Brocade® Fabric OS® Command Reference Manual, 9.2.x

Reference Manual
October 15, 2024

FOS-92x-Command-RM104
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Introduction

This *Brocade® Fabric OS® Command Reference Manual* details the commands that can be issued on devices that support Fabric OS 9.2.x. This manual documents all officially supported Fabric OS commands. Any commands not listed in this command reference are not supported and may be subject to removal without notification.

Supported Hardware and Software

Supported Hardware

The following hardware platforms are supported by Brocade Fabric OS 9.2.x.

Brocade Gen 7 (64G) Fixed-Port Switches

- Brocade G710 Switch (See note below)
- Brocade G720 Switch
- Brocade G730 Switch
- Brocade 7850 Extension Switch

NOTE
The earliest supported FOS version for G710 switch is Fabric OS v9.2.2.

Brocade Gen 7 (64G) Directors

- Brocade X7-4 Director
- Brocade X7-8 Director

Brocade Gen 6 (32G) Fixed-Port Switches

- Brocade G610 Switch
- Brocade G620 Switch
- Brocade G630 Switch
- Brocade 7810 Extension Switch
- Brocade G648 Blade Server SAN I/O Module

Brocade Gen 6 (32G) Directors

- Brocade X6-4 Director
- Brocade X6-8 Director

Supported Software

FOS 9.2.2 obsoletes in-line usage of sensitive data such as passwords, keys, and tokens. The affected commands with modified or restricted usage are:

- aaaconfig
- configdownload
- configupload
- extncfg
- femdump
- frudump
- firmwarecleainstall
- firmwaredownload
- firmwarepatch
- license
- mapsconfig
- passwd
- portcfg ipsec-policy
- snmpconfig
- seccertmgmt
- supportftp
- supportlink
- supportsave
- tsClockServer
- userconfig

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- For questions regarding service levels and response times, contact your OEM or solution provider.

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Online	Telephone
For nonurgent issues, the preferred method is to log on to the Support portal at support.broadcom.com. (You must initially register to gain access to the Support portal.) Once registered, log on and then select **Hardware** > **Brocade Storage Networking**. You can now navigate to any of the Brocade tools.	For Severity 1 (critical) issues, call Brocade Fibre Channel Networking Global Support at one of the phone numbers listed at www.broadcom.com/support/fibre-channel-networking/contact-brocade-support.

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CLI Usage Conventions

- Some Fabric OS show commands display certain switch or fabric components in three-digit decimal numbers, for example, 003. When you use these numeric identifiers as input to other commands, you must remove the leading zeros; otherwise the commands will fail or generate incorrect results. Adding zeros to any decimal number in command input will cause that number to be treated as an octal number.
- The entire command line (both commands and options) is case-sensitive. Selected command names and options may also support Java-style capitalization. Java-style capitalization means that while `bannershow` and `bannerShow` will both work, `BANNERSHOW` and `BannerShow` will not work. Command options, on the other hand, are strictly case-sensitive, and

  therefore only lower-case or Java-style capitalization can be entered depending on each option. This means that while the -USB option of the `configDownload` command works, the `-usb` option will not work. Refer to the command syntax for explicit instructions on supported capitalization for each command and its options.
- Almost all commands have both Hungarian and all lower case notations. Entries for both these notations are there in execution path. User may execute a command in either notation. The FOS documentation uses both there notations interchangeably in online and offline man pages.
- When command examples in this guide show user input enclosed in quotation marks, the quotation marks are required. Example: `zonecreate "zonename"` requires that the value for zonename be in quotation marks.
- Automatic page breaks in CLI command output are being phased out. Use the `more` option to display command output with page breaks: `command | more`. Do not use the `more` option in conjunction with help pages. Issuing `help command | more` displays a "`no manual entry for command`" message.

Using Fabric OS Commands

The Fabric OS command line interface (CLI), accessed via Telnet, SSH, or a serial console, provides full management capability on a Brocade switch.

Using the Command Line Interface

The Fabric OS CLI enables an administrator to monitor and manage individual switches, ports, and entire fabrics from a standard workstation. Selected commands must be issued from a secure Telnet or SSH session.

Access is controlled by a switch-level password for each access level. The commands available through the CLI are based on the user's login role and the license keys used to unlock certain features.

The Fabric OS CLI provides the following capabilities:

- Access to the full range of Fabric OS features according to the license keys installed.
- Assistance with configuration, monitoring, dynamic provisioning, and daily management of every aspect of storage area networks (SANs).
- A deeper view of the tasks involved in managing a Brocade SAN.
- Identification, isolation, and management of SAN events across every switch in the fabric.
- Management of Brocade licenses.

The documentation for each command includes a synopsis of its syntax, a description of command use, and a set of examples. The same information can be accessed by issuing the `help` command followed by the command name on a Brocade switch or director. This command displays the help page for the specified command. For example, to display the help page for `portCfg` , enter:

```
switch:admin> help portCfg
```

Understanding Role-Based Access Control

Fabric OS implements Role-Based Access Control (RBAC) to control access to all Fabric OS operations. Eight predefined roles are supported, as described in **Role Definitions** table. These predefined role definitions are guided by perceived common operational situations and the operations and effects that a role is permitted to have on a fabric and individual fabric elements.

> **NOTE**
> Access to the root account is removed in Fabric OS v9.1.0 and the account cannot be activated. References to the root account may persist in FOS and must be ignored.

Table 1: Role Definitions

Role Name	Definition
Admin	All administrative tasks, including encryption and chassis commands.
BasicSwitchAdmin	A subset of administrative tasks, typically of a more limited scope and effect.
FabricAdmin	Administrative use excluding user management.
Operator	A subset of administrative tasks typically required for routine maintenance operations.
SecurityAdmin	Administrative use including admin, encryption, security, user management, and zoning.

Role Name	Definition
SwitchAdmin	Administrative use excluding security, user management, and zoning.
User	Nonadministrative use, such as monitoring system activity. In Fabric OS 7.4.2 and later, the user account gains access to Fabric ID 128. This is the default logical fabric after a firmware upgrade.
ZoneAdmin	Zone management only.

In addition to these predefined roles, Fabric OS provide support for creating user-defined roles. See the `roleConfig` command for more information.

NOTE
While executing any command such as `classConfig` , the `OperandPresent` string in the options column indicates that an option must be present with the command for successful execution.

Additional command restrictions apply depending on whether Virtual Fabrics is enabled in a fabric. See Command Availability.

Understanding Virtual Fabric Restrictions

All Fabric OS commands are subject to additional RBAC enforcement with regard to Virtual Fabric contexts and switch types. Commands can be issued in one or more of the contexts described in **Virtual Fabric Contexts** table.

Table 2: Virtual Fabric Contexts

Context Type	Definition
Switch context	Command applies to the current logical switch only or to a specified logical switch.
Chassis context	Command applies to the chassis on which it is issued.
Switch and chassis context	Command can be issued in a logical switch context or in a chassis context.
Disallowed	Command is not supported in Virtual Fabric mode.

Issuing of chassis commands requires chassis permissions.

Switch commands are further defined by the switch type restrictions described in **Switch Types** table. Switch type restrictions are not applicable to commands that require chassis permissions.

Table 3: Switch Types

Switch Type	Definition
All Switches	Command can be issued in any switch context.
Base Switch Only	Command can be issued only on the base switch.
Default Switch Only	Command can be issued only on the default switch.
N/A	Command is a chassis command or is not supported in Virtual Fabric mode.

In a Virtual Fabric environment where contexts are enforced, the following Virtual Fabric restrictions apply to the RBAC permissions specified in **Role Definitions** table. See the `userConfig` command for more information on configuring user account access permissions in a Virtual Fabric environment.

- Any given role is allowed to issue all switch commands to which the role is authorized in the account's home context. The default home context is the default logical fabric FID 128.
- You can change an account's home context to a specified FID and the account permissions to access additional logical switches specified in the user's fabric ID list.
- Accounts with user or admin permissions can be granted chassis permissions. A user account with the chassis role can issue chassis-level commands at the user RBAC access level. An admin account with the chassis role can issue chassis-level commands at the admin RBAC access level.

Use the `classConfig --showcli` command to look up the Virtual Fabrics context for a specified command. See Chapter 5, Command Availability, for a complete listing of Virtual Fabric restrictions that apply to the commands included in this manual.

Determining the RBAC Permissions for a Specific Command

To determine the RBAC permissions for a specific command, use the `classconfig` command.

1. Enter the `classconfig --showcli` command for a specified command.
   The command displays the RBAC class and access permissions for each of the command options. The command passed as an argument must use only lowercase letters. Note that options for a single command option can belong to different classes.
2. Enter the `classconfig --showroles` command and specify the RBAC class of the command option that you want to look up.

The command displays the default roles and the permissions to access commands in the specified RBAC class.

The following example shows how you can obtain permission information for the `zone` command. Suppose that you want to know if a user with the SwitchAdmin role can create a zone. You issue the `classconfig --showcli` command for the `zone` command, which shows that the `zone --add` command belongs to the RBAC class "Zoning." You then issue the `classconfig --showroles` command for the Zoning RBAC class. The output shows that the SwitchAdmin role has "Observe" (O) permissions only for any command in the Zoning class. This means that a user with the SwitchAdmin role is not allowed to create zones. To allow this user to create a zone, you must change the user's access to any of the roles that have "Observe and Modify" (OM) access. Use the `userConfig` command to change the user's role, or use the `roleConfig` command to create a custom role.

```
switch:admin> classconfig --showcli zone
CLI Option        Permission  RBAC Class      Context
-------------------------------------------------------
zone copy          OM          Zoning          vf
zone expunge       OM          Zoning          vf
zone help          O           Zoning          vf
zone validate      O           Zoning          vf


switch:admin> classconfig --showroles zoning
Roles that have access to the RBAC Class 'zoning' are:

Role Name        Permission
-------------------
User              O
Admin             OM
Root              OM
Operator          O
SwitchAdmin       O
ZoneAdmin         OM
FabricAdmin       OM
```

```
BasicSwitchAdmin  O
SecurityAdmin     O
Maintenance       OM
```

NOTE
If a role name does not appear in the list, it indicates that the role is not available to the specified class and that associated commands in that class are restricted and cannot be issued in that role.

NOTE
Maintenance Account is only to be used when directed by your Service Provider.

Shell Function Commands

The following commands are used by Fabric OS to support certain shell functions. Users should not run these commands directly.

- `builtin`
- `mail_handler`

The following commands are used for administrative functions and will fail when run directly:

- `export_switch`
- `set_console_switch`
- `set_switch_inst`
- `setSlot`

Fabric OS Commands

The following Fabric OS commands can be issued on devices that support Fabric OS 9.2.x.

aaaConfig

Manages RADIUS, LDAP, TACACS+, and RSA configuration information.

Synopsis

```
aaaconfig --show [-npage | -conf {radius | ldap | tacacs+ | rsa | fa}]
 aaaconfig --add <server> -conf radius [-p <port>]
     [-s <secret>][-t <timeout>] [-a {chap | pap | peap-mschapv2}]
     [-e {none | aes256} | -encr_type {none | aes256}]
 aaaconfig --add <server> -conf ldap
     [-p <port>] [-t <timeout>] [-d <domain>]
     [-tls_mode {starttls | ldaps}]
 aaaconfig --add <server> -conf tacacs+
     [-s <secret>][-p <port>] [-t <timeout>]
     [-a {chap | pap}] [-e {none | aes256} |
 -encr_type {none | aes256}]
 aaaconfig --add <server> -conf rsa -client_key <key>
 -client_id <id> [-p port]
 aaaconfig --remove <server> -conf {radius | ldap | tacacs+ | rsa}
 aaaconfig --change <server> -conf radius
    [-s <secret>] [-p <port>] [-t <timeout>]
    [-a {chap | pap | peap-mschapv2}]
    [-e {none | aes256} | -encr_type {none | aes256}]
 aaaconfig --change <server> -conf ldap
     [-p <port>] [-t <timeout>] [-d <domain>]
     [-tls_mode {starttls | ldaps}]
 aaaconfig --change <server> -conf tacacs+
     [-s <secret>] [-p <port>] [-t <timeout>]
     [-a {chap | pap}] [-e {none | aes256} |
 -encr_type {none | aes256}]
 aaaconfig --change <server> -conf rsa [-client_key <key>]
     [-p port] [-client_id <id>]
 aaaconfig --move <server> -conf {radius | ldap | tacacs+} <to_position>
 aaaconfig --authspec "<aaa1>[;<local>]" [-backup] [-nologout]
     [-logpriauth {yes | no}]
 aaaconfig --authspec <"fa"> [-nologout] [-logpriauth {yes | no}] [-dualmode]
 aaaconfig --authrconf -show
 aaaconfig --authrconf <AAA_username> {[-l
     <"switchrole1=start_lf_id-end_lf_id [;switchrole2=start_lf_id-end_lf_id]">]
     [-h <LF_ID>] [-c <chassis_role>]}
 aaaconfig --authrconf <AAA_username> -r <rolename>
 aaaconfig --authrconf <AAA_username> -u
 aaaconfig --import -server <ipaddress> -name <user>
 -proto {scp | sftp} -file <remote_file_name>
```

```
aaaconfig --export -server <ipaddress> -name <user>
-proto {scp | sftp} -file <remote_file_name>
aaaconfig --allowuser {-show | "<user>[;<user>]..."}
aaaconfig --log -conf fa {-enable | -disable | -show | -status}
```

Description

Use this command to manage the RADIUS, LDAP, TACACS+, RSA, or federated server (FA) configuration for the Authentication, Authorization, and Accounting (AAA) services. Use this command to display, add, remove, change, enable, or disable the RADIUS, LDAP, TACACS+, RSA, or FA configuration.

Brocade switches use a local and a remote authentication mechanism for validating a login. Supported authentication protocols include Password Authentication Protocol (PAP), Challenge-Handshake Authentication Protocol (CHAP), Protected Extensible Authentication Protocol (PEAP), Oauth for federated, and Hypertext Transfer Protocol Secure (HTTPS). Also supported is Lightweight Directory Access Protocol (LDAP) authentication against Active Directory for user authentication and authorization.

RADIUS, LDAP, and TACACS+ servers are contacted in the order in which they appear in the configuration list. The first server that returns authentication success or failure causes the authentication request to succeed or fail. If no response is received within the specified timeout, the next RADIUS, LDAP, or TACACS+ server in the list is contacted. RSA and FA supports a single server. An event entry is logged if all RADIUS, LDAP, TACACS+, RSA, or FA servers fail to respond.

When the command succeeds, it triggers an event log (the Fabric OS audit log) to indicate that a server is added, removed, or modified. Refer to the *Brocade Fabric OS Message Reference Manual* for specific details.

Configuration changes are persistently saved and takes effect with the next AAA login request. The configuration applies to all switch instances in a platform that supports multiple switch domains.

Notes

Customers can use centralized RADIUS servers to manage AAA services for a switch, as defined in the RFC 2865 RADIUS specification.

This command can be issued when logged in through the console, Telnet, or an SSH connection.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

<server>	Specifies an IP address or a server name in dotted-decimal notation. IPv6 addresses are supported. If a name is used, a DNS entry must be correctly configured for the server. While adding a server, if the specified server IP address or name already exists in the current configuration, the command fails and generates an error. However, the command does not validate the server name against the IP address in the configuration. Make sure to avoid duplicate configuration of the same server, one specified by the name, and another specified by the IP address.
--show	Displays the current AAA service configuration. Use **-npage** option to display details without any page breaks.
	-conf {radius | ldap | tacacs+ | rsa | fa} Displays the RADIUS, LDAP, TACACS+, RSA, or federated servers configured. This operand is optional and if used, mention the server as either RADIUS or LDAP or TACACS+ or RSA or federated.
{--add | --change} ***<server>*** **[*options*]**	Adds or modifies a RADIUS, LDAP, TACACS+, or RSA server. The **--add** option appends the specified server to the end of the current configuration list. A maximum of five servers are supported for each

authentication type except for RSA server. The **--change** option modifies the specified server configuration to use the new arguments. The server must be one of the IP addresses or names shown in the current configuration.

The following *options* are supported:

-conf {radius | ldap | tacacs+ | rsa} Specifies the server configuration as RADIUS, LDAP, TACACS+, or RSA. This operand is required. The TACACS+ is deprecated and will be obsoleted in a future FOS version. In this FOS version, TACACS+ functionality is unchanged.

The following operands are optional:

-p <*port*> Specifies the RADIUS, LDAP, TACACS+, or RSA server port number. The supported range is 1 to 65535. The default port is 1812 for RADIUS authentication, 1813 for RADIUS accounting, 49 for TACACS+, 389 for LDAP authentication, 636 for LDAPS, 3268 for Global Catalog, 3269 for Global Catalog LDAPS authentication, and 5555 for RSA authentication. This operand is optional. If no port is specified, the default is used.

-t^<*timeout*> Specifies the response timeout for the RADIUS, LDAP, or TACACS + server. The supported range is 1 to 30 seconds. The default is 3 seconds. This operand is optional. If no timeout is specified, the default is used.

-d <*domain*> Specifies the domain name for the LDAP server, for example, broadcom.com. This option is valid only with the **-conf ldap** option and takes "local" as default if domain value is not provided. This operand is optional.

-s <*secret*> Specifies a common secret between the switch and the RADIUS or TACACS+ server. The secret must be 8 to 40 characters for a RADIUS server and 1 to 40 characters for TACACS+ server. This option is valid only with the **-conf radius** or **-conf tacacs+** options, and it was optional till Fabric OS v9.2.0 with the default value as **sharedsecret**. From Fabric OS v9.2.1, this option is made as mandatory and non interactive. Beginning with Fabric OS v9.2.2, this option is made as interactive and requires valid user input during execution. For **--add** option, this option is not a valid command line argument; whereas for **--change** option, this can be executed in command line without the <*secret*> value. The secret can include any printable ASCII character from 0x21 to 0x7E. Spaces are not allowed.

-a Specifies the remote authentication protocol for the RADIUS or TACACS+ server. This operand is valid with the **-conf radius** or **-conf tacacs+** options, and it is optional. The default value for this operand is **CHAP**.

Note that the distinction between protocols is only applicable to the packets between a system and the RADIUS or TACACS+ server. To authenticate a user to the system, a password is always used.

Valid protocols are one of the following:

pap Password Authentication Protocol.

chap Challenge Handshake Authentication Protocol.

peap-m schapv2 Protected Extensible Authentication Protocol. This is applicable only to RADIUS configuration.

-e <*encr_type*> Specifies the encryption algorithm of the servers sharedsecret. This is applicable to both RADIUS and TACACS+ configurations. Valid values include the following:

none	No encryption, stored in plain text.
aes256	AES-256 algorithm.

-tls_mode Specifies the mode of connection with the LDAP server. Valid options include the following:

starttls	Initiates LDAP connection with StartTLS. The default port is 389.
ldaps	Initiates LDAPS connection. The default port is 636.

-client_key <*key*> Specifies the client key. The maximum allowed length is 256 characters. Beginning from Fabric OS v9.2.2, the <*key*> value is accepted only through interactive mode. For **--add** option, this option is not a valid command line argument; whereas for **--change** option, this can be executed in command line without the <*key*> value.

-client_id Specifies the client ID. The maximum allowed length is 256 characters.

--remove <*server*> Removes the specified server from the configuration. The server must match one of the IP addresses or names shown in the current configuration. You cannot remove the last server from the configuration, if the corresponding AAA service is configured. The following operand is required:

-conf {radius | ldap | tacacs+ | rsa} Specifies the server configuration as RADIUS, LDAP, TACACS+, or RSA. If the server is enabled, the command does not allow the last server to be removed from the configuration list. RADIUS, LDAP, TACACS+, or RSA must first be disabled before the last server of the specified type may be removed.

--move <*server*> <*option*> Moves the specified server from the current position in a RADIUS, LDAP, or TACACS+ configuration list to the specified position. If the specified position is the same as the current position, no change occurs. Valid options include the following:

-conf {radius | ldap | tacacs+}	Specifies the server configuration as RADIUS, LDAP, or TACACS+. This operand is required.
<*to_position*>	Specifies the new position for the server. The value for *to_position* is an integer and must be within the range of server positions in the current configuration. Use the **--show** option to determine current server positions. This operand is required.

--authspec "<*aaa1*>[;<*local*>]" [-backup] [-nologout] [-dualmode] Replaces the configuration with the specified AAA service. Each service can be specified only once in the list, for example, "radius; local; radius" is invalid. No edit option is provided. The **--authspec** option takes as an argument a semicolon-separated list of AAA services. Services must be enclosed in double quotation marks.

The following AAA services and service pairs are valid:

"local"	Default setting. Authenticates the user against the local database only. If the password does not match or the user is not defined, the login fails.
"radius"	When "radius" is specified, the first RADIUS server is contacted. If the RADIUS server is not reachable, the next RADIUS server is contacted. If the authentication fails, the authentication process does not check for the next server in the sequence.
"ldap"	When "ldap" is specified, the first LDAP server is contacted. If the LDAP server is not reachable, the next LDAP server is contacted. If the authentication fails, the authentication process does not check for the next server in the sequence.
"rsa"	Authenticates the user against "rsa" database.

"fa"	Authenticates the user against "fa" database.
"tacacs+"	When "tacacs+" is specified, the first TACACS+ server is contacted. If the TACACS+ server is not reachable, the next TACACS+ server is contacted. If the authentication fails, the authentication process does not check for the next server in the sequence.
"radius;local"	Enables the current RADIUS configuration as the primary AAA service and the switch-local database as the secondary AAA service. If "radius" and "local" are specified, and if the RADIUS servers are reachable and the user credentials are correct, the user authentication succeeds. If the user provides credentials from the switch database, the RADIUS authentication fails but login succeeds through the switch database.
"ldap;local"	Enables the current LDAP configuration as the primary AAA service and the switch-local database as the secondary AAA service. If "ldap" and "local" are specified, and if the LDAP servers are reachable and the user credentials are correct, the user authentication succeeds. If the user provides credentials from the switch database, LDAP authentication fails but login still succeeds through the switch database.
"tacacs+;local"	Enables the current TACACS+ configuration as the primary AAA service and the switch-local database as the secondary AAA service. If "tacacs+" and "local" are specified, and if the TACACS+ servers are reachable and the user credentials are correct, the user authentication succeeds. If the user provides credentials from the switch database, TACACS+ authentication fails but login still succeeds through the switch database.
"rsa;local"	Enables the current RSA configuration as the primary AAA service and the switch-local database as the secondary AAA service. If "rsa" and "local" are specified, and if the RSA server is reachable and the user credentials are correct, the user authentication succeeds. If the user provides credentials from the switch database, RSA authentication fails but login still succeeds through the switch database.
-backup	For use with the "radius;local", "ldap;local", "tacacs+;local", and "rsa;local" options only. The backup option states to try the secondary AAA service only if none of the primary AAA services are reachable.
-nologout	If **-nologout** is not specified, a change in the authentication mechanism may result in the termination of existing sessions. If **-nologout** is specified, there will be no effect on the existing sessions regardless of the chosen authentication mechanism.
-logpriauth {yes | no}	Suppresses (no) or displays (yes) a log message for authentication failure by the primary AAA service if authentication is to be done through secondary AAA service, which is the local switch database. By default, primary authentication failure logs are displayed.
-dualmode	An additional option for the traditional password authentication method for the local switch users login is supported along with federated authentication.

--authrconf Maps the user to the switch role, allows RSA and FA users. The limit on number of mappings is 256.

-r <*rolename*>	Adds a user to role mapping in VF disabled mode. The maximum length allowed is 16 characters.
<*AAA_username*>	The maximum length allowed is 255 characters. The special characters like forward slash (/), opening and closing square brackets, colon(:), semicolon(;), pipe (|), equal to (=), comma (,), plus (+), asterisk (*), question mark (?), and opening or closing angle brackets (<>) are not supported.
-l	The valid format is <"switchrole1=start_lf_id-end_lf_id [;switchrole2=start_lf_id-end_lf_id]">. For example, "user=1-128". The maximum length allowed is 2048 characters.
-h <*LF_ID*>	Allows only digits and the valid values ranges from 1 through 128.
-c <*chassis role*>	The maximum length allowed is 16 characters.

--import | --export	Imports or exports IDP and authentication configuration to a remote server.
--allowuser	Configures a breakglass local user for federated authentication without dualmode.
--log -conf fa	Configures logging for 'fa'.
	-enable | -disable Enables or disables logging to collect logs during the login of AAA users.
	-show Displays the logs in the terminal.
	-status Displays the logging status.

Examples

To display the current RADIUS, LDAP, TACACS+, and RSA configurations:

```
switch:admin> aaaconfig --show
RADIUS CONFIGURATIONS
=====================

Position          : 1
Server            : 1.2.1.1
Port              : 1812
Secret            : ********
Timeout(s)        : 3
Auth-Protocol     : PAP
Encryption level  : NONE

LDAP CONFIGURATIONS
===================

Position                 : 1
Server                   : 1.2.1.4
Port                     : 389
Domain                   : local
Timeout(s)               : 3

Position                 : 2
Server                   : 1.4.3.4
Port                     : 389
Domain                   : local
Timeout(s)               : 3

Position                 : 3
Server                   : 1.3.3.4
Port                     : 389
Domain                   : local
Timeout(s)               : 3

 Type <CR> to continue, Q<CR> to stop:

Position                 : 4
Server                   : 1.1.3.4
Port                     : 389
Domain                   : local
Timeout(s)               : 3
```

```
Position                 : 5
Server                   : 1.2.2.4
Port                     : 389
Domain                   : local
Timeout(s)               : 3

TACACS+ CONFIGURATIONS
======================
TACACS+ configuration does not exist.

RSA CONFIGURATIONS
======================

Position          : 1
Server            : 1.2.3.4
Port              : 5555
Client ID         : security_vm
Client Key        : ********

Primary AAA Service: Switch database
Secondary AAA Service: None
Log Primary Authentication Status: yes
```

To display the current RSA configurations:

```
switch:admin> aaaconfig --show -conf rsa

RSA CONFIGURATIONS
======================

Position          : 1
Server            : 1.2.3.4
Port              : 5555
Client ID         : security_vm
Client Key        : ********

Primary AAA Service: RSA
Secondary AAA Service: Switch database
Log Primary Authentication Status: Yes
```

To display the current RADIUS, LDAP, and TACACS+ configurations without any page breaks:

```
switch:admin> aaaconfig --show -npage
RADIUS CONFIGURATIONS
======================

Position          : 1
Server            : 1.2.3.1
Port              : 1812
Secret            : ********
Timeout(s)        : 3
Auth-Protocol     : PAP
```

```
Encryption level  : NONE

LDAP CONFIGURATIONS
===================

Position                 : 1
Server                   : 1.2.2.4
Port                     : 389
Domain                   : local
Timeout(s)               : 3

Position                 : 2
Server                   : 1.2.3.3
Port                     : 389
Domain                   : local
Timeout(s)               : 3

Position                 : 3
Server                   : 1.1.3.4
Port                     : 389
Domain                   : local
Timeout(s)               : 3

Position                 : 4
Server                   : 1.2.2.4
Port                     : 389
Domain                   : local
Timeout(s)               : 3

Position                 : 5
Server                   : 1.2.4.4
Port                     : 389
Domain                   : local
Timeout(s)               : 3

TACACS+ CONFIGURATIONS
======================
TACACS+ configuration does not exist.

Primary AAA Service: Switch database
Secondary AAA Service: None
Log Primary Authentication Status: yes
```

To display the current RADIUS configurations

```
switch:admin> aaaconfig --show -conf radius
RADIUS CONFIGURATIONS
=====================

Position          : 1
Server            : 1.2.3.4
Port              : 1812
Secret            : ********
```

```
Timeout(s)        : 3
Auth-Protocol     : PAP
Encryption level  : NONE

Primary AAA Service: Switch database
Secondary AAA Service: None
Log Primary Authentication Status: yes
```

To display the current LDAP configurations

```
switch:admin> aaaconfig --show -conf ldap
LDAP CONFIGURATIONS
===================

Position                 : 1
Server                   : 1.2.3.4
Port                     : 389
Domain                   : local
Timeout(s)               : 3

Position                 : 2
Server                   : 1.3.3.4
Port                     : 389
Domain                   : local
Timeout(s)               : 3

Position                 : 3
Server                   : 1.2.2.4
Port                     : 389
Domain                   : local
Timeout(s)               : 3

Position                 : 4
Server                   : 1.2.3.3
Port                     : 389
Domain                   : local
Timeout(s)               : 3

Position                 : 5
Server                   : 1.1.3.4
Port                     : 389
Domain                   : local
Timeout(s)               : 3

Primary AAA Service: Switch database
Secondary AAA Service: None
Log Primary Authentication Status: yes
```

To display the current TACACS+ configurations:

```
switch:admin> aaaconfig --show -conf tacacs+
TACACS+ CONFIGURATIONS
```

```
=====================

Position          : 1
Server            : 1.2.3.4
Port              : 49
Secret            : ********
Timeout(s)        : 3
Auth-Protocol     : CHAP
Encryption level  : NONE

Primary AAA Service: Switch database
Secondary AAA Service: None
Log Primary Authentication Status: yes
```

To display the current Federated configurations:

```
switch:admin> aaaconfig --show -conf fa
FA CONFIGURATIONS
=====================
Position : 1
Server : azure
11
CRM_Testing
Mode : oauth
Dev APP ID : 1234567-abcd-1234-abcd-12ab3cd56789
Metadata-url : https://login.microsoftonline.com/a12345b6-a12b-12a3-ab00-1a2bcd345678/v2.0/.well-known/
openidconfiguration
Auth Role Precedence : groups,name,roles
Metadata :
token_endpoint : https://login.microsoftonline.com/a12345b6-a12b-12a3-ab00-1a2bcd345678/oauth2/v2.0/token
jwks_uri : https://login.microsoftonline.com/a12345b6-a12b-12a3-ab00-1a2bcd345678/discovery/v2.0/keys
issuer : https://login.microsoftonline.com/a12345b6-a12b-12a3-ab00-1a2bcd345678/v2.0
userinfo_endpoint : https://graph.microsoft.com/oidc/userinfo
authorization_endpoint: https://login.microsoftonline.com/a12345b6-a12b-12a3-ab00-1a2bcd345678/oauth2/v2.0/
authorize
device_authorization_endpoint: https://login.microsoftonline.com/a12345b6-a12b-12a3-ab00-1a2bcd345678/oauth2/
v2.0/devicecode
end_session_endpoint : https://login.microsoftonline.com/a12345b6-a12b-12a3-ab00-1a2bcd345678/oauth2/v2.0/
logout
kerberos_endpoint : https://login.microsoftonline.com/a12345b6-a12b-12a3-ab00-1a2bcd345678/kerberos
tenant_region_scope : NA
cloud_instance_name : microsoftonline.com
cloud_graph_host_name : graph.windows.net
msgraph_host : graph.microsoft.com
rbac_url : https://pas.windows.net
Oauth-data :
Issuer : https://sts.windows.net
Tenant ID : a12345b6-a12b-12a3-ab00-1a2bcd345678
App IDs :
: 1234567-abcd-1234-abcd-12ab3cd56789
: 1234567-abcd-1234-abcd-12ab3cd56789
Keys :
Index : 1
```

```
Type : RSA
Use : sig
Key ID : -AB1C2dEF3gHijklmNoPqrSTUvw
x5t : -AB1C2dEF3gHijklmNoPqrSTUvw
n :
tJL6Wr2JUsxLyNezPQh1J6zn6wSoDAhgRYSDkaMuEHy75VikiB8wg25WuR96gdMpookdlRvh7SnRvtjQN9b5m4zJCMpSRcJ5DuXl4mcd7Cg3Zp1C5-
JmMq8J7m7OS9HpUQbA1yhtCHqP7XA4UnQI28J-TnGiAa3viPLlq0663Cq6hQw7jYo5yNjdJcV5-
FSxNV7UHR4zAMRruMUHxte1IZJzbJmxjKoEjJwDTtcd6DkI3yrkmYt8GdQmu0YBHTJSZiz-
M10CY3LbvLzftbBNKQ_
gfnGGKF7MvRCmPA_YF_APynrIG7p4vPDRXhpG3_CIt317NyvGoIwiv0At83kQ
e : AQAB
x5c : MIIDBTCCAe2gAwIBAgIQGQ6YG6NleJxJGDRAwAd/
ZTANBgkqhkiG9w0BAQsFADAtMSswKQYDVQQDEyJhY2NvdW50cy5hY2Nlc3Njb250cm9sLndpbmRvd3MubmV0MB4XDTIyMTAwMjE
 4MDY0OVoXDTI3MTAwMjE4MDY0OVo+lq9iVLMS8jXsz0IdSes5+sEqAwIYEWEg5GjLhB8u+VYpIgfMINuVrkfeoHTKaKJHZUb 4e0p0b7Y0DfW
+ZuMyQjKUkXCeQ7l5eJnHewoN2adQufiZjKvCe5uzkvR6VEGwNcobQh6j
+1wOFJ0CNvCfk5xogGt74jy5atOutwquoUMO42KOcjY3SXFefhUvsTVe1B0eMwDEa7jFB8bXtSGSc2yZsYyqBIycA07XHeg
 5CN8q5JmLfBnUJrtGAR0yUmYs/
jNdAmNy27y83/rWwTSkP4H5xhihezL0QpjwP2BfwD8p6yBu6eLzw0V4aRt/
wiLd9ezcrxqCMIr9ALfN5ECAwEAAaMhMB8wHQYDVR0OBBYEFJcSH
+6Eaqucndn9DDu7Pym7OA8rMA0GCSqGSIb3DQEBCwUAA4IBAQADkkY0PIyslgWGmRDKpp/5PqzzM9+TNDhXzk6pw8aESWoLPJo
 90RgTJVf8uIj3YSic89m4ftZdmGFXwHcFC91aFe3PiDgCiteDkeH8KrrpZSve1pcM4SNjxwwmIKlJdrbcaJfWRsSoGFjzbFg
 OecISiVaJ9Z+BeAz1Zpmu8DSyY22dG/K6ZDx5qNFg8pehdOUYY24oMamd4J2u2lUgkCKGBZMQgBZFwk+q7H86B/byGuTDEiz LjGPTY/
sMms1FAX55xBydxrADAer/pKrOF1v7Dq9C1Z9QVcm5D9G4DcenyWUdMyK43NXbVQLPxLOng51KO9icp2j4U7pwHP
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CRM_Testing
issuer : https://login.microsoftonline.com/a12345b6-a12b-12a3-ab00-1a2bcd345678/v2.0
Index : 2
Type : RSA
Use : sig
Key ID : Mr5-AUibfBii7Nd1jBebaxboXW0
x5t : Mr5-AUibfBii7Nd1jBebaxboXW0
n : yr3v1uETrFfT17zvOiy01w8nO-1t67cmiZLZxq2ISDdte9dw--yO_Zpozx0J34wHBEMuaw-ZfCUk7mdKKsg---ICer6yxe2itIQ
e : AQAB
x5c : ["+ptdB+LSs3KmTNCSfzYoGNvaRYpsZS+/++//+d1yqF0ZVwfLTCBjnIPiAnq+/+++//aIdCp+//FhENE0Odv/"]
issuer : https://login.microsoftonline.com/a12345b6-a12b-12a3-ab00-1a2bcd345678/v2.0
Index : 3
Type : RSA
Use : sig
Key ID : Mr5-AUibfBii7Nd1jBebaxboXW0
x5t : Mr5-AUibfBii7Nd1jBebaxboXW0
n : yr3v1uETrFfT17zvOiy01w8nO-1t67cmiZLZxq2ISDdte9dw--yO_Zpozx0J34wHBEMuaw-ZfCUk7mdKKsg---ICer6yxe2itIQ
e : AQAB
x5c : ["+ptdB+LSs3KmTNCSfzYoGNvaRYpsZS+/++//+d1yqF0ZVwfLTCBjnIPiAnq+/+++//aIdCp+//FhENE0Odv/"]
issuer : https://login.microsoftonline.com/a12345b6-a12b-12a3-ab00-1a2bcd345678/v2.0
Primary AAA Service: FA
Secondary AAA Service: None
Log Primary Authentication Status: No
```

To move the RADIUS server "radserver" from position 3 to position 1:

```
switch:admin> aaaconfig --move radserver -conf radius 1
```

To change LDAP server configuration:

```
switch:admin> aaaconfig --change 192.0.2.0  \
 -conf ldap -p 3002 -t 1
```

To add LDAP server to the configuration:

```
switch:admin> aaaconfig --add 192.0.2.0  \
 -conf ldap -p 3002 -d broadcom.com -t 1
```

To replace the AAA service with backup option:

```
 switch:admin> aaaconfig --authspec "ldap;local" -backup
```

To change the authentication mechanism with the no logout provision:

```
switch:admin> aaaconfig --authspec radius -nologout
switch:admin> aaaconfig --show
RADIUS CONFIGURATIONS
=====================

Position     : 1
Server       : 1.2.3.4
Port         : 1812
Timeout(s)   : 3
Auth-Protocol: PEAP-MSCHAPv2
Encryption level  : AES256

LDAP CONFIGURATIONS
===================
LDAP configuration does not exist.

TACACS+ CONFIGURATIONS
======================
TACACS+ configuration does not exist.

Primary AAA Service: RADIUS
Secondary AAA Service: None
Log Primary Authentication Status: yes
```

To add a TACACS+ server to the configuration:

```
switch:admin> aaaconfig --add 192.0.2.0 -conf tacacs+
        -p 49 -t 5 -a pap

Enter secret :

Encryption type is currently set to none. Do you want to set
encryption type to aes256? (y/n): y
Warning: TACACS+ is deprecated and will be obsoleted in a future FOS version.
In this FOS version, TACACS+ functionality is unchanged.
Please plan accordingly.
```

To suppress log of primary authentication status:

```
switch:admin> aaaconfig --authspec "tacacs+;local" -logpriauth no
```

```
Log for primary authentication status configured to no
AUTH configuration already enabled
```

To change the authentication mechanism for federated dualmode:

```
switch:admin> aaaconfig --authspec "fa" -nologout -dualmode
```

To display log of primary authentication status:

```
switch:admin> aaaconfig --show
RADIUS CONFIGURATIONS
=====================

Position          : 1
Server            : 1.2.3.4
Port              : 1812
Secret            : ********
Timeout(s)        : 3
Auth-Protocol     : CHAP
Encryption level  : AES256

LDAP CONFIGURATIONS
===================

Position          : 1
Server            : 1.2.3.5
Port              : 389
Domain            : subdomain.domain.com
Timeout(s)        : 3

TACACS+ CONFIGURATIONS
======================

Position          : 1
Server            : 1.1.1.1
Port              : 49
Secret            : ********
Timeout(s)        : 3
Auth-Protocol     : CHAP
Encryption level  : AES256
Primary AAA Service: TACACS+
Secondary AAA Service: Switch database
Log Primary Authentication Status: no
```

To add LDAP TLS mode:

```
switch:admin> aaaconfig --add 9.10.11.12 -conf ldap
-tls_mode ldaps -p 636

2020/06/19-23:47:41, [SEC-1184], 3455, FID 128, INFO, sw0,
                     LDAP configuration change, action ADD, server ID 9.10.11.12.

switch:admin> aaaconfig --show -conf ldap

LDAP CONFIGURATIONS
```

```
===================

Position                : 1
Server                  : 1.2.3.4
Port                    : 389
Domain                  : local
Timeout(s)              : 3
LDAP TLS Mode           : STARTTLS

Position                : 2
Server                  : 5.6.7.8
Port                    : 389
Domain                  : local
Timeout(s)              : 3
LDAP TLS Mode           : STARTTLS

Position                : 3
Server                  : 9.10.11.12
Port                    : 636
Domain                  : local
Timeout(s)              : 3
LDAP TLS Mode           : LDAPS

Primary AAA Service: LDAP
Secondary AAA Service: Switch database
Log Primary Authentication Status: Yes
```

To add a user to role mapping in VF-enabled mode for RSA configuration:

```
switch:admin> aaaconfig --authrconf
rsauser1 -l user=1-128 -h 128 -c admin
User has been successfully mapped.
```

To display the output in VF-enabled mode for RSA configuration:

```
switch:admin> aaaconfig --authrconf -show
 User       | Switch Role   | Home VF    | Chassis Role
-------------------------------------------------------------
 rsauser1   | user=1-128    | 10         | admin
-------------------------------------------------------------
```

To import federated authorization and authentication configuration:

```
switch:admin> aaaconfig --import -server 10.20.30.40
-name user -proto scp -file /home/user/build/json_ut/fa_final_config.json
user@10.20.30.40's password:
Configurations have been successfully imported.
```

To export federated authorization and authentication configuration in a switch to a remote server:

```
switch:admin> aaaconfig --export -server 10.20.30.40
-name user -proto scp -file /home/user/build/json_ut/fa_final_config.json
```

```
user@10.20.30.40's password:
Configurations have been successfully exported.
```

To allow a local user to authenticate in federated only mode:

```
switch:admin> aaaconfig --allowuser "admin;maintenance"
switch:admin> aaaconfig --allowuser -show
Allowed users:admin;maintenance
```

To configure and view logging 'fa' during the login of AAA users:

```
switch:admin> aaaconfig --log -conf fa -enable
Logging enabled for 'fa'

switch:admin> aaaconfig --log -conf fa -status
Logging for 'fa' is 'enabled'

switch:admin> aaaconfig --log -conf fa -disable
Logging disabled for 'fa'

switch:admin> aaaconfig --log -conf fa -show
pam_fedauth: FA login - user xxxx
pam_fedauth: Failed to fetch the idp configuration
pam_fedauth: Failed to load read the idp configuration
pam_fedauth: Failed to load read the idp device_authorization_endpoint configuration
pam_fedauth: Failed to load read the idp scopes_supported configuration
pam_fedauth: Failed to load read the idp dev-appid configuration
pam_fedauth: User xxxx is not an allowed user
pam_fedauth: FA server is not reachable (error-34)
pam_ftok: Error : Invalid jwt token received
pam_ftok: Error : Jwt authentication failed, Errcode : 259
pam_ftok: Error : Failed to load the idp config
pam_ftok: Error : Failed to load the authr config
pam_ftok: Error : Failed to load the decoded jwt
pam_ftok: Info  : Appid is not present in jwt
```

See Also

None

ag

Enables Access Gateway (AG) and manages AG-specific operations.

Synopsis

```
ag --help
ag --show
ag {--modeshow | --modeenable | --modedisable}
ag {--policyenable | --policydisable} <policy>
ag --policyshow
ag --mapshow [<N_Port>]
ag {--mapset | --mapadd | --mapdel} <N_Port> "<F_Port1>[;<F_Port2>;...]"
```

```
ag {--staticadd | --staticdel } <N_Port> "<F_Port1>[;<F_Port2>;...]"
ag --pgshow [<pgid>]
ag --pgcreate <pgid> "<N_Port1>[;<N_Port2>;...]" [-n <pgname>]
     [-m "mfnm;lb"]
ag {--pgadd | --pgdel} <pgid> "<N_Port1>[;<N_Port2>;...]"
ag --pgrename <pgid> <newname>
ag --pgremove <pgid>
ag {--pgmapadd | --pgmapdel} <pgid> "<F_Port1>[;<F_Port2>;...]"
ag {--pgsetmodes | --pgdelmodes} <pgid> "mfnm;lb"
ag --pgfnmtov [<new_tov>]
ag {--failoverenable | --failoverdisable} {<N_Port> | -pg <pgid>}
ag --failovershow [<N_Port>]
ag {--failbackenable | --failbackdisable} {<N_Port> | -pg <pgid>}
ag --failbackshow [<N_Port>]
ag --failbackforce {<N_Port> | -pg <pgid> | -all}
ag {--prefset  |  --prefdel} "<F_Port1>[;<F_Port2>;...]" <N_Port>
ag --prefshow
ag {--adsset | --adsadd | --adsdel} "<F_Port1>[;<F_Port2>;...]"
     "<WWN1>[;<WWN2>;...]"
ag --adsshow
ag --persistentalpaenable {{1 | ON} | {0 | OFF}} {-s | -f}
ag --printalpamap <F_Port>
ag --deletepwwnfromdb <PWWN>
ag --clearalpamap <F_Port>
ag --addwwnmapping <N_Port> "<WWN1>[;<WWN2>;...]" [--all]
ag --delwwnmapping <N_Port> "<WWN1>[;<WWN2>;...]" [--all]
ag --addwwnpgmapping <port_group> "<WWN1>[;<WWN2>;...]" [--all]
ag --delwwnpgmapping <port_group> "<WWN1>[;<WWN2>;...]" [--all]
ag --addwwnfailovermapping <N_Port> "<WWN1>[;<WWN2>;...]" [--all]
ag --delwwnfailovermapping <N_Port> "<WWN1>[;<WWN2>;...]" [--all]
ag --wwnmappingenable "<WWN1>[;<WWN2>;...]" [--all]
ag --wwnmappingdisable "<WWN1>[;<WWN2>;...]" [--all]
ag --wwnmapshow
ag --reliabilitycounterset
ag --reliabilitycountershow
ag --reliabilityshow [<N_Port>]
ag --backupmappingsave <N_Port>
ag --backupmappingdel <N_Port>
ag --backupmappingshow <N_Port>
```

Description

Use this command to perform the following Access Gateway management functions:

- Enable or disable Access Gateway mode.
- Display the current configuration and state of AG.
- Configure and display F_Port to N_Port mappings.
- Configure and display N_Port failover and failback policies.
- Configure and display the Port Group policy.
- Create or remove a port group.
- Get or set the timeout value for fabric name monitoring.
- Display port groups and member N_Ports.
- Add or delete N_Ports in a port group.
- Display all policies and their status.
- Enable or disable the auto port configuration (APC) policy.
- Enable or disable the preferred secondary N_Port policy.
- Enable, disable, and manage the advanced device security (ADS) policy.
- Manage persistent ALPA mode.
- Manage device WWN to N_Port mappings.
- Manage device WWN to N_Port group mappings.
- Manage device WWN failover to N_Ports configured as preferred failover ports.
- Enable or disable device WWN mappings.
- Configure the reliability limit for the preferred N_Port.
- Save the configured F_Ports, static F_Ports for the given N_Port, and F_Ports for which the given N_Port is a preferred one.
- Delete the backup mappings for the given N_Port, if any.
- Display the saved mappings for the given N_Port, if any.

AG configuration changes are saved persistently as configuration keys. Use the **portCfgNPort** command to set a port as an N_Port.

This command supports multiple configurations for mapping device logins to N_Ports for the purposes of load balancing and redistribution in the event of a fabric change. If multiple mappings are configured, the system considers the available mappings in a fixed order of priority to determine which of the available N_Ports should be assigned to the login request. The first eligible mapping is chosen in the order specified below.

1. Device WWN to N_Port
2. Device WWN to N_Port group
3. Automatic device WWN load balancing
4. F_Port to N_Port
5. F_Port to N_Port group

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

AG is supported only on selected Brocade hardware platforms. Refer to the *Brocade Fabric OS Access Gateway Administration Guide* for hardware support and AG configuration procedures.

In non-AG mode, only two actions are available: **--modeenable** and **--modeshow**.

The **--backupmappingsave**, **--backupmappingdel**, and **--backupmappingshow** commands can be issued if the auto policy is disabled.

Operands

This command has the following operands:

--help Displays the command usage.

--show Displays the current configuration of the Access Gateway. This includes all N_Ports and F_Ports that are currently online, failover and failback settings, and any online F_Ports that are currently mapped to N_Ports. Failover and failback policies are displayed as enabled (1) or disabled (0).

--modeshow Displays the current Access Gateway operating mode of the switch as either enabled or disabled.

--modeenable Enables Access Gateway mode on a switch. Long-distance mode settings should be cleared for all ports on the NPIV edge switch to which the AG is connected. Otherwise, the NPIV switch port displays the long-distance port type along with the F_Port.

--modedisable Disables Access Gateway mode on a switch. After AG mode is disabled, the switch reboots automatically and comes online with default zone access set to No Access. In order to merge the switch with a fabric, set the default zone to All Access and disable/enable the E_Port.

--policyshow Displays the supported AG port policies and their status as either enabled or disabled. AG supports four types of policies:

- Port Grouping (pg) policy: This policy manages failover of an F_Port to a set of related N_Ports in a port group.
- Auto Port Configuration (auto) policy: When this policy is enabled, the AG-enabled switch automatically detects available ports and maps F_Ports to N_Ports. Auto port configuration is disabled by default.
- Advanced Device Security (ADS) policy. This policy restricts access to the fabric at the AG level to a set of authorized devices. Unauthorized access is rejected, and the system logs a RASLOG message. You can configure the list of allowed devices for each F_Port by specifying their port WWN. See the **ag --ads*** commands for information on managing advanced device security. The ADS policy is disabled by default, which means that all devices can connect to the switch.
- WWN Based Load Balancing policy: This policy routes device logins to the least loaded port in the port group to which they are mapped.

--policyenable <*policy*> Enables the specified port policy for the Access Gateway. When a new policy is enabled, all port-related configuration settings are lost. Use the **configUpload** command to save the current port configuration. Valid policies include the following:

pg Enables the Port Grouping policy. A default port group "pg0" is created, which includes all configured N_Ports assigned to the policy. Enabling the Port Grouping policy disables the Get Fabric Name policy.

auto Enables the Auto Port Configuration policy. When enabled, this policy applies to all ports on the switch. All F_Port to N_Port mappings and port group configurations are ignored.

ads Enables the Advanced Device Security (ADS) policy. When enabled, this policy applies to all ports on the switch. By default all devices have access to the fabric on all ports.

wwnloadbalance Enables the device WWN Based Load Balancing policy. When this policy is enabled, device logins are sent to the least loaded port in the port group to which they are mapped. These devices are displayed with **ag --wwnmapshow** as dynamic device mappings. The Port Grouping policy must be enabled before you can enable the WWN Based Load Balancing policy.

--policydisable <*policy*> Disables the specified policy for the Access Gateway. When a policy is disabled, all port-related configuration settings are lost. Use the **configUpload** command to save the current port configuration. Valid policies include the following:

pg Disables the Port Grouping policy. All port group configurations are deleted. Disabling the Port Grouping policy enables the Get Fabric Name policy.

auto	Disables the Auto Port Configuration policy and deletes all associated configuration settings.
ads	Disables the Advanced Device Security (ADS) policy and deletes all lists of allowed device WWNs.
wwnloadbalance	Disables the device WWN Based Load Balancing policy.

--mapshow [<*N_Port*> | <*device_WWN*>]	Displays the F_Ports that are configured and currently mapped to a given "primary" N_Port. Optionally specify an N_Port to display the F_Ports that are mapped to the specified N_Port only, or specify a device WWN to display the N_Port to which the device WWN is mapped. Failover and failback policies are displayed as enabled (1) or disabled (0).
--mapset <*N_Port*> "[<*F_Port1*>;<*F_Port2*>;...]"	Maps a set of F_Ports to a specified "primary" N_Port, forcing all traffic from the F_Ports to be routed through this N_Port to the attached fabric. An F_Port cannot be mapped to more than one primary N_Port at any given time. F_Ports are enabled only if the N_Port is online. This command overwrites existing port mappings. Use a blank list ("") to clear current mappings.
--mapadd <*N_Port*> "[<*F_Port1*>;<*F_Port2*>;...]"	Adds one or more specified F_Ports to the mapping of an existing "primary" N_Port. The traffic for the configured F_Ports is routed to the fabric through the specified N_Port when the F_Ports come online. An F_Port cannot be mapped to more than one primary N_Port at the same time.
--mapdel <*N_Port*> "[<*F_Port1*>;<*F_Port2*>;...]"	Deletes one or more specified F_Ports from the "primary" N_Port mapping.
--staticadd <*N_Port*> "[<*F_Port1*>;<*F_Port2*>;...]"	Creates a static mapping between an existing "primary" N_Port and one or more specified F_Ports. This command removes exiting mappings. Once the static mapping is enabled, the F_Ports and all logged-in devices will log out of the previous N_Port and log in using the new N_Port.
--staticdel <*N_Port*> "[<*F_Port1*>;<*F_Port2*>;...]"	Deletes a static mapping between an existing "primary" N_Port and one or more specified F_Ports. This command removes exiting mappings. Alternately, you can remove an existing mapping by mapping the F_Port to another N_Port.
--pgshow [<*pgid*>]	Displays the Port Group configuration. The port grouping feature supports specifying a set of N_Ports to be included in the Port Group (PG) policy. The factory default PG is "pg0", which includes all N_Ports. The default PG cannot be removed or renamed.
--pgcreate <*pgid*>	"<*N_Port1*>[;<*N_Port2*>;...]" [**-n** <*pgname*>][**-m** "lb; mfnm"] Creates a port group with the ID *pgid* and a specified list of N_Ports to be included in the policy. The list must be enclosed in quotation marks. Ports must be separated by semicolons. The port group ID must not exceed 63 characters. An error message is displayed instead of truncating the input when the input string exceeds 63 characters. Optionally, specify a name for the port group and a mode. Modes are disabled by default. For an explanation of mode values, see **--pgsetmodes**.
--pgadd <*pgid*> "<*N_Port1*>[;<*N_Port2*>;...]"	Adds one or more N_Ports to the specified port group. The port list must be enclosed in quotation marks. Ports must be separated by semicolons.
--pgdel <*pgid*> "<*N_Port1*>[;<*N_Port2*>;...]"	Deletes one or more N_Ports from the specified port group. Deleted ports are added to the default port group "pg0". The port list must be enclosed in quotation marks. Ports must be separated by semicolons.
--pgrename <*pgid*> <*newname*>	Replaces the name of an existing port group with the specified new name. The port group ID must not exceed 63 characters. An error message is displayed instead of truncating the input when the input string exceeds 63 characters for PG_Name.
--pgremove <*pgid*>	Deletes the specified port group. The N_Ports in the port group that is deleted are moved to the default port group, which is port group ID 0.
--pgmapadd <*pgid*> "<*F_Port1*>[;<*F_Port2*>;...]"	Maps the specified F_Ports to the PG identified by the PG ID. Upon execution, the system identifies the least loaded N_Port in the port group and maps the F_Ports to that N_Port. The port list must be enclosed in double quotation marks. Ports must be separated by semicolons. Login balancing (LB) mode must be enabled on the port group for this command to succeed. Use **ag --pgsetmodes** to enable LB mode.
--pgmapdel <*pgid*> "<*F_Port1*>[;<*F_Port2*>;...]"	Removes one or more F_Ports that are part of the port group identified by the PG ID from their mapping to a corresponding N_Port. The port list must be enclosed in double quotation marks. Ports must be separated by semicolons. Login balancing (LB) mode must be enabled on the port group for this command to succeed. Use **ag --pgsetmodes** to enable LB mode.

--pgsetmodes <*pgid*> "mfnm;lb"

Sets the APC modes for the specified port group. The mode list must be enclosed in double quotation marks, and the modes must be separated by a semicolon. Alternately you can set the modes at the time when you create the port group with the **pgcreate** command. The following modes are supported:

lb Specifies the login balancing mode for the specified port group. If login balancing mode is enabled and an F_Port goes offline, logins in the port group are redistributed among the remaining F_Ports. Similarly, if an N_Port comes online, port logins in the PG are redistributed to maintain a balanced N_Port to F_Port ratio. This operation is disruptive. Login balancing mode is disabled by default in all port groups.

mfnm Enables the Managed Fabric Name Monitoring (MFNM) mode in the specified port group. This command changes the fabric name monitoring mode from "default" to "managed". In both default and managed mode, the system queries the fabric name once every 120 seconds, and if it detects an inconsistency, for example, if the port group is connected to multiple fabrics, it triggers a RASLOG message. The difference between default and managed fabric name monitoring is that in managed mode, failover is disabled for all ports in the port group if the system detects an inconsistency in fabric names.

You can add or remove MFNM from a port group: however, doing so will enable or disable MFNM on the entire switch. RASLOG messages are generated only if MFNM is enabled on the entire switch and multiple fabrics are connected to the switch.

--pgdelmodes <*pgid*> "mfnm;lb"

Disables the specified modes on a given port group. The mode list must be enclosed in double quotation marks, and the modes must be separated by a semicolon. For a description of supported modes, see **--pgsetmodes**.

--pgfnmtov <*new_tov*>

Displays the fabric name monitoring timeout value in seconds when used without specifying a new value. To change the current value, specify a new timeout value in seconds. The valid range is 30 to 120 seconds. The default value is 120 seconds.

--failoverenable [<*N_Port*>] | -pg <*pgid*>

Enables the failover policy for a given N_Port or for all N_Ports in the given port group. When the failover policy is enabled for a given N_Port, F_Ports behave as follows:

- If only primary F_Port to N_Port mapping is in place, all currently mapped F_Ports fail over to another available N_Port if the original N_Port becomes disabled. If multiple N_Ports are available for failover, F_Ports are evenly balanced across all available N_Ports. If no other N_Port is available, failover does not occur.
- If preferred secondary F_Port to N_Port mapping is in place, the F_Ports are routed through the preferred secondary N_Port. If the preferred secondary N_Port is offline, the F_Ports are disabled.

--failoverdisable [<*N_Port*>] | -pg <*pgid*>

Disables the failover policy for a given N_Port or for all N_Ports in the given port group.

--failovershow [<*N_Port*>]

If an N_Port is specified (optional), the command displays the failover policy for this N_Port. Otherwise, the failover policy for all N_Ports is displayed. Failover is displayed as enabled (1) or disabled (0).

--failbackenable [<*N_Port*>] | -pg <*pgid*>

Enables the failback policy for a specified N_Port or for all N_Ports in the given port group. When the failback policy is enabled, ports behave as follows:

- If only primary F_Port to N_Port mapping is in place, all F_Ports are automatically rerouted back to the N_Ports to which they were originally mapped when those N_Ports come back online. Only the originally mapped F_Ports fail back. In the case of multiple N_Port failures, only F_Ports that were mapped to the recovered N_Port fail back. The remaining F_Ports are not redistributed among the online N_Ports during the failback.
- If preferred secondary F_Port to N_Port mapping is in place, and the primary N_Port comes back online, then the F_Ports are rerouted through the primary N_Port. If the secondary N_Port comes online while the primary N_Port is still offline, F_Ports are rerouted through the secondary N_Port.

--failbackdisable [<*N_Port*>] | -pg <*pgid*>

Disables the failback policy for the specified N_Port or for all N_Ports in the given port group.

--failbackshow [<*N_Port*>]	If an N_Port is specified (optional), the command displays the failback policy for this N_Port. Otherwise, the failback policy for all the N_Ports is displayed. The failback policy is displayed as disabled (0) or enabled (1).
--failbackforce [<*N_Port*> | -pg <*pgid*> | -all]	Forces ports to log in through the configured N_Port for the specified N_Port or for all N_Ports in the given port group if the ports are not already logged in. When used with the **-all** option, all F_Ports configured to all N_Ports, regardless of port group, are failed back to their respective N_Ports. Failback will not occur if failback is disabled on the N_Port or if the F_Ports are manually disabled by the user to avoid any override of other manual actions. The forced failback will not occur when the N_Port is in a port group that has Login Balancing enabled as it will automatically map F_Ports to the least utilized N_Ports.
--prefset "<*F_Port1*>[;<*F_Port2*>;...]" <*N_Port*>	Sets the preferred secondary N_Port for one or more F_Ports. Preferred mapping is optional. Preferred F_Port to N_Port mapping provides an alternate N_Port for F_Ports to come online for predictable failover and failback. An F_Port must have primary N_Port mapping before a secondary N_Port can be configured. The list of F_Ports to be mapped must be enclosed in double quotation marks. Port numbers must be separated by semicolons.
--prefdel "<*F_Port1*>[;<*F_Port2*>;...]" <*N_Port*>	Deletes the preferred secondary N_Port for the specified F_Ports. The list of F_Ports to be deleted from the secondary mapping must be enclosed in double quotation marks. Port numbers must be separated by semicolons.
--prefshow	Displays the preferred secondary N_Port for all F_Ports.
--adsset "<*F_Port1*>[;<*F_Port2*>;...]" "<*WWN1*>[;<*WWN2*>;...]"	Sets the list of devices that are allowed to log in to a specified set of F_Ports. Devices are specified by their world wide names. Lists must be enclosed in double quotation marks. List members must be separated by semicolons. The maximum number of entries in the allowed device list is twice the per-port maximum login count. Replace the WWN list with an asterisk (*) to indicate all access on the specified F_Port list. Replace the F_Port list with an asterisk (*) to add the specified WWNs to all the F_Ports' allow lists. A blank WWN list ("") indicates no access. The ADS policy must be enabled for this command to succeed.
--adsadd "<*F_Port1*>[;<*F_Port2*>;...]" "<*WWN1*>[;<*WWN2*>;...]"	Adds the specified WWNs to the list of devices allowed to log in to the specified F_Ports. Lists must be enclosed in double quotation marks. List members must be separated by semicolons. Replace the F_Port list with an asterisk (*) to add the specified WWNs to all the F_Ports' allow lists. The ADS policy must be enabled for this command to succeed.
--adsdel "<*F_Port1*>[;<*F_Port2*>;...]" "<*WWN1*>[;<*WWN2*>;...]"	Deletes the specified WWNs from the list of devices allowed to log in to the specified F_Ports. Lists must be enclosed in double quotation marks. List members must be separated by semicolons. Replace the F_Port list with an asterisk (*) to remove the specified WWNs from all the F_Ports' allow lists. The ADS policy must be enabled for this command to succeed.
--adsshow	Displays the list of allowed device WWNs for all F_Ports.
--persistentalpaenable [1 | ON] | [0 | OFF] <*mode*>	Configures the persistent ALPA feature. Once enabled, the ALPA parts of all device PIDs become persistent regardless of whether they were logged in before or after the persistent ALPA feature was enabled. ALPA persistence ensures that there is no inconsistency between logged-in devices. The persistent ALPA feature is disabled by default.
[1 | ON] | [0 | OFF]	Specify 1 or On to enable persistent ALPA. Specify 0 or Off to disable the feature.
<*mode*>	Specifies the manner in which the ALPA is obtained if the ALPA value is already taken by another host. Valid modes include the following:
-s | stringent	Specifies a stringent ALPA request mode. In stringent mode, the login is rejected if the ALPA is not available.
-f | flexible	Specifies a flexible ALPA request mode. In flexible mode, the host login is accepted either with the requested ALPA value or with a different ALPA value if the requested ALPA is not available.
--printalpamap <*F_Port*>	Displays the database entry for the specified port. An F_Port must be specified. The output displays the PWWN-to-host-ALPA mapping.
--deletepwwnfromdb <*PWWN*>	Removes the specified port WWN entry from the database after the host has logged out.

--clearalpamap ***<F_Port>***	Clears the ALPA values for the specific F_Port. This command removes the PWWN-to-ALPA-value mapping from the database.
--addwwnmapping ***<N_Port>*** **"<*WWN1*>[;<*WWN2*>;...]" [--all]**	Maps one or more device WWNs to a preferred N_Port. All traffic form the specified devices is forced through the specified N_Port, regardless of which F_Port the device logs in to. If the designated N_Port becomes unavailable, an alternate port can serve as a preferred failover port. This command affects only devices that are connecting to the fabric after successful execution of this command; it does not affect devices already logged in. If a device is already connected to the switch when its mapping is created, that mapping goes into effect the next time the device connects. The WWN list must be enclosed in double quotation marks. WWNs must be separated by semicolons. The **--all** option indicates all device WWNs already mapped, for example, if you wish to change an existing WWN mapping. It does not affect device WWNs that are not part of an existing mapping.
--delwwnmapping ***<N_Port>*** **"<*WWN1*>[;<*WWN2*>;...]" [--all]**	Removes the mapping of one or more device WWNs to a preferred N_Port. The **--all** option removes the mapping for all device WWNs currently mapped to the specified N_Port. The WWN list must be enclosed in double quotation marks. WWNs must be separated by semicolons. The mappings are removed upon execution of this command.
--addwwnpgmapping ***<PG>*** **"<*WWN1*>[;<*WWN2*>;...]" [--all]**	Maps one or more device WWNs to any of the N_Ports included in the specified port group. The port group is identified by its port group ID. The **--all** option maps all currently mapped device WWNs to the specified port group. The WWN list must be enclosed in double quotation marks. WWNs must be separated by semicolons. The device WWN to port group mapping takes effect the next time the device logs in.
--delwwnpgmapping ***<PG>*** **"<*WWN1*>[;<*WWN2*>;...]" [--all]**	Removes the mapping between the specified device WWNs and the specified port group. The port group is identified by its port group ID. The **--all** option removes the mapping of all device WWNs currently mapped to the specified port group. The WWN list must be enclosed in double quotation marks. WWNs must be separated by semicolons. The mappings are removed upon execution of this command.
--addwwnfailovermapping ***<N_Port>*** **"<*WWN1*>[;<*WWN2*>;...]" [--all]**	Maps one or more device WWNs to a preferred failover N_Port. If the N_Port to which the WWNs are mapped is not available or goes down, the device logins fail over to the preferred failover N_Port. The **--all** option maps all currently mapped device WWNs to the specified failover N_Port. The WWN list must be enclosed in double quotation marks. WWNs must be separated by semicolons.
--delwwnfailovermapping ***<N_Port>*** **"<*WWN1*>[;<*WWN2*>;...]" [--all]**	Deletes the mapping of one or more device WWNs to a preferred failover N_Port. The **--all** option deletes the failover mappings of all device WWNs currently mapped to the specified N_Port. The WWN list must be enclosed in double quotation marks. WWNs must be separated by semicolons.
--wwnmappingdisable **"<*WWN1*>[;<*WWN2*>;...]" [--all]**	Disables one or more device WWN mappings. Use this command if you want to disable the mapping action temporarily without making permanent changes to the mappings. The mappings remain disabled until they are re-enabled or deleted. The **--all** option disables all currently existing device WWN mappings.
--wwnmappingenable **"<*WWN1*>[;<*WWN2*>;...]" [--all]**	Re-enables one or more previously disabled device WWN mappings. The **--all** option re-enables all previously disabled device WWN mappings.
--wwnmapshow	Displays all device WWN mappings. For each device WWN, the command displays the N_Port number to which it is mapped, the secondary (failover) N_Port, and the port group if applicable. The "Current" field shows the port that the device is currently using. If the device is not logged in, the field displays "none." If the device is logged in to a port other than the one to which it is mapped, the field displays that port. If the device is mapped to a port group, the field displays the number of the port within that port group that the device is currently using. If the device is using a trunk, the field displays the port in that trunk to which the device is logged in. The "Enabled" field indicates whether a mapping has been temporarily disabled ("no") or whether it is in the enabled state ("yes").
--reliabilitycounterset ***<count>***	Sets the reliability limit for the preferred N_Port. This parameter controls the number of ONLINE or OFFLINE State Change Notification (SCN) messages that a port can receive before becoming unreliable. The range is 10 through 100. The default value is 25. Specify 0 to disable the reliability limit; when disabled, any unreliable N_Ports become reliable again.

	The port becomes reliable again if it does not receive any SCN messages for a period of five minutes. Preferred N_Port settings are not enforced on unreliable N_Ports. When the port becomes reliable again, the behavior is as follows: • If a FAILBACK flag is set, the port will fail back the configured F_Ports. • Configured F_Ports that are offline will come back online. • If the LB mode or auto policy is configured, load rebalancing resumes.
--reliabilityshow [<*N_Port*>]	Displays the current reliable state of the N_Ports. Reliability is displayed as reliable (1) or unreliable (0). The N_Port parameter displays the reliability of the individual N_Port. If no parameter is specified, the reliability of all N_Ports regardless of the port group is displayed.
--reliabilitycountershow	Displays the configured reliability limit for N_Ports.
--backupmappingsave <*N_Port*>	Saves the configured F_Ports, static F_Ports for the given N_Port, and F_Ports for which the given N_Port is a preferred one.
--backupmappingdel <*N_Port*>	Deletes the backup mappings for the given N_Port, if any.
--backupmappingshow <*N_Port*>	Displays the saved mappings for the given N_Port, if any.

Examples

To display the current state of the Access Gateway with Failover (FO) and Failback (FB) enabled on N_Ports 9 and 12:

```
switch:admin> ag --show
Name              : core_ag
NodeName          : 10:00:00:05:1e:85:ae:f8
Chassis WWN       : 10:00:88:94:71:5e:14:7f
Number of Ports   : 40
IP Address(es)    : 192.0.2.0
Firmware Version  : v9.2.0
N_Ports           : 8
F_Ports           : 5
Policies enabled  : pg
Persistent ALPA   : Disabled
Static WWN Map    : None
Port Group information :
      PG_ID  PG_Members          PG_Name   PG_Mode
      ----------------------------------------------
      0       0;1;2;3;8;         pg0       -
              9;10;11;32;33;
              34;35;36;37;38;
              39
     ----------------------------------------------
Fabric Information :
      Attached Fabric Name          N_Ports
      ----------------------------------------------
      10:00:00:05:1e:d6:f8:c9       0;1;2;3;8;
                                    9;10;11
     ----------------------------------------------
N_Port information :
      Port  PortID    Attached PWWN   Attached_Switch
                                            F-port\
     ----------------------------------------------\
      0    0x010100  50:00:51:ed:6f:8e:60:28    Spirit\
```

```
      1    0x010100  50:00:51:ed:6f:8e:60:28    Spirit\
      2    0x010100  50:00:51:ed:6f:8e:60:28    Spirit\
      3    0x010100  50:00:51:ed:6f:8e:60:28    Spirit\
      8    0x010d00  20:0d:00:05:1e:d6:f8:c9    Spirit\
      9    0x010c00  20:0c:00:05:1e:d6:f8:c9    Spirit\
     10    0x010e00  20:0e:00:05:1e:d6:f8:c9    Spirit\
     11    0x010f00  20:0f:00:05:1e:d6:f8:c9    Spirit\

     Switch  FO  FB  IP_Addr   F_Ports
     ----------------------------------------
       0     1   1   192.0.2.0    4;5;23;
       0     1   1   192.0.2.0    None
       0     1   1   192.0.2.0    None
       0     1   1   192.0.2.0    None
       13    1   1   192.0.2.0    6;
       12    1   1   192.0.2.0    7;
       14    1   1   192.0.2.0    None
       15    1   1   192.0.2.0    None
     ----------------------------------------
F_Port information :
       Port  PortID     Attached PWWN           N_Port\
       ---------------------------------------------- \
       4    0x010103  20:00:00:05:1e:85:92:88    0 \
       5    0x010102  20:01:00:05:1e:85:92:88    0 \
       6    0x010d01  20:02:00:05:1e:85:92:88    8 \
       7    0x010c01  20:03:00:05:1e:85:92:88    9 \
       23   0x010101  10:00:00:05:1e:65:95:81    0 \

       Preferred N_port  Login Exceeded?
        ---------------------------------------
       None               No
       None               No
       None               No
       None               No
       None               No
     ----------------------------------------------
Static N-Port to F-Port Mapping :
       N-Port     F-Port
      ----------------------------------------------
       0       None
       1       None
       2       None
       3       None
       8       None
       9       None
       10      None
       11      None
     ---------------------------------------------
```

To display the current Access Gateway mode:

```
switch:admin> ag --modeshow
Access Gateway mode is enabled.
```

```
switch:admin> ag --modeshow
Access Gateway mode is NOT enabled.
```

AG group policy commands

To show current policies:

```
switch:admin> ag --policyshow
AG Policy                   Policy Name     State
-----------------------------------------------------
Port Grouping               pg              Enabled
Auto Port Configuration     auto            Disabled
Advanced Device Security    ads             Disabled
WWN Based Load Balancing    wwnloadbalance  Disabled
-----------------------------------------------------
```

To enable a port grouping policy:

```
switch:admin> ag --policyenable pg
```

To disable a port grouping policy

```
switch:admin> ag --policydisable pg
```

To enable auto port configuration policy when both policies are disabled and the switch is already disabled:

```
switch:admin> ag --policyenable auto
All Port related Access Gateway configurations will be lost.
Please save the current configuration using configupload.
Do you want to continue? (yes, y, no, n): [no] y
```

To disable auto port configuration policy when the switch is disabled:

```
switch:admin> ag --policydisable auto
Default factory settings will be restored.
Default mappings will come into effect.
Please save the current configuration using configupload.
Do you want to continue? (yes, y, no, n): [no] y
Access Gateway configuration has been restored \
to factory default
```

To enable the ADS policy:

```
switch:admin> ag --policyenable ads
```

To disable the ADS policy:

```
switch:admin> ag --policydisable ads
```

To enable the WWN load balancing policy:

```
switch:admin> ag --policyenable wwnloadbalance
```

To disable the WWN load balancing policy:

```
switch:admin> ag --policydisable wwnloadbalance
```

AG port mapping commands

To display current port mappings and port grouping policies:

```
switch:admin> ag --mapshow
```

```
N_Port Configured Static Current Failover Failback PG_ID PG_Name
      _F_Ports  _F_Ports _F_Ports
-----------------------------------------------------------------
   0    4;5;6    None    4;5;6     1       0       2  SecondFabric
   1    7;8;9    None    7;8;9     0       1       0  pg0
   2    10;11    None    10;11     1       0       2  SecondFabric
   3    12;13    None    12;13     0       1       0  pg0
-----------------------------------------------------------------
```

Explanation of fields in **--mapshow** output:

- *Static F_Ports* are part of static F_Port to N_Port mapping.
- *Current F_Ports* are the F_Ports that are currently online and mapped to a given N_Port either because they are mapped to that N_Port or as a result of N_Port failover.
- *Configured F_Ports* are the F_Ports that are explicitly mapped to this N_Port (saved in config).
- *Failover* and *Failback* indicate whether or not N_Port policy is enabled (1) or disabled (0).
- *PG_ID* is the Port Group ID and *PG_Name* is the Port Group Name.

To clear all F_Ports mapped to the configured primary N_Port 0:

```
switch:admin> ag --mapset 0 ""
F_Port to N_Port mapping has been updated successfully
```

To add F_Ports 4 and 6 to N_Port 0 (observe that Port 0 has no configured F_Ports):

```
switch:admin> ag --mapset 0 "4;6"
F_Port to N_Port mapping has been updated successfully
```

To add F_Port 5 to N_Port 2 (observe that N_Port 2 already has mapped F_Ports):

```
switch:admin> ag --mapadd 2 "5"
```

To display the new mappings:

```
switch:admin> ag --mapshow

N_Port Configured Static  Current Failover Failback PG_ID PG_Name
       _F_Ports  _F_Ports F_Ports
-----------------------------------------------------------------
   0    4;6       None    4;6       1      0      2   SecondFabric
   1    7;8;9     None    7;8;9     0      1      0   pg0
   2    5;10;11   None    5;10;11   1      0      2   SecondFabric
   3    12;13     None    12;13     0      1      0   pg0
-----------------------------------------------------------------
```

To delete F_Port 5 that was mapped to N_Port 2:

```
switch:admin> ag --mapdel 2 "5"
Preferred N_port is set for F_Port[s]
Please delete it before removing primary N_Port
ERROR:Unable to remove F_Port[s] from mapping,
retry the command

switch:admin> ag --prefshow
F_Ports                          Preferred N_Port
-------------------------------------------------
```

```
10;11                              0
4;5;6                              2
7;8;9                              3
----------------------------------------------

switch:admin> ag --prefdel 5 2
Preferred N_Port is deleted successfully \
for the F_Port[s]

switch:admin> ag --mapdel 2 "5"
F_Port to N_Port mapping has been updated successfully
```

To create and display a static mapping:

```
switch:admin> ag --staticadd 17 1
switch:admin> ag --show

N_Port information :
    Port  PortID        Attached PWWN     Attached_Switch
                                               F-port\
    -------------------------------------------------------\
    0   0x010100  50:00:51:ed:6f:8e:60:28     Spirit     \
    17  0x010100  50:00:51:ed:6f:8e:60:28     Spirit     \

    Switch  FO  FB  IP_Addr    F_Ports
    ------------------------------------------
      0     1   1   192.0.2.0    4;5;23;
      0     1   1   192.0.2.0    None
    ------------------------------------------
F_Port information :
    Port PortID    Attached PWWN   N_Port Preferred \
    ------------------------------------------------
     4  0x010103  20:00:00:05:1e:85:92:88  0     \
     5  0x010102  20:01:00:05:1e:85:92:88  0     \

     N_port  Login Exceeded?
     -------------------------
     None               No
     None               No
    ----------------------------------------------------
N_Port Configured Current Failover Failback PG_ID PG_Name
        _F_Ports  _F_Ports
    ----------------------------------------------------
  0    None        None     1       1       N/A     N/A
  17   2           2        0       0       N/A     N/A
    ----------------------------------------------------
Static N-Port to F-Port Mapping
     N-Port       F-Port
    ------------------------------------------
    17           1
    ------------------------------------------
```

AG failover policy commands

To display failover policy settings for all N_Ports:

```
switch:admin> ag --failovershow
N_Port  failover_bit
---------------------------
    0               1
    1               0
    2               1
    3               0
```

To set and display failover and failback policies on a single port:

```
switch:admin> ag --failoverenable 1
Failover policy is enabled for port 1

switch:admin> ag --failoverdisable 0
Failover policy is disabled for port 0

switch:admin> ag --failovershow 0
Failover on N_Port 0 is not supported

switch:admin> ag --failbackdisable 2
Failback policy is disabled for port 2

switch:admin> ag --failbackshow 2
Failback on N_Port 2 is not supported

switch:admin> ag --failbackenable 2
Failback policy is enabled for port 2
```

To display failback policy settings for all the N_Ports:

```
switch:admin> ag --failbackshow
N_Port  failback_bit
---------------------------
0               0
1               1
2               0
3               1
```

To set and display failback policy settings on a single port:

```
switch:admin> ag --failbackenable 0
Failback policy cannot be enabled since failover
policy is disabled for port 0

switch:admin> ag --failbackenable 2
Failback policy is enabled for port 2

switch:admin> ag --failbackenable 3
Failback on N_Port 3 is not supported

switch:admin> ag --failbackenable 2
Failback on N_Port 2 is supported
```

Port Group commands

To display Port Group information:

```
switch:admin> ag --pgshow
PG_ID PG_Name      PG_Mode  N_Ports   F_Ports
-----------------------------------------------
0     pg0          lb,mfnm    1;3     10;11
2     SecondFabric  -         0;2     4;5;6
-----------------------------------------------
```

To create a port group "FirstFabric" that includes N_Ports 1 and 3 and has login balancing enabled:

```
switch:admin> ag --pgcreate 3 "1;3" -n FirstFabric1 -m "lb"
Port Group 3 created successfully

switch:admin> ag --pgshow
PG_ID PG_Name      PG_Mode  N_Ports   F_Ports
-----------------------------------------------
0     pg0          lb,mfnm    none      none
2     SecondFabric   -        0;2        4;5;6
3     FirstFabric   lb        1;3        10;11
-----------------------------------------------
```

To rename the port group with *pgid* 2 to "MyEvenFabric":

```
switch:admin> ag --pgrename 2 MyEvenFabric
Port Group 2 has been renamed as MyEvenFabric successfully

switch:admin> ag --pgshow
PG_ID PG_Name      PG_Mode  N_Ports   F_Ports
-----------------------------------------------
0     pg0           lb,mfnm   none      none
2     MyEvenFabric    -       0;2       4;5;6
3     FirstFabric    lb       1;3       10;11
-----------------------------------------------
```

To remove the port group with *pgid* 2:

```
switch:admin> ag --pgremove 2
Port Group 2 has been removed successfully

switch:admin> ag --pgshow
PG_ID PG_Name      PG_Mode  N_Ports   F_Ports
-----------------------------------------------
0     pg0          lb,mfnm     0;2       4;5;6
3     FirstFabric  lb          1;3       10;11
-----------------------------------------------
```

To enable managed fabric name monitoring in port group 3:

```
switch:admin> ag --pgsetmodes 3 "mfnm"
Managed Fabric Name Monitoring mode has been \
enabled for Port Group 3

switch:admin> ag --pgshow
PG_ID PG_Name      PG_Mode  N_Ports   F_Ports
-----------------------------------------------
```

```
0     pg0          lb,mfnm    0;2       4;5;6
3     FirstFabric  lb,mfnm    1;3       10;11
-----------------------------------------------
```

To disable managed fabric name monitoring in port group 3:

```
switch:admin> ag --pgdelmodes 3 "mfnm"
Managed Fabric Name Monitoring mode has been disabled for Port Group 3

switch:admin> ag --pgshow
-----------------------------------------------
0     pg0            lb,mfnm     0;2       4;5;6
3     FirstFabric    lb          1;3       10;11
-----------------------------------------------
```

To get the current fabric name monitoring timeout value:

```
switch:admin> ag --pgfnmtov
Fabric Name Monitoring TOV: 120 seconds
```

To set the fabric name monitoring timeout value to 30 seconds:

```
switch:admin> ag --pgfnmtov 30
```

AG Preferred port information commands

To display preferred port settings for F_Ports:

```
switch:admin> ag --prefshow
F_Ports                  Preferred N_Port
-----------------------------------------
10;11                          0
12;13                          1
4;6                            2
7;8;9                          3
-----------------------------------------
```

To delete secondary port mapping for F_Ports 7, 8 and 9:

```
switch:admin> ag --prefdel "7;8;9" 3
Preferred N_Port is deleted successfully \
for the F_Port[s]
```

To set secondary port mapping for F_Ports 7, 8 and 9:

```
switch:admin> ag --prefset "7;8;9" 3
Preferred N_Port is set successfully \
for the F_Port[s
```

ADS Policy commands

To set the list of allowed devices for Ports 11 and 12 to 'no access':

```
switch:admin> ag --adsset "11;12" ""
WWN list set successfully as the Allow Lists of \
the F_Port[s]
```

To set the list of allowed devices for Ports 1, 10 and 13 to 'all access':

```
switch:admin> ag --adsset "1;10;13" "*"
```

```
WWN list set successfully as the Allow Lists of \
the F_Port[s]
```

To remove two devices from the lists of allowed devices for ports 1 and 9:

```
switch:admin> ag --adsdel "3;9" \
   "22:03:08:00:88:35:a0:12;22:00:00:e0:8b:88:01:8b"
WWNs removed successfully from Allow Lists of the\
F_Port[s]
```

To add a two new device to the lists of allowed devices for ports 1 and 9:

```
switch:admin> ag --adsadd "3;9" \
   "20:03:08:00:88:35:a0:12;21:00:00:e0:8b:88:01:8b"
WWNs added successfully to Allow Lists of the \
F_Port[s]
```

To display the lists of allowed devices on the switch:

```
switch:admin> ag --adsshow
F_Port              WWNs Allowed
--------------------------------------------
1                   ALL ACCESS
3                   20:03:08:00:88:35:a0:12
                    21:00:00:e0:8b:88:01:8b
9                   20:03:08:00:88:35:a0:12
                    21:00:00:e0:8b:88:01:8b
10                  ALL ACCESS
11                  NO ACCESS
12                  NO ACCESS
13                  ALL ACCESS
--------------------------------------------
```

Persistent ALPA configuration commands

To enable persistent ALPA in flexible mode:

```
switch:admin> ag --persistentalpaenable 1 -f
Persistent ALPA mode is enabled
```

To enable persistent ALPA in stringent mode:

```
switch:admin> ag --persistentalpaenable 1 -s
Persistent ALPA mode is enabled
```

To disable persistent ALPA mode:

```
switch:admin> ag --persistentalpaenable 0
Persistent ALPA mode is disabled
```

To display the ALPA database entries for F_Port 5:

```
switch:admin> ag --printalpamap 5
 Hash table for Port 5 data
PWWN                 ALPA
============================================
 20:12:00:05:1e:85:92:88         1
 20:07:00:05:1e:01:0b:4a         3
```

To attempt to remove a device entry from the database while the device is online and cannot be removed:

```
switch:admin> ag --deletepwwnfromdb  \
     0:12:00:05:1e:85:92:88 20:08:00:05:1e:01:0b:4a Online. \
      Cannot delete an online device
```

To remove a device entry from the database when the device is offline:

```
switch:admin> ag --deletepwwnfromdb  \
    0:12:00:05:1e:85:92:88
Device 20:13:00:05:1e:85:92:88 successfully deleted
```

To remove a device entry from the database when the device is not present in the table

```
switch:admin> ag --deletepwwnfromdb  \
    0:12:00:05:1e:85:92:00 20:12:00:05:1e:85:92:00 not found.
 Please check the device name
```

To remove the PWWN to ALPA value for port 5 from the database and to verify the removal:

```
switch:admin> ag --clearalpamap 5
  ALPA Table for port 5 is cleared

switch:admin> ag --clearalpamap 5

 Hash table for Port 5 data
         PWWN                 ALPA
 ==========================================
Hash Table is empty
```

Device WWN mapping commands

To create a WWN to N_Port mapping for two devices.

```
switch:admin> ag --addwwnmapping 8  \
   "0:12:00:05:1e:85:92:88; 0:12:00:05:1e:85:92:88"
```

To delete one of the device WWN to N_Port mappings.

```
switch:admin> ag --delwwnmapping 8  \
   "0:12:00:05:1e:85:92:88"
```

To create a WWN to port group mapping for all currently mapped devices (this command does not affect devices not already mapped or connecting later).

```
switch:admin> ag --addwwnpgmapping 4 --all
```

To add port 13 as a preferred failover N_Port for a device:

```
switch:admin> ag --addwwnfailovermapping 13 "0:12:00:05:1e:85:92:88"
```

To disable all WWN mappings:

```
switch:admin> ag --wwnmappingdisable --all
```

To display the WWN mappings when WWN load balancing policy is not enabled:

```
switch:admin> ag --wwnmapshow
Static Device Mapping Information:
WWN,          1st N_Port 2nd N_Port PG_ID Current Enabled
-------------------------------------------------------
```

```
25:f7:00:0c:29:00:02:8b  9     None    None  None    yes
25:f7:00:0c:29:00:03:8b  9     None    None  None    yes
25:f7:00:0c:29:00:04:8b  9     None    None  None    yes
25:f7:00:0c:29:00:05:8b  9     None    None  None    yes
25:f7:00:0c:29:00:07:8b  9     None    None  None    yes
25:f7:00:0c:29:00:08:8b  9     None    None  None    yes
25:f7:00:0c:29:00:09:8b  9     None    None  None    yes
25:f7:00:0c:29:00:0a:8b  9     None    None  None    yes
------------------------------------------------------------

Dynamic Device Mapping Information:
------------------------------------------------------------
No dynamic mappings in use
------------------------------------------------------------
```

To display the WWN mappings when WWN load balancing policy is enabled:

```
switch:admin> ag --wwnmapshow
Static Device Mapping Information:
WWN,           1st N_Port 2nd N_Port PG_ID Current Enabled
------------------------------------------------------------
No static mappings are defined
------------------------------------------------------------
Dynamic Device Mapping Information:
WWN,           1st N_Port 2nd N_Port PG_ID Current Enabled
------------------------------------------------------------
10:00:00:06:2b:11:52:df 23     None       0     23      yes
------------------------------------------------------------
```

To configure and display the reliability counter for the preferred N_Port:

```
switch:admin> ag --reliabilitycounterset 50
switch:admin> ag --reliabilitycountershow
================================
Reliability Counter = 50
================================
```

Backup mapping commands

To save the configured, static, and preferred mapping of an N_Port:

```
switch:admin> ag --backupmappingsave 43
Configured,static and preferred mappings have been saved \
for the N_port successfully.
```

To display the saved mappings for the given N_Port:

```
switch:admin> ag --backupmappingshow 43
N_Port                                : 43
Backed-up Configured F_Ports          : 15;16;17
Backed-up Static F_ports              : 18;19
Backed-up Preferred F_ports           : 27;28
```

To delete the backup mappings for the given N_Port:

```
switch:admin> ag --backupmappingdel 43
```

```
Backed up mappings have been deleted for the N_port.
```

See Also

agAutoMapBalance, portCfgNPort, portCfgNPIVPort

agAutoMapBalance

Controls automatic remapping of F_Ports in AG mode.

Synopsis

```
agautomapbalance {--enable | --disable} {-fport | -nport}
{-pg <Port_Group_Number> | -all}
agautomapbalance --force {-pg <Port_Group_Number> | -all}
agautomapbalance {--show | --help}
```

Description

Use this command to control the automatic rebalancing of F_Ports for login distribution in the event that an F_Port goes offline or an N_Port comes online.

If automatic rebalancing is enabled and an F_Port goes offline, the remaining F_Port logins are redistributed across the existing N_Ports. Similarly, if a new N_Port comes online, some of the F_Port logins being routed through existing N_Ports are failed over to the new N_Ports. Both operations are potentially disruptive. Disabling automatic rebalancing of login distribution provides a way of avoiding disruptions associated with routine F_Port/N_Port offline/online events.

The default values for **agautomapbalance** are as follows:

- Disable automatic login redistribution when F_Ports go offline.
- Enable automatic login redistribution when N_Ports come online.

Use the **--show** option to display the current configuration of the automatic rebalancing feature. The command output varies depending on the current AG policy settings:

- If the Port Group policy is enabled on the switch, the command displays the following information for each configured port group:
  - **PG_ID** - Port Group number
  - **LB mode** - Login Balancing mode: enabled or disabled
  - **nport** - Enabled or disabled
  - **fport**- Enabled or disabled
- If the Auto policy is enabled on the switch, the command displays the status of the automatic rebalancing feature per port type as either disabled or enabled.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--enable	Enables automatic login redistribution upon removal or addition of a specified port type.

-fport Enables automatic login redistribution in the event that one or more F_Ports go offline. When automatic login redistribution is enabled, the remaining F_Ports are remapped such that logins are balanced among the existing Imports.

-nport Enables automatic login redistribution in the event that one or more N_Ports come online. When automatic login redistribution is enabled, the F_Ports mapped to the current N_Ports are rebalanced among the N_Ports.

--disable Disables automatic login redistribution upon removal or addition of a specified port type.

-fport Disables automatic login redistribution in the event that one or more F_Ports go offline. When automatic login redistribution is disabled, the remaining F_Ports maintain their existing N_Port mappings.

-nport Disables automatic login redistribution in the event that one or more N_Ports come online. When auto map balancing is enabled, the F_Ports mapped to the current N_Ports are rebalanced among the N_Ports.

-pg *<Port_Group_Number>* | -all Specifies the port group number or all port groups. These operands are mutually exclusive and optional with the **--enable** and **--disable** options. When a port group is specified, command execution is targeted to the members of that specific port group. When all port groups are specified, command execution is targeted to all port groups defined in the Access Gateway. The port group options are allowed only when login balancing is enabled on the specified port groups.

--force Enforces automatic login redistribution on a one-time basis in the event that automatic login redistribution is disabled for N_Port addition, F_Port removal, or both. This command forces rebalancing of the F_Port to N_Port mapping once. It does not affect the configuration settings.

--show Displays the auto login distribution configuration.

--help Displays the command usage.

Examples

To display the automatic login redistribution settings for port groups 0 and 1:

```
switch:admin> agautomapbalance --show
AG Policy:   pg
---------------------------------------------
PG_ID        LB mode      nport     fport
---------------------------------------------
0            Enabled      Enabled   Disabled
1            Disabled     -            -
---------------------------------------------
```

To display the automatic login redistribution settings for N_Ports and F_Ports.

```
switch:admin> agautomapbalance --show

---------------------------------------------------
AG Policy:                                Auto
---------------------------------------------------
automapbalance on N_Port Online Event:   Disabled
automapbalance on F_Port Offline Event:  Enabled
---------------------------------------------------
```

To disable automatic login redistribution on F_Port offline events:

```
switch:admin> agautomapbalance --disable -fport
```

To enable automatic login redistribution on F_Ports and N_Ports on port group 1 in the Access Gateway:

```
switch:admin> agautomapbalance --enable -fport pg 1
```

To disable automatic login redistribution on F_Ports and N_Ports on all port groups in the Access Gateway:

```
switch:admin> agautomapbalance --disable -all
```

See Also

ag, agShow

agShow

Displays the Access Gateway information registered with the fabric.

Synopsis

```
agshow
agshow --name ag_name
agshow --local
agshow --all
```

Description

This command displays the details of the F_Ports and the configured N_Ports in the Access Gateway attached to the fabric. The command output displays the following information.

Name	The name of the Access Gateway.
Type	The type of switch.
NodeName	The World Wide Name of the Access Gateway node.
Ports	The number of ports in the Access Gateway.
Enet IP Addr	The IP address of the Access Gateway.
Firmware	The current firmware running on the Access Gateway.
Local/Remote	Indicates whether the Access Gateway is locally or remotely registered to this switch.
World Wide Name	The world wide name (WWN) of the given Access Gateway.
N-Port ID(s)	The port IDs of the online N_Ports in the given Access Gateway.
N-Ports	The number of configured N_Ports that are online.
F-Ports	The number of F_Ports that are online.
Edge AG	Specifies if the given AG is an edge AG or core AG.
Topology Details	Displays the topology details of how the particular edge is connected to a fabric.
Number of core AG(s)	Specifies the number of core AG(s) through which the edge AG is connected to a fabric device.
Attached F-Port information	Displays the port ID, the switch F_Port number, and the port WWN of each F_Port that is online on the Access Gateway.
Access Gateway F-Port information	Displays the port number, the port ID, and the port WWN of the Access Gateway to which the F_Port is connected. This information is displayed only if both the Access Gateway and the switch to which the Access Gateway is attached are running Fabric OS 7.0.0 or later. The data in this section is not always synchronized with the data in the Attached F-Port information section.

Notes

Only core AG name should be used for distributing PWD. PWD distribution directly to an Edge AG is not supported.

NPIV capability should be enabled on the ports that are connected to the Access Gateway. NPIV capability is enabled by default. Use **portCfgNPIVPort** to enable NPIV capability on a port if it was previously disabled.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following optional operands:

--name *ag_name*	Displays information regarding a specific Access Gateway that is registered with this fabric.
--local	Display information regarding all edge and core Access Gateways that are locally registered to this switch.
--all	Displays detailed information regarding all edge and core Access Gateways that are registered with this fabric.

Examples

To display the Access Gateway information registered with the fabric:

```
switch:admin> agshow --name CAGG62027
Name                 : CAGG62027
Type                 : 162
NodeName             : 10:00:00:27:f8:f1:81:40
N-Port ID(s)         : 0x0a6e00,0x0a3f00,0x071000
Number of Ports      : 64
IP Address(es)       : 192.0.2.0
Firmware Version     : v9.x.x
N-Ports              : 8
F-Ports              : 10
Edge AG              : No
Topology Details     :
Number of Core AG(s) : 0
Name                 : N/A
NodeName             : N/A
N_port ID(s)         : N/A
Attached F-Port information :
 PortID Port WWN Switch F-port
 ---------------------------------------------------
 0x0a6e01 10:00:00:05:1e:56:5f:29 91
 0x0a6e02 10:00:00:05:1e:56:5e:00 91
 0x0a6e03 10:00:8c:7c:ff:42:12:01 91
 [...]
Access Gateway F-Port Information :
 F-Port Number F-Port ID F-Port WWN
 ----------------------------------------------------
 22 0x071001 20:16:00:27:f8:f1:14:a0
[...]
```

To display the locally registered Access Gateways:

```
switch:admin> agshow --local
Worldwide Name            Ports   Enet IP Addr  Firmware
----------------------------------------------------------------------
10:00:00:05:33:e6:ce:80    64     192.0.2.0   v9.x.x_Aug_17_22
10:00:c4:f5:7c:16:a4:60    64     192.0.2.0   v9.x.x_Aug_17_22
```

```
Local/Remote   Edge_AG Name
-----------------------------------------------
local           No      sw0
local           No      sw0
```

To display all Access Gateways attached to the fabric:

```
switch:admin> agshow
Worldwide Name            Ports   Enet IP Addr    Firmware
-------------------------------------------------------------
10:00:00:05:33:e6:ce:80    64     192.0.2.0     v9.x.x_Aug_17_22
10:00:c4:f5:7c:16:a4:60    64     192.0.2.0     v9.x.x_Aug_17_22

Local/Remote   Edge_AG
----------------------------
local           No
local           No
```

To display the detailed information of Access Gateways registered with the fabric:

```
switch:admin> agshow --all
AG #1:
Name                 : sw0
Type                 : 162
NodeName             : 10:00:00:05:33:e6:ce:80
N-Port ID(s)         : 0x020600,0x021000,0x021100
Number of Ports      : 64
IP Address(es)       : 192.0.2.0
Firmware Version     : v9.x.x
N-Ports              : 3
F-Ports              : 1
Edge AG              : No
Topology Details     :
Number of Core AG(s) : 0
Name                 : N/A
NodeName             : N/A
N_port ID(s)         : N/A
Attached F-Port information :
 PortID     Port WWN                  Switch F-port
 ------------------------------------------------
 0x020601   10:00:00:05:1e:65:95:81      6

Access Gateway F-Port Information :
 F-Port Number F-Port ID F-Port WWN
 ------------------------------------------------
      15     0x020601 20:0f:00:05:33:e6:ce:80
```

See Also

portCfgNPIVPort

aliAdd

Adds a member to a zone alias.

Synopsis

```
aliadd "<aliName>", "<member>[; <member>...]"
```

Description

Use this command to add one or more members to an existing zone alias. The alias member list cannot contain another zone alias.

This command changes the defined configuration. For the change to become effective, enable the zone configuration using the **cfgEnable** command. For the change to be preserved across switch reboots, save the zone configuration to nonvolatile memory using the **cfgSave** command.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

An alias with mixed-type members (WWN and D,I) is not allowed to be part of an alias peer zone.

Operands

The following operands are required:

"*<aliName>*" Specify the name of a zone alias, enclosed in double quotation marks.

See the **aliCreate** command for more information on name and member specifications. Note that the dollar sign ($) must be prefixed with a backslash (\) while using it in the command prompt.

"*<member>*" Specify a member or list of members to be added to the alias, enclosed in double quotation marks. Members must be separated by semicolons. An alias member can be specified by one or more of the following methods:

- A switch domain and port index pair. Use **switchShow** for a list of valid port index numbers.
- A world wide name (WWN).

Examples

To add members to zone aliases array1 and array2:

```
switch:admin> aliadd "array1", "1,2"

switch:admin> aliadd "array2", "21:00:00:20:37:0c:72:51"
```

See Also

aliCreate, aliDelete, aliRemove, aliShow

aliCreate

Creates a zone alias.

Synopsis

```
alicreate "<aliName>", "<member>[; <member>...]"
```

Description

Use this command to create a new zone alias. The zone alias member list must have at least one member (empty lists are not allowed). The alias member list cannot contain another zone alias. See the **zoneCreate** command for more information on name and member specifications.

This command changes the defined configuration. For the change to become effective, enable the zone configuration using the **cfgEnable** command. For the change to be preserved across switch reboots, save the zone configuration to nonvolatile memory using the **cfgSave** command.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

An alias with mixed-type members (WWN and D,I) is not allowed to be part of an alias peer zone.

Operands

The following operands are required:

"*<aliName>*" Specify a name for the zone alias, in double quotation marks. A zone alias name can begin with a letter or number and can consist of letters, numbers, hyphen (-), underscore (_), dollar ($), and caret (^) characters. Names are case-sensitive. For example, "Ali_1" and "ali_1" are different zone aliases. Spaces are ignored.

The dollar sign ($) must be prefixed with a backslash (\) while using it in the command prompt.

"*<member>*" Specify a member or list of members to be added to the alias, enclosed in double quotation marks. Members must be separated by semicolons. An alias member can be specified by one or more of the following methods:

- A switch domain and port index pair. Use **switchShow** for a list of valid port index numbers.
- A world wide name (WWN).

Examples

To create a zone alias defined by domain and port index pairs:

```
switch:admin> alicreate "array1", "2,32; 2,33; 2,34"
```

To create a zone alias with one member defined by WWN.

```
switch:admin> alicreate "array2", "21:00:00:20:37:0c:66:23"
```

See Also

aliAdd, aliDelete, aliRemove, aliShow

aliDelete

Deletes a zone alias.

Synopsis

```
alidelete "<aliName>"
```

Description

Use this command to delete a zone alias.

This command changes the defined configuration. For the change to become effective, enable the zone configuration using the **cfgEnable** command. For the change to be preserved across switch reboots, save the zone configuration to nonvolatile memory using the **cfgSave** command.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

Operands

The following operand is required:

"<aliName>"	Specify the name of the zone alias to be deleted. Double quotation marks are optional, but required when specifying names that contain special characters. See the **aliCreate** command for more information on name and member specifications. Note that the dollar sign ($) must be prefixed with a backslash (\) while using it in the command prompt.

Examples

To delete the zone aliases "array2" and "array1":

```
switch:admin> alidelete "array2"
switch:admin> alidelete array1
```

See Also

aliAdd, aliCreate, aliRemove, aliShow

aliRemove

Removes a member from a zone alias.

Synopsis

```
aliremove "<aliName>", "<member>[; <member>...]"
```

Description

Use this command to remove one or more members from an existing zone alias.

If all members are removed, the zone alias is deleted.

This command changes the defined configuration. For the change to become effective, enable the zone configuration using the **cfgEnable** command. For the change to be preserved across switch reboots, save the zone configuration to nonvolatile memory using the **cfgSave** command.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

Operands

This command has the following operands:

"<*aliName*>" Specify the name of the zone alias from which members are to be removed in double quotation marks. This operand is required.

See the **aliCreate** command for more information on name and member specifications. Note that the dollar sign ($) must be prefixed with a backslash (\) while using it in the command prompt.

"<*member*>" Specify a member or list of members to be removed from the alias. The list must be enclosed in double quotation marks. Members must be separated by semicolons. An alias member can be specified by one or more of the following methods:

- A switch domain and port index number pair. Use **switchShow** for a list of valid port index numbers.
- A world wide name (WWN).

Examples

To remove members from "array1":

```
switch:admin> aliremove "array1", "3,5"

switch:admin> aliremove "array1", "21:00:00:20:37:0c:76:8c"
```

See Also

aliAdd, aliCreate, aliDelete, aliShow

aliShow

Displays zone alias information.

Synopsis

```
alishow ["<pattern>"[ ,<mode>]]
alishow --ic [-verbose] "<pattern>"[ ,<mode>]
alishow --verbose ["<pattern>"] [ ,<mode>]
alishow --help
```

Description

Use this command to display zone configuration information.

Use the *pattern* operand to display only matching zone alias names in the defined configuration.

If no parameters are specified, all zone configuration information (both defined and effective) is displayed. See **cfgShow** for a description of this display.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

Operands

The following operands are optional:

--ic Displays all configured zone alias names for a given pattern without case distinction.

See the **aliCreate** command for more information on name and member specifications. Note that the dollar sign ($) must be prefixed with a backslash (\) while using it in the command prompt.

-verbose Displays the property members of peer zones along with the default **aliShow** command output.

"<*pattern*>" A pattern that matches zone alias names. This operand must be enclosed in quotation marks. Patterns may contain:

- Asterisk (*) - Matches any string of characters.

<*mode*> The default value is 0. Value can be any one of the following:

- 0 or "trans" - Displays the contents of the transaction buffer (the contents of the current transaction).
- 1 or "def" - Displays the contents of the committed defined database.
- 2 or "eff" - Displays the contents of the effective zone configuration.

--verbose Displays the property members of peer zones along with the default **aliShow** command output.

--help Displays the command usage.

Examples

To display all zone aliases beginning with "arr":

```
switch:admin> alishow "arr*"
alias: array1  21:00:00:20:37:0c:76:8c
alias: array2  21:00:00:20:37:0c:66:23
```

To display all zone alias names beginning with "arr", regardless of the case:

```
switch:admin> alishow --ic "arr*"
alias: array1  20:e0:00:05:33:11:1f:00
alias: ARRAY2  2f:11:00:05:33:c1:37:a2
```

See Also

None

appServer

Displays application server information.

Synopsis

```
appserver --domainInfo {-all | -domain {<domain_ID> | local}}
appserver --show {-all | -domain {<domain_ID> | local} |
 -pid <N_Port_ID> | -eid <entity_ID>}
appserver --help
```

Description

Use this command to display information that is stored or managed by the application server daemon.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--domainInfo Displays information of the specified application server domain or all application server domains in the fabric. Specify one of the following operands:

- **-all** Displays information for all application server domains in the fabric.
- **-domain {<*domain_ID*> | local}** Displays information for the specified application server domain. Specify **local** to display information for the local domain.

--show Displays information of the application server database. Specify one of the following operands:

- **-all** Displays database information for all application servers in the fabric.
- **-domain {<*domain_ID*> | local}** Displays database information for the specified application server domain. Specify **local** to display information for the local domain.
- **-pid <*N_Port_ID*>** Displays application server database information for the specified port ID. Specify *N_Port_ID* (the 24-bit Fibre Channel address including the domain part) in hexadecimal format.
- **-eid <*entity_ID*>** Displays application server database information for the specified entity ID. Specify *entity_ID* in ASCII or hexadecimal format.

--help Displays the command usage.

Examples

To display information of a specific application server domain:

```
switch:admin> appserver --domainInfo -domain 3
--------------------
Domain    : 03 [10:00:00:00:f8:f1:e0:c0]
State     : known dca [Application Server Supported]
--------------------

Application Server displays 1 entry
```

To display information of all application server domains:

```
switch:admin> appserver --domainInfo -all
--------------------
Domain    : 04 [10:00:c0:f5:7c:00:00:00]
State     : local [Application Server Supported]
--------------------

Application Server displays 1 entry
```

To display database information for all application servers:

```
switch:admin> appserver --show -all
-------------------------------------------------------------
Displaying results for Fabric
-------------------------------------------------------------
N_Port ID         : 030e00
Entity ID (ASCII) : vm_two
Entity ID (Hex)   : 0x766d5f74776f
Application ID    : 0x00000010h (16)
Entity Name       : My_VM_Instance
Host Identifier   : My_Department_ESXi_Host
Symbolic Data     : VMware ESXi build
---------------------------------------------------------------
```

To display database information for a specific port ID:

```
switch:admin> appserver --show -pid 010200
-------------------------------------------------------------
Displaying results for PID 010200
-------------------------------------------------------------
N_Port ID         : 010200
Entity ID (ASCII) : 52 fc ef 53 8b ed 5a 32-10 5b 72 77 e7 df d8 83
Entity ID (Hex)   : 0x3532206663206566203533203862206564203561203322d \
                       313020356220373220373720653720646620643820383 3
Application ID    : 0x00000209h (521)
--------------------

Application Server displays 1 entry
```

To display database information for a specific entity ID:

```
switch:admin> appserver --show -eid 0x3532206663206566203 \
    533203862206564203561203322d313020356220373220 \
    373720653720646620643820383 3
-------------------------------------------------------------
Displaying results for Entity ID
-------------------------------------------------------------
N_Port ID         : 010200
Entity ID (ASCII) : 52 fc ef 53 8b ed 5a 32-10 5b 72 77 e7 df d8 83
Entity ID (Hex)   : 0x3532206663206566203533203862206564203561203322d \
                       313020356220373220373720653720646620643820383 3
Application ID    : 0x00000209h (521)
--------------------

Application Server displays 1 entry
```

See Also

None

aptPolicy

Changes or displays the Advanced Performance Tuning (APT) policy.

Synopsis

aptpolicy [<*policy*>]

Description

Use this command to display and change the Advanced Performance Tuning (APT) policies on a switch.

Dynamic path selection (DPS) is supported in logical fabrics. APT policy settings affecting the DPS behavior can be configured per logical switch, and settings apply to the partition for which they are set. Note that policy settings for the base switch or any switch in the base fabric affect all traffic going through the base fabric including any logical fabric traffic that uses the base fabric.

When invoked without arguments, this command displays the APT policies supported on this switch, as well as the current policy.

Notes

You must disable the switch before using this command to change the current policy. Changes take effect immediately for all EX_Ports after the switch is re-enabled.

For details on performance tuning, refer to the *Brocade Fabric OS Administration Guide*.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

<policy> Specifies the APT policy. The following polices are supported:

1 Port-based routing policy. With this policy, the path chosen for an ingress frame is based on both of the following items:

- The ingress port on which the frame was received.
- The destination domain for the frame.

The chosen path remains the same if Dynamic Load Sharing (DLS) is not enabled. If DLS is enabled, a different path may be chosen for a fabric event. See **dlsSet** for a definition of a fabric event.

This policy may provide better ISL utilization when there is little or no oversubscription of the ISLs.

2 Device-Based Routing policy. Device-based routing is supported in FICON environments and in open environments only when FICON coexists. With this policy, the path chosen for an ingress frame is based on the following items:

- The ingress port on which the frame was received.
- The FC address of the source fabric device (SID) for this frame.
- The FC address of the destination fabric device (DID) for this frame.

This policy optimizes the utilization of the available paths by allowing I/O traffic between different source fabric device (SID) or destination fabric device (DID) pairs to use different paths. As a result, every distinct flow in the fabric can take a different path through the fabric. Effectively, device-based routing works the same as exchange-based routing but does not use the Originator Exchange ID (OXID) field. This helps to ensure that the exchanges between a pair of devices stay in order.

Device-based routing is also a form of Dynamic Path Selection (DPS). DPS assigns communication paths between end devices in a fabric to egress ports in ratios proportional to the potential bandwidth of the ISL, ICL, trunk group, or FCIP tunnel. When there are multiple paths to a destination, the input traffic is distributed across

the different paths in proportion to the bandwidth available on each of the paths. This improves utilization of the available paths and reduces possible path congestion.

3 Exchange-based routing policy (default). With this policy, the path chosen for an ingress frame is based on all of the following items:

- The ingress port on which the frame was received.
- The FC address of the SID for this frame.
- The FC address of the DID for this frame.
- The FC OXID for this frame.

This policy optimizes the utilization of the available paths by allowing I/O traffic between different SID, DID, or OXID pairs to use different paths. All frames received on an ingress port with the same SID, DID, or OXID parameters take the same path unless there is a fabric event. See **dlsSet** for the definition of a fabric event.

This policy does not support static routes. DLS is always enabled, and the DLS setting cannot change with this policy.

Examples

To display the current APT policy:

```
switch:admin> aptpolicy
        Current Policy: 3
3: Default Policy
1: Port Based Routing Policy
2: Device Based Routing Policy (FICON support only)
3: Exchange Based Routing Policy
```

To change the current APT policy to the exchange-based routing policy:

```
switch:admin> aptpolicy 3
Switch must be disabled in order to modify
this configuration parameter. To disable the switch,
use the "switchDisable" command.

switch:admin> switchdisable

switch:admin> aptpolicy 3
Policy updated successfully.

switch:admin> switchenable

switch:admin> aptpolicy
Current Policy: 3

3: Default Policy
1: Port Based Routing Policy
2: Device Based Routing Policy (FICON support only)
3: Exchange Based Routing Policy
```

See Also

dlsReset, dlsSet, dlsShow, switchDisable

auditCfg

Modifies and displays the audit log filter configuration.

Synopsis

```
auditcfg --class <audit_class>
auditcfg --enable {-log <message_id> | -all}
auditcfg --disable {-log <message_id> | -all}
auditcfg --severity <severity_level>
auditcfg --show {-log <message_id> | -disabled |
 -filter }
```

Description

Use this command to configure audit logging and to display the audit log configuration. This command allows you to set filters by configuring certain classes, to add or remove any of the classes in the filter list, to set severity levels for audit messages, and to enable or disable audit filters. Based on the configuration, certain classes are logged to syslog for auditing. Syslog configuration is required for logging audit messages. Use the **syslogAdmin** command to add the syslogd server IP address.

Notes

The RAS class is not configurable; its function is to audit the audit log management operations, and it is always enabled internally.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--class Configures filters for a specified audit class. To add or remove any of the classes in the filter list, reissue the **--class** option.

- ***audit_class*** Specifies the filters to be configured. Valid values are: 1-ZONE, 2-SECURITY, 3-CONFIGURATION, 4-FIRMWARE, 5-FABRIC, 7-LS (Logical Switch), 8-CLI, and 9-MAPS. The filter is specified by its numeric value. To add more than one filter, the numeric values must be separated by commas. Spaces are not permitted. This operand is required.

--enable | --disable Enables or disables all filters. This action enables an existing configuration; it does not change the configuration.

- **-log *message_id*** Enables or disables AUDIT logging for a specified message ID.
- **-all** Enables or disables all AUDIT logging.

--severity Sets the audit severity level to a specified value. When the severity is set, only log messages of type *severity_level* and higher are displayed. You cannot enter multiple severity levels.

- ***severity_level*** Valid values are INFO, WARNING, ERROR, and CRITICAL. By default, all messages are logged. This operand is required.

--show Displays the current configuration.

- **-filter** Displays the AUDITLOG filter status.
- **-disabled** Displays all the disabled AUDITLOGs.

-log *message_id* Displays AUDIT logging for a specified message ID.

Examples

To configure the audit log filter:

```
switch:admin> auditcfg --class 2,3,8
Audit filter is configured.
```

To enable audit logging:

```
switch:admin> auditcfg --enable -all
Audit filter is enabled.
```

To display the configuration:

```
switch:admin> auditcfg --show -filter
Audit filter is enabled.
1-ZONE
2-SECURITY
3-CONFIGURATION
8-CLI
Severity level: INFO
```

To disable audit logging and to display the configuration (the filters are unchanged but show the dis[abled state):

```
switch:admin> auditcfg --disable -all
Audit filter is disabled.
switch:admin> auditcfg --show -filter
Audit filter is disabled.
1-ZONE
2-SECURITY
3-CONFIGURATION
8-CLI
Severity level: INFO
```

See Also

auditDump, rasAdmin

auditDump

Displays or clears the audit log.

Synopsis

```
auditdump --show
auditdump -s
auditdump --clear
auditdump -c
```

Description

Use this command to display or clear the audit log on the switch. The audit log persistently saves the most recent 1024 log entries on the switch. On modular platforms, the entries are not shared across CPs. Each command that is issued on a switch is saved as an audit log. To display or clear the logs, this command must be issued for each CP separately.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-s | --show	Displays the audit log on the switch or the CP.
-c | --clear	Clears the audit log on the switch or the CP.

Examples

To display the audit log:

```
switch:admin> auditdump --show
1 AUDIT, 2021/10/28-23:36:05 (GMT), [SRM-1001], INFO, RAS,
NONE/admin/NONE/none/CLI,NA/G8000/CHASSIS, , System is alive.

2 AUDIT, 2021/10/28-23:36:05 (GMT), [SRM-1001],
INFO, RAS, NONE/admin/NONE/none/CLI,NA/G8000/CHASSIS, ,
System is alive.

3 AUDIT, 2021/10/28-23:36:05 (GMT), [RAS-2001],
INFO, RAS, NONE/admin/NONE/none/CLI,NA/G8000/CHASSIS, ,
Audit message log is enabled.

4 AUDIT, 2021/10/28-23:36:15 (GMT), [TO-1005],
INFO, CONFIGURATION, NONE/admin/NONE/none/CLI,NA/sw0/FID 128, ,
TO Profile Sys_TrafOpt_Version2 is enforced successfully.

5 AUDIT, 2021/10/28-23:36:40 (GMT), [FCR-1069],
INFO, CONFIGURATION, NONE/admin/NONE/none/CLI,NA/sw0/FID 128, ,
The FC Routing service is enabled.

6 AUDIT, 2021/10/28-23:36:40 (GMT), [FCR-1068],
INFO, CONFIGURATION, NONE/admin/NONE/none/CLI,NA/sw0/FID 128, ,
 The FC Routing service is disabled.

7 AUDIT, 2021/10/28-23:36:43 (GMT), [MAPS-1145],
INFO, MAPS, NONE/admin/NONE/none/CLI,NA/sw0/FID 128, ,
FPI Profile dflt_fpi_profile is activated for E-Ports.

8 AUDIT, 2021/10/28-23:36:43 (GMT), [MAPS-1144],
INFO, MAPS, NONE/admin/NONE/none/CLI,NA/sw0/FID 128, ,
FPI Profile dflt_fpi_profile is activated for F-Ports.

9 AUDIT, 2021/10/28-23:36:43 (GMT), [MAPS-1201],
INFO, MAPS, NONE/admin/NONE/none/CLI,NA/sw0/FID 128, ,
MAPS has started monitoring with dflt_base_policy policy.

(output truncated)
```

To clear the audit log:

```
switch:admin> auditdump --clear
```

See Also

auditCfg

authUtil

Displays and sets the authentication configuration.

Synopsis

```
authutil --set option value
authutil --show
authutil --policy -sw option
authutil --policy -dev option
authutil --authinit [slot/]port[, [slot/]port...]
authutil --authinit allE
```

Description

Use this command to display and set local switch authentication parameters.

Use **--set** to change authentication parameters such as protocol, Diffie-Hellman group (DH group), or hash type. When no protocol is set, the default setting of "FCAP, DH- CHAP" is used. When no group is set, the default setting of "*" (meaning "0,1,2,3,4") is used. Configuration settings are saved persistently across reboots. Configuration changes take effect during the next authentication request.

Use the **--show** command to display the current authentication configuration.

Authentication parameters are set on a per-switch basis. If Virtual Fabrics are enabled, all authentication parameters apply to the current logical switch context only and must be configured separately for each logical switch. Use **setContext** to change the current logical switch context.

In a VF environment, authentication is performed only on physical E_Ports, not on logical inter-switch links (LISLs).

An FCR switch does not depend on the authentication policy to perform authentication or encryption/compression key exchange with the edge fabric. The authentication policy set on an FCR switch is not considered to perform authentication with the edge fabric. The **authUtil** configuration on the FCR switch does not affect EX_Port. The EX_Port acts passively by accepting the parameters received from the edge fabric.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--show	Displays the local authentication configuration. This option is supported in Access Gateway (AG) mode.
--set *option value*	Modifies the authentication configuration. Valid options and their values include the following:
-a fcap | dhchap | all	Sets the authentication protocol. Specify "fcap" to set only FCAP authentication. Specify "dhchap" to set only DH-CHAP authentication. Specify "all" to set both FCAP and DH-CHAP, which is the default setting. When authentication is set to "all", the implicit order is FCAP followed by DH-CHAP. This means that in authentication

negotiation, FCAP is given priority over DH-CHAP on the local switch. If the negotiation is done for an encrypted port, DH-CHAP takes precedence over FCAP. The **--set dhchap** and **--set all** options are supported in the AG mode.

Before setting the authentication type, make sure that FCAP certificates and dhchap secrets are configured.

-g 0 | 1 | 2 | 3 |4 | * Sets the Diffie-Hellman (DH) group. Valid values are 0 to 4 and "*". DH group 0 is called NULL DH. Each DH group implicitly specifies a key size and associated parameters. A higher group value provides stronger cryptography and a higher level of security. When the DH group is set to a specified value, only that DH group is enabled. Specifying "*" enables all DH groups, 0, 1, 2, 3, and 4, in that order. This means that in authentication negotiation, the NULL DH group is given priority over all other groups. In the case of a port that is enabled for encryption and you specify "*", DH group 4 is selected. This option is supported in AG mode.

-h sha256 | sha1 | md5 | sha1,md5 | all Sets the hash type. Valid values are "sha256", "sha1", "md5", "sha1,md5" or "all". Enabling sha256 access is required when configuring the system for FIPS. Refer to the *Brocade Fabric OS Administration Guide* for details on FIPS configuration.

--policy Sets the switch authentication policy or device authentication policy. The following options are supported:

-sw off | passive | active | on Sets the switch authentication policy. Specify one of the following modes. Operands are exclusive. If the switch has ports enabled for encryption, only the **on** and **active** options are supported. Only **on** and **off** options are supported in AG mode.

off Turns the authentication policy off, and the switch rejects any authentication requests.

passive Sets the authentication policy to passive mode (default) . The switch does not initiate authentication but participates in authentication if the connecting switch initiates it.

active Sets the authentication policy to active mode. During switch initialization, authentication is initiated on all E_Ports, but the port is not disabled if the connecting switch does not support authentication or the authentication policy is turned off.

on Sets the switch authentication policy to ON mode. Strict authentication is enforced on all E_Ports. The inter-switch link (ISL) goes down (port disable) if the connecting switch does not support the authentication or the authentication policy is switched off.

-dev off | passive | on Sets the device authentication policy. Three modes are supported. The device authentication policy is off by default. This option and suboptions are supported in AG mode.

off Turns off the device authentication policy. Authentication is not required. The switch ignores any authentication requests and continues with the FC probing without authentication.

passive Sets the authentication policy to passive mode. Authentication is optional. If the attached device is capable of doing the authentication, the switch participates in authentication; otherwise it forms an F_Port without authentication. In this mode, the device accepts authentication on all F_Ports.

on Sets the authentication policy to "on" mode. Authentication is mandatory. If the attached device is not capable of doing authentication, the corresponding port is disabled.

--authinit [*slot*/]*port* [, [*slot*/]*port*...] | allE

Reinitiates authentication on selected ports after changing the DH-CHAP group, hash type, and shared secret between a pair of switches. This command does not work on private, loop, NPIV, and FICON devices. This command may bring down the E_Ports if the DH-CHAP shared secrets are not installed correctly. This command is not supported on encrypted ports. This option is not supported in AG mode. This command does not initiate authentication on disabled ports. Valid options include the following:

slot	Specify the slot number, if applicable, followed by a slash (/).
port	Specify the port number. On enterprise-class platforms, use the *slot/port* format for specifying the port number.
allE	Specify all E_Ports in the switch.

Examples

To set DH-CHAP as the authentication protocol:

```
switch:admin> authutil --set -a dhchap
Authentication is set to dhchap.
```

To set both protocols in order of FCAP and then DH-CHAP:

```
switch:admin> authutil --set -a all
Authentication is set to fcap,dhchap.
```

To enable sha1 hash type:

```
switch:admin> authutil --set -h sha1
 Hash is set to sha1.
```

To enable all hash types:

```
switch:admin> authutil --set -h all
 Hash is set to sha256,sha1,md5.
```

To check the hash types set:

```
switch:admin> authutil --show
AUTH TYPE     HASH TYPE     GROUP TYPE
--------------------------------------
fcap,dhchap   sha256,sha1,md5     1

Switch Authentication Policy: PASSIVE
Device Authentication Policy: OFF
```

To enable Sha256 hash type:

sha256 hash type is recommended for FIPS configuration.

```
switch:admin> authutil --set -h sha256
Hash is set to sha256.

switch:admin> authutil --show
AUTH TYPE     HASH TYPE     GROUP TYPE
--------------------------------------
fcap,dhchap     sha256         1

Switch Authentication Policy: PASSIVE
Device Authentication Policy: OFF
```

To set DH group 3:

```
switch:admin> authutil --set -g 3
DH Group was set to 3.
```

To set all DH groups to be specified in the authentication negotiation in the order of 0, 1, 2, 3, and 4:

```
switch:admin> authutil --set -g  "*"
DH Group is set to 0,1,2,3,4
```

To set the Switch policy to active mode:

```
switch:admin> authutil --policy -sw active
Warning: Activating the authentication policy requires
either DH-CHAP secrets or PKI certificates depending
on the protocol selected. Otherwise, ISLs will be
segmented during next E-port bring-up.
ARE YOU SURE  (yes, y, no, n): [no] y
Auth Policy is set to ACTIVE
```

To set the Device policy to passive mode:

```
switch:admin> authutil --policy -dev passive
Warning: Activating the authentication policy requires
DH-CHAP secrets on both switch and device. Otherwise,
the F-port will be disabled during next F-port
bring-up.
ARE YOU SURE  (yes, y, no, n): [no] y
Device authentication is set to PASSIVE
```

To set the device authentication policy to "on" mode:

```
switch:admin> authutil --policy -dev on
Warning: Activating the authentication policy requires
DH-CHAP secrets on both switch and device. Otherwise,
the F-port will be disabled during next F-port
bring-up.
ARE YOU SURE  (yes, y, no, n): [no] y
Device authentication is set to ON
2008/03/24-23:13:06, [AUTH-1003], 112,, INFO, Stealth_3,
Device authentication type has been successfully set to ON
```

To start authentication on E/F_Ports 2, 3, and 4:

```
switch:admin> authutil --authinit  2,3,4
Warning: Initiating the authentication requires either DH-CHAP
 secrets or PKI certificates depending on the protocol selected.
 Failed authentication may result in traffic disruption.
 Authentication will not be initiated on encrypted ports.
ARE YOU SURE  (yes, y, no, n): [no]y
```

See Also

portShow, secAuthSecret

bannerSet

Sets the banner on the local switch.

Synopsis

bannerset [*banner*]

Description

Use this command to set the banner on the local switch.

The banner is a string of alphanumeric characters. It is displayed after you log in to a switch.

The banner can be created using the *banner* operand or interactively by entering the **bannerSet** command without an operand.

If you enter the banner text using the interactive method, the valid length is 1022 characters. The valid string length for noninteractive method is 116 characters. If the banner text length exceeds the maximum allowed, the software truncates the input. To close the banner text string, enter a period at the beginning of a new line.

In noninteractive method, if a banner is executed with single or double quotation marks, the output ignores the quotation marks. Whereas, in interactive method, the output includes the single and double quotation marks.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following optional operand:

banner	Specify a text string to be displayed upon login. If you enter the banner text using the banner operand, the valid length is 116 characters. Allows alphanumeric characters, spaces, and special characters like period (.), comma(,), single quotation marks ('), double quotation marks ("), asterisk (*), and hyphen (-).

Examples

To set a new banner in interactive method for a switch:

```
switch:admin> bannerset
Please input content of security banner (press "." and RETURN \
at the beginning of a newline to finish input):
"hello"
.
switch:admin> bannershow
"hello"
```

To set a new banner in noniteractive method for a switch:

```
switch:admin> bannerset "hello"

switch:admin> bannerShow
hello
```

See Also

bannerShow, motd

bannerShow

Displays the banner text.

Synopsis

```
bannershow
```

Description

Use this command to display the text of the local switch banner.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the banner for a switch:

```
switch:admin> bannershow
Banner: Do not disturb the setup on this switch.
```

See Also

bannerSet, motd

bladeVerShow

Displays versions of FPGA code in various blades and blade components.

Synopsis

```
bladevershow [<slot> | all]
bladevershow --help
```

Description

Use this command on the active CP to display the system FPGA versions of a switch, a specific blade slot, or all blades.

The behavior of this command is platform-specific; output varies depending on the platform and is unsupported on older platforms.

Notes

This command is intended for support-related usage only. FPGA version levels can vary among the same blade types due to manufacturing versions and other factors without affecting blade or system functionality.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

<slot>	Specifies the slot number on bladed systems. A value of 0 may optionally be used for nonbladed systems.
all	Displays FPGA versions of all the blades.
--help	Displays the command usage.

Examples

To display system FPGA version on a non-bladed switch:

```
switch:admin> bladevershow
bladeId:    100
==============================
FPGA version         0x0e
```

To display system FPGA versions on a director class switch:

```
switch:admin> bladevershow all
Slot# 1 BladeID: 97  Modelname: FC32-48
==========================================
JTAG_version:          0x1
cpld_version:          0xe_0

Slot# 5 BladeID: 98  Modelname: FC32-64
==========================================
JTAG_version:          0x3
cpld_version:          0x7_0

Slot# 6 BladeID: 50  Modelname: CP8
==========================================
FPGA version           0xd0
CPLD version           0xba

Slot# 7 BladeID: 50  Modelname: CP8
==========================================
FPGA version           0xd0
CPLD version           0xba

Slot# 8 BladeID: 98  Modelname: FC32-48
==========================================
JTAG_version:          0x3
cpld_version:          0x7_0

Slot: 12 is faulty
```

To display a specific blade slot system FPGA:

```
switch:admin> bladevershow 1
Slot# 1 BladeID: 97  Modelname: FC32-48
==========================================
JTAG_version:          0x1
cpld_version:          0xe_0
```

See Also
slotShow, switchShow

cfgActvShow

Displays effective zone configuration information.

Synopsis
```
cfgactvshow
```

Description

Use this command to display the effective zone configuration information.

The current configuration is a single zone configuration that is currently in effect. The devices that an initiator sees are based on this configuration. The effective configuration is built when a specified zone configuration is enabled.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the effective zone configuration information:

```
switch:admin> cfgactvshow
Effective configuration:
cfg:   c4
zone:  z3      33:07:06:05:04:03:02:01
zone:  z4      44:01:23:45:67:89:a0:bc
               40:01:23:45:67:89:a0:bc
```

See Also
cfgClear, cfgDelete, cfgRemove, cfgSave, cfgShow

cfgAdd

Adds a member to a zone configuration.

Synopsis
```
cfgadd "<cfgName>", "<member>[; <member>...]"
```

Description

Use this command to add one or more zone members to an existing zone configuration.

This command changes the defined configuration. For the change to take effect, enable the configuration using the **cfgEnable** command. For the change to be preserved across switch reboots, save the configuration to nonvolatile memory using the **cfgSave** command.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

Operands

The following operands are required:

"<*cfgName*>"	Specifies a name for the zone configuration, enclosed in double quotation marks. See the **cfgCreate** command for more information on name and member specifications. The dollar sign ($) must be prefixed with a backslash (\) in the command prompt.
"<*member*>"	Specifies a zone member or a list of zone members to be added to the configuration. The list must be enclosed in double quotation marks. Members must be separated by semicolons.

Examples

To add two new zones to the configuration "Test_cfg":

```
switch:admin> cfgadd "Test_cfg", "greenzone;bluezone"
```

See Also

cfgClear, cfgCreate, cfgDelete, cfgDisable, cfgEnable, cfgRemove, cfgSave, cfgShow

cfgClear

Clears all zone configurations.

Synopsis

```
cfgclear [-force | -f | --help | --h]
```

Description

Use this command to clear all zone information in the transaction buffer. All defined zone objects in the transaction buffer are deleted. If an attempt is made to commit the empty transaction buffer while a zone configuration is enabled, you are warned to first disable the enabled zone configuration or to provide a valid configuration with the same name.

After clearing the transaction buffer with the **cfgClear** command, use the **cfgDisable** command to clear the entire zoning configuration (both the transaction buffer and the active configuration). If there is no current active zoning configuration or you just want to clear the transaction buffer, use the **cfgSave** command to commit the transaction.

If the default zone access mode is No Access, this command recreates the default zoning objects.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

Operands

[-force | -f]	Clears the zone information in the transaction buffer without confirmation. This operand is optional.
[--help | --h]	Displays the command usage.

Examples

To clear all zones and then clear nonvolatile memory:

```
switch:admin> cfgclear
The Clear All action will clear all Aliases, Zones,
and configurations in the Defined configuration.
Run cfgSave to commit the transaction or cfgTransAbort to
cancel the transaction.
Do you really want to clear all configurations? \
  (yes, y, no, n): [no] n

switch:admin> cfgsave
You are about to save the Defined zoning configuration. This
action will only save the changes on Defined configuration.
Any changes made on the Effective configuration will not
take effect until it is re-enabled. Until the Effective
configuration is re-enabled, merging new switches into the
fabric is not recommended and may cause unpredictable
results with the potential of mismatched Effective Zoning
configurations.
Do you want to save Defined zoning configuration only? \
   (yes, y, no, n): [no]n
```

To clear all zone configurations without confirmation:

```
switch:admin> cfgclear -force
The Clear All action performed has cleared all aliases, zones,
and configurations in the Defined configuration.
Run cfgSave to commit the transaction or cfgTransAbort to
cancel the transaction.
```

See Also

cfgDisable, cfgEnable, cfgSave

cfgCreate

Creates a zone configuration.

Synopsis

cfgcreate "<*cfgName*>", "<*member*>[; <*member*>...]"

Description

Use this command to create a new zone configuration.

This command changes the defined configuration (see **cfgShow**). For the change to become effective, enable the configuration using the **cfgEnable** command. For the change to be preserved across switch reboots, save the configuration to nonvolatile memory using the **cfgSave** command.

See the **zoneCreate** command for more information on *name* and *member* specifications.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

Operands

The following operands are required:

"<cfgName>"	Specifies a name for the zone configuration in double quotation marks. A zone configuration name can begin with a letter or number and can consist of letters, numbers, and the hyphen (-), underscore (_), dollar ($), or caret (^) characters. Names are case-sensitive. For example, "Cfg_1" and "cfg_1" are different zone configurations. Blank spaces are ignored. The dollar sign ($) must be prefixed with a backslash (\) while using it in the command prompt.
"<member>"	Specifies a zone member or list of zone members to be added to the configuration. The list must be enclosed in double quotation marks. Members must be separated by semicolons. The zone configuration member list must have at least one member. Empty member lists are not allowed.

Examples

To create a configuration containing three zones:

```
switch:admin> cfgcreate "USA_cfg",  \
"Purple_zone;Blue_zone;Green_zone"
```

See Also

cfgAdd, cfgClear, cfgDelete, cfgDisable, cfgEnable, cfgRemove, cfgSave, cfgShow

cfgDelete

Deletes a zone configuration.

Synopsis

```
cfgdelete "<cfgName>"
```

Description

Use this command to delete a zone configuration.

This command changes the defined configuration (see **cfgShow**). For the change to become effective, enable the configuration using the **cfgEnable** command. For the change to be preserved across switch reboots, save the configuration to nonvolatile memory using the **cfgSave** command.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

Operands

The following operand is required:

"<*cfgName*>" Specifies a name for the zone configuration to be deleted. Double quotation marks are optional, but required when specifying names that contain special characters.

See the **cfgCreate** command for more information on name and member specifications. The dollar sign ($) must be prefixed with a backslash (\) while using it in the command prompt.

Examples

To delete a zone configuration:

```
switch:admin> cfgdelete "USA_cfg"
```

See Also

cfgClear, cfgDisable, cfgEnable, cfgRemove, cfgSave, cfgShow

cfgDisable

Disables a zone configuration.

Synopsis

```
cfgdisable [-force | -f]
```

Description

Use this command to disable the current zone configuration. The fabric returns to nonzoning mode, a mode that will revert to the default zone policy. See **defZone** help for details.

This command ends and commits the current zoning transaction buffer to both volatile and nonvolatile memory. If a transaction is open on a different switch in the fabric when this command is run, the transaction on the other switch is automatically aborted. A message displays on the other switches to indicate that the transaction was aborted.

In Fabric OS v9.0.0, the zone fabric locking feature prevents multiple transactions from being opened on v9.0.0 and newer switches while there is an active lock. However, the zone fabric lock will not have visibility of any pending transactions, if the fabric is running pre-v9.0.0 firmware. In this case, use the **cfgtransshow --opentrans** command to view the list of any switches in the fabric with open command-line-sourced transactions.

If the default zone access mode is No Access, this command becomes equivalent to **cfgEnable "d_efault_Cfg"**. See **defZone** help for information on zone access configuration.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

You cannot disable the effective configuration if the default zone mode is set to "All Access" and you have more than 120 devices in the fabric. You either need to lower the device count below 120 or change the default zone mode to "NoAccess".

Operands

This command has the following operand:

-force | -f Disables the zone configuration without confirmation. This operand is optional.

Examples

To disable the current zone configuration:

```
switch:admin> cfgdisable
You are about to disable zoning configuration. This
action will disable any previous zoning configuration.
Do you want to disable zoning configuration? \
    (yes, y, no, n): [no] y
```

To disable the current zone configuration without confirmation:

```
switch:admin> cfgdisable -force
You have disabled zoning configuration. This
action disabled any previous zoning configuration enabled.
Note: The above operation was performed without user prompting
      due to using the '-force' option.
```

See Also

cfgClear, cfgEnable, cfgSave

cfgEnable

Enables a zone configuration.

Synopsis

cfgenable "<*cfgName*>" [**-force** | **-f**]

Description

Use this command to enable a zone configuration. The command builds the specified zone configuration. It checks for undefined zone names, zone alias names, or other inconsistencies by expanding zone aliases, removing duplicate entries, and then installing the effective configuration.

If the build fails, the previous state is preserved (zoning remains disabled, or the previous effective configuration remains in effect). If the build succeeds, the new configuration replaces the previous configuration. See the **cfgShow** command for a description of the defined and effective configurations.

This command ends and commits the current transaction. If there are open transactions in the fabric, only a single transaction can be saved. If a transaction is open on a different switch in the fabric and the command is executed, the transaction on the other switch aborts automatically. A warning message displays on the other switches saying the transaction was aborted.

In Fabric OS v9.0.0, the zone fabric locking feature prevents multiple transactions from being opened on v9.0.0 and newer switches while there is an active lock. However, the zone fabric lock will not have visibility of any pending transactions, if the fabric is running pre-v9.0.0 firmware. In this case, use the **cfgtransshow --opentrans** command to view the list of any switches in the fabric with open command-line-sourced transactions.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

Operands

This command has the following operands:

"<*cfgName*>"	Specifies the name of the zone configuration. The name must be enclosed in double quotation marks. See the **cfgCreate** command for more information on name and member specifications. The dollar sign ($) must be prefixed with a backslash (\) while using it in the command prompt.
[-force | -f]	Enables the zone configuration without confirmation. This operand is optional.

Examples

To enable the zone configuration USA_cfg:

```
switch:admin> cfgenable "USA_cfg"
You are about to enable a new zoning configuration.
This action will replace the old zoning configuration with the
current configuration selected.
Do you want to enable 'USA_cfg' configuration  \
    (yes, y, no, n): [no] y
zone config "USA_cfg" is in effect
Updating flash ...
```

To enable the zone configuration USA_cfg when there are open CLI-sourced transactions in the fabric:

```
switch:admin> cfgenable "USA_cfg"
You are about to enable a new zoning configuration.
This action will replace the old zoning configuration with the
current configuration selected.
Multiple open transactions are pending in this fabric. Only one
transaction can be saved.Please abort all unwanted transactions
using the cfgtransabort command. Use the cfgtransshow --opentrans
command to display a list of domains with open transactions
switch:admin> cfgtransabort 271010736
switch:admin> cfgenable "USA_cfg"
You are about to enable a new zoning configuration.
This action will replace the old zoning configuration with the
current configuration selected.
Do you want to enable 'USA_cfg' configuration  \
    (yes, y, no, n): [no] y
zone config "USA_cfg" is in effect
Updating flash ...
```

To enable the zone configuration when zone fabric lock is active in a fabric:

```
switch:admin> cfgenable "cfg1"
You are about to enable a new zoning configuration.
This action will replace the old zoning configuration with the
current configuration selected.

Multiple open transactions are pending in this fabric. Only one
transaction can be saved. Please abort all unwanted transactions
using the cfgtransabort command. Use the cfgtransshow --opentrans
command to display a list of domains with open transactions
Do you want to enable 'cfg1' configuration  (yes, y, no, n): [no] y
Operation Failed: There is an outstanding transaction on domain 3 \
```

```
    (approx 5 mins 10 secs left).
```

To enable the zone configuration USA_cfg without confirmation:

```
switch:admin> cfgenable "USA_cfg" -force
You have enabled a new zoning configuration.
This action replaced the old zoning configuration with the
current configuration selected.
Note: The above operation was performed without user prompting
      due to using the '-force' option.
```

See Also

cfgClear, cfgDisable, cfgSave, cfgShow

cfgRemove

Removes a member from a zone configuration.

Synopsis

```
cfgremove "<cfgName>", "<member>[; <member>...]"
```

Description

Use this command to remove one or more members from an existing zone configuration. If all members are removed, the zone configuration is deleted.

This command changes the defined configuration (see **cfgShow**). For the change to become effective, enable the configuration using the **cfgEnable** command. For the change to be preserved across switch reboots, save the configuration to nonvolatile memory using the **cfgSave** command.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

Operands

The following operands are required:

"*<cfgName>*"	Specifies a name for the zone configuration, enclosed in double quotation marks. See the **cfgCreate** command for more information on name and member specifications. The dollar sign ($) must be prefixed with a backslash (\) while using it in the command prompt.
"*<member>*"	Specifies a zone member or a list of zone members to be removed from the configuration. The list must be enclosed in double quotation marks. Members must be separated by semicolons.

Examples

To remove a zone from a configuration:

```
switch:admin> cfgremove "Test_cfg", "bluezone"
```

See Also

cfgClear, cfgDelete, cfgDisable, cfgEnable, cfgSave, cfgShow, cfgTransAbort, cfgTransShow

cfgSave

Saves the zone configuration to nonvolatile memory.

Synopsis

```
cfgsave [-force | -f]
```

Description

Use this command to save the current zone configuration. This command writes the defined configuration and the name of the effective configuration to nonvolatile memory in all switches in the fabric.

The saved configuration is automatically reloaded at power-on, and, if a configuration was in effect at the time it was saved, the same configuration is reinstalled with an automatic **cfgEnable** command.

Because the saved configuration is reloaded at power-on, only valid configurations are saved. The **cfgSave** command validates the effective configuration by performing the same tests as the **cfgEnable** command. If the tests fail, an error message is displayed and the configuration is not saved.

This command ends and commits the current transaction. If there are open transactions in the fabric, only a single transaction can be saved. If a transaction is open on a different switch in the fabric when this command is run, the transaction on the other switch is automatically aborted. A message displays on the other switches to indicate that the transaction was aborted.

In Fabric OS v9.0.0, the zone fabric locking feature prevents multiple transactions from being opened on v9.0.0 and newer switches while there is an active lock. However, the zone fabric lock will not have visibility of any pending transactions, if the fabric is running pre-v9.0.0 firmware. In this case, use the **cfgtransshow --opentrans** command to view the list of any switches in the fabric with open command-line-sourced transactions.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

Operands

This command has the following operand:

-force | -f	Saves the zone configuration without confirmation. This operand is optional.

Examples

To save a zone configuration:

```
switch:admin> cfgsave
WARNING!!!
The changes you are attempting to save will render the
Effective configuration and the Defined configuration
inconsistent. The inconsistency will result in different
Effective Zoning configurations for switches in the fabric if
a zone merge or HA failover happens. To avoid inconsistency
it is recommended to commit the configurations using the
cfgenable command.
Do you want to save Defined zoning configuration
```

```
     only?  (yes, y, no, n): [no]y
```

To save a zone configuration if there are multiple open transactions:

```
switch:admin> cfgsave
You are about to save the Defined zoning configuration. This
action will only save the changes on Defined configuration.
Multiple open transactions are pending in this fabric. Only one
transaction can be saved.Please abort all unwanted transactions
using the cfgtransabort command. Use the cfgtransshow --opentrans
command to display a list of domains with open transactions
Do you want to save the Defined zoning configuration only?  (yes, y, no, n): [no]
switch:admin> cfgtransabort 271010736
switch:admin> cfgsave
You are about to save the Defined zoning configuration. This
action will only save the changes on Defined configuration.

Do you want to save the Defined zoning configuration only?  (yes, y, no, n): [no] y
```

To save a zone configuration when zone fabric lock is active in a fabric:

```
switch:admin> cfgsave
You are about to save the Defined zoning configuration. This
action will only save the changes on Defined configuration.


Multiple open transactions are pending in this fabric. Only one
transaction can be saved. Please abort all unwanted transactions
using the cfgtransabort command. Use the cfgtransshow --opentrans
command to display a list of domains with open transactions
Do you want to save the Defined zoning configuration only?  (yes, y, no, n): [no] y
Operation Failed: There is an outstanding transaction on domain 3 \
   (approx 5 mins 19 secs left).
```

To save a zone configuration without confirmation:

```
switch:admin> cfgsave -force
You have force saved the Defined zoning configuration. This
action only saved the changes on Defined configuration.

Note: The above operation was performed without user prompting
      due to using the '-force' option.
```

See Also

cfgClear, cfgDelete, cfgDisable, cfgEnable, cfgRemove, cfgShow, cfgTransAbort, cfgTransShow

cfgShow

Displays zone configuration information.

Synopsis

cfgshow ["*<pattern>*"[,*<mode>*]]

cfgshow --ic [**-verbose**] "*<pattern>*"[,*<mode>*]

```
cfgshow --transdiffs [-verbose]
cfgshow --transdiffsonly [-verbose]
cfgshow --verbose ["<pattern>"] [ ,<mode>]
cfgshow --help
```

Description

Use this command to display zone configuration information.

If no operand is specified, all zone configuration information (both defined and effective) is displayed. If the local switch has an outstanding transaction, this command displays the most recently edited zone configuration that has not yet been saved. If the local switch has no outstanding transaction, this command displays the committed zone configuration.

If a pattern is specified, only matching configurations are displayed.

- The *defined configuration* is the complete set of all zone objects that have been defined in the fabric. There can be multiple zone configurations defined, but only one can be enabled at a time. There might be inconsistencies in the definitions, zones, or aliases that are referenced but not defined, or there might be duplicate members. The defined configuration is the current state of the administrator input.
- The *effective configuration* is the single zone configuration that is currently enabled. The devices that an initiator sees in the fabric are based on this configuration. The effective configuration is built when a specific zone configuration is enabled and all error checking has been completed successfully.

Use the **--transdiffs** and **--transdiffsonly** options to view changes in the current transaction. The command output displays changes in the current transaction by the following notations:

- An asterisk (*) before any tag indicates a change in that zone, zone configuration, alias, or any other entity in the zone configuration.
- A plus (+) before any entity indicates that it is a newly added entity.
- A minus (-) before any entity indicates that it is a deleted entity.

When this command is issued after a zoning transaction was aborted on the local switch, it displays the following warning message: `"Warning: Current Zoning Transaction was aborted. Reason code = Zone Config update received."`

When default zoning is enabled with No Access mode, `"No Effective configuration: (No Access)"` is displayed.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

The following operands are optional:

--ic	Displays all zone configuration names for a given pattern without case distinction. See the **cfgCreate** command for more information on name and member specifications. The dollar sign ($) must be prefixed with a backslash (\) while using it in the command prompt.
"*<pattern>*"	A regular expression that matches zone configuration names. The pattern must be enclosed in quotation marks and can contain the following: • Asterisk (*) - Matches any string of characters.

	<mode>	Specify **0** to display the contents of the transaction buffer (the contents of the current transaction), **1** to display the contents of the committed defined database, and **2** to display the contents of the effective zone configuration. The default value is 0.
	-verbose	Displays the property members of peer zones along with the default **cfgShow** command output.
--transdiffs	Displays changes in the current transaction.	
	-verbose	Displays the property members of peer zones along with the default **--transdiffs** command output.
--transdiffsonly	Displays only the changes in the current transaction.	
	-verbose	Displays the property members of peer zones along with the default **--transdiffsonly** command output.
--verbose	Displays the property members of peer zones along with the default **cfgShow** command output.	
--help	Displays the command usage.	

Examples

To display all zone configurations that start with "Test":

```
switch:admin> cfgshow "Test*"
cfg:   Test1 Blue_zone
cfg:   Test_cfg Red_zone; Blue_zone
```

To display all zone configurations that start with "Test", regardless of the case:

```
switch:admin> cfgshow -ic "Test*"
cfg:   Test1 Blue_zone
cfg:   TEST2_cfg Red_zone; Blue_zone
```

To display all zone configuration information:

```
switch:admin> cfgshow
Defined configuration:
cfg:   USA1    Blue_zone
cfg:   USA_cfg Red_zone; Blue_zone
zone:  Blue_zone
       1,1; array1; 1,2; array2
zone:  Red_zone
       1,0; loop1
alias: array1  21:00:00:20:37:0c:76:8c; \
     21:00:00:20:37:0c:71:02
alias: array2  21:00:00:20:37:0c:76:22; \
     21:00:00:20:37:0c:76:28
alias: loop1   21:00:00:20:37:0c:76:85; \
     21:00:00:20:37:0c:71:df

Effective configuration:
cfg:   USA_cfg
zone:  Blue_zone
        1,1
        21:00:00:20:37:0c:76:8c
        21:00:00:20:37:0c:71:02
        1,2
```

```
        21:00:00:20:37:0c:76:22
        21:00:00:20:37:0c:76:28
zone:  Red_zone
        1,0
        21:00:00:20:37:0c:76:85
        21:00:00:20:37:0c:71:df
```

To display only configuration names:

```
switch:admin> cfgshow "*"
cfg:   USA1    Blue_zone
cfg:   USA_cfg Red_zone; Blue_zone
```

To display changes in the current transaction:

```
switch:admin> cfgshow --transdiffs
Defined configuration:
cfg:   fabric_cfg Blue_zone

zone:  Blue_zone
        1,1; array1; 1,2; array2

*zone:  green_zone
        -1,1; 1,2; +6, 15

*zone: +red_zone
        5,1; 4,2

alias: array1  21:00:00:20:37:0c:76:8c; \
     21:00:00:20:37:0c:71:02
        alias: array2  21:00:00:20:37:0c:76:22; \
     21:00:00:20:37:0c:76:28

Effective configuration:
cfg:   fabric_cfg
zone:  Blue_zone
        1,1
        21:00:00:20:37:0c:76:8c
        21:00:00:20:37:0c:71:02
        1,2
```

To display only the changes in the current transaction:

```
switch:admin> cfgshow --transdiffsonly
*zone:  -Blue_zone
        21:00:00:20:37:0c:76:8c
        21:00:00:20:37:0c:71:02

*zone:  green_zone
        1,1; -1,2;+5,4;+ 21:00:00:20:37:0c:76:55

*zone:  +red_zone
        5,4; 5,6
```

To display the property members of peer zones:

```
switch:admin> cfgshow --verbose

Defined configuration:
cfg:        c2            peer_zone3; peer_zone5; peer_zone7
zone:    peer_zone1             00:02:00:00:00:02:01:01; test1; edit123; alias67
zone:    peer_zone2             00:02:00:00:00:03:00:01; 30:08:00:05:33:88:e3:f3;
                                30:08:00:05:33:88:e3:f4; 30:08:00:05:33:88:e3:f5
zone:    peer_zone3             00:02:00:00:00:03:01:02; edit123; alias67; test1
zone:    peer_zone5             00:02:00:00:00:03:03:06; alias67; edit123; test1
zone:    peer_zone7             00:02:00:00:00:02:01:02; edit123; alias67

Effective configuration:
cfg:        c2
zone:    peer_zone3
                                00:02:00:00:00:03:01:02
                                30:08:00:05:33:88:e3:f5
                                30:08:00:05:33:88:e3:f6
                                30:08:00:05:33:88:e3:f8
                                30:08:00:05:33:88:e3:f7
                                30:08:00:05:33:88:e3:fa
                                30:08:00:05:33:88:e3:fc
zone:    peer_zone5
                                00:02:00:00:00:03:03:06
                                30:08:00:05:33:88:e3:f5
                                30:08:00:05:33:88:e3:f6
                                30:08:00:05:33:88:e3:f8
                                30:08:00:05:33:88:e3:f7
                                30:08:00:05:33:88:e3:fa
                                30:08:00:05:33:88:e3:fc
zone:    peer_zone7
                                00:02:00:00:00:02:01:02
                                7,6
                                7,7
                                7,4
                                7,5
                                7,10
                                7,11
(output truncated to display only zones and cfgs)
```

See Also

cfgClear, cfgDelete, cfgDisable, cfgEnable, cfgRemove, cfgSave, cfgTransAbort, cfgTransShow

cfgSize

Displays zone database size details.

Synopsis

cfgsize [<*integer*>]

Description

Use this command to display the size details of the zone database.

The size details include the following:

Chassis-Wide Max Zone DB size	Defines the upper limit for the zone defined configuration, determined by the amount of nonvolatile memory available chassis-wide across all logical switches for storing the defined configuration. Beginning from Fabric OS v9.0.0, the maximum supported zone database size is 16 MB chassis-wide for director and fixed-port switches.
Chassis-Wide Committed Zone DB size	Displays the committed zone database size of all partitions.
Current Logical Switch Max Zone DB size	Displays the maximum zone database size of the current logical switch.
Fabric-Wide Max Zone DB size	Displays the fabric-wide maximum zone database size.
Available Zone DB size	Displays the remaining size of the database that is actually available for storage.
Committed size	Displays the size of the defined configuration currently stored in nonvolatile memory.
Transaction size	Displays the size of the uncommitted defined configuration. This value will be nonzero if the defined configuration is being modified by Telnet, API, and so forth; otherwise it is 0.

See **cfgShow** help page for a description of defined and effective zone configurations.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

In Virtual Fabric environments, the zone database size of all partitions taken together cannot exceed 16 MB. The per-logical-switch maximum zone database size cannot exceed 4 MB. The per-fabric maximum zone database size is restricted to the switch that supports the lowest size.

Operands

The following operand is optional:

<integer>	If a nonzero integer is specified, the size of the nonvolatile memory allocated for the zone database is displayed. The zone database includes both the defined and effective configurations. The database size is displayed in bytes.

Examples

To display the zone database:

```
switch:admin> cfgsize
Chassis-Wide Max Zone DB size -             16777216 bytes
Chassis-Wide Committed Zone DB size -           1362 bytes
Current Logical Switch Max Zone DB size -    4194304 bytes
Fabric-Wide Max Zone DB size - (Domain 211)  1045274 bytes
Available Zone DB size -                     1043912 bytes

 Current Logical switch zone config sizes:
     committed -    1362
   transaction -       0
```

See Also

cfgShow, zoneHelp

cfgTransAbort

Aborts the current zoning transaction.

Synopsis

```
cfgtransabort [<token>]
```

Description

Use this command to abort the current zoning transaction without committing it. All changes made since the transaction was started are removed, and the zone configuration database is restored to the state before the transaction was started.

If a transaction is open on a different switch in the fabric when this command is run, the transaction on the other switch remains open and unaffected.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

Operands

When invoked without an operand, this command aborts the current transaction. The following operand is optional:

<token>	Specifies the token ID of the transaction to be aborted. Use the **cfgTransShow** command to obtain the token ID of a transaction.

Examples

To abort the current transaction:

```
switch:admin> cfgtransabort
```

See Also

cfgClear, cfgDelete, cfgDisable, cfgEnable, cfgRemove, cfgSave, cfgShow, cfgTransShow

cfgTransShow

Displays information about the current zoning transaction.

Synopsis

```
cfgtransshow
cfgtransshow --opentrans
cfgtransshow --fabricLock
cfgtransshow --help
```

Description

Use this command to display the ID of the current zoning transaction. In addition, the command provides information on whether the transaction can be aborted. The transaction cannot be aborted if it is an internal zoning transaction.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--opentrans	Displays local open transaction token details and the list of domains with open command-line-sourced transactions.
--fabricLock	Displays zone fabric lock information such as whether the lock state is active or not. This operand is case-sensitive.
--help	Displays the command usage.

Examples

To display the current transaction on a non-lock principal switch with no local open transaction:

```
switch:admin> cfgtransshow
There is an outstanding zoning transaction in progress on Domain 5.
Time Remaining: 3 mins 33 seconds

switch:admin> cfgclear
The Clear All action will clear all Aliases, Zones,
and configurations in the Defined configuration.
Run cfgSave to commit the transaction or cfgTransAbort to
cancel the transaction.
Do you really want to clear all configurations?  (yes, y, no, n): [no] y
Operation Failed: There is an outstanding transaction on domain 5 \
   (approx 3 mins 33 secs left).
```

To display the current transaction and the list of domains with open command-line-sourced transactions:

```
switch:admin> cfgtransshow --opentrans
Current transaction token is 0x3109
It is abortable

Transactions Detect: Capable

Current Open Transactions
Domain List:
-------------------------
 1 2 3 4
```

To display the current transaction on the lock principal switch:

```
switch:admin> cfgtransshow
Current transaction token is 0x1234
It is abortable

Fabric-Lock  : Active
Client   : Admin
Time Remaining : 3 mins 33 seconds
```

To display the information on a non-lock principal switch in a fabric having an active lock:

```
switch:admin> cfgtransshow --fabricLock
State   :Fabric-Lock Active
Lock-Principal :Domain 5
Client   :Admin    // can be Admin, REST, etc
Timeout   :5 minutes
Time Remaining :3 mins 33 seconds
Fabric Supported:Yes     // can be "No" if downlevel in the fabric
```

To display the information on a non-lock principal switch in a fabric with no active lock:

```
switch:admin> cfgtransshow --fabricLock
Lock State    :Not Active
Lock-Principal Domain :n/a
Client     :n/a
Timeout     :n/a
Time Remaining   :n/a
Fabric Supported  :Yes    // can be "No" if downlevel in the fabric
```

To display the locally-configured lock timeout value:

```
switch:admin> configshow -pattern zoning.FabLockTimeout
zoning.FabLockTimeout:5
```

See Also

cfgClear, cfgDelete, cfgDisable, cfgEnable, cfgRemove, cfgSave, cfgShow, cfgTransAbort, zoneFabricLock

chassisBeacon

Sets chassis beaconing mode.

Synopsis

chassisbeacon [**0** | **1** | **--help**]

Description

Use this command to enable or disable beaconing on a chassis. Chassis beaconing can be used to locate a failing chassis in a group of chassis. Use the **portBeacon** command to locate a failing port, and use the **switchBeacon** command to locate a failing (logical) switch.

When beaconing mode is turned on, the port LEDs flash green at various rates across the chassis. The beaconing continues until you turn it off.

Beaconing mode takes over the port LEDs. The normal flashing LED pattern associated with an active, faulty, or disabled port is suppressed, and only the beaconing pattern is shown. Other commands are still executable and functional. Running diagnostic commands overwrites the LED port beaconing pattern.

The **chassisBeacon** command is one of the commands that control beaconing. Each command has a clearly defined scope of action:

- The **portBeacon** command enables or disables beaconing on a specified port.
- The **switchBeacon** command enables or disables beaconing on all ports in the current logical switch.
- The **chassisBeacon** command enables or disables beaconing on all ports in the chassis.
- The **portPeerBeacon** command enables or disables beaconing to identify the interconnections between ports.

The actions of the beaconing commands are independent and mutually exclusive. For example, if you enabled beaconing on the logical switch and you want to enable beaconing on the entire chassis, you must first disable switch beaconing with the **switchBeacon** command before you can use the **chassisBeacon** command to enable beaconing on the entire chassis. Likewise, existing **portBeacon** settings remain unaffected if you enable or disable beaconing on the switch or chassis. Failure to disable existing beaconing commands before using a different type of beaconing may cause the commands to interfere with each other in unexpected ways.

On a Brocade X6/X7 Director, enabling chassis beaconing activates beaconing on CP blades also.

To determine whether beaconing is enabled or disabled on the switch or chassis, use the **switchBeacon** or **chassisBeacon** command without operands. A value of 0 indicates that the command is disabled, and a value of 1 indicates that the command is enabled. Issue the **portBeacon --show** command to display beaconing for a specific port. The **switchShow** command displays the status of the **switchBeacon** command only.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

[0 | 1]	Specify 1 to enable chassis beaconing mode or 0 to disable beaconing mode. This operand is optional. If no operand is specified, the current value is displayed.
--help	Displays the command usage.

Examples

To turn on chassis beaconing mode:

```
switch:admin> chassisbeacon 1
Chassis beacon success 1
```

To turn off beaconing mode:

```
switch:admin> chassisbeacon 0
Chassis beacon success 0
```

To display the chassis beaconing mode:

```
switch:admin> chassisbeacon
Value = 0
```

See Also

portBeacon, portPeerBeacon, switchBeacon, switchShow

chassisDisable

Disables all user ports in a chassis.

Synopsis

```
chassisdisable [-force]
```

Description

Use this command to disable a Virtual Fabric-aware chassis. All Fibre Channel ports are taken offline. This command prompts for confirmation unless the **-force** option is used. If the chassis is partitioned into logical switches that are part of logical fabrics, the remaining switches in these fabrics reconfigure. As each port is disabled, the front panel LED changes to a slow-flashing amber.

You must disable the chassis before making configuration changes or running offline diagnostic tests. Commands that require the chassis to be disabled generate an error message if invoked while the chassis is enabled. It is not necessary to disable a chassis before rebooting or powering off the switch.

To disable the ports of a single logical switch, use the **switchDisable** command.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

-force	Disables the chassis without confirmation. This operand is optional.

Examples

To disable a chassis:

```
switch:admin> chassisdisable
This command can cause disruption to\
     multiple logical switches.
Are you sure you want to disable all chassis ports now?\
 (yes, y, no, n): [no]y
```

See Also

chassisEnable, switchShow, switchDisable, switchEnable, switchCfgPersistentEnable, switchCfgPersistentDisable

chassisDistribute

Distributes IP filter policies.

Synopsis

```
chassisdistribute -db ipfilter -fid
        target_FID [-force]
chassisdistribute -db ipfilter -domain
        target_domain_list [-force]
```

Description

Use this command to manually distribute the IP filter policy database. The behavior of this command depends on whether Virtual Fabrics are enabled or disabled.

- If Virtual Fabrics are enabled on the originating switch, this command distributes the IP filter policy database to all chassis that are connected through the specified logical switch (FID). If the target chassis has Virtual Fabrics enabled,

the IP filter policy database is distributed to all logical switches configured on the target. If Virtual Fabrics are not enabled on the target, the IP filter policy database is distributed to the default logical switch of the target.

- If Virtual fabrics are disabled on the originating switch, the IP filter policy database is distributed to a list of target switches specified by their Domain IDs. If a target domain has Virtual Fabrics enabled, the IP filter policy database is distributed to all logical switches on the target domain. If Virtual Fabrics are not enabled on the target domain, the IP filter policy database is distributed to the default logical switch of the target domain.

This command distributes the entire IP filter database and overwrites any existing IP filter policies on the receiving switches. The **chassisDistribute** command does not enforce FCS policy.

The target chassis or switches must be capable of accepting the distribution. The distribution is aborted if one of the connected chassis or domains is configured to reject the distribution. Use the **fddCfg** command to configure the fabric-wide policies that control distribution behavior.

The command output includes the following information:

FID	Indicates whether Virtual Fabrics are enabled or not on the domain that receives the distribution. If Virtual Fabrics are enabled, the FID is displayed, and all logical switches that are part of the chassis are targeted to receive the distribution.
DOMAIN	Displays the Domain ID of the receiving switch.
CHASSISWWN	Displays the WWN of the originating or receiving chassis. Displays the originating switch WWN in switches running Fabric OS versions that do not support the chassis WWN feature.
CHASSISNAME	Displays the name of the chassis.
SUPPORTED_DIST	Displays **yes** if the distribution is supported on the receiving chassis. Displays **no** if the distribution is not supported.

Notes

This command distributes the IP Filter database only. To distribute other security databases, use the **distribute** command.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-db ipfilter	Specifies the policy database to be distributed with this command. The only accepted value for **-db** is **ipfilter**. The database name is case insensitive. The legacy notation ("IPFILTER") still works but is not necessary. The following operands are mutually exclusive:
-fid *target_FID*	Specifies the target logical switch for the distribution. The logical switch is identified by its fabric ID (FID). When a FID is specified, the database is distributed to all chassis that are connected to the specified logical switch (FID) and are configured to accept the distribution. This operand is required and valid only when the originating switch is in Virtual Fabric mode.
-domain *target_domain_list*	Specifies a list of target switch domain IDs or switch names or switch WWNs that should receive the database. The list must be enclosed in double quotation marks; members must be separated by a semicolon. A wildcard (*) may be specified to include all switches in the fabric that support the distribute feature. This operand is required and valid only when Virtual Fabrics are disabled.
-force	Distributes the database without confirmation.

Examples

To distribute the IP Filter policies to all chassis that are connected through the logical fabric 128 and support the distribute feature:

```
switch:admin> chassisDistribute -db ipfilter -fid 128
FID   DOMAIN   CHASSISWWN      CHASSISNAME SUPPORTED_DIST
 -------------------------------------------------------
 128    3 10:00:00:05:1e:38:ac:0e  X6             yes
 NON-VF 4 10:00:00:05:1e:39:bd:0f  G610           yes
 128   98 10:00:00:05:1e:41:22:9f  G620           no

chassisDistribute will distribute the database(s) to \
above topology.
Would you like to continue [Y/N] : y
ChassisDistribute operation succeeded for above topology
```

To distribute the IP Filter policies to all switches in the fabric that support the distribute feature (Virtual Fabrics are disabled on the evoking switch):

```
switch:admin> chassisDistribute -db ipfilter -domain "*"
FID   DOMAIN    CHASSISWWN    CHASSISNAME SUPPORTED_DIST
-------------------------------------------------------
128    3 10:00:00:05:1e:38:ac:0e X6             no
NON-VF 4 10:00:00:05:1e:39:bd:0f G610           yes
128   98 10:00:00:05:1e:41:22:9f G620           no
ChassisDistribute will distribute the database(s) to \
above topology.
Would you like to continue [Y/N] : y
ChassisDistribute operation succeeded for above topology
```

See Also

distribute, fddCfg

chassisEnable

Enables all user ports in a chassis.

Synopsis

chassisenable

Description

Use this command to enable a Virtual Fabric-aware chassis. All Fibre Channel ports that passed the power-on self test (POST) are enabled. They may come online if connected to a device, or remain offline if disconnected. Use **chassisEnable** to re-enable the chassis after making configuration changes or running offline diagnostics.

If the chassis is partitioned into multiple logical switches and physically connected to multiple logical fabrics, the logical switches rejoin their fabrics.

As each port is enabled, the front panel LED changes from slow-flashing amber to nonflashing green for online ports, or to nonflashing amber for ports that do not initialize. Disconnected ports remain unlit. Loopback ports slowly flash green when online.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To enable a chassis:

```
switch:admin> chassisenable
```

See Also

chassisDisable, switchDisable, switchEnable, switchCfgPersistentEnable, switchCfgPersistentDisable, switchShow

chassisName

Displays or sets the chassis name.

Synopsis

```
chassisname [<name> | --help]
```

Description

Use this command to display or change the name associated with the chassis. The configured chassis name appears in all the chassis event RASLog messages.

Use this command without parameters to display the current chassis name. Use this command with the <*name*> operand to assign a new chassis name.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

<name>	Specify a new name for the chassis, optionally in double quotation marks. From Fabric OS v8.2.1, a chassis name can include up to 31 characters (supports both pizzabox and chassis devices). A chassis name must begin with a letter, and can consist of letters, numbers, underscore or hyphen characters. Spaces are not permitted.
--help	Displays the command usage.

Examples

To change the chassis name to "dilbert":

```
switch:admin> chassisname dilbert
switch:admin> chassisname
dilbert
```

See Also
switchName

chassisShow

Displays all field replaceable units (FRUs).

Synopsis

```
chassisshow [--sort | --help]
```

Description

Use this command to display the Field Replaceable Unit (FRU) header content for each object in the chassis and chassis backplane version. This command displays the following information:

1. The chassis family, for example, X6-8 or X7-8.
2. The backplane version number, in hexadecimal: Chassis Backplane Revision: *xx*
3. The state of the chassis whether enabled or disabled. For example, Chassis State: *Enabled*
4. The first line of each record contains the object ID. If the FRU is part of an assembly, a brief description is displayed in parentheses.
   a. Object type: CHASSIS, FAN, POWER SUPPLY, SW BLADE (switch), CP BLADE (control processor), WWN (world wide name), or UNKNOWN.
   b. Object number: Slot *nn* (for blades), Unit *nn* (for everything else).
5. FRU header version number: Header Version: *x*
6. Hardware version number: Hardware Version: *x*. This field is supported for the blades and pizzabox switches and when the blade state or the switch state is 'ON'.
7. Displays the maximum allowed power consumption for a given hardware component: positive for power supplies and negative for power consumers. The combined total maximum allowed power consumption for the entire chassis is shown in the output of the **slotShow -p** command. Power Consume Factor: *-xxx*
8. Displays the real-time power consumption for each FRU that supports real-time power measurement. Only 16Gb blades currently support real time measurement of power being consumed by these blades. When the capability is not supported for a FRU, the line is suppressed. Power Usage (Watts):
9. Factory part number (up to 14 characters): Factory Part Num: *xx-xxxxxx-xx*
10. Factory serial number (up to 12 characters): Factory Serial Num:*xxxxxxxxxx*
11. FRU manufacture date: Manufacture: Day: *dd* Month: *mm* Year: *yyyy*
12. Date of the last FRU header update: Update: Day: *dd* Month: *mm* Year: *yyyy*
13. Cumulative number of days the FRU has been powered on: Time Alive: *dddd* days; *hours* hours for WWNs
14. Time elapsed, in days, since the FRU was last powered on: Time Awake: *dddd* days
15. Time elapsed, in hours, since the FRU was manufactured for WWN units: Time Awake: *hours* hours
16. Externally supplied ID (up to 10 characters): ID: *xxxxxxxxxx*
17. Externally supplied part number (up to 20 characters): Part Num: *xxxxxxxxxxxxxxxxxxxx*
18. Externally supplied serial number (up to 20 characters): Serial Num: *xxxxxxxxxxxxxxxxxxxx*
19. Externally supplied revision number (up to 4 characters): Revision Num: *xxxx*

The output of this command depends on the platforms on which it is executed. On some platforms, for certain FRU types, a few items may not be available. In these cases, the lines are suppressed. Possibly affected lines are 1, 3 through 7, 9, and 11 through 14. In addition, for lines 11 through 14, if there is no data set, these lines are suppressed.

This command displays the power supply input voltage data read from the PS controller in real time. This feature is supported only on the Brocade X6-4, Brocade X6-8, Brocade X7-4, Brocade X7-8, Brocade G630, and Brocade G730 platforms.

In the Brocade G620 device, the power usage is displayed for each of the PSU section in the **chassisshow** output. The power usage value is the value displayed from one PSU and the value displayed in the other PSU is redundant.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following optional operand:

--sort	Displays all the field replaceable units(FRUs) in a sorted order.
--help	Displays the command usage.

Examples

To display the FRUs for a Brocade X7-8 Director:

```
switch:user> chassisshow

Chassis Family:             X7-8
Chassis Backplane Revision: 0
Chassis State:              Enabled

SW BLADE  Slot:             3
Header Version:             2
Hardware Version:           2
Power Consume Factor:       -420W
Factory Part Num:           60-1004269-09
Factory Serial Num:         FQZ0336T01S
Manufacture:                Day: 28  Month:  9  Year: 2022
Update:                     Day: 20  Month:  2  Year: 2023
Time Alive:                 80 days
Time Awake:                 3 days

SW BLADE  Slot:             4
Header Version:             2
Hardware Version:           2
Power Consume Factor:      -420W
Factory Part Num:           60-1004269-09
Factory Serial Num:         FQZ0336T021
Manufacture:                Day: 27  Month:  9  Year: 2022
Update:                     Day: 20  Month:  2  Year: 2023
Time Alive:                 80 days
Time Awake:                 3 days

SW BLADE  Slot:             5
Header Version:             2
Hardware Version:           2
Power Consume Factor:       -420W
Factory Part Num:           60-1004269-09
Factory Serial Num:         FQZ0336T026
Manufacture:                Day: 29  Month:  9  Year: 2022
```

```
Update:                     Day: 20  Month:  2  Year: 2023
Time Alive:                 80 days
Time Awake:                 3 days

SW BLADE  Slot:             6
Header Version:             2
Hardware Version:           2
Power Consume Factor:       -420W
Factory Part Num:           60-1004409-01
Factory Serial Num:         FQZ0336T036
Manufacture:                Day: 28  Month:  9  Year: 2022
Update:                     Day: 20  Month:  2  Year: 2023
Time Alive:                 80 days
Time Awake:                 3 days
```

See Also

slotShow

classConfig

Displays RBAC class permissions.

Synopsis

classconfig --show {*<class_name>* | **-all** | **-classlist**}
classconfig --showcli *<command>*
classconfig --showroles *<class_name>*
classconfig --help

Description

Use this command to display information about role-based access control (RBAC) permissions for one or all meta-object format (MOF) classes, to display permissions for a specified command, or to display the role-specific permissions for a specified MOF class.

Fabric OS commands are grouped into feature sets called MOF classes. For example, the commands **ldapCfg**, **passwd**, **passwdCfg**, and **userConfig** are all related to User Management and are therefore grouped together under a MOF class called **UserManagement**.

The pre-defined roles Root, Admin, User, SwitchAdmin, ZoneAdmin, FabricAdmin, BasicSwitchAdmin, SecurityAdmin and Operator provide a mechanism for further restricting access to commands of a certain class by role-specific permissions. For example, a user with the ZoneAdmin role will have access to the commands under the MOF class Zoning but not to those under the UserManagement class.

The following RBAC permissions are supported in Fabric OS:

- O = observe
- OM = observe-modify
- N = no access

Note that the MOF class level permissions extend to all commands in that class, but not necessarily to each and every command option. For example, a command may have the RBAC class permission of "OM", but a show only option under that command may have the permission "O". At the role level, a certain role may be excluded from viewing the command information, in which case the permission for that role would be "N".

Notes

Access to the root account is removed in Fabric OS v9.1.0 and the account cannot be activated.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following optional operand:

--show	Displays RBAC permission information. One of the following operands is required:
	<*class_name*> or -all — Displays permissions for a single MOF class or for all classes. The output displays the class name, the CLI commands grouped under the specified class, the command options, and the RBAC class permissions for each command option.
	-classlist — Displays an alphabetical listing of all MOF classes supported in Fabric OS.
--showcli <*command*>	Displays the RBAC permissions for the specified command and associated command options. The output displays the command name, the command options, the RBAC class permissions for each command option, the MOF class, and the context restriction for the command in VF mode only. If the length of a row is too long to fit in one line, the strings displayed under RBAC Class and Option column will be split and displayed in two lines.
--showroles <*class_name*>	Displays the role permissions the specified MOF class.
--help	Displays the command usage.

Examples

To display an alphabetical listing of all MOF classes supported in Fabric OS:

```
switch:admin> classconfig --show -classlist
List of RBAC classes:
  1. AdminDomains
  2. ADSelect
  3. AG
  4. Audit
  5. Authentication
  6. Blade
  7. ChassisConfiguration
  8. ChassisManagement
  9. ConfigManagement
  10. Configure
  11. DCE
  12. Diagnostics
  13. DMM
  14. EncryptionConfiguration
  15. EncryptionManagement
  16. EthernetConfig
  17. Fabric
  18. FabricDistribution
  19. FabricRouting
  20. FCoE
  21. FICON
  22. FIPSCfg
  23. FirmwareKeyManagement
```

```
  24. FirmwareManagement
  25. FRUManagement
  26. HA
  27. IPfilter
  28. ISCSI
  29. LayerTwo
  30. License
  31. LocalUserEnvironment
  32. Logging
  33. LogSupportsave
  34. ManagementAccessConfiguration
  35. ManagementServer
  36. MAPS
  37. NameServer
  38. Nocheck
  39. NxPortManagement
  40. PhysicalComputerSystem
  41. PKI
  42. PortMirror
  43. RADIUS
  44. Reboot
  45. Restricted
  46. RoleConfig
  47. RoutingAdvanced
  48. RoutingBasic
  49. Security
  50. SessionManagement
  51. SNMP
  52. SRM
  53. Statistics
  54. StatisticsDevice
  55. StatisticsPort
  56. SwitchConfiguration
  57. SwitchManagement
  58. SwitchManagementIPConfiguration
  59. SwitchPortConfiguration
  60. SwitchPortSecurityConfiguration
  61. SwitchPortManagement
  62. Topology
  63. USBManagement
  64. UserManagement
  65. WWNCard
  66. Zoning
```

To display the RBAC permissions for the commands included in the UserManagement class:

```
switch:admin> classconfig --show UserManagement

RBAC Class Name : UserManagement

  CLI                      Option          Permission
-------------------------------------------------------
  ldapcfg                  help                 O
  ldapcfg                  maprole              OM
```

```
  ldapcfg                  mapattr              OM
  ldapcfg                  show                 O
  ldapcfg                  unmaprole            OM
  passwd                   OperandPresent       OM
  passwdcfg                deleteuser           OM
  passwdcfg                disableadminlockout  OM
  passwdcfg                enableadminlockout   OM
  passwdcfg                hash                 OM
  passwdcfg                help                 O
  passwdcfg                set                  OM
  passwdcfg                setdefault           OM
  passwdcfg                setuser              OM
  passwdcfg                showall              O
  passwdcfg                showhash             O
  passwdcfg                showuser             O
  userconfig               add                  OM
  userconfig               addlf                OM
  userconfig               change               OM
  userconfig               delete               OM
  userconfig               deletelf             OM
  userconfig               showlf               O
  userconfig               showuser             O
```

To display the RBAC permissions for the UserManagement class:

```
switch:admin> classconfig --showroles UserManagement
Roles that have access to the RBAC Class 'usermanagement' are:

  Role Name   Permission
  ---------   ----------
  Admin                 OM
  Root                  OM
  SecurityAdmin         OM
  Maintenance           OM
```

To display the RBAC permissions for a command:

```
switch:admin> classconfig --showcli classconfig
CLI            Option     Permission  RBAC Class    Context
-------------------------------------------------------
classconfig    help       O           RoleConfig    chassis
classconfig    show       O           RoleConfig    chassis
classconfig    showcli    O           RoleConfig    chassis
classconfig    showroles  O           RoleConfig    chassis
```

To display the RBAC permissions for a command (in the following example, the command option entries are split and displayed in two lines because the length of the rows is too long):

```
switch:admin> classconfig --showcli ag
CLI    Option        Permission   RBAC Class
-----------------------------------------------------
ag     addwwnfailov  OM           AG
       ermapping
ag     addwwnmappin  OM           AG
       g
```

```
ag      addwwnpgmapp  OM           AG
        ing
[...]
```

See Also

roleConfig

cliHistory

Displays switch command history.

Synopsis

```
clihistory
clihistory --show
clihistory --showuser username
clihistory --showall
clihistory --enable -shellbuffer
clihistory --disable -shellbuffer
clihistory --display -shellbuffer
clihistory --help
```

Description

This command saves the following information whenever a command is executed on the switch:

- Timestamp
- Username
- FID (VF mode only)
- IP address of the Telnet session or an Interface name
- Options
- Arguments

This command displays the local CLI command history. The information is saved in the SSHOW_SYS file as part of **supportSave**. The CLI history is saved persistently to compact flash. The maximum number of saved entries for this command is 1680. CLI history records is wrapped after reaching the maximum limit specified.

This command can also be executed on the standby CP.

The CLI history is wrapped and saved in a file that is persistent across reboots and firmware download.

Only the command name is stored in the CLI history for commands that requires password; no arguments are stored.

Use **--enable|--disable -shellbuffer** option to configure the device to record or not to record any CLI entry to the shell CLI buffer. This option can be executed only on the active CP.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

--show	Displays the CLI history of the current user.

--showuser *username*	Displays the CLI history of the given user.
--showall	Displays the CLI history of all users.
--enable | --disable	Enables or disables the shell CLI buffer for CLI history.
--display -shellbuffer	Displays the status of shell CLI buffer for CLI history.
--help	Displays the command usage.

Examples

To display the command history on a switch:

```
switch:admin> clihistory
Date & Time                      Message
Fri Sep 19 09:43:53 2014         admin, FID 10, console, tracedump
Fri Sep 19 09:43:59 2014         admin, FID 10, console, coreshow
Fri Sep 19 09:44:21 2014         admin, , console, firmwareshow
Fri Sep 19 09:44:25 2014         admin, , console, errdump
switch:admin> firmwaredownload -s -p scp 192.0.2.0,user,/dist,userman
Server IP: 192.0.2.0, Protocol IPv4
Checking system settings for firmwaredownload...
Failed to access scp://fvt:**********@192.0.2.0//dist/release.plist
switch:admin> clihistory
Date & Time                      Message
Wed May 23 03:39:37 2012         admin, console, firmwaredownload
```

To enable or disable shell buffer for CLI history:

```
switch:admin> clihistory --enable -shellbuffer
CLI history shell CLI buffer is enabled.
switch:admin> clihistory --display -shellbuffer
CLI history buffer is enabled.
switch:admin> clihistory --disable -shellbuffer
CLI history shell CLI buffer is disabled.
switch:admin>  clihistory --display -shellbuffer
CLI history buffer is disabled.
```

See Also

None

configDefault

Resets the nonpersistent configuration data to factory defaults.

Synopsis

configdefault [**-fid** <*FID*> | **-all** | **-switch**] [**-force**]

Description

Use this command to reset the nonpersistent configuration settings to their factory default values.

Configuration data is grouped into chassis information and switch information. Each configuration type is managed separately. The behavior of **configDefault** depends on the environment in which the command is executed:

- In a Virtual Fabric environment, when executed without operands, this command resets the switch configuration to default values on the current logical switch only. An Admin with chassis permissions can use additional parameters

to reset configuration data for a specified logical switch (**-fid** *FID*) or for all logical switches and the chassis (**-all**). Resetting default FCR configuration data requires base switch to be configured in the chassis.

- In a non-Virtual Fabric environment, when executed without operands, this command resets the switch configuration. When executed with the **-all** operand, **configDefault** resets all of the system's configuration data, including chassis and switch configurations. The **-switch** option resets the switch configuration only. The **-fid** option is not valid.

This command resets nonpersistent configuration parameters only. The following parameters are not affected by this command:

- Ethernet MAC address, IP address, subnet mask, and boot ROM parameters
- IP gateway address
- License keys
- OEM customization
- Product ID and Vendor ID
- SNMP configuration
- System name
- Chassis name
- World wide name
- Zoning configuration (includes aliases, zones, and configurations)
- Security parameters and policies
- User account passwords (includes all user configuration and all built-in accounts)
- Switch PID format
- Ethernet Link Mode

See **configure** and **configureChassis** help files for more information on default values for configuration parameters.

Notes

This command cannot be executed on an enabled switch. You must first disable the switch using **switchDisable** or **chassisDisable**.

Some configuration parameters are cached by the system. To avoid unexpected system behavior, reboot the system after executing **configDefault**.

Note that **configDefault** does not completely remove all FCIP tunnels and GbE IP address information. This may be an issue when attempting to use the same information to create new tunnels or modify the existing ones.

On Gen6 platforms, this command is blocked if encryption is enabled on ports.

This command should be used with caution on Embedded switches, as it can alter the factory default settings. In addition, not all Embedded switches provide the same support for this command.

This command is subject to Virtual Fabric restrictions may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-fid <*FID*>	Specifies the Fabric ID of the logical switch for which to reset the configuration. This operand is valid only in Virtual Fabric mode, and the executing account must have chassis permissions.
-all	Restores all nonpersistent configuration parameters to factory default values (switch and chassis parameters). This command requires chassis permissions.
-switch	Resets the switch configuration only. This operand is not valid in VF mode.
-force	Executes the command without confirmation and reboots the switch. This operand is optional.

Examples

To restore all system configuration parameters to default values:

```
switch:admin> configdefault -all
WARNING:  This is a disruptive operation that requires a switch reboot.
Would you like to continue [Y/N]: y
Executing configdefault...Please wait
Already in Native Mode continuing with configDefault
Committing configuration ... done.
The switch has to be rebooted to allow the changes to take effect.
Switch rebooting .......
Restarting system.
The system is coming up, please wait...
```

To restore all system configuration parameters with **-force** option:

```
switch:admin> configdefault -all -force
            Executing configdefault...Please wait
setting the default config on switch sw_7810_79
Already in Native Mode continuing with configDefault
Committing configuration ... done.
The switch has to be rebooted to allow the changes to take effect.
Switch rebooting .......
Restarting system.
The system is coming up, please wait...
```

See Also

snmpConfig, configure, configureChassis, switchDisable, switchEnable

configDownload

Downloads configuration data to the system.

Synopsis

```
configdownload
configdownload {-p ftp | -ftp} [<host>,<user>,<path>
     [,<passwd>]]
 configdownload {-p scp [-P <port>] | -scp [-cra] [-P <port>]}
     [<host>,<user>,<path>[,<passwd>]]
 configdownload {-p sftp [-P <port>] | -sftp [-P <port>]}
     [<host>,<user>,<path>[,<passwd>]]
 configdownload -all {-p ftp | -ftp} [<host>,<user>,<path>
     [,<passwd>]]
 configdownload -all {-p scp [-P <port>] | -scp [-P <port>]}
     [<host>,<user>,<path>[,<passwd>]]
 configdownload -all {-p sftp [-P <port>] | -sftp [-P <port>]}
     [<host>,<user>,<path>[,<passwd>]]
 configdownload -fid <FID> {-p ftp | -ftp}
     [<host>,<user>,<path>[,<passwd>]]
 configdownload -fid <FID> {-p scp [-P <port>] |
 -scp[-P <port>]} [<host>,<user>,
     <path>[,<passwd>]]
 configdownload -fid <FID> {-p sftp [-P <port>] |
```

```
-sftp [-P <port>]} [<host>,<user>,
    <path>[,<passwd>]]
configdownload -chassis {-p ftp | -ftp} [<host>,<user>,
    <path>[,<passwd>]]
configdownload -chassis {-p scp [-P <port>] |
-scp [-P <port>]} [<host>,<user>,
    <path>[,<passwd>]]
configdownload -chassis {-p sftp [-P <port>] |
-sftp [-P <port>]} [<host>,<user>,
    <path>[,<passwd>]]
configdownload -switch {-p ftp | -ftp} [<host>,<user>,
    <path>[,<passwd>]]
configdownload -switch {-p scp [-P <port>] |
-scp [-P <port>]} [<host>,<user>,
    <path>[,<passwd>]]
configdownload -switch {-p sftp [-P <port>] |
-sftp [-P <port>]} [<host>,<user>,
    <path>[,<passwd>]]
configdownload -all -map {-p ftp | -ftp} [<host>,<user>,
    <path>[,<passwd>]]
configdownload -all -map {-p scp [-P <port>] |
-scp [-P <port>] [-cra]} [<host>,<user>,
    <path>[,<passwd>]]
configdownload -all -map {-p sftp [-P <port>] |
-sftp [-P <port>] [-cra]} [<host>,<user>,
    <path>[,<passwd>]]
configdownload -fid <FID> -map {-p ftp | -ftp} [<host>,<user>,
    <path>[,<passwd>]]
configdownload -fid <FID> -map {-p scp [-P <port>] |
-scp [-P <port>] [-cra]} [<host>,<user>,
    <path>[,<passwd>]]
configdownload -fid <FID> -map {-p sftp [-P <port>] |
-sftp [-P <port>] [-cra]} [<host>,<user>,
    <path>[,<passwd>]]
configdownload -fid <fid> -sfid <fid> -p <ftp>
    <host>,<user>,<path>[,<passwd>]
configdownload -fid <fid> -p scp -sfid <fid>
    [-P <port>] <host>,<user>,
    <path>[,<passwd>]
configdownload -fid <fid> -sfid <fid>
-U <path>
configdownload {-local | -USB | -U} [<filename>]
```

Description

This command downloads configuration parameters to the local system. Two types of configuration files can be downloaded with this command: Virtual Fabric configuration parameters and system configuration parameters. You must download both types of configuration data for the system to behave as expected. You can use FTP or SCP to download configuration files from a remote host, or you can retrieve the configuration files from a predetermined directory on the local system, or from an attached USB device.

User-defined roles must be deleted prior to uploading configuration and any user-defined roles created after the last **configupload** was generated must be reapplied.

Use the **-vf** option to download the Virtual Fabric configuration data. The Virtual Fabric configuration file includes logical switch definitions and Virtual Fabric status (enabled or disabled). The file should be named vf-conf_xxx.txt to distinguish it from the regular system configuration (config.txt). The xxx indicates the platform ID. Virtual Fabric configuration data can only be shared between switches that belong to the same platform type and share the same platform ID. If the platform ID contained in the header of the configuration file does not match the platform ID of the system to which it is downloaded, **configDownload** fails. When you download a vf-conf_xxx.txt file, all attributes defined in this file are downloaded to the system and take effect with the exception of LISL ports. The LISL ports on the system are not affected by this download.

Use the **-all** option to download the system configuration data (which must be downloaded separately from the Virtual Fabric configuration data). It is grouped into chassis information and switch information. Each configuration type is managed separately and the behavior of **configDownload** depends on the environment in which the command is executed and which part of the system configuration you wish to download.

- In a Virtual Fabric environment, when the **configDownload** command is executed without chassis permissions, this command downloads the switch configuration to the current logical switch only. An Admin user with chassis permissions can use additional parameters to perform the following selective configuration downloads:
  - Download the switch configuration to a specified logical switch (**-fid** *FID*).
  - Download the chassis configuration only (**-chassis**).
  - Download the entire configuration including the data for all logical switches and for the chassis (**-all**).

  The interactive version of the command (no operands) prompts for input on only the parameters the user is allowed to execute.
- In a non-Virtual Fabric environment, this command by default downloads the configuration for the default logical switch only. To download the chassis-level configuration only, use the **-chassis** option. To download both the chassis and switch configuration, use the **-all** option. Chassis permissions are required. The **-fid** option is not valid. The **-switch** option is equivalent to issuing the command default (without options).

Perform the following steps to backup and then restore a configuration in a switch using Virtual Fabrics:

1. Run the **configUpload -vf** command followed by the **configUpload -all** command from the old setup.
2. Run the **configDownload -vf** command followed by the **configDownload -all** command in the new setup.

The switch must be disabled for configuration download of all parameters with the exception of SNMP and MAPS.

The following rules apply to configuration download in Virtual Fabric mode:

- When downloading the chassis configuration, only the chassis-related configuration is updated and not the switch configuration so the number of logical switches need not be the same that is present in the system.
- When downloading the switch configuration, the target FID must be defined in both the configuration download and the current system.
- When downloading the switch configuration from a specified source FID to a target FID, the target FID must be defined on the switch and the source FID and associated configuration must be defined in the configuration download. In addition, downloading an SFID configuration resets the target FID ports without warning. Caution is advised when using this option.
- When downloading all configuration parameters, the number of switches defined in the downloaded configuration file must match the number of switches currently defined on the switch. In addition, the following restrictions apply:
  - The switches must be disabled unless you only wish to download SNMP or MAPS parameters.
  - Downloading a configuration file from a system that is not Virtual Fabric-capable to a system in Virtual Fabric mode is not recommended. The configuration is applied to the default switch only, and only to the ports that are part of the default switch.

If an FCS policy is enabled, the following rules and restrictions apply:

- Both [Defined Security Policies] and [Active Security Policies] sections must exist and contain the FCS_POLICY.
- In the [Defined Security Policies] section, at least one member of the FCS_POLICY must be the same as a member in the previous FCS_POLICY.
- In the [Active Security Policies] section, the FCS_POLICY must be exactly the same as the previous FCS_POLICY. Order of members must be maintained.
- After the switch is enabled, if the switch is the primary FCS, then its security and zoning information is propagated to all other switches in the fabric.
- After the switch is enabled, if the switch is a non-FCS or a backup FCS, then its security and zoning information will be overwritten by the primary FCS.

Security parameters and the switch identity cannot be changed by **configDownload**. Parameters such as the switch name and IP address are ignored; they are lines in the configuration file that begin with "boot". Security parameters and version stamp are ignored; they are the lines in the configuration file that begin with "sec".

[License] is only accepted if the boot.mac parameter matches the license ID (WWN) of the switch performing the download; otherwise, it is ignored.

The configuration parameters R_A_TOV, E_D_TOV, WAN_TOV, and MAX_HOPS are interrelated. Assigning a specific value to one or more of these parameters might change the range of allowed values that can be assigned to the other parameters. As a result, you may not be able to set all the values within the range displayed for each parameter. This command validates the modified values of these four parameters and terminates the download operation, if the validation check fails.

This is particularly important when downloading a zoning configuration. Because the new zoning information is added to the current configuration, there might not be any conflicts. If the current zoning configuration is to be replaced, the keyword "clear:" should be inserted into the configuration file immediately before the zoning lines (starting at the line "[Zoning]").

If the configuration file contains the keyword "enable:" followed by a *zone_configuration*, that zoning configuration is enabled in the fabric. If there is no "enable:" keyword in the configuration file or no zoning configuration by that name exists, or if enable fails for any reason (such as dangling aliases), then the following conditions apply:

- The effective configuration remains as it was prior to the configuration download. The "enable:" action is ignored.
- The Defined Configuration changes to reflect the new zoning configuration.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

If the switch is in Access Gateway mode, some of the configuration parameters will take effect only after the switch has been re-enabled with the **switchEnable** command.

F_Port trunking configurations are not saved in the configuration file and will not be restored after a configuration download.

Do not manually edit a configuration file after uploading the file and before downloading the file to a switch. Manual editing bypasses sanity checks for some configuration parameters and results in unpredictable system behavior.

The **configDownload** command prompts for confirmation and issues a notice that "A switch reboot is required for the changes to take effect." A configuration download affects large amount of configuration data, and there is no reliable mechanism to determine, which of these parameters may or may not require a reboot. To ensure that all configuration changes are applied correctly, Brocade strongly recommends that you always reboot the switch after a configuration download.

The configuration download from Fabric OS v9.1.x is not allowed to Fabric OS v9.2.0, if the Application header has F_Port(s) with VMID+ and EX_Port(s)/EX_Port configuration is enabled.

On Gen6 platforms, this command is blocked if encryption is enabled on ports.

Operands

This command has the following operands:

-p ftp | -ftp or -p scp | -scp or -p sftp | -sftp	Specifies the data transmission protocol as either file transfer protocol (FTP), secure copy protocol (SCP), or secure FTP (SFTP). If no protocol is specified, the protocol defaults to FTP.
-P <*port*>	Specifies the server port number for download. Valid protocols are **scp** (secure copy protocol) and **sftp** (secure file transfer protocol). The valid range is from 1 through 65535.
-cra	Enables Challenge Response Authentication (CRA). CRA is supported only with the SCP protocol.
-vf	Downloads the Virtual Fabric configuration (vf-conf_xx.txt) instead of the regular system configuration. The vf-con_xx.txt file contains a listing of logical switches configured on the platform specified by the platform ID (xx) and other Virtual Fabric parameters. You cannot use the **-vf** option with any of the system configuration upload options (**-fid**, **-chassis**, **-all**).
-all	Downloads all configuration data, including chassis and switch configuration data.
-fid <*FID*>	Downloads the switch configuration to a logical switch specified by its fabric ID. This operand is valid only in a Virtual Fabric environment and requires chassis permissions.
-sfid <*FID*>	Downloads the switch configuration to a logical switch specified by its fabric ID. The FID must be defined on the switch, and the source FID must be defined in the downloaded configuration file.
-chassis	Downloads the chassis configuration only.
-switch	Downloads the switch configuration only. This operand is valid only in non-VF mode.
-map	Downloads the port-to-area addressing mode configuration files. The **-chassis** and **-switch** operands are exclusive and may not be combined with this operand. Refer to *Brocade Fabric OS Administration Guide* for more information.
<*host*>	Specifies the name or the IP address of the external host, from which to download the configuration. IPv4 and IPv6 addresses are supported. To be able to mention the FTP server by name, you need to set up two DNS servers with **dnsConfig**. Quotation marks are optional.
<*user*>	Specifies the login name for the external host. Quotation marks are optional. The user name can include upto 383 characters. It must begin with a letter and spaces are not permitted. The characters that do not support are tilde (~), single quotation mark ('), exclamation mark (!), number sign (#), dollar sign($), percentage (%), caret (^), ampersand(&), asterisk(*), plus sign (+), equals sign (=), pipe (|), parenthesis (), curly braces {}, square brackets [], double quotation mark ("), colon (:), comma (,), question mark (?), semicolon (;), greater than (>), and less than (<). Use at (@) or backslash (\\) in username to separate username and domain.
<*path*>	Specifies the file name and path of the configuration file. When used with the **-map** option, this parameter specifies a folder that contains all port-to-area mapping files. Absolute path names may be specified using a forward slash (/). Relative path names search for the file in the login account's home directory on UNIX hosts and in the directory on which the FTP server is running on Windows hosts. This operand is valid only when the file is downloaded from an external host. Quotation marks are optional.
<*passwd*>	Specifies the account password. Quotation marks are optional. Beginning with Fabric OS v9.2.2, the <*passwd*> is not a valid parameter and will result in command failure or error if used.
-local	Downloads a specified configuration file from a predetermined directory on the local chassis.
-USB | -U	Downloads a specified configuration file from a predetermined directory on an attached USB device.
<*filename*>	Specifies the name of the configuration file to be downloaded. This parameter can be used only with the **-local** or **-USB** option, each of which retrieves files from a predetermined directory on the local chassis or on an attached USB device. Absolute path names are not permitted. Quotation marks are optional.

Examples

To download the switch configuration file interactively to the current logical switch from a local directory (no chassis permissions):

```
switch:admin> configdownload
Protocol (scp, ftp, sftp, local) [ftp]:
Server Name or IP Address [host]: xxx.xxx.xxx.xxx
User Name [user]: admin
Path/Filename [<home dir>/config.txt]:
Section (all|chassis|FID# [all]):
                *** CAUTION ***

This command is used to download a backed-up configuration
for a specific switch.  If using a file  from a  different
switch, this file's configuration  settings will  override
any current switch settings.   Downloading a configuration
file, which was uploaded  from a different type of switch,
may cause the switch to fail.

A switch reboot is required for the changes to take effect.

Please make sure all the switches are disabled by
using chassisdisable command. Downloading configuration
to an online switch may result in some configuration not
being downloaded to that switch.

configDownload operation may take several minutes
to complete for large files.
Do you want to continue [y/n]: y
Password: *******
Activating configDownload: Switch is disabled
configDownload complete: All config parameters are downloaded
```

To download the switch configuration file non interactively:

```
switch:admin> configdownload -p scp -P 22 10.20.30.40,user,
/home/user/config.txt,XXXXXX

                        *** CAUTION ***

  This command is used to download a backed-up configuration
  for a specific switch.  If using a file  from a  different
  switch, this file's configuration  settings will  override
  any current switch settings.   Downloading a configuration
  file, which was uploaded  from a different type of switch,
  may cause this switch to fail.

  A switch reboot is required for the changes to take effect.

  Please make sure all the switches are disabled by
  using "chassisdisable" command. Downloading configuration
  to an online switch may result in some configuration not
  being downloaded to that switch.

  Please reboot the system for the configuration to be effective

  configDownload operation may take several minutes
```

```
  to complete for large files.
  Do you want to continue [y/n]: y

Doing configDownload on switch 128...

Activating configDownload without disabling switch:
NOTE: Not all configuration parameters will be downloaded with switch online
** :
                            Configuration could not be saved

With the supplied configuration data, the switch must first
be disabled, using the "switchDisable" command.
```

To download the switch configuration data to the current logical switch from an external FTP server (no chassis permissions):

```
switch:admin> configdownload -ftp xxx.xxx.xx.xxx,
user,config.txt
```

To download all system configuration data for the chassis and all logical switches (requires chassis permissions):

```
switch:admin> configdownload -all -ftp xxx.xxx.xx.xxx,
user,config.txt
```

To download the switch configurations to a logical switch with FID 8 from an attached USB device (requires chassis permissions):

```
switch:admin> configdownload -fid 8 -USB config.txt
```

To download the switch configurations belonging to a logical switch with FID 10 to a logical switch with FID 15 from an attached USB device (requires chassis permissions):

```
switch:admin> configdownload -fid 15 -sfid 10
-USB config_fid8.txt
                          *** CAUTION ***

  This command is used to download a backed-up configuration
  for a specific switch.  If using a file  from a  different
  switch, this file's configuration  settings will  override
  any current switch settings.   Downloading a configuration
  file, which was uploaded  from a different type of switch,
  may cause this switch to fail.

  A switch reboot is required for the changes to take effect.

  Please make sure all the switches are disabled by
  using "chassisdisable" command. Downloading configuration
  to an online switch may result in some configuration not
  being downloaded to that switch.

  Please reboot the system for the configuration to be effective

  configDownload operation may take several minutes
  to complete for large files.
  Do you want to continue [y/n]: y
```

```
Doing configDownload on switch 15...

Activating configDownload: Switch is disabled


configDownload complete: All selected config parameters are downloaded
```

To download the Virtual Fabric configuration file using secure FTP:

```
switch:admin> configdownload -vf -p sftp
xxx.xxx.xx.xxx,user,/temp/vf-conf_66.txt
```

To download the switch configuration non-interactively from a switch using the server port number:

```
switch:admin> configdownload -all -scp -P 22
"xxx.xxx.xx.xxx,user,/home/user/config.txt"
```

To download the Virtual Fabric configuration file:

```
switch:admin> configdownload -vf
Protocol (sftp, local): sftp
Do you want to continue with CRA (Y/N) [N]:
SFTP Server Port Number [22]:
Server Name or IP Address [host]: xx.xx.xx.xx
User Name [user]: username
Path/Filename [<home dir>/config.txt]:

                        *** CAUTION ***

  This command is used to download the VF configuration to the
  switch.  Afterwards, the switch will be automatically rebooted
  and the new VF settings will be used.  You will then need to
  run configdownload again to install the configuration(s) for
  any logical switch(s) that are setup in the new VF configuration.

  Please note that Virtual Fabrics and Admin Domains are mutually
  exclusive and are not supported at the same time on a switch.
  If any Admin Domains are configured on the switch, the configdownload
  operation will fail.

  Do you want to continue [y/n]: y
  Password: *******
configDownload complete : VF config parameters are downloaded
Rebooting! Wed Jan  4 14:04:20 IST 2023

Broadcast message from admin@C01_G720 (pts/1) (Wed Jan  4 14:04:20 2023):

The system is going down for reboot NOW!
```

See Also

configDefault, configList, configShow, configUpload, configure, configRemove

configList

Lists uploaded configuration files.

Synopsis

```
configlist {-local | -USB | -U}
```

Description

This command displays a list of names, sizes, and creation dates of configuration files saved on the local chassis or on an attached USB device. These files are created when the **configUpload** command is executed with the **-local** or the **-USB** option.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-local	Displays the list of configuration files on the local chassis.
-USB | -U	Displays the list of configuration files on the attached USB device.

Examples

To display a list of configuration files stored on the local chassis:

```
switch:admin> configlist -local
config.txt        25679     2007 Jan 02 15:16
config2.txt       25679     2007 Jan 06 15:16
next_cfg.txt      20977     2007 Jan 18 15:16
```

See Also

configDownload, configUpload, configShow, configRemove

configRemove

Deletes a saved configuration file.

Synopsis

```
configremove {-local | -USB | -U} [<filename>]
```

Description

This command deletes a configuration file that was previously saved to the local chassis or to an attached USB device by using the **configUpload** command.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-local	Removes a configuration file that was previously created by **configUpload -local** from the local chassis.
-USB | -U	Removes a configuration file that was previously created by **configUpload -USB** from an attached USB device.
<filename>	Specifies the configuration file to be removed. If the <*file*> option is omitted, the command prompts for a file name.

Examples

To remove a configuration file from the local chassis:

```
switch:admin> configremove -local first_config.txt
```

To remove a configuration file from an attached USB device without specifying a filename:

```
switch:admin> configremove -USB
File Name [config.txt]: second_config.txt
```

See Also

configDownload, configUpload, configList, configShow

configShow

Displays system configuration settings.

Synopsis

```
configshow
configshow {-all | -fid <FID>
| -chassis | -switch | -local <file>
| -USB <file> | -U <file>}
   [-pattern "<pattern>"]
configshow {-help | -h}
```

Description

Use this command to display system configuration settings. Some but not all of these parameters are set by the **configure** and **configureChassis** commands.

Configuration data is grouped into chassis information and switch information. Each configuration type is managed separately. The behavior of **configShow** depends on the environment in which the command is executed:

- In a Virtual Fabric environment, when executed without operands, this command displays the switch configuration for the current logical switch. An Admin with chassis permissions can use additional parameters to display configuration data for a specified logical switch (**-fid** *FID*), for the chassis (**-chassis**), or for all logical switches and the chassis (**-all**).
- In a non-Virtual Fabric environment, when executed without operands, this command displays the switch configuration. When executed with the **-all** operand, **configShow** displays all of the system's configuration data, including chassis and switch configuration data. The **-chassis** option displays the chassis configuration only. The **-switch** option displays the switch configuration only. The **-fid** option is not valid.

Notes

Not all values displayed are applicable to all system models and configurations.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

The following operands are optional:

-pattern "<*pattern*>"	Specifies a text string, enclosed in double quotation marks, that limits the output of the command to only those entries that contain the pattern. Use of wildcards and other common regular expression operators is not supported. Some configuration settings do not display when filtered. When in doubt, use the command without the **-pattern** operand. Executing **configShow -pattern** without further operands is not recommended and can cause unspecified behavior.
-all	Displays all configuration data including chassis and switch configuration.
-fid <*FID*>	Displays configuration data for a logical switch specified by its fabric ID. This option is valid only in a Virtual Fabric environment and requires chassis permissions
-chassis	Displays configuration data for the chassis only. This option is valid only in a Virtual Fabric environment and requires chassis permissions
-switch	Displays the switch configuration only. This option is valid only in a Non-Virtual Fabric environment.
-local <*file*>	Displays the content of a configuration file that was previously created by **configUpload** and stored on the chassis. The output can be optionally filtered by **-pattern** "*pattern*". If *file* is omitted, the command prompts for a file name. The output format when **-local** is specified matches that of **configUpload** and contains a superset of the information provided when **-local** is not specified.
-USB <*file*> | -U <*file*>	Displays the content of a configuration file that was previously created by **configUpload** and stored on an attached USB device. The output can be optionally filtered by **-pattern** "*pattern"*. If *file* is omitted, the command prompts for a file name. The output format when **-USB** is specified matches that of **configUpload** and contains a superset of the information provided when **-USB** is not specified.

Examples

To display all configuration data on a Virtual Fabric-enabled system:

```
switch :admin> configshow -all
[Configuration upload Information]
Configuration Format = 4.0
Minimum Compatible Format = 3.0
Excluding Format = 0.0
date = Fri Sep 25 10:37:04 2020
FOS version = v9.2.0
Number of LS = 1
[Chassis Configuration Begin]

[fcRouting]
fcRoute.backboneFabricId:128
fcRoute.fcrState:2
fcRoute.sifl:0
fcRoute.pathBWBalance:0
fcRoute.spm:1
fcRoute.allowxisl:1
fcRouteParam.maxLsanCount:3000
fcRoute.xlate.persistxdState:1
fcRouteParam.lsan.tagCnt:0

[Chassis Configuration]
authspec.mode:0
```

```
chassis.licenseID:10:00:c4:f5:7c:4e:07:6c
SB_License.FTR_10G.slots:0x0
SB_License.FTR_AE.slots:0x0
SB_License.FTR_AFA.slots:0x0
SB_License.FTR_UPG1.slots:0x0
SB_License.FTR_UPG2.slots:0x0
X509v3.validation:Basic
audit.cfg.class:1,2,3,4,5,7,8,9,10
audit.cfg.severity:4
audit.cfg.state:1
auditlog.quiettime.dow:0
auditlog.quiettime.enable:0
auditlog.quiettime.endtime:
auditlog.quiettime.starttime:
cfgload.cfgfile_suffix:0
cfgload.firmware_sync:1
cfgload.secure:0
cfgload.signed:0
cfgtest.switchdisable:1
cfgtest.vf.all:1
cfgtest.vf.bs:1
cfgtest.vf.ds:1
(output truncated)
```

To filter the content to display only the password configuration:

```
switch :admin> configshow -all -pattern "passwdcfg"
passwdcfg.adminlockout:0
passwdcfg.allowuser:Yes
passwdcfg.charset:0
passwdcfg.digits:0
passwdcfg.hash:sha512
passwdcfg.history:1
passwdcfg.lockoutduration:30
passwdcfg.lockoutthreshold:0
passwdcfg.lowercase:0
passwdcfg.manualHashChange:0
passwdcfg.maxpasswordage:0
passwdcfg.minDiff:0
passwdcfg.minlength:8
passwdcfg.minpasswordage:0
passwdcfg.oldpasswd:0
passwdcfg.perUserPwdCfgCount:0
passwdcfg.punctuation:0
passwdcfg.repeat:1
passwdcfg.reverse:0
passwdcfg.sequence:1
passwdcfg.status:0
passwdcfg.uppercase:0
passwdcfg.warning:0
```

To display switch configuration data for FID 128:

```
switch :admin> configshow -fid 128
```

```
[Switch Configuration Begin : 0]
SwitchName = X6-4
Fabric ID = 128

[Boot Parameters]
boot.name:X6-4
boot.ipa:192.0.2.0
boot.mac:10:00:c4:f5:7c:2d:0c:c0
boot.device:eth0
boot.gateway.ipa:10.20.10.1

[Configuration]
Custom.index:0
acl.clear:0
ag.port.nfportfailback:0x0
ag.port.nfportfailover:0x0
ag.port.nsfporttopo.0:0x0
ag.port.nsfporttopo.1:0x0
ag.port.nsfporttopo.10:0x0
ag.port.nsfporttopo.11:0x0
ag.port.nsfporttopo.12:0x0
ag.port.nsfporttopo.13:0x0
ag.port.nsfporttopo.14:0x0
ag.port.nsfporttopo.15:0x0
ag.port.nsfporttopo.16:0x0
ag.port.nsfporttopo.17:0x0
ag.port.nsfporttopo.18:0x0
ag.port.nsfporttopo.19:0x0
ag.port.nsfporttopo.2:0x0
ag.port.nsfporttopo.20:0x0
ag.port.nsfporttopo.21:0x0

(output truncated)
```

See Also

configure, configureChassis, configDownload, configUpload, configList, configRemove, diagDisablePost, diagEnablePost, ipAddrShow

configUpload

Uploads system configuration data to a file.

Synopsis

```
configupload
configupload {-p ftp | -ftp} [<host>,<user>,<path>
     [,<passwd>]]
 configupload {-p scp [-P <port>] | -scp [-cra] [-P <port>]}
     [<host>,<user>,<path> [,<passwd>]]
 configupload {-p sftp [-P <port>] | -sftp [-P <port>]}
     [<host>,<user>,<path> [,<passwd>]]
 configupload -all {-p ftp | -ftp} [<host>,<user>,<path>
     [,<passwd>]]
```

```
configupload -all {-p scp [-P <port>] | -scp [-P <port>]}
    [<host>,<user>,<path> [,<passwd>]]
configupload -all {-p sftp [-P <port>] | -sftp [-P <port>]}
    [<host>,<user>,<path> [,<passwd>]]
configupload -fid <FID> {-p ftp | -ftp}
    [<host>,<user>,<path> [,<passwd>]]
configupload -fid <FID> {-p scp [-P <port>] |
-scp[-P <port>]} [<host>,<user>,
    <path> [,<passwd>]]
configupload -fid <FID> {-p sftp [-P <port>] |
-sftp [-P <port>]} [<host>,<user>,
    <path> [,<passwd>]]
configupload -chassis {-p ftp | -ftp} [<host>,<user>,
    <path> [,<passwd>]]
configupload -chassis {-p scp [-P <port>] |
-scp [-P <port>]} [<host>,<user>,
    <path> [,<passwd>]]
configupload -chassis {-p sftp [-P <port>] |
-sftp [-P <port>]} [<host>,<user>,
    <path> [,<passwd>]]
configupload -switch {-p ftp | -ftp} [<host>,<user>,
    <path> [,<passwd>]]
configupload -switch {-p scp [-P <port>] |
-scp [-P <port>]} [<host>,<user>,
    <path> [,<passwd>]]
configupload -switch {-p sftp [-P <port>] |
-sftp [-P <port>]} [<host>,<user>,
    <path> [,<passwd>]]
configupload -all -map {-p ftp | -ftp} [<host>,<user>,
    <path> [,<passwd>]]
configupload -all -map {-p scp [-P <port>] |
-scp [-P <port>] [-cra]} [<host>,<user>,
    <path> [,<passwd>]]
configupload -all -map {-p sftp [-P <port>] |
-sftp [-P <port>] [-cra]} [<host>,<user>,
    <path> [,<passwd>]]
configupload -fid <FID> -map {-p ftp | -ftp} [<host>,<user>,
    <path> [,<passwd>]]
configupload -fid <FID> -map {-p scp [-P <port>] |
-scp [-P <port>] [-cra]} [<host>,<user>,
    <path> [,<passwd>]]
configupload -fid <FID> -map {-p sftp [-P <port>] |
-sftp [-P <port>] [-cra]} [<host>,<user>,
    <path> [,<passwd>]]
configupload {-local | -USB | -U} [<filename>]
```

Description

This command uploads configuration data to a file. Two types of configuration files can be uploaded with this command: Virtual Fabric configuration parameters and system configuration parameters.

Use the **-vf** option to upload Virtual Fabric configuration parameters. The Virtual Fabric configuration includes logical switch definitions and Virtual Fabric status (enabled or disabled). The file should be named vf-conf_xxx.txt to distinguish it from the regular system configuration (config.txt). The xxx indicates the platform ID specified in the header of the configuration file. The platform ID is the same as the first three digits of the "switchType" parameter displayed by **switchShow**. Virtual Fabric configuration data can only be shared between switches that belong to the same platform type and share the same platform ID. Refer to **configDownload** help for more information on the Virtual Fabric configuration.

The system configuration data is uploaded separately. It is grouped into chassis information and switch information. Each configuration type is managed separately and the behavior of **configUpload** depends on the environment in which the command is executed and which part of the system configuration you wish to upload.

- In a Virtual Fabric environment, when executed without chassis permissions, this command uploads the current logical switch configuration only. An Admin user with chassis permissions can use additional parameters to perform the following selective configuration uploads:
  - Upload the switch configuration of a specified logical switch (**-fid** *FID*).
  - Upload the chassis configuration only (**-chassis**).
  - Upload the entire system configuration including the data for all logical switches and for the chassis (**-all**).
  - Upload the switch configuration only in Non-VF mode(**-switch**).

  The interactive version of the command (no operands) prompts for input on only the parameters the user is allowed to execute.
- In a non-Virtual Fabric environment, this command by default uploads the configuration for the default logical switch only. To upload the chassis-level configuration only, use the **-chassis** option. To upload both the chassis and switch configuration, use the **-all** option. Chassis permissions are required. The **-fid** option is not valid. The **-switch** option is equivalent to issuing the command default (without options).

Perform the following steps to backup and then restore a configuration in a switch using Virtual Fabrics:

1. Run the **configUpload -vf** command followed by the **configUpload -all** command from the old setup.
2. Run the **configDownload -vf** command followed by the **configDownload -all** command in the new setup.

You can use the file transfer protocol (FTP), the secure copy protocol (SCP), or secure FTP (SFTP) to upload configuration files to an external host, or you can save the configuration in a predetermined directory on the local chassis or on an attached USB device. If the specified file already exists, this command prompts you to overwrite the file. Specify **-force** to overwrite the file without confirmation. When the local chassis is chosen as the destination, the resulting file is written to both primary and secondary partitions, and on enterprise-class platforms, to both Active and Standby Control Processors (CPs).

Refer to the *Brocade Fabric OS Administration Guide* for information on backward compatibility and on the content of the configuration file.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

F_Port trunking configurations are not saved in the configuration file and will not be restored after a configuration download.

Do not manually edit a configuration or a vf-conf.xx file after uploading the file and before downloading the file to a switch. Manual editing bypasses sanity checks for some configuration parameters and results in unpredictable system behavior.

Operands

This command has the following operands:

-p ftp | -ftp or -p scp | -scp or -p sftp | -sftp	Specifies the data transmission protocol as either file transfer protocol (FTP), secure copy protocol (SCP), or secure FTP (SFTP). If no protocol is specified, the protocol defaults to FTP.
-P *port*	Specifies the server port number for upload. Valid protocols are **scp** (secure copy protocol) and **sftp** (secure file transfer protocol). The valid range is from 1 through 65535.
-cra	Enables Challenge Response Authentication (CRA). CRA is supported only with the SCP protocol.
-vf	Uploads the Virtual fabric configuration to a file. You must specify a filename when uploading this file. It is recommended to name this file vf-conf_xx.txt (where xx indicates the platform ID) to distinguish this file from the system configuration (config.txt). Use **switchShow** to determine the platform ID of the system. The platform ID in the header of the configuration file is the same as the first two digits of the switchType parameter in the **switchShow** output. You cannot use the **-vf** option with any of the regular configuration upload options (**-fid**, **-chassis**, **-all**).
-fid <*FID*>	Uploads switch configuration data from a logical switch specified by its fabric ID. This parameter is valid only in a Virtual Fabric environment and requires chassis permissions.
-chassis	Uploads chassis configuration only.
-all	Uploads all system configuration data including chassis and switch configuration for all logical switches.
-switch	Uploads the switch configuration only. This operand is not valid in VF mode.
-map	Uploads the port-to-area addressing mode configuration files. The **-chassis** and **-switch** operands are exclusive and may not be combined with this operand. Refer to *Brocade Fabric OS Administration Guide* for more information.
<*host*>	Specifies the name or the IP address of the external host to which to upload the configuration. To be able to mention the FTP server by name, you need to set up one or more DNS servers with **dnsConfig**. Quotation marks are optional.
<*user*>	Specifies the login name for the external host. Quotation marks are optional. The user name can include upto 383 characters. It must begin with a letter and spaces are not permitted. The characters that do not support are tilde (~), single quotation mark ('), exclamation mark (!), number sign (#), dollar sign($), percentage (%), caret (^), ampersand(&), asterisk(*), plus sign (+), equals sign (=), pipe (|), parenthesis (), curly braces {}, square brackets [], double quotation mark ("), colon (:), comma (,), question mark (?), semicolon (;), greater than (>), and less than (<). Use at (@) or backslash (\\) in username to separate username and domain.
<*path*>	Specifies the file name and path of the configuration file. When used with the **-map** option, this parameter specifies a folder that contains all port-to-area mapping files. Absolute path names may be specified using a forward slash (/). Relative path names upload the file to the login account's home directory on UNIX hosts and into the directory on which the FTP server is running on Windows hosts. This operand is valid only when the file is uploaded to an external host. Quotation marks are optional.
<*passwd*>	Specifies the account password. Quotation marks are optional. Beginning with Fabric OS v9.2.2, the <*passwd*> is not a valid parameter and will result in command failure or error if used.
-local	Uploads a specified configuration file to a predetermined directory on the local chassis. This option requires a file name.
-USB | -U	Uploads a specified configuration file to a predetermined directory on an attached USB device. This option requires a file name.
<*filename*>	Specifies the file name. Quotation marks are optional. This parameter is valid only with the **-local** or **-USB** options, each of which stores files in a predetermined directory on the local chassis or on an attached USB device. Absolute path names are not permitted.
-force	Overwrites an existing file without confirmation. This parameter is valid only with the **-local** or **-USB** options.

When invoked without operands or without <*host*> or <*filename*> parameters, **configUpload** runs in interactive mode.

Examples

To upload the switch configuration interactively from a switch that is not enabled for Virtual Fabrics:

```
switch:admin> configupload
Protocol (scp, ftp, sftp, local) [ftp]: sftp
Server Name or IP Address [host]: xxx.xx.xxx.xxx
User Name [user]: user
File Name [<home dir>/config.txt]:
Section (all|chassis|switch [all]):
Password: ******

configUpload complete: All config parameters are uploaded
```

To upload the switch configuration non interactively from a switch that is not enabled for Virtual Fabrics:

```
switch:admin> configupload -p scp -P 22 10.20.30.40,user,
/home/user/config.txt,XXXXX

configUpload complete: All selected config parameters are uploaded
```

To upload the switch configuration that belongs to a logical switch with FID 100:

```
switch:admin> configupload
Protocol (scp, ftp, sftp, local) [ftp]: sftp
Server Name or IP Address [host]: xxx.xxx.xxx.xxx
User Name [user]: user
File Name [<home dir>/config.txt]: config.fid100.txt
Section (all|chassis|FID# [all]): 100
Password: ******

configUpload complete: All config parameters are uploaded
```

To upload the configuration for the entire chassis to a local file from the command line forcing an overwrite:

```
switch:admin> configupload -chassis -local  \
     -force config.txt

configUpload complete: All config parameters are uploaded
```

To upload the configuration for the current logical switch to an external FTP server:

```
switch:admin> configupload -ftp xxx.xxx.xx.xxx, \
     user,config.txt
```

To upload all system configuration data to an external FTP server:

```
switch:admin> configupload -all -ftp  \
     xxx.xxx.xx.xxx,user,config.txt
```

To upload the system configuration file for a logical switch with FID 8 to an attached USB device:

```
switch:admin> configupload -fid 8 \
     -USB config.txt
```

To upload the Virtual Fabric configuration of the current platform to an external FTP server:

```
switch:admin> configupload -vf -p ftp  \
     xxx.xxx.xx.xxx,user,/temp/vf-conf.66.txt
```

To upload the switch configuration non-interactively from a switch using the server port number:

```
switch:admin> configupload -all -scp -P 22  \
     "xxx.xxx.xx.xxx9,user,/home/user/config.txt" \
```

See Also

configDefault, configDownload, configShow, configList, configRemove, configure, configureChassis

configure

Changes switch configuration settings.

Synopsis

```
        configure
        configure {--query | --show}
     [-module <module_name>
     [-key <key_name>]]
        configure --set -module <module_name>
             -key <key_name> -value <value>
        configure --default -module <module_name>
             -key <key_name>
```

Description

Use this command to change switch configuration settings.

The command switches to interactive mode if no command option (**--query**, **--show**, **--set**, or **--default**) is provided.

Configuration data is grouped into chassis information and switch information. Each configuration type is managed separately. For information on file format and specific parameters contained in each section, see **configUpload** help page.

The behavior of the **configure** command depends on the environment in which the command is executed:

- In a Virtual Fabric environment, the **configure** command sets switch configuration parameters for the current and few chassis-wide configurations. If a switch or chassis is configured with multiple logical switches, you must configure each logical switch separately. Use the **setContext** command to change the current logical switch context.
- In a non-Virtual Fabric environment, the **configure** command sets switch configuration parameters.

To configure chassis-wide parameters, use the **configureChassis** command.

The following switch configuration parameters can be set with the **configure** command:

- Switch fabric parameters
- Virtual channel parameters
- F_Port login parameters
- Zoning operation parameters
- Remote State Change Notifications (RSCN) transmission mode
- System Services settings
- Portlog Events enable or disable settings
- D-Port parameters
- RDP Polling Cycle
- Web Tools attributes

To access all parameters controlled by this command, you must disable the switch using the **switchDisable** command. If executed on an enabled switch, only a subset of attributes are configurable. Menu displays may vary depending on the hardware platform.

The **configure** command runs in interactive mode and presents you with a series of hierarchical menus. Each top-level menu and its associated submenus consist of a text prompt, a selection of valid values, and a default value (in brackets).

The following keys control the execution of the command:

Return	When entered at a prompt with no preceding input, the command accepts the default value (if applicable) and moves to the next prompt.
Interrupt (Ctrl-C)	Aborts the command immediately and ignores all changes made.
End-of-file (Ctrl-D)	When entered at a prompt with no preceding input, terminates the command and saves changes made.

The following parameters can be modified with the **configure** command:

Fabric Parameters

Fabric settings control the overall behavior and operation of the fabric. Some of these settings, such as the domain, are assigned automatically and may differ from one switch to another in a given fabric. Other parameters, such as buffer-to-buffer credit or timeout values, can be modified to suit specific applications or operating environments but must be in agreement among all switches to allow formation of the fabric.

The following fabric settings in a Brocade Gen 6 chassis can be modified (* = multiplication symbol)

```
Field                       Type      Default Range
-------------------------------------------------------
Domain                      Number    1       1-239
Enable a 256 Area Limit     Number    0       0 to 2
WWN Based persistent PID    Boolean   no      yes/no
Allow XISL Use              Boolean   yes     yes/no
R_A_TOV                     Number    10000   E_D_TOV * 2
                                             to 120000
E_D_TOV                     Number    2000    1000 to
                                             R_A_TOV/2
WAN_TOV                     Number    0       0 to R_A_TOV/4
MAX_HOPS                    Number    7       7 to 19
Data Field Size             Number    2112    256 to 2112
Sequence Level Switching    Boolean   0       0 or 1
Disable Device Probing      Boolean   0       0 or 1
Suppress Class F Traffic    Boolean   0       0 or 1
Per-frame Route Priority    Boolean   0       0 or 1
Long Distance Fabric        Boolean   0       0 or 1
```

```
BB Credit                   Number    16      1 to 27
Insistent Domain ID Mode    Boolean   no      yes/no
Disable Default PortName    Boolean   no      yes/no
Display FDMI Host Name      Boolean   no      yes/no
Disable Preserved Domain
     ID Mode                Boolean   no      yes/no
Dynamic Portname            Boolean   off     on/off
Edge hold time              Number    220     80 to 500
Remote Fosexec              Boolean   on      on/off
High Integrity Fabric Mode  Boolean   on      on/off
```

Fabric parameters are defined as follows:

Domain The domain number uniquely identifies a switch in a fabric. This value is automatically assigned by the fabric. The range is 1-239.

Enable 8-bit Dynamic Area Mode Dynamic Area Mode is disabled by default. When enabled, Dynamic Area Mode supports both static and dynamic area assignment. Use the **portAddress** command to perform a static assignment of an area to a given port. In Dynamic Area Mode, areas are dynamically assigned to the ports (up to a 255 limit). Port area assignments are persistent; however, disabling Dynamic Area Mode with **configure** resets the area assignments. This feature is configurable only on the default switch.

Enabling Dynamic Area Mode fails under one or more of the following conditions:

- The number of ports in the default partition exceeds 255.
- An AP blade with FL ports is present in the chassis.

WWN Based persistent PID When enabled, this feature supports both dynamic and static WWN-based PID assignment. In dynamic PID binding, the first area assigned to a device when it logs in is bound to the device WWN and remains persistent through subsequent logins. Every time the device logs into the switch, it is guaranteed to get the same PID. Alternately, you can use the **wwnAddress** command to create a static WWN-based PID assignment. In either case, the WWN-based persistent PID feature must be enabled through **configure**. The feature is disabled by default; it is dependent on Dynamic Area Mode being enabled.

D-Port Parameters Disables or enables the D_Port parameters on the switch.

Dynamic D_Port Disables or enables Dynamic D_Port mode configuration on the switch. By default, Dynamic D_Port mode is ON. When Dynamic D_Port mode is ON, the port may dynamically go into D_Port mode based on external request from remote HBA or device port. After the D_Port tests are complete, the port may automatically switch to operate as an F_Port. This option is not supported in AG mode.

On Demand D_Port Disables or enables On-Demand D_Port mode configuration on the switch. By default, On-Demand D_Port mode is OFF.

RDP Polling Cycle Displays the Switch Driver timer routine for polling. The switch need not be disabled to configure this variable.

Allow XISL Use An extended interswitch link (XISL) is an interswitch link (ISL) that connects the logical switch to the base switch and carries traffic for multiple logical fabrics. This feature is supported only on Virtual Fabric-aware platforms under the following conditions: Virtual Fabrics must be enabled on the switch, and the switch cannot be a base switch. This feature is enabled by default (yes=enabled).

You do not need to disable the logical switch before changing the value of this parameter. Turning off XISL use requires confirmation because all LISLs will be removed upon execution. If the logical switch is enabled and is part of an edge fabric connected to an FCR, this parameter cannot be turned on. If the logical switch is disabled or it is not yet part of an edge fabric, this parameter can be turned on. However, execution may cause edge fabric segmentation if the EX_Port connected to the edge fabric is disabled while the logical switch is enabled or connected to the edge fabric.

The VMID+ feature is mutually exclusive with extended ISL (XISL) usage on the logical switches running pre-v9.2.0 firmware. Beginning with Fabric OS v9.2.0, VMID+ feature can be used along with extended ISL (XISL) usage on the logical switches. For more information on configuring XISL usage, refer to the

Configuring a Logical Switch for XISL Use section of the *Brocade Fabric OS Administration Guide*. Ensure you adhere to this restriction before donwloading a configuration.

Disable FID Check

If fabric ID (FID) check is disabled, the fabric ignores the Fabric Identifier conflict with the neighboring switch during fabric formation. By default, FID check is enabled. If the fabric detects a FID conflict, it disables the E_Port with a "Fabric ID conflict" message. This parameter is configurable only if the switch is Virtual Fabric-aware and Virtual Fabric is enabled on the switch.

Enable 256 Area limit

The 256 area limit allows the partition to be configured for 8-bit addressing rather than the default 10-bit addressing. Each port in this partition is given a unique area represented by the middle 8 bits of the PID. Valid values include the following:

0 No limit is imposed on the area. This is the default value. The partition is configured for 10-bit addressing and supports up to 1800 ports.

1 The unique area assignments begin at zero regardless of where the port is physically located. This allows FICON users to make use of high port count port blades with port indexes greater than 256.

2 The unique area assignments are based on the port index. This mode does not allow FICON users to make use of ports with an index greater than 256 (high ports of a high port count blade), but this mode is compatible with domain-index zoning. This parameter is configurable only if the switch is Virtual Fabric-aware and Virtual Fabric is enabled on the switch.

R_A_TOV

The resource allocation time out value specified in milliseconds. This variable works with the variable E_D_TOV to determine switch actions when presented with an error condition.

Allocated circuit resources with detected errors are not released until the time value has expired. If the condition is resolved prior to the time out, the internal time-out clock resets and waits for the next error condition.

E_D_TOV

Error detect time out value specified in milliseconds. This timer is used to flag a potential error condition when an expected response is not received within the set time limit. If the time for an expected response exceeds the set value, then an error condition occurs.

WAN_TOV

Wide area network time out value specified in milliseconds. This timer is the maximum frame time out value for a WAN, if any, interconnecting the Fibre Channel islands.

MAX_HOPS

Maximum hops is an integer that denotes the upper limit on the number of hops a frame might have to traverse to reach any destination port from any source port across the fabric.

Note that the R_A_TOV, E_D_TOV, WAN_TOV, and MAX_HOPS configuration parameters are interrelated. Assigning a specific value to one or more of these parameters can change the range of allowed values that can be assigned to the other parameters. As a result, you may not be able to set all the values within the range displayed against each parameter. To reduce problems, the configuration utility validates the modified parameter values and prompts you to re-enter some values, if the validation check fails.

Data Field Size

The data field size specifies the largest possible value, in bytes, for the size of a type 1 (data) frame. The switch advertises this value to other switches in the fabric during construction of the fabric as well as to other devices when they connect to the fabric. Setting this parameter to a value smaller than 2112 might result in decreased performance.

Sequence-Level Switching

When sequence-level switching is set to 1, frames of the same sequence from a particular source are transmitted as a group. When this feature is set to 0, frames are transmitted interleaved among multiple sequences.

Under normal conditions, sequence-level switching should be disabled for better performance. However, some host adapters have performance issues when receiving interleaved frames from multiple sequences. When there are such devices attached to the fabric, sequence-level switching should be enabled.

Disable Device Probing

When disable device probing is set to 1, devices that do not register with the Name Server will not be present in the Name Server data base. Set this mode only if the switch's N_Port discovery process (PLOGI, PRLI, INQUIRY) causes an attached device to fail.

Suppress Class F Traffic	By default, the switch can send Class F frames. When this option is turned on, Class F traffic is converted to Class 2 traffic before being transmitted.
Per-frame Route Priority	In addition to the eight virtual channels used in frame routing priority, support is also available for per-frame-based prioritization when this value is set. When Per-frame Route Priority is set to 1, the virtual channel ID is used in conjunction with a frame header to form the final virtual channel ID.
Long Distance Fabric	When this mode is set to 1, ISLs in a fabric can be up to 100 km long. The exact distance level is determined by the per-port configuration on the E_Ports of each ISL. Both E_Ports in an ISL must be configured to run the same long-distance level; otherwise, the fabric will be segmented. An Extended Fabric license is required to set this mode. This parameter is functionally obsolete and can be used for backward compatibility. Disable the switch to set or clear this parameter.
BB Credit	The buffer-to-buffer (BB) credit represents the number of buffers available to attached devices for frame receipt. The range of allowed values varies depending on other system settings (see Unicast-only Operation). Refer to the *Brocade Fabric OS Administration Guide* for more information on platform-specific BB Credit limitations.
Insistent Domain ID Mode	When this mode is set, the switch attempts to acquire from the fabric the domain number programmed in its "Switch Fabric Settings." If the operation fails, the switch will segment from the fabric. You must disable the switch before configuring this parameter.
Disable Default PortName	When this mode is set, the switch does not generate a default port name.
Display FDMI Host Name	When this mode is set, the switch displays the FDMI Host name. By default this feature is in OFF state.
Dynamic Portname	When enabled, this feature dynamically assigns port name with various fields such as switch name, port type, port index, and alias name. Dynamic Portname and Display FDMI Host Name features are mutually exclusive.
Preserved Domain ID Mode	Disables or enables Preserved Domain ID (PDID) mode. By default this feature is in enabled state.
Remote Fosexec feature	The remote fosexec configuration is bi-directional. The configuration is checked when sending any fosexec request to a remote switch and also when receiving the request from a remote switch. Thus, both the sending and receiving switched must be configured with fosexec ON. By default remote fosexec feature is in OFF state.
High Integrity Fabric Mode	Disables or enables the system to check for FMS mode and all existing HIF parameters present in the switch. By default this feature is in OFF state.
Edge hold time	Configures the maximum time a frame can wait after it is received on the ingress port and before it is delivered to the egress port. If the frame waits in the egress buffer for more than the configured hold time, the switch drops the frame, replenishes sender's credit, and increments the counters er_tx_c3_timeout and er_rx_c3_timeout on the TX and RX ports respectively. The frame-timeout indicates a slow draining or a congestion or bottleneck in the fabric. Decreasing hold time on the edge switches may reduce frame drop counts in the core switches. This parameter is stored persistently in the configuration file. You can configure edge hold time on both default and logical switch. The edge hold time configuration is a chip-based value and the configuration varies between 8Gb/s-capable, 16Gb/s-capable, and 32Gb/s-capable platforms. An 8Gb/s-capable platform provides one register to store the edge hold time value and any change in this value will affect all ports in the chip. Therefore, the edge hold time configuration will not be changed for 8Gb/s-capable platform ports in a logical switch. The 8Gb/s-capable platform ports in a logical switch take the default edge hold time value (220 milliseconds) or the value configured in the default switch. Both 16Gb/s and 32Gb/s-capable platforms provide four registers to store the edge hold time configuration and therefore each port in a chip can be configured one of the four values. The edge hold time parameter is enabled by default with a value of 220 milliseconds. The following are the three predefined edge hold time values:

80	Low edge hold time (in milliseconds).
220	Medium edge hold time (in milliseconds). This is the default value.
500	High edge hold time (in milliseconds).
User Defined	A user-defined value may be defined in the range of 80-500 milliseconds in increments of one. This value is only applicable to the default switch.

In a logical switch, the edge hold time configuration is updated only for 16Gb/s-capable ports. If 8Gb/s-capable ports are present in the logical switch, the SWCH-1025 RASLog message is triggered to indicate that 8Gb/s-capable ports are present and the edge hold time configuration will not change for these ports.

Virtual Channel Settings

VC Priority specifies the class of frame traffic given priority for a virtual channel. The switch enables fine-tuning for a specific application by configuring the parameters for eight virtual channels. The first two virtual channels are reserved for switch internal functions and are not available for modification.

The default virtual channel settings have already been optimized for switch performance. Changing the default values can improve switch performance but can also degrade performance. Do not change these settings without fully understanding the effects of the changes.

This parameter is functionally obsolete and can be used for backward compatibility. Disable the switch to set or clear this parameter.

The values for virtual channel settings are as follows:

Field	Default	Range
VC Priority 2	2	2 to 3
VC Priority 3	2	2 to 3
VC Priority 4	2	2 to 3
VC Priority 5	2	2 to 3
VC Priority 6	3	2 to 3
VC Priority 7	3	2 to 3

F_Port Login Parameters

Specifies the F_Port login parameters. The following F_Port login settings are configurable. Unless there are issues with F_Port staging, do not change default values. (* = multiplication symbol)

Field	Type	Default	Range
Maximum logins per switch	Number	For directors: 16 * the max number of physical ports	1 to 126 * the max
Logins per second	Number	0	0 to 100
Login stage interval (milli-seconds)	Number	0	0 to 10000
Stage FDISC logins with busy rejects:	Number	0	1 to 255
Enforce FLOGI/FDISC login:	Number	0	0 to 2
MAX num. of FLOGIs allowed	Number	100	0 to 100

Maximum logins per switch Sets a switch-wide limit on allowed logins.

The following three parameters are related to staged F_Port logins by FLOGI requests and virtual device logins by FDISC(SID==0) requests.

Logins per second	Specifies the number of logins the switch accepts per second in staged F_Port bring up.
Login stage interval	Specifies the stage interval in staged F_Port bring up.
Stage FDISC logins with busy reject:	This parameter, if nonzero, enables staging of FDISC logins by rejecting the FDISC requests with "logical busy", when the requests are more than the number of configured "logins per second". It also specifies the number of FDISC requests that will always be accepted first without reject.
Enforce FLOGI/ FDISC login	Setting this flag allows a second F_Port login (FLOGI/FDISC login) in the event of two devices attempting to log in with the same PWWN. In default mode (zero) the first FLOGI/FDISC login takes precedence over the second. When the mode is set to 1, the second FLOGI/FDISC login takes precedence over the first. All modes are for NPIV and non-NPIV F-Ports. When mode is set to 2, on FLOGI login the first FLOGI takes precedence. On FDISC login, the second FDISC takes precedence. For more information, see "Configure FLOGI-time handling of duplicate PWWNs" section in the *Brocade Fabric OS Administration Guide*. You must disable the switch to change this parameter.
MAX num. of FLOGIs allowed	Specifies the number of FLOGIs the port can accept per second. The default value is 100. When the FLOGI limit is reached, the port will be fenced.

Zoning Operation Parameters

The following zoning operation parameter can be modified.

Disable NodeName Zone Checking	Specify 1 to disable using node WWN when specifying nodes in the zone database. Specify 0 to enable using node WWN when specifying nodes in the zone data. The default value is 0. This value must be set to 1 for interpretability.

RSCN Transmission Mode

The RSCN transmission modes and values are as follows:

End-device RSCN Transmission Mode	Values are as follows:	
	0	RSCN only contains single PID
	1	RSCN contains multiple PIDs (Default)
	2	Fabric addresses RSCN
Domain RSCN to End-device	Values are as follows:	
	0	Disabled. No domain RSCN is sent to the end-device for the switch IP address or name change.
	1	Enabled. Domain RSCN is sent to the end-device for the switch IP address or name change.

System Services Settings

The values for the System Services settings are as follows:

Disable RLS probing	Enables or disables the read link status (RLS) probing. Performed by the FCP daemon, RLS probing reads the link error block from the device. This extended link services command is defined by the FC standards. Refer to the FC standards for information. RLS probing is enabled by default, meaning "Disable RLS probing" is "off". "on" disables RLS probing.

Portlog Events Enable/Disable Settings

These settings determine whether or not various types of port events are logged.

Each event type displayed on the screen is enabled by default ("on"). When disabled, this event is not logged by the port log.

Application Attributes

A number of application attributes are configurable.

Management Port Ingress Rate limiting

You must execute **configure** command from the default FID to make Management Port Ingress Rate limiting option available.

This setting is supported only on the Brocade X7 Directors from Fabric OS v9.0.0.

```
switch:admin> FID128> configure

Not all options will be available on an enabled switch.
To disable the switch, use the "switchDisable" command.

Configure...

  Fabric parameters (yes, y, no, n): [no]
  D-Port Parameters (yes, y, no, n): [no]
  RDP Polling Cycle(hours)[0 = Disable Polling]: (0..24) [1]
  System services (yes, y, no, n): [no] y
    Management Port Ingress Rate limiting (on, off): [on]
```

Notes

The maximum per port login limit is no longer configurable with this command. Use the **portcfgNPIVPort --setloginlimit** command to configure this parameter on a per port basis.

The Telnet interface is no longer configurable with this command. Use the **ipfilter** command to enable or disable the Telnet interface.

The SNMP attributes are no longer configurable with this command. Use the **snmpConfig --set seclevel** command to configure SNMP attributes.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--query Displays all configuration key information that supports the non-interactive mode. The information includes a list of configuration module ID or key ID.

- **-module *module_name*** Queries all configuration key information for a specific configuration module.
- **–key *key_name*** Queries specific configuration key information. Use partial configure key string to query a group of configure keys. For example, **-key** *fab* displays keys like fabric.domain, fabric.ididmode, fabric.rdp_poll_cycle, etc.

--show Displays all configuration key value that supports the non-interactive mode.

- **-module *module_name*** Displays configuration key value for the entire configuration module.
- **-key *key_name*** Displays partial configuration key, this option displays all the configuration key name matching the provided key string.

--set Sets up the configuration value for the specified values.

–value *value* Sets up the configuration value, displays the configuration key value matching the provided key string.

--default Sets the configuration value to the predefined default value. If the default value is defined, the runtime key value is updated with the default value and the configure DB persistent storage too is updated else the runtime key value is removed and the configure DB persistent value alone is updated.

Examples

To enable XISL use on a logical switch with FID 20:

```
switch:admin> setcontext 20

switch:admin> switchdisable

switch:admin> configure
Configure...

  Fabric parameters (yes, y, no, n): [no] y

    Domain: (1..239) [1]
    Enable 8 bit Dynamic Area Mode
    (0 = No,
     1 = Zero Based Area Assignment): (0..1) [0]
    R_A_TOV: (4000..120000) [10000]
    E_D_TOV: (1000..5000) [2000]
    WAN_TOV: (0..30000) [0]
    MAX_HOPS: (7..19) [7]
    Data field size: (256..2112) [2112]
    Sequence Level Switching: (0..1) [0]
    Disable Device Probing: (0..1) [0]
    Suppress Class F Traffic: (0..1) [0]
    Per-frame Route Priority: (0..1) [0]
    BB credit: (1..27) [16]
    Insistent Domain ID Mode (yes, y, no, n): [no]
    Disable Default PortName (yes, y, no, n): [no]
    Display FDMI Host Name (yes, y, no, n): [no]
    Disable Preserved Domain ID Mode (yes, y, no, n): [no]
    Dynamic Portname (on, off): [off]
    Edge Hold Time(Low(80ms), Medium(220ms), High(500ms),
            UserDefined(80-500ms): (80..500) [220]
    Remote Fosexec feature: (on, off): [off]
    High Integrity Fabric Mode (yes, y, no, n): [no]
    Virtual Channel parameters (yes, y, no, n): [no]
    F-Port login parameters (yes, y, no, n): [no] y
    Maximum logins per switch: (1..40320) [5120]
    Logins per second: (0..3400) [0]
    Login stage interval (milli-seconds): (0..10000) [0]
    Stage FDISC logins with busy reject:
    [1-255] - Number of logins without staging
      0  - No staging: (0..255) [0]
    Enforce FLOGI/FDISC login: (0..2) [0]
    MAX num. of FLOGIs allowed [0-100]: (0..100) [100]
  D-Port Parameters (yes, y, no, n): [no] y
```

```
    Dynamic D-Port (on, off): [on]
    On Demand D-Port (on, off): [off]
  RDP Polling Cycle(hours)[0 = Disable Polling]: (0..24) [1]
  Zoning Operation parameters (yes, y, no, n): [no] y
    Disable NodeName Zone Checking: (0..1) [0]
  RSCN Transmission Mode (yes, y, no, n): [no]
  System services (yes, y, no, n): [no] y
    Disable RLS probing (on, off): [on]
    Management Port Ingress Rate limiting (on, off): [off]
  Portlog events enable (yes, y, no, n): [no]
```

To enable Dynamic Area Mode on the default partition:

```
switch:admin> switchdisable
switch:admin> configure
Configure...

Change fabric parameters? Y
    Domain: (1..239) [160]
    Enable 8 bit Dynamic Area Mode
      (0 = No,
      1 = Zero Based Area Assignment): (0..1) [0] 1
    R_A_TOV: (4000..120000) [10000]
    E_D_TOV: (1000..5000) [2000]
    WAN_TOV: (0..30000) [0]
    MAX_HOPS: (7..19) [7]
    Data field size: (256..2112) [2112]
    Sequence Level Switching: (0..1) [0]
    Disable Device Probing: (0..1) [0]
    Suppress Class F Traffic: (0..1) [0]
    Per-frame Route Priority: (0..1) [0]
    BB credit: (1..27) [16]
    Disable FID Check (yes, y, no, n): [no]
Insistent Domain ID Mode (yes, y, no, n): [no]
Disable Default PortName (yes, y, no, n): [no]
Edge Hold Time(Low(80ms), Medium(220ms), High(500ms),
  UserDefined(80-500ms): (80..500) [500]
Remote Fosexec feature: (on, off): [on]
High Integrity Fabric Mode (yes, y, no, n): [no]
Virtual Channel parameters (yes, y, no, n): [no]
F-Port login parameters (yes, y, no, n): [no]
D-Port Parameters (yes, y, no, n): [no] yes
  Dynamic D-Port (on, off): [on]
  On Demand D-Port (on, off): [on]
RDP Polling Cycle(hours)[0 = Disable Polling]: (0..24) [1]
Zoning Operation parameters (yes, y, no, n): [no]
RSCN Transmission Mode (yes, y, no, n): [no]
System services (yes, y, no, n): [no]
    Disable RLS probing (on, off): [on]
    Eth Rate Limiting (on, off): [off] on
Portlog events enable (yes, y, no, n): [no]
```

To display all supported configuration keys noninteractive functions:

```
switch:admin> configure --query
Description:Describes the system login timeout information
Context    :CHASSIS
MOD        :DIAG
Module Name:
Key Name   :system.login.timeout
RBAC       :Audit
Default    :0
Range      :0-99999
CLI        :timeout
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Defines that the blade is faulty due to hardware issues
Context    :CHASSIS
MOD        :EM
Module Name:system attributes
Key Name   :system.blade.bladeFaultOnHwErrMsk
RBAC       :Configure
Default    :0
Range      :0x0-0x7fffffff
CLI        :configurechassis
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Defines the CPU load threshold parameter above which the switch
            will stop polling the sfps
Context    :CHASSIS
MOD        :EM
Module Name:system attributes
Key Name   :system.cpuLoad
RBAC       :SessionManagement
Default    :121
Range      :10-121
CLI        :configurechassis
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Flag used to track the autorecovery is enabled in the chassis or not
Context    :CHASSIS
MOD        :EM
Module Name:system attributes
Key Name   :system.Enable.bladeAutoRecovery
RBAC       :Configure
Default    :0
Range      :0-1
CLI        :configurechassis
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Flag used to track the autorecovery is enabled in the chassis or not
Context    :CHASSIS
MOD        :EM
Module Name:system attributes
Key Name   :bladeautorecovery
RBAC       :Configure
Default    :0
Range      :0-1
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Describes the domain identification number of the switch
Context    :SWITCH, SwitchDisable
```

```
MOD        :FABR
Module Name:Fabric parameters
Key Name   :Domain(fabric.domain)
RBAC       :Configure
Default    :1
Range      :1-239
CLI        :configure
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Describes the mode of IDID
Context    :SWITCH, SwitchDisable
MOD        :FABR
Module Name:Fabric parameters
Key Name   :Insistent Domain ID Mode(fabric.ididmode)
RBAC       :Configure
Default    :0
Range      :0-1
CLI        :configure
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Describes the BBCredit of the switch
Context    :SWITCH, SwitchDisable
MOD        :FABR
Module Name:Fabric parameters
Key Name   :BB credit
RBAC       :Configure
Default    :16
Range      :1-27
CLI        :configure
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Describes the E_D_TOV value
Context    :SWITCH, SwitchDisable
MOD        :FABR
Module Name:Fabric parameters
Key Name   :E_D_TOV
RBAC       :Configure
Default    :2000
Range      :1000-5000
CLI        :configure
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Describes the R_A_TOV value
Context    :SWITCH, SwitchDisable
MOD        :FABR
Module Name:Fabric parameters
Key Name   :R_A_TOV
RBAC       :Configure
Default    :10000
Range      :4000-120000
CLI        :configure
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Describes the data field size of the frames
Context    :SWITCH, SwitchDisable
MOD        :FABR
Module Name:Fabric parameters
Key Name   :Data field size
```

```
RBAC       :Configure
Default    :2112
Range      :256-2112
CLI        :configure
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Describes the Maximum HOPS supported
Context    :SWITCH, SwitchDisable
MOD        :FABR
Module Name:Fabric parameters
Key Name   :MAX_HOPS
RBAC       :Configure
Default    :7
Range      :7-19
CLI        :configure
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Describes the fcp probe disable mode
Context    :SWITCH, SwitchDisable
MOD        :FABR
Module Name:Fabric parameters
Key Name   :Disable Device Probing
RBAC       :Configure
Default    :0
Range      :0-1
CLI        :configure
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Describes the  mode of long distance fabric
Context    :SWITCH, SwitchDisable
MOD        :FABR
Module Name:Fabric parameters
Key Name   :Long Distance Fabric
RBAC       :Configure
Default    :0
Range      :0-1
CLI        :configure
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Describes the no ClassF mode support
Context    :SWITCH, SwitchDisable
MOD        :FABR
Module Name:Fabric parameters
Key Name   :Suppress Class F Traffic
RBAC       :Configure
Default    :0
Range      :0-1
CLI        :configure
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Describes the mode of Sequence Level Switching
Context    :SWITCH, SwitchDisable
MOD        :FABR
Module Name:Fabric parameters
Key Name   :Sequence Level Switching
RBAC       :Configure
Default    :0
Range      :0-1
```

```
CLI        :configure
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Describes the mode of Per-frame Route Priority
Context    :SWITCH
MOD        :FABR
Module Name:Fabric parameters
Key Name   :Per-frame Route Priority
RBAC       :Configure
Default    :0
Range      :0-1
CLI        :configure
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Describes the WAN TOV value of the switch
Context    :SWITCH, SwitchDisable
MOD        :FABR
Module Name:Fabric parameters
Key Name   :WAN_TOV
RBAC       :Configure
Default    :0
Range      :0-30000
CLI        :configure
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Describes the state of wwn pid mode
Context    :SWITCH
MOD        :FABR
Module Name:Fabric parameters
Key Name   :WWN Based persistent PID
RBAC       :Configure
Default    :0
Range      :0-1
CLI        :configure
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Describes the value of RDP Poll Cycle
Context    :SWITCH
MOD        :FABR
Module Name:Fabric parameters
Key Name   :RDP Polling Cycle(fabric.rdp_poll_cycle)
RBAC       :Configure
Default    :1
Range      :0-24
CLI        :configure
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Describes the state of Remote Fosexec feature
Context    :SWITCH
MOD        :FABR
Module Name:Fabric parameters
Key Name   :Remote Fosexec feature
RBAC       :Configure
Default    :0
Range      :0-1
CLI        :configure
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Enables/Disables Preserved Domain ID Allocation feature
```

```
Context    :SWITCH
MOD        :FABR
Module Name:Fabric parameters
Key Name   :Disable Preserved Domain ID Mode
RBAC       :Configure
Default    :0
Range      :0-1
CLI        :configure
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Enables/Disables High Integrity Fabric Mode feature
Context    :SWITCH
MOD        :FABR
Module Name:Fabric parameters
Key Name   :High Integrity Fabric Mode
RBAC       :Configure
Default    :0
Range      :0-1
CLI        :configure
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Describes xisl use is on or off
Context    :SWITCH
MOD        :FABR
Module Name:Fabric parameters
Key Name   :Allow XISL Use(switch.xisluse)
RBAC       :Configure
Default    :0
Range      :0-1
CLI        :configure
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Default portname for the ports
Context    :SWITCH, SwitchDisable
MOD        :FABR
Module Name:Fabric parameters
Key Name   :Disable Default PortName
RBAC       :Configure
Default    :0
Range      :0-1
CLI        :configure
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Displays FDMI registered host name for the ports
Context    :SWITCH, SwitchDisable
MOD        :FABR
Module Name:Fabric parameters
Key Name   :Display FDMI Host Name
RBAC       :Configure
Default    :0
Range      :0-1
CLI        :configure
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Displays automatically/dynamically generated portnames
Context    :SWITCH
MOD        :FABR
Module Name:Fabric parameters
```

```
Key Name   :Dynamic Portname
RBAC       :Configure
Default    :0
Range      :0-1
CLI        :configure
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Hold time value
Context    :SWITCH
MOD        :FABR
Module Name:Fabric parameters
Key Name   :Edge Hold Time
RBAC       :Configure
Default    :220
Range      :80-500
CLI        :configure
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Defines the maximum login of per switch
Context    :SWITCH, SwitchDisable
MOD        :SWCH
Module Name:F-Port login parameters
Key Name   :Maximum logins per switch
RBAC       :Configure
Default    :0
Range      :0-112896
CLI        :configure
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Defines the rate at which the FLOGI requests can be accepted by the
            switch
Context    :SWITCH, SwitchDisable
MOD        :SWCH
Module Name:F-Port login parameters
Key Name   :Logins per second
RBAC       :Configure
Default    :0
Range      :0-3400
CLI        :configure
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Determine the poll interval for F/L-port staging
Context    :SWITCH, SwitchDisable
MOD        :SWCH
Module Name:F-Port login parameters
Key Name   :Login stage interval
RBAC       :Configure
Default    :0
Range      :0-10000
CLI        :configure
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Disable FDISC staging or enable FDISC staging with busy reject
            after the specified number of FDISC logins
Context    :SWITCH, SwitchDisable
MOD        :SWCH
Module Name:F-Port login parameters
Key Name   :Stage FDISC logins with busy reject
```

```
RBAC       :Configure
Default    :0
Range      :0-255
CLI        :configure
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Enforce second FLOGI/FDISC for local switch
Context    :SWITCH, SwitchDisable
MOD        :SWCH
Module Name:F-Port login parameters
Key Name   :Enforce FLOGI/FDISC login
RBAC       :Configure
Default    :0
Range      :0-2
CLI        :configure
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Determines the number of FLOGIs a port can receive before fencing
Context    :SWITCH, SwitchDisable
MOD        :SWCH
Module Name:F-Port login parameters
Key Name   :MAX num. of FLOGIs allowed
RBAC       :Configure
Default    :100
Range      :0-100
CLI        :configure
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Defines the Time to Live value for the web sessions
Context    :CHASSIS
MOD        :WEBD
Module Name:webtools attributes
Key Name   :Login Session Timeout
RBAC       :Configure
Default    :7200
Range      :60-432000
CLI        :configurechassis
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Defines the node-name zoning policy
Context    :SWITCH, SwitchDisable
MOD        :ZONE
Module Name:Zoning Operation parameters
Key Name   :Disable NodeName Zone Checking
RBAC       :Configure
Default    :0
Range      :0-1
CLI        :configure
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Defines whether the name of the uploaded config file should have
            the switch name and the date appended to it
Context    :CHASSIS
MOD        :CHS
Module Name:cfgload attributes
Key Name   :Add Suffix to the uploaded file name(cfgload.cfgfile_suffix)
RBAC       :Configure
Default    :0
```

```
Range      :0-1
CLI        :configurechassis
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Defines whether the firmware sync should have happen when the
            standby CP is plugged in the chassis
Context    :CHASSIS
MOD        :CHS
Module Name:cfgload attributes
Key Name   :Do you want to enable auto firmwaresync(cfgload.firmware_sync)
RBAC       :Configure
Default    :1
Range      :0-1
CLI        :configurechassis
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Specifies cmd line invocation if -p protocol is present
Context    :CHASSIS
MOD        :CHS
Module Name:cfgload attributes
Key Name   :Enable secure switch mode(cfgload.secure)
RBAC       :Configure
Default    :0
Range      :0-1
CLI        :configureChassis
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Defines the port log status
Context    :SWITCH, SwitchDisable
MOD        :PORT
Module Name:System services
Key Name   :Portlog events enable
RBAC       :Configure
Default    :23
Range      :N/A
CLI        :configure
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Defines the state of RLS disable
Context    :SWITCH, SwitchDisable
MOD        :PORT
Module Name:System services
Key Name   :Disable RLS probing
RBAC       :Configure
Default    :1
Range      :0-1
CLI        :configure
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Configuration for FMC rate limiting feature.
Context    :CHASSIS
MOD        :PORT
Module Name:System services
Key Name   :Management Port Ingress Rate limiting
RBAC       :Configure
Default    :0
Range      :0-1
CLI        :configure
```

```
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Describes the state of Dynamic D-Port feature
Context    :SWITCH
MOD        :DPRT
Module Name:D-Port Parameters
Key Name   :Dynamic D-Port
RBAC       :Configure
Default    :1
Range      :0-1
CLI        :configure
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Describes the state of OnDemand D-Port feature
Context    :SWITCH
MOD        :DPRT
Module Name:D-Port Parameters
Key Name   :On Demand D-Port
RBAC       :Configure
Default    :0
Range      :0-1
CLI        :configure
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Chassis CSCTL mode.
Context    :CHASSIS
MOD        :FATR
Module Name:fos attributes
Key Name   :CSCTL QoS Mode
RBAC       :Configure
Default    :0
Range      :0-1
CLI        :configurechassis
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Sets the limit of supported quarantined device
Context    :CHASSIS
MOD        :FATR
Module Name:fos attributes
Key Name   :Chassis SDDQ Limit
RBAC       :Configure
Default    :10
Range      :0-32
CLI        :configurechassis
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Sets the compatibility mode between vTap and QoS High Priority Zoning
Context    :CHASSIS, SwitchDisable
MOD        :FATR
Module Name:fos attributes
Key Name   :vTap and QoS High Priority Zone Compatibility Mode
RBAC       :Configure
Default    :0
Range      :0-1
CLI        :configurechassis
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Defines the custom index count
Context    :SWITCH
```

```
MOD        :CSTM
Module Name:Custom attributes
Key Name   :Config Index
RBAC       :Configure
Default    :0
Range      :0-1000
CLI        :configurechassis
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
```

To enable virtual channel parameters:

```
switch:admin> configure

Not all options will be available on an enabled switch.
To disable the switch, use the "switchDisable" command.

Configure...

  Fabric parameters (yes, y, no, n): [no]
  Virtual Channel parameters (yes, y, no, n): [no] y

WARNING!!! The Virtual Channel parameter must match with the neighbor switch otherwise the link will get
 segmented after the port toggle.
Do you want to continue? (yes, y, no, n): [no] y
    VC Priority 2: (2..3) [2] 3
    VC Priority 3: (2..3) [2] 2020/05/15-05:45:46, [CONF-1042], 5474, FID 128, INFO, wedge5, Fabric
 Configuration Parameter VC Priority 2 changed to 3

    VC Priority 4: (2..3) [2]
    VC Priority 5: (2..3) [2]
    VC Priority 6: (2..3) [3]
    VC Priority 7: (2..3) [2]

  D-Port Parameters (yes, y, no, n): [no]
  RDP Polling Cycle(hours)[0 = Disable Polling]: (0..24) [1]
  System services (yes, y, no, n): [no]
```

To enable long distance fabric parameter:

```
switch:admin> configure

Not all options will be available on an enabled switch.
To disable the switch, use the "switchDisable" command.

Configure...

  Fabric parameters (yes, y, no, n): [no] y

    WWN Based persistent PID (yes, y, no, n): [no]
    Allow XISL Use (yes, y, no, n): [no]
    Long Distance Fabric: (0..1) [0] 1
```

```
WARNING!!! The Long Distance Fabric parameter must match with the neighbor switch otherwise the link will get
 segmented after the port toggle.
Do you want to continue? (yes, y, no, n): [no] y

    Dynamic Portname (on, off): [off]
    Edge Hold Time(Low(80ms), Medium(220ms), High(500ms), UserDefined(80-500ms): (80..500) [220]
    Remote Fosexec feature: (on, off): [off]
    High Integrity Fabric Mode (yes, y, no, n): [no]
  Virtual Channel parameters (yes, y, no, n): [no]
  D-Port Parameters (yes, y, no, n): [no]
  RDP Polling Cycle(hours)[0 = Disable Polling]: (0..24) [1]
  System services (yes, y, no, n): [no]
2020/05/15-05:44:35, [CONF-1043], 5473, FID 128, INFO, wedge5, Fabric Configuration Parameter Long Distance
 Fabric changed to Enabled
```

To configure WebTools attributes in noninteractive function:

```
switch:admin> configure --query -module
"webtools attributes"
Description:Defines the Time to Live value for the web sessions
Context    :CHASSIS
MOD        :WEBD
Key        :webtools.session.ttl
Long Key   :Login Session Timeout
RBAC       :Configure
Default    :7200
Range      :60-432000
CLI        :configurechassis
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Defines whether non admin user is enabled for webtools
Context    :CHASSIS
MOD        :WEBD
Module Name:webtools attributes
Key Name   :Non Admin user enabled
RBAC       :Configure
Default    :1
Range      :0-1
CLI        :configurechassis
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
```

See Also

configDefault, configShow, configureChassis, ipAddrSet, portCfgLongDistance, switchDisable, switchEnable, upTime

configureChassis

Changes chassis-level system configuration settings.

Synopsis

configurechassis

Description

Use this command to modify chassis-level system configuration settings.

Configuration data is grouped into chassis information and switch information. Each configuration type is managed separately.

Use the **configure** command to modify switch configuration parameters. Use the **configureChassis** command to modify the following chassis configuration parameters:

- Cfgload attributes
- Custom attributes
- System settings
- FOS attributes
- Web Tools attributes
- Secure Socket Layer (SSL) attributes

This command requires chassis permissions in both Virtual Fabric and non-Virtual Fabric environments.

The **configureChassis** command interactively presents a hierarchical menu. Each top-level heading and its associated subheadings consist of a text prompt, a selection of valid values, and a default value (in brackets).

The following keys control the execution of the command:

Return	When entered at a prompt with no preceding input, the command accepts the default value (if applicable) and moves to the next prompt.
Interrupt (Ctrl-C)	Aborts the command immediately and ignores all changes made.
End-of-file (Ctrl-D)	When entered at a prompt with no preceding input, terminates the command and saves the changes made.

The following parameters can be modified with the **configureChassis** command:

cfgload Attributes	Configures secure switch mode parameters.	
	Enable secure switch mode	Enables (yes) or disables (no) secure switch mode. The default value is "yes".
	Add Suffix to the uploaded file name	Appends a suffix to the uploaded configuration file. The suffix includes the chassis name and a timestamp in *yyymmdd_hhmmss* format. See the example section for an illustration. This feature is disabled by default.
	Do you want to enable auto firmwaresync	Enables the firmware from the active CP to synchronize automatically to the standby CP.
Custom Attributes	The following custom attribute can be modified:	
	config Index	OEM custom configuration. The range is 0 through 10000. The default is 0. This attribute is for internal use only.
System Attributes	The following system-related parameters are configurable on a Virtual Fabric-aware switch.	
	system.cpuLoad	Sets a threshold to define internally when the CPU is busy. The default threshold is 121, which represents a CPU instantaneous load average of 1.21 or top command. The range is 10 to 121 (representing CPU load thresholds of .10 to 1.21).
	system.Enable. bladeAutoRecovery	Enables or disables the blade auto-recovery option. The option is supported only on the Gen 6 chassis.
FOS Attributes	The following chassis-wide CS_CTL mappings can be modified:	
	CSCTL QoS Mode	Configures the CS_CTL to virtual channel (VC) mapping. After changing the CS_CTL QoS mode in a chassis, you must run the **slotPowerOff** and **slotPowerOn** commands for all the edge blades; in a fixed-port switch, you must reboot the switch. Because this mode change affects the persistent storage in the switch and chassis, rebooting is required for the new CS_CTL QoS mode to become effective.

0	Clears any previously configured CS_CTL to VC mapping and sets a one-to-one mapping between a CS_CTL value and VC number for an 8Gb/s-capable and 16Gb/s-capable ASIC. The CS_CTL values are divided into three groups: 1-8 (low priority), 9-16 (medium priority), and 17-24 (high priority). This is the default mode.
1	Sets the CS_CTL to VC mapping to support three CS_CTL values: 1 (low priority), 2 (medium priority), and 3 (high priority). Each CS_CTL value can map to more than one VC depending on the underlying support from the ASIC. This is the auto mode. For more information about CS_CTL-based frame prioritization, refer to the *Brocade Fabric OS Administration Guide*.

Chassis SDDQ Limit	Specifies the number of user ports that can be quarantined in the chassis or unit. Valid values are 0 through 32. The default value is 10. The slow drain device quarantine (SDDQ) feature automatically isolates the slow-drain flows to a low-priority VC from the existing VC (medium or high), thus freeing up the resources for the regular flows in the existing VC.
vTap and QoS High Priority Zone Compatibility Mode	Enables or disables vTap and QoS high priority zone(QoSH) compatibility mode. If vTap and QoSH compatibility is enabled and affected vTap features are also active on any of the logical switches within the chassis, then vTap/QoSH compatibility cannot be disabled. The vTap features must be deactivated on all the logical switches in the chassis before disabling vTap and QoSH compatibility mode. By default, this mode is disabled.

Web Tools Attributes The following Web Tools parameters can be modified:

Login Session Timeout	Configures the login session timeout value in seconds. The valid range is from 60 through 432000. The default value is 7200.

SSL Attributes Beginning with Fabric OS v9.1.0, the SSL attributes are deprecated. Because the certifcates are predefined, there is no need for user input for this attribute.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To add a suffix to the uploaded file name:

```
switch:admin> configurechassis

Configure...

cfgload attributes (yes, y, no, n): [no] y

   Enable secure switch mode (yes, y, no, n): [y]
   Add Suffix to the uploaded file name (yes, y, no, n): [no] y
   Do you want to enable auto firmwaresync (yes, y, no, n): [no]
```

```
Custom attributes (yes, y, no, n): [no]
system attributes (yes, y, no, n): [no]
fos attributes (yes, y, no, n): [no]
ssl attributes (yes, y, no, n): [no]
webtools attributes (yes, y, no, n): [no]
```

To change the CS_CTL-based frame prioritization to default mode (one-to-one mapping):

```
switch:admin> configurechassis
Configure...

cfgload attributes (yes, y, no, n): [no]
Custom attributes (yes, y, no, n): [no]
system attributes (yes, y, no, n): [no]
ssl attributes (yes, y, no, n): [no]
webtools attributes (yes, y, no, n): [no]
fos attributes (yes, y, no, n): [no] y
  CSCTL QoS Mode (0 = default; 1 = auto mode): (0..1) [1] 0
  Chassis SDDQ Limit: (0..32) [10]
```

To change the slow drain device quarantine limit:

```
switch:admin> configurechassis
Configure...

cfgload attributes (yes, y, no, n): [no]
Custom attributes (yes, y, no, n): [no]
system attributes (yes, y, no, n): [no]
ssl attributes (yes, y, no, n): [no]
webtools attributes (yes, y, no, n): [no]
fos attributes (yes, y, no, n): [no] y
  CSCTL QoS Mode (0 = default; 1 = auto mode): (0..1) [1]
  Chassis SDDQ Limit: (0..32) [10] 20
```

To display the unsupported SSL attribute message:

```
switch:admin> configurechassis
Configure...

  cfgload attributes (yes, y, no, n): [no]
  ssl attributes (yes, y, no, n): [no] yThe ssl attributes options under configurechassis command
will be deprecated in a future Fabric OS release.
    Certificate File. (filename or none): [servercert.pem]
      CA Certificate File. (filename or none): [cacert.pem]
      Select length of crypto key.
         (Valid values is 128.): (128..128) [128]

  webtools attributes (yes, y, no, n): [no]
  Custom attributes (yes, y, no, n): [no]
  system attributes (yes, y, no, n): [no]
  fos attributes (yes, y, no, n): [no]
```

See Also

chassisDisable, chassisEnable, configDefault, configShow, configure, ipAddrSet, portCfgLongDistance, switchDisable, switchEnable, upTime

creditRecovMode

Enables credit loss recovery on back-end ports of 8Gb/s-capable, 16Gb/s-capable, 32Gb/s-capable blades, and time-out based credit loss detection of 8Gb/s-capable front-end ports.

Synopsis

```
creditrecovmode --cfg {off | onLrOnly | onLrThresh
      [-lrthreshold <threshold>]}
creditrecovmode --fault {edgeblade | coreblade | edgecoreblade}
creditrecovmode --be_crdloss {off | on}
creditrecovmode --be_losync {off | on}
creditrecovmode --linkreset [<slot>/]<blade_port>
creditrecovmode --show
creditrecovmode --help
```

Description

Use this command to enable or disable credit recovery of backend ports and to display the configuration. When this feature is enabled, credit is recovered on backend ports (ports connected to the core blade or core blade backend ports) when credit loss has been detected on these ports. If complete loss of credit on a 8G-capable backend port causes frame timeouts, a link reset will be performed on that port regardless of the configured setting, even if that setting is **--cfg off**. When used with the **--cfg onLrOnly** option, the recovery mechanism takes the following escalating actions:

- When it detects credit loss, it performs a link reset and logs a RASlog message.
- If the link reset fails to recover the port, the port reinitializes. A RASlog message is generated. Note that the port reinitialization does not fault the blade.
- If the port fails to reinitialize, the port is faulted. A RASlog message is generated.
- If a port is faulted and there are no more online backend ports in the trunk, the core blade is faulted. (Note that the port blade will always be faulted.) A RASlog message is generated .

When used with the **--cfg onLrThresh** option, recovery is attempted through repeated link resets and a count of the link resets is kept. If the threshold of more than the configured threshold value (using the **-lrthreshold** option) per hour is reached, the blade is faulted . Note that regardless of whether the link reset occurs on the port blade or on the core blade, the port blade is always faulted.

The **onLrOnly** and **onLrThresh** options activate link reset for both credit loss and loss of synchronization. The **be_crdloss** option activates link reset for credit loss only. The **be_losync** option activates link reset for loss of synchronization only.

For more information on the RASlog messages, refer to the *Brocade Fabric OS Message Reference Manual.*

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--cfg Configures credit recovery for backend ports. Use one of the following required recovery options to configure credit recovery:

- **onLrOnly** Enables the backend port recovery feature in link reset mode.
- **onLrThresh** Enables the backend port recovery feature in link reset threshold mode.

	off	Disables the backend port credit recovery feature.
	-lrthreshold <*threshold*>	Specifies the link reset threshold value. The default value is 2. Note that the threshold value set using this option will apply only when the recovery mode is **onLrThresh**.
--fault	Configures the blade fault option. Valid values are as follows:	
	edgeblade	The edge blade alone is faulted when the link reset threshold is reached.
	coreblade	The core blade alone is faulted when the link reset threshold is reached.
	edgecoreblade	The edge blade is faulted the first two times the link reset threshold value is reached. If the threshold value is reached the third time, the core blade is faulted.
--be_crdloss	Activates link reset when credit loss occurs on backend ports. This feature is disabled by default.	
	off	Disables link reset for credit loss on backend ports.
	on	Enables link reset for credit loss on backend ports.
--be_losync	Activates link reset when loss of synchronization occurs on backend ports. This feature is disabled by default.	
	off	Disables link reset for loss of synchronization on backend ports.
	on	Enables link reset for loss of synchronization on backend ports.
--linkreset <*slot*>/ <*blade_port*>	Performs a link reset on the specified front-end or back-end blade port. The blade port number can be located in the "Bpt" column output of the **bladePortMap** command. The **bladeportmap** command requires maintenance permissions. The **--linkreset** option is not supported on Ethernet ports.	
--show	Displays the backend port credit recovery configuration as enabled or disabled. In addition, the output indicates whether link reset mode or link reset threshold mode is configured.	
--help	Displays the command usage.	

Examples

To enable backend port credit loss recovery with the link reset only option and to display the configuration:

```
switch:admin> creditrecovmode --cfg onLrOnly
switch:admin> creditrecovmode --show
Internal port credit recovery is Enabled with LrOnly
C2 FE Complete Credit Loss Detection is Enabled
```

To enable backend port credit loss recovery with the link reset threshold option and to display the configuration:

```
switch:admin> creditrecovmode --cfg onLrThresh
switch:admin> creditrecovmode --show
Internal port credit loss recovery is Enabled with LrThresh
C2 FE Complete Credit Loss Detection is Enabled
```

To disable backend port credit loss recovery and to display the configuration:

```
switch:admin> creditrecovmode --cfg off
switch:admin> creditrecovmode --show
Internal port credit loss recovery is Disabled
C2 FE Complete Credit Loss Detection is Enabled
```

To configure a fault option and to display the configuration:

```
switch:admin> creditrecovmode --fault edgecoreblade
switch:admin> creditrecovmode --show
Internal port credit recovery is Disabled
Back end port Loss of Sync's Link Reset is Enabled with LrThresh
```

```
LR threshold (currently activated): 2
Fault Option : EDGECOREBLADE
C2 FE Complete Credit Loss Detection is Disabled
```

To activate credit loss and loss of sync detection with link reset and set link reset threshold value to 10:

```
switch:admin> creditrecovmode --cfg onLrThresh --lrthreshold 10
switch:admin> creditrecovmode --show
Internal port credit recovery is Enabled with LrThresh
Back end port Loss of Sync's Link Reset is Enabled with LrThresh
LR threshold (currently activated): 10
Fault Option : COREBLADE
C2 FE Complete Credit Loss Detection is Disabled
```

To disable link reset for credit loss alone:

```
switch:admin> creditrecovmode --be_crdloss off
switch:admin> creditrecovmode --show
Internal port credit recovery is Disabled
Back end port Loss of Sync's Link Reset is Enabled with LrThresh
LR threshold (currently activated): 2
Fault Option : COREBLADE
C2 FE Complete Credit Loss Detection is Disabled
```

To enable link reset for loss of sync alone:

```
switch:admin>  creditrecovmode --be_losync on
switch:admin> creditrecovmode --show
Internal port credit recovery is Enabled with LrThresh
Back end port Loss of Sync's Link Reset is Enabled with LrThresh
LR threshold (currently activated): 2
Fault Option : COREBLADE
C2 FE Complete Credit Loss Detection is Disabled
```

See Also

None

dataTypeShow

Displays sample data stream types used in some diagnostic commands.

Synopsis

datatypeshow

Description

Use this command to display sample data stream types used in diagnostic commands. There are 25 different sample data types. The command displays an example of each data stream.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display sample data streams you can use with diagnostics:

```
switch:admin> datatypeshow

Pattern   type       example

BYTE_FILL   1  15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15
WORD_FILL   2  0015  0015  0015  0015  0015  0015  0015  0015
QUAD_FILL   3  00000015     00000015     00000015     00000015
BYTE_NOT    4  15 ea 15 ea 15 ea 15 ea 15 ea 15 ea 15 ea 15 ea
WORD_NOT    5  0015  ffea  0015  ffea  0015  ffea  0015  ffea
QUAD_NOT    6  00000015     ffffffea     00000015     ffffffea
BYTE_RAMP   7  15 16 17 18 19 1a 1b 1c 1d 1e 1f 20 21 22 23 24
WORD_RAMP   8  0015  0016  0017  0018  0019  001a  001b  001c
QUAD_RAMP   9  00000015     00000016     00000017     00000018
BYTE_LFSR  10  1c 38 71 e3 c6 8d 1a 34 68 d0 a0 41 82 04 09 12
RANDOM     11  14 5b 52 66 77 c5 bc 76 5a 6e d3 e2 de 3b 6b 40
CRPAT      12  bc bc 23 47 6b 8f b3 d7 fb 14 36 59 bc bc 23 47
CSPAT      13  7f 7f 7f 7f 7f 7f 7f 7f 7f 7f 7f 7f 7f 7f 7f 7f
CHALF_SQ   14  b5 b5 b5 b5 b5 b5 b5 b5 b5 b5 b5 b5 b5 b5 b5 b5
CQTR_SQ    15  d9 26 d9 26 d9 26 d9 26 d9 26 d9 26 d9 26 d9 26
RDRAM_PAT  16  ff 00 ff 00 ff 00 ff 00 ff 00 ff 00 ff 00 ff 00
jCRPAT     17  be d7 23 47 6b 8f b3 14 5e fb 35 59 be d7 23 47
jCJTPAT    18  7e 7e 7e 7e 7e 7e 7e 7e 7e 7e 7e 7e 7e 7e 7e 7e
jCSPAT     19  7f 7f 7f 7f 7f 7f 7f 7f 7f 7f 7f 7f 7f 7f 7f 7f
PRED_RAND  20  00000015     11111126     22222237     33333348
SMI_TEST   21  00000015     fffffffea    00000015     fffffffea
CJPAT      22  7e 7e 7e 7e 7e 7e 7e 7e 7e 7e 7e 7e 7e 7e 7e 7e
QUAD_NOTP  23  00000015     ffffffffa    00000015     ffffffffa
JSPAT      24  7e 7e 7e 7e 7e 7e 7e 7e 9e f8 50 81 e7 50 aa c9
JTSPAT     25  7e 7e 7e 7e 7e 7e 7e 7e 9e f8 50 81 e7 50 aa c9
```

See Also

None

date

Displays or sets the switch date and time.

Synopsis

date [**-u** | **--utc** | **--universal**] ["*newdate*"]
date [**--help** | **-h**]

Description

Use this command to display or set the date and time. All switches maintain current date and time in flash memory. Date and time are used for logging events. Normal switch operation does not depend on the date and time; a switch with incorrect date values continues to function properly.

This command sets a common date and time for the entire fabric. A change in date or time to one switch is forwarded to the principal switch and distributed to the fabric. It may take up to 64 seconds for the switches in the fabric to get synchronized and you cannot execute the command again in less than 64 seconds. However, if an FCS policy is enabled, this command can be executed only on the Primary FCS switch, and only the primary FCS switch can distribute the time stamp to all other switches in the fabric. User can trigger a next date change request only after 64 seconds from the previous date change.

If Virtual Fabrics are enabled, the date is set for the entire chassis, including all logical switches.

The date specified is always the local switch time, taking into account daylight saving time and the time zone setup of the switch. Each switch takes care of converting the GMT time distributed fabric-wide to its local time. See **tsTimeZone** for more information on time zone support.

If the switch is operating in FICON Management Server mode (**fmsMode**), setting the date is subject to the director clock alert mode (DCAM). If DCAM is 1, the operator issues a warning that the switch date is about to change. The operator then prompts to confirm the change with a yes or no response.

User is not allowed to change date or time through any interface if TruFOS Certificate is invalid or missing or expired. The date or time change is allowed only within a reasonable range of 7 days before or after from the estimated system time by the switch.

Notes

This command becomes read-only if external NTP synchronization is enabled. For more information, refer to **tsClockServer**.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

-u | --utc | --universal Specifies the Coordinated Universal Time or UTC.

["*newdate*"] Specify the new date and time enclosed in double quotation marks. this operand is optional; if omitted, the current date and time is displayed. Date and time are specified as a string in the *MMDDhhmmYY* format.

MM	Specifies the month. Valid values are 01 to 12.
DD	Specifies the date. Valid values are 01 to 31.
hh	Specifies the hours. Valid values are 00 to 23.
mm	Specifies the minutes. Valid values are 00 to 59.
YY	Specifies the year, valid values are 00 to 37 and 70 to 99. Year values from 70 to 99 are interpreted as 1970 to 1999; year values from 00 to 37 are interpreted as 2000 to 2037.

Examples

To display the current date and time and then modify it:

```
switch:admin> date
Wed Sep 15 13:57:58 GMT 2021
switch:admin> date "1022140613"
```

```
Wed Sep 15 13:57:58 GMT 2021
```

To modify the current date and time:

```
switch:admin> date -u "1124070421"
Wed Nov 24 07:04:00 UTC 2021

switch:admin> date -u
Thu Nov 24 07:04:00 UTC 2021

switch:admin> date
Thu Nov 24 07:04:03 GMT 2021
```

To modify the current date and time beyond the estimated switch time:

```
switch:admin> date -u "0915135722"
Error: Date change not within allowed range
```

See Also

errShow, portLogShow, tsClockServer, tsTimeZone, upTime

defZone

Sets or displays the default zone access mode.

Synopsis

```
defzone --noaccess [-force | -f]
defzone --allaccess [-force | -f]
defzone --show
defzone --help
```

Description

Use this command to display or set the Default Zone access mode. Setting the Default Zone mode initializes a zoning transaction (if one is not already in progress), and creates reserved zoning objects.

A default zone controls device access when zoning is not enabled. When a user-specified zoning configuration is not enabled, the Default Zone is in effect, allowing access to all devices. When a user-specified zone configuration is enabled, it overrides the Default Zone access mode.

Notes

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Zone object names beginning with the **d_efault_** prefix are reserved for default zoning use. Editing of these objects is not permitted. Therefore, **cfgShow** does not display the names of these objects.

If **d_efault_Cfg** is the effective zone configuration, both **cfgShow** and **cfgActvShow** do not display **d_efault_Cfg** as the effective zone configuration.

Operands

This command has the following operands:

--noaccess Sets the default zone access mode to No Access, initializes a zoning transaction (if one is not already in progress), and creates the reserved zoning objects equivalent to the following zoning commands:

- cfgCreate "d_efault_Cfg","d_efault_Zone"
- zoneCreate "d_efault_Zone","00:00:00:00:00:00:00:01"

A **cfgSave**, **cfgEnable**, or **cfgDisable** command must be issued after issuing this command to commit the changes and distribute them to the fabric; for example:

- defzone --noaccess
- cfgsave

An audit log record is generated for each execution of this command.

When No Access default zone is activated, the following conditions apply:

- If the current effective zone configuration is disabled with the **cfgDisable** command, the local switch converts this command to the equivalent of **cfgEnable "d_efault_Cfg"**.
- If zoning receives a **cfgDisable** command from a remote switch that does not support default zoning, zoning rejects the **cfgDisable** command in the second phase of RCS because the remote switch does not convert the **cfgDisable** command to **cfgEnable "d_efault_Cfg"**.

--allaccess Sets the default zone access mode to All Access, initiates a zoning transaction (if one is not already in progress), and deletes the reserved zoning objects by performing the equivalent to the following zoning commands:

- cfgDelete "d_efault_Cfg"
- zoneDelete "d_efault_Zone"

A **cfgSave**, **cfgEnable**, or **cfgDisable** command must be performed subsequent to the use of this command to commit the changes and distribute them to the fabric. If a **cfgSave** is performed and the fabric is already in the No Access default zone state, a **cfgDisable** is sent to the fabric. For example:

- defzone --allaccess
- cfgsave

An audit log record is generated for each use of this command.

-force | -f Sets the default zone configuration without confirmation. This operand is optional.

--show Displays the current state of the default zone access mode.

--help Displays the command usage.

Examples

To create a default zone configuration:

```
primaryfcs:admin> cfgactvshow
     Effective configuration:
       No Effective configuration

primaryfcs:admin> defzone --noaccess

primaryfcs:admin> cfgsave

primaryfcs:admin> defzone --show
Default Zone Access Mode
committed - No Access
transaction - No Transaction

primaryfcs:admin> cfgactvshow
     Effective configuration:
```

```
        No Effective configuration: (No Access)
```

To set default access mode to No Access without confirmation:

```
primaryfcs:admin> defZone --noaccess -force
2021/06/12-12:19:14 (GMT), [ZONE-1043], 929, FID 128, INFO,
   w84, The Default Zone access mode is set to No Access.
```

See Also

None

deviceLogin

Allows administrator to manage the port groups connected to the FI. Displays the port group information along with manual re-balance of the port group.

Synopsis

devicelogin --show

devicelogin --rebalance <*wwn*>

Description

Specifying the rebalance action used causes MAPS to rebalance device logins among the ports in a port group that are connected to a neighbor port aggregator (FI). The rebalance operation will selectively move some of the logins from heavily loaded ports to lightly loaded ports in an effort to balance the logins across the port group.

Use this command to display or rebalance the device logins in a port group manually, for example, during a maintenance window or during low system activity.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

The nodename WWN is a required parameter when using the rebalance option.

This feature is only supported with Cisco UCS connected to FC ports.

Operands

This command has the following operands:

--show	Displays the list of port aggregator and its device distribution across the ports. A list of ports directly connected to the port aggregator is identified by the node WWN, which you specify as a parameter to the command. If the nodename *WWN* is not specified, information for all port groups is displayed.
--rebalance <*wwn*>	Tells MAPS to take an action to rebalance the device logins among the ports that are directly connected to the port aggregator identified by the node WWN, specified as first parameter to the command. You must use the node *wwn* as a mandatory parameter when using the **--rebalance** option (operand). This command option requires a Fabric Vision license.

Examples

To display the list of the port aggregator and its device distribution across the ports:

```
switch:admin> devicelogin --show
Node WWN                |State           |Ports Count |Ports (Number of devices)   |Master Port |
```

```
---------------------------------------------------------------------------------------------
20:80:8c:60:4f:f7:ed:81 |BALANCED        |3           |50(8), 53(8), 54(7)         |50          |
```

To cause MAPS to try to rebalance the device logins among the ports directly connected to the port aggregator identified by the node *wwn*, specified as the first parameter to the command.

Using **devicelogin --rebalance** produces no output at the CLI prompt. It just performs the **--rebalance** action.

```
switch:admin> devicelogin --rebalance 20:80:8c:60:4f:f7:ed:81
Node WWN                |State     |Ports Count |Ports (Number of devices)      |Master Port |
-----------------------------------------------------------------------------------------------
20:80:8c:60:4f:f7:ed:81 |BALANCED  |3           |50(8), 53(8), 54(7)            |50          |
```

To perform manual re-balance:

```
switch:admin> portdisable 4

switch:admin> devicelogin --show
Node WWN                |State      |Ports Count |Ports (Number of devices)
    |Master Port |
-------------------------------------------------------------------------------------------------------------------------------
20:03:00:2a:6a:2f:ff:c1 |BALA       |9           |24(4), 42(4), 92(4), 93(4), 2(5), 28(4), 29(4), 94(4), 43(4)
   |2           |

switch:admin> portenable 4
Perform manual rebalance.
switch:admin> 2019/10/15-20:23:00, [MAPS-1003], 317, FID 128, WARNING, Tyr_FID13, port24, F-Port
 24, Condition=ALL_F_PORTS(DEV_LOGIN_DIST==IMBALANCED), Current Value:[DEV_LOGIN_DIST, IMBALANCED],
 RuleName=defALL_F_PORTSDEV_LOGIN_DIST_IMBALANCED, Dashboard Category=Fabric Performance Impact.

 The ports state showing imbalanced.
switch:admin> devicelogin --show
Node WWN                |State       |Ports Count |Ports (Number of devices)
          |Master Port |
-------------------------------------------------------------------------------------------------------------------------------
20:03:00:2a:6a:2f:ff:c1 |IMBALANCED  |10          |24(4), 42(4), 92(4), 93(4), 2(5), 28(4), 29(4), 94(4),
 43(4), 4(1)  |2           |

 Perform rebalance action.
switch:admin> devicelogin --rebalance 20:03:00:2a:6a:2f:ff:c1
Perform manual rebalance again.
switch:admin>2019/10/15-20:25:00, [MAPS-1003], 318, FID 128, WARNING, Tyr_FID13, port24, F-Port
 24, Condition=ALL_F_PORTS(DEV_LOGIN_DIST==BALANCED), Current Value:[DEV_LOGIN_DIST, BALANCED],
 RuleName=defALL_F_PORTSDEV_LOGIN_DIST_BALANCED, Dashboard Category=Fabric Performance Impact.

 This time the ports state showing as balanced.
switch:admin> devicelogin --show
Node WWN                |State           |Ports Count |Ports (Number of devices)
               |Master Port |
-------------------------------------------------------------------------------------------------------------------------------
20:03:00:2a:6a:2f:ff:c1 |BALANCED        |10          |24(4), 42(4), 92(4), 93(4), 2(4), 28(4), 29(4), 94(4),
 43(4), 4(4)    |2           |
```

See Also

nsDevLog, logicalGroup, mapsConfig, mapsDb, mapsRule, mapsSam

diagClearError

Clears the diagnostics failure status.

Synopsis

```
diagclearerror [-all]
diagclearerror --slot {-all | slot_num}
```

Description

Use this command to clear the diagnostics failure status. When used without operands, this command clears all port failure flags.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

--slot *slot_num*	Specify the slot on which to clear the diagnostics failure status. The default is set to 0 and designed to operate on fixed-port-count products.
-all	If specified, all blades clear.

Examples

To clear the diag software flag:

```
switch:admin> diagclearerror --slot 8
         ERROR: DIAG CLEARERR
Diagnostics Errors Cleared, port: 8/31
Err# 0120041 081F
```

See Also

None

diagDisablePost

Disables the power-on self-test (POST).

Synopsis

```
diagdisablepost
```

Description

Use this command to disable POST. A reboot is not required for this command to take effect. Use the **diagPost** command to display the current POST status, and use **diagEnablePost** to enable POST.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To disable the POST:

```
switch:admin> diagdisablepost
Config update Succeeded
Diagnostic POST is now disabled.
```

See Also

diagEnablePost, diagPost

diagEnablePost

Enables the power-on self-test (POST).

Synopsis

diagenablepost

Description

Use this command to enable POST. A reboot is not required for this command to take effect. POST includes two phases: POST Phase I mainly tests hardware and POST Phase II tests system functionality.

Use the **diagPost** command to display the current POST status, and use **diagDisablePost** to disable POST.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To enable POST:

```
switch:admin> diagenablepost
Config update Succeeded
Diagnostic POST is now enabled.
```

See Also

diagDisablePost, diagPost

diagHelp

Displays diagnostic command information.

Synopsis

diaghelp

Description

Use this command to display a short description of diagnostic commands.

Use default operands when running diagnostics commands. Non-default settings require detailed knowledge of the underlying hardware and are intended for support personnel only. Contact support if you want to use these operands.

Notes

The **diagHelp** command displays diagnostic commands that may not be available. Execute **help** *command* to verify availability.

Operands

None

Examples

To display diagnostic command information:

```
switch:admin> diaghelp
bpportloopbacktest       Functional test of port via
                         blade processor path.
bpturboramtest           MBIST test for AP blade BP ASICs
ceeportloopbacktest      Functional test of port N->N path.
ceeturboramtest          MBIST test for ASICs
(output truncated)
```

See Also

None

diagPost

Displays the diagnostic power-on self-test (POST) configuration.

Synopsis

diagpost [**-enable** | **-disable** | **-show**]

Description

Use this command to display the current POST configuration. Use **diagEnablePost** or **diagDisablePost** to modify the POST configuration.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

-enable | -disable	Enables or disables POST configuration check.
-show	Displays the POST configuration details.

Examples

To display the current POST configuration:

```
switch:admin> diagpost -show
Diagnostic POST is currently disabled.
```

See Also

None

diagShow

Displays diagnostics status.

Synopsis

```
diagshow
      [--slot <number>]
      [-post | -use_bports <value>]
```

Description

Use this command to display the diagnostics status for the specified list of ports.

Notes

You cannot interrupt the test by pressing the return key (<cr>).

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following optional operands:

--slot <*number*>	Specify which slot to operate on. If this option is not specified, the default slot 0 is used. The default slot is designed to operate on fixed-port-count products. By default, this command displays information for all user ports in the system. Default slot 0 is not valid in a chassis system.
-post	Displays the status of the last run power-on self-test (POST) on the specified slot. This operand is supported only on 32Gb/s-capable platforms.
-use_bports <*value*>	If this value is nonzero, this command displays the diagnostics status for the blade ports specified in **-use_bports**; otherwise, the command displays information for the user ports specified in **-uports**. The default value is 0.

Examples

To display diagnostic status on a switch blade:

```
switch:admin> diagshow
Slot#          Switch Type         ID   Status  Rev#   Blade     Post Status
```

```
0      Fixed Configuration Switch  171  ENABLED  2.0   FC32-48   POST PASSED
(output truncated)
```

See Also
itemList

diagStatus

Displays currently running diagnostic tests.

Synopsis
diagstatus [<*slotnumber*>]

Description

Use this command to display currently running diagnostic test names.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

<slotnumber>	Specifies the slot number to display diagnostic test names. If omitted, information for all blades in the system is displayed.

Examples

To display currently running diagnostic tests:

```
switch:user> diagstatus
Diagnostic status for slot: 1.
Diag executing "NONE"
Diagnostic status for slot: 2.
Diag executing "NONE"
Diagnostic status for slot: 3.
Diag executing "NONE"
Diagnostic status for slot: 4.
Diag executing "NONE"
(output truncated)
```

See Also
None

distribute

Distributes data to switches in a fabric.

Synopsis
distribute -p *policy_list* **-d** *switch_list*

Description

Use this command to distribute data to a specified list of switches in the fabric. The distributed data must be from the list of currently supported policy sets:

SCC	Switch Connection Control Policy
DCC	Device Connection Control Policy
PWD	Password Database and Password Configuration Policy
AUTH	Switch Authentication Policy (ACTIVE, PASSIVE, ON, or OFF) for E_Ports
FCS	Fabric Configuration Server Policy

Each supported database has a switch-local configuration parameter that controls whether the database can be distributed and accepts distributions. Use the **fddCfg** command to view and modify these parameters.

Notes

IP Filter policies cannot be distributed with the **distribute** command. Use the **chassisDistribute** command.

The password database received will be rejected by a Virtual Fabric-enabled chassis running v8.2.0 or later and if it has more than one logical switch.

If FCS policy is enabled, only primary FCS switch can distribute the data.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-p *policy_list*	Specify the list of policy sets, also called security databases, to be distributed. *policy_list* is a semicolon-separated list. Valid values include SCC, DCC, PWD, AUTH, and FCS.
-d *switch_list*	Specify the list of switches that should receive the data distribution. The *switch_list* is a semicolon-separated list of one of the following: • Switch domain IDs • Switch names • Switch WWNs A wildcard (*) may be specified to include all switches in the fabric that support the **distribute** feature.

Examples

To distribute the Switch Connection Control Policy and Device Connection Control Policy to domains 3 and 5 in the fabric:

```
switch:admin> distribute -p "SCC;DCC" -d "3;5"
```

To distribute the Switch Connection Control Policy, Fabric Configuration Server Policy, and Password database to all domains in the fabric that support the **distribute** feature:

```
switch:admin> distribute -p "SCC;FCS;PWD" -d "*"
Wildcard domains are:
1 3 5
```

To distribute the FCS policy and the Password database to all domains and attached AGs in the fabric that support the **distribute** feature:

```
switch:admin> distribute -p "FCS;PWD" -d "*"
```

To distribute the AUTH and FCS policies to all switches in the fabric:

```
switch:admin> distribute -p "AUTH;FCS" -d "*"
```

To distribute the AUTH and SCC policies to domains 1 and 3 in the fabric:

```
switch:admin> distribute -p "AUTH;SCC" -d "1;3"
```

See Also

fddCfg

dlsReset

Disables Dynamic Load Sharing (DLS).

Synopsis

```
dlsreset [--help]
```

Description

Use this command to disable Dynamic Load Sharing.

If DLS is turned off, load sharing calculations are used only to place new routes. Once placed, existing routes are never moved from one output E_Port to another, unless the original output E_Port is no longer a recognized path to the remote domain. Optimal balance is rarely achieved with this setting. Refer to the **dlsSet** help page for a full description of load sharing options, including the Lossless feature and the E_Port Balance Priority feature.

The behavior of this command depends on the routing policies configured on the switch:

- If a port-based routing policy is in place, DLS is disabled by default, and **dlsReset** returns the DLS setting to default. This command resets the Lossless, and the E_Port Balance Priority features along with the DLS feature and returns a message stating that "DLS is not set".
- If an exchange-based routing policy is in place, DLS is always enabled. It cannot be disabled and the **dlsReset** command fails. The command generates a message stating that "DLS is enabled and cannot be changed with the current routing policy". If Lossless is enabled, the feature remains enabled until you disable it with the **dlsSet --disable -lossless** command. If E_Port Balance Priority is enabled, the feature remains enabled until you disable it with the **dlsset --disable -eportbal** command.
- If DLS is already disabled, the command output confirms the disabled status: "DLS is not set (unchanged)."
- If two-hop lossless DLS is enabled while DLS is disabled, the command output shows the message: "Two-hop lossless requires LosslessDLS be enabled prior to enabling."

Refer to **aptPolicy** for information on routing policies.

Notes

The Lossless feature is not supported on GbE ports and FCoE ports. On unsupported platforms, this command exits with an appropriate message.

On platforms that do not support the E_Port Balance Priority feature, the command output indicates that the feature is not supported.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

--help	Displays the command usage.

Examples

To disable the Dynamic Load Sharing option on a switch with a port-based routing policy and DLS enabled:

```
switch:admin> dlsreset
DLS is not set
```

To execute **dlsReset** on a switch with an exchange-based routing policy and DLS enabled:

```
switch:admin> dlsreset
DLS is enabled and cannot be changed with the current routing policy
```

See Also

aptPolicy, dlsSet, dlsShow

dlsSet

Enables Dynamic Load Sharing (DLS) without frame loss.

Synopsis

```
dlsset --enable {-lossless | -eportbal | -twohop}
dlsset --disable {-lossless | -eportbal | -twohop}
dlsset --rebalance [-all]
dlsset [--help]
```

Description

Use this command to enable or disable lossless Dynamic Load Sharing (DLS) in the event of a fabric change, to configure DLS without frame loss, and to display the DLS configuration.

Use this command to enable or disable the E_Port Balance Priority feature. Enabling E_Port balancing causes the E_Port load to be even across all E_Ports to the same domain. E_Port balancing is disabled by default.

Dynamic load sharing optimizes the utilization of the interswitch links (ISLs) by rebalancing the paths going over the ISLs whenever there is a fabric event that may result in a sub-optimal utilization of the ISL. Dynamic rebalancing can be triggered by any one of the following events:

- A change in the fabric occurs.
- A local E_Port (including trunk ports) goes up or down.
- A local Fx_Port goes down.

When used without operands, this command enables Dynamic Load Sharing on a switch (legacy DLS behavior). Frames may be lost during reroute operations. If the switch has an exchanged-based routing policy, DLS is enabled by default and this command fails with the following message: "DLS is enabled and cannot be changed with the current routing policy."

During the load sharing recomputation, existing routes may be moved to maintain optimal load balance. Frame loss is unavoidable when a port goes down. To prevent frames from being lost during this operation, you can enable DLS without frame loss by issuing this command with the **--enable -lossless** option.

Dynamic load sharing without frame loss is supported in logical fabrics and is configured per logical switch. However, there is a potential impact on other logical switches because they share the same hardware. Chassis permissions are required to configure DLS in a logical fabric environment.

For example, assume a chassis is partitioned as follows: logical switch LS1 consists of ports 1/0-1/5, and logical switch LS2 consists of ports 1/6-1/10. Lossless is enabled on logical switch LS1. Because the ports 1/0-1/10 share the same chip, traffic in LS2 is affected whenever traffic for LS1 on ports 1/0-1/5 is rebalanced. The impact on LS2 depends on the configuration on LS2:

- If the Lossless feature is enabled on LS1, traffic pauses and resumes without frame loss on both switches at the same time.
- If the Lossless feature is disabled on LS1, traffic on LS2 is not affected.

Notes

For switches running Fabric OS v7.4.2x or later, you can enable Lossless (or enable Fabric Management Server mode) when XISL is enabled and enable XISL when Lossless or Fabric Management Server mode is enabled.

If the active control processor (CP) and the standby CP are Lossless (or Fabric Management Server mode) and XISLs enabled, High Availability synchronization will fail. Otherwise, standby CP will synchronize with the active CP. After the synchronization of the active and standby CP, enabling Lossless (or Fabric Management Server mode), when XISL is enabled, is rejected with an error message. Enabling XISL, when Lossless (or Fabric Management Server mode) is enabled, is also rejected with an error message.

Use the **configure** command to disable XISL use.

Lossless is supported with both exchange-based and port-based routing policies. Behavior depends on the kind of policy configured and concurrent IOD settings. Refer to the *Brocade Fabric OS Administration Guide* for information on how to optimize your configuration. See **aptPolicy** help page for more information on routing policies.

The Lossless feature is not supported on GbE ports and FCoE. On unsupported platforms, this command exits with an appropriate message.

Two-hop Lossless DLS is not supported over LISLs.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

--enable -lossless	Enables the Lossless feature. Frame loss is reduced while the path is rerouted. If DLS is set on the switch, this command adds the Lossless feature to the existing DLS legacy mode. If DLS is not set on the switch, this command enables both DLS and the Lossless feature.
--disable -lossless	Disables the previously enabled Lossless feature. Execution of this command is equivalent to the legacy **dlsSet** command. Dynamic load balancing is enforced but not without frame loss. DLS (legacy mode) continues to be enabled after Lossless is disabled. Use **dlsReset** to disable DLS completely.
--enable -eportbal	Enables the E_Port Balance Priority feature. The E_Port load is rebalanced when topology changes occur, such as an E_Port going offline and then online. If DLS is disabled on the switch, it remains disabled with this command.
--disable -eportbal	Disables the E_Port Balance Priority feature.
--enable -twohop	Enables two-hop lossless DLS. When enabled, this enhancement coordinates route updates of the switches in the fabric such that the intermediate switches have performed their route rebalancing updates for the new path prior to an upstream switch attempting to use that new path. The Lossless feature must be enabled to perform route updates. Two-hop lossless DLS is disabled by default.
--disable -twohop	Disables the previously enabled two-hop lossless DLS.
--rebalance	Rebalances the E_Port load on a logical switch, without waiting for a topology change to occur.
--rebalance -all	Rebalances the E_Port load on all logical switches, without waiting for a topology change to occur.
--help	Displays the command usage.

Examples

DLS configuration commands on a switch with an exchange-based policy:

```
switch:admin> aptpolicy
Current Policy: 3 0(ap)
```

```
 3 0(ap) : Default Policy
 1: Port Based Routing Policy
 3: Exchange Based Routing Policy
        0: AP Shared Link Policy
        1: AP Dedicated Link Policy

switch:admin> dlsshow

DLS is set by default with current routing policy

DLS is set with Lossless enabled

E-port Balance Priority is not set

switch:admin> dlsreset

DLS is enabled and cannot be changed with the current routing policy

switch:admin> dlsset

DLS is enabled and cannot be changed with the current routing policy

switch:admin> dlsset --enable -lossless

Lossless is set

switch:admin> dlsset --disable -lossless

Lossless is not set

switch:admin> dlssshow

DLS is set by default with current routing policy

E-port Balance Priority is not set
```

DLS configuration commands on a switch with a port-based policy:

```
switch:admin> dlsshow

DLS is set by default with current routing policy

DLS is set with Lossless enabled

E-port Balance Priority is not set

switch:admin> dlsreset

DLS is not set

switch:admin> dlsshow
```

```
DLS is not set

E-port Balance Priority is not set

switch:admin> dlsset --enable -lossless

DLS and Lossless are set

switch:admin> dlsshow

DLS is set with Lossless enabled

switch:admin> dlsset

Lossless is set (unchanged)

switch:admin> dlsset --disable -lossless

Lossless is not set

switch:admin> dlsshow

DLS is not set

E-port Balance Priority is not set
```

To attempt to enable Lossless while XISL use is enabled:

```
switch:admin> dlsset --enable -lossless

Lossless option cannot be enabled when XISL use is allowed.
Please disable the switch with 'switchdisable' and run \
 'configure' to disallow XISL use before enabling Lossless.
```

To enable the E_Port Balance Priority:

```
switch:admin> dlsset --enable -eportbal
E-port Balance Priority is set
```

To disable the E_Port Balance Priority:

```
switch:admin> dlsset --disable -eportbal
E-port Balance Priority is not set
```

To rebalance the E_Port load on a switch:

```
switch:admin> dlsset --rebalance
Route rebalance successful
```

To rebalance the E_Port load on all switches:

```
switch:admin> dlsset --rebalance -all
Route rebalance all successful
```

See Also

aptPolicy, dlsReset, dlsShow, iodReset, iodSet, iodShow, uRouteShow, topologyShow

dlsShow

Displays the setting of Dynamic Load Sharing (DLS).

Synopsis

```
dlsshow [--help]
```

Description

Use this command to display information about Dynamic Load Sharing configuration settings on the switch. Depending on the configuration, the command output displays one of the following messages:

- **DLS is set with Lossless enabled** - DLS is enabled with the Lossless feature. Load sharing is recomputed with every change in the fabric, and existing routes can be moved to maintain optimal balance. In Lossless mode, no frames are lost during this operation.
- **DLS is set with Lossless disabled** - DLS is enabled without the Lossless feature. Load sharing is reconfigured with every change in the fabric, and existing routes can be moved to maintain optimal balance. No attempt is made to prevent frames from being lost while load sharing is recomputed.
- **DLS is not set with Lossless disabled** - DLS is disabled and the Lossless option is disabled. Existing routes are never moved to maintain optimal balance. If the Lossless option was enabled before you disabled DLS, it is now disabled as well. This means, frame loss is not prevented during a load sharing recomputation.
- **DLS is set with Two-hop Lossless enabled** - DLS is enabled with Lossless and two-hop lossless DLS.
- **DLS is set with Lossless enabled, Two-hop Lossless disabled** - DLS with Lossless is enabled and the two-hop lossless DLS feature is disabled.

Refer to **dlsSet** for a description of load sharing.

This command also displays the status of the E_Port Balance Priority feature on the switch. If the feature is enabled, the message "E-port Balance Priority is set" displays. If the feature is disabled, the message "E-port Balance Priority is not set" displays.

Notes

The Lossless feature is not supported on GbE ports and FCoE ports. On unsupported platforms, this command exits with an appropriate message.

On platforms that do not support the E_Port Balance Priority feature, the command output indicates that the feature is not supported.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

--help	Displays the command usage.

Examples

To display the current DLS and E_Port Balance Priority configuration on a switch with port-based routing:

```
switch:admin> dlsshow
DLS is set with Lossless enabled.
E_Port Balance Priority is set.
```

See Also

None

dnsConfig

Sets, displays, or removes domain name service (DNS) parameters.

Synopsis

```
dnsconfig
dnsconfig --add -domain <name> -serverip1 <ipaddress1>
[-serverip2 <ipaddress2>]
dnsconfig --delete
dnsconfig --show
dnsconfig {--help | -h}
```

Description

Use this command to display, set, or remove the domain name service parameters.

The domain name service parameters are the domain name and the name server IP address for primary and secondary name servers. The **dnsconfig** command displays IPv4 and IPv6 addresses.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--add	Sets the DNS configuration.
-domain <*name*>	Specifies the DNS domain name.
-serverip1 <*ipaddress*>	Specifies the DNS primary server IP address. The IP address can be an IPv4 or IPv6 address.
-serverip2 <*ipaddress*>	Specifies the DNS secondary server IP address. The IP address can be an IPv4 or IPv6 address.
--delete	Removes the DNS configurations.
--show	Displays the current DNS configuration.
--help	Displays the command usage.

Examples

To set the DNS parameters for the system:

```
switch:admin> dnsconfig

Enter option
1 Display Domain Name Service (DNS) configuration
2 Set DNS configuration
3 Remove DNS configuration
4 Quit
Select an item: (1..4) [4] 2
```

```
Enter Domain Name: [] broadcom.com
Enter Name Server IP address in dot notation: [] \
    1.1.1.1
Enter Name Server IP address in dot notation: [] \
    1.1.1.1
DNS parameters saved successfully

Enter option
1 Display Domain Name Service (DNS) configuration
2 Set DNS configuration
3 Remove DNS configuration
4 Quit
Select an item: (1..4) [4] 4
```

To configure the DNS domain name, DNS server address:

```
switch:admin> dnsconfig --add -domain broadcom.com \
     -serverip1 1.1.1.1 -serverip2 1.1.2.1
DNS parameters saved successfully.
```

To delete the DNS configurations:

```
switch:admin> dnsconfig --delete
DNS parameters removed successfully.
```

To display the DNS configurations:

```
switch:admin> dnsconfig --show
Domain Name Server Configuration Information
_________________________________________
Domain Name            = broadcom.com
Name Server IP Address = 1.1.1.1
Name Server IP Address = 1.1.2.1
```

See Also

configDownload, configUpload, firmwareDownload, ipAddrSet, ipAddrShow

enclosureShow

Displays attributes of the switch enclosure.

Synopsis

```
enclosureshow  {id | modelname | slotid | rackname
       | rackid | enclosurename | enclosureid | connname
       | connaddr | connid | conntype | connloc | connpres
       | connfuse | modelid | uuid | mmmacaddr | snmpports}
```

Description

Use this command to display attributes of the switch enclosure, including the vendor-specific enclosure identifier and the identifier of the enclosure interface to which the switch is attached.

This command applies to products that are embedded in a blade server or storage chassis. Most options are platform-specific. Options that do not apply to a platform are identified with a "Not supported on this platform" message.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

attribute Specifies the enclosure attribute. Valid attributes include the following:

id	The vendor-specific enclosure identifier.
modelname	The vendor-specific enclosure model name.
slotid	The identifier of the enclosure interface to which the switch is attached.
rackname	The name assigned by the enclosure manager to the rack.
rackid	The serial number assigned by the enclosure manager to the rack.
enclosurename	The name assigned by the enclosure manager to the enclosure.
enclosureid	The serial number assigned by the enclosure manager to the enclosure.
connname	The product name used by the enclosure manager for the switch model.
connaddr	The connector address used by the enclosure manager for this switch (indicates the physical position of the switch in the enclosure).
connid	The serial number of the switch used by the enclosure manager (not to be confused with the Factory Serial Number).
conntype	The connector type used by the enclosure manager for this model of switch.
connloc	The switch location within the enclosure.
connpres	Information about the presence of the switch that is used by the enclosure manager.
connfuse	Information about whether or not the switch has a fuse.
uuid	The Universal Unique ID for the switch if visible to the enclosure manager.
mmmacaddr	The enclosure manager's Ethernet MAC Address.
snmpports	The SNMP agent and trap ports if visible to the enclosure manager.

Examples

To display the identifier of the enclosure interface to which the switch is attached:

```
switch:admin> enclosureShow slotid
Bay 4
```

See Also

chassisShow

errClear

Clears all error log messages for all switch instances on this Control Processor (CP).

Synopsis

```
errclear
```

Description

Use this command to clear all internal and external error log messages for all switch instances on the CP where the command is executed. For products with a single processor, all error log messages are cleared. For products that contain

multiple processors, this command can be executed on either control processor. It clears the error log only on the CP where the command is executed. For example, to clear the error log on the standby CP, issue **errclear** on the standby CP.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To clear the error log messages:

```
switch:admin> errclear
```

See Also

errDump, errShow

errDelimiterSet

Sets the error log start and end delimiters for messages sent to the console and syslog.

Synopsis

```
errdelimiterset [-s "<start_delimiter_string>" -e "<end_delimiter_string>"]
```

Description

Use this command to set the error log start and end delimiters for log messages sent to the console and syslog. An empty string clears the start and the end delimiters (including the colon) so that they are not displayed.

When used without operands, this command displays the existing **errDelimiterSet** configuration. The delimiter configuration is stored persistently.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Start and end delimiters are displayed only at the console; they are not displayed in a Telnet session or in the RASLog.

Operands

This command has the following operands:

-s "*start_delimiter_string*"	Specifies an alphanumeric string for the start delimiter. The string can be up to 10 characters long and can be optionally enclosed in double quotation marks. This operand is optional.
-e "*end_delimiter_string*"	Specifies the alphanumeric string for the end delimiter. The string can be up to 10 characters long and can be optionally enclosed in double quotation marks. This operand is optional.

Examples

To display the start and end delimiters:

```
switch:admin> errdelimiterset
delimiter start string: <none>
delimiter end string: <none>
```

To change the start and end delimiters (with sample output):

```
switch:admin> errdelimiterset -s "Start" -e "End"
switch:admin> errdelimiterset
delimiter start string: Start
delimiter end string: End
```

Sample output:

```
Start2022/08/06-11:45:35 (GMT), [SEC-1193], 104, FID 128, INFO,
sw0, Security violation: Login failure attempt via HTTPS.
IP Addr: 192.0.2.0.End
```

See Also

errDump, errFilterSet, errShow

errDump

Displays the error log without pagination.

Synopsis

```
errdump [--all]
errdump [--count number]
errdump [--reverse]
errdump [--severity severity]
errdump [--slot slotnum]
errdump [--attribute attribute]
errdump [--message msgID]
errdump [--start YYYY/MM/DD-HH:MM:SS]
errdump [--stop YYYY/MM/DD-HH:MM:SS]
errdump [--help]
```

Description

Use this command to dump external error log messages without any page breaks. When executed without operands, this command prints all error messages for the logical switch context in which the command is executed.

The output of this command is unique for each control processor (CP). On dual CP systems this command must be executed on each CP to obtain a complete record.

Specify both **--start** and **--stop** operands to display messages within a time period. Specify the **--start** operand alone to display messages from a specific time to the end of the log. Specify the **--stop** operand alone to display messages from the beginning of the log to the specified time.

The following information is displayed in each message:

Start delimiter	Delimiter string for the start of a message.
Timestamp	Timestamp for the message.
Message ID	Message identifier.
External sequence number	Sequence number for the message.

Security audit flag	Security audit message displayed as AUDIT.
Severity	Severity of the message. Valid values include INFO, WARNING, ERROR, and CRITICAL.
Switch name	Switch name for the generator of this message, or "chassis".
Message	Message body.
End delimiter	Delimiter string for the end of a message.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--all	Displays messages for the entire chassis for a user with chassis permissions. This operand is optional; if omitted, the messages for the current logical switch context are displayed.
--count *number*	Displays messages based on count value.
--reverse	Displays messages in reversed order. This operand is optional; if omitted, the messages display in chronological order.
--severity *severity*	Displays messages based on severity.
	CRITICAL Displays critical messages.
	ERROR Displays error messages.
	WARNING Displays warning messages.
	INFO Displays informational messages.
--slot *slotnum*	Displays messages based on CP slot.
--attribute *attribute*	Displays messages with the given attribute. Valid attributes values are ALL and FFDC.
--message *msgID*	Displays all raslog messages based on the message ID.
--start *YYYY/MM/DD-HH:MM:SS*	Displays messages from the given start time. The value of the time is related to the raslog storage time.
--stop *YYYY/MM/DD-HH:MM:SS*	Display messages that are logged up to the given end time.
--help	Displays command usage.

Examples

To display the error log for the chassis:

```
switch:admin> errdump --all
Fabric OS: v9.2.1
2023/11/10-16:45:16 (MST), [LOG-1003], 1, CHASSIS, INFO,
   device, The log has been cleared.

2023/11/10-21:13:19 (MST), [SEC-1193], 2, FID 44, INFO,
   device1_-_-_, Security violation:
   Login failure attempt via SSH. IP Addr: 10.20.30.40.

2023/11/10-21:13:20 (MST), [LOG-1000], 3, FID 44, INFO,
   device1_-_-_, Previous message repeated 1 time(s).

2023/11/10-21:13:20 (MST), [SEC-1193], 4, FID 44, INFO,
   device1_-_-_, Security violation:
```

```
   Login failure attempt via SSH. IP Addr: 10.20.30.40.
(output truncated)
```

To display messages for a CP slot:

```
switch:admin> errdump --slot 2
Fabric OS: v9.2.1

2023/08/04-18:58:19 (GMT), [IPAD-1000], 1, SLOT 2 | CHASSIS, INFO, sw0, \
   CP/1 Ether/0 IPv6 autoconf 2620:100:4:f112:da1f:ccff:fe18:7ff/64 DHCPv6 Off.

2023/08/04-18:58:19 (GMT), [HAM-1004], 2, SLOT 2 | CHASSIS, INFO, sw0, \
   Processor rebooted - PowerCycle.

2023/08/04-18:58:19 (GMT), [IPAD-1000], 3, SLOT 2 | CHASSIS, INFO, sw0, \
   CP/1 Ether/0 IPv6 manual 2620:100:4:f112::113:76/64 DHCPv6 Off.

2023/08/04-18:58:19 (GMT), [IPAD-1000], 4, SLOT 2 | CHASSIS, INFO, sw0, \
   SW/0 Ether/0 IPv6 autoconf 2620:100:4:f112:da1f:ccff:fe17:5b10/64 tentative DHCPv6 Off.

2023/08/04-18:58:19 (GMT), [IPAD-1000], 5, SLOT 2 | CHASSIS, INFO, sw0, \
   SW/0 Ether/0 IPv6 autoconf 2620:100:4:f112:da1f:ccff:fe17:5b10/64 DHCPv6 Off.
```

To display messages based on severity:

```
switch:admin> errdump --severity WARNING
Fabric OS: v9.2.1
2023/11/10-23:01:57 (MST), [XTUN-1997], 6, CHASSIS, WARNING, DEVICE,
   FTRACE buffer 0 on slot 0 dp 1 has been triggered.

2023/11/10-23:01:57 (MST), [XTUN-1997], 7, CHASSIS, WARNING, DEVICE1,
   FTRACE buffer 1 on slot 0 dp 1 has been triggered.

2023/11/10-23:06:03 (MST), [XTUN-1997], 8, CHASSIS, WARNING, DEVICE1,
   FTRACE buffer 2 on slot 0 dp 1 has been triggered.
(output truncated)
```

To display messages based on attributes:

```
switch:admin> errdump --attribute FFDC
Fabric OS: v9.2.1
2023/11/10-23:06:06 (MST), [KSWD-1002], 9, FFDC | CHASSIS,
   WARNING, device1, Detected termination of process msd:3028.

2023/11/11-02:01:07 (MST), [KSWD-1002], 157, FFDC | CHASSIS,
   WARNING, device, Detected termination of process msd:3670.

2023/11/11-19:06:05 (MST), [KSWD-1002], 293, FFDC | CHASSIS,
   WARNING, device1, Detected termination of process msd:3676.

2023/11/11-22:01:07 (MST), [KSWD-1002], 425, FFDC | CHASSIS,
   WARNING, device1, Detected termination of process msd:3676.
(output truncated)
```

To display messages based on count value:

```
switch:admin> errdump --count 3
Fabric OS: v9.2.1
2023/11/10-16:45:16 (MST), [LOG-1003], 1, CHASSIS,
   INFO, device1, The log has been cleared.

2023/11/10-21:13:19 (MST), [SEC-1193], 2, FID 44,
   INFO, Ddevice2_-_-_, Security violation: Login failure
   attempt via SSH. IP Addr: 10.20.30.40
2023/11/10-21:13:20 (MST), [LOG-1000], 3, FID 44,
   INFO, device2 Previous message repeated 1 time(s).
```

To display raslog messages based on a message ID:

```
switch:admin> errdump --message SEC-1193
Fabric OS: v9.2.1

2023/11/10-21:13:19 (MST), [SEC-1193], 2, FID 44, INFO, device1
   Security violation: Login failure attempt via SSH.
   IP Addr: 10.20.30.40.

2023/11/13-00:42:43 (MST), [SEC-1193], 832, FID 44, INFO, device2_-_-_,
   Security violation: Login failure attempt via SSH.
   IP Addr: 10.20.30.50.
```

To display messages from specified time to the end of the log:

```
switch:admin>  errdump --start 2023/11/13-00:42:43
Fabric OS: v9.2.1

2023/11/13-00:42:43 (MST), [SEC-1193], 832, FID 44, INFO, device2_-_-_,
   Security violation: Login failure attempt via SSH.
   IP Addr: 10.20.30.50.
```

To display messages from beginning of the log to the specified time:

```
switch:admin>  errdump --stop 2023/11/13-00:42:43
Fabric OS: v9.2.1

2023/11/12-22:08:42 (MST), [ESM-2700], 817, FID 44, INFO, device2_-_-_,
   TCL default created [API].

2023/11/12-22:08:47 (MST), [ESM-1012], 818, FID 44, INFO, device1_-_-_,
   DP0 Configuration replay has started.

2023/11/12-22:08:47 (MST), [ESM-1012], 819, FID 44, INFO, device1_-_-_,
   DP1 Configuration replay has started.
```

To display messages within a time period:

```
switch:admin>  errdump --start 2023/11/12-22:08:41 --stop 2023/11/13-00:42:43
Fabric OS: v9.2.1

2023/11/12-22:08:41 (MST), [ESM-2000], 782, FID 44 | PORT 0/GE15, INFO, device1_-_-_,
   IP Interface ge15.dp0 created 10.20.30.40/29 vlan: 42 mtu: 9216 [Config Replay].

2023/11/12-22:08:41 (MST), [ESM-2000], 783, FID 44 | PORT 0/GE15, INFO, device1_-_-_,
```

```
   IP Interface ge15.dp1 created 10.20.30.40/29 vlan: 42 mtu: 9216 [Config Replay].

2023/11/12-22:08:41 (MST), [ESM-2100], 784, FID 44 | PORT 0/24, INFO, device2_-_-_,
   VE tunnel 24 created [Config Replay].

2023/11/12-22:08:41 (MST), [ESM-2310], 785, FID 44, INFO, device1_-_-_,
   IKE Session Policy HAFooPolicyVodka dp0.0 created 10.20.30.40 - 10.20.30.50.

2023/11/12-22:08:41 (MST), [ESM-2310], 786, FID 44, INFO, device2_-_-_,
   IKE Session Policy HAFooPolicyVodka dp1.0 created 10.20.30.40 - 10.20.30.50.
```

See Also

errDelimiterSet, errFilterSet, errShow

errFilterSet

Sets a filter for an error log destination.

Synopsis

errfilterset [**-d** <*destination*> **-v** <*severity*>]

Description

Use this command to set a filter for an error log destination. A filter is set based on the severity level of the messages.

When used without operands, this command displays the filters that are currently in configured.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-d *destination*	Specifies the destination for the filter. The string **console** is the only valid value at this time.
-v *severity*	Specifies the minimum severity level of the message to pass through the filter. Valid values are INFO, WARNING, ERROR, or CRITICAL. Input values are not case-sensitive.

Examples

To display the current filter settings:

```
switch:admin> errfilterset

console: filter severity = WARNING
```

To set the filter severity level for the console:

```
switch:admin> errfilterset -d console -v warning
```

See Also

errDump, errShow

errModuleShow

Displays all the defined error log modules.

Synopsis

errmoduleshow
errmoduleshow -m *module_name*
errmoduleshow -d
errmoduleshow -h

Description

Use this command to display a list of all defined error log modules.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-m ***module_name***	Displays a module.
-d	Displays raslog modules with the description.
-h	Displays the command usage.

Examples

To display a list of all defined error log modules:

```
switch:admin> errmoduleshow
Module IDs:

  1 KT          2 UT          3 TRCE        4 KTRC
  5 LOG         6 CDR         7 BLPU        8 PISP
  9 PIXE       10 EGR        11 BL         12 PIC
 13 PS         14 RTE        15 AS         16 AUTH
 17 BLDE       18 BLM        19 BPRT       20 CER
 21 CFLD       22 CFMN       23 CHPS       24 CONF
(output truncated)
```

To display ralog modules with description:

```
switch:admin> errmoduleshow -d
---------------------------------------------------------
ID RASModule Description
---------------------------------------------------------
1 KT Kernel Test ID
2 UT User Test ID
3 TRCE Trace Subsystem (User)
4 KTRC Trace Subsystem (Kernel)
5 LOG RASLOG module
6 CDR Condor ASIC driver
```

```
7 BLPU Pulsar Blade driver
8 PISP Spectrum PIC driver
9 PIXE Xena PIC driver
10 EGR Egret ASIC driver
11 BL Generic Blade driver
12 PIC Generic PIC driver
13 PS Advanced Performance Monitoring
14 RTE Routing
15 AS
16 AUTH Authentication Module
17 BLDE
18 BLM
19 BPRT
20 CER Certification
21 CFLD
22 CFMN
23 CHPS
24 CONF Configuration
25 CPT
26 DIAG Diagnosis
27 EM Environmental Monitor
28 ERRL Error Log
29 FABR Network of Fibre Channel Switches
30 FABS Fabric System Driver Module
31 FCIU
32 FCMC Fibre Channel Miscellaneous Messages
33 FCPD Fibre Channel Protocol Daemon
34 FCPH
```

To display a module detail:

```
switch:admin> errmoduleshow -m DIAG
26 DIAG
```

See Also

errDump, errShow

errShow

Displays the error log messages with pagination.

Synopsis

errshow [**-a** | **-r** | **-t** <*time_stamp*> [**-o** <*time_stamp*>] |

-o <*time_stamp*>]

Description

Use this command to display external error log messages one at a time. When executed without operands, this command prints the error messages for the logical switch context in which the command is executed. When used with the **-a** option, the command prints the error messages for the entire chassis. The messages are displayed with page breaks. The **-r** operand displays the messages in reversed order.

The output of this command is unique for each Control Processor (CP). On dual CPs this command must be executed on each CP to obtain a complete record.

Specify both **-t** and **-o** operands to display messages within a time period. Specify the **-t** operand alone to display messages from a specific time to the end of the log. Specify the **-o** operand alone to display messages from the beginning of the log to the specified time.

The following information displays in each message:

Start delimiter	Delimiter string for the start of a message.
Timestamp	Timestamp for the message.
Message ID	Message identifier.
External sequence number	Sequence number for the message
Security audit flag	Security audit message displayed as AUDIT.
Severity	Severity of the message. Valid values include INFO, WARNING, ERROR, and CRITICAL.
Switch name	Switch name for the generator of this message, or "chassis".
Message	Message body.
End delimiter	Delimiter string for the end of a message.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-a	Displays messages for the entire chassis for a user with admin and chassis permissions. This operand is optional; if omitted, the messages for the current logical switch context are displayed.
-r	Displays messages in reversed order. This operand is optional; if omitted, the messages display in the chronological order.
-t <*time_stamp*>	Displays messages from the given start time. The value of the time is related to the raslog storage time.
-o <*time_stamp*>	Displays messages that are logged up to the given end time.

Examples

To display the error log for the chassis:

```
switch:admin> errshow -a
Fabric OS: v9.1.0
2021/11/26-09:15:48 (GMT), [LOG-1003], 1, SLOT 2 | CHASSIS, INFO, factory,
   The log has been cleared.

Type <CR> to continue, Q<CR> to stop:

2021/11/26-09:16:54 (GMT), [SULB-1001], 2, SLOT 2 | CHASSIS, WARNING, factory,
   Firmwaredownload command has started. (From v9.1.0 To v9.1.0_x).

Type <CR> to continue, Q<CR> to stop:

2021/11/26-09:17:08 (GMT), [SULB-1001], 3, SLOT 1 | CHASSIS, WARNING, factory,
   Firmwaredownload command has started. (From v9.1.0_x To v9.1.0_xx).
```

```
Type <CR> to continue, Q<CR> to stop:

2021/11/26-09:21:15 (GMT), [SULB-1039], 4, SLOT 1 | CHASSIS, INFO, factory,
   CP has completed relocating the internal firmware image.

Type <CR> to continue, Q<CR> to stop:

2021/11/26-09:21:15 (GMT), [SULB-1044], 5, SLOT 1 | CHASSIS, INFO, factory,
   Firmwaredownload to secondary partition has completed successfully.

Type <CR> to continue, Q<CR> to stop:
```

To display messages from specified time to the end of the log:

```
switch:admin> errshow -t 2021/11/29-19:17:23
Fabric OS: v9.1.0_xxx
2021/12/01-04:44:38 (GMT), [SULB-1001], 50, SLOT 2 | CHASSIS, WARNING, factory,
   Firmwaredownload command has started. (From v9.1.0_x To v9.1.0_xx).

Type <CR> to continue, Q<CR> to stop:

2021/12/01-04:50:55 (GMT), [SULB-1039], 51, SLOT 2 | CHASSIS, INFO, factory,
   CP has completed relocating the internal firmware image.

Type <CR> to continue, Q<CR> to stop:

2021/12/01-04:50:55 (GMT), [SULB-1044], 52, SLOT 2 | CHASSIS, INFO, factory,
   Firmwaredownload to secondary partition has completed successfully.

Type <CR> to continue, Q<CR> to stop:
```

To display messages from beginning of the log to the specified time:

```
switch:admin> errshow -o 2021/11/29-19:17:23
Fabric OS: v9.1.0_xxx
2021/11/26-09:15:48 (GMT), [LOG-1003], 1, SLOT 2 | CHASSIS, INFO, factory,
   The log has been cleared.

Type <CR> to continue, Q<CR> to stop:
```

To display messages within a time period:

```
switch:admin> errshow -t 2021/11/29-19:17:23 -o 2021/11/29-19:18:00
Fabric OS: v9.1.0_xxx
2021/11/26-09:15:48 (GMT), [IPAD-1000], 5, CHASSIS, INFO, Broadcomxxxx,
   SW/0 Ether/0 IPv6 autoconf 2012::90/64 DHCP Off.

Type <CR> to continue, Q<CR> to stop:

2021/11/26-09:15:48 (GMT), [IPAD-1001], 6, CHASSIS, INFO, Broadcomxxxx,
   CP/0 IPv6 autoconf fe80::224:38ff:fea5:6200 DHCP not Set.

Type <CR> to continue, Q<CR> to stop:
```

See Also

errDelimiterSet, errDump, errFilterSet

ethIf

Displays and sets the link operating mode for a network interface.

Synopsis

```
ethif {--enable | --disable} mgmtporttrack
ethif --set <interface>
ethif --set <interface> {-auto-negotiate | -an} off
 -speed <speed> -duplex {full | FULL}
ethif --set interface {-auto-negotiate | -an} on
      [-speed <speed> -duplex {full | FULL}]
ethif --set -tcptimeoutlevel {1|2|3|4|5}
ethif --reseterror <interface>
ethif --set mgmtporttrack -interval <seconds>
ethif --show [<interface> | -tcptimeoutlevel]
ethif --show mgmtporttrack {-config | -all | -port <number>
      |-family {ipv4 | ipv6} |
 -proto {tcp | udp} | -state {active | inactive}
      |-dump | -backend}
ethif --help
```

Description

Use this command to set and view the link operating mode for a network interface.

Changing the link mode is not supported for all network interfaces or for all Ethernet network interfaces. On the Brocade Gen 6 and Brocade Gen 7 CPs, this command supports **eth0** and **eth3** as interface parameters.

The CP on the Brocade Gen 6 and Brocade Gen 7 platforms, has two external physical Ethernet management ports, eth0 and eth3. Both interfaces are bonded together to form a single logical interface, bond0.

The management port IP addresses are assigned to the logical interface, bond0. Link layer Ethernet operations are applied to the physical interfaces **eth0** and **eth3**.

Ethernet bonding provides link layer redundancy using the active-standby failover model. The two Ethernet ports must be part of the same subnet. By default, all traffic is transmitted over the active Ethernet port, **eth0**. The second Ethernet port, **eth3**, acts as a standby interface and no traffic is transmitted over it. When the active Ethernet port is disconnected, the alternate Ethernet port becomes active. When the system reboots, the Ethernet port **eth0** is always made active if it is connected.

When executed with the bond0 operand, ethif --show displays the active Ethernet port.

When selecting autonegotiation, you can choose the specific link operating modes that are advertised to the link partner. At least one common link operating mode must be advertised by both sides of the link.

When forcing the link operating mode, both sides of the link must be forced to the same mode. The link does not work reliably if one side is set to autonegotiate and the other side is set to forced mode.

Exercise care when using this command. Forcing the link to an operating mode not supported by the network equipment to which it is attached may result in an inability to communicate with the system through its Ethernet interface. It is recommended that this command be used only from the serial console port. When used through an interface other than the serial console port, the command displays a warning message and prompts for verification before continuing. This warning is not displayed and you are not prompted when the command is used through the serial console port.

For dual-CP systems, this command affects only the CP to which you are currently logged in to set the link operating mode on the active CP, you must issue this command on the active CP; to set the link operating mode on the standby CP, you must issue this command on the standby CP. During failover, the link operating mode is retained separately for each CP, because the physical links may be set to operate in different modes.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

{--enable | --disable} mgmtporttrack Enables or disables the management port tracker. It is enabled by default and the TCP/UDP network connections are scanned periodically for every 30 seconds.

--set Sets a link operating mode for a network interface.

- ***interface*** Specifies the name of the interface, optionally enclosed in double quotation marks. Valid interfaces include the following:
  - **eth0 | eth3** Displays the link operating mode of the specified interface. The interface parameters **eth0** and **eth3** are supported on the Brocade Gen 6 and Brocade Gen 7 chassis platforms.
  - **bond0** Displays the active Ethernet port. This operand is valid only on the Brocade Gen 6 and Brocade Gen 7 chassis platforms.
- **-auto-negotiate | -an** Configures auto-negotiation.
  - **on | off** Sets auto-negotiation on or off.
- **-speed *speed*** Configures the speed. You can configure 1000, 100, or 10 as the speed. Note that 1000Mb/s speed can be configured only when auto-negotiation is on.
- **-duplex** Configures the capability of operation as full duplex.
- **-tcptimeoutlevel {1|2|3|4|5}** Configures the timeout for the half open TCP IPv4 and IPv6 connections. The approximate timeout value for each of the level is as follows:
  - 1: 3 seconds
  - 2: 7 seconds
  - 3: 15 seconds
  - 4: 31 seconds
  - 5: 63 seconds
- **--set mgmtporttrack -interval <*seconds*>** Changes the interval of querying the stack for network connections. The default scan interval value is 30 seconds. The maximum port scan interval can be up to 5 minutes, that is 300 seconds. If the scan interval is set to a higher value, connections opened and closed between the scan intervals are not recorded.

--reseterror *interface* Resets error counters on the network interface. The valid values for *interface* is **eth0**.

--show Displays all the management Ethernet interfaces in a device. Displays the details of eth0 for fixed-port switch and bond0, eth0, and eth3 details for chassis.

- ***interface*** Specifies the name of the interface, optionally enclosed in double quotation marks. Valid interfaces include the following:
  - **eth0 | eth3** Displays the link operating mode of the specified interface. The interface parameters **eth0** and **eth3** are supported on the Brocade Gen 6 and Brocade Gen 7 chassis platforms.

	bond0	Displays the active Ethernet port. This command supports eth0 and eth3 as interface parameters.
-tcptimeoutlevel	Displays the current configured timeout level.	
mgmtporttrack ***suboptions***	Displays all the active and inactive network connections. Maximum of 2000 connections. The following are the supported options. Only one sub option is allowed at a time.	
	-config	Displays the current configuration of the management port tracker. Also displays if the configuration is enabled or disabled and the scan period.
	-all	Displays all the active and inactive network connections of maximum upto 2000. The network connections on the backplane IP of chassis are not displayed with this option.
	-port ***port***	Displays connection that exist on the port number specified.
	-proto TCP | UDP	Displays connection that exist on the protocol specified.
	-family ***ipv4*** **|** ***ipv6***	Displays the network connections based on the network family specified.
	-state active | inactive	Displays the connections that are found to be active in the kernel during the most recent scan or displays the inactive network connections that are already closed and not seen on the device (past or old connections).
	-dump	Dumps all the saved connections into a persistent file `/var/log/mgmtportdump.txt`. The file is replaced with a new file when each time the **-dump** command is executed.
	-backend	Displays connection on the backplane IP interface of the chassis devices.

--help Displays the command usage.

Examples

To set the link operating attributes on a network interface interactively:

```
switch:admin> ethif --set eth0
Exercise care when using this command. Forcing the link to an operating mode not \
supported by the network equipment to which it is attached, may result in an \
inability to communicate with the system through its ethernet interface.

It is recommended that you only use this command from the serial console port.

Are you sure you really want to do this? (yes, y, no, n): [no] yes Proceed with caution.
Auto-negotiate (yes, y, no, n): [no] yes Advertise 100 Mbps / \
Full Duplex (yes, y, no, n): [yes] Advertise 10 Mbps / \
Full Duplex (yes, y, no, n): [yes] Committing configuration...done.
```

To set the link operating attributes on a network interface:

```
switch:admin> ethif --set eth0 -an on -speed 100 -duplex full
an:on
speed:100
cap:full
MII_CMD:-A
ADVERTISE:Advertise
```

```
DEFMODE:yes
auto:1
MII_MODE:100baseTx-FD,
Committing configuration...done.
```

To reset the link operating attributes on eth0:

```
switch:admin> ethif --reseterror eth0
Statistics cleared for eth0
```

To view all the management Ethernet interface details:

```
switch:admin> ethif --show
eth0 interface:

  Link mode: negotiated 1000baseT-FD, link ok
  MAC Address: xx:xx:xx:xx:xx:xx

  eth0      Link encap:Ethernet  HWaddr xx:xx:xx:xx:xx:xx
    inet addr:xx:xx:xx:xx  Bcast:xx:xx:xx:xx  Mask:xx:xx:xx:xx
    inet6 addr: xxxx:xxx:x:xxxx::xxxx/xxx Scope:Global
    inet6 addr: xxxx::xxxx:xxxx:xxxx:xxxx/xx Scope:Link
    UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
    RX packets:13284 errors:0 dropped:0 overruns:0 frame:0
    TX packets:354 errors:0 dropped:0 overruns:0 carrier:0
    collisions:0 txqueuelen:1000
    RX bytes:1284960 (1.2 Mb)  TX bytes:43042 (42.0 Kb)
    Memory:fe4e2000-fe4e2fff
```

To view the link operating attributes on a network interface:

```
switch:admin> ethif --show eth0
eth0 interface:

Link mode: negotiated 1000baseT-FD, link ok
MAC Address: xx:xx:xx:xx:xx:xx

eth0      Link encap:Ethernet  HWaddr xx:xx:xx:xx:xx:xx
          UP BROADCAST RUNNING SLAVE MULTICAST  MTU:1500  Metric:1
          RX packets:2397 errors:0 dropped:0 overruns:0 frame:0
          TX packets:55 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
```

To display and set TCP timeout level:

```
switch:admin> ethif --show -tcptimeoutlevel
TCP timeout level : 4 (~31 seconds)

switch:admin> ethif --set -tcptimeoutlevel 2
Timeout level changed to 2 (~7 seconds)
```

To display the current configuration of the managament port tracker:

```
switch:admin> ethif --show mgmtporttrack -config

mgmtporttrack configuration  : Enabled
```

```
mgmtporttrack poll interval  : 30 seconds
```

To display all the active and inactive connections:

```
switch:admin> ethif --show mgmtporttrack -all
Open Time          Last Update Time    Local Address  Remote Address State   Protocol PID/Program
08/19/20-17:26:56  ------------------     :::80       :::0           TCP     LISTEN   2818/httpd.0
08/19/20-17:26:26  ------------------     :::23       :::0           TCP     LISTEN   1695/inetd
08/19/20-17:26:26  ------------------     :::22       :::0           TCP     LISTEN   2368/sshd
08/19/20-17:26:26  ------------------    0.0.0.0:23   0.0.0.0:0      TCP     LISTEN   1695/inetd
08/19/20-17:26:26  ------------------    0.0.0.0:22   0.0.0.0:0      TCP     LISTEN   2368/sshd
```

See Also

ipAddrSet, ipAddrShow

extnCfg

Sets the extension mode configuration.

Synopsis

```
extncfg --ve-mode [--slot <slot>] {10VE | 20VE}
extncfg --ve-mode {6VE | 18VE}
extncfg --app-mode {fcip | hybrid} [--slot <slot>]
extncfg --ge-mode {copper | optical}
extncfg --config {-default [-slot <slot> |
 -all] | -clear -slot <slot> | -manager}
extncfg --fwdl-prep [-version <version>] [-abort]
extncfg --show
extncfg --help
```

Description

Use this command to set the extension mode configuration. This command switches the Field Programmable Gate Array (FPGA) images, the VE_Port mappings, or the GbE port availability.

Notes

This command is disruptive and requires a switch reboot.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--slot <*slot*>	For chassis-based systems only, specifies the slot number of the port to be configured, followed by a slash (/).
--ve-mode {10VE | 20VE | 6VE | 18VE}	Switches the VE_Port mode between the base VE mode and extended VE mode. The Brocade SX6 Extension Blade supports 10VE(default) and 20VE modes. The Brocade 7850 Extension Switch supports 6VE(default) and 18VE modes.
--app-mode fcip | hybrid	Sets the system extension mode to FCIP or hybrid (FCIP with IPEXT in the Brocade 7810 and Brocade SX6 only). The default APP_Port mode is FCIP for the Brocade SX6. Configuring the switch for hybrid

	mode is disruptive. The switch reboots and loads the hybrid image. The Brocade 7810 supports only hybrid mode, and the device boots into hybrid mode by default and cannot be configured to FCIP mode.
--ge-mode copper | optical	Sets the GbE port availability to copper or optical. Supported only on the Brocade 7810 Extension Switch. Switching between copper or optical ports is nondisruptive, and no switch reboot is required.
--config -default	Removes active extension configurations from the specified slot or all slots.
--config -clear	Removes the inactive (stale) extension configurations from the specified slot or all slots. After executing this command, you must run the **slotPowerOff** and **slotPowerOn** commands for the extension blade to clear the configurations completely. **-all** For chassis-based systems only, indicates all slots in the chassis.
--config -manager	Runs the extension configuration management utility.
--fwdl-prep [-version <*version*>] [-abort]	Prepares the switch for a firmware download to the specified firmware version. The **-version** option is optional. If the version is not specified, this command prepares the switch for a downgrade to the previous Fabric OS version that contains the extension configuration changes.
--fwdl-prep [-abort]	Allows the reversal of the previously completed firmware download preparation performed by ESMD.
--show	Displays the current extension mode configuration.
--help	Displays the command usage.

Examples

To display the current extension mode configuration:

```
switch:admin> extncfg --show
App Mode is FCIP
VE-Mode: configured for 10VE mode.
GE-Mode: Not Applicable.
```

To switch the extension VE-mode configuration:

```
switch:admin> extncfg --ve-mode 20VE
This operation will require a reboot of the switch and will disrupt
any running traffic.
Are you sure you want to proceed? (y/n): y

Operation Succeeded. Rebooting Switch.
```

To switch the extension GE-mode configuration:

```
switch:admin> extncfg --ge-mode copper
Operation Succeeded.

switch:admin> extncfg --show
APP Mode is HYBRID (FCIP with IPEXT)
VE-Mode: Not Applicable.
GE-Mode: configured for Copper mode.
```

To configure the system for hybrid mode:

```
switch:admin> extncfg --app-mode hybrid
This action will configure the system for Hybrid (FCIP/IPExt) mode.

WARNING: This is a disruptive operation that requires a reboot \
   to take effect. Would you like to continue (Y,y,N,n): [ n] y

Operation succeeded. Rebooting the system...
```

```
switch:admin> extncfg --show
APP Mode is Hybrid (FCIP with IPEXT)
VE-Mode: configured for 20VE mode.
GE-Mode: Not Applicable.
```

To prepare the switch for a firmware download to Fabric OS 9.2.x:

```
switch:admin> extncfg --fwdl-prep -version 9.2.0
Operation Succeeded.
```

To revert the switch from the previous firmware download preparation:

```
switch:admin> extncfg --fwdl-prep -version 9.2.0 -abort
```

See Also

None

extnPerfMon

Monitors performance and captures engineering-level extension support information into a file on the control processor.

Synopsis

extnperfmon --status
extnperfmon --monitor [<*arguments*>]
extnperfmon --start [<*arguments*>]
extnperfmon --stop
extnperfmon --cleanup [**-force**]
extnperfmon --help

Description

This command captures a series of performance-related statistics over a period of time to help monitor and diagnose possible issues. The command is also intended to be executed at the request of the switch support provider, and the data is captured in the next `supportSave` run on the switch. The `supportSave` data can then be analyzed by the switch support provider to identify any possible issues.

The command runs a series of scripts on a single DP. In case of a multi-slot or multi-DP platform, the corresponding slot/dp must be specified for data collection.

LAN monitoring is allowed even if the blade or switch is in FCIP mode.

There can be only one active instance of extension performance monitoring (EPM) at a time on the switch. If a second session is attempted on the switch before the first session is completed or stopped, the second session fails to start, and an error message is displayed.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--status	Displays the current status of an EPM and any current log files from prior sessions.

--monitor [<*arguments*>]	Specifies the arguments for the performance monitor.
--start [<*arguments*>]	Starts the performance monitor with the current settings.
--stop	Stops the active monitoring session.
--cleanup	Cleans up the log files stored in `/var/log` and `/mnt/var/log` in both the active and backup CP. **-force** Cleans up the log files stored in `/var/log` and `/mnt/var/log` on only the active CP without prompting for a confirmation.
--help	Displays the command usage.

The following are the arguments supported with the **--monitor** and **--start** operands:

-dp [<*slot*>] <*dp_number*>	Specifies the DP to monitor. This is a mandatory parameter and fails if not provided with the **--start** operand. For a slot-based system, the slot must also be specified.
-time <*minutes*>	Specifies the time to monitor, in minutes. The default value is 15 minutes.
-filename <*filename*>	Specifies a name for the monitoring session. Allows a maximum of 31 characters in length. The default file name format is `epm_<date><DPID><filename>.log` ; whereas the date format is YYMMDD_HHMMSS and the format for DPID is <SLOT/DPID>.
-sys	Enables system monitoring flags. Enabled by default.
-lan	Enables LAN or IPEXT monitoring flags.
-wan	Enables WAN monitoring flags.
-fc	Enables FC monitoring flags.
-all	Enables all monitoring flags.

Examples

To display the status with all default values with no performance monitor configured:

```
switch:admin> extnperfmon --status
Nothing currently configured.

Previous runs:
(none)
```

To display the current status with active session monitoring in slot 3, DP 0 for the System, LAN, and WAN modules:

```
switch:admin> extnperfmon --status
-------------------------------------------------------------
 Session File Name  : extnperfmon
 Session Status   : Running
 Modules Monitoring  : SYS, LAN, WAN
 DP Monitored   : DP0
 Duration/Time remaining: 5 (minutes) / 04:57
 Start Time             : 11/24/2022-13:53:55
 End Time               : 11/24/2022-13:58:55 (expected)
------------------------------------------------------------

Existing performance monitor files: 5
/var/log/epm_221124_133853_DP0_extnperfmon.log.gz
/var/log/epm_221124_133927_DP0_extnperfmon.log.gz
/var/log/epm_221124_135149_DP0_extnperfmon.log.gz
/var/log/epm_221124_135244_DP0_extnperfmon.log.gz
/var/log/epm_221124_135355_DP0_extnperfmon.log
```

To set the name, DP, and time and to add modules to be monitored:

```
switch:admin> extnperfmon --monitor -filename
SLOT4_PERFORMANCE_LAN_WAN -dp 4/dp1 -time 20 -lan -wan
Operation Succeeded.
```

To start extension performance monitoring with default values and view the status:

```
switch:admin> extnperfmon --start
extnperfmon: Operation Succeeded.

switch:admin> extnperfmon --status
-----------------------------------------------------------
 Session File Name  :  extnperfmon
 Session Status   :  Running
 Modules Monitoring  :  SYS
 DP Monitored   :  3/DP0
 Duration/Time remaining:  15 (minutes) / 14:48
 Start Time    :  04/19/2021-07:58:31
 End Time    :  04/19/2021-08:13:31 (expected)
-----------------------------------------------------------

Previous runs:
  /var/log/epm_210419_075831_DP30_extnperfmon.log
```

To stop extension performance monitoring and view the status:

```
switch:admin> extnperfmon --stop
 Stopping the Extension Performance Monitor session.  This process may take up to 2 minutes.
extnperfmon: Operation Succeeded.
switch:admin> extnperfmon --status
-----------------------------------------------------------
Session File Name:        extnperfmon
Session Status:           Stopped - User Request
Modules Monitoring:       SYS
DP Monitored:             DP0
Duration/Time remaining:  15 (minutes) / --
Start Time:               01/10/2023-06:23:04
End Time:                 01/10/2023-06:23:17
-----------------------------------------------------------

Existing performance monitor files: 1
/var/log/epm_230110_062303_DP0_extnperfmon.log.gz
```

To delete or clean all data collected in log files in the active CP:

```
switch:admin> extnperfmon --cleanup
Existing performance monitor files:
/var/log/epm_221124_133853_DP0_extnperfmon.log.gz
/var/log/epm_221124_133927_DP0_extnperfmon.log.gz
/var/log/epm_221124_135149_DP0_extnperfmon.log.gz
/var/log/epm_221124_135244_DP0_extnperfmon.log.gz
/var/log/epm_221124_135355_DP0_extnperfmon.log.gz

Continue with file deletion (Y,y,N,n): [ n] y
```

See Also

None

fabRetryShow

Displays the retry count of the fabric commands.

Synopsis

fabretryshow

Description

Use this command to display the retry count of the fabric commands. For each port, the command output displays counts for the following Switch Internal Link Service (SW_ILS) requests:

ELP	Exchange Link Parameters
EFP	Exchange Fabric Parameters
HA_EFP	Exchange Fabric Parameters used during warm recovery
DIA	Domain Identifier Assigned
RDI	Request Domain Identifier
BF	Build Fabric
FWD	Fabric Controller Forward
EMT	Fabric Controller Mark Timestamp
ETP	Fabric Controller Trunk Parameters
RAID	Return Address Identifier
GAID	Get Address Identifier
ELP_TMR	Used internally for fabric application (not a SW_ISL)
GRE	Get Route Entry
ECP	Exchange Credit Parameters
ESC	Exchange Switch Capabilities
EFMD	Exchange Fabric Membership Data
ESA	Exchange Security Attributes
DIAG_CMD	Diagnostic Command

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the retry count of Fabric OS commands:

```
switch:user> fabretryshow
                        SW_ILS
E_Port ELP  EFP  HA_EFP DIA  RDI  BF   FWD  EMT  ETP  RAID \

34     0    0    0      0    0    0    0    0    0    0    \
35     0    0    0      0    0    0    0    0    0    0    \
```

```
GAID ELP_TMR GRE  ECP  ESC  EFMD ESA  DIAG_CMD

0    0       0    0    0    0    0    0
0    0       0    0    0    0    0    0
```

See Also
None

fabRetryStats

Displays or manages the retry count of fabric commands.

Synopsis
```
fabretrystats --show
fabretrystats --clear
fabretrystats --help
```

Description

Use this command to view and clear the retry count of the fabric commands. The **--clear** option clears the counters for all the Switch Internal Link Service (SW_ILS) requests. For each E/D_Port, the **--show** option displays the counters for the following Switch Internal Link Service (SW_ILS) requests:

ELP	Exchange Link Parameters
EFP	Exchange Fabric Parameters
HA_EFP	Exchange Fabric Parameters used during warm recovery
DIA	Domain Identifier Assigned
RDI	Request Domain Identifier
BF	Build Fabric
FWD	Fabric Controller Forward
EMT	Fabric Controller Mark Timestamp
ETP	Fabric Controller Trunk Parameters
RAID	Return Address Identifier
GAID	Get Address Identifier
ELP_TMR	Used internally for fabric application (not a SW_ISL)
GRE	Get Route Entry
ECP	Exchange Credit Parameters
ESC	Exchange Switch Capabilities
EFMD	Exchange Fabric Membership Data
ESA	Exchange Security Attributes
DIAG_CMD	Diagnostic Command

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--show	Displays the retry count of fabric commands for all E_Ports and D_Ports.
--clear	Clears the retry count of fabric commands.
--help	Displays the command usage.

Examples

To display the retry count of fabric commands:

```
switch:admin> fabretrystats --show
                           SW_ILS
-------------------------------------------------------\
E/D_Port   ELP   EFP   HA_EFP  DIA   RDI   BF    FWD   EMT \
----------------------------------------------------------------------\
3          1      0      0      0    0     0     0      0 \
12         0      2      0      0    0     0     0      0 \
    ETP   RAID  GAID  ELP_TMR   GRE   ECP   ESC   EFMD  ESA   DIAG_CMD
     0      0    0       0       0     0     0      0    0     0
     0      0    0       0       0     0     0      0    0     0
```

To clear the retry count of fabric commands:

```
switch:admin> fabretrystats --clear
switch:admin> fabretrystats --show
                           SW_ILS
-------------------------------------------------------\
E/D_Port   ELP   EFP   HA_EFP  DIA   RDI   BF    FWD   EMT \
----------------------------------------------------------------------\
3          0      0      0      0    0     0     0      0 \
12         0      0      0      0    0     0     0      0 \
    ETP   RAID  GAID  ELP_TMR   GRE   ECP   ESC   EFMD  ESA   DIAG_CMD
     0      0    0       0       0     0     0      0    0     0
     0      0    0       0       0     0     0      0    0     0
```

See Also

fabRetryShow, fabStatsShow

fabricLog

Displays (all users) or manipulates (admin) the fabric log.

Synopsis

```
fabriclog {-s | --show} [dport]
fabriclog {-c | --clear} [dport]
fabriclog {-d | --disable} [dport]
fabriclog {-e | --enable} [dport]
fabriclog {-t | --failstop} dport
fabriclog {-h | --help}
```

Description

Use this command to display, clear, disable, or enable the fabric log. When used with the **--show** option, this command displays the following information:

Time Stamp	Time of the event in the following format *HH:MM:SS:MS*.

Input and *Action Fabric log message. An asterisk (*) in the message indicates an action. The link reset information is indicated by LR_IN and LR_OUT. LR_IN indicates a link reset on the remote switch, whereas LR_OUT indicates a link reset on the local switch.

S Current switch state. Valid switch states include the following:

- **FO** Build Fabric (BF) received.
- **F1** Reconfigure Fabric (RCF) is not supported.
- **F2** Exchange Fabric Parameters (EFP) is waiting for last Accept Frame (ACC) from flood.
- **F3** Flood EFPs.
- **D0** The switch is the principal switch.
- **D1** The principal switch is sending Domain ID Assigned (DIA).
- **D2** The principal switch is waiting for Request Domain ID (RDI).
- **D3** The principle switch is processing the RDI.
- **A0** The switch is not the principal switch.
- **A1** The non-principal switch is sending a DIA.
- **A2** The non-principal switch is waiting for an RDI.
- **A3** The non-Principal switch is processing an RDI.
- **S0** The switch is in offline state.

P Port state. Port states include the following:

- **PO** The port is offline.
- **P1** The port is online.
- **P2** Exchange Link Parameters (ELP) Accept Frame (ACC) received.
- **P3** Link reset occurred on master or E_Port.
- **I0** Trunk Initiator: Exchange Mark Timestamp (EMT) sent.
- **I1** Trunk Initiator: Exchange Trunking Parameters (ETP) Accept Frame (ACC) received.
- **I2** Trunk Initiator: ETP sent.
- **I3** Trunk Initiator: Link reset occurred.
- **I4** Trunk Initiator: Link reset done on slave.
- **T0** Trunk Target: EMT received.
- **T1** Trunk Target: ETP received.
- **T2** Trunk Target: Link reset.
- **T3** Trunk Target: Link reset done on slave.
- **LD** Dynamic long distance ECP sent or received.
- **ESC** Exchange Switch Capabilities (ESC) state between P2 and P3.

Sn Next switch state. Refer to switch states for valid states.

Pn Next port state. Refer to port states for valid states.

Port Port number, if applicable, or NA

Xid OXID (Exchange ID) Port number, if applicable, or NA

Refer to the FC-SW-5 specification for more information on the port and switch states logged by this command.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

{-s | --show} [dport]	Displays the fabric log. Optionally displays the D_Port logs only.
{-c | --clear} [dport]	Clears the fabric log. Optionally clears the D_Port logs only.
{-d | --disable} [dport]	Disables the fabric log. By default, the fabric log is enabled. Optionally disables the D_Port logs only.
{-e | --enable} [dport]	Enables the fabric log. Optionally enables the D_Port logs only.
{-t | --failstop} dport	Disables D_Port logs on the first D_Port test failure. This option is cleared automatically when the D_Port fabric log is enabled.
{-h | --help}	Displays the command usage.

Examples

To display the fabric log:

```
switch:admin> fabriclog -s
Time Stamp      Input and *Action                          S, P   Sn,Pn  Port  Xid
================================================================================
Switch 0; Thu Feb 23 06:55:59 2012 GMT (GMT+0:00)
06:55:59.661357 *Fss Init                                  NA,NA  NA,NA  NA    NA
06:55:59.661606 *Initiate State                            NA,NA  F2,NA  NA    NA
06:55:59.963652 Expd1 0x00000000 0000ffff ffffffff ffffffff F2,NA  F2,NA  0     NA
06:56:03.242214 Rcv FSS_RECOV_COLD                         F2,NA  F2,NA  NA    NA
06:56:03.242264 D-port Offline Skip Cnt 1(inst = 1)        F2,NA  F2,NA  NA    NA
06:58:44.880675 SCN LR_PORT (0);g=0x22; LR_IN              A2,P0  A2,P0  41    NA
07:00:12.107354 D-port Offline Skip Cnt 1(inst = 4)        F2,NA  F2,NA  NA    NA
07:00:12.640790 SCN LR_PORT (0);g=0x0; LR_OUT              F2,P0  F2,P0  11    NA
07:00:12.772930 SCN Port Online;g=0x0;                     F2,P0  F2,P1  11    NA
(output truncated)
```

To display the cleared fabric log:

```
switch:admin> fabriclog -s
Time Stamp  Input and *Action    S, P   Sn,Pn  Port  Xid
=====================================================
Number of entries: 0
Max number of entries: 64
```

See Also

None

fabricName

Configures fabric name and displays the fabric name parameter.

Synopsis

fabricname {**--set** [<*fabric_name*>]|**--clear**|**--show**|**--help**}

Description

Use this command to display the name of the fabric.

With Virtual Fabrics it is not uncommon to have multiple fabrics in a single chassis. These logical fabrics are identified by their Fabric ID.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

--set <*fabric_name*>	Configures the fabric name to the string provided by the argument, which length can be from 1 to 128 characters. An escape character backslash (\) within the fabric name is processed first by the command line shell and then the resulting string is passed to the **fabricname** command. The interpretation of the escape character with or without a double quotation mark (") may differ for different shells, resulting in different fabric names. When **--set** is issued without any parameter, it sets the existing fabric name as the current fabric name. The fabric name is restricted to the switch instance in which it is configured.
--clear	Clears the fabric name that was already set.
--show	Displays the fabric name. If a fabric name is not configured, an appropriate message is displayed.
--help	Displays the command usage.

Examples

To set fabric name:

```
switch:user> fabricname --set newfabric
Fabric Name set to "newfabric"
```

To display the fabric name:

```
switch:user> fabricname --show
Fabric Name: "newfabric"
```

To clear the fabric name already set:

```
switch:user> fabricname --clear
Fabric Name cleared!
```

See Also

switchShow, fabricShow

fabricNotification

Displays the information of the hardware level congestion signal capabilities, software level notification registration status, Fabric Performance Impact(FPI) state, and clears statistical information of a device.

Synopsis

```
fabricnotification --show {-all | -brief | -pid <N_Port_ID> |
 -wwn <N_Port_WWN> |  -port-index <port_index> |
 -fport {-all | <port_index>} | -nport {-all | <port_index>}}
fabricnotification --clear -stats {-all |
 -pid <N_Port_ID>}
fabricnotification --help
```

Description

Use this command to display the information of EDC and FPIN registration data with the FPI-related information for local devices.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

--show	Displays the details of all local records for the applicable devices and filtering the output based on the port (N_Port ID or port WWN). The following options are supported.
	-all Displays all the local devices (detail).
	-brief Displays all the local devices (summary).
	-pid <*N_port ID*> Filters the display of the information by N_Port ID.
	-wwn <*N_Port WWN*> Filters the display of the information by N_Port world wide name (WWN).
	-port-index <*port_index*> Filters the display of the information by user port index.
	-fport {-all | <*port_index*>} Displays all records for Access Gateway F_Ports. The output is filtered by port index.
	-nport {-all | <*port_index*>} Displays all records for Access Gateway N_Ports. The output is filtered by port index.
--clear -stats	Clears statistical information of a specified device, or all local devices to zero for the locally attached devices.
	-all Clears statistical information for all the local devices.
	-pid <*N_port ID*> Clears statistics for a specified N_Port ID.
--help	Displays the command usage.

Examples

To display the details of all the local records:

```
switch:admin> fabricnotification --show -all
-------------------------------------------------------
Device Information              :
-------------------------------------------------------
N-Port ID                       : 010200
N-Port Name (WWN)               : 30:11:50:eb:1a:bb:6c:fd
F-Port Name (WWN)               : 20:02:c4:f5:7c:16:99:f4
Port Index                      : 2
RDF Registration                :
                                  FPIN-Link-Integrity
                                  FPIN-Peer-Congestion
                                  FPIN-Congestion
                                  FPIN-Delivery
Congestion Status               : No Impacts Reported
EDC Owner (N-Port ID)           : 010200
-------------------------------------------------------
Diagnostic Capabilities         :   N-Port        F-Port
```

```
-------------------------------------------------------
Receive Signal Capability           Warning      Warning
Receive Signal Frequency             100 ms       100 ms
Transmit Signal Capability  Warning + Alarm      Warning
Transmit Signal Frequency            100 ms         1 µs
Degrade Activate Threshold               20            0
Degrade Deactivate Threshold             10            0
FEC Degrade Interval                      2            0
-------------------------------------------------------
Applied Signaling Capabilities  :       F-Port
-------------------------------------------------------
Receive Signal Capability              Warning
Receive Signal Frequency                100 ms
Transmit Signal Capability             Warning
Transmit Signal Frequency               100 ms
-------------------------------------------------------
FPIN Statistics                 : Send            Receive
-------------------------------------------------------
Peer-Congestion FPIN              0                   0
Congestion FPIN                   0                   0
Link Integrity FPIN               0                   0
Delivery FPIN                     0                   0
-------------------------------------------------------
```

To display the summary of all the local records:

```
switch:admin> fabricnotification --show -brief
-----------------------------------------------------------------------------
N_Port ID | Port Index | N_Port Name             | RDF | EDC | FPI |
-----------------------------------------------------------------------------
 10200    |          2 | 30:10:50:eb:1a:bb:6c:fd |   Y |   Y |   - |
 10201    |          2 | 30:10:01:eb:1a:bb:6c:fd |   Y |   Y |   - |
-----------------------------------------------------------------------------
  RDF : One or more diagnostic functions registered (e.g., FPIN)
  EDC : One or more diagnostic capabilities registered
  FPI : One or more Fabric Performance Impacts reported
-----------------------------------------------------------------------------
```

To clear statistical information of all local devices:

```
switch:admin> fabricnotification --clear -stats -all
SUCCESS: Cleared statistics for all locally attached devices
…
```

To clear statistical information for a specified N_Port ID:

```
switch:admin> fabricnotification --clear -stats -pid 20000
SUCCESS: Cleared statistics for device [020000]
…
```

To display all records for Access Gateway F_Ports:

```
switch:admin> fabricnotification --show -fport -all
---------------------------------------------------------------
Port Index                      : 1
AG Port Type                    : F_Port
```

```
AG N_Port Mapping               : 40
Congestion Status               : No Impacts Reported
EDC Owner (N-Port ID)           : 022802
---------------------------------------------------------------
Diagnostic Capabilities         : N-Port           AG F-Port
---------------------------------------------------------------
Receive Signal Capability         Warning                 N/A
Receive Signal Frequency           100 ms                   -
Transmit Signal Capability            N/A             Warning
Transmit Signal Frequency               -               10 ms
Degrade Activate Threshold              0                   0
Degrade Deactivate Threshold            0                   0
FEC Degrade Interval                    0                   0
---------------------------------------------------------------
Applied Signaling Capabilities  :                   AG F-Port
---------------------------------------------------------------
Receive Signal Capability                                N/A
Receive Signal Frequency                                   -
Transmit Signal Capability                            Warning
Transmit Signal Frequency                              100 ms
---------------------------------------------------------------
```

To display all records for Access Gateway N_Ports:

```
switch:admin> fabricnotification --show -nport -all
---------------------------------------------------------------
Port Index                      : 40
AG Port Type                    : N_Port
AG N-Port ID                    : 022800
---------------------------------------------------------------
Notification Capabilities       : AG N-Port     Fabric Neighbor
---------------------------------------------------------------
AGPIN                             Supported           Supported
-
---------------------------------------------------------------
```

See Also

None

fabricPrincipal

Sets the principal switch selection mode.

Synopsis

```
fabricprincipal [--help | --show | --disable]
fabricprincipal --enable [-priority <priority>] [-force]
fabricprincipal [-h | -q | -f | 0 | 1]
```

Description

Use this command to set principal switch selection mode for a switch and to set priorities for principal switch selection.

The implementation of the **fabricPrincipal** command is based solely on mechanisms specified in the Fibre Channel standards. These mechanisms provide a preference for a switch requesting to be the principal switch in a fabric, but they do not provide an absolute guarantee that a switch requesting to be the principal switch is granted this status.

When dealing with large fabrics, the selection of the principal switch is less deterministic. In these cases, to help ensure that the desired switch is selected as the principal switch, a small cluster of switches should be interconnected first, followed by additional switches to enlarge the fabric.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--help |-h Displays the command usage.

--show Displays the current mode setting and principal switch selection priority. This operand is optional; if not specified, **fabricPrincipal** displays the same data as with the **--show** option.

-q Displays principal mode only (enabled or disabled). This is a legacy command option that does not display the priority settings.

--enable Enables principal switch selection. The following operands are optional. If you do not provide a priority value, the system assigns the default of 0x01 or generates a value based on the switch state.

- **-priority | -p <*priority*>** Sets the principal selection priority of the switch. The specified priority value is used in the principal switch selection protocol when the fabric rebuilds. Not all of these values can be assigned. Accepts decimal, hexadecimal (0x prefix), and octal (0 prefix) numbers. The hexadecimal inputs are recommended for usage.
  - **0x00** Reserved. This value cannot be assigned.
  - **0x01** Highest priority. This is a user-defined value
  - **0x02** Switch was principal prior to sending or receiving a build fabric (BF) request. This value is generated by the switch to initiate a fabric reconfiguration. This value should not be assigned.
  - **0x3 - 0xFE** Priority value range. Choose a value in this range to indicate priority. Higher numbers mean lower priority.
  - **0xFF** Switch is not capable of acting as a principal switch. This is a user-defined value. Use **--enable** with a new priority to revert to this condition.
- **-force | -f** Forces a fabric rebuild regardless of whether the switch is principal or subordinate. This option is not valid with the **--disable** command.

--disable Disables principal switch selection. This command resets the priority to the default value 0xFE.

[-f] *mode* Sets the principal switch selection mode. Specify 1 to enable principal switch selection mode. Specify 0 to disable principal switch selection mode. Optionally, use the -f operand to force a fabric rebuild. Mode changes take effect when the fabric rebuilds. This operand is optional.

Examples

To enable a high fabric principal priority setting:

```
switch:admin> fabricprincipal --enable -p 0xff
Principal Selection Mode enabled (Activate in \
  next fabric rebuild)
```

To disable the principal mode selection:

```
switch:admin> fabricprincipal --disable
Principal Selection Mode disabled
```

To display the current mode setting:

```
switch:admin> fabricprincipal -q
Principal Selection Mode: Enable
```

To disable the mode setting:

```
switch:admin> fabricprincipal 0
Principal Selection Mode disabled
```

To enable the mode setting:

```
switch:admin> fabricprincipal 1
Principal Selection Mode enabled
```

To enable the mode setting and force fabric rebuild:

```
switch:admin> fabricprincipal -f 1
Principal Selection Mode enabled \
   (Forcing fabric rebuild)
```

To display the principal switch selection priority:

```
switch:admin> fabricprincipal --show
Principal Selection Mode: Enable
Principal Switch Selection Priority: 0x10
```

See Also

fabricShow

fabricShow

Displays fabric membership information.

Synopsis

```
fabricshow [-membership | -chassis | -paths | -version]
fabricshow [-prior | -model]
fabricshow -help
```

Description

Use this command to display information about switches in the fabric.

If the switch is initializing or is disabled, the message "no fabric" is displayed.

Running this command on an FCR or edge switch does not provide any router information; running this command on an edge switch with the **-membership** option does provide router information.

If the fabric is reconfiguring, some or all switches may not be displayed; otherwise, the following fields are displayed depending on the command option used:

Switch ID	The switch Domain_ID and embedded port D_ID.
Worldwide Name	The switch WWN.

Enet IP Addr	The switch Ethernet IP address for IPv4- and IPv6-configured switches. For IPv6 switches, only the static IP address displays.
FC IP Addr	The switch IP FC (IP over Fibre Channel) address.
Name	The switch symbolic name. An arrow (>) indicates the principal switch.
FC Router IP Addr	The IP address of the FC Router. This field is empty if the switch is not an FC Router or it the FC Router does not support it.
FC Router Name	The FC Router symbolic name. This field is empty if the switch is not an FC Router or it the FC Router does not support it.
Chassis WWN	The world wide name of the chassis. For switches running firmware versions that do not distribute the chassis WWN, this field displays "NA".
Chassis Name	The name of the chassis. For switches running firmware versions that do not distribute the chassis name, this field displays "NA".
Fabric Name	If the fabric has an assigned name, the fabric name is displayed at the end of the command output.
Path Count	The number of currently available paths to the remote domain.
Version	The firmware version of the domain.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-membership	Displays fabric membership information with additional details of the FC Router, if present in the fabric.
-chassis	Displays information about the chassis including chassis WWN and chassis name. Also, displays IPv6 address for IPv6-only switches.
-paths	Displays the number of paths available to each remote domain. Also, displays IPv6 address for IPv6-only switches.
-version	Displays firmware version details for each domain.
-prior	Displays the details of the switches present in the fabric before the fabric reconfiguration.
-model	Displays the model and serial number of all the switches present in the fabric.
-help	Displays the command usage.

Examples

The following example illustrates a fabric of four switches. The switch named "sw180" is the Principal switch. Three of the switches are configured to run IP over Fibre Channel. The fabric name is configured.

```
switch:admin> fabricshow
Switch ID   Worldwide Name           Enet IP Addr    FC IP Addr   Name
-------------------------------------------------------------------------
64:fffc40 10:00:00:60:69:00:06:56 192.168.64.59  192.168.65.59   "sw5"
65:fffc41 10:00:00:60:69:00:02:0b 192.168.64.180 192.168.65.180>"sw180"
66:fffc42 10:00:00:60:69:00:05:91 192.168.64.60  192.168.65.60  "sw60"
67:fffc43 10:00:00:60:69:10:60:1f 192.168.64.187  0.0.0.0       "sw187"

The Fabric has 4 switches
Fabric Name: mainFabricA
```

To show a mixed fabric with IPv4- and IPv6-configured switches (the fabric name is not configured):

```
switch:admin> fabricshow
```

```
Switch ID  Worldwide Name         Enet IP Addr   FC IP Addr      Name
--------------------------------------------------------------------
1:fffc41 10:00:00:60:69:00:02:0b 192.168.64.180 192.168.65.180>"sw180"
                                     1080::8:800:200C:1234/64
2:fffc42 10:00:00:60:69:00:05:91 192.168.64.60  192.168.65.60  "sw60"

The Fabric has 2 switches.
```

To show additional details of the FC Router, if present:

```
switch:admin> fabricshow -membership
Switch ID    Name          ENET IP Addr   FC Router    FC Router
                                          IP Addr      Name
-----------------------------------------------------------------
  1: fffc01  fcr_sprint_01 192.0.2.0
160: fffca0  fcr_fd_160    0.0.0.0        192.0.2.0  fcr_meteor2
190: fffcbe  fcr_mojo_6    192.0.2.0

The Fabric has 3 switches
```

To show additional details about the chassis:

```
switch:admin> fabricshow -chassis
Switch ID     Name          ENET IP Addr  Chassis WWN   Chassis Name
-------------------------------------------------------------------
4:fffc04 sw0000_126_128 192.0.2.0 10:00:00:05:1e:0e:eb:58 Brcdxxxx
5:fffc05 sw0000_127_128 192.0.2.0 10:00:00:05:1e:0e:eb:98 Brcdxxxx

The Fabric has 2 switches
```

To show additional details about the paths:

```
switch:admin> fabricshow -paths
Switch ID   Name    ENET IP Addr  Worldwide Name          Path Count
-----------------------------------------------------------------
28:  fffcb2 2358  192.0.2.28    10:00:00:05:1e:e5:ab:00  N/A
38:  fffcbc 2458  192.0.2.38    10:00:00:05:1e:47:cb:00  9

The Fabric has 2 switches
```

To show firmware version details:

```
switch:admin> fabricshow -version
Switch ID   Worldwide Name          Enet IP Addr    FC IP Addr      Version
-----------------------------------------------------------------------------
  1: fffc01 10:00:00:05:1e:82:3c:2a 192.0.2.0     11.22.33.44     v8.2.0a
```

To display switch details of the fabric prior to fabric reconfiguration:

```
switch:admin> fabricshow -prior
Switch ID   Switch  Worldwide Name
-------------------------------------------
  3:        fffc03  10:00:c4:f5:7c:01:2d:40
  8:        fffc08  10:00:00:05:33:e7:d0:10
 88:        fffc58  10:00:c4:f5:7c:00:9b:00
Fabric had 3 switches before fabric reconfiguration
```

To display model and serial number of all switches in fabric:

```
switch:admin> fabricshow -model
Switch ID  Chassis   Worldwide Name           Model   Serial      Name
-----------------------------------------------------------------------
  3:       fffc03    10:00:c4:f5:7c:01:2d:7f  173. 1  FKF0324N002 TYR5
  8:       fffc08    10:00:00:05:33:e7:d0:8f  179. 0  DZZ0312L00G sw0
 88:       fffc58    10:00:c4:f5:7c:00:9b:3f  173. 1  N/A         tyr3

The Fabric has 3 switches
Fabric Name: abcd
```

See Also

fabricName, switchShow

fabStatsShow

Displays fabric statistics.

Synopsis

fabstatsshow

Description

Use this command to display statistics for the fabric. The following information is displayed:

- Number of times a switch domain ID has been forcibly changed
- Number of E_Port offline transitions
- Number of fabric reconfigurations
- Number of fabric segmentations resulting from any of the following causes:

- Loopback
- Incompatibility
- Overlap
- Zoning
- E_Port segment
- Licensing
- Disabled E_Port
- Platform DB
- Security incompatibility
- Security violation
- ECP error
- Duplicate WWN
- E_Port isolated
- VF AD conflict
- Exchange Switch Capabilities (ESC) detected conflict
- Encryption conflict - Both ends are not configured for encryption
- Compression conflict - Both ends are not configured for encryption
- Encryp/Comp bw availability - Encryption or compression - Configured but lack of bandwidth in the ASIC
- Defzone conflict
- Alias peer zone conflict
- Enhanced zone object naming conflict
- Chassis zone DB size exceeded
- Fabric zone DB size exceeded
- Zone merge timed out
- Zone merge Internal error
- AD configuration not supported
- Encryption trunk port limit exceeded
- Encryption trunk configuration mismatch
- Deprecated zone object detected

For each recorded incident, the command provides the following additional information:

Count	The total number of times the specific event occurred on various ports on the switch.
Port	The number of the port where the latest incident occurred. An arrow (<) next to the port number denotes the type of event that occurred last.
Timestamp	The time when the latest incident occurred.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the fabric statistics:

```
switch:admin> fabstatsshow
```

```
 Description                   Count   Port    Timestamp
 ---------------------------   ------  ------  ----------------
 Domain ID forcibly changed:       0
 E_Port offline transitions:       0
 Reconfigurations:                 2  0  Sat Nov 11 18 14:29:56 2023
 Segmentations due to:
                   Loopback:       0
            Incompatibility:       0
                    Overlap:       0
                     Zoning:       0
             E_Port Segment:       0
                  Licensing:       0
            Disabled E_Port:       0
                Platform DB:       0
        Sec Incompatibility:       0
              Sec Violation:       0
                  ECP Error:       0
              Duplicate WWN:       0
             Eport Isolated:       0
             VF AD conflict:       0
      ESC detected conflict:       0
        Encryption conflict:       0
       Compression conflict:       0 < 349  Fri Oct 27 15:33:58 2023
 Encryp/Comp bw availability:      0
           Defzone conflict:       0
   Alias Peer Zone Conflict:       0
   Enh Zone Objt Naming Conflict:  0
   Chassis Zone DB Size Exceeded:  0
   Fabric Zone DB Size Exceeded:   0
       Zone Merge Timed Out:       0
   Zone Merge Internal Error:      0
 AD Configuration Not Supported:   0
   Encr Trunk Pt Limit Exceeded:   0
 Encryption Trunk Config Mismatc:  0
 Deprecated Zone Object Detected:  0
 '<'  - Denotes the type of event that occurred last.
```

See Also

fabRetryShow

factoryFanShow

Retrieves the fan sensor information from an Energy Management module and display the values for each unit.

Synopsis

factoryfanshow

Description

Use this command to retrieve fan sensor and fan speed information for each unit.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To retrieve fan sensor and speed information for each unit:

```
switch:admin> factoryfanshow
Fan 1 sensor 1 is OK, speed is 6535 RPM
Fan 2 sensor 1 is OK, speed is 6535 RPM
Fan 3 sensor 1 is OK, speed is 6535 RPM
```

See Also

None

factoryReset

Resets all the configurations to factory default on the device.

Synopsis

```
factoryreset [-force | -keep <args> | -clearEULA |
 -set securitydefault]
factoryreset --help
```

Description

Use this command to reset all the configurations on the switch. The execution of this command decommissions the switch with respect to the following configurations:

- FC protocol and FCOE related configurations
- bootenv configurations
- user configurable IP configurations in EPROM
- non default accounts other than maintenance, admin, and user are removed and the passwords for maintenance, admin, and user are reset
- raslogs, tracedump, audit logs, and all the other logs in the switch
- extension blade related configurations

Notes

It is recommended to execute **configupload** command to retain the configuration of the switch in case of emergency.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

-force	Overrides the default behavior and bypasses the interactive mode.
-keep <*args*>	Preserves the specified argument. The only supported argument is *ip*.

-clearEULA	Clears EULA records.
-set securitydefault	Enables all the default secure settings on the switch that includes IPfilter policies, crypto configurations for all TLS applications and SSH, applicable password policies, regenerating default stronger crypto keys or notify on the key strength if already generated or installed.
--help	Displays the command usage.

Examples

To perform factory reset on a Brocade Gen 7 chassis:

```
switch:admin> factoryreset
This operation will reset all switch configurations to manufacture default,
all customized configurations will be lost.
Chassis/switch would be rebooted to clear the config.
Do you want to continue [y/n]?: y

Broadcast message from admin@sw0 (pts/0) (Thu Nov 25 05:23:42 2021):

Terminating all sessions except factory-reset session

Clearing EULA record....
EULA record cleared successfully....
done
Deleting fips configurations....
Removing auth secrets for FID 128
Zeroizing certificates
Removing all FCAP Keys/Certificates
Removing all Radius Keys/Certificates
Removing all LDAP Keys/Certificates
Removing all Syslog-ng Keys/Certificates
Removing all HTTPS Keys/Certificates
Removing all Kafka Keys/Certificates
Removing all ASC Keys/Certificates
Removing all RSC Keys/Certificates
Resetting password database to defaults
Zeroizing Radius configuration:
Authentication mode already set to local switch database.
RADIUS configuration does not exist.
LDAP configuration does not exist.
TACACS+ configuration does not exist.
Zeroizing IPSec static SA configuration.
Zeroizing SSH key.
private key is deleted successfully.
Zeroizing SSH Known Hosts.
Removing all IP-extension Keys/Certificates
Deleting LDAP Map attributes
Resetting auth util data
Removing log files
Deleting crypto templates
Applying default crypto configuration values
Deleting FIPS config files
Disabling Idle session timeout
Resetting SSH rekey interval
```

```
Zeroizing Service shell configurations
Zeroize core files in Local.
done
Clearing trace buffer and core files....done
Clearing raslog ....Audit log cleared.
done
Deleting maps configurations....done
Deleting dns configurations....done
Resetting switch name, host name and chassis name....done
Resetting diagonstic configurations....done
Resetting BSN configurations....
Removed custom support link configuration.
done
Resetting Banner configurations....done
Resetting motd configurations....done
Resetting security fdd configurations....done
Resetting security fdd config keys....done
Resetting firmware check configuration....firmwarecheck: Restricted mode is already disabled.
done
Resetting to Native mode if AG mode is enableddone
Deleting VF configurations and switch configurations....done
Deleting cli and firmware history....done
Deleting all license configurations....done
Cleaning up the filesystem...
Deleting firmwaredownload status....done
Deleting all Multi area files....done
Clearing management interface IP configurations....This may terminate current telnet/ssh session...
----------------------------------------------
```

To perform factory reset using force option:

```
switch:admin> factoryreset -force
   Do not power off the switch, factory reset in progress...
   Removing config database... for fid 128.
   done
   Removing FAWWN data ... for fid 128.
   done
   ---------------------------
   --------------------------
   Deleting cli and firmware history....done
   Resetting bootenv....
   Factory reset completed successfully!
2018/11/16-10:59:15, [RAS-1007], 11, CHASSIS, INFO, sw0, System is about to reload.
Rebooting! Fri Nov 16 10:59:20 UTC 2018
reboot: Restarting system
```

To preserve the argument:

```
switch:admin> factoryreset -keep ip
This operation will reset all switch configurations to manufacture default,
all customized configurations will be lost.
Chassis/switch would be rebooted to clear the config.
Do you want to continue [y/n]?: y
```

```
Broadcast message from admin@sw0 (pts/0) (Thu Nov 25 05:18:28 2021):

Terminating all sessions except factory-reset session

Clearing EULA record....
EULA record cleared successfully....
done
Deleting fips configurations....
Removing auth secrets for FID 128
Zeroizing certificates
Removing all FCAP Keys/Certificates
Removing all Radius Keys/Certificates
Removing all LDAP Keys/Certificates
Removing all Syslog-ng Keys/Certificates
Removing all HTTPS Keys/Certificates
Removing all Kafka Keys/Certificates
Removing all ASC Keys/Certificates
Removing all RSC Keys/Certificates
Resetting password database to defaults
Zeroizing Radius configuration:
Authentication mode already set to local switch database.
RADIUS configuration does not exist.
LDAP configuration does not exist.
TACACS+ configuration does not exist.
Zeroizing IPSec static SA configuration.
Zeroizing SSH key.
private key is deleted successfully.
Zeroizing SSH Known Hosts.
Removing all IP-extension Keys/Certificates
Deleting LDAP Map attributes
Resetting auth util data
Removing log files
Deleting crypto templates
Applying default crypto configuration values
Deleting FIPS config files
Disabling Idle session timeout
Resetting SSH rekey interval
Zeroizing Service shell configurations
Zeroize core files in Local.
done
Clearing trace buffer and core files....done
Clearing raslog ....Audit log cleared.
done
Deleting maps configurations....done
Deleting dns configurations....done
Resetting switch name, host name and chassis name....done
Resetting diagonstic configurations....done
Resetting BSN configurations....
Removed custom support link configuration.
done
Resetting Banner configurations....done
Resetting motd configurations....done
Resetting security fdd configurations....done
```

```
Resetting security fdd config keys....done
Resetting firmware check configuration....firmwarecheck: Restricted mode is already disabled.
done
Resetting to Native mode if AG mode is enableddone
Deleting VF configurations and switch configurations....done
Deleting cli and firmware history....done
Deleting all license configurations....done
Cleaning up the filesystem...
Deleting firmwaredownload status....done
Deleting all Multi area files....done
Resetting bootenv....done
Factoryreset operation is completed successfully.
Rebooting! Thu Nov 25 05:20:33 GMT 2021

Broadcast message from admin@sw0 (pts/0) (Thu Nov 25 05:20:33 2021):

The system is going down for reboot NOW!
```

To clear EULA:

```
switch:admin> factoryreset -clearEULA
Factoryreset clear EULA record started.
EULA record cleared successfully.
```

To set security default settings:

```
switch:admin> factoryreset -set securitydefault
This command configures the switch with secure cryptographic ciphers and protocol and deletes all the existing
 certificates and SSH keys in the switch.
It requires the daemon(s) HTTP, SSH and Syslog to be restarted.
Existing sessions will be terminated.
Make sure HTTP and SSH client(s) are supporting the ciphers configured in the switch.
Do you want to continue [y/n]?: y
Setting secure ciphers and protocol
Resetting SSH rekey interval
Deleting certificates
Zeroizing SSH key.
private key is deleted successfully.
Deleting SSH Known Hosts.
Certificates and SSH keys deleted successfully.
Terminating all SSH/SCP sessions running

Broadcast message from root@sw0 (pts/0) (Thu Sep 1 08:21:55 2022):

All SSH accounts will be logged out

Switch is configured with secure cryptographic ciphers
```

See Also

None

fanDisable

Disables a fan unit.

Synopsis

```
fandisable <fan_unit_number>
```

Description

Use this command to disable a nonfaulty fan unit by setting the RPM speed to below minimum.

Notes

This command is not available on nonbladed systems.

Disabling the fan units on a Brocade X6 and X7 Directors does not change their RPM speed to 0.

Fan units on a Brocade X6 and X7 Directors take few minutes to change the speed to below minimum RPM after being disabled.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

<fan_unit_number> Specifies the number of the fan unit to disable.

Examples

To disable a fan unit:

```
switch:admin> fandisable 1

Fan unit 1 has been disabled
```

See Also

fanEnable, fanShow

fanEnable

Enables a fan unit.

Synopsis

```
fanenable <fan_unit_number>
```

Description

Use this command to set a previously disabled fan unit back to the default RPM speed.

Notes

This command is not available on nonbladed systems.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

<fan_unit_number>	Specify the fan unit number to enable.

Examples

To enable a fan unit:

```
switch:admin> fanenable 1

Fan unit 1 has been enabled
```

See Also

fanDisable, fanShow

fanShow

Displays fan status and speed.

Synopsis

```
fanshow
```

Description

Use this command to display the current status and speed of each fan in the system.

Fan status is displayed as follows:

OK	Fan is functioning correctly.
absent	Fan is not present.
below minimum	Fan is present but rotating too slowly or stopped.
above maximum	Fan is rotating too quickly.
unknown	Unknown fan unit installed.
faulty	Fan has exceeded hardware tolerance and has stopped. In this case, the last known fan speed is displayed.

The output from this command varies depending on switch type and number of fans present.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display information on the fans in the system:

```
switch:admin> fanshow
Fan #1 is OK, speed is 2721 RPM
Fan #2 is OK, speed is 2657 RPM
Fan #3 is OK, speed is 2700 RPM
```

See Also

chassisShow, fanDisable, fanEnable, psShow

fastBoot

Reboots the Control Processor (CP), bypassing the Power-On Self-Test (POST).

Synopsis

```
fastboot
```

Description

Use this command to perform a "cold reboot" (power off/restart) of the CP bypassing POST when the system comes back up. Bypassing POST can reduce boot time significantly. If POST was previously disabled using the **diagDisablePost** command, then **fastBoot** is the same as **reBoot**.

The **fastBoot** operation is disruptive, and the command prompts for confirmation before executing. When you reboot a switch connected to a fabric, all traffic to and from that switch stops. All Fibre Channel ports on that switch including E_Ports become inactive until the switch comes back online.

The behavior of this command varies according to platform type:

- When issued on a standalone (single-processor) switch, this command performs a cold reboot of the switch.
- When issued on an enterprise-class platform with two CPs (active and standby), the following rules apply:
  - When the Standby CP reboots, it goes down and there is no failover because there is no traffic on that switch. When the Standby CP comes up again, it is temporarily no longer in sync with the Active CP.
  - When the Active CP reboots, it fails over to the Standby CP. The Standby CP becomes the new Active CP and traffic is disrupted.
  - When HA is disabled and **fastBoot** is issued on the Active CP, both the Active and Standby CPs reboot with the original mastership retained. The original Active CP remains the Active CP after the reboot, and the original Standby CP remains the Standby CP. After the reboot, HA is enabled.
  - When HA is disabled and **fastBoot** is issued on the Standby CP, the Standby CP reboots without prompting. It boots up with the default switch only, even if the Active CP has multiple logical switches configured. After the Standby CP boots up, HA is still disabled.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To reboot a standalone (single-processor) switch without executing POST on startup:

```
switch:admin> fastboot
```

```
Warning: This command would cause the switch to reboot
and result in traffic disruption.
Are you sure you want to reboot the switch [y/n]? y

Rebooting! Sun Feb 28 19:49:45 2010...

The system is going down for reboot NOW !!
```

To reboot without executing POST on startup (in the example, HA is enabled):

```
switch:admin> fastboot
Warning: This command is being run on a control processor (CP)
based system and will cause the active CP to reboot.
Are you sure you want to reboot the active CP [y/n]? y

Rebooting! Sun Feb 28 19:49:45 2010...

The system is going down for reboot NOW !!
```

To reboot without executing POST on startup (in the example, HA is disabled):

```
switch:admin> fastboot
This command is being run on a control processor (CP)
based system. Because HA is disabled, it will cause both
active CP and the standby CP to reboot. After reboot, the
HA will be enabled.

Do you want to continue [y/n] y

Rebooting! Sun Feb 28 19:49:45 2010...

The system is going down for reboot NOW !!
```

See Also

diagDisablePost, diagEnablePost, reBoot, haDisable, haEnable, haFailover

fcipHelp

Displays FCIP command information.

Synopsis

fciphelp

Description

Use this command to display a listing of Fibre Channel over IP (FCIP) commands with short descriptions for each command. FCIP commands require an FCIP license.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display FCIP command help information:

```
switch:admin> fciphelp
extncfg                    Configure blade/switch extension product features
fciphelp                   Print FCIP help info
portcfg                    Create/Delete a new ip interface/route/arp entry on
                           the GigE port
portcfgge                  Configure GigE port features
portcmd                    Execute commands (ping etc) on the GigE port
portshow                   Show configured ip interfaces/routes/arp entries on
                           the GigE Port
```

See Also

portCfg, portCmd, portShow

fcipLedTest

Exercises the GbE port LEDS on the Extension switches or Extension blades.

Synopsis

fcipledtest [**--slot** *<slot>*]

Description

Use this command to exercise the GbE port LEDs on the Extension switches or Extension blades. The behavior of this command varies according to platform:

- On Brocade 7810 and Brocade 7850, this test cycles all the port LEDs by lighting GREEN on all ports for 3 seconds and lighting AMBER on all ports for 3 seconds. The switch will reboot once the test is complete.
- On Brocade SX6, this test cycles all the port LEDs by lighting GREEN on all ports for 3 seconds. As the test continues the ports turn AMBER for 3 seconds. The LEDs turn off when the test has finished. The blade will reboot once the test is complete.

This diagnostic cannot be run on an operational switch. You must disable the switch using the **chassisDisable** command before you can run this test. After the command completes, the ATTN LEDs flash amber, indicating that the command has finished and exited. Enable the switch using the **chassisEnable** command to set the ATTN LEDs back to black.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--slot <*slot*>	Tests all GbE ports in the specified slot. This operand is valid only on chassis-based platforms.

Examples

To test the LEDs on a slot of Brocade X6-4.

```
switch:admin> fcipledtest --slot 4
PASSED.
```

See Also

chassisDisable, chassisEnable, extnCfg, portLedTest

fcipPathTest

Tests the data path of the FCIP complex.

Synopsis

```
fcippathtest
      [--slot slot]
      [-lb_mode mode]
      [-nframes count]
```

Description

Use this command to verify the data paths in the FCIP complex. All data path modes run tests by comparing Fibre Channel frames or data packets transmitted from and received by the network processor due to the designated loopback.

This command is supported only on the Brocade 7810 and SX6 platforms.

Executing this command causes the switch or blade to reboot.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--slot *slot*
Specifies the slot number on which the diagnostic operates. The default is 0 and operates on fixed-port-count products.

-lb_mode *mode*
Specifies the loopback mode for the test. By default, this test uses the External (SERDES) loopback mode 2 which is the only loopback mode supported on Brocade 7810 and SX6 platforms. Other valid values in addition to mode 2 are as follows:

1	Port loopback (requires loopback plugs)
2	External (SERDES) loopback
5	Internal (parallel) loopback
7	Backend bypass and port loopback (requires loopback plugs)
8	Backend bypass and SERDES loopback

-nframes *count*
Specifies the number of frames to send. The test will progress until the specified number of frames has been transmitted on each port. The default value is 4 for Brocade 7810 and Brocade SX6.

Examples

To run the test on slot 2:

```
switch:admin> fcippathtest --slot 2
Running fcippathtest .............
Test Complete: fcippathtest Pass 10 of 10
Duration 0 hr, 1 min & 50 sec (0:1:50:942).
 passed.
```

See Also

chassisDisable, chassisEnable

fcLag

Establishes and manages the Fibre Channel Link Aggregation (FC-LAG) port member to communicate with its peer using the link aggregation protocol.

Synopsis

```
fclag --create <fclag_name>
 fclag --delete <fclag_name>
 fclag --enable <fclag_name>
 fclag --disable <fclag_name>
 fclag --add_mbr <fclag_name>
 -port [<slot>/]<port1>[-<port2>]
 fclag --remove_mbr <fclag_name>
 -port [<slot>/]<port1>[-<port2>]
 fclag --show <fclag_name>
 fclag --show -brief
 fclag --perf <fclag_name>
 fclag --perf -brief
fclag --clearall [-force]
 fclag --help
```

Description

When FC-LAG is enabled, a link aggregation protocol is run between the remote FI and the switch and all the underlying physical links are configured into a single aggregated link.

A maximum of 96 FC-LAGs are allowed to be configured in a switch.

A maximum of 96 FC-LAGs are allowed to be configured in each switch partition.

The maximum number of physical links under each FC-LAG is 16.

All physical ports within an FC-LAG must have the same speed, and the FC-LAG must be formed within the same switch.

Refer to the *Brocade Fabric OS Administration Guide* for more information on Fibre Channel Link Aggregation (FC-LAG).

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--create	Creates the FC-LAG. Each FC-LAG must have a unique name; else an error is printed.

--delete	Deletes the specified FC-LAG.
--enable	Enables the specified FC-LAG. By default, the FC-LAG is enabled once it is created.
--disable	Disables the specified FC-LAG.
<fclag_name>	The name of the FC-LAG.
--add_mbr	Adds physical ports to the FC-LAG created. Once a port is added to the FC-LAG, it is disabled. Use the **portenable** or **portdisable** commands to enable or disable the member port.
--remove_mbr	Removes the port from the FC-LAG. This operation can be disruptive if the port that is removed is the last port in the FC-LAG. The traffic is adjusted evenly to the remaining ports in the FC-LAG once a port is removed from the FC-LAG.
***<slot>*/]<**	On bladed systems only, specifies the slot number of the port(s) to be added to or removed from the FC-LAG, followed by a slash (/).
***port1*>[-<*port2*>]**	The single port(*port1*) or range of ports(*port1*-*port2*) to be added to or removed from the FC-LAG.
--show	Displays the details of the existing FC-LAGs.
--perf	Displays the performance statistics of the existing FC-LAGs.
-brief	Displays a summary of all the FC-LAGs.
--clearall	Clears all the FC-LAG ports in the system.
	-force Cleans up all the FC-LAG ports in the system without prompting for a confirmation.
--help	Displays the command usage.

Examples

To display the exisitng FC-LAGs:

```
switch:admin> fclag --show
FC-LAG Name: fclag-1
FC-LAG Number: 1
FC-LAG Port-WWN: f6:1f:cc:03:3d:e1:06:86
FC-LAG Admin Status: ENABLED
FC-LAG Link Status: UP
FC-LAG Port-Index: 1670
Member ports: 2
         Port 40: Admin Status ENABLED, Link Status UP
         Port 41: Admin Status ENABLED, Link Status UP

Total number of FC-LAG(s) = 1
```

To display a summary of the FC-LAGs:

```
switch:admin> fclag --show -brief
Name         Admin_state       Oper_state      Total_member
----         -----------       ----------      ------------
fclag1         ENABLED           UP              1
fclag2         DISABLED          DOWN            1
Total number of FC-LAG(s) = 2
```

To enable an FC-LAG:

```
switch:admin> fclag --enable fclag1
FC-LAG 'fclag1' is enabled.
```

To add a member port to the specified FC-LAG port:

```
switch:admin> fclag --add_mbr fclag1 -port 36-37
Port '36' added to FC-LAG 'fclag1' and disabled.
Please do the same operation to the switch on the
other end of the FC-LAG, then 'enable' ports on
both ends to bring it up.
Port '37' added to FC-LAG 'fclag1' and disabled.
Please do the same operation to the switch on the
other end of the FC-LAG, then 'enable' ports on
both ends to bring it up.
```

To display performance statistics of the FC-LAG:

```
switch:admin> fclag --perf
FC-LAG Name       : fclag1
FC-LAG Link Status: UP
FC-LAG Stats      :
         Port 36: Rx Bandwidth 16G, Throughput    552.46k(00.00%)
                            Tx Bandwidth 16G, Throughput    405.22m(02.53%)
         Port 37: Rx Bandwidth 16G, Throughput    549.70k(00.00%)
                            Tx Bandwidth 16G, Throughput    403.81m(02.52%)

         Overall: Rx Bandwidth 32G, Throughput      1.10m(00.00%)
                      Tx Bandwidth 32G, Throughput    809.03m(02.52%)
                      RX+Tx Bandwidth 64G, Throughput    810.14m(01.26%)
FC-LAG Name       : fclag2
FC-LAG Link Status: DOWN
FC-LAG Name       : fclag3
FC-LAG Link Status: DOWN
FC-LAG Name       : fclag10
FC-LAG Link Status: DOWN
Total number of FC-LAG(s) = 4
```

To clear all the FC-LAG ports in the system:

```
switch:admin> fclag --clearall -force
```

See Also

nodeFind, nsCamShow, nsShow, nsZoneMember

FCoE

Configures and displays various parameters of the Fibre Channel over Ethernet (FCoE) feature supported only in Brocade FC32-64 Port Blade.

Synopsis

fcoe --create -fabricmap <*map_name*> **-vlan** <*vlan_value*> [**-priority** <*priority_value*>] [**-fcmap** <*fcmap_value*>]

fcoe --delete -fabricmap <*map_name*>

fcoe --config -vlan <*vlan_value*>[**-fabricmap** <*map_name*>]

fcoe --config -priority <*priority_value*> [**-fabricmap** <*map_name*>]

fcoe --config -fcmap <*fcmap_value*> [**-fabricmap** <*map_name*>]

fcoe --config -katimeout <*katimeout_value*>

```
 fcoe --config -fka <fka_value>
 fcoe --config -enodes <enode_num>
 fcoe --enable -port [<slot>/]<port1>[-<port2>]
    [-fabricmap <name>] [ucs]
 fcoe --enable -portchannel <po_name> [-fabricmap <name>] [ucs]
 fcoe --disable -port [<slot>/]<port1>[-<port2>]
 fcoe --disable -portchannel <po_name>
 fcoe --show -fabric
fcoe --show -fabricmap [<map_name>]
 fcoe --show -login [brief | port [<slot>/]<port1>[-<port2>]
    | portchannel <po_name> | fabricmap <name>]
 fcoe --show -provision
fcoe --show -stats [port [<slot>/]<port> | portchannel <po_num>]
 fcoe --show -portchannel [<po_name>]
 fcoe --show -fcf
fcoe --default
 fcoe --clear -stats [port [<slot>/]<port> | portchannel <po_name>]
 fcoe --clear -login [port [<slot>/]<port> | portchannel <po_name> |
 wwn<wwn_name>]
 fcoe --help
```

Description

Beginning with Fabric OS v9.2.2, this command is deprecated and will be removed in a future release of Fabric OS. FCoE CLI commands will display a warning message as **FCoE is deprecated and will be obsoleted in a future FOS version. In this FOS version, FCoE functionality is unchanged.** when FCoE configuration is modified.

Use this command to configure FCoE parameters, FCoE enodes, enable or disable FCoE on Ethernet ports or portchannels, view the FCoE configuration and device login information, view or clear the FCoE statistics on an Ethernet port or portchannel. This **--help** option of this command displays the usage. Use the **--show** option to display the current settings on the switch.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--create Create new fabric map.

- **-vlan** Configures the FCoE VLAN. The valid range is from 2 through 4093; where the default value is 1002.
- **-priority** Configures the FCoE priority. Valid range is from 1 through 6; where the default is 3.
- **-fcmap** Configures the FCoE FC-MAP. Valid range is from 0x0efc00 through 0x0efcff; where 0x0efc00 is the default value.

--delete Delete the fabric map.

- **-fabricmap** Fabric map that has to be deleted.

--config Configure various fabric map parameters.

-vlan	Configures the FCoE VLAN. The valid range is from 2 through 4093; where the default value is 1002.
-priority	Configures the FCoE priority. Valid range is from 1 through 6; where the default is 3.
-fcmap	Configures the FCoE FC-MAP. Valid range is from 0x0efc00 through 0x0efcff; where 0x0efc00 is the default value.
-katimeout	Sets the Keep Alive Timeout on or off. The default value is **on**.
-fka	Configures the fka interval. The valid range is from 250 through 90000 in milli-seconds.
-enodes	Creates the VF ports. The valid range is from 0 through 1000.

--enable To enable FCOE provisioning on the given interface/port.

-port [ucs]	Enable FCOE on the physical port with the option to ignore KA.
-portchannel [ucs]	Enable FCOE on portchannel with the option to ignore KA.
-fabricmap [ucs]	Enable the FCOE on port or portchannel for the named fabric map. The map name denotes the name of the fabric map to be configured. The UCS mode must be the last option specified.

--disable To disable the FCOE provisioning on the given interface/port.

-port [ucs]	Disables the FCoE provisioning on the port or port range.
-portchannel [ucs]	Disables the FCoE provisioning on the portchannel.

--show Displays all the FCoE configuration parameters, FCoE device login, FCoE statistics, etc.

-fabric	Displays FCoE fabric wide parameters such as VLAN, FCoE priority, FC-MAP, FKA interval and Keep Alive timeout.
-fabricmap	Displays FCoE fabric map parameters such as the fabric map name.
-login	Displays FCoE device login information.

brief	Displays a brief information of the devices logged in and the number of VN-ports.
port *slot/port*	Displays the login information for all the devices logged in through the specified physical port.
portchannel *po_name*	Displays the login information for all the devices logged in through the specified portchannel.
fabricmap *map_name*	Displays the logins for the given fabric map name. The map name describes the name of the fabric map.

-provision	Displays information about the FCoE provisioned ports and portchannels.
-stats	Displays the FCoE protocol statistics. If no option is provided, displays statistics for all the FCoE-provisioned Ethernet ports and portchannels, else displays statistics for the requested Ethernet ports or portchannels.
-portchannel	Displays information about all the FCoE provisioned portchannels.
-fcf	Displays the FCoE Forwarder(FCF) domain-specific parameters such as Number of Enodes configured and the various FCF MACs.

--clear Clears the FCoE protocol statistics for all the ports or for the specified port or portchannel. The **-login** option clears the login on all the FCoE interfaces or on the particular port or portchannel or for the specified device WWN. The **wwn** option is not supported under **-stats** option.

--default Configures the system to the default FCoE configuration state.

--help Displays the command usage.

Examples

To display FCoE global configuration parameters:

```
switch:admin> fcoe --show -fabric
==========================================================
VLAN      VFID      Pri     FCMAP        FKA       Timeout
==========================================================
1002[D]   128[D]    3[D]    0xefc00[D]   8000[D]   Enabled[D]
```

To edit part of the fabric-map parameters use one of the **fcoe --config** commands:

```
switch:admin> fcoe --config -enode 10
switch:admin> fcoe --config -vlan 1003
switch:admin> fcoe --config -priority 4
switch:admin> fcoe --config -fcmap 0x0efc01
switch:admin> fcoe --config -katimeout on
switch:admin> fcoe --config -fka 6000
switch:admin> fcoe --config -enodes 5
```

To enable FCoE on the physical Ethernet port or a port range:

```
switch:admin> fcoe --enable -port 2/3-4
```

To enable FCoE on the physical Ethernet port with UCS mode:

```
switch:admin> fcoe --enable -port 2/8 ucs
Enabling UCS mode will disable VNPort Keep Alives for the devices logging in on this port
Would you like to continue [y/n]?: y
```

To enable FCoE on a portchannel with UCS mode:

```
switch:admin> fcoe --enable -portchannel portch_1 ucs
Enabling UCS mode will disable VNPort Keep Alives for the devices logging in on this port
Would you like to continue [y/n]?: y
```

To disable FCoE on the physical Ethernet port or a port range:

```
switch:admin> fcoe --disable -port 2/3-4
```

To enable FCoE configuration on LAG:

```
switch:admin> fcoe --enable -portchannel port_ch_1
```

To disable FCoE configuration on LAG:

```
switch:admin> fcoe --disable -portchannel port_ch_1
```

To display the FCoE device login details:

```
switch:admin> fcoe --show -login
=============================================================================================
FCOE VF-Port Eth-port/LAG       Device WWN               Device MAC         Session MAC
=============================================================================================
1800            8/4        10:00:00:05:1e:8f:fb:43  00:05:1e:8f:fb:43  0e:fc:00:01:90:c0
1800            8/4        10:00:00:05:1e:8f:f9:00  00:05:1e:8f:fb:43  0e:fc:00:01:90:c1
1800            8/4        10:00:00:05:1e:8f:f9:01  00:05:1e:8f:fb:43  0e:fc:00:01:90:c2
1800            8/4        10:00:00:05:1e:8f:f9:02  00:05:1e:8f:fb:43  0e:fc:00:01:90:c3
1800            8/4        10:00:00:05:1e:8f:f9:03  00:05:1e:8f:fb:43  0e:fc:00:01:90:c4
```

```
switch:admin> fcoe --show -login brief
================================================
FCOE VF-Port        Eth-port/LAG       #VN-Ports
================================================
1800                8/4                3

Total number of Port(s) = 1

switch:admin> fcoe --show -login port 8/4
=========================================================================================
FCOE VF-Port Eth-port/LAG      Device WWN               Device MAC      Session MAC
=========================================================================================
1800                8/4         10:00:00:05:1e:8f:fd:02  00:05:1e:8f:fd:02  0e:fc:00:01:90:40
1800                8/4         10:00:00:05:1e:8f:fd:00  00:05:1e:8f:fd:02  0e:fc:00:01:90:41
1800                8/4         10:00:00:05:1e:8f:fd:10  00:05:1e:8f:fd:02  0e:fc:00:01:90:42

Total number of Login(s) = 3

switch:admin> fcoe --show -login portchannel portch_1
==================================================================================
FCOE VF-Port    Eth-port/LAG    Device WWN            Device MAC         Session MAC
==================================================================================
777             portch_1 20:01:00:11:0d:f2:08:00  00:05:1e:78:f2:08  0e:fc:01:01:07:01

Total number of Login(s) = 1
```

To display the ports or portchannels that are provisioned for FCoE:

```
switch:admin> fcoe --show -provision
=====================================================
Domain        Port(s)/Portchannel(s)      Mode
=====================================================
1             8/0                         UCS
1             8/4
1             8/27
1             abc                         UCS
1             portch_1

Total number of port(s) = 5
```

To display details of the portchannels provisioned for FCoE:

```
switch:admin> fcoe --show -portchannel
LACP Aggregator: port_channel1
     Member ports: 1
     Link: 3/0

Total number of Portchannel(s) = 1
```

To display details of the local FCF switch including domain-id, FCF MAC addresses, etc.:

```
switch:admin> fcoe --show -fcf
```

```
Domain-id : 1
Number of Enodes : 6
Global FCF Mac
===============
       c4:f5:7c:00:a8:62
Per Port FCF Mac
=================
       16:  c4:f5:7c:00:a8:12
       17:  c4:f5:7c:00:a8:13
       20:  c4:f5:7c:00:a8:16
       21:  c4:f5:7c:00:a8:17
       24:  c4:f5:7c:00:a8:1a
       25:  c4:f5:7c:00:a8:1b
       28:  c4:f5:7c:00:a8:1e
       29:  c4:f5:7c:00:a8:1f
```

To display the stats for all the Ethernet ports and FCoE provisioned portchannels:

```
switch:admin> fcoe --show -stats
Port: 1/8
---------------------------------------------------------
RX Statistics:
Num of FIP VLAN Discovery Requests  : 1
Num of FIP Discovery Solicitations  : 1
Num of FIP FLOGIs                   : 1
Num of FIP NPIV FDISCs              : 0
Num of FIP LOGOs                    : 0
Num of FIP Enode Keep Alives        : 1207
Num of FIP VN Port Keep Alives      : 107
Errors                              : 0
TX Statistics:
Num of FIP VLAN Discovery Responses : 1
Num of FIP Discovery SA             : 1
Num of FIP Discovery UA             : 0
Num of FLOGI ACCs                   : 1
Num of FDISC ACCs                   : 0
Num of LS_RJT (FLOGI, FDISC, LOGO)  : 0
Num of CVLs                         : 0
Errors                              : 0

Port: 2/8
---------------------------------------------------------
RX Statistics:
Num of FIP VLAN Discovery Requests  : 1
Num of FIP Discovery Solicitations  : 1
Num of FIP FLOGIs                   : 1
Num of FIP NPIV FDISCs              : 0
Num of FIP LOGOs                    : 0
Num of FIP Enode Keep Alives        : 1209
Num of FIP VN Port Keep Alives      : 107
Errors                              : 0
TX Statistics:
Num of FIP VLAN Discovery Responses : 1
```

```
Num of FIP Discovery SA             : 1
Num of FIP Discovery UA             : 0
Num of FLOGI ACCs                   : 1
Num of FDISC ACCs                   : 0
Num of LS_RJT (FLOGI, FDISC, LOGO)  : 0
Num of CVLs                         : 0
Errors                              : 0
Total number of Ports = 2
```

To display the FCoE statistics for a specified Ethernet port:

```
switch:admin> fcoe --show -stats 1/8
Port: 1/8
-------------------------------------------------------
RX Statistics:
Num of FIP VLAN Discovery Requests  : 1
Num of FIP Discovery Solicitations  : 1
Num of FIP FLOGIs                   : 1
Num of FIP NPIV FDISCs              : 0
Num of FIP LOGOs                    : 0
Num of FIP Enode Keep Alives        : 1207
Num of FIP VN Port Keep Alives      : 107
Errors                              : 0
TX Statistics:
Num of FIP VLAN Discovery Responses : 1
Num of FIP Discovery SA             : 1
Num of FIP Discovery UA             : 0
Num of FLOGI ACCs                   : 1
Num of FDISC ACCs                   : 0
Num of LS_RJT (FLOGI, FDISC, LOGO)  : 0
Num of CVLs                         : 0
Errors                              : 0
Total number of Ports = 1
```

To change the system to default FCoE configuration state:

```
switch:admin> fcoe --default
```

To clear the FCoE statistics on the specified port:

```
switch:admin> fcoe --clear -stats port 1/7
```

To clear the FCoE statistics on the specified portchannel:

```
switch:admin> fcoe --clear -stats portchannel portch_1
```

To clear the FCoE device logged in on the specified port:

```
switch:admin> fcoe --clear -login port 1/21
```

To clear the FCoE device logged in on the specified portchannel:

```
switch:admin> fcoe --clear -login portchannel portch_1
```

To clear the FCoE device logged in with the specified wwn:

```
switch:admin> fcoe --clear -login wwn 10:00:00:05:1e:8f:fb:43
```

See Also

portChannel, lldp

fcPing

Sends a Fibre Channel Extended Link Service (ELS) Echo request to a pair of ports or to a single destination, or executes a SuperPing.

Synopsis

```
fcping
     [--number <frames> | --n <frames>]
     [--length <size> | --l <size>]
     [--interval <wait> | --i <wait>]
     [--pattern <pattern> | --p <pattern>]
     [--bypasszone | --b]
     [--quiet |  --q]
     [source] <destination>
fcping {--allpaths | -s}
     [-maxtries <maxvalue> | -m <maxvalue>]
     [-delay <millisec> | -d <millisec>]
     [-printisl | -p] [-errstats | -e]
     [-covcount <count> | -c <count>]
     [-framelength <len> | -f <len>]
     [-vc] <destination>
fcping --help
```

Description

Use this command to send a Fibre Channel ELS Echo request to a pair of ports (a source and a destination), to a single device, or to execute a SuperPing that exercises all interswitch links (ISLs) and internal links in different paths that route to the destination device.

- When you use **fcPing** with a source and a destination, the command performs a zoning check between the two ports. In addition, two Fibre Channel ELS requests are generated. The first ELS request is from the domain controller to the source port identifier. The second ELS request is from the domain controller to the destination port identifier. The ELS Echo request elicits an ELS Echo response from a port identifier in the fabric and is useful for validating link connectivity.

  The source and destination port identifiers can be specified as a 24-bit Fibre Channel port identifier (PISD), a port World Wide Name, or a node World Wide Name. The two port identifiers are then used to determine if the identifiers are zoned together.
- When you use **fcPing** to probe a single destination, an ELS Echo is sent to the specified destination and a response obtained. The destination can be a switch WWN, a domain ID, or a switch domain controller ID. No zoning check is performed when a single device is probed.
- When you use **fcPing** with the **--allpaths** option, the command exercises a "SuperPing." A SuperPing exercises all ISLs and the internal links included in the least-cost paths that route to the destination. It collects statistical data of all the covered paths and their port and provides optional parameters to selectively display the data. SuperPing takes only one argument, the destination port identifier. To execute a SuperPing for two destinations, you must issue the **fcping --allpaths** command separately for each destination.

  SuperPing facilitates troubleshooting of links that experience problems. When an echo frame is dropped, all the ISLs and internal links potentially traversed by this frame are marked as failures. If a fabric topology is considered fully

redundant, that is, at each hop there are multiple paths to reach a destination, a high percentage of errors are recorded on the link that experiences errors.

Logical Fabrics: When executed in a Logical Fabric from a switch to a destination device connected through the base fabric, SuperPing exercises all paths in the base fabric along with the ISLs in the logical fabric. The path output indicates the LISLs and the base switch. Refer to the Examples section for an illustration.

Notes

The ELS Echo may not be supported on all devices. In such cases, the response could be either an ELS reject or a request timeout.

By default, **fcPing** sends five ELS Echo requests to each port. When a device does not respond to the ELS Echo request, further debugging may be needed to determine, whether the device does not support ELS Echo, or whether the request is rejected for some other reason. Do not assume that the device is not connected.

If a fabric reconfiguration occurs while SuperPing is in progress, the command reports an error message. Exit the command and rerun the test after the fabric becomes stable again.

SuperPing and the **fcPing** command are not supported for the simulated devices that exist on SIM ports. Use the **flow** command to enable the SIM ports.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

<destination>	Specifies the destination as follows. • When using **fcPing** between a source and a destination, specify the destination as port WWN or a node WWN. • When using **fcPing** to ping a single device, specify the destination as a PID, a switch WWN, a domain ID, or a switch domain controller ID. • When using **fcPing** with the **--allpaths** option, specify the destination as a PID, a switch WWN, or a domain ID.
<source>	Specifies the source port ID, port WWN, or node WWN. This operand is optional; it is not valid with the SuperPing command (**--allpaths**).

The following operands are valid only when **fcPing** is executed without the **--allpaths** option (legacy mode):

--number <*frames*> **| --n <*frames*>**	Specifies the number of ELS Echo requests to send. The default value is 5. Valid values ranges from 1 through 1000 frames.
--length <*size*> **| --l <*size*>**	Specifies the frame size of the requests in bytes. The default value is 0. Without data, the Fibre Channel Echo request frame size is 12 bytes. The total byte count includes four bytes from the Echo request header and eight bytes from the timestamp. The maximum allowed value is 2,036 bytes. The length must be word-aligned.
--interval <*wait*> **| --i <*wait*>**	Specifies the interval, in seconds, between successive ELS Echo requests. The default value is 0 seconds. The maximum allowed value is 100.
--pattern <*pattern*> **| --p <*pattern*>**	Specifies up to 16 "pad" bytes, which are used to fill out the request frame payload sent. This is useful for diagnosing data-dependent problems in the fabric link. The pattern bytes are specified as hexadecimal characters. For example, **--pattern ff** fills the request frame with instances of the number 1. If a non-byte-aligned pattern is specified, the upper nibble of the last pattern byte is filled with zeros. For example, **--pattern 123** fills the payload with a pattern of 0x1203.
--bypasszone | --b	Bypasses the zone check.

--quiet | --q Suppresses the diagnostic output. Only zoning information, if applicable, and the summary line are displayed.

The following operands are valid only when **fcPing** is executed to perform a SuperPing:

--allpaths [<*args*>] <*destination*> Executes a SuperPing that covers all available least-cost paths to the specified destination. The number of actual paths covered depends on two other parameters that you can optionally specify. When you issue **fcping --allpaths** for a destination without any other options, SuperPing covers all ISLs in the routes between source to destination but does exercise all possible combinations of end-to-end paths. This operand is required when executing **fcPing** as SuperPing.

The following operands are optional and valid only with the **--allpaths** option:

-printisl | -p Displays statistical data for each ISL and internal port along the paths traversed by SuperPing. This information displays in addition to the path display.

-covcount <*count*> | -c <*count*> Specifies the minimum number of times each ISL is exercised by the SuperPing command. The command sends *count* frames and checks if each ISL is exercised at least the *count* times. When the condition is met, superPing exits and prints the statistics. The default value is 5.

-maxtries <*maxvalue*> | -m <*maxvalue*> Specifies the maximum number of frames to be sent before SuperPing exits. If both **-maxtries** and **-covcount** are specified, SuperPing checks the ISL coverage and keeps resending frames until the minimum coverage condition to is met or until the maximum number of echo frames specified in **maxtries** has been sent. For example, assuming a coverage count of 100 and a **Maxtries** value of 300, SuperPing will send 100 frames at a time and checks if each ISL is covered at least 100 times. If not, SuperPing will keep sending 100 frames at a time to check for coverage up to 3 times for a maximum of 300 frames (3*100 = 300) on each egress port. If this value is set too low in relation to the specified coverage count, not all ISLs may be covered. The default value is 100. Valid values ranges from 5 through 1000.

-delay <*millisec*> | -d <*millisec*> Includes a delay of *millisec* value between each echo frame sent. Valid values ranges from 1 through 1000.

-framelength <*len*> | -f <*len*> Specifies the size of the data to send.

-errstats | -e Collects error statistics of each user port that is part of ISLs covered through SuperPing to reach destination domain.

-vc Displays the ISL and internal port statistics per VC.

--help Displays the command usage.

Examples

To display one device that accepts the request and another device that rejects the request:

```
switch:admin> fcping 10:xx:xx:xx:xx:xx:xx:xx 21:xx:xx:xx:xx:xx:xx:xx
Source:         10:xx:xx:xx:xx:xx:xx:xx
Destination:    21:xx:xx:xx:xx:xx:xx:xx
Zone Check:     Not Zoned

Pinging 10:xx:xx:xx:xx:xx:xx:xx [0x20800] with 12 bytes of data:
received reply from 10:xx:xx:xx:xx:xx:xx:xx  12 bytes time:1162 usec
received reply from 10:xx:xx:xx:xx:xx:xx:xx  12 bytes time:1013 usec
received reply from 10:xx:xx:xx:xx:xx:xx:xx  12 bytes time:1442 usec
received reply from 10:xx:xx:xx:xx:xx:xx:xx  12 bytes time:1052 usec
received reply from 10:xx:xx:xx:xx:xx:xx:xx  12 bytes time:1012 usec
5 frames sent, 5 frames received, 0 frames rejected, 0 frames timeout
```

```
Round-trip min/avg/max = 1012/1136/1442 usec

Pinging 21:xx:xx:xx:xx:xx:xx:xx [0x211e8] with 12 bytes of data:
Request rejected
Request rejected
Request rejected
Request rejected
Request rejected
5 frames sent, 0 frames received, 5 frames rejected, 0 frames timeout
Round-trip min/avg/max = 0/0/0 usec
```

To display one device that accepts the request and another device that does not respond to the request:

```
switch:admin> fcping 0x020800 22:xx:xx:xx:xx:xx:xx:xx
Source:         0x020800
Destination:    22:xx:xx:xx:xx:xx:xx:xx
Zone Check:     Zoned

Pinging 0x020800 with 12 bytes of data:
received reply from 0x020800: 12 bytes time:1159 usec
received reply from 0x020800: 12 bytes time:1006 usec
received reply from 0x020800: 12 bytes time:1008 usec
received reply from 0x020800: 12 bytes time:1038 usec
received reply from 0x020800: 12 bytes time:1010 usec
5 frames sent, 5 frames received, 0 frames rejected,0 frames timeout
Round-trip min/avg/max = 1006/1044/1159 usec

Pinging 22:xx:xx:xx:xx:xx:xx:xx [0x0217d9] with 12 bytes of data:
Request timed out
Request timed out
Request timed out
Request timed out
Request timed out
5 frames sent, 0 frames received, 0 frames rejected,5 frames timeout
Round-trip min/avg/max = 0/0/0 usec
```

To use **fcping** with a single destination:

```
switch:admin> fcping 22:xx:xx:xx:xx:xx:xx:xx
Pinging 22:xx:xx:xx:xx:xx:xx:xx [0x022300] with 12 bytes of data:
Request rejected
 Request rejected by 0x022300: Command not supported: time: 1159 usec
 Request rejected by 0x022300: Command not supported: time: 1006 usec
 Request rejected by 0x022300: Command not supported: time: 1008 usec
 Request rejected by 0x022300: Command not supported: time: 1038 usec
 Request rejected by 0x022300: Command not supported: time: 1010 usec
 5 frames sent, 0 frames received, 5 frames rejected, 0 frames timeout
        Round-trip min/avg/max = 1006/1044/1159 usec
```

To use **fcPing** with a single destination (in the example, the destination is a switch WWN):

```
switch:admin> fabricshow
Switch ID   Worldwide Name      Enet IP Addr    FC IP Addr  Name
-----------------------------------------------------------------
6: fffc06 10:xx:xx:xx:xx:xx:xx:xx 10.00.90.00 0.0.0.0 "mps_daz_1"
```

```
55:fffc37 10:xx:xx:xx:xx:xx:xx:xx 192.0.2.0 0.0.0.0  pulsar055"

switch:admin> fcping 10:xx:xx:xx:xx:xx:xx:xx
Destination:    10:xx:xx:xx:xx:xx:xx:xx

Pinging 10:xx:xx:xx:xx:xx:xx:xx [fffc06] with 12 bytes of data:
received reply from 10:xx:xx:xx:xx:xx:xx:xx : 12 bytes time:1162 usec
received reply from 10:xx:xx:xx:xx:xx:xx:xx : 12 bytes time:1013 usec
received reply from 10:xx:xx:xx:xx:xx:xx:xx : 12 bytes time:1442 usec
received reply from 10:xx:xx:xx:xx:xx:xx:xx : 12 bytes time:1052 usec
received reply from 10:xx:xx:xx:xx:xx:xx:xx : 12 bytes time:1012 usec
5 frames sent, 5 frames received, 0 frames rejected, 0 frames timeout
Round-trip min/avg/max = 1012/1136/1442 usec
```

To use **fcPing** with a single destination (in the example, the destination is a device node WWN):

```
switch:admin> nsshow
{
 Type Pid    COS     PortName          NodeName        TTL(sec)
 N  370500;3;20:07:00:05:1e:35:10:7f;10:00:00:05:1e:35:10:7f; na
    Fabric Port Name: 20:05:00:05:1e:34:01:f5
    Permanent Port Name: 20:07:00:05:1e:35:10:7f
    Port Index: 5
    Share Area: No
    Redirect: No
    Partial: NO
 N 370501; 3;10:00:00:00:c9:3f:7c:b8;20:00:00:00:c9:3f:7c:b8; na
    FC4s: FCP
    NodeSymb: [44] "Emulex LP1050 FV1.81A1 DV5-5.20A9 DELL1750-3"
    Fabric Port Name: 20:05:00:05:1e:34:01:f5
    Permanent Port Name: 20:07:00:05:1e:35:10:7f
    Port Index: 5
    Share Area: No
    Redirect: No
    Partial: NO
The Local Name Server has 2 entries }

switch:admin> fcping 20:xx:xx:xx:xx:xx:xx:xx
Destination:    20:xx:xx:xx:xx:xx:xx:xx

Pinging 20:xx:xx:xx:xx:xx:xx:xx [0x370501] with 12 bytes of data:
received reply from 20:xx:xx:xx:xx:xx:xx:xx bytes time:825 usec
received reply from 20:xx:xx:xx:xx:xx:xx:xx bytes time:713 usec
received reply from 20:xx:xx:xx:xx:xx:xx:xx bytes time:714 usec
received reply from 20:xx:xx:xx:xx:xx:xx:xx bytes time:741 usec
received reply from 20:xx:xx:xx:xx:xx:xx:xx bytes time:880 usec
5 frames sent,5 frames received,0 frames rejected,0 frames timeout
Round-trip min/avg/max = 713/774/880 usec
```

To execute a SuperPing testing all ISLs to a specified destination (in the example, two paths are tested, and each hop is displayed in Domain/Index format):

```
switch:admin> fcping --allpaths 165
```

```
Pinging(size:12 bytes) destination domain 165 through all paths

PATH SWITCH1-->     SWITCH2-->            SWITCH3-->     \
-------------------------------------------------------------
1.(3/EMB,3/205)[128] (207/25,207/42)[128] (101/3,101/16)[128]\

2.(3/EMB,3/204)[128] (207/27,207/42)[128] (101/3,101/16)[128]\

 SWITCH4             STATUS
----------------------------
(165/99,165/0)[128]  SUCCESS

2(165/99,165/0)[128] SUCCESS
```

To execute a SuperPing in a logical fabric (in the example, domains 10 and 40 in FID 1 are connected through the base fabric (FID 2)):

```
switch:admin: fcping --allpaths 40
Pinging(size:12 bytes) destination domain 30 through all paths

PATH SWITCH1-->  SWITCH2-->
-------------------------------------------------------
1.(10/EMB,10/4)[128] (20/5,20/EMB )[128] (1/EMB, 1/6)[2] \
Successfully completed superping for all paths

SWITCH3-->                       SWITCH4         STATUS
-------------------------------------------------------------
(2/7,2/EMB)[2] (30/EMB,30/8)[128] (40/9, 40/EMB)[128] SUCCESS
Successfully completed superping for all paths
```

To execute a SuperPing and print statistical coverage of each ISL and internal port along the potential paths (in the example, a few errors are recorded on the ISLs 3/205->2/25, 3/204->2/27, 2/42->101/3, and 2/1->101/8, but the internal port analysis shows that errors are recorded on the internal port 0/284 in domain 2, which is the potential faulty link):

```
switch:admin> fcping --allpaths -printisl 101
Pinging(size:12 bytes) destination domain 101 through all paths

PATH     SWITCH1-->           SWITCH2-->         \
-------------------------------------------------
1.   ( 3/EMB, 3/123)[128] (165/96 ,165/99 )[128] \
2.   ( 3/EMB, 3/205)[128] ( 2/25 , 2/1 )[128]    \
3.   ( 3/EMB, 3/205)[128] ( 2/25 , 2/42 )[128]   \
4.   ( 3/EMB, 3/204)[128] ( 2/27 , 2/42 )[128]   \
5.   ( 3/EMB, 3/204)[128] ( 2/27 , 2/1  )[128]   \

SWITCH3                  STATUS
---------------------------------
(101/16 ,101/EMB)[128]   SUCCESS
(101/8 ,101/EMB)[128]    FAILED
(101/3 ,101/EMB)[128]    FAILED
4(101/3 ,101/EMB)[128]   FAILED
 101/8 ,101/EMB)[128]    FAILED

Completed superping for all paths. Error found in few paths
```

```
ISL COVERAGE
-------------
SNO             ISL                          STATUS
---------------------------------------------------
1      (  3/123[128]-->165/96[128] )         SUCCESS(5/5)
2      (  3/205[128]-->  2/25[128] )         FAILURE(7/50)
3      (  3/204[128]-->  2/27[128] )         FAILURE(11/50)
4      (165/99[128] -->101/16[128] )         SUCCESS(5/5)
6      (  2/42[128] -->101/3[128]  )         FAILURE(10/67)
7      (  2/1[128]  -->101/8[128]  )         FAILURE(8/33)

INTERNAL PORT COVERAGE
-----------------------

SNO     DOMAIN  INTRNL_PORT     STATUS
-------------------------------------------
1        2       0/272     SUCCESS(40/40)
2        2       0/276     SUCCESS(44/44)
3        2       0/280     SUCCESS(30/30)
4        2       0/284     FAILURE(20/20)
```

To execute a SuperPing with a coverage count of 1000 and a **maxtries** value of 5000 (in the example, the ISL (3/204->204/27), could not be covered 1000 times):

```
switch:admin> fcping --allpaths -covcount 1000  \
   -maxtries 5000 -printisl 165

Pinging(size:12 bytes) destination domain 165 through all paths
|
PATH SWITCH1-->  SWITCH2-->      SWITCH3-->      \
---------------------------------------------------------------
1.(3/EMB,3/205)[128] (207/25,207/42)[128] (101/3,101/16)[128]\

2.(3/EMB,3/204)[128] (207/27,207/42)[128] (101/3,101/16)[128]\

SWITCH4             STATUS
---------------------------
(165/99,165/0)[128] SUCCESS

(165/99,165/0)[128] SUCCESS

Successfully completed superping for all paths

ISL COVERAGE
-------------
SNO             ISL                  STATUS
-------------------------------------------------------
 1      (  3/205-->207/25 )      SUCCESS(4025/4025)
 2      (  3/204-->207/27 )      SUCCESS(5/5)
 3      (207/42 -->101/3  )      SUCCESS(4030/4030)
 4      (101/16 -->165/99 )      SUCCESS(4030/4030)

INTERNAL PORT COVERAGE
```

```
-----------------------

SNO     DOMAIN  INTRNL_PORT     STATUS
----------------------------------------
```

See Also
None

fcpLogClear

Clears the FCPD debug information log.

Synopsis
fcplogclear

Description

Use this command to clear the debug information logged by the Fibre Channel Protocol daemon (FCPD).

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To clear the FCPD debug information log:

```
switch:admin> fcplogclear
```

See Also
fcpLogDisable, fcpLogEnable, fcpLogShow

fcpLogDisable

Disables the FCPD debug information log.

Synopsis
fcplogdisable

Description

Use this command to disable the logging of debug information by the Fibre Channel Protocol daemon (FCPD).

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To disable the FCPD debug information log:

```
switch:admin> fcplogdisable
```

See Also

fcpLogClear, fcpLogEnable, fcpLogShow

fcpLogEnable

Enables the FCPD debug information log.

Synopsis

```
fcplogenable
```

Description

Use this command to enable Fibre Channel Protocol daemon (FCPD) logging. Debug information logging is enabled by default.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To enable the FCPD debug information log:

```
switch:admin> fcplogenable
```

See Also

fcpLogClear, fcpLogDisable, fcpLogShow

fcpLogShow

Displays the FCPD debug information log.

Synopsis

```
fcplogshow
```

Description

Use this command to display the debug information logged at various stages during the Fibre Channel Protocol daemon (FCPD) device probing.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the FCPD debug information log:

```
switch:admin> fcplogshow
Switch 0; Sat Dec 18 14:22:05 2010
14:22:05.799269 Flush or Probe rcvd, port 15, \
   Line: 16777862, scn_type: 2
14:22:05.799279 Probe flush, port:15, \
   Line:16780554, flag:0
14:22:17.469561 Flush or Probe rcvd, port 15, \
   Line: 16777862, scn_type: 1
14:22:17.469567 Probe Msg Rcvd, port: 15, Line: 16777899, \
   prev_state: 0, msg_scn_arg1: 0
14:22:17.470618 fcpStartProbe, port: 15, line: 16778347, \
   async_state: 1, origin: 0,probe_state: 0, opt_code: 0
14:22:17.471052 fcpStartProbe, port: 15, line: 16778413, \
   async_state: 1073741824, origin: 0,probe_state: 0, opt_code: 0
14:22:17.471057 Probe flush, port:15, Line:16780554, flag:1
(output truncated)
```

See Also

fcpLogClear, fcpLogDisable, fcpLogEnable

fcpProbeShow

Displays the Fibre Channel Protocol (FCP) probe information.

Synopsis

fcpprobeshow *<port>*

Description

Use this command to display the Fibre Channel Protocol daemon (FCPD) device probing information for the devices attached to the specified F_Port or FL_Port. This information includes the number of successful logins and SCSI INQUIRY commands sent over this port and a list of the attached devices.

This command includes probing information for NPIV devices. In addition, this command displays the list of devices connected to a port and the number of successful PLOGI, PRLI, INQUIRies, and current probe state. For F_Ports and NPIV ports, when the F_Port Device Update Mode is ON, the probed device details are updated in the "npiv update map" field. When the F_Port Device Update Mode is OFF, the probed device details are updated in the "update map" field. Use the **configure** command to configure the F_Port Device Update Mode.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

port	Specify the port number to display, relative to its slot for bladed systems. Use **switchShow** to list valid ports. This operand is required.

Examples

To display the FCP probe information:

```
switch:admin> fcpprobeshow 31

port 0 is FV-Port and it is online.
nodes probed:        3
successful PLOGIs:   3
successful PRLIs:    3
successful INQUIRies:3
successful LOGOs:    3
outstanding IUs:     0
probing state:       3
probing TOV:         0
probing count:       0
probing next:        0
pmap:        0x00000000, 0x00000000, 0x00000000, 0x00000000
update map:  0x40000000, 0x00000000, 0x00000000, 0x00000000
npiv pmap:   0x00000000 0x00000000 0x00000000 0x00000000 \
   0x00000000 0x00000000 0x00000000 0x00000000
npiv update map:   0x00000006 0x00000000 0x00000000 0x00000000 \
    0x00000000 0x00000000 0x00000000 0x00000000

list of devices(may include old NPIV devices):
0x500e8: SEAGATE ST318452FC      0005
0x500e4: SEAGATE ST318452FC      0001
0x500e2: SEAGATE ST318452FC      0005
```

See Also

portLoginShow, portLogShow

fcpRlsProbe

Initiates the Fibre Channel Protocol (FCP) Read Link Status (RLS) probing for F_Port and displays the RLS information.

Synopsis

fcpRlsProbe --start *<port_range>*
fcpRlsProbe --show {*<port>* | **-all**}
fcpRlsProbe --help

Description

Use this command to initiate the FCP RLS probing or to display the RLS information. This information describes the number of link failures, loss-of-signal, loss-of-sync, CRC errors, and other failure events detected on the specified port.

Use the **fcprlsprobe --start** command to read the error status block for F/FL-Ports. This command will send a RLS ELS probe to the device on the specified port and caches the RLS information.

Use the **fcprlsprobe --show** command to display the cached RLS information. For the command to send RLS probe to the device you must enable the following parameter: Disable Device Probing = 0 (Enables device probing. By default Device probing is enabled).

For this command to gather and display F_Port error statistics, apart from enabling the device probing, you must enable RLS Probing using the **fcprlsprobe --start** command or use the **configure** command, "Disable RLS Probing". By default, RLS probing is disabled.

Notes

The cached RLS information will be provided in **supportsave**. To have the updated RLS information for a specified port or port range in **supportsave**, execute **fcpRlsProbe --start** successfully before initiating the **supportsave**.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--start	Sends the ELS RLS to the device and gets the RLS information.
<port_range>	Initiate RLS probing for the specified port(s).
--show	Displays the RLS information.
<port>	Display the RLS probing result for the specified port.
--help	Displays the command usage.

Examples

To start the RLS probing:

```
switch:admin> fcprlsprobe --start 21
RLS probing initiated...
Please use fcprlsprobe --show port command to view the RLS info.
```

To view the RLS information:

```
switch:admin> fcprlsprobe --show 21
Rls Probing Statistics for port 21
===================================

AL_PA 0x0 PID:11500
--------------------
RLS Probe Status   : FAIL (RLS not supported by device)
Last Updated       : Thur Oct 06 16:02:07 2022

AL_PA 0x1 PID:11501
--------------------
RLS Probe Status   : SUCCESS
Last Updated       : Thur Oct 06 16:02:07 2022
```

```
-------------------------------------------------------------------
link fail   loss sync   loss sig   prtc err   bad word   crc err
-------------------------------------------------------------------
        0         103          0          0          0         0
```

See Also

fcpRlsShow

fcpRlsShow

Displays the Fibre Channel Protocol (FCP) Read Link Status (RLS) information.

Synopsis

fcprlsshow *<port>*

Description

Use this command to display the FCP RLS information for an F_Port or FL_Port. This information describes the number of loss-of-signal, loss-of-sync, CRC errors, and other failure events detected on the specified port.

For this command to gather and display F_Port error statistics,

- you must enable the configuration parameter: Disable Device Probing = 0 (Enables device probing. By default Device probing is enabled).
- you must enable RLS Probing in the following ways: Use the **fcprlsprobe --start**command which enables RLS Probing or use the **configure** command "Disable RLS Probing" to enable RLS probing. Disable RLS Probing = Off (Enables RLS Probing) by default RLS probing is disabled.

Use the **fcprlsprobe --show** command to view the RLS information.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

port	Specifies the port number to display, relative to its slot for bladed systems. Use **switchShow** for a listing of valid ports. This operand is required.

Examples

To display the FCP RLS information:

```
switch:admin> fcprlsshow 21
RLS Probing Statistics for port 21
==================================
AL_PA 0x0 PID:11500
--------------------
RLS Probe Status : FAIL (RLS not supported by device)
Last Updated : Fri Thur Oct 06 16:02:07 2022

AL_PA 0x1 PID:11501
```

```
--------------------
RLS Probe Status : SUCCESS
Last Updated : Fri Thur Oct 06 16:02:07 2022

-----------------------------------------------------------
link fail  loss sync  loss sig  prtc err  bad word  crc err
-----------------------------------------------------------
0          103         0        0         0         0
```

See Also

portLoginShow, portShow

fcrBcastConfig

Displays or sets the broadcast frame forwarding option.

Synopsis

```
fcrbcastconfig --show
fcrbcastconfig --enable -f <fabric_id>
fcrbcastconfig --disable -f <fabric_id>
fcrbcastconfig --help
```

Description

Use this command to enable or disable the broadcast frame option or to display the current configuration. If no operands are specified, this command displays the usage. By default, frame forward option is disabled. Use the **--show** option to display the current settings on the switch.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--show	Shows the current broadcast configuration as enabled or disabled. If broadcast frame forwarding is disabled for selected FIDs, only the enabled FIDs in the current configuration are displayed.
--enable	Enables the frame forwarding option for a specified fabric ID.
--disable	Disables the frame forwarding option for a specified fabric ID
	-f <*fabric_id*> Specifies the fabric ID to be disabled or enabled. Valid values are 1 to 128. This operand is required with the **--enable** and **--disable** options.
--help	Displays the command usage.

Examples

To display the current configuration:

```
fcr:admin> fcrbcastconfig --show
Broadcast configuration is disabled for all FID
```

To enable broadcast frame forwarding for FID 33, 28, and 2:

```
fcr:admin> fcrbcastconfig --enable -f 33
fcr:admin> fcrbcastconfig --enable -f 28
fcr:admin> fcrbcastconfig --enable -f 2
```

To display the new configuration:

```
fcr:admin> fcrbcastconfig --show
Broadcast configuration is enabled for FID:
2 33 128
```

To disable broadcast frame forwarding for FID 33:

```
fcr:admin> fcrbcastconfig --disable -f 33
```

To display the new configuration:

```
switch:admin> fcrbcastconfig --show
Broadcast configuration is enabled for FID:
2 128
```

See Also

None

fcrConfigure

Displays or sets FC Router configuration parameters.

Synopsis

```
fcrconfigure --bbfid [<FID>]
fcrconfigure --enable -shortestifl
fcrconfigure --disable -shortestifl
fcrconfigure --enable -migrationmode
fcrconfigure --disable -migrationmode
fcrconfigure --add -alias <Alias_name> -fid  <FID>
fcrconfigure --delete -alias {<FID> | -all}
fcrconfigure --resetphantomdomain [-force]
fcrconfigure --show [-alias]
fcrconfigure --help
```

Description

Use this command to change the backbone fabric ID, or to enable or disable the shortest inter-fabric link (IFL) mode. If no operands are specified, this command displays the usage. Use the **--show** option to display the current settings on the switch.

Before you configure the backbone fabric ID using the **--bbfid** option, you must disable FC routing by using the **fosConfig** command and disable the switch using the **switchDisable** command.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--bbfid	Specifies the Backbone Fabric ID. This is an interactive option. A fabric ID uniquely identifies a fabric in FC Router configurations. The backbone fabric is the fabric attached to the U_Ports of the switch, for example, E_Ports or F_Ports. The backbone fabric ID must be unique across all fabrics connected to the FC Router. Use the **switchShow** command to display the current Backbone Fabric ID.
--enable -shortestifl	Enables the shortest IFL mode in FC Router. When the shortest IFL mode is enabled, FC Router can choose a lowest-cost IFL path in the backbone fabric. This feature is useful when an FC Router has multiple connections to the source edge fabric and the backbone fabric has multiple FC Routers connected through FCIP links (VE_Ports) and FC links (E_Ports). Because a domain in an edge fabric can choose any equal cost path to reach the translate domain, frames can be transmitted through FCIP links even though FC links are present in the backbone fabric. When the shortest IFL mode is enabled, the FCIP path in the backbone fabric is avoided while reaching the destination edge fabric. You should identify the FCIP links in the backbone fabric and then the direction of the FCIP path (across the backbone fabric) from the source to the destination edge fabric. Once the direction of the FCIP path is identified, set the cost of the FCIP link greater than or equal to 10000 by using the **linkCost** command. The link cost must be set for all FC Routers in the identified FCIP link path. Likewise, identify and set the cost for other FCIP paths of all destination edge fabrics. After you identify the FCIP links between FC Routers for all fabrics and updated the cost of all FCIP links, enable the shortest IFL mode in all the FC Routers in the backbone fabric using this option. If the FCIP link is the only available path from the source to the destination edge fabric, then traffic will flow through that FCIP link only.
--disable -shortestifl	Disables the shortest IFL mode in FC Router.
--enable -migrationmode	Enables the migration mode on an FCR switch. Enabling the migration mode on an FCR helps to proceed with decommissioning of the FCR switch from the backbone fabric. The decommissioning must result in disabling all the EX_Port(s) connected to the edge fabric from which the traffic has been migrated to other FCRs. Only edge-to-edge traffic is migrated where the switch performs both edge-to-edge and backbone-to-edge routing.
--disable -migrationmode	Disables the migration mode on an FCR switch. After the decommissioning you can manually remove the switch from the topology.
--add -alias *Alias_name* -fid *FID*	Adds the alias name to the specific FID.
--delete -alias {*FID* | -all}	Deletes a specific FID alias association or all FID alias associations.
--resetphantomdomain	Resets the persistent front and translate domain IDs to the default starting value (160 for front domain ID and 200 for translate domain ID). **-force** Executes the command without confirmation. This operand is optional.
--show [-alias]	Shows the current Backbone Fabric ID with the associated alias name and the status of the shortest IFL mode as enabled or disabled.
--help	Displays the command usage.

Examples

To configure FC Router parameters:

```
switch:admin> fcrconfigure --bbfid
Backbone fabric ID parameter set. <cr> to skip this parameter
Please make sure new Backbone Fabric ID does \
  not conflict with any configured EX-Port's Fabric ID
Backbone fabric ID: (1-128)[128]32
```

To enable shortest IFL mode:

```
switch:admin> fcrconfigure --enable -shortestifl
Shortest IFL path is enabled.
```

To disable shortest IFL mode:

```
switch:admin> fcrconfigure --disable -shortestifl
Shortest IFL path is disabled
```

To display the current configuration:

```
switch:admin> fcrconfigure --show
Backbone fabric ID: 32
Shortest IFL feature is disabled
```

To assign a name to a FID:

```
switch:admin> fcrconfigure --add -alias Red_fabric -fid 10
```

To display a name associated to a FID:

```
switch:admin> fcrconfigure --show -alias
FID        Alias
=======================
10        Red_fabric
```

To delete the name of a FID:

```
switch:admin> fcrconfigure --delete -alias 10
```

To reset all the phantom domain to the default range:

```
switch:admin> fcrconfigure --resetphantomdomain
This operation will reset all the phantom domain to be default range
Do you want to continue (Y/N):y

Phantom Domain IDs were successfully reset to default
```

To display the migration mode:

```
switch:admin> fcrconfigure --show
Backbone fabric ID: 128
Shortest IFL feature is disabled.Migration mode is disabled.
-----------------------------------------
FID        Alias
-----------------------------------------
10        bodc

Number of entries:1
```

See Also

fosConfig, portCfgEXPort, switchDisable, switchEnable, switchShow, linkCost

fcrEdgeshow

Displays the FIDs of all configured EX_Ports.

Synopsis

```
fcredgeshow
fcredgeshow [-fid <FabricID>]fcredgeshow --detail
fcredgeshow --help
```

Description

Use this command without operand to display information about all Fabric IDs (FIDs) that have been created on the chassis and are assigned to EX_Ports.

When a FID is specified, **fcredgeshow** displays information for all EX_Ports configured with the specified FID.

For each FID, the command output includes the following:

FID	Fabric ID of the EX_Port.
EX-port	EX_Port number of the switch.
E_Port	Port number for the remote E_Port.
PWWN	Neighbor switch port WWN.
SWWN	Neighbor switch WWN.
Flags	encryption, compression and fec features.
FD	Front domain of an EX_Port.

The command output depends on the EX_Port configuration:

- If the EX_Port is online, the command displays the FID, the EX_Port to which it is assigned, the E_Port, the port WWN, the switch WWN and Port flags.
- IF no EX_Ports are configured in the switch, the command displays "No EX-port Configured".
- If no EX_Ports are configured within the specified FID, the command displays the following message: "No EX-ports with FID *FabricID*."

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-fid <*FabricID*>	Specifies the FID for which to display the configured EX_Ports.
--detail	Displays the front domain ID for an EX_Port.
--help	Displays the command usage.

Examples

To display the EX_Ports configured in the switch:

```
switch:admin> fcredgeshow
FID  EX-port E-port  Neighbor Switch (PWWN, SWWN ) Flags
-----------------------------------------------------------------
25   1/13    244  20:f4:00:05:1e:38:a4:cb 10:00:00:05:1e:38:a4:cb FEC \
     ENCRYPTION COMPRESSION
```

```
35   1/12    299  2e:2b:00:05:1e:40:44:02 10:00:00:05:1e:40:44:02 ENCRYPTION \
     COMPRESSION
11   5/13    273  2e:11:00:05:33:b3:39:00 10:00:00:05:33:b3:39:00 FEC
```

To display the EX_Ports configured with a specified FID:

```
switch:admin> fcredgeshow -fid 25
FID EX-port  E-port  Neighbor Switch (PWWN, SWWN ) Flags
----------------------------------------------------------------
25  11       244  20:f4:00:05:1e:38:a4:cb 10:00:00:05:1e:38:a4:cb FEC ENCRYPTION \
     COMPRESSION
```

To display a FID for which no EX_Ports are configured:

```
switch:admin> fcredgeshow -fid 29
No EX-ports with FID 29
```

To display front domain ID:

```
switch:admin> fcredgeshow --detail
  FID    EX-port     E-port   FD    Neighbor Switch (PWWN, SWWN )
-------------------------------------------------------------------------
   2     33          29       161   20:1d:c4:f5:7c:00:9b:00  10:00:c4:f5:7c:00:9b:00
   7     82          39       163   20:27:00:05:33:e7:d0:10  10:00:00:05:33:e7:d0:10
```

See Also

fcrPhyDevShow, fcrProxyDevShow, fcrRouteShow, lsanZoneShow, switchShow, fcrFabricShow

fcrFabricShow

Displays the FC Routers on a backbone fabric.

Synopsis

```
fcrfabricshow
fcrfabricshow --name
fcrfabricshow --alias
fcrfabricshow --help
```

Description

Use this command to display information about FC Routers that exist in an FC Router backbone fabric. The existing syntax is maintained for IPv6 support. When IPv6 addresses are not configured, the output of **fcrFabricShow** displays the IPv4 format. Use the **--name** option to display the fabric name along with EX-port, FID, and switch name.

The message "No active FC Routers found" is displayed if no active FC Routers are present on the backbone fabric.

The following information is displayed for each FC Router found on the backbone fabric:

WWN	The world wide name of the FC Router.
Domain ID	The domain ID of the FC Router. This domain ID is relevant only on the backbone fabric.
Info	The Ethernet IP address and switch name of the FC Router. When IPv6 addresses are configured, only the static IP address displays for each FC Router found on the backbone fabric.
EX_Ports	A listing of active EX_Ports for the FC Router and information about these EX_Ports. This information includes:

EX_Port	The port number for the trunkmaster EX_Port. An asterisk (*) at the end of the line indicates that the EX_Port is a Remote Router Port.
FID	The fabric ID of the EX_Port.
Neighbor Switch Info (WWN, enet IP, name)	The WWN, Ethernet IP address, and switch name of the switch attached to the EX_Port. An asterisk (*) indicates that the EX_Port is located across a high cost path.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand.

--name	Displays the FC Routers on a backbone fabric with edge fabric names.
--alias	Displays the FC Routers on a backbone fabric with alias name of each fabric.
--help	Displays the command usage.

Examples

To display the FC Routers in the backbone fabric:

```
switch:admin> fcrfabricshow

FC Router WWN: 10:00:00:05:1e:41:59:81, Dom ID:   2, Info:
 192.0.2.0,  "swd77"
  EX_Port  FID Neighbor Switch Info (enet IP, WWN, name)
  -------------------------------------------------------
  12       5  10.33.35.81 10:00:00:05:1e:34:01:d0 "B10_4"

 FC Router WWN: 10:00:00:05:1e:41:1c:73, Dom ID:   4, Info:
 192.0.2.0, "ttv12"
  EX_Port FID Neighbor Switch Info (enet IP, WWN, name)
  -------------------------------------------------------
    9      2  10.33.35.80 10:00:00:05:1e:38:01:e7 "B10_3"
    10     2  10.33.35.80 10:00:00:05:1e:38:01:e7 "B10_3"

 FC Router WWN: 10:00:00:05:1e:39:51:67, Dom ID:   5, Info:
 192.0.2.0, "Scimitar"
  EX_Port FID Neighbor Switch Info (enet IP, WWN, name)
  -------------------------------------------------------
    151    2  10.33.35.80 10:00:00:05:1e:38:01:e7 "B10_3"*
```

To display the fabric name along with EX-port, FID, and switch name:

```
switch:admin> fcrfabricshow --name
FC Router WWN: 10:00:00:05:33:13:70:3e, Dom ID:   1,
Info: 192.0.2.0, "U34"
 EX_Port     FID       Neighbor Switch Info (swname, fabricname)
 -----------------------------------------------------------------
    16         22        "SPIRIT-2"  "FOSFCR"
    17         22        "SPIRIT-2"  "FOSFCR"
```

```
    18         22        "SPIRIT-2"  "FOSFCR"

FC Router WWN: 10:00:00:05:33:13:74:3e, Dom ID:   2,
Info: 192.0.2.0, "U35"
 EX_Port     FID       Neighbor Switch Info (swname, fabricname)
 ----------------------------------------------------------------
    7          33        "U33"  "BODCFCR"
    4          33        "U33"  "BODCFCR"
    5          33        "U33"  "BODCFCR"
    6          33        "U33"  "BODCFCR"
```

To display the FC Routers on a backbone fabric with alias name:

```
switch:admin> fcrfabricshow --alias
FC Router WWN: 10:00:00:05:1e:44:d2:00, Dom ID:  20,
Info: 192.0.2.0, 2620:100:4:f400:205:1eff:fe44:d200    "GOOD"
 EX_Port Alias_name       Neighbor Switch Info (enet IP, name)
--------------------------------------------------------------------------------
   249    "RED"           10.38.134.30   "p620"
                          2620:100:4:f400:205:1eff:feb7:1000
   215    "GREEN"         10.38.134.13   "sw1"
```

See Also

fcrPhyDevShow, fcrProxyDevShow, fcrRouteShow, lsanZoneShow, switchShow

fcrIclPathBWMonitor

Sets or displays FC Router ICL bandwidth monitor parameters for EX_Ports.

Synopsis

```
fcriclpathbwmonitor --enable
fcriclpathbwmonitor --disable
fcriclpathbwmonitor --show
fcriclpathbwmonitor --help
```

Description

Use this command to enable or disable the Inter Chassis Link (ICL) EX_Ports bandwidth Monitor feature on an FC Router, or to display the current status of ICL bandwidth feature and the ICL slot bandwidth assigned to connected edge fabrics. If no operands are specified, this command displays the usage. By default, this feature is disabled.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--enable Enables the ICL EX_Port bandwidth Monitor feature on an FC Router. In the enable mode, FC Router will periodically check for bandwidth imbalances from each ICL slot of FC Router to each ICL slot of neighbor switch connected through EX_Ports. A RASLog message will be generated when bandwidth imbalance is detected or resolved to other fabric.

--disable	Disables the ICL EX_Port bandwidth Monitor feature on an FC Router.
--show	Displays the current ICL EX_Port bandwidth Monitor feature status and bandwidth from each slot to connected edge fabric.
--help	Displays the command usage.

Examples

To enable ICL EX_Port bandwidth Monitor:

```
fcr:admin> fcriclpathbwmonitor --enable
ICL bandwidth balance Monitor functionality is enabled
```

To disable ICL EX_Port bandwidth Monitor:

```
fcr:admin> fcriclpathbwmonitor --disable
ICL bandwidth balance Monitor functionality is disabled
```

To display the current configuration:

```
fcr:admin> fcriclpathbwmonitor --show
ICL Path Bandwidth state :Enabled

FABRIC  SLOT-3 BW  SLOT-6 BW   STATE
========================================
  48      128         128       BALANCED
  126     64          128       UNBALANCED
```

See Also

fosConfig, switchDisable, switchEnable, switchShow

fcrLsanCount

Displays or sets the maximum LSAN count.

Synopsis

fcrlsancount [*max_lsan_count*]

Description

Use this command to set or display the maximum number of LSAN zones that can be configured on the edge or backbone fabric. By default, the maximum LSAN count is set to 3000, which is also the minimum. This command allows you to create LSAN zones up to 7500 for Gen6 platforms in the backbone fabric, if needed to support additional devices. The maximum number of supported LSAN devices is 15000 for Gen6 platforms.

When executed without operand, this command displays the current LSAN zone limit.

This command assumes that all FCRs in the same LSAN fabric matrix or backbone have the same maximum LSAN count defined in order to protect the FCRs from running into indefinite state. Asymmetric LSAN configurations due to different maximum LSAN counts may lead to different devices being imported on different FCRs.

Because the maximum number of LSANs is configured per switch, if there is a different maximum LSAN count on the switches throughout the meta-SAN, the device import or export will not be identical on the FCRs. You should therefore enter the same maximum LSAN count for all the FCR switches in the same backbone that support this feature. Verify the configured maximum limit against the LSANs configured using the **fcrResourceShow** command.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

max_lsan_count Specifies the maximum LSAN count.

Examples

To display the current LSAN limit:

```
switch:admin> fcrlsancount
 LSAN Zone Limit: 3000
```

To increase the LSAN zone limit:

```
 switch:admin> fcrlsancount 5000
 LSAN Zone Limit: 5000
```

See Also

fcrResourceShow

fcrLsanMatrix

Creates, modifies, and displays the LSAN fabric matrix or the FCR matrix.

Synopsis

```
fcrlsanmatrix
fcrlsanmatrix --add {-lsan <FID1> <FID2> | -fcr <wwn1> <wwn2>}
 fcrlsanmatrix --remove {-lsan <FID1> <FID2> | -fcr <wwn1> <wwn2>}
 fcrlsanmatrix --apply {-lsan | -fcr | -all}
 fcrlsanmatrix --cancel {-lsan | -fcr | -all}
 fcrlsanmatrix --display {-lsan | -fcr}
 fcrlsanmatrix --fabricview {-lsan | -fcr}
 fcrlsanmatrix --verify {-lsan | -fcr}
 fcrlsanmatrix --quickmode {-lsan | -fcr}
 fcrlsanmatrix --help
```

Description

Use this command to create, modify, remove, and manage Logical SAN (LSAN) Zone bindings between edge fabrics or between FC routers. LSAN Zone bindings specify pairs of edge fabrics or FCRs that can access each other and share LSAN Zone and device database information.

This command follows a transaction model. Modifications to the LSAN fabric matrix or to the FC router matrix are saved nonpersistently in a cache until you save the changes persistently with the **--apply** option.

When used with the **-lsan** option, this command manages the LSAN matrix information. An LSAN fabric pair binds two edge fabrics specified by their Fabric IDs. Every paired edge fabric implies two-way communications. The paired edge fabrics have access only to the edge fabrics associated with them by this command. The edge fabrics that are not specified in the LSAN fabric matrix have access to the remaining unspecified edge fabrics. Using this information, the

FCR switch maintains the remote LSAN Zone and the device state database only if it is associated with its local edge fabrics.

For example, if the edge fabrics with FIDs 1, 2, 3, 4, and 5 are online, all edge fabrics have two-way communication. This is the default behavior. If you pair the edge fabrics 1 and 2 with the **--add -lsan** command, the default access between the edge fabrics is changed as follows:

- Fabric 1 can access only fabric 2.
- Fabric 2 can access only fabric 1.
- The fabrics 3, 4, and 5 can access each other, but cannot access Fabric 1 or 2.

The LSAN matrix information is automatically distributed to all switches in the fabric. The FIDs entered are not required to be online when you set up the LSAN fabric matrix.

When used with the **-fcr** option, this command manages the FC router matrix. This database consists of FC router pairs that can talk to each other. All edge fabrics connected to a defined pair of FCRs are allowed to import devices to each other.

Once a fabric is removed from an FCR, the communication with other fabrics of the two FCRs is also removed. It is advisable to update the matrix to reflect the change. If FCR Binding is enabled in the edge fabrics, the edge fabrics can still communicate with the backbone fabric. The LSAN matrix provides a higher level of granularity than the FCR matrix. Therefore, communication between two fabrics could pass the FCR matrix, but fail due to restriction of the FID matrix.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

If no operands are specified, this command displays the persistent LSAN Zone matrix information. The following operands are optional:

--add {-lsan <*FID1*> <*FID2*> | -fcr <*wwn1*> <*wwn2*>}	Adds the pair of edge fabrics or FCR members that can access each other to the LSAN matrix cache. Edge fabrics are specified by their Fabric IDs. FCRs are specified by their world wide names (WWNs). If the FCR is online, the domain ID of the switch can be used in place of the WWN. If you specify **--add** with zero (0) value for *FID* or 00:00:00:00:00:00:00:00 for *wwn*, the command returns the cache to default mode.
--remove {-lsan <*FID1*> <*FID2*> | -fcr <*wwn1*> <*wwn2*>}	Removes the specified pair of FIDs or FCRs from the cache. When you remove a fabric or FCR pair from the LSAN matrix, the edge fabrics assume the default behavior.
--apply {-lsan | -fcr | -all}	Applies the information from the cache to persistent memory. This operation succeeds only if there is no effect on the existing import/export devices. Otherwise, this command generates an error message. See the Diagnostics section for more information.
--cancel {-lsan | -fcr | -all}	Cancels changes made to the cache that were not applied. This command effectively reverts to the persistently stored information.
--display {-lsan | -fcr}	Displays the information saved in the cache.
--fabricview {-lsan | -fcr}	Displays all static and default/dynamic fabric bindings in the backbone.
--verify {-lsan | -fcr}	Verifies if the LSAN Zone information previously entered and stored in the cache can be successfully applied. The data is considered acceptable if the apply operation does not cause any traffic disruption
--quickmode {-lsan | -fcr}	Derives the LSAN Zone matrix from the imported or exported devices.

Examples

To add the LSAN Zone Matrix data (For the following example, assume that the backbone has the following online edge fabrics (FIDs): 1, 2, 4, 5, 7, 8, and 10. Currently, FIDs 14 and 19 are not available.):

```
switch:admin> fcrlsanmatrix --add -lsan 4 5
```

To remove an entry from the LSAN matrix:

```
switch:admin> fcrlsanmatrix --remove -lsan 10 14
```

To display the information from the cache:

```
switch:admin> fcrlsanmatrix --display -lsan

Fabric ID 1           Fabric ID 2
-----------------------------------
    4                       5
    4                       7
    10                      19
```

To apply the changes persistently:

```
switch:admin> fcrlsanmatrix --apply -lsan
```

To view the persistent changes:

```
switch:admin> fcrlsanmatrix -lsan
LSAN MATRIX is activated
Fabric ID 1             Fabric ID 2
--------------------------------------
 4                            5
 4                            7
10                           19
```

To view the LSAN Zone static and default/dynamic binding in the backbone where online fabrics are: 1, 2, 4, 5, 7, 8, 10:

```
switch:admin> fcrlsanmatrix --fabricview -lsan
LSAN MATRIX is activated

Fabric ID 1             Fabric ID 2
--------------------------------------
4                            5
4                            7
10                          19
Default LSAN Matrix:
1 2 8
```

To display all proxy devices for all FC Routers in the same backbone fabric whether or not they are relevant to this FC Router:

```
switch:admin> fcrproxydevshow -a

 Proxy            WWN           Proxy  Device Physical  State
 Created                         PID   Exists   PID
 in Fabric                             in Fabric

   52  10:00:00:06:2b:0e:4d:e5  01f001    78    4e0000  Imported
   52  10:32:16:90:28:dd:d0:03  0bf001    82    2a0900  Imported
   52  10:32:16:91:24:dd:d0:07  0bf002    82    520c00  Imported
   52  10:32:16:91:25:dd:d0:06  01f002    78    4e3000  Imported
   78  10:00:00:06:2b:0d:29:31  09f002    52    482200  Imported
```

```
   78  10:32:16:90:29:dd:d0:07  08f002    82    2a0a00  Imported
   78  10:32:16:91:24:dd:d0:05  09f001    52    48a100  Imported
   78  10:32:16:91:25:dd:d0:03  08f001    82    520f00  Imported
   82  10:00:00:06:2b:0d:29:30  01f002    78    4e1400  Imported
   82  10:00:00:06:2b:0d:2f:ed  03f002    52    480200  Imported
   82  10:00:00:06:2b:0d:33:4d  01f001    78    4e1800  Imported
   82  10:00:00:06:2b:0e:4d:c9  03f001    52    482000  Imported
Total devices displayed: 12
```

To display the information from the cache:

```
switch:admin> fcrlsanmatrix --display -lsan

 Fabric ID 1             Fabric ID 2
--------------------------------------
52                              78
52                              82
78                              82
```

To apply the changes persistently:

```
switch:admin> fcrlsanmatrix --apply -lsan
```

To view all the static and the default/dynamic fabric binding in the backbone:

```
switch:admin> fcrlsanmatrix --fabricview -lsan
LSAN MATRIX is activated

 Fabric ID 1             Fabric ID 2
--------------------------------------
52                              78
52                              82
78                              82

Default LSAN Matrix:
57 91
```

To add FCR Bindings to the FCR matrix:

```
switch:admin> fcrlsanmatrix --add -fcr 10:00:00:60:69:e2:09:fa \
     10:00:00:60:69:e2:09:fb
switch:admin> fcrlsanmatrix --add -fcr 10:00:00:60:69:e2:09:fb \
      10:00:00:60:69:e2:09:fc
```

To remove an entry from the FCR matrix:

```
switch:admin> fcrlsanmatrix --remove -fcr 10:00:00:60:69:e2:09:fb \
     10:00:00:60:69:e2:09:fc
```

To display the information from the cache:

```
switch:admin> fcrlsanmatrix --display --fcr

    CACHE FCR PAIRS
===================================
FCR                             FCR
-------------------------------------------------------
```

```
10:00:00:60:69:e2:09:fa (2)   10:00:00:60:69:e2:09:fb (unknown)
```

To apply the changes persistently:

```
switch:admin> fcrlsanmatrix --apply -fcr
```

To view the persistent changes:

```
switch:admin> fcrlsanmatrix --fabricview -fcr

     SAVED FCR PAIRS
===================================
FCR                               FCR
-----------------------------------------------------
10:00:00:60:69:e2:09:fa (2)      10:00:00:60:69:e2:09:fb (unknown)
```

See Also

fcrFabricShow, lsanZoneShow, fcrPhyDevShow, fcrProxyDevShow, fcrRouteShow, switchShow

fcrPhyDevShow

Displays the FC Router physical device information.

Synopsis

```
fcrphydevshow [-a][-f <FID> ] [-w <wwn>]
fcrphydevshow [-c | -d]
fcrphydevshow -h
```

Description

Use this command to display the physical (real) devices that are configured to be exported to other fabrics. A device is considered to be configured to be exported to another fabric if it is a member of an LSAN zone. The device is displayed only if it is discovered in the EX_Port-attached fabric and backbone fabric's name server (for instance, the device is online).

Physical device information is available only for physical devices that exist in fabrics attached to EX_Ports of FC Routers on the same backbone fabric as the current FC Router.

The default output displays only physical device information relevant to the current FC Router. Relevant physical devices include physical devices that are configured to be exported from fabrics attached to the current FC Router's EX_Ports.

The physical devices are listed by fabric.

The **-f** and **-w** operands allow searching for physical devices based on fabric ID or port world wide name.

"No device found" is displayed if there is no physical device information available at the current FC Router.

Each line of the output displays:

Device Exists in Fabric	The fabric in which the physical device exists.
WWN	The world wide name of the device port.
Physical PID	The port ID of the physical device. This port ID is only relevant on the fabric specified by the "Device Exists in Fabric" column.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-a	Displays all physical devices for all FC Routers in the same backbone fabric whether or not they are relevant to the current FC Router.
-a -f *FID*	Displays the physical devices in the specified fabric for all FC Routers in the same backbone fabric whether or not they are relevant to the current FC Router.
-w *wwn*	Displays the physical devices with the specified port WWN.
-c	Clears login-related counters.
-d	Displays the following login-related counters. Counters are cleared upon reboot or failover.
	login try The number of times the device attempted to log in.
	local failure the number of times the device login failed because of missing LSAN zones within the device fabric.
	remote failure the number of times the device login failed due to missing LSAN zones within the remote fabric.
--help	Displays command usage.

Examples

To display the physical devices relevant to an FC Router:

```
fcr:admin> fcrphydevshow
        Device           WWN            Physical
        Exists                            PID
       in Fabric
       ----------------------------------------
           2    10:00:00:00:c9:2b:6a:68  c70000
           3    50:05:07:65:05:84:09:0e  0100ef
           3    50:05:07:65:05:84:0b:83  0100e8
 Total devices displayed: 3
```

See Also

fcrFabricShow, fcrProxyDevShow, fcrRouteShow, lsanZoneShow, switchShow

fcrProxyConfig

Displays or configures proxy devices presented by an FC Router.

Synopsis

```
fcrproxyconfig
fcrproxyconfig -s <importedFID> <devWWN> <slot>
fcrproxyconfig -r <importedFID> <devWWN>
```

Description

Use this command to display or set the persistent configuration of proxy devices presented by the local FC Router.

When used without operand, this command displays the persistent proxy device configuration; otherwise, it sets the specified attributes to its new value.

The proxy device must be inactive prior to setting or clearing persistent attributes. Disabling EX_Ports (using the **portDisable** command) attached to the relevant edge fabric, removing the device from the appropriate LSAN zones, or disabling the physical device are valid methods of ensuring a proxy device is inactive.

Persistent proxy device configuration attributes apply to the local FC Router. Multiple FC Routers attached to the same edge fabric coordinate to present the same proxy devices. As a result, persistent proxy device configurations must be consistent across all FC Routers attached to the same edge fabric or unpredictable results may occur. If the proxy device configuration is not altered, no action is required. If the configuration is altered, then care must be taken to ensure consistency across all FC Routers attached to the same edge fabric.

When used without operands, this command displays the following information:

importedFID	The imported fabric ID of the proxy device.
devWWN	The port world wide name of the device.
slot	The slot used for the device WWN. The device WWN-to-slot association is persistently stored. The slot format is *XXYYH*, where *XX* specifies the translate domain area_ID (valid values include F0H through FFH) and *YY* specifies the Port ID value or the low 8-bits of the proxy device address (valid values include 01H through FEH). The address of the proxy device is derived from the PID format (for example, native, core, or extended edge) and the proxy device slot.

If no proxy device WWN is stored in any slot for all edge fabrics, the following message is displayed: "All slots empty."

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-s ***importedFID devWWN slot***	Adds the specified *devWWN* (format: xx:xx:xx:xx:xx:xx:xx:xx) to the specified slot (format XXYYH, where XX is the translate domain area_ID [F0H through FFH] and YY is the port_ID [01H through FEH]) for the edge fabric specified (1 through 128). The following messages may be displayed: • "WWN does not exist in any proxy device slot." The WWN does not exist in any slot for the specified edge fabric. • "Too many proxy slots configured. Remove some unused proxy device WWNs from their slots using the **-r** operand and try again." All slots are used for the specified edge fabric. • "The specified slot already contains a WWN, overwrite? [y]" The specified slot already contains an entry. You are then prompted for confirmation.
-r ***importedFID devWWN***	Removes the specified *devWWN* (format: XX:XX:XX:XX:XX:XX:XX:XX) from its slot for the edge fabric specified by *importedFID* (1 through 128). If the WWN does not exist in any slot for the specified edge fabric, the following message is displayed: "WWN does not exist in any proxy device slot."

Examples

To display the persistent proxy device configuration:

```
switch:admin> fcrproxyconfig
Imported FID        Device WWN          Slot
```

```
002          50:05:07:65:05:84:08:d7    f001
002          50:05:07:65:05:84:0a:7b    f002
002          22:00:00:20:37:c3:11:71    f001
002          22:00:00:20:37:c3:1a:8a    f002
003          10:00:00:00:c9:2b:6a:2c    f001
```

To persistently configure device WWN 00:11:22:33:44:55:66:77 to use slot f101h in fabric 5:

```
switch:admin> fcrproxyconfig -s 5  \
    00:11:22:33:44:55:66:77 f101
```

To remove device WWN 00:11:22:33:44:55:66:77 from its persistent slot in fabric 5:

```
switch:admin> fcrproxyconfig -r 5  \
    00:11:22:33:44:55:66:77
WWN deleted from proxy device slot
```

See Also

fcrPhyDevShow, fcrProxyDevShow, fcrXlateConfig, lsanZoneShow, switchShow

fcrProxyDevShow

Displays FC Router proxy device information.

Synopsis

```
fcrproxydevshow [-a][-f fabricid][-w wwn]
fcrproxydevshow --help
```

Description

Use this command to display the proxy devices presented by FC Router EX_Ports and information about the proxy devices. A proxy device is a virtual device presented in to a fabric by an FC Router. A proxy device represents a real device on another fabric. When a proxy device is created in a fabric, the real Fibre Channel device is considered to be imported in to this fabric. The presence of a proxy device is required for inter-fabric device communication. The proxy device appears to the fabric as a real Fibre Channel device. It has a name server entry and is assigned a valid port ID.

Proxy device information is available only for proxy devices that are presented by FC Routers on the same backbone fabric as this FC Router.

The default output displays only proxy device information relevant to this FC Router. Relevant proxy devices include proxy devices created by this FC Router (devices imported by this FC Router).

The proxy devices are listed by fabric. Search parameters **-f** and **-w** allow searching for proxy devices based on fabric ID or port WWN.

"No proxy device found" is displayed if there is no proxy device information available on this FC Router.

This command displays the following information:

Proxy Created in Fabric	The fabric in which the proxy device has been created.
WWN	The WWN of the device port.
Proxy PID	The port ID of the proxy device. The port ID is only relevant on the fabric specified by the "Proxy Created in Fabric" column.
Device Exists in Fabric	The fabric in which the physical device is connected or exists.

Physical PID	The port ID of the physical device. The port ID is relevant only on the fabric specified by the "Device Exists in Fabric" column.
State	State includes:
	Imported Proxy device has been imported into the fabric.
	Initializing The proxy device is being initialized and will soon be imported into the fabric.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-a	Display all proxy devices for all FC Routers in the same backbone fabric whether or not they are relevant to this FC Router.
-a -f *fabricid*	Display the proxy devices in the specified fabric for all FC Routers in the same backbone fabric whether or not they are relevant to this FC Router.
-f *fabricid*	Display the proxy devices in the specified fabric that are relevant to this FC Router.
-w *wwn*	Displays proxy devices with the specified port WWN.
--help	Displays the command usage.

Examples

To display the proxy devices relevant to this FC Router:

```
switch:admin> fcrproxydevshow
Proxy           WWN         Proxy  Device  Physical State
Created                     PID    exists    PID
in Fabric                        in Fabric
-------------------------------------------------------
2   50:05:07:65:05:84:09:0e 01f001    3   0100ef Imported
2   50:05:07:65:05:84:0b:83 01f000    3   0100e8 Imported
3   10:00:00:00:c9:2b:6a:68 02f000    2   c70000 Imported
   Total devices displayed: 3
```

See Also

fcrFabricShow, fcrRouteShow, lsanZoneShow, switchShow

fcrResourceShow

Displays FC Router physical resource usage.

Synopsis

```
fcrresourceshow
```

Description

Use this command to display the FC Router-available resources. The maximum number allowed versus the currently used is displayed for various resources. The command output includes:

LSAN Zones	The maximum versus the currently used LSAN zones.

LSAN Devices	The maximum versus the currently used LSAN device database entries. Each proxy or physical device constitutes an entry.
Proxy Device Slots	The maximum versus the currently used proxy device slots. A proxy device is presented to an edge fabric as being connected to a translate domain slot. A slot is the port number and AL_PA combination. The slot-to-device WWN association is persistently stored.
Phantom Node WWNs	The maximum versus the currently allocated phantom switch node WWNs. The phantom switch requires node WWNs for fabric-shortest-path-first (FSPF) and manageability purposes. Phantom node names are allocated from the pool sequentially and are not reused until the pool is exhausted and rolls over. The last allocated phantom node WWN is persistently stored. If the switch is disabled, the phantom node WWNs are not returned to the pool because the phantom switch could still be accessible through other switches. Across a switch reboot, the allocation starts from the next usable WWN from the pool and not from the beginning.
Phantom Port WWNs	The maximum versus the currently used phantom domain port WWNs. Phantom domain ports require port WWNs for manageability purposes. Phantom domain ports include ports connecting front and translate domains (virtual ISLs), translate domain ports for proxy devices, and EX_Ports. Phantom port names are allocated from the pool sequentially and are not resumed until the pool is exhausted and rolls over. The last allocated phantom port WWN is persistently stored. If the switch is disabled, phantom port WWNs are not returned to the pool because the phantom switch might still be accessible through other switches. Across the switch reboot, the allocation starts from the next usable WWN base from the pool and not from the beginning.
Port Limits	Displays resources for each physical port (EX_Port), which include the following:
	Max Proxy Devices The maximum versus the currently used proxy device.
	Max NR_Ports The maximum versus the currently used NR_Port entries. Destination NR_Port entries are stored at every physical port for routing decision purposes.

Notes

Only configured EX_Ports are displayed.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the resource usage for the local FC Router:

```
switch:admin> fcrresourceshow

             Daemon Limits:
               Max Allowed  Currently Used
              ----------------------------
LSAN Zones:          3000               22
LSAN Devices:       10000             1208
Proxy Device Slots: 10000                2

              WWN Pool Size      Allocated
              ----------------------------
Phantom Node WWN:   8192              3790
Phantom Port WWN:  32768              6446
```

```
Port Limits:
Max proxy devices:  2000
Max NR_Ports:       1000

Currently Used(column 1: proxy, column 2: NR_Ports):
 48  |      0          0
 49  |      0          0
 50  |      0          0
 52  |      0          0
 53  |      0          0
 54  |      0          0
 60  |      0          0
 63  |      1          4
176  |      1          4
177  |      1          4
183  |      1          4
190  |      0          0
```

See Also

fcrFabricShow, fcrProxyDevShow, fcrRouteShow, lsanZoneShow, switchShow

fcrRouterPortCost

Displays or sets an FC Router port cost.

Synopsis

fcrrouterportcost [[*slot/*]*port* | [*slot/*]*port cost*]

Description

Use this command to set or display the cost of the FC Router ports. You can set the cost of the link to one of two fixed values: 1000 or 10000. The option 0 sets the cost of the link to the default value based on link type (EX_Ports). The router module chooses the router port path based on the minimum cost per fabric ID (FID) connection. If multiple paths exist with the same minimum cost, the load is shared over these paths.

Every inter-fabric link (IFL) has a default cost. For an EX_Port IFL, the default cost is 1000. If the cost is set to 0, the link cost defaults to 1000 for an EX_Port.

when used without operands, this command displays the current link costs for all ports on the switch.

Notes

Before setting the cost, ensure that admin is enabled for the EX_Port with **portCfgEXPort**.

The link cost update to agent EX_Port is disallowed and the link cost update to the controller port is applied to the agent ports in the same trunk group.

The bandwidth of an inter-fabric link (IFL) is unrelated to its default cost. In other words, 1Gb/s, 2Gb/s, 4Gb/s, and 8Gb/s EX_Port IFLs have the same cost value of 1000 as their FC Router port.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

slot	For bladed systems only, specifies the slot number of the port whose cost is to be displayed or changed, followed by a slash (/).
port	Specifies the number of the port whose cost is to be displayed or changed. This value is relative to the slot for bladed systems. Use **switchShow** for a list of valid ports. If a port is not specified, this command displays the costs of all ports.
cost	Specifies the new cost of the link connected to the specified port. This operand is optional; if omitted, this command displays the cost of the specified port. The cost of the link can be changed only when the specified port is disabled. Valid values for cost are 0, 1000 or 10000.

Examples

To display the cost of all EX_Ports:

```
switch:admin> fcrrouterportcost
 Port             Cost
 ------------------------
 7/3              1000
 7/4              1000
 7/9              1000
 7/10             1000
 7/16             10000
 10/0             10000
```

To display the cost on an EX_Port:

```
switch:admin> fcrrouterportcost 7/10 0

switch:admin> fcrrouterportcost 7/10
Port             Cost
------------------------
7/10             1000
```

To set the cost of an EX_Port and display the result:

```
switch:admin> fcrrouterportcost 7/10 10000
switch:admin> fcrrouterportcost 7/10
Port             Cost
------------------------
7/10             10000
```

To set the default cost on the EX_Port:

```
switch:admin> fcrrouterportcost 7/10 0
switch:admin> fcrrouterportcost 7/10
Port             Cost
------------------------
7/10             1000
```

See Also

switchShow, fcrRouteShow, portCfgEXPort

fcrRouteShow

Displays FC Router route information.

Synopsis

fcrrouteshow

Description

Use this command to display routes through the FC Router backbone fabric to accessible destination fabrics. An FC Router backbone fabric is the fabric that contains the E_Ports of this platform and routes inter-fabric traffic between imported fabrics, creating a meta-SAN.

There are FC Router ports that reside on the backbone fabric. These ports are known as NR_Ports. NR_Ports send and receive inter-fabric traffic. For the AP7420, there is a one-to-one relationship between an NR_Port on a backbone fabric and an EX_Port. NR_Port technology enables EX_Ports to exchange traffic across an intermediate fabric. NR_Ports are addressable entities on the backbone fabric and have port IDs relevant to the backbone fabric.

Because cascaded backbone/intermediate fabrics are currently not supported, an NR_Port provides a path to a single fabric with a single FC Router protocol cost. Multiple NR_Ports can provide paths to the same destination fabric.

"No routes found" is displayed if there is no route information available at this FC Router. There is no route information available if no EX_Ports are configured at this FC Router.

The output includes:

Destination Fabric ID	The destination fabric.
NR_Port PID	The port ID of the NR_Port. The port ID is relevant only on the backbone fabric. This NR_Port has a route to the destination fabric identified by the "Destination Fabric ID" column.
FCRP Cost	The FC Router protocol cost (for routing decisions) for this NR_Port. The FCRP cost is the same (1000) for all NR_Ports.
WWN of the Principal Switch in the Dest. Fabric	The world wide name of the principal switch in the destination fabric.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the route information:

```
switch:admin> fcrrouteshow
Destination  NR_Port    FCRP Cost  WWN of Principal
Fabric Id     PID              Switch in the Dest. Fabric
-------------------------------------------------------
   4        640000       1000    10:00:00:60:69:c0:05:d1
   4        640100       1000    10:00:00:60:69:c0:05:d1
   5        640200       1000    10:00:00:60:69:c0:20:ed
   5        640300       1000    10:00:00:60:69:c0:20:ed
```

See Also

fcrFabricShow, fcrPhyDevShow, fcrProxyDevShow, lsanZoneShow, switchShow

fcrXlateConfig

Configures a translate (xlate) domain's domain ID and state of persistence for both the EX_Port-attached fabric and the backbone fabric.

Synopsis

```
fcrxlateconfig
fcrxlateconfig [<importedFID> <exportedFID> [<preferredDomainID>]]
fcrxlateconfig {--remove | -r} <importedFID> <exportedFID>
fcrxlateconfig --enable persistxd
fcrxlateconfig --disable persistxd
fcrxlateconfig --show stalexd [<importedFID>]
fcrxlateconfig --delete stalexd <importedFID> <staleXlateDomainID>
fcrxlateconfig --active
fcrxlateconfig --help
```

Description

Use this command to display a translate (xlate) domain ID or change the preferred domain ID and its state of persistence.

A translate domain is a phantom domain created by an FC Router. FC Routers emulate proxy devices representing real devices in remote fabrics. These proxy devices are emulated to be connected to translate domains. Translate domains are presented to a fabric as residing topologically behind front phantom domains (domains created by an EX_Port). In the case of backbone fabrics, translate domains are topologically behind an E_Port. In every EX_Port-attached edge fabric and backbone fabric, there can be a translate domain for every FC Router-accessible remote fabric.

During a fabric build, the translate domain requests a domain ID from the principal switch in the EX_Port-attached edge fabric. The domain ID requested is the preferred domain ID. You can set the preferred domain ID when the translate domain is not active and is persistently saved. The principal switch attempts to provide the translate domain with the requested domain ID, but it may not provide it if there are domain ID conflicts with other domains in the fabric. If the requested domain ID (such as the preferred domain ID) is unavailable, the domain ID assignment is completely at the discretion of the principal switch. The assignment domain ID is persistently stored and is used as the preferred domain ID in the future.

By default, FCR creates the translate domain for a remote fabric if a valid persistent translate domain ID is configured in the local fabric, even if no devices are imported or exported across the edge fabrics. Disabling the **persistxd** parameter prevents the xlate domain from being created. Enabling the **persistxd** parameter from a disabled state re-enables the FCR default behavior.

If the remote edge fabric becomes unreachable, the translate domains created in other edge fabrics for this remote edge fabric become stale. Use the **--show stalexd** option to identify translate domains that have become stale, and delete them in a nondisruptive manner with the **--delete stalexd** option.

When executed without operands, **fcrxlateconfig** displays for each translate domain the imported FID, the exported FID, the domain ID and the xlate WWN.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Information displayed is not related to the entire backbone. The FC Router displays only connections to an edge fabric for which there are translate domain IDs. Any changes you intend to make using this command should be issued on the switches to which the edge fabrics are directly attached. In a Virtual Fabric environment, this is the base switch.

Operands

This command has the following operands:

fcrxlateconfig Sets the preferred domain ID (1-239) to *preferredDomainID* for the translate phantom domain and saves the configuration persistently. The translate domain must be inactive to set the preferred domain ID. The following operands are required:

- ***<importedFID>*** Specifies the fabric ID (1 through 128) of the fabric that contains the translate domain.
- ***<exportedFID>*** Specifies the fabric ID (1 through 128) of the remote fabric represented by this translate domain.
- ***<preferredDomainID>*** Specifies the preferred domain ID (1 through 239) of the translate phantom domain.

--remove | -r Removes the preferred domain ID of the translate phantom domain. The translate domain must be inactive to remove the preferred domain ID. The following operands are required:

- ***<importedFID>*** Specifies the fabric ID (1 through 128) of the fabric that contains the translate domain.
- ***<exportedFID>*** Specifies the fabric ID (1 through 128) of the remote fabric represented by this translate domain.
- ***<preferredDomainID>*** Specifies the preferred domain ID (1 through 239) of the translate phantom.

--enable persistxd Enables translate domain persistence. When **persistxd** is enabled, the translate domain is created based on the persistent translate domain ID configuration. If a valid persistent translate domain ID is configured for a given *importedFID* and *exportedFID* pair, a translate domain for the *exportedFID* is created, even if no devices need to be imported or exported across the edge fabrics represented by *importedFID* and *exportedFID*. By default, **persistxd** is enabled.

--disable persistxd Disables translate domain persistence. When **persistxd** is disabled, the translate domain is not created, even if a valid persistent translate domain ID is configured for the *importedFID* and *exportedFID* pair, so long as no devices are imported or exported across the edge fabrics represented by *importedFID* and *exportedFID*. Once devices need to be imported or exported across the edge fabrics, the translate domain is created.

--show stalexd [<*importedFID*>] Displays stale translate domains associated with the specified Fabric ID (1-128). A translate domain becomes stale when the remote edge fabric for which this translate domain was created in the specified edge fabric becomes unreachable. When issued without specifying an imported FID, this command lists all stale translate domains in all edge fabrics connected to the FCR.

--delete stalexd <*importedFID*> <*staleXlateDomainID*> Deletes the specified stale translate domain from the edge fabric specified by its fabric ID. This command must be executed in the FCR that owns the stale translate domain.

--active Displays the identity to the owner FCR domain for the translate domain.

--help Displays the command usage.

Examples

To display the translate domain configuration and the state of the **persistxd** parameter:

```
switch:admin> fcrxlateconfig

ImportedFid ExportedFid  Domain    OwnerDid         XlateWWN
   001      002          004       000001              N/A
```

```
   001      005          003       N/A                 N/A

Persist XD state: Enabled
```

To set the preferred domain ID of the translate domain created in fabric 2, which represents the remote fabric 3, to a value of 8:

```
switch:admin> fcrxlateconfig 2 3 8
xlate domain already configured, overwrite?(n) y
```

To clear the preferred domain ID of the translate domain created in fabric 2, which represents remote fabric 3:

```
switch:admin> fcrxlateconfig -r 2 3
xlate domain deleted
```

To enable translate domain persistence:

```
fcr:admin> fcrxlateconfig --enable persistxd
Persist XD is enabled
```

To disable translate domain persistence:

```
fcr:admin> fcrxlateconfig --disable persistxd
Persist XD is disabled
```

To identify and remove stale translate domains in a single backbone multiple FCR configuration:

```
fcr:admin> fcrxlateconfig --show stalexd
Imported FID      Stale XD      Owner Domain
--------------------------------------------------
    012            002              007 ( this FCR )
    013            002              001 ( other FCR )
```

To remove the stale translate domain (only the translate domain owned by the current owner can be removed; note that trailing zeros must be removed from the FID and Xlate domain ID.>):

```
fcr:admin> fcrxlateconfig --delete stalexd 12 2
Xlate domain 2 is deleted
```

To display the identity of the owner FCR domain in different scenarios:

```
Scenario:1
switch:admin> fcrxlateconfig --active
ImportedFid   ExportedFid  Domain   OwnerDid         XlateWWN
     2        100          200      161(this FCR)    5c:4f:57:c0:12:d8:1f:e1

Scenario:2
switch:admin> fcrxlateconfig --active
ImportedFid   ExportedFid  Domain   OwnerDid         XlateWWN
     2        100          200      161(other FCR)   5c:4f:57:c0:12:d8:1f:e1

Scenario:3
switch:admin> fcrxlateconfig --active
ImportedFid   ExportedFid  Domain   OwnerDid         XlateWWN
     2        100          200      161(other FCR*)  5c:4f:57:c0:12:d8:1f:e1
* - FCR in another backbone fabric
```

See Also

portCfgEXPort, portDisable, portEnable, portShow

fddCfg

Manages the fabric data distribution configuration parameters.

Synopsis

```
fddcfg --showall
fddcfg --localaccept  policy_list
fddcfg --localreject policy_list
fddcfg --fabwideset policy_list
```

Description

Use this command to manage the fabric data distribution configuration parameters. These parameters control the fabric-wide consistency policy.

Switches can be locally configured to allow or reject a security policy. Supported policies include the following:

SCC	Switch Connection Control policy
DCC	Device Connection Control policy
PWD	Password policy
FCS	Fabric Configuration Server policy
Auth	Fabric Element Authentication policy
IPFILTER	IP Filter policy

Automatic distribution of a fabric-wide consistency policy is limited to SCC, DCC, and FCS policies. Use the **--fabwideset** parameter to enforce these policies fabric-wide in tolerant or strict mode, In strict mode, fabric-wide enforcement of FCS consistency policy is possible in mixed fabrics. However, switches that do not support the policies ignore them.

Notes

When a policy is set to strict mode, the manual distribution of the policy is not allowed.

If FCS policy is present, a fabricwide FCS policy must be created to avoid another FCS primary creation.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--showall	Displays the accept/reject configuration of all policy sets and the fabric-wide consistency policy on the switch.
--localaccept *policy_list*	Configures the switch to accept distributions of the specified policies. The policies in *policy_list* must be separated by semicolons and enclosed in quotation marks; for example, "SCC;DCC;FCS".
--localreject *policy_list*	Configures the switch to reject distributions of the specified policies in *policy_list*. However, a database cannot be rejected if it is specified in the fabric-wide consistency policy. The policies in *policy_list* must be separated by semicolons and enclosed in quotation marks; for example, "SCC;DCC".
--fabwideset *policy_list*	Sets the fabric-wide consistency policy. A database that is set to reject distributions cannot be specified in the fabric-wide consistency policy. To set the fabric-wide consistency policy as strict, use the strictness indicator "S". To set the fabric-wide consistency policy as tolerant, omit the "S". A valid policy set should be of the form "SCC:S;DCC;FCS". To set the fabric-wide policy to NULL (default) or no fabric-wide

consistency, use the policy Set "". Supported policies are Switch Connection Control (SCC), Device Connection Control (DCC), and Fabric Configuration Server (FCS). All members specified in a given policy set are automatically distributed to all participating switches in the fabric that support the policy. Refer to the DESCRIPTION section for specific exceptions. In the presence of a fabric-wide FCS consistency policy, this command can only be run from the primary FCS switch.

Examples

To display the fabric-wide consistency policy and the accept/reject configuration for all databases:

```
switch:admin> fddcfg --showall
 Local Switch Configuration for all Databases:-
 DATABASE - Accept/Reject
 -------------------------
      SCC  -   accept
      DCC  -   accept
      PWD  -   accept
      FCS  -   accept
     AUTH  -   accept
 Fabric Wide Consistency Policy:- "SCC:S;DCC;FCS"
```

To configure the switch to accept distribution of the SCC policy set and PWD database:

```
switch:admin> fddcfg --localaccept "SCC;PWD"
Local Switch Configured to accept policies.
```

To configure this switch to reject distribution of SCC and DCC policy sets:

```
switch:admin> fddcfg --localreject "SCC;DCC"
Local Switch Configured to reject policies.
```

To set the fabric-wide consistency policy to "strict" for SCC and "tolerant" for DCC and FCS:

```
switch:admin> fddcfg --fabwideset "SCC:S;DCC;FCS"
```

See Also

None

fdmiCacheShow

Displays abbreviated remote FDMI device information, according to remote domain ID.

Synopsis

fdmicacheshow

Description

Use this command to display FDMI cache information for remote domains only. Also displays the capabilities of the remote switches.

The state of each remote domain, identified by its domain ID, is shown to be unknown, known, unsupported, or error.

The revision of the switch also displays, followed by the world wide name of the switch.

For HBAs, only the HBA identifiers and registered port lists are displayed. No detailed HBA attributes are displayed. For registered ports, only port identifier and corresponding HBA are shown; no detailed port attributes are displayed.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the FDMI cache:

```
switch:admin> fdmicacheshow
Switch entry for domain 22
  state:   known
  version: v821
  capability: partial-cache
  wwn:     10:00:00:27:f8:82:56:15

    HBAs:
     30:02:00:33:f8:8f:64:25
    Ports: 1
      30:02:00:33:f8:8f:64:25

  Total count of devices on the switch is 1
...
Switch entry for domain 116
  state:   known
  version: v900
  capability: full-cache asynch-exchange
  wwn:     10:00:c4:f5:7c:4e:59:54

  HBAs:
    21:00:00:24:ff:7f:11:c4
    Ports: 1
      21:00:00:24:ff:7f:11:c4

  Total count of devices on the switch is 1
```

See Also

fdmiShow

fdmiShow

Displays detailed FDMI information.

Synopsis

fdmishow
fdmishow -hexoutput
fdmishow --domain *<domain>*[-*<domain_range>*]
fdmishow --port *<port>*[-*<port_range>*]
fdmishow --help

Description

Use this command to display Fabric-Device Management Interface (FDMI) information for all host bus adapters (HBAs) and ports.

Detailed FDMI information is displayed for local HBAs and ports. The devices from certain vendors may register the following extended vendor-specific attributes and the output may vary depending on the device-registered values.

- **0xF047** - End-to-End Version
- **0xF100** - Service Category
- **0xF101** - GUID
- **0xF102** - Version
- **0xF103** - Product Name
- **0xF104** - Port Info
- **0xF105** - QOS Support
- **0xF106** - Security Support
- **0xF107** - Connected Ports
- **0xF108** - Storage Array Family
- **0xF109** - Storage Array Name
- **0xF10A** - Storage Array System Model
- **0xF10B** - Storage Array OS
- **0xF10C** - Storage Array Number of Nodes
- **0xF10D** - Storage Array Nodes

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-hexoutput	Displays raw hex data for all non-ASCII and non-WWN FDMI port attributes. This operand is optional.
--domain <*domain*>[-<*domain_range*>]	Displays information about the HBAs and ports that are connected to the specified domain or a domain range.
--port <*port*>[-<*port_range*>]	Displays information about the HBAs and ports that are connected to the specified port or a port range.
--help	Displays the command usage.

Examples

To display FDMI information on a local switch:

```
switch:admin> fdmishow
Local HBA database contains:
  10:00:8c:7c:ff:01:eb:00
  Ports: 1
    10:00:8c:7c:ff:01:eb:00
      Port attributes:
        FC4 Types: FCP
        Supported Speed: 2 4 8 16 Gb/s
        Port Speed: 16 Gb/s
        Max Frame Size: 2112 bytes
```

```
        Device Name: bfa
        Host Name: X3650050014
        Node Name: 20:00:8c:7c:ff:01:eb:00
        Port Name: 10:00:8c:7c:ff:01:eb:00
        Port Type: N_PORT (0x1)
        Port Symb Name: port2
        Class of Service: 3
        Fabric Name: 10:00:00:05:1e:e5:e8:00
        FC4 Active Type: FCP
        Port State: 0x5
        Discovered Ports: 0x2
        Port Identifier: 0x030200
  HBA attributes:
    Node Name: 20:00:00:90:fa:02:4e:91
    Manufacturer: Emulex Corporation
    Serial Number: FC31263400
    Model: LPe16002B-M6
    Model Description: Emulex LPe16002B-M6 PCIe 2-port 16Gb Fibre Channel Adapter
    Hardware Version: 0000000B
    Driver Version: 11.2.124.0
    Option ROM Version: 11.2.156.27
    Firmware Version: 11.2.156.27
    OS Name and Version: Windows 2008 R2
    Max CT Payload Length: 524288 words
    Symbolic Name: Emulex LPe16002B-M6 FV11.2.156.27 DV11.2.124.0 HN:F3V1137 OS:Windows 2008 R2
    Number of Ports: 1
    Fabric Name: 10:00:c4:f5:7c:00:cc:f0
    Bios Version: 11.2.156.27
    Vendor Identifier: Emulex

Local Port database contains:
  10:00:8c:7c:ff:01:eb:00

Remote HBA database contains:
  10:00:00:05:1e:ea:05:fa
  Domain: 116
  Ports: 1
    10:00:00:05:1e:ea:05:fa
      Port attributes:
        FC4 Types: FCP
        Supported Speed: 8 16 32 Gb/s
        Port Speed: 16 Gb/s
        Port Type: N_Port (0x1)
        Port Symb Name: QLE2742
        Port State: 0x2
        Discovered Ports: 0x0
        Port Identifier: 0x740100
  HBA attributes:
    Node Name: 20:00:00:24:ff:7f:11:c4
    Manufacturer: QLogic Corporation
    Serial Number: RFD1647N59885
    Fabric Name: 10:00:c4:f5:7c:4e:59:54
    Bios Version: 3.36
```

```
    Vendor Identifier: QLOGIC

30:02:00:33:f8:8f:64:25
  Domain: 22
  Capability: partial-cache
  Ports: 1
    30:02:00:33:f8:8f:64:25

Remote Port database contains:
  10:00:00:05:1e:ea:05:fa
```

To display FDMI information in raw hex format (for non-ASCII and non-WWN FDMI port attributes) on a local switch:

```
switch:admin> fdmishow -hexoutput
Local HBA database contains:
  10:00:8c:7c:ff:01:eb:00
  Ports: 1
    10:00:8c:7c:ff:01:eb:00
      Port attributes:
        FC4 Types: 0x0000010000000000000000000000000000000000000000000000000000000000
        Supported Speed: 0x0000003a
        Port Speed: 0x00000020
        Max Frame Size: 0x00000840
        Device Name: bfa
        Host Name: X3650050014
        Node Name: 20:00:8c:7c:ff:01:eb:00
        Port Name: 10:00:8c:7c:ff:01:eb:00
        Port Type: 0x1
        Port Symb Name: port2
        Class of Service: 0x08000000
        Fabric Name: 10:00:00:05:1e:e5:e8:00
        FC4 Active Type: 0x0000010000000000000000000000000000000000000000000000000000000000
        Port State: 0x00000005
        Discovered Ports: 0x00000002
        Port Identifier: 0x00030200
  HBA attributes:
    Node Name: 20:00:00:90:fa:02:4e:91
    Manufacturer: Emulex Corporation
    Serial Number: FC31263400
    Model: LPe16002B-M6
    Model Description: Emulex LPe16002B-M6 PCIe 2-port 16Gb Fibre Channel Adapter
    Hardware Version: 0000000B
    Driver Version: 11.2.124.0
    Option ROM Version: 11.2.156.27
    Firmware Version: 11.2.156.27
    OS Name and Version: Windows 2008 R2
    Max CT Payload Length: 0x00080000
    Symbolic Name: Emulex LPe16002B-M6 FV11.2.156.27 DV11.2.124.0 HN:F3V1137 OS:Windows 2008 R2
    Number of Ports: 1
    Fabric Name: 10:00:c4:f5:7c:00:cc:f0
    Bios Version: 11.2.156.27
    Vendor Identifier: Emulex

Local Port database contains:
```

```
  10:00:8c:7c:ff:01:eb:00

Remote HBA database contains:
  10:00:00:05:1e:ea:05:fa
  Ports: 1
    10:00:00:05:1e:ea:05:fa

Remote Port database contains:
  10:00:00:05:1e:ea:05:fa
```

To display FDMI information for a specified domain or a domain range:

```
switch:admin> fdmishow --domain 116
Remote HBA database contains (domain 116):
  21:00:00:24:ff:7f:11:c4
  Domain: 116
  Ports: 1
    21:00:00:24:ff:7f:11:c4
      Port attributes:
        FC4 Types: FCP
        Supported Speed: 8 16 32 Gb/s
        Port Speed: 16 Gb/s
        Port Type: N_Port (0x1)
        Port Symb Name: QLE2742
        Port State: 0x2
        Discovered Ports: 0x0
        Port Identifier: 0x740100
  HBA attributes:
    Node Name: 20:00:00:24:ff:7f:11:c4
    Manufacturer: QLogic Corporation
    Serial Number: RFD1647N59885
    Fabric Name: 10:00:c4:f5:7c:4e:59:54
    Bios Version: 3.36
    Vendor Identifier: QLOGIC

Remote Port database contains (domain 116):
  21:00:00:24:ff:7f:11:c4
```

To display FDMI information for a specified port or a port range:

```
switch:admin> fdmishow --port 0
Local HBA database contains no entry (port 0).

Local Port database contains no entry (port 0).

switch:admin> fdmishow --port 5-12
Local HBA database contains (port 5-12):
  23:00:00:24:ff:7f:11:c4
  Ports: 1
    23:00:00:24:ff:7f:11:c4
      Port attributes:
        FC4 Types: FCP
        Supported Speed: 8 16 32 Gb/s
        Port Speed: 16 Gb/s
```

```
        Max Frame Size: 2048 bytes
        Device Name: QLogic Adapter
        Host Name: CAMERON
        Node Name: 20:00:00:24:ff:7f:11:c4
        Port Name: 23:00:00:24:ff:7f:11:c4
        Port Type: N_Port (0x1)
        Port State: 0x2
        Discovered Ports: 0x0
        Port Identifier: 0x740100
  HBA attributes:
    Node Name: 20:00:00:24:ff:7f:11:c4
    Serial Number: RFD1647N59885
    Number of Ports: 1
    Fabric Name: 10:00:c4:f5:7c:4e:59:54
    Bios Version: 3.36
    Vendor Identifier: QLOGIC

Local Port database contains (port 5-12):
  23:00:00:24:ff:7f:11:c4
```

See Also

fdmiCacheShow

femDump

Collects limited debug information to a remote directory through FTP, SCP, or SFTP. This command is a minimal version of **supportsave** command.

Synopsis

```
femdump [-c] [-a]
 femdump -u <user_name>
 -h <host_ip>  -d <remote_dir>
 -l <protocol> [-b <port>] [-a]
 femdump [-U -d <remote_dir>]
 femdump --help
```

Description

Use this command to collect limited debug information to a remote directory through FTP or SCP. This command is a minimal version of a **supportsave** command.

The files generated by this command are compressed before being sent off the switch. The core files and panic dumps remain on the switch after the command is run. The FFDC data are removed after the command has finished.

If there are application processor (AP) blades installed on the switch, a support file (a tar.gz file) is generated from each slot.

This command accepts IPv4 and IPv6 addresses. If the configured IP address is in IPv6 format, the RAS auto-file transfer and event notification to syslog will not work in the case where the Fabric OS version is downgraded. You must reconfigure auto-file transfer and syslog with IPv4 IP addresses.

In a Virtual Fabric environment, the command saves all chassis-based information and iterates through the defined switch-based information for all logical switches. Chassis permissions are required to execute this command.

Note that quotes should be used around path entries to ensure proper handling of special shell characters.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. Use "Using Fabric OS Commands" and "Command Availability" for details.

If you use anonymous FTP to run **femDump** on a chassis with multiple AP blades, configure the FTP Windows server to allow unlimited anonymous users.

Operands

This command has the following operands:

-u <*user_name*>	Specifies the user name for the FTP, SCP, or SFTP server. This operand is optional; if omitted, anonymous FTP is used.
-h <*host_ip*>	Specifies the IPv4 or IPv6 address for the remote server.
-c	Uses the FTP, SCP, or SFTP parameters saved by the supportFtp command. This operand is optional; if omitted, specify the FTP, SCP, or SFTP parameters through command line options or interactively. This option is same as like in **supportsave** command.
-U	Saves data to an attached USB device. When using this option, a target directory must be specified with the **-d** option.
-d <*remote_dir*>	Specifies the remote directory to which the file is to be transferred.
-l <*protocol*>	Specifies the transfer protocol. Valid values are File Transfer Protocol (FTP), Secure Copy Protocol (SCP), or Secure File Transfer Protocol (SFTP). If you plan to use SCP to transfer files, it is important to test the command prior to its use with various SCP-mode services. Because the **femDump** command makes several access requests to copy files, it is important that the SCP-mode service be configured so that passwords are not required for each attempted transfer. Failure to configure the service correctly may result in significant delays in obtaining transferred output from the **femDump** command. When using SCP, **femDump** may create a directory if it does not already exist and the parent directory has the appropriate permissions. Use of FTP requires the directory to exist on the remote server.
-b <*port*>	Specifies the server port number. Valid protocol are scp (secure copy protocol) and sftp (secure file transfer protocol). The valid range is from 1 through 65535.
-a	Enables Challenge Response Authentication (CRA). CRA is supported only with the SCP protocol.
--help	Displays the command usage.

Examples

To collect limited debug information to a remote directory through SFTP:

```
switch:admin> femdump  -u admin -h 192.0.2.0 -d temp/ss/femdump -l sftp

Saving support information:
 SLOT  SWITCH               MODULE       CLI SIZE  FILE SIZE   CLI     TIME   MODULE   TIME LOAD AVERAGE
CP0 fos_195147_fid128  F_SSHOW_ASICDB    0.241 KB  0.000 KB   0.513474 secs  14.268017 secs 0.3/0.5/0.6
                            AP_SS        0.000 KB  0.000 KB   0.0      secs   0.275    secs 0.5/0.6/0.6
CP0 fos_195147_fid128  F_SSHOW_FABRIC    0.241 KB  0.000 KB   0.707300 secs   1.727898 secs 0.3/0.5/0.6
CP0 fos_195147_fid128  F_SSHOW_PORT      0.239 KB  0.000 KB   0.666826 secs   1.740863 secs 0.3/0.5/0.6
CP0 fos_195147_fid128  F_SSHOW_SERVICE   0.242 KB  0.000 KB   0.668397 secs   1.740030 secs 0.3/0.5/0.6
CP0 fos_195147_fid128  F_SSHOW_ISWITCH   0.242 KB  0.000 KB   0.706406 secs   1.808788 secs 0.3/0.5/0.6
CP0 fos_195147_fid128  F_SSHOW_SYS       0.238 KB  0.000 KB   0.718660 secs   1.834891 secs 0.3/0.5/0.6
CP0 fos_195147_fid128  F_C4PREGDUMP      0.036 KB  0.000 KB   0.26614  secs   1.54318  secs 0.5/0.6/0.6
CP0 fos_195147_fid128  F_GE5REGDUMP      0.036 KB  0.000 KB   0.23854  secs   1.304431 secs 1.0/0.6/0.7
CP0 fos_195147_fid128  F_C4REGDUMP       0.035 KB  0.000 KB   0.23734  secs   1.319162 secs 0.5/0.6/0.6
CP0 fos_195147_fid128  F_C5REGDUMP       0.035 KB  0.000 KB   0.24267  secs   1.322068 secs 0.5/0.6/0.6
```

```
CP0 fos_195147_fid128  F_GE4REGDUMP      0.036 KB  0.000 KB   0.22729  secs   1.329492 secs 1.0/0.6/0.7
CP0 fos_195147_fid128  F_BLSREGDUMP      0.036 KB  0.000 KB   0.21293  secs   1.354170 secs 1.0/0.6/0.7
Summary worker: 8, cpu load: 7 upload size:     1 KB, time: 22 secs upload: 5 load:1.0/0.6/0.7
```

To collect data in USB storage:

```
switch:admin> femdump
Save to USB device (yes, y, no, n): [no] yes
Remote Directory: fem_ss
```

See Also

supportSave, supportShow, supportFtp

ficonCfg

Configures the specified FICON database.

Synopsis

ficoncfg --set LIRR *<port_index>*
ficoncfg --reset LIRR
ficoncfg --help

Description

Use this command to configure a FICON database on a specified port. Refer to **ficonShow** for a description of the database content.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

<port_index>	Specifies the port to be configured. You can specify the port by its port index number or by a hexadecimal number. Use **switchShow** for a listing of valid port index numbers.
--set	Sets the configuration entry.
--reset	Resets the configuration entry to its default value.
LIRR	Devices registered to receive link incident reports.

Examples

To set the LIRR database on a port using a decimal index number:

```
switch:user> ficoncfg --set LIRR 27
```

To reset the LIRR

```
switch:user> ficoncfg --reset LIRR
```

To set the LIRR database using a hexadecimal index number:

```
switch:user> ficoncfg --set LIRR 0x1b
switch:user> ficonshow LIRR
The Local LIRR database has 0 entries.

Current LIRR device port number: 27 (0x1b)
```

See Also

ficonHelp, ficonShow

ficonClear

Clears the records from the specified FICON database.

Synopsis

```
ficonclear {RLIR | RNID}
```

Description

Use this command to remove records from the local FICON database. The command effect depends on the specified database.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command uses one of these database operands.

RLIR	Remove all entries from the link incidents database including implicit link incidents (ILIR).
RNID	Remove all the "not current" entries from the device node identification database (the entries are for devices that were previously connected but are no longer online). Note that "current" entries are not removed from the RNID database.

Examples

To clear the RLIR database:

```
switch:user> ficonclear RLIR
successfully clear local RLIR Database.
```

To clear the RNID database:

```
switch:user> ficonclear RNID
successfully clear not current
 entries from local RNID Database.
```

See Also

ficonHelp, ficonShow

ficonCupSet

Sets FICON-CUP parameters for a switch.

Synopsis

```
ficoncupset fmsmode {enable | disable | reset}
        ficoncupset modereg {POSC|UAM|ASM|DCAM|ACP|HCP} {0 | 1}
        ficoncupset MIHPTO <seconds>
        ficoncupset CRP <Port_ID> <Channel_ID>
        ficoncupset UALERT_ALL {enable | disable}
        ficoncupset UALERT_HSC {enable | disable}
        ficoncupset UALERT_FRU {enable | disable}
        ficoncupset UALERT_INVATT {enable | disable}
```

Description

Use this command to set FICON-CUP (Control Unit Port) parameters for a switch. All parameters can be set while the switch is online. Changes made by this command take effect immediately. A reboot is not required.

Use **ficonCupShow** to display current settings.

Notes

A FICON License is required to enable FMSMODE and to manage ports with FICON CUP. Without a license, FICON CUP traffic will not be allowed.

You must be in a FICON logical switch before FMSMODE is enabled. When FMSMODE is enabled, port names are truncated to 24 characters to be FICON compliant, and a 24-character limit is imposed on all newly created port names.

Refer to the *Brocade Fabric OS Administration Guide* for information on PID formats to enable FICON Management Server (FMS) mode.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

fmsmode Configures the FICON Management Server (FMS) mode for the switch. Specify one of the following modes:

- **enable** Enables the FICON Management Server mode. When you enable the switch, you must wait until all ports have come online before enabling fmsmode.
- **disable** Disables the FICON Management Server mode.
- **reset** Resets the CUP to a neutral execution state. This command does not modify any other configuration state. This command should NOT be used unless explicitly instructed to do so by your support provider. It is potentially a disruptive command and intended to be used to reset abnormal protocol state conditions.

modereg Sets or resets a bit in the FICON-CUP mode register. The following are the valid mode register bit names:

- **POSC** Programmed offline state control
- **ASM** Active=saved mode
- **DCAM** Director clock alert mode
- **ACP** Alternate control prohibited
- **HCP** Host control prohibited

***bitvalue* {0 | 1}** Specifies a given bit value to be (1) set or not set (0).

MIHPTO Sets the missing interrupt handler primary timeout (MIHPTO) value for the CUP. The following operand is required:

seconds Specifies the timeout value in seconds. Provide a decimal value in the range between 15 and 600 seconds. The default timeout value is 180 seconds. If a value greater than 63 seconds is specified, the timeout value is rounded down to the closest value divisible by 10. For example, an MIHPTO timeout value of 86 defaults to 80.

CRP *PID CHID* Sets the current reporting path (CRP). The reporting path is a CUP mechanism for sending FRU-failure reports to a FICON logical path via FICON protocol and alerts based on the MAPS events. The logical path between the PID and the CHID must exist and be in operational state for this command to succeed. Use ficonCupShow with the LP option to display the logical paths on the switch. The following operands are required:

Port_ID Specifies the Port identifier, which is a three-byte Fibre Channel Port Address.

Channel_ID Specifies the Channel ID (CHID). The CHID is the Logical Partition (LPAR) identifier supplied as part of the FICON protocol header. The CHID is a 1-byte value in hexadecimal format. The first nibble indicating the Channel Subsystem identifier (a value between 0 and 5) and the second the LPAR within that CSS (a value between 0 and F).

UALERT_ALL {enable | disable} Enables or disables all of the unsolicited alert types (HSC, FRU, and Invalid Attach) and displays the status of the alert types.

UALERT_HSC {enable | disable} Enables or disables the unsolicited HSC alert type and displays the status of the alert type.

UALERT_FRU {enable | disable} Enables or disables the unsolicited FRU alert type and displays the status of the alert type.

UALERT_INVATT {enable | disable} Enables or disables the unsolicited invalid attach alert type and displays the status of the alert type.

Examples

To enable FMS mode for the switch:

```
switch:admin> ficoncupset fmsmode enable
fmsmode for the switch is now Enabled
```

To set the ASM bit in the mode register for the switch:

```
switch:admin> ficoncupset modereg ASM 1
Active=Saved Mode bit is set to 1
```

To set the MIHPTO value to 60 seconds:

```
switch:admin> ficoncupset MIHPTO 60
 MIHPTO has been changed to 60 seconds
```

To set the current reporting path:

```
switch:admin> ficoncupset CRP D20000 0A
Processing - set CRP

Attempting to set Current Reporting Path to (D20000:0A)

Results of set CRP:
```

```
++-- --------------- LP Display for LS(1) ----------------
-------------------- Logical Path Reporting Information ----------------------
  Current Reporting Path(D20000:0A)
  Alternate Reporting Path(070300:00)

  Primary Reporting Path configured by B9 CCW (D20000:0A)

  LP      LP      Operational     Reporting Path
  PID     CHID    State           State
  ------  --      --------------  ---------------------
  070300  00      Oper            Alternate
  D20000  00      Oper
  4C1400  00      Reset
  D20000  0A      Oper            Primary Current
  D20000  05      Reset
  4C1400  05      Reset
  070300  02      Reset
----------- End Logical Path Reporting Information ----------------------
----------- End Of LP Display ----------------
```

To display the current reporting path:

```
switch:admin> ficoncupshow LP
 ---- --------------- LP Display for LS(1) ----------------
-------------------- Logical Path Reporting Information ----------------------
  Current Reporting Path(D20000:0A)
  Alternate Reporting Path(D20000:00)

  Primary Reporting Path configured by B9 CCW (D20000:0A)

  LP      LP      Operational     Reporting Path
  PID     CHID    State           State
  ------  --      --------------  ---------------------
  070300  00      Oper
  D20000  00      Oper            Alternate
  4C1400  00      Reset
  D20000  0A      Oper            Primary Current
  D20000  05      Reset
  4C1400  05      Reset
  070300  02      Reset
----------- End Logical Path Reporting Information ----------------------
----------- End Of LP Display ----------------
```

To reset the FMS mode for a switch:

```
switch:admin> ficoncupset fmsmode reset
FMS_001(I) - FMSMODE RESET completed - FMSMODE(Disabled)

Conditions prior to reset:

    All CUP states nominal, no conditions reset

   ----- END DISPLAY of FMSMODE RESET ------
```

To disable the alert type "UALERT_HSC":

```
switch:admin> ficoncupset UALERT_HSC disable
FMS_001(I) - Processing - set UALERT_Mode
FMS_001(I) - Disabled Alerts(HSC )
FMS_001(I) - Enabled Alerts(FRU INV_ATT )
```

See Also

ficonCupShow

ficonCupShow

Displays FICON-CUP parameters for a switch.

Synopsis

```
ficoncupshow fmsmode
ficoncupshow modereg {POSC|UAM|ASM|DCAM|ACP|HCP}
ficoncupshow MIHPTO
ficoncupshow DD_LOG
ficoncupshow diag_info
ficoncupshow hlthchk_log
ficoncupshow LP
ficoncupshow UALERT_MODE
```

Description

Use this command to display FICON-CUP (Control Unit Port) parameters for a switch.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

fmsmode Display the FICON Management Server (FMS) mode for the switch.

modereg Display the FICON-CUP mode register. If no operand is specified, all mode register bit settings are displayed. If a mode register bit name is specified, then only the value of that bit is displayed. A value of 1 indicates that a given mode register bit is set, and 0 indicates that it is not set.

The following are the optional mode register bit names.

POSC	Programmed offline state control
UAM	User alert mode
ASM	Active=saved mode
DCAM	Director clock alert mode
ACP	Alternate control prohibited
HCP	Host control prohibited

MIHPTO Displays the FICON-CUP missing interrupt handler primary timeout (MIHPTO) value in seconds.

DD_LOG Displays the latest Director Diagnostics Log.

diag_info Displays diagnostic information for the logical switch such as whether Diagnostic Interval has been set for CUP Diagnostics (if so, then Statistics Sampling is running), along with additional information about

	Statistics Sampling by the CUP, the detected CUP Diagnostic capabilities and settings for other switches in the fabric..
hlthchk_log	Displays the HealthCheck Logs for the logical switch. It displays Sense Data returned to the FICON host for Asynchronous Error Reporting events generated by the CUP for any MAPS generated event that includes the FMS action and triggers notification to the FICON host.
LP	Displays the logical paths on the switch. For each entry, the command displays the port identifier (PID), the LPAR identifier (CHID), reporting state (operational or reset (=nonoperational)), and reporting path state (current, primary, or alternate).
UALERT_MODE	Displays the status of the unsolicited alerts such as FRU, invalid attach, and HSC as either enabled or disabled.

Examples

To display the FMS mode for the switch:

```
switch:user> ficoncupshow fmsmode
fmsmode for the switch: Enabled
```

To display the mode register for the switch:

```
switch:user> ficoncupshow modereg
 POSC  UAM  ASM  DCAM  ACP  HCP
 ------------------------------
    1    0    1     0    1    0
```

To display the ASM bit in the mode register for the switch:

```
switch:user> ficoncupshow modereg ASM
 ASM
 ---
   1
```

To display the MIHPTO value for the CUP:

```
switch:user> ficoncupshow MIHPTO
 MIHPTO for the CUP: 60 seconds
```

To display the logical paths for the switch:

```
switch:user> ficoncupshow LP
 ---- --------------- LP Display for LS(1) ----------------
--------------------- Logical Path Reporting Information -----------------------
  Current Reporting Path(D20000:0A)
  Alternate Reporting Path(D20000:00)

  Primary Reporting Path configured by B9 CCW (D20000:0A)

  LP      LP      Operational     Reporting Path
  PID     CHID    State           State
  ------  --      --------------  ---------------------
  070300  00      Oper
  D20000  00      Oper            Alternate
  4C1400  00      Reset
  D20000  0A      Oper            Primary Current
  D20000  05      Reset
  4C1400  05      Reset
```

```
  070300  02      Reset
----------- End Logical Path Reporting Information ----------------------
----------- End Of LP Display ----------------
```

To display the status of the unsolicited alerts:

```
switch:user> ficoncupshow UALERT_MODE
FMS_001(I) - Disabled Alerts(HSC)
FMS_001(I) - Enabled Alerts(FRU INV_ATT)
```

See Also

ficonCupSet, ficonHelp

ficonHelp

Displays a list of FICON support commands.

Synopsis

ficonhelp

Description

Use this command to display a list of FICON support commands with descriptions.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display a list of FICON commands:

```
switch:admin> ficonhelp
ficoncfg       Manage FICON configuration
ficonclear     Clears contents of the specified FICON
               management database
ficoncupset    Sets FICON-CUP parameters for a switch
ficoncupshow   Displays FICON-CUP parameters for a switch
ficonhelp      Displays FICON commands
ficonshow      Displays contents of the specified FICON
               management database
```

See Also

None

ficonShow

Displays the contents of the specified FICON database.

Synopsis

```
ficonshow {ILIR|LIRR|RLIR|switchRNID} [fabric]
ficonshow RNID [fabric | table | port port_index]
```

Description

Use this command to display the contents of a FICON database. The **ficonShow** database operand is the name of the database to display. If the fabric operand is absent, the command displays the members of the named database that are local to the switch on which the command was issued. If the fabric operand is present, it must be entered exactly as displayed in the device, and this specifies that all members are displayed, both local and remote.

The following information may be displayed, depending on which database you enter and which operands you use with the command:

Domain	Displays the domain ID.
Fabric WWN	Displays the fabric WWN.
Flag	Indicates if the node is valid, not valid, or not current. Flag values are as follows: **0x00** Indicates the node ID of the storage port is valid. **0x10** Indicates the node ID of the channel port is valid. **0x20** Indicates the node ID of the storage port is not current. **0x30** Indicates the node ID of the channel port is not current. **0x40** Indicates the node ID of the storage port is not valid. **0x50** Indicates the node ID of the channel port is not valid.
Fmt	Displays the record-registration format.
FRU Failure Description	Indicates the FRU failure type as one of the following: **WWN card [*unit number*]** The WWN card **Power Supply [*unit number*]** The Power Supply card **Hardware Slot [*unit number*]** The Hardware Slot **Blower [*unit number*]** The Blower
FRU Part Number	Displays the FRU part number.
FRU Serial Number	Displays the FRU serial number.
Incident Count	Displays the incident count. This number increases by 1 for each incident within the individual switch.
Link Incident Description	Same as Link Incident Type.
Link Incident Type	Indicates the link incident type as one of the following: • Bit-error-rate threshold exceeded • Loss of signal or synchronization • NOS recognized • Primitive sequence timeout • Invalid primitive sequence for port state
Listener PID	Same as PID.

Listener Port Type Same as Port Type.

Listener Port WWN Displays the channel HBA port world wide name.

Listener Type Indicates the listener type as follows:

- **Conditional** This port receives a link incident record if no other recipients from the established registration list have been chosen.
- **Unconditional** This port is always chosen as a recipient of a link incident record.

Manufacturer Displays the manufacturer name or code.

Model Number Displays the model number.

Node Parameters Same as Parameters.

Parameters Displays the node type for the switch in three bytes, 0xAABBCC:

- **Byte AA 0x20** FC-SB-2 and updates
- **Byte BB 0x0a** Switch
- **Byte CC 0x00** Port number. It is dynamically assigned whenever a link incident occurs.

Parm Displays the incident node parameters type in three bytes, 0xAABBCC:

Byte AA Possible values include the following:

- **0x00** Reserved.
- **0x20** FC-SB-2 and updates.
- **0x40** Other FC-4s including FCP and updates.
- **0x60** FC-SB-2 and updates and other FC-4s including FCP and updates.
- **0x80** FC-4 support not specified.
- **0xa0** Reserved.
- **0xc0** Reserved.
- **0xe0** Vendor-specific.

Byte BB Possible values include the following:

- **0x00** Unspecified class.
- **0x01** Direct access storage device, if it is a storage port; otherwise, not channel-to-channel capable.
- **0x02** Magnetic tape, if it is a storage port; otherwise, a reserved field for a channel port.
- **0x03** Input unit record, if it is a storage port; otherwise, a reserved field for a channel port.
- **0x04** Output unit, if it is a storage port; otherwise, a reserved field for a channel port.
- **0x05** Reserved field for a channel port.
- **0x06** Controller, if it is a storage port; otherwise, a reserved field for a channel port.
- **0x07** Terminal - Full screen if it is a storage port; otherwise, a reserved field for a channel port.
- **0x08** Terminal - Line mode if it is a storage port; otherwise, an emulated control unit support only.
- **0x09** Reserved.
- **0x10** Switch, if it is a switch device; otherwise, reserved.
- **0x0b-0xff** Reserved.

Byte CC Possible values include the following:

- **0x00** If storage CU port has registered with the switch.

0xID	CHIPID if channel port has registered with the switch.
0xPN	If switch has registered with the channel, PN represents the FL port number.

Part Number	Displays the switch chassis part number.
PID	Displays the 24-bit Fibre Channel port address in 0xDDAAPP format. DD is Domain ID. AA is Area ID. PP is AL_PA ID.
Plant of Manufacture	Displays the manufacturer plant name or code.
Port	Physical port number.
Port Status	Displays the status of the port as one of the following: • Link degraded but operational • Link not operational
Port Type	Displays the port type as one of the following: **U** Unknown **N** N_Port **NL** NL_Port
Protocol	Displays whether the traffic is using FICON or FCP.
Registered Node WWN	Displays the device's node world wide name associated with the device HBA.
Registered Port WWN	Displays the device's channel or storage CU port world wide name associated with the device HBA.
Sequence Number	Displays the sequence number of the self-describing node.
Serial Number	Displays the switch serial number.
Switch node WWN	Displays the switch node world wide name.
Switch Port WWN	Displays the switch port world wide name.
Switch WWN	Displays the switch WWN.
Tag	Displays the physical identifier for the self-describing node interface.
TS Format	Displays the Time Server format.
Time Stamp	Displays the timestamp, expressed in date format.
Type	Same as Port Type.
Type Number	Displays the type number of the self-describing node. It also describes the machine type.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command uses the following valid database operand values.

RNID	Device node identification.
LIRR	Devices registered to receive link incident reports. Entries can have the following flags: **-C*** A user-configured LIRR entry defined as current (set with the **ficonCfg** command). **-C** A LIRR entry defined by the management server demon as current based on order. **-S** A LIRR entry defined by the management server demon as secondary.
SwitchRNID	Switch node identification.
RLIR	Link incident reports.
ILIR	Implicit link incident reports.
fabric	Displays FICON database information for the entire fabric. This operand is optional; if omitted, only local members of the named database are displayed.

table	Displays RNID data in table format.
port	Displays RNID data for the specified port.
port_index	Specifies the port index number in decimal or in hexadecimal format.

Examples

To display the local RNID database:

```
switch:admin> ficonshow RNID
{
 {Fmt Type PID Registered Port WWN     Registered  Node WWN \
0x18 N 502b00 50:05:07:64:01:00:15:8d 50:05:07:64:00:c1:69:ca \
      flag Parm
      0x10 0x200110
  Type number:          002064
  Model number:         101
  Manufacturer:         IBM
  Plant of Manufacture: 02
  Sequence Number:      0000000169CA
  tag:                  102b
 }
 {Fmt Type PID Registered Port WWN   Registered  Node WWN \
  0x18 N 502e00 50:05:07:64:01:40:0f:ca 50:05:07:64:00:c1:69:ca \
      flag Parm
      0x10 0x200105
 Type number:          002064
  Model number:         101
  Manufacturer:         IBM
  Plant of Manufacture: 02
  Sequence Number:      0000000169CA
  tag:                  052e
 }
}
```

To display the local RNID database in tabular format:

```
switch:admin> ficonshow RNID table
{
 Fmt  Type PID    Registered Port WWN     Registered  Node WWN
 0x18 N    252500 50:05:07:60:28:bf:42:cf 50:05:07:64:00:cd:01:b6
 0x18 N    255800 50:05:07:60:28:bf:3e:98 50:05:07:64:00:cd:01:b6
 0x18 N    255A00 50:05:07:60:28:bf:2c:9e 50:05:07:64:00:cd:01:b6
 0x18 N    255B00 50:05:07:60:28:bf:3f:0b 50:05:07:64:00:cd:01:b6
 0x18 N    255C00 50:05:07:60:28:bf:3f:0a 50:05:07:64:00:cd:01:b6
 0x18 N    255D00 50:05:07:60:28:bf:2c:9f 50:05:07:64:00:cd:01:b6
 0x18 N    255E00 50:05:07:60:28:bf:18:63 50:05:07:64:00:cd:01:b6
 0x18 N    255F00 50:05:07:60:28:bf:18:64 50:05:07:64:00:cd:01:b6

              flag Parm     Type   Mod Manf Plant Sequence#    Tag
              0x10 0x3101DB 002817 M15 IBM  02    0000000D01B6 40DB
              0x10 0x310138 002817 M15 IBM  02    0000000D01B6 4038
              0x10 0x3101D4 002817 M15 IBM  02    0000000D01B6 40D4
              0x10 0x3101D7 002817 M15 IBM  02    0000000D01B6 40D7
              0x10 0x3101D6 002817 M15 IBM  02    0000000D01B6 40D6
```

```
              0x10 0x3101D5 002817 M15 IBM  02    0000000D01B6 40D5
              0x10 0x3101D8 002817 M15 IBM  02    0000000D01B6 40D8
              0x10 0x3101D9 002817 M15 IBM  02    0000000D01B6 40D9
}
8 valid entries, 0 not current entries
The Local RNID database has 8 entries.
```

To display RNID data for the specified port:

```
switch:admin> ficonshow RNID port 0x08
{Fmt  Type PID    Registered Port WWN     Registered  Node WWN  \
  0x18 E    010800 20:08:00:05:1e:57:b1:86 10:00:00:05:1e:57:b1:86\
                                            flag Parm
                                          0x00 0x200a00
  Type number:          BROCAD
  Model number:         510
  Manufacturer:         BRD
  Plant of Manufacture: CA
  Sequence Number:      0ALM0632D038
  tag:                  03ff
}
```

To display the local LIRR database:

```
switch:admin> ficonshow LIRR
{Fmt  Type PID    Listener Port WWN
 0x18 N    255800 50:05:07:60:28:bf:3e:98 \
 0x18 N    255a00 50:05:07:60:28:bf:2c:9e \
 0x18 N    255b00 50:05:07:60:28:bf:3f:0b \
 0x18 N    255c00 50:05:07:60:28:bf:3f:0a \
 0x18 N    255d00 50:05:07:60:28:bf:2c:9f \
 0x18 N    255e00 50:05:07:60:28:bf:18:63 \
 0x18 N    255f00 50:05:07:60:28:bf:18:64 \

Switch Port WWN         Listener Type
20:58:00:05:33:0d:b7:05 Conditional-S
20:5a:00:05:33:0d:b7:05 Conditional
20:5b:00:05:33:0d:b7:05 Conditional
20:5c:00:05:33:0d:b7:05 Conditional
20:5d:00:05:33:0d:b7:05 Conditional
20:5e:00:05:33:0d:b7:05 Conditional
20:5f:00:05:33:0d:b7:05 Conditional-C*
}
The Local LIRR database has 7 entries.

Current LIRR device port number: 95 (0x5f)
```

To display the local and remote LIRR database:

```
switch:admin> ficonshow LIRR fabric
{Fmt  Type PID    Listener Port WWN       \
 0x18 N    502d00 50:05:07:64:01:40:11:79 \
 0x18 N    510d00 50:05:07:64:01:00:15:8c \
 0x18 N    510f00 50:05:07:64:01:00:14:62 \
```

```
Switch Port WWN         Listener Type
20:2d:00:60:69:80:1e:4e Conditional-C
20:0d:00:60:69:80:1e:4f Conditional-S
 20:0f:00:60:69:80:1e:4f Conditional
}
The LIRR database has 3 entries.

Current LIRR device port number: Not configured
```

To display the local Switch RNID database:

```
switch:admin> ficonshow switchrnid
{
 {Switch WWN                    flag Parm
  10:00:00:60:69:80:1e:4e       0x00   0x200a00
  Type number:          SLKWRM
  Model number:         48K
  Manufacturer:         BRD
  Plant of Manufacture: CA
  Sequence Number:      0RB030000082
  tag:                  00ff
 }
}
The Local switch RNID database has 1 entries.
```

To display the local RLIR database:

```
switch:user> ficonshow RLIR

{
 {Fmt Type PID  Port Incident Count TS Format   Time Stamp
  0x18 N  502e00 46       1 Time server Mon Jan 13 04:29:33 2003
  Port Status:          Link not operational
  Link Failure Type:    Loss of signal or synchronization

  Registered Port WWN Registered Node WWN  Flag  Node Parameters
  50:05:07:64:01:40:0f:ca 50:05:07:64:00:c1:69:ca 0x50 0x200105
  Type Number:          002064
  Model Number:         101
  Manufacturer:         IBM
  Plant of Manufacture: 02
  Sequence Number:      0000000169CA
  tag:                  2e00

  Switch Port WWN     Switch Node WWN     Flag  Node Parameters
  20:2e:00:60:69:80:1e:4e 10:00:00:60:69:80:1e:4e 0x00 0x200a2e
  Switch Part Number:   060-0001501-05
  Switch Serial Number: 0FT02X801E4E
  Domain:               20480
 }
}
The local RLIR database has 1 entry.
```

See Also

ficonClear

firmwareActivate

Activates switch firmware.

Synopsis

```
firmwareactivate
firmwareactivate [-l | -local] [-force]
firmwareactivate --help
```

Description

Use this command to activate the firmware that has been downloaded to the secondary partition using the **firmwareDownload -r** command. This command swaps partitions and reboots the system to activate the new image.

Execute this command with the **-local** or **-l** option to activate the firmware on a local control processor (CP). This option is not supported on all nonbladed switches and supports only on the chassis-based devices.

It is also recommended to use **firmwaredownload -lr** to download the firmware locally to the secondary partition on the CP.

The **firmwareRestore** and **firmwareCommit** commands only take action if the new firmware is activated; otherwise, the process terminates with an error. However, you can execute the **firmwareDownload** command before activating the firmware.

Notes

This command is supported on the single CP and dual-CP systems.

You must not make any configuration changes before activating the firmware.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

The following operands are optional:

-l | -local	Activates the firmware on the local CP.
-force	Activate the firmware without confirmation.
--help	Displays the command usage.

Examples

To activate a new version of the firmware:

```
switch:admin> firmwareactivate
This command will activate the firmware on the secondary partition
but will require that existing telnet, secure telnet or SSH sessions
to be restarted.

Do you want to continue (Y/N) [Y]:
```

See Also

firmwareCommit, firmwareDownload, firmwareDownloadStatus, firmwareRestore, firmwareShow, version

firmwareCleanInstall

Recovers the switch firmware.

Synopsis

```
firmwarecleaninstall
 firmwarecleaninstall {-p | -protocol} {scp | ftp | sftp}
     <host>,<user>,<path>,<passwd>
     [-force] [-acceptEULA]
 firmwarecleaninstall {--help | -h | -showEULA}
```

Description

Use this command to initiate a clean reinstall of the firmware. Use of this command results in resetting the system to default configuration. This may be used in cases where the loaded firmware does not function correctly, the normal firmware download fails, or to recover from a rolling reboot situation.

It is recommended that this command be used either to cleaninstall or reinstall only to the same FOS version that is currently running on the system. Use of this command to upgrade or downgrade to a different FOS version is not recommended. The firmware upgrade or downgrade to a different FOS version is recommended only via the **firmwaredownload** command and not via **firmwarecleaninstall** command to avoid circumventing firmware compatibility checking and firmware download blocking afforded by **firmwaredownload**.

Notes

The firmwarecleaninstall operation should be performed similarly on both standalone platforms and on directors. On a director, it should be invoked on each CP, and operates only on that CP. Firmwarecleaninstall can be run on both active and standby CPs, however it should not be run simultaneously on both CPs. Note that running **firmwarecleaninstall** command on an active CP may lead to traffic disruption.

If for any reason, boot flash is corrupted and boot ROM cannot be loaded, you must let it go through RMA. Firmwarecleaninstall mechanism cannot be used to recover from such damage.

If local CF is corrupted in a way that the Linux image cannot be loaded, firmwarecleaninstall cannot be used to recover the switch.

The compact flash is reformatted during the process and hence all contents on mass storage are cleared. Also, all the previous data and configurations are removed during formatting.

In a pizza box, since pre-existing configurations are totally wiped out by firmwarecleaninstall, to restore the previous configuration or the OEM configuration you must do a specific configdownload. For a director, it is recommended to do firmwarecleaninstall on both CPs in parallel and do a specific configdownload.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

The following operands are optional. When invoked without operands, the command goes into interactive mode.

-p | -protocol {scp | ftp | sftp}	Specifies the file transfer protocol. Valid values are ftp, scp, and sftp.

<host>	Specifies a valid FTP or SSH server name or IP address. The firmware is downloaded from the specified host.
<user>	Specifies a user name for FTP or SSH server access.
<path>	Specifies a path for the firmware files.
<passwd>	Specifies a password. Beginning with Fabric OS v9.2.2, this option is made as interactive and requires user input during execution.
-showEULA	Displays EULA agreement.
-acceptEULA	Prompts the user to accept EULA agreement when no option is specified.
-force	Initiates a clean reinstall of the firmware without confirmation.
--help	Displays the command usage.

Examples

To perform a clean firmware install interactively:

```
switch:admin> firmwarecleaninstall
Server Name or IP Address: 192.0.2.0
User Name: admin
File Name: /admin/dist/FOS9.2.x/
Network Protocol(1-FTP, 2-SCP, 3-SFTP) [1]: 2
Verifying if the public key authentication is available.Please wait ...
The public key authentication is not available.
Password:


Do you accept and agree to the terms outlined in the End User
License Agreement(EULA) for this product?
Please respond with (Y/y) to Accept, (N/n) to Not accept,
or (D/d) to display the EULA : Y

This command will erase all the data on the Compact Flash
before installing a new firmware. There are also disruptive
reboots during the process. Please use "configupload -all" and
"configupload -vf" if all configurations need to be saved before
continuing with firmwarecleaninstall.

Do you want to continue (Y/N) [Y]:
```

To perform a clean firmware install noninteractively:

```
switch:admin> firmwarecleaninstall 192.0.2.0  \
   admin,/admin/dist/FOS9.2.x/
```

See Also

firmwareActivate, firmwareCommit, firmwareDownload, firmwareDownloadStatus, firmwareRestore, firmwareShow, version

firmwareCommit

Commits switch firmware.

Synopsis

```
firmwarecommit
```

Description

Use this command to commit a firmware download to a CP. This command copies an updated firmware image to the secondary partition and commits both partitions of the CP to an updated version of the firmware. This must be done after each firmware download and after the switch has been rebooted and a sanity check is performed to make sure the new image is fine.

For switches that have nonvolatile memory set into two equal partitions, the primary partition is the where the system boots from; the secondary partition is where a copy of the firmware is stored, in case the primary partition is damaged.

To maintain the integrity of the firmware image in the nonvolatile memory, the **firmwareDownload** command updates the secondary partition only. When **firmwareDownload** completes successfully and the CP is rebooted, the system switches the primary partition (with the old firmware) to the secondary, and the secondary partition (with the new firmware) to the primary.

The default behavior of the **firmwareDownload** command is to automatically run the **firmwareCommit** command after the reboot. If you decide to disable the autocommit option when running **firmwareDownload**, you must execute one of the following two commands after the CP is rebooted:

- **firmwareCommit** copies the primary partition (with new firmware) to the secondary and commits the new firmware to both partitions of the CP.
- **firmwareRestore** copies the secondary partition (with the old firmware) to the primary and backs out of the new firmware download. The **firmwareRestore** command can be run only if autocommit was disabled during the firmware download. Autocommit can be disabled only when you run **firmwareDownload** in single mode.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To commit a new version of the firmware:

```
switch:admin> firmwarecommit
Validating primary partition...
Doing firmwarecommit now.
Please wait ...
Replicating kernel image
...............
FirmwareCommit completes successfully.
```

See Also

firmwareDownload, firmwareRestore

firmwareDownload

Downloads firmware from a remote host, a local directory, or a USB device.

Synopsis

```
firmwaredownload
 firmwaredownload [-s [-n] [-b] [-L]
      [-r | -lr] | -L [-r | -lr] | -r | -lr] |
 -p {ftp | scp [-m <port_num>] [-k]
      | sftp [-m <port_num>] [-k] |
 http [-m <port_num>]}
      <host>, <user>, <path>, <password>
      [-A cra][-acceptEULA] [-x <timeout>]
 firmwaredownload -U [-s [[-b] [-n] |
 -r | -lr] | -r | -lr] <path>
 firmwaredownload -showEULA
firmwaredownload -v
```

Description

Use this command to download switch firmware from an FTP or SSH server or local NFS directory to nonvolatile storage. Switch firmware can also be downloaded from an external USB device on platforms that support USB.

The new firmware is downloaded as a bundle of packages. Package names are defined in a *.plist file along with other firmware information (time stamp, platform code, version, etc.). These packages are made available periodically to add features or to remedy defects. Contact customer support to obtain information about available firmware versions.

On enterprise-class platforms, this command, by default, downloads the firmware image to both control processors (CPs) in rollover mode to prevent disruption to application services. This operation depends on High Availability (HA) support. If HA is not available, use the **-s** option to upgrade the CPs one at a time.

All systems supported by this firmware have two partitions of nonvolatile storage (primary and secondary) to store two firmware images. This command always downloads the new image to the secondary partition and then swaps partitions so the secondary partition becomes the primary.

By default, **firmwareDownload** reboots the system and activates the new image. Finally, the command performs a **firmwareCommit** automatically to copy the new image to the other partition. In systems with blade processors (BPs), after the new CP firmware is downloaded to the system and activated, the BP firmware is downloaded to the BP processors if there is a mismatch between the BP and CP firmware.

By default, **firmwareDownload** performs a full install, autoreboot, and autocommit. These modes are selectable only in single CP (**-s**) mode, in which case autoreboot is OFF by default.

For each standalone switch in your fabric, complete all firmware download changes before issuing the **firmwareDownload** command on the next switch to ensure a nondisruptive download.

If **firmwareDownload** is interrupted due to an unexpected reboot as a result of a software error or power failure, the command automatically recovers the corrupted secondary partition. Wait for the recovery to complete before starting another firmware download.

Beginning wih Fabric OS v9.1.0, firmware upgrade from Fabric OS v8.2.x to Fabric OS v9.1.x is not supported. This enforces the firmware upgrade from Fabric OS v8.2.x to run through Fabric OS v9.0.x to validate TruFOS certificate and upgrade to Fabric OS v9.1.x.

The firmware upgrade to Fabric OS v9.2.0 is blocked if the switch or chassis has F_Port(s) with VMID+ and EX_Port(s)/EX_Port configuration.

The firmware download to Fabric OS v9.1.x is blocked if the switch or chassis has F_Port(s) with VMID+ and XISL usage is enabled.

Notes

Firmware download and subsequent POST failure may occur on some platforms, if the firmware commit operation coincides with the execution of POST. The recommended work around is to disable POST (**diagDisablePost**) before you initiate a firmware download and re-enable POST (**diagEnablePost**) after the firmware commit operation has completed.

Firmware download procedures may vary depending on which Fabric OS version you are migrating from. See the *Brocade Fabric OS Administration Guide* for restrictions on changing Fabric OS versions.

On certain occasions, you may see messages in the console output of **firmwareDownload**. These are internal messages generated by the Linux utilities. You can safely ignore these messages. For relevant Brocade-generated firmware download messages, refer to the *Brocade Fabric OS Message Reference Manual* (SULB module).

To correlate Brocade blade names with blade IDs, use the **slotShow** command.

While downgrading from Fabric OS v9.2.0 to earlier versions, the secondary partition version is displayed as **Unknown**. Execute **firmwareCommit** and reboot the device to see the correct version.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

The following operands are optional. When invoked without operands, the command goes into interactive mode.

-U	Downloads the firmware from an attached USB device. This option is valid only on platforms that support a USB port. Refer to your specific Hardware Reference Guide for details. The USB device must be enabled prior to firmware download with the **usbStorage** command. On a dual-CP chassis, the USB device must be attached to the active CP. When downloading firmware from a USB device, the **-p** option is ignored.
-s	Enables single-CP mode. This mode supports selectively enabling or disabling a full install, autoreboot, and autocommit on bladed and nonbladed systems. On enterprise-class platforms, this mode supports upgrading a single CP. When downloading the main Fabric OS firmware, this option disables autoreboot, unless overridden by the **-b** option.
-b	Enables autoreboot mode. When single CP mode is enabled and this operand is not specified, **reboot** must be run manually to activate the downloaded image. If autoreboot mode is enabled, the switch reboots automatically after the firmware has been downloaded.
-n	Disables autocommit mode. When autocommit mode is disabled, the **firmwareCommit** command must be executed manually to propagate the downloaded image to both partitions of the storage device.
<host>	Specify a valid FTP or SSH server name or IP address. IPV4 and IPv6 addresses are supported. The firmware is downloaded from the specified host. If a host is not specified, the firmware is considered accessible on a local directory. To mention an FTP server by name, a DNS server must first be set up with the **dnsConfig** command. If DNS is enabled and a server name is specified, **firmwareDownload** automatically determines whether IPv4 or IPv6 should be used.
<user>	Specify a user name for FTP or SSH server access. This operand can be omitted, if the firmware is accessible on a local directory, a USB device, or by anonymous FTP server access. A user name other than "anonymous" is required for SSH server access.
<path>	Specify a fully qualified path for the firmware. Absolute path names may be specified using forward slashes (/).
<password>	Beginning with Fabric OS v9.2.2, this option is made as interactive and requires user input during execution. Specify a password. This operand can be omitted, if the firmware is accessible through a local directory or an attached USB device, or if no password is required by the FTP server. This operand is required when accessing an SSH server. In Fabric OS v7.4.2 or later, you can omit the password if the switch is configured as follows:

- The switch must be configured with public key authentication. See **sshUtil** help page for more information.
- You select a secure protocol (SCP or SFTP).
- The private key is installed on the switch, and the public key is exported to the remote host. Refer to the *Brocade Fabric OS Administration Guide* for configuration procedures.

-p scp | ftp | sftp | http	Specify the file transfer protocol. Valid values are **ftp** (file transfer protocol), **sftp** (secure file transfer protocol), **scp** (secure copy protocol), and **http** (hypertext transfer protocol). Values are not case-sensitive. If **-p** is not specified, **firmwareCommit** determines the protocol automatically by checking the config.security parameter.
-m *port*	Specify the SSH server port number for SCP/SFTP. The default port number is 22. Valid values are from 1 through 65535.
-A cra	Specify the method for protocol. Valid option is **cra**. Challenge Response Authentication (CRA) is supported only with the SCP and SFTP protocols.
-r	Downloads the firmware only to the secondary partition.
-L	Enables legacy firmware download and skips incremental upgrade.
-lr	Downloads the firmware locally to the secondary partition on the CP.
-showEULA	Displays EULA agreement.
-acceptEULA	Prompts the user to accept EULA agreement when no option is specified.
-k	Enables SFTP StrictHostKeyChecking. This option is valid only if the protocol is scp or sftp. Beginning from Fabric OS v9.2.2, this option is not supported.
-x	firmwaredownload timeout in seconds.
-v	Checks space availability to proceed with firmwaredownload.

Examples

To download the firmware to both CPs on a dual-CP chassis with an attached USB device (You would execute the same command on a single-CP switch with USB support. Output may vary depending on platform.):

```
switch:admin> firmwaredownload -U v9.x.x

Checking system settings for firmwaredownload...
Protocol selected: USB
Trying address-->AF_INET IP: 192.0.2.0, flags : 2
System settings check passed.

Checking version compatibility...
Version compatibility check passed.

This command will upgrade the firmware on both
CP blades. If you want to upgrade firmware on a single
CP only, please use -s option.

You may run firmwaredownloadstatus to get the status
of this command.

This command will cause a warm/non-disruptive boot on
the active CP, but will require that existing telnet,
secure telnet or SSH sessions be restarted.
```

To download firmware interactively:

```
switch:admin> firmwaredownload
Server Name or IP Address: 192.0.2.0
```

```
User Name: admin
File Name: /admin/dist
Network Protocol(1-auto-select, 2-FTP, 3-SCP, 4-SFTP, 5-HTTP) [1]: 3
Do you want to input SCP/SFTP options (Y/N) [N]: y
Verifying if the public key authentication is available.Please wait ...
The public key authentication is not available.
Password:
Do you want to continue with CRA (Y/N)[N]:

Do you accept and agree to the terms outlined in the End User
License Agreement(EULA) for this product?
Please respond with (Y/y) to Accept, (N/n) to Not accept,
or (D/d) to display the EULA : Y

Checking system settings for firmwaredownload...

System settings check passed.

You can run firmwaredownloadstatus to get the status
of this command.

This command will cause a warm/non-disruptive boot but will
require that existing telnet, secure telnet or SSH sessions
be restarted.

Do you want to continue (Y/N) [Y]: y
```

To download firmware noninteractively:

```
switch:admin> firmwaredownload
Download from USB [No]:
Server Name or IP Address: 192.0.2.0
User Name: admin
File Name: /admin/dist
Network Protocol(1-auto-select, 2-FTP, 3-SCP, 4-SFTP, 5-HTTP) [1]: 5
Do you want to input HTTP Port (Y/N) [N]:
Password:
```

To download firmware without a password using public key authentication:

```
switch:admin> firmwaredownload -s
Server Name or IP Address: 192.0.2.0
User Name: admin
File Name: /users/home25/admin/dist
Network Protocol(1-auto-select, 2-FTP, 3-SCP, 4-SFTP, 5-HTTP) [1]: 3
Verifying if the public key authentication is available.
Please wait ...Success.

Do Auto-Commit after Reboot [Y]: y
Reboot system after download [N]: y
Server IP: 192.0.2.0, Protocol IPv4
Checking system settings for firmwaredownload...
```

```
System settings check passed.
(Output truncated)
```

See Also

firmwareCommit, firmwareDownloadStatus, firmwareRestore, firmwareShow, reBoot, slotShow, version

firmwareDownloadStatus

Displays the status of a firmware download.

Synopsis

firmwaredownloadstatus

Description

Use this command to display an event log that records the progress and status of events during a firmware download. The event log is created by the firmware download process and is kept until you issue another **firmwareDownload** command. A timestamp is associated with each event. When downloading Fabric OS firmware, the event logs in the two control processors (CPs) are synchronized and you can run this command from either CP.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the status of a firmware download on a switch:

```
switch:admin> firmwaredownloadstatus
[1]: Sat Nov 20 03:45:56 2021
Firmware is being downloaded to the switch. This step may take up to 30 minutes.

[2]: Sat Nov 20 03:59:39 2021
The internal firmware image is relocated successfully.

[3]: Sat Nov 20 03:59:39 2021
Firmware has been downloaded to the secondary partition of the switch.

[4]: Sat Nov 20 04:01:47 2021
The firmware commit operation has started. This may take up to 10 minutes.

[5]: Sat Nov 20 04:05:39 2021
The commit operation has completed successfully.

[6]: Sat Nov 20 04:05:40 2021
Firmwaredownload command has completed successfully. Use firmwareshow to verify the firmware versions.
```

To display the status of a firmware download on a chassis:

```
switch:admin> firmwaredownloadstatus
[1]: Fri Nov 19 15:23:50 2021
Slot 1 (CP0, active): Firmware is being downloaded to standby CP. This step may take up to 30 minutes.

[2]: Fri Nov 19 15:31:27 2021
Slot 1 (CP0, active): Firmware has been downloaded successfully to Standby CP.

[3]: Fri Nov 19 15:31:28 2021
Slot 1 (CP0, active): Standby CP is going to reboot with new firmware.

[4]: Fri Nov 19 15:34:47 2021
Slot 1 (CP0, active): Standby CP booted successfully with new firmware.

[5]: Fri Nov 19 15:35:21 2021
Slot 12 (SX6): Firmware is being downloaded to the blade.

[6]: Fri Nov 19 15:36:49 2021
Slot 2 (CP1, active): Forced failover succeeded. New Active CP is running new firmware

[7]: Fri Nov 19 15:38:29 2021
Slot 2 (CP1, active): Firmware is being downloaded to standby CP. This step may take up to 30 minutes.

[8]: Fri Nov 19 15:41:10 2021
Slot 2 (CP1, active): Firmware has been downloaded successfully on Standby CP.

[9]: Fri Nov 19 15:41:11 2021
Slot 2 (CP1, active): Standby CP reboots.

[10]: Fri Nov 19 15:44:28 2021
Slot 2 (CP1, active): Firmware commit operation has started on both active and standby CPs.

[11]: Fri Nov 19 15:44:28 2021
Slot 2 (CP1, active): The firmware commit operation has started. This may take up to 10 minutes.

[12]: Fri Nov 19 15:44:29 2021
Slot 2 (CP1, active): Standby CP booted successfully with new firmware.

[13]: Fri Nov 19 15:48:13 2021
Slot 2 (CP1, active): The commit operation has completed successfully.

[14]: Fri Nov 19 15:48:13 2021
Slot 2 (CP1, active): Firmware commit operation has completed successfully on active CP.

[15]: Fri Nov 19 16:48:11 2021
Slot 12 (SX6): Firmware upgrade on the blade has completed.

[16]: Fri Nov 19 16:48:11 2021
Slot 2 (CP1, active): Firmwaredownload command has completed successfully. Use firmwareshow to verify the
 firmware versions.
```

See Also

firmwareCommit, firmwareDownload, firmwareRestore, firmwareShow

firmwareRestore

Restores the former active firmware image.

Synopsis

```
firmwarerestore
```

Description

Use this command to restore the former active Fabric OS firmware image. This command can only be run if autocommit was disabled during the **firmwareDownload** process.

After a **firmwareDownload** and a **reboot** (with autocommit disabled), the downloaded firmware becomes active. If you do not want to commit the firmware and want to restore the former firmware, issue the **firmwareRestore** command. After running **firmwareRestore**, you can run **firmwareDownload** again.

This command reboots the system and makes the former firmware active. After the switch reboots, both primary and secondary partitions restore the previous firmware.

This command only takes action if the system is booted after a **firmwareDownload**; otherwise, the process terminates with an error.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To restore the former active firmware image:

```
switch:admin> firmwarerestore
Restore old image to be active ...
Restore both primary and secondary image after reboot.
The system is going down for reboot NOW !!
Rebooting! Fri Oct 22 23:48:54 2010...

Doing firmwarecommit now.
Please wait ...
```

See Also

firmwareCommit, firmwareDownload

firmwareShow

Displays the firmware version and download history.

Synopsis

```
firmwareshow [--v | --history | --help]
```

Description

Use this command to display the firmware versions and the firmware download history. The command shows the firmware versions on both the primary and secondary partitions of the storage device. When this command is issued while a firmware download is in process, an appropriate warning message is displayed.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--history	Displays the contents of the firmware download log. For each firmware download record, the command displays the date and time, the switch name, the slot number, port ID, and firmware version.
--v	Displays the firmware DP version.
--help	Displays the command usage.

Examples

To display the firmware versions on a device while a firmware download is in progress:

```
switch:admin> firmwareshow
Slot Name  Appl Primary/Secondary Versions   Status
-----------------------------------------------------
1    CP0   FOS  v9.2.x                      STANDBY

2    CP1   FOS  v9.2.x                       ACTIVE *

6    SX6   FOS  v9.2.x                       In Progress

12   SX6   FOS  v9.2.x                       In Progress

* Local CP

WARNING: Firmwaredownload is in progress.
```

To display the firmware version on a standalone switch:

```
switch:admin> firmwareshow -v
Appl     Primary/Secondary Versions
----------------------------------------
FOS       v9.2.x
          v9.2.x
DP        v9.2.x
```

To display the firmware download history:

```
switch:admin> firmwareshow --history
Firmware version history

Sno Date & Time          Switch Name   Slot PID   FOS   Version(Path)
1   Wed Oct 26 07:24:09 2022 Brocade_X6-4  2    3685  Fabos Version 9.2.0
```

```
2   Thu Oct 27 03:52:38 2022 Brocade_X6-4  2    2957  Fabos Version 9.2.0
3   Thu Oct 27 05:58:15 2022 Brocade_X6-4  2    3104  Fabos Version 9.1.1
4   Thu Oct 27 06:22:08 2022 Brocade_X6-4  2    3211  Fabos Version 9.2.0
5   Thu Oct 27 12:34:29 2022 Brocade_X6-4  2    3153  Fabos Version 9.2.0
6   Thu Oct 27 12:58:44 2022 Brocade_X6-4  2    3192  Fabos Version 9.2.0
7   Thu Oct 27 18:29:57 2022 Brocade_X6-4  2    3136  Fabos Version 9.2.0
8   Thu Oct 27 22:11:35 2022 Brocade_X6-4  2    3022  Fabos Version 9.1.1
9   Thu Oct 27 22:39:25 2022 Brocade_X6-4  2    3206  Fabos Version 9.2.0
10  Fri Oct 28 04:58:01 2022 Brocade_X6-4  2    3170  Fabos Version 9.2.0
11  Fri Oct 28 06:55:10 2022 Brocade_X6-4  2    3160  Fabos Version 9.2.0
(output truncated...)
```

See Also

firmwareDownload, firmwareDownloadStatus

firmwareSync

Synchronizes the firmware from the active control processor (CP) to the standby CP.

Synopsis

```
firmwaresync [-force]
firmwaresync --help
```

Description

Use this command to manually synchronize the firmware from the active CP to the standby CP. Execute the command without arguments to synchronize the active CP firmware to the standby CP.

Notes

This command is applicable only for the dual CP systems. Execution of this command updates the firmware version of the standby CP with that of the active CP.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

[-force]	Executes the command without user confirmation. This operand is optional.
--help	Displays the command usage.

Examples

To synchronize the standby CP with active CP firmware version:

```
switch:admin> firmwaresync

This command will copy the firmware on the active CP blade to the
standby CP blade but will require that existing telnet, secure telnet or
SSH sessions to the standby CP blade to be restarted.

This command may take up to 10 minutes.
```

```
Do you want to continue (Y/N) [Y]:
Firmwaresync has started.
.......................Firmwaresync has been completed successfully.
```

See Also

None

flow

Creates, manages, and displays flows in Flow Vision.

Synopsis

```
        flow --create <flow_name> -feature <feature_list>
        <port_options> <frame_options> <config_options>
        flow --modify <flow_name> <port_options>
        flow --modify {sys_flow_monitor {-port <port> | {-vmenable | -vmdisable}} | sys_analytics_vtap {-
ingrport | -mirrorport} <port>}
        flow --delete {<flow_name> | all} [-force]
        flow --control <flow_name> -feature generator {-size <payload_size> | -pattern >pattern_string> | -
size <payload_size> -pattern <pattern_string>}
        flow --control -simport <port_num> {-enable | -disable}
        flow --control -feature mirror {-enable_wrap | -disable_wrap}
        flow --control sys_flow_monitor -n {<number of entries to be displayed in sys_flow_monitor brief show>
 | all}
        flow --reset {<flow_name> | all} [-feature <feature_list>]
        flow --activate <flow_name> [-feature <feature_list>]
        flow --deactivate <flow_name> [-feature <feature_list>]
        flow --show -allzoned -srcdev <address> -dstdev <address>      {-egrport | -ingrport} <port>
        flow --show <flow_name> [-feature <feature_list>] {{-count <count> | -time <interval> | -verbose | -
sortby <field>} | -ctrlcfg}
        flow --show {-resource [-fid]}
        flow --show <flow_name> {-top <field> [-n <count>] |-bottom <field> [-n <count>]}
        flow --show <flow_name> {-stats | -srcdev <address> |  -dstdev <address> | -srcdev <address> -dstdev
 <address> [-port <port>] [[-lun <lun> | -nsid <nsid>][-srceid <srceid>] |-srceid <srceid>] | -port <port>}
        flow --help
```

Description

Use this command to perform the following functions:

- Create a flow
- Activate or deactivate features for a flow
- Clear the data collected for a particular feature of a flow
- Change the control parameters for a feature or a flow
- Modify the definition of the predefined Analytics VTAP flow
- Display the flow statistics
- Delete a flow

Each of these functions is documented in a separate section that includes function, synopsis, description, operands, and examples.

A flow is a set of related Fibre Channel (FC) frames or packets that share similar traits, such as an ingress port, egress port, or frame options that can uniquely differentiate one set of related frames or packets from a different set of frames. A flow is defined by a combination of ingress port, egress port, source device, and destination device parameters. Flow Vision supports Flow Monitor, Flow Generator, and Flow Mirror features to monitor, simulate, and capture the network traffic respectively. You can create up to 512 flows on Brocade director and 128 flow on switch-based system. For more information on Flow Vision, refer to the *Brocade Fabric OS Administration Guide*.

Notes

This command requires a Fabric Vision license.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Function

Creating a flow

Synopsis

```
flow --create <flow_name> -feature <feature_list> <port_options> <frame_options> <config_options>
```

Description

Use this command to create a flow and by default activate the flow for the specified features. This command validates the flow definition before creating a flow. If the flow definition is not supported by any specified feature or if the flow definition is a duplicate of an existing active flow, the operation will terminate with an appropriate error message. For more information on duplicate flows, refer to the *Brocade Fabric OS Administration Guide*.

The following rules apply for creating a flow:

- You must specify at least one port option (**-ingrport** or **-egrport**) but not both.
- You must specify the source device (**-srcdev**), the destination device (**-dstdev**), or both. The source device and the destination device can be learned using a wildcard ("*").
- The ingress port and egress port must reside in the local switch.
- The source device and destination device can reside in either the local or remote switch.
- You can create 512 flows on a Brocade director and 128 flows on a switch-based system. Note that each flow discovered when using "*" as a source device or destination device will count as one of these flows. These system-discovered flows will impact the number of user-defined flows allowed to be active.
- The configuration options **-noactivate**, **-noconfig**, and **-bidir** are optional.
- You can create four generator flows per port.
- You can activate one mirror flow per chassis or switch-based system.

Operands

The **--create** command has the following operands:

<flow_name>	Specifies the name of the flow. Each flow name must be a unique string composed of a maximum of 20 alphanumeric or underscore characters. The flow name is case-insensitive and is always stored as lowercase.
-feature <*feature_list*>	Specifies a comma-separated list of features to activate for the flow. Specify "all" to activate all features for a flow. Valid values for *feature_list* include the following:

generator Activates the Flow Generator feature for a flow. The Flow Generator is a traffic flow diagnostics feature that generates traffic at line rate in the fabric to validate connectivity, hardware components, and network performance. You must configure the ingress or egress ports and the source and destination devices to be SIM ports before activating a flow using the Flow Generator feature.

You can modify the frame size and payload pattern using the **--control** options after creating the flow.

The following configuration considerations apply for the Flow Generator feature:

- The Flow Generator feature is not supported on a base switch or ICL port.
- AG mode is not supported.
- You can activate the Flow Generator feature on four flows per port.
- The **-frametype**, **-lun**, and **-bidir** options are not supported with the Flow Generator feature.

mirror Activates the Flow Mirror feature for a flow. The Flow Mirror captures network traffic in a flow and sends it to the switch CPU or a local mirror port in a switch for traffic analysis. This feature mirrors only the flows that are in active state. The logging mechanism of the frames can be modified by using the **--control -enable_wrap** | **-disable_wrap** options.

For both switch-based system and a chassis-based system, a maximum of 256 frames per second are mirrored. A maximum of 1280 frames are stored for switch-based systems and 5120 frames are stored for chassis-based systems.

The following configuration considerations apply for the Flow Mirror feature:

- The ingress port or the egress port must be an F_Port, which is 8G or less, on the local switch.
- The Flow Mirror feature is supported only on Gen 6 or later ports.
- EX_Ports, XISL ports, DISL ports, E_Ports, trunked E_Ports, and trunked F_Ports are not supported.
- The Flow Mirror feature is not supported on SIM ports.
- The Flow Mirror feature can be active on only one flow per chassis or switch-based system.

<port_options> Specifies the options to configure the ingress or egress ports.

-ingrport <*port*> Specifies the ingress port. The *port* can be in either [*slot*/]*port* or D,I (Domain, Index) format depending on the port mode configured.

-egrport <*port*> Specifies the egress port. The *port* can be in either [*slot*/]*port* or D,I format depending on the port mode configured.

The **-ingrport** and **-egrport** options are mutually exclusive; that is, you can specify only one of the options. The learning mode ("*") is not supported.

-mirrorport <*port*> Specifies the port from which mirrored frames exits. The *port* can be in either [*slot*/]*port* or D,I format depending on the port mode configured.

<frame_options> Specifies the options that represent the content of the FC frame or attributes of the frame.

-srcdev <*device_id*> Specifies the 3-byte source ID of the originator device. The *device_id* can be in PID or PWWN format depending on the device ID mode configured. The PID format is 0xDDAAPP, where DD is the Domain ID, AA is the Area ID and PP is the AL_PA ID. The PWWN format is "XX:XX:XX:XX:XX:XX:XX:XX". Specify "*" to enumerate all originator devices.

-dstdev <*device_id*> Specifies the 3-byte destination ID of the destination device. The *device_id* can be in PID or PWWN format depending on the device ID mode configured. The PID format is 0xDDAAPP, where DD is the Domain ID, AA is the Area ID and PP is the AL_PA

ID. The PWWN format is "XX:XX:XX:XX:XX:XX:XX:XX". Specify "*" to enumerate all destination devices.

-sfid <*fid*> Specifies the source fabric ID.

-dfid <*fid*> Specifies the destination fabric ID.

-lun <*LUN_id*> Specifies the LUN identification in decimal or hexadecimal (2-byte value) format. The valid range for *LUN_id* is from 0 through 65535 (0x0000 to 0xFFFF). The LUN parameter includes the addressing method and fields associated with the respective addressing method. If the most significant byte (MSB) is not specified in the flow definition, 0x00 is used. This operand is not supported by the Flow Generator feature.

-frametype <*type*> Specifies the predefined frame type. Valid values for *type* include the following: SCSI, SCSIRead, SCSIWrite, SCSIRW, SCSI2Reserve, SCSI3Reserve, scsicmdsts (supported only in Mirror feature), ABTS, BAACC, SCSI2Release, SCSI3Release, SCSITur, SCSI2ReserveRelease, SCSI3ReserveRelease, SCSIGoodStatus, SCSICheckStatus, SCSIResvConflict, SCSIInquiry, SCSIXferrdy, Srr, and BARJT. This operand is not supported by the Flow Generator feature.

-srceid <*vm_uuid*> Specifies the source entity ID.

-nsid <*nsid*> Specifies the namespace ID of the NVMe flow to monitor.

<config_options> Specifies the flow configuration options.

-bidir Configures the features to act on both incoming and outgoing directions on bidirectional traffic. For example, the Flow Mirror feature mirrors the frames on both directions: traffic originating from the source device and traffic that is destined to the source device. This operand is not supported by the Flow Generator feature.

-noactivate Allows a flow to be created, but suppresses activation of a flow.

-noconfig Overrides the default behavior, which automatically saves the flow in the persistent configuration when you create a flow. The flow will be lost when the system is rebooted.

Examples

To create a flow on ingress port (1/10) for traffic from the source device (0x020a00) to the destination device (0x030000) and activate the flow for the Flow Mirror feature:

```
switch:admin> flow --create myflow1 -feature mirror
-ingrport 1/10 -srcdev 0x020a00 -dstdev 0x030000
```

To create a flow from source device (0x010203) to destination device(0x020304) for Flow Generator feature without saving the flow:

```
switch:admin> flow --create myflow2 -feature generator
-srcdev 0x010203 -dstdev 0x020304 -ingrport 2/3 -noconfig
```

To create a flow from source device (0x01ba00) to destination device(0x01c000) for Flow Generator feature without activating the flow:

```
switch:admin> flow --create myflow3 -feature generator
-srcdev 0x01ba00 -dstdev 0x01c000 -ingrport 2/18 -noactivate
```

To create a flow to mirror ingress and egress traffic flowing through a port to an embedded port:

```
switch:admin> flow --create myflow4 -feature mirror
-ingrport 1/20 -srcdev 0x010203 -lun 0x02 -bidir
```

To create a flow to generate traffic from the source device (0x020a00) to all destination devices that are zoned with the source device:

```
switch:admin> flow --create myflow5 -feature generator
-ingrport 1/10 -srcdev 0x020a00 -dstdev "*"
```

Function

Activating features or flow

Synopsis

```
flow --activate <flow_name> -feature <feature_list>
```

Description

Use this command to activate a flow if it is not in the active state or configure the specified features for a flow. Use this command if you created a flow using the **-noactivate** operand or if none of the features are activated for the flow. Note that the flows are not enforced until they are active and the flows cannot be activated without configuring the features. If one or more of the flow parameters are not supported by any specified feature, the flow will not be activated and the operation will fail with an appropriate error message.

Operands

The **--activate** command has the following operands:

<flow_name> Specifies the name of the flow on which the specified features must be activated. Specify "all" to activate the specified features for all flows. The following predefined flows are supported:

- **sys_analytics_vtap** Used to mirror frames to a port on a remote domain, which is in IO Analyzer Mode. This flow is supported only with the **mirror** feature.
- **sys_gen_all_simports** Used for monitoring traffic when generated from each SIM port on a switch to all the other SIM ports configured on that switch.
- **sys_flow_monitor** Used to monitor VIT or VITL flows upto 20K total flows.

<feature_list> Specifies a comma-separated list of features to activate for a flow. Specify "all" to activate all features for a flow. Valid values for *feature_list* include the following: **monitor**, **generator**, and **mirror**.

Examples

To activate Flow Mirror feature for a flow:

```
switch:admin> flow --activate myflow2 -feature mirror
```

Function

Deactivating features

Synopsis

```
flow --deactivate <flow_name> -feature <feature_list>
```

Description

Use this command to deactivate the specified features for a flow. All data associated with the deactivated feature will be cleared.

Operands

The **--deactivate** command has the following operands:

<flow_name> Specifies the name of the flow on which the specified features must be deactivated. Specify "all" to deactivate the specified features for all flows. The following predefined flows are supported:

- **sys_analytics_vtap** Used to mirror frames to a port on a remote domain, which is in IO Analyzer Mode. This flow is supported only with the **mirror** feature.
- **sys_flow_monitor** Used to monitor VIT or VITL flows upto 20K total flows.
- **sys_gen_all_simports** Used for monitoring traffic when generated from each SIM port on a switch to all the other SIM ports configured on that switch.

<feature_list> Specifies a comma-separated list of features to deactivate for the flow. Specify "all" to deactivate all features for a flow. Valid values for *feature_list* include the following: **monitor**, **generator**, and **mirror**.

Examples

To deactivate the Flow Mirror feature for a flow:

```
switch:admin> flow --deactivate myflow2 -feature mirror
```

Function

Changing the control parameters

Synopsis

```
        flow --control <flow_name> -feature generator {-size <payload_size> | -pattern >pattern_string> | -
size <payload_size> -pattern <pattern_string>}
        flow --control -simport <port_num> {-enable | -disable}
        flow --control -feature mirror {-enable_wrap | -disable_wrap}
        flow --control sys_flow_monitor -n {<number of entries to be displayed in sys_flow_monitor brief show>
 | all}
```

Description

Use this command to modify the port or device addressing mode and to change the control parameters of a flow or features.

Operands

The **--control** command has the following operands:

<flow_name> Specifies the flow name. Specify "all" to modify the control parameters for all flows. If a flow name is not specified, the default values of the control parameters, **-size** and **-pattern** will be modified; the flows which are already present does not intake the modified control parameters. The modified control parameters will apply to all flows created in future.

-feature <*feature_list*> Specifies a comma-separated list of features on which the control parameters should be applied. Valid values for *feature_list* include the following: **generator**, **monitor**, and **mirror**.

-simport <*port*> Enables or disables a port as a SIM port. The *port* can be in [*slot*/]*port* or D,I format depending on the port ID mode configured. You can specify a single port or a range of ports in *slot*/*port*, *slot*/*port-port*, *slot*/* (all ports in slot), */* (all ports in switch or logical switch), *port*, *port-port*, and * (all ports in switch or logical switch) formats. The flow name is not required for enabling or disabling a port as SIM port.

-enable	Enables the port as a SIM port.
-disable	Disables the SIM port configuration on the port.
-size <*payload_size*>	Specifies the size of the frame payload. The frame size must be specified in multiples of 4, for example, 64, 68, 120, or 320 characters. The valid range is from 64 through 2048 characters; 0 for random size. The default payload size is 2048 bytes.
	The following operands are specific to the flow **generator** feature:
-pattern <*pattern_string*>	Specifies the ASCII pattern of the payload. The valid range is from 1 through 32 bytes; 0 for random pattern. The default is random pattern.
	The following operands are specific to the flow **mirror** feature. You can use these operands only if the Flow Mirror feature is not activated for a flow. The flow name is not required for enabling or disabling this option.
-enable_wrap	Enables the wrapping of mirrored frame logs. This is the default value. The Flow Mirror flow must be deactivated before using this command. The statistics of the Flow Mirror flow are reset during this operation.
-disable_wrap	Disables the wrapping of mirrored frame logs. The Flow Mirror flow must be deactivated before using this command. The statistics of the Flow Mirror flow are reset during this operation.
-n <*count*> | all	Displays the number of entries from brief show of sys_flow_monitor.

Examples

To configure the ports from 1 to 40 in slot 1 as SIM port:

```
switch:admin> flow --control -simport 1/1-40 -enable
```

To remove the SIM port configuration on port 20 in slot 1:

```
switch:admin> flow --control -simport 1/20 -disable
```

To modify the size and pattern for a flow:

```
switch:admin> flow --control myflow2 -feature generator
-size 100 -pattern "1234"
```

To disable wrapping of frame logs for the Flow Mirror feature:

```
switch:admin> flow --control -feature mirror -disable_wrap
```

To display number of entries from brief show of sys_flow_monitor flow:

```
switch:admin> flow --control sys_flow_monitor -n all
switch:admin> flow --show sys_flow_monitor -ctrlcfg
Control parameters of flow sys_flow_monitor

Brief display entries:  all

IT Limit: 512

VM Mode: Enabled
```

Function

Modifying definition of Analytics vTap flow.

Synopsis

```
flow --modify <flow_name> <port_options>
flow --modify {sys_flow_monitor {-port <port> | {-vmenable | -vmdisable}} | sys_analytics_vtap {-ingrport | -mirrorport} <port>}
```

Description

Use this command to modify the existing flow definition of the predefined flows and specify either a single port, a MAPS logical port group name, or a wildcard (*) as ingress port. You can also override the default mirror port by using the **--mirrorport** *port* option.

Operands

The **--modify** command has the following operands:

<flow_name>	Specifies the name of the Analytics vTap flow. Valid options are **sys_analytics_vtap** and **sys_flow_monitor**. The sys_analytics_vtap flow is used to mirror frames to a port on a remote domain, which is in IO Analyzer Mode. The flow can be modified only if it is in the deactive state. The sys_flow_monitor flow is used to monitor all IT flows and manages upto 8K IT flows.
<port_options>	Specifies the options to configure the ingress or mirror port.
-ingrport <*port*>	Specifies the ingress port. The *port* can be in either [*slot*/]*port* or D,I (Domain, Index) format depending on the port mode configured using a wildcard (*).
-mirrorport <*port*>	Specifies the port from which mirrored frames exits. The *port* must be in the D,I (Domain, Index) format.
-port <*port*>	Specifies the port that can be a single port or wildcard (*) port, or MAPS logical group port.
-vmenable | -vmdisable	Used with sys_flow_monitor to enable or disable VM level monitoring.

Examples

To modify and activate the predefined Analytics vTap flow:

```
switch:admin> flow --modify sys_analytics_vtap -ingrport 2/10 -mirrorport 12, 21
switch:admin> flow -activate sys_analytics_vtap -feature mirror
```

Function

Clearing feature data

Synopsis

```
flow --reset <flow_name> -feature <feature_list>
```

Description

Use this command to clear the data of the specified flow and feature combination. All the data collected for the flow and feature combination will be cleared.

Operands

The **--reset** command has the following operands:

<flow_name>	Specifies the name of the flow on which the feature data must be cleared. Specify "all" to reset all flows. The following predefined flows are supported:

sys_analytics_vtap Used to mirror frames to a port on a remote domain, which is in IO Analyzer Mode. This flow is supported only with the **mirror** feature.

sys_gen_all_simports Used for monitoring traffic when generated from each SIM port on a switch to all the other SIM ports configured on that switch.

sys_flow_monitor Used to monitor VIT or VITL flows upto 20K total flows.

<feature_list> Specifies a comma-separated list of features. Specify "all" to reset all features for a flow. Valid values for *feature_list* include the following: **monitor**, **generator**, and **mirror**.

Examples

To clear all the mirrored frames for a flow:

```
switch:admin> flow --reset myflow1 -feature mirror
```

Function

Displaying flow data

Synopsis

```
        flow --show -allzoned -srcdev <address> -dstdev <address>      {-egrport | -ingrport} <port>
        flow --show <flow_name> [-feature <feature_list>] {{-count <count> |  -time <interval> | -verbose | -
sortby <field>} | -ctrlcfg}
        flow --show {-resource [-fid]}
        flow --show <flow_name> {-top <field> [-n <count>] |-bottom <field> [-n <count>]}
        flow --show {-stats | -srcdev <address> | -dstdev <address> |-srcdev <address> -dstdev <address> [-
port <port>] [[-lun <lun> | -nsid <nsid>][-srceid <srceid>] |-srceid <srceid>] | -port <port>}
```

Description

Displays the flow definitions and frame statistics. When used without operand, the **--show** command displays the list of all flows configured in Flow Vision.

The show on demand feature allows you to display the statistics of the features without creating a flow. To display the statistics of the features without creating a flow, you must specify the operands without a flow name and provide a flow definition. The flow will run for a time interval of 6 seconds and the data will be displayed for the specified features.

Operands

The **--show** command has the following operands:

<flow_name> Displays the parameters and flow statistics for the specified flow. Specify "all" to display all flows. The following predefined flows are supported:

sys_analytics_vtap Used to mirror frames to a port on a remote domain, which is in IO Analyzer Mode. This flow is supported only with the **mirror** feature.

sys_gen_all_simports Used for monitoring traffic when generated from each SIM port on a switch to all the other SIM ports configured on that switch.

sys_flow_monitor Used to monitor VIT or VITL flows upto 20K total flows. Refer to the **flow --help -show** command for the supported combinations.

-feature *<feature_list>* Displays the statistics for the specified features. Specify "all" to display statistics of all configured features. Valid values for *feature_list* include the following: **monitor**, **generator**, **mirror**, and **fabinfo**.

fabinfo	Displays the topology data (the summary of all the paths taken by the flows in the flow definition) and the MAPS violations. The *flow_name*, **-lun**, **-frametype**, and **-sortby** options are not supported with this feature.
-allzoned	Displays all the zoned devices for a specified port, flow name, or flow definition.
<*port_options*>	Specifies the ingress or egress port options.
-ingrport <*port*>	Specifies the ingress port. The *port* can be in either [*slot*/]*port* or D,I (Domain, Index) format depending on the port mode configured.
-egrport <*port*>	Specifies the egress port. The *port* can be in either [*slot*/]*port* or D,I format depending on the port mode configured.
-mirrorport <*port*>	Specifies the port from which mirrored frames exits. The *port* can be in either [*slot*/]*port* or D,I format depending on the port mode configured.
<*frame_options*>	Specifies the options that represent the content of the FC frame or attributes of the frame.
-srcdev <*device_id*>	Specifies the 3-byte source ID of the originator device. The *device_id* can be in PID or PWWN format depending on the device ID mode configured. The PID format is 0xDDAAPP, where DD is the Domain ID, AA is the Area ID and PP is the AL_PA ID. The PWWN format is "XX:XX:XX:XX:XX:XX:XX:XX". Specify "*" to enumerate all originator devices.
-dstdev <*device_id*>	Specifies the 3-byte destination ID of the destination device. The *device_id* can be in PID or PWWN format depending on the device ID mode configured. The PID format is 0xDDAAPP, where DD is the Domain ID, AA is the Area ID and PP is the AL_PA ID. The PWWN format is "XX:XX:XX:XX:XX:XX:XX:XX". Specify "*" to enumerate all destination devices.
-lun <*LUN_id*>	Specifies the LUN identification in decimal or hexadecimal (2-byte value) format. The valid range for *LUN_id* is from 0 through 65535 (0x0000 to 0xFFFF). The LUN ID includes the addressing mode. If the most significant byte (MSB) is not specified, 0x00 is used. This operand is not supported by the Flow Generator feature.
-frametype <*type*>	Specifies the predefined frame type. Valid values for *type* include the following: SCSI, SCSIRead, SCSIWrite, SCSIRW, SCSI2Reserve, SCSI3Reserve, scsicmdsts, ABTS, BAACC, SCSI2Release, SCSI3Release, SCSITur, SCSI2ReserveRelease, SCSI3ReserveRelease, SCSIGoodStatus, SCSICheckStatus, SCSIResvConflict, SCSIInquiry, SCSIXferrdy, Srr, and BARJT. This operand is not supported by the Flow Generator feature.
-nsid <*nsid*>	Specifies the namespace ID of the NVMe flow to monitor.
-srceid <*vm_uuid*>	Specifies the source entity ID.
-count <*value*>	Specifies the number of times the output must be repeated. The default value is 1 and the maximum value is 10.
-time <*time_interval*>	Displays the flow information for the specified time interval until it is terminated with **Ctrl + C**. Values are in seconds. The time interval must be specified in multiples of 6, for example, 6, 12, 18, or 24 seconds. Valid range is from 6 through 300 seconds.
-verbose	Displays the flow or feature statistics in verbose mode.
-domain <*domain_id*>	Displays detailed information for the specified domain. The operand is valid only with the **fabInfo** feature.
-sortby <*field*>	Displays the sub-flows for a feature in the specified order. The *field* can be column*X*, where *X* is the column number. The value of *X* can be from 1 to maximum number of columns present in the **--show** output. For the Flow Mirror feature, the sub-flows may or may not be present but the mirrored frames can be sorted. The **-sortby** option can be applied if only one feature is specified with the **--show** command.
-ctrlcfg	Displays the control parameters.

-resource	Displays the following values for IT, ITL, and both IT and ITL flows (total limits): currently used flows, reserved flows, and maximum flows. The following optional operand is available only with the **-resource** option. **-fid** Displays the resource consumption for each Fabric ID (FID).
-stats	Displays the top 10 IT brief metrics of the Brocade Gen 6 and Brocade Gen 7 devices.
-port <*port*>	Aggregated across all IT flows on the port or use with the brief metrics option to display only the IT flows of the specified port.
-top <*field*>	Displays the default or specific number of flows in descending order based on the metric field (ect, frt, bps, iops, pending_io).
-bottom <*field*>	Displays the default or specific number of flows in ascending order based on the metric field (ect, frt, bps, iops, pending_io).
-n <*count*>	Number of entry of flows to display with top or bottom options.

Examples

To display all flows in Flow Vision:

```
switch:admin> flow --show
----------------------------------------------------------------
Flow Name           |Feature| SrcDev | DstDev |IngrPt|EgrPt |BiDir
----------------------------------------------------------------
sys_gen_all_simports|gen    |*       |*       |*     |*     |no
sys_flow_monitor    |mon+   |*       |*       |*     |*     |no
----------------------------------------------------------------
     ----------------------------------------------
     | LUN  | NSID |SFID|DFID|    SEID    |MirPt |
     ----------------------------------------------
     |-     |-     |-   |-   |-           |-     |
     |*     |*     |-   |-   |-           |-     |
  + Denotes feature is currently activated for the flow
  The flow name with prefix sys_ denotes predefined flow
```

To display statistics of a particular flow:

```
switch:admin> flow --show myflow2
=========================================================
Name      : myflow2     Features: gen(Activated)
Definition: IngrPort(3),SrcDev(0x010203),DstDev(0x020304)

Flow Generator (Activated):
-----------------------
|  SrcDev  |  DstDev  |
-----------------------
| 0x010203 | 0x020304 |
-----------------------
Number of frames generated from IngrPort : 1.50G
=========================================================
```

To display the statistics for the Flow Mirror feature in learning mode:

```
switch:admin> flow --show mirFlow -feature mirror
Name : mirFlow       Features: mir(Activated)
Definition: EgrPort(17),DstDev(0x051100),BiDir
```

```
Flow Mirror:
------------------------------------------------------------ \
| SID(*) | DID(*) | OXID | RXID | SOF   | EOF  | Frame_type  \
------------------------------------------------------------ \
| 051600 | 051100 | 0883 | ffff | SOFi3 | EOFt | SCSIRead   \
| 051600 | 051100 | 0191 | 0bce | SOFn3 | EOFn | Data       \
| 051600 | 051100 | 0c8f | ffff | SOFi3 | EOFt | SCSIWrite  \
| 051600 | 051100 | 0017 | ffff | SOFi3 | EOFt | SCSIWrite  \
| 051600 | 051100 | 0191 | 0bce | SOFn3 | EOFn | Data       \
   ------------------------
   | Dir| Time-Stamp      |
   ------------------------
   | Tx | Jun 10 11:08:10 |
   | Tx | Jun 10 11:08:10 |
   | Tx | Jun 10 11:08:10 |
   | Tx | Jun 10 11:08:10 |
   | Tx | Jun 10 11:08:10 |
```

To display all the devices zoned with device at port '11' (F_Port) as destination:

```
switch:admin> flow --show -allzoned -src "*" -dst 0x190b00 -egr 11
Active Flows:
-------------------------------------------------------
|  SrcDev                       | DstDev    |
-------------------------------------------------------
| 0x21400 0x21e00 0x21f00 0x31000 0x31100   | 0x190b00  |
-------------------------------------------------------
```

To display all the devices zoned with device at port 11 (F_Port) as source:

```
switch:admin> flow --show -allzoned -src "*" -dst * -ing 11
Active Flows:
-------------------------------------------------------
|  SrcDev  |                DstDev                    |
-------------------------------------------------------
| 0x190b00 | 0x21400 0x21e00 0x21f00 0x31000 0x31100  |
-------------------------------------------------------
```

To display all the zoned devices for port 15 (E_Port):

```
switch:admin> flow --show -allzoned -src "*" -dst "*" -ing 15
Active Flows:
-------------------------------------------------------
|  SrcDev  |  DstDev                                  |
-------------------------------------------------------
| 0x190a00 | 0x21400 0x21e00 0x21f00 0x31000 0x31100  |
-------------------------------------------------------
| 0x190b00 | 0x21400 0x21e00 0x21f00 0x31000 0x31100  |
-------------------------------------------------------
```

To display the statistics for the Flow Mirror feature in verbose mode:

```
switch:admin> flow --show mirFlow1 -feature mirror -verbose
Name : mirFlow1    Features: mir(Activated)
Definition: EgrPort(1/5),SrcDev(010200),DstDev(*),BiDir
Flow Mirror:
```

```
-------------------------------------------------------------------------------
Time-Stamp      | Dir | SOF   | EOF  | Frame_Type  | Frame Contents            |
-------------------------------------------------------------------------------
Jun 04 08:27:04 | Tx  | SOFi3 | EOFt | SCSI3_Res   | 06040500 00010200 08290000
009a0fd3 00000000 00000000 00000000 00000001 5f010300 00000000 18000000 00000000
Jun 04 08:27:04 | Tx  | SOFi3 | EOFt | SCSITxRdy   | 05040500 00010200 08890000
07ce01ca 00000000 00000000 00000018 00000000
Jun 04 08:27:04 | Rx  | SOFi3 | EOFt | Data        | 01010200 00040500 08090008
089a0f71 00000000 00000000 ffaabbcc 00000000 00000000 00000000 00000000
Jun 04 08:27:04 | Rx  | SOFi3 | EOFt | SCSIGoodSts | 07010200 00040500 08990000
089a0f71 00000000 00000000 00000000 00000000 00000000 00000000 00000000
```

To display the control parameters:

```
switch:admin> flow --show -ctrlcfg
SimPort Information
-----|------|--------|-------------------------|----------------- \
Slot | Port |  PID   |         PWWN            | SID Frame Count  \
-----|------|--------|-------------------------|----------------- \
1    |  2   | 050200 | 20:02:00:05:1e:e2:8e:00 |       0K         \
     |------------------
     | DID Frame Count |
     |------------------
     |     19.46K      |
```

To display the control parameters for the Flow Generator feature:

```
switch:admin> flow --show -ctrlcfg -feature generator
Control Parameters of Generator
Size: 1024
Pattern: SCSITur
```

To display the statistics for the Flow Mirror feature on ingress port (1/10) without creating a flow (show on demand):

```
switch:admin> flow --show -srcdev 0x030000 -ingrport 1/10 -feature mirror
```

To display the flow dashboard data:

```
switch:admin> flow --show -feature fabinfo -srcdev "*" -egrport 17
Flow Dashboard Information:
==========================

Topology Data:
-------------

srcDev (0x170500), dstDev(0x31100)
srcDev(0x170500) <-> (23/1#, 23/5) <<-> (3/7, 3/17) <-> dstDev(0x31100)

srcDev (0x190a00), dstDev(0x31100)
[srcDev: 0x190a00]<-> (25/10, 25/2)<->(23/2#, 23/5)<->(3/7, 3/17#)<-> [dstDev:0x31100]
[srcDev:0x190a00]<-> (25/10, 25/3)<->(21/3, 21/1#)<->(3/4, 3/17#)<-> [dstDev:0x31100]
[srcDev:0x190a00]<-> (25/10, 25/4)<->(21/4, 21/1#)->(3/4, 3/17#)<-> [dstDev:0x31100]

# "Indicates there are MAPS violations on these ports"

Switch Specific Data:
```

```
==============================================================================

SwitchDomain         : 3 (0x3)
Name: sw0   Model    : 121.3   Uptime: (41 days 0 hrs 02 mins)
FirmwareVersion      : v8.0.0
OperationalStatus    : Healthy
RebootReason         : Reboot
Fenced Ports         : 24
Decommissioned Ports : None
Quarantined Ports    : None

MAPS violation:
---------------
Port Health(24)   |6   | defALL_HOST_PORTSCRC_2|09/17/14 09:13:24|Port17| 5 |
Port Health(15)   |2   | defNON_E_F_PORTSLF_0 |09/17/14 09:18:24|Port17| 3 |

==============================================================================

SwitchDomain: 25 (0x19)
Name: sw0   Model: 121.3   Uptime: (40 days 21 hrs 12 mins)
FirmwareVersion      : v8.0.0
OperationalStatus    : CRITICAL Reason : FAULTY_BLADE
RebootReason         : Reboot
Fenced Ports         : None
Decommissioned Ports : None
Quarantined Ports    : None


Category(Rule Count)|RepeatCount|Rule Name   |Execution Time  |Object  |Triggered
    Value(Units)|
------------------------------------------------------------------------------
No violations on the ports in the flow path

==============================================================================

SwitchDomain: 21 (0x15)
Name: sw0   Model: 121.3   Uptime: (40 days 03 hrs 10 mins)
FirmwareVersion      : v8.0.0
OperationalStatus    : Healthy
RebootReason         : Reboot
Fenced Ports         : None
Decommissioned Ports : None
Quarantined Ports    : None

No MAPS violations
==============================================================================
```

To display flow dashboard information for a specific domain:

```
switch:admin> flow --show -feature fabinfo -srcdev 0x011100 \
   -egrport 17 -verbose -domain 3
Flow Dashboard Information:
==========================
```

```
Switch Specific Data:

==============================================================================

SwitchDomain: 3 (0x3)
Name: sw0    Model: 121.3    Uptime: (41 days 0 hrs 02 mins)
FirmwareVersion : v8.0.0
OperationalStatus: Healthy
RebootReason: Reboot

MAPS violation:
---------------
Port Health(24)   |6      | defALL_HOST_PORTSCRC_2|09/17/14 09:13:24|Port17| 5 |
Port Health(15)   |2      | defNON_E_F_PORTSLF_0 |09/17/14 09:18:24|Port17| 3 |

MAPS history data:
------------------

Stats(Units)  Current   05/06/15   05/05/15   05/04/15   04/30/15   04/29/15   04/28/15
              Port(val) Port(val)  Port(val)  Port(val)  Port(val)  Port(val)  Port(val)
-------------------------------------------------------------------------------------------
CRC          32(3)     32(2)      46(34)     45(7)      32(1)       -          32(7)
    42(2)    42(2)     43(33)     44(6)      33(1)       -          33(7)
    12(1)    12(1)     42(31)     42(5)      34(1)       -          34(7)
    06(1)    06(1)     47(20)     46(5)      35(1)       -          35(7)

ITW 32(11)   32(8)     45(2300)   45(539)    32(3)       0(1)       32(21)
    33(3)    33(3)     40(2282)   40(522)    33(1)       -          33(7)
    34(3)    34(3)     44(2276)   41(519)    34(1)       -          34(7)
    35(3)    35(3)     41(2269)   44(517)    35(1)       -          35(7)
```

To display the IT flow count on the Brocade Gen 6 platform:

```
switch:admin> flow --show sys_flow_monitor -resource   \
==================================================================================
Flows             |     Current Configuration   |        Chassis Maximum         |
                  |             Used            |                                |
==================================================================================
IT count          |                0            |                512             |
==================================================================================
*ITL limits are derived based on IT reservation limit
Timebase:

========================================
Time Bases  |    Used    |    Max     |
========================================
10 sec      |        0   |       25   |
5 min       |        0   |      512   |
========================================

Slot Resource:
==================================================================================================================
|    Slot    |     Total    |         Initiator         |          Target           |          IT           |
           ITL          |
```

```
|    No      |   F-Port(s)  |  SCSI  /  NVMe  /  Total  |  SCSI  /  NVMe  /  Total  |  Current  /    Max    |
  Current  /    Max    |
==========================================================================================================================
|           0|             2|       1/       0/        1|       0/       0/        0|          0/        512|
          0/          0|
--------------------------------------------------------------------------------------------------------------------------
* These values are system defined and not configurable
```

To display the IT flow count on the Brocade Gen 7 platform:

```
switch:admin> flow --show sys_flow_monitor -resource   \
==================================================================================
Flows | Current Configuration | Chassis Maximum |   | Used |   |
==================================================================================
IT count | 0 | 1024 |
ITL count | 0 | 6144 |
Total | 0 | 7168 |
==================================================================================
*ITL limits are derived based on IT reservation limit
Timebase:

========================================
Time Bases | Used | Max  |
========================================
10 sec     | 0    | 25   |
5 min      | 0    | 1024 |
6 hr       | 0    | 6144 |
========================================

Slot Resource:
==================================================================================================================
| Slot | Total | Initiator | Application | Target | IT | ITL + VMITL |
| No | F-Port(s) | SCSI / NVMe / Total | Total | SCSI / NVMe / Total | Current / Max | Current / Max |
==================================================================================================================
| 0| 0| 0/ 0/ 0| 0| 0/ 0/ 0| 0/ 1024| 0/ 6144|
------------------------------------------------------------------------------------------------------------------
* These values are system defined and not configurable
```

To display the current IT and ITL flows consumed in a chassis with a maximum limit of 73728:

```
switch:admin> flow --show sys_flow_monitor -resource
==================================================================================
Flows | Current Configuration | Chassis Maximum | | Used | |
==================================================================================
IT count | 3843 | 8192 |
ITL count | 65536 | 65536 |
Total | 69379 | 73728 |
==================================================================================
*ITL limits are derived based on IT reservation limit
Timebase:

========================================
```

```
Time Bases | Used | Max |
=======================================
10 sec | 0 | 25 |
5 min | 3843 | 8192 |
6 hr | 65536 | 65536 |
=======================================

Slot Resource:
==================================================================================
| Slot | Total | Initiator | Target | IT | ITL |
| No | F-Port(s) | SCSi / NVMe / Total | SCSi / NVMe / Total | Current / Max | Current / Max |
==================================================================================
| 3| 42| 42/ 0/ 42| 0/ 0/ 0| 505/ 4096| 8192/ 8192|
----------------------------------------------------------------------------------
| 4| 48| 40/ 8/ 48| 0/ 0/ 0| 320/ 4096| 8192/ 8192|
----------------------------------------------------------------------------------
| 5| 20| 14/ 4/ 18| 2/ 0/ 2| 110/ 4096| 8192/ 8192|
----------------------------------------------------------------------------------
| 6| 42| 40/ 0/ 40| 2/ 0/ 2| 932/ 4096| 8192/ 8192|
----------------------------------------------------------------------------------
| 9| 34| 32/ 0/ 32| 2/ 0/ 2| 117/ 4096| 8192/ 8192|
----------------------------------------------------------------------------------
| 10| 23| 21/ 0/ 21| 2/ 0/ 2| 392/ 4096| 8192/ 8192|
----------------------------------------------------------------------------------
| 11| 46| 44/ 0/ 44| 2/ 0/ 2| 1067/ 4096| 8192/ 8192|
----------------------------------------------------------------------------------
| 12| 45| 43/ 0/ 43| 2/ 0/ 2| 400/ 4096| 8192/ 8192|
----------------------------------------------------------------------------------
* These values are system defined and not configurable
```

To display the IT and ITL flow count for each FID:

```
switch:admin> flow --show sys_flow_monitor -resource -fid   \
Resource consumption by FID:
========================================
|    FID     |  Timebase  | IT Count   |
========================================
|    128     |   10 sec   |        0   |
|            |   5 min    |        0   |
----------------------------------------
|     10     |   10 sec   |        0   |
|            |   5 min    |        0   |
----------------------------------------
|     20     |   10 sec   |        0   |
|            |   5 min    |        0   |
----------------------------------------
|   Total    |    ALL     |        0   |
========================================
```

To display the top 10 IT flow brief metrics in Brocade Gen 7 device:

```
switch:admin> flow --show sys_flow_monitor -stats   \
```

```
==============================================================================
Name             : sys_flow_monitor
VM Mode          : Yes
Monitored port(s): (*)
Host Port Count  : 3
Target Port Count: 3
SCSI             : 1
NVMe             : 0
No of IT         : 1
--------------------------------
| TOP 10 Threshold Violations |
-------------------------------------------------------------------------------------------------------------------------------
|      |       | RD|        |     | Total Count  |  Violations  |  Violations  |  Violations  |  Violations  |
  Total Count |
| Port |  PID  | WR| Device |Proto|  Violations  |      ECT     |      FRT     |  Pending IOs |  Exceptions  |
  Errors      |
| Index|       |   | Type   |     |  5min / All  |  5min / All  |  5min / All  |  5min / All  |  5min / All  |
  5min / All  |
-------------------------------------------------------------------------------------------------------------------------------
|    59| 023b00| RD|      I | SCSI|       /1.529K|       /  720 |       /  809 |       /      |       /      |
       /      |
-------------------------------------------------------------------------------------------------------------------------------
```

To display the specific flows in ascending order (column name):

```
switch:admin> flow --show sys_flow_monitor -top ect -n 2   \
Name : sys_flow_monitor
-------------------------------------------------------------------------------------------
VM Mode : Yes
Monitored port(s): (*)
Host Port Count : 5
Target Port Count: 4
SCSI : 16
NVMe : 16
No of IT : 32
------------
TOP 10 ECT |
-------------------------------------------------------------------------------------------
| | | RD| | | | | Max Time | Max Time | Avg IOs/sec | Avg Bytes/sec| Max Count | Total Count | Total Count |
| SID | DID | WR| Device | Flow | Port |Proto| ECT | FRT | IOPS | BPS | Pending IOs | Exceptions | Violations
 |
| | | | Type | Hierarchy | Index| | 5min / All | 5min / All | 5min / All | 5min / All | 5min / All | 5min /
 All | 5min / All |
-------------------------------------------------------------------------------------------
| 011100| 012001| RD| I | IT->N| 17| NVMe| 907u/25.20m| 895u/25.18m| 13 / 13 | 221.0K/212.3K| 3 / 3 | / |
 3.592K/156.2K|
| 011100| 012002| RD| I | IT->N| 17| NVMe| 866u/34.19m| 854u/34.18m| 11 / 12 | 185.7K/192.5K| 3 / 3 | / |
 3.019K/141.6K|
-------------------------------------------------------------------------------------------
```

To display the specific flows in descending order (column name):

```
switch:admin> flow --show sys_flow_monitor -bottom frt -n 2   \
==========================================================================
Name : sys_flow_monitor
-------------------------------------------------------------------------------------
VM Mode : Yes
Monitored port(s): (*)
Host Port Count : 5
Target Port Count: 4
SCSI : 16
NVMe : 16
No of IT : 32
------------
TOP 10 ECT |
-------------------------------------------------------------------------------------
| | | RD| | | | | Max Time | Max Time | Avg IOs/sec | Avg Bytes/sec| Max Count | Total Count | Total Count |
| SID | DID | WR| Device | Flow | Port |Proto| ECT | FRT | IOPS | BPS | Pending IOs | Exceptions | Violations
 |
| | | | Type | Hierarchy | Index| | 5min / All | 5min / All | 5min / All | 5min / All | 5min / All | 5min /
 All | 5min / All |
-------------------------------------------------------------------------------------
| 011100| 012002| WR| I | IT->N| 17| NVMe| /2.894m| /2.599m| / | / 148 | / 1 | / | / 16 |
| 011100| 012007| WR| I | IT->N| 17| NVMe| /1.218m| / 255u| / 1 | /1.599K| / 1 | / | / 16 |
-------------------------------------------------------------------------------------
```

To display supported combinations for the sys_flow_monitor flow:

```
switch:admin> flow --help -show
Description - Show feature specific data associated with an active flow
...
...
...
-n <entries/all>   : Number of entry of flows to display with top or bottom option.
<Supported Combinations>
  <Brief metrics of all IT Flows>
    flow --show sys_flow_monitor -srcdev "*" -dstdev "*"
  <Brief metrics of ITL Flows in a specific IT>
    flow --show sys_flow_monitor -srcdev <devId> -dstdev <devId> -lun "*"
  <Brief metrics of ITN Flows in a specific IT>
    flow --show sys_flow_monitor -srcdev <devId> -dstdev <devId> -nsid "*"
  <Brief metrics of Violation stats of IT flows>
    flow --show sys_flow_monitor
  <Brief metrics of IT flows sorted by default for specific number of IT flows>
    flow --show sys_flow_monitor -stats
  <Brief metrics of IT flows sorted based on top/bottom option across all the flows>
    flow --show sys_flow_monitor -top|-bottom <field> [-n <count>]
  <Summary of metrics for a host flow>
    flow --show sys_flow_monitor --srcdev <devid>
  <Summary of metrics for a target flow>
    flow --show sys_flow_monitor --dstdev <devId>
  <Detailed metrics of a specific IT Flow>
    flow --show sys_flow_monitor -srcdev <devId> -dstdev <devId>
  <Detailed metrics of a specific ITL Flow>
```

```
    flow --show sys_flow_monitor -srcdev <devId> -dstdev <devId> -lun <LUN ID>
  <Detailed metrics of a specific ITN Flow>>
    flow --show sys_flow_monitor -srcdev <devId> -dstdev <devId> -nsid <NS ID>
  <Detailed metrics of a specific port>
    flow --show sys_flow_monitor -port <port>
  <Brief metrics of VMIT Flows in a specific IT>
    flow --show sys_flow_monitor -srcdev <devId> -dstdev <devId> -srceid "*"
  <Brief metrics of VMITL Flows in a specific ITL>
    flow --show sys_flow_monitor -srcdev <devId> -dstdev <devId> -lun <LUN ID> -srceid "*"
  <Detailed metrics of a specific VMIT Flow>
    flow --show sys_flow_monitor -srcdev <devId> -dstdev <devId> -srceid <SRCE ID>
  <Detailed metrics of a specific VMITL Flow>
    flow --show sys_flow_monitor -srcdev <devId> -dstdev <devId> -lun <LUN ID> -srceid <SRCE ID>
Note: lun or nsid option is not supported for monitor on GEN6 and GEN6-2 platforms.
      VMITL flow is supported on GEN7 platforms only and VMIT flow on GEN6 platforms only.
```

Function

Deleting a flow

Synopsis

flow --delete *flow_name*

Description

Use this command to delete the specified flow from Flow Vision. All the data associated with the flow will be cleared.

Operands

The **--delete** command has the following operands:

***flow_name* | all** Specifies the name of the flow to be deleted. Specify **all** to delete all flows. Use of **all** option prompts for a confirmation.

-force Executes the command without confirmation. This operand is optional.

Examples

To delete a flow:

```
switch:admin> flow --delete myflow1
```

To delete all flows:

```
switch:admin> flow --delete all
This operation will delete all user defined flows and deactivate pre-defined flows.
Are you sure? (yes, y, no, n): [no] y
All flows deleted successfully.
```

Function

Displaying the command help

Synopsis

flow --help [*operand*] [...]

Description

Use this command to display the command usage.

Operands

operand Displays the syntax and usage guidelines for the specified operand or sub-option.

Examples

To display the command usage:

```
switch:admin> flow --help
Description - Perform Flow Vision operations
SYNTAX: flow <Flow_operations>

<Flow_operations>
--create      <flowname> -feature <list>
              <Port options> <Frame options> <Config options>
--delete      <flowname>
--control     [flowname] [-feature <list>]
              [-simport <portID> -enable/-disable]
              [-size <frame size> | -pattern <pattern string>]
              [-enable_wrap/-disable_wrap]
--reset       <flowname> -feature <list>
--activate    <flowname> -feature <list>
--deactivate  <flowname> -feature <list>
--show        [flowname] [-feature <list>]
              [<Port options> <Frame_options>]
              [-count <iterations> | -time <interval> | -verbose]
              [-sortby <field>] [-ctrlcfg] [-stats]
```

To display the command usage for an operand:

```
switch:admin> flow --help --create
Description - Create a flow definition for Flow Vision features
SYNTAX: flow --create <flowname> -feature <list>
                     <Port options> <Frame options> <Config options>

<flowname>         : Unique string of characters to identify a flow
-feature <list>    : Comma separated list of Flow Vision features
                     (mirror, monitor and generator)
<Port options>
  -ingrport <portID>: Switch receive port on which feature(s) is applied
  -egrport <portID>: Switch transmit port on which feature(s) is applied

<Frame options>
  -srcdev <devID>  : FC device that is flow source (SID or PWWN)
  -dstdev <devID>  : FC device that is flow destination (DID or PWWN)
  -sfid <FID>      : FID that is flow source
  -dfid <FID>      : FID that is flow destination
  -lun <LUN ID>    : SCSI LUN identifier
```

```
  -frametype <ftyp>: Frame type applicable to the flow
  -srceid <VM UUID>: Source Entity ID(UUID) of the VM
  -nsid <nsid>     : Namespace ID of the NVMe flow

<Config options>
  -bidir           : Applies Flow Vision features for both directions of flow
  -noactivate      : Creates flow without activating the flow
  -noconfig        : Creates flow without saving persistently
```

To display the command usage for an operand and sub-option:

```
switch:admin> flow --help --create -frametype
-frametype <ftyp>: FC frame types applicable to the flow.
                   <ftyp> can be one of scsi, srd, swr, srdwr, sres2, sres3,
                   scsirel2, stur, scsiresrel2, scsigoodstatus,
                   scsicheckstatus, scsirel3, scsiresrel3, srescnfl, sinq,
                   sxfr, scmdsts, abts, bacc, barjt.
```

See Also

None

fosConfig

Displays or modifies Fabric OS features.

Synopsis

```
fosconfig --enable {fcr | vf} [-force | -f]
fosconfig --disable {fcr | vf} [-force | -f]
fosconfig --show
```

Description

Use this command to enable or disable a feature, or to display the current operating status of features on a switch. This command can be run while the switch is online.

The following features are supported (refer to the Notes for limitations):

- FC Routing service (see **fcrConfigure**)
- Virtual Fabrics (see **lfCfg** and **lsCfg**)

Notes

The features described may not be supported on all platforms. If you attempt to enable a feature that is not supported on your platform, an error message stating "Command not supported on this platform" is displayed.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--enable {fcr | vf} Enables a feature on the switch. Valid values for *feature* include the following:

fcr Enables the FC Routing service on the switch. The FC Routing service is disabled by default. Use **fosConfig --show** to determine if FCR is enabled or disabled,

When enabling FCR, you may encounter one of the following system messages:

"FC Routing service is in the process of being disabled, please try again after a few minutes." This means that a command to disable the FC Routing service is still in progress. Wait a few minutes and try again.

"FC Routing service is already enabled." This means that the FC Routing service is already enabled.

vf Enables Virtual Fabrics. By default, Virtual Fabrics are enabled. This command prompts for confirmation, because the chassis reboots after this command is executed.

--disable {fcr | vf} Disables a feature on the switch. Valid values for *feature* include the following:

fcr Disables the FC Routing service on the switch. All enabled EX_Ports on the switch must be offline for this command to succeed.

Use this command to disable the FC Routing service only instead of disabling the switch, issue this command, then change the BB fabric ID using **fcrConfigure**.

When disabling the FCR service, you may encounter the following system messages:

"Please disable all EX_Ports first before running this command." - This means that there were EX_Ports online when this command was issued. Take these ports offline and try the command again.

"FC Routing service is already disabled" - This means that the FC Routing service is already disabled.

vf Disables Virtual Fabrics on the switch. This command prompts for confirmation, because the chassis reboots after this command is executed.

-force | -f Executes the specified command without prompting for confirmation.

--show Displays the current operating status of features on the switch.

Examples

To display the operating status of the services:

```
switch:admin> fosconfig --show
FC Routing service:             disabled
Virtual Fabric:                 enabled
Ethernet Switch Service:        Service not supported on this Platform
```

To disable the FC Routing service:

```
switch:admin> fosconfig --disable fcr
 FC Routing service is disabled
```

To enable the FC Routing service:

```
switch:admin> fosconfig --enable fcr
 FC Routing service is enabled
```

To enable Virtual Fabrics:

```
switch:admin> fosconfig --enable vf
WARNING:  This is a disruptive operation that
   requires a reboot to take effect.
```

```
All EX ports will be disabled upon reboot.
Enabling VF will cause other non-default admin accounts to gain
chassis admin role permissions if default admin account is disabled.
Would you like to continue [Y/N]: y
```

To disable Virtual Fabrics:

```
switch:admin> fosconfig --disable vf
WARNING:  This is a disruptive operation that
   requires a reboot to take effect.
Would you like to continue [Y/N]y
```

To disable Virtual Fabrics without confirmation:

```
switch:admin> fosconfig --disable vf -f
WARNING: This is a disruptive operation that requires a reboot to take effect.
Please delete all but the default switch before disabling Virtual Fabric.
```

See Also

fcrConfigure, switchShow

fosExec

Executes any Fabric OS command on a specified or all the remote domains, logical switches, or AG switches.

Synopsis

```
fosexec --fid FID -cmd "cmd [args]"
 fosexec --fid all [-force] -cmd "cmd [args]"
 fosexec --domain DID -cmd "cmd [args]"
 fosexec --domain all -cmd "cmd [args]"
 fosexec --ag switch_name -cmd "cmd [args]"
 fosexec --ag all -cmd "cmd [args]"
```

Description

Use this command to execute any Fabric OS command on a specified remote domain, logical switch context, AG switch or all remote domains, logical switches, or AG switches.

The target logical switch is identified by its fabric ID (FID). When used with the **--fid all** option, the specified command is executed in all logical switches.

The target remote domain is identified by its Domain ID (DID). When used with the **--domain all** option, the specified command is executed in all remote domains.

The target AG switch is identified by its name. When used with the **--ag all** option, the specified command is executed in all AG switches connected to the fabric.

The FIDs must be part of the FID permission list associated with the user account. If you execute **fosexec --fid all** and you do not have permission to one or more of the logical switches (FIDs), the command prompts for confirmation to continue with the execution of the command in the FIDs for which you do have permission. You can override the prompt for confirmation with the **-force** option. Refer to **userConfig** help for more information on logical switch access permissions.

Executing chassis-level commands through **fosexec --fid all** results in redundant output.

Use the **configure** command to set the Remote Fosexec feature. By default, the Remote Fosexec feature is disabled.

Notes

The **--domain** option can be executed only if the Remote Fosexec feature is enabled on local and remote switches.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Usage of "|" (pipe) at multiple level is supported when executed in the **--fid** option within the double quotation marks.

Operands

This command has the following operands:

-cmd "*cmd* [*args*]"	Specifies the command to be executed including command options if applicable. The entire command string must be enclosed in double quotation marks. Use a backslash (\) to omit the double quotes, if the double quotes are used in the arguments of the command.
--fid *FID*	Specifies the Fabric ID of the logical switch for which the command is executed.
--fid all	Executes the specified command in all logical switch contexts configured on the physical switch.
-force	Executes the specified command on all logical switches in your permission list without prompting for confirmation.
--domain *DID*	Specifies the Domain ID of the remote switch for which the command is executed.
--domain all	Executes the specified command on all switches in the fabric.
--ag *switch_name*	Specifies the name of the switch for which the command is executed.
--ag all	Executes the specified command on all AG switches connected to the fabric.

Examples

To display switch information for a logical switch with FID 10:

```
switch:admin> fosexec --fid 10 -cmd "switchshow"
-------------------------------------
"switchshow" on FID 10
switchName:     switch_10
switchType:     66.1
switchState:    Online
switchMode:     Native
switchRole:     Subordinate
switchDomain:   1
switchId:       fffc01
switchWwn:      10:00:00:05:1e:41:5f:c2
zoning:         ON (lsan_cfg)
switchBeacon:   OFF
FC Router:      OFF
Allow XISL Use: ON
LS Attributes:  [FID: 10, Base Switch: No, \
   Default Switch: No, Address Mode 0]
Index Slot Port Address Media Speed State     Proto
=====================================================
  0    1    0   640000   --    N8   No_Module   FC
  1    1    1   640100   --    N8   No_Module   FC
  2    1    2   640200   --    N8   No_Module   FC
```

To enable port 5/0 on all logical switches:

```
switch:admin> fosexec --fid all -cmd "portenable 5/0"
```

```
--------------------------------------------------

"portenable" on FID 128:

--------------------------------------------------

"portenable" on FID 10:

A port or ports is/are not part of this switch.

--------------------------------------------------

"portenable" on FID 20:

A port or ports is/are not part of this switch.
```

To display the firmware version for all logical switches:

```
switch:user> fosexec --fid all -cmd "firmwareshow -v"
"firmwareshow" on FID 128:

Slot Name Appl Primary/Secondary Versions Status
1    CP0  FOS  v9.2.0            STANDBY  v9.2.0

2    CP1  FOS  v9.2.0              ACTIVE * v9.2.0

"firmwareshow" on FID 1:

Slot Name Appl Primary/Secondary Versions Status
1    CP0  FOS  v9.2.0            STANDBY  v9.2.0

2    CP1  FOS  v9.2.0              ACTIVE * v9.2.0


"firmwareshow" on FID 10:

Slot Name Appl Primary/Secondary Versions Status
1    CP0  FOS  v9.2.0              STANDBY  v9.2.0

2    CP1  FOS  v9.2.0              ACTIVE * v9.2.0
```

To display the switch name for all logical switches without confirmation:

```
switch:user> fosexec --fid all -force -cmd "switchname"

------------------------------------
"switchname" on FID 128:

x7-8

"switchname" on FID 1:

switch_1
```

```
"switchname" on FID 10:

switch_10
```

To display the fabric information for all switch in the fabric:

```
switch:user> fosexec --domain all -cmd "fabricshow"
Domain 3
=========
Switch ID   Worldwide Name          Enet IP Addr    FC IP Addr      Name
--------------------------------------------------------------------------
  3: fffc03 10:xx:xx:xx:xx:xx:xx:xx 192.0.2.0     0.0.0.0         "TOM-1"
  4: fffc04 10:xx:xx:xx:xx:xx:xx:xx 192.0.2.1     0.0.0.0         "TOM_4"

The Fabric has 2 switches
Fabric Name: POD_1


Domain 4
=========
Switch ID   Worldwide Name          Enet IP Addr    FC IP Addr      Name
--------------------------------------------------------------------------
  3: fffc03 10:xx:xx:xx:xx:xx:xx:xx 192.0.2.0     0.0.0.0        >"TOM-1"
  4: fffc04 10:xx:xx:xx:xx:xx:xx:xx 192.0.2.1     0.0.0.0         "TOM_4"
The Fabric has 2 switches
Fabric Name: POD_1
```

To display the fabric information for domain 3 in the fabric:

```
switch:user> fosexec --domain 3 -cmd "fabricshow"
Domain 3
=========
Switch ID   Worldwide Name          Enet IP Addr    FC
IP Addr      Name
--------------------------------------------------------------------------
  3: fffc03 10:xx:xx:xx:xx:xx:xx:xx 192.0.2.0  0.0.0.0         "TOM-1"
  4: fffc04 10:xx:xx:xx:xx:xx:xx:xx 192.0.2.1  0.0.0.0         "TOM_4"

The Fabric has 2 switches
Fabric Name: POD_1
```

To display firmware version information in an AG switch:

```
switch:user> fosexec --ag C3_CORE_AG -cmd "version"
Access Gateway: 10:xx:xx:xx:xx:xx:xx:xx
=========
Kernel:    2.6.14.2
Fabric OS: v9.2.x
Made on:   Mon Aug 8 06:32:02 2016
Flash:     Tue Jul 21 19:32:17 2015
BootProm:  1.0.11
```

To display the firmware version information in all AG switches:

```
switch:user> fosexec --ag all -cmd "version"
Access Gateway: C4_CORE_AG(10:xx:xx:xx:xx:xx:xx:xx)
=========
Kernel:    2.6.34.6
Fabric OS: v9.2.x
Made on:   Mon Apr 15 06:40:42 2024
Flash:     Sat Jul 22 12:18:02 2023
BootProm:  3.0.1

Access Gateway: C3_CORE_AG(10:xx:xx:xx:xx:xx:xx:xx)
=========
Kernel:    2.6.14.2
Fabric OS: v9.2.x
Made on:   Mon Apr 15 06:40:42 2024
Flash:     Sat Jul 22 12:18:02 2023
BootProm:  1.0.11

Access Gateway: sw0(10:00:c4:f5:7c:16:98:14)
=========
Remote fosexec feature is disabled.
Access Gateway: C4_EDGE_AG(10:xx:xx:xx:xx:xx:xx:xx)
=========
Kernel:    2.6.34.6
Fabric OS: v9.2.x
Made on:   Mon Apr 15 06:40:42 2024
Flash:     Sat Jul 22 12:18:02 2023
BootProm:  3.0.1
```

See Also

setContext, userConfig

fpgaUpgrade

Upgrades and verifies the field-programmable gate array (FPGA) firmware image.

Synopsis

fpgaupgrade [**--slot** <*slot_num*> | **--latest** | **--verbose**]
fpgaupgrade --help

Description

Use this command to update the flash reserved for FPGA with a new image and to verify the newly downloaded image. If the operation is successful, the switch must be power cycled for changes to take effect and therefore this operation is disruptive. If the operation fails, an error message is displayed.

When this command is executed on a system that is already running with the latest FPGA image, it displays the following warning message: "The switch is already running the latest FPGA version."

The behavior of this command is platform-specific; output varies depending on the platform.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following optional operands:

--slot *slot_num*	Specifies the slot number on bladed systems.
--latest	Displays the current and latest version.
--verbose	Displays the statistics in verbose mode.
--help	Displays the command usage.

Examples

To upgrade FPGA image:

```
switch:admin> fpgaupgrade
This is a disruptive operation and will require a power-cycle after the completion of the operation.
Do you want to continue (y/n)? y
Programming new FPGA, this may take a few minutes ...
Device #1 IDCODE is 0310A0DD
full-chip erasing Max 10 FPGA device(s) ...
programming Max 10 FPGA CFM0 block at sector 5 ...
programming Max 10 FPGA CFM1 block at sector 3 ...
programming Max 10 FPGA CFM1 block at sector 4 ...
programming Max 10 FPGA UFM block at sector 2 ...
verifying Max 10 FPGA CFM0 block at sector 5 ...
verifying Max 10 FPGA CFM1 block at sector 3 ...
verifying Max 10 FPGA CFM1 block at sector 4 ...
verifying Max 10 FPGA UFM block at sector 2 ...
programming Max 10 FPGA DSM block ...
DONE
Test time elapsed = 162.764267 sec
Exit code = 0... Success
Programmed new FPGA successfully. Please power-cycle for it to take effect.
```

To upgrade FPGA image (in this example, the command is executed on a system that is already running with the latest FPGA image):

```
switch:admin> fpgaupgrade
The switch is already running the latest FPGA version
```

To upgrade FPGA image (in this example, the command failed with an error message):

```
switch:admin> fpgaupgrade
This is a disruptive operation and will require a power-cycle after the completion of the operation.
Do you want to continue (y/n)? y
Programming new FPGA, this may take a few minutes ...
The FPGA installer did not pass sanity check. Please firmwaredownload to a target path firmware and retry.
Failed to program new FPGA (-1)
```

To display the current and latest version of FPGA image:

```
switch:admin> fpgaupgrade --l
Slot        Current          Latest
```

```
1           0x06.03          0x06.0a
5           0x06.00          0x06.00
6           0x06.00          0x06.00
8           0x06.02          0x06.02
```

See Also

None

fpiProfile

Manages the fabric performance impact (FPI) profile threshold configurations.

Synopsis

```
        fpiprofile --create <fpiprofile_name> -perfimpact -txql <txql_in_ms> -cred-zero-1 <percentage_in_1sec>

           -cred-zero-5 <percentage_in_5sec> -cred-zero-10 <
           percentage_in_10sec> -frameloss -txql <txql_in_ms>
   [-oversubscription -tx <transmit_percentage>]
        fpiprofile --enable {-eport <fpiprofile_name> | -fport <fpiprofile_name> | -eport <fpiprofile_name> -
fport <fpiprofile_name>}
        fpiprofile --config <fpiprofile_name>
     {[-perfimpact {[-txql <txql_in_ms>]
     [-cred-zero-1 <percentage_in_1sec>]
     [-cred-zero-5 <percentage_in_5sec>]
     [-cred-zero-10 <percentage_in_10sec>]}]
     [-frameloss -txql <txql_in_ms>]
     [-oversubscription -tx <transmit_percentage>]}
        fpiprofile --clone <fpiprofile_name> -name <new_fpiprofile_name>
        fpiprofile --delete <fpiprofile_name>
        fpiprofile --show
        fpiprofile --help
```

Description

Use this command to manage fabric performance impact (FPI) profile and to create a custom FPI profile for F_Ports or E_Ports or both.

By default, the *dflt_fpi_profile* is enabled in MAPS for E_Ports and F_Ports, which includes trunking ports too.

The TXQL value is in milliseconds(ms) and credit zero values are in percentage(%).

The FPI profile configurations are for per-logical switch. Use **fosexec** command to configure and enable same profile across all the logical switches.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--create	Creates a new custom FPI profile with custom thresholds for both fabric performance impact and frame loss states. A maximum of two custom FPI profiles can be created and all the suboptions under **--create** are mandatory.
--clone	Copies the existing FPI profile thresholds to a new custom profile. The existing profile can be either a default or any another custom profile.
--config	Modifies one or more thresholds in the custom profile.
--delete	Deletes the existing custom profile.
--enable	Activates the FPI profile(s) for E_Ports and F_Ports. You can enable either E_Port or F_Port at a time.
--show	Displays the FPI profile and threshold details along with the state such as active policies will have the port type assigned.
--help	Displays the command usage.

Examples

To display the FPI profile details:

```
switch:admin> fpiprofile --show
-------------------------------------------------------------------------------------
FPI Profile      |Profile Type|IO_PERF_IMPACT      |IO_FRAME_LOSS|OVERSUBSCRIBED *|
-------------------------------------------------------------------------------------
dflt_fpi_profile |Not Active  |TXQL          = 10ms|TXQL  = 80ms |TX    = 70%     |
                 |            |CRED-ZERO-1s  = 70% |             |                |
                 |            |CRED-ZERO-5s  = 50% |             |                |
                 |            |CRED-ZERO-10s = 30% |             |                |
-------------------------------------------------------------------------------------
cust_fpi1        |F-Port      |TXQL          = 9ms |TXQL = 94ms  |TX    = 70%     |
                 |            |CRED-ZERO-1s  = 78% |             |                |
                 |            |CRED-ZERO-5s  = 30% |             |                |
                 |            |CRED-ZERO-10s = 10% |             |                |
-------------------------------------------------------------------------------------
cust_fpi         |E-Port      |TXQL          = 9ms |TXQL = 94ms  |TX    = 70%     |
                 |            |CRED-ZERO-1s  = 50% |             |                |
                 |            |CRED-ZERO-5s  = 30% |             |                |
                 |            |CRED-ZERO-10s = 10% |             |                |
-------------------------------------------------------------------------------------
(*) indicates the read-only state and default thresholds
```

To create a new FPI profile with custom thresholds:

```
switch:admin> fpiprofile --create fpiprof1 -perfimpact  \-txql 5 -cred-zero-1 60 -cred-zero-5 40 -cred-zero-10
 20 -frameloss -txql 50
-oversubscription -tx 75
```

To clone new custom profile using an existing FPI profile:

```
switch:admin> fpiprofile --clone fpiprof1 -name cust_prof_profile1
```

To modify one or more thresholds in an existing custom profile:

```
switch:admin> fpiprofile --config cust_prof_profile1 -perfimpact  \-txql 5 -cred-zero-1 60 -cred-zero-5 40 -
cred-zero-10 20 frameloss -txql 50
```

To delete an existing custom profile:

```
switch:admin> fpiprofile --delete fpiprof1
```

To activate FPI profile in E_Ports and F_Ports:

```
switch:admin> fpiprofile --enable -fport dflt_fpi_profile -eport cust_fpi_profile1
```

See Also

mapsRule, mapsConfig

frameLog

Displays information about discarded frames.

Synopsis

```
framelog {--enable | --disable} [-type timeout]
     [-type destunreach] [-type unroute] [-type type1miss]
     [-type type2miss] [-type type6miss] [-type hardzonemiss] [-type all]
framelog --clear
framelog --status
framelog --action {fpin | none}
framelog --show [-type timeout] [-type destunreach] [-type unroute]
     [-type type1miss] [-type type2miss] [-type type6miss] [-type hardzonemiss]
     [-type all] [-txport [<slot>/]<port>]
     [-rxport [<slot>/]<port>]
     [-sid <source_PID>][-did <destination_PID>]
     [-sfid <fabric_ID>] [-dfid <fabric_ID>]
     [-mode {summary | dump}] [-n <num_items>]
framelog --show_header [-n <num_items>]
framelog {--enable | --disable} [-type timeout]
     [-type destunreach] [-type unroute] [-type type1miss]
     [-type type2miss] [-type type6miss] [-type hardzonemiss]
     [-type allfc] [-type vlanhdrerr] [-type iphdrerr] [-type ipopterr]
     [-type acldeny] [-type tcammiss] [-type runterr] [-type luterr]
     [-type bufferr] [-type alleth] [-type all]
framelog --clear
framelog --status
framelog --action {fpin | none}
framelog --show [-type timeout] [-type destunreach] [-type unroute]
     [-type type1miss] [-type type2miss] [-type type6miss] [-type hardzonemiss]
     [-type allfc] [-type vlanhdrerr] [-type iphdrerr] [-type ipopterr]
     [-type acldeny] [-type tcammiss] [-type runterr] [-type luterr]
     [-type bufferr] [-type alleth] [-type all]
     [-txport [<slot>/]<port>]
     [-rxport [<slot>/]<port>]
     [-sid <source_PID>][-did <destination_PID>]
     [-sfid <fabric_ID>] [-dfid <fabric_ID>]
     [-vlantag <vlan_tag>] [-srcip <ipv4_addr>]
     [-dstip <ipv4_addr>] [-srcmac <mac_addr>]
     [-dstmac <mac_addr>]
     [-mode {summary | dump}] [-n <num_items>]
framelog --show_header [-n <num_items>]
```

Description

Use this command to disable or re-enable the frame log, and to display detailed information about the discarded frames logged by the frame log. The frame log stores information about frames discarded due to certain reasons. The frame log sees information about only 40 discarded frames per second per chip on the chassis.

When frame drops occur on a switch, the frame log can help you identify to which flows the dropped frames belong and zero in on the affected applications by finding out the end-points of the dropped frame.

Use the **--show** option to display detailed information about the discarded frames that match the filter criteria provided by this command. The **--show** option supports two viewing modes: summary and dump mode. In summary mode, the command aggregates similar frames (those that have the same log timestamp, TX port, RX port, SID, DID, SFID, DFID, Src Entity Id, and Dst Entity Id) without displaying the raw frame contents. In dump mode, the command displays the raw frame contents, but the frames are not aggregated in the manner of the summary mode. In either mode, you can specify additional filters to customize the number and properties of the frames for closer examination.

When viewed in summary mode, the frame log displays the following information:

Log timestamp	The date and time when the frames described in this line of output were discarded. This value is accurate to within one second, that is, the displayed frames were not necessarily dropped at precisely the same time.
TX port	Egress port where the frames were bound to exit the chassis.
RX port	Ingress port where the frames entered the chassis.
SID	Source port ID in hexadecimal PID format.
DID	Destination port ID in hexadecimal PID format.
SFID	Source Fabric ID
DFID	Destination Fabric ID
Src Entity Id	Source ID
Dst Entity Id	Destination ID
Type	Reason for the frame discard. Frames can be discarded for a variety of reasons. The discard reasons currently handled by the frame log are timeout, unroute, destunreach, type1miss, type2miss, type6miss, and hardzonemiss.
Count	The number of discarded frames logged in the frame log that have the log timestamp, TX port, RX port, SID, DID, SFID and DFID values listed on this line of output. Note that this count may be less than the actual number of such frames discarded, because the frame log cannot log the details of all discarded frames.

When viewed in dump mode, the frame log displays the following information:

Log timestamp	The date and time when the frames described in this line of output were discarded.
TX port	Egress port where the frames were bound to exit the chassis. A port displayed as -1 (or -1/-1 on slot-based systems) indicates an internal port.
RX port	Ingress port where the frames were bound to enter the chassis. A port displayed as -1 (or -1/-1 on slot-based systems indicates an internal port.
Type	Reason for the frame discard. Frames can be discarded for a variety of reasons. The discard reasons currently handled by the frame log are timeout, unroute, destunreach, type1miss, type2miss, type6miss, and hardzonemiss.
Frame contents	The first 64 bytes of the frame contents in hexadecimal format.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

The Frame Log operation is chassis-wide.

Operands

This command has the following operands:

-type Specifies the discard frame types. Valid values for this operand include the following:

- **timeout**: Timeout discard frames
- **destunreach**: Destination unreachable frames
- **unroute**: Unroutable frames
- **type1miss**: FTB type 1 miss discarded frames
- **type2miss**: FTB type 2 miss discarded frames
- **type6miss**: FTB type 6 miss discarded frames
- **hardzonemiss**: ACL check miss discarded frames
- **all**: Frames discarded due to FC discard errors

The following Ethernet dropped frames are captured for the IP Storage platform.

- **allfc**: Packets discarded due to any of the native FC discard errors. Native FC discard errors are timeout, destination unreachable, unroute, type1miss, type2miss, type6miss and hardzonemiss
- **vlanhdrerr**: VLAN header is not present in port configured to expect VLAN tagged Ethernet packets
- **iphdrerr**: Packets having IP header checksum error
- **ipopterr**: Packets IP header options are not supported
- **acldeny**: Packets hitting ACL denied
- **tcammiss**: Packets hitting Rx TCAM miss
- **runterr**: Packets generating runt or short frame error
- **luterr**: Packets observing lookup memory table error
- **bufferr**: Packets discarded due to FCE buffer shortage
- **alleth**: Packets discarded due to any of the native Ethernet discard errors. Native ethernet discard errors are vlanhdrerr, iphdrerr, ipopterr, acldeny, tcammiss, luterr, runterr, and bufferr
- **all**: Packets discarded due to any of the FC or Ethernet discard errors

--disable Disables logging of discarded frames, which is enabled by default. This command clears the history of discarded frames and gathering of new information ceases. When frame logging is disabled, only the **--help** and **--enable** operations are permitted.

--enable Enables logging of discarded frames after the feature was disabled.

--clear Clears the stored history of discarded frames. This operation is permitted only when the feature is enabled.

--status Displays the current status of the frame log service, and the type of discard frames that are being logged.

--action [fpin | none] Enables or disables action when the frame loss occur for the categories configured for the frame viewer. The only configurable action is **FPIN**. The **FPIN** action enables the fabric performance impact notification for the frame loss events.

--show Prints a listing of details about stored frames that match the specified filter criteria. This operation is permitted only when the feature is enabled. You can specify one or more of the following options to filter the output. When used without operands, the **--show** command displays the unfiltered output. This option supports specifying that the TX port or RX port of displayed frames should be a backend port.

-type timeout | destunreach | unroute | type1miss | type2miss | type6miss | hardzonemiss | all Specifies the discard frame types to display.

-txport <*slot*>/]<*port*> Displays only the frames that were bound to exit by the specified egress port. The **-txport** option accepts argument "-1" (for fixed-port switches) or "-1/-1" (for modular switches). These stand for "any backend port". Using this notation, you can select specifically those discarded frames that have a backend port in the TX port field.

	Individual backend ports cannot be specified, only the quality of being a backend port can be specified.
-rxport <*slot*>/]<*port*>	Displays only the frames that entered the chassis on the specified port. The **-rxport** option accepts argument "-1" (for fixed-port switches) or "-1/-1" (for modular switches). These stand for "any backend port". Using this notation, you can select specifically those discarded frames that have a backend port in the RX port field. Individual backend ports cannot be specified, only the quality of being a backend port can be specified.
-sid <*source_PID*>	Displays only the frames with the specified 24-bit source address in the FC header. The port ID (PID) must be written in hexadecimal and must be prefixed by 0x.
-did <*destination_PID*>	Displays only the frames with the specified 24-bit destination address in the FC header. The port ID (PID) must be written in hexadecimal and must be prefixed by 0x.
-sfid <*fabric_ID*>	Displays only the frames with the specified fabric ID as the source fabric ID.
-sdfid <*fabric_ID*>	Displays only the frames with the specified fabric ID as the destination fabric ID.
-mode {summary | dump}	Specifies the command output mode. In dump mode, the command prints the 64 bytes of frame contents. In summary mode, the frame contents are not displayed. Summary mode is the default.
-n <*num_items*>	Displays the specified number of items. In summary mode, an item is a record of frames with the same values of log timestamp, TX port, RX port, SID, DID, SFID and DFID. Note that more frames may be represented in the lines of output than specified in the *num_items* value, because one line can aggregate multiple frames in summary mode. In dump mode, each item represents a single frame. The default value of *num_items* is 20. The maximum value in summary mode is 1200, and in dump mode it is 12,000.

--show_header Displays the frame header (24-bytes) of all types of dropped frames and avoids capturing potential data frame content in supportsave.

-n <*num_items*>	Displays the specified number of items.

Examples

To display the status of the frame log service and the discard frame type:

```
switch:user> framelog --status
Service Status:                 Enabled
Enabled Disc Frame Types:       timeout unroute
Action(s):                      FPIN
```

To display the framelog when unroute type is enabled:

```
switch:user> framelog --show
==============================================================================================================
        Wed Aug 03 19:54:07 UTC 2016
==============================================================================================================

Timestamp           |Tx Port|Rx Port|SID     |DID     |SFID|DFID|Src Entity Id|Dst Entity Id|Type  |Count|
--------------------------------------------------------------------------------------------------------------
Aug 03 2016 19:53:28|--     |8      |0x520800|0x101010|128 |128 |vm_2         |vm_2         |unrout|10   |
                    |       |       |        |        |    |    |             |             |e     |     |
Aug 03 2016 19:52:26|--     |8      |0x520800|0x101010|128 |128 |N/A          |N/A          |unrout|10   |
                    |       |       |        |        |    |    |             |             |e     |     |
```

To display eight lines of an unfiltered frame log view in summary mode:

```
switch:user> framelog --show -mode summary -n 8
=====================================================================
        Mon Jan 31 23:54:59 UTC 2011
======================================================================
Log             TX   RX
timestamp       port port SID       DID      SFID  DFID Type    Count
======================================================================
Jan 31 23:49:37 2    2    0xfffffd  0xfffffd  1     1    timeout   1
Jan 31 23:49:37 2    1    0x051500  0x060100  1     1    timeout   4
Jan 31 23:49:37 2    0    0x051700  0x060000  1     1    timeout   4
Jan 31 23:49:36 2    1    0x051500  0x060100  1     1    timeout   3
Jan 31 23:49:36 2    0    0x051700  0x060000  1     1    timeout   3
Jan 31 23:49:35 2    1    0x051500  0x060100  1     1    timeout   2
```

To display the frame contents in dump mode:

```
switch:user> framelog --show -mode dump -n 4

====================================================================
        Mon Jan 31 18:34:47 UTC 2011
====================================================================
Log             TX   RX
timestamp       port port Type    Frame contents (first 64 bytes)
====================================================================
Jan 31 18:34:46 7/32 7/33 timeout
                     00 03 a0 00 00 03 a1 00 00 28 00 00 00 00 00 00
                     80 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                     00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                     00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

Jan 31 18:34:46 7/32 7/33 timeout
                     00 03 a0 00 00 03 a1 00 00 28 00 00 00 00 00 00
                     80 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                     00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                     00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

Jan 31 18:34:46 7/32 7/33 timeout
                     00 03 a0 00 00 03 a1 00 00 28 00 00 00 00 00 00
                     80 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                     00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                     00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

Jan 31 18:34:46 7/32 7/33 timeout
                     00 03 a0 00 00 03 a1 00 00 28 00 00 00 00 00 00
                     80 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                     00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                     00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
```

To display the 24-bytes frame header of the dropped data:

```
switch:user> framelog --show_header
==================================================================================
        Tue Jul 07 18:33:14 GMT 2020
```

```
================================================================================
Log              TX    RX
timestamp        port  port Type       Frame contents (Frame header)
================================================================================
Jul 07 18:28:50  --    26   unroute    01 04 3f 00 00 05 48 40 08 00 00 00 01 00 00 01
                                       09 03 ff ff 00 00 00 00

Jul 07 18:28:50  --    26   unroute    01 04 3f 00 00 05 48 40 08 00 00 00 01 00 00 01
                                       09 06 ff ff 00 00 00 00

Jul 07 18:28:50  --    26   unroute    01 04 3f 00 00 05 48 40 08 00 00 00 01 00 00 01
                                       09 06 ff ff 00 00 00 00
(output truncated...)


Jul 07 18:28:48  63    26   destunreach  01 04 3f 00 00 05 48 40 08 00 00 00 01 00 00 01
                                         09 03 ff ff 00 00 00 00

Jul 07 18:28:48  63    26   destunreach  01 04 3f 00 00 05 48 40 08 00 00 00 01 00 00 01
                                         09 06 ff ff 00 00 00 00

Jul 07 18:28:48  63    26   destunreach  01 04 3f 00 00 05 48 40 08 00 00 00 01 00 00 01
                                         09 03 ff ff 00 00 00 00
(output truncated...)
```

To display the 24-bytes frame header of the dropped data with the number of entries:

```
switch:user> framelog --show_header -n 5
================================================================================
Fri Sep 18 06:17:56 GMT 2020
================================================================================
Log       TX   RX
timestamp port port  Type        Frame contents (Frame header)
================================================================================
Sep 18 06:17:29 42 7 destunreach 01 6d 0a 00 00 a5 07 00 08 80 00 08 81 01 00 18
                                 03 a2 04 92 00 00 be 80

Sep 18 06:17:29 42 7 destunreach 01 6d 0a 00 00 a5 07 00 08 80 00 08 81 01 00 17
                                 03 a2 04 92 00 00 b6 90

Sep 18 06:17:29 42 7 destunreach 01 6d 0a 00 00 a5 07 00 08 80 00 08 81 01 00 16
                                 03 a2 04 92 00 00 ae a0

Sep 18 06:17:29 42 7 destunreach 01 6d 0a 00 00 a5 07 00 08 80 00 08 81 01 00 15
                                 03 a2 04 92 00 00 a6 b0

Sep 18 06:17:29 42 7 destunreach 01 6d 0a 00 00 a5 07 00 08 80 00 08 81 01 00 14
                                 03 a2 04 92 00 00 9e c0
```

To display the framelog on an IPS platform with both FC and Ethernet discards:

```
switch:user> framelog --show
================================================================================================================================
        Wed May 24 10:51:39 GMT 2023
```

```
==========================================================================================================================

Timestamp           |Tx Port|Rx Port|SID     |DID     |SFID|DFID|Src Entity Id       |Dst Entity Id       |
Type     |Count|
--------------------------------------------------------------------------------------------------------------------------
May 24 2023 10:51:01|2      |-1     |0x020400|0x030400|128 |128 |N/A                 |N/A                 |
timeout  |1    |
May 24 2023 10:50:33|2      |-1     |0x020400|0x030400|128 |128 |N/A                 |N/A                 |
timeout  |1    |
May 24 2023 10:50:25|2      |-1     |0x020400|0x030400|128 |128 |N/A                 |N/A                 |
timeout  |2    |
May 24 2023 10:50:21|2      |-1     |0x020400|0x030400|128 |128 |N/A                 |N/A                 |
timeout  |2    |
May 24 2023 10:50:17|2      |-1     |0x020400|0x030400|128 |128 |N/A                 |N/A                 |
timeout  |2    |
May 24 2023 10:50:13|2      |-1     |0x020400|0x030400|128 |128 |N/A                 |N/A                 |
timeout  |2    |
May 24 2023 10:50:09|4      |16     |0x020900|0x030400|128 |128 |N/A                 |N/A                 |
timeout  |2    |
May 24 2023 10:50:05|4      |16     |0x020900|0x030400|128 |128 |N/A                 |N/A                 |
timeout  |2    |

Ethernet Discards
==========================================================================================================================
Log              |Tx Port  |DID      |Type        |VLAN Tag    |ETH Type |DMac               |Dst IP        |
Count|
timestamp        |Rx Port  |SID      |            |            |         |SMac               |Src IP        |
     |
==========================================================================================================================
May 24 10:48:25  |-1       |0        |acldeny     |UnTagged    |0x86dd   |33:33:00:00:00:02  |172.17.204.98 |
1    |
                 |33       |0x352100 |            |            |         |84:16:0c:50:2d:a0  |172.17.205.98 |
     |
May 24 10:48:17  |-1       |0        |acldeny     |0x810001fa  |0x86dd   |33:33:ff:37:1a:95  |N/A           |
1    |
                 |33       |0x352100 |            |            |         |84:16:0c:50:2e:20  |              |
     |
May 24 10:48:05  |-1       |0        |acldeny     |UnTagged    |0x86dd   |33:33:ff:04:37:91  |N/A           |
1    |
                 |33       |0x352100 |            |            |         |5c:6f:69:fa:b2:30  |              |
     |
May 24 10:47:57  |-1       |0        |acldeny     |UnTagged    |0x86dd   |33:33:00:00:00:02  |N/A           |
3    |
                 |33       |0x352100 |            |            |         |84:16:0c:50:2d:a0  |              |
     |
May 24 10:47:57  |-1       |0        |acldeny     |UnTagged    |0x86dd   |33:33:ff:a8:c6:f9  |N/A           |
1    |
                 |33       |0x352100 |            |            |         |84:16:0c:50:2d:a0  |              |
     |
May 24 10:47:41  |-1       |0        |acldeny     |UnTagged    |0x86dd   |33:33:00:00:00:02  |N/A           |
1    |
                 |33       |0x352100 |            |            |         |84:16:0c:50:2d:a1  |              |
     |
```

See Also

None

fruDump

Collects limited debug information related to field-replaceable units (FRU) that can be displayed on screen or can be sent to a remote directory through FTP, SFTP, or SCP. This command is a minimal version of the **supportsave** command.

Synopsis

```
frudump [-u <user_name>  -h <host_ip >
 -d <remote_dir> -l <protocol>]
 frudump [-c]
 frudump [-U -d <remote_dir>]
 frudump [-a]
```

Description

Use this command to collect limited debug information related to FRUs that can be displayed on screen/console or can be sent to a remote directory through FTP, SCP, or SFTP. This command is a minimal version of the **supportsave** command.

The files generated by this command are compressed before being sent off the switch. The core files and panic dumps remain on the switch after the command is run. The FFDC data is removed after the command has finished.

This command accepts IPv4 and IPv6 addresses. If the configured IP address is in IPv6 format, the RAS auto-file transfer and event notification to syslog will not work when the Fabric OS version is downgraded. You must reconfigure auto-file transfer and syslog with IPv4 addresses.

In a Virtual Fabric environment, the command saves all chassis-based information and iterates through the defined switch-based information for all logical switches. Chassis permissions are required to execute this command.

Note that quotes should be used around path entries to ensure proper handling of special shell characters.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-u <*user_name*>	Specifies the user name for the FTP, SCP, or SFTP server. This operand is optional; if omitted, anonymous FTP is used.
-U	Saves support data to an attached USB device. When using this option, a target directory must be specified with the **-d** option.
-h <*host_ip*>	Specifies the IPv4 or IPv6 address for the remote server.
-c	Uses the FTP, SCP, or SFTP parameters saved by the **supportFtp** command. This operand is optional; if omitted, specify the FTP, SCP, or SFTP parameters through command line options or interactively. This option is same as in the **supportsave** command.
-d <*remote_dir*>	Specifies the remote directory to which the file is to be transferred.
-l <*protocol*>	Specifies the transfer protocol. Valid values are File Transfer Protocol (FTP), Secure Copy (SCP), or Secure File Transfer Protocol (SFTP). If you plan to use SCP to transfer files, it is important to test the command prior to its use with various SCP-mode services. Because the **fruDump** command makes several access requests to copy files, it is

important that the SCP-mode service be configured so that passwords are not required for each attempted transfer. Failure to configure the service correctly may result in significant delays in obtaining transferred output from the **fruDump** command.

When using SCP, **fruDump** may create a directory if it does not already exist and the parent directory has the appropriate permissions. Use of FTP requires the directory to exist on the remote server.

-a Displays all FRU related commands output to the screen.

Examples

To collect FRU dump information in a remote directory through SCP:

```
switch:admin> frudump  -u admin -h 192.0.2.0 -d /temp/support -l scp
Saving support information:
SLOT  SWITCH  MODULE                CLI SIZE     FILE SIZE     CLI TIME        MODULE TIME  LOAD AVERAGE
CP0    sw0    RAS                 589.626 KB      0.000 KB   7.679349 secs  18.466434 secs  0.2/0.2/0.2
CP0    sw0    FRUDUMP              67.276 KB      0.000 KB   2.600234 secs  10.646594 secs  0.3/0.2/0.2
CP0    sw0    CORE_FFDC             0.000 KB   4157.361 KB   7.679349 secs  12.508840 secs  0.4/0.3/0.2

SupportSave completed (Duration : ).
```

To collect FRU dump information through interactive mode:

```
switch:admin> frudump
Host IP or Host Name : 192.0.2.0
User Name: anonymous
Protocol (ftp | scp | sftp): ftp
Remote Directory: /temp
This command collects RASLOG, TRACE, supportShow, core file, FFDC data
and other support information from both active and standby CPs
and then transfer them to a FTP/SCP/SFTP server or a USB device.
Local CP, remote CP and BPs' information will be saved,
but supportShow information is available only on the Active CP.
This operation can take several minutes.
OK to proceed? (yes, y, no, n): [no] y

Saving support information:
SLOT  SWITCH    MODULE                CLI SIZE     FILE SIZE    CLI TIME      MODULE TIME    LOAD AVERAGE
CP2    ras020   RAS                 280.008 KB      0.000 KB  18.812242 secs  20.67081  secs 0.2/0.3/0.2
CP2    ras020   FRUDUMP              50.909 KB      0.000 KB  12.297817 secs  12.373003 secs 0.2/0.3/0.2
No core or FFDC data files found!
CP2    ras020   CORE_FFDC             0.000 KB      0.000 KB   0.0      secs   0.525251 secs 0.2/0.3/0.2
Summary worker: 8, cpu load: 7 upload size:   330 KB, time: 34 secs upload: 1 load:0.7/0.4/0.3

SupportSave completed (Duration : 0 minutes 34 seconds).
```

See Also

supportSave, supportShow, supportFtp

fspfShow

Displays Fabric Shortest Path First (FSPF) protocol information.

Synopsis

```
fspfshow [--help]
```

Description

Use this command to display FSPF protocol information and internal data structures of the FSPF module. The command displays the following fields:

version	Version of the FSPF protocol.
domainID	Domain number of the local switch.
switchOnline	State of the local switch.
switchGenNum	Switch generation number.
switchGenNum(mmap)	Switch's current generation number managed by the switch driver.
domainValid	TRUE if the domain of the local switch is currently confirmed.
isl_ports	Bit map of all ISL ports. Bit positions correspond to the default areas of the ports. Bit 0 refers to default area of the switch, bit 1 refers to default area 1, and so forth.
trunk_ports	Bit map of all trunk slave ports.
f_ports	Bit map of all FX_Ports.
seg_ports	Bit map of all segmented ports.
active_ports	Bit map of all online ports.
minLSArrival	FSPF constant.
minLSInterval	FSPF constant.
LSoriginCount	Internal variable.
startTime	Start time of the FSPF task from boot time, in milliseconds.
fspfQ	FSPF input message queue.
fabP	Pointer to fabric data structure.
agingTID	Aging timer ID.
agingTo	Aging time out value in milliseconds.
lsrDlyTID	Link State Record delay timer ID.
lsrDelayTo	Link State Record delay time out value in milliseconds.
lsrDelayCount	Counter of delayed Link State Records.
ddb_sem	FSPF semaphore ID.
event_sch	FSPF scheduled events bit map.

Notes

The output displays only the lines with a bit set. If a port bitmap does not have any bits set, the output displays as "None" for the first line of the bitmap.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

--help	Displays the command usage.

Examples

To display FSPF protocol information:

```
switch:admin> fspfshow
version                 = 2
domainID                = 1
switchOnline            = TRUE
switchGenNum            = 4
switchGenNum(mmap)      = 4
domainValid             = TRUE
isl_ports               = None
trunk_ports             = None
fports                  = None
seg_ports               = None
active_ports            = None
le_ports                = None
nbStFullPortsP          = None
ve_portsP               = None
minLSArrival            = 3000
minLSInterval           = 5000
LSoriginCount           = 0
startTime               = 0
fspfQ                   = 0x111ffba8
fabP                    = 0x11209bc8
agingTID                = 0x11329ae0
agingTo                 = 10000
lsrDlyTID               = 0x1132ac90
lsrDelayTo              = 5000
lsrDelayCount           = 0
ddb_sem                 = 0x11209bd8

fabP:
event_sch               = 0x0
max port                = 200
max phy port            = 40
```

See Also

topologyShow, uRouteShow

gePortErrShow

Displays error statistics of Gigabit Ethernet (GbE) port and XGE ports.

Synopsis

```
geporterrshow
geporterrshow --help
```

Description

Use this command to display error statistics of Gigabit Ethernet (GbE) ports on the Brocade FX8-24 extension blade. Values for the following parameters are displayed:

frames tx Number of frames transmitted (Tx).

frames rx	Number of frames received (Rx).
crc err	Number of CRC errors.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

--help	Displays command usage.

Examples

To display error statistics:

```
switch:admin> geporterrshow
              frames     crc
            tx     rx    err
        ====================

1/ge0  :    0      0      0
1/ge1  :    0      0      0
1/ge2  :    0      0      0
1/ge3  :    0      0      0
1/ge4  :    0      0      0
1/ge5  :    0      0      0
1/ge6  :    0      0      0
1/ge7  :    0      0      0
1/ge8  :    0      0      0
1/ge9  :    0      0      0
```

See Also

portCfgShow, portErrShow

gePortPerfShow

Displays throughput information for Gigabit Ethernet (GbE) ports and XGE ports.

Synopsis

```
geportperfshow
geportperfshow [-slot <slot> |
     [<slot>/]<geport1>[-[<slot>/]<geport2>]]
     [-tx | -rx | -tx -rx][-t <time_interval>]
geportperfshow --help
```

Description

Use this command to display throughput information for all GbE ports on a switch or chassis or to display the information of GE ports in the specified slot of chassis. Output includes the number of bytes received and transmitted per interval. Throughput values are displayed as bytes per second. Values are rounded down.

The data is displayed one column per GbE port plus one column that displays the total for these GbE ports. Results display every second or over a specified interval. Press **Enter**, **Ctrl-c**, or **Ctrl-d** to terminate the command.

When executed with the command line arguments **-tx**, **-rx**, or **-tx -rx**, this command displays the transmitter throughput, the receiver throughput, or both. For ports with status of "No_Module," "No_Light," "No_SigDet," or "Loopback" throughput is displayed as 0.

An asterisk (*) in the output indicates a SIM port that is generating or receiving traffic.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

This command is supported on the Brocade 7810 and Brocade SX6.

Operands

This command has the following operands:

-slot <*slot*>/]<*geport1*>	Displays throughput information for the GbE ports in the specified slot.
-t *time_interval*	Specifies the interval, in seconds, between each sample. The default interval is one second. If no interval is specified, the default is used.
-tx	Displays the transmitter throughput.
-rx	Displays the receiver throughput.
-tx -rx	Displays the transmitter and receiver throughput.
--help	Displays the command usage.

Examples

To display performance information for all GbE ports at a one second (default) interval:

```
switch:user> geportperfshow
slot 1:
 ge0   ge1   ge2   ge3    ge4   ge5
===============================================
  0     0     0    71.8m   0     0

 ge6   ge7   ge8   ge9   xge0   xge1   Total
===============================================
  0     0     0     0     0     0     71.8m

slot 2:
 ge0   ge1   ge2   ge3   ge4   ge5
===============================================
  0     0     0     0     0     0

  ge6   ge7   ge8   ge9    xge0   xge1   Total
===============================================
   0     0     0    32.9m   0      0     32.9m
```

To display transmitter throughput for a single slot:

```
switch:user> portperfshow 1 -tx
slot 1:
 ge0   ge1   ge2   ge3    ge4   ge5
```

```
=============================================
  0     0     0    55.7m   0     0

 ge6   ge7   ge8   ge9    xge0   xge1
=============================================
  0     0     0     0      0      0
```

To display receiver throughput for a single slot:

```
switch:user> portperfshow 1 -rx
slot 1:
 ge0   ge1   ge2   ge3   ge4   ge5
=============================================
  0     0     0    1.4m   0     0

 ge6   ge7   ge8   ge9    xge0   xge1
=============================================
  0     0     0     0      0      0
```

To display transmitter and receiver throughput for all GbE ports:

```
switch:user>  portperfshow -tx -rx
slot 1:
  ge0           ge1           ge2           ge3           ge4           ge5
==TX=====RX=====TX=====RX=====TX=====RX=====TX=====RX=====TX=====RX=====TX=====RX===
   0      0      0      0      0      0     40.2m 964.3k   0      0      0      0

  ge6           ge7           ge8           ge9           xge0          xge1
==TX=====RX=====TX=====RX=====TX=====RX=====TX=====RX=====TX=====RX=====TX=====RX===
   0      0      0      0      0      0      0      0      0      0      0      0

slot 2:
  ge0           ge1           ge2           ge3           ge4           ge5
==TX=====RX=====TX=====RX=====TX=====RX=====TX=====RX=====TX=====RX=====TX=====RX===
   0      0      0      0      0      0      0      0      0      0      0      0

  ge6           ge7           ge8           ge9           xge0          xge1
==TX=====RX=====TX=====RX=====TX=====RX=====TX=====RX=====TX=====RX=====TX=====RX===
   0      0      0      0      0      0     16.1m 347.2k   0      0      0      0
```

See Also

portStatsShow

haDisable

Disables the High Availability feature.

Synopsis

hadisable

Description

Use this command to disable the High Availability (HA) feature on a switch. If the HA feature is already disabled, this command does nothing.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To disable the High Availability feature:

```
switch:admin> hadisable
HA is disabled
```

See Also

haEnable, haShow

haDump

Displays High Availability status information.

Synopsis

hadump

Description

Use this command to display information about the status of the High Availability (HA) feature on a switch or a chassis. This command displays the following information:

- Time Stamp
- Local CP state (slot number and CP ID)
- Remote CP state (slot number and CP ID)
- Type of recovery (warm or cold)
- High Availability (enabled or disabled)
- Heartbeat (up or down)
- Health of standby CP
- HA synchronization status
- IP and Fibre Channel addresses configured for the switch or chassis.
- Additional internal HA state information, subject to change.

The health of the standby CP is defined as follows:

Healthy	The standby CP is running and the background health diagnostic has not detected any errors.
Failed	The standby CP is running, but the background health diagnostic has discovered a problem with the blade. Check the logs to determine an appropriate course of action. Failover is disabled until the standby CP is repaired. Information about the failing device in the standby CP is displayed.
Unknown	The standby CP health state is unknown because the standby CP does not exist, heartbeat is down, or Health Monitor detects a configuration file error.

The High Availability synchronization status is defined as follows:

HA State synchronized	The system is currently fully synchronized. If a failover becomes necessary, it is nondisruptive.

HA State not in sync The system is unable to synchronize the two control processors (CPs) because the standby CP is faulty or a system error occurred. If a failover becomes necessary at this time, active CP reboots and the failover is disruptive.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To view information about the High Availability feature status:

```
switch:admin> hadump
---------------------------------------
TIME_STAMP: Mar 30 12:57:35.109173
---------------------------------------
Local CP (Slot 7, CP1): Active, Warm Recovered
Remote CP (Slot 6, CP0): Standby, Healthy
HA enabled, Heartbeat Up, HA State synchronized

CHASSIS
Ethernet IP Address: 192.0.2.0
Ethernet Subnetmask: 255.255.240.0

CP0
Ethernet IP Address: 192.0.2.1
Ethernet Subnetmask: 255.255.240.0
Host Name: cp0
Gateway IP Address: 10.20.112.1

CP1
Ethernet IP Address: 192.0.2.2
Ethernet Subnetmask: 255.255.240.0
Host Name: cp1
Gateway IP Address: 10.20.112.1

IPv6 Autoconfiguration Enabled: Yes
Local IPv6 Addresses:
IPv6 Gateways:
---------------------------------------
TIME_STAMP: Mar 30 12:57:37.31282
---------------------------------------
== Service ==
chassis0:0(8.0)
major:            8     part:            0
lo:               0     role:            2
id:               0     dump:            3
epoch:            3     log:             0
block:            0     bits:          321
```

```
recov:            0     index:           14
upper:           14     coldnum:          3
warmnum:         14     stbynum:          4
stat:             4     prevstat:         4
sv_winsz:        64     nscm:            10
== Config ==
(Output truncated)
```

See Also

haShow

haEnable

Enables the High Availability feature.

Synopsis

```
haenable
 haenable [-force]
 haenable --help
```

Description

Use this command to enable the High Availability (HA) feature on a switch. If the HA feature is already enabled, this command has no effect.

If the HA feature is disabled, this command enables it. The standby CP reboots as part of the process. The command displays a warning message and prompts for confirmation before rebooting the CP.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

-force	Enables the High Availability (HA) feature on a switch without confirmation.
--help	Displays the command usage.

Examples

To enable the High Availability feature:

```
switch:admin> haenable
Warning: This command will enable the HA. It will reboot the standby
CP and require all telnet, secure telnet, and SSH sessions to the
standby CP to be restarted

Are you sure you want to go ahead [y/n]? y
HA is enabled
```

To verify that High Availability is enabled:

```
switch:admin> hashow
```

```
Local CP (Slot 7, CP1): Active, Warm Recovered
Remote CP (Slot 6, CP0): Standby, Healthy
HA enabled, Heartbeat Up, HA State synchronized
```

See Also

haDisable, reBoot

haFailover

Forces the failover mechanism so that the standby control processor (CP) becomes the active CP.

Synopsis

```
hafailover
hafailover [-force]
 hafailover --help
```

Description

Use this command to force the failover mechanism to occur so that the standby CP becomes the active CP. In case the active and standby CPs are not synchronized or the system is not in redundant mode, the command aborts.

Notes

When High Availability (HA) synchronization is enabled and the CPs are in sync, the port traffic light does not flash during the failover, even while traffic is continuing to flow.

This command is supported only on dual-CP systems.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

-force	Forces to perform haFailover without confirmation.
--help	Displays the command usage.

Examples

To force the failover of the active CP to the standby CP in the switch:

```
switch:admin> hafailover
Local CP (Slot 7, CP1): Active, Warm Recovered
Remote CP (Slot 6, CP0): Standby, Healthy
HA enabled, Heartbeat Up, HA State synchronized
Warning: This command is being run on a redundant control processor(CP)
system, and this operation will cause the active CP to reset.
Therefore all existing telnet sessions are required to be restarted.

Are you sure you want to fail over to the standby CP [y/n]? y
```

See Also

haDisable, haEnable, haShow

haReboot

Performs high availability (HA) reboot.

Synopsis

hareboot

Description

Use this command to perform warm reboot in the switch-based systems. On chassis-based systems, this command behaves similar to the **haFailover** command so that the standby CP becomes the active CP.

In chassis-based systems, if the active and standby CPs are not synchronized or the system is not in the redundant mode, the command aborts.

When the switch-based system is not fully up or stable, the **haReboot** command cannot be completed.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To perform Ha reboot in the switch-based systems:

```
switch:admin> hareboot
HA Rebooting ...

The system is going down for reboot NOW!switch (Mon Aug 26 12:28:11 2024
```

To perform Ha reboot in the chassis-based systems:

```
switch:admin> hareboot
2024/08/26-12:28:11 (GMT), [RAS-1007], 865, SLOT 2 | CHASSIS, INFO, sw0, System is about to reload.
Rebooting! Aug 26 12:28:11 2024 GMT 2023
Reboot from OSS

Broadcast message from root@x7-4-256685 (Mon Aug 26 12:28:11 2024):

The system is going down for reboot NOW!
```

See Also

haDisable, haEnable, haFailover, haShow

haRedundancy

Displays switch uptime.

Synopsis

```
haredundancy --show
haredundancy --help
```

Description

Use this command to display the switch uptime and the chassis control processor redundancy statistics. For chassis, the command displays the control processor redundancy settings and switch uptime. For switches, the command displays the switch uptime only.

The display includes the following information:

- Current active session: Displays the settings for the current session.
  - HA synchronization status.
  - Active slot state: Displays CP ID, whether CP is local or remote, and recovery type information.
  - Standby slot state: Displays CP ID, and whether CP is local or remote.
  - Start time: Displays the start time of the services in sync state.
- Previous active session: Displays the settings for the previous active session.
  - Active slot state: Displays CP ID, and recovery type information.
  - Standby slot state: Displays CP ID information.
  - Start time: Displays the start time of the services in sync state for the session.
  - End time: Displays end time of the session caused by expected or unexpected recovery.
- System uptime: Displays the start time of the system services. This changes when there is a power cycle or both CPs are reset together.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--show	Displays the switch uptime and other information.
--help	Displays the command usage.

Examples

To display switch uptime with a health standby CP:

```
switch:admin> haredundancy --show
    === HA Redundancy Statistics ===
        HA State synchronized
        Current Active Session:
        Active Slot = CP0 (Local), Expected Recovered
        Standby Slot = CP1 (Remote)
        Start Time: 17:55:33 UTC Fri Jan 03 2014

        Previous Active Session:
```

```
        Active Slot = CP1, Expected Recovered
        Standby Slot = CP0
        Start Time: 17:49:46 UTC Fri Jan 03 2014
        End Time: 17:54:10 UTC Fri Jan 03 2014

        System Uptime: 17:42:11 UTC Fri Jan 03 2014
```

To display switch uptime without a standby CP:

```
switch:admin> haredundancy --show
        === HA Redundancy Statistics ===
        Non-redundant

        System Uptime: 17:42:11 UTC Fri Jan 03 2014
```

To display switch uptime:

```
switch:admin> haredundancy  --show
        === HA Redundancy Statistics ===

        Not supported on this platform

        System Uptime: 09:42:12 UTC Wed Nov 22 2013
```

See Also

haShow

haShow

Displays control processor (CP) status.

Synopsis

hashow

Description

Use this command to display the control processor status. The display includes the following information:

- Local CP state (slot number and CP ID), warm or cold, recovering or recovered.
- Remote CP state (slot number and CP ID).
- High Availability (enabled or disabled).
- Heartbeat (up or down).
- Health of standby CP
- HA synchronization status

The health of the standby CP is defined as follows:

Healthy	The standby CP is running and the background health diagnostic has not detected any errors.
Failed	The standby CP is running, but the background health diagnostic has discovered a problem with the blade. Check the logs to determine the appropriate action. Failover is disabled until the standby CP is repaired. Information about the failing device in the standby CP is displayed.
Unknown	The standby CP health state is unknown because of one of the following reasons: the standby CP does not exist, Heartbeat is down, or the Health Monitor has detected a configuration file error.

The High Availability synchronization status is defined as follows:

HA State synchronized	The system is currently fully synchronized. If a failover becomes necessary, it is nondisruptive.
HA State synchronized(critical)	The system HA state is synchronized for all critical components. However, a non critical component failed to come up. If the failure is on active CP, run **hafailover** command to recover. If the failure is on standby CP, run **reboot** command on standby CP to recover.
HA State not in sync	The system is unable to synchronize the two CPs. This may be caused by one or more of the following conditions: • The **haFailover** command was issued. In this case the "HA State not in sync" state is transitory. • The standby CP is faulty. • A system error occurred. If a failover becomes necessary while the CPs are not in sync, the standby CP reboots, and the failover is disruptive.

Notes

This command may not be supported on nonbladed systems.

Slot numbers for CP1 and CP0 vary depending on the hardware platform. On the Brocade X6 Director, CP0 is in slot 1 and CP1 is in slot 2.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display CP status on a Brocade X6 Director with a healthy standby CP:

```
switch:admin> hashow
Local CP (Slot 1, CP0): Active, Cold Recovered
Remote CP (Slot 2, CP1): Standby, Healthy
HA enabled, Heartbeat Up, HA State synchronized
```

See Also

None

haShutdown

Shuts down high availability (HA) reboot.

Synopsis

```
hashutdown
```

Description

Use this command to shut down the High Availability (HA) feature on a switch. If the HA feature is already shut down, this command has no effect.

After **haShutdown**, switch reboot is required to enable the HA feature.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To shut down the High Availability feature:

```
switch:admin> hashutdown
```

See Also

haDisable, haEnable, haFailover, haReboot, haShow

help

Displays command help information.

Synopsis

```
help
help [-p | -page]
help [<command>]
```

Description

Use this command without operands to display an alphabetical listing of commands for which help is available. When used without an operand, the command listing displays without page break.

Pipe the output through the Unix **grep** command to filter the output.

Use the **-page** operand to display the commands for which help is available one page at a time. Press **Enter** to go to the next page. When using help with the **-page** option, you can search for specific strings by entering a forward slash, followed by a text string, for example **/zone**.

The help listing includes only commands that are available to the current user; command availability may vary depending on the following conditions:

- Login user role
- License key
- Hardware platform

To access help information for a specific command, enter the command name as an operand.

Commands ending in "Help" display grouped commands for a particular subsystem; for example, the **diagHelp** command displays a list of diagnostic commands.

Operands

This command has the following operands:

<command>	Specifies the name of the command for which to display help information. This operand is optional.
p | -page	Displays help output with page breaks.
help	Displays the command usage.

Examples

To display a listing of commands for which help is available (with page breaks):

```
switch:admin> help -p
aaaconfig          Configure RADIUS for AAA services
ag                 Configure the Access Gateway feature
agshow             Displays the Access Gateway information
                   registered with the fabric
aliadd             Add a member to a zone alias
alicreate          Create a zone alias
alidelete          Delete a zone alias
aliremove          Remove a member from a zone alias
alishow            Print zone alias information
aptpolicy          Get and set Advanced Performance
                   Tuning policy
auditcfg           Modifies and displays audit log filter
                   configuration.
auditdump          Display audit log
(output truncated)
```

To search for the string "zone" while paging is enabled (enter /zone after issuing the command):

```
switch:admin> help -p
aaaconfig          Configure RADIUS for AAA services
ag                 Configure the Access Gateway feature
agshow             Displays the Access Gateway information
                   registered with the fabric
aliadd             Add a member to a zone alias
alicreate          Create a zone alias
alidelete          Delete a zone alias
aliremove          Remove a member from a zone alias
alishow            Print zone alias information
aptpolicy          Get and set Advanced Performance Tuning
                   policy
auditcfg           Modifies and displays audit log filter
                   configuration.
auditdump          Display audit log
authutil           Get and set  configuration
backplanetest      Backplane connection test for multi-blade
                   systems.
backport           Test for back-end ASIC pair to ASIC pair links.
bannerset          Set security banner
bannershow         Display security banner
Type <CR> or <SPACE BAR> to continue, <q> to stop
/zone
aliadd             Add a member to a zone alias
alicreate          Create a zone alias
alidelete          Delete a zone alias
aliremove          Remove a member from a zone alias
alishow            Print zone alias information
aptpolicy          Get and set Advanced Performance Tuning policy
auditcfg           Modifies and displays audit log filter
                   configuration.
```

```
(output truncated)
```

To filter the output with the **grep** command:

```
switch:admin> help | grep errshow
errshow            Print error log
porterrshow        Print port  summary
switch:admin>
```

See Also

diagHelp, routeHelp, zoneHelp

history

Displays shell history.

Synopsis

h

history

Description

Use this command to view the shell history. The shell history mechanism is similar to the UNIX shell history facility. The **h** command displays the 20 most recent commands typed into the shell; the oldest commands are replaced as new ones are entered.

Operands

None

Examples

To display previous shell commands:

```
switch:admin> h
1 version
2 switchshow
3 portdisable 2
4 portenable 2
5 switchshow
```

See Also

None

historyLastShow

Displays the latest entry in the field replaceable unit (FRU) history log.

Synopsis

historylastshow

Description

Use this command to display the latest entry of the history log, which records insertion and removal events for field-replaceable units (FRUs), such as blades, power supplies, fans, and world wide name (WWN) cards. The type of FRU supported depends on the hardware platform.

Each history record contains three lines of information. The first line of each record contains the following fields:

Object type	On standalone platforms: FAN, POWER SUPPLY, WWN (WWN card), or UNKNOWN. On enterprise-class platforms: FAN, POWER SUPPLY, CORE BLADE (core switch blade), AP BLADE (application processor), SW BLADE (port blade), CP BLADE (control processor), WWN (WWN card), or UNKNOWN.
Object number	Slot number for blades. Unit number for all other object types.
Event type	Inserted, Removed, or Invalid.
Time of the event	Format: *Day Month dd hh:mm:ss yyyy,*

The second and third lines of a record contain the factory part number and factory serial number, if applicable.

Factory Part Number	x*x-yyyyyyy-zz* or Not available.
Factory Serial Number	*xxxxxxxxxxxx* or Not available.

The size of the history log depends on the hardware platform.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the late FRU insertion or removal event:

```
switch:admin> historylastshow

POWER SUPPLY  Unit 2    Inserted at Tue Aug 14 15:52:10 2001
Factory Part Number:    60-0001536-02
Factory Serial Number:  1013456800

Records:  11
```

See Also

historyShow

historyMode

Displays the mode of the field replaceable unit (FRU) history log.

Synopsis

```
historymode
```

Description

Use this command to display the mode of the history buffer, which records the insertion and removal of FRUs on a switch or chassis.

This command supports two modes of handling new log entries once the history buffer has reached its maximum size:

Rotating mode	Any new entry exceeding the maximum buffer size overwrites the oldest entry in the log. This is the default mode.
First-in mode	Any new entry exceeding the maximum buffer size is discarded. The original entries in the buffer is preserved.

The history mode is a factory setting that cannot be modified. The size of the history buffer depends on the hardware platform.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the mode of the history log:

```
switch:admin> historymode

History Mode is: Rotating.
```

See Also

historyLastShow, historyShow

historyShow

Displays the entire field replaceable unit (FRU) history log.

Synopsis

```
historyshow
```

Description

Use this command to display the entire history log, which records insertion and removal events for field-replaceable units (FRUs), such as blades, power supplies, fans, and world wide name (WWN) cards. The type of FRU supported depends on the hardware platform.

Each history record contains three lines of information. The first line of each record contains the following:

Object type	On standalone platforms: FAN, POWER SUPPLY, WWN (WWN card), or UNKNOWN. On enterprise-class platforms: FAN, POWER SUPPLY, CORE BLADE (core switch blade), SW BLADE (port blade), AP BLADE (application processor), CP BLADE (control processor), WWN (WWN card), or UNKNOWN.
Object number	Slot number for blades. Unit number for all other object types.
Event type	Inserted, Removed, or Invalid

Time of the event Format: *Day Month dd hh:mm:ss yyyy*

The second and third lines of a record contain the factory part number and factory serial number, if applicable:

Factory Part Number *xx-yyyyyyy-zz* or Not available
Factory Serial Number *xxxxxxxxxxxx* or Not available

The size of the history buffer depends on the HW platform.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the history log of FRUs and removal events on a standalone switch:

```
switch:admin> historyshow

FAN  Unit 3             Removed at Tue Aug 14 10:05:37 1970
Factory Part Number:    20-123456-12
Factory Serial Number:  1013456800

POWER SUPPLY  Unit 1    Inserted at Tue Aug 14 10:52:10 1970
Factory Part Number:    60-0001536-02
Factory Serial Number:  Not Available

FAN  Unit 3             Inserted at Tue Aug 14 10:23:45 2001
Factory Part Number:    20-123456-12
Factory Serial Number:  1013456800

WWN  Unit 1             Inserted at Tue Aug 14 11:03:45 2001
Factory Part Number:    40-0000031-03
Factory Serial Number:  1013456800

SW BLADE  Slot 3        Removed at Tue Aug 14 12:10:09 2001
Factory Part Number:    60-0001532-03
Factory Serial Number:  1013456800

CP BLADE  Slot 6        Removed at Tue Aug 14 13:45:07 2001
Factory Part Number:    60-0001604-02
Factory Serial Number:  FP00X600128

SW BLADE  Slot 3        Inserted at Tue Aug 14 13:53:40 2001
Factory Part Number:    60-0001532-03
Factory Serial Number:  1013456800

CP BLADE  Slot 6        Inserted at Tue Aug 14 13:59:50 2001
Factory Part Number:    60-0001604-02
Factory Serial Number:  FP00X600128
```

```
POWER SUPPLY  Unit 2    Inserted at Tue Aug 14 15:52:10 2001
Factory Part Number:    60-0001536-02
Factory Serial Number:  1013456800

Records:  11
```

See Also

historyLastShow

iflShow

Displays the inter-fabric link (IFL) information.

Synopsis

```
iflshow
iflshow --help
```

Description

Use this command to display the current connection and information of the inter-fabric links (IFL) on an edge switch. The command output includes the following information:

E-Port	Port number of the local switch to which FC Router switch is connected
EX-Port	Port Number of FC Router switch
FCR WWN	WWN of the FC Router switch
FCR FID	Fabric ID of FC Router switch
FCR Name	Switch name of FC Router
Speed	IFL connection speed, if applicable. Connection speed not applicable to VE_Ports. For these port types, speed displays as '-'.
BW	Bandwidth of the link.

- TRUNK - Trunking enabled, if applicable
- QOS - QoS enabled, if applicable
- ENCRYPT - Encryption enabled, if applicable
- COMPRESS - Compression enabled, if applicable
- CR_RECOV - Credit recovery enabled, if applicable
- FEC - Forward Error Correction enabled, if applicable
- IFL cable distance

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

--help	Displays the command usage.

Examples

To display the inter-fabric links:

```
switch:admin> iflshow
   E-   EX-       FCR WWN            FCR  FCR                Speed  BW
#  Port Port                         FID  Name
--------------------------------------------------------------------------------
1: 2->  20   10:00:d8:1f:cc:5a:f0:ae 112  g720_c5d_62         32G   32G TRUNK QOS CR_RECOV FEC
2: 4-> 117   10:00:00:27:f8:f3:fb:b3 112  x74_c5abcd_14_f12   64G   64G TRUNK QOS CR_RECOV FEC
3:33->  81   10:00:c4:f5:7c:02:43:c9 112  g730_g5b_x66_f10    32G   64G TRUNK QOS CR_RECOV FEC
```

See Also

fcrFabricShow

iodReset

Disables in-order delivery (IOD) on a switch.

Synopsis

```
iodreset [--help]
```

Description

Use this command to disable in-order delivery enforcement on the local switch. IOD is disabled by default, and can only be disabled after it has been enabled with the **iodSet** command. This command disables the legacy IOD enforcement only.

Disabling IOD allows faster rerouting after a fabric topology change, but it may cause out-of-order delivery of frames during fabric topology changes.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

--help	Displays the command usage.

Examples

To disable IOD enforcement:

```
switch:admin> iodreset
IOD is not set
```

See Also

iodSet, iodShow

iodSet

Enables in-order delivery (IOD).

Synopsis

```
iodset [--help]
```

Description

Use this command to enforce in-order delivery of frames during a fabric topology change.

In a stable fabric, frames are always delivered in order, even when the traffic between switches is shared among multiple paths. However, when topology changes occur in the fabric (for instance, a link goes down), traffic is rerouted around the failure and some frames might be delivered out of order. This command ensures that frames are not delivered out-of-order, even during fabric topology changes. It enforces a sufficient delay between the event that causes an existing path to be removed and the establishment of a new path, so that frames are delivered in order. However, this also means that frames are dropped during the delay, causing I/O failures.

When used without operands, **iodSet** enables in-order-delivery of frames on a switch (legacy IOD behavior). Frame loss is unavoidable when a port goes down.

IOD is disabled by default. Use **iodShow** to display current settings. Use **iodReSet** to restore the default setting.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--help	Displays the command usage.

Examples

To display the default legacy IOD setting:

```
switch:admin> iodshow

IOD is not set
```

To enable IOD:

```
switch:admin> iodset

IOD is set
```

See Also

iodShow, iodReset

iodShow

Displays the in-order delivery (IOD) setting.

Synopsis

```
iodshow [--help]
```

Description

Use this command to display the IOD setting on the switch. By default, IOD is disabled.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

--help	Displays the command usage.

Examples

To display the current setting of the IOD setting:

```
switch:admin> iodshow

IOD is not set
```

See Also

None

ipAddrSet

Sets the Ethernet and FC IP addresses.

Synopsis

```
ipaddrset {-cp <cp_number> | -chassis}
ipaddrset
ipaddrset -ipv4 -add -ethip <ipaddress> [-ethmask <mask>]
     [-gwyip <gateway_ip>] [-dhcp OFF]
ipaddrset -ipv4 -add -gwyip <gateway_ip> [-dhcp OFF]
ipaddrset -ipv4 -add -dhcp {ON | OFF}
ipaddrset -ipv6 {--add <x:x:x:x:x:x:x/n> | --delete}
ipaddrset -ipv6 {-add | -del} -gwyip <gateway_ip>
ipaddrset -ipv6 {-auto | -noauto}
ipaddrset -ipv6 {-dhcpv6 | -nodhcpv6}
ipaddrset -ipv6 {-ddns | -noddns} [-force]
ipaddrset -ls <FID> {--add <IPv4_address/prefix> |
 --delete}
ipaddrset --clear
ipaddrset -ipv4 -add -cp <cp_number> -ethip <ipaddress>
     [-ethmask <mask>] [-gwyip <gateway_ip>]
     [-dhcp OFF]
```

```
ipaddrset -ipv4 -add -cp <cp_number> -gwyip <gateway_ip>
ipaddrset -ipv4 -add -chassis -ethip <ipaddress>
     [-ethmask <mask>] [-dhcp OFF]
ipaddrset -ipv4 -add -cp <cp_number> -host <name>
ipaddrset -ipv4 -add {-cp <cp_number> | -chassis}
 -dhcp {ON | OFF}
ipaddrset -ipv6 {--add <x:x:x:x:x:x:x/n> | --delete}
     {-cp <cp_number> | -chassis}
ipaddrset -ipv6 {-add | -del} -gwyip <gateway_ip>
     {-cp <cp_number> | -chassis}
ipaddrset -ipv6 {-auto | -noauto}
ipaddrset -ipv6 {-dhcpv6 | -nodhcpv6}
ipaddrset -ipv6 {-ddns | -noddns} [-force]
ipaddrset -ls <FID> {--add <IPv4_address/prefix> |
 --delete}
ipaddrset --clear
```

Description

Use this command to configure the IP addresses on a switch, a control processor (CP) or a standalone application processor (AP). On platforms that support Logical Fabrics, this command configures the IPv4 Fibre Channel addresses for the logical fabric IPFC network interface. The IPFC (IP over Fibre Channel) protocol allows switches to send IP traffic over Fibre Channel rather than through Ethernet connections.

Any update to the **ipAddrSet** command will validate if RON has been set, and the command fails unless RON is set.

This command supports an interactive legacy mode and a command line interface. Use the command line interface to configure IPv6 addresses, IPv6 gateway, to enable or disable stateless IPv6 autoconfiguration, to assign a Fibre Channel IPv4 address and prefix to a logical switch IPFC network interface, and to clear all IP configurations. When run interactively in legacy mode, this command sets the Ethernet IPv4 address, subnet mask, and Gateway on a switch or a chassis.

Command usage depends on the type of IP address and on the platform on which the command is run. Some of the platform- and IP address-specific features of the command are outlined below. For complete details, refer to the *Brocade Fabric OS Administration Guide*.

Configuring IP Addresses using the command line interface

- The command accepts the **-ipv6** command line syntax with the **--add** or **--delete** option on all platforms that support IPv6 addresses. The **--add** option configures a single static IPv6 address and prefix for the specified managed entity (chassis, CP, or AP). The **--delete** option deletes a static IPv6 address and prefix for the specified managed entity. On modular platforms, the command can be executed only on the active CP.
  - When using the command line syntax to add or delete IPv6 addresses, the managed entity is identified only on modular platforms. To set the CP IPv6 address, use the **-cp**option; to set the IP address for the entire chassis, use the **-chassis** option.
  - When using the command line syntax to add or delete IPv6 addresses on standalone platforms, the implied entity is the single managed entity supported by the platform and must be left unspecified.
- Use the **-auto** and **-noauto** options to enable or disable stateless IPv6 autoconfiguration.
- Use the **-gwyip** operand with the **--add** or **--del** option to add or delete IPv6 gateway address.
- Use the **-ls** option with appropriate arguments to set or delete the IPv4 Fibre Channel address and prefix for the IPFC interface of a logical switch. In a Virtual Fabric environment, each logical fabric is represented by a separate IPFC network interface. Each of these network interfaces can be assigned a unique IPv4 FC address and prefix. The logical switches that make up a logical fabric are identified by the fabric ID (FID) that is assigned to each of the logical switch instances.

When setting the IPFC interface of a switch that is not in Virtual Fabric mode, use the **-ls** option with FID 128. FID 128 identifies the switch when Virtual Fabrics are disabled.

Setting IP addresses interactively (IPv4 Ethernet address only):

- To set the CP Ethernet IPv4 address, use the **-cp** option; to set the Ethernet IP address for the entire chassis, use the **-chassis** option. When setting the chassis IP address, the command prompts for the Ethernet IP address and Ethernet subnet mask. When setting the CP Ethernet IP address, the command prompts for the host name, Ethernet IP address, Ethernet subnet mask, and Gateway IP address. Valid switch and CP numbers depend on the platform on which the command is run. The command must be executed on the active CP.
- The **ipAddrSet** command runs interactively if invoked without operands. The command prompts for the Ethernet IP address, Ethernet subnet mask, and Gateway IP address. In addition, the command prompts for a specification of whether the Dynamic Host Control Protocol (DHCP) should be used to acquire the Ethernet IP address, Ethernet subnet mask and Gateway IP address. Valid entries are "On" to enable DHCP and "Off" to disable it. When DHCP is enabled, any user-configured Ethernet IP address, Ethernet subnet mask or Gateway IP address is ignored.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

If the IP address is changed while there is an Ethernet connection, connectivity may be lost. The reason for this is explained in detail in the *Brocade Fabric OS Administration Guide*. If this happens, take one of the following actions to recover the interface:

- Unplug the network cable, wait 5 seconds, and then plug it back in.
- Perform a High Availability (HA) failover routine or hareboot for fixed port switches.
- Power down the switch and then power it back up again.
- Re-establish new Telnet or SSH sessions for the disconnected session after IP address change.

Operands

When used in command line mode, the following operands are supported:

-Ipv6	Specifies IP address type as static IPv6 including prefix as needed.	
	--add ***<x:x:x:x:x:x:x/n>***	Sets the specified IPv6 address.
	--delete	Deletes the statically configured IPv6 address.
	-cp <*cp_number*>	Specifies the CP on a chassis. Valid values are **0** or **1**.
	-chassis	Specifies the chassis configuration.
	-gwyip ***<gateway_ip>***	Specifies the IPv6 gateway address.
	-ipv6 [-auto | -noauto]	Enables or disables stateless IPv6 autoconfiguration on a switch or chassis. When autoconfiguration is enabled, the host automatically performs configuration of IPv6 addresses and periodic nondisruptive reconfiguration. By default, autoconfiguration is disabled.
	-ls *<FID>*	Specifies the logical fabric ID for which to configure an IPFC network interface. The FID is a decimal number. A switch that is not in Virtual Fabric mode uses the -ls parameter with *FID* 128 (the effective, single Logical Fabric number on such switches) to set the IPv4 FC address. Note that setting the IP address for the logical switch is only for the IPFC interface, not for the Ethernet interface.

--add Assigns a specified IPv4 FC address and prefix to the logical switch instance represented by the specified FID. This command replaces any existing FC IPv4 address.

<IPv4_address/prefix> Specifies the IPv4 address and prefix for the IPFC network interface. The IP Address is represented by a dotted decimal number, followed by a slash and a prefix. This operand is required with the **--add** option.

--delete Deletes the IPv4 FC address and prefix from a logical switch.

-ls <*IFID*> Specifies the fabric ID that identifies the logical switch for which to delete the FC IPv4 address and prefix. This operand is required when deleting an FC IPv4 address from a logical switch. On a switch that is not in Virtual Fabric mode, use the **-ls** parameter with *FID* 128 (the effective, single Logical Fabric number on such switches) to delete the IPv4 FC address.

When used interactively to configure IPv4 addresses on a modular platform, ipAddrSet prompts for the following parameters:

-cp <*cp_number*> Specifies the managed entity as a CP. Valid values include the following:

- **0** Sets the Ethernet IP address, Ethernet subnet mask, gateway IP address and host name of CP0.
- **1** Sets the Ethernet IP address, Ethernet subnet mask, gateway IP address and host name of CP1.

-chassis Specifies the managed entity as the chassis.
-ipv4 Specifies IP address type as static IPv4.
-add Sets the specified IPv4 address.
-host <*hostname*> Sets the hostname.
-ethip <*ipaddress*> Sets the ethernet IP address.
-ethmask <*mask*> Sets the ethernet mask.
-gwyip <*gateway_ip*> Sets the gateway IP address.
-dhcp[ON | OFF] Enables or disables DHCP.
-dhcpv6 Enables DHCPv6.
-nodhcpv6 Disables DHCPv6.
--clear Clears all IP (IPv4 and IPv6) addresses on a management interface.
--help Displays command usage.

Examples

To configure an IPv6 address and prefix on a standalone platform:

```
switch:admin> ipaddrset -ipv6 --add  \
     fec0:60:69bc:60:260:69ff:fed0:107/64
```

To configure an IPv6 address and prefix on a single CP of a chassis:

```
switch:admin> ipaddrset -cp 0 -ipv6 --add  \
     1080::8:800:200C:417A/64
```

To delete any existing IPv6 address and prefix on CP0 on an enterprise-class platform:

```
switch:admin> ipaddrset cp 0 -ipv6 --delete
```

To configure an IPv4 FC address for the IPFC interface associated with a logical switch with fabric ID 123:

```
switch:admin> ipaddrset -ls 123 --add xx.x.x.x/xx
IP address is being changed...Done.
```

To verify the IPv4 FC address for the logical switch:

```
switch:admin> ipaddrshow

CHASSIS
Ethernet IP Address: xx.xx.xxx.xx
Ethernet Subnetmask: xxx.xxx.xxx.x

CP0
Ethernet IP Address: xx.xx.xxx.xx
Ethernet Subnetmask: xxx.xxx.xxx.x
Host Name: cp0
Gateway IP Address: xxx.xxx.xxx.x

CP1
Ethernet IP Address: xx.xx.xxx.xx
Ethernet Subnetmask: xxx.xxx.xxx.x
Host Name: cp1
Gateway IP Address: xxx.xxx.xxx.x
IPFC address for logical fabric ID 128: xxx.xxx.xxx.x/xx
```

To delete the IPv4 address for the IPFC interface associated with a logical switch with Virtual Fabric ID 67:

```
switch:admin> ipaddrset -ls 67 --delete
IP address is being changed...Done.
```

To configure an IPv4 FC address for the IPFC interface associated with a switch that is not in Virtual Fabric mode:

```
switch:admin> ipaddrset -ls 128 --add xx.xx.xx.xx/xx
IP address is being changed...Done.
```

To verify the changes:

```
switch:admin> ipaddrshow

SWITCH
Ethernet IP Address: xx.xx.xx.xx
Ethernet Subnet mask: xxx.xxx.xxx.x
Gateway IP Address: xx.xx.xx.xx
DHCP: Off
IPFC address for virtual fabric ID 128: xx.xx.xx.xx/24
IPv6 Autoconfiguration Enabled: No
Local IPv6 Addresses:
dhcpv6 xxxx:xxx:x:xxxx::xxxx/xxx preferred
link local xxxx::xxxx:xxxx:xxxx:xxxx/xx
IPv6 Gateways:
stateless fe80::135
DHCPv6: On
```

To set the IPv4 address details for a switch chassis in interactive mode:

```
switch:admin> ipaddrset -chassis
DHCP [On]:Off
Ethernet IP Address [xx.xx.xx.xx]:
Ethernet Subnet mask [xxx.xxx.xxx.x]:
IP address is being changed...
Done.
```

To enable DHCP on a standalone, non-AP platform:

```
switch:admin> ipaddrset
DHCP [Off]:On
IP address is being changed...
Done.
```

To enable DHCPv6 on a device:

```
switch:admin> ipaddrset -ipv6 -dhcpv6
```

To clear all IP address information on a management interface and verify the changes:

```
switch:admin> ipaddrset --clear
Warning: All management interface will be closed, \
   which will result in all network connections \
   being terminated.
Please initiate a connection to the serial console of \
   the switch to configure the management interface.
Would you like to continue with clearing the IP \
   configuration?(y/n)y
switch:admin> ipaddrshow
CHASSIS
Ethernet IP Address: none
Ethernet Subnetmask: none

CP0
Ethernet IP Address: none
Ethernet Subnetmask: none
Host Name: cp0
Gateway IP Address: none

CP1
Ethernet IP Address: none
Ethernet Subnetmask: none
Host Name: cp1
Gateway IP Address: none
```

See Also

ipAddrShow

ipAddrShow

Displays IP address information for a switch or control processor (CP).

Synopsis

```
ipaddrshow
ipaddrshow [-cp <cp_number> | -chassis |
 --help | -h]
```

Description

Use this command to display the IP addresses configured in the system.

The **-cp** option displays the IP address for a specified CP on modular platforms, or use the command without arguments to display the IP address on a standalone switch, or the IP addresses for both CPs on a chassis.

On a standalone switch, the command displays the following information:

- Ethernet IP Address
- Ethernet Subnet mask
- The Gateway IP Address
- Dynamic Host Control Protocol (DHCP): on or Off
- IPv6 Autoconfiguration Enabled: Yes or No
- Local IPv6 Addresses
- IPv6 Gateway address
- DHCPv6: on or off
- IPv6 DDNS configuration: on or off

On modular platforms, the command displays the following information:

For the chassis:

- Ethernet IP Address
- Ethernet Subnet mask

For each CP:

- Ethernet IP Address
- Ethernet Subnet mask
- Host Name
- Gateway IP Address
- Dynamic Host Control Protocol (DHCP)

If the IPFC network interface is configured for logical switches:

- IPFC address for Virtual Fabric ID
- IPFC subnet mask for Virtual Fabric ID

IPv6 Autoconfiguration Enabled

DHCPv6 Configuration Enabled

All local Ipv6 addresses of chassis and CP

Gateway IP addresses for both CPs

Local IPv6 addresses display the following identifiers:

- IP Address type:

  - **static** - A statically configured IPv6 address.
  - **stateless** - Acquired through stateless autoconfiguration.
  - **dhcpv6** - Acquired through stateful DHCPv6 configuration
- IP Address state:
  - tentative
  - preferred
  - deprecated

IPv6 DDNS configuration: on or off

Refer to the RFC 2462 specification for more information.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-cp <*cp_number*>	On dual-CP systems, specifies the CP card number to be displayed (0 or 1).
-chassis	On dual-CP systems, displays the IP addresses for the chassis.
--help | -h	Displays the command usage.

Examples

To display the IP addresses for a switch:

```
switch:admin> ipaddrshow
SWITCH
Ethernet IP Address           : xx.xx.xx.xx
Ethernet Subnet mask          : xx.xx.xx.xx
Gateway IP Address            : xx.xx.xx.xx
DHCP                          : On
IPv6 Autoconfiguration Enabled: Yes
Local IPv6 Addresses:
 static xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx/xx preferred
 dhcpv6 xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx/xx preferred
 stateless xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx/xx preferred
 link local xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx/xx
IPv6 Gateways:
 static xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx
 stateless xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx
DHCPv6                        : On
IPv6 DDNS                     : On
```

To display the IP addresses for a chassis:

```
switch:admin> ipaddrshow -chassis
CHASSIS
Ethernet IP Address           : xx.xx.xx.xx
Ethernet Subnet mask          : xx.xx.xx.xx
CP0
Ethernet IP Address           : xx.xx.xx.xx
```

```
Ethernet Subnet mask          : xx.xx.xx.xx
Host Name                     : cp0
Gateway IP Address            : xx.xx.xx.xx
CP1
Ethernet IP Address           : xx.xx.xx.xx
Ethernet Subnet mask          : xx.xx.xx.xx
Host Name                     : cp1
Gateway IP Address            : xx.xx.xx.xx
DHCP                          : Off
IPv6 Autoconfiguration Enabled: No
Local IPv6 Addresses          :
 chassis 0 static xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx/xx preferred
 chassis 0 stateless xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx/xx preferred
 chassis 0 dhcpv6 xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx/xx preferred
IPv6 Gateways                 :
DHCPv6                        : On
IPv6 DDNS                     : Off
```

To display only the IP addresses for CP 0:

```
switch:admin> ipaddrshow -cp 0
CP0
Ethernet IP Address           : xx.xx.xx.xx
Ethernet Subnet mask          : xx.xx.xx.xx
Host Name                     : cp0
Gateway IP Address            : xx.xx.xx.xx
DHCP                          : On
IPv6 Autoconfiguration Enabled: Yes
Local IPv6 Addresses:
 cp 0 link local xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx/xx
 cp 0 static xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx/xx preferred
 cp 0 stateless xxxx:xxxx:xxxxx:xxxx:xxxx:xxxx:xxxx:xxxx/xx preferred
 cp 0 dhcpv6 xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx/xx preferred
IPv6 Gateways:
 cp 0 static xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx
 cp 0 stateless xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx
DHCPv6                        : On
IPv6 DDNS                     : Off
```

To display only the IP addresses for CP 1:

```
switch:admin> ipaddrshow -cp 1
CP1
Ethernet IP Address           : xx.xx.xx.xx
Ethernet Subnet mask          : xx.xx.xx.xx
Host Name                     : cp1
Gateway IP Address            : xx.xx.xx.xx
DHCP                          : On
IPv6 Autoconfiguration Enabled: Yes
Local IPv6 Addresses          :
 cp 1 link local xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx/xx
 cp 1 static xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx/xx preferred
 cp 1 stateless xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx/xx preferred
 cp 1 dhcpv6 xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx/xx preferred
```

```
IPv6 Gateways                 :
 cp 1 stateless xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx
 cp 1 static xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx
DHCPv6                        : On
IPv6 DDNS                     : Off
```

See Also

ipAddrSet

ipfilter

Manages the IP filter policies.

Synopsis

```
ipfilter --create <policyname> -type {ipv4 | ipv6}
ipfilter --clone <policyname> -from <src_policyname>
ipfilter --show [-a] [<policyname>]
ipfilter --save [<policyname>]
ipfilter --activate <policyname>
ipfilter --delete <policyname>
ipfilter --addrule <policyname> -rule <rulenumber> -sip
     <source_IP> -dp <destination_port> -proto {tcp | udp}
 -act {permit | deny}[-dip <destination_IP>]
ipfilter --delrule <policyname> -rule <rulenumber>
ipfilter --transabort
ipfilter --default
ipfilter --help
```

Description

Use this command to manage IP filter policies. The **ipfilter** command and command options are noninteractive, except when prompting for a confirmation.

The IP filter policy sets up a packet filtering firewall to provide access control on the management IP interface. The IPv4 and IPv6 policies are either in the defined configuration or in the active configuration.

Excluding the default policies, there can be a maximum of six custom policies in the defined configuration and one policy per IPv4 and IPv6 type in the active configuration.

The active policy must be the default policy or one of the policies in the defined configuration. Only the active policies are enforced. All of the **ipfilter** options except **--show** and **--transabort**, create a transaction owned by the management session initiating the commands.

An open transaction prevents other transactions from being created on different management sessions. The **--create**, **--clone**, **--delete**, **--addrule**, and **--delrule** operands modify policies in memory buffer, while operands, **--save** and **--activate** commit policies to the persistent configuration. The operands, **--save** and **--activate**, implicitly end the transaction if all policy changes are committed in the current session. The operand **--transabort** explicitly ends an open transaction and aborts policy changes in memory buffer. Closing the management session that owns the transaction also aborts policy changes and closes the transaction.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

In a Virtual Fabric environment, IP Filter policies are treated as chassis-wide configurations and apply to all logical switches in the chassis. Chassis permissions are required to manage IP Filter policies.

Operands

This command has the following operands:

<*policyname*>	Specifies an IP filter policy name. The policy name is a unique string composed of a maximum of 20 alphanumeric or underscore characters. The default_ipv4 and default_ipv6 names are reserved for default IP filter policies. The policy name is case-insensitive and is always stored as lower case. The policy type identifies the policy as an IPv4 or IPv6 filter. You can create a maximum of eight IP filter policies.
--create <*policyname*> -type {ipv4 | ipv6}	Creates an IP filter policy with the specified name and type. The policy created is stored in a temporary buffer and is lost if the policy is not saved to the persistent configuration.
--clone <*policyname*> -from <*src_policyname*>	Creates a replica of an existing IP filter policy. The cloned policy is stored in a temporary buffer and has the same rules as the original policy.
--show [-a] [<*policyname*>]	Displays the IP filter policy content for the specified policy name or all IP filter policies if *policyname* is not specified. For each IP filter policy, the policy name, type, persistent state, and policy rules are displayed. The policy rules are listed by the rule number in ascending order. The **-a** option displays the traffic type and the configured destination IP. Command output displays without pagination. Use *command* | **more** to display the output with page breaks. If a temporary buffer exists for an IP filter policy, the **--show** operand displays the content in the temporary buffer, with the persistent state set to modified defined or modified active.
--save [<*policyname*>]	Saves one or all IP filter policies persistently as the defined configuration. This operand is optional. If a policy name is specified, only the specified IP filter policy in the temporary buffer is saved; otherwise, all IP filter policies in the temporary buffer is saved. Only the CLI session that owns the updated temporary buffer can run this command. Modification to an active policy cannot be saved without being applied. Therefore, the **--save** option is blocked for the active policies; instead use the **--activate** option.
--activate <*policyname*>	Activates the specified IP filter policy. IP filter policies are not enforced until they are activated. Only one IP filter policy per IPv4 and IPv6 type can be active. If there is a temporary buffer for the policy, the policy is saved to the defined configuration and activated at the same time. If there is no temporary buffer for the policy, the policy existing in the defined configuration becomes active. The policy to be activated replaces the existing active policy of the same type. Activating the default IP filter policies returns the IP management interface to its default state. An IP filter policy without any rule cannot be activated. This operand prompts for confirmation before proceeding.
--delete <*policyname*>	Deletes the specified IP filter policy. Deleting an IP filter policy removes it from the temporary buffer. To permanently delete the policy from the persistent database, issue the **ipfilter --save** command. An active IP filter policy cannot be deleted.
--addrule <*policyname*>	Adds a new rule to the specified IP filter policy. The change made to the specified IP filter policy is not saved to the persistent configuration until saved or activated. The following arguments are supported with the **--addrule** option: **-sip <*source_IP*>** — Specifies the source IP address. For filters of type IPv4, the address must be a 32-bit address in dot notation, or a CIDR-style IPv4 prefix. For filters of type IPv6, the address must be a 128-bit IPv6 address in any format specified by RFC3513, or a CIDR-style IPv6 prefix. The source IP option is not supported for FORWARD traffic. **-dp <*destination_port*>** — Specifies the destination port number, a range of port numbers, or a service name. Note that blocking or permitting of port from 1 through 65535 is allowed. These ports are used by various applications and services on the switch. **-proto <*protocol*>** — Specifies the protocol type, for example, *tcp* or *udp*. **-act {permit | deny}** — Specifies the permit or deny action associated with this rule. Blocking or permitting of port from 1 through 65535 is allowed.

-rule <*rulenumber*>	Adds a new rule at the specified rule index number. The rule number must be between 1 and the current maximum rule number plus one and you can also set a rule for a range of ports.
-dip <*destination_IP*>	Specifies the destination IP address. For filters of type IPV4, the address must be a 32-bit address in dot notation, or a CIDR-style IPv4 prefix. For filters of type IPv6, the address must be in a 128-bit IPv6 address in any format specified by RFC3513, or a CIDR-style IPv6 prefix.
--delrule <*policyname*> -rule <*rulenumber*>	Deletes a rule from the specified IP filter policy. Deleting a rule in the specified IP filter policy causes the rules following the deleted rule to shift up in rule order. The change to the specified IP filter policy is not saved to the persistent configuration until it is saved or activated.
--transabort	A transaction is associated with a CLI or manageability session, which is opened implicitly when you execute the **--create**, **--addrule** and **--delrule** subcommands. The **--transabort** command explicitly ends the transaction owned by the current CLI or manageability session. If a transaction is not ended, other CLI or manageability sessions are blocked on the subcommands that would open a new transaction.
--default	Activates the default ipfilter policies and deletes all the custom policies.
--help	Displays the command usage.

Examples

To create an IP filter for a policy with an IPv6 address:

```
switch:admin> ipfilter --create ex1 -type ipv6
```

To add a new rule to the policy and specify the source IP address, destination port, and protocol, and to permit the rule:

```
switch:admin> ipfilter --addrule abc -rule 1 \
     -sip fec0:60:69bc:60:260:69ff:fe80:d4a -dp 65000  \
     -proto tcp -act permit
 switch:admin> ipfilter --addrule B_custom_ipv4 \
     -rule 10 -sip any -dp 1024-65535 -proto tcp -act deny
```

To display all existing IP filter policies:

```
switch:admin> ipfilter --show

Name: default_ipv4, Type: ipv4, State: active
Rule  Source IP      Protocol   Dest Port    Action
1     any            tcp         22          permit
2     any            tcp         23          permit
3     any            tcp         80          permit
4     any            tcp        443          permit
5     any            udp        161          permit
6     any            udp        123          permit
7     any            tcp        600 - 1023   permit
8     any            udp        600 - 1023   permit

Name: default_ipv6, Type: ipv6, State: active
Rule    Source IP   Protocol    Dest Port   Action
1     any           tcp          22         permit
2     any           tcp          23         permit
3     any           tcp          80         permit
4     any           tcp         443         permit
5     any           udp         161         permit
6     any           udp         123         permit
```

```
7     any           tcp         600 - 1023  permit
8     any           udp         600 - 1023  permit
```

To activate the IP Filter policy "ex1":

```
switch:admin> ipfilter --activate ex1
```

To display al l IP Filter policies, including the activated policy:

```
switch:admin> ipfilter --show

Name: default_ipv4, Type: ipv4, State: active
Rule    Source IP            Protocol Dest Port  Action
1     any                    tcp       22        permit
2     any                    tcp       23        permit
3     any                    tcp       80        permit
4     any                    tcp      443        permit
5     any                    udp      161        permit
6     any                    udp      123        permit
7     any                    tcp      600 - 1023 permit
8     any                    udp      600 - 1023 permit

Name: default_ipv6, Type: ipv6, State: defined
Rule    Source IP           Protocol  Dest Port  Action
1     any                   tcp        22        permit
2     any                   tcp        23        permit
3     any                   tcp        80        permit
4     any                   tcp       443        permit
5     any                   udp       161        permit
6     any                   udp       123        permit
7     any                   tcp       600 - 1023 permit
8     any                   udp       600 - 1023 permit

Name: ex1, Type: ipv6, State: active
Rule    Source IP           Protocol   Dest Port Action
1 fec0:60:69bc:60:260:69ff:fe80:d4a tcp 23       permit
```

To create an IPv4-type IP filter policy:

```
switch:admin> ipfilter --create ex2 -type ipv4
```

To add a rule to the created policy "ex2":

```
switch:admin> ipfilter --addrule ex2 -sip 192.0.2.0 \
     -dp 23 -proto tcp -act permit
```

To display the IP filter policies, including the new policy:

```
switch:admin> ipfilter --show

Name: default_ipv4, Type: ipv4, State: active
Name: default_ipv4, Type: ipv4, State: active
Rule    Source IP            Protocol Dest Port  Action
1     any                    tcp       22        permit
2     any                    tcp       23        permit
3     any                    tcp       80        permit
4     any                    tcp      443        permit
```

```
5     any                    udp      161        permit
6     any                    udp      123        permit
7     any                    tcp      600 - 1023 permit
8     any                    udp      600 - 1023 permit

Name: ex2, Type: ipv4, State: defined (modified)
Rule    Source IP           Protocol   Dest Port Action
1     10.32.69.99           tcp        23        permit
```

To save the IP Filter policy "ex2" (the status of the policy changes from modified to defined after the policy is saved):

```
switch:admin> ipfilter --save ex2
switch:admin> ipfilter --show
Name: default_ipv4, Type: ipv4, State: active
Name: default_ipv4, Type: ipv4, State: active
Rule    Source IP            Protocol Dest Port  Action
1     any                    tcp       22        permit
2     any                    tcp       23        permit
3     any                    tcp       80        permit
4     any                    tcp      443        permit
5     any                    udp      161        permit
6     any                    udp      123        permit
7     any                    tcp      600 - 1023 permit
8     any                    udp      600 - 1023 permit

Name: ex2, Type: ipv4, State: defined
Rule    Source IP           Protocol   Dest Port Action
1     10.20.20.30            tcp       23        permit
```

To activate default ipfilter policies:

```
switch:admin> ipfilter --default
This will delete all custom IP filter policies, and
activate default ipfilter policies.
ARE YOU SURE  (yes, y, no, n): [no]
```

See Also

None

ipsArpTable

Displays runtime ARP information.

Synopsis

ipsArpTable --show [**-ipAddress** <*IP_address*>]
[**-macAddress** <*xx:xx:xx:xx:xx:xx*>]
[**-vrfID** <*vrfID*>]
ipsArpTable --help

Description

This command is used to display both user-defined ARP entries and dynamically learned ARP entries applied by the system.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-ipAddress ***<IP address>***	Specifies the IP address of the remote host.
-macAddress ***<xx:xx:xx:xx:xx:xx>***	Specifies the device MAC address.
-vrfID ***<vrfID>***	Specifies the VRF ID. Valid value ranges from 1 through 63.
--show	Displays runtime ARP information.
--help	Displays the command usage.

Examples

To display runtime ARP information:

```
switch:admin> ipsarptable --show
--------------------------------------------------------------------------------
ipAddress |macAddress       |interface|vrfID |vlanID|entryType|resolved|age |
--------------------------------------------------------------------------------
192.0.1.2 |9a:16:b0:ec:32:8d|229/7/22 |0     |101   |dynamic  |true    |0 |
192.0.1.3 |92:ad:1e:59:9d:1e|232/4/22 |0     |101   |dynamic  |true    |0 |
192.0.2.2 |ae:5f:cb:bb:c2:69|229/7/23 |1     |102   |dynamic  |true    |0 |
192.0.1.3 |fe:2d:34:86:54:a8|232/4/23 |1     |102   |dynamic  |true    |0 |
```

See Also

ipsInterface, ipsLag, ipsNeighborInfo, ipsPathVerify, ipsPing, ipsReachable, ipsRouteTable, ipsStaticArp, ipsStaticRoute, ipsTraceRoute, ipsVlan, ipsVrf, trafClass

ipsConfigurationSize

Displays the configuration database size.

Synopsis

```
ipsConfigurationSize --show [-feature <featureName>]
     [-resturi]
 ipsConfigurationSize --help
```

Description

This command displays the supported configuration details like the maximum size in MB and the used size in percentage.

This command supports only ISNS feature.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--show Displays configuration size for all the supported feature.

- **-feature *<featureName>*** Provides configuration size details for the particular feature.
- **-resturi** Generates REST URI with body in JSON format.

--help Displays the command usage.

Examples

To display the configuration details:

```
switch:admin> ipsConfigurationSize --show

-----------------------------------
feature|maximumSize|usedPercentage|
-----------------------------------
iSNS   |  2.00 MB  | 60.25 %      |
```

To display the configuration size details for the particular feature:

```
switch:admin> ipsConfigurationSize --show -feature iSNS

-----------------------------------
feature|maximumSize|usedPercentage|
-----------------------------------
iSNS   |  2.00 MB  | 90.10 %      |
```

To display the details with REST URI in JSON format:

```
switch:admin> ipsConfigurationSize --show
-feature iSNS -resturi

-----------------------------------
feature|maximumSize|usedPercentage|
-----------------------------------
iSNS   |  2.00 MB  | 90.10 %      |

REST URI:
GET    /rest/running/ipStorage/configurationSize/feature/iSNS?vf-id=20
BODY:
None
```

See Also

isnsConfig, isnsDD, isnsDDSet, isnsShow

ipsDiag

Displays the statistics of the frames from the IP Storage diagnostics module.

Synopsis

```
ipsDiag --showFrameStats
 ipsDiag --help
```

Description

This command displays the diagnostics information of the frames from the IP Storage diagnostics module.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--showFrameStats	Displays the statistics of the frames.
--help	Displays the command usage.

Examples

To display the frame statistics:

```
switch:admin> ipsdiag --showFrameStats

utFrames         : 8
inFrames         : 8
outRequestFrames : 8
inResponseFrames : 7
inRequestFrames  : 0
outResponseFrames: 0
inDroppedFrames  : 0
outTimedoutFrames: 1
```

See Also

ipsArpTable, ipsInterface, ipsLag, ipsNeighborInfo, ipsPathVerify, ipsPing, ipsReachable, ipsRouteTable, ipsStaticArp, ipsStaticRoute, ipsTraceRoute, ipsVlan, ipsVrf

ipsInterface

Manages native VLAN configuration for Ethernet ports and LAG interfaces.

Synopsis

```
ipsInterface --config {<domain>/<slot>/<port>
     | <domain>/LAG<key>} -nativeVlanID <vlanID>
 ipsInterface --default {<domain>/<slot>/<port>
```

```
    |<domain>/LAG<key>}
ipsInterface --show [-interface {<domain>/<slot>/<port>
    |<domain>/LAG<key>}]
ipsInterface --help
```

Description

Use this command to edit the native VLAN of an Ethernet port or LAG interface and to display interface information. Also verifies if the interface is already part of the VLAN.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--config	Edits the properties of the specified interface. In Fabric OS v9.2.1, the only value is the **nativeVlanID**. The following input validation checks are performed and any failure may result with no configuration changes. • The interface is present. • The interface is not part of a LAG.
--nativeVlanID <*vlan*>	Specifies the native VLAN ID. Valid value ranges from 2 through 3599.
<*domain*>/<*slot*>/<*port*> | <*domain*>/LAG<*key*>}	Specifies the domain or slot or port.
--default	Resets all interface properties to the default values. In Fabric OS v9.2.1, the only value is the **nativeVlanID**. Performs **The interface is present** input validation check alone.
--show	Displays the interface configuration record. Each record is automatically created and destroyed in the system. An interface configuration record is created for every Ethernet port and LAG within a given IPS VF switch partition. Interfaces are displayed only if the domain where they reside is present within the fabric.
--help	Displays the command usage.

Examples

To configure a native VLAN ID:

```
switch:admin> ipsinterface --config 1/0/33 -nativeVlanID 985
```

To reset interface properties to the default values:

```
switch:admin> ipsinterface --default 1/0/33
```

To display interface configuration record:

```
switch:admin> ipsinterface --show

-----------------------------------------------------------------------------------------
interface|operationalStatus|lagName   |protocolSpeed|allowedVlanId|nativeVlanId|lagTimeout|
-----------------------------------------------------------------------------------------
224/0/32 |ONLINE           |          |10-ge        |60           |0            |
224/0/40 |ONLINE           |          |25-ge        |50           |50           |
229/4/20 |LAG_ONLINE       |229/LAG1  |10-ge        |             |             |Long
```

```
229/4/21 |LAG_ONLINE       |229/LAG1  |10-ge        |             |             |Long
229/4/22 |LAG_ONLINE       |229/LAG1  |10-ge        |             |             |Long
229/4/23 |LAG_ONLINE       |229/LAG1  |10-ge        |             |             |Long
229/7/23 |OFFLINE          |          |0-ge         |80           |80           |
229/LAG1 |ONLINE           |          |40-ge        |101,50,60,70,|0            |
232/3/32 |LAG_CONFIGURED   |232/LAG1  |0-ge         |             |             |Long
232/3/33 |LAG_CONFIGURED   |232/LAG1  |0-ge         |             |             |Long
232/4/44 |ONLINE           |          |10-ge        |50,60,70,80  |50           |
232/LAG1 |OFFLINE          |          |0-ge         |102,103      |0            |
232/7/40 |ONLINE           |          |25-ge        |             |             |
232/LAG2 |ONLINE           |          |100-ge       |             |             |
```

See Also

ipsArpTable, ipsLag, ipsNeighborInfo, ipsPathVerify, ipsPing, ipsReachable, ipsRouteTable, ipsStaticArp, ipsStaticRoute, ipsTraceRoute, ipsVlan, ipsVrf, trafClass

ipsLag

Creates or deletes a LAG, manages the interface membership for a LAG, and displays LAG runtime and configuration information.

Synopsis

```
ipsLag --create <domain>/LAG<key>
     [-interfaces <domain>/<slot>/<port_range>
     [,<domain>/<slot>/<port_range>...]]
 ipsLag --delete <domain>/LAG<key>
 ipsLag --interfaceAdd <domain>/LAG<key>
 -interfaces <domain>/<slot>/<port_range>
     [,<domain>/<slot>/<port_range>...]
 ipsLag --interfaceRemove <domain>/LAG<key>
 -interfaces <domain>/<slot>/<port_range>
     [,<domain>/<slot>/<port_range>...]
 ipsLag --enable <domain>/LAG<key>
 ipsLag --disable <domain>/LAG<key>
 ipsLag --clearStatistics <domain>/LAG<key>
 ipsLag --show [-details] [-name <domain>/LAG<key> ]
 ipsLag --showStatistics [-details] [-name <domain>/LAG<key> ]
 ipsLag --help
```

Description

This command is used to create or delete a LAG, configure LAG admin status, manage interface membership for a LAG, and display LAG runtime information.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--create <*domain*>/ LAG<*key*>	Creates a LAG. The Domain ID (domain locality) and LAG ID are required while creating the LAG. Supports upto a maximum of 16 interfaces in a particular LAG. The LAG ID must be unique at a given domain. The port interface members can be added during creation or later.
-interfaces <*domain*>/<*slot*>/ <*port*>[,<*domain*>/ <*slot*>/<*port_range*>...]]	Specifies the interface or a range of interfaces.
--delete	Deletes a LAG configuration.
--interfaceAdd	Adds one or more interface member to a LAG. The input format must be <*domain*>/<*slot*>/<*port*>. The domain value must match that of the domainID value specified for the LAG.
--interfaceRemove	Removes one or all interface members from a LAG.
{--enable | --disable}	Manages the admin status setting for the LAG.
--clearStatistics	Clears the performance statistics associated with a given LAG.
{--show | --showStatistics}	Displays LAG configuration and operational status.
-details	Displays detailed information. This operand is optional.
-name <*domain*>/ LAG<*key*>	Specifies the LAG name. The LAG name format must be <*domainID*>/<*lag_Key*>. For example, LAG with key 5 on domain_id 10 and the value is 10/LAG5.
--help	Displays the command usage.

Examples

To create a LAG:

```
switch:admin> ipslag --create 1/LAG20
```

To delete a LAG:

```
switch:admin> ipslag --delete 1/LAG10
```

To add or remove interfaces:

```
switch:admin> ipslag --interfaceAdd 5/LAG20 -interfaces 5/0/33,5/0/34

switch:admin> ipslag --interfaceRemove 5/LAG20 -interfaces 5/0/33,5/0/34
```

To enable or disable status settings for the LAG:

```
switch:admin> ipslag --enable 5/LAG20

switch:admin> ipslag --disable 5/LAG20
```

To display LAG configuration information:

```
switch:admin> ipslag --show
--------------------------------------------------------------------------------
name       |adminStatus|operationalStatus|interfaces         |onlineInterfaces  |
--------------------------------------------------------------------------------
224/LAG2310|enable     |online           |224/0/32,224/0/33, |224/0/32,224/0/33,|
           |           |                 |224/0/34,224/0/35  |224/0/34,224/0/35 |
225/LAG2320|enable     |online           |225/0/32,225/0/33, |225/0/32,225/0/33,|
           |           |                 |225/0/34,225/0/35  |225/0/34,225/0/35 |
```

To display detailed LAG configuration information:

```
switch:admin> ipslag --show -details
name                   : 10/LAG10
key                    : 10
domainID               : 10
adminStatus            : enable
operationalStatus      : online
lacpSystemMacAddress   : c4:f5:7c:b9:1a:2b
lacpSystemPriority     : 32768
partnerSystemMacAddress: 00:05:1e:8f:fb:a8
partnerSystemPriority  : 0
protocolSpeed          : 20-ge
interfaces             : 10/10/33,10/10/32
onlineInterfaces       : 10/10/32,10/10/33

name                   : 10/LAG20
key                    : 20
domainID               : 10
adminStatus            : enable
operationalStatus      : offline
lacpSystemMacAddress   : 00:00:00:00:00:00
lacpSystemPriority     : 0
partnerSystemMacAddress: 00:00:00:00:00:00
partnerSystemPriority  : 0
protocolSpeed          :
interfaces             :
onlineInterfaces       :
```

To display LAG name and LAG-wise statistics for data frames:

```
switch:admin> ipslag --showstatistics
-----------------------------------------------------
name    |inTotalOctets        |outTotalOctets       |
-----------------------------------------------------
10/LAG10|32096                |159792               |
10/LAG20|0                    |0                    |

switch:admin> ipslag --showstatistics -details

name               : 10/LAG10
inGoodPkts         : 257
in64bPkts          : 27
in65b127bPkts      : 141
in128b255bPkts     : 71
in256b511bPkts     : 18
in512b1023bPkts    : 0
in1024b1518bPkts   : 0
inLargePkts        : 0
out64bPkts         : 0
out65b127bPkts     : 46
out128b255bPkts    : 1230
out256b511bPkts    : 0
```

```
 out512b1023bPkts   : 0
 out1024b1518bPkts  : 0
 outLargePkts       : 0
 inRuntPkts         : 0
 inRuntBadCrc       : 0
 inBadTermination   : 0
 inCrcAlignmentError: 0
 inOversizedPkts    : 0
 inSymbolError      : 1
 inIfgViolation     : 0
 inCrcStomp         : 0
 outPausePkts       : 0
 inPausePkts        : 0
 inTotalPkts        : 257
 outTotalPkts       : 1276
 inTotalOctets      : 32200
 outTotalOctets     : 161328
 outFceDropCount    : 0


 name               : 10/LAG20
 inGoodPkts         : 0
 in64bPkts          : 0
 in65b127bPkts      : 0
 in128b255bPkts     : 0
 in256b511bPkts     : 0
 in512b1023bPkts    : 0
 in1024b1518bPkts   : 0
 inLargePkts        : 0
 out64bPkts         : 0
 out65b127bPkts     : 0
 out128b255bPkts    : 0
 out256b511bPkts    : 0
 out512b1023bPkts   : 0
 out1024b1518bPkts  : 0
 outLargePkts       : 0
 inRuntPkts         : 0
 inRuntBadCrc       : 0
 inBadTermination   : 0
 inCrcAlignmentError: 0
 inOversizedPkts    : 0
 inSymbolError      : 0
 inIfgViolation     : 0
 inCrcStomp         : 0
 outPausePkts       : 0
 inPausePkts        : 0
 inTotalPkts        : 0
 outTotalPkts       : 0
 inTotalOctets      : 0
 outTotalOctets     : 0
 outFceDropCount    : 0
```

See Also

ipsArpTable, ipsInterface, ipsNeighborInfo, ipsPathVerify, ipsPing, ipsReachable, ipsRouteTable, ipsStaticArp, ipsStaticRoute, ipsTraceRoute, ipsVlan, ipsVrf, trafClass

ipsNeighborInfo

Verifies and displays the connectivity to the specified end device.

Synopsis

```
ipsNeighborInfo <ip_address>
     [-vrfID <vrfID>]
 ipsNeighborInfo --help
```

Description

This command takes the IP Address and VRF as input and provides local and remote gateway interfaces to reach the destination. Takes default VRF value zero if a VRF ID is not specified.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

<ip_address>	Specifies the IP Address of the end device.
-vrfID *<vrfID>*	Specifies the VRF ID of the destination device. Valid value ranges from 0 through 63.
--help	Displays the command usage.

Examples

To display the local and remote gateway interface to reach the destination:

```
switch:admin> ipsneighborinfo 192.0.2.0 -vrfID 1
-----------------------------------------------------------------------------------------
IpAddress  |reachable  |gateway    |gatewayDomainIDs|localGatewayInterface |remoteInterface|
-----------------------------------------------------------------------------------------
192.0.2.0   |true      |192.0.2.1  |3               |3/0/42                |port1
```

See Also

ipsArpTable, ipsInterface, ipsLag, ipsPathVerify, ipsPing, ipsReachable, ipsRouteTable, ipsStaticArp, ipsStaticRoute, ipsTraceRoute, ipsVlan, ipsVrf, trafClass

ipsPathVerify

Verifies the path between the specified IP Address and the peer IP Address to make sure the route is set.

Synopsis

```
ipsPathVerify <ip_address1> <ip_address2>
```

```
      [-vrfID <vrfID>]
  ipsPathVerify --help
```

Description

This command takes the IP Address and the peer IP Address of two devices to check if they are connected and are reachable through the IP Storage. Takes default VRF value zero if a VRF ID is not specified.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

<ip_address1> ***<ip_address2>***	Specifies the IP Address of the end device that need to be verified.
-vrfID *<vrfID>*	Specifies the VRF ID of the destination device. Valid value ranges from 0 through 63.
--help	Displays the command usage.

Examples

To display the verified path information:

```
switch:admin> ipspathverify 10.10.11.3 10.10.14.3 -vrfid 1

destinationIpAddress| pingStatus | SourceGateway| gatewayInterface | reachable
10.10.14.3            success      10.10.12.3     05/04/03           True
10.10.14.3            success      10.10.13.3     05/05/03           True
10.10.11.3            success      10.10.12.3     05/04/03           True
10.10.11.3            success      10.10.13.3     05/05/03           True
10.10.14.3            success      10.10.14.1     05/04/03           True
10.10.11.3            success      10.10.14.1     05/04/03           True
```

See Also

ipsArpTable, ipsInterface, ipsLag, ipsNeighborInfo, ipsPing, ipsReachable, ipsRouteTable, ipsStaticArp, ipsStaticRoute, ipsTraceRoute, ipsVlan, ipsVrf, trafClass

ipsPing

Verifies the connectivity to the end device for the specified VRF.

Synopsis

```
 ipsPing <ip_address>
      [-vrfID <vrfID>]
      [-sourceGateway <ip_address>]
      [-size <size>]
      [-count <count>]
  ipsPing --help
```

Description

Verifies if the IP address is reachable or not. This command can be executed on any IP Storage device. Takes default VRF value zero if a VRF ID is not specified.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

<*ip_address*>	Specifies the IP Address of the device that ECHO needs to be triggered.
-vrfID <*vrfID*>	Specifies the VRF ID of the destination device. Valid value ranges from 1 through 63.
-sourceGateway <*ip_address*>	Specifies the source gateway from which the destination need to be reached.
-size <*size*>	Specifies the echo request data size. The supported size ranges from 18 through 2056.
-count <*count*>	Specifies the number of Echo requests to be triggered. The supported range is from 1 through 200.
--help	Displays the command usage.

Examples

To display runtime routing information:

```
switch:admin> ipsping 10.15.17.3 -vrfID 1 -sourceGateway 10.15.17.1 -size 100 -count 4

PING to 10.15.17.3 from source IP 10.15.17.1 100(128) bytes of data.
108 bytes from 10.15.17.3: icmp_seq=1 ttl=128 time=3.973 ms
108 bytes from 10.15.17.3: icmp_seq=2 ttl=128 time=3.920 ms
108 bytes from 10.15.17.3: icmp_seq=3 ttl=128 time=3.732 ms
108 bytes from 10.15.17.3: icmp_seq=4 ttl=128 time=3.891 ms
--- 10.15.17.3 ping statistics ---
4 packets transmitted, 4 packets received, 0% packet loss, time 3.973 ms
rtt min/avg/max/mdev = 3.732/3.973/3.891/0.000 ms, ipg/ewma 0/0.000 ms
```

See Also

ipsArpTable, ipsInterface, ipsLag, ipsNeighborInfo, ipsPathVerify, ipsReachable, ipsRouteTable, ipsStaticArp, ipsStaticRoute, ipsTraceRoute, ipsVlan, ipsVrf, trafClass

ipsReachable

Displays a summary of the connectivity information for all locally connected devices on VRFs.

Synopsis

```
ipsReachable -vrfID <vrfID>
 ipsReachable --showLastStatus
 ipsReachable --help
```

Description

This command takes VRF ID as input and provides brief connectivity status of all the devices connected through local gateway. Takes default VRF value zero if a VRF ID is not specified.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-vrfID <*vrfID*>	Specifies the VRF ID of the destination device. Valid value ranges from 1 through 63.
--showLastStatus	Displays the cached results of the ipsReachable command from the previous execution.
--help	Displays the command usage.

Examples

To display the connectivity status of the devices connected through local gateway:

```
switch:admin> ipsReachable -vrfID 9
vrfID |destinationIpAddress  |gateway    |gatewayDomainIDs |reachable  |requestTime |
-----------------------------------------------------------------------------------------------
9     |xx.xx.xx.xx           |xx.xx.xx.xx|15               |true       |2024-02-14T07:06:54+00:00|
```

To display the last status of the command:

```
switch:admin> ipsreachable --showLastStatus

vrfID |destinationIpAddress   |gateway      |gatewayDomainIDs |reachable |requestTime
-----------------------------------------------------------------------------------------------
9      xx.xx.xx.xx            xx.xx.xx.xx   15                true       2023-09-07T21:56:57+00:00
```

See Also

ipsArpTable, ipsInterface, ipsLag, ipsNeighborInfo, ipsPathVerify, ipsPing, ipsRouteTable, ipsStaticArp, ipsStaticRoute, ipsTraceRoute, ipsVlan, ipsVrf, trafClass

ipsRouteTable

Displays the runtime routing information.

Synopsis

```
ipsRouteTable --show [-destination <IP address>]
     [-vrfID <vrfID>]
 ipsRouteTable --help
```

Description

Displays all the routes applied by the system. This includes both user-defined routes that are statically configured and the routes that are created dynamically by the system.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--show Displays the runtime routing information.

- **-destination** Specifies the destination IP Address.
- **-vrfID <*vrfID*>** Specifies the VRF configuration record. Valid value ranges from 0 through 63.

--help Displays the command usage.

Examples

To display runtime routing information:

```
switch:admin> ipsroutetable --show
----------------------------------------------------------------
destination  |vrfID |Status |nextHop       |metric|interface|
----------------------------------------------------------------
192.0.2.0/28 |0     |online |0.0.0.0       |0     |38/4/40  |
192.0.2.0/32 |0     |online |0.0.0.0       |0     |38/4/40  |
192.0.2.0/30 |0     |online |0.0.0.0       |0     |38/4/38  |
192.0.2.1/28 |9     |online |0.0.0.0       |0     |38/4/40  |
192.0.2.2/28 |9     |offline|0.0.0.0       |0     |38/8/40  |
192.0.2.3/28 |9     |online |192.2.0.86    |1     |38/8/19  |
192.0.2.12/30|9     |online |192.2.1.75    |1     |38/8/42  |
192.0.2.3/30 |9     |online |192.2.1.18    |1     |38/8/41  |
192.0.1.0/28 |9     |online |0.0.0.0       |0     |38/LAG606|
192.0.2.4/30 |9     |online |0.0.0.0       |0     |38/8/19  |
192.1.2.0/30 |9     |online |0.0.0.0       |0     |38/8/41  |
192.2.2.0/30 |9     |online |0.0.0.0       |0     |38/8/42  |
```

See Also

ipsArpTable, ipsInterface, ipsLag, ipsNeighborInfo, ipsPathVerify, ipsPing, ipsReachable, ipsStaticArp, ipsStaticRoute, ipsTraceRoute, ipsVlan, ipsVrf, trafClass

ipsStaticArp

Manages static ARP entries.

Synopsis

```
ipsStaticArp --create <IP_address> <vlanID>
 -macAddress <xx:xx:xx:xx:xx:xx>
 -interface <interface>
 ipsStaticArp --delete <IP_address> <vlanID>
 ipsStaticArp --show [-ipAddress <IP_address>]
     [-macAddress <xx:xx:xx:xx:xx:xx>] [-vlanID <vlanID>]
 ipsStaticArp --help
```

Description

This command is used to create or delete a static ARP entry. Also displays defined static ARP entries.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--create <*IP address*> <*vlanID*>	Creates a static ARP entry. The following input validation checks are performed and any failure may result with no configuration changes. • The referenced VLAN is present. • An entry with the same VLAN and IP address is not present with a different MAC address. • The address is within the valid subnet of the VLAN. No operation is performed if the input results in the same ARP entry.
<*IP address*>	Specifies the IP address of the remote host.
<*vlanID*>	Specifies the VLAN ID. Valid value ranges from 2 through 3599.
-interface <*interface*>	Specifies the interface.
--delete	Deletes a user defined ARP entry. Verifies if the referenced VLAN is present during the validation check.
--show	Displays user-defined static ARP entries.
-macAddress <*xx:xx:xx:xx:xx:xx*>	Specifies the device MAC address.
--help	Displays the command usage.

Examples

To create a static ARP entry:

```
switch:admin> ipsstaticarp --create 192.0.10.23 985
-macAddress 8c:7c:ff:5e:a3:13 -interface 1/0/37
```

To delete a static ARP entry:

```
switch:admin> ipsstaticarp --delete 192.0.10.23 985
```

To display static ARP entries:

```
switch:admin> ipsstaticarp --show
--------------------------------------------------
ipAddress   |vlanID |macAddress         |interface|
--------------------------------------------------
10.10.10.5  |2      |xx:xx:xx:xx:xx:xx  |1/0/60   |
```

See Also

ipsArpTable, ipsInterface, ipsLag, ipsNeighborInfo, ipsPathVerify, ipsPing, ipsReachable, ipsRouteTable, ipsStaticRoute, ipsTraceRoute, ipsVlan, ipsVrf, trafClass

ipsStaticRoute

Manages static routes for IP Storage configuration.

Synopsis

```
ipsStaticRoute --create <destination_IP_address>/<prefix-length>
     <gateway_IP_address> [-vrfID <vrfID>]
     [-metric <route_cost>]
 ipsStaticRoute --delete <destination_IP_address>/<prefix-length>
     <gateway_IP_address> [-vrfID <vrfID>]
 ipsStaticRoute --show [-destination <IP_address>/<prefix-length>]
     [-vrfID <vrfID>]
 ipsStaticRoute --help
```

Description

Creates, deletes, and displays user-defined static routes.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--create	Creates a user-defined static route. The **-metric** option is optional specifying a route cost, a positive numeric value. The following input validation checks are performed and any failure may result with no configuration changes. • The referenced VRF is present. • Only 8 static routes per destination network are allowed. • No entry with the same destination and next hop address with a different metric. • The static route IP address and mask are not equal to or a portion of the VLAN's subnet. • The static route next hop IP address is not used by another IP Storage.
-destination *<IP_address>/<prefix-length>*	Specifies the destination IP address and the prefix.
<gateway_IP_address>	Specifies the next hop IP Address.
-vrfID *<vrfID>*	Specifies the VRF ID. Valid value ranges from 0 through 63 for **--create** and **--delete** options.
-metric *<route_cost>*	Cost of reaching the destination domain. The default value is 1 and the valid value ranges from 1 through 65535.
--delete	Deletes a user-defined static route. Verifies if the referenced VRF is present during the validation check.
--show	Display routes that have been statically defined by the user. Valid VRF value ranges from 0 through 63.
--help	Displays the command usage.

Examples

To create a static route:

```
switch:admin> ipsstaticroute --create 192.0.1.1/30 192.1.2.3 -vrfid 10 -metric 55
     2023/11/23-06:57:33 (GMT), [UCID-3069], 596, FID 20, INFO, switch_20,
     Static route 192.0.1.1/30 192.1.2.3 created with VRF 10 metric 55
```

To delete a user-defined static route:

```
switch:admin> ipsstaticroute --delete 19.3.1.2/30 192.2.1.3 -vrfId 10
     2023/11/23-06:57:21 (GMT), [UCID-3070], 595, FID 20, INFO, switch_20,
     Static route 19.3.1.2/30 192.2.1.3 with VRF 10 deleted
```

To display runtime routing information:

```
switch:admin> ipsstaticroute --show
---------------------------------------------
destination     |nextHop      |vrfID |metric|
---------------------------------------------
10.10.10.1/24   |10.10.10.2   |9     |50    |
```

See Also

ipsArpTable, ipsInterface, ipsLag, ipsNeighborInfo, ipsPathVerify, ipsPing, ipsReachable, ipsRouteTable, ipsStaticArp, ipsTraceRoute, ipsVlan, ipsVrf, trafClass

ipsTraceRoute

Verifies the connectivity to the specified end device for the given VRF and traces route to the host.

Synopsis

```
ipsTraceRoute <ip_address>
     [-vrfID <vrfID>]
     [-protocol {UDP | ICMP}]
     [-sourceGateway <ip_address>]
 ipsTraceRoute --help
```

Description

This command takes the IP address and VRF ID as input and provides the route to the host. Takes default VRF value zero if a VRF ID is not specified.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

<ip_address>	Specifies the IP Address of the device for which the route to be traced.
-vrfID *<vrfID>*	Specifies the VRF ID of the destination device. Valid value ranges from 0 through 63.
-sourceGateway *<ip_address>*	Specifies the source gateway from which the destination need to be traced.

-protocol {UDP | ICMP}	Uses UDP or ICMP protocol for trace route. By default, **ipsTraceRoute** command uses ICMP protocol if no option is specified.
--help	Displays the command usage.

Examples

To display the trace routes:

```
switch:admin>  ipstraceroute xx.xx.xx.xx -vrfID 9
 -sourceGateway xx.xx.xx.xx -protocol ICMP

traceroute to xx.xx.xx.xx, 30 hops max, 64 byte packets
0 xx.xx.xx.xx (LOCAL HOST)
1 xx.xx.xx.xx 7.70 ms 7.05 ms 5.03 ms
```

See Also

ipsArpTable, ipsInterface, ipsLag, ipsNeighborInfo, ipsPathVerify, ipsPing, ipsReachable, ipsRouteTable, ipsStaticArp, ipsStaticRoute, ipsVlan, ipsVrf, trafClass

ipsVlan

Manages VLANs.

Synopsis

```
ipsVlan --create <vlanID>
 -gateway <IP_address>/<prefix-length>
     [-vrfID <vrfID>]
     [-interfaces {<domain>/<slot>/<port_range>
     | <domain>/LAG<key>}
     [,{<domain>/<slot>/<port_range>
     | <domain>/LAG<key>}...]]
 ipsVlan --delete <vlanID>
 ipsVlan --interfaceAdd <vlanID>
 -interfaces {<domain>/<slot>/<port_range>
     | <domain>/LAG<key>}
     [,{<domain>/<slot>/<port_range>
     | <domain>/LAG<key>}...]
 ipsVlan --interfaceRemove <vlanID>
 -interfaces {<domain>/<slot>/<port_range>
     | <domain>/LAG<key>}
     [,{<domain>/<slot>/<port_range>
     | <domain>/LAG<key>}...]
 ipsVlan --gatewayConfig <vlanID>
 -gateway <IP_address>/<prefix-length>
 ipsVlan --show [-vlanID <vlanID>] [-vrfID <vrfID>]
 ipsVlan --help
```

Description

This command is used to create or delete a user-defined VLAN, configure interface membership of a VLAN, and display VLAN information.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--create <*vlanID*>

Creates a new VLAN configuration record. Takes the default VRF ID zero if not specified. A VLAN can be defined without any interface members. It is optional to specify the interface member at the time of VLAN creation. It is mandatory to provide the gateway IP address when creating a VLAN. Valid value ranges from 2 through 3599.

The following input validation checks are performed and any failure may result with no configuration changes.

- The referenced VRF is present.
- The interfaces are not specified multiple times.
- The subnet range does not overlap with another VLAN in the same VRF.
- No more than 254 interfaces are specified.
- The interface specified is not part of a LAG.
- A static route matching the equal or portion of the VLANs subnet.
- A static route with matching next hop IP address do not exist.
- An entry with the same VLAN does not exist with rest of the attributes being different.

No operation is performed if the exact same configuration is entered; else returns an error when a different configuration is entered for the VLAN.

-gateway <*IP_address*>/<*prefix-length*>

Specifies the gateway address and prefix-length.

-vrfID <*vrfID*>

Specifies the VRF ID. Valid value ranges from 1 through 63.

-interfaces {<*domain*>/<*slot*>/<*port_range*> | <*domain*>/LAG<*key*>}

Specifies the interface or a range of interfaces.

--delete

Deletes an existing VLAN configuration.

The following input validation checks are performed and any failure may result with no configuration changes.

- The VLAN is present.
- The VLAN is not configured as a native VLAN for interfaces or LAGs.
- The VLAN is not being referenced by static ARP entries.

--interfaceAdd

Adds one or more interface member to a VLAN. Interface members can be ports or LAGs.

The following input validation checks are performed and any failure may result with no configuration changes.

- The VLAN is present.
- The interfaces are not specified multiple times.
- Not more than 256 interfaces are added.
- The added VLANs are not more than 254 VLANs assigned to any interfaces.
- The interface specified is not part of a LAG.

--interfaceRemove Removes one or all of the interface members from a VLAN.

The following input validation checks are performed and any failure may result with no configuration changes.

- The VLAN is present.
- The interfaces are not specified multiple times.
- A nonzero number of interfaces or LAGs are specified.
- The deleted interface is present in the existing VLAN configuration.
- The deleted LAGs are present in the existing VLAN configuration.

--gatewayConfig Edits the gateway IP address of a VLAN configuration.

The following input validation checks are performed and any failure may result with no configuration changes.

- The VLAN is present.
- A static route matching the equal or portion of the VLANs subnet.
- A static route with matching next hop IP address do not exist.

--show Displays VLAN configuration. Use <*vrfID*> or <*vlanID*> to display specific configuration. The <*vrfID*> valid values are from 0 through 63 and <*vlanID*> valid value ranges from 2 through 3599.

--help Displays the command usage.

Examples

To create a VLAN configuration:

```
switch:admin> ipsvlan --create 9 -vrfid 40 -interfaces 47/0/34 -gateway 192.0.10.23/28;
```

To add or remove interface member:

```
switch:admin> ipsvlan --interfaceAdd 3  -interfaces  1/5/2

switch:admin> ipsvlan --interfaceRemove 3  -interfaces  1/5/2
```

To edit gateway configuration:

```
switch:admin> ipsvlan --gatewayConfig 3  -gateway 192.0.10.23/24
```

To delete a VLAN configuration:

```
switch:admin> ipsvlan --delete 3
```

To display current VLAN configuration:

```
switch:admin> ipsvlan --show
-----------------------------------------------------
vlanID|gateway        |vrfID |interfaces            |
-----------------------------------------------------
4     |192.0.2.0/24   |10    |D104_LAG3233          |
40    |192.0.2.0/28   |10    |102/0/40              |
```

See Also

ipsArpTable, ipsInterface, ipsLag, ipsNeighborInfo, ipsPathVerify, ipsPing, ipsReachable, ipsRouteTable, ipsStaticArp, ipsStaticRoute, ipsTraceRoute, ipsVrf, trafClass

ipsVrf

Configures VRF. Creates or deletes a user defined VRF, manages DHCP configuration for the VRF, and displays VRF information.

Synopsis

```
ipsVrf --create <vrfID>
 ipsVrf --create <vrfID> [-dhcpEnabled true]
     [-dhcpServer <ip_address>]
 ipsVrf --delete <vrfID>
 ipsVrf --dhcpConfig [<vrfID>] -dhcpEnabled false
 ipsVrf --dhcpConfig [<vrfID>] -dhcpEnabled true
 -dhcpServer <ip_address>
 ipsVrf --show [-vrfID <vrfID>]
 ipsVrf --help
```

Description

This command is used to create user-defined VRF's, manage DHCP relay configuration, and display VRF information.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--create <*vrfID*>	Creates a new VRF configuration record. DHCP is disabled by default, if the DHCP setting is not configured. Valid value ranges from 1 through 63.
--dhcpConfig -dhcpEnabled true	Manages the DHCP settings that apply to a given VRF.
-dhcpServer <*ip_address*>	Disables or enables DHCP. The DHCP server IP address must be specified when enabling DHCP.
--delete	Deletes an existing user-defined VRF configuration. The default VRF configuration record (VRF ID zero) is auto created and cannot be deleted.
--show	Displays the current VRF configuration. Use <*vrfID*> to display a specific VRF configuration. Valid values are from 0 through 63.
--help	Displays the command usage.

Examples

To create a VRF:

```
switch:admin> ipsvrf --create 15
```

To create a VRF with DHCP enabled:

```
switch:admin> ipsvrf --create 40
-dhcpEnabled true -dhcpServer 192.0.2.0
```

To delete a VRF:

```
switch:admin> ipsvrf --delete 15
```

To display the current VRF configuration:

```
switch:admin> ipsvrf --show
-------------------------------------------------
vrfID |dhcpEnabled  |  dhcpServer  |vlans     |
-------------------------------------------------
0     |false        |              |          |
10    |false        |              |4,40      |
```

See Also

ipsArpTable, ipsInterface, ipsLag, ipsNeighborInfo, ipsPathVerify, ipsPing, ipsReachable, ipsRouteTable, ipsStaticArp, ipsStaticRoute, ipsTraceRoute, ipsVlan, trafClass

islShow

Displays interswitch link (ISL) information.

Synopsis

```
islshow [-slotport | --help]
```

Description

Use this command to display the current connections and status of the interswitch link (ISL) for each port on a switch. The command output includes the following information:

- Node world wide name (WWN)
- Domain ID
- Switch name
- ISL connection speed, if applicable
- Bandwidth
- Trunking enabled, if applicable
- QOS - QoS enabled, if applicable
- ENCRYPT - Encryption enabled, if applicable
- COMPRESS - Compression enabled, if applicable
- CR_RECOV - Credit recovery enabled, if applicable
- FEC -Forward Error Correction enabled, if applicable
- ISL cable distance

When issued on a switch that is part of a logical fabric configuration, the **islShow** command displays logical interswitch links (LISLs) along with regular ISLs. However, speed (sp) displays N/A for logical ports. The bandwidth (bw) displayed is the sum of the bandwidth of all extended ISLs (XISLs) that form the LISL. A shared ISL (XISL) connects the base switches and is shared by different logical fabrics. It allows devices to communicate with each other within the logical fabric.

Connection speed is not applicable to LE_Ports or VE_Ports. For these port types, speed displays as "sp:-------".

This command will display the neighbor WWN information even when the ISL is segmented during exchange link parameter (ELP) or post ELP segmentation phase.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

-slotport	Displays the neighbor port detail in *slot/port* format. This operand is optional.
--help	Displays the command usage.

Examples

To execute **islshow** in a base fabric:

```
switch:user> islshow
1:  2->300 10:00:00:05:1e:43:00:00 100 BG620 \
     sp:  8.000G bw: 32.000G TRUNK QOS
2:  8->  3 10:00:00:05:1e:41:8a:d5  30 BG610\
     sp:  4.000G bw: 16.000G TRUNK QOS
3: 19-> 10 10:00:00:05:1e:41:43:ac  50 BG630 sp:\
     8.000G bw: 64.000G TRUNK
```

To execute **islshow** in a logical fabric:

```
switch:user> islshow
1: 33-> 29 10:00:00:60:69:80:4f:84   3 BG620 \
    sp:  2.000G bw:  4.000G TRUNK
2: 39->  7 10:00:00:60:69:45:68:04   4 BG610 \
    sp:  2.000G bw:  8.000G TRUNK
3: 41-> (incompatible)
4: 47-> (incompatible)
5: 95->  0 10:00:00:05:1e:01:0b:4a  15 B7810 \
    sp:  2.000G bw:  2.000G TRUNK
```

To display interswitch links with encryption or compression enabled:

```
switch:user> islshow
1: 33-> 29 10:00:00:60:69:80:4f:84   3 BG610  \
   sp:  2.000G bw:  4.000G TRUNK ENCRYPT
2: 39->  7 10:00:00:60:69:45:68:04   4 BG620 \
   sp:  2.000G bw:  8.000G ENCRYPT COMPRESS
2: 38->  6 10:00:00:60:69:45:68:03   4 BG630 \
   sp:  2.000G bw:  8.000G COMPRESS
```

To display interswitch links with Credit Recovery and Forward Error correction enabled:

```
switch:user> islshow
1: 46->718 10:00:d8:1f:cc:1f:9d:08  17 Core-X7-8_130017_LS128  \
         sp: 64.000G bw:512.000G TRUNK QOS CR_RECOV FEC
2: 50->584 10:00:88:94:71:ba:cd:e1 239 Core-X7-8_130239        \
         sp: 32.000G bw:256.000G TRUNK QOS CR_RECOV FEC
3: 58->311 10:00:88:94:71:ba:cd:e1 239 Core-X7-8_130239        \
```

```
         sp: 64.000G bw:256.000G TRUNK QOS CR_RECOV FEC
 4: 61->294 10:00:00:27:f8:f3:3b:40  13 Core-X6-8_130013        \
         sp: 32.000G bw:128.000G TRUNK QOS CR_RECOV FEC
```

To display interswitch links with D_Port enabled:

```
switch:user> islshow
1: 24->343 10:00:00:05:1e:e5:e4:00   1 D-Port      \
         sp: 16.000G bw: 16.000G CR_RECOV FEC
2: 25->341 10:00:00:05:1e:e5:e4:00   1 D-Port      \
         sp: 16.000G bw: 16.000G CR_RECOV FEC
3: 26-> 95 10:00:00:05:1e:e5:e4:00   1 D-Port      \
         sp: 16.000G bw: 16.000G CR_RECOV FEC
4: 27->340 10:00:00:05:1e:e5:e4:00   1 D-Port      \
         sp: 16.000G bw: 16.000G CR_RECOV FEC
5: 29->166 10:00:00:05:1e:e5:e4:00   1 D-Port      \
         sp: 16.000G bw: 16.000G CR_RECOV FEC
6: 30->165 10:00:00:05:1e:e5:e4:00   1 D-Port      \
         sp: 16.000G bw: 16.000G QOS CR_RECOV FEC
```

To display the neighbor switch WWN for the segmented ISLs during ELP and post ELP phase:

```
switch:user> islshow
[...]
1:9-> 2 10:00:00:05:1e:a3:00:59 (incompatible)
[...]
```

To display neighbor details:

```
switch:admin> islshow -slotport
 1: 0/ 16-> 3/ 40  10:00:00:05:33:e7:d0:10  20 FCR-xxx  sp: 32.000G bw: 32.000G TRUNK QOS CR_RECOV FEC
```

See Also

switchShow, trunkShow

isnsConfig

Supports iSNS server related attributes.

Synopsis

```
isnsConfig --show [-vrfID <vrfID>]
 isnsConfig --update [<vrfID>] -server <IP_address>
```

Description

This command supports updating of iSNS server and its associated attributes.

Use **--update** option to set and clear the attributes.

iSNS is supported only on IP Storage partitions.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--show [-vrfID <*vrfID*>]	Displays iSNS server configuration details for the specified VRF. The valid values ranges from 0 through 63.
--update [<*vrfID*>]	Enables iSNS server functionality for the specified VRF and provides the iSNS server IPv4 address when being enabled.
-server <*IP_address*>	Disbles the iSNS capability if the IP address is none. Enables the iSNS capability if the IP address is a valid IPv4 address.

Examples

To enable and update iSNS server functionality for the specified VRF:

```
switch:admin> isnsConfig --update 30 -server 40.40.40.40

2024/05/09-23:30:11 (GMT), [UCID-3188], 1217, FID 10, INFO, switch_10,
     ISNS server IP 40.40.40.40 updated for VRF 30.

switch:admin> isnsConfig --show
-------------------
vrfID |server     |
-------------------
0     |10.10.10.2 |
10    |10.10.10.10|
30    |40.40.40.40|
```

To disable iSNS server functionality for the specified VRF:

```
switch:admin> isnsConfig --update 30 -server none
2024/05/09-23:29:44 (GMT), [UCID-3189], 1216, FID 10, INFO, switch_10,
     ISNS server IP removed from VRF 30.

switch:admin> isnsConfig --show
---------------------------
vrfID |server     |
---------------------------
0     |10.10.10.2 |
10    |10.10.10.10|
```

To display iSNS configuration details:

```
switch:admin> isnsconfig --show
---------------------------
vrfID |server     |
---------------------------
0     |10.10.10.2 |
```

```
10    |10.10.10.10|
```

See Also

isnsDD, isnsDDSet, isnsShow

isnsDD

Adds, removes, or deletes storage node members.

Synopsis

```
isnsDD --create <name> [-vrfID <vrfID>]
     [-storageNode <iqn1>[,<iqn2>...]]
 isnsDD --delete <name> [-vrfID <vrfID>]
 isnsDD --add <name> [-vrfID <vrfID>]
     [-storageNode <iqn1>[,<iqn2>...]]
 isnsDD --remove <name> [-vrfID <vrfID>]
     [-storageNode <iqn1>[,<iqn2>...]]
 isnsDD --deleteAll [-vrfID <vrfID>]
 isnsDD --show [-name <name>] [-vrfID <vrfID>]
```

Description

This command supports creating, adding, removing, deleting, or displaying Discovery Domain (DD) and its members in iSCSI device names (IQNs) format.

iSNS is supported only on IP Storage partitions.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--create <*name*> Creates a new Discovery Domain. While creating a new DD, the storage node member(s) in IQN format can be added at the same time. It is not required to register the storage node with iSNS at the time of DD creation. An empty DD is being created, if not specified. The DD name supports the alphabets(a-z), numbers(0-9), and special characters like period(.), hyphen(-), and underscore(_). An error message is displayed if the DD name is longer than 255.

- **<*vrfID*>** The default vrfID is **0**, if not specified.
- **-storageNode <*iqn1*>[,<*iqn2*>...]** A list of iSCSI node IQNs that are able to communicate with each other. The **-storageNode** name follows the IQN format. The IQN format supports alphabets(a-z), numbers(0-9), and special characters like period(.), hyphen(-), and colon(:). The name must start with **iqn.yyyy-mm.**, where **yyyy-mm** are year and month. The valid name length ranges from 13 through 223.

--delete Deletes an existing Discovery Domain. The Discovery Domain cannot be deleted if any Discovery Domain Sets refers to the DD.

--add	Adds member(s) to the existing DD. It is not required that the storage node member need to be registered with the iSNS server at the time of the addition.
--remove	Removes the member(s) from the existing DD.
--deleteAll	Deletes all the existing Discovery Domains for a given VRF. If any DDs are referred by existing Discovery Domain Sets, a warning message is displayed that the Discover Domain Sets must be deleted or the reference to be removed to proceed.
--show	Displays all of the Discovery Domains, if not specified.

Examples

To create a new DD for the specified VRF:

```
switch:admin> isnsDD --create dd.10_1 -vrfID 10

2024/05/10-22:08:44 (GMT), [UCID-3192], 1410, FID 10, INFO, switch_10,
Discovery Domain dd.10_1 created in vrf 10 with 0 members ((null)).

switch:admin> isnsDD --show
-------------------------------------------------------------------------------------
vrfID |name   |storageNodesTypeUnknown|storageNodesTypeInitiator|storageNodesTypeTarget|
10    |dd.10_1|
```

To create a new DD for the specified VRF with a member:

```
switch:admin> isnsDD --create dd.10_2 -vrfID 10
-storageNode iqn.1998-10.myexampleiqn

2024/05/10-22:10:06 (GMT), [UCID-3192], 1411, FID 10, INFO, switch_10,
Discovery Domain dd.10_2 created in vrf 10 with 1 members (iqn.1998-10.myexampleiqn).

switch:admin> isnsDD --show
-------------------------------------------------------------------------------------------
vrfID |name   |storageNodesTypeUnknown  |storageNodesTypeInitiator|storageNodesTypeTarget|
-------------------------------------------------------------------------------------------
10    |dd.10_1|                         |                         |                      |
10    |dd.10_2|iqn.1998-10.myexampleiqn |                         |                      |
```

To add members to an existing DD:

```
switch:admin> isnsDD --add dd.10_1 -vrfID 10
-storageNode iqn.2011-02.com.example.iscsi1:theexamplenumber

2024/05/10-22:13:53 (GMT), [UCID-3194], 1414, FID 10, INFO, switch_10,
Discovery Domain dd.10_1 in vrf 10 added 1 members
(iqn.2011-02.com.example.iscsi1:theexamplenumber).

switch:admin> isnsDD --show
-------------------------------------------------------------------------------------------
vrfID |name   |storageNodesTypeUnknown  |storageNodesTypeInitiator|storageNodesTypeTarget|
-------------------------------------------------------------------------------------------
10    |dd.10_1|                         |iqn.2011-02.com.exampl   |                      |
      |       |                         |e.iscsi1:theexamplenumber|                      |
10    |dd.10_2|iqn.1998-10.myexampleiqn |                         |                      |
```

To delete an existing DD:

```
switch:admin> isnsDD --delete dd.10_2 -vrfID 10

2024/05/10-22:19:01 (GMT), [UCID-3193], 1418, FID 10, INFO, switch_10,
Discovery Domain dd.10_2 in vrf 10 deleted.

switch:admin>  isnsDD --show
-----------------------------------------------------------------------------------------
vrfID |name   |storageNodesTypeUnknown|storageNodesTypeInitiator|storageNodesTypeTarget   |
-----------------------------------------------------------------------------------------
10    |dd.10_1|                       |iqn.2011-02.com.exampl   |                         |
      |       |                       |e.iscsi1:theexamplenumber|                         |
```

To remove members from an existing DD:

```
switch:admin> isnsDD --create dd.0
-storageNode iqn.2001-06.defaultiqn1,iqn.1980-03.defaultiqn2,
iqn.2021-10.defaultiqn3

2024/05/10-22:21:38 (GMT), [UCID-3192], 1419, FID 10, INFO, switch_10,
Discovery Domain dd.0 created in vrf 0 with 3 members
(iqn.2001-06.defaultiqn1,iqn.1980-03.defaultiqn2,iqn.2021-10.defaultiqn3).

switch:admin> isnsDD --show
------------------------------------------------------------------------------------------
vrfID |name   |storageNodesTypeUnknown  |storageNodesTypeInitiator|storageNodesTypeTarget   |
------------------------------------------------------------------------------------------
0     |dd.0   |iqn.2001-06.defaultiqn1, |                         |                         |
      |       |iqn.1980-03.defaultiqn2, |                         |                         |
      |       |iqn.2021-10.defaultiqn3  |                         |                         |
10    |dd.10_1|                         |iqn.2011-02.com.exampl   |                         |
      |       |                         |e.iscsi1:theexamplenumber|                         |

switch:admin>  isnsDD --remove dd.0 -storageNode
iqn.2001-06.defaultiqn1,iqn.1980-03.defaultiqn2

2024/05/10-22:23:04 (GMT), [UCID-3195], 1420, FID 10, INFO, switch_10,
Discovery Domain dd.0 in vrf 0 removed 2 members
(iqn.2001-06.defaultiqn1,iqn.1980-03.defaultiqn2).

switch:admin> isnsDD --show
------------------------------------------------------------------------------------------
vrfID |name   |storageNodesTypeUnknown  |storageNodesTypeInitiator|storageNodesTypeTarget   |
------------------------------------------------------------------------------------------
0     |dd.0   |iqn.2021-10.defaultiqn3  |                         |                         |
10    |dd.10_1|                         |iqn.2011-02.com.exampl   |                         |
      |       |                         |e.iscsi1:theexamplenumber|                         |
```

To delete all existing DDs in VRF ID 0:

```
switch:admin> isnsDD --deleteAll

2024/05/10-22:24:12 (GMT), [UCID-3196], 1421, FID 10, INFO, switch_10,
Removed all Discovery Domains in vrf 0.

switch:admin>  isnsDD --show
-----------------------------------------------------------------------------------------
vrfID |name   |storageNodesTypeUnknown|storageNodesTypeInitiator|storageNodesTypeTarget   |
-----------------------------------------------------------------------------------------
10    |dd.10_1|                       |iqn.2011-02.com.exampl   |iqn.2021-11.com.exampl   |
      |       |                       |e.iscsi1:theexamplenumber|e.iscsi2:theexamplenumber|
30    |dd.30_1|                       |                         |iqn.2011-02.com.exampl   |
      |       |                       |                         |e.iscsi3:theexamplenumber|
```

To delete all existing DDs in a particular VRF ID:

```
switch:admin> isnsDD --deleteAll -vrfID 30

2024/05/10-22:24:46 (GMT), [UCID-3196], 1423, FID 10, INFO, switch_10,
Removed all Discovery Domains in vrf 30.

switch:admin> isnsDD --show
-----------------------------------------------------------------------------------------
vrfID |name   |storageNodesTypeUnknown|storageNodesTypeInitiator|storageNodesTypeTarget   |
-----------------------------------------------------------------------------------------
10    |dd.10_1|                       |iqn.2011-02.com.exampl   |iqn.2021-11.com.exampl   |
      |       |                       |e.iscsi1:theexamplenumber|e.iscsi2:theexamplenumber|
```

See Also

isnsConfig, isnsDDSet, isnsShow

isnsDDSet

Creates, adds, or deletes DD members. Enables or disables DD members for a given Discovery Domain set entry.

Synopsis

```
isnsDDSet --create <name> [-vrfID <vrfID>]
     [-discoveryDomain <dd1>[,<dd2>...]]
 isnsDDSet --delete <name> [-vrfID <vrfID>]
 isnsDDSet --enable <name> [-vrfID <vrfID>]
 isnsDDSet --disable <name> [-vrfID <vrfID>]
 isnsDDSet --add <name> [-vrfID <vrfID>]
 -discoveryDomain <dd1>[,<dd2>...]
 isnsDDSet --remove <name> [-vrfID <vrfID>]
 -discoveryDomain <dd1>[,<dd2>...]
 isnsDDSet --deleteAll [-vrfID <vrfID>]
 isnsDDSet --show [-name <name>] [-vrfID <vrfID>]
```

Description

This command supports creating, adding, removing, deleting, or displaying Discovery Domain (DD) sets and its members in iSCSI device names (IQNs) format.

iSNS is supported only on IP Storage partitions.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--create <*name*>	Creates a new Discovery Domain set. During creation, DD member(s) can be added to the DD set. An empty DD set is being created by iSNS server, if DD members are not specified. The Discovery Domain set is disabled by default. **<*vrfID*>** The default vrfID is **0**, if not specified. **-discoveryDomain <*dd1*>[,<*dd2*>...]** The DD member(s) of the DD Set.
--delete	Deletes an existing Discovery Domain set.
--enable	Enables an existing Discovery Domain set.
--disable	Disables an existing Discovery Domain set.
--add	Adds the DD member(s) to the specified DD set. An empty DD is created by the iSNS server if the referred DD is not existed.
--remove	Removes the DD member(s) from the specified DD set.
--deleteAll	Deletes all the existing Discovery Domain sets for a given VR.
--show	Displays all of the Discovery Domain sets, if not specified.

Examples

To create a new DD set:

```
switch:admin> isnsDDSet --create dds.0_1


2024/05/10-22:31:02 (GMT), [UCID-3197], 1427, FID 10, INFO, switch_10,
Discovery Domain Set dds.0_1 created in vrf 0 with 0 members ((null)).

switch:admin>  isnsDDSet --show
----------------------------------------
vrfID |name   |enabled|discoveryDomains|
----------------------------------------
0     |dds.0_1|false  |                |
```

To create a new DD set for the specified DD member:

```
switch:admin> isnsDDSet --create dds.0_2
-discoveryDomain dd.0

2024/05/10-22:31:56 (GMT), [UCID-3197], 1428, FID 10, INFO, switch_10,
Discovery Domain Set dds.0_2 created in vrf 0 with 1 members (dd.0).
```

```
switch:admin>  isnsDDSet --show
----------------------------------------
vrfID |name   |enabled|discoveryDomains|
----------------------------------------
0     |dds.0_1|false  |                |
0     |dds.0_2|false  |dd.0            |
```

To create a new DD set with 2 DD members:

```
switch:admin> isnsDDSet --create dds.10_1
-vrfID 10 -discoveryDomain dd.10_2,dd.10_3

2024/05/10-22:36:10 (GMT), [UCID-3197], 1432, FID 10, INFO, switch_10,
Discovery Domain Set dds.10_1 created in vrf 10 with 2 members (dd.10_2,dd.10_3).

switch:admin>  isnsDDSet --show
-------------------------------------------------
vrfID |name    |enabled|discoveryDomains        |
-------------------------------------------------
0     |dds.0_1 |false  |                        |
0     |dds.0_2 |false  |dd.0                    |
10    |dds.10_1|false  |dd.10_2,dd.10_3         |
```

To enable an existing DD set:

```
switch:admin> isnsDDSet --enable dds.10_1 -vrfID 10

2024/05/10-22:37:29 (GMT), [UCID-3202], 1433, FID 10, INFO, switch_10,
Discovery Domain Set dds.10_1 in vrf 10 enabled.

switch:admin>  isnsDDSet --show
-------------------------------------------------
vrfID |name    |enabled|discoveryDomains        |
-------------------------------------------------
0     |dds.0_1 |false  |                        |
0     |dds.0_2 |false  |dd.0                    |
10    |dds.10_1|true   |dd.10_2,dd.10_3         |
```

To disable a DD set:

```
switch:admin> isnsDDSet --disable dds.10_1 -vrfID 10

2024/05/10-22:38:42 (GMT), [UCID-3203], 1435, FID 10, INFO, switch_10,
Discovery Domain Set dds.10_1 in vrf 10 disabled.

switch:admin>  isnsDDSet --show
-------------------------------------------------
vrfID |name    |enabled|discoveryDomains        |
-------------------------------------------------
0     |dds.0_1 |false  |                        |
0     |dds.0_2 |false  |dd.0                    |
```

```
10    |dds.10_1|false  |dd.10_2,dd.10_3         |
```

To delete a DD set:

```
switch:admin> isnsDDSet --delete dds.0_1

2024/05/10-22:39:33 (GMT), [UCID-3198], 1436, FID 10, INFO, switch_10,
Discovery Domain Set dds.0_1 in vrf 0 deleted.-

switch:admin> isnsDD --show
-------------------------------------------------
vrfID |name    |enabled|discoveryDomains        |
-------------------------------------------------
0     |dds.0_2 |false  |dd.0                    |
10    |dds.10_1|false  |dd.10_2,dd.10_3         |
```

To add members to the DD set:

```
switch:admin> isnsDDSet --add dds.10_1
-vrfID 10 -discoveryDomain dd.10_1

2024/05/10-22:41:07 (GMT), [UCID-3199], 1437, FID 10, INFO, switch_10,
 Discovery Domain Set dds.10_1 in vrf 10 added 1 members (dd.10_1).

switch:admin>  isnsDDSet --show
--------------------------------------------------
vrfID |name    |enabled|discoveryDomains         |
--------------------------------------------------
0     |dds.0_2 |false  |dd.0                     |
10    |dds.10_1|false  |dd.10_2,dd.10_3,dd.10_1  |
```

To remove members in a DD set:

```
switch:admin> isnsDDSet --remove dds.10_1
-vrfID 10 -discoveryDomain dd.10_3

2024/05/10-22:43:22 (GMT), [UCID-3200], 1438, FID 10, INFO, switch_10,
Discovery Domain Set dds.10_1 in vrf 10 removed 1 members (dd.10_3).

switch:admin>  isnsDDSet --show
-------------------------------------------------
vrfID |name    |enabled|discoveryDomains        |
-------------------------------------------------
0     |dds.0_2 |false  |dd.0                    |
10    |dds.10_1|false  |dd.10_2,dd.10_1         |
```

To delete all existing DD sets in VRF ID 0:

```
switch:admin>  isnsDDSet --deleteAll

2024/05/10-22:44:10 (GMT), [UCID-3201], 1439, FID 10, INFO, switch_10,
Removed all Discovery Domains Sets in vrf 0.
```

```
switch:admin>  isnsDDSet --show
-------------------------------------------------
vrfID |name    |enabled|discoveryDomains        |
-------------------------------------------------
10    |dds.10_1|false  |dd.10_2,dd.10_1         |
```

To delete all existing DDs in a particular VRF ID:

```
switch:admin> isnsDDSet --deleteAll -vrfID 10

2024/05/10-22:44:33 (GMT), [UCID-3201], 1440, FID 10, INFO, switch_10,
Removed all Discovery Domains Sets in vrf 10.

switch:admin>  isnsDDSet --show
No results found.
```

See Also

isnsConfig, isnsDDSet, isnsShow

isnsShow

Displays all the registered Storage Nodes in IQN format, entities, Portal Groups, or Portals.

Synopsis

```
isnsShow --device [-details] [-entityID <eid>
     | -name <iqn>] [-vrfID <vrfID>]
 isnsShow --entity [-details]
     [-entityID <eid>][-vrfID <vrfID>]
 isnsShow --pg [-details]
     [-storageNode <iqn> |
 -portalIP <IP_address> [-portalPort <port_number>] |
 -tag <tag> ][-vrfID <vrfID>]
 isnsShow --portal [-portalIP <IP_address>
     [-portalPort <port_number>] |
 -entityID <eid>] [-vrfID <vrfID>]
 isnsShow --primary
```

Description

This command displays none or all the registered storage nodes in IQNs format. Displays entities, portal groups, or portals.

iSNS is supported only on IP Storage partitions.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--device	Displays all of the devices in IQN format.	
	-details	Displays an additional attribute **index** in list view.
	-entityID <*eid*>	Displays the storage nodes with the matching entityID for all of the vrfIDs if vrfID is not speciified.
	-name <*iqn*>	Displays all of the storage nodes along with the matching IQN.
	-vrfID <*vrfID*>	If the <*vrfID*> is not specified, it will match the entries for all of the vrfIDs.
--entity	Displays the entities with the matching <*eid*>.	
--pg	Displays all of the registered portal groups.	
	-storageNode <*iqn*>	Displays the portal groups with the matching storage node.
	[-portalIP <*IP_address*>[-portalPort <*port_number*>]	Displays the portal groups with the matching portal IP address or portal IP address with portal port.
	-tag <*tag*>	Displays the portal groups with the matching tag.
--portal	Displays all of the registered portals.	
--primary	Displays the ISNS primary domain of the Virtual Fabric.	

Examples

To display the device details:

```
switch:admin> isnsShow --device

vrfID  |entityID |name                 |alias  |type
-----------------------------------------------------
2      |XYZ      |iqn.xxx.com.example1 |BCM123 |Target
3      |ABC      |iqn.xxx.com.example2 |BCM456 |Target

Note: the above example is for the output on the primary domain.
On the secondary domains, it will show the error message of
“This command is only supported on the primary domain,
use 'isnsShow --primary' to find the primary domain”.
```

To display the entity details:

```
switch:admin> isnsShow --entity
vrfID|entityID |protocol |registrationPeriod
——————————————————————————
2    |XYZ1      |iscsi    |25
3    |ABC1      |iscsi    |10

Note: the above example is for the output on the primary domain.
On the secondary domains, it will show the error message of
“This command is only supported on the primary domain,
use 'isnsShow --primary' to find the primary domain”.
```

To display the portal groups:

```
switch:admin> isnsShow --pg

vrfID|storageNode              |portalIP   |portalPort |portal    |tag
                                                        Protocol
————————————————————————————————————————————————————————————————————————
0    |iqn.2024-03.com.example1 |10.10.10.2 |10         |tcp       |1
1    |iqn.2024-03.com.example2 |10.10.10.2 |10         |tcp       |1
1    |iqn.2024-03.com.example1 |10.10.10.2 |11         |udp       |2
1    |iqn.2024-03.com.example2 |20.10.10.3 |12         |udp       |2

Note: the above example is for the output on the primary domain.
On the secondary domains, it will show the error message of
"This command is only supported on the primary domain,
use 'isnsShow --primary' to find the primary domain".
```

To display the portal details:

```
switch:admin> isnsShow --portal

The expected output format of the command (example) is as below:

vrfID | entityID |portalIP   |portalPort |portalProtocol|scnPort|
scnProtocol   |esiPort    |esiProtocol
————————————————————————————————
0     |ABC1      |10.10.10.2 |10          |tcp           |2     |
udp           |20         |tcp
1     |XYZ2      |20.10.10.3 |12         |udp           |5     |
tcp           |180        |udp

-storageNode: IQN of the iSCSI device to display
-entityID: ID of the entity to display
-pg: Portal Groups to display
-portal: Portals to display
-portalProtocol: portal port protocol (tcp/udp)
-scnProtocol: SCN port protocol (tcp/udp)
-esiProtocol: ESI port protocol (tcp/udp)

Note: the above example is for the output on the primary domain.
On the secondary domains, it will show the error message of
"This command is only supported on the primary domain, use
'isnsShow --primary' to find the primary domain".
```

To display the primary device details:

```
switch:admin> isnsShow  --primary

------------------------------------------------------------
domainID       |ipAddress        |ipAddressV6            |
------------------------------------------------------------
2              |10.10.10.2       |1080::8:800:200C:1234    |
```

```
-doaminID: the isns primary domain ID
-ipAddress: the IPv4 address of a switch.
-ipAddressV6: the IPv6 address of a switch. If not configured, it will show blank.

Note: the above command can be executed on both the primary
domain and the secondary domains.
```

See Also

isnsConfig, isnsDD, isnsDDSet

itemList

Lists parameter syntax information.

Synopsis

```
item_list = element | element white item_list
element = item | item - item
item = num | slot [white]/ [white] num
slot = num
num = hex | int
int = int digit | digit
hex = 0x hex digit | hex hex digit
digit = 0|1|2|3|4|5|6|7|8|9hex digit = digit |A|B|C|D|E|F|a|b|c|d|e|f
white = *["\\t\\f\\r ,"]
```

Description

All kernel diagnostics have at least one item list parameter to specify which ports to test. The normal default value for this parameter is to select everything.

This is not a command; rather, it is a common parameter to many commands.

If you want to restrict the items to be tested to a smaller set, the parameter value is an item list with the following characteristics:

- It is a comma-separated list of items.
- Each item in the list can be a single element or a range of elements separated by a dash character or a combination of both. For example,"0,3,4-6,1","0,1,3,4,5,6", and"0 3 4 - 6 1" each select items 0, 1, 3, 4, 5, 6, and 7.
- Spaces and tab stops are skipped.
- Each item might be proceeded by an optional slot number followed by a slash ("/").

Besides the syntax rules, there are also some grammatical restrictions on the slot numbers:

- Once specified, a slot selection applies to all items to the right of the slot selections until the next slot selection or the end of the item list. For example,"1/0 - 15" and"1/0 - 1/15" are equivalent.
- If no slot number is specified, user port lists are specified by area number. For instance,"0, 16, 32" and"1/0, 2/0, 3/0" specify the same ports on a 16-port/blade system. On that same system,"1/0, 16, 32" is not a valid list: even though it is legal syntax, the ports do not exist.
- If no slot number is specified, all lists except user port lists use the default slot 0.
- No list type except for user port lists may specify multiple conflicting slot numbers. For instance,"1/0, 2/0, 3/0" is a valid user port list but is not valid for any other type of list.

In the case of conflicting settings within a single item list, an error is generated, as described earlier. In the case of multiple item list parameters, the last one on the command line overrides previous settings.

The exact type of list varies, depending on the test and the parameter; however, the most common are blade ports and user ports. A list of blade ports is most commonly used by ASIC-level tests such as **turboRamTest** and represents which ports on the current blade (specified with **--slot** *number*) are tested. A list of user ports is used by higher-level tests to specify which user-accessible external ports within the current switch (selected during Telnet login) are tested. When specified in an item list, user ports might be specified by either the area portion of the ports Fibre Channel address or with *slot*/*port* notation. For nonblade systems, the port number on the silkscreen is the area number, so the two notations are identical.

For item list parameters, the parameter type is PT_LIST and the list type is one of the following:

Type	Grouping	Description
BPORTS	Blade	Blade ports, internal and external ports.
UPORTS	Switch	User ports, ports with external connections.
QUADS	Blade	Quadrants, group of (normally 4) ports.
CHIPS	Blade	Chips, Asics within a blade.
MINIS	Blade	Mini switches.
SLOTS	Chassis	Slots.
INDEX	N/A	Anything.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

None

See Also

portLedTest, portLoopbackTest

killTelnet

Terminates an open Telnet session.

Synopsis

killtelnet

Description

Use this command to terminate an open Telnet session. The command lists all current SSH, Telnet, and serial port login sessions and information such as the session number, login name, idle time, IP address of the connection, and timestamp of when the login session was opened. The command prompts you to specify the number of the session that you want to terminate. The list of open sessions displayed with **killTelnet** includes your current session; be sure not kill your own Telnet session.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Examples

To terminate an open Telnet connection:

```
switch:admin> killtelnet
Collecting login information....

                   List of sessions (3 found)
_____________________________________________________________________________
 Session No   USER                  TTY      IDLE     LOGIN@ FROM
_____________________________________________________________________________
     0        admin                 ttyS0    40:40    Wed19  -
     1        maintenance           pts/0    18.00s   07:20  10.80.18.15
     2        admin                 pts/1    5.00s    07:20  10.80.18.15
_____________________________________________________________________________
Please verify the Session details and Enter a Number to terminate (q to quit) 1
_____________________________________________________________________________
 USER                            TTY      IDLE     LOGIN@ FROM
_____________________________________________________________________________~
 maintenance                     pts/0    18.00s   07:20  10.80.18.15
_____________________________________________________________________________
Confirm Kill Session (Y/[N]): y

Killing Session....  Done!

Collecting login information....

                   List of sessions (2 found)
_____________________________________________________________________________
 Session No   USER                  TTY      IDLE     LOGIN@ FROM
_____________________________________________________________________________
     0        admin                 ttyS0    40:50    Wed19  -
     1        admin                 pts/1    4.00s    07:20  10.80.18.15
_____________________________________________________________________________
Please verify the Session details and Enter a Number to terminate (q to quit) q
```

See Also

None

lacp

Configures or displays various parameters of Link Aggregation Control Protocol (LACP) modules.

Synopsis

lacp --config -sysprio *priority*
lacp --default
lacp --show
lacp --help

Description

Use this command to configure or display various parameters of LACP modules.

Notes

This command is supported only on the Directors that support Brocade FC32-64 Port Blade or Brocade SX6 blades.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--config -sysprio *priority*	Configures system priority. The valid values are from 0 through 65535.
--default	Removes all the non-default configuration with respect to LACP and reverts to default.
--show	Displays the LACP system information.
--help	Displays the command usage.

Examples

To configure system priority:

```
switch:admin> lacp --config -sysprio 100
```

To display protocol parameters:

```
switch:admin> lacp --show
LACP system prio 100
LACP System ID: 0x0064,00-27-f9-02-87-94
```

To revert to default configuration:

```
switch:admin> lacp --default
```

See Also

None

ldapCfg

Maps LDAP AD server roles to default switch roles.

Synopsis

```
   ldapcfg --maprole <ldaprole> <switchrole>
   ldapcfg --unmaprole <ldaprole>
   ldapcfg --mapattr <ldaprole> {[-l <LF_ID_list>]
[-h <LF_ID>] [-c <chassis_role>]}
   ldapcfg --show
   ldapcfg --help
```

Description

Use this command to map a Lightweight Directory Access Protocol (LDAP) Active Directory (AD) server role to a default or user-defined roles available on a switch. This command also provides options to add or remove an existing mapping.

This command creates a mapping for a customer-defined group, which allows a user belonging to that group to login to the switch with the permissions associated with the mapped switch role.

This command supports one-to-one role mapping. For example, you might map the "SAN administrator" AD server group to "admin" role on switch but remapping of "SAN administrator" is not allowed with another entry. Although "SAN administrator" mapping can be modified from "admin" to other roles on switch.

Beginning from Fabric OS v9.0.1, in VF mode, an LDAP local user is not allowed to login if the AD group membership is not mapped with a switch role or LDAP local user role mapping is not done or **brcdadvfdata** attribute is not defined on AD server. In non-VF mode, an LDAP local user is allowed to login only if the AD group membership is mapped or LDAP user to role is mapped.

A firmware upgrade to Fabric OS v9.0.0 and later from any earlier versions will display a warning message if the LDAP authentication is configured on a device.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command takes as input an action and its associated arguments. When no operand is specified, the command prints the usage.

This command has the following operands:

--maprole Maps an LDAP role to a specified switch role. The following operands are required:

<ldaprole> Specifies the LDAP role to be mapped to a switch role. The role must be a valid AD server role. A maximum of 64 characters are allowed for the ldaprole string. The string can consist of upper and lowercase letters, numbers, and special characters from decimal 32 through decimal 126 of ASCII table. If any of the following character is carried forward from earlier versions of *ldaprole* then the mapping is ignored in the Fabric OS v9.0.0 and later.

- / - forward slash
- []- opening and closing square brackets
- : - colon
- ; - semicolon
- | - pipe
- = - equal to
- , - comma
- + - plus sign
- * - asterisk
- ? - question mark
- > - greater than
- < - less than

<switchrole> Specifies the switch role to which the LDAP role is mapped. Valid switch roles include the following:

- admin
- basicswitchadmin
- fabricadmin
- maintenance
- operator
- securityadmin
- switchadmin
- user
- zoneadmin
- any other user-defined role on switch

--unmaprole Removes the mapping between an LDAP role and a switch role. When a user-defined role is mapped with any LDAP role then it cannot be deleted using **roleconfig** command. Use the **--show** option for a listing of existing mappings. The following operand is required:

<ldaprole> Specifies the LDAP AD sever role to be removed from the mapping.

--mapattr <*ldaprole*> Adds the specified attributes to an existing LDAP role mapping. This operand is valid only in VF mode. The attribute value should not exceed 2048 characters. The attribute mapping for an LDAP role are to be removed before disabling the VF mode on a device when you configure to non-VF mode. Use **ldapcfg --unmaprole** to unmap the role and its corresponding attributes, followed by **ldapcfg --maprole** to remap only the LDAP role without any attributes before configuring device to non-VF mode. To map attributes, specify one or more of the following operands:

-l <*LF_ID_list*> Specifies the Logical Fabrics to be added to the LDAP role. The value for the LF_ID_list format is "<switchrole1>=<start_lf_id>-<end_lf_id> [;<switchrole2>=<start_lf_id>-<end_lf_id>]". For example, "user=1-10;admin=11-128". Beginning from Fabric OS v9.0.0, the option uses the first mapping from the VF list for LDAP authentication and authorization when duplicate VF list is configured.

-h <*LF_ID*> Specifies the home Logical Fabric. Home LF Role is the default logical switch context when you have no permission to log in to a particular logical switch context or over management interface. Home VF configuration (on LDAP server or switch) must be within the range and a part of the configured VF list. The VF list configuration must exist for Home VF configuration to be taken into account.

-c <*chassis_role*> Specifies the access permissions at the chassis level. Valid chassis roles include the default roles and any of the user-defined roles.

--show Displays a table of existing mappings between LDAP roles and their corresponding switch role.

--help Displays the command usage.

Examples

To display current LDAP and switch role map:

```
switch:admin> ldapcfg --show
  LDAP Role   |  Switch Role  |  Home VF  |  Chassis Role
-------------------------------------------------------
  ldaprole    |  admin=1-128  |  25       |  admin
-------------------------------------------------------
```

To map an LDAP AD server role to the switch role of "operator":

```
switch:admin> ldapcfg --maprole SANoperator operator
LDAP role SANoperator has been successfully mapped.
```

```
switch:admin> ldapcfg --unmaprole SANoperator
LDAP role SANoperator has been successfully unmapped.
```

To add attributes to an LDAP AD server role:

```
switch:admin> ldapcfg --mapattr ldaprole -l "user=1-10;admin=11-128" -h 128 -c admin
```

See Also

aaaConfig, userConfig

lfCfg

Configures and displays logical fabrics.

Synopsis

```
lfcfg {--show | --showall} -cfg
lfcfg {--show | --showall} -lisl [-v]
lfcfg {--show -xisl [<slot>/]<port> | --showall -xisl}
lfcfg --lislenable
lfcfg --help
```

Description

Use this command to display logical fabric configuration information, to determine the status of logical interswitch links (LISLs), to enable LISLs between logical switches, and to display information about the XISLs and LISLs associated with each XISL.

A logical switch is a partition created on a physical switch that shares the physical resources of the base fabric while functioning as an independent entity in a "virtual" logical fabric. The logical fabric sits on top of a base physical fabric and ties otherwise disconnected logical switches together to share the same connectivity and physical resources. At the same time, the logical fabric provides protocol and management isolation, and each logical fabric is independently scalable.

The display options provided with this command show the logical fabric configuration for a given logical switch context or for a chassis context. Each logical switch displays only the user ports that are configured to be part of that switch instance. The switch context is defined by the fabric ID. The default context is the base logical switch that you are placed in upon login. The default logical switch context is defined by the fabric ID 128. To change the context, use the **setContext** command.

When issued with the **-cfg** option, this command displays the following information:

Chassis	Numeric identifier for the chassis.
Chassis WWN	Chassis world wide name.
Base switch Domain	The domain ID of the base switch.

For each logical switch, the following information is displayed:

Logical Switch	Numeric identifier for the logical switch within the chassis.
Base switch	Yes or No. This field indicates whether or not this logical switch is the base switch.
Fabric Id	The logical switch fabric ID (FID).
State	The state of the logical switch: Online or Offline.
Switch WWN	The logical switch world wide name.

When issued with the **-lisl** option, the command displays the following information:

FID	Fabric ID of the logical switch.
Port	Number of the logical LISL port.

remote-domain	Domain ID of the base switch in the remote chassis.
Name	Switch name.
State	Port state: Online or Offline.
Associated physical ports	Physical ports associated with the LISL ports.

When **lfCfg** is issued within a logical switch context, only the configuration regarding that switch and the fabrics reachable from that switch is displayed. When the command is issued in a chassis context the information for all chassis in the base fabric reachable from the current chassis is displayed. Executing chassis-level commands requires chassis permissions. Refer to the **userConfig** command for information on setting chassis user permissions.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

You cannot use the **portEnable** command on logical ports. Use **lfcfg** with the **--lislenable** option to re-enable disabled LISL ports on a logical switch.

Operands

This command has the following operands:

--show -cfg	Displays information for the fabric ID set by the context in all chassis reachable from the base fabric.
--showall -cfg	Displays information for all fabrics in all chassis reachable from the chassis context in which the command is executed. This option requires chassis permissions.
--show -lisl	Displays status information about the LISLs in the logical switch set by the context.
--showall -lisl	Displays status information of all LISLs in the chassis. This option requires chassis permissions.
	-v Displays, in addition to the LISLs, the physical ports on the base switch that are associated with the LISL ports. This operand is optional with the **-lisl** option.
--show -xisl [<*slot*>/]<*port*>	Displays the XISL and the LISLs associated with it for the specified XISL port. For each LISL port, the output displays the FID, LISL State (online/offline) and the local and remote logical switch WWNs. This command must be executed from the base switch.
--showall -xisl	Displays the XISL connections between two base switches for all XISL ports. This command must be executed from the base switch.
--lislenable	Re-enables all LISLs in the fabric that were disabled either due to **-lisldisable** option used during logical switch creation or by some conflict or error condition in the fabric. This command provides the option of manually reestablishing the LISLs after the error condition has been resolved.
--help	Displays the command usage.

Examples

To display logical fabric information for FID 2 in all chassis reachable from the base fabric.

```
switch:admin> lfcfg --show -cfg

------------------------ Chassis: 1 ---------------------
Chassis WWN: 10:00:00:05:1e:39:82:64
Number of Partitions: 2
Base switch domain: 1

   Logical switch: 2  Base switch: YES       Fabric Id: 2
   State: Online(1)   Switch WWN: 10:00:00:05:1e:39:81:67
```

```
----------------------- Chassis: 2 -----------------------
Chassis WWN: 10:00:00:05:1e:0b:a4:5e
Number of Partitions: 2
Base switch domain: 2

   Logical switch: 2  Base switch: YES       Fabric Id: 2
   State: Online(1)   Switch WWN: 10:00:00:05:1e:0b:a4:41
```

To display information for all fabrics in all chassis reachable from the base fabric:

```
switch:admin> lfcfg --showall -cfg

---------------------- Chassis: 1 -----------------------
Chassis WWN: 10:00:00:05:1e:39:82:64
Number of Partitions: 2
Base switch domain: 1

   Logical switch: 2   Base switch: YES       Fabric Id: 2
   State: Online(1)    Switch WWN: 10:00:00:05:1e:39:81:67

   Logical Switch: 1   Base switch: NO         Fabric Id: 1
   State: Online(1)    Switch WWN: 10:00:00:05:1e:39:81:66

---------------------- Chassis: 2 -------------------------
Chassis WWN: 10:00:00:05:1e:0b:a4:5e
Number of Partitions: 2
Base switch domain: 2

   Logical switch: 2   Base switch: YES        Fabric Id: 2
   State: Online(1)    Switch WWN: 10:00:00:05:1e:0b:a4:41

   Logical Switch: 1   Base switch: NO         Fabric Id: 1
   State: Online(1)    Switch WWN: 10:00:00:05:1e:0b:a4:40
```

To display the LISLs in the logical switch:

```
switch:admin> lfcfg --show -lisl
FID     Port#   remote-domai Name   State

2       384     24            sw0   PT Online
```

Displays status information about the LISLs in the logical switch set by the context:

```
switch:admin> lfcfg --show -lisl -v

ID Port# remote-domain Name State Associated Physical Ports
2  384   24            sw0  PT Online 1/29, 2/41, 3/33, 4/24
```

To display information about all LISLs in the chassis:

```
switch:admin> lfcfg --showall -lisl

FID     Port#   remote-domain   Name     State
2       384     24              sw0      PT Online
3       385     24              sw0      PT Online
```

To display all XISLs and the LISLs associated with each XISL:

```
switch:admin> lfcfg --showall -xisl

XISL Port No. : 12/30
LISL Pt. FID LISL State Local LS WWN            Remote LS WWN

450   10  PortOnline 10:00:00:05:1e:48:f8:02 10:00:00:05:1e:58:b2:5a
451   20  PortOnline 10:00:00:05:1e:48:f8:03 10:00:00:05:1e:58:b2:5b
452   30  PortOnline 10:00:00:05:1e:48:f8:04 10:00:00:05:1e:5b:69:d5
453   10  PortOnline 10:00:00:05:1e:48:f8:02 10:00:00:05:1e:5b:69:d4
454   30  PortOnline 10:00:00:05:1e:48:f8:04 10:00:00:05:1e:58:bd:6b
455   10  PortOnline 10:00:00:05:1e:48:f8:02 10:00:00:05:1e:58:bd:6a

XISL Port No. : 12/31
LISL Pt. FID LISL State        Local LS WWN            Remote LS WWN
448   10  PortOnline 10:00:00:05:1e:48:f8:02 10:00:00:05:1e:0b:87:dd
449   20  PortOnline 10:00:00:05:1e:48:f8:03 10:00:00:05:1e:0b:87:de
```

To display a specific XISL and the LISLs associated with it

```
switch:admin> lfcfg --show -xisl 12/31

XISL Port No. : 12/31
LISL Pt. FID LISL State  Local LS WWN            Remote LS WWN
448 10  PortOnline  10:00:00:05:1e:48:f8:02 10:00:00:05:1e:0b:87:dd
449 20  PortOnline  10:00:00:05:1e:48:f8:03 10:00:00:05:1e:0b:87:de
```

See Also

None

license

Adds, removes, or displays license keys.

Synopsis

```
license --install -key <lic_key>
license --install -usb <lic_path>
license --install -h <host_ip> -t <protocol>
     [-m <server_port_number>] -u <user>
     [-p <password>] -f <filepath/xmlfile>
license --remove {<serial_num> | -key <lic_key>}
license --show [<serial_num> | -lid | -port]
license {--release | --reserve} -port <port1>[-<port2>]
license --export -s all {-usb -d <directory> | -h <host_ip>
 -t <protocol> [-m <server_port_number>]
 -u <user> [-p <password>]
 -d <directory>}
license --export -s <serial_number>
     {-usb [-f <path/file_name> | -d <directory>]
     | -h <host_ip> -t <protocol>
     [-m <server_port_number>]
 -u <user> [-p <password>]
```

```
{-f <path/file_name> | -d <directory>}}
```

Description

Use this command to add a license key to a switch, remove a license key, or display the current license keys.

A license key is a string of any length consisting of upper and lowercase letters and numbers. License keys are case-sensitive. The license key must be entered exactly as issued. The system may accept an incorrectly entered license, but the licensed products will not function. After entering the license, use the **license --show** command to validate the product associated with the license. If no licensed products are shown, it means the license is invalid.

The representation of the license can be either a license key or a serial number. The license key is a string with alpha numeric characters and the license serial number is a string with the format of **FOS-XX-X-XX-XXXXXXXX**. Refer to *Brocade Fabric OS Software Licensing User Guide*, for more information about the license certificate file details and the license information of the specified license key.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

--install	Installs the new licenses.
	-key The license key.
	The following options are supported when installing or exporting the licenses with serial number from a file.
	-h The remote host IP address.
	-t The transport protocol. Supported protocols are SCP, SFTP, or FTP.
	-m The server port number.
	-u The user name of the remote system.
	-p The password of the remote system. Beginning with Fabric OS v9.2.2, this option is made as interactive and requires user input during execution.
	-f The file path in the remote system. This option is valid only for exporting a single file with the user-defined file name that is **-s** with a serial number.
	-usb *license_path* Installs the license from a USB storage device. The USB storage must be enabled using the **usbstorage --enable** command. The *license_path* must be the exact path of the license certificate present in the USB storage.
--remove	Removes the specified license key. The *serial_num* option removes the v4 licenses; whereas the **-key** option removes v2/v3 licenses.
--export	Exports the license certificate installed on the switch to a remote server.
	-s The serial number to export a specific license certificate or use **all** to export all license certificates.
	-d The target directory or path.
	-usb Exports the license from a switch to an USB storage device.
--show -lid	Displays the license ID. The *serial_num* option is optional.
--show -port	Displays the details of the PORT, DD-PORT, or QUAD PORT license status and port assignments.
--release | --reserve	Reserves or releases the specified port.
-port [*port_num* | *port_num_range*]	The switch port number or range of ports.

Examples

To install a new license:

```
switch:admin> license --install -h 10.20.30.40 \
-t scp -u user -p testpwd -f /test/test1/test.xml

License install failed - Invalid input parameters

license --install {-key <lic_key> | -usb <lic_path> |
{-h <hostip> -t <protocol> [-m <server_port_number>]
-u <user> -f <filepath/xmlfile>}}
```

To display licenses installed on a switch:

```
switch:admin> license --show

License Id : 90:xx:xx:xx:xx:xx

 License 1 :
 ------------------------------------------------------------
 License key : 1ab1b32bchuwye34yi2yiuy32iihi23i
 License features : xxx
 License Capacity : 5

 License 2 :
 ------------------------------------------------------------
 License key : cwidci2u3h29898080hio989838hdffd
 License features : xxxx
 License 3 :
 ------------------------------------------------------------
 License serial number : FOS-xx-x-xx-xxxxxxxx
 License features : xxx
 xxx
 xxx
 Generation date : 10/23/2019

 License 4 :
 ------------------------------------------------------------
 License serial number : FOS-xx-x-xx-xxxxxxxx
 License features : xxx
 License Capacity : xxx
 Generation date : 10/23/2019
```

To display the license ID of the switch:

```
switch:admin> license --show -lid
License  Id: 10:xx:xx:xx:xx:xx
```

To display information of the license certificate file:

```
switch:admin> license --show FOS-xx-x-xx-xxxxxx
Product Name   :FOS
LicenseId      :10:xx:xx:xx:xx:xx:xx:xx
Serial Number  :FOS-xx-x-xx-xxxxxxxx
Feature Name   :######
```

```
Capacity       :64
Date Generated :10/24/2019
Date Expiry    :NA
Validaity Days :NA
Key Index      :1
Lic Sign       OjK4GnWCabcHUSEz8+J0V6uVtFNmRRC/Yv6WfEjaQS4GCBOKiFqy14bYkgJGBlqNkcX
+vTrQMN3iPKVz9RVM/L5SHulmclexWQ2bSYDdphvKXBArV6uQY9sbk0OL9Nk7f7QE2w7jY1AEPiYZZ70UqGc85fPSQvvTI9T
+GQlw4oN7ntTE7gM6DW2b687DUinFgVBIWKzAvSDUvvRuqvJCfHptRT5Vb4o2mKR+R2/6+VIgqopiVrfU974O6R/
xXONWtR1MoU5HyHGtjlfhkvkZ7rfu/QMd53rQLwfuiS5NNV7CBfaau93CPP9/xovutoWbDc6OkSulq74YOqLwSb
+flNOHiWUHUjkXRVHtAAJFygymVohzVMeyBOvhvd4DzfDfcWNQfVSQsyMm5bLV2JjhAol4d0cUu1nCc94GjRIITXSAvcLkUMYHvXH8p1DYKJ3PQyku5LW1A
+PUk8lWW7FN9BSknAog4vUKuSX7BC1RuXitGJP+BTvzX1mxcOBC50kvzSlV8vLLUogzaSTJSPdsfLwCukIkBJxSQLobKM8cOtMC
+QeWtXQmFQ3qx44k2qAhvB5O/5wXd1lZFt/oBe0mr5aLuApXQ7Drp4JvuHcOiOVqxYACIhOHo9kaenBEVcOuiC6mJqS1CgP8oq4PS4=
```

To remove or deactivate a license key:

```
switch:admin> license --remove -key  \
121i3ubiy13ubiu123hbi1ub3898ybfv
For license change to take effect, it may be necessary to enable affected ports...
```

To remove a license using a serial number:

```
switch:admin> license --remove FOS-xxxxxxxx  \
For license change to take effect, it may be necessary to enable affected ports...
```

To reserve a port:

```
switch:admin> license --reserve -port 1 \
```

To release a port:

```
switch:admin> license --release -port 1 \
```

To display ports:

```
switch:admin> license --show -port \
   48 SFP-based ports are available in this switch
   16 SFP-DD-based ports are available in this switch
   Ports on Demand license is installed
   Double Density Ports on Demand license is installed
     Dynamic POD method is in use

   48 SFP-based port assignments are provisioned for use in this switch:
        32 SFP-based port assignments are provisioned by the base switch allowance
        16 SFP-based port assignments are provisioned by the Ports on Demand license
   48 SFP-based ports are assigned to the base switch allowance or installed licenses:
        32 ports are assigned to the Ports on Demand base switch allowance
        16 SFP-based ports are assigned to the Ports on Demand license
   SFP-based ports assigned to the base switch allowance:
        0, 1*, 2, 3*, 4*, 5*, 6*, 7*, 8*, 9*
        10*, 11*, 12*, 13*, 14*, 15*, 16*, 17*, 18*, 19*
        20*, 21*, 22*, 23*, 24*, 25*, 26*, 27, 28*, 29*
        30*, 38*
   SFP-based ports assigned to the Ports on Demand license:
        31*, 32*, 33*, 34*, 35*, 36*, 37*, 39*, 40*, 41*
        42*, 43*, 44*, 45*, 46*, 47*
   SFP-based ports that are not assigned:
        None
```

```
8 license reservations are still available for use by unassigned ports

45 license assignments are held by offline ports (indicated by *)

16 SFP-DD-based port assignments are provisioned for use in this switch:
     0 SFP-DD-based port assignments are provisioned by the base switch allowance
     16 SFP-DD-based port assignments are provisioned by the Double Density Ports on Demand license
9 SFP-DD-based ports are assigned to the base switch allowance or installed licenses:
     0 ports are assigned to the Double Density Ports on Demand base switch allowance
     9 SFP-DD-based ports are assigned to the Double Density Ports on Demand license
SFP-DD-based ports assigned to the base switch allowance:
     None
SFP-DD-based ports assigned to the Double Density Ports on Demand license:
     48*, 49*, 50*, 51*, 52*, 53*, 54*, 55*, 56*
SFP-DD-based ports that are not assigned:
     57, 58, 59, 60, 61, 62, 63
7 license reservations are still available for use by unassigned ports

9 license assignments are held by offline ports (indicated by *)
```

To export a license certificate with the default name:

```
switch:admin> license --export -h 192.0.2.0
-t scp -u user1 -d /var/ftp/pub/private/user/lc_exp -s FOS-87-0-04-11204528
```

To export a license certificate with a file name specified by the user:

```
switch:admin> license --export -h 192.0.2.0
-t scp -u user1 -f /var/ftp/pub/private/user/lc_exp/abc.xml -s FOS-87-0-04-11204528
```

To export all license certificates with the default name:

```
switch:admin> license --export -h 192.0.2.0
-t scp -u user1 -d /var/ftp/pub/private/user/lc_exp -s all
```

To export license from a switch to an USB storage device:

```
switch:admin> license --export -s FOS-87-0-04-11227924 -usb -d license
License export successful.
```

To install the license using the USB storage:

```
switch:admin> license --install -usb /license/FOS-87-0-04-11204528.xml

License Installed [FOS-87-0-04-11204528]
2022/03/11-08:19:01 (GMT), [SEC-3051], 1100, SLOT 1 | CHASSIS,
   INFO, sw0, The license key/serial number FOS-87-0-04-11204528 is Added.
```

See Also

None

linkCost

Sets or displays the Fabric Shortest Path First (FSPF) cost of a link.

Synopsis

```
linkcost [--help | [<slot>/]<port> [<cost>]]
```

Description

Use this command to set or display the cost of an interswitch link (ISL). The cost of a link is a dimensionless positive number. The Fabric Shortest Path First (FSPF) protocol compares the cost of various paths between a source switch and a destination switch by adding the costs of all the ISLs along each path. FSPF chooses the path with minimum cost. If multiple paths exist with the same minimum cost, FSPF distributes the load among these paths. The default link cost value is 500.

When executed without operands, the command displays the current cost of each port on the switch, including non-ISLs. An E_PORT suffix is appended to the interface number of active ISLs. If a static cost is assigned to a port, a STATIC suffix is appended to the link cost. In this case, only the current link cost displays. Use **interfaceShow** to display both the default and current link costs.

Notes

This command sets a non-default, "static" cost for any port except EX_Ports.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

This command cannot be executed on a logical ISL (LISL).

Link cost cannot be configured on the AE_Ports. Static link costs configured on ports prior to the port becoming an AE_Port are cleared and reset to the default link cost of 7000 when the AE_Port comes online.

Operands

This command has the following operands

<slot>/	For bladed systems only, specifies the slot number for which to set or display the cost, followed by a slash (/).
<port>	Specifies the port number for which to set or display the cost, relative to its slot for bladed systems. Use **switchShow** to list of valid ports.
<cost>	Specifies the static cost of the link connected to the specified port. Recommended cost values are 0 through 32765. Setting static link cost values above 32765 will cause access problems. When you set a link cost value between 32766 and 65534, some parts of the fabric may become inaccessible. When you set the maximum link cost value of 65535, the port will become unusable. In either case, the command displays an appropriate warning message, and you are prompted to continue or to cancel and reissue the command with a lower link cost value. A value of 0 removes the static cost and the port reverts to its default link cost. If *cost* is not specified, the command displays the current cost of the specified port.
--help	Displays the command usage.

Examples

To display the link costs for all ports on a switch:

```
switch:admin> linkcost
             Port            Cost
```

```
-------------------------
1/0  (E_PORT)     500
1/1               500
1/2               500
1/3               500
1/4               500
1/5               500
1/6               500
1/7               500
1/8               500
1/9  (E_PORT)     500
1/10              500
1/11              500
1/12              500
1/13              500
1/14              500
1/15              500
Type <CR> to continue, Q<CR> to stop:
```

To set the ISL cost on a port:

```
switch:admin> linkcost 1/9 1000
```

To display the new cost value on the same port:

```
switch:admin> linkcost 1/9

Interface1/9  (E_PORT)  Cost   1000 (STATIC)
```

To delete the cost value and reset to default:

```
switch:admin> linkcost 1/9 0
```

To display the change:

```
switch:admin> linkcost 1/9

Interface1/9  (E_PORT)  Cost   500
```

To set the ISL cost to a value outside of the recommended range:

```
switch:admin> linkcost 1/9 32766
The link cost entered may prevent some parts of the fabric
from being accessible. If you do not want this to happen, choose n|no
and run 'linkcost' again with a value lower than 32766.
Do you want to continue? (yes, y, no, n): [no]y

switch:admin> linkcost 1/9

Interface1/9  (E_PORT)  Cost   32766 (STATIC)
```

To set the ISL cost to the maximum value:

```
switch:admin> linkcost 1/9 65535
The link cost entered will cause the port to become unusable.
If you do not want this to happen, choose n|no
and run 'linkcost' again with a value lower than 65535.
```

```
Do you want to continue? (yes, y, no, n): [no] n
```

See Also

lsDbShow, topologyShow, uRouteShow

lldp

Configures or displays various parameters of Link Level Discovery Protocol (LLDP) module.

Synopsis

```
lldp --create -profile <profile_name>
lldp --delete -profile <profile_name>
lldp --config -sysname <system name>
lldp --config -sysdesc <system description>
lldp --config -mx <multiplier> [-profile <profile_name>]
lldp --config --txintvl <interval> [-profile <profile_name>]
lldp --enable
lldp --enable -tlv <tlv_name> [-profile <profile_name>]
lldp --enable -port [slot/]port1[-port2]
      [-profile <profile_name> | -dcbxver {auto|cee|precee}]
lldp --disable
lldp --disable -tlv <tlv_name> [-profile <profile_name>]
lldp --disable -port [slot/]port1[-port2] [-profile <profile_name>]
lldp --clear -nbr [[slot/]port1[-port2]]
lldp --clear -stats [[slot/]port1[-port2]]
lldp --show
lldp --show -nbr [[slot/]port1[-port2]] [-detail]
lldp --show -stats [[slot/]port1[-port2]]
lldp --show -profile [<profile_name>]
lldp --show -port [slot/]port1[-port2]
lldp --default
lldp --help
```

Description

Use this command to configure or display various parameters of LLDP modules.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--create Creates the specified LLDP profile. A maximum of 32 characters are allowed for the *profile_name*. The values can be a combination of alphanumeric characters with special character underscore(_).

--delete Deletes the specified LLDP profile.

--config Configures global and LLDP profile parameters. The valid operators include the following:

- **-sysname** Configures system name used in the LLDP exchanges. The maximum length is 32 characters.

-sysdesc Configures system description used in the LLDP exchanges. The maximum length of the description must be 255 characters and may include alphanumeric characters and underscores(_).

-mx Configures multiplier values for the LLDP protocol. The *multiplier* valid range is from 2 through 10. The sub command **-profile** is optional and is used to configure **-mx** values on LLDP profile.

-txintvl Configures TX interval values for the LLDP protocol. The *interval* range is from 4 through 180 seconds. The sub command **-profile** is optional and is used to configure **-txintvl** values on LLDP profile.

-profile *profile_name* Configures the particular LLDP profile. This is an optional parameter.

--enable | --disable Enables or disables LLDP protocol across the switch and the valid operators include the following:

-port *[slot/]port* Enables or disables LLDP on the specified port. Also allows port range.

-dcbxver auto|cee|precee Enables or disables DCBx version. The default DCBx version is **auto**.

-tlv *tlv_name* Enables or disables the specified TLV on the profile or enables or disables LLDP TLV on global profile.

The values for *tlv_names* can be one of the following standard TLVs in LLDP.

- dcbx: IEEE Data Center Bridging exchange TLV
- fcoe-app: IEEE DCBx FCoE Application TLV
- fcoe-lls: IEEE DCBx FCoE Logical Link TLV
- dot1: IEEE 802.1 Organizationally Specific TLV
- dot3: IEEE 802.3 Organizationally Specific TLV
- mgmt-addr: Management Address TLV
- port-desc: Port-Description TLV
- sys-cap: System Capabilities TLV
- sys-desc: System Description TLV
- sys-name: System Name TLV

-profile *profile_name* Enables or disables the particular LLDP profile on a port when executed with **-port**.

--clear Clears LLDP information.

-nbr Clears the neighbor information for all ports or for the specified ports.

-stats Clears the LLDP statistics information for all ports or for the specified ports.

--show Displays the LLDP global information.

-nbr Displays the neighbor information for all ports or for the specified ports.

-detail Displays detailed neighbor information.

-stats Displays the LLDP statistics information for all ports or for the specified ports.

-profile Displays LLDP profile information.

-port Displays LLDP configuration for a specified port.

--default Removes all the non-default configuration with respect to LLDP and reverts to default.

--help Displays the command usage.

Examples

To display global configuration information:

```
switch:admin> lldp --show
LLDP Global Information
-----------------------
  system-name:             sw0
  system-description:      Brocade switch
  description:             lldpglobalconfig
  State:                   Enabled
  Mode:                    Receive/Transmit
  Advertise transmitted:   30 seconds
  Hold time for advertise: 120 seconds
  Tx Delay Timer:          1 seconds
  Transmit TLVs:           Chassis ID               Port ID
                           TTL                      System Name
                           IEEE DCBx                DCBx FCoE App
                           DCBx FCoE Logical Link
  DCBx FCoE Priority Values: 3
```

To display LLDP configuration for a given port:

```
switch:admin> lldp --show -port 4/1
LLDP information for 4/1
------------------------
  State:                   Enabled
  Mode:                    Receive/Transmit
  Advertise Transmitted:   30 seconds
  Hold time for advertise: 120 seconds
  Tx Delay Timer:          1 seconds
  DCBX Version :           CEE
  Auto-Sense :             Yes
  Transmit TLVs:           Chassis ID               Port ID
                           TTL                      System Name
                           IEEE DCBx                DCBx FCoE App
                           DCBx FCoE Logical Link
  DCBx FCoE Priority Values: 3
```

To display neighbor information for all the ports:

```
switch:admin> lldp --show -nbr
Local     Dead      Remaining Remote          Chassis ID     Tx   Rx    System
Intf      Interval  Life      Intf                                      Name
eth0      120       98        Gi1/0/1         28ac.9e12.7580 14   10 SJS-G29-RS1.nw-am.broadcom.net
7/16      120      103        TenGigabit      0005.3365.0bc4 5     5 sw0
                              Ethernet 1/0/29
7/17      120      105        TenGigabit      0005.3365.0bc4 5     5 sw0
                              Ethernet 1/0/31
8/ge10    120      107        7/ge16          8894.71ba.bab1 7     5 sw0
8/ge11    120      107        7/ge17          8894.71ba.bab1 5     5 sw0
```

To display a detailed neighbor information for a particular port:

```
switch:admin> lldp --show -nbr  1/8 -detail
MANDATORY TLVs
===============
Local port:  1/8  (Local port MAC: 0027.f8f3.877f)
Remote port: port0 (Remote port MAC: 0005.1e78.f005)
```

```
Dead Interval: 120 secs
Remaining Life : 101 secs
Chassis ID: 0005.1e78.f005
LLDP PDU Transmitted: 199  Received: 199
OPTIONAL TLVs
==============

DCBX TLVs
===========
Version : CEE
DCBX Ctrl OperVersion: 0  MaxVersion: 0  SeqNo: 1  AckNo: 2
DCBX ETS OperVersion: 0  MaxVersion: 0  Enabled: 1  Willing: 1 Error: 1
Enhanced Transmission Selection (ETS)
  Priority-Group ID Map:
    Priority : 0  1  2  3  4  5  6  7
    Group ID : 0  0  0  0  0  0  0  0
  Group ID Bandwidth Map:
    Group ID  :   0   1   2   3   4   5   6   7
    Percentage:   0   0   0   0   0   0   0   0
    Number of Traffic Classes supported: 8
DCBX PFC OperVersion: 0  MaxVersion: 0  Enabled: 1  Willing: 1 Error: 0
Priority-based Flow Control (PFC)
     Enabled Priorities: none
     Number of Traffic Class PFC supported: 8
Application OperVersion: 0  MaxVersion: 0  Enabled: 1  Willing: 1 Error: 0
FCoE Application Protocol
     User Priorities: none
iSCSI Application Protocol
     User Priorities: none
```

To display statistics information for all the ports:

```
switch:admin> lldp --show -stats
LLDP port statistics for 1/8
Frames transmitted: 202
Frames Aged out:    0
Vlan Info Aged out: 0
TLV Info Aged out:  0
Frames Discarded:   0
Frames with Error:  0
Frames Received:    202
TLVs discarded:     0
TLVs unrecognized:  0

LLDP port statistics for 1/9
Frames transmitted: 193
Frames Aged out:    0
Vlan Info Aged out: 0
TLV Info Aged out:  2
Frames Discarded:   0
Frames with Error:  0
Frames Received:    192
TLVs discarded:     0
TLVs unrecognized:  0
```

```
LLDP port statistics for 1/10
Frames transmitted: 0
Frames Aged out:    0
Vlan Info Aged out: 0
TLV Info Aged out:  0
Frames Discarded:   0
Frames with Error:  0
Frames Received:    0
TLVs discarded:     0
TLVs unrecognized:  0
```

To display LLDP profile information:

```
switch:admin> lldp --show -profile LLDP_Profile_1
Profile-name:           LLDP_Profile_1
Advertise transmitted:  20 seconds
Hold time for advertise:100 seconds
Enabled TLVs:           dot1;dot3;sys-cap;
Profile ports:          3/24
```

See Also

None

logicalGroup

Manages the MAPS groups.

Synopsis

```
   logicalgroup --create <group_name> -type <group_type>
[-feature <feature_name> -pattern <value>
| -members <member_list>]
   logicalgroup --delete <group_name> [-force]
   logicalgroup --addmember <group_name> -members <member_list>
   logicalgroup --delmember <group_name> -members <member_list>
   logicalgroup --clone <existing_group_name> -name <new_group_name>
   logicalgroup --update <group_name> -feature <feature_name>
        -pattern <value>
   logicalgroup --restore <group_name>
   logicalgroup --show [<group_name>] [-details]
   logicalgroup --help
```

Description

Use this command to manage groups that are to be monitored using the same set of thresholds. For example, you can create a group of ports that behave in a similar manner, such as UNIX ports or long-distance ports.

SFP_STATE for Ethernet ports were monitored in pre-v9.2.1 firmware. Beginning with Fabric OS v9.2.1, MAPS monitors the Ethernet ports in the IPS logical switch.

Refer to *MAPS Basic Elements* section in *Brocade Fabric OS MAPS User Guide* for more information on MAPS group.

Refer to *MAPS Scale Numbers* section in *Brocade Fabric OS MAPS User Guide* for more details on the maximum groups allowed.

Notes

This command requires a Fabric Vision license.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

<*group_name*> Specifies the name of the group to be configured. The name for the group must be unique; it is not case-sensitive and can contain up to 32 characters.

<*member_list*> Specifies the elements in the group. The member list must be enclosed in double quotation marks and can consist of the following:

Port and SFP groups:
- A single port, for example, "8" or "2/8".
- A port range where the beginning and end port are separated by a dash, for example, "8-13" or "2/8-13".
- A set of ports and port ranges separated by commas, for example, "3,5,7-10,15" or "2/3,2/5,3/7-10,4/15".

Circuit groups:
- A single circuit in VE_Port/circuit format, for example, "33/5".
- A circuit range in VE_Port/circuit format, for example, "33/1-3".
- A set of circuits separated by commas, for example, "33/1-3,33/5".

--create <*group_name*> Creates a group of monitored elements.

-type <*group_name*> Specifies the type of elements present in the group. Valid types include the following:

port	The elements are FC ports.
circuit	The elements are FCIP circuits.
sfp	The elements are SFP transceivers.

-feature <*feature_name*> Specifies the existing feature name for the group. Valid feature names are PORTNAME and NODEWWN.

-pattern <*value*> Specifies the wildcard characters while defining the feature characteristics. The wildcard characters "*" for any string, "?" for any single character, "[expr]" for one character from the set specified in the expression, or '!' for negation of the string, are supported. If '!' is specified in the pattern, the pattern must be in single quotes.

-members <*member_list*> Specifies the elements that are to be in the group.

--delete <*group_name*> [-force] Deletes a logical group of monitoring elements. You cannot delete a predefined group. You cannot delete a group that is used by any rules. The **-force** option overrides the default behavior. If a logical group is present in user-defined rules, the **-force** option deletes all the rules that are configured with the given group and then deletes the group.

--addmember <*group_name*> Adds members to the group.

-members <*member_list*> Specifies the elements that are to be added to the group.

--delmember <*group_name*> Deletes members from the group.

-members <*member_list*> Specifies the elements that are to be deleted from the group.

--clone Creates a replica of an existing group. The new group has all of the members of the existing group. You can further modify the newly created group. The following operands are required:

<existing_group_name> Specifies the name of an existing group. The group can be a predefined group or a user-defined group.

-name *<new_group_name>* Specifies the name of the group to be created.

--update Changes the characteristic string of an existing group.

-feature *<feature_name>* Specifies the existing feature name for the group. Valid feature names are PORTNAME and NODEWWN.

-pattern <*value*> Specifies the wildcard characters while defining the feature characteristics. The wildcard characters "*" for any string, "?" for any single character, "[expr]" for one character from the set specified in the expression, or '!' for negation of the string, are supported. If '!' is specified in the pattern, the pattern must be in single quotes.

--restore Restores the membership entries for the group.

<group_name> Restores entries for a single specified group. The name can be a predefined or a user-defined group created with feature option.

--show Displays detailed information for a single group or all groups in MAPS. For each group, the group name, predefined flow, type, member count, and group members are displayed.

<group_name> Displays information for a single specified group. The name can be a predefined or a user-defined group.

[-details] Displays detailed information for each group. This operand is optional.

--help Displays the command usage.

Examples

To create a group with three port members:

```
switch:admin> logicalgroup --create CRITICAL_PORTS
-type port -members "2, 10, 22"
```

To add members to a group:

```
switch:admin> logicalgroup --addmember CRITICAL_PORTS
-members "4, 5"
```

To delete members from a group:

```
switch:admin> logicalgroup --delmember CRITICAL_PORTS
-delmember "5"
```

To clone a group:

```
switch:admin> logicalgroup --clone CRITICAL_PORTS
-name LONG_DISTANCE_PORTS
```

To display the members of a group:

```
switch:admin> logicalgroup --show CRITICAL_PORTS
Group Name     |Predefined |Type |Member Count |Members
----------------------------------------------------------------
CRITICAL_PORTS  No          Port  9             2,4,10,22
```

To delete a group:

```
switch:admin> logicalgroup --delete CRITICAL_PORTS
```

To update a group:

```
switch:admin> logicalgroup --update dynGroup -feature portname -pattern "port1*"
```

To restore a group:

```
switch:admin> logicalgroup --restore ALL_HOST_PORTS
```

To display detailed information about the group:

```
switch:admin> logicalgroup --show group1 -details
GroupName         : group1
Predefined        : No
Type              : Port
MemberCount       : 6
Members           : 2,11,20-23
Added Members     : 11
Deleted Members   : 1
Feature           : PORTNAME
Pattern           : port2*
```

To display the monitored flows in an IPS logical switch:

```
switch:admin> logicalgroup --show
-----------------------------------------------------------------------------------------------------------------
Group Name                      |Predefined |Type              |Member Count |Members
-----------------------------------------------------------------------------------------------------------------
ALL_PORTS                       |Yes        |Port              |20           |1,32-50
ALL_FC_PORTS                    |Yes        |Port              |17           |1,32-34,36-39,41-42,44-50
ALL_E_PORTS                     |Yes        |Port              |3            |1,32-33
NON_E_F_PORTS                   |Yes        |Port              |14           |34,36-39,41-42,44-50
ALL_D_PORTS                     |Yes        |Port              |0            |
ALL_ETH_PORTS                   |Yes        |Port              |3            |35,40,43
ALL_LAGS                        |Yes        |LAG               |1            |6/LAG6
ALL_TS                          |Yes        |Temperature sensor|18           |0-17
ALL_PS                          |Yes        |Power Supply      |2            |1-2
ALL_FAN                         |Yes        |Fan               |2            |1-2
ALL_FLASH                       |Yes        |Flash             |1            |0
ALL_CERTS                       |Yes        |Certificate       |5            |HTTPS SW Certificate,
                                                                             LDAP Server CA
 Certificate,RADIUS
                                                                             Server CA Certificate,KAFKA
 Server
                                                                             CA Certificate,IDP Server CA
 Certificate
SWITCH                          |Yes        |                  |1            |1
CHASSIS                         |Yes        |                  |1            |1
ALL_SFP                         |Yes        |Sfp               |6            |1,32-33,35,40,43
ALL_10GSWL_SFP                  |Yes        |Sfp               |0            |
ALL_10GLWL_SFP                  |Yes        |Sfp               |0            |
ALL_25Km_32GELWL_JBA_SFP        |Yes        |Sfp               |0            |
ALL_25Km_32GELWL_SFP            |Yes        |Sfp               |0            |
ALL_40Km_32GELWL_SFP            |Yes        |Sfp               |0            |
```

```
ALL_32GSWL_SFP                  |Yes        |Sfp                |0            |
ALL_32GLWL_SFP                  |Yes        |Sfp                |0            |
ALL_32GLWL_JDB_SFP              |Yes        |Sfp                |0            |
ALL_32GSWL_QSFP                 |Yes        |Sfp                |0            |
ALL_OTHER_SFP                   |Yes        |Sfp                |2            |35,40
ALL_64GSWL_SFP                  |Yes        |Sfp                |3            |1,32-33
ALL_64GSWL_SFP_DD               |Yes        |Sfp                |0            |
ALL_64GLWL_SFP                  |Yes        |Sfp                |0            |
ALL_25Km_64GELWL_SFP            |Yes        |Sfp                |0            |
```

See Also

mapsConfig, mapsDb, mapsPolicy, mapsRule, mapsSam

logout

Logs out from a shell session.

Synopsis

```
logout
```

Description

Use this command to log out from a shell session. Remote login connections are closed and the local serial connections return to the **login** prompt.

The **exit** command is accepted as a synonym for **logout**, as is **Ctrl-D** at the beginning of a line.

Operands

None

Examples

To log out from an rlogin session:

```
switch:admin> logout
Closing the current session.
```

See Also

None

lsanZoneShow

Displays logical SAN zone information.

Synopsis

```
lsanzoneshow {-v | --verbose | -m | --maxcapacity |
      -r | --remove}
lsanzoneshow [-s | -d| -deviceinfo]
[-f <fabricid> | -w <wwn> | -z <
      zonename>] [-o | -sort]
lsanzoneshow --help
```

Description

Use this command to display the inter-fabric zones or LSAN zones. These zones are normal WWN zones created in FC Router EX_Port-connected fabrics and backbone fabrics. The LSAN zones are identified by the text string "lsan_" in the zone name. Note that the string is case insensitive so "LSAN_" also is valid. The FC Router uses these zones to establish the inter-fabric device import and export policy. The LSAN zones are established by zoning administration in each EX_Port-attached fabric and backbone fabric. Inter-fabric device sharing is allowed between two devices if the LSAN zones defined in their respective fabrics both allow the two devices to communicate; for example, the intersection of LSAN zones in two fabrics define the device sharing policy.

The LSAN zones are listed by fabric. Zone membership information (information about the devices in the zone) is provided for each LSAN zone. The default output displays only WWNs of the zone members.

Search parameters **-f**, **-w**, and **-z** allow searching for LSAN zones based on fabric ID, WWN of an LSAN zone member, or LSAN zone name.

"No LSAN zone found" is displayed if there is no LSAN zone information available at this FC Router.

Each LSAN zone entry displays the following:

Fabric ID	The ID of the fabric in which the LSAN zone was created.
Zone Name	The zone name.
Zone Members	The zone members or devices. The default output displays the WWN of the zone members.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-s *state*	Displays state information for the device and the LSAN zone information. Valid states include the following: **Configured** — Device is configured to be in an LSAN, but the device is neither imported nor exists in this fabric. **Initializing** — Device is in an intermediate state. It is not yet imported into the fabric. **EXIST** — Device exists in this fabric (the fabric of the zone entry). **Imported** — Device has been imported (proxy created) into this fabric.
-f *fabricid*	Displays LSAN zones in the specified fabric.
-w *wwn*	Displays LSAN zones containing the specified port WWN. The WWN format is *xx:xx:xx:xx:xx:xx:xx:xx*.
-z *zonename*	Displays LSAN zones with the specified zone name. The database for zones is displayed per switch, which can differ from the database stored on the other FCR switches.
-d | -deviceinfo	Displays the fabric IDs of the LSAN devices. This command displays fabric IDs for **Imported** and **EXIST** devices. The devices that do not exist in the corresponding edge fabrics are displayed as **configured**.
-o | -sort	Displays the WWNs of the zone members in ascending order.
-m | --maxcapacity	Displays the list of LSAN zones and LSAN devices to be removed before downgrading to older firmware version.
-r | --remove	Displays the list of configuration scripts that can used to remove LSAN zones and LSAN devices before downgrading to older firmware version.
-v | --verbose	Displays the property members in peer zones.
--help	Displays the command usage.

Examples

To display the LSAN zones:

```
switch:admin> lsanzoneshow
       Fabric ID: 4 Zone Name: lsan_fcr10_0
               50:05:07:65:05:84:0b:83
               50:05:07:65:05:84:09:0e
               10:00:00:00:c9:2b:6a:68
               21:00:00:20:37:18:22:55
       Fabric ID: 5 Zone Name: lsan_fcr11_0
               10:00:00:00:c9:2b:6a:68
               21:00:00:20:37:18:22:55
               50:05:07:65:05:84:0b:83
               50:05:07:65:05:84:09:0e
       switch#
```

To display the LSAN zones with device information:

```
switch:admin> lsanzoneshow -d
Fabric ID: 10 Zone Name: LSAN_10
     30:02:00:05:1e:61:23:8f  EXIST in FID 10
     30:02:01:05:1e:61:23:8f  EXIST in FID 10
     30:00:00:05:1e:61:23:8f  Configured
     30:06:00:05:1e:61:23:8f  Imported from FID 20
     30:06:01:05:1e:61:23:8f  Imported from FID 20
Fabric ID: 20 Zone Name: LSAN_20
     30:02:00:05:1e:61:23:8f  Imported from FID 10
     30:02:01:05:1e:61:23:8f  Imported from FID 10
     30:01:00:05:1e:61:23:8f  Configured
     30:06:00:05:1e:61:23:8f  EXIST in FID 20
     30:06:01:05:1e:61:23:8f  EXIST in FID 20
```

To display state information for the device and sort the WWNs in ascending order:

```
switch:admin> lsanzoneshow -s -sort
Fabric ID: 12 Zone Name: lsan_zone1
     30:06:00:05:1e:61:23:8f EXIST
     30:0c:00:05:1e:61:23:8f Imported
Fabric ID: 16 Zone Name: lsan_zone1
     30:06:00:05:1e:61:23:8f Imported
     30:0c:00:05:1e:61:23:8f EXIST
Fabric ID: 20 Zone Name: lsan_bb
     10:06:00:01:1e:61:23:8f Configured
     10:06:00:05:1e:61:23:8f Configured
     20:03:00:05:1e:61:23:8f Configured
     20:06:00:05:1e:61:23:8f Configured
```

To display the property members in peer zone:

```
switch:admin> lsanzoneshow -v
Fabric ID: 12 Zone Name: LSAN_HH_253_1_SB_020_1_0
    00:02:00:00:00:03:00:01
    10:00:8c:7c:ff:b1:90:80
    20:00:00:11:0d:16:00:00
Fabric ID: 12 Zone Name: LSAN_HH_253_2_SB_020_2_0
```

```
    00:02:00:00:00:03:00:01
    10:00:8c:7c:ff:b1:90:81
    20:01:00:11:0d:16:01:00
Fabric ID: 12 Zone Name: LSAN_HH_253_3_SB_020_3_0
    00:02:00:00:00:03:00:01
    10:00:8c:7c:ff:a9:a5:00
    20:02:00:11:0d:0b:00:00
(output truncated...)
```

See Also

fcrFabricShow, fcrPhyDevShow, fcrProxyDevShow, fcrRouteShow, switchShow

lsCfg

Configures and manages a logical switch.

Synopsis

```
lscfg --create <FID> [-b | -base] [-lisldisable] [-f | -force]
lscfg --create <FID> [-n | -ficon] [-lisldisable] [-f | -force]
lscfg --create <FID> -ips [-f | -force]
lscfg --delete <FID> [-f |-force]
lscfg --config <FID> {[-slot  slot1[-slot2]]
[-port port1[-port2] [-q | -qsfp]]} [-f |-force]lscfg --config <FID> -index index1[-index2]
[-q | -qsfp][-f |-force]
lscfg --restore_to_default <FID>lscfg --restore_slot_to_default slot
lscfg --change <FID> {-base | [-newfid <FID>]
[-ficon]} [-force]
lscfg --show [-provision] [-ge]
lscfg --show [-n | -name | -i | -instance]
lscfg --show -ficon [fid]
lscfg --show -ips [<FID>]
lscfg --help
```

Description

Use this command to create a logical switch and to modify logical switch configurations.

Use **-ips** option to create an IP Storage type logical switch that handles only IP Storage traffic.

The logical switch feature provides the ability to partition a single physical switch into multiple switch instances. Each of these switch partitions is referred to as a logical switch (LS). The logical switch feature allows you to configure multiple logical fabrics on top of a base (physical) fabric. Each logical fabric is made up of logical switches that share the physical resources of the base fabric, for example, interswitch link (ISL) connectivity. At the same time, protocol and management isolation of each logical fabric is maintained, and each logical fabric can scale independently.

The Default Logical Switch is created by the system and cannot be deleted. All switch ports not explicitly assigned to a logical switch are part of the default logical switch.

The Virtual Fabric (VF) feature must be enabled on the switch before you can configure a logical switch. Use the **fosconfig --enable vf** command to enable the feature. Use the **fosconfig --show** command to determine whether the VF feature is enabled or disabled on the switch.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Not all commands that support the **-force** option will prompt for user input when used without the **-force** option.

Operands

This command has the following operands:

--create Creates a logical switch instance. The following operands are supported.

- ***FID*** Specifies the Fabric ID. Each logical switch in a chassis is assigned a unique fabric identifier. The FID address space is shared between logical switches and EX_Ports. Valid FID values are integers between 1 and 128. The default logical switch is assigned FID 128 by default. This operand is required.
- **-b | -base** Creates a base logical switch on the chassis. A base logical switch communicates among different logical switches. Legacy switches can be connected to the base logical switch through EX_Ports, and interswitch links (ISLs) between base logical switches enable communication among different logical switches. This operand is optional.
- **-lisldisable** Configures the LISL ports to remain in the offline state after the logical switch is created. By default, LISL ports are created and set to online state after the logical switch is created. This option provides the capability to override the default behavior. Use the **lfcfg --lislenable** command to enable the LISL ports manually. This operand is optional.
- **-n | -ficon** Creates a logical switch with FICON configurations on the chassis. This option automatically enables configuration attributes such as IDID, fabric binding, high integrity fabric mode, DBR routing policy, 256-Area limited addressing mode, and so on. This operand is optional.
- **-f | -force** Executes the command without confirmation. This operand is optional.
- **-ips** Creates logical switch autoconfigured with IPS configuration that requires IDID mode persistently enabled and XISL mode disabled. This operand is optional.

--delete Deletes a logical switch with the specified fabric ID. The specified logical switch must exist and no ports should be configured on this partition. You must remove all ports from the logical switch before deleting the logical switch instance. Use the **lscfg --config** command to remove the ports.

- ***FID*** Specifies the Fabric ID of the logical switch. This operand is required.
- **-f | -force** Executes the command without confirmation. This operand is optional.

--config Configures the specified logical switch. This command assigns ports to the logical switch specified by a given FID. The ports are removed from the partition on which they are currently configured. This command prompts for confirmation, indicating that the specified ports will be disabled. The following operands are supported:

- ***FID*** Specifies the fabric ID of the logical switch. This operand is required.
- **-slot *slot1*[-*slot2*]** Specifies the slot number or a range of slot numbers separated by a dash, for example **-slot 3-5**. This operand is required.
- **-port *port1*[-*port2*]** Specifies the ports to be assigned to the logical switch. Provide a valid port, or a range of ports separated by a dash, for example **-port 3-8**. This operand is optional; if omitted, all ports on the specified slots are assigned.
- **-q | -qsfp** Moves all ports in a quad small form-factor pluggable (QSFP) group to be assigned to the logical switch. Supports only for ICL ports. This operand is optional.

-index *index1*[-*index2*]	Specifies either the individual port or disjoint port index ranges to move ports from one logical switch to another. This operand is optional.
-f | -force	Executes the command without confirmation. This operand is optional.

--restore_to_default *FID*	Moves all vacant ports in the logical switch specified by **FID** to the default switch. Use this command when **lsCfg --show** displays no ports, but the switch continues to generate errors indicating that there are ports on the switch.
--restore_slot_to_default *slot*	Moves all ports on a specified slot to the default switch.
--change	Changes the fabric ID of a logical switch, creates a base logical switch out of an existing logical switch, or removes base switch properties. The **-newfid** and **-base** operands are exclusive and may not be combined. The following operands are supported:

FID	Specifies the Fabric ID of the logical switch. This operand is required.
-newfid *FID*	Changes the fabric ID of an existing logical switch. This command effectively removes the logical switch from a given logical fabric and makes it part of another logical fabric.
-b | -base	Turns an existing logical switch into a base switch. When this command is issued on a switch that is already a base switch, this command removes the base switch properties. This command disables the current logical switch. After making the change, you must re-enable the switch.
-ficon	Turns an existing logical switch into a FICON mode logical switch. This command fails when it is issued on a switch that is already a FICON mode logical switch. There is no outage when changing a logical switch that is already configured to meet the criteria for a FICON switch to be a FICON mode logical switch. If the logical switch is not configured to meet the criteria then the switch is disabled with the changes configured and need to re-enable the switch.
-f | -force	Executes the command without confirmation. This operand is optional.

--show	Displays the partition configuration on a switch or chassis. Without any operands, the command displays all logical switches and the FC ports assigned to them. For each switch, the FID, switch role, and domain ID are displayed: base switch (bs) or default switch (ds). The following operands are optional with the **--show** option.

-ge	Displays partition configuration information for GbE ports. This operand is valid on the Brocade 7810 switches and Brocade SX6 blades.
-provision	Displays the partition configuration for all slots, regardless of the slot's status. This operand is valid only on a chassis and can be used with or without the **-ge** option.
-n | -name	Displays fabric ID, switch type, domain ID, switch name, and fabric name of the logical switch. This operand can be used with the **-n** or **-name** option.
-i |-instance	Displays the switch instance number of the logical switch.
-ips	Displays IP Storage logical switch configuration.

--help	Displays the command usage.

Examples

To create a base switch:

```
switch:admin> lscfg --create 1 -base
Creation of a base switch requires that the proposed
   new base switch on this system be disabled.
Would you like to continue [y/n]?: y
About to create switch with fid=1. Please wait...
```

```
Switch successfully created.

Logical Switch has been created with default configurations.
Please configure the Logical Switch with appropriate switch
and protocol settings before activating the Logical Switch.
```

To create a logical switch identified by fabric ID 2:

```
switch:admin> lscfg --create 2
A Logical switch with FID 2 will be created with default configuration.
Would you like to continue [y/n]?: y
About to create switch with fid=2. Please wait...
2023/06/20-10:55:56 (GMT), [TO-1005], 683, FID 2, INFO, switch_2,
     TO Profile Sys_TrafOpt_Version2 is enforced successfully.
sw1 Updating flash ...
2023/06/20-10:56:02 (GMT), [ZONE-1034], 684, FID 2, INFO, switch_2,
     A new zone database file is created.
2023/06/20-10:56:03 (GMT), [FV-1002], 685, FID 2, INFO, switch_2,
     Flow Vision Config Replay Completed Successfully.
2023/06/20-10:56:04 (GMT), [MAPS-1145], 686, FID 2, INFO, switch_2,
     FPI Profile dflt_fpi_profile is activated for E-Ports.
2023/06/20-10:56:04 (GMT), [MAPS-1144], 687, FID 2, INFO, switch_2,
     FPI Profile dflt_fpi_profile is activated for F-Ports.
2023/06/20-10:56:04 (GMT), [MAPS-1201], 688, FID 2, INFO, switch_2,
     MAPS has started monitoring with dflt_conservative_policy policy.

2023/06/20-10:56:17 (GMT), [PMGR-1001], 689, CHASSIS, INFO, sw0,
     Attempt to create switch 2 succeeded.
Logical Switch with FID (2) has been successfully created.

Logical Switch has been created with default configurations.
Please configure the Logical Switch with appropriate switch
and protocol settings before activating the Logical Switch.
```

To create a base switch with FID 2 without confirmation:

```
switch:admin> lscfg --create 2 -base -force
About to create switch with fid=2. Please wait...
Switch successfully created.

Logical Switch has been created with default configurations.
Please configure the Logical Switch with appropriate switch
and protocol settings before activating the Logical Switch.
```

To create a logical switch autoconfigured with IPS configuration:

```
switch:admin> lscfg --create 55 -ips
A Logical switch with FID 55 will be created with IP Storage configuration.
Would you like to continue [y/n]?: y
About to create switch with fid=55. Please wait...
2023/06/20-06:08:05 (GMT), [ESM-1002], 5449, SLOT 1 | FID 55, INFO, switch_55, ESMd initialization done for
 service fcsw:14.
2023/06/20-06:08:05 (GMT), [ESM-3000], 5450, SLOT 1 | FID 55, INFO, switch_55, Cold Recovery starting.
2023/06/20-06:08:05 (GMT), [ESM-3001], 5451, SLOT 1 | FID 55, INFO, switch_55, Cold Recovery complete.
```

```
2023/06/20-06:08:05 (GMT), [ESM-1002], 5452, SLOT 2 | FID 55, INFO, switch_55, ESMd initialization done for
 service fcsw:14.
2023/06/20-06:08:05 (GMT), [TO-1005], 5453, SLOT 1 | FID 55, INFO, switch_55, TO Profile Sys_TrafOpt_Version1
 is enforced successfully.
sw14 Updating flash ...
2023/06/20-06:08:08 (GMT), [ZONE-1034], 5454, SLOT 1 | FID 55, INFO, switch_55, A new zone database file is
 created.
2023/06/20-06:08:08 (GMT), [ESM-3001], 5455, SLOT 1 | FID 55, INFO, switch_55, Cold Recovery complete.
2023/06/20-06:08:11 (GMT), [MAPS-1148], 5456, SLOT 1 | FID 55, INFO, switch_55, No Flow Vision license,
 changing active policy to dflt_base_policy from dflt_conservative_policy.
2023/06/20-06:08:13 (GMT), [FV-1002], 5457, SLOT 1 | FID 55, INFO, switch_55, Flow Vision Config Replay
 Completed Successfully.
2023/06/20-06:08:15 (GMT), [MAPS-1145], 5458, SLOT 1 | FID 55, INFO, switch_55, FPI Profile dflt_fpi_profile
 is activated for E-Ports.
2023/06/20-06:08:15 (GMT), [MAPS-1144], 5459, SLOT 1 | FID 55, INFO, switch_55, FPI Profile dflt_fpi_profile
 is activated for F-Ports.
2023/06/20-06:08:15 (GMT), [MAPS-1201], 5460, SLOT 1 | FID 55, INFO, switch_55, MAPS has started monitoring
 with dflt_base_policy policy.
2023/06/20-06:08:21 (GMT), [MAPS-1021], 5461, SLOT 1 | FID 55, WARNING, switch_55,
 RuleName=defCHASSISBAD_PWR_MARG, Condition=CHASSIS(BAD_PWR/NONE>=2), Obj:Chassis [BAD_PWR,2] has contributed
 to switch status MARGINAL.
2023/06/20-06:08:21 (GMT), [MAPS-1020], 5462, SLOT 1 | FID 55, WARNING, switch_55, Switch wide status has
 changed from HEALTHY to MARGINAL.
All service instances in sync
2023/06/20-06:08:26 (GMT), [FSSM-1002], 5463, SLOT 1 | CHASSIS, INFO, Allegiance9, HA State is in sync.
2023/06/20-06:08:26 (GMT), [FSSM-1002], 5464, SLOT 2 | CHASSIS, INFO, Allegiance9, HA State is in sync.
2023/06/20-06:08:53 (GMT), [PMGR-1001], 5471, SLOT 1 | CHASSIS, INFO, Allegiance9, Attempt to create switch 55
 succeeded.
Logical Switch with FID (55) has been successfully created.

Logical Switch has been created with IP Storage configurations.
Please configure the Logical Switch with appropriate switch
and protocol settings before activating the Logical Switch.
```

To delete a logical switch:

```
switch:admin> lscfg --delete 2
The Logical switch with FID 2 will be deleted.
Would you like to continue [y/n]?: y
All active login sessions for FID 2 have been terminated.
Switch successfully deleted.
2023/06/20-10:56:54 (GMT), [PMGR-1003], 690, CHASSIS,
      INFO, sw0, Attempt to delete switch 2 succeeded.
```

To assign ports to a logical switch:

```
switch:admin> lscfg --config 2 -port 10-12
This operation requires that the affected ports be disabled.
Would you like to continue [y/n]?: y
Making this configuration change.  Please wait...
Configuration change successful.
Please enable your ports/switch when you are ready to continue.
```

To assign ports to a logical switch without confirmation:

```
switch:admin> lscfg --config 2 -port 0-4 -force
Configuration change successful.
Making this configuration change.  Please wait...
Please enable your ports/switch when you are ready to continue.
```

To move all ports in a QSFP group to a logical switch:

```
switch:admin> lscfg --config 10 -slot 5 -port 0-23 -qsfp
This operation requires that the affected ports be disabled and will move all
   ports(0-23) in qsfp to fid 10.
Would you like to continue [y/n]?: y
Making this configuration change.  Please wait...
Dispatch a request to kernel-land component: swc
Dispatch a request to kernel-land component: swc
Configuration change successful.
Please enable your ports/switch when you are ready to continue.
```

To display the logical switch configuration for :FC ports only:

```
switch:admin> lscfg --show

Created switches FIDs(Domain IDs):  128(ds)(1)  10(1)  11(1)  12(1)
                                    13(1)  14(1)  15(1)  16(1)
                                    17(1)  18(bs)(1)  19(1)  20(ips)(1)
                                    21(1)  22(1)  55(fs)(1)  24(fs)(1)

Slot   1     2     3     4     5     6     7     8     9    10    11    12
--------------------------------------------------------------------------------
Port
 0  |     |     |  24 | 128 | 128 | 128 | 128 | 128 |     | 128 | 128 |     |
 1  |     |     |  24 | 128 | 128 | 128 | 128 | 128 |     | 128 | 128 |     |
 2  |     |     |  24 | 128 | 128 | 128 | 128 | 128 |     | 128 | 128 |     |
 3  |     |     |  24 | 128 | 128 | 128 | 128 | 128 |     | 128 | 128 |     |
 4  |     |     | 128 | 128 | 128 | 128 | 128 | 128 |     | 128 | 128 |     |
 5  |     |     | 128 | 128 | 128 | 128 | 128 | 128 |     | 128 | 128 |     |
 6  |     |     | 128 | 128 | 128 | 128 | 128 | 128 |     | 128 | 128 |     |
 7  |     |     | 128 | 128 | 128 | 128 | 128 | 128 |     | 128 | 128 |     |
 8  |     |     | 128 | 128 | 128 | 128 | 128 | 128 |     | 128 | 128 |     |
 9  |     |     | 128 | 128 | 128 | 128 | 128 | 128 |     | 128 | 128 |     |
10  |     |     | 128 | 128 | 128 | 128 | 128 | 128 |     | 128 | 128 |     |
```

To display the logical switch configuration for GbE ports only (in the example, all GbE ports are in logical switch 2):

```
switch:admin> lscfg --show -ge

Created switches FIDs(Domain IDs):  (ds)  2(bs)(1)  1(1)

Slot     1     2     3     4     5     6     7     8
-------------------------------------------------------
Port
 0    |     |   2 |     |     |     |     |     |     |
 1    |     |   2 |     |     |     |     |     |     |
 2    |     |   2 |     |     |     |     |     |     |
```

```
 3    |      |   2 |      |      |      |      |      |      |
 4    |      |   2 |      |      |      |      |      |      |
 5    |      |   2 |      |      |      |      |      |      |
 6    |      |   2 |      |      |      |      |      |      |
 7    |      |   2 |      |      |      |      |      |      |
 8    |      |   2 |      |      |      |      |      |      |
 9    |      |   2 |      |      |      |      |      |      |
10    |      |   2 |      |      |      |      |      |      |
11    |      |   2 |      |      |      |      |      |      |
```

To display the partition configuration for all slots with the **-ge** option:

```
switch:admin> lscfg --show -provision -ge

Created switches FIDs(Domain IDs): 128(ds)(118) 2(bs)(1) 1(1)
Slot      1     2     3     4     5     6     7     8
-------------------------------------------------------
Port
 0    | 128 |   2 |      |      |      |      | 128 | 128 |
 1    | 128 |   2 |      |      |      |      | 128 | 128 |
 2    | 128 |   2 |      |      |      |      | 128 | 128 |
 3    | 128 |   2 |      |      |      |      | 128 | 128 |
 4    | 128 |   2 |      |      |      |      | 128 | 128 |
 5    | 128 |   2 |      |      |      |      | 128 | 128 |
 6    | 128 |   2 |      |      |      |      | 128 | 128 |
 7    | 128 |   2 |      |      |      |      | 128 | 128 |
 8    | 128 |   2 |      |      |      |      | 128 | 128 |
 9    | 128 |   2 |      |      |      |      | 128 | 128 |
10    | 128 |   2 |      |      |      |      | 128 | 128 |
11    | 128 |   2 |      |      |      |      | 128 | 128 |
```

To change the fabric ID for a logical switch:

```
switch:admin> lscfg --change 1 -newfid 2
Changing of a switch fid requires that the switch be disabled.
Would you like to continue [y/n]?: y
Disabling switch...
All active login sessions for FID 2 have been terminated.
Checking and logging message: fid = 2.
Please enable your switch.
```

To display the change:

```
switch:admin> lscfg --show

Created switches FIDs(Domain IDs):  128(ds)(118)  1(1)  2(bs)(1)

Port   0     1     2     3     4     5     6     7     8     9
-----------------------------------------------------------------
FID    1 |   1 |   1 |   1 |   1 | 128 | 128 | 128 | 128 | 128 |

Port  10    11    12    13    14    15    16    17    18    19
-----------------------------------------------------------------
FID  128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 |
```

```
Port  20    21    22    23    24    25    26    27    28    29
-----------------------------------------------------------------
FID  128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 |

Port  30    31    32    33    34    35    36    37    38    39
-----------------------------------------------------------------
FID  128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 |
```

To make logical switch FID 1 the base switch without confirmation:

```
switch:admin> lscfg --change 1 -base -force
Disabling the current base switch...
Disabling switch fid 1
Disabling the proposed new base switch...
Disabling switch fid 1
Please enable your switches when ready.
```

To make logical switch FID 1 the base switch with confirmation:

```
switch:admin> lscfg --change 1 -base
Creation of a base switch requires that the proposed new base switch on this
system be disabled.

Would you like to continue [y/n]?: y
Disabling the proposed new base switch...
Disabling switch fid 1
Please enable your switches when ready.
```

To display the logical switch details with the FID name:

```
switch:admin> lscfg --show -n
-------------------------------------------------------------------
Switch Information
-------------------------------------------------------------------
FID: 30
SwitchType: DS
DomainID: 3
SwitchName: switch1
FabricName: thor2fab
-------------------------------------------------------------------
FID: 2
SwitchType: BS
DomainID: 1
SwitchName: switch_2
FabricName: base_switch
```

To display the switch instance number of the logical switch:

```
switch:admin> lscfg --show -instance
Switch  Instance                 :  0
Created switches FIDs(Domain IDs):  128(ds)(1)
```

To move ports from one logical switch to another:

```
switch:admin> lscfg --config 10 -index 2-3,10,7-9
This operation requires that the affected ports be disabled.
```

```
Ports already in the logical switch will be skipped.
Would you like to continue [y/n]?: y
Making this configuration change.  Please wait...
Configuration change successful.
Please enable your ports/switch when you are ready to continue.
2023/06/20-05:18:48 (GMT), [PMGR-1005], 2127, SLOT 1 | CHASSIS, INFO, sw0,
     Attempt to move port(s) to switch 10 succeeded.
```

To display IP Storage logical switch configuration:

```
switch:admin> lscfg --show -ips
---------------------------------------
IP Storage Switch Information
---------------------------------------
FID       : 55
SwitchName: switch_55
IDID Mode : Enabled
XISL Use  : Disabled
---------------------------------------
```

See Also

setContext, slotCfg

lsDbShow

Displays the Fabric Shortest Path First (FSPF) link state database.

Synopsis

lsdbshow [**--help** | **-nopage** | <*domain*>]

Description

Use this command to display an FSPF link state database record for switches in the fabric or for a specified domain.

There are two types of database entries:

- The link state database entry, which is permanently allocated.
- The link state record (LSR), which is allocated when a switch is connected to the fabric.

The LSR describes the links between connected domains in a fabric. For a link to be reported in the LSR, the neighbor for that link must be in NB_ST_FULL state.

This command displays the content of both types of database entries, if both are present, as shown below:

Domain	Domain ID described by this LSR. A (self) keyword after the domain ID indicates that LSR describes the local switch.
lsrP	Pointer to LSR.
earlyAccLSRs	Number of LSRs accepted, even though they were not sufficiently spaced apart.
ignoredLSRs	Number of LSRs not accepted because they were not sufficiently spaced apart.
lastIgnored	Last time an LSR was ignored.
installTime	Time this LSR was installed in the database, in seconds since boot.
lseFlags	Internal variable.
uOutIfsP	Internal variable.
uAllOutIfsP	Internal variable.

uPathCost	Internal variable.
uOldHopCount	Internal variable.
uHopsFromRoot	Internal variable.
uPathCount	The number of currently available paths to the remote domain.
mOutIfsP	Internal variable.
parent	Internal variable.
mPathCost	Internal variable.
mHopsFromRoot	Internal variable.
Link State Record pointer	Pointer to LSR. The same as lsrP.
lsAge	Age, in seconds, of this LSR. An LSR is removed from the database when its age exceeds 3,600 seconds.
reserved	Reserved for future use.
type	Type of the LSR. Always 1.
options	Always 0.
lsId	ID of this LSR. It is identical to the domain ID.
advertiser	Domain ID of the switch that originated this LSR.
incarn	Incarnation number of this LSR.
length	Total length, in bytes, of this LSR. Includes header and link state information for all links.
chksum	Checksum of total LSR, with exception of lsAge field.
linkCnt	Number of links in this LSR. Each link represents a neighbor in NB_ST_FULL state.
flags	Always 0.
LinkId	ID of this link. It is the domain ID of the switch on the other side of the link.
out port	Port number on the local switch.
rem port	Port number of the port on the other side of the link.
cost	Cost of this link. The default cost for a 1Gb/s link is 1,000.
bw	The rounded bandwidth of the output link, in Gb/s.
type	Always 1.

Notes

Beginning Fabric OS v7.4.x, the output displays only the lines with a bit set. If a port bitmap does not have any bits set, the output displays as "None" for the first line of the bitmap.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

<domain>	Specifies the domain ID of the LSR to be displayed. This operand is optional; if omitted, the entire link state database is displayed.
-nopage	Disables the paging format to display the output.
--help	Displays the command usage.

Examples

To display the link state record for a switch:

```
switch:admin> lsdbshow 1

Domain = 1 (self), Link State Database Entry pointer = 0x1096da60
```

```
lsrP            = 0x109784b0
earlyAccLSRs    = 0
ignoredLSRs     = 0
lastIgnored     = Never
installTime     = Aug 26 18:20:41.451
lseFlags        = 0xa
uAllOutIfsP[4]  = 0x00000001
uPathCost       = 0
uOldHopCount    = 0
uHopsFromRoot   = 0
uPathCount      = 1
mOutIfsP[0]     = 0x10000000
parent          = 0xf0
mPathCost       = 0
mHopsFromRoot   = 0

Link State Record:
Link State Record pointer = 0x109784b0
lsAge           = 321
reserved        = 0
type            = 1
options         = 0x0
lsId            = 1
advertiser      = 1
incarn          = 0x80000185
length          = 60
chksum          = 0x168a
linkCnt = 2,    flags = 0x0
LinkId =  91, out port =  28, rem port =  28, cost = 500, bw = 16G, type = 1
LinkId =  91, out port =  29, rem port =  29, cost = 500, bw = 48G, type = 1
```

See Also

nbrStateShow

mapsConfig

Sets MAPS configuration to manage the MAPS alerting capabilities. The configuration is applicable to the logical switch or MAPS policy (custom or default) except the **--raslogMode** and **--notification** configuration. The **--raslogMode** and **--notification** options are applicable chassis-wide and impacts all the switches.

Synopsis

```
mapsconfig --config {pause|restart} -type <member_type>
 -members <member_list>
 mapsconfig --actions <actions_list>
 mapsconfig --emailcfg {-address {<email_address> | <address_list>
     | none} | -from {<from_address> | none}}
 mapsconfig --testmail [-subject <subject>] [-message <msg>]
 mapsconfig --purge [-force]
 mapsConfig --raslogMode {default | custom}
 mapsConfig --decomcfg {impair | withdisable}
 mapsConfig --qt {-value <value> [-unit {hour|day}] | -clear}
```

```
 mapsconfig --notification {default | adaptive}
 mapsconfig --show
mapsconfig --help
```

Description

Use this command to perform the following Monitoring and Alerting Policy Suite (MAPS) functions:

- Pause or restart monitoring of specific elements or complete group.
- Define the list of allowable actions that can be taken on the switch when a threshold is triggered.
- Configure e-mail address to which the alerts must be delivered. Beginning with Fabric OS v9.2.2, this option is made as interactive and requires user input during execution..
- Define raslog mode to default or custom.
- Configure the result of the DECOM action either to impair the link or decommission with disable.
- Delete all user-defined MAPS configurations related to rules, groups, policies, and so on.
- Configure or clear global quiet time. The quiet time feature will be deprecated in the future Fabric OS release.
- Configure Adaptive MAPS notifications.
- Display MAPS settings.

Notes

This command requires a Fabric Vision license.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--config pause Stops monitoring specific elements.

--config restart Restarts monitoring specific elements on which monitoring was previously paused.

-type <*member_type*> Specifies the type of elements on which to pause monitoring. Valid types include the following:

port	The elements are FC ports.
circuit	The elements are FCIP circuits.
sfp	The elements are SFP transceivers.
switch	The element is switch.
all	All supported elements type. Use **all** to pause or restart all the group type.

-members <*member_list*> Specifies the specific elements on which to pause or restart monitoring. The member list must be enclosed in double quotation marks and can consist of the following:

Port and SFP groups:
- A single port, for example, "2/8".
- A port range where the beginning and end port are separated by a dash, for example, "2/8-13".
- A set of ports and port ranges separated by commas, for example, "2/3,2/5,2/8-13,3/7-10,4/15".

Circuit groups:
- A single circuit in VE_Port/circuit format, for example, "33/5".
- A circuit range in VE_Port/circuit format, for example, "33/1-3".
- A set of circuits separated by commas, for example, "33/1-3,33/5".

all Pauses or restarts monitoring of all members in a particular group.

--actions <*actions_list*> Specifies a comma-separated list of all of the actions that are allowed globally on the switch. Any actions listed for a specific rule must also be listed here to take effect. Refer to *MAPS Basic Elements* section in *Brocade Fabric OS MAPS User Guide* for more details. In IP Storage logical switch, only IPS-specific actions are displayed. Valid actions include the following:

raslog Generates a RASLog message.

decom Decommissions the port. You can configure FENCE or DECOM or FENCE, DECOM if the decom (global) is in **impair** mode. You can even configure decom without enabling **fence**.

fence Fences the port, if port fencing is enabled. Port fencing takes the ports offline if the rule thresholds are exceeded. This action is valid only on conditions that are evaluated on ports.

snmp Generates an SNMP trap.

email Sends information about a switch event to a specified email address.

sfp_marginal Sets the state of the affected SFP transceiver to marginal.

re_balance Directs MAPS to bring the port group state back to a balanced state. After MAPS takes the rebalance action, it expects the FI to redistribute the devices among existing ports to bring back the port group into a balanced state. MAPS waits for some time before it decides to set the port group state to BALANCED or RE_BALANCE_FAILED.

sddq Isolates the slow-drain flows to a low priority VC from the existing VC (medium or high) thus freeing up the resources for the regular flows in the existing VC. The slow drain device quarantine (SDDQ) feature is not supported in the Access Gateway mode. The port toggling (PT) action and the SDDQ action are mutually exclusive. You cannot enable SDDQ and PT actions at the same time.

fms Notifies the configured MAPS threshold events to the FICON Management Server (FMS).

toggle Enables port toggling to recover a port from bottleneck condition caused by the target device. Port toggle is supported only for the F_Ports. The port toggling (PT) action and the SDDQ action are mutually exclusive. You cannot enable SDDQ and PT actions at the same time.

unquar Releases the previously quarantined ports.

uninstall_vtap Uninstalls vTAP feature if the mirrored frame count exceeds 250K IOPS and encryption is enabled on the 16Gb/s-capable ASIC. If encryption is not enabled on the ASIC, vTAP is not uninstalled. This action is applicable only to the Brocade Gen 6 devices.

FPIN The fabric performance impacts notification (FPIN) action handler applies only to the F_Port rules regarding congestion, frame loss, and CRC/ITW errors. Beginning from Fabric OS v9.1.0, FPIN support is added to Access Gateway.

ha_recover MAPS triggers HA failover or HA reboot in a chassis or switch respectively for critical memory usage alert.

none No actions are allowed on the switch. Specifying this option allows you to turn off all notifications. It is recommended not to use this option with any other action. The actions SW_CRITICAL, SW_MARGINAL, and SFP_MARGINAL are always enabled and cannot be turned off.

--emailcfg Specifies the configuration for e-mail notifications. You can configure a relay host IP address using the **relayConfig** command. Beginning with Fabric OS v9.2.2, this option is made as interactive and requires user input during execution.

	-address <*email_address*>	Specifies the e-mail address to which the notifications are sent. User can configure up to 5 e-mail addresses as the alert message's receiver. Multiple e-mail addresses must be separated by a comma and each e-mail address can be up to a maximum length of 128 bytes. The e-mail address must conform to standard syntax: string@domain.suffix. Invalid e-mail addresses are rejected. "NONE" is the default address and a valid input parameter. Beginning with Fabric OS v9.2.2, the **-address** opiton is not a valid parameter and will result in command failure or error if used.
	-from <*from_address*>	Allows the user to configure the from address. If the user has not configured the **From** email address, the old format of switch_name@domain.com is used by default. User can configure only one address for this option. Beginning with Fabric OS v9.2.2, the **-from** opiton is not a valid parameter and will result in command failure or error if used.
--testmail	Sends the test e-mail with the default subject and message along with the switch name in the message. The command fails if the e-mail address is not configured.	
	-subject <*subject*>	Specifies the user-defined subject line for the test e-mail. This operand is optional.
	-message <*msg*>	Specifies the user-defined message for the test e-mail. This operand is optional.
--purge	Deletes all user-defined MAPS configurations on the switch (groups, rules, and policies). Enables **dflt_conservative_policy** after successful purge.	
	-force	Executes the command without confirmation.
--show	Displays the MAPS global configuration settings.	
--raslogMode default | custom	Allows the raslog mode to be modified to custom or default. In custom mode, MAPS generates different raslogs for different monitoring systems; whereas in the default mode MAPS generates generic raslogs from MAPS-1001 through MAPS-1004 for all the monitoring systems. It is recommended to use the custom mode as the default mode will be deprecated in a future Fabric OS release.	
--decomcfg	Configures the result of the DECOM action in MAPS to either impair the link or decommission with disable.	
	impair	Modifies the result of the configured DECOM action to impair the link instead of a decommission and disable (or FENCE if the process fails). After this action triggers, the port remains online with no routes unless no other shortest path links exist. The **impair** option is applicable only for E_Ports.
	withdisable	Modifies the result of the configured DECOM action to the default of decommissioning the port with disable (or FENCE if the process fails). Either way the port is disabled, after this action triggers.
--qt -value <*value*>	Configures global quiet time either in hours or days. The default value is 0 and the default unit is hour. The quiet time feature will be deprecated in the future Fabric OS release.	
	-clear	Clears global quiet time.
--notification	Enables or disables adaptive MAPS notifications.	
	default	Default configuration continues to send the notifications with or without global or rule quiet time.
	adaptive	Notifications are throttled progressively. The **adaptive** notification configuration is a chassis-wide configuration and not LS-specific. Therefore, executing **mapsconfig –purge** will not clear the notification configuration.
--help	Displays the command usage.	

Examples

To stop monitoring on three ports:

```
switch:admin>  mapsconfig --config pause -type port
```

```
-members "3/1-3"
```

To stop monitoring on all ports:

```
switch:admin>  mapsconfig --config pause -type port
-members all
switch:admin>  mapsconfig --show

(output truncated...)

Paused members           :
================
    PORT    : all
    CIRCUIT :
    SFP     :
    SWITCH  :

Note: "all/paused" indicates complete group is paused with monitoring
```

To resume monitoring on two ports:

```
switch:admin>  mapsconfig --config restart -type port
-members "3/1-3"
```

To resume monitoring on all ports:

```
switch:admin>  mapsconfig --config restart -type all
-members all
switch:admin>  mapsconfig --show

(output truncated...)

Paused members           :
================
    PORT    : all
    CIRCUIT : all
    SFP     : all
    SWITCH  : paused

Note: "all/paused" indicates complete group is paused with monitoring
```

To specify that generating a RASLog and sending an e-mail message are the only allowed notification actions on this switch:

```
switch:admin>  mapsconfig --actions raslog,email
```

To specify that MAPS will call a RE_BALANCE action to rebalance any imbalanced port groups:

```
switch:admin>  mapsconfig --actions re_balance
```

To configure the e-mail address to which notifications are sent:

```
switch:admin>  mapsconfig --emailcfg
Enter the email address(es) : xxx@broadcom.com
Enter the from address : xxx@broadcom.com
```

To send a test e-mail:

```
switch:admin>  mapsconfig --testmail
MAPS test welcome mail sent successfully
```

To delete all of the user-defined groups, policies, and rules:

```
switch:admin>  mapsconfig --purge
WARNING: This command will clear all the user-defined MAPS
     configurations and activate the factory defined policy
     and rules.
Do you want to continue? (yes, y, no, n): [no] yes
```

To display the switch level MAPS configuration:

```
switch:admin>  mapsconfig --show
Configured Notifications:       RASLOG,EMAIL,SW_CRITICAL,SW_MARGINAL,SFP_MARGINAL,RE_BALANCE
Mail Recipient:                 xxxx@broadcom.com
Mail From Address:              xxxx@broadcom.com
Raslog Mode:                    Default
Decom Action Config:            With Disable
Global Quiet Time:              Not Configured
Notification Behavior:          Default
Paused members :
================
PORT :
CIRCUIT :
SFP :
SWITCH :
```

To enable adaptive notification with or without quiet time configurations:

```
switch:admin>  mapsconfig --notification adaptive

WARNING: Adaptive MAPS Notification feature is enabled. Quiet time configurations will be ignored.

switch:admin> mapsconfig --show
Configured Notifications:       RASLOG,SW_CRITICAL,SW_MARGINAL,SFP_MARGINAL,SDDQ
Mail Recipient:                 Not Configured
Mail From Address:              Not Configured
Raslog Mode:                    Default
Decom Action Config:            Impair (No Disable)
Global Quiet Time:              Not Configured
Notification Behavior:          Adaptive
```

See Also

logicalGroup, mapsDb, mapsPolicy, mapsRule, mapsSam, relayConfig

mapsDb

Displays or clears the dashboard showing an at-a-glance snapshot of switch health status.

Synopsis

```
mapsdb --show [-category <db_categories> | all | details
[-day <mm/dd/yyyy> | -hr <hour_of_day>]]
mapsdb --show history
mapsdb --show congestion [-credit-stall [-top <count> -hr <hour_of_day> | -freq -top <count>] | -
oversubscription [-top <count> -hr <hour_of_day> ]]
mapsdb --clear {all | history | summary | congestion} [-force]
mapsdb --help
```

Description

Use this command to view the summary of the events or rules triggered and the objects on which the rules were triggered over a specified period of time. Use to clear the dashboard data. When used with the **--show** option, this command displays the following information:

Dashboard Information	Displays the dashboard start time, active policies, configured alerts, fenced ports, decommissioned ports, fenced circuits, quarantined ports, and the top 5 ports with highest zoned device ratio.
Switch Health Report	Displays the overall status of the switch. If the overall status is not healthy, the contributing factors are listed.
Summary Report	Displays the status of the monitoring categories needed to determine the current health of the switch. The health state of each category is contributed to by a group of monitoring systems or error counters, and the rules configured in the active policy. The summary view displays the following information for each category: information collected since midnight of the current day and the historical information collected over the last 7 days. The health state can be one of the following: **No Error** — No error has occurred. **In operating range** — The errors are within the thresholds configured in the active policy. **Out of operating range** — The errors are above the configured thresholds and this triggers the rules configured in the active policy. This indicates that some attributes of the switch are operating out of the configured range.
Rules Affecting Health	Displays the details of the rules triggered on the system. The following information is displayed: number of rules triggered in a category, repeat count, triggered rules, execution time, the elements for which rules were triggered, and the triggered value.
History Data	Displays the following historical data for a specific time window: the monitoring system, the current value that triggered the rule, and the elements for which rules were triggered. TX, RX, and UTIL values may not reflect the actual usage if the port speed is modified. It may be lower than the actual when the speed is increased or higher when the speed is decreased. It is possible to see the throughput value may run to more than 100%.
History Data for Backend ports	Displays the error statistics for the backend ports for a specific time window.

If no operands are specified, this command displays the usage.

Notes

This command requires a Fabric Vision license. Without Fabric Vision license, this command displays the summary of only the unlicensed features.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--show Displays a summary of the data collected since midnight of the current day. The following operands are supported with the **--show** command.

- **all** Displays a summary and historical data of the errors for 5 rules and last 5 ports.
- **history** Displays the historical data only.
- **-category *db_categories*** Displays the specified categories. The value of *db_categories* can be a single category or a series of categories separated by commas and it supports the following categories:
  - Port - Port Health
  - BePort - BE Port Health
  - GePort - Extension GE Port Health
  - FRU - Fru Health
  - Extension - Extension Health
  - FPI - Fabric Performance Impact
  - Security - Security Violation
  - Fabric - Fabric State Changes
  - Switch - Switch Resource
  - IO Latency - IO Latency Statistics
  - IO Health - IO Health
- **details** Displays detailed data in addition to the summary. The following operands are supported with the **details** command.
  - **-day <*mm/dd/yyyy*>** Displays the dashboard data for a specific day.
    - ***mm*** Specifies the month. Valid values are 01 through 12.
    - ***dd*** Specifies the date. Valid values are 01 through 31.
    - ***yyyy*** Specifies the year.
  - **-hr <*hour_of_day*>** Displays the dashboard data for a specific hour of the day. The valid values for hour are 0 through 23. For example, if you specify 17, the dashboard data is displayed for the time window of 5:00 PM to 5:59 PM.
- **congestion** Displays congestion information of the ports sorted based on the extent of congestion. The two different types of tables namely, the congestion state table and the congestion frequency table are displayed as part of this command. The State table displays the ports sorted based on the congestion states of the ports and the Frequency table displays the ports sorted based on the number of times the port was in congestion state. The congestion frequency value is updated every second and the congestion state count is updated every 10 seconds.
  - **-credit-stall -top** Displays table of ports based on the credit-stall condition. By default, it displays data for the top 10 violated ports. The **-hr** <*hour_of_day*> option is used for a specific hour of the day

<*count*> -hr <*hour_of_day*>	and **-top** <*count*> option is used to display the top count of the congested ports.
-freq -top <*count*>	Displays table of ports based on the congestion frequency count consolidated for an hour. The frequency table displays data for the last 10 hours. By default, it displays the top 10 congested ports based on the frequency value for the last 10 hours. Use **-top** *count* option to display the top count.
-oversubscription -top <*count*> -hr <*hour_of_day*>	Displays the oversubscribed ports in an given hour. Displays "Data Unavailable", if the given past hour is past 10 hour or past start time. By default, it displays data for the top 10 violated ports. The **-hr** <*hour_of_day*> option is used for a specific hour of the day and **-top** *count* option is used to display the top count of the congested ports.

--clear Clears the dashboard data. This command clears all database data except the History Data of the current day because it is directly displayed from hardware. The following operands are supported with the **--clear** command.

all	Clears all dashboard data.
history	Clears the dashboard history data.
summary	Clears the dashboard summary data.
congestion	Clears congestion dashboard data.
-force	Executes the command without confirmation.

--help Displays the command usage.

Examples

To display the dashboard with summary information:

```
switch:admin>  mapsdb --show all
1 Dashboard Information:
========================
DB start time                        : Thu Feb 27 09:41:29 2020
Active policy                        : dflt_conservative_policy
Configured Notifications             : SW_CRITICAL,SW_MARGINAL,SFP_MARGINAL,DECOM,FPIN
Fenced Ports                         : None
Decommissioned Ports                 : None
Fenced circuits                      : None
Quarantined Ports                    : None
Top Zoned PIDs <pid(it-flows)> : 0x028600(4) 0x022700(3)

2 Switch Health Report:
=======================
Current Switch Policy Status         : CRITICAL
Contributing Factors                 :
----------------------
*BAD_PWR (CRITICAL).
*ERR_PORTS (MARGINAL).
*DOWN_CORE (MARGINAL).
*HA_SYNC (MARGINAL).

3.1 Summary Report:
===================
```

```
Category                 |Today                     |Last 7 days               |
-------------------------------------------------------------------------------
Port Health              |Out of operating range    |Out of operating range    |
Extension GE Port Health |No Errors                 |No Errors                 |
Fru Health               |In operating range        |Out of operating range    |
Security Violations      |No Errors                 |No Errors                 |
Fabric State Changes     |In operating range        |Out of operating range    |
Switch Resource          |In operating range        |In operating range        |
Extension Health         |No Errors                 |No Errors                 |
Fabric Performance Impact|In operating range        |In operating range        |
IO Latency               |In operating range        |In operating range        |

3.2 Rules Affecting Health:
===========================
Category(Violation Count)|Repeat |Rule Name                  |Execution Time   |Object   |Triggered
 Value(Units)|
                          Count
-----------------------------------------------------------------------------------------------------------
Port Health(3)           |1      |defALL_16GSWL_SFPRXP_32    |03/05/20 09:24:00|SFP 4/40  |3 uW
    |
                         |2      |defALL_16GSWL_SFPRXP_32    |02/28/20 08:36:00|SFP 4/36  |3 uW
    |
                         |       |                           |                 |SFP 4/36  |3 uW
    |
Fru Health(4)            |1      |defALL_SLOTSBLADE_STATE_ON |03/04/20 05:11:26|Blade 3   |ON
    |
                         |1      |defALL_SLOTSBLADE_STATE_OFF|03/04/20 05:11:03|Blade 3   |OFF
    |
                         |1      |defALL_SLOTSBLADE_STATE_ON |02/28/20 07:00:49|Blade 3   |ON
    |
                         |1      |defALL_SLOTSBLADE_STATE_OFF|02/28/20 07:00:25|Blade 3   |OFF
    |
Fabric State Changes(3)  |1      |defSWITCHZONE_CHG_10       |03/04/20 14:00:00|Switch    |13 Changes
    |
                         |1      |defSWITCHZONE_CHG_10       |03/03/20 14:00:00|Switch    |35 Changes
    |
                         |1      |defSWITCHZONE_CHG_10       |03/02/20 14:00:00|Switch    |35 Changes
    |
4 History Data:
===============
Stats(Units)        Current     03/02/20    02/28/20    02/27/20
-------------------------------------------------------------------
CRC(CRCs)           -           -           -           -
ITW(ITWs)           -           -           -           -
LOSS_SYNC(SyncLoss) -           -           -           -
LF(LFs)             4/40(1)     -           -           -
                    4/41(1)     -           -           -
LOSS_SIGNAL(LOS)    4/41(1)     -           4/36(1)     -
PE(Errors)          -           -           -           -
STATE_CHG           4/40(4)     4/40(1)     4/40(15)    4/36(1)
                    4/41(4)     4/41(1)     4/41(15)    4/40(1)
                    4/36(2)     3/39(1)     3/39(4)     4/41(1)
                    4/38(2)     4/38(1)     4/36(4)     -
```

```
                    3/39(2)     4/36(1)     4/38(3)     -
LR(LRs)             4/40(6)     4/41(3)     4/40(18)    4/36(3)
                    4/41(5)     3/39(3)     4/41(17)    4/40(3)
                    4/36(3)     4/36(3)     3/39(5)     4/41(2)
                    4/38(2)     4/38(2)     4/36(5)     -
                    3/39(2)     4/40(2)     4/38(4)     -
C3TXTO(Timeouts)    -           -           -           -
RX(%)               -           -           -           -
TX(%)               -           -           -           -
UTIL(%)             -           -           -           -
BN_SECS(Seconds)    -           -           -           -

5 History Data for Gige Ethernet ports:
=======================================
Stats(Units)        Current     03/02/20    02/28/20    02/27/20
--------------------------------------------------------------------
GE_CRC(CRCs)        -           -           -           -
GE_LOS_OF_SIG(LOS)  -           -           -           -
```

To display the dashboard information for the specified category:

```
switch:admin> mapsdb --show -category security,fru,port
1 Dashboard Information:
========================

DB start time:                  Wed Mar 13 20:36:02 2019
Active policy:                  slv_policy
Configured Notifications:       SW_CRITICAL,SW_MARGINAL
Fenced Ports :                  None
Decommissioned Ports :          None
Fenced circuits :               None
Quarantined Ports :             None
Top Zoned PIDs >pid(it-flows)<:

2 Switch Health Report:
========================

Current Switch Policy Status: HEALTHY


3.1 Summary Report:
===================

Category                 |Today                     |Last 7 days               |
--------------------------------------------------------------------------------
Port Health              |In operating range        |No Errors                 |
Fru Health               |Out of operating range    |In operating range        |
Security Violations      |Out of operating range    |No Errors                 |


3.2 Rules Affecting Health:
===========================
```

```
Category(Violation Count)|RepeatCount|Rule Name              |Execution Time   |Object      |Triggered
 Value(Units)|
-----------------------------------------------------------------------------------------------------------------------
Fru Health(12)           |12         |defALL_PORTSSFP        |03/13/19 20:41:12|-Port 8/11  |FAULTY
  |
                                      _STATE_FAULT
                         |           |Y                      |                 |            |
  |
                         |           |                       |                 |-Port 8/10  |FAULTY
  |
                         |           |                       |                 |-Port 8/9   |FAULTY
  |
                         |           |                       |                 |-Port 8/8   |FAULTY
  |
                         |           |                       |                 |-Port 8/7   |FAULTY
  |
Security Violations(2)   |2          |slv_rule               |03/13/19 20:44:18|Switch      |2 Violations
  |
                         |           |                       |                 |Switch      |2 Violations
  |
```

To display the dashboard with summary information and historical data for a specific day:

```
switch:admin> mapsdb --show details -day 03/04/2020

1 Dashboard Information:
========================
DB start time                       : Thu Feb 27 09:41:29 2020
Active policy                       : dflt_conservative_policy
Configured Notifications            : SW_CRITICAL,SW_MARGINAL,SFP_MARGINAL,DECOM,FPIN
Fenced Ports                        : None
Decommissioned Ports                : None
Fenced circuits                     : None
Quarantined Ports                   :  None
Top Zoned PIDs <pid(it-flows)>: 0x028600(4) 0x022700(3)

2 Switch Health Report:
========================
Current Switch Policy Status        : CRITICAL
Contributing Factors                :
---------------------
*BAD_PWR (CRITICAL).
*ERR_PORTS (MARGINAL).
*DOWN_CORE (MARGINAL).
*HA_SYNC (MARGINAL).

3.1 Summary Report:
===================
Category                 |Today                     |03/04/2020                |
-------------------------------------------------------------------------------
Port Health              |In operating range        |In operating range        |
Extension GE Port Health |No Errors                 |No Errors                 |
Fru Health               |In operating range        |Out of operating range    |
Security Violations      |No Errors                 |No Errors                 |
```

```
Fabric State Changes     |In operating range        |Out of operating range    |
Switch Resource          |In operating range        |In operating range        |
Extension Health         |No Errors                 |No Errors                 |
Fabric Performance Impact|In operating range        |In operating range        |
IO Latency               |In operating range        |In operating range        |

3.2 Rules Affecting Health:
===========================
Category(Violation Count)|Repeat |Rule Name                  |Execution Time   |Object   |Triggered
 Value(Units)|
                          Count
-------------------------------------------------------------------------------------------------------------
Fru Health(2)            |1      |defALL_SLOTSBLADE_STATE_ON |03/04/20 05:11:26|Blade 3  |ON
   |
                         |1      |defALL_SLOTSBLADE_STATE_OFF|03/04/20 05:11:03|Blade 3  |OFF
   |
Fabric State Changes(1)  |1      |defSWITCHZONE_CHG_10       |03/04/20 14:00:00|Switch   |13 Changes
   |

4 History Data:
===============
Stats(Units)        Current     03/02/20    02/28/20    02/27/20
-------------------------------------------------------------------
CRC(CRCs)           -           -           -           -
ITW(ITWs)           -           -           -           -
LOSS_SYNC(SyncLoss) -           -           -           -
LF(LFs)             4/40(1)     -           -           -
                    4/41(1)     -           -           -
LOSS_SIGNAL(LOS)    4/41(1)     -           4/36(1)     -
PE(Errors)          -           -           -           -
STATE_CHG           4/40(4)     4/40(1)     4/40(15)    4/36(1)
                    4/41(4)     4/41(1)     4/41(15)    4/40(1)
                    4/36(2)     3/39(1)     3/39(4)     4/41(1)
                    4/38(2)     4/38(1)     4/36(4)     -
                    3/39(2)     4/36(1)     4/38(3)     -
LR(LRs)             4/40(6)     4/41(3)     4/40(18)    4/36(3)
                    4/41(5)     3/39(3)     4/41(17)    4/40(3)
                    4/36(3)     4/36(3)     3/39(5)     4/41(2)
                    4/38(2)     4/38(2)     4/36(5)     -
                    3/39(2)     4/40(2)     4/38(4)     -
C3TXTO(Timeouts)    -           -           -           -
RX(%)               -           -           -           -
TX(%)               -           -           -           -
UTIL(%)             -           -           -           -
BN_SECS(Seconds)    -           -           -           -

5 History Data for Gige Ethernet ports:
=======================================
Stats(Units)        Current     03/02/20    02/28/20    02/27/20
-------------------------------------------------------------------
GE_CRC(CRCs)        -           -           -           -
GE_LOS_OF_SIG(LOS)  -           -           -           -
```

To display the dashboard information without Fabric Vision license:

```
switch:admin> mapsdb --show
1 Dashboard Information:
========================

DB start time                       : Tue Mar 31 05:36:04 2020
Active policy                       : dflt_base_policy
Configured Notifications            : SW_CRITICAL,SW_MARGINAL,SFP_MARGINAL,FPIN
Fenced circuits                     : N/A
Quarantined Ports                   : None
Top Zoned PIDs <pid(it-flows)>:

2 Switch Health Report:
========================

Current Switch Policy Status: HEALTHY


3.1 Summary Report:
====================

Category                 |Today           |Last 7 days      |
-------------------------------------------------------------
Port Health              |No Errors       |No Errors        |
Fru Health               |No Errors       |No Errors        |
Security Violations      |No Errors       |No Errors        |
Switch Resource          |No Errors       |No Errors        |
Fabric Performance Impact|No Errors       |No Errors        |
IO Latency               |No Errors       |No Errors        |


3.2 Rules Affecting Health:
============================

Category(Violation Count)|RepeatCount|Rule Name  |Execution Time   |Object  |Triggered Value(Units)|
-------------------------------------------------------------------------------------------------------

MAPS is not Licensed. MAPS extended features are available ONLY with License
```

To display the dashboard information with the IO category:

```
switch:admin> mapsdb --show
1 Dashboard Information:
========================

DB start time                       :  Mon Mar  1 02:13:37 2021
Active policy                       :  dflt_aggressive_policy
Configured Notifications            :  RASLOG,SNMP,EMAIL,FENCE,SW_CRITICAL,
                                       SW_MARGINAL,SFP_MARGINAL,SDDQ,UNQUAR
Fenced Ports                        :  None
Decommissioned Ports                :  None
Fenced circuits                     :  N/A
Quarantined Ports                   :  27
```

```
Top Zoned PIDs <pid(it-flows)>:  0x7a1b00(11) 0x7a1a00(11) 0x7a2200(10)
                                       0x7a2000(10) 0x7a0a00(10)

2 Switch Health Report:
=======================

Current Switch Policy Status: HEALTHY


3.1 Summary Report:
===================

Category                 |Today                     |Last 7 days               |
-------------------------------------------------------------------------------
Port Health              |Out of operating range    |Out of operating range    |
BE Port Health           |No Errors                 |No Errors                 |
Extension GE Port Health |No Errors                 |No Errors                 |
Fru Health               |In operating range        |In operating range        |
Security Violations      |In operating range        |In operating range        |
Fabric State Changes     |In operating range        |In operating range        |
Switch Resource          |In operating range        |In operating range        |
Extension Health         |In operating range        |In operating range        |
Fabric Performance Impact|In operating range        |Out of operating range    |
IO Health                |In operating range        |In operating range        |
IO Latency               |In operating range        |In operating range        |



3.2 Rules Affecting Health:
===========================

Category(Violation Count)|Repeat|Rule Name                  |Execution Time   |Object           |Triggered
 Value(Units)|
                          Count
-------------------------------------------------------------------------------------------------------------------------------
Port Health(16)          |1     |defALL_TARGET_PORTSCRC_0   |03/05/21 02:25:31|F-Port 10        |1 CRCs
          |
                         |2     |defALL_TARGET_PORTSSTATE_CH|03/05/21 02:15:13|F-Port 5         |1
          |
                         |      |G_0                        |                 |                 |
          |
                         |1     |defNON_E_F_PORTSSTATE_CHG_2|03/02/21 01:23:55|U-Port 59        |3
          |
Fru Health(4)            |1     |defALL_SLOTSBLADE_STATE_ON |03/04/20 05:11:26|Blade 3          |ON
          |
                         |1     |defALL_SLOTSBLADE_STATE_OFF|03/04/20 05:11:03|Blade 3          |OFF
          |
Security Violations(3)   |1     |defSWITCHSEC_LV_0          |07/20/21 18:30:30|Switch           |1 Violations
          |
                         |2     |defSWITCHSEC_LV_4          |07/20/21 18:29:06|Switch           |5 Violations
          |
Fabric State Changes(5)  |1     |defSWITCHFLOGI_4           |03/05/21 02:15:13|Switch           |6 Logins
          |
```

```
                         |1     |defSWITCHEPORT_DOWN_1      |03/02/21 01:22:55|Switch           |2 Events
          |
                         |2     |defSWITCHFAB_CFG_1         |03/02/21 01:23:37|Switch           |2 Changes
          |
                         |      |                           |                 |Switch           |2 Changes
          |
                         |1     |defSWITCHFLOGI_4           |03/01/21 20:19:01|Switch           |5 Logins
          |
Fabric Performance Impact|3     |defALL_PORTS_IO_LATENCY_CLE|03/05/21 02:24:45|F-Port 27        |
IO_LATENCY_CLEAR      |
(12)                     |      |AR                         |                 |                 |
          |
                         |4     |defALL_PORTS_IO_PERF_IMPACT|03/05/21 02:24:35|F-Port 27        |
IO_PERF_IMPACT        |
                         |1     |defALL_LOCAL_PIDSIT_FLOW_8 |03/01/21 23:59:49|Pid 0x7a2200     |10 IT-Flow(s)
         |
                         |      |                           |                 |Pid 0x7a2000     |10 IT-Flow(s)
         |
IO Health(1257)          |2     |def_IO_ERROR               |03/05/21 06:00:07|Flow (SID=0x7a1b0|180 IO-ERRORS
         |
                         |      |                           |                 |0,DID=0x7a2000,LU|
          |
                         |      |                           |                 |N=2,Host Port=27)|
          |
                         |359   |def_IO_ERROR               |03/05/21 05:59:47|Flow (SID=0x7a1b0|180 IO-ERRORS
         |
                         |      |                           |                 |0,DID=0x7a2000,LU|
          |
                         |      |                           |                 |N=2,Host Port=27)|
          |
                         |      |                           |                 |Flow (SID=0x7a1b0|180 IO-ERRORS
         |
                         |      |                           |                 |0,DID=0x7a2000,LU|
          |
                         |      |                           |                 |N=2,Host Port=27)|
          |
IO Latency(792)          |62    |defWR_STATUS_TIME_4000     |03/05/21 03:10:05|Flow (SID=0x7a1b0|4689
 Microseconds     |
                         |      |                           |                 |0,DID=0x7a2000,Ho|
          |
                         |      |                           |                 |st Port=27)      |
          |
                         |      |                           |                 |Flow (SID=0x7a1b0|4689
 Microseconds     |
                         |      |                           |                 |0,DID=0x7a2000,Ho|
          |
                         |      |                           |                 |st Port=27)      |
          |
                         |28    |defRD_STATUS_TIME_4000     |07/20/21 00:30:00|Flow (SID=0x6d020|617.7K
 Microseconds   |
                         |      |                           |                 |0,DID=0xd72d00,Ho|
          |
```

```
                        |      |                          |                |st Port=2)       |
          |
                        |      |                          |                |Flow (SID=0x6d020|617.7K
 Microseconds   |
                        |      |                          |                |0,DID=0xd72d00,Ho|
          |
                        |      |                          |                |st Port=2)       |
          |
                        |28    |defRD_1stDATA_TIME_3500    |07/20/21 00:30:00|Flow (SID=0x6d020|617.7K
 Microseconds   |
                        |      |                          |                |0,DID=0xd72d00,Ho|
          |
                        |      |                          |                |st Port=2)       |
          |
                        |29    |defRD_STATUS_TIME_VIOL_5   |07/20/21 00:30:00|F-Port 2         |9.09 %
          |
                        |78    |defRD_STATUS_TIME_VIOL_5   |07/19/21 22:35:00|F-Port 29        |8.14 %
          |
                        |28    |defRD_1stDATA_TIME_1750    |07/19/21 21:35:00|Flow (SID=0x6d1d0|1880
 Microseconds     |
                        |      |                          |                |0,DID=0x7a0401,Ho|
          |
                        |      |                          |                |st Port=29)      |
          |
```

To display the bandwidth monitoring utilization >100% (speed multiplier of 4X) when port speed degrades:

```
switch:admin> mapsdb --show history
1 History Data:
===============

Stats(Units)        Current     11/05/19    --/--/--    --/--/--
----------------------------------------------------------------

CRC(CRCs)           -           -           -           -
ITW(ITWs)           -           -           -           -
LOSS_SYNC(SyncLoss) -           -           -           -
LF(LFs)             -           -           -           -
LOSS_SIGNAL(LOS)    -           -           -           -
PE(Errors)          -           -           -           -
STATE_CHG           9/9(2)      11/7(5)     -           -
                    11/7(2)     9/9(3)      -           -
                    -           9/8(3)      -           -
LR(LRs)             11/7(2)     9/2(14)     -           -
                    9/9(1)      11/7(7)     -           -
                    -           9/9(5)      -           -
C3TXTO(Timeouts)    -           -           -           -
RX(%)               11/7(387.04) -           -           -
                    11/12(93.69) -           -           -
TX(%)               9/9(386.98) -           -           -
                    11/7(374.86) -           -           -
                    11/12(92.63) -           -           -
UTIL(%)             11/7(380.88) -           -           -
                    9/9(193.52) -           -           -
```

```
                    11/12(93.16) -           -           -
BN_SECS(Seconds)    -           -           -           -

2 History Data for Backend ports:
=================================
Stats(Units)        Current     11/05/19    --/--/--    --/--/--
-------------------------------------------------------------------

CRC(CRCs)           -           -           -           -
ITW(ITWs)           -           -           -           -
LR(LRs)             -           7/6(1)      -           -
                    -           7/7(1)      -           -
                    -           7/8(1)      -           -
                    -           7/39(1)     -           -
                    -           7/40(1)     -           -
                    -           7/41(1)     -           -
                    -           7/70(1)     -           -
                    -           7/71(1)     -           -
                    -           7/72(1)     -           -
                    -           7/83(1)     -           -
(output truncated...)
BAD_OS(Errors)      -           -           -           -
FRM_LONG(Errors)    -           -           -           -
FRM_TRUNC(Errors)   -           -           -           -

3 History Data for Gige Ethernet ports:
=======================================
Stats(Units)        Current     11/05/19    --/--/--    --/--/--
-------------------------------------------------------------------

GE_CRC(CRCs)        -           -           -           -
GE_LOS_OF_SIG(LOS)  -           -           -           -
```

To clear the history data:

```
switch:admin> mapsdb --clear history
```

To clear congestion dashboard data:

```
switch:admin> mapsdb --clear congestion
WARNING: This command will clear congestion data
Do you want to continue? (yes, y, no, n): [no]y
```

To clear all data with confirmation:

```
switch:admin> mapsdb --clear all
WARNING: This command will clear all data
Do you want to continue? (yes, y, no, n): [no] yes
2021/03/17-08:20:12 (GMT), [MAPS-1203], 591, FID 128, WARNING, SWG720, Dashboard all data has been cleared.
```

To clear all data without confirmation:

```
switch:admin> mapsdb --clear all -force
2021/03/17-08:20:17 (GMT), [MAPS-1203], 592, FID 128, WARNING, SWG720, Dashboard all data has been cleared.
```

To display details of the congested port for both conditions by default:

```
switch:admin> mapsdb --show congestion
1 Dashboard Information:
========================

DB start time:                Sat May 18 16:53:15 2019
Time Window:                  11:11 - 12:11
Total Credit-Stalled ports:   1
Total Oversubscribed ports:   1

2 Credit-Stall State Frequency Table:
=====================================

Port        |Current Min State |Frame Loss   |Perf Impact  |Medium   |Low      |Info     |
-------------------------------------------------------------------------------------------
F-Port 40   |Perf Impact       |0            |60           |0        |0        |0        |

3 Oversubscription State Frequency Table:
=========================================

Port        |Current Min State      |Frequency|
-----------------------------------------------
E-Port 19   |Oversubscribed         |3        |
```

To display details of the congested port based on the credit-stall:

```
switch:admin> mapsdb --show congestion -credit-stall

1 Dashboard Information:
========================

DB start time:                Sat May 18 16:53:15 2019
Time Window:                  11:13 - 12:13
Total Credit-Stalled ports:   1

2 Credit-Stall State Frequency Table:
=====================================

Port        |Current Min State |Frame Loss   |Perf Impact  |Medium   |Low      |Info     |
-------------------------------------------------------------------------------------------
F-Port 40   |Perf Impact       |0            |60           |0        |0        |0        |
```

To display details of the congested port based on the congestion frequency for the last 10 hours:

```
switch:admin> mapsdb --show congestion -credit-stall -freq -top 20
1 Dashboard Information:
========================

DB start time:           Thu May 23 14:56:26 2019

2 Credit-Stall Frequency Table:
===============================

-------------------------------------------------------------------------------------------
15:00:00         |14:00:00         |13:00:00         |12:00:00         |11:00:00
```

```
     |10:00:00         |09:00:00         |08:00:00         |07:00:00         |06:00:00         |
-----------------------------------------------------------------------------------------------
Total Ports: 1   |Total Ports: 1   |Data Unavailable |Data Unavailable |Data Unavailable
     |Data Unavailable |Data Unavailable |Data Unavailable |Data Unavailable |Data Unavailable |
-----------------------------------------------------------------------------------------------
F-Port 40,(108)  |F-Port 40,(227)  |                 |                 |
     |                 |                 |                 |                 |                 |
```

To display details of the congested port based on the oversubscription for the last 14 hours:

```
switch:admin> mapsdb --show congestion -oversubscription -hr 14
 1 Dashboard Information:
========================

DB start time:                Thu May 23 14:38:10 2019
Time Window:                  14:38 - 14:41
Total Oversubscribed ports:   1

2 Oversubscription State Frequency Table:
=========================================

Port        |Current Min State      |Frequency|
-----------------------------------------------
E-Port 19   |Oversubscribed         |1        |
```

See Also

logicalGroup, mapsConfig, mapsPolicy, mapsRule, mapsSam, portStatsClear

mapsHelp

Displays MAPS command information.

Synopsis

mapshelp

Description

Use this command to display a listing of Monitoring and Alerting Policy Suite (MAPS) commands with short descriptions for each command. MAPS commands require a Fabric Vision license.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display MAPS command help information:

```
switch:admin> mapshelp
```

```
mapsRule        Use this command to create threshold monitoring rules
mapsPolicy      Manage policies using this command
logicalGroup    Create and manage user-defined logical groups
mapsDb          Display MAPS Dashboard to see the summary of the violations
                triggered due to current active policy.
mapsConfig      MAPS configuration command
relayConfig     Configure e-mail server information to receive email notifications
mapsSam         Show availability monitor information
mapsHelp        Display all the MAPS commands
portimpair      Use this command to clear the impaired flag of a port
deviceLogin     Use this command to manage port group connected to FI
sddquarantine   Clears or displays the quarantined ports
fpiprofile      Manage FPI threshold configurations
```

See Also

None

mapsPolicy

Manages the MAPS policies.

Synopsis

```
mapspolicy --create <policy_name>
mapspolicy --delete <policy_name>
mapspolicy --show {-summary | <policyName> | -all} [-concise]
mapspolicy --addrule <policy_name> -rulename <rule_name>
mapspolicy --delrule <policy_name> -rulename <rule_name>
mapspolicy --enable <policy_name>
mapspolicy --clone <existing_policy_name> -name <new_policy_name>
mapspolicy --help
```

Description

A MAPS policy is a set of rules. A switch can have multiple policies. However, you can activate or enable only one policy at a time. Once the policy is active, all the rules in the active policy take effect to monitor the switch. One policy must always be active on the switch.

You can only change the active policy by enabling a different policy.

Notes

This command requires a Fabric Vision license.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--create Creates a monitoring policy.

<policy_name> Specifies the name of the policy to be created. The name for the policy must be unique; it is case-sensitive. Refer to **MAPS Scale Numbers** table in *Brocade Fabric*

OS MAPS User Guide for the maximum length of policy name and maximum policies allowed on the systems.

--addrule <*policy_name*> Adds a rule to the specified user-defined policy.

-rulename <*rule_name*> Specifies the name of the rule to be added to the policy.

--delrule <*policy_name*> Deletes a rule from the specified user-defined policy.

-rulename <*rule_name*> Specifies the name of the rule to be deleted from the policy.

--enable Activates a policy on the switch.

<*policy_name*> Specifies the name of the policy to be enabled. The name can be a predefined or a user-defined policy. If another policy is already enabled, that policy is disabled and the specified policy is enabled instead. The predefined policies are as follows:

dflt_conservative_policy Contains rules with more lenient thresholds that allow a buffer and do not immediately trigger actions. Use this policy in environments where the elements are resilient and can accommodate errors.

dflt_moderate_policy Contains rules with thresholds values between the aggressive and conservative policies.

dflt_aggressive_policy Contains rules with very strict thresholds. Use this policy if you need a pristine fabric (for example, FICON fabrics).

dflt_base_policy Contains rules based on the features which can be monitored without a license.

dflt_always_active_policy Enables the current active policy. The system policy is always active and monitors the system. The policy monitors the critical resources such as memory, TruFOS license, etc.

--clone Creates a replica of an existing predefined or user-defined policy. The new policy has all of the rules of the existing policy. You can further modify the newly created policy. The following operands are required:

<*existing_policy_name*> Specifies the name of an existing policy. The policy can be a predefined policy or a user-defined policy.

-name <*new_policy_name*> Specifies the name of the policy to be created.

--delete Deletes a user-defined policy.

<*policy_name*> Specifies the name of the policy to be deleted.

--show Displays the rules in a policy.

<*policy_name*> Specifies the name of the policy to display. The name can be a predefined or a user-defined policy.

-summary Displays all existing policies and the number of rules present in them.

-all Displays the rules in all of the policies.

-concise Displays legends instead of the complete action names in the output. The legends for the action names are as follows: RS:RASLOG, SN:SNMP, EML:EMAIL, PF:FENCE, PL:PORTLOG, PD:DECOM, FMS:FMS, PT:TOGGLE, SDDQ:SDDQ, SWD:SW_CRITICAL,,SWM:SW_MARGINAL, SFPM:SFP_MARGINAL , UNQUAR:UNQUAR, UNVTAP:UNINSTALL_VTAP, RB:RE_BALANCE, and FPIN:FPIN. This operand is optional.

--help Displays the command usage.

Examples

To create a policy named "aggressive_policy":

```
switch:admin>  mapspolicy --create userPolicy
2020/04/09-16:51:53, [MAPS-1110], 179, FID 128, INFO, sw0, Policy userPolicy is created.
```

To add a rule to a policy:

```
switch:admin>  mapsPolicy --addrule userPolicy -rulename crc_rule
2020/04/09-16:52:46, [MAPS-1114], 180, FID 128, INFO, sw0, Rule crc_rule added to Policy userPolicy.
```

To delete a rule from a policy:

```
switch:admin>  mapspolicy --delrule userPolicy \
     -rulename CRIT_PORT_CRC_GE_2
```

To clone a policy:

```
switch:admin>  mapspolicy --clone dflt_conservative_policy \
     -name my_conservative_policy
```

To delete a policy:

```
switch:admin>  mapspolicy --delete my_conservative_policy
```

To display a policy:

```
switch:admin>  mapspolicy --show dflt_moderate_policy
Policy Name: dflt_moderate_policy

Rule Name                           |Condition                                    |Actions
 |  |                     |
-------------------------------------------------------------------------------------------------------------------------------
defALL_100M_16GSWL_QSFPCURRENT_1    |ALL_100M_16GSWL_QSFP(CURRENT/NONE<=1)      |SFP_MARGINAL,RASLOG,SNMP,EM|
 |    |AIL qt=1 hour  |
defALL_100M_16GSWL_QSFPCURRENT_10   |ALL_100M_16GSWL_QSFP(CURRENT/NONE>=10)     |SFP_MARGINAL,RASLOG,SNMP,EM|
 |    |AIL qt=1 hour  |
defALL_100M_16GSWL_QSFPRXP_2187     |ALL_100M_16GSWL_QSFP(RXP/NONE>=2187)       |SFP_MARGINAL,RASLOG,SNMP,EM|
 |    |AIL qt=1 hour  |
defALL_100M_16GSWL_QSFPRXP_44       |ALL_100M_16GSWL_QSFP(RXP/NONE<=44)         |SFP_MARGINAL,RASLOG,SNMP,EM|
 |    |AIL qt=1 hour  |
defALL_100M_16GSWL_QSFPSFP_TEMP_85  |ALL_100M_16GSWL_QSFP(SFP_TEMP/NONE>=85)    |SFP_MARGINAL,RASLOG,SNMP,EM|
 |    |AIL qt=1 hour  |
defALL_100M_16GSWL_QSFPSFP_TEMP_n5  |ALL_100M_16GSWL_QSFP(SFP_TEMP/NONE<=-5)    |SFP_MARGINAL,RASLOG,SNMP,EM|
 |    |AIL qt=1 hour  |
defALL_100M_16GSWL_QSFPVOLTAGE_2970 |ALL_100M_16GSWL_QSFP(VOLTAGE/NONE<=2970)   |SFP_MARGINAL,RASLOG,SNMP,EM|
 |    |AIL qt=1 hour  |
defALL_100M_16GSWL_QSFPVOLTAGE_3630 |ALL_100M_16GSWL_QSFP(VOLTAGE/NONE>=3630)   |SFP_MARGINAL,RASLOG,SNMP,EM|
 |    |AIL qt=1 hour  |

(output truncated...)

Active Policy is 'dflt_aggressive_policy'.
Unmonitored Rules are prefixed with "*"
System rules are prefixed with "+"
```

To display a summary of policies in a non-IPS switch:

```
switch:admin>  mapspolicy --show -summary
        Policy Name           Number of Rules
-------------------------------------------------------------
dflt_aggressive_policy     :    504
dflt_moderate_policy       :    508
dflt_conservative_policy   :    508
dflt_base_policy           :    57
dflt_always_active_policy  :    6

Active Policy is 'dflt_conservative_policy'. The policy
'dflt_always_active_policy' always monitors the system.
```

To display a summary of policies in an IPS Logical switch:

```
switch:admin> mapspolicy --show -summary
Policy Name                Number of Rules
-----------------------------------------
dflt_aggressive_policy     :  310
dflt_moderate_policy       :  314
dflt_conservative_policy   :  314
dflt_base_policy           :  57
dflt_always_active_policy  :  6

Active Policy is 'dflt_conservative_policy'. The policy
'dflt_always_active_policy' always monitors the system.
```

To enable a policy:

```
switch:admin>  mapspolicy --enable aggressive_policy
```

To display the details of a policy:

```
switch:admin>  mapspolicy --show dflt_aggressive_policy -concise
Policy Name: dflt_aggressive_policy

Rule Name                            |Condition                                |Actions           |
-------------------------------------------------------------------------------------------------------
defALL_100M_16GSWL_QSFPCURRENT_1     |ALL_100M_16GSWL_QSFP(CURRENT/NONE<=1)    |SFPM,RS,SN,EML |
defALL_100M_16GSWL_QSFPCURRENT_10    |ALL_100M_16GSWL_QSFP(CURRENT/NONE>=10)   |SFPM,RS,SN,EML |
defALL_100M_16GSWL_QSFPRXP_2187      |ALL_100M_16GSWL_QSFP(RXP/NONE>=2187)     |SFPM,RS,SN,EML |
defALL_100M_16GSWL_QSFPRXP_44        |ALL_100M_16GSWL_QSFP(RXP/NONE<=44)       |SFPM,RS,SN,EML |
defALL_100M_16GSWL_QSFPSFP_TEMP_85   |ALL_100M_16GSWL_QSFP(SFP_TEMP/NONE>=85)  |SFPM,RS,SN,EML |
defALL_100M_16GSWL_QSFPSFP_TEMP_n5   |ALL_100M_16GSWL_QSFP(SFP_TEMP/NONE<=-5)  |SFPM,RS,SN,EML |
defALL_100M_16GSWL_QSFPVOLTAGE_2970  |ALL_100M_16GSWL_QSFP(VOLTAGE/NONE<=2970)|SFPM,RS,SN,EML |
defALL_100M_16GSWL_QSFPVOLTAGE_3630  |ALL_100M_16GSWL_QSFP(VOLTAGE/NONE>=3630)|SFPM,RS,SN,EML |

Active Policy is 'dflt_moderate_policy'.
Unmonitored Rules are prefixed with "*"
System rules are prefixed with "+"

Legends:
RS:RASLOG  SN:SNMP  EML:EMAIL  PF:FENCE  PL:PORTLOG  PD:DECOM  FMS:FMS  PT:TOGGLE  SDDQ:SDDQ  SWD:SW_CRITICAL
SWM:SW_MARGINAL  SFPM:SFP_MARGINAL  UNQUAR:UNQUAR  UNVTAP:UNINSTALL_VTAP  RB:RE_BALANCE  FPIN:FPIN
```

See Also

logicalGroup, mapsConfig, mapsDb, mapsRule

mapsRule

Manages MAPS monitoring rules.

Synopsis

```
   mapsrule --create <rule_name> <rule_parameters> [-policy <policy_name>]
   mapsrule --createRoR <rule_name> <rule_parameters> [-policy <policy_name>]
   mapsrule --config <rule_name> <rule_parameters>
   mapsrule --clone <existing_rule_name> -rulename <new_rule_name>
<rule_parameters> [-policy <policy_name>]
   mapsrule --cloneByGroup <existing_group> -frompolicy <existing_policy>
        -newpolicy <new_policy_name> -newgroup <group>
[-tag <rule_tag>]
   mapsrule --delete <rule_name> [-force]
   mapsrule --show {<rule_name> | -all} [-concise]
   mapsrule --help
```

Description

Use this command to manage MAPS monitoring rules. A rule associates a condition with actions that must be triggered when the specified condition is evaluated to be true for a specified object. The combination of actions, conditions, and groups allows you to create a rule for almost any scenario required for your environment.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--create Creates a monitoring rule.

--createRoR Creates a Rule-on-Rule (RoR) to monitor a user-defined base rule. The following restrictions apply when you create an RoR:

- To create an RoR, the base rule must be present.
- To add an ROR to a given policy, the base rule must be present and added to that policy.
- You can define an RoR with any time base greater than the time base of the base rule. The time base 'none' is not supported.
- You cannot create an RoR based on another RoR.
- Refer to *MAPS Scale Numbers* section in *Brocade Fabric OS MAPS User Guide* for more details on the maximum number allowed for MAPS elements.

--config Modifies the specified monitoring rule.

--clone Creates a replica of an existing rule. Specify only the rule parameters that you want to modify. If no operand is specified, an exact copy is created. The following operands are required:

<existing_rule_name> Specifies the name of the exiting rule to be copied.

-rulename *<new_rule_name>* Specifies the name of the new rule. The name for the new rule must be unique; it is case-sensitive and can contain up to 72 characters.

--cloneByGroup Clones all the rules associated with the specified group and adds the rules to a new policy. The following operands are required:

- ***<existing_group>*** Specifies the name of an existing group to be copied.
- **-frompolicy *<policy_name>*** Specifies the name of an existing policy that contains the rules to be copied.
- **-newpolicy *<new_policy_name>*** Specifies the name of a new policy to which you want to add the rules.
- **-newgroup *<group>*** Specifies the name of a new group. The name for the new group must be unique.
- **-tag *<rule_tag>*** Specifies the tag to add to the name of cloned rules. If the tag is not specified, all the cloned rule names are prefixed with the default tag name "clone_".

--delete *<rule_name>* [-force] Deletes a user-defined monitoring rule. The **-force** option provides the capability to override the default behavior, and this option fails if you try to delete a default rule.

<rule_name> Specifies the name of the rule to be configured. The name for the rule must be unique and it is case-sensitive. Refer to *MAPS Scale Numbers* section in *Brocade Fabric OS MAPS User Guide* for more details on the maximum characters allowed for the rule name.

--show Displays the condition, actions, and the associated policies for the given rule or all rules. Specify **-all** to display all rules configured on the switch.

- **-concise** Displays legends instead of the complete action names in the output. The legends for the action names are as follows: RS (RASLOG), PF (FENCE), EML (EMAIL), SN (SNMP), PL (PORTLOG), PT (TOGGLE), PD (DECOM), FMS (FMS), SDDQ (SDDQ), SWD (SW_CRITICAL), SWM (SW_MARGINAL), SFPM (SFP_MARGINAL), FPIN (FPIN), UNQUAR (UNQUAR), UNVTAP (UNINSTALL_VTAP), RB (RE_BALANCE), and HAR (HA_RECOVER). This operand is optional.

<rule_parameters>

- **-group *<group_name>*** Specifies a pre-defined or user-defined group that contains the elements on which the specified condition is to be evaluated.
- **-monitor *<ms_name>*** Specifies the monitoring system (MS). Refer to the description of the *ms_name* option for the list of supported monitoring systems.
- **-timebase *<time_base>*** Specifies the time interval between two samples to be compared. Valid time base values include the following:
  - **min** Samples are compared every minute.
  - **hour** Samples are compared once an hour.
  - **day** Samples are compared once a day.
  - **IO** Rules gets executed in the hardware.
  - **10SEC** Samples are compared every 10 seconds.
  - **NONE** Samples are compared between the latest value and the configured threshold value.
- **-op *<comparison_operator>*** Specifies the relational operation to be used in evaluating the condition. Valid operators include the following:
  - **l** Less than.
  - **le** Less than or equal to.
  - **g** Greater than.
  - **ge** Greater than or equal to.
  - **eq** Equal to.
- **-value *<value>*** Specifies the threshold value. Refer to **Monitoring Systems Support Matrix** table for the limit, type, and range of the thresholds with other restrictions in the *Brocade Fabric OS MAPS User Guide*.

-action <*action*> Specifies a comma-separated list of actions to be taken if the specified condition is evaluated to be true. The action is not taken unless it is also specified globally using the **mapsconfig --actions** command. Refer to *MAPS Basic Elements* section in *Brocade Fabric OS MAPS User Guide* for more details. Valid actions include the following:

raslog	Generates a RASLog message.
decom	Decommissions the port. You can configure FENCE or DECOM or FENCE, DECOM if the decom (global) is in **impair** mode. You can even configure decom without enabling **fence**.
fence	Fences the port, if port fencing is enabled. Port fencing takes the ports offline if the user-defined thresholds are exceeded. This action is valid only on conditions that are evaluated on ports.
snmp	Generates mapsTrapAM and mapsQuietTimeTrap SNMP traps. Refer to **MAPS Traps** section of the *Brocade Fabric OS MIB Reference Manual* for more details.
email	Sends information about a switch event to a specified email address.
sw_critical	Sets the state of the affected switch to critical. This action is valid only if the **monitor** operand is one of the switch policy status monitoring systems.
sw_marginal	Sets the state of the affected switch to marginal. This action is valid only if the **monitor** operand is one of the switch policy status monitoring systems.
sfp_marginal	Sets the state of the affected SFP transceiver to marginal. This action is valid only if the **monitor** operand is one of the switch policy status monitoring systems.
sddq	Isolates the slow-drain flows to a low-priority VC from the existing VC (medium or high), thus freeing up the resources for the regular flows in the existing VC. The slow drain device quarantine (SDDQ) feature is not supported in Access Gateway mode. The port toggling (PT) action and the SDDQ action are mutually exclusive. When using the **mapsConfig** command, you cannot enable the SDDQ and PT actions at the same time.
fms	Notifies the FICON Management Server (FMS) of the configured MAPS threshold events.
toggle	Enables port toggling to recover a port from a bottleneck condition caused by the target device. Port toggle is supported only for F_Ports. The port toggling (PT) action and the SDDQ action are mutually exclusive. When using the **mapsConfig** command, you cannot enable the SDDQ and PT actions at the same time.
unquar	Releases the previously quarantined ports.
uninstall_vtap	Uninstalls vTAP if the mirrored frame count exceeds 250K IOPS and encryption is enabled in the 16Gb/s-capable ASIC. If encryption is not enabled in the ASIC, vTAP is not uninstalled. This action is applicable only to Brocade Gen 6 devices.
fpin	Enables fabric notifications.
re_balance	Directs MAPS to bring the port group state back to a balanced state. After MAPS takes the rebalance action, it expects the FI to redistribute the devices among existing ports to bring back the port group into a balanced state. MAPS waits for some time

before it decides to set the port group state to BALANCED or RE_BALANCE_FAILED.

ha_recover MAPS triggers HA failover or HA reboot in a chassis or switch respectively for critical memory usage alert.

none No actions are allowed on the switch. Specifying this option allows you to turn off all notifications.

The action SFP_MARGINAL is always enabled and cannot be turned off.

-tt <*timeout*> Specifies the time window in seconds over which the port is disabled and re-enabled by MAPS to recover from a congestion condition. The valid range is from 2 to 3600 seconds. This parameter is valid with only the **toggle** alert option.

-qt -value *value* [-unit {min | hour | day}] Specifies the time interval, in units of minutes, hours, or days, between consecutive alerts. The default unit is seconds.

-qtclear Clears the configured quiet time for the RASLog and email alerts.

-uqrt <*unquarantine_time*> [-uqrt_unit {min | hour | day}] Specifies the time, in units of minutes, hours, or days, after which the previously quarantined ports are automatically released. This parameter is valid only with the **unquar** alert option.

-uqrt_clear Clears the configured un-quarantine timeout value. This parameter is valid only with the **unquar** alert option.

-severity Specifies the severity level. Valid values include **info**, **warning**, **error**, **critical**, and **default**.

-policy <*policyname*> Specifies the user-defined policy. You cannot add a rule to a predefined policy.

<*ms_name*> Specifies the monitoring system. Refer to *MAPS Categories* section of the *Brocade Fabric OS MAPS User Guide* for more details on the monitoring system. Valid monitoring systems for each dashboard category include the following:

Port health Monitors port statistics. Valid values for the port health category include the following:

CRC Cyclic redundancy check errors

ITW Invalid transmit words

LOSS_SYNC Loss of synchronization

LF Link failure

LOSS_SIGNAL Loss of signal

PE Protocol errors

LR Link reset

C3TXTO Class 3 timeouts

STATE_CHG State changes

CURRENT SFP current

RXP SFP receive power

TXP SFP transmit power

VOLTAGE SFP voltage

SFP_TEMP SFP temperature

PWR_HRS SFP power-on hours

DEV_NPIV_LOGINS NPIV device logins

ENCR_BLK Encryption block errors

ENCR_DISC Frames dropped due to parity errors

	ENCR_SHRT_FRM	Encryption short frames
	PID	Port ID
	ROUTING_ERR	Frames dropped due to routing errors
Backend Port Health	Monitors backend port statistics. Valid values for the port health category include the following:	
	CRC	Cyclic redundancy check errors
	ITW	Invalid transmit words
	LR	Link reset
	BAD_OS	Invalid ordered set
	FRAME_TRUNC	The frame is too short (less than 36 bytes).
	FRAME_LONG	The frame is longer than expected (greater than 2148 bytes).
Extension GE Port Health	Monitors extension GE port health. Valid values for the port health category include the following:	
	GE_CRC	Cyclic redundancy check errors
	GE_LOS_OF_SIG	Loss of signal
FRU health	Monitors the field-replaceable units, including ports, power supplies, and flash memory. Valid values for the FRU health category include the following:	
	PS_STATE	The power supply state has changed.
	FAN_STATE	The fan state has changed.
	BLADE_STATE	The blade state has changed.
	SFP_STATE	The SFP state has changed.
	WWN	The WWN card state has changed.
Extension Health	Monitors the FCIP circuit. Valid values for the category include the following:	
	CIR_STATE	Circuit state changes
	CIR_UTIL	Percentage of circuit utilization
	CIR_PKTLOSS	Percentage of circuit packet loss
	RTT	Circuit round-trip time in milliseconds
	JITTER	Percentage of variance in RTT for circuits
	STATE_CHG	Tunnel state changes
	UTIL	Percentage of utilization
	PKTLOSS	Percentage of tunnel QoS utilization
	IP_UTIL	Circuit IP utilization
	IP_PKTLOSS	Circuit IP packet loss
	IP_RTT	Circuit IP round-trip time in milliseconds
	IP_JITTER	Circuit IP connection variance
	IP_EXTN_FLOW	Monitors DP objects for the number of IP Extension TCP flows
Fabric performance impact	Monitors the fabric performance. Valid values for the Fabric performance impact category include the following:	
	DEV_LATENCY_IMPACT	Fabric Performance Impact
	BE_LATENCY_IMPACT	Latency impact
	RX	Receive bandwidth usage %
	TX	Transmit bandwidth usage %

UTIL	Utilization
IT_FLOW	IT flow ratio
DEV_LOGIN_DIST	MAPS monitors the number of devices logged in on individual ports in the group. This operand monitors the port group state and can have the following values:
BALANCE	Specifies that no ports in the group can have a number of devices more than one (1) in the port group. The rebalance operation selectively moves some of the device logins from heavily loaded ports to lightly loaded ports in an effort to balance the logins across the port group.
IMBALANCE	MAPS monitors the number of devices logged in on individual ports in the group; no two ports can have more than one device login difference. If two ports in a port group have a difference of more than one device login, it sets the port group state into imbalance, which leads to an alert to the administrator.
BALANCE_FAILED	MAPS performed the re_balance action but failed to rebalance the port group.

Security health

Monitors security violations on the switch. In AG mode, the values SEC_SCC, SEC_DCC, SEC_TS, SEC_AUTH_FAIL, and SEC_CMD are not supported. Valid values for the security health category include the following:

SEC_DCC	DCC violations
SEC_HTTP	HTTP violations
SEC_CMD	Illegal command
SEC_LV	Login violations
SEC_SCC	SCC violations
SEC_AUTH_FAIL	Authentication failure
SEC_TELNET	Telnet violations
SEC_TS	Time Server (TS) out of sync
DAYS_TO_EXPIRE	Days to expire
EXPIRED_CERTS	Expired certificates. No alerts are triggered for certificates expiring post 2038.

Fabric state change

Monitors fabric state changes, including zone changes, fabric segmentation, E_Port down, fabric reconfiguration, domain ID changes, and fabric logins. Valid values for the fabric state change category include the following:

DID_CHG	Domain ID change
FLOGI	Fabric logins
FAB_CFG	Fabric reconfigurations
EPORT_DOWN	E_Ports down
FAB_SEG	Fabric segmentation
ZONE_CHG	Zone changes
L2_DEVCNT_PER	Layer 2 device count
LSAN_DEVCNT_PER	LSAN device count
ZONE_CFGSZ_PER	Zone configuration size
BB_FCR_CNT	FCR count

Switch status policy Monitors the health of the switch. Valid values for the switch status policy category include the following:

BAD_PWR	Absent or faulty power supply
BAD_TEMP	Temperature sensors outside range
BAD_FAN	Absent or faulty fans
FLASH_USAGE	Flash usage
MARG_PORTS	Percentage of marginal ports
FAULTY_PORTS	Percentage of faulty ports
MISSING_SFP	Percentage of missing SFP transceivers
ERR_PORTS	Percentage of error ports
WWN_DOWN	World Wide Name card down
DOWN_CORE	Core blade monitoring
FAULTY_BLADE	Faulty blades
HA_SYNC	High Availability monitoring
FAN_AIRFLOW_MISMATCH	Monitors the air flow direction of the power supply fan FRUs and blower FRUs and generates an alert if there is a mismatch in the air flow direction of any two power supply fans or any two blowers. The mismatch event is followed by a match event when the air flow direction in all the fans and blowers returns to normal.
SYSTEM_TEMP	System temperature. Valid values are MARG_OUT_OF_RANGE, CRIT_OUT_OF_RANGE, and HEALTHY.

Switch resource Monitors system RAM, flash, memory, and CPU. Valid values for the switch resource category include the following:

TEMP	Temperature sensor
ETH_MGMT_PORT_STATE	Ethernet management port state
FLASH_USAGE	Flash usage
VTAP_IOPS	Traffic IOPS per ASIC chip
CPU	CPU utilization
MEMORY_USAGE	Memory usage. This monitoring system is deprecated.
IT_RES_USAGE	IT reserve usage
ITL_RES_USAGE	ITL reserve usage
MEMORY_USAGE_STATE	Memory usage state

I/O Latency Stats Monitors I/O latency statistics. Valid values for the I/O latency stats category include the following:

RD_STATUS_TIME	Read Completion Time (RCT)
WR_STATUS_TIME	Write Completion Time (WCT)
RD_1stDATA_TIME	First read response time
WR_1stXFER_RDY	First write response transfer ready
RD_PENDING_IOs	Read pending IOs

WR_PENDING_IOs	Write pending IOs
MAX_RD_PENDING_IO	Maximum read pending IO per port
MAX_WR_PENDING_IO	Maximum write pending IO per port
RD_1stDATA_TIME_VIOL	Percentage of read first response violations
WR_1stXFER_RDY_VIOL	Percentage of write first response violations
RD_STATUS_TIME_VIOL	Percentage of read exchange completion violations
WR_STATUS_TIME_VIOL	Percentage of write exchange completion violations

I/O Health Monitors errors or exceptions pertaining to flows.

TIMEOUT	SCSI or NVMe IO exchange timeout monitoring
IO_ERROR	Any other SCSI or NVMe errors status

Other Monitors the other category.

TRUFOS_CERT_DAYS_TO_EXPIRE	Remaining number of days for certificate expiration.
TRUFOS_CERT_INSTALLED	TruFOS Certificate installed.
TRUFOS_CERT_EXPIRED	TruFOS Certificate expired.
ASC_UPLOAD_FAILURE	ASC upload failure.

--help Displays the command usage.

Examples

To create a rule for monitoring the number of CRC errors every hour on critical ports and generating a RASlog if the number of CRC errors is greater than 100:

```
switch:admin>  mapsrule --create crc_rule -monitor CRC
-group ALL_PORTS -timebase min -op ge -value 100 -action raslog,email
     2020/04/09-16:45:12, [MAPS-1100], 177, FID 128, INFO, sw0, Rule crc_rule is created.
```

To create an RoR rule:

```
switch:admin> mapsRule --createRoR crc_ror -monitor crc_rule -group ALL_PORTS -timebase hour
-op ge -value 10 -action raslog,email
     [MAPS-1100], 178, FID 128, INFO, sw0, Rule crc_ror is created.

switch:admin> mapsrule --show crc_ror
Rule Data:
----------
RuleName: crc_ror
Condition: ALL_PORTS(crc_rule/hour>=10)
Actions: raslog,email
Associated Policies:
```

To modify a rule to change the action to generate a RASlog message and fence the port:

```
switch:admin>  mapsrule --config toggle_rule -group DB_PORTS
-monitor DEV_LATENCY_IMPACT -timebase none -op eq
-value IO_PERF_IMPACT -action TOGGLE –tt 180
```

To clone a rule with a modified timebase:

```
switch:admin>  mapsrule --clone defALL_HOST_PORTSUTIL_75
-rulename my_mon_rule_4_util_90 -timebase Hour
```

To clone all rules associated with a group:

```
switch:admin> mapsrule --cloneByGroup ALL_E_PORTS -newgroup admin_CBG_E_PORTS
-frompolicy dflt_aggressive_policy -newpolicy admin_CBG -tag cl
```

To display a single rule:

```
switch:admin>  mapsrule --show crc_rule
Rule Data:
----------
RuleName: crc_rule
Condition: ALL_PORTS(CRC/min>=100)
Actions: raslog,email
Associated Policies:
```

To display all of the rules configured on a switch:

```
switch:admin>  mapsrule --show -all
Rule Name                   |Condition                                          |Actions                    |
-------------------------------------------------------------------------------------------------------------------------------
defNON_E_F_PORTSCRC_0       |NON_E_F_PORTS(CRC/MIN>0)                           |RASLOG,SNMP,EMAIL          |
defNON_E_F_PORTSCRC_2       |NON_E_F_PORTS(CRC/MIN>2)                           |FENCE,SNMP,EMAIL           |
defNON_E_F_PORTSCRC_10      |NON_E_F_PORTS(CRC/MIN>10)                          |RASLOG,SNMP,EMAIL          |
defALL_PORTS_IO_FRAME_LOSS  |ALL_PORTS(DEV_LATENCY_IMPACT/NONE==IO_FRAME_LOSS)  |RASLOG,SNMP,EMAIL,SDDQ,TOGG|
                            |                                                   |LE tt=2                    |
defALL_PORTS_IO_LATENCY_CLEAR|ALL_PORTS(DEV_LATENCY_IMPACT/NONE==IO_LATENCY_CLEA|RASLOG,SNMP,EMAIL          |
```

To display all of the rules configured on a switch with legends for action names:

```
switch:admin>  mapsrule --show -all -concise
Rule Name             |Condition                 |Actions  |
-------------------------------------------------------------
defNON_E_F_PORTSCRC_0 |NON_E_F_PORTS(CRC/MIN>0)  |RS,SN,EM |
defNON_E_F_PORTSCRC_2 |NON_E_F_PORTS(CRC/MIN>2)  |PF,SN,EM |

Legend:
RS:RASLOG, EM:EMAIL, PD:DECOM, PF:FENCE, SC:SW_CRITICAL SM:SW_MARGINAL, FM:FMS, PT:TOGGLE, SQ:SDDQ SN:SNMP
```

To display the dflt_always_active_policy rule configured on a switch:

```
switch:admin>  mapspolicy --show dflt_always_active_policy
Policy Name: dflt_always_active_policy

Rule Name                                |Condition                                          |Actions
           |
-------------------------------------------------------------------------------------------------------------------------------
```

```
defCHASSISMEMORY_USAGE_STATE_CRIT        |CHASSIS(MEMORY_USAGE_STATE/NONE==CRITICAL)        |
RASLOG,SNMP,EMAIL,HA_RECOVE|
                                         |                                                  |R
           |
defCHASSISMEMORY_USAGE_STATE_WARN        |CHASSIS(MEMORY_USAGE_STATE/NONE==WARNING)         |RASLOG,SNMP,EMAIL
          |
defCHASSISTRUFOS_CERT_DAYS_TO_EXPIRE_60  |CHASSIS(TRUFOS_CERT_DAYS_TO_EXPIRE/NONE<60)    |RASLOG,SNMP,EMAIL
 qt=7 day |
defCHASSISTRUFOS_CERT_EXPIRED            |CHASSIS(TRUFOS_CERT_EXPIRED/NONE==TRUE)           |RASLOG,SNMP,EMAIL
 qt=30 day|
                                         |                                                  |
           |
defCHASSISTRUFOS_CERT_INSTALLED          |CHASSIS(TRUFOS_CERT_INSTALLED/NONE==FALSE)        |RASLOG,SNMP,EMAIL
 qt=30 day|
                                         |                                                  |
           |
Active Policy is 'dflt_aggressive_policy'. The policy 'dflt_always_active_policy' always monitors the system.
```

See Also

logicalGroup, mapsConfig, mapsDb, mapsPolicy, mapsSam

mapsSam

Generates or clears reports to display CPU, RAM, and flash memory usage, and the port status for every physical Fibre Channel port or Ethernet ports on the switch.

Synopsis

```
mapssam --show [cpu | memory | flash]
mapssam --clear
mapssam --help
```

Description

Use this command to generate the reports to display CPU, RAM, and flash memory usage, and the port status for every physical and virtual Fibre Channel port on the switch. This command provides an option to clear the reports. This report displays uptime and downtime for each port and enables you to check if a particular port is failing more often than the others.

The Free Memory value that displays in the **mapssam --show** command output includes cache memory. This may differ from the Free Memory value in the **memshow** or **top** command output. However, due to different polling frequency of the **mapssam**, **memshow**, and **top** commands, the data displayed by these commands are not in sync with each other most of the time.

When issued with the **--show** option, the report displays with the following information:

Port	Port number on the local switch.
Type	Port type, such as the following: E (E_Port), F (F_Port), U (U_Port), D (disable port), AE (AE_Port), AF (AF_Port), T (E Trunk ports), ETH (ETH_Port), VE (VE_Port), G (G_Port), DP (persistently disable port), DIA (D_Port), or TF (F Trunk ports).
Total Up Time	Percent of time the port was up.
Total Down Time	Percent of time the port was faulty.
Down Occurrence	Number of times the port was faulty.

Total Offline Time Percent of time the port was offline.

Notes

MAPS monitors kernel memory as part of **Memory Usage** on the Brocade G730 and the Brocade 7850 Extension Switch.

This command requires a Fabric Vision license.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--show Displays the MAPS Service Availability Module (SAM) report.

- **cpu** Displays system CPU usage.
- **memory** Displays system memory usage.
- **flash** Displays system flash usage.

--clear Clears the SAM report.

--help Displays the command usage.

Examples

To generate a port availability monitor report:

```
switch:admin>  mapssam --show
               Total     Total       Down        Total
Port  Type     Up Time   Down Time   Occurrence  Offline Time
              (Percent)  (Percent)   (Times)     (Percent)
==========================================================
9/39   ETH     100.00       0.00       0           0.00
11/17  ETH     100.00       0.00       0           0.00
11/22  ETH     100.00       0.00       0           0.00
11/23  ETH     100.00       0.00       0           0.00
12/5   E       100.00       0.00       0           0.00
12/16  ETH     100.00       0.00       0           0.00
12/22  ETH     100.00       0.00       0           0.00
12/23  ETH     100.00       0.00       0           0.00
(output truncated)
```

To display CPU usage:

```
switch:admin>  mapssam --show cpu
Showing Cpu Usage:
   CPU Usage   : 2.0%
```

To display memory usage:

```
switch:admin>  mapssam --show memory
Showing Memory Usage:
   Memory Usage              : 16.00%
   Used Memory               : 2465536k
   Free Memory               : 12737108k
   Free Kernel Memory        : 68%
```

```
   Total Memory              : 15202644k
   Memory Usage State        : IN_RANGE
```

To display system flash usage:

```
switch:admin>  mapssam --show flash
Showing Flash Usage:
   Flash Usage   : 42%
```

To clear the report:

```
switch:admin>  mapssam --clear
```

See Also

logicalGroup, mapsConfig, mapsDb, mapsRule, mapsPolicy

memShow

Displays the amounts of free and used memory in a switch.

Synopsis

```
memshow [-b | -k | -m]
```

Description

Use this command to display free and used memory in the switch, as well as the shared memory and buffers used by the kernel.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-b	Specify to display memory usage in bytes.
-k	Specify to display memory usage in kilobytes.
-m	Specify to display memory usage in megabytes. By default, memory usage is displayed in bytes.

Examples

To view the memory usage:

```
switch:admin> memshow
           total      used      free   shared   buffers    cached
Mem:   129740800 112562176  17178624        0    139264  30396416
Swap:          0         0         0

switch:admin> memshow -m
          total       used      free    shared   buffers   cached
Mem:        123        107        16         0         0       28
```

```
Swap:          0           0          0
```

See Also

supportSave

mgmtApp

Configures the maximum number of REST sessions, enables or disables keepalive, and terminates a REST session. On chassis-based systems, this command is supported only on the active CP.

Synopsis

```
mgmtapp
mgmtapp --config -maxrestsession <rest_session_count>
mgmtapp --terminate <session_id>
mgmtapp --enable {rest [-protocol http] | keepalive | httpoptions}
mgmtapp --disable {rest [-protocol http] | keepalive | httpoptions}
mgmtapp --unbind
mgmtapp --create authtoken
mgmtapp --delete authtoken
mgmtapp --show [authtoken | rbacinfo]
mgmtapp --authmode enable
mgmtapp --authmode disable [-force]
mgmtapp --showsessions
mgmtapp --help
```

Description

Use this command to perform REST session-related operations. Allows maximum REST session configuration to the entire switch and chassis and on per logical switch on VF-enabled switches.

Use to enable and disable the REST interface. It is enabled by default and when enabled, it uses the **maxrestsession** count and allows client logins.

Use this command to create or delete authtoken of the logged in users.

Use **keepalive** option to enable or disable keepalive connection in HTTPS. The option is disabled by default. The keepalive connection expires after processing 25 requests or on an idle time of 15 seconds.

Use **httpoptions** option to enable or disable HTTP OPTIONS methods supported in Fabric OS.

Use **sessioninfo** to display the application login history.

Use **-protocol http** to enable or disable REST interface in HTTP mode. By default, HTTP is enabled.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

For more information of using REST with Fabric OS devices, refer to the *Brocade Fabric OS REST API Reference Manual*.

Operands

This command has the following operands:

--config -maxrestsession *<rest_session_count>*	Configures the maximum REST sessions allowed. Limits to configdb and validates whenever a new REST login is processed. An error is reported if the login count has reached its maximum limit. The minimum and maximum number is 1 and 10 sessions respectively and the default is 3 sessions.
--terminate *<session_id>*	Terminates the REST session for the specified session ID. This option also removes all the session parameters from the backend database.
--enable {rest | keepalive | httpoptions}	Enables the specified REST interface or keepalive or HTTP OPTIONS. The Keepalive mode can be enabled only when the HTTPS mode is on.
--disable {rest | keepalive | httpoptions}	Disables the specified REST interface or keepalive or HTTP OPTIONS.
--unbind	Clears the binding of the switch to the Management application to allow a different instance of the Management application to manage the switch. This option also clears the collection configuration created by the application.
--create | --delete authtoken	Creates or deletes the authtoken for the logged in user.
--authmode {enable | disable}	Enables or disables auth mode in HTTP interface.
--show	Displays the maximum number of configured REST sessions values keepalive state (enabled or disabled), keepalive timeout (in seconds), authmode (enabled or disabled), and HTTP options (enabled or disabled).
	authtoken Displays the authtoken of the logged in user.
	rbacinfo Displays the REST URIs and its corresponding RBAC class name and context type.
--showsessions	Displays the history of login sessions from external applications and the active application sessions.
--help	Displays the command usage.

Examples

To configure the maximum number of REST sessions:

```
switch:admin> mgmtapp --config -maxrestsession 5
Configuration succeeded.
```

To terminate a REST session:

```
switch:admin> mgmtapp --terminate
df5e6d2495d366c172816ce165193510feed81efc2677ed9dccfa40d85535762
Rest session terminated successfully.
```

To unbind the Management application:

```
switch:admin> mgmtapp --unbind
Application unbind success.
```

To enable the REST interface:

```
switch:admin> mgmtapp --enable rest
Rest interface enabled successfully.

switch:admin> mgmtapp --show
REST Configuration:
 Interface State          : Enabled
 Effective Protocol       : HTTP only
 HTTP State               : Enabled
 Session Count            : 3

HTTPS Configuration:
```

```
 KeepAlive                : Disabled
 KeepAliveTimeout         : 15sec

Auth Configuration:
    AuthMode                 : Enabled

HTTP Options                 : Enabled
```

To disable the REST interface:

```
switch:admin> mgmtapp --disable rest
Rest interface disabled successfully.

switch:admin> mgmtapp --show
REST Configuration:
 Interface State          : Disabled
 Effective Protocol       : None
 HTTP State               : Disabled
 Session Count            : 2

HTTPS Configuration:
 KeepAlive                : Disabled
 KeepAliveTimeout         : 15sec

Auth Configuration:
    AuthMode                 : Enabled

HTTP Options                 : Enabled
```

To enable keepalive mode:

```
switch:admin> mgmtapp --enable keepalive
HTTP mode will be disabled after enabling KeepAlive.Do you want to continue?(y or n) y
KeepAlive enabled successfully.

switch:admin> mgmtapp --show
REST Configuration:
 Interface State          : Disabled
 Effective Protocol       : None
 HTTP State               : Disabled
 Session Count            : 2

HTTPS Configuration:
 KeepAlive                : Enabled
 KeepAliveTimeout         : 15sec

Auth Configuration:
    AuthMode                 : Enabled

HTTP Options                 : Enabled
```

To disable keepalive mode:

```
switch:admin> mgmtapp --disable keepalive
KeepAlive disabled successfully.
```

```
switch:admin> mgmtapp --show
REST Configuration:
    Interface State          : Enabled
    Effective Protocol       : HTTPS only
    HTTP State               : Enabled
    Session Count            : 3

HTTPS Configuration:
    KeepAlive                : Disabled
    KeepAliveTimeout         : 15sec

Auth Configuration:
    AuthMode                 : Enabled

HTTP Options                 : Enabled
```

To enable or disable HTTP OPTIONS method supported in FOS:

```
switch:admin> mgmtapp --enable httpoptions
HTTP OPTIONS method enabled.

switch:admin> mgmtapp --disable httpoptions
HTTP OPTIONS method disabled.
```

To display the configuration settings:

```
switch:admin> mgmtapp --show
REST Configuration:
 Interface State         : Enabled
 Effective Protocol      : HTTPS only
 HTTP State              : Enabled
 Session Count           : 10
HTTPS Configuration:
 KeepAlive               : Disabled
 KeepAliveTimeout        : 15sec
Auth Configuration:
 AuthMode                : Enabled

HTTP Options                : Enabled
```

To display REST interface state when HTTPS certificate is present:

```
switch:admin> mgmtapp --show
REST Configuration:
 Interface State          : Enabled
 Effective Protocol       : HTTPS only
 HTTP State               : Disabled
 Session Count            : 3

HTTPS Configuration:
 KeepAlive                : Disabled
 KeepAliveTimeout         : 15sec

Auth Configuration:
```

```
 AuthMode                 : Enabled

HTTP Options                 : Enabled
```

To enable REST interface with HTTP protocol:

```
switch:admin> mgmtapp --enable rest –protocol http
Warning: http is not secured, Do you want to continue?  (yes, y, no, n): [no] y
Rest HTTP interface enabled successfully.
```

To enable HTTP protocol when REST interface is disabled:

```
switch:admin> mgmtapp --enable rest –protocol http
REST interface disabled. Please enable REST and try again.
```

To display the history of application login sessions:

```
switch:admin> mgmtapp --showsessions

The following is the history of logins to the switch from external applications  \
(Login Timestamp, IP Address, User Account, Application, SessionId, Current VF,  \
Auth Token, Protocol):

2021/10/19-16:49:48.648557, 10.155.143.51, admin, SANnavMP220,           \
 1e997dd20a6d3cffa54d75aee5433a7b63059904e7e340b74e93e9fee0e976eb,    \
 128, No, HTTP,  e6e1872d-dfe9-3ac0-9fba-c791e5834e12
2021/10/20-11:01:23.162576, 10.155.43.72, admin, SANnavMP220,            \
 59420e6cfbd061cd2982520b92581e79bb86b91be40d7df6e889e469f6fdbf49,    \
 128, No, HTTP,  ae7e7481-79ff-3f6c-874c-5d2b70d9a643
2021/10/20-11:01:28.403890, 10.155.43.72, admin, SANnavMP220,            \
 26ea0d5e5e212b1ab3e36fc4ae53ee6d39bdc75cbbd664a58ee4487fa8b5210b,    \
 128, No, HTTP,  ae7e7481-79ff-3f6c-874c-5d2b70d9a643
(truncated)
2021/10/20-11:28:20.866312, 10.155.143.51, admin, SANnavMP220,           \
 25232440548b45cbcf084eb32ad6505041fdb7baa5294b239c804d8141dbb796,    \
 128, No, HTTP,  e6e1872d-dfe9-3ac0-9fba-c791e5834e12

 The following are the sessions from the external applications that are
currently active:

2021/10/19-16:49:48.648557, 10.155.143.51, admin, SANnavMP220,           \
 1e997dd20a6d3cffa54d75aee5433a7b63059904e7e340b74e93e9fee0e976eb,    \
 128, No, HTTP,  e6e1872d-dfe9-3ac0-9fba-c791e5834e12
2021/10/20-11:01:23.162576, 10.155.43.72, admin, SANnavMP220,            \
 59420e6cfbd061cd2982520b92581e79bb86b91be40d7df6e889e469f6fdbf49,    \
 128, No, HTTP,  ae7e7481-79ff-3f6c-874c-5d2b70d9a643
2021/10/20-11:28:20.866312, 10.155.143.51, admin, SANnavMP220,           \
 25232440548b45cbcf084eb32ad6505041fdb7baa5294b239c804d8141dbb796,    \
 128, No, HTTP,  e6e1872d-dfe9-3ac0-9fba-c791e5834e12
```

To create a new authtoken of the logged in user:

```
switch:admin> mgmtapp --create authtoken
Auth token created successfully.

switch:admin> mgmtapp --show authtoken
```

```
AuthToken: NAXCBsFrBxf3/b5z6G7pyywSx0eXE4w4HyuqdFuXFd1OErJIYLnaVqTafgEl
YywH8ZCIgKka0WAmtnN2LcbbfyIUvw97Vdxg0lA8dQSaOv7m+fXX+okHF6qINJV
1LVMxso9qZCmhDP/CLByQWN1enUGUQiClbm9Y06vVS3WJvLAdc3OPsfW+Q5/PKlVzsP
```

To delete a new authtoken of the logged in user:

```
switch:admin> mgmtapp --delete authtoken
Auth token deleted successfully.

switch:admin> mgmtapp --show authtoken
Error: Auth token is not present.
```

To display RBAC information:

```
switch:admin> mgmtapp --show rbacinfo
--------------------------------------------------------------------------------
URL                                   RBAC               CONTEXT_TYPE
--------------------------------------------------------------------------------
/rest/auth-token                      None                  both
/rest/brocade-module-version          None                  both
/rest/login                           None                  both
/rest/logout                          None                  both
/rest/modules-state                   None                  both
/rest/operations/device-management    NxPortManagement      both
/rest/operations/extension            SwitchPortManagement  chassis
/rest/operations/fibrechannel-fabric  Fabric                vf
/rest/operations/fibrechannel-zone    Zoning                vf
/rest/operations/firmwaredownload     FirmwareManagement    both
/rest/operations/license
(output truncated)
```

To enable or disable authmode:

```
switch:admin> mgmtapp --authmode enable

switch:admin> mgmtapp --authmode disable
Warning: Auth mode disable is not secured,
Do you want to continue?  (yes, y, no, n): [no]y
```

See Also

None

motd

Sets the banner on the chassis.

Synopsis

motd --set *string*
motd --show

Description

Use this command to set the banner on the chassis.

The banner is a string of alphanumeric characters. It is displayed before you log in to a switch. This banner is shown only in the Fabric OS CLI prompt and it is not shown in Web Tools.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following optional operands:

--set *string*	Specify a text string of alphanumeric characters to be displayed before login. The string must be enclosed in double quotation marks and supported maximum length is 1022 characters. Allows alphanumeric characters, spaces, and special characters like period (.), comma(,), single quotation marks ('), double quotation marks (""), asterisk (*), and hyphen (-). The message displays either before or after the login prompt, depending on the SSH client implementation. Fabric OS does not control when the MOTD displays.
--show	Displays the chassis-wide banner.
--help	Displays the command usage.

Examples

To set a chassis-level banner for the switch:

```
switch:admin> motd --set "This is a \
     chassis-level banner. It displays before the login."
```

To display the banner:

```
switch:admin> motd --show
This is a chassis-level banner. It displays before the login.
```

See Also

bannerSet, bannerShow

msCapabilityShow

Displays the Management Server (MS) capabilities.

Synopsis

```
mscapabilityshow
```

Description

Use this command to display the supported capabilities of the Management Server for each switch in the fabric. An asterisk displays next to the name of the local switch.

Notes

Reliable commit service (RCS) is a fabric-wide capability and is supported only if all the switches in the fabric support the service.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the supported MS capabilities for each switch in the fabric:

```
switch:admin> mscapabilityshow
       Switch WWN         Capability   Switch Name
========================   ==========   =======
10:00:00:60:69:20:15:71    0x0000008f   "switch1"*
10:00:00:60:69:00:30:05    0x0000008f   "switch2"

         Capability Bit Definitions:
                 Bit 0: Basic Config Service Supported.
                 Bit 1: Platform Management Service Supported.
                 Bit 2: Topology Discovery Service Supported.
                 Bit 3: Unzoned Name Service Supported.
                 Bit 4: Fabric Zone Service Supported.
                 Bit 5: Fabric Lock Service Supported.
                 Bit 6: Time Service Supported.
                 Bit 7: RSCN Small Payload Supported.
                 Bit 8: Reliable Commit Service(RCS) Supported.
                 Bit 9: Access Gateway Registration/Discovery Supported.
                 Others: Reserved.
```

See Also

msPlMgmtActivate, msPlMgmtDeactivate

msPlatShow

Displays the Management Server (MS) platform database.

Synopsis

msplatshow

Description

Use this command to display information from the MS platform database. This command displays the name of each platform object with the platform type (GATEWAY, HOST_BUS_ADAPTER, and so forth), associated management addresses, and associated node names.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the MS platform database for a fabric:

```
switch:admin> msplatshow
-------------------------------------------
Platform Name: [9] "first obj"
Platform Type: 5 : GATEWAY
Number of Associated M.A.: 1
Associated Management Addresses:
[35] "http://java.sun.com/products/plugin"
Number of Associated Node Names: 1
Associated Node Names:
10:00:00:60:69:20:15:71
---------------------------------------------
Platform Name: [10] "second obj"
Platform Type: 7 : HOST_BUS_ADAPTER
Number of Associated M.A.: 1
Associated Management Addresses:
[30] "http://java.sun.com/products/1"
Number of Associated Node Names: 2
Associated Node Names:
10:00:00:60:69:20:15:79
10:00:00:60:69:20:15:75
```

See Also

msCapabilityShow, msPlMgmtActivate, msPlMgmtDeactivate

msPlatShowDBCB

Displays the Management Server (MS) platform service database control block.

Synopsis

msplatshowdbcb

Description

Use this command to display the control block fields associated with the platform database.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the MS platform service database control block:

```
switch:admin> msplatshowdbcb
Domain  Worldwide Name     Retry Count Exchange Status
```

```
-------------------------------------------------------
  3: 10:00:00:60:69:51:10:e6     0             0x2
-------------------------------------------------------
msPlDBCB.peerWwn == 00:00:00:00:00:00:00:00.
msPlDBCB.psPeerWwn == 00:00:00:00:00:00:00:00.
msPlDBCB.replicate == 0.
msPlDBCB.fabMaySeg == 255.
msPlDBCB.enabled == 1.
```

See Also

msCapabilityShow, msPlatShow, msPlClearDB, msPlMgmtActivate, msPlMgmtDeactivate

msPlClearDB

Clears the Management Server (MS) platform database on all switches in the fabric.

Synopsis

msplcleardb

Description

Use this command to clear the MS platform database in the entire fabric. Because this operation cannot be undone, it should not be performed unless it is intended to resolve a database conflict between two joining fabrics or to establish an entirely new fabric with an empty database.

Notes

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To clear the MS platform database:

```
switch:admin> msplcleardb

MS Platform Service is currently enabled.
This will erase MS Platform Service Database in the
   entire fabric.

Would you like to continue this operation?
   (yes, y, no, n): [no] y

Request to MS Platform DB Clear operation in progress...

*Completed clearing MS Platform Service Database!!
```

See Also

msCapabilityShow, msPlatShow, msPlatShowDBCB, msPlMgmtActivate, msPlMgmtDeactivate

msPlMgmtActivate

Activates the Management Server (MS) platform service.

Synopsis

```
msplmgmtactivate
```

Description

Use this command to activate the MS platform service throughout the fabric. This command attempts to activate the MS platform service for each switch in the fabric. The change takes effect immediately and is committed to the configuration database of each affected switch. MS activation is persistent across power cycles and reboots.

Notes

By default, the MS platform service is disabled.

Before issuing this command, run **msCapabilityShow** to verify that all switches in the fabric support the MS platform service; if one switch does not support the service, the command fails.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To activate the MS platform service:

```
switch:admin> msplmgmtactivate

Request to activate MS Platform Service in progress......

*Completed activating MS Platform Service in the fabric!
```

See Also

msCapabilityShow, msPlatShow, msPlMgmtDeactivate

msPlMgmtDeactivate

Deactivates the Management Server (MS) platform service.

Synopsis

```
msplmgmtdeactivate
```

Description

Use this command to deactivate the MS platform service throughout the fabric. This command deactivates the MS platform service for each switch in the fabric and commits the change to nonvolatile storage.

Notes

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To deactivate the MS platform service on all switches in the fabric:

```
switch:admin> msplmgmtdeactivate

MS Platform Service is currently enabled.

This will erase MS Platform Service configuration
information as well as database in the entire fabric.

Would you like to continue this operation?
   (yes, y, no, n): [no] y

Request to deactivate MS Platform Service in progress...

*Completed deactivating MS Platform Service in the fabric!
```

See Also

msCapabilityShow, msPlatShow, msPlMgmtActivate

msTdDisable

Disables the Management Server (MS) topology discovery service.

Synopsis

```
mstddisable [ALL]
```

Description

Use this command to disable the management server topology discovery service on a local switch or an entire fabric. This change takes effect immediately and commits to the configuration database for all affected switches. The change is persistent across power cycles and reboots.

Notes

Topology Discovery Management requires the attached devices (including attached switches) to support request node identification data (RNID) extended link service (ELS).

When an FCS policy is enabled, and this command is issued with the "ALL" operand, it can be issued only from the primary FCS.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

The following operand is optional:

ALL	Disables the MS topology discovery service throughout the entire fabric.

Examples

To disable the MS topology discovery service on the local switch only:

```
switch:admin> mstddisable
This may erase all NID entries.  Are you sure?
   (yes, y, no, n): [no] y

Request to disable MS Topology Discovery Service
in progress....
done.
*MS Topology Discovery disabled locally.
```

To disable MS topology discovery on all the switches in the fabric:

```
primaryfcs:admin> mstddisable ALL
This may erase all NID entries.  Are you sure?
   (yes, y, no, n): [no] y

Request to disable MS Topology Discovery Service
   in progress....
done.
*MS Topology Discovery disabled locally.
*MS Topology Discovery Disable Operation Complete!!
```

See Also

msTdEnable, msTdReadConfig

msTdEnable

Enables the Management Server (MS) topology discovery service.

Synopsis

```
mstdenable ["ALL"]
```

Description

Use this command to enable the MS topology discovery service on the local switch or throughout the fabric. The change takes effect immediately and commits to the configuration database for all affected switches. The change is persistent across power cycles and reboots.

Notes

Topology Discovery Management requires the attached devices (including attached switches) to support request node identification data (RNID) extended link service (ELS).

When an FCS policy is enabled, and this command is issued with the "ALL" operand, it can be issued only from the primary FCS.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

The following operand is optional:

"ALL"	Enables the MS topology discovery service throughout the fabric. This operand must be enclosed in double quotation marks.

Examples

To enable the MS topology discovery service on the local switch:

```
switch:admin> mstdenable

Request to enable MS Topology Discovery Service
  in progress....
done.
*MS Topology Discovery enabled locally.
```

To enable MS topology discovery on all switches in the fabric:

```
switch:admin> mstdenable "ALL"

Request to enable MS Topology Discovery Service
  in progress....
done.
*MS Topology Discovery enabled locally.
*MS Topology Discovery Enable Operation Complete!!
```

See Also

msTdDisable, msTdReadConfig

msTdReadConfig

Displays the status of The Management Server (MS) topology discovery service.

Synopsis

mstdreadconfig

Description

Use this command to check whether or not the management server topology discovery service is enabled.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the status of the topology discovery service:

```
switch:admin> mstdreadconfig

*MS Topology Discovery is enabled.
```

See Also

msCapabilityShow, msPIMgmtActivate, msPIMgmtDeactivate, msTdDisable, msTdEnable

myId

Displays the current login session details.

Synopsis

```
myid
```

Description

Use this command to display the status of the system and the login session details. This includes IPv4 or IPv6 addresses associated with the login session.

The login session gives details of the following:

- CP/switch (or console/serial port) used to log in.
- The IP address of the current login session for Telnet or the name of the current console port or the serial port (if modem login used).
- The current CP mode (Active, Standby, or N/A).
- The current system status (Redundant, Nonredundant, or N/A).

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display current login information:

```
switch:admin> myid
 Current Switch: switch
```

```
 Session Detail: switch (123.123.123.123) Active Redundant
switch:admin> myid
 Current Switch: sw0
 Session Detail: sw0 (123.123.123.123) N/A  HA-Status-N/A
```

See Also

version

nbrShow

Displays FSPF protocol information.

Synopsis

nbrshow {**--help** | [<*slot*>/]<*port*>}

Description

This command is deprecated and will be removed in future releases of Fabric OS. When the command is executed, a warning message is displayed.

Use this command to display FSPF protocol statistics and information about the link between the local and remote switches, including the current synchronization state of the two switches connected through the link. This information is used when debugging FSPF related link protocol issues. The displayed information is a subset of that shown in the **interfaceShow** command, which also includes interface and port information for the local port.

The following fields are displayed:

state	Current state of this interface. This E_Port is used to route traffic to other switches only if the state is NB_ST_FULL.
lastTransition	Time the last state changed on this interface.
nghbCap	Neighbor capabilities. Should be 0.
nghbId	Domain ID of the neighbor (adjacent) switch.
idbNo	IDB number. Should be equal to *port*.
remPort	Port number on the remote switch connected to this port.
nflags	Internal FSPF flags.
initCount	Number of times this neighbor was initialized without the interface going down.
lastInit	Time of the last initializing state, NB_ST_INIT, on this interface.
firstHlo	Time of the first hello sent on this interface.
nbstFull	Time of the last finishing state, NB_ST_FULL, on this interface.
&dbRetransList	Pointer to the database retransmission list.
&lsrRetransList	Pointer to the link state records (LSR) retransmission list.
&lsrAckList	Pointer to the link state acknowledgements (LSA) retransmission list.
inactTID	Inactivity timer ID.
helloTID	Hello timer ID.
dbRtxTID	Database retransmission timer ID.
lsrRtxTID	LSR retransmission timer ID.
inactTo	Inactivity timeout value, in milliseconds. When this timeout expires, the adjacency with the neighbor switch is broken and new paths are computed to all possible destination switches in the fabric.
helloTo	Hello timeout value, in milliseconds. When this timeout expires, a Hello frame is sent to the neighbor switch through this port.

rXmitTo	Retransmission timeout value, in milliseconds. It is used to transmit topology information to the neighbor switch. If no acknowledgement is received within this value, the frame is retransmitted.
nCmdAcc	Total number of commands accepted from the neighbor switch. Number includes Hellos, Link State Updates (LSUs), and LSAs.
nInvCmd	Number of invalid commands received from the neighbor switch. Usually commands with an FSPF version number higher than the one running on the local switch.
nHloIn	Number of Hello frames received from the neighbor switch.
nInvHlo	Number of invalid Hello frames (Hello frames with invalid parameters) received from the neighbor switch.
nLsuIn	Number of LSUs received from the neighbor switch.
nLsaIn	Number of LSAs received from the neighbor switch.
attHloOut	Number of attempted transmissions of Hello frames to the neighbor switch.
nHloOut	Number of Hello frames transmitted to the neighbor switch.
attLsuOut	Number of attempted transmissions of LSUs to the neighbor switch.
nLsuOut	Number of LSUs transmitted to the neighbor switch.
attLsaOut	Number of attempted transmissions of LSAs to the neighbor switch.
nLsaOut	Number of LSAs transmitted to the neighbor switch.
StuckCnt	Number of HLO timeouts that occurred before the port changed to the NB_ST_FULL state.
state	Substate of the port. The port can be in one of the following 12 substates:

INIT (0)	The port is initializing.
ROUTABLE (1)	The port is ready to receive frames.
ROUTABLE_WAIT (2)	The port is waiting for notification from the neighbor.
ROUTABLE_SEND (3)	The port is preparing for local route update; negotiates for the necessary locks before updating the routes.
ROUTABLE_TIMER (4)	The request for one or more locks failed; delay for a short interval before retrying.
DONE (5)	The port is online and in use.
DECOM_START (6)	The decommissioning request is sent to the neighbor and waiting for a response.
DECOM_WAIT (7)	Waiting for neighbor to remove routes using the interswitch link (ISL).
DECOM_SEND (8)	Preparing to update routes of the local port; negotiates for the necessary before updating the routes.
DECOM_TIMER (9)	The request for one or more locks failed; delay for a short interval before retrying.
DECOM_DONE (10)	The local routes are updated; waiting for acknowledgement from the neighbor.
DECOM_BLOCK (11)	The local routes are updated; the neighbor sent acknowledgement.

chassis_lock	Internal variable
lock_request	Internal variable
nbr_lock_lock	Internal variable
r_rdy_rcvd	Indicates if the neighbor has reported as ready to receive frames.
nbr r_rdy flags	Internal flags reported by the neighbor.
lock_busy_cnt	Number of times a lock has reported as busy.
decom_active	Indicates if a decommissioning request is active on the port.
decom_initiator	Indicates if the local port is the decommissioning request initiator.
decom_active_port	Indicates the port for which the decommissioning request is active.
decom_trunk_member	Indicates if decommissioning request is for a multi-link trunk.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

<slot>/	For bladed systems only, specify the slot number of the port to be displayed, followed by a slash (/).
<port>	Specify the number of the port to be displayed, relative to its slot for bladed systems. Use **switchShow** for a list of valid ports. This operand is optional; if omitted, the interface information for all ports is displayed.
--help	Displays the command usage.

Examples

To display FSPF protocol statistics and information:

```
switch:admin> nbrshow 63

This command has been deprecated.

Neighbor 63 data structure:

state              = NB_ST_DOWN
lastTransition     = Oct 19 18:40:22.750
nghbCap            = 0x0
nghbId             = -1
idbNo              = 63
remPort            = -1
nflags             = 0x0
nghbVersion        = 0xffffffff
initCount          = 0
lastInit           = Oct 19 18:40:22.750
firstHlo           = Dec 31 16:00:00.000
nbstFull           = Oct 19 16:49:02.895
&dbRetransList     = 0x19904efc
&lsrRetransList    = 0x19904f04
&lsrAckList        = 0x19904f0c
inactTID           = 0x19905108
helloTID           = 0x199052c8
dbRtxTID           = 0x19905488
lsrRtxTID          = 0x19905808
inactTo            = 160000
helloTo            = 20000
rXmitTo            = 5000
nCmdAcc            = 0
nInvCmd            = 0
nHloIn             = 0
nInvHlo            = 0
nLsuIn             = 0
nLsaIn             = 0
attHloOut          = 0
nHloOut            = 0
```

```
attLsuOut          = 0
nLsuOut            = 0
attLsaOut          = 0
nLsaOut            = 0
StuckCnt           = 0

Port Sub-State Data:
state              = INIT (0)
chassis_lock       = 0
lock_request       = 0
nbr_lock_lock      = 0
r_rdy_rcvd         = 0
nbr r_rdy flags    = 0x0
lock_busy_cnt      = 0
decom_active       = 0
decom_initiator    = 0
decom_active_port  = -1
decom_trunk_member = 0

This command has been deprecated.
```

See Also

None

nbrStateShow

Displays the state of FSPF neighbors.

Synopsis

nbrstateshow [**--help** | [<*slot*>/]<*port*>]

Description

Use this command to display information about fabric shortest path first (FSPF) neighbors to the local switch or information about a neighbor to a specified port. FSPF defines a neighbor as a remote E_Port interface that is directly attached to the local switch. However, if ports are trunked, the command displays data only about the trunk master.

This command displays the following fields:

Local Domain ID	Domain ID of the local switch.
Local Port	E_Port interface on the local switch. This value is typically equal to the Index field reported in the **switchShow** command.
Domain	Domain ID of the remote switch.
Remote Port	E_Port interface on the remote switch.
State	State of the neighbor. The neighbor can be in one of the following five states:

0	**NB_ST_DOWN** - The neighbor is down.
1	**NB_ST_INIT** - The neighbor is initializing.
2	**NB_ST_DB_EX** - The neighbor and the switch are exchanging data from their Link State Records (LSR) databases.

3	**NB_ST_DB_ACK_WT** -The neighbor is waiting for the switch to acknowledge the LSR database.
4	**NB_ST_DB_WT** - The LSR Database is in waiting state; synchronization is in process.
5	**NB_ST_FULL** - The neighbor is in the last, finishing state. The E_Port can route frames only if the neighbor is in full state.

Sub-State Substate of the port. The port can be in one of the following 12 substates:

INIT	The port is initializing.
ROUTABLE	The port is ready to receive frames.
ROUTABLE_WAIT	The port is waiting for notification from the neighbor.
ROUTABLE_SEND	The port is preparing for local route update; negotiates for the necessary locks before updating the routes.
ROUTABLE_TIMER	The request for one or more locks failed; delay for a short interval before retrying.
DONE	The port is online and in use.
DECOM_START	The decommissioning request is sent to the neighbor and waiting for a response.
DECOM_WAIT	Waiting for neighbor to remove routes using the interswitch link (ISL).
DECOM_SEND	Preparing to update routes of the local port; negotiates for the necessary before updating the routes.
DECOM_TIMER	The request for one or more locks failed; delay for a short interval before retrying.
DECOM_DONE	The local routes are updated; waiting for acknowledgement from the neighbor.
DECOM_BLOCK	The local routes are updated; the neighbor sent acknowledgement.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

<slot>	For bladed systems only, specify the slot number of the port to display, followed by a slash (/).
<port>	Specify the port number to display, relative to its slot for bladed systems. Use **switchShow** to list valid ports. This operand is optional; if omitted, all neighbor states are displayed.
--help	Displays the command usage.

Examples

To display information about a neighbor directly connected to the local switch:

```
switch:user> nbrstateshow 2/0
Local Domain ID: 1

Local Port   Domain   Remote Port   State   Sub-State
-----------------------------------------------------
    16         2         48       NB_ST_FULL  DONE
```

See Also

None

nbrStatsClear

Resets FSPF interface counters.

Synopsis

nbrstatsclear [**--help** | [<*slot*>/]<*port*>]

Description

Use this command to reset the counters of fabric shortest path first (FSPF) frames transmitted and received on all interswitch links (ISLs) or on a specified ISL Use this command without operands to reset counters on all interfaces. Use **interfaceShow** to view the FSPF counters.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

<slot>	For bladed systems only, specify the slot number of the port to display, followed by a slash (/).
<port>	Specify the port number to display, relative to its slot for bladed systems. Use **switchShow** to list valid ports. This operand is optional; if omitted, FSPF statistics are reset.
--help	Displays the command usage.

Examples

To display the counters on a port:

```
switch:admin> interfaceshow 1/0

idbP            = 0x10050a38

Interface 0 data structure:

nghbP           = 0x1004ce68
ifNo            = 0
masterPort      = 0 (self)
defaultCost     = 500
cost            = 500
delay           = 1

(output truncated)

nCmdAcc         = 37
nInvCmd         = 0
nHloIn          = 10
nInvHlo         = 0
nLsuIn          = 17
nLsaIn          = 10
attHloOut       = 11
nHloOut         = 11
```

```
attLsuOut       = 12
nLsuOut         = 12
attLsaOut       = 17
nLsaOut         = 17
```

To reset the counters on a port:

```
switch:admin> nbrstatsclear 1/0
```

To verify the changes:

```
switch:admin> interfaceshow 1/0

idbP            = 0x10050a38

Interface 0 data structure:

nghbP           = 0x1004ce68
ifNo            = 0
masterPort      = 0 (self)
defaultCost     = 500
cost            = 500

(output truncated)
```

See Also

portShow, switchShow

nodeFind

Displays all device Name Server (NS) entries matching a given WWN, device PID, or alias.

Synopsis

nodefind {<*WWN*> | <*PID*> | <*alias*>}

Description

Use this command to display the NS information for all devices in the fabric that have either a port world wide name (WWN) or a node WWN matching the given WWN; or have a device PID matching the given PID; or have a defined configuration alias to which the device belongs matching the given alias.

If there is no device matching the given WWN, PID, or alias, the message *"No device found"* is displayed.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

{<*WWN*> | <*PID*> | <*alias*>}	Specify the WWN, device PID, or alias that can be used to match the real device's data. The WWN must be specified as a hexadecimal value or a colon-separated value with eight fields, each consisting of one or two

hexadecimal numbers between 0 and ff. The PID usually begins with 0x or 0X. If the PID does not begin with 0x or 0X, it is interpreted as an alias. If an alias is not found, the argument is checked for other PIDs.

Examples

To display all the device information matching the WWN "30:19:01:eb:1a:bb:6c:fd":

```
switch:user> nodefind 30:19:01:eb:1a:bb:6c:fd
Remote:
  Type Pid    COS     PortName                NodeName
   N  010801;    2,3;30:19:01:eb:1a:bb:6c:fd;10:00:50:eb:1a:bb:6c:fd;

        FC4s: FCP FC-NVMe
        NodeSymb: [31] "nvmehost:sw0"
        Fabric Port Name: 20:08:50:eb:1a:88:bc:40
        Permanent Port Name: 30:19:50:eb:1a:bb:6c:fd
        Device type: NPIV Initiator
        Port Index: 8
        Share Area: No
        Redirect: No
        Partial: No
        Slow Drain Device: No
        Device Link speed: 16G
        FCoE: No
        FC4 Features [FCP]: Initiator
        FC4 Features [FC-NVMe]: Initiator
        Aliases:  Initiator-XYZ
        Platform Name ID (PNI): 20:3e:0a:2b:30:9f:00:50
        PNI Symbolic Name: [30] “dsim:nvmepnihost:PlatformID-50”
```

To display all the device information matching the PID "0ab081":

```
switch:user> nodefind 0ab081
 Type Pid    COS     PortName                NodeName                 SCR
N    0ab081;      3;20:00:00:25:b5:10:00:0e;20:00:00:25:b5:20:00:0d; 0x00000003
    SCR: Fabric-Detected Nx-Port-Detected
    FC4s: FCP FC-CT
    PortSymb: [37] "Cisco VIC FCoE HBA - 20000025b510000e"
    NodeSymb: [42] "Cisco VIC FCoE HBA FW:4.1(2d) DRV:00010001"
    Fabric Port Name: 5c:4f:57:cb:91:af:f2:b0
    Permanent Port Name: 20:06:8c:60:4f:f7:ed:80
    Device type: NPIV Initiator
    Port Index: 688
    Redirect: No
    Partial: No
    LSAN: No
    Slow Drain Device: No
    Device link speed: 16G
    Connected through AG: No
    Real device behind AG: No
    FCoE: No
    Connected through FC-LAG: Yes
    FC4 Features [FCP]: Initiator
```

```
    Platform Name ID (PNI): 20:3e:0a:2b:30:9f:00:50
    PNI Symbolic Name: [30] "dsim:nvmepnihost:PlatformID-50"
```

To display device information for a string for which there is no match:

```
switch:user> nodefind abcd
No device found.
```

To display all the device information matching the alias "SR655_136086_p3":

```
switch:user> nodefind SR655_136086_p3

Local:
Type Pid    COS     PortName                NodeName                 SCR
N    24c000;    2,3;10:00:00:10:9b:aa:70:a3;20:00:00:10:9b:aa:70:a3; 0x00000003
    SCR: Fabric-Detected Nx-Port-Detected
    FC4s: FCP FC-NVMe
    PortSymb: [34] "Emulex PPN-10:00:00:10:9B:AA:70:A3"
    NodeSymb: [79] "Emulex SN37A28328 FV12.8.351.6904 DV12.8.351.7 HN:I21-U7-136-86 OS:Windows 2019"
    Fabric Port Name: 20:c0:88:94:71:ba:b3:61
    Permanent Port Name: 10:00:00:10:9b:aa:70:a3
    Device type: Physical Initiator
    Port Index: 192
    Redirect: No
    Partial: No
    LSAN: No
    Slow Drain Device: No
    Device link speed: 64G
    Connected through AG: No
    Real device behind AG: No
    FCoE: No
    Connected through FC-LAG: No
    FC4 Features [FCP]: Initiator
    FC4 Features [FC-NVMe]: Initiator
    Aliases: SR655_136086_p3
    Platform Name ID (PNI): 20:3e:0a:2b:30:9f:00:50
    PNI Symbolic Name: [30] "dsim:nvmepnihost:PlatformID-50"
```

See Also

aliShow, nsAllShow, nsCamShow, nsShow

nodeWwn

Adds a WWN to the OUI database, displays the WWNs added by the user, displays usage information, and also dumps debug information into a file.

Synopsis

```
nodewwn --add -vendor <vendor_name> <vendor_wwn>
nodewwn --debug
nodewwn --show
nodewwn --help
```

Description

Use this command to add WWN to the OUI database for MAPS UCS Uplink Distribution.

The WWNs added using **nodeWwn** command are also saved during config upload and restored during config download operations.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--add -vendor	Adds the new vendor WWN to the OUI database.
	<vendor_name> Specifies the vendor name. The only supported vendor name is Cisco.
	<vendor_wwn> Specifies the vendor node WWN. The WWN must be presented in colon separated format.
--show	Displays the user-defined node WWNs.
--debug	Dumps the OUI database information in a file for debugging.
--help	Displays the command usage.

Examples

To add a new vendor and display the details:

```
switch:admin> nodewwn --add -vendor Cisco 20:00:8c:7c:ff:5e:a3:00
The WWN added successfully.

switch:admin> nodewwn --show
WWN                      OUI        Vendor Name
-----------------------  --------   -----------
20:00:8c:7c:ff:5e:a3:00  0x8c7cff   Cisco
```

To display node WWNs when no new devices were added to the user-defined database.

```
switch:admin> nodewwn --show
No user defined node WWNs found.
```

To dump the OUI DB information in a file:

```
switch:admin> nodewwn --debug
The OUI DB dumped to /tmp/fab_oui_db_debug.txt file.
```

See Also

deviceLogin, mapsRule, mapsPolicy, mapsConfig, mapsDb

nsAliasShow

Displays local Name Server (NS) information, with aliases.

Synopsis

```
nsaliasshow [-r] [-t]
 nsaliasshow [-domain <domain_id>]
 nsaliasshow [--help]
```

Description

Use this command to display local name server information with the added feature of displaying the defined configuration aliases to which the device belongs. If there are no defined configuration aliases for that device, no alias is displayed. If there is no information in this switch, the following message is displayed: "There is no entry in the Local Name Server." Use the **-domain** <*domain_id*> option to display the remote device details for a specific domain in the fabric.

The information displayed for each device is the same that is displayed by the **nsShow** command with the exception of the additional display of the alias to which the device belongs. Refer to the **nsShow** help page for a description of these displays. Use **nsCamShow** to display information from all switches.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following optional operands:

-r Beginning with Fabric OS v9.2.2, this option is not supported. Replaces the time-to-live (TTL) attribute output with state change registration (SCR) information. This value indicates what type of RSCN a device registers to receive. Values include the following:

- **SCR=0** Reserved.
- **SCR=1** Fabric detected registration. Register to receive all RSCN requests issued by the fabric controller for events detected by the fabric.
- **SCR=2** NX_Port detected registration. Register to receive all RSCN requests issued for events detected by the affected NX_Port.
- **SCR=3** Register to receive all RSCN requests issued. The RSCN request returns all effected N_Port_ID pages.

-t Beginning with Fabric OS v9.2.2, this option is not supported. Displays the device type. The device type is defined in terms of two attributes. The first attribute indicates the origination of the device as one of the following:

- Physical -The device is connected to the NX_Port, using FLOGI to log in to the switch.
- Virtual -The device is contrived by the switch.
- NPV -The device is connected to the NX_Port, using FDISC to log in to the switch.
- iSCSI Device is connected to the iSCSI port.

The second attribute indicates the role of the device. Valid role attributes include the following:

- Unknown (initiator/target) - Device role is not detected
- Initiator - An iSCSI initiator.
- Target - An iSCSI target.
- Initiator+Target - Both an iSCSI initiator and an iSCSI target.

-domain <*domain_id*> Displays the remote device details for a specific domain.

--help Displays the command usage.

Examples

To display local NS information with aliases:

```
switch:user> nsaliasshow
{
Type Pid    COS     PortName                NodeName                 SCR
(truncated)
N    865700;      3;10:00:00:10:9b:8f:2d:ac;20:00:00:10:9b:8f:2d:ac; 0x00000000
    SCR: None
    FC4s: FCP
    Fabric Port Name: 20:57:c4:f5:7c:02:55:c8
    Permanent Port Name: 10:00:00:10:9b:8f:2d:ac
    Device type: Physical Initiator
    Port Index: 87
    Redirect: No
    Partial: No
    LSAN: No
    Slow Drain Device: No
    Device link speed: 32G
    Connected through AG: No
    Real device behind AG: No
    FCoE: No
    Connected through FC-LAG: No
    FC4 Features [FCP]: Initiator
    Aliases: SR650_148095_p7
        Platform Name ID (PNI): 20:3e:0a:2b:30:9f:00:50
        PNI Symbolic Name: [30] "dsim:nvmepnihost:PlatformID-50"
The Local Name Server has 1990 entries }
```

To display local NS information with aliases with the **-r** option:

```
switch:user> nsaliasshow -r
nsaliasshow -r
(truncated)
{
Type Pid    COS     PortName                NodeName                 SCR
N    865700;      3;10:00:00:10:9b:8f:2d:ac;20:00:00:10:9b:8f:2d:ac; 0x00000000
    SCR: None
    FC4s: FCP
    Fabric Port Name: 20:57:c4:f5:7c:02:55:c8
    Permanent Port Name: 10:00:00:10:9b:8f:2d:ac
    Device type: Physical Initiator
    Port Index: 87
    Redirect: No
    Partial: No
```

```
    LSAN: No
    Slow Drain Device: No
    Device link speed: 32G
    Connected through AG: No
    Real device behind AG: No
    FCoE: No
    Connected through FC-LAG: No
    FC4 Features [FCP]: Initiator
    Aliases: SR650_148095_p7
The Local Name Server has 1990 entries }
```

To display local NS information with aliases with the **-r** and **-t** options:

```
switch:admin> nsaliasshow -r -t
{
 Type Pid    COS     PortName            NodeName          SCR
 N 010600; 3;20:06:00:05:1e:38:81:71;10:00:00:05:1e:38:81:71; 0
    Fabric Port Name: 20:06:00:05:1e:7a:7a:00
    Permanent Port Name: 20:06:00:05:1e:38:81:71
    Device type: Physical Unknown(initiator/target)
    Port Index: 6
    Share Area: No
    Redirect: No
    Partial: No
    Aliases: MyAlias1 MyAlias2
 N 010601;3;23:0d:00:05:1e:38:81:71;50:00:51:e3:88:17:10:0d; 3
    FC4s: FCP
    PortSymb: [44] "Brocade Ioblaster Port Entity #00,pid#10601."
    Fabric Port Name: 20:06:00:05:1e:7a:7a:00
    Permanent Port Name: 20:06:00:05:1e:38:81:71
    Device type: NPIV Unknown(initiator/target)
    Port Index: 6
    Share Area: No
    Redirect: No
    Partial: No
    Aliases:
 N 010602; 3;10:00:00:00:00:00:00:01;10:00:00:00:00:00:00:01; 3
    FC4s: FCP
    PortSymb: [41] "Brocade Ioblaster Initiator#00,pid#10602."
    Fabric Port Name: 20:06:00:05:1e:7a:7a:00
    Permanent Port Name: 20:06:00:05:1e:38:81:71
    Device type: NPIV Initiator
    Port Index: 6
    Share Area: No
    Redirect: No
    Partial: No
    Aliases: DeviceAlias
The Local Name Server has 3entries }
```

To display remote device details for a specific domain:

```
switch:admin> nsaliasshow -domain 92
{
```

```
 Type Pid    COS     PortName                NodeName
 N 5c1000; 3;23:06:00:05:1e:53:e3:8a;50:00:51:e5:3e:38:a0:06;
  FC4s: FCP
  PortSymb: [45] "Brocade VDPC Entity-Slot#00,DPC#00,Entity#03."
  Fabric Port Name: 20:10:00:05:1e:53:e3:8a
  Permanent Port Name: 23:06:00:05:1e:53:e3:8a
  Port Index: 16
  Share Area: No
  Redirect: No
  Partial: No
  Aliases: MyAlias1
 N 5c1200;3;23:04:00:05:1e:53:e3:8a;50:00:51:e5:3e:38:a0:04;
  FC4s: FCP
  PortSymb: [45] "Brocade VDPC Entity-Slot#00,DPC#00,Entity#02."
  Fabric Port Name: 20:12:00:05:1e:53:e3:8a
  Permanent Port Name: 23:04:00:05:1e:53:e3:8a
  Port Index: 18
  Share Area: No
  Redirect: No
  Partial: No
  Aliases: MyAlias1
 N 5c1300; 3;23:02:00:05:1e:53:e3:8a;50:00:51:e5:3e:38:a0:02;
  FC4s: FCP
  PortSymb: [45] "Brocade VDPC Entity-Slot#00,DPC#00,Entity#01."
  Fabric Port Name: 20:13:00:05:1e:53:e3:8a
  Permanent Port Name: 23:02:00:05:1e:53:e3:8a
  Port Index: 19
  Share Area: No
  Redirect: No
  Partial: No
  Aliases:
 N  5c1700; 3;23:00:00:05:1e:53:e3:8a;50:00:51:e5:3e:38:a0:00;
  FC4s: FCP
  PortSymb: [34] "Brocade DPC Entity-Slot#00,DPC#00."
  Fabric Port Name: 20:17:00:05:1e:53:e3:8a
  Permanent Port Name: 23:00:00:05:1e:53:e3:8a
  Port Index: 23
  Share Area: No
  Redirect: No
  Partial: No
  Aliases:
 The Remote Name Server has 4 entries }
```

See Also

nsAllShow, nsShow, switchShow

nsAllShow

Displays global name server information.

Synopsis

nsallshow [<*type*>]

Description

Use this command to display the 24-bit Fibre Channel addresses of all devices in all switches in the fabric. When used with the type operand, the command displays only devices of the specified FC-4 type. FC-4 type codes are referenced in the *Fibre Channel Framing and Signaling* (FC-FS) standards documentation (see "TYPE codes - FC-4"). When used without operand, all devices are displayed.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

<type> Specifies the FC-4 type code to filter the command output. Valid values are 0 to 255. Only the following two FC-4 device type codes are applicable to the Brocade environment:

- 8 - FCP type device
- 5 - FC-IP type device

For all other codes, entries are summarized in the format "*x* ports supporting FC4 *type*", where *x* is the number of ports and *type* is the user-specified FC-4 type code in hexadecimal format.

Examples

To display all devices in the fabric, followed by all type 8 (SCSI-FCP) devices, and all type 5 (SCSI-FCIP) devices:

```
switch:admin> nsAllShow
{
  011000 011200 0118e2 0118e4 0118e8 0118ef 021200 021300
  0214e2 0214e4 0214e8 0214ef
12 Nx_Ports in the Fabric }

switch:admin> nsAllShow 8
{
  0118e2 0118e4 0118e8 0118ef 0214e2 0214e4 0214e8 0214ef
8 FCP Ports }

switch:admin> nsAllShow 5
{
  011200 021200
2 FC-IP Ports }
```

To display a device type of 255:

```
switch:admin> nsAllShow 255
{
010100 020a00
2 Ports supporting FC4 0xff }
```

See Also

nsShow, switchShow

nsCamShow

Displays information about remote devices in the Name Server (NS) cache.

Synopsis

```
nscamshow [-t]
```

Description

Use this command to display the local NS cache information about the devices discovered in the fabric by the NS cache manager.

If the NS cache manager does not discover new switches or new devices in the fabric, the command displays the message "No Entry is found!"

For each discovered remote switch, this command displays the following information:

Switch entry for *N*	Displays the remote domain ID for the switch.
state	Displays one of the following values: **known** — The local domain is aware of all the devices from this remote domain. **unknown** — The local domain is unaware of devices from this remote domain. **ERROR** — The information for this remote domain is unreliable.
rev	Fabric OS firmware version of the remote switch. For switches running firmware other than Fabric OS, a string of question marks ("????") is displayed.
owner	Displays the owner of the NSCAM database entry. The value displayed is a domain ID (domain address). For example, 0xfffc02 indicates domain 2 and is the domain on which the command has been executed. This is the local domain and the information is stored locally by this switch.
cap_available	Each switch in the fabric exchanges information regarding its capabilities (for example, firmware level, feature support, etc.). When the **cap_available** value is 1, it indicates that the local domain has received the capabilities of the remote domain that is being displayed. When the value is 0 capability information has not been received.

The remaining information displayed for each device is the same that is displayed by the **nsShow** command. Refer to the **nsShow** help page for a description of these displays.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

The following operand is optional:

-t	Displays the device type. (Deprecated)

Examples

To display all switch and device entries discovered by the Name Server in the fabric:

```
switch:user> nscamshow
nscam show for remote switches:
Switch entry for 239
  state  rev    owner  cap_available
```

```
  known   v910  0xfffc86 1
  Device list: count 112
    Type Pid    COS     PortName                NodeName

N    efff40;      3;20:04:00:11:0d:3a:00:00;20:04:00:11:0d:3a:00:00;
        FC4s: FCP
        PortSymb: [16] "SANBlaze FC Port"
        Fabric Port Name: 2e:ff:88:94:71:ba:cd:e1
        Permanent Port Name: 20:04:00:11:0d:3a:00:00
        Device type: Physical Target
        Port Index: 511
        Redirect: No
        Partial: No
        Slow Drain Device: No
        Device Link speed: 16G
        Connected through AG: No
        Real device behind AG: No
        FCoE: No
        Connected through FC-LAG: No
        FC4 Features [FCP]: Target
        Platform Name ID (PNI): 20:3e:0a:2b:30:9f:00:50
        PNI Symbolic Name: [30] “dsim:nvmepnihost:PlatformID-50”
```

See Also

nsAllShow, nsAliasShow, nsShow, switchShow

nsDevLog

Manages device history logging.

Synopsis

nsdevlog --show [[**-slot** <*slot*>] **-port** <*port*> |
-pid <*pid*> | **-wwpn** <*wwpn*> | **-wwnn** <*nwwn*> |
-event <*event*>]
nsdevlog {**--enable** | **--disable**}
nsdevlog --clear
nsdevlog --help

Description

Use this command to manage Name Server (NS) device logging. By default, logging is enabled. The NS records the PortIndex, PID, world wide node name (WWNN), world wide port name (WWPN) and the event (login and logout).

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--show <*options*> Displays the device logs.

-slot <*slot*> -port <*port*>	Displays device logs for the specified port or slot/port.
-pid <*pid*>	Displays device logs for the specified PID.
-wwpn <*pwwn*>	Displays device logs for the specified port WWN.
-wwnn <*nwwn*>	Displays device logs for the specified node WWN.
-event <*event*>	Displays device logs for the specified event. The events are the following: • "Register": Entry created by explicit NS registration, • "Deregister": Entry deleted by explicit NS deregistration. • "Device Add": Entry created based on UPD Area. • "Device Del": Entry deleted based on UPD Delete. • "Device Add (Query)": Entry created by NS query from the device. • "Port Del": Entries deleted based on DEL Area. • "Dup WWN": Entry deleted based on Duplicate WWN. • "Switch Offline": Entries deleted due to switch offline. • "FPORT Entry": Entry created by F-Port SCN. • "Device marked SD": Entry created when a device is marked Slow Drain. • "Device cleared SD": Entry created when Slow Drain condition is cleared for a device.

--enable	Enables NS device history logging.
--disable	Disables NS device history logging.
--clear	Clears the NS device history logs.
--help	Displays the command usage.

Examples

To enable device logging:

```
switch:admin> nsdevlog --enable
Device History Logging enabled
```

To disable device logging:

```
switch:admin> nsdevlog --disable
Device History Logging disabled
```

To display the NS device log for an event:

```
switch:admin> nsdevlog --show -event "FPORT Entry"
date/time                port    PID             Port WWN                 Node WWN           event

Wed Oct 20 09:24:22.553   33   0x862100  20:02:00:11:0d:55:86:00  20:02:00:11:0d:55:86:00  FPORT Entry
Wed Oct 20 09:24:22.773   18   0x861200  20:06:00:11:0d:55:86:00  20:06:00:11:0d:55:86:00  FPORT Entry
Wed Oct 20 09:24:23.077   49   0x863100  20:03:00:11:0d:55:86:00  20:03:00:11:0d:55:86:00  FPORT Entry
Wed Oct 20 09:43:35.217    6   0x860600  20:05:00:11:0d:55:86:00  20:05:00:11:0d:55:86:00  FPORT Entry
Wed Oct 20 09:43:52.170   18   0x861200  20:06:00:11:0d:55:86:00  20:06:00:11:0d:55:86:00  FPORT Entry
Total number of Logged entries = 4546
Total number of Entries displayed = 187
Max number of entries: 32768
```

See Also

nsAliasShow, nsAllShow, nsCamShow, nsShow, nsZoneMember

nsShow

Displays local Name Server (NS) information.

Synopsis

```
nsshow [-r][-t]
```

Description

Use this command to display local NS information about devices connected to a switch. If no information is available for the switch, the command displays the following message: "There is no entry in the Local Name Server."

Use **nsAllShow** to display NS information for all switches in the fabric.

Each line of output displays the following information:

Type Displays U for unknown, N for N_Port, NL for NL_Port.

PID Displays the 24-bit Fibre Channel address of the device.

COS Displays the Class of Service levels supported by the device. This can be class 1, class 2, or class 3. The command displays only the numeric values, 1, 2, and/or 3. A device can support multiple CoS levels.

PortName Displays the device port world wide name (WWN).

NodeName Displays the device node WWN.

SCR Displays the state change registration of the device. This value indicates what type of RSCN a device registers to receive. Values include the following and/or concatenation of the following values:

- **SCR=0x00000000 (‘None’)** No Registration reserved for any RSCN function.
- **SCR=0x00000001 (‘Fabric-Detected’)** Fabric detected registration. Register to receive all RSCN requests issued by the fabric controller for events detected by the fabric.
- **SCR=0x00000002 (‘Nx-Port-Detected’)** NX_Port detected registration. Register to receive all RSCN requests issued for events detected by the affected NX_Port.
- **SCR=0x00000004 (‘Fabric-Name’)** Fabric Name change registration (FC Standard variant). Register to receive an RSCN when the Fabric Principal switch changes.
- **SCR=0x00000008 (‘Peer-Zone’)** Peer Zone change registration. Register to receive an RSCN when an associated Peer Zone changes.

The following SCR values use the 4th byte of the SCR value and can coexist with the SCR values of 0x00000000, 0x00000001, 0x00000002, 0x00000004, and 0x00000008.

- **SCR=0x01000000 (‘Brocade-Principal-Switch’)** Principal switch RSCN registration. Register to receive proprietary RSCN (principal switch change).
- **SCR=0x02000000 (‘Brocade-QoS’)** AG_QOS RSCN registration (proprietary).

Device type Displays the device type. The device type is defined in terms of two attributes. The first attribute indicates the origination of the device as one of the following:

- **Physical** The device is connected to the NX_Port, using FLOGI to log in to the switch.
- **Virtual** The device is contrived by the switch.
- **NPV** The device is connected to the NX_Port, using FDISC to log in to the switch.

iSCSI	The device is connected to the iSCSI port.
	The second attribute indicates the role of the device. Valid role attributes include the following:
Unknown (initiator/target)	Device role is not detected
Initiator	An iSCSI initiator.
Target	An iSCSI target.
Initiator+Target	Both an iSCSI initiator and an iSCSI target.
NodeSymb	Displays the symbolic node name.
Fabric Port Name	Displays the F_Port WWN to which the N_Port connects.
Permanent Port Name	Displays the physical N_Port or NL_Port WWN.
Port Index	Displays the index number of the physical N_Port to which the device connects.
Redirect	Displays "Yes" if the device is involved in frame redirection; otherwise displays "No". The device involved in frame redirection is specified as either "virtual" , "host", or "target".
Partial	Displays "Yes" if the device entry is incomplete; otherwise displays "No". Devices that are incomplete are displayed by the **nsShow** and **nsCamShow** commands, and have routing established, but are not considered during device discovery (for example, during FC-GS Name Server Queries).
LSAN	Displays "Yes" if the device is currently part of an active LSAN zone; otherwise displays "No".
FCoE	Displays "Yes" if the device is an FCoE device.
FC4 Features	Displays the FC-4 Features registered with the name server.
Device link speed	Displays the link speed of the device, for example: 4G, 8G, 16G and 32G. Link speed of end devices that log in to the edge fabric through F_Port trunk display the bandwidth of the F_Port trunk. For example, if an 8Gb/s host attached to AG login to fabric through a 32Gb/s F_Port trunk, the device link speed for the 8Gb/s host is displayed as 32G.
Connected through AG	Displays "Yes" if the devices in the fabric are connected through Access Gateway.
Real device behind AG	Displays "Yes" if any real device is connected behind the Access Gateway device.
Port Properties	Displays a list of port properties, for example: "SIM Port" for SIM ports If no properties are assigned, the field is not displayed.
Connected through FC-LAG	Displays "Yes" if the devices in the fabric are connected through Fibre Channel Link Aggregation (FC-LAG).
Platform Name ID (PNI)	Displays the registered platform name ID. Displays the chassis WWN or 00.00.00.00.00.00.00.00 if the PNI is not registered.
PNI Symbolic Name	Displays the symbolic name string length followed by the symbolic name of the PNI. The string length is [0] followed by “Not Registered", if the PNI symbolic name is not registered.

The following information is displayed only if the device has registered the information:

- FC4s supported
- IP address
- Port and node symbolic names
- FC4 Features supported
- Port address or port IP address

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following optional operands:

-r	Deprecated.
-t	Displays the device type. (Deprecated)

Examples

To display local NS information:

```
switch:user> nsshow
{
 Type Pid    COS     PortName                NodeName                 SCR
 N    0a00c0;      3;24:0a:8c:60:4f:f7:ed:80;20:80:8c:60:4f:f7:ed:81; 0x00000000
    SCR: None
    IP address: 192.0.2.0
    PortSymb: [37] "BSN-FVT-UCS-FI-A:san-port-channel 10."
    NodeSymb: [16] "BSN-FVT-UCS-FI-A"
    Fabric Port Name: f1:f5:7c:b9:1a:08:0c:c6
    Permanent Port Name: 24:0a:8c:60:4f:f7:ed:80
    Device type: Physical Unknown(initiator/target)
    Port Index: 3270
    Redirect: No
    Partial: No
    LSAN: No
    Slow Drain Device: No
    Device link speed: 16G
    Connected through AG: No
    Real device behind AG: No
    FCoE: No
    Connected through FC-LAG: Yes
    Platform Name ID (PNI): 20:3e:0a:2b:30:9f:00:50
    PNI Symbolic Name: [30] “dsim:nvmepnihost:PlatformID-50”
```

See Also

nsAllShow, nsAliasShow, nsCamShow, switchShow

nsZoneMember

Displays the information on online devices zoned with a specified device.

Synopsis

nszonemember {**-a** | **-n** | **-u** | <*WWN*> | <*PID*> |
[**-domain** <*domain*>] **-index** <*index*> | **--help**}

Description

Use this command to display information on all online devices zoned with the specified device. The device can be specified by WWN or Port ID (PID). Use this command with the **-u** option to display all unzoned devices in the entire fabric. Use the **-a** option to display online zoned device data for each local device. Use the **-domain** and **-index** options to display zoned device data for a device (either local or remote) in the fabric with the specified domain and port index combination. If a domain is not specified, device data for a local device with the specified port index is displayed.

The command output displays the following information:

Type	U - known, N - N_Port, NL - NL_Port.
Pid	The 24-bit Fibre Channel address.
COS	A list of classes of service supported by the device.
PortName	The device's port world wide name (WWN).
NodeName	The device's node WWN.
Permanent Port Name	The physical N_Port or NL_Port WWN.
DeviceType	The device type.
Port Index	The index of the port to which the device is attached.
Shared Area	Whether or not the device shares an area with other devices and/or has a 10-bit-area address.

Additional lines may display if the device has registered any of the following information:

- FC4 supported
- IP address (node)
- IPA
- port and node symbolic name (local device only)
- fabric port name
- hard address or port IP address

The remaining information displayed for each device is the same that is displayed by the **nsShow** command. Refer to the **nsShow** help page for a description of these displays.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

<*PID*> | <*WWN*>	Specifies the port ID or WWN of the device for which to display zoned devices.
-a	Displays each local device's online zoned device data, including the device PID and zone alias.
-n	Displays each local device's online zoned device data including the device PID.
-u	Displays all unzoned devices in the entire fabric. The device data includes the device PID and zone alias.
-domain <*domain*>	Displays zoned device data for a device (either local or remote) with the specified domain.
-index <*index*>	Displays zoned device data for a device (either local or remote) with the specified port index.
--help	Displays the command usage.

Examples

To display information about all the online devices zoned with the given device:

```
switch:admin> nszonemember 021300
1 local zoned members:

 Type Pid    COS     PortName                NodeName                 SCR
 N    021300;    2,3;30:18:88:94:71:03:f3:16;10:00:88:94:71:03:f3:16; 0x00000000
    SCR: None
    Fabric Port Name: 20:13:c4:f5:7c:02:07:b8
    Permanent Port Name: 30:18:88:94:71:03:f3:16
    Device type: Physical Unknown(initiator/target)
    Port Index: 19
    Redirect: No
```

```
    Partial: No
    LSAN: No
    Slow Drain Device: No
    Device link speed: 32G
    Connected through AG: No
    Real device behind AG: No
    FCoE: No
    Connected through FC-LAG: No
    Platform Name ID (PNI): 20:3e:0a:2b:30:9f:00:50
    PNI Symbolic Name: [30] "dsim:nvmepnihost:PlatformID-50"

3 remote zoned members:
Type Pid    COS     PortName                NodeName
 N   2e0500; 2,3; 20:05:d8:1f:cc:04:51:78; 20:05:d8:1f:cc:04:51:78;
     Fabric Port Name: 20:05:d8:1f:cc:04:51:78
     Permanent Port Name: 20:05:d8:1f:cc:04:51:78
     Device type: Physical Unknown(initiator/target)
     Port Index: 5
     Redirect: No
     Partial: No
     Slow Drain Device: No
     Port Properties: SIM Port
     Device Link speed: 32G
     Connected through AG: No
     Real device behind AG: No
     FCoE: No
     Connected through FC-LAG: No
     Platform Name ID (PNI): 20:3e:0a:2b:30:9f:00:50
     PNI Symbolic Name: [30] "dsim:nvmepnihost:PlatformID-50"
```

To display information about all the online devices zoned with the given WWN:

```
switch:admin> nszonemember 10:00:00:00:c8:23:0b:ad
3 local zoned members:

Type Pid  COS     PortName            NodeName              SCR
NL 041901;2,3;10:00:00:00:c9:26:0e:ae;20:00:00:00:c9:26:0e:ae;3
    Fabric Port Name: 20:09:00:60:69:50:06:78
    Permanent Port Name: 10:00:00:00:c9:26:0e:ae
    Device type: Physical Initiator
NL 0416e2; 3;22:00:00:20:37:d9:6b:b3;20:00:00:20:37:d9:6b:b3; 0
    FC4s: FCP [SEAGATE ST318304FC      0005]
    Fabric Port Name: 20:06:00:60:69:50:06:78
    Permanent Port Name: 22:00:00:20:37:d9:6b:b3
    Device type: Physical Target
NL 0416e4; 3;22:00:00:20:37:d9:61:ac;20:00:00:20:37:d9:61:ac; 0
    FC4s: FCP [SEAGATE ST318304FC      0005]
    Permanent Port Name: 22:00:00:20:37:d9:61:ac
    Device type: Physical Target

     No remote zoned members
```

To display all the unzoned devices in the fabric:

```
 switch:admin> nszonemember -u
  Pid: 0xb01ea9;    Aliases: trimm32b_1
  Pid: 0xb01eaa;    Aliases: trimm32b_2
  Pid: 0xb01eab;    Aliases: trimm32b_3
  Pid: 0xb01eac;    Aliases: trimm32b_4
  Pid: 0xb01fad;    Aliases: trimm32a_5
  Pid: 0xb01fae;    Aliases: trimm32a_6
  Pid: 0xb01fb1;    Aliases: trimm32a_7
  Pid: 0xb01fb2;    Aliases: trimm32a_8
  Pid: 0xdc2800;    Aliases:
  Totally 9 unzoned devices in the fabric.
```

To display each local device's online zoned device data:

```
 switch:admin> nszonemember -a
Port: 4 Pid: 0xb00400    Aliases: ix360_131_201_6a
    Zoned Members: 2 devices
           Pid: 0xb00400  Aliases: ix360_131_201_6a
           Pid: 0xba1ee8  Aliases: trimm101b_3

Port: 12  Pid: 0xb00c01   Aliases: dl360_130159a
    Zoned Members: 2 devices
           Pid: 0xb00c01  Aliases: dl360_130159a
           Pid: 0xbd1bef  Aliases: nstor4b_8

Port: 13  Pid: 0xb00d00    Aliases: ix360_131_196p5
    Zoned Members: 2 devices
           Pid: 0xb00d00   Aliases: ix360_131_196p5
           Pid: 0xe07d00   Aliases: hds9200_6p4 hds9200_6p4

Port: 14  Pid: 0xb00e00   Aliases: dl360_130251a dl360_130251a
    Zoned Members: 2 devices
           Pid: 0xb00e00   Aliases: dl360_130251a dl360_130251a
           Pid: 0xba1ae4   Aliases: trimm100a_2
```

To display device data for a local device with the specified port index:

```
switch:admin> nszonemember -index 2
Port Index: 2 Pid: 0x015200
    Zoned Members: 2 devices
            Pid: 0x015200    Aliases: ali_b1
            Pid: 0x03a840    Aliases: ali_b1
```

To display zoned device data for a device (either local or remote) in the fabric with the specified domain and port index:

```
switch:admin> nszonemember -domain 3 -index 168
Port Index: 168  Pid: 0x03a840
    Zoned Members: 2 devices
        Pid: 0x03a840    Aliases: ali_z1
        Pid: 0x015200    Aliases: ali_z1
```

See Also

cfgShow, nsCamShow, nsShow

nsZoneShow

Displays the zone names.

Synopsis

```
nszoneshow {-pid <pid> | -wwn <wwn> |
 -pid <pid1,pid2> |
 -wwn <wwn1,wwn2> }
```

Description

Use this command to display the zone names that a specified device or device-pair are part of.

- If you specify a single Port ID (PID) or world wide name (WWN), the command displays the names of the regular zones that the devices belong to.
- If you specify a PID pair or WWN pair, the command displays the names of the common regular zones that the device pairs share.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-pid <*pid*>	Displays the zone names that the PID belongs to.
-wwn <*wwn*>	Displays the zone names that the WWN belongs to.
-pid <*pid1*,*pid2*>	Displays the zone names of the common zones where both PIDs are zoned together.
-wwn <*wwn1*,*wwn2*>	Displays the zone names of the common zones where both WWNs are zoned together.

Examples

To display the zone names for a device with a specified PID:

```
switch:admin> nszoneshow -pid 0x010200
Zone Names
=================
zn_test1
zn_test2
=================
```

To display the common zone for two devices specified by a WWN pair:

```
switch:admin> nszoneshow \
-wwn "20:08:00:05:1e:a3:01:d9,20:01:00:05:1e:a3:01:d9"
Zone Names
=================
zn_test2
=================
```

See Also

cfgShow, zone, nsZoneMember

objServer

Displays the upper layer object server registration information across the fabric.

Synopsis

```
objserver --show
objserver --show -domainID <domain-id>
objserver --show -pid <n-port-id>
objserver --help
```

Description

Displays all the registered ULP name object information without any filter.

This command is not supported on IPS logical switches.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--show -domainID *<domain-id>*	Displays the upper layer object server information for the particular domain ID.
--show -pid *<n-port-id>*	Displays the diagnostics information of a remote port along with its peer port.
--help	Displays the command usage.

Examples

To display the upper layer object server registration information across the fabric:

```
switch:admin> objserver  --show

-----------------------------------------------------------------------------------------------
domainID   |pid     |fc4Type|ulpType       |ulpName                  |ulpHexName               |
-----------------------------------------------------------------------------------------------
49         |0x310000|FC-NVMe|discovery NQN |nqn.2014-08.org.nvmexpres|0x6e716e2e323031342d30382|
           |        |       |              |s.discovery              |e6f72672e6e766d6578707265|
           |        |       |              |                         |73732e646973636f766572790|
           |        |       |              |                         |0                        |
49         |0x310000|FC-NVMe|sub system NQN|nqn.1992-04.com.emc:nvme:|0x6e716e2e313939322d30342|
           |        |       |              |PowerMax_8000:00:00019760|e636f6d2e656d633a6e766d65|
           |        |       |              |0427                     |3a506f7765724d61785f38303|
           |        |       |              |                         |0303a30303a30303031393736|
           |        |       |              |                         |303034323700             |
49         |0x310000|FC-NVMe|sub system NQN|nqn.1992-04.com.emc:nvme:|0x6e716e2e313939322d30342|
           |        |       |              |PowerMax_8000:00:00019760|e636f6d2e656d633a6e766d65|
           |        |       |              |0428                     |3a506f7765724d61785f38303|
           |        |       |              |                         |0303a30303a30303031393736|
           |        |       |              |                         |303034323800             |
49         |0x310100|FC-NVMe|host NQN      |nn-0x200000109b1c1204:pn-|0x6e6e2d30783230303030303|
```

```
|        |       |              |0x100000109b1c1204       |1303962316331323034 3a706e|
|        |       |              |                         |2d3078313030303030313 0396|
|        |       |              |                         |231633132303400           |
```

See Also

None

openSource

Displays open source licenses.

Synopsis

opensource {**--show** | **--help**}

Description

Displays listing of open source elements, licenses, and code samples used in Fabric OS. Refer to the Linux documentation for more information on how to use this command.

--show	Displays open source attribution file.
--help	Displays the command usage.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display open source attribution file:

```
switch:user> opensource --show
FABRIC OS 9.1.0x Open Source Attribution File

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operating system, and the place of purchase.
```

See Also

aliShow

passwd

Changes the password for a specified user.

Synopsis

passwd
[*user_account*] [**-base64**]
[**-old** *old_password*]
[**-new** *new_password*]

Description

Use this command to change a user account password.

Passwords can be changed locally on any switch. For the password database to be distributed to other switches in the fabric, the switches must be configured to accept the password database using the **fddCfg** command. The password database is distributed manually using the **distribute** command.

Administrators with the privilege to change passwords for other accounts may do so regardless of whether AAA authentication is enabled; all such password changes operate on the local password database.

The **passwd** command cannot be run on the standby CP. When an admin account or a SecurityAdmin account changes the password for other accounts, it does not prompt for the current password.

Beginning with Fabric OS v9.2.2, this command is made as interactive and requires valid user input during execution.

Any chosen password must satisfy the following password strength rules:

- The password contains the minimum required number of lowercase characters.
- The password contains the minimum required number of uppercase characters.
- The password contains the minimum required number of numeric characters.
- The password contains the minimum required number of punctuation characters.
- The password must be between *minlength* and 40 characters long. The *minlength* parameter is set using the **passwdCfg** command.
- The password may not contain the colon (:) character.
- The password must satisfy repeated and sequential character constraints.
- The password must satisfy minimum number of changed character constraints between the new and old passwords.

The password history policy is enforced across all user accounts when users are setting their own password or when an administrator sets the password for another administrator. The passwords modified by an administrator with less privilege or same privilege (another administrator) are not recorded in the password history.

The **passwd** command behaves as follows:

- If you are changing your own password, you are prompted to enter the old password, and, if your entry is valid, you are prompted to enter the new password. Alternately, you may specify the old and new password on the command line.
- If you are changing another user's password, see the **passwdCfg** command options for password management.
- If you are logged in as an admin or SecurityAdmin account, you are not prompted to enter the current password; instead use **passwdCfg** command.
- Changing the password of any user level causes the login session of that account (if logged in) to terminate.
- The default password for admin and user must be changed on login. Do not set your password to "password" because it is considered as a default password and a warning message is printed to change the password to something different.

When invoked without an operand, this command changes the password for the current user account.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

The following operand is optional:

user_account	Specifies the user account for which the password is to be changed. The user account must be an existing account, either default or user-created. Only users with accounts of type SecurityAdmin or admin can execute with this command argumemt and have permission to change passwords for accounts other than their own. To change admin password using **passwd** command, login as admin, system will prompt to change the default admin password.
-base64	Manages the user passwords in the switch. The specified password is considered to be in base64 encoded format and it will be decoded internally. A hash is calculated for the decoded string and stored in the system. This option is supported only in Fabric OS v9.2.2.
-old *old_password*	Specifies the old password. This operand is optional. Beginning with Fabric OS v9.2.2, the **-old** is not a valid option and will result in error if executed.
-new *new_password*	Specifies the new password. This operand is optional. Extended ASCII characters are not supported within the password argument. Beginning with Fabric OS v9.2.2, the **-new** is not a valid option and will result in error if executed.

Examples

To change the password for the admin account while logged in as admin:

```
switch:admin> passwd
Changing password for admin
Enter new password:
Re-type new password:
Password changed.
Saving password to stable storage.
Password saved to stable storage successfully.
```

To change the password for user "admin" from an admin account interactively:

```
switch:admin> passwd
Changing password for admin
Enter old password:
Enter new password:
Re-type new password:
passwd: all authentication tokens updated successfully
Saving password to stable storage.
Password saved to stable storage successfully.
```

To change the password for user "brocadeUser" from an admin account interactively:

```
switch:admin> passwd brocadeUser
Changing password for brocadeUser
Enter new password:
Re-type new password:
passwd: all authentication tokens updated successfully
Saving password to stable storage.
Password saved to stable storage successfully.
```

See Also

logout, passwdCfg

passwdCfg

Manages the password policies.

Synopsis

```
passwdcfg --set {[-lowercase <value>] [-uppercase <value>]
     [-charset <value>] [-allowuser {Yes | No}]
     [-digits <value>] [-punctuation <value>]
     [-minlength <value>] [-history <value>]
     [-minpasswordage <value>] [-maxpasswordage <value>]
     [-warning <value>] [-lockoutthreshold <value>]
     [-lockoutduration <value>] [-repeat <value>]
     [-sequence <value>] [-reverse <value>]
     [-expire] [-minDiff <value>]}
 passwdcfg --setuser <username> {[-minpasswordage <value>]
     [-maxpasswordage <value>][-warning <value>] [-expire]}
 passwdcfg --disableadminlockout
passwdcfg --enableadminlockout [{-enable | -disable} consoleaccess]
 passwdcfg --setdefault
```

```
passwdcfg --showall
passwdcfg --showuser <username>
 passwdcfg --deleteuser {<username> | -all}
 passwdcfg --hash {md5 | sha256 | sha512} [-manual]
 passwdcfg --showhash [<username> | -all]
 passwdcfg --help
```

Description

Use this command to manage password policies.

Use **--set** to configure the following password policies:

- Password strength policy
- Password history policy
- Password expiration policy
- Account lockout policy

Password Strength Policy

The password strength policy enforces a set of rules that new passwords must satisfy. Configurable rules include lowercase and uppercase characters, numbers, punctuation occurrences, and minimum length values. The policy is enforced only when a new password is defined. It is enforced across all user accounts. When a password fails more than one of the strength attributes, an error is reported for only one of the attributes at a time.

Password History Policy

The password history policy prevents reuse of a recently used password. The password history policy is enforced across all user accounts when users are setting their own password or when an administrator sets the password for another administrator. The passwords modified by an administrator for another administrator with less privilege or the same privilege are not recorded in the password history.

Password Expiration Policy

The password expiration policy forces expiration of a password after a specified period of time. When a user's password expires, the user must change the password to complete the authentication process. A warning that password expiration is approaching is displayed when the user logs in. The number of days prior to password expiration during which warnings commence is a configurable parameter. Password expiration does not disable or lock out the account. The password expiration policy is enforced across all user accounts.

Account Lockout Policy

The account lockout policy disables a user account when the user exceeds a configurable number of failed login attempts. The mechanism can be configured to keep the account locked until explicit administrative action is taken to unlock the account, or locked accounts can be automatically unlocked after a specified period. An administrator can unlock a locked account at any time. Note that the account locked state is distinct from the account disabled state. The account lockout policy is enforced across all user accounts except for the SecurityAdmin role account. A separate configuration option, available to the SecurityAdmin and Admin role accounts, may be used to enable and disable applications of the account lockout policy to Admin role accounts.

A failed login attempt counter is maintained for each user on each switch instance. The counters for all user accounts are reset to zero when the account lockout policy is enabled. The counter for an individual account is reset to zero when the account is unlocked after the lock-out duration period expires.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command takes as input an operand and its associated arguments. When invoked without operands, the command prints the usage.

--set Configures a specified password policy. All the options are case-sensitive.

-charset <*value*>	Specifies the minimum criteria on the character set (upper and lowercase letters and special characters) to be used in the password. The default value is 1. The maximum value must be less than or equal to the **-minlength** value.
-allowuser [Yes | No]	Activates (no) or deactivates (yes) the validation check to determine if the user name is used in the password. If activated, the user name in both forward and reverse direction cannot be used in the password. For example, if the user name is "testuser", the password "testuser123" or "resutset567" is not allowed. The default value is "No".
-lowercase <*value*>	Specifies the minimum number of lowercase alphabetic characters that must occur in the password. The default value is 1. The maximum value must be less than or equal to the **-minlength** *value*.
-uppercase <*value*>	Specifies the minimum number of uppercase alphabetic characters that must occur in the password. The default value is 1. The maximum value must be less than or equal to the **-minlength** *value*.
-digits <*value*>	Specifies the minimum number of numeric digits that must occur in the password. The default value is 1. The maximum value must be less than or equal to the **-minlength** *value*.
-punctuation <*value*>	Specifies the minimum number of punctuation characters that must occur in the password. All displayable, nonalphanumeric punctuation characters, except the colon (:), are allowed. The default value is 1. The maximum value must be less than or equal to the **-minlength** *value*.
-minlength <*value*>	Specifies the minimum length of the password. The minimum can be set anywhere between 8 and 510 characters. The default value is 12. The total of **-lowercase**, **-uppercase**, **-digits**, and **-punctuation** must be less than or equal to the **-minlength** <*value*>. Also, the total of **-digits** and **-charset** must be less than or equal to the **-minlength** <*value*>.
-history <*value*>	Specifies the number of past password values that are disallowed when setting a new password. A value of 0 to 24 can be specified. The default value is 1.
-minDiff <*value*>	Specifies the number of character differences expected between the old and the new password. The configuration range of **-minDiff** must be set between 0 to 510 and must be less than the configured **-minlength** *value*.The default value is 2. Setting this parameter to 0 disables the password similarity check.
-minpasswordage <*value*>	Specifies the minimum number of days that must elapse before a password can be changed. **-minpasswordage** can be set from 0 to 999. The default value is 0. Setting this parameter to a nonzero value discourages a user from rapidly changing a password in order to defeat the password history setting to reuse a recently used password. The **minpasswordage** policy is not enforced when an administrator changes the password for another user.
-maxpasswordage <*value*>	Specifies the maximum number of days that can elapse before a password must be changed. This is the password expiration period. **-maxpasswordage** can be set from 0 to 999. Setting this parameter to 0 disables password expiration. The default value is 0. When **-maxpasswordage** is set to a nonzero value, **-minpasswordage** must be set to a value less than or equal to **-maxpasswordage**.
-warning <*value*>	Specifies the number of days prior to password expiration that a warning of password expiration is displayed. The valid range for **-warning** is 0 to 999. The default value is 0.

-lockoutthreshold <*value*> Specifies the number of times a user can specify an incorrect password during login before the account is locked. The number of failed login attempts is counted from the last successful login. Values for **-lockoutthreshold** range from 0 to 999. Setting this parameter to 0 disables the lockout mechanism. The default value is 3. For a user whose home LF role is either admin or securityadmin, "passwdcfg.lockoutthreshold" is applicable only when "passwdcfg.adminlockout" is set to 1.

-lockoutduration <*value*> Specifies the time, in minutes, after which a previously locked account automatically unlocks. **lockoutduration** values range from 0 to 99999. The default value is 5. Setting this parameter to 0 disables the lockout duration, requiring an administrative action to unlock the account. The lockout duration begins with the first login attempt after the lockout threshold has been reached. Subsequent failed login attempts do not extend the lockout period.

-repeat <*value*> Specifies the length of repeated character sequences that will be disallowed. For example, if the repeat value is set to 3, the password "passAAAword" is disallowed because it contains the repeated sequence "AAA". A password of "passAAword" would be allowed because no repeated character sequence exceeds two characters. The range of allowed values is 1 to 510.

-sequence <*value*> Specifies the length of sequential character sequences that will be disallowed. In a character sequence, the ASCII value of each contiguous character differs by one. The ASCII value for the characters in the sequence must all be increasing or decreasing. For example, if the sequence value is set to 3, the password "passABCword" is disallowed because it contains the sequence "ABC". A password of "passABword" would be allowed because no repeated character sequence exceeds two characters. The range of allowed values is 1 to 68. The default value is 2.

-reverse [1 | 0] Activates (1) or deactivates (0) the validation check to determine whether the password is an exact reverse string of the user name.

-expire Expires the password for all users. Users will be prompted for a password change at the next successful login.

--setuser <*username*> Configures the password policy for a specific user.

-minpasswordage <*value*> Specifies the minimum number of days that must elapse before a password can be changed. **-minpasswordage** can be set from 0 to 999. The default value is 0. Setting this parameter to a nonzero value discourages a user from rapidly changing a password in order to defeat the password history setting to reuse a recently used password. The **minpasswordage** policy is not enforced when an administrator changes the password for another user.

-maxpasswordage <*value*> Specifies the maximum number of days that can elapse before a password must be changed. This is the password expiration period. **-maxpasswordage** can be set from 0 to 999. Setting this parameter to 0 disables password expiration. The default value is 0. When **-maxpasswordage** is set to a nonzero value, **-minpasswordage** must be set to a value less than or equal to **-maxpasswordage**.

-warning <*value*> Specifies the number of days prior to password expiration that a warning of password expiration is displayed. The valid range for **-warning** is 0 to 999. The default value to 0.

-expire Expires the password for the specified user. Users will be prompted for a password change at the next successful login.

--enableadminlockout Enables the admin lockout policy and sets the config parameter "passwdcfg.adminlockout" to 1. If the parameter "passwdcfg.lockoutthreshold" is set to greater than 0 and the Admin Lockout policy is enabled, then, if the number of failed login attempts from the last successful login equals the "passwdcfg.lockoutthreshold", the account gets locked for the "passwdcfg.lockoutduration" duration. The particular account is unlocked manually using **userconfig --change** *account_name* **-u**, or it is automatically

unlocked after the "passwdcfg.lockoutduration" duration. This parameter is applicable only when the home LF role of the user is either admin or securityadmin. If the home LF role of the user is any role other than admin or securityadmin, the user is locked out based on the "passwdcfg.lockoutthreshold" setting, irrespective of the "passwdcfg.adminlockout" value.

[{-enable | -disable} consoleaccess]	Enables or disables the separation of console and Ethernet access restrictions. When **--enableadminlockout** is configured, the lockout duration and threshold restrictions are independently applied and enforced irrespective of the interface. By default, console access is enabled.

--disableadminlockout	Disables the admin lockout policy if it is already enabled and sets the config parameter "passwdcfg.adminlockout" to 0. By default, the admin lockout policy is disabled.
--deleteuser <*username*>	Removes the password expiration polices for a particular user account.
--deleteuser -all	Removes the password expiration policies of all users.
--hash md5 | sha256 | sha512	Sets the hash type. Valid values are "md5", "sha256", or "sha512". After the password hash type is configured on the switch, the user will be prompted to change the password at the next login if the password hash type is different from the configured hash type on the switch.
-manual	Requires a manual password change.
--showhash [*username* | -all]	Displays the password hash configuration for the given user or for all users. When executed without optional parameters, this command displays the password hash configured in the system.
--setdefault	Resets all password policies to their default values.
--showall	Displays the password configuration parameters.
--showuser <*username*>	Displays the password configuration parameters for a specific user.
--help	Displays the command usage.

Examples

To display the current password configuration parameters:

```
switch:admin> passwdcfg --showall
passwdcfg.minlength: 8
passwdcfg.lowercase: 0
passwdcfg.uppercase: 0
passwdcfg.charset: 0
passwdcfg.allowuser: Yes
passwdcfg.digits: 0
passwdcfg.punctuation: 0
passwdcfg.history: 1
passwdcfg.minpasswordage: 0
passwdcfg.maxpasswordage: 0
passwdcfg.warning: 0
passwdcfg.lockoutthreshold: 3
passwdcfg.lockoutduration: 5
passwdcfg.adminlockout: 1
passwdcfg.repeat: 1
passwdcfg.sequence: 1
passwdcfg.reverse: 0
passwdcfg.minDiff: 0
passwdcfg.adminlockoutconsoleaccess:1
```

To set password configuration parameters to specify that a password must contain at least two uppercase characters and that passwords expire in 90 days from the date they are defined:

```
switch:admin> passwdcfg --set -uppercase 2  \
     -maxpasswordage 90
```

To set user password expiration policy parameters:

```
switch:admin> passwdcfg --setuser admin -minpasswordage 2 \
     -maxpasswordage 5 -warning 3
```

To expire the passwords for all users:

```
switch:admin> passwdcfg --set -expire
```

To display the current user password expiration policy parameters:

```
switch:admin> passwdcfg --showuser admin
passwdcfg.maxpasswordage.admin: 5
passwdcfg.minpasswordage.admin: 2
passwdcfg.warning.admin: 3
```

To delete all password configurations:

```
switch:admin> passwdcfg --deleteuser -all  \
All user password configurations are removed
```

To delete the password configurations for a specific user:

```
switch:admin> passwdcfg --deleteuser admin \
The user(admin) password configurations are removed
```

To activate the password reverse criterion check:

```
switch:admin> passwdcfg --set -reverse 1
```

To expire the password for a specified user:

```
switch:admin> passwdcfg --setuser user -expire
```

To set a minimum difference of five characters between the old and new password:

```
switch:admin> passwdcfg --set -minDiff 5
```

See Also

passwd, userConfig

pathBwConfig

Controls and displays information about ISL and ICL bandwidth related features.

Synopsis

```
pathbwconfig {--enable | --disable | --force |
 --clear } rebal
 pathbwconfig --show rebal [-domain <domain_id>]
 pathbwconfig --help
```

Description

Use this command to enable or disable the Interchassis Link (ICL) bandwidth rebalancing and to display the current state of rebalancing.

Notes

ICL Bandwidth balancing is disabled by default. The ICL bandwidth balancing feature provides support to automatically select a set of ICL-based paths to achieve balanced or near balanced available bandwidth on the two core blades. The balancing of available bandwidth is necessary to increase internal resource performance.

Disabling or enabling the balancing feature is persistent across reboot.

ICL bandwidth balancing requires that Dynamic Load Sharing (DLS) is enabled on the switch.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command supports the following operands:

--enable rebal	Enables ICL path rebalancing.
--disable rebal	Disables ICL path rebalancing.
--force rebal	Forces the running ICL path rebalancing immediately.
--show rebal [-domain <*domain_id*>]	Displays whether ICL rebalancing is enabled or disabled.
--clear rebal	Resets the ICL bandwidth balancing counters.
--help	Displays command usage.

Examples

To enable ICL bandwidth balancing:

```
switch:admin> pathbwconfig --enable rebal
Bandwidth balancing successfully enabled.
```

To force rebalancing:

```
switch:admin> pathbwconfig --force rebal
Bandwidth balancing ran successfully
```

To display whether ICL rebalancing is enabled or disabled:

```
switch:admin> pathbwconfig --show rebal
State:      Disabled
Last run:   ---
Duration:   ---
Run count:  0

Domain   Slot-5 BW   Slot-8 BW   State
==========================================
1        80          176         Unbalanced
3        176         176         Balanced
160      80          176         Unbalanced
```

To display whether ICL rebalancing is enabled or disabled for a single domain:

```
switch:admin> pathbwconfig --show rebal -domain 1
Domain   Core-0 BW   Core-1 BW   State
==========================================
1       80          176        Unbalanced
```

To reset ICL bandwidth rebalancing counters:

```
switch:admin> pathbwconfig --clear rebal
ICL bandwidth balancing counters reset successfully
```

See Also

dlsSet, dlsShow, lsDbShow

pathInfo

Displays routing information and statistics along a path covering multiple switches.

Synopsis

pathinfo

pathinfo [**-f FID**] *dest_domain* [*source_port* [*dest_port*]|
[**-sid** *source_pid*] [**-did** *dest_pid*]] [**-r**] [**-t**]

pathinfo --help

Description

Use this command to display routing information from a source port on the local switch to a destination port on another switch. The command output describes the path between these ports, including all intermediate switches.

When using **pathInfo** across fabrics connected through an FC Router, the command represents backbone information as a single hop. The command captures details about the FC Router to which ingress and egress EX_Ports are connected, but it hides the details about the path the frame traverses between the ingress EX_Ports to the egress EX_Ports in the backbone.

To use **pathInfo** across remote fabrics, you must specify both the fabric ID (FID) and the domain ID of the remote switch. You cannot use the command to obtain source port information across remote FCR fabrics. When obtaining path info across remote fabrics, the destination switch must be identified by its Domain ID. Identifying the switch by name or WWN is not accepted.

The command does not retry if there is a timeout or failure. It may fail if a switch along the path is busy or does not support this feature.

If the advanced performance tuning (APT) policy in effect on any switch in the path is not a port-based policy, subsequent data streams may not take the same path as displayed in the **pathInfo** output. See **aptPolicy** for more information on advanced performance tuning policies.

If you specify an inactive port or a path through a switch that does not have active routing tables to the destination, this command describes the path that would be taken if the ports were active. If you specify a destination port that is not active, this command uses the embedded port as the destination.

The ingress and egress points above 256 are specified as port index. Use **switchShow** for a listing of valid port index numbers.

To display the TI-enabled path across FCR, you must specify both source ID (SID) and destination ID (DID). The DID must be the proxy device ID and you can view the proxy device IDs using the **nsAllShow** command.

In addition, **pathInfo** can provide statistics on every traversed interswitch link (ISL) that is part of the path. This feature is available only in the interactive command mode.

The routing and statistics information are provided by every switch along the path, based on the current routing table information and statistics calculated continuously in real-time. Each switch represents one hop of the total path.

In a Virtual Fabric environment, **pathInfo** displays port numbers beyond physical port numbers while displaying information for a hop that corresponds to a path in the base fabric. The cost for this hop is the cost of the corresponding path in the base fabric plus a small offset. See Examples section for an illustration.

Other command options allow the collection of information on the reverse path, or on a user-selected path (source route).

For each hop, this command displays the following fields:

Hop	The hop number. The local switch is hop 0.
In Port	The port on which the switch receives frames. For hop 0, this is *source_port*. identified by the port index.
Domain ID	The domain ID of the switch.
Name	The name of the switch.
Out Port	The output port that the frames take to reach the next hop. For the last hop, this is *destination_port* identified by the port index.
BW	The bandwidth of the output interswitch link (ISL), in Gb/s. This parameter does not apply to the embedded port. If the bandwidth is zero, it is displayed as 1Gb/s. For logical interswitch links (LISL) ports, the bandwidth displays as 8Gb/s, the maximum bandwidth on hardware platforms on which LISLs can be formed. In cases where the LISL bandwidth is zero, **pathInfo** displays a bandwidth of 4Gb/s.
Cost	The cost of the output link used by the fabric shortest path first (FSPF) routing protocol. This parameter applies only if the output link is recognized by FSPF.

You can request more detailed statistics for each hop in addition to the routing information. These statistics are presented for the input and output ports for both receive and transmit modes. You can select basic or extended statistics or both when running **pathInfo** in interactive mode. Statistics are not reported for the embedded port. Some throughput values are reported in multiple time intervals, to describe both current path utilization and the average throughput over a larger period of time.

To collect these statistics, this command uses a special **pathInfo** frame that is sent hop-by-hop from the source switch to the destination switch. To prevent such a frame to loop forever if an error occurs, a maximum number of hops for the frame to traverse is enforced. The hop count includes all hops in the direct path from source to destination, and also all the hops in the reverse path, if the tracing of the reverse path is requested. The default value for the maximum hop count is 25.

Basic statistics Basic statistics report parameters that may indicate ISL congestion along the path. They include the following:

B/s	Bytes per second received or transmitted. This value is reported for multiple time periods displayed in parentheses.
Txcrdz	The length of time, in milliseconds, that the port was unable to transmit frames because the transmit BB credit was zero. The purpose of this statistic is to detect congestion or a device affected by latency. This parameter is sampled at 1 millisecond intervals, and the counter is incremented if the condition is true. Each sample represents 1 ms of time with zero Tx BB Credit. An increment of this counter means that the frames could not be sent to the attached device for 1 ms, indicating degraded performance. This value reports for multiple time periods, displayed in parentheses. Note that other commands, such as **portStatsShow**, may express this value in units other than milliseconds.

Extended statistics Extended statistics report variables of general interest. They include the following:

F/s	The number of frames received or transmitted per second. This value is reported for multiple time periods, displayed in parentheses.
Words	The total number of 4-byte Fibre Channel words.
Frames	The total number of frames.

Errors The total number of errors that may have caused a frame not to be received correctly. This includes cyclic redundancy check (CRC) errors, bad end-of-frame (EOF) errors, frame truncated errors, frame-too-short errors, and encoding errors inside a frame.

Reverse path The path from port A on switch X to port B on switch Y may be different from the path from port B to port depending on the links traversed between a given sequence of switches, or the reverse path may involve different switches. The **-r** option displays routing and statistics information for the reverse path in addition to those for the direct path.

Source route The source route option allows you to specify a sequence of switches or ports, which the **pathInfo** frame has to traverse to reach the destination. Therefore, the path specified may be different from the one used by actual traffic.

The source route is expressed as a sequence of switches, a sequence of output ports, or a combination of both. The next hop in the source route is described by either the output port to be used to reach the next hop, or the domain ID of the next hop.

The source route can specify a full route from source to destination or a partial route. In a partial route the remaining hops are chosen as the path from the input port on the first hop not listed in the source route to the destination. The maximum hop count is enforced in both cases.

If the source route does not specify all the switches along a section of the path, you can specify a strict or a loose path. A strict source route requires that only the specified switches are reported in the path description. If two switches are specified back-to-back in the source route descriptor but are not directly connected, the switches in-between are ignored. In a loose source route, the switches in-between are reported. The concepts of strict and loose route apply only to the portions of the path described by domains, not to the part described by output ports.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

dest_switch_domain Specifies the destination switch. To obtain path info in a Layer 2 fabric, the destination switch can be identified by its Domain ID, by the switch WWN, or by the switch name. To obtain path info across remote fabrics connected through an FC Router, the destination switch must be identified by its Domain ID. Identifying the switch by name or WWN is not accepted. This operand is optional; if omitted, the command prompts for input interactively.

source_port Specifies the port whose path to the destination domain is traced, specified as the port index. The embedded port (-1) is the default. The embedded port can be selected manually by entering the value of MAX_PORT. MAX_PORT stands for the maximum number of ports supported by the local switch.

dest_port Specifies the port on the destination switch for the path being traced. This operand returns the state of this port. The embedded port (-1) is used by default, or if you specify a destination port that is not active. The destination is specified as the port index.

"-r" Displays the reverse path in addition to the forward path. This operand is optional.

-t Displays the command output in traceroute format. When this operand is used, only routing information is displayed. The output includes the time it takes, in microseconds, to reach each hop. Basic and extended statistics are not available in the traceroute format.

-sid *source_pid* Specifies the source ID of the originator device in "0xDDAAPP" format, where DD is domain ID, AA is area ID and PP is AL_PA ID.

-did *dest_pid* Specifies the destination ID of the proxy device in "0xDDAAPP" format, where DD is domain ID, AA is area ID and PP is AL_PA ID. You can view the proxy device IDs using the **nsAllShow** command.

--help	Displays the command usage.

When executed without operands, **pathInfo** runs interactively. Specifying a destination switch is required; the values for the source and destination ports can be -1 to indicate the embedded port. You must specify the source and destination PID to display the correct TI-enabled path information across the FCR. Reverse-path tracing is optional. In addition, this command prompts for the following parameters:

Max hops	The maximum number of hops that the **pathInfo** frame is allowed to traverse; the default is 25.
Fabric Id	Specifies the Fabric ID. If unspecified, the value defaults to -1 (Default switch FID 128)
Domain|Wwn|Name	Specifies the domain ID or WWN.
Source port	Specifies the port whose path to the destination domain is traced, specified as the port index. If unspecified, the value defaults to -1 (embedded port).
Destination port	Specifies the port on the destination switch for the path being traced. If unspecified, the value defaults to -1 (embedded port)
Source pid	Specifies the source ID of the originator device in hexadecimal format.
Destination pid	Specifies the destination ID of the proxy device in hexadecimal format.
Basic stats	Whether basic statistics are generated on every link; the default is no.
Extended stats	Whether extended statistics are generated on every link; the default is no.
Trace reverse path	Specifies the path information in reverse direction; the default is no.
Source route	Specifies a sequence of switches or ports that the **pathInfo** frame should traverse; the default is no. If an output port to the next hop is specified, you are not prompted for the domain of the next switch. The domain is determined by the port.
Timeout	The maximum time allowed waiting for the response in milliseconds. The default is 10000 milliseconds.

Examples

To display basic path information to a specific domain in command line mode:

```
switch:admin> pathinfo 39
 Target port is Embedded

Hop  In Port  Domain ID (Name)             Out Port    BW   Cost
-----------------------------------------------------------------
0       E       134 (E-G730_144134_A4)         1      96G    500
1       9       239 (8_130239)               816     106G    500
2     792        39 (0039)                     E       -      -
```

To display basic path information in traceroute format:

```
switch:admin> pathinfo 39 -t
Target port is Embedded

Hop     Domain ID (Name)                        Time/hop
-------------------------------------------------------------
1         239 (8_130239)                       55680 usec
2          39 (0039)                           55680 usec
```

To display basic path information in traceroute format with reverse path option:

```
switch:admin> pathinfo 39 -r -t

Target port is Embedded
```

```
Hop     Domain ID (Name)                        Time/hop
-------------------------------------------------------------
1         239 (8_130239)                       38425 usec
2          39 (0039)                           38425 usec

Reverse path
3          13 (8_130013)                       38425 usec
4         134 (E-G730_144134_A4)               38425 usec
```

To display path information when source port and destination port are provided along with the traceroute option:

```
switch:admin> pathinfo 6 12 13 -t

Target port is F_Port

Hop     Domain ID (Name)            Time/hop
-----------------------------------------------
6 (Stealth_I)                       108186 usec
```

To display basic path information to a specific domain in a Virtual Fabric environment (the cost for this hop is the cost of the corresponding path in the base fabric):

```
switch:admin> pathinfo 13 4

Target port is Embedded

Hop  In Port  Domain ID (Name)      Out Port    BW   Cost
-------------------------------------------------------
0       4          9                 2009*      -    1500
1       2015*     10                    8       1G   1000
2       6         13                    E       -    -
```

To display basic and extended statistics in interactive mode:

```
switch:admin> pathinfo
Max hops: (1..127) [25]
Fabric Id: (1..128) [-1]
Domain|Wwn|Name: [] 8
Source port: (0..200) [-1]
Destination port: (0..1800) [-1]
Source pid: (0x0..0xefff00) [ffffffff]
Destination pid: (0x0..0xefff00) [ffffffff]
Basic stats (yes, y, no, n): [no] y
Extended stats (yes, y, no, n): [no] y
Trace reverse path (yes, y, no, n): [no]
Source route (yes, y, no, n): [no]
Timeout: (1000..30000) [5]
Target port is Embedded


Hop  In Port  Domain ID (Name)      Out Port    BW   Cost
-------------------------------------------------------
0       E         9 (web226)           2       1G   1000
```

```
Port                                E                      2
                   Tx         Rx         Tx     Rx
                  ----------------------------------------
   B/s (1s)        -          -          0          0
   B/s (64s)       -          -          1          1
   Txcrdz (1s)     -          -          0          -
   Txcrdz (64s)    -          -          0          -
   F/s (1s)        -          -          0          0
   F/s (64s)       -          -       2743          0
   Words           -          -    2752748    2822763
   Frames          -          -     219849      50881
   Errors          -          -          -          0
Hop  In Port  Domain ID (Name)      Out Port    BW   Cost
-------------------------------------------------------
1       3        10 (web229)          12       1G   1000
Port                                3                      12
                    Tx        Rx        Tx         Rx
                   ----------------------------------------
  B/s (1s)          36        76         0          0
  B/s (64s)          5         -         0          -
  Txcrdz (64s)       0         -         0          -
  F/s (1s)           1         1         0          0
  F/s (64s)          0         0         0          0
  Words      240434036   2294316   2119951    2121767
  Frames      20025929     54999    162338      56710
  Errors             -         4         -          0

Hop  In Port  Domain ID (Name)      Out Pot    BW   Cost
-------------------------------------------------------
2      14         8 (web228)           E       -      -
(output truncated)
```

To display the TI-enabled path information over an FCR in interactive mode:

```
switch:admin> pathinfo
Max hops: (1..127) [25]
Fabric Id: (1..128) [-1] 8
Domain|Wwn|Name: [] 5
Source port: (0..400) [-1] 2
Destination port: (0..400) [-1] 24
Source pid: (0x0..0xefff00) [ffffffff] 0x061600
Destination pid: (0x0..0xefff00) [ffffffff] 0x01f001
Basic stats (yes, y, no, n): [no]
Extended stats (yes, y, no, n): [no]
Trace reverse path (yes, y, no, n): [no] y
Source route (yes, y, no, n): [no]
Timeout: (1000..30000) [10000]

Target port is Embedded

Hop  In Port  Domain ID (Name)      Out Pot    BW   Cost
-------------------------------------------------------
0      2         1 (web228)           6       4G     500
```

```
1       23        2 (web228)          8       4G     500
2       4         3 (web228)          3       4G     500
3       2         4 (web228)          24      4G     10000
4       3         7 (switch_3)        2       4G     500
5       27        5 (switch_3)        24      -      -

Reverse path
6       24        5 (switch_3)        27      4G     500
7       2         7 (switch_3)        3       4G     500
8       24        4 (web228)          2       4G     500
9       3         3 (web228)          4       4G     10000
10      8         2 (web228)          23      4G     500
11      6         1 (web228)          2       -      -
```

See Also

portStatsShow, switchShow

pdShow

Displays data from a panic dump file.

Synopsis

pdshow [**help** | *<panic_dump_file>*]

Description

Use this command to display data from a panic dump file. The panic dump file contains information that might be useful to determine the cause of the system panic.

When executed without any arguments, this command displays output from the latest panic dump file available on the switch.

If a panic dump file is specified as an argument, the contents of that specific file are displayed.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following optional operand:

<panic_dump_file>	Specify the full path name of a panic dump file.
help	Displays the available pd files.

Examples

To examine a panic dump file:

```
switch:admin> pdshow
Platform from pdfile is: G720

_________________________********_____________________________
```

```
*   File   :/core_files/panic/core.pd20221123093149   *
*   SECTION:PD_MISC                                   *
------------------------********-------------------------
Section=Startup time: Tue Nov 22 06:07:11 GMT 2022
fabos not yet initialized= -1
Section=HA Show Output
haShow=/fabos/cliexec/hashow: Not supported on this platform
Section=sin Output
sin=Platform: SWBD181, Revision 2
sin=Processor: CPU: 1200 MHz PowerPC
sin=Main memory: 2048 MB  @ 0x00000000
sin=Primary data cache: 32 KB, 32 B lines
sin=Primary instruction cache: 32 KB, 32 B lines
sin=Control Processor No: 0
WWN=10:00:d8:1f:cc:18:11:4c
_______________________
_________________________********__________________________
*   File   :/core_files/panic/core.pd20221123093149   *
*   SECTION:PDTRACE                                   *
------------------------********-------------------------
pdtrace info
wmd_meta info:
magic=0x12345678 ver=1 pd=1
dumpctrl        :0xa5ddc000
kboard_ptr      :0xa5dd4000
uboard_ptr      :0xa5db0000
Display ctrl info:
dumpctrl        :a5ddc000
kboard_ptr      :a5dd4000
  size     :512
  freeze_p :a5dd0000
  freeze_p backup:a5dd0000
  freeze_p corrupted:0
  list_p   :a5dc0000
  list_p backup :a5dc0000
kboard dump:a5dd4000
000:00 00 02 00 00 00 00 00 00 00 00 00 00 00 00 00
016:00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

(output truncated)
```

See Also

portLogDump, supportSave

portAddress

Assigns the lower 16 bits of the Fibre Channel port ID.

Synopsis

portaddress --bind [<*slot*>/]<*port*>[<-*port*>]
    <*16-bit_address*> [**--auto**]
portaddress --unbind [<*slot*>/]<*port*>[<-*port*>]

```
portaddress --show [[<slot>/]<port>]
portaddress --findPID <24-bit_Port_ID>
portaddress --help
```

Description

Use this command to bind the 16-bit address to the lower two bytes of a port 24-bit Fibre Channel address or to unbind the currently bound address for the specified port. Changes effected by this command are persistent across reboots and power cycles.

The port must be offline to bind an address and not currently bound to another address. If the port is currently bound to another address, use this command with the **--unbind** option to unbind the port.

This command returns an error if the chosen address is in use or is bound to another port. If the address is currently assigned to another port, use this command with the **--findPID** option to identify the port that is bound to that address, and then unbind the port.

The command provides a **--show** option that displays the currently bound address for a specified port or for all ports. Alternately, you can use the **--findPID** option to display the port currently bound to a specified port ID (PID).

Notes

This command is not supported on embedded platforms.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--bind Assigns the lower two bytes of the Fibre Channel address to the specified port.

- ***<slot>*** Specifies the slot number on bladed systems, followed by a slash (/).
- ***<port>*[*<-port>*]** Specifies a port or a port range, relative to the slot number on bladed systems, for example, 12/0-2. The port range value is applicable only to the FICON-enabled logical switches.
- ***<16-bit_address>*** Specifies the 16-bit address, in hexadecimal format, to be bound to the FC address. Leading zeros are optional in the hexadecimal value (for example, you can either specify 0x1a00 or 1a00). Note that only the upper 10 bits of the PID can be used for a unique route. Therefore, not all addresses in the 16-bit range are available.

--auto Enables autobinding on the specified port. If the auto feature is enabled, the entire area field of the PID is bound to a single port. With 10-bit routing, up to 4 ports can share the same 8-bit area field of the PID. This address assignment mode dedicates all four unique routes to a single port. By default, auto is off. This operand is optional; if unspecified, the default is used.

--unbind Removes both the address and any automode override configuration from the specified port.

--show Displays the currently bound address attributes for the specified port. This command shows the lowest two bytes of the Fibre Channel address as well as the current setting for automode. If a port is not specified, the display shows the Partition Address Mode value (0, 1, or 2) and all ports on the current partition. A -1 is displayed for ports that have not been assigned an area. Areas are dynamically assigned an address as they are added to a partition. The Partition Address Mode value is set by the **configure** command (Enable a 256 Area Limit).

--findPID Displays the port (slot and port offset) of the port that is currently assigned with the provided address. This command applies the 10-bit area mask to the provided PID and returns the port that has been assigned the specified address. Therefore not all 24 bits are required to match exactly.

24-bit_Port_ID Specifies the 24-bit Fibre Channel port address. This operand is required with the **--findPID** option. This command applies the 10-bit area mask to the provided PID and returns the port hat has been assigned the specified address. Therefore not all 24 bits are required to match.

--help Displays the command usage.

Examples

To bind a 16-bit address to the lower two bytes of a port 24-bit Fibre Channel address:

```
switch:admin> portaddress --bind 5/18 1a00
```

To unbind a given address from a port:

```
switch:admin> portaddress --unbind 5/18
```

To display all port address bindings on the current partition:

```
switch:admin> portaddress --show
Partition Address Mode :0
Index Slot Port  Area     Mode   User_bound
================================
384    5    0  0x0800    8 bit      Y
385    5    1  0x0900    8 bit      -
386    5    2  0x0a00    8 bit      -
387    5    3  0x0b00    8 bit      -
388    5    4  0x0c00    8 bit      -
389    5    5  0x0d00    8 bit      -
390    5    6  0x0e00    8 bit      -
391    5    7  0x0f00    8 bit      -
392    5    8  0x0000    8 bit      -
393    5    9  0x0100    8 bit      Y
394    5   10  0x0200    8 bit      -
395    5   11  0x0300    8 bit      -
396    5   12  0x0400    8 bit      -
397    5   13  0x0500    8 bit      -
398    5   14  0x0600    8 bit      -
399    5   15  0x0700    8 bit      -
400    5   16  0x1800    8 bit      -
401    5   17  0x1900    8 bit      -
402    5   18  0x1a00    8 bit      -
403    5   19  0x1b00    8 bit      -
404    5   20  0x1c00    8 bit      -
405    5   21  0x1d00    8 bit      -
406    5   22  0x1e00    8 bit      -
407    5   23  0x1f00    8 bit      -
408    5   24  0x1000    8 bit      -
409    5   25  0x1100    8 bit      -
410    5   26  0x1200    8 bit      -
411    5   27  0x1300    8 bit      -
412    5   28  0x1400    8 bit      Y
413    5   29  0x1500    8 bit      -
414    5   30  0x1600    8 bit      -
415    5   31  0x1700    8 bit      -
```

To display the port address binding for port 28:

```
switch:admin> portaddress --show 5/28

Index Slot Port  Area     Mode
==============================
412    5   28  0x1400    8 bit
```

To display the port bound to a specified address.

```
switch:admin> portaddress --findPID 0x2400

Index Port  Port ID
===================
36   36  0x  2400
```

See Also

None

portBeacon

Sets port beaconing mode.

Synopsis

```
portbeacon --enable [<slot>/]<port>
portbeacon --disable {[<slot>/]<port> | -all}
portbeacon --show [<slot>/]<port>
portbeacon --show -all
portbeacon --help
```

Description

Use this command to enable or disable beaconing mode on a specified port.

When beaconing mode is enabled on a port, the port LED flashes amber and green for 2.5 seconds each in an alternating pattern. The beaconing mode continues until you turn it off. Beaconing mode is useful if you are trying to locate a specific port.

Beaconing mode takes over the port LEDs. The normal flashing LED pattern associated with an active, faulty, or disabled port is suppressed, and only the beaconing pattern is shown. Other commands are still executable and functional. Running diagnostic commands overwrites the LED port beaconing pattern.

The **portBeacon** command is one of the commands that controls beaconing. Each command has a clearly defined scope of action:

- The **portBeacon** command enables or disables beaconing on a specified port.
- The **switchBeacon** command enables or disables beaconing on all ports in the current logical switch.
- The **chassisBeacon** command enables or disables beaconing on all ports in the chassis.
- The **portPeerBeacon** command enables or disables beaconing to identify the interconnections between ports.

The actions of the beaconing commands are independent and mutually exclusive. Existing **portBeacon** settings remain unaffected if you enable or disable beaconing on the switch or on the chassis. Failure to disable existing beaconing commands before using a different type of beaconing may cause the commands to interfere with each other in unexpected ways.

Issue the **portBeacon --show** [*slot*/]*port* command to display beaconing for a specific port. The **switchShow** command displays the status of the **switchBeacon** command only.

Notes

Beaconing of Inter Chassis Link (ICL) ports, GE ports, FCoE ports, 10G ports, and embedded internal ports is not allowed.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

[<*slot*>/]	For bladed systems only, specifies the slot number of the port group to display, followed by a slash (/).
<port>	Specifies the number of the port to be configured, relative to its slot for bladed systems. Use **switchShow** for a listing of valid ports.
--enable	Enables beaconing mode on the specified port.
--disable	Disables beaconing mode on the specified port.
	-all Disables beaconing mode on all the portbeacon enabled ports.
--show	Displays the port beaconing mode on the specified port as ON or OFF.
--show -all	Displays the beaconing ports in slot/port format on the chassis and index format on switches, in logical switch order.
--help	Displays the command usage.

Examples

To enable beaconing mode on a port and verify the configuration:

```
switch:admin> portbeacon --enable 2/1
switch:admin> portbeacon --show 2/1
PortBeacon status of : slot 2, port 1 is ON
```

To disable beaconing mode on a port and verify the configuration:

```
switch:admin> portbeacon --disable 2/1
switch:admin> portbeacon --show 2/1
PortBeacon status of : slot 2, port 1 is OFF
```

To display the beaconing ports on a chassis:

```
switch:admin> portbeacon --show -all
   In FID: 128
   PortBeacon enabled port(s):
   12/23 12/26
```

See Also

chassisBeacon, portPeerBeacon, switchBeacon

portBufferCalc

Calculates the number of buffers required per port.

Synopsis

```
portbuffercalc [<slot>/]<port> [-distance <distance>]
   [-speed <speed>] [-framesize <framesize>]
portBufferCalc --help
```

Description

Use this command to calculate how many buffers are required for a given distance, speed, and framesize. If no options are specified, then the current port's configuration is considered to calculate the number of buffers required.

Notes

8 buffers are required for 1 km at 16G for the given frame size(2048 framesize), distance, and speed.

Operands

This command supports the following operands:

-distance <*distance*>	Specifies the desired distance with valid range of 10Km to 1500Km.
-speed <*speed*>	Specifies the port speed. The valid values are:

1	Specifies port speed as 1G.
2	Specifies port speed as 2G.
4	Specifies port speed as 4G.
8	Specifies port speed as 8G.
10	Specifies port speed as 10G.
16	Specifies port speed as 16G.
32	Specifies port speed as 32G.
64	Specifies port speed as 64G.

-framesize <*framesize*>	Specifies the desired framesize in bytes with a maximum value 2048.
--help	Displays command usage.

Examples

To calculate the buffers required per port:

```
switch:admin> portbuffercalc 9/4
   -distance 100 -speed 8 -framesize 512
1606 buffers required for 100km at 8G and framesize
   of 512 bytes
```

See Also

None

portBufferShow

Displays the buffer usage information for a port group or for all port groups in the switch.

Synopsis

```
portbuffershow [[-ls] [<slot>/]<port>]
portbuffershow --help
```

Description

Use this command to display the current long distance buffer information for the ports in a port group. The port group can be specified by giving any port number in that group. If no port is specified, then the long distance buffer information for all of the port groups of the switch is displayed.

The following long distance information is displayed:

User Port	Index number of the port.
Port Type	E (E_Port), F (F_Port), G (G_Port), L (L_Port), or U (U_Port).
Lx Mode	Long distance mode. **L0** Link is not in long distance mode. **LE** Link is up to 10 km. **LD** Distance is determined dynamically. **LS** Distance is determined statically by user input.
Max/Resv Buffers	The maximum or reserved number of buffers that are allocated to the port based on the estimated distance. If the port is not configured in long distance mode, certain systems might reserve buffers for the port. This field then displays the number of buffers reserved for the port.
Avg Buffer Usage & FrameSize	The average buffer usage and average frame size for Tx and Rx.
Buffer Usage	The actual number of buffers allocated to the port. In LD mode, the number is determined by the actual distance and the user-specified desired distance.
Needed Buffers	The number of buffers needed to utilize the port at full bandwidth (depending on the port configuration). If the number of **Buffer Usage** is less than the number of **Needed Buffers**, the port is operating in the buffer limited mode.
Link Distance	For L0 (not in long distance mode), the command displays the fixed distance based on port speed, for instance: 10 km (1G), 5 km (2G), 2 km (4G), 1 km (8G), or upto 150 meters for all other port speed. For static long distance mode (LE), the fixed distance of 10 km displays. For LD mode, the distance in kilometers displays as measured by timing the return trip of a MARK primitive that is sent and then echoed back to the switch. LD mode supports distances up to 500 km. Distance measurement on a link longer than 500 km might not be accurate. If the connecting port does not support LD mode, is shows "N/A".
Remaining Buffers	The remaining (unallocated) buffers available for allocation in this group.

A hyphen in one of the display fields indicates that no relevant information is available; there may be no connection to a port, or the port is disabled, or the port is not an E_Port.

When invoked without operands, this command displays the long distance buffer information for all the port groups of the switch.

With the FC32-48 and the Brocade G620, additional buffers are needed to enable encryption. The buffer requirement for the ports is as follows:

- A non-encryption, non-QoS online E_Port needs 70 internal buffers.
- A non-encryption, QoS online E_Port needs 105 internal buffers.
- Encryption port needs extra 105 buffers.

For example, the required buffers for an online encryption-enabled, non-QoS online E_Port link is 175 buffers (70+105) and for an online encryption-enabled, QoS online E_Port is 210 (105+105) buffers.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

The following operands are optional:

-ls	Specifies the logical switch FID.
<slot>	For bladed systems only, specifies the slot number of the port group to display, followed by a slash (/).
<port>	Specifies the number of a port associated with the port group, relative to its slot for bladed systems. Use **switchShow** for a list of valid ports.
--help	Displays the command usage.

Examples

To display the port buffer information:

```
switch:admin> portbuffershow 17
User  Port  Lx    Max/Resv  Avg Buffer Usage & FrameSize\
Port  Type  Mode  Buffers        Tx         Rx              \
----  ----  ----  -------   ---------------------------------
                            Buffer Needed   Link     Remaining
                            Usage  Buffers  Distance  Buffers
                            ------ -------  --------- --------
 64         -      8          - ( - )     - ( - )\
                             0      -         -
 65         -      8          - ( - )     - ( - )\
                             0      -         -
 66         -      8          - ( - )     - ( - )\
                             0      -         -
 67         -      8          - ( - )     - ( - )\
                             0      -         -
 68    E   LS      806       197(2012)    201(2044)\
                             206    206      100km
 69    E    -      8          1(2016)     1(2020)
                             26     26        2km
 70    E    -      8          1(2012)     1(2036)\
                             26     26        2km
 71    E    -      8          1(2008)     2(2052)\
                             26     26        2km
192         -      8          - ( - )     - ( - )\
                             0      -         -
193         -      8          - ( - )     - ( - )\
                             0      -         -
194         -      8          - ( - )     - ( - )
                             0      -         -
195         -      8          - ( - )     - ( - )\
                             0      -         -
196         -      8          - ( - )     - ( - )\
```

```
                              0      -         -
 197         -      8          - ( - )     - ( - )\
                              0      -         -
 198         -      8          - ( - )     - ( - )\
                              0      -         -
 199         -      8          - ( - )     - ( - )\
                              0      -         -        4556
 ------------------------------------------------------------
```

To display the logical switch FID:

```
switch:admin> portbuffershow -ls 4/0
User  LS   Port Lx    Max/Resv Avg Buffer   Usage & FrameSize Buffer Needed   Link     Remaining
Port  FID  Type Mode  Buffers        Tx           Rx          Usage  Buffers  Distance Buffers
-----------------------------------------------------------------------------------------------------
  96  128              -        20  - (  - )      - (  - )      0       -        -
  97  128              -        20  - (  - )      - (  - )      0       -        -
  98  128              -        20  - (  - )      - (  - )      0       -        -
  99  128              -        20  - (  - )      - (  - )      0       -        -
 100  128              -        20  - (  - )      - (  - )      0       -        -
 101  128              -        20  - (  - )      - (  - )      0       -        -
 102  128              -        20  - (  - )      - (  - )      0       -        -
 103  128              -        20  - (  - )      - (  - )      0       -        -
 120  128              -        20  - (  - )      - (  - )      0       -        -
 121  128              -        20  - (  - )      - (  - )      0       -        -
 122  128              -        20  - (  - )      - (  - )      0       -        -
 123  128              -        20  - (  - )      - (  - )      0       -        -
 124  128              -        20  - (  - )      - (  - )      0       -        -
 125  128              -        20  - (  - )      - (  - )      0       -        -
 126  128              -        20  - (  - )      - (  - )      0       -        -
 127  128              -        20  - (  - )      - (  - )      0       -        -
 128  128              -        20  - (  - )      - (  - )      0       -        -
 129  128              -        20  - (  - )      - (  - )      0       -        -
 130  128              -        20  - (  - )      - (  - )      0       -        -
 131  128              -        20  - (  - )      - (  - )      0       -        -
 132  128              -        20  - (  - )      - (  - )      0       -        -
 133  128              -        20  - (  - )      - (  - )      0       -        -
 134  128              -        20  - (  - )      - (  - )      0       -        -
 135  128              -        20  - (  - )      - (  - )      0       -        -    8152
```

See Also

None

portCamShow

Displays port-based filter CAM utilization.

Synopsis

portcamshow [<*slot*>/]<*port*>

Description

Use this command to display the current filter Content-Addressable Memory (CAM) utilization of a specified port.

The command displays the following information:

SID used	Total number of CAM entries used by this port. Note that each CAM entry, either source ID (SID) or destination ID (DID) CAM, can be shared among a certain number of ports, depending on the ASIC.
DID used	Total number of CAM entries used by this port. Note that each CAM entry (either SID or DID CAM) can be shared among a certain number of ports, depending on the ASIC.
SID entries	All existing source ID entries within the CAM for this port. Note that each CAM entry (either SID or DID CAM) can be shared among a certain number of ports, depending on the ASIC.
DID entries	All existing destination ID entries within the CAM for this port. Note that each CAM entry (either SID or DID CAM) can be among a certain number of ports, depending on the ASIC.
SID free	The total number of free SID CAM entries available for use by this port.
DID free	The total number of free DID CAM entries available for use by this port.

Notes

This command cannot be executed on a logical port.

Ports that support shared areas are divided into two ports: primary and secondary ports. Primary and secondary ports share the same area. Port CAM entries displayed on the primary ports also consist of all the secondary port SIDs and DIDs as well, when both the ports are F_Ports. This is because the primary port acts as a proxy for the CAM entries of the secondary port, in this case using redirect filters.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command is not supported on FCoE ports.

This command cannot be executed on a logical port.

Operands

This command has the following operands:

<slot>	For bladed systems only, specifies the slot number of the port to display, followed by a slash (/).
<port>	Specifies the port number to display, relative to its slot for bladed systems. Use **switchShow** to list valid ports. This operand is required.

Examples

To display the filter CAM utilization for a single port on a switch:

```
switch:user> portcamshow 3/2

--------------------------------------------------
Area  SID used  DID used  SID entries  DID entries
 34     3         1       350400       2b2200
                          2b1200
                          220400
--------------------------------------------------
SID Free, DID Free: (61, 511)
```

To display port CAM entries on shared ports (in the example, port 7/31 and 7/39 are shared ports and 7/31 is the primary port):

```
switch:user> portcamshow 7/39
--------------------------------------------------
Area  SID used  DID used  SID entries  DID entries
```

```
207      3          1       03b380       03cf80
               034100
               03cf00
-------------------------------------------------
SID free, DID free: (2044, 1020)

switch:admin> portcamshow 7/31
-------------------------------------------------
Area  SID used  DID used  SID entries  DID entries
207      4          2       03b380       03cf80
                           034100       03cf00
                           03cf00
                           03cf80
-------------------------------------------------
SID free, DID free: (2044, 1020)
```

The SID entry 03cf00 and DID entry 03cf80 on port 7/31 belong to port 7/39.

See Also

switchShow

portCfg

Manages port configuration parameters for FC_Ports, VE_Ports, and Ethernet ports.

Synopsis

```
portcfg rscnsupr [<slot>/]<port>[-<port>] {--enable | --disable}
portcfg ipif [<slot/>]ge_port.dp <number> {create          {<ipaddr> netmask <mask> | <ipaddr/prefix_len>}
        [mtu <mtu_size>] [vlan <vlan_id>] | modify <ipaddr> [mtu <mtu_size>] [vlan <vlan_id>] | delete
<ipaddr>}
portcfg iproute [<slot>/]ge_port.dp <number> {create        {<dest_ipaddr> netmask <mask> <gateway>
| <dest_ipaddr/prefix_len> <gateway>} | modify {<dest_ipaddr> netmask <mask> <gateway> | <dest_ipaddr/
prefix_len> <gateway>} | delete {<dest_ipaddr> netmask <mask> |   <dest_ipaddr/prefix_len>}}
portcfg ipsec-policy <name> create [{-p | --profile} <name>] {{-k | --preshared-key} <key> | {-K | --
keypair} <name>}
portcfg ipsec-policy <name> modify [{-p | --profile} <name>] {{-k | --preshared-key} <key> | {-K | --
keypair} <name>}
portcfg ipsec-policy <name> restart
portcfg ipsec-policy <name> deleteportcfg tcl <name> {create <args> | modify <args> | delete}
portcfg sla <name> {create --loss <percentage>          [--runtime <min>] [--timeout {<minutes> | none}]
  | modify [--loss <percentage>] [--runtime <min>]        [--timeout {<minutes> | none}] | delete}
portcfg filter-set <name> {create <args> | modify <args> | delete}
portcfg app-type <name> {create [--portrange <value>] [--description <desc>] |modify  [--portrange <value>]
[--description <desc>] | delete}
portcfg lan-stats --flow <name> {create <args> | modify <args> | delete}
portcfg fciptunnel [<slot>/]<ve_port> {create <tunnel_arguments> <circuit_arguments> | modify
<tunnel_arguments> <circuit_arguments> | delete}
portcfg fcipcircuit [<slot>/]<ve_port> {create <circuit_id> <circuit_arguments> | modify <circuit_ID>
<circuit_arguments> | delete <circuit_id>}
portcfg ftrace [<slot>/]<ve_port> {cfg | del}
```

Description

Use this command to manage port configuration parameters on FC_Ports as well as on Gigabit Ethernet (GbE) ports on the Extension switches or Extension blades.

You must use this command in a manner that honors the platform-specific differences in command syntax and behavior. Some command options are not available on all platforms. Others behave differently depending on the platform on which they are executed. Use the following section headings to navigate this page.

Commands supported on all platforms

- **portcfg rscnsupr** - Manage registered state change notification (RSCN) suppression on the local port.

Configure IP interfaces on the Extension switches or Extension blades.

- **portcfg ipif** - Configure the local IP interfaces.
- **portcfg iproute** - Configure a static route on the IP interface.
- **portcfg ipsec-policy** - Include the IPsec policy.
- **portcfg tcl** - Configure the Traffic Control List (TCL).
- **portcfg sla** - Configure an Service Level Agreement (SLA) session. Beginning with Fabric OS v9.2.2, this option is deprecated and will be removed in Future FOS releases.
- **portcfg filter-set** - Configure a static filter-set. A filter-set can be used to filter the **portShow** output for **ipif**, **iproute**, **tcl**, **lan-stats**, and other extension objects.
- **portcfg app-type** - Creates a user-defined application type.
- **portcfg lan-stats** - Configures lan-stats options such as flow definitions used for monitoring per-flow statistics.

Configure tunnels, circuits, and management interfaces.

- **portcfg fciptunnel** - Create, modify, and delete Fibre Channel over IP (FCIP) tunnels.
- **portcfg fcipcircuit** - Create, modify, and delete FCIP circuits.

To display the command usage on the switch, execute **portcfg** *action* without any further arguments.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Some of the features supported by this command may require a license.

The Fabric OS port configuration commands are not supported on FCoE ports.

Function

Commands supported on all platforms

Synopsis

```
portcfg rscnsupr [<slot>/]<port>[-<port>] {--enable | --disable}
```

Description

Use this command to configure the following parameters on a local FC port.

- **portcfg rscnsupr** - Manage registered state change notification (RSCN) suppression on the local port.

Operands

This command has the following operands:

<slot>	For bladed systems only, specifies the slot number of the port to be configured, followed by a slash (/).
***<port>*[<-port>]**	Specifies a single port or a range of ports, for example, 3-22 or 1/3-8. port ranges are supported only with the **rscnsupr** option.
rscnsupr	Manages Registered State Change Notification (RSCN) suppression on the local port. RSCN suppression is configurable only on FC_Ports. The syntax for **portCfg rscnsupr** is as follows: `portcfg rscnsupr [<slot>/]<port>[-<port>] {--enable | --disable}` The following modes are supported with the **rscnsupr** option: **--disable** Disables the configuration. When disabled, device changes on the port generate an RSCN to all other end devices that are zoned with this one. By default, RSCN suppression is disabled on all ports. **--enable** Enables the configuration. When enabled, any device changes on the port will not generate an RSCN to any other end device.

Examples

To configure a range of ports as RSCN-suppressed:

```
switch:admin> portcfg rscnsupr 2/4-7 --enable
```

Function

Configure extension-related parameters on the Extension switches or Extension blades.

Synopsis

```
portcfg <action> [<slot>/] ge_<port> | <name> <arguments>
```

Description

Use this command to configure the local IP interfaces and static routes on the Extension switches or Extension blades. You must configure the local IP interfaces before you can create and configure FCIP tunnels. You can also create a VLAN configuration at the IP interface on the Extension switches or Extension blades.

- **portcfg ipif** - Configure the local IP interfaces.
- **portcfg iproute** - Configure a static route on the IP interface.
- **portcfg ipsec-policy** - Include the IPsec policy.
- **portcfg tcl** - Configure the Traffic Control List (TCL). Supported only on the Extension switches or Extension blades.
- **portcfg sla** - Configure an Service Level Agreement (SLA) session. Supported only on the Extension switches or Extension blades. Beginning with Fabric OS v9.2.2, this option is deprecated.
- **portcfg filter-set** - Configure a static filter-set. A filter-set can be used to filter the **portShow** output for **tcl**, **lan-stats**, and other extension objects.
- **portcfg app-type** - Creates a user-defined application type.
- **portcfg lan-stats** - Configures lan-stats options such as flow definitions used for monitoring per-flow statistics.

Operands

This command has the following operands:

slot	For bladed systems only, specifies the slot number of the port to be configured, followed by a slash (/).
ge<*_port*>	Specifies the number of the GbE port to be configured. The GbE ports are numbered ge0 - ge7 on the Brocade 7810 switch, ge0 - ge17 on the Brocade 7850 switch, and ge0 - ge17 on Brocade SX6 extension blade.

The Brocade SX6 extension blade has two 40GbE ports labeled ge0 and ge1, and 16(1GbE or 10GbE) ports labeled ge2-ge17. For all extension platforms, specify GbE port number along with the DP number, for example, **portcfg ipif ge0.dp0**. The valid DP numbers are dp0 and dp1.

The Brocade 7810 switch has either 1G or 10G ports labeled ge0 - ge7. The GbE ports ge0 and ge1 are Copper and ge2 - ge7 are Optical. The valid DP number is always dp0 for Brocade 7810 switch.

In the Brocade 7850 switch, GbE ports ge0-ge15 are SFP ports that can operate at 1G/10G/25G speeds and ge16-ge17 are QSFP ports that can operate at 100G speed.

For Brocade 7810 switch, Brocade SX6 extension blade, and Brocade 7850 switch specify the switch virtual interface (SVI) LAN port in "lan.dp#" format, for example, **portcfg ipif lan.dp0**.

Use the **switchShow** command for a list of valid ports.

ipif Defines the IP interface for both ports of a tunnel.

The IP network connection is configured by defining IP interfaces for origin and destination virtual ports, and then defining one or more IP routes to connect them. The syntax for **portCfg ipif** is as follows:

```
portcfg ipif [<slot>/]ge_port.dp<number> {create
{<ipaddr> netmask <mask> | <ipaddr/prefix_len>}
[mtu <mtu_size>] [vlan <vlan_id>]
| modify <ipaddr> [mtu <mtu_size>]
[vlan <vlan_id>] | delete <ipaddr>}
```

Valid options and arguments for **ipif** include the following:

create <src_ipaddr> <netmask> [<mask>] mtu <mtu_size> <vlan> [<vlan_id>] Creates IP interfaces. Specify the following:

- ***<src_ipaddr>*** Specifies source IP address in either IPv6 or IPv4 format:
  - ***<src_IPv6_addr>* *<prefix_len>*** Specifies the source IPv6 address of the port if IPv6 is used. The address must be an IPv6 global, unicast address, followed by a prefix. This is used for IPv6 addresses instead of a netmask. The *prefix_len* operator is required. Refer to the *Brocade Fabric OS Extension User Guide* for more information on IPv6 rules and restrictions.
  - ***<src_IPv4_addr>* *<netmask>* [*<mask>*]** Specifies the source IPv4 address of the port, if IPv4 is used. If an IPv4 address is used, the subnet mask must be specified as well (in a.b.c.d. format). The CIDR notation for IPv4 addresses can also be used.
- **mtu [*<mtu_size>*]** Specifies the maximum transmission unit size. The permitted range is 1280 Bytes to 9216 Bytes or 'auto' to enable PMTU discovery for the Extension switches or Extension blades. This operand is optional.
- ***vlan* [*<vlan_id>*]** Specifies the VLAN ID. This operand is optional and currently supported on the Extension switches or Extension blades.
- **modify *<ipaddr>*** Modifies an existing IP interface and supported only on the Extension switches or Extension blades.
- **delete *<ipaddr>*** Deletes IP interfaces. Specify the IPv6 or IPv4 address of the virtual port.

iproute Defines static IP routes on an Ethernet port. After defining the IP interface on the remote switch, you can define destination routes for an interface.

The syntax for **portcfg iproute** is as follows:

```
portcfg iproute [slot>/]ge_port.dpnumber { create
        {dest_ipaddr netmask mask gateway |
 dest_ipaddr/prefix_len gateway} | modify {dest_ipaddr
 netmask mask gateway | dest_ipaddr/prefix_len gateway}
        | delete {dest_ipaddr netmask mask |
 dest_ipaddr/prefix_len}
```

Valid options and arguments for **iproute** include the following:

create *dest_ipaddr netmask* [*mask*] [*gateway_router*] Creates an IP route. Specify the following:

dest_ipaddr Specifies the destination IP address in either IPv6 or IPv4 format:

dest_IPv6_addr/prefix_len Specifies the destination IPv6 address of the port, if IPv6 is used. The address must be an IPv6 global, unicast address, followed by a prefix. This is used for IPv6 addresses instead of a netmask. The *prefix_len* operand is required.

***dest_IPv4_addr netmask* [*mask*]** Specifies the destination IPv4 address of the port, if IPv4 is used. If an IPv4 address is used, the subnet mask must be specified as well. Use a.b.c.d. format. The CIDR notation for IPv4 addresses can also be used.

gateway_router Specifies the IP address of an IP router that can route packets to the destination virtual port IP address. The gateway address must be on the same IP subnet as one of the port IP addresses. This operand is optional with IPv6 addresses. If not specified, the *gateway_router* learned from the Neighbor Discovery protocol is used.

delete *ipaddr* Deletes IP routes for a specified IPv4 or IPv6 address. Valid *ipaddr* values include the following:

ipaddr Specifies IP address in either IPv6 or IPv4 format:

IPv6_addr/prefix_len Specifies the IPv6 address of the virtual port, if IPv6 is used. The address must be an IPv6 global, unicast address, followed by a prefix. The prefix_len operand is required.

dest_IPv4_addr netmask Specifies the destination IPv4 address of the virtual port, if IPv4 is used. If an IPv4 address is used, the subnet mask must be specified as well. Use a.b.c.d. format or the CIDR notation for IPv4 addresses.

ipsec-policy Creates an IPsec policy.

This command supports **create**, **modify**, **restart**, and **delete** options only. The syntax for **portcfg ipsec-policy** is as follows:

portcfg ipsec-policy *name option* [*args*]

```
portcfg ipsec-policy <name> create [{-p | --profile} <name>]
         {{-k | --preshared-key} <key> | {-K | --keypair} <name>}
portcfg ipsec-policy <name> modify [{-p | --profile} <name>] {{-k | --preshared-key}
         <key> | {-K | --keypair} <name>}
portcfg ipsec-policy <name> restart
```

```
portcfg ipsec-policy <name> delete
```

Valid options and arguments for **ipsec-policy** include the following:

create *name* [-k | --preshared-key *key*] [--keypair *name*]	Creates the IPsec policy.	
	name	Specifies the name for the IPsec policy. The IPsec policy name can be up to 31 characters long and cannot contain special characters and keywords such as "all" and "none".
	-p | --profile *name*	Specifies the profile to use with the IPSec policy. Valid values for *name* are **pre-shared** and **pki**.
	-k | --preshared-key *key*	Specifies the preshared key to be used for authentication. This operand is required with shared-key authentication. Beginning with Fabric OS v9.2.2, this option is made as interactive and requires valid user input during execution.
	-K | --keypair *name*	Sets the local key pair name to use for IKE authentication. This operand is required with PKI profile.
modify *name* [-k | --preshared-key *key*] [--keypair *name*]	Modifies the IPsec policy.	
	name	Specifies the name for the IPsec policy.
	-k | --preshared-key *key*	Specifies the preshared key to be used for authentication. This operand is required with shared-key authentication. The minimum key length is 16 characters and the maximum is 64 characters for the Extension switches or Extension blades.
	-p | --profile *name*	Specifies the profile to use with the IPSec policy. Valid values for *name* are **pre-shared** and **pki**.
	--keypair *name*	Sets the local key pair name to use for IKE authentication. This operand is required with PKI profile.
restart *name*	Restarts all inactive IKE sessions for the IPsec policy.	
	name	Specifies the name for the IPsec policy.
delete *name*	Deletes the IPsec policy.	
	name	Specifies the name for the IPsec policy.

tcl Creates a TCL.

This command supports **create**, **modify**, and **delete** options only. The syntax for **portcfg tcl** is as follows:

```
portcfg tcl name {create args | modify args | delete}
```

Valid options and arguments for **tcl** include the following:

name	Specifies the name of the TCL. The TCL name can be up to 31 characters long and cannot contain special characters.	
create *name* [*args*]	Creates a TCL.	
modify *name* [*args*]	Modifies a TCL.	
	-p | --priority *value*	Sets the priority ID for the TCL. The range is from 1 through 65534.
	--admin-status enable | disable	Enables or disables the TCL.
	--action allow | deny | [*slot/*]dp#-deny	Specifies the permit or deny action associated with the TCL.

-t | --target ***VE*[*-pri*]** Sets the target virtual interface, QoS, and priority for the TCL.

-S | --src-addr ***ipaddr*[*/prefix_len*]** Sets the source IP address input filter for the specified TCL.

--src-mask ***ipaddr*** Sets the source IP address mask input filter for the specified TCL.

-D | --dst-addr ***ipaddr*[*/prefix_len*]** Sets the destination IP address input filter for the specified TCL.

--dst-mask ***ipaddr*** Sets the destination IP address mask input filter for the specified TCL.

--proto-port ***ipaddr*** Sets the protocol port (Layer 4 protocol) input filter for the specified TCL.

--proto-app ***app_name*** Sets the application input filter for the specified TCL.

--dscp ***value*** Set the DSCP input filter for the specified TCL. The range is from 0 through 63.

-v | --vlan ***value*** Set the VLAN input filter for the specified TCL. The range is from 0 through 4095.

--l2cos ***value*** Sets the Layer 2 CoS input filter for the specified TCL. The value can be 'any' or a range from 0 through 7.

--l4proto ***num* | *name*** Sets the Layer 4 protocol input filter for the specified TCL. Valid values for *name* are TCP, UDP, ICMP, VRRP - ranging 0 through 255, or 'none' to clear the filter.

--rst-propagation enable | disable Enables or disables end-to-end RST propagation for the specified TCL.

--segment-preservation enable | disable Enables or disables segment preservation for the specified TCL.

--non-terminated enable | disable Enables or disables non-terminate traffic handling for the specified TCL.

sla Creates, modifies, or deletes an SLA session. For more information on the SLA feature, refer to the *Brocade Fabric OS Extension User Guide*.

This command supports **create**, **modify**, and **delete** options only. The syntax for **portcfg sla** is as follows:

portcfg sla *name option* [*args*]

```
portcfg sla name {create --loss percentage
          [--runtime min] [--timeout {minutes | none}]
         | modify [--loss percentage] [--runtime min]
          [--timeout {minutes | none}] | delete}
```

Beginning with Fabric OS v9.2.2, this option is deprecated and will be removed in future FOS releases. Valid options and arguments for **sla** include the following:

create Creates an SLA session with the specified name. You must create an SLA session at each end of the circuit, but the session names need not match.

modify Modifies the specified SLA session.

name Specifies the name of the SLA.

--loss *percentage* Sets the packet-loss percentage. The valid range is from 0.05 through 5.0 percentage.

--runtime *min* Sets duration time for the test to run. The valid range is from 1 through 1440 minutes. The default value is 5 minutes.

--timeout *min* | none Sets the timeout duration for the test. If the timeout value is reached during the SLA session, the session is terminated and the circuit is put into service. Specify **none** to run the test until the runtime and packet-loss values are met. The valid range is from 1 through 2880 minutes.

delete *name* Deletes the specified SLA session.

filter-set Creates, modifies, or deletes filter-sets.

This command supports **create**, **modify**, and **delete** options only. The syntax for **portcfg filter-set** is as follows:

```
portcfg filter-set name {create args | modify args | delete}
```

Valid options and arguments for **filter-set** include the following:

create Creates a filter-set.

modify Modifies the specified filter-set.

name Specifies the name of the filter-set.

--port [*slot*/]*port* Specifies the port number.

--slot *slot* Specifies the slot number.

--ipaddr *ip_address*[/*prefix*] Specifies the IPv4 address and prefix. The IP address is represented by a dotted decimal number, followed by a slash and a prefix.

--dp [*slot*/]dp# Specifies the dual processor ID.

--circuit *cid* Specifies the ID of FCIP circuits within the tunnel.

--priority *value* Specifies the priority ID. Valid values for *value* are control, high, medium, low, ip-high, ip-medium, and ip-low.

--ha-type *type* Specifies the HA type. Valid values for *type* are main, local-backup, and remote-backup.

--tcp-port *value* | *app* Specifies a single or range of TCP ports or application type. The valid range for *value* is from 0 through 65535. Use the **portshow lan-stats --known-apps** for the list of supported application types.

--retransmits *value* Specifies the retransmits value. This operand is used to filter the output based on the retransmits exceeding specified value.

--rtt *value* Specifies the circuit round trip time in milliseconds. This operand is used to filter the output based on the round trip time exceeding specified value.

--bytes *bytes* [k | m | g] Specifies the bandwidth (bytes per second) value. Specify **k** for KB/s, **m** for MB/s, and **g** for Gb/s. This operand is used to filter the output based on bandwidth exceeding specified value.

--conn-cnt *value* Specifies the connected count value. This operand is used to filter the output based on the connected count exceeding specified value.

--vlan *vlan_id* Specifies the VLAN ID.

--oper-status *oper* Specifies the operation status of a tunnel. You can specify the exact operation string or the states such as active, inactive, healthy, and unhealthy.

--default-behavior show | hide Sets the default display action if the specified filter statement is not supported. The default action is **hide**.

--show Displays the parameters matching the filter criteria.

--hide Hides the parameters matching the filter criteria.

--and The logical AND operator.

--or The logical OR operator.

delete *name* Deletes the specified filter-set.

app-type Creates, modifies, or deletes application types.

This command supports **create**, **modify**, and **delete** options only. The syntax for **portcfg app-type** is as follows:

```
portcfg app-type name {create [--portrange value] [--description desc]
        | modify  [--portrange value] [--description desc] | delete}
```

Valid options and arguments for **app-type** include the following:

create Creates an application type.

--portrange *value* Specifies a single port or a range of ports separated by a dash character or a combination of both. For example, "18", "21500-21600", and "21500-21600,680".

--description Specifies a description for the application type.

modify *name* --portrange *value* Modifies the specified application type.

delete *name* Deletes the specified application type.

lan-stats Creates, modifies, or deletes a lan-stats flow definition.

This command supports **create**, **modify**, and **delete** options only. The syntax for **portcfg lan-stats** is as follows:

```
portcfg lan-stats --flow name {create args | modify args | delete}
```

Valid options and arguments for **lan-stats** include the following:

create Creates a new filter-set or flow.

modify Modifies an existing filter-set.

name Specifies the name of the new filter-set.

--port [*slot*/]*port* Filter on specified FC, VE, GE, or LAG port number.

--slot *slot* Filter on specified slot number.

--ipaddr *ip_address*[/*prefix*] Filter on specified IP address or a network.

--dp [*slot*/]dp# Specifies the dual processor ID.

--tcp-port *value* | *app* Specifies a single or range of TCP ports or application type. The valid range for *value* is from 0 through 65535. Use the **portshow lan-stats --known-apps** for the list of supported application types.

--retransmits *value* Specifies the retransmits value. This operand is used to filter the output based on the retransmits exceeding specified value.

--bytes *bytes* [k | m | g]	Specifies the bandwidth (bytes per second) value. Specify **k** for KB/s, **m** for MB/s, and **g** for Gb/s. This operand is used to filter the output based on bandwidth exceeding specified value.
--vlan *vlan_id*	Specifies the VLAN ID.
--and	The logical AND operator.
--or	The logical OR operator.
--flow *"flow_name"*	The LAN flow monitor.
--Rx | --Tx	Filters the connection in the specified flow sorting the highest Rx or Tx bytes.
--fid	Filters LAN traffic to a specific logical switch.
--default -behavior show | hide	Sets the default behavior for objects that does not support the specified filter criteria. The default value is **show**.
--show | --hide	Displays or hides objects matching the filter criteria.
--mac_addr	Filters the specified MAC address.
--dscp	Filters the connection that matches DSCP.
--l2cos	Filters the connection that matches l2cos.
--throughput	Filters the connection that has the highest throughput value.
--help	Filters the connection that matches l2cos.

delete *name* Deletes the specified filter-set.

Examples

To create an IP interface using IPv4:

```
switch:admin> portcfg ipif ge0.dp0 create  \
     192.169.0.20 netmask 255.0.0.0 mtu 1500
Operation Succeeded
```

To create an SVI LAN port on a DP:

```
switch:admin> portcfg ipif lan.dp0 create 10.0.0.1/24 vlan 100
Operation Succeeded.
switch:admin> portcfg ipif lan.dp0 create 10.0.1.1/24 vlan 200
Operation Succeeded.

switch:admin> portshow ipif

 Port         IP Address                     / Pfx  MTU   VLAN  Flags
-------------------------------------------------------------------------
 ge4.dp0      192.168.60.20                  / 24   1500  0     U R M
 ge17.dp0     192.168.10.107                 / 24   1500  0     U R M
 lan.dp0      10.0.0.1                       / 24   1500  100   U R M
 lan.dp0      10.0.1.1                       / 24   1500  200   U R M
-------------------------------------------------------------------------
Flags: U=Up B=Broadcast D=Debug L=Loopback P=Point2Point R=Running
       N=NoArp PR=Promisc M=Multicast S=StaticArp LU=LinkUp X=Crossport
```

To create an IP interface using IPv6 with a prefix:

```
switch:admin> portcfg ipif ge0.dp0 create 2000::22/64 1500
Operation Succeeded
```

```
switch:admin> portshow ipif ge0.dp0

 Port         IP Address                    / Pfx  MTU   VLAN  Flags
--------------------------------------------------------------------------------
 ge0          192.180.0.20                  / 24   1500  n/a   U R M
 ge0          192.168.0.21                  / 24   1500  n/a   U R M
 ge0          2000::10                      / 64   1500  n/a   U R M
--------------------------------------------------------------------------------
Flags: U=Up B=Broadcast D=Debug L=Loopback P=Point2Point R=Running
       N=NoArp PR=Promisc M=Multicast S=StaticArp LU=LinkUp X=Crossport
```

To delete an IP interface:

```
switch:admin> portcfg ipif ge0.dp0 delete 192.168.10.20
Operation Succeeded
```

To create a static IP route using an IPv4 destination address, a netmask, and a gateway address:

```
switch:admin> portcfg iproute ge0.dp0 create  \
     192.42.0.0 netmask 255.255.255.0 192.168.0.250
Operation Succeeded
```

To create a static IP route using IPv6:

```
switch:admin> portcfg iproute ge0.dp0 create  \
     2010::/64 2000::1:250
Operation Succeeded

switch:admin> portshow iproute ge0.dp0
 Port         IP Address               / Pfx  Gateway               Flags
--------------------------------------------------------------------------------
 ge0          192.168.0.0              / 24   *                     U C
 ge0          2000::                   / 64   *                     U C
 ge0          2000::10                 / 128  *                     U H L
 ge0          2000::1:250              / 128  *                     U H L
 ge0          2010::                   / 64   2000::1:250           U G S
--------------------------------------------------------------------------------
 Flags: U=Usable G=Gateway H=Host C=Created(Interface)
        S=Static L=LinkLayer X=Crossport
```

To display all TCP connections going over GE17 FE port:

```
switch:admin> portcfg lan-stats --flow "testge" create -port ge17
```

To create an IPsec policy:

```
switch:admin> portcfg ipsec-policy myPolicy1 create -k
Please enter the preshared-key. The key length must be between 16-64 characters.
Enter preshared-key:
Confirm preshared-key:
Operation Succeeded.
```

To view the IPsec policy status:

```
switch:admin> portshow ipsec-policy all --ike
IPsec Policy  OpStatus IKECnt  Pre-Shared Key
```

```
   IKE-ID     OpStatus RefCnt  Local IP Address      Remote IP Address
---------------------------------------------------------------------------
myPolicy1     NotInUse    0    some test key
```

To create an IPsec policy and set encryption profile:

```
switch:admin> portcfg ipsec-policy pki_pol0 create --profile pki
Operation Succeeded
```

To restart all inactive IKE sessions under an IPSec policy:

>

```
switch:admin> portcfg ipsec-policy psk_pol0 restart
Operation Succeeded
```

To create a TCL:

```
switch:admin> portcfg tcl hostAtoB create --admin enable \
   --target 24 --src-addr 10.0.0.0/8 --priority 10
Operation Succeeded
```

To create an SLA session:

```
switch:admin> portcfg sla netA create --loss 0.5 \
   --runtime 15 --timeout 60
WARNING: This command is deprecated and will be removed in a future release.
Operation Succeeded
```

To configure a filter-set:

```
switch:admin> portcfg filter-set tcpErrors create \
     --retransmits 100 --and --bytes 1000000
```

To create application type:

```
switch:admin> portcfg app-type TELNET create \
    --portrange 18 --description "Includes telnets connections"
Operation Succeeded
```

Function

Configure tunnels, circuits, and management interfaces on the Extension switches or Extension blades.

Synopsis

```
        portcfg fciptunnel [slot/]ve_port {create tunnel_arguments  circuit_arguments
  | modify tunnel_arguments circuit_arguments | delete}
        portcfg fcipcircuit [slot/]ve_port {create circuit_id  circuit_arguments
  | modify circuit_ID circuit_arguments | delete  circuit_id}
```

Description

Use this command to configure FCIP tunnels and FCIP circuits on the Extension switches or Extension blades. The FCIP tunnels on the local and remote ports act as Virtual E_Ports (VE_Ports) connecting the local and remote fabrics. The following operations can be performed with this command:

- **portcfg fciptunnel** - Create, modify, and delete Fibre Channel over IP (FCIP) tunnels.

  - Configure a tunnel with the FCIP FastWrite feature.
  - Configure the compression options.
  - Configure an IPsec-enabled tunnel.
  - Configure Differentiated Services Code Point (DSCP) markings.
  - Set the committed rate or minimum and maximum rates for the default circuit.
- **portcfg fcipcircuit** - Create, modify, and delete additional FCIP circuits.
  - Set or modify the committed rate or minimum and maximum rates for the circuit.
  - Configure or change VLAN tagging on the default circuit.
  - Set or modify additional circuit parameters.

Notes

You can configure up to 20 tunnels on the Brocade SX6 blades. The Brocade 7810 Switch supports up to four tunnels and Brocade 7850 Switch supports 18 tunnels.

Operands

This command has the following operands:

slot For bladed systems only, specifies the slot number of the port to be configured, followed by a slash (/).

ve_port Specifies the number of the VE_Port associated with the tunnel. The VE_Ports are numbered 12-15 on the Brocade 7810, 16-35 on the Brocade SX6, and 24-41 on the Brocade 7850.

fciptunnel Creates, modifies, or deletes an extension tunnel.

Note the following port mapping rules:

	7810	SX6	7850
DP0 ports	12-15	16-25	24-32
DP1 ports	0	26-35	33-41

The syntax for **portcfg fciptunnel** is as follows:

portcfg fciptunnel [*slot*/]*ve_port* {**create** *tunnel_arguments circuit_arguments* | **modify** *tunnel_arguments circuit_arguments* | **delete**}

The following *options* are supported with **fciptunnel**:

create [*tunnel_arguments*] [*circuit_arguments*] Creates an extension tunnel and, optionally a single default circuit. If no circuit arguments are specified, no extension circuit will be created. While it is possible to create a tunnel without a default circuit, it is an unlikely scenario (for example, for configuration staging purposes). In most cases, you will create a tunnel with at least one configured circuit. In this case, you must specify a remote and local IP address for the circuit as well as a committed rate (or alternately, a minimum and maximum committed rate) to configure the default circuit. The default circuit created with the tunnel is automatically assigned the circuit ID 0. You can modify the default circuit with the **fciptunnel modify** command. To add additional circuits to an existing tunnel, use the **fcipcircuit create** command.

modify [*tunnel_arguments*] [*circuit_arguments*] Modifies the properties of an existing extension tunnel. To modify a tunnel, you must specify at least one of the tunnel or circuit parameters for the command to be effective. Any circuit attribute you change with the **fciptunnel modify** command affects only the circuit 0. All other circuits remain unchanged. To modify a circuit other than circuit 0, you must use the **fcipcircuit modify** command.

In order to create a default circuit 0 with the tunnel, you must at least specify the following circuit arguments with **fciptunnel create**:

-D | --remote-ip-address ***remote_ip_address***
Specifies the IP address for the remote end of the extension circuit.

-S | --local-ip-address ***local_ip_address***
Specifies the IP address for the local end of the extension circuit.

-b | --min-comm-rate ***value*** **-B | --max-comm-rate** ***value***
You may set a minimum and a maximum for the committed rate to configure the tunnel for Adaptive Rate Limiting (ARL), which allows for a more effective sharing of bandwidth between applications. The valid range is 20,000 Kb/s to 10,000,000 Kb/s. The maximum committed rate can be no larger than five times the minimum committed rate.

Optional *tunnel_arguments* for **fciptunnel create** and **modify** include the following. Tunnel parameters are by default disabled. To change the default (for example, enabling FastWrite) with **fciptunnel create**, specify the parameter only. To modify any of these parameters with **fciptunnel modify**, specify the parameter and one of the values in square brackets.

-f | --fastwrite [disable | enable]
Disables or enables the FCIP FastWrite on the specified extension tunnel.

-t | --tape-pipelining [disable | enable | write-only]
Configures Open Systems Tape Pipelining on the specified extension tunnel. By default, OSTP is disabled .

When using this operand with **fciptunnel create**, specify one or more of the following operands:

-t | --tape-pipelining
Enables write-read Tape Pipelining (FCIP FastWrite must also be enabled.)

-t | --tape-pipelining ***mode***
Modifies the Open System Tape Pipelining configuration. Specify one of the following modes:

disable
Disables Tape Pipelining

enable
Enables write-read Tape Pipelining (FCIP FastWrite must also be enabled).

write-only
Enables write-only Tape Pipelining (FCIP FastWrite must also be enabled).

-c | --compression ***compression_level***
Configures compression on the specified FCIP tunnel. By default, compression is disabled.

Specify one of the following values on the Extension switches or Extension blades:

none
Compression disabled.

fast-deflate
Enable fast-deflate compression.(The Brocade 7810 switch does not support fast-deflate.)

deflate
Enable deflate compression.

aggr-deflate
Enable aggressive deflate compression level.

--fc-compression ***compression_level***
Configures FC compression on the specified FCIP tunnel. By default, compression is disabled. This operand is supported on the Extension switches or Extension blades. Specify one of the following values for *compression_level*:

	aggr-deflate Enable aggressive deflate compression level. **default** Enable default compression level. **deflate** Enable deflate compression. **fast-deflate** Enable fast-deflate compression. (The Brocade 7810 switch does not support fast-deflate.) **none** Compression disabled.
--ip-compression *compression_level*	Configures IP compression on the specified FCIP tunnel. By default, compression is disabled. This operand is supported only on the Extension switches or Extension blades. Specify one of the following values for *compression_level*: **aggr-deflate** Enable aggressive deflate compression level. **default** Enable default compression level. **deflate** Enable deflate compression. **none** Compression disabled.
--ipext enable | disable	Enables or disables IP Extension capability to a tunnel. This parameter is supported on the Extension switches or Extension blades.
-n | --remote-wwn *remote-wwn*	Specifies the WWN of the remote FC entity.
-d | --description *string*	Specifies a description for the specified tunnel.
-i | --ipsec [*policy_name* | none]	Sets the Internet Protocol Security (IPsec) on the specified tunnel to use the specified IPsec Policy, or to disable IPsec for the tunnel if the 'none' operand is used. This argument is supported on the Extension switches or Extension blades.
-p | --distribution *mode*[,*ratio*,...]	Sets tunnel bandwidth distribution mode. The valid modes are protocol, priority, and default. Optionally, you can change the default bandwidth allocation ratio for Fibre Channel (FC) and IP Extension (IP) traffic in the tunnel. This operand is supported on the Extension switches or Extension blades.
-Q | --fc-qos-ratio *high,med,low*	Sets QoS percentages for FC priorities. The default values are 50% (high), 30% (medium), and 20% (low). Each priority can have a minimum of 10%. The sum of percentages must equal 100%. This operand is supported on the Extension switches or Extension blades.
-I | --ip-qos-ratio *high,med,low*	Sets QoS percentages for IP priorities. The default values are 50% (high), 30% (medium), and 20% (low). Each priority can have a minimum of 10%. The sum of percentages must equal 100%. This operand is supported on the Extension switches or Extension blades.
-q | --qos-bw-ratio *high,med,low* | default	Sets QoS percentages for all QoS priorities. The default values are 50% (high), 30% (medium), and 20% (low). Each priority can have a minimum of 10%. The sum of percentages must equal 100%. Both ends of the tunnel must have the same QoS priority settings.

-F | --ficon [disable | enable]

Enables or disables FICON emulation on the specified extension tunnel. Optional FICON arguments for **fciptunnel create** allow you to control specific features. Use the [0|1] options only with **fciptunnel modify**.

--ficon-tera-read [disable | enable]

Enables or disables FICON Read Emulation for a Teradata server on the specified extension tunnel.

--ficon-tera-write [disable | enable]

Enables or disables FICON Write Emulation for a Teradata server on the specified extension tunnel.

--ficon-xrc [disable | enable]

Enables or disables FICON XRC emulation. FICON XRC Emulation allows XRC (IBM eXtendedRemote Copy, also known as IBM z/OS Global Mirroring) to operate effectively at extended distances. Beginning with Fabric OS v9.2.2, this option is deprecated.

--ficon-tape-write [disable | enable]

Enables or disables FICON Tape Write Pipelining. This feature improves the performance of certain applications when writing to tape over extended distances. Beginning with Fabric OS v9.2.2, this option is deprecated.

--ficon-tape-read [disable | enable]

Enables or disables FICON Tape Read Pipelining. This feature improves performance for certain applications when reading from FICON tape over extended distances. Beginning with Fabric OS v9.2.2, this option is deprecated.

--ficon-tin-tir [disable | enable]

Enables or disables FICON TIN/TIR emulation. This feature enhances recovery when a TIN/TIR exchange occurs as part of a channel recovery operation during tape emulation. This feature is enabled by default (recommended setting).

--ficon-dvcack [disable | enable]

Enables or disables FICON Device Level Acknowledgement emulation. This feature is applicable to both FICON Disk and Tape configurations. The feature removes one network round trip for exchanges that end with a Device Level Acknowledgement frame from the device. This feature is enabled by default (recommended setting).

--ficon-read-blk [disable | enable]

Enables or disables FICON read Tape Read Block ID emulation. This feature permits FICON write channel programs containing embedded read block ID commands (CCWs) with a byte count of exactly four bytes to be processed as emulated commands during write emulation processes. Beginning with Fabric OS v9.2.2, this option is deprecated.

--ficon-print [disable | enable]

Enables or disables FICON printer emulation on the specified FCIP tunnel. This command is valid only with the **modify** option.

--max-read-pipe *value*	Defines the maximum number of tape read channel commands (CCWs) that can enter the read pipeline for a single device whether all the CCWs are bundled in a single channel program or in multiple channel programs. The setting has significance only for host (channel) initiated operations at this side and will not affect tape write operations initiated by hosts (channels) attached at the opposite side. Too small of a value will result in poor performance. The value should be chosen based upon the typical tape channel program that requires optimum performance. The default value is 32 (recommended setting). The range is 1 to 100. Beginning with Fabric OS v9.2.2, this option is deprecated.
--max-write-pipe *value*	Defines the maximum number of tape write channel commands (CCWs) that can enter the write pipeline for a single device whether all the CCWs are bundled in a single channel program or in multiple channel programs. The setting has significance only for host (channel) initiated operations at this side and will not affect tape write operations initiated by hosts (channels) attached at the opposite side. Too small of a value will result in poor performance. The value should be chosen based upon the typical tape channel program that requires optimum performance. The default value is 32 (recommended setting). The range is 1 to 100. Beginning with Fabric OS v9.2.2, this option is deprecated.
--max-read-devs *value*	Defines the maximum number of concurrent emulated tape read operations. As concurrency increases, the value of emulation decreases. Excessive concurrency has the potential to oversubscribe packet data memory. The setting has significance only for host (channel) initiated operations at this side and will not affect tape read operations initiated by hosts (channels) attached at the opposite side. The default value is 16. The range is 1 to 32. Beginning with Fabric OS v9.2.2, this option is deprecated.
--max-write-devs *value*	Defines the maximum number of concurrent emulated tape write operations. As concurrency increases, the value of emulation decreases. Excessive concurrency has the potential to oversubscribe packet data memory. The setting has significance only for host (channel) initiated operations at this side and will not affect tape write operations initiated by hosts (channels) attached The default value is 16. The range is 1 to 32. Beginning with Fabric OS v9.2.2, this option is deprecated.
--write-timer *value*	Defines a time limit for pipelined write chains. This value is specified in milliseconds (ms). If a pipelined

write chain takes longer than this value to complete, the ending status for the next write chain will be withheld from the channel. This limits processing to what the network and device can support. Too small a value limits pipelining performance. Too large a value results in too much data being accepted for one device on a path. The default value is 300 milliseconds (ms). The range is 100 to 1500. Beginning with Fabric OS v9.2.2, this option is deprecated.

--write-chain *value* Defines the maximum amount of data that can be contained in a single CCW chain. If this value is exceeded, emulation is suspended. The default value is 3.2 MB (3200000 bytes) The range is 1 MB to 5 MB. Beginning with Fabric OS v9.2.2, this option is deprecated.

--oxid-base *value* Defines the base value of an entry pool of 256 OXIDs supplied to emulation-generated exchanges. It should fall outside the range used by FICON channels and devices to avoid conflicts. The default value is 0x9000 (recommended setting). The range is 0x0000 to 0xF000.

--ficon-debug *value* Defines optional debug flags. The default value is 0xF7C80000. This parameter is primarily for use by technical support personnel.

--arl-algorithm Sets the ARL algorithm. Valid values for *mode* are **auto**, **reset**, **step-down**, **timed-step-down**. This option is supported on the Extension switches or Extension blades.

Optional FCIP circuit arguments for **fciptunnel create** and **modify** include the following.

-a | --admin-status [disable | enable] Enables or disables the circuit. Admin status is enabled by default.

-S | --local-ip *ipaddress* | none Sets the local IP address to use for the circuit. The **none** option is supported only on the Extension switches or Extension blades.

-D | --remote-ip *ipaddress* | none Sets the remote IP address to use for the circuit. The **none** option is supported only on the Extension switches or Extension blades.

--local-ha-ip *ipaddress* | none Sets the local HA IP address to use for the circuit. This argument is applicable only on the Brocade 7850 and Brocade SX6 extension blades.

--remote-ha-ip *ipaddress* | none Sets the remote HA IP address to use for the circuit. This argument is applicable on the Extension switches or Extension blades.

-C | --connection-type [default | listener | initiator] Specifies whether the circuit is the listener or the initiator. In default mode, the initiator and listener are automatically chosen based on the lower and higher-order IP address. This can cause a problem in Network Address Translation (NAT) environments, if both sides of the circuit have lower-order addresses.

-L | --load-leveling [default | failover | spillover]	Configures spillover or failover load-balancing method. The default load-balancing method is failover. This argument is applicable on the Extension switches or Extension blades.
-k | --keepalive-timeout *timeout*	Specifies the keep alive timeout in milliseconds. The valid range is 500 ms to 7200000 ms. If the tunnel does not already have FICON Emulation enabled, circuits created on the tunnel default to the keep alive timeout of 6000 ms (6 seconds) for Extension Switches and Extension blades. If FICON emulation is enabled on the extension tunnel when a circuit is created, the keep alive timeout defaults to 1000 ms (1 seconds).
-x | --metric *metric*	Specifies the metric for the configured circuit. The valid range is 0 to 1. The default value is 0. A lower metric assigns a higher priority to the circuit. As data is flowing through the extension tunnel, it automatically traverses the lowest metric cost circuits. For example, if a tunnel has four circuits, three of which are set to a metric of 0 and one is set to a metric of 1, all data will flow over the metric 0 circuits. This parameter is meaningful only, if you configure more than one circuit.
-g | --failover-group *failover_group_ID*	Specifies the failover group ID for the configured circuit. The valid range is 0 to 9, where 0 is the default failover group. The circuit failover groups must be defined at both ends of the extension tunnel and each failover group should include at least one metric 0 and one metric 1 circuit. If all metric 0 circuits in the failover group go down, the transmission fails over to the metric 1 circuits in the group. If all metric 0 circuits in a tunnel go down, by default the traffic will run over the metric 1 circuits.

delete *tunnel_ID*	Deletes the specified extension tunnel. This command deletes all associated circuits created with the **fciptunnel** or **fcipcircuit** commands. Use the **portShow** command to display all tunnels and their associated circuits.

fcipcircuit

Creates an extension circuit on an existing tunnel. Use this command to configure additional circuits. The circuit-specific parameters are optional. The syntax for **portcfg fcipcircuit** is as follows:

```
portcfg fcipcircuit [slot/]ve_port {create circuit_id
circuit_arguments | modify circuit_ID circuit_arguments | delete
circuit_id}
```

The following options and arguments are supported with **fcipcircuit**:

create *circuit_ID* -D | --remote-ip *remote_ip_addr* -S | --local-ip *local_ip_addr* -b | --min-comm-rate *value in Kb/s* -B|--max-comm-rate *value in Kb/s* [*circuit_arguments*]	Creates an extension circuit. You must specify the following parameters when creating an additional circuit:	
	circuit_ID	Specifies a numeric identifier for the circuit. The circuit ID is an integer value between 0-9 or 0-5 for the Brocade 7810 switch.
	-D | --remote-ip *remote_ip_addr*	Specifies the IP address for the remote end of the circuit.
	--local-ha-ip *ipaddress* | none	Sets the local HA IP address to use for the circuit. This argument is applicable only on the Brocade 7850 and Brocade SX6 extension blades.

--remote-ha-ip *ipaddress* | none	Sets the remote HA IP address to use for the circuit. This argument is applicable on the Extension switches or Extension blades.
-S | --local-ip *local_ip_addr*	Specifies the IP address for the local end of the circuit.
-b | --min-comm-rate {*kbps* | *mbps*M | *gbps*G} | -B | --max-comm-rate {*kbps* | *mbps*M | *gbps*G}	You can set a minimum and a maximum for the committed rate to configure the tunnel for Adaptive Rate Limiting (ARL), which allows for a more effective sharing of bandwidth between applications. The valid range is 50,000 Kb/s to 25,000,000 Kb/s for Brocade 7850 and 20,000 Kb/s to 10,000,000 Kb/s for Brocade 7810 and SX6 Extension blade. The maximum committed rate can be no larger than five times the minimum committed rate, and both sides of the circuit must have matching configurations.

modify [*circuit_ID*] [*circuit_arguments*] Modifies the properties of an existing extension circuit. To modify a circuit, you must specify at least one of the optional circuit parameters for the command to be effective. Any circuit attribute you change with the **fcipcircuit modify** command affects only the specified circuit. All other circuits remain unchanged.

--sla *sla_name* | none	Assigns an SLA to a circuit. Make sure to configure the other end of the circuit with a matching SLA. Specify **none** to remove the SLA for a circuit. Beginning with Fabric OS v9.2.2, this option is deprecated and will be removed in Future FOS releases. See the **fciptunnel create** and **modify** for a listing of other optional circuit arguments and their descriptions.

delete *circuit_ID* Deletes the specified extension circuit.

Examples

To create a FICON-enabled tunnel, first create an empty extension tunnel without any circuits:

/

```
switch:admin> portcfg fciptunnel 7/16 create
Operation succeeded
```

To enable FICON and compression on the tunnel (this sets the keepalive timeout value to 1000 ms, which is the default for FICON-enabled tunnels):

//

```
switch:admin> portcfg fciptunnel 7/16 modify -c hardware -F enable
Operation succeeded
```

To create two circuits (circuit 0 and circuit 1) on the tunnel (these circuits will be created with the FICON-compatible keepalive timeout value):

/

```
switch:admin> portcfg fcipcircuit  create \
   0 192.168.51.61 192.168.50.68 -b 300000 -B 500000
Operation succeeded
switch:admin> portcfg fcipcircuit 7/16 create
1 192.168.50.61 192.168.51.68 -b 300000 -B 500000
Operation succeeded
```

To display circuit 1:

```
switch:admin> portshow fciptunnel 7/16 1
Circuit 7/16.1 (DP0)
====================================================
Admin/Oper State     : Enabled / Online
Flags                : 0x00000000
IP Addr (L/R)        : 60.166.77.30 7/ge7 <-> 65.167.7.10
HA IP Addr (L/R)     : 60.166.77.31 7/ge7 <-> 65.167.7.11
Configured Comm Rates: 1000000 / 1000000 kbps
Peer Comm Rates      : 1000000 / 1000000 kbps
Actual Comm Rates    : 1000000 / 1000000 kbps
Keepalive (Cfg/Peer) : 6000000 (6000000 / 6000000) ms
Metric               : 1
Connection Type      : Default
ARL-Type             : Auto
PMTU                 : Disabled
HA PMTU              : Disabled
SLA                  : (none)
Failover Group       : 0
VLAN-ID              : NONE
L2Cos (FC:h/m/l)     : 0 / 0 / 0 (Ctrl:0)
L2Cos (IP:h/m/l)     : 0 / 0 / 0
DSCP (FC:h/m/l)      : 0 / 0 / 0 (Ctrl:0)
DSCP (IP:h/m/l)      : 0 / 0 / 0
cfgmask              : 0x40000000 0x00013caf
Flow Status          : 0
ConCount/Duration    : 1 / 1d21h49m
Uptime               : 1d21h48m
Stats Duration       : 1d21h48m
Receiver Stats       : 0 bytes / 0 pkts /    0.00 Bps Avg
Sender Stats         : 0 bytes / 0 pkts /    0.00 Bps Avg
TCP Bytes In/Out     : 341985960 / 341984056
ReTx/OOO/SloSt/DupAck: 1 / 0 / 1 / 0
RTT (min/avg/max)    : 1 / 1 / 88 ms
Wan Util             : 0.0%
```

To set the compression rate to 'moderate' on the tunnel:

```
switch:admin> portcfg fciptunnel 7/16 modify -c deflate
!!!! WARNING !!!!
Modify operation can disrupt the traffic on the fciptunnel specified for a brief period of time. This
 operation will bring the existing tunnel down (if tunnel is up) before applying new configuration.

Continue with Modification (Y,y,N,n): [ n] y
Operation Succeeded.

switch:admin> portshow fciptunnel 7/16

Tunnel: VE-Port:7/16 (idx:0, DP0)
====================================================
Oper State           : MisConfig
TID                  : 144
Flags                : 0x00000000
IP-Extension         : Enabled
```

```
Compression          : Deflate
FC-Compression       : Deflate (Inherited)
IP-Compression       : Deflate (Inherited)
QoS Distribution     : Protocol (FC:50% / IP:50%)
FC QoS BW Ratio      : 50% / 30% / 20%
IP QoS BW Ratio      : 50% / 30% / 20%
Fastwrite            : Disabled
Tape Pipelining      : Disabled
IPSec                : Disabled
Legacy QOS Mode      : Disabled
Load-Level (Cfg/Peer): Failover (Failover / Failover)
Local WWN            : 10:00:00:05:33:e7:cf:10
Peer WWN             : 00:00:00:00:00:00:00:00
RemWWN (config)      : 00:00:00:00:00:00:00:00
cfgmask              : 0x0000001f 0x40010248
Uncomp/Comp Bytes    : 0 / 0 / 1.00 : 1
Uncomp/Comp Byte(30s): 0 / 0 / 1.00 : 1
Configuration Warnings:
  Compression
Flow Status          : 0
ConCount/Duration    : 1 / 1d21h49m
Uptime               : 1d21h48m
Stats Duration       : 1d21h48m
Receiver Stats       : 19201216 bytes / 66501 pkts /    0.00 Bps Avg
Sender Stats         : 18153376 bytes / 66490 pkts /    0.00 Bps Avg
TCP Bytes In/Out     : 2487313888 / 2517906296
ReTx/OOO/SloSt/DupAck: 3 / 0 / 5 / 0
RTT (min/avg/max)    : 1 / 1 / 77 ms
Wan Util             : 0.0%
TxQ Util             : 0.0
```

To enable FICON XRC and Teradata emulation on the tunnel:

```
switch:admin> portcfg fciptunnel 1/12 modify  \
     --ficon-xrc enable --ficon-tera-read enable --ficon-tera-write enable
Operation succeeded
```

To enable printer emulation on the tunnel:

```
switch:admin> portcfg fciptunnel 1/12 modify  \
     --ficon-print enable
Operation succeeded
```

To configure FCIP FastWrite and Tape Pipelining on the tunnel:

```
switch:admin> portcfg fciptunnel 1/12 modify -f enable -t enable
Operation succeeded
```

To set the bandwidth distribution mode to "protocol" and adjust the FC and IP bandwidth ratios for an IP-Extension enabled tunnel:

```
switch:admin> portcfg fciptunnel 24 create --distribution protocol,60,40
Operation succeeded
```

To create a circuit on the tunnel with the failover group ID and verify the configuration (in this example, the OpStatus "FGrpWrn" indicates that the failover group is defined but there is not at least one metric 0 and one metric 1 circuit as part of the failover group):

```
switch:admin> portcfg fcipcircuit 1/22 create 2 \
     --remote-ip 1.42.128.93 --local-ip 1.42.128.23 --min-comm-rate 500000 --max-comm-rate 500000 -x 1 -g 1
Operation succeeded
switch:admin> portshow fciptunnel all -c
-------------------------------------------------------------------------------
Tunnel Circuit  OpStatus  Flags   Uptime  TxMBps  RxMBps ConnCnt CommRt Met/G
-------------------------------------------------------------------------------
1/22   -         FGrpWrn cft----  20m26s    0.00    0.00    1      -      -/-
1/22   0 1/xge0  Up      ---4--s  20m26s    0.00    0.00    1  3000/5000  0/-
1/22   1 1/xge0  Up      ---4--s      3s    0.00    0.00    2  3000/5000  0/-
1/22   2 1/xge0  Up      ---4--s    2m7s    0.00    0.00    1  5000/5000  1/1
-------------------------------------------------------------------------------
```

To set the failover group for circuit 1 and verify the configuration:

```
switch:admin> portcfg fcipcircuit 1/12 modify 1 -g 1
Operation succeeded
switch:admin> portshow fciptunnel all -c
-------------------------------------------------------------------------------
Tunnel Circuit  OpStatus  Flags   Uptime  TxMBps  RxMBps ConnCnt CommRt Met/G
-------------------------------------------------------------------------------
1/22   -         Up      cft----  26m51s    0.00    0.00    1      -      -/-
1/22   0 1/xge0  Up      ---4--s  20m26s    0.00    0.00    1  3000/5000  0/-
1/22   1 1/xge0  Up      ---4--s      3s    0.00    0.00    2  3000/5000  0/1
1/22   2 1/xge0  Up      ---4--s    2m7s    0.00    0.00    1  5000/5000  1/1
-------------------------------------------------------------------------------
```

To delete circuit 1:

```
switch:admin> portcfg fcipcircuit 1/12 delete 1
Operation succeeded
```

To create a tunnel:

1. Modify existing circuit to change DSCP marking values

```
switch:admin> portcfg fcipcircuit 16 modify 0  \
     --dscp-f 32 --dscp-h 16 --dscp-m 8 --dscp-l 4
Operation Succeeded
```

2. Display the tunnel configuration and circuit values.

```
switch:admin> portshow fciptunnel 24 -c
-------------------------------------------
Tunnel: VE-Port:24 (idx:0, DP0)
 ====================================================
  Oper State           : Online
  TID                  : 24
  Flags                : 0x00000000
  IP-Extension         : Disabled
  Compression          : None
  QoS BW Ratio         : 50% / 30% / 20%
  Fastwrite            : Disabled
  Tape Pipelining      : Disabled
```

```
  IPSec                : Enabled
  IPSec-Policy         : myPolicy1
  Load-Level (Cfg/Peer): Failover (Failover / Failover)
  Local WWN            : 10:00:00:05:33:65:82:c8
  Peer WWN             : 10:00:00:05:33:65:84:08
  RemWWN (config)      : 00:00:00:00:00:00:00:00
  cfgmask              : 0x0000001f 0x4000020c
  Flow Status          : 0
  ConCount/Duration    : 2 / 2h41s
  Uptime               : 1h31m59s
  Stats Duration       : 1h31m59s
  Receiver Stats       : 1020072 bytes / 6534 pkts /  210.00 Bps Avg
  Sender Stats         : 835204 bytes / 6535 pkts /  173.00 Bps Avg
  TCP Bytes In/Out     : 28609996 / 35324148
  ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
  RTT (min/avg/max)    : 1 / 1 / 1 ms
  Wan Util             : 0.0%
  TxQ Util             : 0.0%

Circuit 24.0 (DP0)
====================================================
  Admin/Oper State     : Enabled / Online
  Flags                : 0x00000000
  IP Addr (L/R)        : 10.1.8.77 ge8 <-> 10.1.8.76
  HA IP Addr (L/R)     : 0.0.0.0 ge0 <-> 0.0.0.0
  Configured Comm Rates: 1000000 / 1000000 kbps
  Peer Comm Rates      : 1000000 / 1000000 kbps
  Actual Comm Rates    : 1000000 / 1000000 kbps
  Keepalive (Cfg/Peer) : 6000 (6000 / 6000) ms
  Metric               : 0
  Connection Type      : Default
  ARL-Type             : Auto
  PMTU                 : Disabled
  SLA                  : (none)
  Failover Group       : 0
  VLAN-ID              : NONE
  L2Cos (FC:h/m/l)     : 0 / 0 / 0 (Ctrl:0)
  L2Cos (IP:h/m/l)     : 0 / 0 / 0
  DSCP (FC:h/m/l)      : 16 / 8 / 4 (Ctrl:32)
  DSCP (IP:h/m/l)      : 0 / 0 / 0
  cfgmask              : 0x40000000 0x01e10c2f
  Flow Status          : 0
  ConCount/Duration    : 2 / 2h42s
  Uptime               : 1h31m59s
  Stats Duration       : 1h31m59s
  Receiver Stats       : 515664 bytes / 3307 pkts /   97.00 Bps Avg
  Sender Stats         : 415636 bytes / 3269 pkts /   77.00 Bps Avg
  TCP Bytes In/Out     : 19805096 / 23191360
  ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
  RTT (min/avg/max)    : 1 / 1 / 1 ms
  Wan Util             : 0.0%

Circuit 24.1 (DP0)
```

```
    ====================================================
      Admin/Oper State     : Enabled / Online
      Flags                : 0x00000000
      IP Addr (L/R)        : 192.168.0.20 ge6 <-> 192.168.0.10
      HA IP Addr (L/R)     : 0.0.0.0 ge0 <-> 0.0.0.0
      Configured Comm Rates: 1000000 / 1000000 kbps
     Peer Comm Rates      : 1000000 / 1000000 kbps
      Actual Comm Rates    : 1000000 / 1000000 kbps
      Keepalive (Cfg/Peer) : 6000 (6000 / 6000) ms
      Metric               : 0
      Connection Type      : Default
      ARL-Type             : Auto
      PMTU                 : Disabled
      SLA                  : (none)
      Failover Group       : 0
      VLAN-ID              : NONE
      L2Cos (FC:h/m/l)     : 0 / 0 / 0 (Ctrl:0)
      L2Cos (IP:h/m/l)     : 0 / 0 / 0
      DSCP (FC:h/m/l)      : 16 / 8 / 4 (Ctrl:32)
      DSCP (IP:h/m/l)      : 0 / 0 / 0
      cfgmask              : 0x40000000 0x01e00c2f
      Flow Status          : 0
      ConCount/Duration    : 2 / 1h48m37s
      Uptime               : 1h31m59s
      Stats Duration       : 1h31m59s
      Receiver Stats       : 504408 bytes / 3227 pkts /  103.00 Bps Avg
      Sender Stats         : 419568 bytes / 3266 pkts /   88.00 Bps Avg
      TCP Bytes In/Out     : 16794424 / 20191296
      ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
      RTT (min/avg/max)    : 1 / 1 / 1 ms
      Wan Util             : 0.0%
```

To modify an existing circuit so it becomes the listener:

```
switch:admin> portcfg fcipcircuit 16 modify 2 -C 1

!!!! WARNING !!!!
Modify operation can disrupt the traffic on the fcipcircuit specified \
for a brief period of time. This operation will bring the existing \
circuit down (if circuit is up) before applying new configuration.

Continue with Modification (Y,y,N,n): [n]y
Operation Succeeded
```

To modify an existing circuit so it becomes the initiator (the following example uses the string option):

```
switch:admin> portcfg fcipcircuit 16 \
       modify 2 --connection-type initiator

!!!! WARNING !!!!
Modify operation can disrupt the traffic on the fcipcircuit specified \
for a brief period of time. This operation will bring the existing \
circuit down (if circuit is up) before applying new configuration.
```

```
Continue with Modification (Y,y,N,n): [n]y
Operation Succeeded
```

See Also

configure, portCfgShow, portShow, switchShow

portCfgAppHeader

Enables or disables the removal of the Application header on a port.

Synopsis

```
portCfgAppHeader [<slot>/]<port> {--enable | --disable}
portCfgAppHeader --help
```

Description

Use this command to enable the functionality to remove the Application header on a port or to disable the functionality to remove the Application header from the frames.

If a switch or chassis has EX_Port(s) (including EX_Port configuration) then VMID+ configuration is not allowed.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

<slot>	Specifies the slot number, if applicable, followed by a slash (/).
<port>	Specifies the port number. On enterprise-class platforms, use the slot/port format for specifying the port number. You can specify a single port or a range of ports. The following are the maximum number of ports that can be supported with the configuration: • A maximum of 4 ports can be configured per logical switch. • In non-VF mode, a maximum of 16 ports can be configured on a switch. • In non-VF mode, a maximum of 64 ports can be configured on a chassis.
--enable | --disable	With the **--enable** option, the Application header is removed from the frames; whereas the **--disable** option will not remove the Application header from frames.
--help	Displays the command usage.

Examples

To enable the Application header functionality on a port:

```
switch:admin> portcfgappheader 2 --enable
Application Header configuration enabled on the port 2.
Please toggle the port for configuration changes to take effect.
```

To disable the Application header functionality on a port:

```
switch:admin> portcfgappheader 2 --disable
Application Header configuration enabled on the port 2.
Please toggle the port for configuration changes to take effect.
```

See Also

None

portCfgAutoDisable

Manages the port autodisable configuration.

Synopsis

```
portcfgautodisable {--enable | --disable | --addall | --removeall |
 --show} [<slot>/]<port1>[-<port2>]
 portcfgautodisable {--add | --remove | --addexcept} <option>
     [<slot>/]<port1>[-<port2>]
 portcfgautodisable {--help | --suspend | --resume}
```

Description

Use this command to enable or disable the autodisable feature for a specified port or a range of ports and to manage the configuration. If the ports are already in the requested configuration, no action is taken. If a range of ports is specified, some of which are already in the requested configuration, no action is taken for those ports. All other ports in the specified range are updated. Execution of this command is nondisruptive.

The autodisable feature is by default disabled for all ports.

Use the **--suspend** and **--resume** options respectively to temporarily suspend and resume the configuration in the current logical switch. These states are persistent across reboots and HA failover.

The port autodisable feature minimizes traffic disruption introduced in some instances of automatic port recovery. When the autodisable flag is set, you can specify the conditions that will prevent the port to reinitialize. Such conditions include loss of sync, loss of signal, OLS, NOS, and LIP. Refer to the operand section for an explanation of these conditions. Note that a link reset does not cause a port autodisable. When a port is in FICON Management Server (FMS) mode, an autodisabled port remains persistently disabled across High Availability (HA) failover. In all cases, you can bring the automatically disabled port back into service using the **portEnable** command.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

This command is not supported on GbE ports, VE_Ports, logical interswitch links (LISLs), or FCoE ports.

Operands

This command has the following operands:

<slot>	Specifies the slot number on bladed systems, followed by a slash (/).
***<port1>*[-*<port2>*]**	Specifies a port or a port range, relative to the slot number on bladed systems, for example, 5/17-29.
--enable	Enables the autodisable feature on the specified ports.
--disable	Disables the autodisable feature on the specified ports.
--add	Specifies one or more trigger conditions that will disable the specified ports. Trigger conditions must be separated by a space, for example, LOSN OLS LIP. Trigger conditions are case insensitive.
--remove	Removes one or more trigger conditions from the port autodisable configuration.
--addall	Adds all supported trigger conditions to the port autodisable configuration.
--removeall	Removes all supported trigger conditions from the port autodisable configuration. This command removes the triggers only; it does not disable the port autodisable flag.

--addexcept	Adds all supported trigger conditions to the port autodisable configuration except the one specified .
--show	Displays the port autodisable configuration for the specified slot or port with the port index.
--suspend	Suspends the current port autodisable configuration temporarily.
--resume	Resumes the suspended port autodisable configuration.
--help	Displays command usage.
<option>	Specify one or more the following options (supported with the **--add**, **--remove**, and **--addexcept** operands):

LOSN	Loss of Sync
LOSNG	Loss of Signal
OLS	Offline Primitive Sequence
NOS	Not Operational Primitive Sequence
LIP	Loop Initialization Primitive Sequence

Examples

To disable the port autodisable feature on single port:

```
switch:admin> portcfgautodisable --disable 18
switch:admin> portcfgautodisable --show 18
Port Index: 18
Port Auto Disable: OFF
Configured Option(s):No events configured. Port will
   not be automatically disabled.
```

To enable the port autodisable feature on a single port:

```
switch:admin> portcfgautodisable --enable 18
switch:admin> portcfgautodisable --show 18
Port Index: 18
Port Auto Disable: ON
MODE             : RESUME
Configured Option(s):No events configured. Port will
   not be automatically disabled.
```

To add multiple trigger conditions to the port autodisable configuration on a single port:

```
switch:admin> portcfgautodisable --add losn lip ols 18
switch:admin> portcfgautodisable --show 18
Port Index: 18
Port Auto Disable: ON
MODE             : RESUME
Configured Option(s): LOSN  OLS  LIP
```

To add all trigger conditions except the LOSN condition:

```
switch:admin> portcfgautodisable --addexcept LOSN 18
switch:admin> portcfgautodisable --show 18
Port Index: 18
Port Auto Disable: ON
MODE             : RESUME
Configured Option(s): LOSG  OLS  NOS  LIP
```

To attempt to enable and configure the port autodisable feature on a port for which the feature is already activated (the configuration is not updated):

```
switch:admin> portcfgautodisable --show 54-56
Port Index: 54
Port Auto Disable: OFF
Configured Option(s):No events configured. Port will not be automatically disabled.
Port Index: 55
Port Auto Disable: OFF
Configured Option(s):No events configured. Port will not be automatically disabled.
Port Index: 56
Port Auto Disable: OFF
Configured Option(s):No events configured. Port will not be automatically disabled.
```

To enable the port autodisable feature on a range of ports:

```
switch:admin> portcfgautodisable --enable 0-2
switch:admin> portcfgautodisable --show 0-2
Port Index: 0
Port Auto Disable: ON
MODE             : RESUME
Configured Option(s):No events configured.
Port will not be automatically disabled.

Port Index: 1
Port Auto Disable: ON
MODE             : RESUME
Configured Option(s):No events configured.
Port will not be automatically disabled.

Port Index: 2
Port Auto Disable: ON
MODE             : RESUME
Configured Option(s):No events configured.
Port will not be automatically disabled.
```

To enable the port autodisable feature for a range of ports, some of which were previously enabled (the configuration is applied only to those ports, for which an update is necessary, that is, port 3 in the following example):

```
switch:admin> portcfgautodisable --enable 0-3
Same configuration for port 0
Same configuration for port 1
Same configuration for port 2
```

To suspend the port autodisable configurations:

```
switch:admin> portcfgautodisable --suspend
Suspending Port Auto Disable will de-activate the triggers \
        for all ports configured with Port autodisable conditions on this Logical Switch.
Would you like to continue [y/n]?: y
PAD option is set to 'SUSPEND'
switch:admin> portcfgautodisable --show 18
Port Index: 18
Port Auto Disable: ON
MODE             : SUSPEND
Configured Option(s): LOSG  OLS  NOS  LIP
```

To resume the suspended port autodisable configurations:

```
switch:admin> portcfgautodisable --resume
PAD option is set to 'RESUME'
switch:admin> portcfgautodisable --show 18
Port Index: 18
Port Auto Disable: ON
MODE              : RESUME
Configured Option(s): LOSG  OLS  NOS  LIP
```

See Also

portCfgShow, portEnable

portCfgBreakout

Enables or disables QSFP breakout and non-breakout mode for QUAD ports.

Synopsis

```
portcfgbreakout {--enable | --disable} [<slot>/]<port>
```

Description

Use this command to enable or disable breakout mode of Quad ports.

The QSFP breakout option is supported only on Ethernet ports.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--enable	Enables QSFP breakout mode for all the ports from the quad and will be online.
--disable	Disables QSFP breakout mode. The primary port will be online and all secondary ports will be persistently disabled with a reason stating **QSFP Secondary port**.
<port>	Specifies the port number.
[*<slot>*/]	Specify the slot number on chassis based switches.

Examples

To enable breakout mode:

```
switch:admin> portcfgbreakout --enable 8/60
switch:admin> switchshow | grep "   8   " | tail -n 4
 252    8   60   02fc00   id    10G       Online      ETH
 253    8   61   02fd00   id    10G       Online      ETH
 254    8   62   02fe00   id    10G       Online      ETH
 255    8   63   02ff00   id    10G       Online      ETH
```

To disable breakout mode:

```
switch:admin> portcfgbreakout --disable 8/60
```

See Also

portCfgShow, portCfgFlexPort

portCfgCleanAddress

Sets the associated port configuration either to enable or disable the Clean Address Bit support.

Synopsis

```
portcfgcleanaddress {--enable | --disable} [<slot>/]<port1>[-<port2>]
portcfgcleanaddress {--enable | --disable} <slot>/<port1>[,<slot>/<port2>]
portcfgcleanaddress {--enable | --disable} *
portcfgcleanaddress --help
```

Description

This command enables or disables Clean Address Bit for a specified port or port range. Supported only on the F_Ports.

This command is not supported on the Ethernet ports, Logical ports, or SIM ports.

This command is not supported on AG mode and on the Standby CP.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--enable | --disable Enables or disables support of the Clean Address Bit within the LS_ACC response frame for the specified port or port range. If enabled, the FC Standards compliant behavior takes effect for FLOGI and FDISC login responses on the specified port(s). The option is disabled by default.

- ***[slot]/port*** Enables or disables Clean Address Bit on the specified port. Also allows port range.
- ***** Enables or disables Clean Address Bit on all applicable ports.

--help Displays the command usage.

Examples

To enable clean address bit on the specified port range:

```
switch:admin> portcfgcleanaddress --enable 1/0

switch:admin> portcfgshow -slot 1
Index:              0  1  2  3   4  5  6  7   8  9 10 11  12 13 14 15
------------------+--+--+--+--+---+--+--+--+---+--+--+--+---+--+--+--
Octet Speed Combo  1  1  1  1   1  1  1  1   1  1  1  1   1  1  1  1
Speed             AN AN AN AN  AN AN AN AN  AN AN AN AN  AN AN AN AN
AL_PA Offset 13   .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Trunk Port        ON ON ON ON  ON ON ON ON  ON ON ON ON  ON ON ON ON
Long Distance     .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
```

```
VC Link Init       .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Locked L_Port      .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Locked G_Port      .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Disabled E_Port    .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Locked E_Port      .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
ISL R_RDY Mode     .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
RSCN Suppressed    .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Persistent Disable.. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
LOS TOV mode       0  2  2  1   2  1  1  0   0  0  0  0   0  0  0  0
NPIV capability    ON ON ON ON  ON ON ON ON  ON ON ON ON  ON ON ON ON
NPIV PP Limit      90 90 90 90  90 90 90 90  90 90 90 90  90 90 90 90
NPIV FLOGI Logout  ON ON ON ON  ON ON ON ON  ON ON ON ON  ON ON ON ON
QOS E_Port         AE AE AE AE  AE AE AE AE  AE AE AE AE  .. .. .. ..
EX Port            .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Mirror Port        .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Rate Limit         .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Credit Recovery    ON ON ON ON  ON ON ON ON  ON ON ON ON  ON ON ON ON
Fport Buffers      .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Port Auto Disable .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
CSCTL mode         .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
TDZ mode           .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
D-Port mode        .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
D-Port over DWDM   .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Compression        .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Encryption         .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
10G/16G FEC        ON ON ON ON  ON ON ON ON  ON ON ON ON  ON ON ON ON
16G FEC via TTS    .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Fault Delay        0  0  0  0   0  0  0  0   0  0  0  0   0  0  0  0
SIM Port           .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
8G Non-DFE         .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
TDZ mode           .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Clean Address Bit ON .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
```

See Also

portCfgShow

portCfgCompress

Configures a port for compression.

Synopsis

portcfgcompress --enable [*slot*]/*port*
portcfgcompress --disable [*slot*]/*port*
portcfgcompress --help

Description

Use this command to configure a port for compression. This command enables or disables the compression configuration on the specified slot/port, and saves the configuration persistently.

Configuring a port for compression is disruptive. You must disable the port before you can enable compression on the port. This command fails on an enabled port.

The number of configurable ports are limited per ASIC. A message is displayed once the maximum number is exceeded. Use the **portEncCompShow** for a listing of configurable ports per ASIC.

Notes

This command is supported only on E_Ports. An E_Port can be enabled for compression and for encryption at the same time.

When you move a configured port to another logical switch, you are informed that the operation requires the port configuration to be disabled. You are given the choice to cancel the move or to continue. If you want to go ahead with the move and the port is configured for encryption or compression, you must disable the configuration prior to moving the port. You must reconfigure the port on the target switch if you want to use compression or encryption on that port.

This command is supported on 32G-capable platforms (running Fabric OS v8.0.1 or later with the exception of the Brocade G610 switch), but not supported in Brocade 7810.

Compression feature is not supported on Inter Chassis Link (ICL) ports.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

slot	On bladed systems only, specifies the slot number of the ports to be configured, followed by a slash (/).
port	Specifies the port to be configured.
--enable	Enables the compression configuration on the specified port.
--disable	Disables the compression configuration on the specified port.
--help	Displays the command usage.

Examples

To enable the compression configuration:

```
switch:admin> portcfgcompress --enable 3/4
switch:admin> lscfg --config 15 -port 3/4
This operation requires that the affected ports be disabled.
Would you like to continue [y/n]?: y
Checking for cap port 4
After Checking for cap port 24
val 1  port 4
lscfg: The port cannot be moved to the requested switch because
port or ports have Encryption/Compression enabled. Please disable
the Encryption/Compression configuration.
    FID:     15
    Slot:     3
    Port:     4
```

To disable the compression configuration:

```
switch:admin> portcfgcompress --disable 3/4
```

To enable compression configuration when maximum number is reached:

```
switch:admin> portcfgcompress --enable 3/4
Configuration is not allowed. Maximum number of ports is
```

```
already configured for Encryption/Compression.
```

See Also

portCfgEncrypt, portEncCompShow

portCfgCongestionSignal

Enables or disables congestion signal primitives.

Synopsis

```
portcfgcongestionsignal {--enable | --disable} [<slot>/]<port1>[-<port2>]
portcfgcongestionsignal {--enable | --disable} <slot>/<port1>[,<slot>/<port2>]
portcfgcongestionsignal {--enable | --disable} *
portcfgcongestionsignal --help
```

Description

This port level configuration command enables and disables congestion detection primitive signals.

Beginning from Fabric OS v9.1.0, the command is supported in a device configured with Access Gateway(AG).

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

{--enable | --disable} Enables or disables hardware level signals on a single port, range of ports, or on all ports. A wildcard * indicates all ports. The configuration applies to all congestion-related ARB signals (ARB F1 and ARB F7) and are enabled by default. The configuration supports on F_Port trunks too.

- **[<*slot*>/]<*port1*>[-<*port2*>] | *** Specifies a set of ports as a list, range, or wildcard. For example, "10/6" or "10/6,9" or "10/6-9" or "0" or "0,31" or "0-31" or "*".

--help Displays the command usage.

Examples

To enable congestion detection signaling:

```
switch:admin> portcfgcongestionsignal --enable 0
```

To disable congestion detection signaling:

```
switch:admin> portcfgcongestionsignal --disable 0
```

See Also

None

portCfgCreditRecovery

Enables or disables credit recovery on a port.

Synopsis

```
portcfgcreditrecovery {--enable | --disable} [<slot>/]<port>
portcfgcreditrecovery --help
```

Description

Use this command to enable or disable credit recovery on a port.

The credit recovery feature enables credits or frames to be recovered. The default credit recovery configuration is enabled.

Notes

This command is supported in Access Gateway mode.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

The Fabric OS port configuration commands are not supported on FCoE ports.

Operands

This command has the following operands:

--disable	Disables credit recovery configuration on the specified port.
--enable	Enables credit recovery configuration on the specified port.
--help	Displays the command usage.

Examples

To enable credit recovery on a port:

```
switch:admin> portcfgcreditrecovery --enable 3/15
```

To disable credit recovery on a port:

```
portcfgcreditrecovery --disable 3/15
```

See Also

portCfgShow

portCfgDefault

Resets the port configuration to factory default value.

Synopsis

```
portcfgdefault {[<slot>/][ge]<port> | --help}
```

Description

Use this command to reset all configuration values on a specified port to their factory defaults. This command persistently disables ports capable of routing, which is the factory default value. Use the **portCfgShow** command to display the port configuration.

This command does not change the state of a port. To change the state of an E_Port, use either **switchDisable**/**switchEnable** or **portDisable**/**portEnable**.

When this command is used to reset an F_Port in an Access Gateway, that F_Port is unmapped from its mapping to an N_Port.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

This command is blocked if encryption is enabled on a 32G-capable port.

This command should be used with caution on Embedded switches, as it can alter the factory default settings. In addition, not all Embedded switches provide the same support for this command.

Operands

This command has the following operands:

<slot>/	For bladed systems only, specifies the slot number of the port to be reset, followed by a slash (/).
<port>	Specifies the number of the port to be reset, relative to its slot for bladed systems. Use **switchShow** to list of valid ports.
--help	Displays the command usage.

Examples

To reset a port to factory defaults:

```
switch:admin> portcfgdefault 1/3
```

To reset a GbE port to factory defaults:

```
switch:admin> portcfgdefault 8/ge1
```

See Also

portCfgPersistentDisable, portCfgPersistentEnable, portCfgShow, portCfgSpeed, portCfgTrunkPort

portCfgDPort

Configures a port as a D_Port.

Synopsis

```
portcfgdport --enable [-dwdm] [<slot>/]<port_list>
 portcfgdport --disable [-dwdm] [<slot>/]<port_list>
 portcfgdport --provision -add [-dwdm] [<slot>/]<port_list>
 portcfgdport --provision -delete [-dwdm] [<slot>/]<port_list>
 portcfgdport --provision -show [[<slot>/]<port_list>]
 portcfgdport --help
```

Description

Use this command to configure a diagnostic port (D_Port). The D_Port is not part of the fabric. It does not carry any interswitch traffic or data traffic. The D_Port is used solely for the purpose of running link-level diagnostics between two switches, switch-HBA, AG-AG, or AG-HBA and to isolate link level fault on the port, in the small form factor pluggable (SFP), or in the cable.

You must configure both ends of the link between a given pair of switches, and you must disable the port before you can configure a D_Port. Re-enabling the D_Ports will automatically start the diagnostics when the ports come online.

The D_Port test performs the following diagnostics:

- A link traffic test
- A link distance measurement

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

This command is supported only on Fibre Channel ports. For Brocade Gen 6 platform, SFPs must be 10G or 16G or 32G and for Brocade Gen 7 platform it must be 10G or 16G or 32G or 64G Brocade-branded SFPs. The SFPs must run on the supported Fabric OS version.

The command is also supported on the following Brocade-branded SFPs, QSFPs, or QSFP+:

- 16G or 32G LWL FC, 8G or 16G ELWL FC supported on 16G or 32G-capable ports in Brocade Gen 6 Platform.
- 16G or 32G or 64G LWL/ELWL FC supported on 32G or Gen 7 ICL ports in Brocade Gen 7 Platform.

D_Port configuration is not supported on SIM-Ports and ports configured in encryption mode or compression mode.

Links with mismatched D_Port configuration will be segmented or disabled.

Do not run D_Port tests on more than eight links at a time for normal (not long distance) links. On a FC 16-64 blade, do not enable the On-Demand D_Port with **bladeInsert** or **slotPowerOn**.

Run D_Port test on one link at a time for long distance ports. D_Port tests on other long distance links must be started only after the D_Port test completes on the previous long distance link.

Beginning with Fabric OS v9.2.1, this command configures a diagnostic port(D_Port) on EX_Port. Supports only static and dynamic configurations and On-demand configuration is not supported on EX_Port. A warning message is displayed when triggering On-demand D_Port test on an EX_Port.

Operands

This command has the following operands:

<slot>	On bladed systems only, specifies the slot number of the ports to be configured, followed by a slash (/).
<port_list>	Specifies one or more ports, relative to the slot on bladed systems. Use **switchShow** for a listing of valid ports. A port list should be enclosed in double quotation marks and can consist of the following: • A single port, for example, "8" or "5/8" on blades systems. • A port range where beginning and end port are separated by a dash, for example, "8-13" or "5/8-13" on blades systems. A port range cannot span multiple slots. • A set of ports separated by commas, for example "3,5,7,8" or "5/3,5,7,8" on bladed systems. • A wildcard * indicates all ports. The wildcard can be represented as '*' or "*".
--enable	Configures the specified port(s) as D_Port. You cannot configure the port as a D_Port while Dynamic D_Port tests are in progress on the port. The operation fails with an error message.

-dwdm This operand is mandatory when you want to enable **-dwdm**. Issuing **portcfgdport --enable -dwdm** will enable both D_Port mode and D_Port over DWDM.

--disable Disables the D_Port configuration on the specified ports. While disabling, remove the D_Port configuration on both the ends if the D_Port tests are in progress.

-dwdm Disables DWDM mode on the D_Port. Use of this operand will only disable DWDM mode, leaving D_Port mode enabled.

--provision List of ports that are marked to be set as D_Ports. Use the **--enable** command to configure one or more ports from the list as D_Ports.

-add Adds the ports on the provision list to be configured as D_Ports.

-dwdm Provisions the specified ports for DWDM. This operand is optional.

-delete Removes the ports from the provision list.

-dwdm Disables DWDM provisioning on the specified ports. This operand is optional.

-show Lists all the ports in the provision list.

If the port range is specified, the status of each port on the provision list displays. Displays ON if the port is in the provision list or OFF if the port is not in the provision list.

--help Displays the command usage.

Examples

To configure a single port as a D_Port:

```
switch:admin> portdisable 42
switch:admin> portcfgdport --enable 42
Caution:
Gen 6 platforms: D_Port functionality is available with 32Gb/16Gb/10Gb FC SFPs or
   QSFPs and 32Gb/16Gb  LWL/ELWL FC SFPs.
Gen 7 platforms: D_Port functionality is available with 64Gb/32Gb/16Gb/10Gb FC SFPs or
   QSFPs and 64Gb/32Gb/16Gb LWL/ELWL FC SFPs or 53G QSFP.
switch:admin> portenable 42
```

To configure D_Port on EX_Port:

```
switch:admin> portcfgdport --en 16; portenable 16
Caution:
Gen 6 platforms: D_Port functionality is available with 32Gb/16Gb/10Gb
     FC SFPs or QSFPs and 32Gb/16Gb  LWL/ELWL FC SFPs.
Gen 7 platforms: D_Port functionality is available with 64Gb/32Gb/16Gb/10Gb
     FC SFPs or QSFPs, 64Gb/32Gb/16Gb LWL/ELWL FC SFPs or 53G QSFP and 64Gb FC SFP-DD.
D-Port is configured on EX-Port

switch:admin> portdisable 42
```

To clear the D_Port configuration:

```
switch:admin> portdisable 42
switch:admin> portcfgdport --disable 42
switch:admin> portenable 42
```

To add a port to the D_Port provision list:

```
switch:admin> portcfgdport --provision -add -dwdm 7/16
Caution:
Gen 6 platforms: D_Port functionality is available with 32Gb/16Gb/10Gb FC SFPs or
   QSFPs and 32Gb/16Gb  LWL/ELWL FC SFPs.
Gen 7 platforms: D_Port functionality is available with 64Gb/32Gb/16Gb/10Gb FC SFPs or
   QSFPs and 64Gb/32Gb/16Gb LWL/ELWL FC SFPs or 53G QSFP.
```

To remove a port from the provision list:

```
switch:admin> portcfgdport --provision -delete 4/12
```

To list all the ports in the provision list:

```
switch:admin> portcfgdport --provision -show
Port D-Port provision DWDM
============================
  16      ON           OFF
switch:admin> portcfgdport --provision -show
 Port D-Port provision DWDM
============================
  16      ON           ON
```

See Also

fabricLog, portCfg, portDPortTest, portShow, switchShow

portCfgEncrypt

Configures a port for encryption.

Synopsis

portcfgencrypt --enable [*slot*]/*port*
portcfgencrypt --disable [*slot*]/*port*
portcfgencrypt --help

Description

Use this command to configure a port for encryption. This command enables or disables the encryption configuration on the specified slot/port and saves the configuration persistently.

Before you can configure a port for encryption, you must configure the port for authentication. When disabling encryption, you must disable the encryption configuration before you can disable authentication.

Configuring a port for encryption is disruptive. You must disable the port before you can enable encryption on the port. This command fails on an enabled port.

The number of configurable ports is limited per ASIC. Use the **portEncCompShow** for a listing of configurable ports per ASIC.

Notes

This command is supported on E_Ports. An E_Port and Ex_port can be enabled for compression and for encryption at the same time.

When you move a configured port to another logical switch, you are informed that the operation requires that the port configuration be disabled. You are given the choice to cancel the move or to continue. If you want to go ahead with the move and the port is configured for encryption or compression, you must disable the configuration prior to moving the port. You must reconfigure the port on the target switch if you want to use compression or encryption on that port.

This command is supported on 16Gb/s-capable platforms (running Fabric OS v7.4.2x or later), FC32-48 port blades in 32Gb/s-capable platforms (running Fabric OS v8.1.0 or later), Brocade G620 (running Fabric OS v8.2.0 or later), and Brocade G630 device (running Fabric OS v8.2.0a or later).

This command is not supported on Brocade G610, Brocade 7810, and Brocade SX6 port blades.

In-Flight Encryption feature is not supported on Inter Chassis Link (ICL) ports.

Each encryption port on the Brocade G620 requires an extra 105 buffers, which requires disabling and reserving ports 44 through 47 for support. If enough buffers are not available, the port cannot be configured for encryption. Use the **portBufferShow** command to map the buffer allocation and deallocation for the ports.

On the Brocade G620, ports 44 through 47 must be disabled for Encryption to be enabled on any other port. When enabling encryption, ports 44 through 47 will be reset to default values and then reserved, after confirmation from the user. The **-force** option bypasses the user confirmation to reserve these ports. If ports 40 through 47 are in Octet combination mode 2, they must first be changed back to Octet combination 1 using the **portCfgOctetSpeedCombo** command in order to enable encryption.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

slot	On bladed systems only, specifies the slot number of the ports to be configured, followed by a slash (/).
port	Specifies the port to be configured.
--enable	Enables the encryption configuration on the specified port.
--disable	Disables the encryption configuration on the specified port.
-force|-f	Overrides the default behavior. This option is supported only on the Brocade G620 device.
--help	Displays the command usage.

Examples

To enable the encryption configuration:

```
switch:admin> portcfgencrypt --enable 3/4
```

To attempt to move a configured port to another logical switch:

```
switch:admin> lscfg --config 15 -port 3/4
This operation requires that the affected ports be disabled.
Would you like to continue [y/n]?: y
Checking for cap port 4
After Checking for cap port 4
val 1  port 4
lscfg: The port cannot be moved to the requested switch because
port or ports have Encryption/Compression enabled. Please disable
the Encryption/Compression configuration.
    FID:     15
    Slot:     3
    Port:     4
```

To disable the encryption configuration:

```
switch:admin> portcfgencrypt --disable 3/4
```

See Also

authUtil, portCfgCompress, portEncCompShow, secAuthSecret

portCfgEport

Enables or disables E_Port capability on a port or locks down a port as an E_Port.

Synopsis

```
portcfgeport {-slot | -s} {<slot> | <slot_range>} [-p] {0|1|2}
portcfgeport -i {<port_index> | <portindex_range>} [-f]
[-p] {0|1|2}
portCfgEport [<slot>/]<port> [-p] {0|1|2}
portcfgeport -h
```

Description

Use this command to enable or disable E_Port capability on a port or to lock down a port as an E_Port. E_Port capability is enabled by default. When an interswitch link (ISL) is connected to a port and the port's E_Port capability is disabled, the ISL is segmented, and all traffic between the switches stops. Fabric management data, such as zoning information, can no longer be exchanged through this port.

You can identify a single port to be configured by its port number or by its port index number. Port ranges are supported with index numbers or by specifying a slot or a slot range. Use **switchShow** for a listing of valid ports, slots, and port index numbers. When used without operands, this command displays all persistently disabled ports on the switch.

By default, this command disables and re-enables the port and the port comes online with the new configuration setting. When used with the **-p** option, any configuration changes are updated immediately but only take effect on the next port toggle. The **portcfgshow** displays the changed configuration and uses auditlog to determine whether the configuration has taken effect or not.

Changes made by this command are persistent across switch reboots or power cycles.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Regardless of how many E_Ports are connected between two switches, the maximum routing paths are limited to 16 E_Ports.

The Fabric OS port configuration commands are not supported on FCoE ports.

Operands

This command has the following operands:

<slot>	For bladed systems only, specifies the slot number of the port to be configured, followed by a slash (/).
<port>	Specifies the number of the port to be configured, relative to its slot for bladed systems. Use **switchShow** to display a listing of valid ports.
-p	Enables the passive option. Updates the configuration changes immediately but takes effect only on the next port toggle. This operand is optional.

-i ***<port_index>*** **|** ***<portindex_range>***	Specifies a range of ports identified by port index numbers. You may specify multiple index ranges separated by a space, for example, **-i** 33-38 40-60.
-f	Ignores nonexisting ports. This operand is valid only with the **-i** option.
<slot> **|** ***<slot_range>***	Specifies all ports on a slot or on a range of slots, for example, **-s** 3-5. You may specify multiple slot ranges separated by a space, for example, **-s** 3-5 8-10.
mode	Specifies the E_Port configuration as one of the following:
0	Disables E_Port capability for the specified ports.
1	Enables the ports as E_Ports. This is the default port state.
2	Locks down the ports as E_Ports. This command effectively disables the port's F_Port capability.
-h	Displays the command usage.

Examples

To disable E_Port capability on a port:

```
switch:admin> portcfgeport 1/3 0
```

To enable E_Port capability on a port:

```
switch:admin> portcfgeport 1/3 1
```

To lock down the port as an E_Port.

```
switch:admin> portcfgeport 1/3 2
```

To lock down the port as an E_Port using the passive option.

```
switch:admin> portcfgeport 1/3 -p 2
```

To disable E_Port capability on a range of ports specified by their index number:

```
switch:admin> portcfgeport -i 12-18 0
```

To enable E_Port capability on all ports of slot 3-5:

```
switch:admin> portcfgeport -s 3-5 1
```

See Also

portCfgEportCredits, portShow, switchShow

portCfgEportCredits

Configures normal distance E_Port buffer allocation.

Synopsis

```
portcfgeportcredits --enable [<slot>/]<port> <credits>
portcfgeportcredits --disable [<slot>/]<port>
portcfgeportcredits --show [<slot>/]<port>
portcfgeportcredits --help
```

Description

Use this command to change the default credit allocation for a normal distance E_Port or EX_Port by allocating the specified number of credits to the port. When port credit allocation is enabled, the number of credits specified overrides

the default E_Port credit allocation; that is, a new credit model is constructed based on the user-configured credits value. When the configuration is disabled, the default credit allocation (default credit model) is restored. Only a normal distance E_Port and EX_Port can utilize the new credit model constructed by this command, and the allocated credits are reserved only for that port.

ICL ports are supported and are used in conjunction with 2 km ICL QSFPs.

The E_Port credit configuration is persistent across system reboots and High Availability (HA) failover.

Use the **portcfgeportcredits --show** command to display the configured credits.

Use the **portBufferShow** command to determine current port buffer allocations.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

The E_Port credits feature does not support ports configured as F_Ports, Mirror Ports, L_Ports, and Trunk Areas. If E_Port credits are configured on ports, moving the ports from one logical switch to another logical switch is not permitted.

The Fabric OS port configuration commands are not supported on FCoE ports.

The E_Port credits are mutually exclusive with F_Port buffers, longdistance, ISL R_RDY, and Buffer Optimized mode.

Operands

This command has the following operands:

--enable	Enables the E_Port credit configuration on a specified port. A port and credits allocation must be specified with this option.
--disable	Disables the E_Port credit configuration on a specified port.
--show	Displays the credits configured on a specified port.
[<*slot*>/]	Specifies the slot number on bladed systems, followed by a slash (/).
<*port*>	Specifies the port number.
<*credits*>	Specifies the number of credits to be allocated to the specified port. The specified credit allocation takes effect when the E_Port comes online. This operand is required with the **--enable** option. For Gen 6 platform, the credit allocation is allowed in the range between 5 to 160 for both ICL ports and normal ISL and EX Port links. On a Gen 6 platform, if the specified credit allocation is less than the default allocation, the default allocation scheme is enforced (in Gen 6 platform, 32Gb/s links are reserved 20 credits per VC). For Non-ICL, 32G 2km QSFP links are reserved with 100 credits per VC in QoS mode and 16 credits in Non QoS mode. The configured credits will be allocated for each of the medium virtual channels (VCs) for the non-QoS ports. For QoS ports, after sharing, both the medium and high VCs will have the configured credits allocated.
--help	Displays the command usage.

Examples

To allocate 10 credits to an E_Port:

```
switch:admin> portcfgeportcredits --enable 12/6 10
Success.
```

To display the configured credits for an E_Port:

```
switch:admin> portcfgeportcredits --show 12/6
E-Port Credit Configured : 10
```

```
Success.
```

To disable the credit configuration and return to the default credit allocation:

```
switch:admin> portcfgeportcredits --disable 12/6
Success.
```

See Also

portBufferShow

portCfgEXPort

Sets a port to be an EX_Port, and sets and displays EX_Port configuration parameters.

Synopsis

```
   portcfgexport [<slot>/]<port>[-<port2>]
[-a 1] [-f <fid>] [-d <domain_id>]
[[-t 2] [-r <ratov>] [-e <edtov>]
[-p <pid_format>] | -t 1]
   portcfgexport [<slot>/]<port>[-<port2>] -a 2
   portcfgexport --help
```

Description

Use this command to allow a port to be configured as an EX_Port, to display the port's EX_Port configuration, or to change the configuration. If no optional parameter is specified, the command displays the currently configured values; otherwise, it sets the specified attribute to its new value. The port must be disabled prior to setting EX_Port attributes. The port must be enabled before the port can become active following EX_Port parameter changes. Use **portDisable** and **portEnable** to disable or enable the port.

When the port is not active, the preferred domain ID is configurable. The preferred domain ID is used by the EX_Port's front phantom domain to request a domain ID from the principal switch. The domain ID received becomes the subsequent preferred domain ID, which is persistent and is displayed.

This command is also used to configure the Inter-Chassis Link (ICL) ports to be EX_Ports. The ICL EX_Port is supported only on the VF-enabled 16G, 32G, and 64G-capable chassis. Setting ICL EX_Port configuration in a non-VF switch or non-base switch will display an error.

All EX_Ports within a quad small form-factor pluggable (QSFP) must be present in the base switch and in disabled state for configuring ICL EX_Ports. If an EX_Port within the same QSFP is moved from the base switch to a logical switch, EX_Port configuration cannot be applied to any of the ports in the QSFP. When specifying an ICL port, all four ports of the QSFP will be configured with the same EX_Port parameters.

Encryption and compression are not supported on an ICL EX_Ports. When this command is executed on ICL EX_Port without optional parameters, encryption and compression states are not displayed.

If a switch or chassis has a VMID+ port, then EX_Port configuration is not allowed.

Notes

The fabric ID must be the same for every router port connected to the same edge fabric, and different for every edge fabric. If two ports are connected to the same fabric but have been assigned different fabric IDs, one of them will be disabled due to a fabric ID oversubscription. If two fabrics have been assigned the same fabric ID, one of them will be disabled due to a fabric ID conflict.

When a port is changed from FL_Port to EX_Port, the topology is implicitly changed to point-to-point.

The front domain WWN field displays the WWN of the front domain. If the port is enabled and the state is "OK", the edge fabric principal switch domain ID and WWN also are displayed.

If the Fabric Parameter value is "Auto Negotiate", the port ID format, R_A_TOV, and E_D_TOV values display the negotiated values indicated by "(N)" next to them. The negotiated values are what the edge switch specifies in the ELP request. If the state is "Not OK", the R_A_TOV and E_D_TOV display "Not Applicable". By default, all EX_Ports are auto-ELP enabled.

If the Fabric Parameter attribute value is "User configured", the port ID format R_A_TOV and E_D_TOV values display the configured values.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

When invoked without operands, this command displays the usage. The following operands are supported:

<slot>/	On bladed systems only, specifies the slot number followed by a slash (/).
<port>[-<port2>]	Specifies a port or a port range, relative to the slot number on bladed systems, for example, 5/17-29. Use **switchShow** for a list of valid ports. When executed with [<*slot*>/]<*port*>[-<*port2*>] only, the command displays the current port configuration.
-a *<admin>*	Enables or disables the specified port as an EX_Port. Valid values are 1 (enable as EX_Port), 2 (disable as EX_Port and enable as non-EX_Port). **portCfgDefault** may also be used to disable EX_Ports.
-f *<fabricid>*	Specifies the fabric ID. The valid values for FID are from 1 through 128 or the alias name of the fabric. The alias name is displayed, only if alias name exists for the corresponding Edge Fabric ID. Execute **fcrconfigure --show** to view the alias name configuration. If Fabric ID is not specified, FCR switch generates a valid Fabric ID from 1 through 128 and applies the value to the port's EX_Port configuration.
-r *<ratov>*	Specifies the R_A_TOV used for port negotiation. Valid values are 2000 to 120000. This operand is only applicable if the "Fabric Parameter" attribute value is not "Auto Negotiate".
-e *<edtov>*	Specifies the E_D_TOV used for port negotiation. Valid values are 1000 to 60000. This operand is only applicable if the "Fabric Parameter" attribute value is not "Auto Negotiate".
-d *<domainid>*	Specifies the preferred domain ID. For Brocade native mode, valid values are 1 to 239.
-p *<pidformat>*	Specifies the Port ID format. Valid values are 0-native, 1-core, 2-extended edge. This operand is applicable only when port mode is set to 0 (native mode). If port mode is not "Brocade Native", the Port ID format displays as "Not applicable".
-t *<fabric_parameter>*	Enables or disables negotiation of the fabric parameters. Valid values are 1 for enable and 2 for disable.
--help	Displays the command usage.

Examples

To set the fabric ID of port 2/1 to 5 and the port ID format to core:

```
switch:admin> portcfgexport 2/1 -f 5 -p 1
```

To configure port 2/0 to be an EX_Port and set the fabric ID to 4:

```
switch:admin> portcfgexport 2/0 -a 1 -f 4
```

To disable fabric parameter negotiation on port 2/0 of an EX_Port:

```
switch:admin> portcfgexport 2/0 -t 2
```

To enable and EX_Port using alias name:

```
switch:admin> portcfgexport 1/5 -a 1 -f Red_fabric
```

To view the configuration of an EX_Port:

```
switch:admin> portcfgexport 1/5
Port           1/5   info
Admin:               enabled
State:               OK
Pid format:          core(N)
Operate mode:        Brocade Native
Edge Fabric ID:      128
Alias name:          Red_fabric
Preferred Domain ID: 160
Front WWN:           50:00:51:e4:44:40:0e:80
Fabric Parameters:   Auto Negotiate
R_A_TOV:             10000(N)
E_D_TOV:             2000(N)
Authentication Type: DHCHAP
DH Group:            4
Hash Algorithm:      SHA-1
Encryption:          ON
Compression:         ON
Forward Error Correction: ON
Edge fabric's primary wwn: N/A
Edge fabric's version stamp: N/A
```

To view the configuration of an ICL EX_Port:

```
switch:admin> portcfgexport 5/12
Port          5/12   info
Admin:               enabled
State:               OK
Pid format:          core(N)
Operate mode:        Brocade Native
Edge Fabric ID:      11
Alias name:          orange_fabric
Front Domain ID:     160
Front WWN:           50:00:51:e4:8f:80:2e:0b
Principal Switch:    1
Principal WWN:       10:00:00:05:1e:48:f8:03
Fabric Parameters:   Auto Negotiate
R_A_TOV:             10000(N)
E_D_TOV:             2000(N)
Authentication Type: None
DH Group:            N/A
Hash Algorithm:      N/A
Forward Error Correction: ON
Edge fabric's primary wwn: N/A
Edge fabric's version stamp: N/A
```

See Also

portDisable, portEnable, portShow, portCfgDefault, fcrBcastConfig, fcrConfigure

portCfgFaultDelay

Configures the fault delay for a single FC port.

Synopsis

```
portcfgfaultdelay [<slot>/]<port> {0 | 1}
portcfgfaultdelay --help
```

Description

Use this command to configure the fault delay of an FC port.

In the event that the link is noisy after a host power cycle, the switch may go into a soft fault state, which means a delay of R_A_TOV. Setting the mode value to 1 reduces the fault delay value to 1.2 seconds. The configuration is stored in nonvolatile memory and is persistent across switch reboots and power cycles.

Use the **portCfgShow** command to display the user-configured fault delay settings.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

This command is applicable only to Fibre Channel ports.

Operands

This command has the following operands:

[<*slot*>/] For bladed systems only, specifies the slot number of the port to be configured, followed by a slash (/).

<port> Specifies the number of the port to be configured, relative to its slot for bladed systems. Use **switchShow** for a listing of valid ports.

{0 | 1} Specifies the fault delay value for the port number. This operand is required. Valid values are one of the following:

- **0** Sets the fault delay to R_A_TOV (default).
- **1** Sets the fault delay to 1.2 seconds.

---help Displays the command usage.

Examples

To set the fault delay of a port to 1.2 seconds:

```
switch:admin> portcfgfaultdelay 2/3 1
```

To display the configuration

```
switch:admin> portcfgshow 2/3

Area Number:              21
Octet Speed Combo:        1(16G|8G|4G|2G)
Speed Level:              AUTO(SW)
AL_PA Offset 13:          OFF
Trunk Port                ON
```

```
Long Distance             OFF
VC Link Init              OFF
Locked L_Port             OFF
Locked G_Port             OFF
Disabled E_Port           OFF
Locked E_Port             OFF
ISL R_RDY Mode            OFF
RSCN Suppressed           OFF
Persistent Disable        OFF
LOS TOV enable            OFF
NPIV capability           ON
QOS E_Port                AE
Port Auto Disable:        OFF
Rate Limit                OFF
EX Port                   OFF
Mirror Port               OFF
Credit Recovery           ON
F_Port Buffers            OFF
Fault Delay:              1(1.2sec)
NPIV PP Limit:            126
CSCTL mode:               OFF
D-Port mode:              OFF
Compression:              OFF
Encryption:               OFF
FEC:                      Active

switch:admin> portcfgshow

Ports of Slot 2  0  1  2  3   4  5  6  7   8  9 10 11  12 13 14 15
---------------+--+--+--+--+---+--+--+--+---+--+--+--+---+--+--+--
Speed           AN AN AN AN  AN AN AN AN  AN AN AN AN  AN AN AN AN
AL_PA Offset 13 .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Trunk Port      ON ON ON ON  ON ON ON ON  ON ON ON ON  ON ON ON ON
Long Distance   .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
VC Link Init    .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Locked L_Port   .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Locked G_Port   .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Disabled E_Port .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
ISL R_RDY Mode  .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
RSCN Suppressed .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Persistent Disable .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
LOS TOV enable  .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
NPIV capability ON ON ON ON  ON ON ON ON  ON ON ON ON  ON ON ON ON
QOS E_Port      AE AE AE AE  AE AE AE AE  AE AE AE AE  .. .. .. ..
EX Port         .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Mirror Port     .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Rate Limit      .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Credit Recovery ON ON ON ON  ON ON ON ON  ON ON ON ON  ON ON ON ON
Fport Buffers   .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Port Auto Disable. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
CSCTL mode      .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
D-Port mode     .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Compression     .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
```

```
Encryption      .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
FEC             .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Fault Delay      0  0  0  1   0  0  0  0   0  0  0  0   0  0  0  0
         where AE:QoSAutoEnable, AN:AutoNegotiate, ..:OFF,
         -:NotApplicable, ??:INVALID
(output truncated)
```

See Also

portCfgShow

portCfgFec

Enables or disables Forward Error Correction (FEC) or FEC through Transmitter Training Signal (TTS) on 16G and 10G Fibre Channel links. FEC is utilized by default on 32G FC links, which are not affected by these port configurations. Also enables the RS FEC (RS-528) for 25G ports for IPS switches alone.

Synopsis

```
   portcfgfec {--enable | --disable} [-FEC] [-TTS]
[-force | -f] [<slot>/]<port>[-<port>]
   portcfgfec --show [<slot>/]<port>[-<port>]
   portcfgfec --help
```

Description

Use this command to enable or disable Forward Error Correction (FEC) or Transmitter Training Signal (TTS) on a specified port or on a range of ports, or to display the configuration.

FEC provides a mechanism for reducing error rates during data transmissions over 16G Fibre Channel links. When FEC is enabled on a port, the sender adds systematically generated error-correcting code (ECC) to its data transmission. This mechanism allows the receiver to detect and correct errors without needing to get additional information from the sender.

If the TTS mode is enabled, the port negotiates FEC through TTS. TTS and 64B/66B are mutually exclusive. At fixed speed, TTS is not compatible with 64B/66B at the peer port and the final port state will be "No_Sync". In auto negotiation, the local port will try the TTS encoding; if the other end is not compatible, then the local port will try the 8B/10B encoding and the port will settle in "N8" port speed if the peer port also supports 8B/10B encoding. Thus, the TTS mode should only be enabled if a similarly TTS-capable and enabled device is connected to the port.

The implementation of FEC is supported on 16G platforms and enables the switch to recover bit errors in 16G and 10G data streams. The FEC encoding can correct one burst of up to 11 error bits in every 2,112-bit transmission. The error correction covers both frames and primitives. There is no loss of bandwidth or added transmission data rate overhead to the 16Gb/s FC link.

By default, FEC without TTS is enabled switch-wide on all 16G platforms but FEC via TTS is not enabled. If FEC is already enabled on the ports, enabling FEC has no effect. If a range of ports is specified, some of which are already in the requested configuration, a notification is generated, and no action is taken for those ports only. All other ports in the specified range are updated. Enabling or disabling FEC is disruptive to traffic. The command prompts for confirmation to continue with enabling or disabling TTS or FEC via TTS for the online ports. You can override the prompt for confirmation with the **-force** option.

When used with the **--show** option, the command displays the following information for the specified ports:

Port	The port index number
FEC Capable	Displays YES if the port supports FEC. Displays NO if the port does not support FEC.
FEC Configured	Displays ON if FEC is enabled on the port (default). Displays OFF if the feature is disabled.

FEC via TTS Configured	Displays OFF if TTS is disabled on the port (default). Displays ON if the FEC negotiation via TTS feature is enabled.
FEC State	The FEC state can be active or inactive. An active FEC state indicates that FEC is enabled and actually running. An inactive state can indicate two conditions: FEC is enabled, but not running due to some error condition (for example, FEC may not be enabled on both ends of the link). Or FEC is disabled and therefore inactive.

Use the **portCfgShow** command to display the FEC configuration along with other port parameters. Use the **isIShow** command to view interswitch link-level FEC configurations. Use the **portErrshow** and **portStatShow** commands to monitor data transmission errors. You should see a significant reduction in CRC errors on FEC-enabled links.

Note that FEC is negotiated at ELP while FEC TTS is negotiated during speed negotiation.

Except for transparent DWDM, FEC is not supported over Dense Wavelength Division Multiplexing (DWDM) because non-transparent DWDM recognizes FC protocol and only transmits the frames. FEC is in unused signaling bits which are not replicated by non-transparent DWDM. ISL links that are extended across DWDM therefore should have FEC disabled.

Notes

FEC is compatible with QoS and Credit Recovery.

FEC is not supported on D_Ports configured with Dense Wavelength Division Multiplexing (DWDM).

In Fabric OS v7.4.2x and later, the TTS mode is supported only for F_Ports. If a port initializes as an E_Port, it is disabled with a warning message and its peer port will be in "No_Light". status.

The TTS mode is not supported for ICL ports, EX_Ports, D_Ports, SIM ports, Mirror ports, Software ASN, fixed 1G, fixed 2G, fixed 4G, or fixed 8G ports.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

<slot>	On bladed systems only, specifies the slot number of the ports to be configured, followed by a slash (/).
***<port>*[-*<port>*]**	Specifies a port or a port range, relative to the slot number on bladed systems, for example, 5/17-29. Multiple port ranges are not supported with this command.
--enable [-FEC] [-TTS]	Enables FEC, FEC through TTS or both on the specified ports. Use the **-FEC** option to enable FEC only, use the **-TTS** option to enable TTS only, or use both **-FEC** and **-TTS** options together to enable FEC through TTS. Enables the RS FEC (RS-528) for 25GE ports in an IP Storage device.
--disable [-FEC] [-TTS]	Disables FEC, FEC through TTS on the specified ports.Use the **-FEC** option to disable FEC only, use the **-TTS** option to disable TTS only, or use both **-FEC** and **-TTS** options together to disable FEC through TTS. Disables the RS FEC (RS-528) for 25GE ports in an IP Storage device.
-force | -f	Enables or disables FEC or FEC through TTS without prompting for a confirmation.
--show	Displays the FEC and TTS configurations on the specified ports.
--help	Displays the command usage.

Examples

To enable FEC on a single port and to display the configuration:

```
switch:admin> portcfgfec --enable -FEC 5/28
FEC has been enabled.
switch:admin> portcfgfec --show 5/28
Port: 412
```

```
FEC Capable: YES
10G/16G FEC Configured: ON
16G FEC via TTS Configured: OFF
FEC State: Active
```

To enable FEC on a single port and to display the configuration on an IP Storage device:

```
switch:admin> portcfgfec --enable 37
FEC has been enabled.
2023/11/14-09:34:37 (GMT), [USL-1001], 15, FID 2 | PORT 0/37, INFO, switch_2,  Interface 37 is online.
```

To enable FEC on a port:

```
switch:admin> portcfgfec --enable -FEC 18
FEC has been enabled.
```

To enable FEC on a port range:

```
switch:admin> portcfgfec --enable -FEC 0-8
FEC has been enabled.
FEC has been enabled.
FEC has been enabled.
FEC has been enabled.
FEC has been enabled.
FEC has been enabled.
FEC has been enabled.
FEC has been enabled.
FEC has been enabled.
```

To enable the FEC feature on a range of ports, some of which were previously enabled (the following example enables port 4):

```
switch:admin> portcfgfec --enable -FEC 2-4
Same configuration for port 2
Same configuration for port 3
Same configuration for port 4
```

To enable FEC on an IP Storage device:

```
switch:admin> portcfgfec --enable 37
FEC has been enabled.
2023/11/14-09:34:37 (GMT), [USL-1001], 15, FID 2 | PORT 0/37, INFO, switch_2,  Interface 37 is online.
```

To disable the FEC feature on a port range:

```
switch:admin> portcfgfec --disable -FEC 0-8
FEC has been disabled for the port at 10G/16G speeds. FEC is required and will always be active for speeds
 greater than 16G.
FEC has been disabled for the port at 10G/16G speeds. FEC is required and will always be active for speeds
 greater than 16G.
FEC has been disabled for the port at 10G/16G speeds. FEC is required and will always be active for speeds
 greater than 16G.
FEC has been disabled for the port at 10G/16G speeds. FEC is required and will always be active for speeds
 greater than 16G.
FEC has been disabled for the port at 10G/16G speeds. FEC is required and will always be active for speeds
 greater than 16G.
FEC has been disabled for the port at 10G/16G speeds. FEC is required and will always be active for speeds
 greater than 16G.
```

```
FEC has been disabled for the port at 10G/16G speeds. FEC is required and will always be active for speeds
 greater than 16G.
FEC has been disabled for the port at 10G/16G speeds. FEC is required and will always be active for speeds
 greater than 16G.
FEC has been disabled for the port at 10G/16G speeds. FEC is required and will always be active for speeds
 greater than 16G.
```

To disable the FEC feature on a port in an IP Storage device:

```
switch:admin> portcfgfec --disable 37
FEC has been disabled for the port at 10G/16G/25GE speeds.
   FEC is required and will always be active on FC ports for speeds greater than 16G.
2023/11/14-09:34:24 (GMT), [USL-1003], 14, FID 2 | PORT 0/37, INFO, switch_2,  Interface 37 is link down.
```

To enable TTS on a port:

```
switch:admin> portcfgfec --enable -TTS 7
WARNING: 16G FEC with TTS is only supported on F-Ports. \
        Other port types will be disabled.
FEC changes are disruptive. Are you sure you want to continue?
(yes, y, no, n): [no]: y
TTS has been enabled.
```

To display the TTS on a port:

```
switch:admin> portcfgfec --show 7
Port: 7
FEC Capable: YES
10G/16G FEC Configured: ON
16G FEC via TTS Configured: ON
FEC State: Active
```

To disable TTS on a port:

```
switch:admin> portcfgfec --disable -TTS 1
FEC changes are disruptive. Are you sure you want to continue?
(yes, y, no, n): [no]: y
TTS has been disabled.
```

To enable both FEC and TTS on a port:

```
switch:admin>  portcfgfec --enable -FEC -TTS 2
WARNING: 16G FEC with TTS is only supported on F-Ports. \
        Other port types will be disabled.
FEC changes are disruptive. Are you sure you want to continue?
(yes, y, no, n): [no]: y
FEC & TTS have been enabled for port 2.
```

To disable both FEC and TTS on a port:

```
switch:admin> portcfgfec --disable -FEC -TTS 2
FEC changes are disruptive. Are you sure you want to continue?
(yes, y, no, n): [no]: y
FEC & TTS have been disabled for port 2.
```

To enable TTS on a port range using the force option:

```
switch:admin> portcfgfec --enable -TTS -f 1-5
WARNING: 16G FEC with TTS is only supported on F-Ports. Other port types will be disabled.
Same configuration for port 1
Same configuration for port 2
Same configuration for port 3
Same configuration for port 4
Same configuration for port 5
```

To enable TTS feature on a range of ports, which were previously enabled using the force option:

```
switch:admin> portcfgfec --enable -TTS -f 16-17
WARNING: 16G FEC with TTS is only supported on F-Ports. Other port types will be disabled.
FEC changes are disruptive. Are you sure you want to continue?
(yes, y, no, n): [no]: y
Same configuration for port 16
FEC changes are disruptive. Are you sure you want to continue?
(yes, y, no, n): [no]: y
Same configuration for port 17
```

To enable FEC and TTS feature when FEC is previously enabled:

```
switch:admin> portcfgfec --enable -FEC -TTS 1
WARNING: 16G FEC with TTS is only supported on F-Ports. \
        Other port types will be disabled.
FEC changes are disruptive. Are you sure you want to continue?
(yes, y, no, n): [no]: y
Same FEC configuration; and TTS has been enabled for port 1.
```

To enable FEC and TTS feature when TTS is previously enabled:

```
switch:admin> portcfgfec --enable -FEC -TTS 1
WARNING: 16G FEC with TTS is only supported on F-Ports. \
        Other port types will be disabled.
FEC changes are disruptive. Are you sure you want to continue?
(yes, y, no, n): [no]: y
Same TTS configuration; and FEC has been enabled for port 1.
```

To disable FEC and TTS feature when FEC is previously disabled and TTS is enabled:

```
switch:admin> portcfgfec --disable -FEC -TTS 1
FEC changes are disruptive. Are you sure you want to continue?
(yes, y, no, n): [no]: y
Same FEC configuration; and TTS has been disabled for port 1.
```

To disable FEC and TTS feature when TTS is previously disabled and FEC is enabled:

```
switch:admin> portcfgfec --disable -FEC -TTS 1
FEC changes are disruptive. Are you sure you want to continue?
(yes, y, no, n): [no]: y
Same TTS configuration; and FEC has been disabled for port 1.
```

To display the FEC and TTS configuration on range of ports:

```
switch:admin> portcfgfec --show 7-10
```

```
Port: 7
FEC Capable: YES
10G/16G FEC Configured: ON
16G FEC via TTS Configured: ON
FEC State: Active

Port: 8
FEC Capable: YES
10G/16G FEC Configured: OFF
16G FEC via TTS Configured: OFF
FEC State: Inactive

Port: 9
FEC Capable: YES
10G/16G FEC Configured: ON
16G FEC via TTS Configured: OFF
FEC State: Inactive

Port: 10
FEC Capable: YES
10G/16G FEC Configured: ON
16G FEC via TTS Configured: OFF
FEC State: Inactive
```

See Also

islShow, portCfgShow, portErrShow, portStatsShow

portCfgFlexPort

Modifies port type to either Ethernet or Fiber Channel or vice-versa. All ports from same quad must be disabled before executing this command and it will change the port type of all the ports in the quad.

Synopsis

```
portcfgflexport --proto {fc | eth} [<slot>/]<port>[-<port>]
portcfgflexport --quadshow [[<slot>/]<port>]
```

Description

Use this command to modify the port type either to Ethernet or Fiber Channel.

This command is supported on all platforms, but FC to ETH configuration is allowed only for flexport capable ports which are supported only in Brocade FC32-64, and FC64-48 Port Blades.

By default, Brocade FC32-64 Port Blade will be in FC mode. User can use the **portcfgflexport** command to convert the port into Ethernet port.

In Brocade FC32-64, user must disable all the ports in the quad to convert the MAC type. Use **--quadshow** option to display the four ports that belong to the quad.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--proto Defines the MAC type for the port and the valid operators include the following:

fc	Converts port into Fiber Channel.
eth	Converts port into Ethernet.
<port>	Specifies the port number or port range.
[*<slot>*/]	Specify the slot number on chassis based switches.

--quadshow Displays the four ports that belong to the quad in FC32-64 and for FC64-48 displays the ports that can be converted to Ethernet.

Examples

To define the MAC type:

```
switch:admin> portcfgflexport --proto eth 4/0
Error: Ports 4/0,4/1,4/2,4/3 in the QUAD are not yet disabled

switch:admin> portdisable 4/0-3

switch:admin> portcfgflexport --proto eth 4/0
Success: Port(s) 4/0,4/1,4/2,4/3 are configured as port type ETH

switch:admin> portcfgflexport --proto fc 4/0
Success: Port(s) 4/0,4/1,4/2,4/3 are configured as port type FC

switch:admin> portcfgflexport --proto fc 4/0-7
switch:admin> portcfgflexport --proto eth 4/0-7
```

To display the ports belong to the quad:

```
switch:admin> portcfgflexport --quadshow 4/4

UPort  slot  Port  Protocol   QuadNum
=====================================
100    4     4        ETH            4
102    4     6        ETH            4
103    4     7        ETH            4
101    4     5        ETH            4
```

See Also

portEnable, portDisable, switchShow

portCfgFlogiLogout

Enables the Base Device Logout functionality on the port.

Synopsis

portcfgflogilogout {**--enable** | **--disable**} {[*<slot>*/]*<port>* | **-all**}
portcfgflogilogout --help

Description

Use this command to enable or disable Base Device Logout functionality on a specified port or port range. By default, the functionality is disabled on all the ports.

This functionality allows NPIV devices to remain logged in even after the base device logs out.

A base device is a device on a F_Port which has the base PID. The base device logs in with a FLOGI.

The execution of this command is disruptive. The online ports will toggle with this command but prompts for user confirmation if any port is online.

You cannot configure the Base Device Logout functionality if the standby device is running on a lower version of the firmware.

The feature is not supported on ICL ports. You cannot enable this feature on the ports that do not support NPIV capability or if NPIV is disabled by configuration.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

[*slot*/]*port* | [-all]	Specifies a port number. You can specify a port or range of ports. You can use **-all** to include all ports on the logical switch.
--enable	Enables Base Device Logout functionality on the specified port.
--disable	Disables Base Device Logout functionality on the specified port.
--help	Displays the command usage.

Examples

To enable Base Device Logout functionality on a port:

```
switch:admin> portcfgflogilogout --enable 2/1
```

To disable Base Device Logout functionality on a port:

```
switch:admin> portcfgflogilogout --disable 2/1
```

See Also

portCfgNPIVPort

portCfgFportBuffers

Configures F_Port buffer allocation.

Synopsis

```
portcfgfportbuffers --enable [<slot>/]<port> <buffers>
portcfgfportbuffers --disable [<slot>/]<port>
```

Description

Use this command to change the default buffer allocation for an F_Port and to allocate a specified number of buffers to the port. When port buffer allocation is enabled, the number of buffers specified override the default F_Port buffer allocation. When the configuration is disabled, the default buffer allocation is restored. Only an F_Port can utilize the buffers allocated by this command, and the allocated buffers are reserved only for this port.

The F_Port buffer configuration is persistent across system reboots.

Use the **portBufferShow** command to determine current port buffer allocations.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

The F_Port buffer feature does not support ports configured as EX_Ports, Mirror Ports, Long Distance Ports, L_Ports, QoS Ports, Fast Write, and Trunk Areas.

The Fabric OS port configuration commands are not supported on FCoE ports.

Operands

This command has the following operands:

--enable Enables the F_Port buffer configuration on a specified port. A port and buffer allocation must be specified with this option.

- ***<slot>/*** Specifies the slot number on bladed systems, followed by a slash (/).
- ***<port>*** Specifies the port number.
- ***<buffers>*** Specifies the number of buffers to be allocated to the specified port. The specified buffer allocation takes effect when the F_Port comes online. This operand is required with the **--enable** option. The minimum buffer allocation is the default number of buffers plus 1. The maximum is determined by the remaining buffer allocations in the port's port group. Use **portBufferShow** to determine the number of remaining free buffers.

--disable Disables the F_Port buffer configuration on a specified port.

Examples

To allocate 12 buffers to an F_Port:

```
switch:admin> portcfgfportbuffers --enable 2/44 12
```

To disable the port buffer configuration and return to the default buffer allocation:

```
switch:admin> portcfgfportbuffers --disable 2/44 12
```

See Also

portBufferShow

portCfgGE

Manages the port configuration of the Ethernet ports.

Synopsis

```
portcfgge  [<slot>/]<port> --set -speed <speed>
portcfgge  [<slot>/]<port> --set -channel <channel_num>
portcfgge  [<slot>/]<port> --set -lan
portcfgge  [<slot>/]<port> --set -wan
portcfgge  [<slot>/]<port> --set -fec <fec>
portcfgge  [<slot>/]<port> --enable -autoneg
portcfgge  [<slot>/]<port> --disable -autoneg
portcfgge  [<slot>/]<port> --show [-lmac]
portcfgge --help
```

Description

Use this command to manage the port configuration of the Ethernet ports. This command switches the port speed between 1G, 10G, 25G, or 100G or switch the auto-negotiate mode. The auto-negotiate option allows to control auto-negotiate on the PHY for 1G mode.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

<slot>	For bladed systems only, specifies the slot number of the port to be configured, followed by a slash (/).
<port>	Specifies the number of the GbE port to be configured. On the Brocade SX6 extension blade, 40 GbE ports are numbered ge0 - ge1 and 1G/10GbE ports are numbered ge2 - ge17. On the Brocade 7810, the 1GbE RJ-45 ports are numbered ge0 and ge1, and 1GbE/10GbE SFP ports are numbered ge2 - ge7. On the Brocade 7850 extension switch, GbE ports ge0 - ge15 are SFP ports that can operate at 1G/10G/25G speeds and ge16-ge17 are QSFP ports that can operate at 100G speed. Use the **switchShow** command for a list of valid ports.
--set	Configures the GE ports.
-speed <*speed*>	Configures the port speed for the GE ports. The valid speeds are 1G, 10G, 25G, or 100G.
-channel <*channel_num*>	Configures the tunable small form-factor pluggable (TSFP) channel ID for the 10 GE ports. The valid channel ID range is 1 through 102. This option is supported only on the Extension switches or Extension blades.
-lan	Configures a GE port as a LAN port. This option is supported only on the Extension switches or Extension blades.
-wan	Configures a GE port as a WAN port. This option is supported only on the Extension switches or Extension blades.
-fec <*fec*>	Sets the port Forward Error Correction (FEC) clause. The supported values are Off, CL108, or CL91 (depending on the port speed).
--enable -autoneg	Enables the auto negotiation mode for the GE port.
--disable -autoneg	Disables the auto negotiation mode for the GE port.
--show	Displays the current GE port configurations.
-lmac	Displays the local MAC address. This operand is optional.
--help	Displays the command usage.

Examples

To display the current GE port configurations:

```
switch:admin> portcfgge --show
Port          Speed     Flags     Channel  FEC   Lag Name
-------------------------------------------------------------
 ge0          10G       ----      N/A      Off   -
 ge1          10G       ----      N/A      Off   -
 ge2          10G       ----      N/A      Off   -
 ge3          10G       ----      N/A      Off   -
 ge4          10G       ----      N/A      Off   -
 ge5          10G       ----      N/A      Off   -
 ge6          10G       ----      N/A      Off   -
 ge7          10G       ----      N/A      Off   -
 ge8          25G       ----      N/A      Off   -
 ge9          10G       ----      N/A      Off   -
 ge10         10G       --LG      N/A      Off   temp4
 ge11         25G       ----      N/A      CL108 -
 ge12         10G       --L-      N/A      Off   -
 ge13         25G       --L-      N/A      CL108 -
 ge14         10G       --LG      N/A      Off   temp4
 ge15         10G       --L-      N/A      Off   -
 ge16         100G      ----      N/A      CL91  -
 ge17         100G      ----      N/A      CL91  -
```

To configure the port speed to 1G for ge8 and verify the configuration:

```
switch:admin> portcfgge ge8 --set -speed 1G
switch:admin> portcfgge --show
 Port         Speed     Flags     LAG-ID
-----------------------------------------
 ge0          40G       A----     -
 ge1          40G       A----     -
 ge2          10G       A-LG-     lag0
 ge3          10G       A-LG-     lag0
 ge4          10G       A----     -
 ge5          10G       A----     -
 ge6          10G       A----     -
 ge7          1G        --LG-     edgeSw1
 ge8          1G        A----     -
 ge9          10G       A----     -
 ge10         10G       A----     -
 ge11         10G       A----     -
 ge12         10G       A----     -
 ge13         10G       A----     -
 ge14         10G       A----     -
 ge15         10G       A----     -
 ge16         10G       A----     -
 ge17         10G       A----     -
-----------------------------------------
```

To configure a GE port for LAN operation and verify the configuration:

```
switch:admin> portcfgge ge10 --set -lan
```

```
Operation Succeeded.
switch:admin> portcfgge --show

 Port         Speed     Flags     LAG-ID
----------------------------------------
 ge0          40G       A----     -
 ge1          40G       A----     -
 ge2          10G       A-LG-     lag0
 ge3          10G       A-LG-     lag0
 ge4          10G       A----     -
 ge5          10G       A----     -
 ge6          10G       A----     -
 ge7          1G        --LG-     edgeSw1
 ge8          10G       A----     -
 ge9          10G       A----     -
 ge10         10G       A-L--     -
 ge11         10G       A----     -
 ge12         10G       A----     -
 ge13         10G       A----     -
 ge14         10G       A----     -
 ge15         10G       A----     -
 ge16         10G       A----     -
 ge17         10G       A----     -
----------------------------------------
 Flags: A:Auto-Negotiation Enabled  C:Copper Media Type
        L:LAN Port  G=LAG Member
----------------------------------------
```

See Also

portCfg, portCfgDefault, portShow

portCfgISLMode

Enables or disables ISL R_RDY mode on a port.

Synopsis

portcfgislmode [<*slot*>/]<*port*> {**0** | **1**}

Description

Use this command to enable or disable interswitch link read-ready (ISL R_RDY) mode on a port. Use the **portCfgShow** command to determine whether ISL R_RDY mode is enabled on a port.

In ISL R_RDY mode, the port sends a primitive signal that the port is ready to receive frames. The port sends an exchange link parameter (ELP) with flow control mode 02. If a port is ISL R_RDY enabled, it can only receive an ELP with flow control mode 02. A received ELP with flow control mode 01 will segment the fabric.

This mode cannot detect any inconsistencies in fabric operating mode parameters, such as the PID format of connected ports. Before enabling ISL R_RDY mode, ensure that all fabric-wide parameters are consistent for every switch in the fabric.

Use **configShow fabric.ops** to view a complete listing of fabric operating mode parameters on the switch.

The following E_Port configurations are not applicable to a port configured for ISL R_RDY mode. If configured, these port configuration parameters are ignored during E_Port initialization:

- Trunk port
- VC link init

The **portCfgISLMode** level LE, LD, or LS only can be enabled at the same time. Such an ISL uses R_RDY mode of flow control over the long distance link. This feature is not backward compatible with firmware versions that do not support it.

Notes

Changes made by **portCfgISLMode** are persistent across switch reboots and power cycles.

This configuration can be cleared but not set on VE_Ports.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

The Fabric OS port configuration commands are not supported on FCoE ports.

Operands

This command has the following operands:

[<*slot*>/]	For bladed systems only, specify the slot number of the port to display, followed by a slash (/).
<port>	Specify the port to display, relative to its slot for bladed systems. Use **switchShow** to list valid ports.
{0 | 1}	Specify 1 to enable ISL R_RDY mode. Specify 0 to disable ISL R_RDY mode.

Examples

To enable ISL R_RDY mode on a port:

```
switch:admin> portcfgislmode 1/3, 1
ISL R_RDY Mode is enabled for port 3. Please make sure
the PID formats are consistent across the entire fabric.
```

To disable ISL R_RDY mode on a port:

```
switch:admin> portcfgislmode 1/3, 0
```

See Also

configure, portCfgShow

portCfgLld

Enables or disables link latency determination (LLD) configuration for the port in Brocade Gen 7 platforms.

Synopsis

```
portcfglld {--enable | --disable | --show}
     [<slot>/]<port>
 portcfglld --help
```

Description

This command is used to enable or disable the link latency determination configuration and it is enabled by default.

Notes

This command is subject to Virtual Fabric restrictions that may be in place.

From Fabric OS v9.2.2, E_Port alone is supported on the Brocade Gen 6 Platform; whereas the Brocade Gen 7 Platform supports both E_Port and F_Port. N_Port is supported on an AG switch of the Brocade Gen7 platform. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--enable	Enables the link latency determination configuration.
--disable	Disables the link latency determination configuration.
--show	Displays the link latency determination configuration for the port.
[<*slot*>/]<*port*>	Specifies the port or slot/port.
--help	Displays the command usage.

Examples

To enable and disable LLD configuration in a port:

```
switch:admin>  portcfglld --enable 49
LLD configuration changes are disruptive. Are you sure you want to continue?
(yes, y, no, n): [no]: y
LLD configuration is enabled.

switch:admin>  portcfglld --disable 49
LLD configuration changes are disruptive. Are you sure you want to continue?
(yes, y, no, n): [no]: y
LLD configuration is disabled.
```

To display LLD configuration:

```
switch:admin> portcfglld --show 8
LLD configuration is enabled.
```

See Also

portCfgShow, sfpShow

portCfgLongDistance

Configures a port to support long distance links.

Synopsis

```
portcfglongdistance [<slot>/]<port> [<distance_level>
     [<vc_translation_link_init>
     [[-distance <distance> [-framesize <frame_size>] | -buffers
     <buffers>] [-fecenable | -fecdisable]]]
```

Description

Use this command to allocate frame buffer credits to a port or to configure a specified long distance link. The port can only be used as an E_Port. Changes made by this command are persistent across switch reboots and power cycles. This configuration can be cleared but not set on VE_Ports.

The long distance configuration allows native FC ports to run WAN/LAN connections. It ensures that the full bandwidth of a link or trunk can be utilized for a particular long distance configuration. The receiving port must have sufficient buffers available, so that the transmitting port can saturate the link with enough frames to fill the entire length of the link. As the distance between switches and the link speed increases, additional buffer-to-buffer credits are required to maintain maximum performance. If a port is configured as a long distance port, the remaining ports of that port group could be disabled, fail to initialize, or move to "buffer limited" mode due to a lack of frame buffer credits.

The number of credits reserved for a port depends on the switch model and on the extended fabric mode for which it is configured. Not all distance modes are supported by all platforms. Refer to the *Brocade Fabric OS Administration Guide* for details on platform-specific buffer credit models, long distance mode support, and maximum distance supported for specific hardware configurations.

When the **portcfglongdistance** command is used to configure long distance ports with optimal buffers, use the **portbuffercalc** command to calculate the required buffers for the specified speed and distance. Use this calculated value for the **-buffers** value.

Notes

This command requires an Extended Fabrics license.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

A long-distance link can also be configured to be part of a trunk group. Refer to **portCfgTrunkPort** help for details.

When a port is configured as a long-distance port, the output of **portShow** and **switchShow** displays the long-distance level. Refer to **portShow** help and **switchShow** help for details.

The **portCfgISLMode** and **portCfgLongDistance** LE, LD, or LS levels can be enabled at the same time. Such an ISL uses the R_RDY mode of flow control over the long distance link. While using R_RDY mode flow control, an E_Port cannot form trunk groups of long-distance links even if the trunking is enabled. This feature is not backward compatible with firmware versions that do not support it.

Ctrl-D cancels the configuration update.

The Fabric OS port configuration commands are not supported on FCoE ports.

Operands

This command has the following operands:

<slot> Specifies the slot number (for bladed systems only), followed by a slash (/).

<port> Specifies the number of the port to be configured relative to its slot for bladed systems. Use **switchShow** to display a list of valid ports. This operand is required.

<distance_level> Specifies the long distance level as one of the following (the numerical value representing each *distance_level* is shown in parentheses):

- **L0 (0)** Specifies L0 to configure the port as a regular port. A total of 20 full-size frame buffers are reserved for data traffic, regardless of the port's operating speed; therefore, the maximum supported link distance is up to 5 km at 2G, up to 2 km at 4G and up to 1 km at 8, 10, and 16G.
- **LE (3)** Specifies LE mode to configure an E_Ports distance greater than 5 km and up to 10 km. A total of 5, 10, 20, 40, 50, 80, and 160 full-size frame buffers are reserved

for data traffic at port speeds of 1, 2, 4, 8, 10, 16, and 32G. LE does not require an Extended Fabrics license. If a port in LE mode is set to autonegotiation, it will reserve the buffers for the highest support speed on that port. If this is not the desired buffer allocation, you should set the port to a fixed speed.

LD (5) Specifies LD for automatic long-distance configuration. The buffer credits for the given E_Port are automatically configured based on the actual link distance. Up to a total of 1452 full-size frame buffers are reserved depending on the distance measured during E_Port initialization. The *desired_distance* is used as the upper limit to the measured distance. When the *desired_distance* is less than the measured distance, the port will come up in "Buffer Limited" mode and the port takes the buffers calculated from the desired distance. If a port in LD mode is set to autonegotiation, it will reserve the buffers for the highest support speed on that port. If this is not the desired buffer allocation, you should set the port to a fixed speed.

LS (6) Specifies LS mode to configure a static long distance link with a fixed buffer allocation greater than 10 km. Up to a total of 1452 full-size frame buffers are reserved for data traffic, depending on the specified *desired_distance* value. If a port in LS mode is set to autonegotiation, it will reserve the buffers for the highest support speed on that port. If this is not the desired buffer allocation, you should set the port to a fixed speed.

<*vc_translation_link_init*> Specifies the fill words used on long distance links. When set to 1, the link uses ARB fill words (default). When set to 0, the link uses IDLE fill words. The IDLE fill word option is not compatible with QoS configured links and Credit Recovery enabled links. You must disable these features before configuring long distance IDLE fill words.

-distance <*distance*> This parameter is required when a port is configured as an LD or an LS mode link. In LD mode, the value of desired_distance is the upper limit of the link distance and is used to calculate buffer availability for other ports in the same port group. When the measured distance exceeds the value of *distance*, this value is used to allocate the buffers. In this case, the port operates in degraded mode instead of being disabled due to insufficient buffers. In LS mode, the actual link distance is not measured, instead the *distance* is used to allocate the buffers required for the port.

-framesize <*frame_size*> Specifies the average frame size for LD and LS Mode.

-buffers <*buffers*> Specifies the desired buffer for LD and LS mode.

-fcenable Enables Forward Error Correction on 10G and 16G speed ports.

-fecdisable Disables Forward Error Correction on 10G and 16G speed ports.

FEC via TTS is always enabled on 32G speed ports.

Examples

To configure a switch port 118 to support a 100 km link and be initialized using the long distance link initialization protocol:

```
switch:admin> portcfglongdistance 12/6 LS 1 -distance 100
switch:admin> portshow 12/6
portIndex: 118
portName: slot12 port6
portHealth: No Fabric Watch License

Authentication: None
portDisableReason: None
portCFlags: 0x1
portFlags: 0x103  PRESENT ACTIVE E_PORT G_PORT U_PORT \
   SEGMENTED LOGIN
```

```
LocalSwcFlags: 0x0
portType:  24.0
portState: 1  Online
Protocol: FC
portPhys: 6  In_Sync   portScn: 64 Segmented Flow control \
   mode 0
port generation number: 14
state transition count: 12

portId:   017600
portIfId: 43c2001e
portWwn:  20:76:00:05:1e:e5:cb:00
portWwn of device(s) connected:

Distance:  static (desired distance = 100 Km)
portSpeed: N8Gbps

FEC: Inactive
Credit Recovery: Inactive
LE domain: 0
FC Fastwrite: OFF
Interrupts:   0     Link_failure: 0    Frjt: 0
Unknown:      0     Loss_of_sync: 0    Fbsy: 0
Lli:          70    Loss_of_sig:  0
Proc_rqrd:    205   Protocol_err: 0
Timed_out:    0     Invalid_word: 0
Tx_unavail:   0     Invalid_crc:  0
Delim_err:    0     Address_err:  0
Lr_in:        0     Ols_in:       0
Lr_out:       0     Ols_out:      0
```

To configure desired buffers:

Use **portbuffercalc** command to calculate buffers required for specified speed and distance.

```
switch:admin> portbuffercalc 3/2 -speed 8 -distance 10
```

This displays 46 buffers required for 10km at 8G and framesize of 2048 bytes.

```
switch:admin> portbuffercalc 3/2 -speed 16 -distance 10
```

This displays 86 buffers required for 10km at 16G and framesize of 2048 bytes.

Use this buffer calculation to configure the desired buffers by executing **portcfglongdistance** command as shown below:

```
switch:admin> portcfglongdistance 2/35 LS 1 -buffers 400
Reserved Buffers = 420
```

To configure average frame size:

```
switch:admin> portcfglongdistance 2/35 LS 1 -distance 100 -framesize 1024
```

See Also

configure, portCfgISLMode, portCfgTrunkPort, portCfgShow, portShow, switchShow, portBufferCalc

portCfgLossTov

Enables or disables de-bouncing of signal loss for front end ports.

Synopsis

```
portcfglosstov [<slot>/]<port> {{-disable|0}|{-enable_fixed|1} | {-enable_all|2}}
portcfglosstov [<slot>/]<port> {-dwdmlosyncon | -dwdmlosyncoff}
portcfglosstov -help
```

Description

Use this command to enable or disable the de-bouncing of loss of signal for 100 ms for front end ports. Use **portCfgShow** to display the current setting.

If executed without operands, the command prints the usage.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

On a chassis, this command must be executed on the active CP.

Operands

This command has the following operands:

<slot>/	For bladed systems only, specifies the slot number of the port to be configured, followed by a slash (/).
<port>	Specifies the port to be configured, relative to its slot for bladed systems. Use **switchShow** to list valid ports.
-disable | 0	Disables the configuration.
-enable_fixed | 1	Enables the configuration on fixed speed ports.
-enable_all | 2	Enables the configuration on autonegotiated and fixed speed ports.
-dwdmlosyncon | -dwdmlosyncoff	Enables or disables the configuration for DWDM lossSync fixed speed port.
-help	Displays the command usage.

Examples

To enable the configuration on fixed speed port 1/5 and to display the configuration:

```
switch:admin> portcfglosstov 1/5 1

switch:admin> portcfgshow 1/5
Area Number        5
Octet Speed Combo  2(10G|8G|4G)
Eth Speed Level    10G
FC Speed Level     AUTO(HW)
Trunk Port         ON
Long Distance      OFF
VC Link Init       OFF
Disabled E_Port    OFF
Locked E_Port      OFF
ISL R_RDY Mode     OFF
```

```
RSCN Suppressed    OFF
Persistent Disable OFF
LOS TOV mode       0(OFF)
NPIV capability    ON
QOS Port           AE
Port Auto Disable  OFF
EX Port            OFF
Mirror Port        OFF
SIM Port           OFF
Credit Recovery    ON
F_Port Buffers     OFF
E_Port Credits     OFF
Fault Delay        0(R_A_TOV)
(Output truncated)
```

To disable the configuration on port 1/5:

```
switch:admin> portcfglosstov 1/5 0
```

To enable the configuration for DWDM lossSync fixed speed port:

```
switch:admin> portcfglosstov 1 -dwdmlosyncon
Same configuration for port 1
```

See Also

portCfgShow

portCfgMsAcl

Controls and configures access to the Management Server Access Control List (MS ACL) in Fabric OS.

Synopsis

```
portcfgmsacl --configure <service> -access <access> [slot</]port1>[-<port2>]
portcfgmsacl --configure <service> -access <access> [slot</]port1>[,<slot>/<port2>]
portcfgmsacl --configure <service> -access <access> *
portcfgmsacl --help
```

Description

This command configures read and write access to all Management Services in Fabric OS on a specified port or range of ports. The command is nondisruptive.

The ACL is defined per port and per Management Service.

During firmware downgrade, if any ports are configured with nondefault access, the support to the MS ACL feature prints an error message as `The user will need to change the configuration back to the default access on all ports before being able to continue.`

All the port configuration is set to default when upgraded from unsupported firmware (read-write access is enabled for all ports).

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--configure Configures and controls access to the standard defined Management Services.

- ***<service>*** The service includes Application Server (**appsrvr**), Enhanced Fabric Configuration Server (**efcs**), Fabric Configuration Server (**fcs**), FDMI (**fdmi**), Fabric Zone Server (**zone**), and Unzoned Name Server (**unzn**).
- **-access <*access*>** The port configuration is read_write by default. The access includes no_access (**no**), read_only (**ro**), and read_write (**rw**). For unzoned name server (unzn), the default access is read_only. The allowed access includes no_access (**no**) and read_only (**ro**).
- ***<slot>/<port>* | *** Specifies a set of ports as a list, range, or wildcard. For example, "10/6" or "10/6,9" or "10/6-9" or "0" or "0,31" or "0-31" or "*".

--help Displays the command usage.

Examples

To configure with no access for the specified port:

```
switch:admin> portcfgmsacl --configure appsrvr
-access no_access 10
```

To configure with read-write access for the specified slot/ports:

```
switch:admin> portcfgmsacl --configure unzn
-access read_only 6/9,6/10
```

See Also

portCfgOctetSpeedCombo, portCfgShow, portCfgSpeed

portCfgNPIVPort

Enables or disables N_Port ID virtualization (NPIV) functionality on a port and sets the per-port login limit.

Synopsis

```
portcfgnpivport [<slot>/]<port> {0 | 1}
portcfgnpivport {--enable | --disable} [<slot>/]<port>
portcfgnpivport --setloginlimit {-all | [<slot>/]<port> | <port_range>} <login_limit>
portcfgnpivport --help
```

Description

Use this command to disable NPIV functionality on a port. Changes made by this command are persistent across switch reboots and power cycles.

N_Port ID Virtualization (NPIV) enables a single Fibre Channel protocol port to appear as multiple and distinct ports. It provides unique port identification for each device logging into the fabric via the NPIV port as if each device assigns its own physical port. The virtual port has the same properties as N_Port and is therefore capable of registering with all fabric services.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

When using **portCfgNPIVPort --disable** on trunked ports, you must disable all trunk member ports before changing the NPIV capability on a trunk member and then re-enable the trunked ports to ensure that the configuration changes take effect.

Use the **portCfgShow** command to determine whether NPIV is enabled on a port and to display the maximum logins configured for that port. Use the **portCfgDefault** command to reset all port configurations, including the NPIV configuration of a port.

This command can be executed in both native and AG switch mode.

Operands

This command has the following operands:

<slot>/	For bladed systems only, specifies the slot number of the port to be configured, followed by a slash (/).
<port>	Specifies the number of the port to be configured, relative to its slot for bladed systems. Use **switchShow** for a listing of valid ports.
{0 | 1}	Enables or disables NPIV on the specified port. Specify 1 to enable or 0 to disable the feature. The mode operand is a legacy command; it will be deprecated in a future Fabric OS release.
--enable	Enables NPIV on the specified port.
--disable	Disables NPIV on the specified port.
--setloginlimit	Sets the NPIV limit value for all the ports.
--help	Displays the command usage.

Examples

To display the current NPIV port configuration:

```
switch:admin> portcfgshow
Ports of Slot 0    0  1  2  3   4  5  6  7   8  9 10 11  12 13 14 15
-------------------+--+--+--+--+----+--+--+--+----+--+--+--+----+--+
Speed             AN AN AN AN  AN AN AN AN  AN AN AN AN  AN AN AN AN
AL_PA Offset 13   .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Trunk Port        ON ON ON ON  ON ON ON ON  ON ON ON ON  ON ON ON ON
Long Distance     .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
VC Link Init      .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Locked L_Port     .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Locked G_Port     .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Disabled E_Port   .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Locked E_Port     .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
ISL R_RDY Mode    .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
RSCN Suppressed   .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Persistent Disable.. .. ON ON  .. .. .. ..  .. .. .. ..  .. .. .. ..
LOS TOV enable    .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
NPIV capability   ON ON ON ON  ON ON ON ON  ON ON ON ON  ON ON ON ON
NPIV PP Limit     80 80 80 80  80 80 80 80  95 95 95 95  95 95 95 95
(output truncated)
```

To disable NPIV functionality on port 7 and to display the change:

```
switch:admin> portcfgnpivport --disable 7
```

```
switch:admin> portcfgshow 0/7
Area Number:              7
Speed Level:              AUTO(HW)
AL_PA Offset 13:          OFF
Trunk Port                ON
Long Distance             OFF
VC Link Init              OFF
Locked L_Port             OFF
Locked G_Port             OFF
Disabled E_Port           OFF
Locked E_Port             OFF
ISL R_RDY Mode            OFF
RSCN Suppressed           OFF
Persistent Disable        OFF
LOS TOV enable            OFF
NPIV capability           OFF
QOS E_Port                AE
Port Auto Disable:        OFF
Rate Limit                OFF
EX Port                   OFF
Mirror Port               OFF
Credit Recovery           ON
F_Port Buffers            12
Fault Delay:              0(R_A_TOV)
NPIV PP Limit:            126
CSCTL mode:               OFF
Frame Shooter Port        OFF
D-Port mode:              OFF
```

See Also

configure, portCfgDefault, portCfgShow

portCfgNPort

Enables or disables N_Port functionality for an Access Gateway port.

Synopsis

portcfgnport [[<*slot*>/]<*port*>[-<*port*>] <*mode*>]

Description

Use this command to enable or disable N_Port functionality for an Access Gateway port or for a range of ports. The enabled N_Ports automatically come online if they are connected to an enterprise fabric switch that supports NPIV. When used without operands, this command displays the port configuration.

Notes

NPIV capability must be enabled on the ports connected to the Access Gateway. By default, NPIV is enabled. Use **portcfgnpivport --enable** to enable NPIV capability on a port, if it was previously disabled.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following optional operands:

<slot>	Specifies the slot number, followed by a slash (/) on bladed systems.
***<port>*[-<port>]**	Specifies a single port or a range of ports to be configured as N_Ports, for example, 3-9, or 2/10-15.
<mode>	Enables (1) or disables (0) N_Port functionality on the specified ports. The default mode is 0 (disabled).

Examples

To enable N_Port functionality for a port:

```
switch:admin> portcfgnport 8 1
```

To enable N_Port functionality for a set of ports in a specific range:

```
switch:admin> portcfgnport 2-3 1
```

To display the N_Port configuration for all ports:

```
switch:admin> portcfgnport
Ports                 0  1  2  3  4  5  6  7  8  9 10   [...]
--------------------+--+--+--+--+--+--+--+--+--+--+--+- [...]
Locked N_Port        .. .. ON ON .. .. .. .. ON .. ..   [...]


switch:admin> portcfgshow
Ports of Slot 0    0  1  2  3   4  5  6  7   8  9 10 11  12 13 14 15
----------------+--+--+--+--+---+--+--+--+---+--+--+--+---+--+--+---
Speed             AN AN AN AN  AN AN AN AN  AN AN AN AN  AN AN AN AN
Trunk Port        ON ON ON ON  ON ON ON ON  ON ON ON ON  ON ON ON ON
Locked N_Port     .. .. ON ON .. .. .. ..  .. .. .. ..  .. .. .. ..
Persistent Disable.. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
(output truncated)
```

See Also

portCfgShow

portCfgOctetSpeedCombo

Sets port speed combination for a port octet.

Synopsis

```
portcfgoctetspeedcombo [<slot>/]<port> <combo>
portcfgoctetspeedcombo [<slot>/]<port> -default
```

Description

Use this command to configure the port speed octet. When you configure a given port, the combination applies to all ports in the octet. You can specify the octet by any port within the octet. To change the first octet, for example, you can specify any port from 0 through 7 as a port argument value. See **combo** option for the speed combinations.

The ports in the octet can run on any speed supported by its octet combination. This applies to both auto-negotiated and fixed speeds.

Before you change the octet speed combination, make sure that the following conditions are met:

- All fixed speed ports are configured at a speed supported by the new combination.
- All online ports in auto-negotiation mode have a negotiated speed supported by the new combination.
- If a port is running at a speed not supported in the new combo, you must disable the port or change the speed to a supported fixed speed before you can set the combo.

If any of the ports does not meet the conditions, the operation fails with an appropriate error message. You can change the port speed or disable the ports and retry the command.

The octet combination default is 1. Use the **portCfgOctetSpeedCombo** *port* **-default** command to reset the octet combination to its default value.

Notes

This command is not supported on the Brocade 7810, Brocade G610, and Brocade Gen 7 Platform switches. Use **portcfgspeed** command instead to configure 10G speed.

This command is supported on Ethernet ports.

The operation of the **portCfgOctetSpeedCombo** can be disruptive.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

<slot>/	On bladed systems only, specifies the slot number of the port to be configured, followed by a slash (/).
<port>	Sets the speed combination for the specified port and all other ports in the octet port group.
<combo>	Specifies the speed combination for the ports in the octet. The following speed combinations are supported: **1** Supports auto-negotiated or fixed port speeds of 64, 32, 16, 8, and 4G. **2** Supports auto-negotiated or fixed port speeds of 53, 32, 25, 10, 8, and 4G. **3** Supports auto-negotiated or fixed port speeds of 16 and 10G.
-default	Sets all octet combination values back to the default value of 1.

Examples

To reset the combination to default:

```
switch:admin> portcfgoctetspeedcombo 3 -default
```

To switch from combo 3 to combo 2 and there are online ports running at 16G speed.:

```
switch:admin> portcfgoctetspeedcombo 2 2
The following ports must be disabled or \
   speed configuration needs to be changed.
Please retry the operation after taking appropriate action.

Speeds supported for octet combo 2 -   [10G,8G,4G,2G,AN]

 Port Index  Speed
===================
  0           16*
  1          N16+
  2          N16+
```

```
  3          N16+
  4          N10+
  5          N16+
  6          N16+
  7          N16+

* Port speed configuration must be changed
+ Port must be disabled

Setting octet speed combo failed
```

See Also

portCfgSpeed, switchCfgSpeed

portCfgPersistence

Sets or removes the persistent disable flag on a port or a range of ports.

Synopsis

```
portcfgpersistence --set {-persistentenable | -pe | -persistentdisable | -pd}
{[<slot>/]<port> | <port_range>}
portcfgpersistence --set {-persistentenable | -pe | -persistentdisable | -pd} -i {<port_index> |
<port_index_range>} [-f]
portcfgpersistence --set {-persistentenable | -pe | -persistentdisable | -pd} -x {<port_index> |
<port_index_range>} [-f]
portcfgpersistence --set {-persistentenable | -pe | -persistentdisable | -pd}
{-slot | -s} {<slot> | <slot_range>}
portcfgpersistence -h
```

Description

Use this command to set or remove the persistent disable flag on a port or a range of ports.

You can identify a single port to be configured by its port number or by its port index number. Port ranges are supported with index numbers or by specifying a slot or a slot range. Use **switchShow** for a listing of valid ports, slots, and port index numbers.

This command only sets or removes the flag for persistent disabling of the port. The switch still runs power-on diagnostics and initializes a persistently disabled port. The **portEnable** and **switchEnable** commands do not enable a specific port or ports alone, but these commands succeed on a switch with one or more persistently disabled ports.

The persistent switch disable or enable configuration does not alter the persistent disable or enable configurations of the ports within the switch.

Because ports are by default persistently enabled, the persistently disabled state of a port is cleared by the **portCfgDefault** command.

Notes

This command is blocked if the persistent disable flag is set when the port is currently enabled.

This command is blocked if the switch is operating in the FICON Management Server mode (fmsmode); instead, use **portDisable** with Active=Saved mode enabled.

This command is not supported on FCoE ports.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

[<*slot*>/]	On bladed systems only, specifies the slot number of the ports to set the flag, followed by a slash (/).
<*port*> | <*port_range*>	Sets the flag for a single port or a range of ports identified by port numbers. The port range cannot span slots, but you can specify multiple port range pairs separated by a space, for example 3/1-4 4/7-9.
-f	Ignores nonexisting ports.
-i {<*port_index*> | <*port_index_range*>}	Sets the flag for a port or a range of ports identified by port index numbers. You can specify multiple index ranges separated by a space, for example, **-i** 33-38 40-60.
-x {<*port_index*> | <*port_index_range*>}	Sets the flag for a port or a range of ports identified by index number in hexadecimal format. You can specify multiple port ranges separated by a space, for example, -x 21-26 28-3c.
-slot {<*slot*> | <*slot_range*>}	Sets the flag on all ports on a slot or on a range of slots, for example, **-s** 3-5. You can specify multiple slot ranges separated by a space, for example, **-s** 3-5 8-10.
-h	Displays the command usage.

Examples

To set the persistentenable flag on a port:

```
switch:admin> portcfgpersistence --set -pe 2
```

To set the persistentdisable flag on a port:

```
switch:admin> portcfgpersistence --set -pd 0
```

See Also

portCfgDefault, portDisable, portEnable, portCfgPersistentDisable, portCfgPersistentEnable, portShow, switchShow

portCfgPersistentDisable

Persistently disables a port or a range of ports.

Synopsis

```
   portcfgpersistentdisable
   portcfgpersistentdisable {[<slot>/]<port> | <port_range>}
[-r <disable_reason_string>]
   portcfgpersistentdisable -i {<port_index> | <port_index_range>} [-f] [-r <disable_reason_string>]
   portcfgpersistentdisable -x {<port_index> | <port_index_range>} [-f] [-r <disable_reason_string>]
   portcfgpersistentdisable {-slot | -s} {<slot> | <slot_range>}
   portcfgpersistentdisable -h
```

Description

Use this command to persistently disable a port or a range of ports. Persistently disabled ports remain disabled across power cycles, switch reboots, and switch enables. By default, a port is enabled persistently, unless the port is capable of routing. The change in configuration is effective immediately.

You can identify a single port to be configured by its port number or by its port index number in decimal or hexadecimal format. Port ranges are supported with port numbers, index numbers (decimal or hexadecimal) or by specifying a slot or a slot range. Use **switchShow** for a listing of valid ports, slots, and port index numbers. When used without operands, this command displays all persistently disabled ports on the switch.

The persistent disable configuration overrides existing port configurations, but it does not change these configurations. Use the **portCfgPersistentEnable** command to enable a port persistently and to restore all previously set port configurations for that port. The switch still runs power-on diagnostics and initializes a persistently disabled port. The **portEnable** and**switchEnable** commands do not enable a specific port or ports alone, but these commands succeed on a switch with one or more persistently disabled ports. The **portEnable** command fails when issued on persistently disabled ports.

The persistent switch disable or enable configuration does not alter the persistent disable or enable configurations of the ports within the switch.

Because ports are by default persistently enabled, the persistently disabled state of a port is cleared by the **portCfgDefault** command.

Notes

This command is blocked if the switch is operating in the FICON Management Server mode (fmsmode); instead, use **portDisable** with Active=Saved mode enabled.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

This command is not supported on FCoE ports.

This command is supported on Ethernet ports.

Operands

This command has the following operands:

[<*slot*>/]	On bladed systems only, specifies the slot number of the ports to be disabled persistently, followed by a slash (/).
<*port*> | <*port_range*>	Persistently disables a single port or a range of ports identified by port numbers. The port range cannot span slots, but you can specify multiple port ranges pairs separated by a space, for example 3/1-4 4/7-9.
-i {<*port_index*> | <*port_index_range*>}	Persistently disables a port or a range of ports identified by port index numbers. You may specify multiple index ranges separated by a space, for example, **-i** 33-38 40-60.
-x {<*port_index*> | <*port_index_range*>}	Persistently disables a port or a range of ports identified by port index numbers in hexadecimal format. You may specify multiple port ranges separated by a space, for example, -x 21-26 28-3c.
-f	Ignores nonexisting ports. This operand is valid only with the **-i** and **-x** options.
-slot {<*slot*> | <*slot_range*>}	Persistently disables all ports on a slot or on a range of slots, for example, **-s** 3-5. You may specify multiple slot ranges separated by a space, for example, **-s** 3-5 8-10.
-r <*disable_reason_string*>	Specifies the reason for disabling the port persistently. The string can be up to 16 characters long and must be enclosed in double quotation marks.
-h	Displays the command usage.

Examples

To disable a single port persistently:

```
switch:admin> portcfgpersistentdisable 2/4
```

To disable a range of ports persistently:

```
switch:admin> portcfgpersistentdisable 2/4-8
```

To disable multiple port ranges persistently:

```
switch:admin> portcfgpersistentdisable 2/12  \
    -15 3/10-12 4/3-4
```

To disable a port persistently by specifying its index number:

```
switch:admin> portcfgpersistentdisable -i 176
```

To disable a range of ports persistently by specifying the corresponding port index range:

```
switch:admin> portcfgpersistentdisable -i 17-18
```

To disable multiple ports persistently by specifying multiple port index ranges:

```
switch:admin> portcfgpersistentdisable -i 17-18 30-39
```

To disable all ports on slots 3-5 persistently:

```
switch:admin> portcfgpersistentdisable -s 3-5
```

To disable all ports on slots 3-5 and 8-10 persistently:

```
switch:admin> portcfgpersistentdisable -s 3-5 8-10
```

To display the persistently disabled ports on the switch:

```
switch:admin> portcfgpersistentdisable
---------+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
Disabled -   -   -   -   -   -   -   -   -   -   -   -   -   -   -   -

Slot 0  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30  31
------+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---
Disabled - YES YES  -   -   -   -   -   -   -   -   -   -   -  YES YES

Slot 0    32  33  34  35  36  37  38  39
---------+---+---+---+---+---+---+---+--
Disabled YES YES YES YES YES YES YES YES
```

To disable a port persistently with a disable reason:

```
switch:admin> portcfgpersistentdisable 3/3 -r "bad SFP"
```

See Also

portCfgDefault, portDisable, portEnable, portCfgPersistentEnable, portShow, switchShow

portCfgPersistentEnable

Persistently enables a port or a range of ports.

Synopsis

```
portcfgpersistentenable
portcfgpersistentenable {[<slot>/]<port> | <port_range>}
portcfgpersistentenable -i {<port_index> | <port_index_range>} [-f]
portcfgpersistentenable -x {<port_index> | <port_index_range>} [-f]
```

```
portcfgpersistentenable {-slot | -s} {<slot> | <slot_range>}
portcfgpersistentenable -h
```

Description

Use this command to persistently enable a port or a range of ports. If the port is connected to another switch when this command is issued, the fabric may reconfigure. After the port is persistently enabled, devices connected to the port can again communicate with the fabric.

You can identify a single port to be configured by its port number or by its port index number in decimal or hexadecimal format. Port ranges are supported with port numbers, index numbers (decimal or hexadecimal) or by specifying a slot or a slot range. Use **switchShow** for a listing of valid ports, slots, and port index numbers. When used without operands, this command displays all persistently enabled ports on the switch.

For ports that come online after being persistently enabled, the following indications may be sent to indicate a state transition: RSCN, SNMP trap, Web pop-up window.

Persistently enabled ports remain enabled across power cycles, switch reboots, and switch enables. By default, a port is enabled persistently, unless the port is capable of routing. The change in configuration is effective immediately.

This command re-enables all previously set port configurations of a specified port. You can temporarily disable a persistently enabled port with the **portDisable** or **switchDisable** commands. The persistent switch disable or enable configuration does not alter the persistent disable or enable configurations of the ports within the switch. The configuration commands **configDefault** and **portCfgDefault** do not modify the persistent enable attribute of a port.

Notes

This command is blocked if the switch is operating in the FICON Management Server mode (fmsmode). Instead use **portEnable** with Active=Saved Mode enabled.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

This command is not supported on FCoE ports.

Operands

This command has the following operands:

[<*slot*>/]	On bladed systems only, specifies the slot number of the ports to be enabled persistently, followed by a slash (/).
<*port*> | <*port_range*>	Persistently enables a single port or a range of ports identified by port numbers. The port range cannot span slots, but you can specify multiple port ranges pairs separated by a space, for example 3/1-4 4/7-9.
-i {<*port_index*> | <*port_index_range*>}	Persistently enables a port or a range of ports identified by port index numbers. You may specify multiple index ranges separated by a space, for example, 33-38 40-60.
-x {<*port_index*> | <*port_index_range*>}	Persistently enables a port or a range of ports identified by port index numbers in hexadecimal format. You may specify multiple port ranges separated by a space, for example, -x 21-26 28-3c.
-f	Ignores nonexisting ports. This operand is valid only with the **-i** and **-x** options.
-slot {<*slot*> | <*slot_range*>}	Persistently enables all ports on a slot or on a range of slots, for example, **-s** 3-5. Multiple slot ranges are not supported with this command.
-h	Displays the command usage.

Examples

To enable a single port persistently:

```
switch:admin> portcfgpersistentenable 2/4
```

To enable a range of ports persistently:

```
switch:admin> portcfgpersistentenable 2/4-8
```

To enable multiple port ranges persistently:

```
switch:admin> portcfgpersistentenable 2/24-26 3/10-12 4/3-4
```

To enable a port persistently by specifying its index number:

```
switch:admin> portcfgpersistentenable -i 176
```

To enable a range of ports persistently by specifying the corresponding port index range:

```
switch:admin> portcfgpersistentenable -i 17-18
```

To enable multiple ports persistently by specifying multiple port index ranges:

```
switch:admin> portcfgpersistentenable -i 17-18 30-39
```

To enable all ports on slots 3-5 persistently:

```
switch:admin> portcfgpersistentenable -s 3-5
```

To display the persistently enabled ports on the switch:

```
switch:admin> portcfgpersistentenable

Slot 9   0   1   2   3   4   5   6   7   8   9  10  11  12  13  14  15
-------+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---
Enabled YES YES YES YES YES YES YES YES YES YES YES YES YES YES YES YES
(output truncated)
```

See Also

portCfgPersistentDisable, portCfgShow, portDisable, portEnable, portShow, switchShow

PortCfgQoS

Enables or disables QoS and sets the default configuration.

Synopsis

```
portcfgqos {--enable | --disable} [<slot>/]port1[-port2] [csctl_mode]
portcfgqos --default [<slot>/]port1[-port2]
portcfgqos --help
```

Description

Use this command to configure traffic prioritization on a port. Two alternate modes of traffic prioritization are supported by this command: Adaptive Networking/Quality of Service (AN/QoS) or Class-Specific Control (CS_CTL):

- The Adaptive Networking with QoS feature allows latency-sensitive applications to share storage resources alongside throughput-intensive applications. You can enable or disable Adaptive Networking/Quality of Service (AN/QoS) on a port and set the default behavior.
- In Fabric OS v9.0.x and later, an alternate method of traffic flow prioritization based on the CS_CTL bits of a Fibre Channel frame is provided through this command. This feature uses the value of the CS_CTL bit of the frame to determine the virtual channel (VC), so each frame can be prioritized based on the value of the CS_CTL bit.

CS_CTL flow prioritization is independent of traffic prioritization based on QoS zones; and both methods are mutually exclusive. If CS_CTL VC mode is enabled on an F/FL_Port, QoS-based traffic flow prioritization cannot be used between any two devices connected to these F/FL_Ports in that fabric and vice versa.

If both QoS-based and CS_CTL-based traffic prioritization are enabled on the same F/FL_Port, the CS_CTL-based method takes priority over the QoS zones. When QoS is enabled on an F/FL_Port and you enable CS_CTL VC mode on the same port, the command displays a message stating that QoS zones will lose priority to CS_CTL-based traffic prioritization. When you disable CS_CTL mode on a given F/FL port, the QoS zones, if already enabled, become the effective frame classification method for all devices connected to that F/FL_Port.

On 16G- or 32G-capable Inter Chassis Link (ICL) ports, QoS is not configurable and it is always enabled internally.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Enabling and disabling QOS is potentially disruptive to the I/O on the affected port.

This command is not supported on all platforms. Refer to the *Brocade Fabric OS Administration Guide* for more information.

The configuration changes effected by this command are persistent across system reboots.

The Fabric OS port configuration commands are not supported on FCoE ports.

Operands

This command has the following operands:

[<*slot*>/]	For bladed systems only, specifies the slot number of the port to configure, followed by a slash (/).
<port>	Specifies the port or port range to be configured, relative to the slot for bladed systems. Use **switchShow** for a listing of valid ports.
--disable	Disables the current configuration on the specified ports. When issued with the **csctl_mode** operand, this command disables traffic prioritization based on CS_CTL. If QoS was enabled before you enabled **csctl_mode**, this command restores QoS-based traffic prioritization.
--enable	Enables QoS or CS_CTL mode. When issued with the **csctl_mode** operand, this command enables traffic prioritization based on CS_CTL. When you enable **csctl_mode**, the command displays a message stating that QoS zones will lose priority to CS_CTL-based traffic prioritization.
--default	Applies the default configuration to the specified port. This command attempts to re-enable QoS; success depends on availability of buffers. If CS_CTL was enabled on the port, this command disables the configuration.
--help	Displays the command usage.

Examples

To enable QoS on a range of ports:

```
switch:admin> portcfgqos --enable 1/15-18
```

To disable QoS on a port:

```
switch:admin> portcfgqos --disable 1/15
```

To set the default QoS configuration on a port:

```
switch:admin> portcfgqos --default 12/41
```

To enable CS_CTL VC mode on a port when QoS is enabled:

```
switch:admin> portcfgqos --enable 1/10-16 csctl_mode
Enabling CSCTL mode flows causes QoS zone flows to lose priority on such ports.
Enabling CSCTL mode takes precedence over quarantine of traffic destined to zoned slow drain device.
Enabling CSCTL mode will deactivate sys_analytics_vtap on this logical switch.

Do you want to proceed?(y/n)
```

To disable CS_CTL VC mode on a port range:

```
switch:admin> portcfgqos --disable 1/10-16 csctl_mode
```

See Also

portCfg, portCmd, portShow, switchShow, configure

portCfgShow

Displays port configuration settings.

Synopsis

```
portcfgshow
portcfgshow [<slot>/]<port>
 portcfgshow -i {<port_index> | <port_index_range>} [-f]
 portcfgshow {-slot | -s} {<slot> | <slot_range>}
 portcfgshow {ipif | iproute} [[<slot>/]<port>]
     [--link-local] [--help] [--filter <filter-args>]
 portcfgshow {fciptunnel | fcipcircuit} [[<slot>/]<port>
     [<circuit-id>]] [<option> ]
 portcfgshow ipsec-policy [{all | <policy-name>}]
     [--ike-session] [--summary | --detail] [--show-password]
     [--help] [--filter <args>]
 portcfgshow tcl [<name>] [--summary | --detail]
     [--priority <value>]
     [--sort {name | priority | src-addr | dst-addr}]
     [--help] [--filter <args>]
```

Description

Use this command to display the current configuration of a port. The behavior of this command is platform-specific; output varies depending on port type and platform, and not all options are supported on all platforms.

Non-GbE port displays

When used without operands, this command displays port configuration settings for all ports on a switch, except Gigabit Ethernet (GbE) ports.

Displays supported only on the Extension switches or Extension blades.

Use this command with optional arguments to display the following parameters configured for a GbE port on the Extension switches or Extension blades.

This command is supported on Ethernet ports.

- IP interfaces on the GbE port
- Static routes on the IP interfaces
- Address resolution protocol (ARP) entries
- VLAN tag configuration
- Fibre Channel over IP (FCIP) tunnel configuration settings
- IPSec configuration
- Inband Management IP addresses and routes.
- Display IPsec policy. Currently supported on the Brocade 7810 and Brocade SX6 blade only.

Non-GbE port displays

The following information is displayed when the command is issued for all ports, for a single port, or for one or more port ranges specified by their port index numbers or slot numbers:

Area Number Displays the port area number. This field is displayed only when **portCfgShow** is executed for a single port.

Octet Speed Combo Displays the speed configuration for a port octet. This value is set by the **portCfgOctetSpeedCombo** command. Port octet speed configuration is supported on 16G and higher speed capable platforms. On unsupported platforms the Octet Speed Combo field is suppressed. Valid Octet Combo values include the following:

- **1** Autonegotiated or fixed port speeds of 64, 32, 16, 8, and 4G.
- **2** Autonegotiated or fixed port speeds of 53, 32, 25, 16, 10, 8, and 4G.
- **3** Autonegotiated or fixed port speeds of 16 and 10G.

Speed Displays Auto for auto speed negotiation mode, or a specific speed of 1G, 2G, 4G, 8G, or 16G, and soft, 10, or AX on 8G. This value is set by the **portCfgSpeed** command.

Trunk Port Displays ON when port is set for trunking. Displays (..) or OFF when trunking is disabled on the port. This value is set by the **portCfgTrunkPort** command.

Long Distance Displays (..) or OFF when long distance mode is off; otherwise, displays long distance levels. This value is set by the **portCfgLongDistance** command. Values are as follows:

- **LE** The link is up to 10 km.
- **LD** The distance is determined dynamically.
- **LS** The distance is determined statically by user input.

VC Link Init Displays (..) or OFF when the long distance link initialization option is turned off. Displays ON when it is turned on for long distance mode. This value is set by the **portCfgLongDistance** command.

Desired Distance Displays the desired distance of the port. This field is displayed only when portCfgShow is executed for a single port and would only display for LS and LD long distance mode.

Reserved Buffers Displays the reserved buffers for the port. This field is displayed only when portCfgShow is executed for a single port and would only display for LS and LD long distance mode.

Disabled E_Port Displays ON when the port is not allowed to be an E_Port. Displays (..) or OFF when the port is allowed to function as an E_Port. This value is set by the **portCfgEport** command.

ISL R_RDY Mode Displays ON when ISL R_RDY mode is enabled on the port. Displays (..) or OFF when ISL R_RDY mode is disabled. This value is set by the **portCfgISLMode** command.

RSCN Suppressed Displays ON when RSCN suppression is enabled on the port. Displays (..) or OFF when RSCN suppression is disabled. This value is set by the **portCfg rscnsupr** command.

Persistent Disable Displays ON when the port is persistently disabled; otherwise displays (..) or OFF. This value is set by the **portCfgPersistentDisable** command.

LOS TOV mode Displays 1 (ON:FixSpd) or 2 (ON:AN&FixSpd) when LOS TOV is enabled on the port; otherwise displays (..) or 0 (OFF). This value is set by the **portCfgLossTov** command.

NPIV capability Displays ON when N_Port ID Virtualization (NPIV) is enabled on the port (default). Displays (..) or OFF when NPIV capability is disabled. This value is set by the **portCfgNPIVPort** command.

NPIV PP Limit	Displays the maximum number of allowed logins for the port. Displays the default of 126 or the configured maximum. This parameter is set with the **portCfgNPIVPort --setloginlimit** command.
NPIV FLOGI Logout	Displays ON when the Base Device Logout feature is enabled and the base device can logout without disrupting the NPIV devices on the same port. Displays (..) when the base device log out causes the NPIV devices on the same port to log out.
QOS E_Port	Displays ON when Quality of Service (QoS) is enabled on the E_Port (or EX_Port) when QoS is enabled in an FCR deployment scenario. Displays (..) or OFF when QoS is disabled. By default, QoS is enabled if sufficient buffers are available. Displays AE when QoS is configured as Auto Enabled. In the AE state, QoS is enabled based on the availability of buffers. Use **islShow** to determine the current status of QoS (on or off) in the AE state. This value is set by the **portCfgQos** command.
EX_Port	Displays ON when the port is configured as an EX_Port. Otherwise displays (..) or OFF. This value is set by the **portCfgExPort** command.
Mirror Port	Displays ON when Mirror Port is enabled on the port. Displays (..) or OFF when Mirror Port is disabled. This value is set by the **portCfg mirrorport** command.
SIM Port	Displays ON when SIM Port is enabled on the port. Displays (..) or OFF when SIM Port is disabled. This value is set by the **flow --control** *flow_name* **-simport** command.
Credit Recovery	Displays ON when Credit Recovery is enabled on the port. Displays (..) or OFF when the feature is disabled. This value is set by the **portCfgCreditRecovery** command. The credit recovery feature is enabled by default.
Port Auto Disable	Displays On when the Auto Disable feature is enabled on a port. Displays (..) or OFF when the feature is disabled. This feature causes ports to become disabled when they encounter an event that would cause them to reinitialize. This feature is enabled by the **portCfgAutoDisable** command. The feature is disabled by default. In the single port view, the configured trigger conditions are displayed when the feature is disabled. See the example section for an illustration.
F_Port Buffers	Displays the number of configured F_Port buffers. Displays (..) or OFF if no buffers are configured. The buffer value is set by the **portCfgfPortbuffers** command.
E_Port Credits	Displays the number of configured E_Port credits. Displays (..) or OFF if no credits are configured. The credit value is set by the **portCfgEportCredits** command.
CSCTL mode	Displays ON if CSCTL mode is enabled on the port. Displays (..) or OFF if the feature is disabled. This parameter is set with the **portCfgQos** command.
TDZ mode	Displays ON when Target Driven Zoning (TDZ) is enabled on a port and the port is online or offline. Displays (..) or OFF when the configuration is disabled. TDZ is enabled by the **portCfgTdz** command; it is disabled by default.
D_Port mode	Displays ON when the port is configured as a D_Port; otherwise displays (..) or OFF. Refer to the **portCfgDPort** command for more information. This parameter is displayed only on on 16G-capable blades that support D_Port capability.
D_Port over DWDM	Displays ON when dwdm is enabled on that port using the **portcfgdport** command. This option is used to set if the link connecting two switches is a DWDM (Dense Wavelength Division Multiplexing) link. However, it can be set on normal links also.
Fault Delay	Displays the Fault delay value. Displays 0 if the value is R_A_TOV. This is the default. Displays 1 if the value is 1.2 seconds. This value is set by the **portCfgFaultDelay** command. valid for FC ports only.
Compression	Displays ON when compression is enabled on a port. Displays (..) or OFF when the configuration is disabled. Compression is enabled by the **portCfgCompress** command; it is disabled by default.
Encryption	Displays ON when encryption is enabled on a port. Displays (..) or OFF when the configuration is disabled. Encryption is enabled by the **portCfgEncrypt** command; it is disabled by default.
10G/16G/25G FEC	Displays ON when Forward Error Correction (FEC) is enabled on a port and the port is online. Displays (..) or OFF when the configuration is disabled. FEC is enabled by the **portCfgFec** command; it is enabled by default.

16G FEC via TTS	Displays ON when control of the Forward Error Correction (FEC) state is permitted via TTS by an externally attached host or device. Displays (..) or OFF when the external control of FEC is disabled. See **portCfgFec** command help page for additional information.
LLD mode	Displays the link latency determination (LLD) configuration settings for the port. This is applicable only for the Brocade Gen 7 devices.
Clean Address Bit	Displays ON when the port is configured with Clean Address Bit. Displays (..) or OFF when the port configuration is disabled. See **portCfgCleanAddress** command help page for additional information.
Congestion Signal	Displays the port level configuration of the congestion signal primitives. Displays (..) or OFF when the port configuration is disabled. See **portCfgCongestionSignal** command help page for additional information.
Access to management services	Displays the port level configuration of the MS ACL for the associated management services like Application Server, Enhanced Fabric Configuration Server (EFCS), Fabric Configuration Server (FCS), FDMI, Fabric Zone Server, and Unzoned Name Server. Displays NO when no access is configured, RO when read-only access is configured, and RW when read-write access is configured. See **portCfgMsAcl** command page for more information.
App Header	Displays the Application header configuration information of the port. Displays **ON** when the Application header is turned **ON** on the port and **OFF** when disabled.

When **portCfgShow** is issued for a single FCoE port, only the following fields are displayed: **Area Number**, **Speed Level**, **RSCN Suppressed**, and **NPIV PP Limit**. Refer to the example section for an illustration.

You can identify a single port to be displayed by its port number or by its port index number. Port ranges are supported with index numbers or by specifying a slot or a slot range. Use **switchShow** for a listing of valid ports, slots, and port index numbers. When used without operands, this command displays all persistently disabled ports on the switch.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

The Fabric OS port configuration commands are not supported on FCoE ports.

Operands

This command has the following operands:

<slot>/	For bladed systems only, specifies the slot number of the port to be configured, followed by a slash (/).
<port>	Specifies the number of the port to be displayed, relative to its slot for bladed systems. Use **switchShow** for a listing of valid port numbers.
-i *<port_index>* | *<port_index_range>*	Specifies a port or a range of ports identified by port index numbers. You can specify multiple index ranges separated by a space, for example, **-i** 33-38 40-60. **-f** Ignores nonexisting ports. This operand is valid only with the **-i** option.
-slot {*<slot>* | *<slot_range>*}	Specifies a slot or a range of slots. You can specify multiple slot ranges separated by a space, for example,**-s** 1-3 5-7.
<ge_port>	Specifies the number of the GbE Port to be displayed. Use the **switchShow** command for a list of valid ports.

Use **portCfgShow** with a GbE port or with one of the optional arguments to display specific FCIP-related parameters.

Displays supported on the Extension switches or Extension blades.

When issued on the Extension switches or Extension blades, tunnels and parameters not applicable to these platforms are not displayed. Use the **portShow** command to display FCIP tunnel and circuit parameters.

ipif	Displays the IP interface configurations. IPv6 addresses are supported.

arp Displays the address resolution protocol (ARP) table. This option is supported on Brocade SX6 extension blade.

iproute Displays the IP route on the specified GbE port. IPv6 addresses are supported.

vlantag Displays the VLAN tagging configuration. For each entry, the output displays the IP interface address, the destination IP address, the VLAN ID, and the L2 CoS priority. This display includes permanent entries only. Permanent entries are configured at the IP interface level with the **portCfg vlantag** command. To view VLAN tagged tunnels and circuits along with permanent entries, use the **portShow vlantag** command.

fcipcircuit Displays FCIP circuits and related parameters.

fciptunnel Displays FCIP tunnels and related parameters.

The following options are supported with **fcipcircuit** and **fciptunnel**:

all Displays information for all FCIP tunnels.

<ve_port> Displays information for the specified FCIP tunnel. To display the tunnel, specify the VE_Port number associated with the tunnel configured on one of the GbE ports. VE_Ports are numbered 16-23.

<optional_argument> The following optional argument is supported with **fciptunnel**:

-ipsec Displays whether IPSec is enabled or disabled. If enabled, the key is displayed. If IPSec is enabled and configured in legacy mode, the mode is displayed as "legacy". The mode information is displayed whether or not you issue the **-ipsec** option.

ipsec-policy Displays the IPsec policy. This option is supported only on the Brocade 7810 switch.

lag Displays the static link aggregation group (LAG) information.

tcl Displays the Traffic Control List (TCL) information.

sla Displays the Service Level Agreement (SLA) information.

Examples

To display the port configuration settings for a single port:

```
switch:admin> portcfgshow 10/38
Area Number:              11
Octet Speed Combo:        2(10G|8G|4G)
Eth Speed Level:          10G
FC Speed Level:           AUTO(HW)
Trunk Port                ON
Long Distance             OFF
VC Link Init              OFF
Disabled E_Port           OFF
Locked E_Port             OFF
ISL R_RDY Mode            OFF
RSCN Suppressed           OFF
Persistent Disable        OFF
LOS TOV mode              0(OFF)
NPIV capability           ON
QOS Port                  AE
Port Auto Disable:        OFF
EX Port                   OFF
Mirror Port               OFF
SIM Port                  OFF
Credit Recovery           ON
F_Port Buffers            OFF
```

```
E_Port Credits            OFF
Fault Delay:              0(R_A_TOV)
NPIV PP Limit:            126
NPIV FLOGI Logout:        OFF
CSCTL mode:               OFF
TDZ mode:                 OFF
D-Port mode:              OFF
D-Port over DWDM:         OFF
Compression:              OFF
Encryption:               OFF
10G/16G/25G FEC:          ON
16G FEC via TTS:          OFF
LLD mode:                 ON
Flex Port:                ETH
Breakout mode             ON
Clean Address Bit         OFF
Congestion Signal:        ON
App Srvr Access:          RW
EFCS Access:              RW
FCS Access:               RW
FDMI Access:              RW
Zone Access:              RW
Unzoned NS Access:        RO
App Header:               ON
```

To display the port configuration settings for a range of ports specified by their index numbers:

```
switch:admin> portcfgshow -i 0-15
Index:            0   1   2   3     4   5   6   7     8   9  10  11    12  13  14  15
--------------------+---+---+---+-----+---+---+---+-----+---+---+---+-----+---+---+---
Octet Speed Combo 1   1   1   1     1   1   1   1     2   2   2   2     2   2   2   2
Speed             AN  AN  AN  AN    AN  AN  AN  AN    AN  AN  AN  AN    AN  AN  AN  AN
Eth Speed Level:  AN  AN  AN  AN    AN  AN  AN  AN    AN  AN  AN  AN    AN  AN  AN  AN
Trunk Port        ON  ON  ON  ON    ON  ON  ON  ON    ON  ON  ON  ON    ON  ON  ON  ON
Long Distance     ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
VC Link Init      ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
Disabled E_Port   ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
Locked E_Port     ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
ISL R_RDY Mode    ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
RSCN Suppressed   ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
Persistent Disable..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
LOS TOV mode      0   0   0   0     0   0   0   0     0   0   0   0     0   0   0   0
NPIV capability   ON  ON  ON  ON    ON  ON  ON  ON    ON  ON  ON  ON    ON  ON  ON  ON
NPIV PP Limit     126 126 126 126   126 126 126 126   126 126 126 126   126 126 126 126
NPIV FLOGI Logout ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
QOS Port          AE  AE  AE  AE    AE  AE  AE  AE    AE  AE  AE  AE    AE  AE  AE  AE
EX Port           ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
Mirror Port       ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
Credit Recovery   ON  ON  ON  ON    ON  ON  ON  ON    ON  ON  ON  ON    ON  ON  ON  ON
Fport Buffers     ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
Eport Credits     ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
Port Auto Disable ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
CSCTL mode        ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
```

```
D-Port mode       ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
D-Port over DWDM  ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
Compression       ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
Encryption        ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
10G/16G/25G FEC   ON  ON  ON  ON    ON  ON  ON  ON    ON  ON  ON  ON    ON  ON  ON  ON
16G FEC via TTS   ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
LLD mode          ON  ON  ON  ON    ON  ON  ON  ON    ON  ON  ON  ON    ON  ON  ON  ON
Fault Delay       0   0   0   0     0   0   0   0     0   0   0   0     0   0   0   0
SIM Port          ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
TDZ mode          ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
Flex Port         ET  ET  FC  FC    ET  ET  FC  FC    FC  FC  ET  ET    FC  FC  ET  ET
Breakout mode     0   0   0   0     0   0   0   0     0   0   0   0     0   0   0   0
Clean Address Bit ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
App Srvr Access   RW  RW  RW  RW    RW  RW  RW  RW    RW  RW  RW  RW    RW  RW  RW  RW
EFCS Access       RW  RW  RW  RW    RW  RW  RW  RW    RW  RW  RW  RW    RW  RW  RW  RW
FCS Access        RW  RW  RW  RW    RW  RW  RW  RW    RW  RW  RW  RW    RW  RW  RW  RW
FDMI Access       RW  RW  RW  RW    RW  RW  RW  RW    RW  RW  RW  RW    RW  RW  RW  RW
Zone Access       RW  RW  RW  RW    RW  RW  RW  RW    RW  RW  RW  RW    RW  RW  RW  RW
Unzoned NS Access RO  RO  RO  RO    RO  RO  RO  RO    RO  RO  RO  RO    RO  RO  RO  RO
App Header        ON  ON  ON  ON    ON  ON  ON  ON    ON  ON  ON  ON    ON  ON  ON  ON

  where AE:QoSAutoEnable, AN:AutoNegotiate, ..:OFF,
  -:NotApplicable, ??:INVALID,
```

To display the configuration for DWDM lossSync fixed speed port:

```
switch:admin> portcfgshow -i 3-5
Index:               3   4   5
---------------- +---+---+---
Speed               AN  AN  AN
AL_PA Offset 13     ..  ..  ..
Trunk Port          ON  ON  ON
Long Distance       ..  ..  ..
VC Link Init        ..  ..  ..
Locked L_Port       ..  ..  ..
Locked G_Port       ..  ..  ..
Disabled E_Port     ..  ..  ..
Locked E_Port       ..  ..  ..
ISL R_RDY Mode      ..  ..  ..
RSCN Suppressed     ..  ..  ..
Persistent Disable  ..  ..  ..
LOS TOV enable      ..  ..  ..
DWDM losync mode    ON OFF OFF
NPIV capability     ON  ON  ON
NPIV PP Limit      255 255 255
QOS E_Port          AE  AE  AE
EX Port             ..  ..  ..
Mirror Port         ..  ..  ..
Rate Limit          ..  ..  ..
Credit Recovery     ON  ON  ON
Fport Buffers       ..  ..  ..
Port Auto Disable   ..  ..  ..
CSCTL mode          ..  ..  ..
App Srvr Access     RW  RW  RW
```

```
EFCS Access        RW  RW  RW
FCS Access         RW  RW  RW
FDMI Access        RW  RW  RW
Zone Access        RW  RW  RW
Unzoned NS Access  RO  RO  RO
App Header         ON  ON  ON
LLD mode           ON  ON  ON
```

To display the configuration settings for a single port on a switch with Access Gateway enabled:

```
switch:admin> portcfgshow 8
Area Number:          8
Octet Speed Combo:    1(32G|16G|8G|4G)
FC Speed Level:       AUTO(HW)
Trunk Port            ON
Long Distance         OFF
VC Link Init          OFF
Disabled E_Port       OFF
Locked E_Port         OFF
ISL R_RDY Mode        OFF
RSCN Suppressed       OFF
Persistent Disable    OFF
LOS TOV mode          0(OFF)
DWDM losync mode      OFF
NPIV capability       ON
QOS Port              AE
Port Auto Disable:    OFF
EX Port               OFF
Mirror Port           OFF
SIM Port              OFF
Credit Recovery       ON
F_Port Buffers        OFF
E_Port Credits        OFF
Fault Delay:          0(R_A_TOV)
NPIV PP Limit:        126
NPIV FLOGI Logout:    OFF
CSCTL mode:           OFF
TDZ mode:             OFF
Clean Address Bit:    OFF
D-Port mode:          OFF
D-Port over DWDM:     OFF
Compression:          OFF
Encryption:           OFF
10G/16G FEC/25G:      ON
16G FEC via TTS:      OFF
LLD mode:             ON
App Srvr Access:      RW
EFCS Access:          RW
FCS Access:           RW
FDMI Access:          RW
Zone Access:          RW
Unzoned NS Access:    RO
```

To display port configuration settings on a Gen6 switch with a Brocade SX6 blade in Slot 12:

```
switch:admin> portcfgshow -slot 12
Index:               64  65  66  67    68  69  70  71 [truncated]
------------------+---+---+---+-----+---+---+---+-----+---+---+-
Octet Speed Combo   1   1   1   1     1   1   1   1
Speed              AN  AN  AN  AN    AN  AN  AN  AN
Trunk Port         ON  ON  ON  ON    ON  ON  ON  ON
Long Distance      ..  ..  ..  ..    ..  ..  ..  ..
VC Link Init       ..  ..  ..  ..    ..  ..  ..  ..
Disabled E_Port    ..  ..  ..  ..    ..  ..  ..  ..
Locked E_Port      ..  ..  ..  ..    ..  ..  ..  ..
ISL R_RDY Mode     ..  ..  ..  ..    ..  ..  ..  ..
RSCN Suppressed    ..  ..  ..  ..    ..  ..  ..  ..
Persistent Disable ..  ..  ..  ..    ..  ..  ..  ..
LOS TOV mode        0   0   0   0     0   0   0   0
NPIV capability    ON  ON  ON  ON    ON  ON  ON  ON
NPIV PP Limit      126 126 126 126   126 126 126 126
NPIV FLOGI Logout  ..  ..  ..  ..    ..  ..  ..  ..
QOS Port           AE  AE  AE  AE    AE  AE  AE  AE
EX Port            ..  ..  ..  ..    ..  ..  ..  ..
Mirror Port        ..  ..  ..  ..    ..  ..  ..  ..
Credit Recovery    ON  ON  ON  ON    ON  ON  ON  ON
Fport Buffers      ..  ..  ..  ..    ..  ..  ..  ..
Eport Credits      ..  ..  ..  ..    ..  ..  ..  ..
Port Auto Disable  ..  ..  ..  ..    ..  ..  ..  ..
CSCTL mode         ..  ..  ..  ..    ..  ..  ..  ..
D-Port mode        ..  ..  ..  ..    ..  ..  ..  ..
D-Port over DWDM   ..  ..  ..  ..    ..  ..  ..  ..
Compression        ..  ..  ..  ..    ..  ..  ..  ..
10G/16G/25G FEC    ON  ON  ON  ON    ON  ON  ON  ON
16G FEC via TTS    ..  ..  ..  ..    ..  ..  ..  ..
Fault Delay        0   0   0   0     0   0   0   0
SIM Port           ..  ..  ..  ..    ..  ..  ..  ..
TDZ mode           ..  ..  ..  ..    ..  ..  ..  ..
Clean Address Bit  ON  ..  ..  ..    ..  ..  ..  ..
App Srvr Access    RW  RW  RW  RW    RW  RW  RW  RW
EFCS Access        RW  RW  RW  RW    RW  RW  RW  RW
FCS Access         RW  RW  RW  RW    RW  RW  RW  RW
FDMI Access        RW  RW  RW  RW    RW  RW  RW  RW
Zone Access        RW  RW  RW  RW    RW  RW  RW  RW
Unzoned NS Access  RO  RO  RO  RO    RO  RO  RO  RO
[output truncated]
```

To display port configuration settings for a single port on a Gen6 switch with a Brocade SX6 blade:

```
switch:admin> portcfgshow 4/4
Area Number:              68
Octet Speed Combo:        1(32G|16G|8G|4G)
Speed Level:              AUTO(HW)
Trunk Port                ON
Long Distance             OFF
```

```
VC Link Init              OFF
Disabled E_Port           OFF
Locked E_Port             OFF
ISL R_RDY Mode            OFF
RSCN Suppressed           OFF
Persistent Disable        OFF
LOS TOV mode              0(OFF)
NPIV capability           ON
QOS Port                  AE
Port Auto Disable:        OFF
EX Port                   OFF
Mirror Port               OFF
SIM Port                  OFF
Credit Recovery           ON
F_Port Buffers            OFF
E_Port Credits            OFF
Fault Delay:              0(R_A_TOV)
NPIV PP Limit:            126
NPIV FLOGI Logout:        OFF
CSCTL mode:               OFF
TDZ mode:                 OFF
D-Port mode:              OFF
D-Port over DWDM:         OFF
Compression:              OFF
10G/16G/25G FEC:          ON
16G FEC via TTS:          OFF
Clean Address Bit         OFF
App Srvr Access:          RW
EFCS Access:              RW
FCS Access:               RW
FDMI Access:              RW
Zone Access:              RW
Unzoned NS Access:        RO
App Header:               ON
```

To display the QoS configuration for an EX_Port (QoS over FCR deployment):

```
switch:admin> switchshow | grep EX-Port
 16  16   id    N4   Online      FC  EX-Port \
    10:00:00:05:1e:41:4a:45 "Tom_100"
(fabric id = 25 )(Trunk master)

switch:admin> portcfgshow 16
Area Number:              11
Octet Speed Combo:        1(16G|8G|4G|2G)
Speed Level:              AUTO(HW)
Trunk Port                ON
Long Distance             LS
VC Link Init              OFF
Desired Distance          10 Km
Reserved Buffers          86
Disabled E_Port           OFF
ISL R_RDY Mode            OFF
```

```
RSCN Suppressed           OFF
Persistent Disable        OFF
LOS TOV mode              0(OFF)
NPIV capability           ON
NPIV FLOGI Logout         ON
QOS E_Port                AE
Port Auto Disable:        OFF
Rate Limit                OFF
EX Port                   ON
Mirror Port               OFF
Credit Recovery           ON
F_Port Buffers            OFF
NPIV PP Limit:            126
CSCTL mode:               OFF
TDZ mode:                 OFF
Fault Delay               1(1.2sec)
D-Port mode:              OFF
D-Port over DWDM:         OFF
10G/16G/25G FEC:          ON
16G FEC via TTS:          ON
Clean Address Bit         OFF
App Srvr Access:          RW
EFCS Access:              RW
FCS Access:               RW
FDMI Access:              RW
Zone Access:              RW
Unzoned NS Access:        RO
App Header:               ON
```

To display an FCIP Tunnel with and without IPSec information (In the following examples, IPSec is in legacy mode):

```
switch:admin> portcfgshow fciptunnel 1/12 -ipsec
-------------------------------------------
Tunnel ID: 1/12
   Tunnel Description:
   Compression: Off
   Tape Acceleration: Off
   TPerf Option: Off
   IPSec: Enabled (legacy)
   IPSec Key: '12345678901234567890123456789012'
   QoS Percentages: High 50%, Med 30%, Low 20%
   Remote WWN: Not Configured
   Local WWN: 10:00:00:05:1e:52:fe:00
   Flags: 0x00000000
   FICON: Off

switch:admin> portcfgshow fciptunnel 1/12
-------------------------------------------
Tunnel ID: 1/12
   Tunnel Description:
   Compression: Off
   Tape Acceleration: Off
   TPerf Option: Off
```

```
IPSec: Enabled (legacy)
QoS Percentages: High 50%, Med 30%, Low 20%
Remote WWN: Not Configured
Local WWN: 10:00:00:05:1e:52:fe:00
Flags: 0x00000000
FICON: Off
```

See Also

portCfg, portCfgAutoDisable, portCfgCreditRecovery, portCfgEport, portCfgFec, portCfgLongDistance, portCfgMsAcl, portCfgNPIVPort, portCfgOctetSpeedCombo, portCfgSpeed, portCfgTrunkPort, switchShow

portCfgSpeed

Configures the speed for a port or a range of ports.

Synopsis

```
portcfgspeed [<slot>/]<port>
     {<speed_level> | 0 -m <max_auto_speed>}
 portcfgspeed {-i <index1>[-<index2>] |-x <hex1>[-<hex2>]}
     [-f] {<speed_level> | 0 -m <max_auto_speed>}
 portcfgspeed {-slot | -s} {<slot_num> | <slot_range>}
     {<speed_level> | 0 -m <max_auto_speed>}
 portcfgspeed -h
```

Description

Use this command to set the speed on a specified port or port range. This command disables and then re-enables the ports, and the ports come online with the new speed setting. The configuration is saved in nonvolatile memory and is persistent across switch reboots or power cycles. Use the **portShow** command to display supported port speed levels. Use the **portCfgShow** command to display configured speed settings.

The **portCfgSpeed** command checks if the requested speed is allowed or not, based on the combination configured for the octet that contains the port. If the speed is not supported by the current octet speed combination, this command exits with a warning message that displays the combination compatible with desired speed. Use the **portCfgOctetSpeedCombo** command to set the suggested combination before re-executing the **portCfgSpeed** command.

You can identify a single port to be configured by its port number or by its port index number in decimal or hexadecimal format. Port ranges are supported with port numbers, index numbers(decimal or hexadecimal) or by specifying a slot or a slot range. Use **switchShow** for a listing of valid ports, slots, and port index numbers.

Notes

This configuration cannot be set on VE_Ports. For a virtual FC port, the speed is always 10 GbE and port speed autonegotiation is not possible.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

<slot>/	For bladed systems only, specifies the slot number of the ports to be configured, followed by a slash (/).
<port>	Configures a single port identified by the port number relative to the slot on bladed systems.

-i <*index1*>[-<*index2*> Configures a port or a range of ports identified by port index numbers. Multiple port ranges are not supported with this command.

-f Ignores nonexisting ports. This operand is valid only with the **-i** option.

-x <*hex1*>[-<*hex2*> Configures a port or a range of ports identified by port numbers, index number in hexadecimal format. You may specify multiple port ranges separated by a space, for example, -x 21-26 28-3c.

-slot {<*slot_num*> | <*slot_range*>} Configures all ports on a slot or on a range of slots, for example, **-s** 3-5. You may specify multiple slot ranges separated by a space, for example, **-s** 3-5 8-10.

<*speed_level*> Sets speed for the specified ports. This operand is required. Valid values are one of the following.

4	The port is set at a fixed speed of 4G.
8	The port is set at a fixed speed of 8G.
10	The port is set at a fixed speed of 10G (not supported on 8G platforms).
16	The port is set at a fixed speed of 16G (not supported on 8G platforms).
25	The port is set at a fixed speed of 25G for Ethernet port.
32	The port is set at a fixed speed of 32G (not supported on 8G and 16G platforms).
40	The port is set at a fixed speed of 40G for Ethernet port.
53	The port is set at a fixed speed of 53G. (supported only on the core blades of the Brocade Gen 7 platform)
64	The port is set at a fixed speed of 64G. (supported only on the port blades and pizza boxes of the Brocade Gen 7 platform)

-m Sets auto-negotiation maximum speed. This operand is optional. Valid values are one of the following.

8	Sets the maximum auto-negotiation speed to 8G.
16	Sets the maximum auto-negotiation speed to 16G.
32	Sets the maximum auto-negotiation speed to 32G.
64	Sets the maximum auto-negotiation speed to 64G.

-h Displays the command usage.

Examples

To set the speed of a port to 10G:

```
switch:admin> portcfgspeed 2/3 10
```

To set the speed of a port using the port index:

```
switch:admin> portcfgspeed -i 78 16
```

To set the speed of a port range using the port index:

```
switch:admin> portcfgspeed -i 24-38 8
```

To set all ports on slots 2 and 3 to 8G:

```
switch:admin> portcfgspeed -s 2-3 8
```

To set all ports on slots 2-3 and 9-12 to 10G:

```
switch:admin> portcfgspeed -s 2-3 9-12 10
```

To set the speed of all ports in a range:

```
switch:admin> portcfgspeed -x 1d-1e 8
```

To set the maximum auto-negotiation speed:

```
switch:admin> portcfgspeed 17 0 -m 4
```

See Also

portCfgOctetSpeedCombo, portCfgShow, portShow, switchCfgSpeed, switchShow

portCfgTdz

Configures a port for Target Driven Zoning (TDZ).

Synopsis

```
portcfgtdz {--enable | --disable | --show}
[<slot>/]<port>
portcfgtdz --help
```

Description

Use this command to configure a port to support Target Driven Zoning. This command enables or disables the Target Driven Zoning configuration on the specified port and saves the configuration persistently. Target Driven Zoning can be configured on E_Ports, F_Ports, and L_Ports that are online or offline and it does not toggle the port to apply the configuration. After Target Driven Zoning is configured on the specified port, it allows the connected target device to configure Target Driven Peer Zones to be enabled and committed to the switch fabric.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

Operands

This command has the following operands:

[*<slot>*/]	For bladed systems only, specifies the slot number of the port on which the Target Driven Zoning configuration must be enabled or disabled, followed by a slash (/).
<port>	Specifies one or more ports, relative to the slot on bladed systems. Use **switchShow** for a listing of valid ports. A port list should be enclosed in double quotation marks and can consist of the following: • A single port, for example, "8" or "5/8" on blades systems. • A port range where beginning and end port are separated by a dash, for example, "8-13" or "5/8-13" on blades systems. A port range cannot span multiple slots. • A set of ports separated by commas, for example "3,5,7,8" or "5/3,5,7,8" on bladed systems. • A wildcard * indicates all ports. The wildcard can be represented as '*' or "*".
--enable	Enables the Target Driven Zoning configuration on the specified port.
--disable	Disables the Target Driven Zoning configuration on the specified port.
--show	Displays the current Target Driven Zoning configuration status (ON or OFF) for the specified port.
--help	Displays the command usage.

Examples

To enable Target Driven Zoning configuration on a port:

```
switch:admin> portcfgtdz --enable 8
```

To display Target Driven Zoning configuration status for a specific port:

```
switch:admin> portcfgtdz --show 8
Port   Mode
============
8      ON
```

To enable Target Driven Zoning configuration on a range of ports:

```
switch:admin> portcfgtdz --enable 8-18
```

To enable Target Driven Zoning configuration on all ports:

```
switch:admin> portcfgtdz --enable "*"
```

To disable Target Driven Zoning configuration on a port:

```
switch:admin> portcfgtdz --disable 8
```

See Also

portCfgShow, switchShow, zoneShow

portCfgTrunkPort

Enables or disables trunking on a port.

Synopsis

portcfgtrunkport [<*slot*>/]<*port*> {**0** | **1**}

Description

Use this command to enable or disable trunking on a port. Use **switchCfgTrunk** to enable or disable trunking on all ports of a switch.

When the command is executed to update the trunking configuration, the port to which the configuration applies is disabled and subsequently re-enabled with the new trunking configuration. Traffic through the ports may be temporarily disrupted.

Disabling trunking fails if a Trunk Area (TA) is enabled on the port.

Notes

Enabling trunking requires an ISL Trunking license. You may disable trunking without a license.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

The Fabric OS port configuration commands are not supported on FCoE ports.

Virtual FC Ports do not support frame-based trunking . If trunking is enabled for one of these ports in a slot, and a Brocade FX8-24 Extension blade is inserted into the slot, the configuration is not honored and the system logs a RASLOG error. An attempt to enable trunking for a Virtual FC port in a slot that contains a Brocade FX8-24 is rejected.

Operands

This command has the following operands:

[<*slot*>/]	For bladed systems only, specifies the slot number of the port to be configured, followed by a slash (/).

<port>	Specifies the port to be configured, relative to its slot for bladed systems. Use **switchShow** to display a listing of valid ports.
{0 | 1}	Specify 1 to enable trunking on the specified port. Specify 0 to disable trunking on the port. This operand is required. Trunking is enabled by default, when a trunking license is present on the switch.

Examples

To enable a port for trunking:

```
switch:admin> portcfgtrunkport 1/3, 1
```

See Also

portCfgShow, portShow, switchCfgTrunk, switchShow

portChannel

Configures or displays various parameters of port channel.

Synopsis

```
portchannel --create <portchannel_name>
 -type {static | dynamic}
     [-key <lagnum>]
portchannel --config <portchannel_name>
     {-autoneg {on | off} |
 -rename <new_portchannel_name> |
 -type {static | dynamic}}
portchannel --config -port {<port> | <port_range>}
 -timeout {s | l}
portchannel --delete <portchannel_name>
portchannel {--enable | --disable}
     <portchannel_name>
portchannel --add <portchannel_name>
 -port {<port> | <port_range>}
     [-timeout {s | l}]
portchannel --remove <portchannel_name>
 -port {<slot/port> | <port_range>}
portchannel --reset -stats <portchannel_name>
portchannel --show [-detail | -static |
 -dynamic | -all | <portchannel_name> |
 -stats [<portchannel_name>]]
portchannel --help
```

Description

Use this command to configure or display the various parameters of a port channel. This command is supported only on the Brocade 7850, Brocade 7810, and Directors that support the Brocade FC32-64 Port Blade or Brocade SX6 blades.

This command is supported on Ethernet ports.

Verify if any port channel is or is not configured when you execute the `slotpoweroff` or `slotpoweron` commands and when you pull the slot out. If the port channel is configured then the timeout value must be configured as **long** to avoid potentially disruptive behavior if already configured as **short**.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--create	Creates a port channel.	
	-key <*lagnum*>	Specifies the preshared key to be used for authentication. The key value for the dynamic port channel is optional. The valid key range is from 1 through 1000.
	-type {static | dynamic}	Specifies the port channel type, static or dynamic.
	<*portchannel_name*>	The port channel name. A maximum of 31 characters is allowed with alphanumeric characters, hyphens, and underscore.
--config	Configures a port channel and member port specific parameters.	
	-timeout {l | s}	Defines a time limit. This is an optional parameter. Valid values are long(l) or short(s).
	-autoneg {on | off}	Enables or disables the auto negotiation mode for the LAG port members. This option is not applicable on an empty portchannel.
	-rename <*new_portchannel_name*>	Renames the portchannel.
	<*member_port*>	Configures a particular member port.
	-type {static | dynamic}	Changes the portchannel type to static or dynamic.
--delete <*portchannel_name*>	Deletes a port channel.	
{--enable | --disable}	Enables or disables a port channel.	
--add	Adds the member ports to the port channel.	
--remove	Removes the member ports from the port channel.	
--reset	Resets the port channel parameters. it resets the statistics for the FCIP port channels when the operand is used with the **-stats** option.	
--show	Displays the port channel information.	
	-all	Displays the details of all the static and dynamic port channels.
	-static	Displays the details of all the static port channels.
	-dynamic	Displays the details of all the dynamic port channels.
	-detail	Displays the port channels details.
	-stats <*lag_name*>	Displays the FCIP LAG statistics.
--help	Displays the command usage.	

Examples

To create and add a port:

```
switch:admin> portchannel --create dyn123 -type dynamic
2022/09/25-08:48:51, [USL-1004], 2001, FID 128, INFO, sw0, Interface dyn123 is created.
switch:admin> portchannel --show
Name                           Type        Oper-State   Port-Count   Member Ports
--------------------------------------------------------------------------------
dyn123                         Dynamic     Offline      0
```

```
switch:admin> portchannel --add dyn123 -port ge2
Operation Succeeded.
2022/09/25-08:48:51, [USL-1004], 2001, FID 128, INFO, sw0, Interface ge2 is added on interface dyn123.

switch:admin> portchannel --show
Name                            Type        Oper-State   Port-Count   Member Ports
--------------------------------------------------------------------------------
dyn123                          Dynamic     Offline      1            ge2
```

To configure a port:

```
switch:admin> portchannel --config dyn123 -autoneg on
Name :dyn123
Type :Dynamic
Key  :1
Autoneg  :On
Admin-state: Disable
Oper-state : Offline
  Admin Key: 0001 - Oper Key 0001
  LACP System ID: 0x8000,00-05-33-65-7f-c2
  PART System ID: 0x0000,00-00-00-00-00-00
  Portchannel Member count = 1
  Port          Oper state      Sync    Timeout
  ---------------------------------------------
   ge2          Offline         0       Long
```

To add a particular port or port channel:

```
switch:admin> portchannel --add test-only -port ge12
2023/06/08-11:33:13 (MDT), [USL-1017], 56174, FID 125 | PORT 0/GE12, INFO, dart8-ds,
    Interface ge12 is added on interface test-only.

switch:admin> portchannel --show test-only
  Name  : test-only
  Type  : Dynamic
  Key   : 2
  Speed : 25G
  Admin-state: Enable
  Oper-state: Offline
   LACP System Priority: 32768
   LACP System MAC: c4:f5:7c:11:b2:7c
   LACP PARTNER System Priority: 65535
   LACP PARTNER System MAC: 00:00:00:00:00:00
   Portchannel Member count: 1
   Port    Oper state  Sync   Timeout    Auto-Negotiation
   ---------------------------------------------------------
   ge12    Offline     0      Long       Disabled
```

To display details of dynamic port channel:

```
switch:admin> portchannel --show -dynamic -detail
Name :d1
Type :Dynamic
Key  :1
Autoneg  :Off
```

```
Admin-state: Disable
Oper-state : Offline
  Admin Key: 0001 - Oper Key 0001
  LACP System ID: 0x8000,c4-f5-7c-00-99-c2
  PART System ID: 0x0000,00-00-00-00-00-00
  Portchannel Member count = 2
  PortOper stateSyncTimeout
  -------------------------------------------
   0/8 Offline   0 Long
   0/9 Offline   0 Long

Name :d2
Type :Dynamic
Key  :2
Autoneg  :Off
Admin-state: Disable
Oper-state : Offline
  Admin Key: 0002 - Oper Key 0002
  LACP System ID: 0x8000,c4-f5-7c-00-99-c2
  PART System ID: 0x0000,00-00-00-00-00-00
  Portchannel Member count = 0

Name :d3
Type :Dynamic
Key  :4
Autoneg  :Off
Admin-state: Disable
Oper-state : Offline
  Admin Key: 0004 - Oper Key 0004
  LACP System ID: 0x8000,c4-f5-7c-00-99-c2
  PART System ID: 0x0000,00-00-00-00-00-00
  Portchannel Member count = 0
```

To display all the port channels information:

```
switch:admin> portchannel --show
Name    Type        Oper-State   Port-Count   Member Ports
--------------------------------------------------------------------------------
d1      Dynamic     Offline      3            ge8 ,ge9 ,
                                              ge12
d2      Dynamic     Offline      0
d3      Dynamic     Offline      0
s1      Static      Offline      0
```

To display and reset FCIP LAG statistic:

```
switch:admin> portchannel --show -stats ip-ext-hpe
Name:           ip-ext-hpe           LAG Name
Speed:          10G                  LAG Speed
Admin-State:    Enable               LAG Admin State
Mac-Address:    c4:f5:7c:ff:f1:9a    LAG Mac Address
Oper-State:     Online               LAG Operational Status
InPkts:         382                  LAG Received Frames
InOctets:       40616                LAG Received Octets
```

```
InUcastPkts:    0                   LAG Received Unicast Frames
InMcastPkts:    0                   LAG Received Multicast Frames
InBcastPkts:    382                 LAG Received Broadcast Frames
InVlanPkts:     0                   LAG Received VLAN Frames
InPausePkts:    0                   LAG Received Pause Frames
InDiscards:     382                 LAG Received Frames Discarded
InErrors:       0                   LAG Received Frames with Errors
OutPkts:        396                 LAG Transmitted Frames
OutOctets:      49804               LAG Transmitted Octets
OutUcastPkts:   0                   LAG Transmitted Unicast Frames
OutMcastPkts:   0                   LAG Transmitted Multicast Frames
OutBcastPkts:   396                 LAG Transmitted Broadcast Frames
OutVlanPkts:    0                   LAG Transmitted VLAN Frames
OutPausePkts:   0                   LAG Transmitted Pause Frames
OutDiscards:    0                   LAG Transmitted Frames Discarded
OutErrors:      0                   LAG Transmitted Frames with Errors
CRCErrors:      0                   LAG CRC Errors
CarrierErrors:  0                   LAG lost carrier sense
JabberErrors:   0                   LAG Jabbers
LAG Uptime:     0 Days 1 Hours 32 Mins 54 Seconds 918 MSeconds

switch:admin> portchannel --reset -stats ip-ext-hpe
switch:admin> portchannel --show -stats ip-ext-hpe
Name:           ip-ext-hpe          LAG Name
Speed:          10G                 LAG Speed
Admin-State:    Enable              LAG Admin State
Mac-Address:    c4:f5:7c:ff:f1:9a   LAG Mac Address
Oper-State:     Online              LAG Operational Status
InPkts:         0                   LAG Received Frames
InOctets:       0                   LAG Received Octets
InUcastPkts:    0                   LAG Received Unicast Frames
InMcastPkts:    0                   LAG Received Multicast Frames
InBcastPkts:    0                   LAG Received Broadcast Frames
InVlanPkts:     0                   LAG Received VLAN Frames
InPausePkts:    0                   LAG Received Pause Frames
InDiscards:     0                   LAG Received Frames Discarded
InErrors:       0                   LAG Received Frames with Errors
OutPkts:        0                   LAG Transmitted Frames
OutOctets:      0                   LAG Transmitted Octets
OutUcastPkts:   0                   LAG Transmitted Unicast Frames
OutMcastPkts:   0                   LAG Transmitted Multicast Frames
OutBcastPkts:   0                   LAG Transmitted Broadcast Frames
OutVlanPkts:    0                   LAG Transmitted VLAN Frames
OutPausePkts:   0                   LAG Transmitted Pause Frames
OutDiscards:    0                   LAG Transmitted Frames Discarded
OutErrors:      0                   LAG Transmitted Frames with Errors
CRCErrors:      0                   LAG CRC Errors
CarrierErrors:  0                   LAG lost carrier sense
JabberErrors:   0                   LAG Jabbers
LAG Uptime:     0 Days 2 Hours 13 Mins 55 Seconds 46 MSeconds
```

See Also

portChannelShow

portChannelShow

Displays the port channels from a domain to the remote domains.

Synopsis

```
portchannelshow [<domain> | --help ]
```

Description

Use this command to display information about port channels from a domain to one or all reachable remote domains. The command output includes the following information:

# domain(s) in the fabric	Total number of domains in the fabric.
Local Domain ID	The domain number of local switch.
Domain	The domain number of destination switch.
Name	The name of the destination switch.
WWN	The world wide name (WWN) of the destination switch.
Port Channel	The list of port-channel interfaces. For each trunk, only the port number of the master port is displayed. This field displays "None" during the following conditions: • Policy-Based Routing (PBR) is enabled on the switch. • Traffic Isolation (TI) zone is applied on the egress port. • Port channel is used by 8Gb/s-capable ingress ports. • Port channel contains ICL ports or it is used by other ICL ingress ports. • Port channel is not used by any ingress port.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

domain	Specifies the remote domain to display port channels between the switch in which command is executed to the specified remote domain. You can specify *domain* in one of the following formats: ***domain_id*** Specifies the domain number of destination switch. ***name*** Specifies the name of destination switch. ***wwn*** Specifies the WWN of destination switch.
--help	Displays the command usage.

Examples

To display port channels for all reachable domains:

```
switch:admin> portchannelshow
3 domain(s) in the fabric; Local Domain ID: 1
Domain: 2
```

```
Name: G620
WWN: 10:00:00:27:f8:f1:69:a0
Port Channel:
       Ports:  15

Domain: 5
Name: G720
WWN: 10:00:c4:f5:7c:01:79:f0
Port Channel:
       Ports:  13
```

To display port channels for a specific remote domain:

```
switch:admin> portchannelshow 10:00:00:05:1e:38:e5:23
Domain:       2
Name:         G610
WWN:          10:00:00:05:1e:38:e5:23
Port Channel:
       Ports: 384, 385, 386, 387, 400, 401, 402, 403,
              417, 418, 419, 432, 433, 434, 435
```

See Also

islShow, trunkShow

portCmd

Diagnoses intelligent ports.

Synopsis

```
   portcmd --ping [<slot>/]ge<port>
{-s | --src} <src_ip> {-d | --dst} <dst_ip>
[{-n | --num-pings} <num_requests>]
[{-t | --ttl} <ttl>]
[{-w | --wait-time} <wait_time>]
[{-z | --size} <bytes>]
[{-i | --ip-tos} <service_type>]
[--dscp <dscp_marking>]
[{-c | --l2cos} <L2 Class-of-Service>]
[{-y | --quiet}] [{-h | --help}]
   portcmd --traceroute [<slot>/]ge<port>
{-s | --src} <src_ip> {-d | --dst} <dst_ip>
[{-m | --max-hops} <ttl>]
[{-f | --first-hop} <ttl>]
[{-w | --wait-time} <wait_time>]
[{-z | --size} <bytes>]
[{-i | --ip-tos} <service_type>]
[--dscp <dscp_marking>]
[{-c | --l2cos} <L2 Class-of-Service>]
[{-h | --help}]
   portcmd --pmtu [<slot>/]ge<port>
```

```
{-s | --src} <src_ip>
{-d | --dst} <dst_ip>
[{-i | --ip-tos} <service_type>]
[--dscp <dscp_marking>]
[{-c | --l2cos} <L2 Class-of-Service>]
[{-v | --verbose}]
[{-h | --help}]
   portcmd --wtool [<slot>/]<session> {create [<args>] |  modify [<args>] | delete | delete-all | show [<
args>] | start | stop | stop-all | --help}
   portcmd --help
```

Description

Use this command to ping or trace a route to a destination IP host from an intelligent Ethernet port, or to determine the path characteristics between a local data source and a remote data sink.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

<slot>	For chassis-based systems only, specifies the slot number of the port to be configured, followed by a slash (/).
ge*<port>*	Specifies the port number of the GbE port on the blade. For the Brocade 7810 switch (supports only dp0), Brocade 7850 switch, and the Brocade SX6 extension blade, specify GbE port number along with the DP number, for example, **portcfg ipif ge0.dp0**. The valid DP numbers are dp0 and dp1.
--ping	Pings a destination IP address from one of the source IP interfaces on the GbE port. Valid arguments and their values include the following:

-s *<src_ip>*	Specifies the source IP address that originates the ping request. IPv6 addresses are supported.
-d *<dst_ip>*	Specifies the destination IP address to which to target the ping request. IPv6 addresses are supported.
-n *<num_requests>*	Specifies the number of ping requests. Valid values are 1 to 255. The default is 4. This operand is optional.
-q *<service_type>*	Specifies the type of service in the ping request. The default is 0 and service_type can be hex (0x0-0xFF) or decimal (0-255). This operand is optional.
-t *<ttl>*	Specifies the time to live. Valid values are 1 to 255. The default is 100. This operand is optional.
-w *<wait_time>*	Specifies the time to wait for the response of each ping request in seconds. The default is 5 seconds and the maximum wait time is 9 seconds. This operand is optional.
-z *<size>*	Specifies the default packet size to a fixed size in bytes. The default is 64 bytes. In an IPv4 environment, the ICMP/IP header occupies 28 bytes. In an IPv6 environment it occupies 48 bytes. The total size, including ICMP/IP headers (28 or 48 bytes without IP options) cannot be greater than the IP MTU configured on the interface. This operand is optional.
-c *<L2 Class-of-Service>*	Specifies Class of Service/Priority, as defined by IEEE 802.1p. Values must be in the range between 0 and 7. The default is 0. This operand is optional with the **-v** option.

--traceroute Traces the IP router hops used to reach the host *dst_ip* from one of the source IP interfaces on the GbE port. Valid arguments include the following:

-s <*src_ip*>	Specifies the local IP address to use for sourcing the probe packets. IPv6 addresses are supported.
-d <*dst_ip*>	Specifies the destination IP address to which to probe the IP router path. IPv6 addresses are supported.
-m <*max_hops*>	Specifies the maximum hop limit used in the outgoing probe packets. The default value is 30 hops. The valid range is from 1 through 255. This operand is optional.
-f <*first_ttl*>	Specifies the starting point for the "time to live" parameter. The default is 1. The command skips processing for those intermediate gateways that are less than the *first_ttl* hops. This operand is optional.
-q <*service_type*>	Specifies the type of service in the **traceroute** request. The default is 0 and service_type must be an integer from 0 to 255. This operand is optional.
-w <*wait_time*>	Sets the time, in seconds, to wait for a response to a probe. The default is 5 seconds. The maximum wait time is 9 seconds. This operand is optional.
-z <*size*>	Specifies the size, in bytes, of the trace route packet to use. The default is 64 bytes. In an IPv4 environment, the ICMP/IP header occupies 28 bytes. In an IPv6 environment, it occupies 48 bytes. The total size, including ICMP/IP headers (28 or 48 bytes without IP options), cannot be greater than the IP MTU configured on the interface. This operand is optional.
-c <*L2 Class-of-Service*>	Specifies Class of Service/Priority, as defined by the IEEE 802.1p specification. Values must be in the range between 0 and 7. The default value is 0. This operand is optional with the **-v** option.

--help Displays command usage.

--pmtu Generates the ICMP messages to discover the maximum MTU available on a specific network path. It is represented as the maximum number of bytes that can traverse the network path. This option is supported only on the Extension switches or Extension blades. Valid arguments include the following:

-s <*src_ip*>	Specifies the local IP address to use for sourcing the probe packets. IPv6 addresses are supported.
-d <*dst_ip*>	Specifies the destination IP address to which to probe the IP router path. IPv6 addresses are supported.
-c <*L2 Class-of-Service*>	Specifies Class of Service/Priority, as defined by IEEE 802.1p. Values must be in the range between 0 and 7. The default is 0.
-q <*DSCP*>	Specifies the DSCP marking. Values must be in the range between 0 and 63.
-v	Displays verbose output.
-y	Displays the short output with summary lines at the beginning and end.

--wtool Generates traffic over a pair of IP addresses to test the link for any network issues. Determines the health of a network link before deploying it for use in a circuit. This option is supported only on the Extension switches or Extension blades.

This command supports following actions and arguments:

create Creates a WAN test session. The valid range is from 0 through 19. This command supports following options:

-a | --admin-status enable | disable	Enables or disables the WAN test session.
-s | --src <*src_ip*>	Specifies the local IP address to use for sourcing the probe packets. IPv6 addresses are supported.

-d | --dst <*dst_ip*>	Specifies the destination IP address to which to probe the IP router path. IPv6 addresses are supported.
-r | --rate <*rate*>	Specifies the test rate in kbps.
-t | --time <*time*>	Specifies the test time in minutes.
i | --ipsec-policy <*ip-sec_policy*>	Specifies the policy name for an ipsec configuration.
-b | --bi-directional	Specifies the test session is running on bi-directional traffic. By default, the WAN test session is configured for uni-directional traffic.
-u | --uni-directional	Specifies the test session is running on uni-directional traffic.
-C | --connection-type	Specifies the connection type. Valid values are default, listener, and initiator.
--dscp <*dscp*>	Sets Differentiated Services Code Point (DSCP) markings for the WAN test session.
--l2cos <*l2cos*>	Sets the Layer 2 Class of Service (L2CoS) value for the WAN test session.

modify Modifies an established WAN test session. This command supports following options:

-r <*rate*>	Specifies the test rate in kbps.
-t <*time*>	Specifies the test time in minutes.
-b	Specifies the test session is running on bi-directional traffic. By default, the WAN test session is configured for uni-directional traffic.
-c	Clears the statistics associated with the WAN test.

show Displays the WAN test session statistics. This command supports following options:

--summary	Displays statistics for active WAN test sessions.
--connection	Displays statistics for established WAN test sessions.
--detail	Displays detailed statistics for active WAN test sessions.
--historical	Displays statistics for past WAN test sessions.
--all-ls	Displays statistics for all configured WAN test sessions from all logical switches.
--peer	Displays statistics for the local and peer WAN test sessions.
--sla	Displays the running SLA-configured sessions.
--reset	Resets the current user WAN tool session statistics.

start Starts the WAN test session associated with the test ID. This command supports following option:

-t	Specifies the test time in seconds. Use this option if the test time is not configured with **create** or **modify** options.

stop Stops the WAN test session associated with the test ID. Use **all** to stop all WAN test sessions.

delete Deletes the WAN test session associated with the test ID. Use **all** to delete all WAN test sessions.

--help Displays command usage.

Examples

To verify if packets can be sent to the destination IP address with maximum *wait_time* specified:

```
switch:admin> portcmd --ping 12/ge0.dp0  \
     -s 2007:7:30:32:227:138:10:120  \
     -d 2007:7:30:32:227:77:0:60 -w 9
Pinging 2007:7:30:32:227:77:0:60 from ip interface \
   2007:7:30:32:227:138:10:120 on 12/ge0 with 64

bytes of data
Reply from 2007:7:30:32:227:77:0:60: bytes=64 rtt=0ms ttl=255
Reply from 2007:7:30:32:227:77:0:60: bytes=64 rtt=1ms ttl=255
Reply from 2007:7:30:32:227:77:0:60: bytes=64 rtt=0ms ttl=255
Reply from 2007:7:30:32:227:77:0:60: bytes=64 rtt=0ms ttl=255

Ping Statistics for 2007:7:30:32:227:77:0:60:
        Packets: Sent = 4, Received = 4, Loss = 0 ( 0 percent loss)
        Min  RTT = 0ms, Max RTT = 1ms Average = 0ms
```

To trace the IP router hops used to reach the remote (with packet size specified):

```
switch:admin> portcmd --traceroute 12/ge0.dp0  \
     -s 2007:7:30:32:227:138:10:120  \
     -d 2007:7:30:32:227:77:0:60 -z 1452
Traceroute to 2007:7:30:32:227:77:0:60 from IP interface
2007:7:30:32:227:138:10:120 on 12/0, 30

hops max
1  1 ms  0 ms  0 ms
Traceroute complete.
```

To discover the maximum MTU available on a switch:

```
switch:admin> portcmd --pmtu ge3.dp0 -s 192.168.0.1 -d 192.168.0.2
Path MTU detection from 192.168.0.1 to 192.168.0.2
Note: a response can take up to 32 seconds

Path MTU returned:1500
```

To create a WAN test session:

```
switch:admin> portcmd --wtool 0 create -d 192.168.0.1 -s 192.168.0.2 -r 5000000
Operation Succeeded
```

To create a WAN test session on a bladed system:

```
switch:admin> portcmd --wtool 7/0 create -d 192.168.0.1 -s 192.168.0.2 -r 5000000
Operation Succeeded
```

To start a WAN test session:

```
switch:admin> portcmd --wtool 0 start -t 1200
Operation Succeeded
```

To display WAN test session for a specified session:

```
switch:admin> portcmd --wtool 0 show
wantool-id: (0)
=========================================
 State              : Established
 Up Time            : 1m6s
 Run Time           : 0s
 Time remaining     : 0s
 IP Addr (L/R)      : 192.168.0.1 ge3 <-> 192.168.0.2
 PMTUD              : Disabled
 Comm Rate          : 5000000 Kbps (610.35 MB/s)
 Tx rate            : 114.06 Kbps (0.01 MB/s)
 Rx rate            : 102.66 Kbps (0.01 MB/s)
 Tx Utilization     : 0.00%
 Rx Utilization     : 0.00%
 RTT (Min/Max)      : 0.10ms/0.28ms
 RTT VAR (Min/Max)  : 0.09ms/0.28ms
 Local Session Statistics
  Tx pkts            : 0
 Peer Session Statistics
  Rx pkts            : 0
  Ooo pkts           : 0
  Drop pkts          : 0 (0.00%)
  Drop% (Overall/5s) : 0.00% / 0%
```

To display active WAN test sessions:

```
switch:admin> portcmd --wtool show --d
WTool Session: 24.0 (DP0)
===============================================
 Admin / Oper State     : Enabled / Running
 Up Time                : 1m24s
 Run Time               : 1m23s
 Time Out               : 3m50s
 Time Remaining         : 13m37s
 IP Addr (L/R)          : 192.168.0.1 ge3 <-> 192.168.0.2
 IP-Sec Policy          : (none)
 PMTU Discovery (MTU)   : disabled (1500)
 Bi-Directional         : disabled
 L2CoS / DSCP           : (none) / (none)
 Configured Comm Rate   : 5000000 kbps
 Peer Comm Rate         : 5000000 kbps
 Actual Comm Rate       : 5000000 kbps
 Tx rate                : 5000000.00 Kbps  ( 610.00 MB/s)
 Rx rate                : 5000000.00 Kbps ( 610.00 MB/s)
 Tx Utilization         : 100.00%
 Rx Utilization         : 100.00%
 RTT (Min/Max)          : 1 ms/1 ms
 RTT VAR (Min/Max)      : 1 ms/1 ms
 Local Session Statistics
  Tx pkts               : 810024
 Peer Session Statistics
  Rx pkts               : 792029
  Ooo pkts              : 0
```

```
  Drop pkts             : 0 (0.00%)
  Drop% (Overall/5s)    : 0.00% / 0%
(output truncated)
```

To display disabled WAN test sessions:

```
switch:admin> portcmd --wtool show --d

 Admin / Oper State     : Disabled / Disabled
 Last Session End       : Thu Feb 23 07:12:31 2017
 Last Session Completion: Pass:Fail(reason):Aborted
 IP Addr (L/R)          : 192.168.0.1 ge3 <-> 192.168.0.2
 IP-Sec Policy          : (none)
 PMTU Discovery (MTU)   : disabled (5500)
 Bi-Directional         : disabled
 L2CoS / DSCP           : (none) / (none)
 SLA (Run Time / Timeout / Loss)
 Configured             : 10m0s / 20m0s / 0.50
 Actual                 : 0s / 0s / 0.00
 Configured Comm Rate   : 50000 kbps
 Peer Comm Rate         : (none)
 Actual Comm Rate       : (none)
```

To display local and remote WAN test sessions:

```
switch:admin> portcmd --wtool 2 show --peer
WTool Session: 2       (Local)                (Remote)
==========================================================================
Admin / Oper State    : Enabled / Online     : Enabled / Online
Up Time               : 6s                   : 6s
Run Time              : 0s                   : 0s
Time Remaining        : 10m0s                : 10m0s
Port                  : ge8.dp0              : -
IP Addr               : 2002:1000:0000:1111  : 2002:1011:1111:1110
IP-Sec Policy         : (none)               : (none)
Configured Comm Rate  : 1000000 kbps         : 1000000 kbps
Actual Comm Rate      : 1000000 kbps         : 1000000 kbps
PMTU Discovery (MTU)  : disabled (9216)      : disabled (9216)
Bi-Directional        : disabled             : disabled
L2CoS / DSCP          : (none) / (none)      : (none) / (none)
Tx rate               : 2992.14 Kbps         : 2992.14 Kbps
Rx rate               : 2976.47 Kbps         : 2976.47 Kbps
Tx Utilization        : 0.30%                : 0.30%
Rx Utilization        : 0.30%                : 0.30%
RTT (Min/Max)         : 1 ms/1 ms            : 1 ms/1 ms
RTT VAR (Min/Max)     : 1 ms/1 ms            : 1 ms/1 ms
Tx pkts               : 0                    : 0
Rx pkts               : 0                    : 0
Ooo pkts              : 0                    : 0
Drop pkts             : 0                    : 0
Drop % (Overall/5s)   : 0.00% / 0.00%        : 0.00% / 0.00%
```

To modify a WAN test session:

```
switch:admin> portcmd --wtool 0 modify --bi
```

```
Operation Succeeded
```

To stop a WAN test session:

```
switch:admin> portcmd --wtool 0 stop
Operation Succeeded
```

To reset a WAN test session:

```
switch:admin> portcmd --wtool 1 show --reset
WTool Session: 1 (DP0)
===============================================
 Admin / Oper State     : Enabled / Running
 Up Time                : 19m41s
 Run Time               : 13s
 Time Remaining         : 9m47s
 IP Addr (L/R)          : 192.168.0.1 ge3 <-> 192.168.0.2
 IP-Sec Policy          : (none)
 PMTU Discovery (MTU)   : disabled (1500)
 Bi-Directional         : disabled
 L2CoS / DSCP           : (none) / (none)
 Configured Comm Rate   : 500000 kbps
 Peer Comm Rate         : 500000 kbps
 Actual Comm Rate       : 500000 kbps
 Tx rate                : 499974.82 Kbps (  62.50 MB/s)
 Rx rate                : 500099.71 Kbps (  62.51 MB/s)
 Tx Utilization         : 99.99%
 Rx Utilization         : 100.02%
 RTT (Min/Max)          : 1 ms/1 ms
 RTT VAR (Min/Max)      : 1 ms/1 ms
 Local Session Statistics
 Tx pkts               : 526104
 Peer Session Statistics
 Rx pkts               : 524717
 Ooo pkts              : 0
 Drop pkts             : 0
 Drop% (Overall/5s)    : 0.00% / 0.00%
```

To display the current SLA-configured session:

```
switch:admin> portcmd --wtool show --sla
Session OperSt    TxMBps  RxMBps   Drop%    RunTime    TimeOut    TimeRemaining
--------------------------------------------------------------------------------
 24.0    Running     6.22    6.25   0.00     5s         3m55s      1m56s
 24.1    Running     6.26    6.25   0.00     5s         19m55s     1m56s
 24.2    Running     6.22    6.25   0.00     4s         19m56s     1m57s
 24.3    Running     6.20    6.23   0.00     3s         19m57s     1m58s
 25.0    Running    12.52   12.45   0.00     3s         19m57s     3m58s
 25.1    Running    12.50   12.50   0.00     4s         19m56s     3m57s
 25.2    Running    12.47   12.51   0.00     4s         19m56s     3m57s
 25.3    Running    12.38   12.43   0.00     3s         19m57s     3m58s
 26.0    Running    12.49   12.49   0.00     5s         19m55s     5m56s
 26.1    Running    12.54   12.50   0.00     5s         19m55s     5m56s
 26.2    Running    12.51   12.49   0.00     4s         19m56s     5m57s
 26.3    Running    12.32   12.40   0.00     3s         19m57s     5m58s
```

```
  27.4    Running    12.50   12.50   0.00     4s         19m56s     7m57s
  27.5    Running    12.48   12.49   0.00     4s         19m56s     7m57s
  27.6    Running    12.24   12.26   0.00     3s         19m57s     7m58s
  27.7    Running     2.98    2.89   0.00     2s         19m58s     7m59s
  28.4    Running     5.81    0.21   0.00     2s         19m58s     9m59s
  28.5    Running    12.20    6.65   0.00     3s         19m57s     9m58s
  28.6    Running    12.47   12.46   0.00     3s         19m57s     9m58s
  28.7    Running    12.44   11.26   0.00     3s         19m57s     9m58s
```

See Also

portCfg, portShow

portDecom

Decommissions and disables an E_Port without frame loss.

Synopsis

portdecom {**--help** | [**-qsfp**] [<*slot*>/]<*port*>}

Description

Use this command to disable an E_Port without frame loss. The E_Port can either be a single redundant E_Port or an E_Port which is part of a trunk group. The port must be an operational E_Port with at least one other redundant E_Port available to reach all domains that the E_Port can reach. Or the port must be an operational E_Port which is part of a trunk group with at least one other member in the trunk. The last member of the trunk group may also be decommissioned, if there are other available redundant E_Ports.

Upon successful completion of the command all traffic flows on the port will be moved to other redundant paths and the port will be placed in a persistently disabled state. To bring the port back online use the **portCfgPersistentEnable** command.

Use the **-qsfp** option to request port decommissioning to automatically perform a lossless E_Port decommissioning for all the E_Ports of a QSFP module. When using **-qsfp** option, the identified port must be part of the QSFP module to be decommissioned and all the ports of the QSFP module must be in the same logical switch. All existing requirements apply for port decommissioning of the individual E_Ports and the request must pass through the prevalidation check. An error message is displayed if the **-qsfp** request fails.

Notes

This command requires that the lossless feature is enabled on both the local switch and the remote switch on the other end of the E_Port. This command will fail for online ports, if the port is not a fully operational E_Port or trunk port, lossless is not enabled on the local or remote switch, or no alternate redundant path is available to route the traffic. A redundant path must be an E_Port connection between the same pair of switches as the E_Port that is being decommissioned. Use the **topologyShow** command to verify that alternate paths are available to reach all domains.

When decommissioning the member of a trunk group, all members must have an equal link cost. If a member does not have an equal cost, the cost of the trunk as a whole may change after decommissioning the port and cause routes to be changed. Refer to the **linkCost** command for more information.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

<slot>	For bladed systems only, specifies the slot number of the ports to be disabled, followed by a slash (/).
<port>	Specifies the E_Port to be decommissioned.
-qsfp	Instructs the command handler to internally lookup for the other three user ports and serially perform a port decommissioning request for all the user ports of that QSFP. This option is supported only in Fabric OS v9.0.0.

Examples

To decommission a port:

```
switch:user> portdecom 2/5
The port has been decommissioned and persistently disabled.
```

To decommission a QSFP port:

```
switch:user> portdecom -qsfp 61
Port 60: submitting request to decommission port. Please wait.
The port has been decommissioned and persistently disabled.

Port 62: submitting request to decommission port. Please wait.
The port has been decommissioned and persistently disabled.

Port 61: submitting request to decommission port. Please wait.
The port has been decommissioned and persistently disabled.

Port 63: submitting request to decommission port. Please wait.
The port has been decommissioned and persistently disabled.
```

The following example shows a scenario of a QSFP port decommission failure.

```
switch:user> portdecom -qsfp 61
Port 60: submitting request to decommission port. Please wait.
The port has been decommissioned and persistently disabled.

Port 62: submitting request to decommission port. Please wait.
The port has been decommissioned and persistently disabled.

Port 61: submitting request to decommission port. Please wait.
The port has been decommissioned and persistently disabled.

Port 63: submitting request to decommission port. Please wait.
Error: Request failed due to the local port not being in a ready state.
```

The following example shows a scenario were the prevalidation fails.

```
switch:user> portdecom -qsfp 2
Error! The requested port is not a QSFP port.

switch:user> portdecom -qsfp 61
Error! Lossless is not enabled on the local switch.
```

See Also

dlsShow, linkCost, portCfgPersistentEnable, topologyShow

portDisable

Disables a port or a range of ports.

Synopsis

```
portdisable [<slot/>]<port1>[-<port2>]
portdisable -i {<port_index> | <port_index_range>} [-f]
portdisable -x <hex1>[-<hex2>]
portdisable{-slot | -s} {<slot> | <slot_range>}
portdisable [<slot>/]<port1>[-<port2>] -r <disable_reason_string>
portdisable -h
```

Description

Use this command to disable a port or a range of ports. If the port is connected to another switch when disabled, the fabric may reconfigure. Devices connected to this port can no longer communicate with the fabric.

You can identify a single port to be disabled by its port number or by its port index number in decimal or hexadecimal format. Port ranges are supported with port numbers, index numbers(decimal or hexadecimal) or by specifying a slot or a slot range. Use **switchShow** for a listing of valid ports, slots, and port index numbers.

The front panel LED of a disabled port flashes amber in a two-second cycle. If the port was online before being disabled, a state transition will be indicated in one of the following ways: RSCN, SNMP trap, or Web pop-up window.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

This command can cause the peer ports, if any, connected to the specified port experience uncorrected FEC errors.

Operands

This command has the following operands:

[<*slot*/>]	On bladed systems only, specifies the slot number of the ports to be disabled, followed by a slash (/).
<*port1*>[-<*port2*>]	Disables a single port or a range of ports identified by port numbers. The port range cannot span slots, but you can specify multiple port ranges pairs separated by a space, for example, 3/1-4 4/7-9.
-i {<*port_index*> | <*port_index_range*>}	Disables a port or a range of ports identified by port index numbers. You may specify multiple index ranges separated by a space, for example, **-i** 33-38 40-60. **-f** Ignores nonexisting ports. This operand is valid only with the **-i** option.
-x <*hex1*>[-<*hex2*>]	Disables a port or a range of ports identified by port numbers, index number in hexadecimal format. You may specify multiple port ranges separated by a space, for example, -x 21-26 28-3c.
-slot <*slot*> | <*slot_range*>	Disables all ports on a slot or on a range of slots, for example, **-s** 3-5. You may specify multiple slot ranges separated by a space, for example, **-s** 3-5 8-10.
-r <*disable_reason_string*>	Specifies the reason for disabling the port. The string can be up to 16 characters long and must be enclosed in double quotation marks.
-h	Displays the command usage.

Examples

To disable a single port.

```
switch:admin> portdisable 2/4
```

To disable a range of ports:

```
switch:admin> portdisable 2/4-8
```

To disable multiple port ranges:

```
switch:admin> portdisable 2/24-26 3/10-12 4/3-4
```

To disable a port by specifying its index number:

```
switch:admin> portdisable -i 176
```

To disable a range of ports by specifying the corresponding port index range:

```
switch:admin> portdisable -i 170-176
```

To disable multiple ports by specifying multiple port index ranges:

```
switch:admin> portdisable -i 30-36 170-176
```

To disable range of ports by specifying port index numbers in hexadecimal format:

```
switch:admin> portdisable -x 1d-1e
```

To disable all ports on slots 3-5:

```
switch:admin> portdisable -s 3-5
```

To disable all ports on slots 3-5 and 9-12:

```
switch:admin> portdisable -s 3-5 9-12
```

To disable a port with a disable reason:

```
switch:admin> portdisable 2/2 -r "laser fault"
```

See Also

portCfgPersistentDisable, portCfgPersistentEnable, portEnable, portShow, switchShow

portDPortTest

Initiates or terminates a D_Port test, or displays D_Port test results.

Synopsis

```
portdporttest --start [-nframes <number> | -time <time>]
     [-framesize <size>] [-pattern <pat_name> |
 -payload <payload_pattern>] [-fec] [-cr] [<slot/>]<port_list>
 portdporttest --setarg [-nframes <number> | -time <time>]
     [-framesize <size>] [-pattern <pat_name> |
 -payload <payload_pattern>] [-fec] [-cr] [<slot/>]<port_list>
 portdporttest --stop [<slot/>]<port_list>
 portdporttest --restart [<slot/>]<port_list>
 portdporttest --clear all [<slot/>]<port>
 portdporttest --reset -module [<slot/>]<port_list>
 portdporttest --show  [-detail] <slot/>]<port_list>
 portdporttest --show  all
portdporttest --exit [<slot/>]<port_list>
```

```
portdporttest --help
```

Description

Use this command to manually initiate or stop a test, display a test results, set test parameters, and take actions on the optics. The **portdporttest --show** command displays the result of the D_Port tests. The port must be configured as a D_Port and physically connected to a second D_Port on a remote switch. Refer to the **portCfgDPort** command for more information. The **portdporttest --start** command only needs to be issued on one end of the link.

The D_Port test supports only link traffic test.

Use the **--setarg** option to set the test parameters and exit. Use the **--restart** option to restart the test with the already configured parameters.

Use the **--show** option with a port operand to display the test status for the specified ports at any time during the test or after the diagnostics has completed. The command output includes the following information for each configured D_Port:

Slot	The slot number on the local side of the link.
Port	The port number on the local side of the link
Remote WWNN	The world wide node name of the switch on the remote side of the link.
Remote WWPN	The world wide port name of the Host Bus Adapter (HBA) or device port on the remote side of the link.
Remote port index	The port number on the remote side of the link
Mode	The testing mode: Automatic (initiated due to port online event) or Manual (manually restarted using this command).
No. of test frames	Number of frames sent for link traffic test.
Test frame size	The test frame size in bytes.
Pattern	The predefined pattern name.
Payload	The user-defined payload. The valid range of payload is from 0x1 through 0xffffffff.
FEC (enabled/ option/active)	The forward error correction (FEC) status. This option is not supported for D_Port HBA.
CR (enabled/ option/active)	The credit recovery (CR) status. This option is not supported for D_Port HBA.
Start time	Date and time of test start
End time	Date and time of test completion
Status	On the link initiator, this field displays the overall test status as PASSED, FAILED, SKIPPED, IN PROGRESS, NOT STARTED, or STOPPED. On the link responder, the status displays PASSED, FAILED, STOPPED, or RESPONDER.
Test	For each sub-test, the command displays the Start time, test result (PASSED, FAILED, IN PROGRESS, NOT STARTED, STOPPED, or RESPONDER), estimated time in seconds, and diagnostic comments. Comments include the following:

No SFP or chip support	The test result is skipped because the SFP or port is not capable of D_Port functionality.
See remote port results	The test result related to this comment is RESPONDER. The port is in responder state and test results will be available at the initiator port on the remote side of the link.
Remote port is not ready to start the test	The test failed because the remote port is not ready to start the D_Port test.
No remote SFP or chip support	The test is skipped because the D_Port test is run between a QSFP and SFP port connected through break-out cable or when the remote SFP is not capable of running the optical loopback test.
Long distance config mismatch	The test result may PASS or FAIL depending on the long distance configuration on LD/LE links or on invalid long distance configuration.

	and *Long distance F_Port not supported*
Roundtrip link latency	Displays roundtrip link latency in nanoseconds or unknown when the test is in progress. Roundtrip link latency is the time required for the light to travel from a given port to the port at the remote side of the link and back again.
Approximate physical distance	The Approximate physical distance of the interswitch link is displayed for the cable length greater than 1KM (in meters). The Link distance for SFPs or ICL ports have a precision of +/- 50 meters for 8G LWL SFPs, 8G ELWL SFPs, 10G SFPs, and QSPF ports and +/- 5 meters for 16G, 32G, and 64G SFPs/QSFPs. When FEC is active, precision is +/- 10 meters for all the 16G ports.
Buffers required	The number of buffers required for the given distance and speed. Irrespective of test frame size, the number of buffers required is calculated for 2112-byte frames.
Failure report	Displays details on the local port and remote port errors, if any, when the D_Port test fails.

Use the **--show all** command to display the following test summary information:

Port	The port number on the local side of the link
State	The port state: OFFLINE or ONLINE
SFP Capabilities	The result is **--** as E/O wrap is deprecated from D-Port functionality.
Test Result	PASSED, FAILED, or STOPPED
Egress power	The power values and power loss in the transmit path. The following values are displayed: power transmitted from the local side of the link (**Tx**), power received on the remote side of the link (**Rx**), the power loss, that is, the relative difference in power (**Diff**), and the status of the power loss (No Loss, within tolerable limits, and outside tolerable limits).
Ingress power	The power values and power loss in the receive path. The following values are displayed: power received on the local side of the link (**Rx**), power transmitted from the remote side of the link (**Tx**), the power loss, that is, the relative difference in power (**Diff**), and the status of the power loss (No Loss, within tolerable limits, and outside tolerable limits).

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

This command is supported only on Fibre Channel ports. SFPs must be Brocade-branded and run Fabric OS v7.4.2 or later. This command skips the optical loopback test for loopback plugs or when the port loops back to another D_Port in the same switch.

The port error statistics may show incremented values after D_Port tests are successful and the test status as NOT_STARTED due to port toggle operation at the end of the D_Port test.

The D_Port long duration test can be run on only one port at a time.

Operands

This command has the following operands:

slot	On bladed systems only, specifies the slot number of the ports to be configured, followed by a slash (/).
port_list	Specifies one or more ports, relative to the slot on bladed systems. Use **switchShow** for a listing of valid ports. A port list should be enclosed in double quotation marks and can consist of the following:

- A single port, for example, "8" or "5/8" on blades systems.
- A port range where beginning and end port are separated by a dash, for example, "8-13" or "5/8-13" on blades systems. A port range cannot span multiple slots.
- A set of ports separated by commas, for example "3,5,7,8" or "5/3,5,7,8" on bladed systems.
- A wildcard '*' indicates all ports. The wildcard can be represented as '*', or "*".

--start Initiates the diagnostics on the specified D_Ports.

-nframes *number*	Specifies the number of frames to send in millions. The range for the number of frames is from 1 through 1500 and the default value is 1 for 1 million frames. Long duration can run only one port at a time.
-time *time*	Specifies the time duration in HH:MM format for which the frame traffic test will run. Long duration can run only one port at a time.
-framesize *size*	Specifies the size of test frames that are generated to run the test. The range for the framesize is 36 to 2112 bytes. The size of the frames can be specified in multiples of 4; otherwise the nearest higher multiple of 4 value will be taken as frame size. Default value is 1024.
-pattern *pat_name*	Specifies the name of the predefined pattern to be used in the payload. Valid patterns are BYTE_NOT, QUAD_NOT, WORD_NOT, BYTE_RAMP, QUAD_RAMP, WORD_RAMP, BYTE_LFSR, RANDOM, CRPAT, CSPAT, CHALF_SQ, CQTR_SQ,RDRAM_PAT, jCRPAT, jCJTPAT, jCSPAT, PRED_RAND, SMI_TEST, CJPAT, QUAD_NOTP, JSPAT, JTSPAT. Use the **dataTypeShow** command to get the list of frame patterns. The default pattern jCRPAT is used if the pattern is not specified.
-payload *payload_pattern*	Specifies the user-defined payload in hexadecimal. The valid range of payload is from 0x1 through 0xffffffff.
-fec	Enables the forward error correction (FEC) during D_Port test. This sub-option is not supported on D_Ports configured with Dense Wavelength Division Multiplexing (DWDM).
-cr	Enables the credit recovery (CR) during D_Port test.

--setarg Sets the D_Port test parameters and exits. The sub-options of **--setarg** are same as **--start**. The result is uncertain, if the arguments are set with different parameters on both sides.

This option is not supported for D_Port HBA connections.

--stop Terminates the diagnostics on the specified D_Ports. Brocade recommends that you execute this command on both the local port and the remote port to properly terminate the D_Port tests.

--restart Restarts the D_Port diagnostic tests with the configured parameters.

This option is not supported for D_Port HBA connections.

--show Displays runtime status and results of the diagnostics.

-detail Displays the current detailed D_Port test results and statistics. This option provides extra details in case of test failure.

--get Gets the port status.

--clear Clears the port status.

--reset -module Restores CDR on HAA modules.

--exit Exits the on-demand or Dynamic D_Ports to normal mode. The static D_Ports are retained in D_Port mode.

--help Displays the command usage.

Examples

To initiate the D_Port test on a single port:

```
switch:admin> portdporttest --start
```

To terminate the D_Port test on a single port:

```
switch:admin> portdporttest --stop
```

To display the D_Port test results for a port while the test is in progress or after the test has completed:

```
switch:admin> portdporttest --show 16
D-Port Information:
===================
Port:                        16
Remote WWNN:                 10:00:00:27:f8:f0:21:60
Remote port index:           8
Mode:                        Manual
No. of test frames:          1 Million
Test frame size:             1024 Bytes
Pattern:                     jCRPAT
FEC (enabled/option/active): Yes/No/Yes
CR (enabled/option/active):  Yes/No/No
Start time:                  Tue Mar 15 20:14:06 2022
End time:                    Tue Mar 15 20:14:36 2022
Status:                      PASSED
=====================================================================
Test                 Start time   Result  EST(HH:MM:SS) Comments
=====================================================================
Link traffic test    20:14:27     PASSED  --------      ----------
=====================================================================
Roundtrip link latency       : 1061 nano-seconds
Approximate physical distance: unknown
Buffers required             : 1 (for 2112 byte frames at 32Gbps speed)
Egress power                 : Tx: -1.0 dBm, Rx: -0.9 dBm, Diff: 0.0 dBm (No Loss)
Ingress power                : Rx: -1.3 dBm, Tx: -1.4 dBm, Diff: 0.0 dBm (No Loss)
```

To display D_Port summary information:

```
switch:admin> portdporttest  --show all
Slot Port  State     SFP Capabilities  Test Result
====================================================
 4   22    ONLINE    ---               PASSED
```

To display the D_Port test results for a port when the test has failed:

```
switch:admin> portdporttest --show 4/22

D-Port test will start on the following port(s)
4/22
Please use portdporttest --show <port> for test status.
All D-Port tests completed. (Press <Enter> key for command prompt.)

switch:admin> portdporttest --show 4/22
D-Port Information:
===================
Slot                  :      4
Port                  :      22
Remote WWNN           :      10:00:c4:f5:7c:00:b0:20
Remote port index     :      3
Mode                  :      Manual
```

```
No. of test frames    :      1 Million
Test frame size       :      1024 Bytes
Pattern               :      jCRPAT
FEC (enabled/option/active): Yes/No/Yes
CR (enabled/option/active):  Yes/No/No
Start time            :      Wed Nov  2 06:51:53 2022
End time              :      Wed Nov  2 06:51:57 2022
Status                :      PASSED
=========================================================================
Test                Start time   Result     EST(HH:MM:SS)    Comments
=========================================================================
Link traffic test   06:51:55    PASSED      --------    ----------
=========================================================================
Roundtrip link latency:      742 nano-seconds
Buffers required      :      1 (for 2112 byte frames at 32Gbps speed)
Egress power          :      Tx: -1.6 dBm, Rx: -1.5 dBm, Diff: 0.0 dB (No Loss)
Ingress power         :      Rx: -1.6 dBm, Tx: -1.5 dBm, Diff: 0.1 dB (Cable power loss is within tolerable
 limit)
```

To display the detailed D_Port test results for a port when the test has failed:

```
switch:admin> portdporttest --show -detail 1
******************************
1. Current D-Port test results:
******************************
Port:                          1
Remote WWNN:                   10:00:00:05:33:7e:97:e9
Remote port index:             2
Mode:                          Automatic
No. of test frames:            1 Million
Test frame size:               1024 Bytes
Pattern:                       jCRPAT
FEC (enabled/option/active):   Yes/No/No
CR (enabled/option/active):    No/No/No
Start time:                    Wed May 18 05:57:41 2022
End time:                      Wed May 18 05:57:48 2022
Status:                        FAILED
==============================================================================
Test                Start time Result      EST(HH:MM:SS)   Comments
==============================================================================
Link traffic test   --------   NOT STARTED --------        ----------
==============================================================================
Roundtrip link latency:  unknown

Failure report:

***************************
2. Current Port statistics:
***************************
portstatsshow 1:
==================
stat_wtx                1000436935  4-byte words transmitted
stat_wrx                1000437023  4-byte words received
```

```
stat_ftx                3775241     Frames transmitted
stat_frx                3775241     Frames received
stat_c2_frx             0           Class 2 frames received
stat_c3_frx             3775233     Class 3 frames received
stat_lc_rx              4           Link control frames received
stat_mc_rx              0           Multicast frames received
stat_mc_to              0           Multicast timeouts
stat_mc_tx              0           Multicast frames transmitted
tim_rdy_pri             0           Time R_RDY high priority
tim_txcrd_z             3489        Time TX Credit Zero (2.5Us ticks)
tim_txcrd_z_vc  0- 3:   3489        0           0           0
tim_txcrd_z_vc  4- 7:   0           0           0           0
tim_txcrd_z_vc  8-11:   0           0           0           0
tim_txcrd_z_vc 12-15:   0           0           0           0
er_enc_in               0           Encoding errors inside of frames
er_crc                  0           Frames with CRC errors
er_trunc                0           Frames shorter than minimum
er_toolong              0           Frames longer than maximum
er_bad_eof              0           Frames with bad end-of-frame
er_enc_out              0           Encoding error outside of frames
er_bad_os               0           Invalid ordered set
er_pcs_blk              0           PCS block errors
er_rx_c3_timeout        0           Class 3 receive frames discarded due to timeout
er_tx_c3_timeout        0           Class 3 transmit frames discarded due to timeout
er_unroutable           0           Frames that are unroutable
er_unreachable          0           Frames with unreachable destination
er_other_discard        0           Other discards
er_type1_miss           0           frames with FTB type 1 miss
er_type2_miss           0           frames with FTB type 2 miss
er_type6_miss           0           frames with FTB type 6 miss
er_zone_miss            0           frames with hard zoning miss
er_lun_zone_miss        0           frames with LUN zoning miss
er_crc_good_eof         0           Crc error with good eof
er_inv_arb              0           Invalid ARB
er_single_credit_loss    0           Single vcrdy/frame loss on link
er_multi_credit_loss    0           Multiple vcrdy/frame loss on link

porterrshow:
==============
           frames      enc    crc    crc    too    too    bad    enc   disc   link   loss   loss   frjt   fbsy
  c3timeout    pcs
        tx     rx      in    err    g_eof  shrt   long   eof     out   c3    fail    sync   sig
   tx    rx    err
  1:    3.7m   3.7m   0      0      0      0      0      0      0      0      0      0      0      0      0
    0      0      0

*******************************************************
3. Port statistics prior to the port was set to D-Port:
*******************************************************
portstatsshow 1
================
stat_wtx                353         4-byte words transmitted
stat_wrx                444         4-byte words received
```

```
stat_ftx                8           Frames transmitted
stat_frx                8           Frames received
stat_c2_frx             0           Class 2 frames received
stat_c3_frx             0           Class 3 frames received
stat_lc_rx              4           Link control frames received
stat_mc_rx              0           Multicast frames received
stat_mc_to              0           Multicast timeouts
stat_mc_tx              0           Multicast frames transmitted
tim_rdy_pri             0           Time R_RDY high priority
tim_txcrd_z             1892        Time TX Credit Zero (2.5Us ticks)
tim_txcrd_z_vc  0- 3:   1892        0           0           0
tim_txcrd_z_vc  4- 7:   0           0           0           0
tim_txcrd_z_vc  8-11:   0           0           0           0
tim_txcrd_z_vc 12-15:   0           0           0           0
er_enc_in               0           Encoding errors inside of frames
er_crc                  0           Frames with CRC errors
er_trunc                0           Frames shorter than minimum
er_toolong              0           Frames longer than maximum
er_bad_eof              0           Frames with bad end-of-frame
er_enc_out              0           Encoding error outside of frames
er_bad_os               0           Invalid ordered set
er_pcs_blk              0           PCS block errors
er_rx_c3_timeout        0           Class 3 receive frames discarded due to timeout
er_tx_c3_timeout        0           Class 3 transmit frames discarded due to timeout
er_unroutable           0           Frames that are unroutable
er_unreachable          0           Frames with unreachable destination
er_other_discard        0           Other discards
er_type1_miss           0           frames with FTB type 1 miss
er_type2_miss           0           frames with FTB type 2 miss
er_type6_miss           0           frames with FTB type 6 miss
er_zone_miss            0           frames with hard zoning miss
er_lun_zone_miss        0           frames with LUN zoning miss
er_crc_good_eof         0           Crc error with good eof
er_inv_arb              0           Invalid ARB
er_single_credit_loss    0           Single vcrdy/frame loss on link
er_multi_credit_loss    0           Multiple vcrdy/frame loss on link

porterrshow
===========
          frames      enc    crc    crc    too    too    bad    enc   disc   link   loss   loss   frjt   fbsy
  c3timeout    pcs
       tx     rx      in    err    g_eof  shrt   long   eof    out   c3    fail    sync   sig
  tx    rx    err
  1:    4      4      0      0      0      0      0      0      0      0      0      0      0      0      0
    0      0      0
 11:    0      0      0      0      0      0      0      0      0      0      0      0      0      0      0
    0      0      0
 21:    0      0      0      0      0      0      0      0      0      0      0      0      0      0      0
    0      0      0
 31:    0      0      0      0      0      0      0      0      0      0      0      0      0      0      0
    0      0      0
 41:    8.6k   8.6k   0      0      0      0      0      0      0      0      1      1      0      0      0
    0      0      0
```

```
*****************************************************
4. Long Distance Configuration mismatch:
*****************************************************
- The long distance port should be configured as LE if the link distance is less than or equal to 10k.
- If the port is configured as LD/LS and option is "distance", configure the cable distance with 10% tolerance
 to the actual cable distance.
  Otherwise, Long Distance config mismatch due to the difference in the Actual cable distance and the
 Configured desired distance on both ends.
- If user missed to configure the port as LD, link traffic test will fail due to LD config mismatch.

switch:admin> portdporttest --show 8/16
D-Port Information:
===================
Slot: 8
Port: 16
Remote WWNN: 10:00:d8:1f:cc:03:57:00
Remote port index: 0
Mode: Manual
Test Duration (HH:MM): 00:30
Test frame size: 1024 Bytes
Pattern: jCRPAT
FEC (enabled/option/active): Yes/No/Yes
CR (enabled/option/active): Yes/No/No
Start time: Tue Mar 15 20:14:06 2022
End time: Tue Mar 15 21:15:13 2022
Status: PASSED
==============================================================================
Test                Start time Result EST(HH:MM:SS) Comments
==============================================================================
Link traffic test   20:45:10   PASSED --------      Long distance config mismatch
==============================================================================
Roundtrip link latency: 103283 nano-seconds
Approximate cable distance: 10438 meters (10.438 Km)
Buffers required: 403 (for 2112 byte frames at 64Gbps speed)
Egress power: Tx: 1.6 dBm, Rx: -5.7 dBm, Diff: 7.3 dB (Cable power loss is above tolerable limit)
Ingress power: Rx: -2.8 dBm, Tx: 1.6 dBm, Diff: 4.4 dB (Cable power loss is within tolerable limit)

*** Actual cable distance(10.5KM as using 10.5KM spool) and the Configured desired distance is (15KM)
```

See Also

dataTypeShow, fabricLog, portCfg, portCfgDPort, portShow, switchShow

portEnable

Enables a port or a range of ports.

Synopsis

portenable [<*slot*/>]<*port1*>[-<*port2*>]
portenable -i {<*port_index*> | <*port_index_range*>} [**-f**]

```
portenable -x <hex1>[-<hex2>]
portenable {-slot | -s} {<slot> | <slot_range>}
portenable -h
```

Description

Use this command to enable a port or a range of ports. If a port is connected to another switch when this command is issued, the fabric may reconfigure. After the port is enabled, devices connected to the port can again communicate with the fabric. The front panel LED of a port that is enabled and online is green.

You can identify a single port to be enabled by its port number or by its port index number in decimal or hexadecimal format. Port ranges are supported with port numbers, index numbers(decimal or hexadecimal) or by specifying a slot or a slot range. Use **switchShow** for a listing of valid ports, slots, and port index numbers.

For ports that come online after being enabled, the following indications might be sent to indicate a state transition: RSCN, SNMP trap, Web pop-up window.

This command fails if the switch is disabled, the port's blade is not fully enabled (faulted, powered off, or disabled), or if the port is persistently disabled.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

[<*slot*/>]	On bladed systems only, specifies the slot number of the ports to be enabled, followed by a slash (/).
<*port1*>[-<*port2*>	Enables a single port or a range of ports identified by port numbers. The port range cannot span slots, but you can specify multiple port ranges separated by a space, for example 3/1-4 4/7-9.
-i <*port_index*> | <*port_index_range*>	Enables a port or a range of ports identified by port index numbers. You may specify multiple index ranges separated by a space, for example, 33-38 40-60.
	-f Ignores nonexisting ports. This operand is valid only with the **-i** option.
-x <*hex1*>[-<*hex2*>]	Enables a port or a range of ports identified by port numbers, index number in hexadecimal format. You may specify multiple port ranges separated by a space, for example, -x 21-26 28-3c.
-slot <*slot*> | <*slot_range*>	Enables all ports on a slot or on a range of slots, for example, **-s** 3-5. Multiple slot ranges are not supported with this command.
-h	Displays the command usage.

Examples

To enable a single port:

```
switch:admin> portenable 2/4
```

To enable a range of ports:

```
switch:admin> portenable 2/4-8
```

To enable multiple port ranges:

```
switch:admin> portenable 2/24-26 3/10-12 4/3-4
```

To enable a port by specifying its index number:

```
switch:admin> portenable -i 176
```

To enable a range of ports by specifying the corresponding port index range:

```
switch:admin> portenable -i 170-176
```

To enable multiple ports by specifying multiple port index ranges:

```
switch:admin> portenable -i 30-36 170-176
```

To enable a range of ports by specifying port index number in hexadecimal format:

```
switch:admin> portenable -x 1d-1e
```

To enable all ports on slot 3-5.

```
switch:admin> portenable -s 3-5
```

See Also

portCfgPersistentDisable, portCfgPersistentEnable, portDisable, portShow, switchShow

portEncCompShow

Displays encryption and compression port configuration details.

Synopsis

```
portenccompshow
```

Description

Use this command to display a list of ports that can be configured for encryption or compression. The command displays one section per ASIC and the ports configurable for that ASIC. The output includes the following information:

Index	The port index number of the port to be configured. Use the **switchShow** command to identify the corresponding slot and port number.
Encryption configured	Displays "Yes" if encryption is enabled on the port. Displays "No" if encryption is disabled. This parameter is configured with the **portCfgEncrypt** command.
Encryption active	Displays the port's runtime status. "Yes" indicates that the port is online and enabled for encryption. "No" indicates that the port is enabled for encryption but offline, or not enabled for encryption.
Compression configured	Displays "Yes" if compression is enabled on the port. Displays "No" if compression is disabled. This parameter is configured with the **portCfgCompress** command.
Compression active	Displays the port's runtime status. "Yes" indicates that the port is online and enabled for compression. "No" indicates that the port is enabled for compression but offline, or not enabled for compression.
Config Speed	Displays the speed of the port and link speed of the online ports. If the speed is configured as AUTO NEG, the speed of the port is taken as the maximum speed of the port.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the port configuration and runtime status of the ports configurable for encryption or compression:

```
switch:admin> portenccompshow
   Encryption       Compression  Config
Index Configured  Active Configured Active Speed
----- ------------- ------ ---------- ------ ------
  17    No       No     No       No
  18    No       No     No       No
  19    No       No     No       No
  20    No       No     No       No
  21    No       No     No       No
  22    No       No     No       No
  23    No       No     No       No
 144    Yes      Yes    Yes      No    32G
 145    No       No     No       No
 146    No       No     No       No
 147    No       No     No       No
 148    No       No     No       No
 149    Yes      No     Yes      No    32G
 150    No       No     No       No
 151    No       No     No       No
-----------------------------------------------------
  88    No       No     No       No
  89    No       No     No       No
  90    No       No     No       No
  91    No       No     No       No
  92    No       No     No       No
  93    No       No     No       No
  94    No       No     No       No
  95    No       No     No       No
 208    No       No     No       No
 209    No       No     No       No
 210    No       No     No       No
 211    No       No     No       No
 212    No       No     No       No
```

See Also

None

portErrShow

Displays a port error summary.

Synopsis

```
porterrshow
porterrshow [<slot>/]<port1>[-[<slot>/]<port2>]
porterrshow {-i | -index} <index1>[-<index2>]
porterrshow -x <hex1>[-<hex2>]
porterrshow --help
```

Description

Use this command to display an error summary for a port or a range of ports. Counts are reported on frames transmitted by the port (Tx) or on frames received by the port (Rx). The display contains one output line per port. Numeric values exceeding 999 are displayed in units of thousands (k), millions (m), or giga (g) if indicated.

You can identify a single port to be configured by its port number or by its port index number in decimal or hexadecimal format. Port ranges are supported with port numbers, index numbers (decimal or hexadecimal) or by specifying a slot or a slot range. Use **switchShow** for a listing of valid ports, slots, and port index numbers. When used without operands, this command displays error summary for all ports on the switch.

Values for the following parameters are displayed:

frames tx	Number of frames transmitted (Tx).
frames rx	Number of frames received (Rx).
enc in	Number of encoding errors inside frames received (Rx).
crc err	Number of frames with CRC errors received (Rx).
crc g_eof	Number of frames with CRC errors with good EOF received (Rx).
too shrt	Number of frames shorter than minimum received (Rx).
too long	Number of frames longer than maximum received (Rx).
bad eof	Number of frames with bad end-of-frame delimiters received (Rx).
enc out	Number of encoding error outside of frames received (Rx).
disc c3	Number of Class 3 frames discarded (Rx). This counter includes the sum of the following class 3 discard counters reported by the **portStatsShow** command: **er_rx_c3_timeout**, **er_tx_c2_timeout**, **er_c2_dest_unreach**, and **er_other_disc**. Refer to **portStatsShow** help for a description of these counters.
link fail	Number of link failures (LF1 or LF2 states) received (Rx).
loss sync	Number of times synchronization was lost (Rx).
loss sig	Number of times a loss of signal was received (increments whenever an SFP is removed) (Rx).
frjt	Number of transmitted frames rejected with F_RJT (Tx).
fbsy	Number of transmitted frames busied with F_BSY (Tx).
c3-timeout tx	The number of transmit class 3 frames discarded at the transmission port due to timeout (platform- and port-specific).
c3-timeout rx	The number of receive class 3 frames received at this port and discarded at the transmission port due to timeout (platform- and port-specific).
pcs err	The number of Physical Coding Sublayer (PCS) block errors. This counter records encoding violations on 10Gb/s, 16Gb/s, or 32Gb/s ports.
uncor err	The number of uncorrectable forward error corrections (FEC).

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

This command is not supported on FCoE ports.

For the Brocade G620, when Encryption is enabled, the reserved ports (44 to 47) will display an error when specified or included as part of a port range.

Operands

This command has the following optional operands:

[<*slot*>/]<*port1*>[-[<*slot*>/]<*port2*>]	Displays port error summary for a single port or for a range of ports, relative to the slot number on bladed systems. Port numbers in a range must be separated by a dash (-), for example, 3-5, or 2/0-2/15. Port

	ranges cannot span slots. Use **switchShow** to display a listing of valid ports. Port operands are optional; if omitted, information for all ports is displayed.
{-i | -index} <*index1*>[-<*index2*>]	Displays port error summary for a single port or for a range of ports identified by port index numbers. You may specify index ranges separated by "-", for example, **-i** 33-47.
-x <*hex1*>[-<*hex2*>]	Displays port error summary for a port or a range of ports identified by port index numbers in hexadecimal format. You may specify port ranges separated by "-", for example, -x 21-26.
--help	Displays the command usage.

Examples

To display error counters for ports on a switch:

```
switch:admin> porterrshow
        frames enc    crc     crc     too     too     bad     enc
     tx     rx      in      err     g_eof  shrt    long    eof     out
    ============================================================
0:   0      0       0       0       0      0       0       0       0
1:   2.5g   73m     0       0       0      0       0       0       1.2k
2:   0      0       0       0       0      0       0       0       0
3:   0      0       0       0       0      0       0       0       667

     disc   link    loss    loss    frjt   fbsy   c3-timeout   pcs    uncor
     c3     fail     sync    sig                    tx     rx    err    err
     ============================================================
     0      0       2       4       0      0       0      0      0      0
     563.2k 0       0       0       1      0       0    415.2k   0      0
     0      0       0       1       0      0       0      0      0      0
     0      21      4       8       0      0       0      0      0      0
(output truncated)
```

See Also

portShow, portStatsShow

portFlagsShow

Displays the port status bitmaps for all ports in a switch.

Synopsis

```
portflagsshow
```

Description

Use this command to display the following status for a port:

SNMP	Displays whether the port is online or offline.
Physical	Displays the port physical status. Valid values are In_Sync, No_Light (8Gb/s-capable ports only), and No_SigDet (quad small form-factor pluggables (QSFPs) installed without cables). Refer to **switchShow** help for more information on these states.
Flags	Displays whether there is an SFP inserted in the port, whether the port is active, and the port type.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the port status for all ports in the switch:

```
switch:user> portflagsshow
Port SNMP      Physical   Flags
--------------------------------
    0 Online    In_Sync    PRESENT ACTIVE F_PORT G_PORT \
   U_PORT LOGICAL_ONLINE LOGIN NOELP ACCEPT FLOGI
    1 Online    In_Sync    PRESENT ACTIVE E_PORT G_PORT \
   U_PORT SEGMENTED CBL_LB LOGIN LED
    2 Offline   No_Module  PRESENT U_PORT LED
    3 Offline   No_Light   PRESENT U_PORT LED
    4 Offline   No_Module  PRESENT U_PORT LED
    5 Offline   No_Module  PRESENT U_PORT LED
    6 Offline   No_Module  PRESENT U_PORT LED
    7 Offline   No_Module  PRESENT U_PORT LED
    8 Offline   No_Module  PRESENT U_PORT LED
    9 Offline   No_Module  PRESENT U_PORT LED
   10 Online    In_Sync    PRESENT ACTIVE F_PORT G_PORT \
   U_PORT LOGICAL_ONLINE LOGIN NOELP ACCEPT FLOGI
   11 Offline   No_Module  PRESENT U_PORT LED
   12 Offline   No_Module  PRESENT U_PORT LED
   13 Offline   No_Module  PRESENT U_PORT LED
   14 Offline   No_Module  PRESENT U_PORT LED
   15 Offline   No_Module  PRESENT U_PORT LED
   16 Online    In_Sync    PRESENT ACTIVE F_PORT G_PORT \
   U_PORT LOGICAL_ONLINE LOGIN NOELP ACCEPT FLOGI
   17 Online    In_Sync    PRESENT ACTIVE F_PORT G_PORT \
   U_PORT LOGICAL_ONLINE LOGIN NOELP ACCEPT FLOGI
   18 Offline   No_Module  PRESENT U_PORT LED
   19 Offline   No_Module  PRESENT U_PORT LED
   20 Offline   No_Module  PRESENT U_PORT LED
   21 Offline   No_Module  PRESENT U_PORT LED
   22 Offline   No_Module  PRESENT U_PORT LED
   (output truncated)
```

To display the port status for QSFPs installed without cables (partial output) :

```
6   16 Offline   No_SigDet  PRESENT U_PORT LED
   6   17 Offline   No_SigDet  PRESENT U_PORT LED
   6   18 Offline   No_SigDet  PRESENT U_PORT LED
   6   19 Offline   No_SigDet  PRESENT U_PORT LED
```

To display the port status for QSFPs installed and connected with cables (partial output) :

```
  6   28 Online    In_Sync    PRESENT ACTIVE E_PORT \
```

```
 T_PORT T_MASTER G_PORT U_PORT LOGICAL_ONLINE LOGIN LED
6   29 Online    In_Sync    PRESENT ACTIVE E_PORT T_PORT \
  T_MASTER G_PORT U_PORT LOGICAL_ONLINE LOGIN LED
6   30 Online    In_Sync    PRESENT ACTIVE E_PORT \
    T_PORT T_MASTER G_PORT U_PORT
```

See Also

portShow, switchShow

portImpair

Clears the impaired flag of a port and sends a request to the attached switch to clear the impaired flag on both sides of the link.

Synopsis

portimpair {**--help** | **--clear** [*<slot>*/]*<port>*}

Description

Use this command to clear the impaired flag of a port.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

The execution of this command requires that the lossless feature is enabled on both the local switch and the remote switch on the other end of the E_Port.

Operands

This command has the following operands:

--clear	Clears the local port impaired flag and sends a request to the attached switch to clear the impaired flag on the remote port. It clears only the local port if the attempt is unsuccessful.
--help	Displays the command usage.

Examples

To clear impaired flag of a port:

```
switch:admin> portimpair --clear 0
The local port and peer port impaired state has been cleared.
To rejoin a trunk group, the port must be toggled.

switch:admin> portimpair --clear 0
Unable to clear impaired state on the remote port because port is offline.
Impaired state cleared on the local port only.

switch:admin> portimpair --clear 0
No change to port.
```

See Also

None

portLedTest

Cycles user port LEDs.

Synopsis

```
portledtest
      [--slot <slot_number>]
      [-ports <itemlist> | -uports <itemlist>]
      [-npass <count>]
      [-action <value>]
```

Description

Use this command to exercise the user port LEDs in the current switch. When used without a port specifier, all user ports are tested.

This diagnostic cannot be run on an operational switch. You must disable the switch using the **chassisDisable** command before you can run this test. After the command completes, the status LEDs flash amber, indicating that the command has finished and exited. Enable the switch using the **chassisEnable** command to set the status LEDs back to black.

The port LED behavior varies depending on the platform.

- Status LEDs for ports not under test are solid mixed amber/green on Brocade Gen 7 and platforms with switch types 184.1, 183.0, and 218.
- Status LEDs for port not under test are solid amber for Brocade Gen 6 platforms except core blades.
- Status LEDs for port not under test are OFF on Brocade Gen 6 core blades.

Notes

You cannot interrupt the test by pressing the return key (<cr>).

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--slot <*slot*>	Specifies the slot number on bladed systems. When used without the **port** option, this option exercises all user ports in the specified slot. When used with the **port** option, only the ports specified for the specified slot are tested.
-ports <*itemlist*>	Specifies a list of front-end blade ports to test. When a specific port is specified, the blade port reference is used. If you want to test a specific user port, you will need maintenance access to the **bladePortMap** command to map the specified blade port to the desired user port. For core blades, to test a single QSFP port, user must input all ASIC port numbers associated with this QSFP port. You can also use the **-uports** option to specify the user ports. See **itemList** for more information on the *itemlist* parameter. When specifying ports on a chassis, the **-ports** operand must be preceded by the **--slot** operand.
-uports <*itemlist*>	Specifies a list of user ports to test. If this operand is omitted, by default the test will run on all valid blade ports in the slot. Refer to **itemList** for more information on the *itemlist* parameter. This option is not supported on Brocade FX8-24 blade.
-npass <*count*>	Specify the number of times to perform this test. The Brocade Gen 7 platforms have default as 5; whereas the Brocade Gen 6 and earlier have default as 10. The platforms with switch types, 184.1, 183.0, and 218, have default as 5.
-action <*action*>	Specifies the LED color. Valid values include the following:

0	This is the default action. Cycle all Port LEDs.
1	Turn Port status LED off.
2	Turn Port status LED amber.
3	Turn Port status LED green.
4	Blink Port status LED Green. Supported only on the Brocade Gen 6 and later platforms; not supported on the Brocade Gen 6 core blades.
5	Blink Port status LED Amber. Supported only on the Brocade Gen 6 and later platforms.

Examples

To test port LEDs on user port 1 use the corresponding value in the "BPt" column of the **bladePortMap** command (requires maintenance permission):

```
switch:admin> portledtest --slot 1 -ports 213

Running portledtest ..............
WARNING:
This test should NOT be aborted in the middle. If aborted, current
blade or the switch (in-case of Pizza box) may become unusable.
Reset the blade or the switch to recover.

PASSED.
```

See Also

chassisDisable, chassisEnable, fcipLedTest, itemList, switchDisable, switchEnable

portLogClear

Clears the port log.

Synopsis

```
portlogclear
portlogclear --help
```

Description

Use this command to clear the port log. It is recommended that you clear the port log before triggering an activity so that the log displays only the log events related to that activity.

If the port log is disabled, **portLogClear** enables it. The port log is disabled automatically when certain errors occur to allow the collection of all the information needed to understand the cause of the error. When the port log is disabled, the events already present in the log are preserved, but new events are not collected.

The following errors disable the port log:

- FCPH, EXCHBAD
- FCPH, EXCHFREE
- NBFSM, DUPEPORTSCN
- UCAST, RELICPDB

Refer to the *Brocade Fabric OS Message Reference Manual* for more information on these errors.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

--help	Displays the command usage.

Examples

To clear the port log:

```
switch:admin> portlogclear
switch:admin> portlogshow
port log is empty
```

See Also

portLogDump, portLogShow

portLogConfigShow

Displays the current port log configuration.

Synopsis

```
portlogconfigshow
portlogconfigshow --help
```

Description

Use this command to display the current port log configuration.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

--help	Displays the command usage.

Examples

To display the current port log configuration:

```
switch:admin> portlogconfigshow
max portlog entries = 16384
```

See Also

portLogResize

portLogDisable

Disables the port log facility.

Synopsis

```
portlogdisable
portlogdisable --help
```

Description

Use this command to disable the port log facility.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

--help	Displays the command usage.

Examples

To display the port log facility:

```
switch:admin> portlogdisable
```

See Also

portLogEnable

portLogDump

Displays the port log without page breaks.

Synopsis

```
portlogdump [<count>[, <saved>]]
portlogdump --help
```

Description

Use this command to display the port log, listing all entries in the log without page breaks. This command displays the same information as **portLogShow**, but **portLogShow** prompts you to press Enter between each page.

For an explanation of the information displayed by this command, refer to the **portLogShow** command.

If the port log is disabled while this command is executed, a warning message is displayed. See **portLogClear** command for more information.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

count	Specifies the maximum number of lines to be displayed. Only the most recent count entries are displayed. This operand is optional.
saved	Specify a nonzero value to display the saved port log from the last switch fault. See **upTime** for conditions that cause a fault. The operand count is ignored when displaying the saved log. This operand is optional.
--help	Displays the command usage.

Examples

To display 10 lines of the portlog:

```
switch:user> portlogdump 10
time         task       event   port cmd  args
-------------------------------------------------
Mon Nov 16 21:52:15 2009
21:52:15.214 FCPH       seq     106  7f0
ed210000,00000000,000073ee,10010082,00008000
21:52:15.214 PORT       Tx3     106 2032 \
    02fffffd,00fffffd,0701ffff,13010000
21:52:15.216 FCPH       read    106 2032
03fffffd,00fffffd,00000000,00008000,07010000
21:52:15.216 FCPH       seq     106  7f0
ed980000,07010000,00004143,0004001c,00008000
21:52:15.216 FCPH       write   106 2032
00fffffd,00fffffd,00000000,00008000,00000000
21:52:15.216 FCPH       seq     106  7f0
ed210000,00000000,000073ee,10010082,00008000
21:52:15.216 PORT       Tx3     106 2032 \
    02fffffd,00fffffd,06feffff,13010000
21:52:15.218 FCPH       read    106 2032
03fffffd,00fffffd,00000000,00008000,06fe0000
21:52:15.218 FCPH       seq     106  7f0 \
ed980000,06fe0000,00004143,0004001c,00008000
21:52:15.220 FCPH       seq     106  7f0
ed980000,06fc0000,00004143,0004001c,00008000
```

See Also

portLogClear, portLogShow, upTime

portLogDumpPort

Displays the port log of a specified port without page breaks.

Synopsis

portlogdumpport *<port_index>*
portlogdumpport --help

Description

Use this command to display the port log for a single port specified by its port index number. The command displays all entries in the log without any page breaks. This command is identical to **portLogShowPort**, except that **portLogShowPort** prompts you to press Enter to display the next page.

Port logs are circular log files in the switch firmware, which can save up to 65,536 entries depending on the hardware platform. Use **portLogConfigShow** to display the current size of the port log. Once the log has reached its maximum size, new entries displace the oldest ones. Port logs capture switch-to-device, device-to-switch, switch-to-switch, some device-to-device1, and control information

If the port log is disabled while this command is executed, a warning message is displayed. See **portLogClear** command for more information.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

<port_index>	Displays the port log for the a single port specified by its port index number. Use **switchShow** for a listing of valid port index numbers.
--help	Displays the command usage.

Examples

To display the port log dump for a port:

```
switch:user> portlogdumpport 14
time          task        event port  cmd  args
-----------------------------------------------
08:35:27.899  tShell      pstate  14  OL1
08:35:27.899  tReceive    pstate  14  LR2
08:35:27.916  tReceive    pstate  14   AC
08:35:28.416  interrupt   scn     14    1
08:35:28.433  tFabric     ioctl   14   90  \
   101d9910,0
08:35:28.433  tFabric     Tx      14  164  \
   02fffffd,00fffffd,0005ffff,10000000
08:35:28.433  tReceive    Rx      14    0  \
   c0fffffd,00fffffd,00050006
08:35:28.433  tReceive    Rx      14  164  \
   03fffffd,00fffffd,00050006,02000000
08:35:28.433  tTransmit   Tx      14    0 \
    c0fffffd,00fffffd,00050006
08:35:28.433  tFabric     ioctl   14   91  \
   103646d8,0
08:35:28.466  tFabric     ioctl   14   a7  3c,1
(output truncated)
```

See Also

portLogDump, portLogClear, portLogShow, upTime

portLogEnable

Enables the port log facility.

Synopsis

```
portlogenable
portlogenable --help
```

Description

Use this command to enable the port log facility.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

--help	Displays the command usage.

Examples

To enable the port log facility:

```
switch:admin> portlogenable
```

See Also

portLogDisable

portLogEventShow

Displays information about port log events.

Synopsis

```
portlogeventshow
portlogeventshow --help
```

Description

Use this command to display information about the ID associated with the various port log events. The Disabled field indicates whether the port log for that event ID is disabled (1) or enabled (0).

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

--help	Displays the command usage.

Examples

To display information about port log events:

```
switch:admin> portlogeventshow
ID      Event-Name      Disabled
--------------------------------
1       start           0
2       disable         0
3       enable          0
4       ioctl           0
5       Tx              0
6       Tx1             0
7       Tx2             0
8       Tx3             0
9       Rx              0
10      Rx1             0
11      Rx2             0
12      Rx3             0
13      stats           0
14      scn             0
15      pstate          0
16      reject          0
17      busy            0
18      ctin            0
19      ctout           0
20      errlog          0
21      loopscn         0
22      create          0
23      debug           1
24      nbrfsm          0
25      timer           0
(output truncated)
```

See Also

portLogTypeDisable, portLogTypeEnable

portLoginShow

Displays port login status of devices attached to the specified port and the details of the last logged out device.

Synopsis

portloginshow [<*slot*>/]<*port*>
[**-history** [**-systemtime**]]

Description

Use this command to display port login status received from devices attached to the specified port. For each login, this command displays the following fields:

Type Type of login can display one of the following:

- **fd** FDISC, Discover F_Port Service Parameters or Virtual N_Port login.
- **fe** FLOGI, Fabric Login to Fabric F_Port.

	ff PLOGI, Port Login to specific N_Ports or well-known addresses like Name Server.
PID	The 24-bit Port ID of the attached device.
WorldWideName	The port's world wide name.
credit	The credit for this login as appropriate. This is BB (buffer-to-buffer) credit for Flogs and EE (end-to-end) credit for PLOGIs.
df_sz	The default frame size for this login.
cos	Class of Services supported. This can be a combination of the following bits:
	4 Class 2 is supported.
	8 Class 3 is supported.
logout time	Timestamp when the device is logged out from a port.

Further information about each login is displayed after these columns, including the Port ID of the well-known address or N_Port that was the target of the PLOGI, if applicable.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

This command is supported on FCoE ports.

Operands

This command has the following operands:

<slot>	For bladed systems only, specify the slot number of the port to be displayed, followed by a slash (/).
<port>	Specify the port for which to display login status information, relative to its slot for bladed systems. Use **switchShow** for a list of valid ports.
-history	Displays the details of the last logged out device on a port for the login types "fe" and "fd". The time stamp displayed under the column "logout time" is in the UTC format. Beginning with FOS9.0.0, the **-history** option must accompany **-systemtime** when executed as admin user.
-systemtime	Displays the system set time in a new column along with the UTC time.

Examples

To display the logins received by Port 23 (revealing one FLOGI (type fe) and two PLOGIs):

```
switch:admin> portloginshow 23
Type  PID     World Wide Name       credit df_sz cos
=====================================================
fe  201700 21:00:00:e0:8b:05:a3:c9  3  2048   8 scr=1
ff  201700 21:00:00:e0:8b:05:a3:c9  0     0   8 d_id=FFFC20
ff  201700 21:00:00:e0:8b:05:a3:c9  0     0   8 d_id=FFFFFC
```

To display the last logged out device on a port:

```
switch:admin> portloginshow 9/28 -history -systemtime
Type PID  World Wide Name         logout time in UTC  system set time
=================================================================================
fe 020100 30:06:00:05:33:8a:f3:76 05/18/2020 07:01:03 05/18/2020 12:31:03
fe 020100 30:06:00:05:33:8a:f3:76 05/18/2020 07:44:18 05/18/2020 13:14:18
fe 020100 30:06:00:05:33:8a:f3:76 05/18/2020 09:49:48 05/18/2020 15:19:48
```

To display FCoE ports:

```
switch:admin> portloginshow 0/1800
Type  PID     World Wide Name        credit df_sz cos
=====================================================
  fd  019042 10:00:00:05:1e:8f:fd:10   48  2112  8  scr=0x3
  fd  019041 10:00:00:05:1e:8f:fd:00   48  2112  8  scr=0x3
  fe  019040 10:00:00:05:1e:8f:fd:02   48  2112  8  scr=0x3
  ff  019042 10:00:00:05:1e:8f:fd:10   0     0   8  d_id=FFFFFA
  ff  019042 10:00:00:05:1e:8f:fd:10   0     0   8  d_id=FFFFFC
  ff  019041 10:00:00:05:1e:8f:fd:00   0     0   8  d_id=FFFFFA
  ff  019041 10:00:00:05:1e:8f:fd:00   0     0   8  d_id=FFFFFC
  ff  019040 10:00:00:05:1e:8f:fd:02   0     0   8  d_id=FFFFFA
  ff  019040 10:00:00:05:1e:8f:fd:02   0     0   8  d_id=FFFFFC
```

To display FCoE ports:

```
switch:admin> portloginshow 25 -history -systemtime
Type PID    World Wide Name         logout time in UTC  system set time
=============================================================================
fd   011901 20:01:00:11:0d:7e:01:01 11/30/2018 09:21:58 11/30/2018 10:21:58
fe   011900 20:01:00:11:0d:7e:01:00 11/30/2018 09:21:58 11/30/2018 10:21:58
```

See Also

FCoE, fcpProbeShow, portShow

portLogReset

Enables the port log facility.

Synopsis

portlogreset
portlogreset --help

Description

Use this command to enable the port log facility.

Notes

See **portLogClear** for events that may disable the port log facility.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

--help	Displays the command usage.

Examples

To enable the port log:

```
switch:admin> portlogreset
```

See Also
None

portLogResize

Resizes the port log to include a specified number of entries.

Synopsis

```
portlogresize <num_entries>
portlogresize --help
```

Description

Use this command to resize the port log to include a specified number of entries. If the specified number of entries is less than the already configured port log size, there is no change.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

<num_entries>	Specifies the number of port log entries. The valid range of values is 16,384 through 32,768.
--help	Displays the command usage.

Examples

To resize the portlog:

```
switch:admin> portlogresize 17288
```

See Also
portLogConfigShow

portLogShow

Displays the port log with page breaks.

Synopsis

```
portlogshow [<count>[, <saved>]]
portlogshow --help
```

Description

Use this command to display the port log with page breaks. This command displays the same information as **portLogDump**, but one page at a time.

The port log is a circular log file in the switch firmware which can save up to 65,536 entries depending on the hardware platform. Use **portLogConfigShow** to display the current port log size. Once the log has reached the maximum size, new entries replace the oldest ones. The port log captures switch-to-device, device-to-switch, switch-to-switch, some device-to-device, and control information.

If the command is executed while the port log is disabled, a warning message is displayed. Refer to the **portLogClear** command for more information.

For each log entry, the following information is displayed:

Time Displays the event date and time in milliseconds. The clock resolution is 16 milliseconds.

Task Displays the name of the task that logged the event or "interrupt" if the event was logged in interrupt context, or "unknown" if the task no longer exists.

Event Displays the task event that generated the log entry. Possible events include the following:

start	A switch start or restart event.
disable	A port is disabled.
enable	A port is enabled.
ioctl	A port I/O control is executed.
Tx	A frame is transmitted (class is indicated).
Rx	A frame is received (class is indicated).
scn	A state change notification is posted.
pstate	A port changes physical state.
reject	A received frame is rejected.
busy	A received frame is busy.
ctin	A CT based request is received.
ctout	A CT based response is transmitted.
errlog	A message is added to the error log.
loopscn	A loop state change notification is posted.
create	A task is created.
debug	Indicates a debug message.
nbrfsm	Indicates a neighbor state transition.
sn	Indicates a speed negotiation state.
fcin	Indicates an incoming Fibre Channel information unit.
fcout	Indicates an outgoing Fibre Channel information unit.
read	Indicates an information unit header log from a read operation.
write	Indicates an information unit header log from a write operation.
err	Indicates an information unit header log of an FC error frame.
frame	Indicates a Fibre Channel frame payload.
nsRemQ	Indicates an interswitch name server query.
rscn	Indicates a Registered State Change Notification.
xalloc	Allocates an exchange.
xfree	Frees an exchange.
xerr	Indicates an exchange error.
xstate	Indicates an exchange state.
payload	Indicates a frame payload.

Port Displays the port number that logged the event.

Cmd Defined by the event. Displays a value defined by the event as follows:

ioctl	I/O control command code.
Tx & Rx	Frame payload size.
scn	New state (see state codes below).
pstate	New physical state (see pstate codes below).

ctin The CT-subtype:

fc	Simple Name Server.

f8 Alias Server.
ctout The same as ctin.

errlog Error level (refer to **errShow**).

loopscn The current loop state during loop initialization. Possible values areas follows:

OLP Offline (disconnected or nonparticipating).
LIP FL_Port entered INITIALIZING or OPEN_INIT state.
LIM LISM completed, FL_Port became the loop master.
BMP Loop init completed, FL_Port in MONITORING state.
OLD Port transitioned to the OLD_PORT state.
TMO Loop init times out.

Args Displays additional information about the event as follows:

start Start type: 0 = enable ports, 100 = disable ports.
disable State (refer to state codes).
enable Mode: 0 normal; nonzero loopback.

Tx & Rx Header words 0,1,4 (R_CTL,D_ID,S_ID,OX_ID,RX_ID) and the first payload word.

reject FC-PH reject reason.

busy FC-PH busy reason.

ctin Argument 0 is divided into two 16-bit fields: [A] A bit map indicating whether subsequent arguments are valid (0001 means argument 1 is valid, 0003 means arguments 1 and 2 are valid). [B] The CT-based service command code.

Argument 1 is the first word of the CT payload, if applicable (as specified in [A]). Argument 2 is the second word of the CT payload, if applicable (as specified in [A]).

ctout Argument 0 is also divided into two 16-bit fields: [A] a bit map indicating whether subsequent arguments are valid (0001 means argument 1 is valid, 0003 means arguments 1 and 2 are valid). [B] the CT command code indicating whether an accept (8002) or a reject (8001). If [B] is an accept, argument 1 and 2 represents the first and second words of the CT payload, if applicable (as specified in [A]). If [B] is a reject, argument 1 contains the CT reject reason and explanation code.

errlog Error type (refer to **errShow**).

loopscn The meaning further depends on each loop state:

OLP Offline reason code, usually zero.
LIP Reason code for LIPs initiated by FL_Port, if the code value is 800x (x = [1,0xc], see below), or the lower two bytes of the LIP received, if the code value is other than 800x.
LIM Usually zero.
BMP Memory address for the loop bitmap.
OLD Usually zero.
TMO Encoded value of the state when loop initialization timed out This value is usually equal to the first word of a loop init frame payload. Other possible values include the following:

2 LIP (req. INITIALIZING) timeout.
94 F0F0 ARB(F0) timeout.
40 CLS timeout.

Codes used in various fields are as follows:

state Valid state values include the following:

1 Online

2	Offline
3	Testing
4	Faulty
5	E_Port
6	F_Port
7	Segmented

pstate Valid **pstate** values include the following:

AC	Active State
LR1	Link Reset: LR Transmit State
LR2	Link Reset: LR Receive State
LR3	Link Reset: LRR Receive State
LF1	Link Failure: NOS Transmit State
LF2	Link Failure: NOS Receive State
OL1	Offline: OLS Transmit State
OL2	Offline: OLS Receive State
OL3	Offline: Wait for OLS State

LIP reason Valid **LIP reason** codes include the following:

8001	Retry loop init.
8002	Start loop after gaining sync.
8003	Restart loop after port reset.
8004	LIP when a loop hangs.
8005	Restart loop if LIP received when sending out ARB(F0).
8006	LIP when an OPN returns.
8007	Restart loop when LIPs received in OLD_PORT AC state.
8008	Restart loop if loop not empty but E_Port loopback.
8009	LIP as requested by the LINIT ELS received.
800a	LIP as requested by the LPC ELS received.

Speed Negotiation States Valid states include the following:

INIT	Start negotiation.
NM	Negotiate master.
WS	Wait for signal.
NF	Negotiation follows.
NC	Negotiation complete.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

<count>	Specifies the maximum number of lines to display. Only the most recent count entries are displayed. This operand is optional.
<saved>	Specifies a nonzero value to display the saved port log from the last switch fault. Refer to **upTime** for a list of conditions that cause a fault. The count is ignored when the saved log is displayed. This operand is optional.

--help Displays the command usage.

Examples

To view the port log for a port:

```
switch:user> portlogshow 24
time         task event port cmd  args
-----------------------------------------------

17:05:30.384 PORT Rx     0  40  02fffffd,00fffffd,08fbffff,14000000
17:05:30.384 PORT Tx     0   0  c0fffffd,00fffffd,08fb0e02
17:05:30.384 PORT debug  0       00c0ffee,00fd0118,00000000,00000001
17:05:30.389 PORT Rx     1  40  02fffffd,00fffffd,08fdffff,14000000
17:05:30.389 PORT Tx     1   0  c0fffffd,00fffffd,08fd0e03
17:05:30.389 PORT debug  1      00c0ffee,00fd013c,00000000,00000001
17:05:30.504 PORT Rx     2  40  02fffffd,00fffffd,08feffff,14000000
17:05:30.504 PORT Tx     2   0  c0fffffd,00fffffd,08fe0e04
17:05:30.504 PORT debug  2      00c0ffee,00fd0182,00000000,00000001
17:05:30.507 PORT Rx     3  40  02fffffd,00fffffd,08ffffff,14000000
17:05:30.507 PORT Tx     3   0  c0fffffd,00fffffd,08ff0e05
17:05:30.508 PORT debug  3      00c0ffee,00fd0148,00000000,00000001
17:05:31.081 PORT Tx     0  40  02fffffd,00fffffd,0e06ffff,14000000
17:05:31.082 PORT debug  0      00c0ffee,00fd0188,14000000,00000001
17:05:31.084 PORT Rx     0   0  c0fffffd,00fffffd,0e060902
17:05:31.772 PORT Tx     1  40  02fffffd,00fffffd,0e07ffff,14000000
17:05:31.772 PORT debug  1      00c0ffee,00fd014a,14000000,00000001
17:05:31.774 PORT Rx     1   0  c0fffffd,00fffffd,0e070906
17:05:31.775 PORT Tx     2  40  02fffffd,00fffffd,0e08ffff,14000000
17:05:31.775 PORT debug  2      00c0ffee,00fd015c,14000000,00000001
17:05:31.777 PORT Rx     2   0  c0fffffd,00fffffd,0e080907
17:05:31.778 PORT Tx     3  40  02fffffd,00fffffd,0e09ffff,14000000
17:05:31.779 PORT debug  3      00c0ffee,00fd015e,14000000,00000001
17:05:31.782 PORT Rx     3   0  c0fffffd,00fffffd,0e090908
```

See Also

portLogClear, portLogDump, upTime

portLogShowPort

Displays the port log of a specified port with page breaks.

Synopsis

portlogshowport *<port_index>*
portlogshowport --help

Description

Use this command to display the port log of a specified port with page breaks. This command displays the same information as **portLogDumpPort**, except that **portLogDumpPort** does not prompt you to press Enter to display the next page.

If the command is executed while the port log is disabled, a warning message is displayed. See the **portLogClear** command for more information.

Notes

See the **portLogShow** command for a description of the data returned by this command.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

<port_index>	Displays the port log for a single port specified by its port index number. Use **switchShow** for a listing of valid port index numbers.
--help	Displays the command usage.

Examples

To display the port log for port 14:

```
switch:user> portlogshowport 14
time          task        event port  cmd  args
-----------------------------------------------------
08:35:28.483  tFabric     scn     14    0
08:35:27.899  tShell      pstate  14  OL1
08:35:27.899  tReceive    pstate  14  LR2
08:35:27.916  tReceive    pstate  14   AC
08:35:28.416  interrupt   scn     14    1
08:35:28.433  tFabric     ioctl   14   90  101d9910,0
08:35:28.433  tFabric     Tx      14  164  \
    02fffffd,00fffffd,0005ffff,10000000
08:35:28.433  tReceive    Rx      14    0  \
    c0fffffd,00fffffd,00050006
08:35:28.433  tReceive    Rx      14  164  \
    03fffffd,00fffffd,00050006,02000000
08:35:28.433  tTransmit   Tx      14    0  \
    c0fffffd,00fffffd,00050006
08:35:28.433  tFabric     ioctl   14   91  103646d8,0
08:35:28.433  tFabric     ioctl   14   92  103646d8,0
08:35:28.466  tFabric     ioctl   14   a7  3c,1
08:35:28.466  tFabric     pstate  14  LR1
08:35:28.466  tReceive    pstate  14  LR3
08:35:28.466  tReceive    pstate  14   AC
(output truncated)
```

See Also

portLogClear, portLogDumpPort, portLogShow, upTime

portLogTypeDisable

Disables the port log of a specified type.

Synopsis

```
portlogtypedisable <id>
portlogtypedisable --help
```

Description

Use this command to disable the port log for a specified port log type.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

<id>	Specifies a nonzero value that corresponds to the port log type to be disabled. Use **portLogEventShow** for a listing of values corresponding to supported log types.
--help	Displays the command usage.

Examples

To disable logging of type 2 port log events:

```
switch:admin> portlogtypedisable 2
```

See Also

portLogDisable, portLogEventShow, portLogTypeEnable

portLogTypeEnable

Enables the port log of a specified port log type.

Synopsis

```
portlogtypeenable <id>
portlogtypeenable --help
```

Description

Use this command to enable the port log for a specified port log type.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

<id>	Specifies a nonzero value that corresponds to the port log type to be enabled. Use **portLogEventShow** for a listing of values corresponding to supported log types.
--help	Displays the command usage.

Examples

To enable logging of type 2 port log events:

```
switch:admin> portlogtypeenable 2
```

See Also

portLogEventShow, portLogTypeDisable

portLoopbackTest

Performs a functional test of port N->N path.

Synopsis

```
portloopbacktest
      [--slot <slot>]
      [-nframes <count>]
      [-lb_mode <mode>]
      [-spd_mode <mode>]
      [-ports <itemlist> | -uports <itemlist>]
      [-enetmode]
```

Description

Use this command to verify the functional operation of the switch by exercising the blade ports of the switch.

This test sends frames from a given port's transmitter and loops them back into the same port's receiver. The loopback is done at the parallel loopback path. The path traversed in this test does not include the media or the fiber cable. Only one frame is transmitted and received at any given time.

The port LED blinking pattern depends on the hardware platform on which the test is run. On 8Gb/s-capable platforms, the LEDs flicker green rapidly while the test is running. Only the ports on which the test is running flicker green. On 16Gb/s-capable platforms, the LEDs on all ports will flash amber, then turn to green, and then return to amber. After the test completes the lights turn to the expected switch disabled pattern. This difference in LED patterns is due to a difference in the ASIC design. See "Supported Hardware and Software" section in the *Brocade Fabric OS Command Reference Manual* for a mapping of ASIC types to switch models.

The test performs the following operations:

1. Sets all ports for parallel loopback.
2. Creates a frame F of maximum data size (2,112 bytes).
3. Transmits the frame F through port N.
4. Picks up the frame from the same port N.
5. Checks if any of the following eight statistic error counters report nonzero values:
   ENC_in, CRC_err, TruncFrm, FrmTooLong, BadEOF, Enc_out, BadOrdSet, DiscC3
6. Checks whether the transmit, receive, or class 3 receiver counters are stuck at some value.
7. Checks whether the number of frames transmitted is not equal to the number of frames received.
8. Repeats Steps two through seven for all ports until one of the following conditions is met:
   a. The number of frames (or pass count) requested is reached.

b. All ports are marked bad.

At each pass, the frame is created from a different data type of a palette of seven. If seven passes are requested, seven different data types are used in the test. If eight passes are requested, the first seven frames use unique data types, and the eighth is the same as the first. The seven data types are:

```
CSPAT: 0x7e, 0x7e, 0x7e, 0x7e, ...
BYTE_LFSR: 0x69, 0x01, 0x02, 0x05, ...
CHALF_SQ: 0x4a, 0x4a, 0x4a, 0x4a, ...
QUAD_NOT: 0x00, 0xff, 0x00, 0xff, ...
CQTR_SQ: 0x78, 0x78, 0x78, 0x78, ...
CRPAT: 0xbc, 0xbc, 0x23, 0x47, ...
RANDOM: 0x25, 0x7f, 0x6e, 0x9a, ....
```

Notes

Do not abort this test prematurely, using **CTRL-C** or **q** to quit. Doing so may cause the test to report unexpected errors. Errors may vary depending on the hardware platform.

You cannot interrupt the test by pressing the return key (<cr>).

This command does not support High Availability (HA).

The following restrictions apply on the Brocade G620 switch:

- 32G SFPs supports 32G/16G/8G speeds
- 16G SFPs supports 16G/8G/4G speeds
- 10G SFPs supports only 10G speed
- 10G spd_mode works only with lb_mode 2 with 10G SFP only and does not work with lb_mode 1
- 16G and 32G SFPs do not support 10G speed in lb_mode 1 or 2

This diagnostic cannot be run on an operational switch. You must disable the switch using the **chassisDisable** command before you can run this test. After the test completes, re-enable the switch using the **chassisEnable** command. Do not use the **switchDisable** command followed by manually shutting down the ports before running the test. This will not work because executing **switchEnable** after the test completes will leave the ports in the same state as before. The only way to bring the ports down before running the test and back up after the test completes is by using the **chassisDisable** command followed by the **chassisEnable** command.

The 32G-capable platforms support only lb_mode 1 and 2.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--slot <*slot*>	Specifies the number of the slot on which to run the diagnostics. All eligible ports relative to the slot number are tested. The default is 0 and designed to operate on fixed-port-count products.
-nframes <*count*>	Specifies the number of frames to send. The test progresses until the specified number of frames has been transmitted on each port. The default value will be platform dependent. The maximum number of frames sent is limited to 1000 on 16G-capable platforms and to 2000 on 32G-capable and 64G-capable platforms. If the number of frames exceeds maximum limit, the test proceeds with the initial maximum limit of frames (for example, 1000 on 16G-capable platforms) and displays a warning message.
-lb_mode <*mode*>	Specifies the loopback mode for the test. By default, this test uses the internal loopback. Valid values depend on the platform on which the command is executed. Unsupported values are rejected with an

appropriate message. To run this test with mode values of 1 and 7, loopback cables must be connected to all front end ports or the test will fail.

1	Port Loopback (loopback plugs)
2	External (SERDES) loopback
5	Internal (parallel) loopback. This parameter is not supported in 16G-capable platforms.
8	Backend bypass & SERDES loopback. This parameter is supported only on Brocade 7810 switch.
11	Backend bypass & EXTERNAL loopback. This parameter is not supported on Brocade 7810 and switches that have no backend links.

-spd_mode <*mode*> Specifies the speed mode for the test. This parameter controls the speed at which each port is operated. The speed option chosen or defaulted to must not exceed the speed capability of the SFP device or the test results will be unpredictable. For example, if you use an 8G SFP in a 16G-supported slot, you must use **spd_mode 8** option to specify 8Gb/s speed. The speed modes 4, 8, 10, 16, and 32 are supported in 32G-capable platforms.

2	Runs test at 2G.
4	Runs test at 4G.
8	Runs test at 8G (Default for 8G platforms).
10	Runs test at 10G (Default for 10G platforms). This speed mode is not supported on 16G core blades.
16	Runs test at 16G (Default for 16G platforms).
32	Runs test at 32G (Default for 32G platforms). This speed mode is not supported in 8G-capable and 16G-capable platforms.

-ports <*itemlist*> Specifies a list of blade ports to test. By default, all of the blade ports in the specified slot (**--slot**) are used. You must have maintenance access to the **bladePortMap** command if you want to map a specific front-end blade port to a user port. You can also use the **-uports** option to specify the user ports. Refer to **itemList** for more information on the *itemlist* parameter.

-uports <*itemlist*> Specifies a list of user ports to test. If this operand is omitted, by default the test will run on all valid blade ports in the slot. See **itemList** for more information on the *itemlist* parameter.

-enetmode Specifies whether the supported front-end ports are to be configured in Ethernet mode when running the test. This mode sends out Ethernet packets for loopback testing on supported platforms. If this option is not specified, the test will run with the front-end ports configured in the Fibre Channel mode.

Examples

To run a functional test in default mode:

```
switch:admin> portloopbacktest

Running portloopbacktest ..............

PASSED.
```

See Also

itemList

portName

Assigns or displays port names.

Synopsis

```
portname [<port> [-n <name>]]
portname [-i <port_index>[-<port_index_range>][-f] [-n <name>]]
portname [-x <port_index>[-<port_index_range>][-f] [-n <name>]]
portname [<pg_id>]
portname [{-slot | -s} <slot>[-<slot_range>] [-n <name>]]
portname [-d [<format_string> | -default | -help]]
portname [-help]
```

Description

Use this command to assign a port name to a specified port or to a range of ports. The port name is included in the **portShow** output; it should not be confused with the world wide port name.

When a port name is not configured, the **portName** command displays a default name in the **portShow** output. The format of the default name is as follows:

- On standalone platforms, the default port name displays as port*portnumber*, for example, "port10."
- On enterprise-class platforms, the default port name displays as slot*slotnumber* port*portnumber*, for example, "slot1 port5."

You can identify a single port to be configured by its port number or by its port index number in decimal or hexadecimal format. Port ranges are supported with port numbers, index numbers (decimal or hexadecimal) or by specifying a slot or a slot range. Use **switchShow** for a listing of valid ports, slots, and port index numbers. When issued without the name operand, this command displays the names of the specified ports or of all ports, if no port is specified.

Like all other configurable port attributes, port names persists across reboots and power cycles. They are not affected by the **configDefault** command, but they are cleared by **portCfgDefault**.

The dynamic port name is retained as is even when the port goes offline or even after the physical disconnection of host from a port.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

slot	For bladed systems only, specifies the slot number of the ports to be configured, followed by a slash (/).
port	Assigns a name to a single port identified by its port number.
-i <*port_index*>[-<*port_index_range*>	Assigns a name to a single port or to a range of ports identified by port index numbers, for example, **-i** 1/3-8 -n backup. You may specify multiple index ranges separated by a space, for example, **-i** 35-45 61-68 -n backup.
-x <*port_index*>[-<*port_index_range*>	Specifies a port or a range of ports identified by port index numbers in hexadecimal format. You may specify multiple port ranges separated by a space, for example, -x 21-26 28-3c.
-f	Ignores nonexisting ports. This operand is valid only with the **-i** and **-x** options.

-slot <*slot*>[-<*slot_range*>

Assigns a name to all ports on a slot or on a range of slots, for example, **-s** 3-5 -n backup. Multiple slot ranges are not supported with this command.

-n <*name*>

Specifies the name to be assigned to the ports. The port name is a character string up to 128 characters, including spaces and characters and excluding commas (,), semicolons (;), parenthesis (), line feed (\n), carriage return (\r), and the at sign (@). When FICON Server Management mode is enabled, the port name character string can only be up to 24 characters in length. To erase a port name, execute the port name operand as an empty string in double-quotation marks (**-n ""**). This operand is optional; if omitted, the current port name is displayed.

Some characters require a qualifier or double quotation marks when used with a bash shell; for example, enter a single quotation mark as \', enter an exclamation mark as \!, or enter a pipe (|) as "|".

The empty string operand for port name (**-n ""**) will not be effective if the default configuration parameter for "Disable Default PortName" is set to **N** or enabled. Use the **configure** command to set this parameter to **Y** or disabled so that **-n ""** can be effective.

-d

Configures or displays the dynamic port name format. When executed without optional parameters, this command displays the configured dynamic port name format.

format_string

Specifies the dynamic port name format. The following control keys and their corresponding port name fields are supported:

- **S** - Switch name
- **T** - Port type
- **I** - Port index
- **C** - Slot number/port number
- **A** - Alias name
- **F** - FDMI hostname
- **R** - Remote switch name

The control keys for port name fields must be separated using periods (.),dashes (-), or underscores (_). Control keys are case-sensitive. The *format_string* must be enclosed in double quotes.

-default

Sets the dynamic port name format to the default format string "S.T.I.A".

-help

Displays the syntax and usage guidelines for the **-d** operand.

-h

Displays the command usage.

Examples

To name a port tape drive 8:

```
switch:admin> portname 1/3 -n "Tape drive 8"
switch:admin> portname 1/3
Tape drive 8
```

To assign a name to a range of ports specified by port index numbers:

```
switch:admin> portname -i 22-26 -n backup
switch:admin> portname -i 22-26
port  22: backup
port  23: backup
port  24: backup
port  25: backup
```

```
port  26: backup
```

To assign a name to all ports on slot 1 and 2:

```
switch:admin> portname -s 1-2 -n backup
switch:admin> portname -s 1-2
port 416: backup
port 417: backup
port 418: backup
port 419: backup
port 420: backup
port 421: backup
(output truncated)
```

To configure dynamic port name format:

```
switch:admin> portname -d "S.T.I.R.A"
```

To display the configured dynamic port name format:

```
switch:admin> portname -d
S.T.I.R.A
```

See Also

configDefault, configure, portCfgDefault, portShow, switchShow

portPeerBeacon

Sets the port peer beaconing to physically identify the interconnections between ports.

Synopsis

```
portpeerbeacon --enable [slot/]port
portpeerbeacon --disable [slot/]port
portpeerbeacon --show -all
portpeerbeacon --help
```

Description

Use this command to turn on or off the port peer beaconing to physically identify the interconnections between ports.

Using this command, the administrator can turn on the beaconing on both ends of the link and physically search the other switches or devices for the beacon pattern to find the peer port. The beaconing pattern is alternating green and amber LEDs every 1.2 seconds.

In the case of the trunk ports, the entire trunk group will be beaconed. This command is supported for more than one port or one trunk group. Newly added trunk ports are automatically included to beacon. Similarly, disabling the **portpeerbeacon** on a trunk port disables beaconing on the entire trunk group.

Port peer beaconing is supported on N_Ports, E_Ports, EX_Ports, F_Ports, AE_Ports, and trunk ports. The command is not supported on ICL ports.

Port peer beaconing is not supported if diagnostic tests are running on the port. Port peer beaconing is not supported with **spinFab** and is mutually exclusive of all the diagnostic commands.

Port peer beaconing remain unaffected when a port or trunk group is disconnected, toggled, or disabled.

The **portPeerBeacon** command is one of the commands that controls beaconing. Each command has a clearly defined scope of action:

- The **portBeacon** command enables or disables beaconing on a specified port.
- The **switchBeacon** command enables or disables beaconing on all ports in the current logical switch.
- The **chassisBeacon** command enables or disables beaconing on all ports in the chassis.
- The **portPeerBeacon** command enables or disables beaconing to identify the interconnections between ports.

The actions of the beaconing commands are independent and mutually exclusive except that the **portPeerBeacon** command overrides the **portBeacon** settings on a port, but **portBeacon** does not override port peer beaconing on a port. For example, if you enabled beaconing on the logical switch and you want to enable beaconing on the entire chassis, you must first disable switch beaconing with the **switchBeacon** command before you can use the **chassisBeacon** command to enable beaconing on the entire chassis. Likewise, existing **portBeacon** settings remain unaffected if you enable or disable beaconing on the switch or on the chassis. Failure to disable existing beaconing commands before using a different type of beaconing may cause the commands to interfere with each other in unexpected ways.

To determine whether or not beaconing is enabled or disabled on the switch or chassis, use the **switchBeacon** or **chassisBeacon** command without operands. A value of 0 indicates that the command is disabled, a value of 1 indicates that the command is enabled. Issue the **portBeacon --show -all** command to display beaconing status. The **switchShow** command displays the status of the **switchBeacon** command only.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

slot	Specifies the slot number on which the port peer beaconing is available.
port	Specifies the number of the port to be configured, relative to its slot for bladed systems. Use **switchShow** for a list of valid ports.
--enable	Enables the port peer beaconing on a particular port.
--disable	Disables the port peer beaconing on a particular port even when the port is disabled or offline.
--show -all	Displays the ports on which the Port Peer Beaconing is active. It helps to find the ports that receive the ELS and start beaconing. The administrator can verify the connectivity from the Telnet instead of physically verifying the connection.
--help	Displays the command usage.

Examples

To enable the port peer beacon on a port:

```
switch:admin> portpeerbeacon --enable 2/15
```

To disable the port peer beacon on a port:

```
switch:admin> portpeerbeacon --disable 15
```

To display the status of the port peer beacon on a chassis:

```
switch:admin> portpeerbeacon --show -all
PortPeerBeacon enabled port(s):
FID 128:
3/27, 3/28, 3/30, 3/31,
FID 10:
3/16, 3/17,
FID 20:
```

```
3/24, 3/25
```

To display the trunk port port peer beacon information (in this example, 2/4, 2/8, and 3/4 are the master ports of their trunking group, and the other ports are the slave ports in their trunking group):

```
switch:admin> portpeerbeacon --show -all
PortPeerBeacon enabled port(s):
FID 128:
Trunk-2/4, 2/5, 2/7, 2/0, 2/1, 2/3, 2/2, 2/6,Trunk-2/8, 2/9, 2/10, 2/11,
FID 10:
Trunk-3/4, 3/5, 3/6, 3/7,
```

See Also

chassisBeacon, portBeacon, switchBeacon

portPerfShow

Displays port throughput performance.

Synopsis

```
portperfshow
portperfshow [[slot/]port1[-[slot/]port2]]
     [-tx -rx | -tx | -rx] [-t interval]
     [-online]
portperfshow -x hex1[-hex2][-online]
portperfshow --help
```

Description

Use this command to display throughput information for all ports on a switch or chassis or to display the information for a specified port or port range. You can display throughput information about a single port identified by its port number or by its port index number in decimal or hexadecimal format. Port ranges are supported with port numbers, index numbers(decimal or hexadecimal) or by specifying a slot or a slot range. Output includes the number of bytes received and transmitted per interval. Throughput values are displayed as either bytes, kilobytes (k), megabytes (m), or gigabytes (g). Values are rounded down.

The data is displayed one column per port plus one column that displays the total for these ports. Results display every second or over a specified interval. Press **Enter**, **Ctrl-c**, or **Ctrl-d** to terminate the command. To run this command one time only, specify an interval of zero.

When executed with the command line arguments **-tx**, **-rx**, or **-tx -rx**, this command displays the transmitter throughput, the receiver throughput, or both. For ports with status of "No_Module," "No_Light," "No_SigDet," or "Loopback" throughput is displayed as 0.

An asterisk (*) in the output indicates a SIM port that is generating or receiving traffic.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

When FastWrite or Tape Pipelining is enabled, the **portPerfShow** VE link output is different. The acceleration entity (FastWrite or Tape Pipelining) responds by sending XFER_RDY and the status well ahead of the actual device's response to the host. The host sends data, which is stored near the device and is delivered to the device only when the device is

ready. Consequently, the data may be stored near the target for some brief period of time. In this case, the **portPerfShow** output on the VE link may not match the output on the device port.

Operands

This command has the following optional operands:

[*slot/*]*port1*[-[*slot/*]*port2*]	Displays throughput information for a single port or for a range of ports, relative to the slot number on bladed systems. Port numbers in a range must be separated by a dash (-), for example, 3-5, or 2/0-2/15. Port ranges cannot span slots. Use **switchShow** to display a listing of valid ports. Port operands are optional; if omitted, information for all ports is displayed.
-t *time_interval*	Specifies the interval, in seconds, between each sample. The default interval is one second. If no interval is specified, the default is used. To run this command one time only, specify an interval of zero.
-tx	Displays the transmitter throughput.
-rx	Displays the receiver throughput.
-tx -rx	Displays the transmitter and receiver throughput.
-x *hex1* [-*hex2*]	Accepts an index number or a range of index numbers within the same slot in hexadecimal format as input and displays the output in slot and port number format for chassis and index number format on switches.
-online	Displays the performance information only for the ports that are online.

Examples

To display performance information for all ports at a one second (default) interval:

```
switch:user> portperfshow
   0    1   2   3   4   5   6   7   8   9     10  11  12  13  14  15
=====================================================================
630.4m  0   0   0   0   0   0   0   0   0  630.4m  0   0   0   0   0

16   17     18     19  20  21  22  23  24  25  26  27  28  29  30  31
=====================================================================
0 210.1m 840.5m 210.1m  0   0   0   0   0   0   0   0   0   0   0   0

32   33   34   35   36   37   38   39   Total
=============================================
0    0    0    0    0    0    0    0    2.5g

  0    1   2   3   4   5   6   7   8   9     10   11  12  13  14  15
=====================================================================
630.4m 0   0   0   0   0   0   0   0   0 630.4m    0   0   0   0   0

16  17    18    19     20  21  22  23  24  25  26  27  28  29  30  31
=====================================================================
0 210.1m 840.6m 210.1m  0   0   0   0   0   0   0   0   0   0   0   0

32   33   34   35   36   37   38   39   Total
=============================================
0    0    0    0    0    0    0    0     2.5g
(output stopped)
```

To display port performance for all ports with an interval of 5 seconds:

```
switch:user> portperfshow -t 5
```

```
  0      1   2   3   4   5   6   7   8    9   10  11  12  13  14  15
=====================================================================
 630.4m  0   0   0   0   0   0   0   0  112 630.4m 0   0   0   0   0

16  17    18    19    20  21  22  23  24  25  26  27  28  29  30  31
=====================================================================
0 210.1m 840.6m 210.1m 0 112   0   0   0   0   0   0   0   0   0   0

32   33   34   35   36   37   38   39   Total
=================================================
0    0    0    0    0    0    0    0    2.5g

 0      1   2   3   4   5   6   7   8   9    10   11  12  13  14  15
=========================================================================
630.4m  0   0   0   0   0   0   0   0   0  630.4m  0   0   0   0   0

16   17    18    19   20  21  22  23  24  25   26  27  28  29  30  31
=========================================================================
0 210.1m 840.5m 210.1m 0   0   0   0   0   0    0   0   0   0   0   0

32   33   34   35   36   37   38   39  Total
=================================================
 0    0    0    0    0    0    0    0   2.5g
(output truncated)
```

To display performance on a single port with at a 5 second interval:

```
switch:user> portperfshow 0 -t 5
  0      Total
=================
 630.4m 630.4m

 0       Total
=================
 630.3m 630.3m
(output truncated)
```

To display transmitter throughput for a single port at a 5 second interval:

```
switch:user> portperfshow 0 -tx -t 5
   0
========
 210.1m
   0
========
 210.1m
(output truncated)
```

To display receiver throughput for a single port at a 5 second interval:

```
switch:user> portperfshow 0 -rx -t 5
  0
========
 420.3m
  0
```

```
========
 420.2m
(output truncated)
```

To display port performance on a chassis for range of ports ('*' indicates a SIM port):

```
switch:user>  portperfshow 0-2
 0     1     2      Total
==========================
 *     0     *      0
```

To display port performance on a chassis for range of ports at an interval of 5 seconds:

```
switch:user>  portperfshow 12/0-12/6 -t 5
          0      1      2      3      4      5      6    Total
================================================================
slot 12: 840.6m  0      0      0      0      0  630.4m    1.4g
 0      1      2      3      4      5      6    Total
================================================================
slot 12: 840.6m  0      0      0      0      0  630.4m    1.4g
 0      1      2      3      4      5      6    Total
================================================================
slot 12: 840.6m  0      0      0      0      0  630.4m    1.4g
(output truncated)
```

To display performance information for a range of ports:

```
switch:user>  portperfshow -x a-b
          10      11      Total
================================
          0       0       0
```

To display performance information only for the online ports:

```
switch:user>  portperfshow -online
    1
============
Slot 4:   *
 Total
===============
Slot 4:   0
    2      4      7     12     14     35     38     47
================================================================
Slot 12:   0      *      0      0      0      0      0   1.4g
 Total
===============
Slot 12:   1.4g
```

See Also

portStatsShow

portShow

Displays status and configuration parameters for ports and GbE ports.

Synopsis

```
portshow [<slot>/][ge]<port>
portshow [<slot>/]<port> -link [-force]
portshow -i {<port_index> | <port_index_range>} [-f]
portshow -pid <pid>
portshow -x <hex1>[-<hex2>]
portshow {ipif | iproute} [[<slot>/]<port>] [--link-local] [--help] [--filter <filter-args>]
portshow arp [[<slot>/]<port>] [--lmac] [--link-local] [--help] [--filter <filter-args>]
portshow {fciptunnel | fcipcircuit} [[<slot>/]<port>     [<circuit-id>]] [<options>]
portshow ftrace <ve-port> <args>
portshow ipsec-policy [{all | <policy-name>}] [--ike-session] [--summary | --detail] [--show-password]
[--help] [--filter <args>]
portshow ipsec-profile [{all | <profile-name>}] [--help]
portshow xtun [<slot>/]<port> [<args>]
portshow tcl [<name>] [--summary | --detail] [--priority <value>] [--sort {name | priority | src-addr
| dst-addr}] [--help] [--filter <args>]
portshow sla [{all | <sla-name>}] [--summary |--detail] [--help]
portshow app-type [--detail] [--help]
portshow filter-set [<name>] [--help]
portshow lan-stats --per-flow [[<slot>/]<dp#> [<index>]] [<per-flow-args>] | --global [[<slot>/]<dp#>]
[<global-stats-args>] | --hist-stats [<hist-stats-args>] | --known-apps
portshow lan-stats --ip-pair [[<slot>/]<dp#> [<index>]] [ <ip-pair-args>] | --flow [<name>] |  --tcp-
port-info | --status [<status-args>]} [--help]
```

Description

Use this command to display general port status and specific configuration parameters for a specified port, GbE port, or VE_Port.

If this command is executed for a specified port with no additional options, it displays general status and configuration for that port. If executed with optional arguments for a Gigabit Ethernet (GbE) port or VE_Port, the command displays extension-related port configuration parameters specific to the Brocade 7810, 7850, and SX6 extension blades.

The behavior of this command is platform-specific. Some command options are not available on all platforms. Use the following section headings to navigate this page.

- Display general port status information on all platforms
- Display extension configurations and extension operational information on the Brocade 7810, 7850 or SX6 extension platforms:

  - **portshow ipif** - Displays the local IP interfaces.
  - **portshow arp** - Displays the content of the address resolution protocol (ARP) table.
  - **portshow iproute** - Displays static routes on the IP interface.
  - **portshow ipsec-policy** - Displays the IPSEC Policy information. Supported on Brocade 7810, 7850, and SX6 extension blade only.
  - **portshow tcl** - Displays the Traffic Control List (TCL) information.
  - **portshow lan-stats** - Displays the LAN statistics.
  - **portshow sla** - Displays the Service Level Agreement (SLA) statistics. Beginning with Fabric OS v9.2.2, this option is deprecated.
  - **portshow filter-set** - Displays the details of the configured filter-sets.
  - **portshow app-type** - Displays the details of the configured application types.
- Display extension tunnels, circuits, management interfaces and FICON statistics:
  - **portshow fciptunnel** - Displays extension tunnels.
  - **portshow fcipcircuit** - Displays extension circuits.
  - **portShow xtun** - Displays FICON and FCP emulation statistics and current runtime conditions.

To display the command usage on the switch, use **portShow** [*action*].

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Some of the features supported by this command may require a license.

Function

General port status display commands supported on all platforms

Synopsis

```
portshow [<slot>/][ge]<port>
portshow [<slot>/]<port> -link [-force]
portshow -i {<port_index> | <port_index_range>} [-f]
portshow -pid <pid>
portshow -x <hex1>[-<hex2>]
```

Description

Use this command to display general port status and configuration parameters for the specified port. This command is valid on all platforms, but the output is platform-specific and not all fields are displayed on all platforms.

The following general information is displayed when the command is issued for a non-GbE port without additional arguments:

portIndex	Index number assigned to the port.
portName	Name assigned to the port by the **portName** command. On standalone platforms, the default port name is the port number, for example, "port5". On enterprise-class platforms, the default port name is a combination of the slot number and the port number, for example, "slot1 port5".
portHealth	Current health of the port (requires a Fabric Vision license).
Authentication	Authentication type and associated parameters (if applicable) used on the port at port online.
	None No authentication was performed.

FCAP	FCAP authentication was performed.
DHCHAP	DHCHAP authentication was performed. Also displays DH group and hash type used for authentication.

portDisableReason	Provides an explanation for the port's disabled status.
portCFlags	Port control flags.
portFlags	A bit map of port status flags, including information on the type of port, whether it is fully online, and whether logins have been accepted. The port flags display ENCRYPT if the port has been enabled for encryption. The port flags display COMPRESS if the port has been enabled for compression. The port flags display D_PORT if the port has been enabled as a diagnostic port. The port flags display FLOGI_LOGO if the base device logs out and at least one NPIV is online.
portType	The port's type and revision numbers.
POD Port	Ports on Demand License status.
portState	The port's SNMP state:

Online	Up and running.
Offline	Not online, see **portPhys** for more detail.
Testing	Running diagnostics.
Faulty	Failed diagnostics.
Persistently Disabled	Persistently disabled.

Protocol	Protocol used by the port: FC, FCoE, or Ethernet.
portPhys	The port's physical state:

No_Card	No interface card present.
No_Module	No module (GBIC or other) present.
No_Light	Module is not receiving light (valid for 8G, 10G, 16G, 32G, 48G, and 64G FC ports only).
No_SigDet	No signal detected; displays when a quad small form-factor pluggables (QSFPs) is installed without cables).
Mod_Inv	Incompatible vendor or module speed mismatch.
No_Sync	Receiving light but out of sync.
In_Sync	Receiving light and in sync.
Laser_Flt	Module is signaling a laser fault.
Port_Flt	Port marked faulty.
Lock_Ref	Locking to the reference signal.

portScn	The port's last State Change Notification.
port generation number	The port's generation number for the last offline state change.
portId	The port's 24-bit port ID.
portIfId	The user port's interface ID.
portWwn	The port's world wide name.
portWwn of devices(s) connected	The World Wide Port Names of connected devices. If the base device logs out and one or more NPIVs are online, the PWWN of the NPIVs online are displayed.
Distance	The port's long-distance level. In the case of LD mode, the user configured distance and actual distance also are displayed.
portSpeed	The port's fixed speed (4G, 8G, 16G, 32G, or 64G) or negotiated speed (N4 Gb/s, N8 Gb/s, N16 Gb/s, N32 Gb/s, N64 Gb/s, or AN).
FEC	Forward error correction (FEC) status: displays "active" if FEC is enabled on the port and the port is online; displays "inactive" if the feature is disabled. Refer to the **portCfgFec** command for more information.
Link latency	The link latency for the local ports.
Link distance	The cable distance for the link.

LE domain	The LE domain ID.
AoQ (Application-oriented QoS)	Indicates that an F_Port or N_Port has negotiated a link that is capable of quality of service (QoS). Both sides of the link have QoS capability and agreed on the protocol. The link could be between an HBA and an Access Gateway, between an Access Gateway and an edge switch, or between an HBA and an edge switch.
Faa (Fabric-Assigned PWWN)	Simplifies server deployment in a Fibre Channel SAN (FC SAN) environment by using a virtual port World Wide Name (PWWN) instead of a physical PWWN to configure zoning and LUN mapping and masking.

If the port is configured as an EX_Port, the following additional port information is displayed:

EX_Port Mode	The port is configured as an EX_Port.
Fabric ID	The fabric ID assigned to this EX_Port; this is the fabric ID of the edge fabric attached to this EX_Port.
Front Phantom	Information on the front phantom domain presented by this EX_Port. Includes the preferred (if not active) or actual (if active) domain ID for the front domain and the WWN of the front domain.
Pr Switch Info	Information on the principal switch of the edge fabric attached to this EX_Port. Includes the domain ID and WWN of the principal switch.
BB XLate	Information on the xlate (translate) phantom domain presented at this port. Includes the preferred (if not active) or actual (if active) domain ID for the xlate phantom domain and the WWN of the xlate phantom domain. The xlate phantom domain connected at this port is in the same fabric as the router and represents the edge fabric connected to the EX_Port.
Authentication Type	Displays NONE or DH-CHAP. DH-CHAP is the only authentication type supported on EX_Ports.
DH Group	Displays DH group [0-4] if DH-CHAP authentication is used. Otherwise displays N/A.
Hash Algorithm	Displays hash type (MD5 or SHA-1) if DH-CHAP authentication is used. Otherwise, displays N/A.
Edge fabric's primary WWN	If the EX_Port is connected to an edge switch with FCS policy enforcement, the WWN of the primary FCS is displayed when the edge fabric is secure and the primary FCS is online. Otherwise, displays "No Primary".
Edge fabric's version stamp	If the EX_PORT is connected to an edge switch with FCS policy enforcement, the version of the security database is displayed. Otherwise displays N/A.

The **portShow** command displays FCoE ports with "Protocol: FCoE". Only a subset of information is displayed. Refer to the Examples section for an illustration.

Following the general information, the command displays three columns of counters. The first column shows interrupt statistics:

Interrupts	Total number of interrupts.
Unknown	Interrupts that are not counted elsewhere.
Lli	Low-level interface (physical state, primitive sequences).
Proc_rqrd	Frames delivered for embedded N_Port processing.
Timed_out	Frames that have timed out.
Tx_unavail	Frames returned from an unavailable transmitter.
Delim_err	Number of invalid frame delimiters received.
Lr_in	Link reset on the remote switch.
Lr_out	Link reset on the local switch.
Link_failure	Number of link failures.
Loss_of_sync	Number of instances of synchronization loss detected.
Loss_of_sig	Number of instances of signal loss detected.
Protocol_err	Number of primitive sequence protocol errors detected.
Invalid_word	Number of invalid transmission words received.
Invalid_crc	Number of frames received with invalid CRC.
Address_err	Number of frames received with unknown addressing.
Ols_in	Number of Offline Primitive OLS received.
Ols_out	Number of Offline Primitive OLS transmitted.

Frjt	Number of transmitted frames rejected with F_RJT.
Fbsy	Number of transmitted frames busied with F_BSY.
FEC Corrected Blocks	FEC corrected block errors.
FEC Uncorrected Blocks	FEC uncorrected block errors.
Cong_Prim_in	Number of congestion detection signals received by the switch from a device.

The second column displays link error status block counters.

The third column shows the number of F_RJTs and F_BSYs generated. For L_Ports, the third column also displays the number of loop initialization protocols (LIPs) received, number of LIPs transmitted, and the last LIP received.

Operands

This command has the following port operands:

slot	For chassis-based systems only, specifies the slot number of the port to be displayed, followed by a slash (/).
port	Specifies the number of the port to be displayed, relative to its slot for chassis-based systems. Use **switchShow** for a listing of valid port numbers.
-link [-force]	Displays the diagnostic information from cached data for a local switch port and the peer port. The **-force** option displays the real-time diagnostic information from the registers for a port.
-i <*port_index*>[-<*port_index_range*>]	Specifies a port or a range of ports identified by port index numbers.
-x <*hex1*> [-<*hex2*>]	Specifies a port or a range of ports identified by port numbers, index number in hexadecimal format. You may specify multiple port ranges separated by a space, for example, -x 21-26 28-3c.
-pid <*pid*>	Specifies the diagnostics information of a remote switch port along with its peer port.

Examples

To display the current state of a D_Port:

```
switch:admin> portshow 9
portIndex         : 9
portName          : port9
portHealth        : HEALTHY

Authentication    : None
portDisableReason : None
portCFlags        : 0x1
portFlags         : 0x903     PRESENT ACTIVE E_PORT T_PORT G_PORT U_PORT LOGICAL_ONLINE LOGIN
LocalSwcFlags     : 0x0
portType          : 30.0
POD Port          : Port is licensed
portState         : 1    Online
Protocol          : FC
portPhys          : 6    In_Sync      portScn:   128    T_Port    Trunk port Flow control mode 4
port generation number:    394
state transition count:    21

portId            : 090900
portIfId          : 43020008
portWwn           : 20:09:38:ba:b0:6d:fb:08
portWwn of device(s) connected:
```

```
    None
Additional area   :
Distance          : normal
portSpeed         : N64Gbps

FEC: Active
Credit Recovery   : Inactive
Link latency      : 725 nsec
Link distance     : 2 m
LE domain         : 0
Peer beacon       : Off
Interrupts        : 47    Link_failure: 0    Frjt:         0
Unknown           : 0    Loss_of_sync : 0    Fbsy:         0
Lli               : 47    Loss_of_sig : 2
Proc_rqrd         : 22    Protocol_err: 0
Timed_out         : 0    Invalid_word : 0
Tx_unavail        : 0    Invalid_crc  : 0
Delim_err         : 0    Address_err  : 0
Lr_in             : 1    Ols_in       : 0
Lr_out            : 2    Ols_out      : 1
Cong_Prim_in      : 0
Nos_in            : 0    Nos_out      : 0
...
```

To display the current state of a port with encryption enabled:

```
switch:admin> portshow 10/44
portIndex         : 348
portName          : slot10 port44
portHealth        : Fabric vision license not present

Authentication    : None
portDisableReason : None
portCFlags        : 0x1
portFlags         : 0x10000103    PRESENT ACTIVE E_PORT T_PORT\
                    T_MASTER G_PORT U_PORT ENCRYPT LOGIN
LocalSwcFlags     : 0x0
portType          : 24.0
portState         : 1   Online
Protocol          : FC
portPhys          : 6  In_Sync  portScn: 1  Online Trunk master port
port generation number:    44
state transition count:    12
```

To display an FCoE port:

```
switch:admin> portshow -i 1801
portIndex         : 1801
portName          : slot-1 port-1
portHealth        : Not Monitored

Authentication    : None
portDisableReason : None
```

```
portCFlags        : 0x1
portFlags         : 0x24b03     PRESENT ACTIVE F_PORT G_PORT  \
                    LOGICAL_ONLINE LOGIN NOELP LED ACCEPT FLOGI LG_PORT
LocalSwcFlags     : 0x0
portType          : 0.0
portState         : 1   Online
Protocol          : FCoE
portPhys          : 255    N/A portScn:   1     Online
port generation number:    0
state transition count:    1

portId            : 0290c0
portIfId          : 4b052004
Associated ifindex: 0x10030800 (Type: Physical Port 3/16)
portWwn           : f1:f5:7c:5b:60:74:07:09
portWwn of device(s) connected:     10:00:00:90:fa:61:8b:18
16b Area list     :
PID               : 0x90c0, Attr: 0x5
Distance          : normal
portSpeed         : Unknown
```

To display the cached data for a port:

```
switch:admin> portshow 32
portIndex              : 32
portName               : port32
portHealth             :
Authentication         : None
portDisableReason      : None
portCFlags             : 0x1
portFlags              : 0x18024b03   PRESENT ACTIVE T_FPORT T_FMASTER F_PORT G_PORT U_PORT
                         LOGICAL_ONLINE LOGIN NOELP LED ACCEPT FLOGI
LocalSwcFlags          : 0x0
portType               : 24.0
POD Port               : Port is licensed
portState              : 1   Online
Protocol               : FC
portPhys               : 6   In_Sync     portScn:   32   F_Port    Trunk master port
port generation number : 22
state transition count : 1
portId                 : 323600
portIfId               : 43020027
portWwn                : 20:20:00:27:f8:81:85:69
Logical portWwn        : 50:02:7f:88:18:58:60:32
portWwn of device(s) connected: 25:00:00:27:f8:65:02:3e
Distance               : normal
portSpeed              : N8Gbps
FEC                    : Inactive
Credit Recovery        : Inactive
Aoq                    : Inactive
FAA                    : Inactive
F_Trunk                : Active
LE domain              : 0
Interrupts             : 0     Link_failure: 0    Frjt:   0
```

```
Unknown                : 0     Loss_of_sync: 0    Fbsy:   0
Lli                    : 28    Loss_of_sig:  0
Proc_rqrd              : 24868 Protocol_err: 0
Timed_out              : 0     Invalid_word: 0
Tx_unavail             : 0     Invalid_crc:  0
Delim_err              : 0     Address_err:  0
Lr_in                  : 4     Ols_in:       1
Lr_out                 : 2     Ols_out:      4
nodeWwn                : 20:20:00:27:f8:81:85:69
PN_PORT Phy Type       : PN Port/PF Port [PN Port/PF Port, lossless Ethernet MAC]
FEC Corrected Blocks   : 0
FEC Uncorrected Blocks : 0

PEER PORT

portWwn                : 20:20:00:27:f8:81:85:69
nodeWwn                : 20:20:00:27:f8:81:85:69
PN_PORT Phy Type       : PN Port/PF Port [PN Port/PF Port, lossless Ethernet MAC]
Link_failure           : 0    Loss_of_sync: 0         Loss_of_sig:  0
Protocol_err           : 0    Invalid_word: 0         Invalid_crc:  0
FEC Corrected Blocks   : 0
FEC Uncorrected Blocks : 0
```

To display the information of a remote switch port:

```
switch:admin> portshow -pid 0x010500
SWITCH PORT0xDDAA00

portWwn         : 20:20:00:27:f8:81:85:69
nodeWwn         : 20:20:00:27:f8:81:85:69
PN_PORT Phy Type: PN Port/PF Port
Link_failure    : 0        Loss_of_sync: 0         Loss_of_sig:  0
Protocol_err    : 0        Invalid_word: 0         Invalid_crc:  0


PEER PORT 0xDDAAxx

portWwn         : 20:20:00:27:f8:81:85:69
nodeWwn         : 20:20:00:27:f8:81:85:69
PN_PORT Phy Type: PN Port/PF Port
Link_failure    : 0        Loss_of_sync: 0         Loss_of_sig:  0
Protocol_err    : 0        Invalid_word: 0         Invalid_crc:  0
```

Function

Display IP Interface configurations on Brocade 7810, Brocade 7850, or Brocade SX6 platforms.

Synopsis

portshow {**ipif** | **iproute**} [[<*slot*>/]<*port*>] [**--link-local**] [**--help**] [**--filter** <*filter-args*>]
portshow arp [[<*slot*>/]<*port*>] [**--lmac**] [**--link-local**] [**--help**] [**--filter** <*filter-args*>]

Description

Use this command to display FCIP-related configuration parameters on the Brocade 7810, 7850, and SX6 extension blade. The parameters displayed by this command are set with the **portCfg** command. The following displays are supported with this command:

- **portshow ipif** - Displays the local IP interfaces.
- **portshow iproute** - Displays static routes on the IP interface.
- **portshow arp** - Displays the content of the address resolution protocol (ARP) table.
- **portshow ipsec-policy** - Displays IPSEC Policy information. The [*slot*/]*ge_port* option is not applicable for **ipsec-policy**.
- **portshow tcl** - Displays the Traffic Control List (TCL) information.
- **portshow lan-stats** - Displays the LAN statistics.
- **portshow sla** - Displays the SLA statistics. Beginning with Fabric OS v9.2.2, this option is deprecated.
- **portshow filter-set** - Displays the details of the configured filter-sets.
- **portshow app-type** - Displays the details of the configured application types.

Notes

IPv6 addresses are supported.

Operands

This command has the following operands:

slot	For chassis-based systems only, specifies the slot number of the port to be displayed, followed by a slash (/).
<ge_port>	Specifies the GbE port number to be displayed relative to the slot number. Use the **switchShow** command for a listing of valid ports.
ipif	Displays the IP interface ID, IP address, prefix, MTU for IPv4 or IPv6 addresses and displays the VLANs associated with each IPIF and Flags. Flags are explained in the command output (refer to the example below).
	--link-local-l Displays the link-local interface addresses.
iproute	Displays the IP address, prefix, gateway, metrics, and flags.
	--link-local-l Displays the link-local interface routes. This operand is optional.
arp	Displays the address resolution protocol (ARP) and IPv6 neighbor discovery table. You can display the content of the ARP table, but you cannot modify its contents.
	--link-local-l Displays the neighbor discovery entries for the link-local addresses. This operand is optional.
	--lmac-m Displays the local MAC address. This operand is optional.
ipsec-policy	Displays IPSEC Policy information. Currently supported on Brocade 7850, 7810, and SX6 only.
tcl	Displays TCL information. The following options are supported:
	-s | --summary Displays summary view of all the TCLs.
	-d | --detail Displays detailed view of all the TCLs.
	-p | --priority Sorts the TCL list based on the priority.
	-S | --sort *<sort_field>* Sorts the TCL list based on specified sort field. Valid values for lt;*sort_field*> are **name** (TCL name), **priority** (priority ID of the TCL), **src-addr** (source IP address), and **dst-addr** (destination IP address).

portshow lan-stats <*actions*> [<*args*>]

Displays the LAN IP extension statistics.

--per-flow

Displays the details of the LAN connections based on the throughput. If the number of connections is more than 25, the top 25 throughput connections are displayed. If the number of connections is less than 25, all the available connections are displayed.

-top [<*count*>]
Displays the specified number of top throughput connections.

-bottom [<*count*>]
Displays the specified number of bottom throughput connections.

-tcp
Displays the TCP error counter values for the LAN connections. Use this operand with **-top** or **-bottom** to display TCP error counter values for the specified number of top or bottom throughput connections.

-application [<*app_name*> | <*port*>]
Displays aggregate throughput of the well-known applications.

<*app_name*>
Displays the aggregation throughput and individual connection information which contributes towards the aggregated throughput for the specified application.

<*port*>
Displays the aggregation throughput and individual connection information which contributes towards the aggregated throughput for the specified port number.

--per-flow -compression

Displays the details of the LAN connections based on compression. If the number of connections is more than 25, the top 25 throughput connections are displayed. If the number of connections is less than 25, all the available connections are displayed.

-top [<*count*>]
Displays the specified number of top compression connections.

-bottom [<*count*>]
Displays the specified number of bottom compression connections.

-tcp
Displays the TCP error counter values for the LAN connections. Use this operand with **-top** or **-bottom** to display TCP error counter values for the specified number of top or bottom compression connections.

--tcp-port-info

Display a listing of all TCP ports that were attempted to connect through an IPExtension tunnel.

--known-apps

Displays the list of supported well-known applications for the aggregation statistics.

--global

Displays the global LAN statistics for the switch.

-dp
Displays the global LAN statistics of each data processor within the switch.

-reset
Resets the global LAN statistics.

-lifetime
Displays the entire lifetime global LAN statistics even after the statistics are reset.

--hist-stats

Displays the most recently closed per-flow LAN statistics.

-all
Displays a summary view of the per-flow LAN statistics. The following operand is optional:

-index
Specifies a port identified by connection index number.

-detail
Displays details about the LAN statistics including TCP flags used to close the connection. The following operands are required:

-dp	Displays the global LAN statistics of each data processor within the switch.
-index	Specifies a port identified by port index number.

-freeze	Freezes the LAN connection statistic table.
-thaw	Clears the static LAN connection statistic table.
-dp	Specifies the data processor ID to filter on.
-filter	Limits the display to the specified filter criteria. Use **portShow lan-stats --hist-stats -filter -help** for details.
-Rx | -Tx	Displays connection in the specified flow sorting the highest Rx or Tx bytes.
-newest | -oldest	Displays connections in the specified flow sorting the recently opened or the oldest connection first.

--ip-pair Displays statistics for the IP-Extension flow stats aggregated by IP-Pair that includes unique ID for each IP-Pair. By default, IP-Pairs are sorted with highest Rx+Tx bytes and are displayed at the top.

-index	Specifies a port identified by port index number.
-reset	Resets the IP-Pair statistics along with the timer to start a fresh new cycle.
-detail	Displays detailed IP-Pair statistics.
-summary	Displays the IP-Pair statistics in summary format (default format).
-hist	Displays the IP-Pair historical summary.
-days	Displays history for the specified number of days. The maximum value is 7. The option is valid only when **-index** count is specified.
-filter	Limits the display to the specified filter criteria. Use **portShow lan-stats --ip-pair -filter -help** for details.
-Rx | -Tx	Displays connections in the specified flow sorting the highest Rx or Tx bytes.
-newest | -oldest	Displays connections in the specified flow sorting the recently opened or the oldest connection first.
-interval	Displays the interval in seconds and must be greater than 10 seconds. The option is valid only when **-index** count is specified.

--flow Displays all connections in the specified flow. The default sorting is based on the **-throughput** option displaying the highest throughput first.

-throughput	Displays connections in the specified flow sorting the highest throughput first.
-compression	Displays connections in the specified flow sorting the highest compression in the beginning.
-RTT	Displays connections in the specified flow sorting the connection with highest LAN RTT in the beginning.
-oop	Displays connections in the specified flow sorting the highest OOP (out of order packets) in the beginning.
-retransmit	Displays connections in the specified flow sorting the highest retransmit packet counter.
-Rx | -Tx	Displays connections in the specified flow sorting by the highest Rx or Tx bytes.
-newest | -oldest	Displays connections in the specified flow sorting by the most recently opened or the oldest connection first.
-top <*count*>	Displays connections in the specified flow sorting based on the **-throughput** option and displaying only the top 20 connections.

-bottom <*count*> Displays connections in the specified flow sorting based on the **-throughput** option and displaying only the bottom 20 connections.

-interval Displays the interval in seconds and must be greater than 10 seconds. The option is valid only when **-index** count is specified.

-detail Displays a detailed statistics of the connections. The following operands are required:

-index Prints connection in that particular index and the connection can be in current or historical stats. Maximum allowed count is 65535 (64K-1).

-reset Resets all connection statistics.

default Displays active connections with brief statistics of each connection.

--status Displays the overall summary of IP extension through FCIP tunnel (IPEX) performance.

-dp [<*slot*>/]dp_number Displays the summary or aggregate of all IPEX-related statistics for the specified slot.

-reset Resets `Global Non-Terminated` and `Global Rx Errors` counter values to zero. The subsequent `lan-stats --status` requests will have a statistics reset indicator at the bottom of the statistics that detail the date or time of the last reset. This command resets only the Global counters and the `Active Emulated TCP/UDP` counters are not affected.

-lifetime Displays the lifetime counters for all of the DPs in the chassis regardless of `lan-stats --status -reset` command issued in the past. This command resets only the Global counters and the `Active Emulated TCP/UDP` counters are not affected.

sla [*name* | all] Displays the configuration parameters for a specific SLA or all SLAs. Beginning with Fabric OS v9.2.2, this option is deprecated.

-s | --summary Displays a summary view of the configuration parameters for a specific SLA or all SLAs.

-d | --detail Displays a detailed view of the configuration parameters for a specific SLA or all SLAs.

filter-set Displays the name, default action, and filter statement of the configured filter-sets.

app-type Displays the application name, port ranges, and description of the configured application types.

--filter <*filter_args*> Filters the **portShow** output based on the specified filter arguments. The filter arguments can be specified in any combination or as a conditional statement using the logical AND or OR operator. A conditional statement can have up to 30 conditions. This operand is supported with **ipif**, **iproute**, **tcl**, **fciptunnel**, **fcipcircuit**, **ipsec-policy**, and **lan-stats** options. The following filter arguments are supported:

--set <*name*> Specifies the filter-set name that is configured using the **portcfg filter-set** command. Use **portshow filter-set** to list the details of the configured filter-sets.

--port [<*slot*>/]<*port*> Filters the output based on the specified port number.

--slot <*slot*> Filters the output based on the specified slot number.

--ipaddr <*ip_address*> Filters the output based on the specified IP address.

--dp [<*slot*>]<*dp#*> Filters the output based on the specified dual processor ID.

--circuit <*cid*> Filters the output based on the specified FCIP circuit ID within the tunnel.

--priority <*value*>	Filters the output based on the specified priority ID. Valid values for *value* are control, high, medium, low, ip-high, ip-medium, and ip-low.
--ha-type <*type*>	Filters the output based on the HA type. Valid values for *type* are main, local-backup, and remote-backup.
--tcp-port <*value*>	Filters the output based on the specified TCP port number. The valid range for *value* is from 0 through 65535. Use the **portshow lan-stats --known-apps** for the list of supported application types.
--retransmits <*value*>	Filters the output based on the retransmits exceeding specified value.
--rtt <*ms*>	Filters the output based on the specified circuit round trip time in milliseconds.
--bytes <*bytes*>[k | m | g]	Filters the output based on bandwidth (bytes per second) exceeding the specified value. Specify **k** for KB/s, **m** for MB/s, and **g** for Gb/s.
--conn-cnt <*value*>	Filters on tunnel and circuit objects where the connected count is greater than or equal to the specified *value*.
--vlan <*vlan_id*>	Filters the output based on VLAN ID.
--oper-status <*oper*>	Filters the output based on the specified operation status of a tunnel. You can specify the exact operation string or the states such as active, inactive, healthy, and unhealthy.
--default [show | hide]	Sets the default display action if the specified filter statement is not supported. The default action is **hide**.
--show	Displays the objects matching the filter criteria.
--hide	Hides the objects matching the filter criteria.
--or	The logical OR operator.
--and	The logical AND operator.

Examples

To display the IP interface and static route configured:

```
switch:admin> portshow iproute -l
 Port         IP Address                / Pfx  Gateway            Flags
-------------------------------------------------------------------------
 ge0.dp0      192.168.0.0               / 24   *                  U C
 ge0.dp0      192.168.0.1               / 32   *                  U H L
 ge0.dp0      192.168.2.0               / 24   192.168.0.1        U G S
 ge0.dp0      fe80::                    / 64   *                  U C
 ge0.dp0      fe80::5:33ff:f065:7b08    / 128  *                  U H L
 ge0.dp0      ff01::                    / 32   *                  U C
 ge0.dp0      ff02::                    / 32   *                  U C
 ge0.dp1      192.168.0.0               / 24   *                  U C
 ge0.dp1      fe80::                    / 64   *                  U C
 ge0.dp1      fe80::5:33ff:f165:7b08    / 128  *                  U H L
 ge0.dp1      ff01::                    / 32   *                  U C
 ge0.dp1      ff02::                    / 32   *                  U C
 ge1.dp0      192.168.1.0               / 24   *                  U C
 ...
 ge17.dp1     fe80:11::5:33ff:f165:7b19 / 128  *                  U H L
 ge17.dp1     ff01:11::                 / 32   *                  U C
 ge17.dp1     ff02:11::                 / 32   *                  U C
-------------------------------------------------------------------------
 Flags: U=Usable G=Gateway H=Host C=Created(Interface)
        S=Static L=LinkLayer X=Crossport
```

To display the IP interfaces configured:

```
switch:admin> portshow ipif -l
 Port         IP Address                    / Pfx  MTU   VLAN  Flags
-----------------------------------------------------------------------
 ge0.dp0      fe80::5:33ff:f065:7b08        / 64   1500  0     U R M
 ge0.dp0      192.168.0.10                  / 24   1500  0     U R M
 ge0.dp1      fe80::5:33ff:f165:7b08        / 64   1500  0     U R M
 ge0.dp1      192.168.0.11                  / 24   1500  0     U R M
 ge1.dp0      fe80:1::5:33ff:f065:7b09      / 64   1500  0     U R M
 ge1.dp0      192.168.1.10                  / 24   1236  100   U R M
 ge1.dp1      fe80:1::5:33ff:f165:7b09      / 64   1500  0     U R M
 ge1.dp1      2000::10                      / 64   1500  0     U R M
 ge2.dp0      fe80:2::5:33ff:f065:7b0a      / 64   1500  0     U R M
 ge2.dp1      fe80:2::5:33ff:f165:7b0a      / 64   1500  0     U R M
 ge3.dp0      fe80:3::5:33ff:f065:7b0b      / 64   1500  0     U R M
 ge3.dp1      fe80:3::5:33ff:f165:7b0b      / 64   1500  0     U R M
 ge4.dp0      fe80:4::5:33ff:f065:7b0c      / 64   1500  0     U R M
 ge4.dp1      fe80:4::5:33ff:f165:7b0c      / 64   1500  0     U R M
 ...
 ge11.dp1     fe80:b::5:33ff:f165:7b13      / 64   1500  0     U R M
 ge12.dp0     fe80:c::5:33ff:f065:7b14      / 64   1500  0     U R M
 ge12.dp1     fe80:c::5:33ff:f165:7b14      / 64   1500  0     U R M
 ge13.dp0     fe80:d::5:33ff:f065:7b15      / 64   1500  0     U R M
 ge13.dp1     fe80:d::5:33ff:f165:7b15      / 64   1500  0     U R M
 ge14.dp0     fe80:e::5:33ff:f065:7b16      / 64   1500  0     U R M
 ge14.dp1     fe80:e::5:33ff:f165:7b16      / 64   1500  0     U R M
 ge15.dp0     fe80:f::5:33ff:f065:7b17      / 64   1500  0     U R M
 ge15.dp1     fe80:f::5:33ff:f165:7b17      / 64   1500  0     U R M
 ge16.dp0     fe80:10::5:33ff:f065:7b18     / 64   1500  0     U R M
 ge16.dp1     fe80:10::5:33ff:f165:7b18     / 64   1500  0     U R M
 ge17.dp0     fe80:11::5:33ff:f065:7b19     / 64   1500  0     U R M
 ge17.dp1     fe80:11::5:33ff:f165:7b19     / 64   1500  0     U R M
-----------------------------------------------------------------------
Flags: U=Up B=Broadcast D=Debug L=Loopback P=Point2Point R=Running
       N=NoArp PR=Promisc M=Multicast S=StaticArp LU=LinkUp X=Crossport
```

To display the ARP tables:

```
switch:admin> portshow arp

Port      IP Address        MAC Address      Flags
---------------------------------------------------------------
ge6.dp0   77.195.6.1     00:00:00:00:00:00   Dynamic
ge6.dp0   192.168.0.10   00:05:33:65:84:0e   Dynamic Resolved
ge8.dp0   10.1.8.76      00:05:33:65:84:10   Dynamic Resolved
---------------------------------------------------------------

switch:admin> portshow arp ge6
Port      IP Address        MAC Address      Flags
---------------------------------------------------------------
```

```
ge6.dp0   77.195.6.1     00:00:00:00:00:00   Dynamic
ge6.dp0   192.168.0.10   00:05:33:65:84:0e   Dynamic Resolved
-------------------------------------------------------------
```

To display the IPSEC policy:

```
switch:admin> portshow ipsec-policy --ike
IPSec Policy     Key
 IKE-ID  Oper Flg Local-Addr    Remote-Addr    IKE Rekey      ESP Rekey
-------------------------------------------------------------------------
 policy1          123456789012
  dp0.0   UP  R   192.168.0.20  192.168.0.120  -         -    -         -
  dp0.1   UP  I   192.168.0.20  192.168.0.121  2h44m4s   0    3h41m1s   1
  dp1.0   UP  I   192.168.0.21  192.168.0.120  2h43m58s  0    41m16s    0
-------------------------------------------------------------------------
Flags: *=Name Truncated  I=Initiator R=Responder
```

To display detailed output of IPSEC policy Hash Match:

```
switch:admin> portshow ipsec-policy
IPSec Policy   Hash                                Hash Match  Certificate
-----------------------------------------------------------------------------
157_170_17460  ---                                  MisMatch   Expired
157_170_23026  10x38x138x170x23026secp384r1CA.pem  Matched    Valid
157_170_25042  10x38x138x170x25042secp384r1CA.pem  Matched    Valid
-----------------------------------------------------------------------------
Flags: *=Name Truncated. Use "portshow ipsec-policy -d for details".

 switch:admin> portshow ipsec-policy -d
IPSec-policy: 157_170_17460
-----------------------------------------------
  Certificate:            Expired
  Hash:                   ----
  Hash Match:             Mismatch
  Keypair:                10x38x138x170x17460
  Profile:                pki
  Authentication:         ECDSA_P384
  Encryption:             AES_256_CBC
  Integrity:              HMAC_SHA_384_192
  Diffie Hellman:         ECDH_P384
  Pseudo Random Function: HMAC_384
  Num IKE Sessions:       0

IPSec-policy: 157_170_23026
-----------------------------------------------
  Certificate:            10x38x138x170x23026secp384r1CA.pem
  Hash:                   d55436bcdc18092b8ca1c5aa7d0805af606052db
  Hash Match:             Matched
  Keypair:                10x38x138x170x23026
  Profile:                pki
  Authentication:         ECDSA_P384
  Encryption:             AES_256_CBC
  Integrity:              HMAC_SHA_384_192
```

```
  Diffie Hellman:         ECDH_P384
  Pseudo Random Function: HMAC_384
  Num IKE Sessions:       0

IPSec-policy: 157_170_25042
-----------------------------------------------
  Certificate:            10x38x138x170x25042secp384r1CA.pem
  Hash:                   4a1174b9706d1cd400662fb14a75ac0bd8dd4435
  Hash Match:             Matched
  Keypair:                10x38x138x170x25042
  Profile:                pki
  Authentication:         ECDSA_P384
  Encryption:             AES_256_CBC
  Integrity:              HMAC_SHA_384_192
  Diffie Hellman:         ECDH_P384
  Pseudo Random Function: HMAC_384
  Num IKE Sessions:       12
```

To display detailed output of all the TCLs:

```
switch:admin> portshow tcl -d
TCL: hostAtoB
===========================================
 Admin Status:         Enabled
 Priority:             10
 Target:               24-Medium (tid:9)
 VLAN:                 ANY
 L2COS:                ANY
 DSCP:                 ANY
 Source Address:       10.0.0.0/8
 Destination Address:  ANY
 L4 Protocol:          ANY
 Protocol Port:        ANY
 Segment Preservation: Disabled
 Action:               Allow
 Cfgmask:              0x085c3a27
 Hit Count:            0

 TCL: default
===========================================
 Admin Status:         Enabled
 Priority:             65535
 Target:               -
 VLAN:                 ANY
 L2COS:                ANY
 DSCP:                 ANY
 Source Address:       ANY
 Destination Address:  ANY
 L4 Protocol:          ANY
 Protocol Port:        ANY
 Segment Preservation: Disabled
 Action:               Deny
 Cfgmask:              0x08c9007
```

```
 Hit Count:            0
```

To display the LAN connections based on the throughput (in the following example, the number of connections is more than 25):

```
switch:admin> portshow lan-stats --per-flow
***Displaying Top 25 connections by throughput***

Src-Address      Dst-Address       Sport  Dport  Pro Tx(B/s)  Rx(B/s)
-------------------------------------------------------------------
192.168.20.223   192.168.10.225    49678  49864  TCP 10.5m    10.5m
192.168.20.223   192.168.10.225    49695  49864  TCP 10.5m    10.5m
192.168.20.223   192.168.10.225    49672  49864  TCP 10.5m    10.5m
192.168.20.223   192.168.10.225    49687  49864  TCP 10.5m    10.5m
192.168.20.223   192.168.10.225    49690  49864  TCP 10.5m    10.5m
192.168.20.223   192.168.10.225    49689  49864  TCP 10.5m    10.5m
192.168.20.223   192.168.10.225    49693  49864  TCP 10.5m    10.5m
192.168.20.223   192.168.10.225    49683  49864  TCP 10.4m    10.4m
192.168.20.223   192.168.10.225    49679  49864  TCP 10.4m    10.4m
192.168.20.223   192.168.10.225    49674  49864  TCP 10.4m    10.4m
192.168.20.223   192.168.10.225    49694  49864  TCP 10.4m    10.4m
192.168.20.223   192.168.10.225    49671  49864  TCP 10.4m    10.4m
192.168.20.223   192.168.10.225    49691  49864  TCP 10.4m    10.4m
192.168.20.223   192.168.10.225    49670  49864  TCP 10.3m    10.3m
192.168.20.223   192.168.10.225    49675  49864  TCP 10.3m    10.3m
192.168.20.223   192.168.10.225    49680  49864  TCP 10.3m    10.3m
192.168.20.223   192.168.10.225    49676  49864  TCP 10.3m    10.3m
192.168.20.223   192.168.10.225    49686  49864  TCP 10.3m    10.3m
192.168.20.223   192.168.10.225    49673  49864  TCP 10.0m    10.0m
192.168.20.223   192.168.10.225    49681  49864  TCP 10.0m    10.0m
192.168.20.223   192.168.10.225    49688  49864  TCP 9.9m     9.9m
192.168.20.223   192.168.10.225    49696  49864  TCP 9.9m     9.9m
192.168.20.223   192.168.10.225    49692  49864  TCP 9.9m     9.9m
192.168.20.223   192.168.10.225    49677  49864  TCP 9.8m     9.8m
192.168.20.223   192.168.10.225    49669  49374  TCP 9.7m     9.7m
-------------------------------------------------------------------
Sport=Source-Port Dport=Destination-Port Pro=Protocol
```

To display the specified number of top throughput connections:

```
switch:admin> portshow lan-stats --per-flow -top 5
Src-Address      Dst-Address       Sport  Dport  Pro Tx(B/s)  Rx(B/s)
--------------------------------------------------------------------
192.168.20.223   192.168.10.225    49695  49864  TCP 15.7m    15.7m
192.168.20.223   192.168.10.225    49678  49864  TCP 15.7m    15.7m
192.168.20.223   192.168.10.225    49672  49864  TCP 15.7m    15.7m
192.168.20.223   192.168.10.225    49690  49864  TCP 15.6m    15.6m
192.168.20.223   192.168.10.225    49689  49864  TCP 15.6m    15.6m
--------------------------------------------------------------------
Sport=Source-Port Dport=Destination-Port Pro=Protocol
```

To display the TCP error counter values:

```
switch:admin> portshow lan-stats --per-flow -tcp
***Displaying Top 1 connections by throughput***
```

```
Src-Address         Dst-Address          Sport  Dport  Pro Tx(B/s)  Rx(B/s)
TCP  TxPkt  RxPkt   TxDrp  RxDrp  ReTx   DpAck  OOO    RTT          FlwCtrl
-------------------------------------------------------------------------------
192.168.20.223      192.168.10.225       49679  49864  TCP 17.4m    17.4m
     0      1.2m    0      0      0      0      0      42           0
-------------------------------------------------------------------------------
Sport=Source-Port Dport=Destination-Port Pro=Protocol
TxPkt=Tx-Packets Rxpkt=Rx-Packets
TxDrp=TX-Drops RxDrp=RX-Drops
ReTx=ReTransmission OOO=out-of-order
DpAck=Duplicate-Acks RTT=Round-Trip-Time(milliseconds)
FlwCtrl=Number of Flow-controls
```

To display the specified number of bottom compression connections:

```
switch:admin> portshow lan-stats --per-flow -compression -bottom 5
Src-Address      Dst-Address      Sport  Dport  Pro CTx(B) CRx(B)  CR
-----------------------------------------------------------------------------
192.168.10.225   192.168.20.223   51300  53086  TCP 104     8      0.00:1
192.168.20.223   192.168.10.225   53087  49374  TCP 239     143    0.00:1
192.168.20.223   192.168.10.225   53094  51301  TCP 195.2m  217.7m 10.3:1
192.168.20.223   192.168.10.225   53099  51301  TCP 197.3m  220.2m 10.4:1
192.168.20.223   192.168.10.225   53097  51301  TCP 159.4m  177.8m 10.4:1
------------------------------------------------------------------------------
Sport=Source-Port Dport=Destination-Port Pro=Protocol
CTx(B)=Post-Compression bytes Rx(B)=Pre-Compression bytes
CR=Compression-Ratio
```

To display aggregate throughput of well-known applications:

```
switch:admin> portshow lan-stats --per-flow -application
 Aggregate Info:
Port        APP         TX(B/s)      RX(B/s)
-----------------------------------------------------
80         HTTP         145.5m       120.1m
8080       HTTP         100.2m       112.1m
69         TFTP         601.0m       423.3m
-          Unknown      406.5m       406.5m
-----------------------------------------------------
Sport=Source-Port Dport=Destination-Port Pro=Protocol
App=Application Name
```

To display the supported well-known applications:

```
switch:admin> portshow lan-stats --known-apps
App                    Port-Id(s)
-----------------------------------------------
CIFS                   139,445
FCIP                   3225-3226
FTP                    20-21,989-990,115
HTTP                   80,8080,8000-8001,3128
HTTPS                  443
iSCSI                  3260
Isilon-SyncIQ          5666-5667
```

```
LDAP                    389,8404,636
MS-SQL                  1443
MySQL                   3306
NETAPP-SNAP-MIRROR      10566
NFS                     2049
ORACLE-SQL              66,1525,1521
RSYNC                   873
SRDF                    1748
SSH                     22
SSL-SHELL               614
TELNET                  23,107,513,992
TFTP                    69
VERITAS-BACKUP          6101-6102,6106,3527,1125
VTS-GRID Control        1415-1416
VTS-GRID Data           350
-----------------------------------------------
```

To display the global LAN statistics:

```
switch:admin> portshow lan-stats --global
LAN Global stats
-----------------------------------------------
Active TCP conn                  :25
Establish TCP conn               :116
Closed TCP conn                  :91
TCP Tx-Bytes                     :50.3m
TCP Rx-Bytes                     :24.4m
TCP Tcl-Deny conn                :0
TCP Tcl lookup fail              :0
Sync-Recv                        :111
Sync-fail                        :0
Drop-Bytes                       :0
Drop-Pkts                        :0
Stale Reset from Host            :0
Number of times
Max TCP conn exceeded as client  :0
Number of times
Max TCP conn exceeded as server  :0
Number of times Max TCP conn
per second exceeded as client    :0
Number of times Max TCP conn
per second exceeded as server    :0
Number of times
TX PDU preserve ON               :0
Number of times
RX PDU preserve ON               :0
Total IPV6 pkts                  :1012
FlowControl on                   :0
FlowControl off                  :0
Active UDP conn                  :0
Establish UDP conn               :619
Closed UDP conn                  :619
UDP route lookup fail            :586
UDP PDU drops due to
```

```
PKO flow control                  :12800
TX UDP PDUs                       :22919200
TX UPD PDU drops                  :13386
RX UDP PDUs                       :1991
RX UDP Tcl lookup fail PDUs       :85
RX UDP Tcl-Deny PDUs              :1012
Total RX UDP PDU drops            :1104
RX UDP PDU drops due to
stream flow control               :0
TX ICMP PDUs                      :0
TX ICMP PDU drops                 :0
RX ICMP PDUs                      :3
RX ICMP Tcl lookup fail PDUs      :3
RX ICMP Tcl-Deny PDUs             :0
Total RX ICMP PDU drops           :3
RX ICMP PDU drops due to
stream flow control               :0
TX ASIS IP PDUs                   :0
TX ASIS IP PDU drops              :0
RX ASIS IP PDUs                   :36
RX ASIS IP Tcl lookup fail PDUs   :20
RX ASIS IP Tcl-Deny PDUs          :8
Total RX ASIS IP PDU drops        :28
RX ASIS IP PDU drops due to
stream flow control               :0
RX Error IP Checksum              :0
RX Error TCP Checksum             :0
RX Error MAC                      :0
RX Error CRC                      :0
RX Error Parity                   :0
RX Error Length                   :0
TX UDP pkts < 64 bytes         :0
TX UDP pkts < 128 bytes        :0
TX UDP pkts < 256 bytes        :0
TX UDP pkts < 512 bytes        :0
TX UDP pkts < 1024 bytes       :22919200
TX UDP pkts < 1500 bytes       :0
TX UDP pkts < 3000 bytes       :0
TX UDP pkts < 4500 bytes       :0
TX UDP pkts < 6000 bytes       :0
TX UDP pkts < 9000 bytes       :0
RX UDP pkts < 64 bytes         :79
RX UDP pkts < 128 bytes        :992
RX UDP pkts < 256 bytes        :80
RX UDP pkts < 512 bytes        :0
RX UDP pkts < 1024 bytes       :840
RX UDP pkts < 1500 bytes       :0
RX UDP pkts < 3000 bytes       :0
RX UDP pkts < 4500 bytes       :0
RX UDP pkts < 6000 bytes       :0
RX UDP pkts < 9000 bytes       :0
-------------------------------------------------
```

To display detailed LAN connection statistics:

```
switch:admin> portshow lan-stats --hist-stats -detail \
   -dp dp0 -index 17
Warning: It is recommended to freeze the table when using detailed stats.

DP0 Connection Detail:(Thawed)
---------------------------------------------------------------
 Slot/DP | Connection:    DP0 | 5
 Src IP Address:          192.78.10.242
 Src Port:                53795
 Dst IP Address:          192.79.10.243
 Dst Port:                59039
 Start time:              08/18/15 21:17:26 UTC
 End time:                08/18/15 21:17:59 UTC
 Close reason/Flag:       Remote LAN / TX FIN
 Current/Previous State:  Time-Wait / FIN-Wait-2
 Last 5 Connection States:
  State/Reason Code 1:    SYN-Sent / User Connect
  State/Reason Code 2:    Established / Connection Success
  State/Reason Code 3:    FIN-Wait-1 / User Close
  State/Reason Code 4:    FIN-Wait-2 / RX ACK for FIN
  State/Reason Code 5:    Time-Wait / Timer Cleanup
 L4 Protocol/MSS:         TCP / 1460
 TX Stats
  TX Bytes/Packets:       710717432 / 542617
  Slow Starts:            0
  FastRetrans/RetransTO:  0 / 0
  Initial/Max Send Seq:   1490083657 / 2179096399
 RX Stats
  RX Bytes/Packets:       689012740 / 504638
  Out of Orders/Dup Ack:  0 / 0
  Initial Receive Seq:    1799596954
```

To freeze the LAN statistic table:

```
switch:admin> portshow lan-stats --hist-stats -freeze
DP0 Connection Summary:(Frozen)
-------------------------------------------------------------------------------
Idx  Local Address    Remote Address  Lport  Rport  Pro  Tx(B)    Rx(B)
-------------------------------------------------------------------------------
First 5 Connections:
 22   10.10.90.101    10.10.80.101    60721  54895  TCP  181.6m   345.8k
 23   10.10.90.101    10.10.80.101    60721  54897  TCP  184.6m   366.8k
 17   10.10.90.101    10.10.80.101    60721  54891  TCP  184.4m   367.7k
 13   10.10.90.101    10.10.80.101    60721  54887  TCP  161.2m   320.8k
 20   10.10.90.101    10.10.80.101    60721  54894  TCP  181.0m   335.8k
Last 5 Connections:
 14   10.10.90.101    10.10.80.101    60721  54888  TCP  249.6m   508.8k
 10   10.10.90.101    10.10.80.101    60721  54884  TCP  159.0m   306.3k
 7    10.10.90.101    10.10.80.101    60721  54881  TCP  163.4m   321.4k
 2    10.10.90.101    10.10.80.101    49374  54877  TCP  280      286
 21   10.10.90.101    10.10.80.101    60721  54896  TCP  184.8m   354.3k
-------------------------------------------------------------------------------
```

To display the throughput stats on an IP-Pair basis:

```
switch:admin> portshow lan-stats --ip-pair

 DP       Idx SrcAddr             DstAddr             Active  TxB       RxB
--------------------------------------------------------------------------------
 DP0      0   10.0.2.10           20.0.2.20           1       1.8m      8.4m
 DP0      1   10.0.1.10           20.0.1.20           1       2.1m      3.3m
 DP0      2   10.0.3.10           20.0.3.20           1       2.4m      7.7m
....
 DP1      5   10.1.6.10           20.1.6.20           1       2.6m      67.4m
 DP1      6   10.1.7.10           20.1.7.20           1       5.7m      3.3m
 DP1      7   10.1.8.10           20.1.8.20           1       31.1m     1.4m
 DP1      8   10.1.9.10           20.1.9.20           1       4.2m      4.3m
--------------------------------------------------------------------------------
```

To thaw the LAN statistic table:

```
portshow lan-stats --hist-stats -thaw
DP0 Connection Summary:(Thawed)
--------------------------------------------------------------------------------
 Idx  Src-Address         Dst-Address         Sport  Dport  Pro  Tx(B)    Rx(B)
--------------------------------------------------------------------------------
First 5 Connections:
 0    192.78.10.242       192.79.10.243       53786  49374  TCP  271      72
 1    192.78.10.242       192.79.10.243       53785  59038  TCP  120      8
 2    192.78.10.242       192.79.10.243       53788  59039  TCP  711.1m   689.4m
 3    192.78.10.242       192.79.10.243       53787  59039  TCP  712.3m   690.5m
 4    192.78.10.242       192.79.10.243       53791  59039  TCP  713.0m   691.2m
Last 5 Connections:
 27   192.78.10.242       192.79.10.243       53816  59039  TCP  697.2m   675.9m
 28   192.78.10.242       192.79.10.243       53814  59039  TCP  701.1m   679.7m
 29   192.78.10.242       192.79.10.243       53815  59039  TCP  700.4m   679.0m
 30   192.78.10.242       192.79.10.243       53810  59039  TCP  707.7m   686.1m
 31   192.78.10.242       192.79.10.243       53817  59039  TCP  691.0m   669.9m
--------------------------------------------------------------------------------
Total Connection count:   32
Oldest Entry:             08/18/15 21:17:58
Newest Entry:             08/18/15 21:17:58
Close RX/TX FIN:          1 / 31
Close RX/TX RST:          0 / 0
Total TX Errors
 Slow Starts:             0
 FastRetrans/RetransTO:   0 / 0
Total RX Errors
 Out of Orders/Dup Ack:   0 / 0
```

To display the details of the configured filter-sets:

```
switch:admin> portshow filter-set
 Name         ACT/DEF   Filter Statement
-----------------------------------------------------
```

```
 tcpErrors   SHOW/HIDE  (retx:100 && bytes:1000000)
----------------------------------------------------
 ACT: Action for objects matching filter
 DEF: Default behavior for objects where filter doesn't apply
```

To display all tunnels and only circuits using IP address 10.0.0.1:

```
switch:admin> portshow fciptunnel -c
--filter -ipaddr 10.0.0.1 --default show
```

To display only per-flow statistics that use both IP address 192.168.0.10 AND TCP port 336:

```
switch:admin> portshow lan-stats --per-flow -all
--filter -ipaddr 192.168.0.10 -tcp-port 336 -and
```

To display tunnels based on the operational status:

```
switch:admin> portshow fciptunnel -c
 Tunnel Circuit  OpStatus  Flags    Uptime  TxMBps  RxMBps ConnCnt CommRt Met/G
-------------------------------------------------------------------------------
 24    -         Up      --------I    5m30s    0.00    0.00   6      -       -
 24    0 ge2     Up      ----ah--4    5m31s    0.00    0.00   6  1000/1000  0/-
 25    -         Up      ---------    5m27s    0.00    0.00   6      -       -
 25    0 ge3     Up      ----ah--4    5m27s    0.00    0.00   6  1000/1000  0/-
 34    -         InProg  --------I       0s    0.00    0.00   0      -       -
 34    0 ge2     InProg  ----ah--4       0s    0.00    0.00   0  2500/5000  0/-
-------------------------------------------------------------------------------
 Flags (tunnel): i=IPSec T=TapePipelining F=FICON r=ReservedBW
                 a=FastDeflate d=Deflate D=AggrDeflate P=Protocol
                 I=IP-Ext
      (circuit): h=HA-Configured v=VLAN-Tagged p=PMTU i=IPSec 4=IPv4 6=IPv6
                 ARL a=Auto r=Reset s=StepDown t=TimedStepDown  S=SLA

switch:admin> portshow fciptunnel -c --filter --oper-status unhealthy
 Tunnel Circuit  OpStatus  Flags    Uptime  TxMBps  RxMBps ConnCnt CommRt Met/G
-------------------------------------------------------------------------------
 34    -         InProg  --------I       0s    0.00    0.00   0      -       -
 34    0 ge2     InProg  ----ah--4       0s    0.00    0.00   0  2500/5000  0/-
-------------------------------------------------------------------------------
 Flags (tunnel): i=IPSec T=TapePipelining F=FICON r=ReservedBW
                 a=FastDeflate d=Deflate D=AggrDeflate P=Protocol
                 I=IP-Ext
      (circuit): h=HA-Configured v=VLAN-Tagged p=PMTU i=IPSec 4=IPv4 6=IPv6
                 ARL a=Auto r=Reset s=StepDown t=TimedStepDown  S=SLA
```

To display the list of configured application types:

```
switch:admin> portshow app-type
 Application   Port Ranges         Description
-------------------------------------------------------------------
 Data-Domain   2051                Brocade Data Domain
 FTP           20-21,989-990,115   Includes Control data FTPS and
                                   Simple FTP
 LDAP          389,8404,636        Includes LDAP secure
 TELNET        23,107,513,992      Includes Telnet connections
 TFTP          69                  TFTP File Transfer
```

```
-------------------------------------------------------------------
```

To display the list of all TCP ports:

```
switch:admin> portshow lan-stats --tcp-port-info

8/DP0:
LAN TCP Destination Ports Used:
--------------------------------
   445 (0x01bd)
  3260 (0x0cbc)
--------------------------------

8/DP1:
LAN TCP Destination Ports Used:
--------------------------------
   445 (0x01bd)
  3260 (0x0cbc)
--------------------------------
```

To display the overall summary of IPEX performance:

```
switch:admin> portshow lan-stats --status
IP-Extension Status
================================================================================
 Slot/DP                  3/dp0  3/dp1  4/dp0  4/dp1  7/dp0  7/dp1  8/dp0  8/dp1
 Active Emulated TCP
  Connection Count    :    512      0      0      0      0      0      0      0
  Tx Bps (30s avg)    : 600.4m      0      0      0      0      0      0      0
  Rx Bps (30s avg)    :  34.4m      0      0      0      0      0      0      0
  Fast Retransmits    : 125.5k 586.5k 582.8k 862.1k 863.1k 394.1k 871.4k 884.9k
  Slow Retransmits    :     30      0      0      0      0      0      0      0
  Out-of-Sequence     : 999.0k  2141k  1100k  3134k      0      0      0      0
  Zero Window Tx      :     11     23     44     12      0      0      0      0
  Zero Window Rx      :      0      0      0      0      0      0      0      0
  Slow Drain          :      7      0      0      0      0      0      0      0
 Active Emulated UDP
  Connection Count    :      0     20      0      0      0      0      0      0
  Tx Bps (30s avg)    :      0     1k      0      0      0      0      0      0
  Rx Bps (30s avg)    :      0    300      0      0      0      0      0      0
 Global Emulated
  Max TCP Connections :      2      0      0      0      0      0      0      0
  Max UDP Connections :     28      0      0      0      0      0      0      0
 Global Non-Terminated
  TCP Tx Packets      :      5      0      0      0      0      0      0      0
  TCP Rx Packets      :      0      0      0      0      0      0      0      0
  TCP Drop Packets    :      0      0      0      0      0      0      0      0
  UDP Tx Packets      :      0      0      0      0      0      0      0      0
  UDP Rx Packets      :      0      0      0      0      0      0      0      0
  UDP Drop Packets    :     10      0      0      0      0      0      0      0
  ICMP Tx Packets     :      0      0      0      0      0      0      0      0
  ICMP Rx Packets     :      0      0      0      0      0      0      0      0
  ICMP Drop Packets   :      0      0      0      0      0      0      0      0
```

```
 Global Rx Errors
  TCP Checksum        :      0      0      0      0      0      0      0      0
  IP Checksum         :      0      0      0      0      0      0      0      0
  Ethernet CRC        :      0      0      0      0      0      0      0      0
  IP Frag Drop        :      0      0      0      0      0      0      0      0
-------------------------------------------------------------------------------
```

To display the summary of slot 3 dp0:

```
switch:admin> portshow lan-stats --status -dp 3/dp0
IP-Extension Status
===============================================================================
 Slot/DP                 3/dp0
 Active Emulated TCP
  Connection Count    :    512
  Tx Bps (30s avg)    : 600.4m
  Rx Bps (30s avg)    :  34.4m
  Fast Retransmits    : 125.5k
  Slow Retransmits    :     30
  Out-of-Sequence     : 999.0k
  Zero Window Tx      :     11
  Zero Window Rx      :      0
  Slow Drain          :      7
 Active Emulated UDP
  Connection Count    :      0
  Tx Bps (30s avg)    :      0
  Rx Bps (30s avg)    :      0
 Global Emulated
  Max TCP Connections :      2
  Max UDP Connections :     28
 Global Non-Terminated
  TCP Tx Packets      :      5
  TCP Rx Packets      :      0
  TCP Drop Packets    :      0
  UDP Tx Packets      :      0
  UDP Rx Packets      :      0
  UDP Drop Packets    :     10
  ICMP Tx Packets     :      0
  ICMP Rx Packets     :      0
  ICMP Drop Packets   :      0
 Global Rx Errors
  TCP Checksum        :      0
  IP Checksum         :      0
  Ethernet CRC        :      0
  IP Frag Drop        :      0
-------------------------------------------------------------------------------
```

To reset and display the status of Global counters:

```
switch:admin> portshow lan-stats --status -reset

IP-Extension Status Global Stats Since: Monday 7 Dec 2020 11:05:02 UTC
```

```
================================================================================
 Slot/DP                 3/dp0  3/dp1  4/dp0  4/dp1  7/dp0  7/dp1  8/dp0  8/dp1
 Active Emulated TCP
  Connection Count    :    200      0      0      0      0      0      0      0
  Tx Bps (30s avg)    : 600.4m      0      0      0      0      0      0      0
  Rx Bps (30s avg)    :  34.4m      0      0      0      0      0      0      0
  Fast Retransmits    : 125.5k 586.5k 582.8k 862.1k 863.1k 394.1k 871.4k 884.9k
  Slow Retransmits    :     30      0      0      0      0      0      0      0
  Out-of-Sequence     : 999.0k  2141k  1100k  3134k      0      0      0      0
  Zero Window Tx      :     11     23     44     12      0      0      0      0
  Zero Window Rx      :      0      0      0      0      0      0      0      0
  Slow Drain          :      7      0      0      0      0      0      0      0
 Active Emulated UDP
  Connection Count    :      0     20      0      0      0      0      0      0
  Tx Bps (30s avg)    :      0     1k      0      0      0      0      0      0
  Rx Bps (30s avg)    :      0    300      0      0      0      0      0      0
 Global Emulated
  Max TCP Connections :      2      0      0      0      0      0      0      0
  Max UDP Connections :     28      0      0      0      0      0      0      0
 Global Non-Terminated
  TCP Tx Packets      :      0      0      0      0      0      0      0      0
  TCP Rx Packets      :      0      0      0      0      0      0      0      0
  TCP Drop Packets    :      0      0      0      0      0      0      0      0
  UDP Tx Packets      :      0      0      0      0      0      0      0      0
  UDP Rx Packets      :      0      0      0      0      0      0      0      0
  UDP Drop Packets    :      0      0      0      0      0      0      0      0
  ICMP Tx Packets     :      0      0      0      0      0      0      0      0
  ICMP Rx Packets     :      0      0      0      0      0      0      0      0
  ICMP Drop Packets   :      0      0      0      0      0      0      0      0
 Global Rx Errors
  TCP Checksum        :      0      0      0      0      0      0      0      0
  IP Checksum         :      0      0      0      0      0      0      0      0
  Ethernet CRC        :      0      0      0      0      0      0      0      0
  IP Frag Drop        :      0      0      0      0      0      0      0      0
--------------------------------------------------------------------------------
```

To display the lifetime information of the overall DPs in a chassis:

```
switch:admin> portshow lan-stats --status -lifetime

IP-Extension Status (Lifetime)
================================================================================
 Slot/DP                 3/dp0  3/dp1  4/dp0  4/dp1  7/dp0  7/dp1  8/dp0  8/dp1
 Active Emulated TCP
  Connection Count    :    222      0      0      0      0      0      0      0
  Tx Bps (30s avg)    : 600.4m      0      0      0      0      0      0      0
  Rx Bps (30s avg)    :  34.4m      0      0      0      0      0      0      0
  Fast Retransmits    : 125.5k 586.5k 582.8k 862.1k 863.1k 394.1k 871.4k 884.9k
  Slow Retransmits    :     30      0      0      0      0      0      0      0
  Out-of-Sequence     : 999.0k  2141k  1100k  3134k      0      0      0      0
  Zero Window Tx      :     11     23     44     12      0      0      0      0
  Zero Window Rx      :      0      0      0      0      0      0      0      0
  Slow Drain          :      7      0      0      0      0      0      0      0
```

```
 Active Emulated UDP
  Connection Count    :      0     20      0      0      0      0      0      0
  Tx Bps (30s avg)    :      0     1k      0      0      0      0      0      0
  Rx Bps (30s avg)    :      0    300      0      0      0      0      0      0
 Global Emulated
  Max TCP Connections :      2      0      0      0      0      0      0      0
  Max UDP Connections :     28      0      0      0      0      0      0      0
 Global Non-Terminated
  TCP Tx Packets      :      0      0      0      0      0      0      0      0
  TCP Rx Packets      :      0      0      0      0      0      0      0      0
  TCP Drop Packets    :      0      0      0      0      0      0      0      0
  UDP Tx Packets      :      0      0      0      0      0      0      0      0
  UDP Rx Packets      :      0      0      0      0      0      0      0      0
  UDP Drop Packets    :      0      0      0      0      0      0      0      0
  ICMP Tx Packets     :      0      0      0      0      0      0      0      0
  ICMP Rx Packets     :      0      0      0      0      0      0      0      0
  ICMP Drop Packets   :      0      0      0      0      0      0      0      0
 Global Rx Errors
  TCP Checksum        :      0      0      0      0      0      0      0      0
  IP Checksum         :      0      0      0      0      0      0      0      0
  Ethernet CRC        :      0      0      0      0      0      0      0      0
  IP Frag Drop        :      0      0      0      0      0      0      0      0
-------------------------------------------------------------------------------
```

Function

Display FCIP tunnels, circuits, management interfaces and FICON statistics on the Brocade 7810, 7850, or SX6 platforms:

Synopsis

portshow {**fciptunnel** | **fcipcircuit**} [[<*slot*>/]<*port*> [<*circuit-id*>]] [<*options*>]
portshow ftrace <*ve-port*> <*args*>
portshow ipsec-policy [{**all** | <*policy-name*>}] [**--ike-session**] [**--summary** | **--detail**] [**--show-password**] [**--help**] [**--filter** <*args*>]
portshow ipsec-profile [{**all** | <*profile-name*>}] [**--help**]
portshow xtun [<*slot*>/]<*port*> [<*args*>] **portshow tcl** [<*name*>] [**--summary** | **--detail**] [**--priority** <*value*>] [**--sort** {**name** | **priority** | **src-addr** | **dst-addr**}] [**--help**] [**--filter** <*args*>]
portshow sla [{**all** | <*sla-name*>}] [**--summary** | **--detail**] [**--help**]
portshow app-type [**--detail**] [**--help**]
portshow filter-set [<*name*>] [**--help**]
portshow lan-stats {**--per-flow** [[<*slot*>/]<*dp#*>] [<*index*>] [<*per-flow-args*>] | **--global** [[<*slot*>/]<*dp#*>] [<*global-stats-args*>] | **--hist-stats** [<*hist-stats-args*>] | **--known-apps** | **--ip-pair** [[<*slot*>/]<*dp#*>] [<*index*>] [<*ip-pair-args*>] | **--flow** [<*name*>] | **--tcp-port-info** | **--status** [<*status-args*>]} [**--help**]

Description

Use this command to display configuration parameters and status information for FCIP tunnels and FCIP circuits on the GbE/10GbE ports on the Brocade 7810, 7850, and SX6 platforms. The FCIP tunnels on the local and remote GbE ports

act as Virtual E_Ports (VE_Ports) connecting the local and remote fabrics. The following display options are supported on these platforms:

- **portShow fciptunnel** - Displays Fibre Channel over IP (FCIP) tunnels including the following:
  - Additional performance information
  - FICON configuration parameters
  - IPSec status (enabled or disabled), mode (legacy if configured) and key
  - Circuits within the tunnel
  - QoS statistics including performance for each priority
  - FCIP Tunnel hierarchy listing circuit IDs and TCP connection information for the tunnel
- **portShow fcipcircuit** - Displays status and configuration for FCIP circuits:
  - TCP statistics for the circuit
  - Circuit-level VLAN tagging configuration
  - Circuit-level Differentiated Services (DSCP) markings
- **portShow xtun** - Displays FICON and FCP emulation statistics and current runtime conditions.

Operands

This command has the following operands:

<slot> For chassis-based systems only, specifies the slot number of the VE_Port to be displayed, followed by a slash (/).

<ve_port> Displays information for a single specified FCIP tunnel. On the Brocade 7810 or 7850 or SX6, specify the VE_Port number associated with the tunnel configured on one of the GbE ports.

all Displays information for all configured FCIP tunnels.

fciptunnel Displays configuration and status per FCIP tunnel. The following operands are supported with **fciptunnel** and **fcipcircuit**.

-c | --circuit Displays the FCIP circuits within the tunnel. This operand can be used with any other operand to include circuit displays.

-t | --tcp Displays the TCP statistics for the circuit. The **-c** option must be specified with this option.

--reset Displays the current time-based statistic and then resets TCP statistics for the circuit to establish a baseline.

--lifetime Displays the entire lifetime statistics for FCIP Tunnels, Circuits and the associated TCP connections. This option will ignore any time based deltas that were created previously set using the **--reset** option.

-p | --perf Displays additional performance information for the specified FCIP tunnels.

--lifetime Displays the entire lifetime statistics for FCIP Tunnels, Circuits and the associated TCP connections. This option will ignore any time based deltas that were created previously set using the **--reset** option.

-q | --qos Displays the QoS statistics including performance for each priority. This operand is optional with the **--perf** option.

-C | --config Displays only the configuration information

-i | --ipsec Displays IPSec status (enabled or disabled) and key if enabled. If IPSec is enabled and configured in legacy mode, the mode information is displayed in parenthesis. This option is valid for **portShow fciptunnel** only. This option is deprecated but still recognized. Use the **-C | --config** option instead.

-h | --hier Displays the FCIP tunnel hierarchy listing basic circuit IDs and TCP connection information for the tunnel.

-s | --summary Displays a summary view of the tunnel configuration parameters for a specific VE_Port. You can use the summary option with the **-perf** and the **- qos** option. When used with the **-perf** option, the summary option forces the **--circuit** option. Flags indicate ipsec-configured tunnels, legacy ipsec tunnels, and compression mode. Circuit flags indicate vlan tagging, crossport configuration, and ipv4 or ipv6 configuration.

-d | --detail Displays a full view configuration details for all configured tunnels when used with the **all** port specifier. This view provides an alternative to specifying a specific VE_Port or to using the **--perf** option for a comprehensive view.

-I | --ip-address Displays the IP addresses configured the specified circuits. You must use this option with either the **--summary** or the **--circuit** option. This option is deprecated but still recognized. Use the **-C | --config** option instead.

--hcl-status Displays the HA status of the FCIP tunnel.

fcipcircuit Displays FCIP circuit configuration and status. The following operands are supported with **portShow fcipcircuit**:

circuit_ID Specifies a single circuit within the FCIP tunnel.

-t | --tcp Displays the TCP statistics for the specified circuit.

--reset Displays the current time-based statistics and then resets TCP statistics for the circuit to establish a baseline.

--lifetime Displays the entire lifetime statistics for FCIP Tunnels, Circuits and the associated TCP connections. This option will ignore any time based deltas that were created previously set using the **--reset** option.

-p | --perf Displays additional performance information for the specified FCIP circuit.

--lifetime Displays the entire lifetime statistics for FCIP Tunnels, Circuits and the associated TCP connections. This option will ignore any time based deltas that were created previously set using the **--reset** option.

-q | --qos Displays the QoS statistics including performance for each priority. This operand is optional with the **--perf** option.

-C | --config Displays only the configuration information

xtun Displays FICON and FCP emulation statistics and current runtime conditions for a specified set of parameters. The following arguments are supported:

-fcp Displays the SCSI Tape Pipelining command sub-menu when issued with a VE_Port number. The syntax for **-fcp** is as follows:

portshow xtun [<*slot*>/]\<*ve_port*> **-fcp** [<*level*>] [<*command*>] [<*param*>] [<*options*>]

The following optional operands are supported with **-fcp** to display FCP emulation statistics and status information:

-help Displays the command usage. You must specify a VE_Port number to display the help functions, for example: **portshow xtun 7/12 -fcp -help**.

<level> Specifies the level for which information is displayed. You can specify one or more of the following levels. With each additional level, this command generates progressively more information.

-port Displays data at the port level.

-it Displays data at the Initiator Target (SID/DID) FCP level.

-itn Displays data at the Initiator Target nexus (SID/DID) level.

-itl Displays data at the Initiator Target LUN (SID/DID/LUN) level.

-twb Displays data at the Exchange (SID/DID/LUN/Exchange) level.

<command> Specifies the type of information to be displayed. This operand is optional; if omitted, the default (**-stats**) is used. You can specify more than one command option. Valid commands include the following:

-stats Displays FCP emulation statistics. This is the default display.

-info Displays general FCP emulation information.

-cfg Displays the FCP emulation configuration.

-dump Displays a raw data dump including data for all information types.

<param> Limits output to one or more of the following parameters, given the commands and levels specified with this command. This operand is optional; if omitted, output for all parameters is displayed. There is no default parameter.

-sid <*SID*> Displays output for the specified SID only.

-did <*DID*> Displays output for the specified DID only.

-lun <*LUN*> Displays output for the specified LUN only.

-timer Displays timer information only.

<options> Affects all levels and commands globally. Only one option is supported.

-zero Displays zero-valued statistics. Note that some commands may show zero-valued information regardless of whether or not this option is specified.

-ficon Displays sub-menu for FICON emulation display commands when issued with a VE_Port number. The syntax for **-ficon** is as follows:

portshow xtun [<*slot*>/]<*ve_port*> **-ficon** [<*command*>] [<*options*>]

The following optional commands are supported with **-ficon**; if omitted, the usage for all parameters is displayed. The **xtun -ficon** command options include displays for all types of FICON Emulation.

-help Displays the command usage. You must specify a VE_Port number to display the help functions, for example, **portshow xtun 7/12 -ficon -help**.

-stats Displays global FICON Emulation statistics for the tunnel including FICON XRC Emulation, FICON Tape Write, FICON Tape Read, FICON Teradata Write, and FICON Teradata Read statistics.

-fdpb <*adrs*> Displays FICON ports or a specific FICON Device Path Block.

-fchb <*adrs*> Displays FICON logical partitions (LPARs) or a specific FICON Channel Control Block.

-fcub <*adrs*> Displays FICON images (the same output as with **-images**) or a specific FICON Control Unit Block.

-images Displays FICON images.

-fdcb <*adrs*> Displays FICON devices or specific FICON Device Control Block.

-tapeperf Starts the emulated Tape Read and Write performance monitor or displays the performance statistics.

when you first issue this command or any other performance monitor commands after a reboot, the command starts the performance monitor, takes a snapshot of current statistics, and saves them with a time stamp. When you issue the command again, it displays the time elapsed between the two iterations of the command and the average time delta statistics. A new time stamp and current statistics are saved as a basis for the next iteration.

-teraperf Starts the emulated Teradata performance monitor or displays the performance statistics.

-printperf Starts the emulated Printer performance monitor or displays the performance statistics.

-xrcperf Starts the emulated XRC performance monitor or displays the performance statistics.

-structs Displays FICON control block sizes.

-emul Displays comprehensive FICON emulation statistics. Use one of the following options to display emulation statistics about a specific component.

-emulxrc Displays FICON XRC emulation statistics.

-emultape Displays FICON Tape emulation statistics.

-emultera Displays FICON Teradata emulation statistics.

-emulprint Displays FICON Printer emulation statistics.

-act Displays the current Active Exchange information.

<*options*> The following additional option is supported.

-clear Resets the specified statistics. This operand is optional; it requires a preceding command.

-mem <*adrs*> <*length*> Specifies the SE memory length in words to display. The valid range for *length* is 0 to 1024.

-dram2 Display the current usage of the dynamic memory allocator.

-pools Display the current free pool allocation (FPA) buffer usage.

-tcb Displays tunnel statistics.

-drshow Displays the current Descriptor Ring status

-smem Displays the current Shadow Memory data.

-rte Displays the current Routing Info SE memory.

--filter <*filter_args*> Filters the **portShow** output based on the specified filter arguments. The filter arguments can be specified in any combination or as a conditional statement using the logical AND or OR operator. A conditional statement can have up to 30 conditions. The following filter arguments are supported:

-ipaddr <*ip_address*> Filters the output based on the specified IP address.

-port [<*slot*>/]<*port*> Filters the output based on the specified port number.

-tcp-port <*port*> Filters the output based on the specified TCP port number.

-dp [<*slot*>/]dp<#>	Filters the output based on the specified dual processor ID.
-retransmits <*value*>	Filters the output based on the retransmits exceeding specified value.
-rtt <*ms*>	Filters the output based on the specified circuit round trip time in milliseconds.
-conn-cnt <*value*>	Filters on tunnel and circuit objects where the connected count is greater than or equal to the specified *value*.
-bps <*value*>[k | m]	Filters the output based on bandwidth (bytes per second) exceeding the specified value. Specify **k** for KB/s and **m** for MB/s.
-or	The logical OR operator.
-and	The logical AND operator.
-default show | hide	Sets the default display action if the specified filter statement is not supported. The default action is **hide**.

Examples

To display FCIP tunnel configuration parameters on the Brocade SX6 blade with Ficon enabled:

```
switch:admin> portshow fciptunnel 8/26 -c

 Tunnel: VE-Port:8/26 (idx:10, DP1)
=====================================================
  Oper State           : Online
  TID                  : 218
  Flags                : 0x00000000
  IP-Extension         : Enabled
  Compression          : None
  FC-Compression       : None (Inherited)
  IP-Compression       : None (Inherited)
  QoS Distribution     : Protocol (FC:50% / IP:50%)
  FC QoS BW Ratio      : 50% / 30% / 20%
  IP QoS BW Ratio      : 50% / 30% / 20%
  Tape Pipelining      : Disabled
  IPSec                : Disabled
  Legacy QOS Mode      : Disabled
  Load-Level (Cfg/Peer): Failover (Failover / Failover)
  Local WWN            : 10:00:00:05:33:e7:cf:10
  Peer WWN             : 10:00:c4:f5:7c:01:33:b8
  RemWWN (config)      : 00:00:00:00:00:00:00:00
  Peer Platform        : 7810
  cfgmask              : 0x0000001f 0x40010248
  Flow Status          : 0
  ConCount/Duration    : 6 / 5h25m3s
  Uptime               : 3h15m58s
  Stats Duration       : 3h15m58s
  Receiver Stats       : 867232 bytes / 3785 pkts /   62.00 Bps Avg
  Sender Stats         : 921880 bytes / 3787 pkts /   70.00 Bps Avg
  TCP Bytes In/Out     : 126182600 / 141788496
  ReTx/OOO/SloSt/DupAck: 2361 / 0 / 205 / 0
  RTT (min/avg/max)    : 1 / 1 / 62 ms
  Wan Util             : 0.0%
  TxQ Util             : 0.0%
```

```
 Circuit 8/26.0 (DP0)
 ====================================================
  Admin/Oper State     : Enabled / Online
  Flags                : 0x00000000
  IP Addr (L/R)        : 10.3.42.30 3/ge0 <-> 10.3.60.30
  HA IP Addr (L/R)     : 10.3.142.30 3/ge0 <-> 10.3.160.30
  Configured Comm Rates: 2000000 / 2000000 kbps
  Peer Comm Rates      : 2000000 / 2000000 kbps
  Actual Comm Rates    : 2000000 / 2000000 kbps
  Keepalive (Cfg/Peer) : 6000 (6000 / 6000) ms
  Metric               : 0
  Connection Type      : Default
  ARL-Type             : Auto
  PMTU                 : Disabled
```

To display an FCIP tunnel with FICON disabled:

```
switch:admin> portshow fciptunnel 8/26 -d

 Tunnel: VE-Port:8/26 (idx:10, DP1)
 ====================================================
  Oper State           : Disabled
  TID                  : 218
  Flags                : 0x00000000
  IP-Extension         : Disabled
  Compression          : None
  QoS BW Ratio         : 50% / 30% / 20%
  Tape Pipelining      : Disabled
  IPSec                : Disabled
  Load-Level (Cfg/Peer): Failover (Failover / Failover)
  Local WWN            : 10:00:00:05:33:e7:d2:11
  Peer WWN             : 00:00:00:00:00:00:00:00
  RemWWN (config)      : 00:00:00:00:00:00:00:00
  cfgmask              : 0x000004ff 0x40000208
  Flow Status          : 0
  ConCount/Duration    : 0 / 1h6m7s
  Uptime               : 0s
  Stats Duration       : 0s
  Receiver Stats       : 0 bytes / 0 pkts /    0.00 Bps Avg
  Sender Stats         : 0 bytes / 0 pkts /    0.00 Bps Avg
  TCP Bytes In/Out     : 0 / 0
  ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
  RTT (min/avg/max)    : 0 / 0 / 0 ms
  Wan Util             : 0.0%
  TxQ Util             : 0.0%
```

To display an FCIP tunnel with additional circuit information:

```
switch:admin> portshow fciptunnel 12 -d

 Tunnel: VE-Port:12 (idx:0, DP0)
 ====================================================
```

```
  Oper State           : Online
  TID                  : 12
  Flags                : 0x00000000
  IP-Extension         : Enabled
  Compression          : None
  FC-Compression       : None (Inherited)
  IP-Compression       : None (Inherited)
  QoS Distribution     : Protocol (FC:50% / IP:50%)
  FC QoS BW Ratio      : 50% / 30% / 20%
  IP QoS BW Ratio      : 50% / 30% / 20%
  Tape Pipelining      : Disabled
  IPSec                : Disabled
  Legacy QOS Mode      : Disabled
  Load-Level (Cfg/Peer): Failover (Failover / Failover)
  Local WWN            : 10:00:88:94:71:42:8d:5f
  Peer WWN             : 10:00:00:05:33:65:86:08
  RemWWN (config)      : 00:00:00:00:00:00:00:00
  Peer Platform        : UNKNOWN
  cfgmask              : 0x0000001f 0x40010248
  Flow Status          : 0
  ConCount/Duration    : 1 / 1h27m35s
  Uptime               : 1h27m33s
  Stats Duration       : 1h27m33s
  Receiver Stats       : 464784 bytes / 1892 pkts /   72.00 Bps Avg
  Sender Stats         : 532945 bytes / 2274 pkts /   68.00 Bps Avg
  TCP Bytes In/Out     : 33730424 / 30320509
  ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
  RTT (min/avg/max)    : 1 / 1 / 1 ms
  Wan Util             : 0.0%
  TxQ Util             : 0.0%
```

To display additional performance parameters on tunnel 1/12 (add -c to display all circuits):

```
switch:admin> portshow fciptunnel 12 -c

 Tunnel: VE-Port:12 (idx:0, DP0)
 ===================================================
  Oper State           : Online
  TID                  : 12
  Flags                : 0x00000000
  IP-Extension         : Enabled
  Compression          : None
  FC-Compression       : None (Inherited)
  IP-Compression       : None (Inherited)
  QoS Distribution     : Protocol (FC:50% / IP:50%)
  FC QoS BW Ratio      : 50% / 30% / 20%
  IP QoS BW Ratio      : 50% / 30% / 20%
  Tape Pipelining      : Disabled
  IPSec                : Disabled
  Legacy QOS Mode      : Disabled
  Load-Level (Cfg/Peer): Failover (Failover / Failover)
  Local WWN            : 10:00:88:94:71:42:8d:5f
  Peer WWN             : 10:00:00:05:33:65:86:08
```

```
  RemWWN (config)      : 00:00:00:00:00:00:00:00
  Peer Platform        : UNKNOWN
  cfgmask              : 0x0000001f 0x40010248
  Flow Status          : 0
  ConCount/Duration    : 1 / 1h28m9s
  Uptime               : 1h28m7s
  Stats Duration       : 1h28m7s
  Receiver Stats       : 466992 bytes / 1901 pkts /   73.00 Bps Avg
  Sender Stats         : 534845 bytes / 2282 pkts /   63.00 Bps Avg
  TCP Bytes In/Out     : 33944472 / 30511681
  ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
  RTT (min/avg/max)    : 1 / 1 / 1 ms
  Wan Util             : 0.0%
  TxQ Util             : 0.0%

 Circuit 12.0 (DP0)
 ====================================================
  Admin/Oper State     : Enabled / Online
  Flags                : 0x00000000
  IP Addr (L/R)        : 103.104.4.3 ge4 <-> 103.104.4.2
  HA IP Addr (L/R)     : 0.0.0.0  <-> 0.0.0.0
  Configured Comm Rates: 2000000 / 2000000 kbps
  Peer Comm Rates      : 2000000 / 2000000 kbps
  Actual Comm Rates    : 2000000 / 2000000 kbps
  Keepalive (Cfg/Peer) : 6000 (6000 / 6000) ms
  Metric               : 0
  Connection Type      : Default
  ARL-Type             : Auto
  PMTU                 : Disabled
  HA PMTU              : Disabled
  SLA                  : (none)
  Failover Group       : 0
  VLAN-ID              : NONE
  L2Cos (FC:h/m/l)     : 0 / 0 / 0 (Ctrl:0)
  L2Cos (IP:h/m/l)     : 0 / 0 / 0
  DSCP (FC:h/m/l)      : 0 / 0 / 0 (Ctrl:0)
  DSCP (IP:h/m/l)      : 0 / 0 / 0
  cfgmask              : 0x40000000 0x00010c2f
  Flow Status          : 0
  ConCount/Duration    : 1 / 1h28m9s
  Uptime               : 1h28m7s
  Stats Duration       : 1h28m7s
  Receiver Stats       : 466992 bytes / 1901 pkts /   73.00 Bps Avg
  Sender Stats         : 534845 bytes / 2282 pkts /   63.00 Bps Avg
  TCP Bytes In/Out     : 33944472 / 30511681
  ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
  RTT (min/avg/max)    : 1 / 1 / 1 ms
  Wan Util             : 0.0%
```

To display TCP connections for the circuits on the tunnel:

```
switch:admin> portshow fciptunnel 12 --circuit
```

```
Tunnel: VE-Port:12 (idx:0, DP0)
====================================================
 Oper State           : Online
 TID                  : 12
 Flags                : 0x00000000
 IP-Extension         : Enabled
 Compression          : None
 FC-Compression       : None (Inherited)
 IP-Compression       : None (Inherited)
 QoS Distribution     : Protocol (FC:50% / IP:50%)
 FC QoS BW Ratio      : 50% / 30% / 20%
 IP QoS BW Ratio      : 50% / 30% / 20%
 Tape Pipelining      : Disabled
 IPSec                : Disabled
 Legacy QOS Mode      : Disabled
 Load-Level (Cfg/Peer): Failover (Failover / Failover)
 Local WWN            : 10:00:88:94:71:42:8d:5f
 Peer WWN             : 10:00:00:05:33:65:86:08
 RemWWN (config)      : 00:00:00:00:00:00:00:00
 Peer Platform        : UNKNOWN
 cfgmask              : 0x0000001f 0x40010248
 Flow Status          : 0
 ConCount/Duration    : 1 / 1h29m15s
 Uptime               : 1h29m13s
 Stats Duration       : 1h29m13s
 Receiver Stats       : 472256 bytes / 1920 pkts /   63.00 Bps Avg
 Sender Stats         : 540212 bytes / 2302 pkts /   68.00 Bps Avg
 TCP Bytes In/Out     : 34363448 / 30887216
 ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
 RTT (min/avg/max)    : 1 / 1 / 1 ms
 Wan Util             : 0.0%
 TxQ Util             : 0.0%

Circuit 12.0 (DP0)
====================================================
 Admin/Oper State     : Enabled / Online
 Flags                : 0x00000000
 IP Addr (L/R)        : 103.104.4.3 ge4 <-> 103.104.4.2
 HA IP Addr (L/R)     : 0.0.0.0  <-> 0.0.0.0
 Configured Comm Rates: 2000000 / 2000000 kbps
 Peer Comm Rates      : 2000000 / 2000000 kbps
 Actual Comm Rates    : 2000000 / 2000000 kbps
 Keepalive (Cfg/Peer) : 6000 (6000 / 6000) ms
 Metric               : 0
 Connection Type      : Default
 ARL-Type             : Auto
 PMTU                 : Disabled
 HA PMTU              : Disabled
 SLA                  : (none)
 Failover Group       : 0
 VLAN-ID              : NONE
 L2Cos (FC:h/m/l)     : 0 / 0 / 0 (Ctrl:0)
 L2Cos (IP:h/m/l)     : 0 / 0 / 0
```

```
 DSCP (FC:h/m/l)      : 0 / 0 / 0 (Ctrl:0)
 DSCP (IP:h/m/l)      : 0 / 0 / 0
 cfgmask              : 0x40000000 0x00010c2f
 Flow Status          : 0
 ConCount/Duration    : 1 / 1h29m15s
 Uptime               : 1h29m13s
 Stats Duration       : 1h29m13s
 Receiver Stats       : 472256 bytes / 1920 pkts /   63.00 Bps Avg
 Sender Stats         : 540212 bytes / 2302 pkts /   68.00 Bps Avg
 TCP Bytes In/Out     : 34363448 / 30887216
 ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
 RTT (min/avg/max)    : 1 / 1 / 1 ms
 Wan Util             : 0.0%
```

To display the time based set of statistics:

```
switch:admin> portshow fciptunnel 12 -cp

 Tunnel: VE-Port:12 (idx:0, DP0)
 ===================================================
  Oper State           : Online
  TID                  : 12
  Flags                : 0x00000000
  IP-Extension         : Enabled
  Compression          : None
  FC-Compression       : None (Inherited)
  IP-Compression       : None (Inherited)
  QoS Distribution     : Protocol (FC:50% / IP:50%)
  FC QoS BW Ratio      : 50% / 30% / 20%
  IP QoS BW Ratio      : 50% / 30% / 20%
  Tape Pipelining      : Disabled
  IPSec                : Disabled
  Legacy QOS Mode      : Disabled
  Load-Level (Cfg/Peer): Failover (Failover / Failover)
  Local WWN            : 10:00:88:94:71:42:8d:5f
  Peer WWN             : 10:00:00:05:33:65:86:08
  RemWWN (config)      : 00:00:00:00:00:00:00:00
  Peer Platform        : UNKNOWN
  cfgmask              : 0x0000001f 0x40010248
  Flow Status          : 0
  ConCount/Duration    : 1 / 1h30m26s
  Uptime               : 1h30m24s
  Stats Duration       : 1h30m24s
  Receiver Stats       : 478190 bytes / 1942 pkts /   81.00 Bps Avg
  Sender Stats         : 548494 bytes / 2342 pkts /  108.00 Bps Avg
  TCP Bytes In/Out     : 34825766 / 31303194
  ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
  RTT (min/avg/max)    : 1 / 1 / 1 ms
  Wan Util             : 0.0%
  TxQ Util             : 0.0%

 Circuit 12.0 (DP0)
 ===================================================
```

```
  Admin/Oper State     : Enabled / Online
  Flags                : 0x00000000
  IP Addr (L/R)        : 103.104.4.3 ge4 <-> 103.104.4.2
  HA IP Addr (L/R)     : 0.0.0.0  <-> 0.0.0.0
  Configured Comm Rates: 2000000 / 2000000 kbps
  Peer Comm Rates      : 2000000 / 2000000 kbps
  Actual Comm Rates    : 2000000 / 2000000 kbps
  Keepalive (Cfg/Peer) : 6000 (6000 / 6000) ms
  Metric               : 0
  Connection Type      : Default
  ARL-Type             : Auto
  PMTU                 : Disabled
  HA PMTU              : Disabled
  SLA                  : (none)
  Failover Group       : 0
  VLAN-ID              : NONE
  L2Cos (FC:h/m/l)     : 0 / 0 / 0 (Ctrl:0)
  L2Cos (IP:h/m/l)     : 0 / 0 / 0
  DSCP (FC:h/m/l)      : 0 / 0 / 0 (Ctrl:0)
  DSCP (IP:h/m/l)      : 0 / 0 / 0
  cfgmask              : 0x40000000 0x00010c2f
  Flow Status          : 0
  ConCount/Duration    : 1 / 1h30m26s
  Uptime               : 1h30m24s
  Stats Duration       : 1h30m24s
  Receiver Stats       : 478190 bytes / 1942 pkts /   81.00 Bps Avg
  Sender Stats         : 548494 bytes / 2342 pkts /  108.00 Bps Avg
  TCP Bytes In/Out     : 34826742 / 31304018
  ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
  RTT (min/avg/max)    : 1 / 1 / 1 ms
  Wan Util             : 0.0%
```

To display the entire lifetime statistics for FCIP Tunnels, Circuits and the associated TCP connections:

```
switch:admin> portshow fciptunnel 12 -ctL

 Tunnel: VE-Port:12 (idx:0, DP0)
 ===================================================
  Oper State           : Online
  TID                  : 12
  Flags                : 0x00000000
  IP-Extension         : Enabled
  Compression          : None
  FC-Compression       : None (Inherited)
  IP-Compression       : None (Inherited)
  QoS Distribution     : Protocol (FC:50% / IP:50%)
  FC QoS BW Ratio      : 50% / 30% / 20%
  IP QoS BW Ratio      : 50% / 30% / 20%
  Tape Pipelining      : Disabled
  IPSec                : Disabled
  Legacy QOS Mode      : Disabled
  Load-Level (Cfg/Peer): Failover (Failover / Failover)
  Local WWN            : 10:00:88:94:71:42:8d:5f
```

```
  Peer WWN             : 10:00:00:05:33:65:86:08
  RemWWN (config)      : 00:00:00:00:00:00:00:00
  Peer Platform        : UNKNOWN
  cfgmask              : 0x0000001f 0x40010248
  Flow Status          : 0
  ConCount/Duration    : 1 / 1h31m9s
  Uptime               : 1h31m7s
  Stats Duration       : 1h31m7s
  Receiver Stats       : 480398 bytes / 1951 pkts /   63.00 Bps Avg
  Sender Stats         : 553042 bytes / 2355 pkts /  103.00 Bps Avg
  TCP Bytes In/Out     : 35096526 / 31549126
  ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
  RTT (min/avg/max)    : 1 / 1 / 1 ms
  Wan Util             : 0.0%
  TxQ Util             : 0.0%

 Circuit 12.0 (DP0)
 ====================================================
  Admin/Oper State     : Enabled / Online
  Flags                : 0x00000000
  IP Addr (L/R)        : 103.104.4.3 ge4 <-> 103.104.4.2
  HA IP Addr (L/R)     : 0.0.0.0  <-> 0.0.0.0
  Configured Comm Rates: 2000000 / 2000000 kbps
  Peer Comm Rates      : 2000000 / 2000000 kbps
  Actual Comm Rates    : 2000000 / 2000000 kbps
  Keepalive (Cfg/Peer) : 6000 (6000 / 6000) ms
  Metric               : 0
  Connection Type      : Default
  ARL-Type             : Auto
  PMTU                 : Disabled
  HA PMTU              : Disabled
  SLA                  : (none)
  Failover Group       : 0
  VLAN-ID              : NONE
  L2Cos (FC:h/m/l)     : 0 / 0 / 0 (Ctrl:0)
  L2Cos (IP:h/m/l)     : 0 / 0 / 0
  DSCP (FC:h/m/l)      : 0 / 0 / 0 (Ctrl:0)
  DSCP (IP:h/m/l)      : 0 / 0 / 0
  cfgmask              : 0x40000000 0x00010c2f
  Flow Status          : 0
  ConCount/Duration    : 1 / 1h31m9s
  Uptime               : 1h31m7s
  Stats Duration       : 1h31m7s
  Receiver Stats       : 480398 bytes / 1951 pkts /   63.00 Bps Avg
  Sender Stats         : 553042 bytes / 2355 pkts /  103.00 Bps Avg
  TCP Bytes In/Out     : 35097406 / 31549910
  ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
  RTT (min/avg/max)    : 1 / 1 / 1 ms
  Wan Util             : 0.0%

  TCP Connection 12.0 HA-Type:Main Pri:IPLow Conn:0x010a300e
  ====================================================
   Local / Remote Port      : 55312 / 3225
```

```
   Duration                 : 1h31m7s
   MSS                      : 1460 bytes
   ARL Min / Cur / Max      : 100000 / 100000 / 1000000
   ARL Reset Algo           : StepDown
   Send Window
    Size / Scale            : 20971008 / 9
    Slow Start Threshold    : 16777216
    Congestion Window       : 16778676
    Pkts InFlight           : 0
   Recv Window
    Size / Scale            : 20971520 (Max:20971520) / 9
   SendQ Nxt / Min / Max    : 0x0daec480 / 0x0daec480 / 0x0daec480
   RecvQ Nxt / Min / Max    : 0xf3aef044 / 0xf3aef044 / 0xf4eeef54
   RecvQ Pkts               : 0
   Sender Stats
    Sent Bytes / Pkts       : 2149220 / 21991
    Unacked Data            : 0
    Retransmits Slow / Fast : 0 / 0 (High:0)
    SlowStart               : 0
   Receiver Stats
    Recv Bytes / Pkts       : 2412620 / 21990
    Out-of-Order            : 0 (High:0)
    Duplicate ACKs          : 0
   RTT / Variance (High)    : 0 ms (0 ms) / 0 ms (0 ms)
[output truncated...]
```

To display IPSec parameters on an IPSec-enabled tunnel:

```
switch:admin> portshow fciptunnel 12 -i

Tunnel: VE-Port:12 (idx:0, DP0)
 ====================================================
  Oper State           : Enabled
  TID                  : 12
  Flags                : 0x00000000
  IP-Extension         : Enabled
  Compression          : Deflate
  FC-Compression       : Deflate (Inherited)
  IP-Compression       : Deflate (Inherited)
  QoS Distribution     : Protocol (FC:50% / IP:50%)
  FC QoS BW Ratio      : 50% / 30% / 20%
  IP QoS BW Ratio      : 50% / 30% / 20%
  Tape Pipelining      : Disabled
  IPSec                : Enabled
  IPSec-Policy         : myPolicy
  Legacy QOS Mode      : Disabled
  Load-Level (Cfg/Peer): Failover (Failover / Failover)
  Local WWN            : 10:00:88:94:71:42:8d:5f
  Peer WWN             : 10:00:00:05:33:65:86:08
  RemWWN (config)      : 00:00:00:00:00:00:00:00
  Peer Platform        : UNKNOWN
  cfgmask              : 0x0000001f 0x4001024c
  Uncomp/Comp Bytes    : 65512 / 65512 / 1.00 : 1
  Uncomp/Comp Byte(30s): 0 / 0 / 1.00 : 1
```

```
  Flow Status          : 0
  ConCount/Duration    : 2 / 2h45s
  Uptime               : 2m4s
  Stats Duration       : 2m4s
  Receiver Stats       : 84082 bytes / 449 pkts /   73.00 Bps Avg
  Sender Stats         : 91556 bytes / 466 pkts /   66.00 Bps Avg
  TCP Bytes In/Out     : 1064742 / 1223264
  ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
  RTT (min/avg/max)    : 1 / 1 / 1 ms
  Wan Util             : 0.0%
  TxQ Util             : 0.0%
```

To display a summary view of the QoS configuration on FCIP tunnels and circuits:

```
switch:admin> portshow fciptunnel 12 --summary --qos
-------------------------------------------------------------------------------
 Tunnel Circuit  OpStatus  Flags    Uptime  TxMBps  RxMBps ConnCnt CommRt Met/G
-------------------------------------------------------------------------------
 12    -         Up      c-i----dI    5m24s    0.00    0.00   2      -       0
 12    -         Up      h-i----d-    5m24s    0.00    0.00   2      -       1
 12    -         Up      m-i----d-    5m24s    0.00    0.00   2      -       1
 12    -         Up      l-i----d-    5m24s    0.00    0.00   2      -       1
 12    -         Up      h-i----dI    5m24s    0.00    0.00   2      -       2
 12    -         Up      m-i----dI    5m24s    0.00    0.00   2      -       2
 12    -         Up      l-i----dI    5m23s    0.00    0.00   2      -       2
-------------------------------------------------------------------------------
 Flags (tunnel): c=Control h=HighPri m=MedPri l=LowPri
                 i=IPSec T=TapePipelining F=FICON r=ReservedBW
                 a=FastDeflate d=Deflate D=AggrDeflate P=Protocol
                 I=IP-Ext


switch:admin> portshow fciptunnel 12 --summary --qos --circuit
-------------------------------------------------------------------------------
 Tunnel Circuit  OpStatus  Flags    Uptime  TxMBps  RxMBps ConnCnt CommRt Met/G
-------------------------------------------------------------------------------
 12    -         Up      c-i----dI    5m52s    0.00    0.00   2      -       0
 12    0 ge4     Up      ----a--i4    5m52s    0.00    0.00   2     0/2000  0/-
 12    -         Up      h-i----d-    5m52s    0.00    0.00   2      -       1
 12    0 ge4     Up      ----a--i4    5m52s    0.00    0.00   2   500/2000  0/-
 12    -         Up      m-i----d-    5m52s    0.00    0.00   2      -       1
 12    0 ge4     Up      ----a--i4    5m52s    0.00    0.00   2   300/2000  0/-
 12    -         Up      l-i----d-    5m52s    0.00    0.00   2      -       1
 12    0 ge4     Up      ----a--i4    5m52s    0.00    0.00   2   200/2000  0/-
 12    -         Up      h-i----dI    5m52s    0.00    0.00   2      -       2
 12    0 ge4     Up      ----a--i4    5m52s    0.00    0.00   2   500/2000  0/-
 12    -         Up      m-i----dI    5m52s    0.00    0.00   2      -       2
 12    0 ge4     Up      ----a--i4    5m53s    0.00    0.00   2   300/2000  0/-
 12    -         Up      l-i----dI    5m52s    0.00    0.00   2      -       2
 12    0 ge4     Up      ----a--i4    5m52s    0.00    0.00   2   200/2000  0/-
-------------------------------------------------------------------------------
 Flags (tunnel): c=Control h=HighPri m=MedPri l=LowPri
                 i=IPSec T=TapePipelining F=FICON r=ReservedBW
```

```
                 a=FastDeflate d=Deflate D=AggrDeflate P=Protocol
                 I=IP-Ext
      (circuit): h=HA-Configured v=VLAN-Tagged p=PMTU i=IPSec 4=IPv4 6=IPv6
                 ARL a=Auto r=Reset s=StepDown t=TimedStepDown  S=SLA
```

To display all FCIP circuits:

```
switch:admin> portshow fcipcircuit all
----------------------------------------------------------------------
Tunnel Circuit OpStatus Flags  Uptime TxMBps RxMBps ConnCnt CommRt Met/G
----------------------------------------------------------------------
1/12  0 1/xge1  Up    ---4--s   3d2m   000    0.00    1  2500/2500  0/0
1/12  1 1/xge0  Up    ---4-xs   3d2m   0.00   0.00    1  2500/2500  1/0
1/21  0 1/xge1  Up    ---4--s   3d1m   0.00   0.00    1  2500/2500  0/0
1/21  1 1/xge0  Up    ---4-xs   3d2m   0.00   0.00    1  2500/2500  1/0
1/22  0 1/xge0  Up    ---4--s   3d1m   0.00   0.00    1  2500/2500  0/0
1/22  1 1/xge1  Up    ---4-xs   3d2m   0.00   0.00    1  2500/2500  1/0
1/31  0 1/xge0  Up    ---4--s   3d2m   0.00   0.00    1  2500/2500  0/0
1/31  1 1/xge1  Up    ---4-xs   3d2m   0.00   0.00    1  2500/2500  1/0
----------------------------------------------------------------------
Flags:circuit:s=sack v=VLAN Tagged x=crossport 4=IPv4 6=IPv6
                T=Test(CPerf) L=Listener I=Initiator

switch:admin> portshow fciptunnel --hcl-status

Checking FCIP Tunnel HA Status.

Current Status         : Ready
CP Version             : v9.x.x
DP0 Status:
   State               : Online - Inactive
   Version             : v9.x.x
   Current FC HA Stage : IDLE
   Current IP HA Stage : IDLE
   IP SVI Swapped      : NO
DP1 Status:
   State               : Online - Inactive
   Version             : v9.x.x
   Current FC HA Stage : IDLE
   Current IP HA Stage : IDLE
   IP SVI Swapped      : NO

 Tunnel 24 (FID:128) FC:HA Online IP:HA Online - Traffic will not be disrupted.
 Tunnel 25 (FID:128) FC:HA Online IP:Disabled - Traffic will not be disrupted.
 Tunnel 34 (FID:128) FC:HA Ready IP:HA Ready - FC and IP traffic will be disrupted.
```

To display the details for a FCIP circuit (Note that both circuits are configured as initiators):

```
switch:admin> portshow fcipcircuit --detail
  -------------------------------------------
Circuit 7/16.0 (DP0)
 ====================================================
  Admin/Oper State     : Enabled / In Progress
```

```
 Flags                : 0x00000000
 IP Addr (L/R)        : 192.0.2.0 7/ge6 <-> 198.51.100.0
 HA IP Addr (L/R)     : 192.0.2.0 7/ge6 <-> 198.51.100.0
 Configured Comm Rates: 2500000 / 5000000 kbps
 Peer Comm Rates      : 0 / 0 kbps
 Actual Comm Rates    : 0 / 0 kbps
 Keepalive (Cfg/Peer) : 0 (6000 / 0) ms
 Metric               : 0
 Connection Type      : Default
 ARL-Type             : Auto
 PMTU                 : Disabled
 HA PMTU              : Disabled
 SLA                  : (none)
 Failover Group       : 0
 VLAN-ID              : NONE
 HA VLAN-ID           : NONE
 L2Cos (FC:h/m/l)     : 0 / 0 / 0 (Ctrl:0)
 L2Cos (IP:h/m/l)     : 0 / 0 / 0
 DSCP (FC:h/m/l)      : 0 / 0 / 0 (Ctrl:0)
 DSCP (IP:h/m/l)      : 0 / 0 / 0
 cfgmask              : 0x40000000 0x00003c2f
 Flow Status          : 1
 ConCount/Duration    : 0 / 1d19h11m
 Uptime               : 0s
 Stats Duration       : 0s
 Receiver Stats       : 0 bytes / 0 pkts /    0.00 Bps Avg
 Sender Stats         : 0 bytes / 0 pkts /    0.00 Bps Avg
 TCP Bytes In/Out     : 0 / 0
 ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
 RTT (min/avg/max)    : 0 / 0 / 0 ms
 Wan Util             : 0.0%

Circuit 7/16.1 (DP0)
====================================================
 Admin/Oper State     : Enabled / In Progress
 Flags                : 0x00000000
 IP Addr (L/R)        : 203.0.113.0 7/ge7 <-> 198.51.100.0
 HA IP Addr (L/R)     : 203.0.113.0 7/ge7 <-> 198.51.100.0
 Configured Comm Rates: 2500000 / 5000000 kbps
 Peer Comm Rates      : 0 / 0 kbps
 Actual Comm Rates    : 0 / 0 kbps
 Keepalive (Cfg/Peer) : 0 (6000 / 0) ms
 Metric               : 1
 Connection Type      : Default
 ARL-Type             : Auto
 PMTU                 : Disabled
 HA PMTU              : Disabled
 SLA                  : (none)
 Failover Group       : 0
 VLAN-ID              : NONE
 HA VLAN-ID           : NONE
 L2Cos (FC:h/m/l)     : 0 / 0 / 0 (Ctrl:0)
 L2Cos (IP:h/m/l)     : 0 / 0 / 0
```

```
  DSCP (FC:h/m/l)      : 0 / 0 / 0 (Ctrl:0)
  DSCP (IP:h/m/l)      : 0 / 0 / 0
  cfgmask              : 0x40000000 0x00003c2f
  Flow Status          : 1
  ConCount/Duration    : 0 / 1d19h11m
  Uptime               : 0s
  Stats Duration       : 0s
  Receiver Stats       : 0 bytes / 0 pkts /    0.00 Bps Avg
  Sender Stats         : 0 bytes / 0 pkts /    0.00 Bps Avg
  TCP Bytes In/Out     : 0 / 0
  ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
  RTT (min/avg/max)    : 0 / 0 / 0 ms
  Wan Util             : 0.0%
```

To display additional performance parameters for a circuit:

```
switch:admin> portshow fcipcircuit 1/12 0 --perf
-----------------------------------------
Tunnel ID: 1/12
   Tunnel Description:
   Admin Status: Enabled
   Oper Status: Up
   Compression: Off
   Tape Acceleration: Off
   TPerf Option: Off
   IPSec: Disabled
   QoS Percentages: High 50%, Med 30%, Low 20%
   Remote WWN: Not Configured
   Local WWN: 10:00:00:05:1e:52:fe:00
   Peer WWN: 10:00:00:05:1e:39:a4:76
   Circuit Count: 2
   Flags: 0x00000000
   FICON: Off
   Oper Status: Up
   Flow Ctrl State: Off
   Connected Count: 1
   Tunnel Duration: 3 days, 19 hours, 54 minutes, 5 seconds
      Compression Statistics:
         0 Uncompressed Bytes
         0 Compressed Bytes
           1.00 : 1 Compression Ratio
      Performance Statistics: Overall Throughput
         31073824 Output Bytes
            16 Bps 30s Avg, 93 Bps Lifetime Avg
         70932 Output Packets
            0 pkt/s 30s Avg, 0 pkt/s Lifetime Avg
         69170308 Input Bytes
            85 Bps 30s Avg, 209 Bps Lifetime Avg
         92393 Input Packets
            0 pkt/s 30s Avg, 0 pkt/s Lifetime Avg
         TCP Stats:
            1450493536 Output Bytes
            16107875 Output Packets
```

```
            844887492 Input Bytes
            16117320 Input Packets
            Retransmits: 0
            Round Trip Time: 0 ms
            Out Of Order: 0
            Slow Starts: 0
```

To display QoS prioritization for the default circuit:

```
switch:admin> portshow fcipcircuit 1/12 0 --perf --qos
  -----------------------------------------
   Circuit ID: 1/12.0
      Circuit Num: 0
      Admin Status: Enabled
      Oper Status: Up
      Connection Type: Default
      Remote IP: 192.168.12.200
      Local IP: 192.168.12.100
      Metric: 0
      Failover Group ID: (Not Config/Active)
      Min Comm Rt: 2500000
      Max Comm Rt: 2500000
      SACK: On
      Min Retrans Time: 100
      Max Retransmits: 8
      Keepalive Timeout: 10000
      Path MTU Disc: 0
      VLAN ID: (Not Configured)
      L2CoS: (VLAN Not Configured)
      DSCP:  F:  0 H:  0 M:  0 L:  0
      Flags: 0x00000000
      Flow Ctrl State: Off
      Connected Count: 1
      Circuit Duration: 3 days, 19 hours, 57 minutes, 42 seconds
      Performance Statistics - Priority: F-Class
         Oper Status: Up
         Flow Ctrl State: Off
         Connected Count: 1
         Duration: 3 days, 19 hours, 57 minutes, 42 seconds
         4732308 Output Bytes
            10 Bps 30s Avg, 14 Bps Lifetime Avg
         41359 Output Packets
            0 pkt/s 30s Avg, 0 pkt/s Lifetime Avg
         7223112 Input Bytes
            27 Bps 30s Avg, 21 Bps Lifetime Avg
         45277 Input Packets
            0 pkt/s 30s Avg, 0 pkt/s Lifetime Avg
         TCP Stats:
            318824216 Output Bytes
            3419555 Output Packets
            184935644 Input Bytes
            3419605 Input Packets
            Retransmits: 0
            Round Trip Time: 0 ms
```

```
      Out Of Order: 0
      Slow Starts: 0
Performance Statistics - Priority: High
   Oper Status: Up
   Flow Ctrl State: Off
   Connected Count: 1
   Duration: 3 days, 19 hours, 57 minutes, 41 seconds
   0 Output Bytes
      0 Bps 30s Avg, 0 Bps Lifetime Avg
   0 Output Packets
      0 pkt/s 30s Avg, 0 pkt/s Lifetime Avg
   0 Input Bytes
      0 Bps 30s Avg, 0 Bps Lifetime Avg
   0 Input Packets
      0 pkt/s 30s Avg, 0 pkt/s Lifetime Avg
   TCP Stats:
      308550696 Output Bytes
      3310618 Output Packets
      176126080 Input Bytes
      3310620 Input Packets
      Retransmits: 0
      Round Trip Time: 0 ms
      Out Of Order: 0
      Slow Starts: 0
Performance Statistics - Priority: Medium
   Oper Status: Up
   Flow Ctrl State: Off
   Connected Count: 1
   Duration: 3 days, 19 hours, 57 minutes, 43 seconds
   26358236 Output Bytes
      17 Bps 30s Avg, 79 Bps Lifetime Avg
   29611 Output Packets
      0 pkt/s 30s Avg, 0 pkt/s Lifetime Avg
   61983140 Input Bytes
      298 Bps 30s Avg, 187 Bps Lifetime Avg
   47166 Input Packets
      0 pkt/s 30s Avg, 0 pkt/s Lifetime Avg
   TCP Stats:
      340704236 Output Bytes
      3429074 Output Packets
      239375444 Input Bytes
      3438474 Input Packets
      Retransmits: 0
      Round Trip Time: 0 ms
      Out Of Order: 0
      Slow Starts: 0
Performance Statistics - Priority: Low
   Oper Status: Up
   Flow Ctrl State: Off
   Connected Count: 1
   Duration: 3 days, 19 hours, 57 minutes, 42 seconds
   0 Output Bytes
      0 Bps 30s Avg, 0 Bps Lifetime Avg
```

```
         0 Output Packets
            0 pkt/s 30s Avg, 0 pkt/s Lifetime Avg
         0 Input Bytes
            0 Bps 30s Avg, 0 Bps Lifetime Avg
         0 Input Packets
            0 pkt/s 30s Avg, 0 pkt/s Lifetime Avg
         TCP Stats:
            308551588 Output Bytes
            3310627 Output Packets
            176126612 Input Bytes
            3310630 Input Packets
            Retransmits: 0
            Round Trip Time: 0 ms
            Out Of Order: 0
            Slow Starts: 0
```

To display a summary view for the circuits:

```
switch:admin> portshow fciptunnel --circuit

 Tunnel Circuit  OpStatus  Flags    Uptime  TxMBps  RxMBps ConnCnt CommRt Met/G
-------------------------------------------------------------------------------
 24    -         Up      --------      36s    0.00    0.00    1      -      -/-
 24    0 ge2     Up      ---ah--4      36s    0.00    0.00    1  2500/5000  0/-
 24    1 ge3     Up      ---ah--4      10s    0.00    0.00    1  2500/5000  0/-
 28    -         Up      --------      13s    0.00    0.00    1      -      -/-
 28    0 ge4     Up      ---a---4      13s    0.00    0.00    1  2500/5000  0/-
 34    -         InProg  --------       0s    0.00    0.00    0      -      -/-
 34    0 ge2     InProg  ---ah--4       0s    0.00    0.00    0  2500/5000  0/-
 34    1 ge3     InProg  ---ah--4       0s    0.00    0.00    0  2500/5000  0/-
-------------------------------------------------------------------------------
 Flags (tunnel): i=IPSec T=TapePipelining F=FICON r=ReservedBW
                 a=FastDeflate d=Deflate D=AggrDeflate
      (circuit): h=HA-Configured v=VLAN-Tagged p=PMTU 4=IPv4 6=IPv6
                 ARL a=Auto r=Reset s=StepDown t=TimedStepDown
```

To display the IP addresses configured for the circuits:

```
switch:admin> portshow fciptunnel 24 --circuit
 Tunnel: VE-Port:24 (idx:0)
 ==================================================
  Oper State           : In Progress
  TID                  : 24
  Flags                : 0x00000000
  Compression          : None
  QoS BW Ratio         : 50% / 30% / 20%
  Tape Pipelining      : Disabled
  IPSec                : Disabled
  Local WWN            : 10:00:00:05:1e:65:7d:08
  Peer WWN             : 00:00:00:00:00:00:00:00
  RemWWN (config)      : 00:00:00:00:00:00:00:00
  cfgmask              : 0x40000008 0x0000001f
  Failover Count       : 0
  Flow Status          : 0
```

```
 ConCount/Duration    : 0 / 0s
 Receiver Stats       : 0 bytes / 0 pkts /    0.00 Bps Avg
 Sender Stats         : 0 bytes / 0 pkts /    0.00 Bps Avg
 TCP Bytes In/Out     : 0 / 0
 ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
 RTT (min/avg/max)    : 0 / 0 / 0 ms

Circuit 24.0 (dp:0)
====================================================
 Admin/Oper State     : Enabled / In Progress
 Flags                : 0x00000000
 IP Addr (L/R)        : 192.168.2.20 ge2 - 192.168.2.10
 HA IP Addr (L/R)     : 192.168.2.21 ge2 - 192.168.2.11
 Configured Comm Rates: 2500000 / 5000000 kbps
 Peer Comm Rates      : 0 / 0 kbps
 Actual Comm Rates    : 2500000 / 5000000 kbps
 Keepalive Timeout    : 6000 ms
 Metric               : 0
 Connection Type      : Default
 ARL-Type             : Auto
 PMTU                 : Disabled
 Failover Group       : 0
 VLAN-ID              : NONE
 L2Cos (f/h/m/l)      : 0/0/0/0
 DSCP (f/h/m/l)       : 0/0/0/0
 cfgmask              : 0x00003c2f 0x40000000
 Flow Status          : 1
 ConCount/Duration    : 0 / 0s
 Receiver Stats       : 0 bytes / 0 pkts /    0.00 Bps Avg
 Sender Stats         : 0 bytes / 0 pkts /    0.00 Bps Avg
 TCP Bytes In/Out     : 0 / 0
 ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
 RTT (min/avg/max)    : 0 / 0 / 0 ms

Circuit 24.1 (dp:0)
====================================================
 Admin/Oper State     : Enabled / In Progress
 Flags                : 0x00000000
 IP Addr (L/R)        : 192.168.3.20 ge3 - 192.168.3.10
 HA IP Addr (L/R)     : 192.168.3.21 ge3 - 192.168.3.11
 Configured Comm Rates: 2500000 / 5000000 kbps
 Peer Comm Rates      : 0 / 0 kbps
 Actual Comm Rates    : 2500000 / 5000000 kbps
 Keepalive Timeout    : 6000 ms
 Metric               : 0
 Connection Type      : Default
 ARL-Type             : Auto
 PMTU                 : Disabled
 Failover Group       : 0
 VLAN-ID              : NONE
 L2Cos (f/h/m/l)      : 0/0/0/0
 DSCP (f/h/m/l)       : 0/0/0/0
 cfgmask              : 0x00003c2f 0x40000000
```

```
 Flow Status          : 1
 ConCount/Duration    : 0 / 0s
 Receiver Stats       : 0 bytes / 0 pkts /    0.00 Bps Avg
 Sender Stats         : 0 bytes / 0 pkts /    0.00 Bps Avg
 TCP Bytes In/Out     : 0 / 0
 ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
 RTT (min/avg/max)    : 0 / 0 / 0 ms
```

To display FCP emulation statistics using the command with two levels and a single command:

```
switch:admin> portshow xtun 1/13 -fcp -itl -itn -stats
```

To display FCP emulation statistics, information, and configuration information using the command with a single level and three commands:

```
switch:admin> portshow xtun 1/13 -fcp -itl -stats  \
     -info -cfg
```

To display FICON statistics on the Brocade SX6 blade:

```
switch:admin> portshow xtun 8/27 -ficon -stats

FICON FCIP VePort=219 Statistics:
 Emulation Common Statistical Counts (decimal)
 ============================================
 TotalIngressFrames    =            307196261
 TotalEgressFrames     =             21636019
 TotalFCEgressFrames   =             10323404
 TotalCmds             =              7420486
 TotalEmulDvcLvlAcks   =                  734
 TotalEmulatedOps      =              1889025
 Idle Accepted Status  =                   92
 Idle Not Accpt Status =                   14
 Idle Accepted ATTN    =                    4
 MaxRetryQueueDepth    =          0   MaxEgressQueueDepth  =       3360
 TotalCUBusyResponses  =          5   TotalCUEndResponses  =          5
 TotalEmulatedCUBusys  =          5   TotalEmulCUEnd       =          5
 WIRE Buffer Percentages LocalFree= 99 LocalLow= 99 PeerFree= 99 PeerLow=99
 XBAR Buffer Percentages LocalFree=100 LocalLow=100 PeerFree=100 PeerLow=100

 FICON Configuration Status:
 ------------------------------------------------------------------
  FICON Host side Paths =       0 Device Side Paths=   0
  FICON LPARS Connected =       5    Curr LCUs =      12 Total Devices= 128
  Current Egress Q Count=    3360    RetryQCnt =       0
  Current Free Headers  =     348    HdrsInUse =       0
  Active Emulation Count= 12

  No Emulated XRC Operations
 --------------------------

 Tape Write Emulation Statistical Counts (decimal)
 ---------------------------------------------------------
  Current Bytes in write pipe         =                    0
```

```
 Maximum Bytes in write pipe         =             14680064
 Largest write chain processed       =               229377
 Total number of emulated Write Bytes=         249337825280
 Number of emulated Write Chains     =              1086924
 Total number of emulated Write CCWs =              4348063
 Average Emulated Writes Blocksize   =                57344
 Average Writes in Emulated Chains   =                    4
 Write emulation slowdowns           =                30980
 Slowdowns at Start of Chain         =                  407
 Slowdowns at End of chain           =                 5291
 Current Host side Write FDCB Count  =                    0
 Max Concurrent Write FDCB Count     =                    8
 Current Write Limited FDCB Count    =                    0

Tape Read Emulation Statistical Counts (decimal)
----------------------------------------------------
 Total number of emulated Read Bytes =          73229283205
 Total number of emulated Read Chains=               802101
 Total number of emulated Read CCWs  =              1180476
 Average Emulated Bytes per chain    =                91296
 Average Emulated Read Blocksize     =                62033
 Average CCWs in Emulated Chains     =                    1
 Current Read FDCBs Count            =                    8
 Max Concurrent Read FDCB Count      =                    0
 Current Read Limited FDCB Count     =                    8

No Emulated Tera Operations
---------------------------

No Emulated Printer Operations
---------------------------

FICON Debug Flags (ftrace and others) = 0x77c90000 (Default = 0x77c90000)
----------------------------------------------------
 Bit 31 [0x80000000] = 0 : TRIGGER_ON_SELRESET
 Bit 30 [0x40000000] = 1 : TRIGGER_ON_PURGEPATH
 Bit 29 [0x20000000] = 1 : TRIGGER_ON_RRS_MISS
 Bit 28 [0x10000000] = 1 : TRIGGER_ON_LRJ

 Bit 27 [0x08000000] = 0 : TRIGGER_ON_UNIT_CHECK
 Bit 26 [0x04000000] = 1 : TRIGGER_ON_LOOKUP_FAIL
 Bit 25 [0x02000000] = 1 : TRIGGER_ON_FDCB_ABORT
 Bit 24 [0x01000000] = 1 : TRIGGER_ON_NOFDCB_ABORT

 Bit 23 [0x00800000] = 1 : TRIGGER_ON_LINKDOWN
 Bit 22 [0x00400000] = 1 : TRIGGER_ON_SENSE_CMD
 Bit 21 [0x00200000] = 0 : TRIGGER_ON_BUSYATTN
 Bit 20 [0x00100000] = 0 : TRIGGER_ON_XRCUNS

 Bit 19 [0x00080000] = 1 : DISPLAY_FDCB_ON_ERROR
 Bit 18 [0x00040000] = 0 : TRIGGER_ON_LOW_WIREPOOL
 Bit 17 [0x00020000] = 0 : TRIGGER_ON_READ_UNITCHECK
 Bit 16 [0x00010000] = 1 : TRIGGER_ON_STATE_SAVE
```

```
 Bit 15 [0x00008000] = 0 : TRIGGER_ON_SUSPEND
 Bit 14 [0x00004000] = 0 : MINIMIZE_RASLOGS
 Bit 13 [0x00002000] = 0 : TRIGGER_ON_LONG_IO
 Bit 12 [0x00001000] = 0 : FORCE_DISABLE_IDLE_STACC

 Bit 11 [0x00000800] = 0 : FORCE_DISABLE_3203_PRINT
 Bit 10 [0x00000400] = 0 : FORCE_DISABLE_3211_PRINT
 Bit  9 [0x00000200] = 0 : FORCE_DISABLE_3800_PRINT
 Bit  8 [0x00000100] = 0 : FORCE_DISABLE_3900_PRINT

 Bit  5 [0x00000020] = 0 : DISABLE_TAPE_MULTIPATH_PROTECTION
 Bit  4 [0x00000010] = 0 : ACCEPT_READTRACK_STATUS

 Bit  3 [0x00000008] = 0 : FORCE_DISABLE_READ_PIPE
 Bit  2 [0x00000004] = 0 : FORCE_DISABLE_WRITE_PIPE
 Bit  1 [0x00000002] = 0 : FORCE_DISABLE_XRC_EMUL
 Bit  0 [0x00000001] = 0 : DISABLE_PERSIST_IU_PACE
```

To display the FICON Device Path Blocks:

```
switch:admin> portshow xtun 23 -ficon -fdpb

 FDPB (FICON Device Path Block - one per path) Count = 4
 ------------------------------------------------------- \
 (0x)        Side Path:              Emul Type Tag        \
 =========== ==== ================== ==== ==== ========== \
 041004E000   H   0x1763016401****** Yes  Tape 0x14340000 \
  flg=10 parms=2001F0 typ=002086 mod=A04 mfg=IBM plnt=02  \

 0410062880   H   0x17630164FE******  No  FCUP 0x14FD0000 \
 0410052000   H   0x1763086403****** Yes  Disk 0x14830000 \
  flg=10 parms=2001F2 typ=002086 mod=A04 mfg=IBM plnt=02  \

 0410084000   H   0x176308640E****** Yes  ESCN 0x14A40000 \
  flg=10 parms=2001F2 typ=002086 mod=A04 mfg=IBM plnt=02  \



------------------------
   EgrOx IngOx Valid VTN
  ===== ===== ===== ===
     0     1   Y     1
  sq=0000000E77DF tg=80F0

     0     0   Y     1
     0     0   Y     1
  sq=0000000E77DF tg=80F2

     1     1   Y     1
   sq=0000000E77DF tg=80F2
  (Output split)
```

To display the FICON Channel Blocks (all blocks and a specified block):

```
switch:admin> portshow xtun 16 -ficon -fchb 041055B680

FCHB (FICON CHannel Block - one per LPAR) Count = 1
-----------------------------------------------------------------
(0x)        Side Path:              CU Count  Emul ChTIN CuTIN
=========== ==== ================== ========  ========== =====
041055B680    D  0x106301640106****   0x0004     0x0000 0x0000

FCHB Flags:
    tinInProgress=N   emuTinAckPending=N  emuTirInProgress=N
emuTirAckPending=N  emuTinLackPending=N     emuTirPending=N
   emuTirReceived=N emuTinFinalAckPend=N     emuTirPending=N
emuTinSuccessful=N     emuTinReceived=N        emuTirSent=N
       fcrPresent=N          fchbValid=Y

FCHB Control variables:
  tinOrigOxid=0xFFFF  tirOrigOxid=0xFFFF   tinAckRxid=0xFFFF
   tinAckOxid=0xFFFF  allocChOxid=0xFFFF  allocChOIdx=0x0000
   tinTirOxid=0xFFFF
```

To display FICON FCUB information (FICON Images accessed through the tunnel)

```
switch:admin> portshow xtun 23 -ficon -fcub

 FCUB (FICON Control Unit Block) Count = 29

                FC Egress parms:
 (0x)        Side Path:              devRange DevCnt Model  \
 =========== ==== ================== ========  ====  =====
0410083800    H   0x17630164010604**   00-0F   0x10   3490  \
0410047500    H   0x17630164010605**   00-0F   0x10   3490  \
0410048E80    H   0x17630164010606**   00-0F   0x10   3490  \
0410049700    H   0x17630164010607**   00-0F   0x10   3490  \
0410054000    H   0x17630164010004**     -     0x00   0000  \
041006B100    H   0x17630864030600**   00-7F   0x80   3990  \
041006C000    H   0x17630864030601**   00-7F   0x80   3990  \
04100A4000    H   0x17630864030000**     -     0x00   0000  \
0410072000    H   0x176308640E0600**     -     0x00   0000  \
0410073100    H   0x176308640E0601**     -     0x00   0000  \
0410075100    H   0x176308640E0602**     -     0x00   0000  \
0410076880    H   0x176308640E0603**     -     0x00   0000  \
0410078000    H   0x176308640E0604**     -     0x00   0000  \
0410078880    H   0x176308640E0605**     -     0x00   0000  \
041007A000    H   0x176308640E0606**     -     0x00   0000  \


                FC Egress parms:
Type   LPE BL CHPID        Tag V Ve P B P VC EGID
====   === == ===== ========== = == = = = == ====
TAPE   Yes    00F0  0x15698E1E Y  Y 2 0 1 02 000D
TAPE   Yes    00F0  0x15B5E15F Y  Y 2 0 2 02 000D
TAPE   Yes    00F0  0x15D1509C Y  Y 2 0 4 02 000D
TAPE   Yes    00F0  0x150D3FDD Y  Y 2 0 2 02 000D
```

```
UNKN   No     00F0  0x15CDB71F Y  Y 2 0 1 02 000D
DISK   Yes    00F2  0x1538206F Y  Y 2 0 4 02 0007
DISK   Yes    00F2  0x15E44F2E Y  Y 2 0 1 02 0007
UNKN   No     00F2  0x159C196E Y  Y 2 0 3 02 0007
UNKN   No     00F2  0x152D3BA3 Y  Y 2 0 3 02 0007
UNKN   No     00F2  0x15F154E2 Y  Y 2 0 4 02 0007
UNKN   No     00F2  0x1595E521 Y  Y 2 0 4 02 0007
UNKN   No     00F2  0x15498A60 Y  Y 2 0 3 02 0007
UNKN   No     00F2  0x155C86A7 Y  Y 2 0 1 02 0007
UNKN   No     00F2  0x1580E9E6 Y  Y 2 0 1 02 0007
UNKN   No     00F2  0x15E45825 Y  Y 2 0 3 02 0007
(output split and truncated)
```

To reset the Device Path Block statistics:

```
switch:admin> portshow xtun 16 -ficon -fdpb -clear
```

To display a FICON Teradata, Tape, or XRC emulation statistics for a specified Device Control Block:

```
switch:admin> portshow xtun 16 -ficon -fdcb 0x041008B980
FDCB (FICON Device Control Block):Port=10 Side=Host Active=No
               DeviceType=TERA
-------------------------------------------------------------
 FDCB
 (0x)        hDom hPrt dDom dPrt lch  lcu  dev  state
============ ==== ==== ==== ==== ==== ==== ==== =====
0x041008B980  63   04   64   02   02   08   03  0x00

CONTROL
=======
active          =  No Send_SYR           =  No crrSet             =  No
xrcEstablished  =  No sssSet             =  No dvcAckEmulInProg   =  No
discardIgrFrames=  No resetEmulPending   =  No interceptLack      =  No
interceptLack2  =  No onStartPendingQueue=  No discardEgrFrames   =  No
deferDeviceType =  No emulBaAcceptPending=  No mappingOxid        =  No
xrcEmulEnable   = Yes tapeWriteEmulEnable= Yes tapeReadEmulEnabled= Yes
dvcAckEmulEnable= Yes fdcbLocked         = Yes vtnValid           = Yes
fcrPresent      =  No deviceNotInstalled =  No onCuBusyQueue      =  No
egressParmsSet  = Yes statusFlags        = 0x4000

QUEUE COUNTS
====================
 fcEgressQueue   =          0  egressQMax =          0
 ficonRetryQueue =          0  retryQMax  =          0
 cmdHdrQueue     =          0  cmdHdrQMax =         32

MISC (hex)
==========
state       = 0x00     prevState    = 0x18   lastStateArray= 0x1C371415
statusFlags = 0x4000
errorCode   = 0x00     ingressOxid  = 0xFFFF
egressOxid  = 0xFFFF   allocatedOxid= 0xFFFF   unsolIngrOxid = 0xFFFF
lastStatus  = 0x0C     lastCmd      = 0x00     tokenFlags    = 0x00
lastCmdArray= 0x773E3E64 lastStsArray= 0x08040C0Cl \
```

```
                                        astXprtArray=0x08040C0C
lastSeqId   = 0x00     curSeqId     = 0xB1
lastXportEmulMsg = 0x4F  statusFctlHi = 0x18    curIuCnt     = 0x0001
token        = 0x00000000
endingChOxid = 0xFFFF    endingCuOxid= 0xFFFF
emulDvcAckSeqs= 0x00000003 lastEvtFromCu= 0x00  priorEvtFrmCu = 0x85
abortOxid    = 0xFFFF    fdcbWorkSched = 0
deviceType   = 0x54455241

EMUL_HDR (hex)
==============
 funct = 0x00 msg = 0x00
 parm1 = 0x00 parm2 = 0x0000 parm3 = 0x00000000

STATS (dec)
===========
 cmdCount         =     274865
 emulatedOps      =     274565 resequencedIuCount  =          0
 cancelCount      =          0 selectiveResetCount =          1
 purgePathCount   =          0 abortCount          =          0
 normStatus       =     274408 attnStatus          =          0
 attnBusyStatus   =          0 ceStatus            =          0
 deStatus         =          0 retryStatus         =          0
 immRetryStatus   =          0 devBusyStatus       =          0
 cuBusyStatus     =          0 ceDeUxStatus        =          1
 deUxStatus       =          0 pendDeStatus        =          0
 deUcStatus       =          0 unusualStatus       =          0
 chLinkBusyCount  =          1 cuLinkBusyCount     =          0
 unusualStsArray  = 0x00000000
 pGb              = 0x0000000000
 tag              = 0x0285CF9E
 senseDeviceType  = 0xFF30884000000000
 ingressFrameCount= 0x000000000011ADCE
 egressFrameCount = 0x00000000000432AB

TERADATA CONTROL
============
 writeSuspendFlag   = OFF finalStatusPndg = OFF waitCuRsp       =  OFF
 cuBusyRsp          = OFF suspendCompleted= OFF rexmitPending   =  OFF
 synStatusSent      = OFF unitCheckPndg   = OFF unAnsweredExchg =  OFF
 queuedCntlFrame    = OFF controlFunctAc  = OFF controlFunctDon =  OFF
 unitChkPresented   = OFF senseDataSaved  = OFF snsDataPresente =  OFF
 waitingForSenseData= OFF lackOwed        = OFF rexmitLbySent   =  OFF
 readEmulAct        = OFF writeEmulAct    = OFF iuPacingNeeded  =   ON

TERADATA MISC
=========
 writeTrigger        = 0x0000          readBlkTrigger  = 0x0000
 teraDhEndCount      = 0x0
 teraEsCount         = 0x0000          writeOpsInPipe  = 0x00000000
 maxWritePipe        = 0x0000          maxReadPipe     = 0x0002
 teraCmdCode         = 0x64            teraStatus      = 0x0d
 emulTeraWriteOps    = 0x00043085      emulTeraReadOps = 0x00000000
```

```
 emulTeraWrtBytes    = 0x00000001679cb8b0
 emulTeraReadBytes   = 0x0000000000000000
 emulTeraWriteCcws   = 0x00043085      emulTeraReadCcws= 0x00000000
 multUnitCheckCnt    = 0x00000000
 currentWriteChain   = 160
 largestWriteChain   = 43936
 bytesInWritePipe    = 0
 atMaxWrtBytesCount  = 0
IU Pacing Values:crrsIssued=0 creditsOutstanding=0 currentCreditBurst=0

 Historic Emulation Headers:
 ===========================
 current index = 1
 ToPeerEmulHdr[0]=funct=2:msg=1:p1=0x00:p2=0x0000:p3=0x0285cf9e
 ToPeerEmulHdr[1]=funct=2:msg=7:p1=0x00:p2=0x3085:p3=0x00000000
 ToPeerEmulHdr[2]=funct=2:msg=7:p1=0x00:p2=0x3085:p3=0x00000000
 ToPeerEmulHdr[3]=funct=2:msg=18:p1=0x00:p2=0x3085:p3=0x00000000
 current index = 0
 FromPeerEmlHd[0]=funct=2:msg=15:p1=0x0c:p2=0x3066:p3=0x00000003
 FromPeerEmlHd[1]=funct=7:msg=8:p1=0x5f:p2=0x0062:p3=0x00000000
 FromPeerEmlHd[2]=funct=7:msg=6:p1=0x00:p2=0x0000:p3=0x00000000
 FromPeerEmlHd[3]=funct=7:msg=8:p1=0x5f:p2=0x0062:p3=0x00000000
 convIngressOxid     = 0xffff          convIngressOxid     = 0xffff
 timedOps            = 0x00043066

TERA IO TIMING:
===============
 last elapsedTime    = 0.397
 maxElapsedTime      = 0.504
 totalTime           = 145.132
 longIOtimes         = 0x0000005D
 startOfChainDelayCnt= 0x0000         endOfChainDelayCnt  = 0x5B
 readPacedCount      = 0x0000         writePacedCount     = 0x0000

Ave Chain SIO time  = 0.000 seconds

ReadPipe Cntls:
===============
 readBlkEmulation=OFF        entireCP=OFF    waitForAccept=OFF
          endOfCP=OFF    commandRetry=OFF    goToIdleState=OFF
     sentUExceptn=OFF        earlyEnd=OFF      dackPending=OFF
   sofCNReceived=OFF       noActiveIO=OFF       sendSOFRep=OFF
   blkIneligible=OFF      rdBlkValid1=OFF      rdBlkValid2=OFF
 earlyIdleStatus=ON        reducePipe=OFF         doBSNoOp=OFF
       waitForDe=OFF    readCpLimited=OFF
 statusFramesOnQueue = 0x0000         readBlocksSent   = 0x0000
 readBlocksRequested = 0x0000         readCpsRequested = 0x0000
```

To display FICON emulation statistics (as the following examples show, this command can display emulation statistics for Teradata, Tape, XRC, and Printer depending on the FICON devices and FICON Emulation Features that are enabled on the tunnel.):

```
switch:admin> portshow xtun 8/27 -ficon -emultera
                                        TAPE EMULATION STATS
```

```
+------------------+----------------+-+-----+----+----+----+-----------+
|     FDCB Ptr     |     Path       |H|State|Emul|Emul|Rtry| Emulated  |
|(0x)              |(0x)            |D|     |Pipe|Q'd | Qd | Tape Ops  |
+------------------+----------------+-+-----+----+----+----+-----------+
|0x8000000500EBC900|DB6841614D02030E|D| 0x3C|0x11|0007|0000|     149487|
|0x8000000500EC3400|DB6841614D020401|D| 0x3C|0x11|0005|0000|     149436|

----------+------+----------+------+
Emulated  |RdAvg |Emulated  |WtAvg |
Read CCWs | Size |Write CCWs| Size |
----------+------+----------+------+
    149487| 65534|         0|     0|
    149436| 65533|         0|     0|
(Output split and truncated)
switch:admin> portshow xtun 23 -ficon -emultape
                            TAPE EMULATION STATS
+------------------+----------------+-+-----+----+----+----+----+-----------+
|     FDCB Ptr     |     Path       |H|State|Cmds| Cmd|Data|Data| Emulated  |
|      (0x)        |     (0x)       |D|     | Qd | Max| Qd |Max | RRS Ops   |
+------------------+----------------+-+-----+----+----+----+----+-----------+
|0x8000000500C79C00|196300640006002B|H| 0x00|0000|0072|0000|0001|       2677|
|0x8000000500C22F00|1963006400060027|H| 0x00|0000|0072|0000|0001|       1850|
|0x8000000500C14D80|196300640006002F|H| 0x00|0000|0072|0000|0001|       2657|
|0x8000000500C1AD80|1963006400060023|H| 0x00|0000|0072|0000|0001|       3546|
[...]
---+------+------+------+
Avg|   RRS|  RRS | Large|
RRS|   TLF|  Read|Chains|
---+------+------+------+
 39| 34819|  9791|     0|
 25| 42323|  6798|     0|
 35| 37134|  7371|     0|
 44| 31723|  8203|     0|
[...]
(Output split and truncated)
switch:admin> portshow xtun 23 -ficon -images
 FCUB (FICON Control Unit Block) Count = 11

 (0x)            Side Path:              devRange DevCnt Model
================ ==== ================== ========  ====  =====
8000000500C82600    H 0x19630064000601**     -     0x00   3990
8000000500BFAB00    H 0x19630064000600**   20-BF   0x80   3990
8000000500C81F00    D 0x19640F63040601**   00-07   0x08   3088
8000000500C83300    H 0x196302640A0510**   00-0F   0x10   3590

                                 FC Egress parms:
Type   LPE BL CHPID        Tag V Ve P B P VC EGID cbState
====   === == ===== ========== = == = = = == ==== =======
DISK   Yes    0000  0x02908700 Y  Y 2 0 0 05 0010    0
DISK   Yes    0000  0x0290E841 Y  Y 2 0 0 05 0010    0
FCTC   Yes    0000  0x02C4D969 Y  Y 2 0 0 15 0013    0
TAPE   Yes    0000  0x023D22B4 Y  Y 2 0 3 15 0012    0
```

```
(Output split and truncated)
```

To display FICON emulation statistics for the FCIP tunnel:

```
switch:admin> portshow xtun 23 -ficon -stats

FICON FCIP Tunnel=7 Statistics:
Emulation Common Statistical Counts (decimal)
=============================================
TotalIngressFrames    =           1824707656
TotalEgressFrames     =           1665499614
TotalFCEgressFrames   =            136476952
TotalCmds             =            152548501
TotalEmulDvcLvlAcks   =                81667
TotalEmulatedOps      =             23893981
Idle Accepted Status  =              8000016
Idle Not Accpt Status =             11886003
MaxRetryQueueDepth    =          0   MaxEgressQueueDepth  =       2316
TotalCUBusyResponses  =          0   TotalCUEndResponses  =          0
TotalEmulatedCUBusys  =          0   TotalEmulCUEnd       =          0
TotalSelectiveResets  =          0   TotalChLinkBusy      =          0
TotalCancels          =          0   TotalAborts          =          0
TotalEmulErrors       =          0   TotalCuLinkBusy      =          0
TotalPurgePaths       =          0   Xport LRC CheckErrors=          0
Generated Link Busys  =          0   Failed Generate Frame=          0

WIRE Buffer Percentages LocalFree= 95 LocalLow= 94 PeerFree= 95 PeerLow=93
XBAR Buffer Percentages LocalFree= 98 LocalLow= 97 PeerFree= 98 PeerLow=97

FICON Configuration Status:
-------------------------------------------------------------------
  FICON Host side Paths =   3 Device Side Paths=   1
  FICON LPARS Connected =   5    Curr LCUs =      17 Total Devices= 200
  Current Egress Q Count=   0    RetryQCnt =       0
  Current Free Headers  = 892    HdrsInUse =       0
  Active Emulation Count=   4

XRC Emulation Statistical Counts (decimal)
----------------------------------------------------------
Total Emulated RRS Chains           =              1950996
Total Emulated RRS Commands         =             18732495
Total Received RRS Bytes            =         145156149548
Total XRC RRS Requests in Bytes     =         315684784416
Average RRS Request BlkSize         =                 7748
Average RRS Requests per Chain      =                    9
Largest RRS Request Byte Count      =             12714240
Ratio of RRS Read Bytes to the
Requested Read bytes = 459 read : 1000 requested

Tape Write Emulation Statistical Counts (decimal)
----------------------------------------------------------
  Current Bytes in write pipe         =                    0
  Maximum Bytes in write pipe         =             21359520
  Largest write chain processed       =              4128769
```

```
  Total number of emulated Write Bytes=        1374007085422
  Number of emulated Write Chains     =             11665734
  Total number of emulated Write CCWs =             39204146
  Average Emulated Writes Blocksize   =                35047
  Average Writes in Emulated Chains   =                    3
  Write emulation slowdowns           =               138931
  Slowdowns at Start of Chain         =                83938
  Slowdowns at End of chain           =                54993
  Current Host side Write FDCB Count  =                    4
  Max Concurrent Write FDCB Count     =                   16
  Current Write Limited FDCB Count    =                    0

Tape Read Emulation Statistical Counts (decimal)
-------------------------------------------------
  Total number of emulated Read Bytes =        1299985900584
  Total number of emulated Read Chains=             10277251
  Total number of emulated Read CCWs  =             35565516
  Average Emulated Bytes per chain    =               126491
  Average Emulated Read Blocksize     =                36551
  Average CCWs in Emulated Chains     =                    3
  Current Read FDCBs Count            =                    0
  Max Concurrent Read FDCB Count      =                   16
  Current Read Limited FDCB Count     =                    0

 Tera Write Emulation Statistical Counts (decimal)
 -----------------------------------------------------------
  Current Bytes in write pipe         =                    0
  Maximum Bytes in write pipe         =              1405952
  Largest write chain processed       =                43936
  Total number of emulated Write Bytes=          19204226768
  Number of emulated Write Chains     =               989882
  Total number of emulated Write CCWs =               989882
  Average Emulated Writes Blocksize   =                19400
  Average Writes in Emulated Chains   =                    1
  Write emulation slowdowns           =                  114
  Slowdowns at Start of Chain         =                    0
  Slowdowns at End of chain           =                  114
  Single Chain Emulation Counter      =                    0
  Write Paced Count                   =                    0
  Current Host side Write FDCB Count  =                    1
  Max Concurrent Write FDCB Count     =                    1
  Current Write Limited FDCB Count    =                    0

 Tera Read Emulation Statistical Counts (decimal)
 --------------------------------------------------
  Total number of emulated Read Bytes =          17688908128
  Total number of emulated Read Chains=               825572
  Total number of emulated Read CCWs  =               825572
  Average Emulated Bytes per chain    =                21426
  Average Emulated Read Blocksize     =                21426
  Average CCWs in Emulated Chains     =                    1
  Read Block Paced Count              =                    0
  Read Not Ready Situations Count     =                    0
```

```
  Current Read FDCBs Count            =                    1
  Max Concurrent Read FDCB Count      =                    1
  Current Read Limited FDCB Count     =                    1

Printer Write Emulation Statistical Counts (decimal)
-----------------------------------------------------------
  Current Bytes in write pipe         =                    0
  Maximum Bytes in write pipe         =                45627
  Largest write chain processed       =                 9150
  Total number of emulated Write Bytes=             27375500
  Number of emulated Write Chains     =                 3500
  Total number of emulated Write CCWs =                 6500
  Average Emulated Writes Blocksize   =                 4211
  Average Writes in Emulated Chains   =                    1
  Current Host side Write FDCB Count  =                    1
  Max Concurrent Write FDCB Count     =                    1
  Current Write Limited FDCB Count    =                    1

FICON Debug Flags (ftrace and others) = 0xffc98030 (Default = 0xf7c90000)
----------------------------------------------------
  Bit 31 [0x80000000] = 1 : TRIGGER_ON_SELRESET
  Bit 30 [0x40000000] = 1 : TRIGGER_ON_PURGEPATH
  Bit 29 [0x20000000] = 1 : TRIGGER_ON_RRS_MISS
  Bit 28 [0x10000000] = 1 : TRIGGER_ON_LRJ

  Bit 27 [0x08000000] = 1 : TRIGGER_ON_UNIT_CHECK
  Bit 26 [0x04000000] = 1 : TRIGGER_ON_LOOKUP_FAIL
  Bit 25 [0x02000000] = 1 : TRIGGER_ON_FDCB_ABORT
  Bit 24 [0x01000000] = 1 : TRIGGER_ON_NOFDCB_ABORT

  Bit 23 [0x00800000] = 1 : TRIGGER_ON_LINKDOWN
  Bit 22 [0x00400000] = 1 : TRIGGER_ON_SENSE_CMD
  Bit 21 [0x00200000] = 0 : TRIGGER_ON_BUSYATTN
  Bit 20 [0x00100000] = 0 : TRIGGER_ON_XRCUNS

  Bit 19 [0x00080000] = 1 : DISPLAY_FDCB_ON_ERROR
  Bit 18 [0x00040000] = 0 : TRIGGER_ON_LOW_WIREPOOL
  Bit 17 [0x00020000] = 0 : TRIGGER_ON_READ_UNITCHECK
  Bit 16 [0x00010000] = 1 : TRIGGER_ON_STATE_SAVE

  Bit 15 [0x00008000] = 1 : TRIGGER_ON_SUSPEND
  Bit 11 [0x00000800] = 0 : FORCE_DISABLE_3203_PRINT
  Bit 10 [0x00000400] = 0 : FORCE_DISABLE_3211_PRINT
  Bit  9 [0x00000200] = 0 : FORCE_DISABLE_3800_PRINT
  Bit  8 [0x00000100] = 0 : FORCE_DISABLE_3900_PRINT

  Bit  4 [0x00000010] = 1 : ACCEPT_READTRACK_STATUS

  Bit  3 [0x00000008] = 0 : FORCE_DISABLE_READ_PIPE
  Bit  2 [0x00000004] = 0 : FORCE_DISABLE_WRITE_PIPE
  Bit  1 [0x00000002] = 0 : FORCE_DISABLE_XRC_EMUL
  Bit  0 [0x00000001] = 0 : DISABLE_PERSIST_IU_PACE
```

To display FICON Teradata Read and Write performance data:

```
switch:admin> portshow xtun 16 -ficon -teraperf
Tera Performance Monitor Data:
==============================
    Sample Time Period in ms: 4318

 Tera Write Performance Data:
 ----------------------------
     Emulated Chains per sec: 1186
       Emulated CCWs per sec: 1186
        Ave Write Block Size: 22617
          Emulated Write BPS: 26831514

 Tera Read Performance Data:
 ---------------------------
     Emulated Chains per sec: 1069
       Emulated CCWs per sec: 1069
         Ave Read Block Size: 10780
           Emulated Read BPS: 11531104
```

To display FICON Printer performance data:

```
switch:admin> portshow xtun 23 -ficon -printperf

Printer Performance Monitor Data:
=================================
    Sample Time Period in ms: 7460
----------------------------
No Emulated Printer operations
----------------------------
No Emulated Read operations
```

To display FICON tape performance data:

```
switch:admin> portshow xtun 23 -ficon -tapeperf

Tape Performance Monitor Data:
==============================
    Sample Time Period in ms: 2461
 Tape Write Performance Data:
 ----------------------------
     Emulated Chains per sec: 480
       Emulated CCWs per sec: 3069
        Ave Write Block Size: 32760
          Emulated Write BPS: 100540440
 ----------------------------
 No Emulated Read operations
```

To display FICON XRC performance data:

```
switch:admin> portshow xtun 23 -ficon -xrcperf

XRC Performance Monitor Data:
=============================
    Sample Time Period in ms: 11340
```

```
    Emulated Chains per sec: 16
  Emulated RRS Cmds per sec: 16
 Emulated RRS Bytes per sec: 640
    Average RRS Update Size: 40
```

See Also

portCfg, portLoginShow, switchShow

portStats64Show

Displays the 64-bit hardware statistics for a port.

Synopsis

portstats64show [<*slot*>/]<*port*> [**-long**]

Description

Use this command to display 64-bit hardware statistics for a specified port. When used without the **-long** option, two integers are reported for most values, the lower and upper 32-bits are reported as two separate numbers. In this case, the top word is the most significant. When issued with the **-long** option, the command displays the counters as one single 64-bit number.

stat64_wtx	Number of 4-byte words transmitted.
stat64_wrx	Number of 4-byte words received.
stat64_ftx	Number of frames transmitted.
stat64_frx	Number of frames received.
stat64_c2_frx	Number of class 2 frames received.
stat64_c3_frx	Number of class 3 frames received.
stat64_lc_rx	Number of link control frames received.
stat64_mc_rx	Number of multicast frames received.
stat64_mc_to	Number of multicast timeouts.
stat64_mc_tx	Number of multicast frames transmitted.
tim64_rdy_pri	Number of times R_RDY was high priority.
tim64_txcrd_z	Number of times that the TX BB_credit was at zero.
er64_enc_in	Number of encoding errors inside of frames.
er64_crc	Number of frames with CRC errors.
er64_trunc	Number of frames shorter than minimum.
er64_toolong	Number of frames longer than maximum.
er_bad_eof	Number of frames with bad end-of-frame.
er64_enc_out	Number of encoding error outside of frames.
er64_disc_c3	Number of class 3 frames discarded.
er64_pcs_blk	Number of Physical Coding Sublayer (PCS) block errors. This counter records encoding violations on 10Gb/s or 16Gb/s ports.
stat64_fec_cor	The number of errors corrected by FEC. Displayed only on 16G-capable platforms and not on 32G-capable platforms.
stat64_fec_uncor	The number of errors left uncorrected by FEC.
stat64_rateTxFrame	Tx frame rate (frames/second).
stat64_rateRxFrame	Rx frame rate (frames/second).
stat64_rateTxPeakFrame	Tx peak frame rate (frames/second).
stat64_rateRxPeakFrame	Rx peak frame rate (frames/seconds).
stat64_rateTxWord	Tx Word rate (words/seconds).

stat64_rateRxWord	Rx Word rate (words/seconds).
stat64_rateTxPeakWord	Tx peak Word rate (words/sec).
stat64_rateRxPeakWord	Rx peak Word rate (words/sec).
stat64_aveTxFrameSize	Average Tx Frame size in words.
stat64_aveRxFrameSize	Average Rx Frame size in words.
stat64_PRJTFramees	Number of P_RJT frames returned to the port.
stat64_PBSYFrames	Number of P_BSY frames returned to the port.
stat64_inputBuffersFull	Number of occurrences when all input buffers are full.
stat64_rxClass1Frames	Number of class 1 frames received.
stat64_aveTxFrameSize	Average Tx Frame size, based on the word and frame counts during the last five seconds.
stat64_aveRxFrameSize	Average Rx Frame size, based on the word and frame counts during the last five seconds.

The following counters provided by SNMP are displayed with **portStats64Show -long** on switches running latest version of Fabric OS:

swConnUnitZeroTenancy, zero_tenancy	Number of times a zero tenancy occurred.
swConnUnitFLNumOfTenancy, fl_tenancy	Number of times the FL_Port had a loop tenancy.
swConnUnitNLNumOfTenancy, nl_tenancy	Number of times any NL_Port had a loop tenancy.
swConnUnitStopTenancyStarvation, Starve_stop	Number of loop tenancies stopped due to starvation.
swConnUnitOpend, opened	Number of times the FL_Port entered OPENED state.
swConnUnitTransferConnection, transfer	Number of times the FL_Port entered TRANSFER state.
swConnUnitOpen, open	Number of times the FL_Port entered OPEN state.
swConnUnitInvalidARB, er_inv_arb	Number of invalid arbitrated loops (ARBs).

The following counters are platform-specific and applicable only to 8G-capable ASICs only.

swConnUnitFTB1Miss, er_type1_miss	The number of FCR frames with transmit errors.
swConnUnitFTB2Miss, er_type2_miss	The number of frames with routing errors.
swConnUnitFTB6Miss, er_type6_miss	The number of FCR frames with receive errors.
swConnUnitZoneMiss, er_zone_miss	Number of frames with hard zoning miss
swConnUnitLunZoneMiss, er_lun_zone_miss	Number of frames with logical unit number (LUN) zoning miss.
swConnUnittStatRxMulticastToObjects, stat_mc_to	The number of multicast timeouts.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

This command is not supported on FCoE ports.

Operands

This command has the following operands:

<slot>	For bladed systems only, specify the slot number of the port to be displayed, followed by a slash (/).
<port>	Specify a port number to be displayed, relative to its slot for bladed systems. Use **switchShow** to display a list of valid ports.
-long	Displays the counters as one single 64-bit number. This operand is optional; if omitted, the lower and upper 32-bits are reported as two separate numbers.

Examples

To display the 64-bit hardware statistics for a port:

```
switch:user> portstats64show 4/15


stat64_wtx    0     top_int : 4-byte words transmitted
              21618 bottom_int : 4-byte words transmitted
stat64_wrx    0     top_int : 4-byte words received
              22492 bottom_int : 4-byte words received
stat64_ftx    0     top_int : Frames transmitted
              596   bottom_int : Frames transmitted
stat64_frx    0     top_int : Frames received
              614   bottom_int : Frames received
stat64_c2_frx 0     top_int : Class 2 frames received
              0     bottom_int : Class 2 frames received
stat64_c3_frx 0     top_int : Class 3 frames received
              0     bottom_int : Class 3 frames received
stat64_lc_rx  0     top_int : Link control frames received
              462   bottom_int : Link control frames received
stat64_mc_rx  0     top_int : Multicast frames received
              0     bottom_int : Multicast frames received
stat64_mc_to  0     top_int : Multicast timeouts
              0     bottom_int : Multicast timeouts
stat64_mc_tx  0     top_int : Multicast frames transmitted
              0     bottom_int : Multicast frames transmitted
tim64_rdy_pri 0     top_int : Time R_RDY high priority
              0     bottom_int : Time R_RDY high priority
tim64_txcrd_z 0     top_int : Time BB_credit zero
              34211 bottom_int : Time BB_credit zero
er64_enc_in   0     top_int : Encoding errors inside of frames
              0     bottom_int : Encoding errors inside of frames
er64_crc      0     top_int : Frames with CRC errors
              0     bottom_int : Frames with CRC errors
er64_trunc    0     top_int : Frames shorter than minimum
              0     bottom_int : Frames shorter than minimum
er64_toolong  0     top_int : Frames longer than maximum
              0     bottom_int : Frames longer than maximum
er64_bad_eof  0     top_int : Frames with bad end-of-frame
              0     bottom_int : Frames with bad end-of-frame
er64_enc_out  0     top_int : Encoding error outside of frames
              135762 bottom_int : Encoding error outside of frames
er64_disc_c3  0     top_int : Class 3 frames discarded
```

```
              0     bottom_int : Class 3 frames discarded
er64_pcs_blk  0     top_int : PCS block errors
              0     bottom_int : PCS block errors
stat64_fec_cor    0    top_int : FEC corrected errors detected
                  0    bottom_int : FEC corrected errors detected
stat64_fec_uncor  0    top_int : FEC uncorrected errors detected
                  0     bottom_int : FEC uncorrected errors detected
stat64_rateTxFrame      0    Tx frame rate (fr/sec)
stat64_rateRxFrame      0    Rx frame rate (fr/sec)
stat64_rateTxPeakFrame  9    Tx peak frame rate (fr/sec)
stat64_rateRxPeakFrame  9    Rx peak frame rate (fr/sec)
stat64_rateTxWord       0    Tx Word rate (words/sec)
stat64_rateRxWord       0    Rx Word rate (words/sec)
stat64_rateTxPeakWord   264  Tx peak Word rate (words/sec)
stat64_rateRxPeakWord   272  Rx peak Word rate (words/sec)
stat64_aveTxFrameSize   504  Average Tx Frame size
stat64_aveRxFrameSize   511  Average Rx Frame size
stat64_PRJTFrames       0    top_int : 4-byte words transmitted
                        0    bottom_int : 4-byte words transmitted
stat64_PBSYFrames       0    top_int : 4-byte words transmitted
                        0    bottom_int : 4-byte words transmitted
stat64_inputBuffersFull 0    top_int : 4-byte words transmitted
                        0    bottom_int : 4-byte words transmitted
stat64_rxClass1Frames   0    top_int : 4-byte words transmitted
                        0    bottom_int : 4-byte words transmitted
stat64_aveTxFrameSize   0    Average Tx Frame size
stat64_aveRxFrameSize   0    Average Rx Frame size
```

To display the counters as one single 64-bit number:

```
switch:admin> portstats64show 12 -long
starve64_stop      0  tenancies stopped due to starvation
er64_inv_arb       0  Invalid ARB
er64_type1_miss    0  frames with FTB type 1 miss
er64_type2_miss    0  frames with FTB type 2 miss
er64_type6_miss    0  frames with FTB type 6 miss
er64_zone_miss     0  frames with hard zoning miss
er64_lun_zone_miss 0  frames with LUN zoning miss
lli64              0  Low level interrupts
```

See Also

portStatsClear, portStatsShow

portStatsClear

Clears port hardware statistics.

Synopsis

```
portstatsclear [<slot>/]<port>
portstatsclear {-i | -x} {<port_index> | <port_index_range>} [-f]
portstatsclear {-slot | -s} {<slot> | <slot_range>}
portstatsclear -h
```

Description

Use this command to clear the hardware statistics for the specified ports. Including ALPA-based CRC monitor, End-to-End monitor, and Filter-based performance monitor statistics.

You can identify a single port to be cleared by its port number or by its port index number in decimal or hexadecimal format. Port ranges or list of port ranges are supported with port numbers, index numbers(decimal or hexadecimal) or by specifying a slot or a slot range or a list of slot ranges. Use **switchShow** for a listing of valid ports, slots, and port index numbers.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

This command is not supported on FCoE ports.

Operands

This command has the following operands:

[<*slot*>/]	For bladed systems only, specify the slot number of the port to be cleared, followed by a slash (/).
<port>	Clears a single port identified by the port number, relative to its slot on bladed systems. Port ranges are not supported with this command. Use **switchShow** for a listing of valid ports.
-i <*port_index*> | <*port_index_range*>	Clears a single port or a list of ports identified by port index numbers. You may specify multiple indexes separated by a space, for example, **-i** 33 47 65 73.
-f	Ignores nonexisting ports. This operand is valid only with the **-i** option.
-x <*port_index*> | <*port_index_range*>	Clears a port or a list of ports separated by a space identified by index number in hexadecimal format, for example, -x 21 26 28 3c.
-slot <*slot*> | <*slot_range*>	Clears all ports on a slot or on a list of slots, for example, **-s** 3 5. You may specify multiple slots separated by a space, for example, **-s** 3 5 8 10.
-h	Displays the command usage.

Examples

To clear hardware statistics for a single port specified by its port number:

```
switch:admin> portstatsclear 4/15
```

To clear hardware statistics for a single port specified by its index number:

```
switch:admin> portstatsclear -i 25
```

To clear hardware statistics for a range of ports specified by their index numbers:

```
switch:admin> portstatsclear -i 32-40
```

To clear hardware statistics for multiple port ranges specified by their index numbers:

```
switch:admin> portstatsclear -i 32-40 50-56
```

To clear hardware statistics for all ports on slots 3-5:

```
switch:admin> portstatsclear -s 3-5
```

To clear hardware statistics for all ports on slots 3-5 and 7-10:

```
switch:admin> portstatsclear -s 3-5 7-10
```

To clear hardware statistics for range of ports specified in hexadecimal format:

```
switch:admin> portstatsclear -x 1d-1e
```

See Also

portStats64Show, portStatsShow, switchShow

portStatsShow

Displays port hardware statistics.

Synopsis

```
portstatsshow [<slot>/]<port>
portstatsshow -i <index1> [<index2>] [...] [-f]
portstatsshow -i <index_range1> [<index_range2>] [...] [-f]
portstatsshow -x <hex1> [<hex2>] [...]
portstatsshow -x <hex_range1> [<hex_range2>] [...]
portstatsshow -slot <slot1> [<slot2>] [...]
portstatsshow -slot <slot_range1> [<slot_range2>] [...]
portstatsshow [<slot>/]ge<port>
portstatsshow -h
```

Description

Use this command to display port hardware statistics counters. Some counters are platform- or port-specific and display only on those platforms and ports. All statistics have a maximum 32-bit value of 4,294,967,295 except stat_wtx and stat_wrx. The stat_wtx and stat_wrx fields have a maximum 64-bit value of 18,446,744,073,709,551,615.

You can display statistics of a single port by its port number or by its port index number in decimal or hexadecimal format. Port ranges or list of port ranges are supported with port numbers, index numbers(decimal or hexadecimal) or by specifying a slot or a slot range or a list of slot ranges. Use **switchShow** for a listing of valid ports, slots, and port index numbers.

The command output may include the following fields (Tx indicates frames transmitted by the port; Rx indicates frames received by the port).

stat_wtx	The number of 4-byte words transmitted.
stat_wrx	The number of 4-byte words received.
stat_ftx	The number of class 2, class 3, and control frames transmitted.
stat_frx	The number of class 2, class 3, and control frames received.
stat_c2_frx	The number of class 2 frames received.
stat_c3_frx	The number of class 3 frames received.
stat_lc_rx	The number of link control frames received.
stat_mc_rx	The number of multicast frames received.
stat_mc_to	The number of multicast timeouts.
stat_mc_tx	The number of multicast frames transmitted.
tim_rdy_pri	The number of times that sending R_RDY or VC_RDY primitive signals was a higher priority than sending frames, due to diminishing credit reserves in the transmitter at the other end of the fiber. This parameter is sampled at intervals of 1.8 microseconds, and the counter is incremented by 1 if the condition is true.
tim_txcrd_z	The number of times that the port was unable to transmit frames because the transmit BB credit was zero. The purpose of this statistic is to detect congestion or a device affected by latency. This parameter is sampled at intervals of 2.5 microseconds, and the counter is incremented if the condition is true. Each sample represents 2.5 microseconds of time with zero Tx BB Credit. An increment of this counter means

	that the frames could not be sent to the attached device for 2.5 microseconds, indicating degraded performance.
tim_txcrd_z_vc	The number of times that the port was unable to transmit frames because the transmit BB credit was zero for each of the port's 16 Virtual Channels (VC 0-15). The purpose of this statistic is to detect congestion or a device affected by latency. This parameter is sampled at intervals of 2.5 microseconds (microseconds), and the counter is incremented if the condition is true. Each sample represents 2.5 microseconds of time with zero Tx BB Credit. An increment of this counter means that the frames could not be send to the attached device for 2.5 microseconds, indicating degraded performance (platform- and port-specific).
lat_tot_pkt_vc	Total TxQ latency monitor statistics.
lat_hi_time_vc	High TxQ latency monitor statistics.
lat_lo_time_vc	Low TxQ latency monitor statistics.
max_latency_vc	Maximum latency for virtual channels.
er_enc_in	The number of encoding errors inside frames.
er_crc	The number of frames with cyclic redundancy check (CRC) errors.
er_trunc	The number of frames shorter than the minimum frame length.
er_toolong	The number of frames longer than the maximum frame length.
er_bad_eof	The number of frames with bad end-of-frame.
er_enc_out	The number of encoding error outside frames.
er_bad_os	The number of invalid ordered sets (platform- and port-specific).
er_pcs_blk	The number of Physical Coding Sublayer (PCS) block errors. This counter records encoding violations.
er_rx_c3_timeout	The number of receive class 3 frames received at this port and discarded at the transmission port due to timeout (platform-and port-specific).
er_tx_c3_timeout	The number of transmit class 3 frames discarded at the transmission port due to timeout (platform- and port-specific).
er_unroutable	The number of frames discarded because they cannot be routed.
er_unreachable	The number of frames discarded because the destination port cannot be reached.
er_c3_dest_unreach	The number of class 3 frames discarded because the destination cannot be reached.
er_other_discard	The number of other discarded due to route lookup failures or other reasons.
er_zone_discard	The number of class 3 frames discarded due to zone mismatch.
er_type1_miss	The number of FCR frames with transmit errors.
er_type2_miss	The number of frames with routing errors.
er_type6_miss	The number of FCR frames with receive errors.
er_zone_miss , er_lun_zone_miss	The number of frames discarded due to hard zoning miss or LUN zoning miss. If Rx port hard zoning is enabled, frames will be discarded at the Rx port. If TX port hard zoning is enabled, frames will be discarded at the TX port. If both RX and TX port hard zoning is enabled, frames will be discarded at the RX port. (LUN zoning is currently not supported.)
er_crc_good_eof	The number of CRC errors with good end-of-frame (EOF) (platform- and port-specific).
er_inv_arb	The number of invalid arbitrated loops (ARBs).
er_single_credit_loss	The number of times the port lost a single VC_RDY primitive signal or a single frame.
er_multi_credit_loss	The number of times the port lost multiple VC_RDY primitive signals or multiple frames.
other_credit_loss	The number of link timeout or complete credit loss errors.
er_encr_blk	The number of encryption block errors.
er_encr_short_frame	The number of encrypted frames that are too short.
er_encr_discard	The number of other encrypted frames that are discarded.
compression_ratio	The ratio based on the last 5 second sampled accumulated value. It is represented in percentage. If the port is configured for compression, this value is displayed. This field is not displayed on Brocade G610 switch.
open	The number of times the FL_Port entered OPEN state.
transfer	The number of times the FL_Port entered TRANSFER state.
opened	The number of times the FL_Port entered OPENED state.

starve_stop	The number of loop tenancies stopped due to starvation.
fl_tenancy	The number of times the FL_Port had a loop tenancy.
nl_tenancy	The number of times the NL_Port had a loop tenancy.
zero_tenancy	The number of times a zero tenancy occurred.
ge_stat_tx_frms	The number of frames transmitted on the GbE port.
ge_stat_tx_octets	The number of octets transmitted on the GbE port.
ge_stat_tx_ucast_frms	The number of unicast frames transmitted on the GbE port.
ge_stat_tx_mcast_frms	The number of multicast frames transmitted on the GbE port.
ge_stat_tx_bcast_frms	The number of broadcast frames transmitted on the GbE port.
ge_stat_tx_vlan_frms	The number of VLAN frames transmitted on the GbE port.
ge_stat_tx_pause_frms	The number of pause frames transmitted on the GbE port.
ge_stat_rx_frms	The number of frames received on the GbE port.
ge_stat_rx_octets	The number of octets received on the GbE port.
ge_stat_rx_ucast_frms	The number of unicast frames received on the GbE port.
ge_stat_rx_mcast_frms	The number of multicast frames received on the GbE port.
ge_stat_rx_bcast_frms	The number of broadcast frames received on the GbE port.
ge_stat_rx_vlan_frms	The number of VLAN frames received on the GbE port.
ge_stat_rx_pause_frms	The number of pause frames received on the GbE port.
ge_err_carrier	The number of times the GbE port lost carrier sense.
ge_err_length	The number of times an invalid length error was observed on the GbE port.
ge_err_crc	The number of CRC Errors received on the GbE port.
ge_err_abort	The number of frames aborted on the GbE port.
ge_err_overrun	The number of overruns observed on the GbE port.
ge_err_fifo_ovf	The number of times an overflow of the first in first out (FIFO) queue was observed on the GbE port.
ip_err_hdr_cksum	The number of checksum errors observed on the GbE port.
ip_err_tcp_data_chksum	The number of IP TCP data checksum errors observed on the GbE port.

The following command output fields are specific to Ethernet ports.

eth_rx_good	The number of Ethernet good packets received.
eth_rx_64	The number of 64 byte Ethernet packets received.
eth_rx_65_127	The number of 65 to 127 bytes Ethernet packets received.
eth_rx_128_255	The number of 128 to 255 bytes Ethernet packets received.
eth_rx_256_511	The number of 256 to 511 bytes Ethernet packets received.
eth_rx_512_1023	The number of 512 to 1023 bytes Ethernet packets received.
eth_rx_1024_1518	The number of 1024 to 1518 bytes Ethernet packets received.
eth_rx_1518_plus	The number of 1518 and greater bytes Ethernet packets received.
eth_tx_64	The number of 64 byte Ethernet packets transmitted.
eth_tx_65_127	The number of 65 to 127 bytes Ethernet packets transmitted.
eth_tx_128_255	The number of 128 to 255 bytes Ethernet packets transmitted.
eth_tx_256_511	The number of 256 to 511 bytes Ethernet packets transmitted.
eth_tx_512_1023	The number of 512 to 1023 bytes Ethernet packets transmitted.
eth_tx_1024_1518	The number of 1024 to 1518 bytes Ethernet packets transmitted.
eth_tx_1518_plus	The number of 1518 and greater bytes Ethernet packets transmitted.
eth_rx_runt	The number of Ethernet Runt packets received.
eth_rx_runt_bad_crc	The number of Runt CRC errors received on the Ethernet.
eth_rx_bad_term	The number of Ethernet bad term received.
eth_rx_crc_align	The number of Ethernet CRC align received.
eth_rx_oversized	The number of Ethernet oversized received.
eth_rx_sym_er	The number of Ethernet sym error received.

eth_rx_ifg_violated	The number of Ethernet IFG violated received.
eth_rx_stmp_crc_fail	The number of Ethernet stamp CRC fail error received.
fce_tx_drop_cnt	The number of Ethernet drop count transmitted.
eth_tx_pause_pkts	The number of Ethernet pause/PFC packets transmitted.
eth_rx_pause_pkts	The number of Ethernet pause/PFC packets received.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

This command is not supported on FCoE ports.

Operands

This command has the following operands:

<*slot*>	For bladed systems only, specifies the slot number of the port to be displayed, followed by a slash (/).
[ge]<*port*>	Displays statistics for a single port identified by the port number, relative to its slot on bladed systems. Specify the optional **ge** option to display the GbE port hardware statistics. Port ranges are not supported with this command. Use **switchShow** for a listing of valid ports.
-i <*index1*> [<*index2*>]	Displays statistics for a single port or for a list of ports identified by port index numbers. You may specify multiple indexes separated by a space, for example, **-i** 33 47 65 73.
-i <*index_range1*> [<*index_range2*>]	Displays statistics for a range of ports or a list of range of ports identified by port index numbers. You may specify multiple range of indexes indexes separated by a space, for example, **-i** 33-47 65-73.
-f	Ignores nonexisting ports. This operand is valid only with the **-i** option.
-x <*hex1*> [<*hex2*>]	Specifies a port or a list of ports separated by a space identified by port index numbers in hexadecimal format. For example, -x 21 3c.
-x <*hex_range1*> [<*hex_range2*>]	Specifies range of ports or list of range of ports separated by a space identified by port index numbers in hexadecimal format, for example, -x 21-26 28-3c.
-slot <*slot1*> [<*slot2*>]	Displays statistics for all ports on a slot or a list of slots, for example, **-s** 3. You may specify multiple slots separated by a space, for example, **-s** 3 5 8 10.
-slot <*slot_range1*> [<*slot_range2*>]	Displays statistics for all ports on a slot range or on a list of range of slots, for example, **-s** 3-5. You may specify multiple slot ranges separated by a space, for example, **-s** 3-5 8-10.
ge	Displays the GbE port statistics.
-h	Displays the command usage.

Examples

To display the basic set of statistics for port 1/13 on a 16G-capable platform:

```
switch:admin> portstatsshow 11
stat_wtx                1974                4-byte words transmitted
stat_wrx                1974                4-byte words received
stat_ftx                8                   Frames transmitted
stat_frx                8                   Frames received
stat_c2_frx             0                   Class 2 frames received
stat_c3_frx             0                   Class 3 frames received
stat_lc_rx              4                   Link control frames received
stat_mc_rx              0                   Multicast frames received
stat_mc_to              0                   Multicast timeouts
stat_mc_tx              0                   Multicast frames transmitted
tim_txcrd_z            227                  Time TX Credit Zero (2.5Us ticks)
tim_txcrd_z_vc  0- 3:  227         0           0           0
```

```
tim_txcrd_z_vc  4- 7:  0           0           0           0
tim_txcrd_z_vc  8-11:  0           0           0           0
tim_txcrd_z_vc 12-15:  0           0           0           0
tim_txcrd_z_vc 16-19:  0           0           0           0
tim_txcrd_z_vc 20-23:  0           0           0           0
tim_txcrd_z_vc 24-27:  0           0           0           0
tim_txcrd_z_vc 28-31:  0           0           0           0
lat_tot_pkt_vc  0- 3:  1           1           1           1
lat_tot_pkt_vc  4- 7:  1           1           1           1
lat_tot_pkt_vc  8-11:  1           1           1           1
lat_tot_pkt_vc 12-15:  1           1           1           1
lat_tot_pkt_vc 16-19:  1           1           1           1
lat_tot_pkt_vc 20-23:  1           1           1           1
lat_tot_pkt_vc 24-27:  1           1           1           1
lat_tot_pkt_vc 28-31:  1           1           1           1
lat_hi_time_vc  0- 3:  0           0           0           0
lat_hi_time_vc  4- 7:  0           0           0           0
lat_hi_time_vc  8-11:  0           0           0           0
lat_hi_time_vc 12-15:  0           0           0           0
lat_hi_time_vc 16-19:  0           0           0           0
lat_hi_time_vc 20-23:  0           0           0           0
lat_hi_time_vc 24-27:  0           0           0           0
lat_hi_time_vc 28-31:  0           0           0           0
lat_lo_time_vc  0- 3:  1           1           1           1
lat_lo_time_vc  4- 7:  1           1           1           1
lat_lo_time_vc  8-11:  1           1           1           1
lat_lo_time_vc 12-15:  1           1           1           1
lat_lo_time_vc 16-19:  1           1           1           1
lat_lo_time_vc 20-23:  1           1           1           1
lat_lo_time_vc 24-27:  1           1           1           1
lat_lo_time_vc 28-31:  1           1           1           1
max_latency_vc  0- 3:  1           1           1           1
max_latency_vc  4- 7:  1           1           1           1
max_latency_vc  8-11:  1           1           1           1
max_latency_vc 12-15:  1           1           1           1
max_latency_vc 16-19:  1           1           1           1
max_latency_vc 20-23:  1           1           1           1
max_latency_vc 24-27:  1           1           1           1
max_latency_vc 28-31:  1           1           1           1
er_enc_in               0                   Encoding errors inside of frames
er_crc                  0                   Frames with CRC errors
er_trunc                0                   Frames shorter than minimum
er_toolong              0                   Frames longer than maximum
er_bad_eof              0                   Frames with bad end-of-frame
er_enc_out              0                   Encoding error outside of frames
er_bad_os               0                   Invalid ordered set
er_pcs_blk              0                   PCS block errors
er_rx_c3_timeout        0                   Class 3 receive frames discarded due to timeout
er_tx_c3_timeout        0                   Class 3 transmit frames discarded due to timeout
er_unroutable           0                   Frames that are unroutable
er_unreachable          0                   Frame with unreachable destination
er_other_discard        0                   Other discards
er_type1_miss           0                   frames with FTB type 1 miss
```

```
er_type2_miss           0                   frames with FTB type 2 miss
er_type6_miss           0                   frames with FTB type 6 miss
er_zone_miss            0                   frames with hard zoning miss
er_lun_zone_miss        0                   frames with LUN zoning miss
er_crc_good_eof         0                   Crc error with good eof
er_inv_arb              0                   Invalid ARB
er_single_credit_loss   0                   Single vcrdy/frame loss on link
er_multi_credit_loss    0                   Multiple vcrdy/frame loss on link
other_credit_loss       0                   Link timeout/complete credit loss
phy_stats_clear_ts      11-23-2022 GMT Wed 17:33:29     Timestamp of phy_port stats clear
lgc_stats_clear_ts      11-23-2022 GMT Wed 17:33:29     Timestamp of lgc_port stats clear
fec_corrected_rate      0                   FEC Corrected blocks per second
```

To display the basic set of statistics using port index numbers:

```
switch:admin> portstatsshow -i 13
switch:admin> portstatsshow -i 13-23
switch:admin> portstatsshow -i 4-6 22-30
```

To display the basic set of statistics using slot numbers:

```
switch:admin> portstatsshow -s 3-5
switch:admin> portstatsshow -s 3-5 10-13
```

To display GbE port statistics for GbE1 on the Brocade 7810:

```
switch:admin> portstatsshow ge2
ge_stat_tx_frms        1429458584        GE transmitted frames
ge_stat_tx_octets      1881856819593    GE transmitted octets
ge_stat_tx_ucast_frms  1429437880        GE transmitted unicast frames
ge_stat_tx_mcast_frms  0                GE transmitted multicast frames
ge_stat_tx_bcast_frms  20701            GE transmitted broadcast frames
ge_stat_tx_vlan_frms   1429437814        GE transmitted vlan frames
ge_stat_tx_pause_frms  0                GE transmitted pause frames
ge_stat_rx_frms        1415001914        GE received frames
ge_stat_rx_octets      1881782890530    GE received octets
ge_stat_rx_ucast_frms  1405721394        GE received unicast frames
ge_stat_rx_mcast_frms  0                GE received multicast frames
ge_stat_rx_bcast_frms  3076440            GE received broadcast frames
ge_stat_rx_vlan_frms   1414691706        GE received vlan frames
ge_stat_rx_pause_frms  0                GE received pause frames
ge_err_crc             0                GE CRC Errors
ge_err_carrier         0                GE lost carrier sense
ge_err_jabber          0                GE jabbers

ge_stat_tx_octets               1881856819593    GE  transmitted octets
ge_stat_tx_pkts64octets         163317426        GE  transmitted 64byte octets
ge_stat_tx_pkts65to127octets    31202660        GE  transmitted 65to127byte octets
ge_stat_tx_pkts128to255octets   8282126            GE  transmitted 128to255byte octets
ge_stat_tx_pkts256to511octets   111331            GE  transmitted 256to511byte octets
ge_stat_tx_pkts512to1023octets  171908            GE  transmitted 512to1023byte octets
ge_stat_tx_pkts1024to1518octets 519163            GE  transmitted 1024to1518byte octets
ge_stat_tx_pkts1519to2047octets 1225853973        GE  transmitted 1519to2047byte octets
ge_stat_tx_pkts2048to4095octets 0                GE  transmitted 2048to4095byte octets
ge_stat_tx_pkts4096to9216octets 0                GE  transmitted 4096to9216byte octets
```

```
ge_stat_rx_octets               1881782890530    GE  received    octets
ge_stat_rx_pkts64octets         310208            GE  received    64byte octets octets
ge_stat_rx_pkts65to127octets    180723761        GE  received    65to127byte octets
ge_stat_rx_pkts128to255octets   6236238            GE  received    128to255byte octets
ge_stat_rx_pkts256to511octets   1281148            GE  received    256to511byte octets
ge_stat_rx_pkts512to1023octets  179                GE  received    512to1023byte octets
ge_stat_rx_pkts1024to1518octets 1570            GE  received    1024to1518byte octets
ge_stat_rx_pkts1519to2047octets 1226448810        GE  received    1519to2047byte octets
ge_stat_rx_pkts2048to4095octets 0                GE  received    2048to4095byte octets
ge_stat_rx_pkts4096to9216octets 0                GE  received    4096to9216byte octets
ge_stat_rx_pfc_control_frame    0                GE  Rx PFC control frame
ge_stat_tx_pfc_control_frame    0                GE  Tx PFC control frame
ge_stat_rx_dvlan_tag_frame      0                GE  Rx Double VLAN tag frame
ge_stat_tx_dvlan_tag_frame      0                GE  Tx Double VLAN tag frame
```

To display the basic set of statistics using port index number specified in hexadecimal format:

```
switch:admin> portstatsshow -x 11f
port:  287
=========
stat_wtx              422         4-byte words transmitted
stat_wrx              560         4-byte words received
stat_ftx              16          Frames transmitted
stat_frx              16          Frames received
(output is truncated)
```

See Also

portErrShow, portShow

portTrunkArea

Assigns or removes a trunk area (TA) from a port or port trunk group; displays masterless F_Port trunking configuration.

Synopsis

```
porttrunkarea --enable [<slot>/]<port>[-<port>] -index <port_index>
porttrunkarea --disable [<slot>/]<port>[-<port>]
porttrunkarea --disable all
porttrunkarea --show {disabled | enabled | trunk | all}
porttrunkarea --show [<slot>/]<port>[-<port>]
```

Description

Use this command to assign a static trunk area (TA) on a port or port trunk group, to remove a TA from a port or group of ports in a trunk, and to display masterless F_Port trunking information. The TA is identified by the port index number displayed in the output of the **switchShow** command.

Masterless F_Port trunking interoperates between the Access Gateway (AG) and Condor-based platforms. It is designed to (1) prevent reassignments of virtual addresses when F_Ports come back online after going offline and (2) to increase N_Port bandwidth.

Assigning a TA to a port or trunk group enables F_Port masterless trunking on that port or trunk group. When a TA is assigned to a port or trunk group, the ports immediately acquires the TA as the area of their process IDs (PID). Likewise, when a TA is removed from a port or trunk group, the ports reverts to the default area as their PID.

Use the **--show** option to obtain configuration details including the following information.

Slot	On enterprise-class platforms, displays the slot number.
Port	Displays the port number.
Type	Displays online masterless trunked F_Port or EX_Port if applicable. Otherwise displays --.
State	Displays Trunk Master, Slave, or --.
Master	Displays the master port of the trunk group.
TA	On standalone switches, displays the user assigned TA number.
DA	On standalone switches, displays the default port area. The default area can be a port swapped area.
TI	On enterprise-class platforms, displays the user-assigned TA port index.
DI	On enterprise-class platforms, displays the default port index. The default port index can be a port swapped area.

The **--show trunk** option displays the following information:

Trunk Index	Displays the trunk index.
ptA->ptB	**ptA** indicates the local user port; **ptB** indicates the remote user port.
sp	Port speed in Gb/s.
Bandwidth	The bandwidth (Rx, Tx, and the combined total for Tx+Rx) of the trunk group. Values are displayed as either bits per second (b/s), kilobits per second (Kb/s), megabits per second (Mb/s), or gigabits per second (Gb/s), rounded down to the next integer.
Throughput	Displays the throughput (Rx, Tx, and the combined total for Tx+Rx) of the trunk group. Results are displayed for the previous second. Values are displayed as either bits per second (b/s), kilobits per second (kb/s), megabits per second (Mb/s), or gigabits per second (Gb/s), rounded down to the next integer.
%	Displays the percentage of link utilization (Rx, Tx, and the combined total for Tx+Rx) . Even when the link utilization is 100% , the throughput value will be lesser than the bandwidth value, due to the 8b/10b encoding and the control words transmitted. For example, the throughput for an 8Gb/s link at 100% utilization would be approximately 6.8Gb/s.
deskew	The time difference for traffic to travel over each F_Port trunk as compared to the F_Port trunk with the shortest travel time in the group. The value is expressed in nanoseconds divided by 10. For Brocade Gen 6 platform, the minimum deskew value is from 4 through 14 and for Brocade Gen 7 platform the minimum deskew value is from 1 through 10.
Master	Identifies the master port of the trunk group.

Execution of this command is subject to the following restrictions:

- Only F_Port trunk ports are allowed to be part of a TA. E/F/L/EX_Port will be persistently disabled. Private L_Ports remain online but will not run traffic.
- Only one trunk master per TA is permitted. The second trunk master is persistently disabled.
- The entire TA trunk group shares the same port WWN.
- The port must be disabled before a TA can be assigned to a port or removed from a trunk group.
- There is one port whose Default Area is the same as its Trunk Area. You cannot remove that port from the trunk group unless The TA is removed from all ports in the trunk group.
- You must enable trunking on all ports to be included in a TA before you can create a TA. Use **portCfgTrunkPort** or **switchCfgTrunk** to enable Trunking on a port or on all ports of a switch.
- N_Port ID Virtualization (NPIV) support is provided for up to 255 devices per TA. Note that this decreases the number of devices available per port, because all participating ports share the same area.
- F_Port trunking is only supported in CORE PID formats.
- Certain port configuration features are not supported within a TA and the command fails if one of these features is enabled on a port within the trunk group. These features include FastWrite, Port Swapping, Port Mirroring, Long Distance, Interchassis links (ICL), and FICON.
- Ports included in a TA share the same port index. The original port index may be removed in the process. This means that D, I zones referring to these indices are no longer part of the switch. For details and workarounds, refer to the *Brocade Fabric OS Administration Guide*.
- Device Connection Control (DCC) Policy must be removed from ports prior to creating a TA. You can re-enable DCC policy after creating the TA.
- You cannot assign a TA while AG mode is enabled.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Masterless F_Port trunking requires an ISL Trunking license.

Operands

This command supports the following operands:

<slot>	On enterprise-class platforms, specifies the slot number, followed by a slash (/).
<port>*[-<port>]	Specifies a single port or a port range, relative to its slot on bladed systems. For example, 9/8-15 on an enterprise-class platform indicates slot 9, ports 8 to 15. Port ranges should fall in the octet (8 port) trunk range starting from port 0 on a switch or blade.
--enable	Creates a TA assigned to the specified ports. Use this option with one of the following operands:
	-area *<area_number>* On single processor switches, specifies the port area number for the static TA to be created. The TA must fall within the 8 port trunk group starting from port 0 on a switch or blade. The TA must be a default area of an existing port in a given port group. However, you may add ports to the trunk group even when a trunk group has already been assigned by using the same area of the octet trunk group. Use **switchShow** for a list of valid port area or index numbers.
	-index *<port_index>* On enterprise-class platforms, specifies the port index for the static TA to be created. The port index must fall within the 8 port trunk group starting from port 0 on a switch or blade. The TA must be a default index of an existing port in a given port group. However, you may add ports to the trunk group even when a trunk group has already been assigned by using the same index of the octet trunk group. Use **switchShow** for a list of valid port indexes.
--disable	Removes specified ports from a TA. If a port with the same default area as the TA assigned for the trunk group is removed, all ports in the trunk group must be explicitly specified for removal.

all	Optionally removes all TA assigned ports on the switch. This option disables masterless F_Port trunking on all ports. All TA assigned ports must be disabled for this option to succeed.

--show Displays masterless F_Port trunking information. When using this option, specify one of the following operands:

[<*slot*>/]<*port*>[-<*port*>]	Displays configuration for a specified port or port range.
trunk	Displays configuration details for the port trunk group, including user port, neighboring user port, and master port properties.
enabled	Displays configuration details for all ports included in a user assigned TA (all ports on which masterless F_Port trunking is enabled).
disabled	Displays configuration details for all ports not included in a user assigned TA (all ports on which masterless F_Port trunking is not enabled).
all	Displays configuration details for all ports on a switch.

Examples

To enable masterless F_Port trunking on a standalone switch:

1. Disable ports 10-11 by executing **portdisable** *port* for each port to be included in the TA.
2. Enable Trunk Area for ports 10-11 with area number 37:

```
switch:admin> porttrunkarea --enable 10-11 -index 11
2009/05/15-12:43:10, [SWCH-1012], 60, FID 128, INFO,
sw0, Trunk Area (11) has been enabled for one or more ports
Trunk area 11 enabled for ports 10 and 11.
```

3. Re-enable ports 10-11 by executing **portenable** *port* for each port in the TA.
4. Show switch/port information:

```
switch:admin> switchshow
[...]
Index Port Address Media Speed State     Proto
=============================================
[...]
11  10   030b00   id    N4   No_Light    FC
11  11   030b00   id    N4   No_Light    FC
[...]
```

5. Display TA-enabled port configuration:

```
switch:admin> porttrunkarea --show enabled

Port  Type   State   Master   TA  DA
-------------------------------------
 10   --      --      --      11  10
 11   --      --      --      11  11
```

To disable masterless F_Port trunking on ports 10-11:

```
switch:admin> porttrunkarea --disable 10-11
ERROR: port 11 has to be disabled
```

Disable each port prior to removing ports from the TA. Then reissue the command:

```
switch:admin> porttrunkarea --disable 10-11
Trunk area 11 disabled for ports 10 and 11.
```

To display trunk details for a user assigned TA 25 that includes ports 24-25:

```
switch:admin> porttrunkarea --show trunk
Trunk Index  25:  25->0   sp:  8.000G \
   bw: 16.000G deskew 15 MASTER
  Tx: Bandwidth 16.00Gbps, Throughput 1.63Gbps (11.84%)
  Rx: Bandwidth 16.00Gbps, Throughput 1.62Gbps (11.76%)
  Tx+Rx: Bandwidth 32.00Gbps, Throughput 3.24Gbps (11.80%)
             24->1   sp:  8.000G bw:  8.000G deskew 15
  Tx: Bandwidth 16.00Gbps, Throughput 1.63Gbps (11.84%)
  Rx: Bandwidth 16.00Gbps, Throughput 1.62Gbps (11.76%)
  Tx+Rx: Bandwidth 32.00Gbps, Throughput 3.24Gbps (11.80%)
```

To configure a TA on an enterprise-class platform including ports 13 and 14 on slot 10 with port index of 125:

1. Disable the ports to be included in the TA.
2. Enable TA for ports 13 and 14 on slot 10 with port index of 125:
```
 switch:admin> porttrunkarea --enable 10/13-14 -index 125
Trunk index 125 enabled for ports 10/13 and 10/14.
```
3. Show the TA port configuration (ports still disabled):
```
switch:admin> porttrunkarea --show enabled
Slot  Port  Type   State  Master   TI  DI
-------------------------------------------
10    13   --      --     --      125 125
10    14   --      --     --      125 126
-------------------------------------------
```
4. Enable ports 13 and 14:
```
switch:admin> portenable 10/13
switch:admin> portenable 10/14
```
5. Show the TA port configuration after enabling the ports:
```
switch:admin> porttrunkarea --show enabled
Slot  Port  Type   State  Master   TI  DI
-------------------------------------------
10    13   F-port  Master  10/13  125 125
10    14   F-port  Slave   10/13  125 126
```

See Also

portCfgTrunkPort, portCfgShow, portShow, switchCfgTrunk, switchShow, trunkShow

portZoneShow

Displays the enforced zone type of the F_Ports and FL_Ports of a switch.

Synopsis

portzoneshow

Description

Use this command to display the enforced zone type of the F_Ports and FL_Ports of a switch.

Output shows virtual port number (decimal), physical port number (decimal), online status, and if online, port type. If the current zone configuration has been disabled by **cfgDisable**, the fabric is in non-zoning mode, in which all devices

see each other. When default zoning is enabled with "No Access" mode, "No Effective configuration: (No Access)" is displayed.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the zone membership information of ports:

```
switch:user> portzoneshow
[OUTPUT TRUNCATED]
PORT: 160 (160)   Offline
PORT: 161 (161)   Offline
PORT: 162 (162)   Offline
PORT: 163 (163)   Offline
PORT: 164 (164)   Offline
PORT: 165 (165)   Offline
PORT: 166 (166)   Offline
PORT: 167 (167)   Offline
PORT: 168 (168)   FL-Port  Enforcement: HARD WWN \
    defaultHard: 0  IFID: 0x4332000a
PORT: 169 (169)   Offline
PORT: 170 (170)   Offline
PORT: 171 (171)   Offline
PORT: 172 (172)   Offline
PORT: 173 (173)   Offline
PORT: 174 (174)   Offline
PORT: 175 (175)   Offline
PORT: 176 (176)   F-Port  Enforcement: HARD WWN   \
   defaultHard: 0  IFID: 0x4342002a
PORT: 177 (177)   Offline
PORT: 178 (178)   Offline
PORT: 179 (179)   Offline
PORT: 180 (180)   Offline
(output truncated)
```

See Also

cfgShow, switchShow

powerOffListSet

Sets the order in which slots are powered off.

Synopsis

powerofflistset

Description

Use this command to modify the order in which slots are powered off. This command displays the current order, and then prompts you interactively to confirm or modify the power-off position for each slot.

Whenever a power supply goes out of service or a field-replaceable unit (FRU) is inserted, the system's available power is compared to the system's required power to determine if there is enough power to operate. If less than the required power is available, the power-off list is processed, until there is sufficient power for the system to operate.

If the system's power supply drops abruptly to insufficient levels, the power-off list cannot be processed. The sudden lack of power causes the CP board processors to cease executing the firmware.

For example, if only one power supply is available to power a fully loaded system and the power supply is removed from the chassis, all system operations terminate immediately, and the power-off list cannot be processed. However, if the system is running on two power supplies (this is not recommended) and one goes into a predicted fail state (in which the power supply is still supplying power), the power-off list is processed as described.

The power-off list does not affect the order, in which slots are powered on. On power-on or when an additional power supply is added, slots are processed sequentially, starting at slot 1.

Notes

CP blade slots and Core blade slots are not included in the power-off list.

Command output may vary depending on the hardware platform.

Some FRUs may use significant power, but cannot be powered off by the software. For example a missing blower FRU may change the power computation enough to affect how many slot blades can be powered up.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To modify the power-off list order on a 32G-capable platform:

```
switch:admin> powerofflistset

Slot    Current POL
-------------------
 12        1st
 11        2nd
 10        3rd
  9        4th
  6        5th
  5        6th
  4        7th
  3        8th

1st slot to be power off: (3..12) [12] 3
2nd slot to be power off: (4..12) [11] 4
3rd slot to be power off: (5..12) [10] 5
4th slot to be power off: (6..12) [9] 6
5th slot to be power off: (9..12) [9] 9
```

```
6th slot to be power off: (10..12) [10] 10
7th slot to be power off: (11..12) [11] 11
8th slot to be power off: (12..12) [12] 12

Old POL    New POL    Power Off Order
-------------------------------------
  12          3            1st
  11          4            2nd
  10          5            3rd
   9          6            4th
   6          9            5th
   5         10            6th
   4         11            7th
   3         12            8th

Proceed to change the POL order? (yes, y, no, n): [no] y
```

To modify the power-off list order on a 64G-capable platform:

```
switch:admin> powerofflistset
Slot    Current POL
-------------------
 12        1st
 11        2nd
 10        3rd
  9        4th
  6        5th
  5        6th
  4        7th
  3        8th

1st slot to be power off: (3..12) [12]
2nd slot to be power off: (3..11) [11]
3rd slot to be power off: (3..10) [10]
4th slot to be power off: (3..9) [9]
5th slot to be power off: (3..6) [6]
6th slot to be power off: (3..5) [5]
7th slot to be power off: (3..4) [4]
8th slot to be power off: (3..3) [3]

No change. PowerOffListSet cancelled.
```

See Also

chassisShow, powerOffListShow, psShow, slotPowerOff, slotPowerOn, slotShow

powerOffListShow

Displays the order in which slots are powered off.

Synopsis

powerofflistshow

Description

Use this command to display the order in which the physical slots are powered off.

Whenever a power supply goes out of service or a field-replaceable unit (FRU) is inserted, the system's available power is compared to the system's required power to determine if there is enough power to operate. If less than the required power is available, the power-off list is processed, until there is sufficient power for the system to operate.

The following rules apply when the power-off list is processed:

- If a power supply starts predicting failure, so that there will not be enough power for all blades, the powered-up port blades are powered down in the order in which they appear on the power-off list.
- If you replace a failed power supply, or you remedy an existing power-supply shortage by inserting a new power supply, the previously powered-down blades are powered up in the reverse order of the power-on list. Note that this is different from the order in which the blades in the system usually come up. The original powering up of blades does not consult the power-off-list; it simply proceeds from the lower-numbered slots to the higher-numbered slots.
- If you add a new blade to the chassis, and there is not enough power available to operate the additional hardware (because you may only have one power supply) the newly inserted blade will be denied power and the existing powered-on blades stay powered on.
- If the system's power supply drops abruptly to insufficient levels, the power-off list cannot be processed. The sudden lack of power causes the CP board processors to cease executing the firmware. For example, if only two power supplies are available to power a fully loaded chassis that requires at least two power supplies, and one power supply is removed from the chassis, all system operations terminate immediately, and the power-off list cannot be processed. However, if the system is running on two power supplies (this is not recommended in this case) and one goes into a predicted fail state (in which the power supply is still supplying power), the power-off list is processed as described.

Notes

Command output may vary depending on the hardware platform.

Control processor (CP) blades are not included in the power-off list.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the slot power off list order on a 32G-capable platform:

```
switch:admin> powerofflistshow

Slot 12 will be powered off 1st
Slot 11 will be powered off 2nd
Slot 10 will be powered off 3rd
Slot  9 will be powered off 4th
Slot  4 will be powered off 5th
Slot  3 will be powered off 6th
Slot  6 will be powered off 7th
Slot  5 will be powered off 8th
```

To display the slot power off list order on a 64G-capable platform:

```
switch:admin> powerofflistshow
```

```
Slot 12 will be powered off 1st
Slot 11 will be powered off 2nd
Slot 10 will be powered off 3rd
Slot  9 will be powered off 4th
Slot  6 will be powered off 5th
Slot  5 will be powered off 6th
Slot  4 will be powered off 7th
Slot  3 will be powered off 8th
```

See Also

chassisShow, powerOffListSet, psShow, slotPowerOff, slotPowerOn, slotShow

psShow

Displays power supply status.

Synopsis

```
psshow
psshow -v
psshow --help
```

Description

Use this command to display the current status of the switch power supplies.

The status of each supply is displayed as:

OK	Power supply functioning correctly.
absent	Power supply not present.
unknown	Unknown power supply unit installed.
predicting failure	Power supply is present but predicting failure.
faulty	Power supply present but faulty (no power cable, power switch turned off, fuse blown, or other internal error).

For certain switch models, the OEM serial ID data displays after each power supply status line.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

-v	Displays verbose information such as the current firmware version of the power supply unit's controllers, voltage input and output, current input and output, power input and output, fans speed, temperature, etc. for each of the power supply unit (PSU). Note that the PSU with faulty status is limited to display only legacy output information. The display highlights the PSU controller firmware information with an annotation recommending to upgrade to the latest firmware version using **psUtil** command if you use an older firmware version.
--help	Displays the command usage.

Examples

To view the status of the power supplies:

```
switch:admin> psshow

Power Supply #1 is faulty Temperature is 0.00 C
V10M32,   DUC2M32M2GL  ,23-0000161-01,A0,DELTA,ECD16020042  ,00,DUC2M32M
Power Supply #2 is OK Temperature is 28.00 C
V10M12,   DUC2M12M1H4  ,23-0000161-01,A0,DELTA,ECD16020042  ,00,DUC2M12M
```

To view the current firmware version of the power supplies:

```
switch:admin> psshow -v

Power Supply #1 is OK Temperature is 30.00 C
V10M12,   DUC2M12M1DS  ,23-0000161-01,A0,DELTA,ECD16020042  ,00,DUC2M12M
Primary FW Version: 3.4
Sec LLC FW Version: 3.2
Sec COM FW Version: 3.1
Voltage input   : 211.00 V   Voltage output: 49.33 V
Current input   : 1.75 A    Current output: 6.75 A
Power input    : 376.00 W   Power output: 332.00 W
Fan1 Speed    : 8576.00 RPM  Fan2 Speed: 8896.00 RPM
Inlet Air Temp: 30 (C), 86 (F)
PFC Heat Sink: 28 (C), 82 (F)
LLC Heat Sink: 28 (C), 82 (F)

Power Supply #2 is OK Temperature is 28.00 C
V10M12,   DUC2M12M1F3  ,23-0000161-01,A0,DELTA,ECD16020042  ,00,DUC2M12M
Primary FW Version:   3.0 (Down Rev. Please Upgrade to Ver 3.1)
Sec LLC FW Version:   3.0
Sec COM FW Version:   3.0 (Down Rev. Please Upgrade to Ver 3.2)
Fan1 Speed  : 8768.00 RPM  Fan2 Speed: 8512.00 RPM
Inlet Air Temp: 28 (C), 82 (F)
PFC Heat Sink: 26 (C), 78 (F)
LLC Heat Sink: 28 (C), 82 (F)

Power Supply #3 is faulty Temperature is 0.00 C
V10M32,   DUC2M32M2GL  ,23-0000161-01,A0,DELTA,ECD16020042  ,00,DUC2M32M
```

See Also

chassisShow, fanShow, psUtil

psUtil

Upgrades the microcontroller firmware in the Brocade X6 and X7 power supplies.

Synopsis

psutil {**--version** | **-v**} {**--ps** | **-p**} <*number*>
psutil {**--upgrade** | **-u**} {**--ps** | **-p**} <*number*>
psutil {**--help** | **-h**}

Description

Use this command to update the firmware for each of the three microcontrollers in the power supplies used in the Brocade X6 and X7 Directors. The three microcontrollers are:

- **PRI**: Primary Controller. Provides digital power factor correction and hold-up time extension.
- **LLC**: Digital LLC (inductor-inductor-capacitor) filter controller.
- **COM**: Communication controller. Provides I2C connectivity for the other power supply components.

The command must only be run on the systems that have power redundancy as the DC output of the power supply will be turned off during the upgrade. During this time there will be one or more EM log messages indicating the power supply is faulted.

The power redundancy is defined as:

- 2 power supplies for Brocade X6-4 Director and Brocade X7-4 Director
- 3 power supplies for Brocade X6-8 Director and Brocade X7-8 Director

The microcontrollers will automatically restart with the new images and re-enable the DC output when the image download is completed successfully. If the image download does not complete successfully, the power supply will remain in upgrade mode and the DC output remains disabled. To recover the power supply, repeat the **psutil** command.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

The total download time for all three images is approximately 8 minutes.

Operands

This command has the following operands:

{--ps | -p} <*number*>	Specifies the power supply number.
--version | -v	Displays the versions of the microcontroller images in the specified power supply along with the latest versions of the firmware images included in this FOS distribution.
--upgrade | -u	Upgrades all three microcontroller devices in the specified power supply if their firmware versions are lower than the versions of the firmware images included in this FOS distribution.
--help | -h	Displays the command usage.

Examples

To get the current and latest firmware versions:

```
switch:admin> psutil --version --ps 1
Firmware versions:   PRI   LLC  COM
Programmed:          3.0   3.0  3.0
Newest:              3.2   3.2  3.1
```

To upgrade the microcontroller devices using the images provided with the FOS distribution:

```
switch:admin> psutil --upgrade --ps 1
Brocade PartNum : 23-0000161-01
Power Supply unit 1 FW upgrade starts
Firmware Versions: 3.3  3.0  3.0
Voltage output status: 0x80
Turn off output voltage. cmd: 0x1 data: 0x0
Voltage output status: 0x0
```

```
Controller ID: 0x30 expected boot status: 0xe
File: /fabos/factory/Brocade_GEN_6_ECD16020042_Com_Ver_3_1.bin size: 56320 pages: 220
expected CRC: 0xda9c actual CRC: 0xda9c
Controller COM: Upgrade needed: Current version 30  latest version 31
Get boot flag cmd: 0xf1 status: 0x0
Voltage output status: 0x0
Sending unlock cmd: 0xf0 0xc 0x30
Get boot flag cmd: 0xf1 status: 0xa
Set boot flag cmd: 0xf1 0x30 0x1
Get boot flag cmd: 0xf1 status: 0xe
Sending unlock cmd: 0xf0 0xc 0x30
Download firmware image
...................................................................................
Sending CRC16. cmd: 0xf4 0x3 0x30 0x9c 0xda
Reset boot flag. cmd: 0xf1 0x30 0x0
Get boot flag. cmd: 0xf1 status: 0x0
FW Version: 3.3  3.0  3.1

Controller ID: 0x20 expected boot status: 0xe
File: /fabos/factory/Brocade_GEN_6_ECD16020042_LLC_Ver_3_2.bin size: 12288 pages: 48
expected CRC: 0x5cab actual CRC: 0x5cab
Controller LLC: Upgrade needed: Current version 30  latest version 32
Get boot flag cmd: 0xf1 status: 0x0
Voltage output status: 0x80
Sending unlock cmd: 0xf0 0xc 0x20
Get boot flag cmd: 0xf1 status: 0x0
Set boot flag cmd: 0xf1 0x20 0x1
Get boot flag cmd: 0xf1 status: 0x4e
Sending unlock cmd: 0xf0 0xc 0x20
Download firmware image
...............................................
Sending CRC16. cmd: 0xf4 0x3 0x20 0xab 0x5c
Reset boot flag. cmd: 0xf1 0x20 0x0
Get boot flag. cmd: 0xf1 status: 0x0
FW Version: 3.3  3.2  3.1

Controller ID: 0x10 expected boot status: 0xd
File: /fabos/factory/Brocade_GEN_6_ECD16020042_Pri_Ver_3_4.bin size: 15360 pages: 60
expected CRC: 0x6772 actual CRC: 0x0648
Controller PRI: Upgrade needed: Current version 33  latest version 34
Get boot flag cmd: 0xf1 status: 0x0
Voltage output status: 0x80
Sending unlock cmd: 0xf0 0xc 0x10
Get boot flag cmd: 0xf1 status: 0x0
Set boot flag cmd: 0xf1 0x10 0x1
Get boot flag cmd: 0xf1 status: 0x4d
Sending unlock cmd: 0xf0 0xc 0x10
Download firmware image
.............................................................
Sending CRC16. cmd: 0xf4 0x3 0x10 0x48 0x6
Reset boot flag. cmd: 0xf1 0x10 0x0
Get boot flag. cmd: 0xf1 status: 0x0
```

```
FW Version: 3.4  3.2  3.1
Turn on output voltage. cmd: 0x1 data: 0x80

Power Supply unit 1 FW upgrade completed successfully
```

See Also

psShow

rasAdmin

Configures RASlog message generation.

Synopsis

```
rasadmin --enable {-log <MSG-ID> | -syslog <MSG-ID> |
 -module <MODULE-ID>}
rasadmin --disable {-log <MSG-ID> | -syslog <MSG-ID> |
 -module <MODULE-ID>}
rasadmin --set -log <MSG-ID> -severity <value>
rasadmin --show {-log <MSG-ID> | -severity <MSG-ID> |
 -module <MODULE-ID> | -disabled | -syslog | -all | -alive}
rasadmin --alive -period <hours>
rasadmin --quiet -enable <log_type> [-stime <HH:MM>
 -etime <HH:MM> [-dow <day_of_week>]]
rasadmin --quiet -disable <log_type>
rasadmin --quiet -show
rasadmin --help
```

Description

Use this command to enable or disable RASlog message logging for selected messages or groups of messages (modules), to change the default severity level for a specified message, to display configured RASlog settings, and to enable or disable quiet time. The **-log**, **-module**, and **-severity** configuration and display options apply to external messages (Message ID 1001-4999) and are available to any user with admin privileges.

An INFO RASlog message is generated for every message that is enabled or disabled. In addition, the list of disabled RASlog messages are collected as part of the **supportSave** command

The changes made by this command are persistent across reboots, high availability failover, and firmware downloads.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

This command does not disable messages of type FFDC or AUDIT. When you disable logging for a message that has both AUDIT and LOG attributes, the message will not be logged as a RASlog message, but it will continue to be written to the Audit log.

Operands

This command has the following operands:

--disable	Disables logging for a specified RASlog message or for all messages grouped in a RASlog module.

--enable Enables logging for a specified RASLog message or for all messages grouped in a RASlog module.Message logging is enabled by default. This command re-enables logging of messages that were previously disabled.

One of the following options must be specified when you disable or enable message logging:

- **-log <*MSG-ID*>** Enables or disables logging for the specified message.
- **-log <*MODULE-ID*>** Enables or disables logging for all message included in the specified module.
- **-syslog <*MSG-ID*>** Enables or disables logging for an internal message.

--set -log <*MSG-ID*> Changes the default severity level of the specified message.

- **-severity <*value*>** Specifies a new severity level for the message. Valid values include **INFO**, **WARNING**, **ERROR**, **CRITICAL**, and **DEFAULT**.

--show -disabled Displays all messages that have been disabled.

--show -log <*MSG-ID*> Displays the logging status of the specified message.

--show -module <*MODULE-ID*> Displays the logging status of all messages included in the specified module.

--show -severity <*MSG-ID*> Displays the severity of the specified messages.

--show -all Displays all external RASlog messages, their status (enabled or disabled), their configured severity and their default severity.

--show -syslog Displays the list of internal RASLog messages that are configured to display on the system console and the syslog server.

--show -alive Displays the system keepalive period.

--alive -period Sets system keepalive period. The valid values are from 0 through 24; where 0 disables keepalive period.

--quiet -enable <*log_type*> Enables quiet time for the specified Log type. Valid values for *log_type* are 1 (audit messages), 2 (raslog messages), and 3 (both audit and raslog messages).

The following optional operands are supported with **--quiet**. If start time and end time are not specified, the quiet time is enabled for a duration of forever.

- **-stime <*HH:MM*>** Specifies the start time in HH:MM 24-hour clock format.
- **-etime <*HH:MM*>** Specifies the end time in HH:MM 24-hour clock format.
- **-dow <*day_of_week*>** Specifies the day of the week. You can specify a single day or a list of days separated by comma (1,3,7). Valid values are 1 (Monday), 2 (Tuesday), 3 (Wednesday), 4 (Thursday), 5 (Friday), 6 (Saturday), and 7 (Sunday).

--quiet -disable <*log_type*> Disables quiet time for the specified message type. Valid values for *log_type* are 1 (audit messages), 2 (raslog messages), and 3 (both audit and raslog messages).

--quiet -show Displays the quiet time configuration details for audit and raslog message types.

Examples

To disable logging of a single message:

```
switch:admin> rasadmin --disable -log SULB-1001
2022/11/23-11:26:55 (GMT), [LOG-1005], 66, CHASSIS, INFO, sw0,
Log message SULB-1001 has been disabled.
```

To re-enable logging of a single message that was previously disabled:

```
switch:admin>  rasadmin --enable -log SULB-1001
2022/11/23-11:27:25 (GMT), [LOG-1006], 67, CHASSIS, INFO, sw0,
Log message SULB-1001 has been enabled.
```

To disable logging of all messages that belong to the SULB module:

```
switch:admin> rasadmin --disable -module SULB
2022/11/23-11:28:02 (GMT), [LOG-1007], 68, CHASSIS, INFO, sw0,
Log Module SULB has been disabled.
```

To re-enable logging of all messages that belong to the SULB module:

```
switch:admin> rasadmin --enable -module SULB
2012/07/20-13:28:37, [LOG-1007], 375, SLOT 4 | CHASSIS, INFO, PLUTO_25,
Log Module SULB has been enabled,
```

To change the severity level of a RASlog message:

```
switch:admin> rasadmin --set -log  LOG-1003 -severity WARNING
2020/03/11-07:57:50, [LOG-1011], 7540, CHASSIS, INFO, sw0, \
Log Message LOG-1003 severity has been changed to WARNING.
   Message   Severity
   LOG-1003  : WARNING
```

To display a list of all messages that have been disabled:

```
switch:admin> rasadmin --show -disabled
Message    Status    Default Severity   Current Severity
IPAD-1002  DISABLED  INFO               INFO
IPAD-1003  DISABLED  INFO               INFO
```

To display the status and configuration of messages that belong to the specified module:

```
switch:admin>  rasadmin --show -module RM
Message    Status    Default Severity   Current Severity
RM-1001    ENABLED   INFO               INFO
RM-1023    ENABLED   INFO               INFO
RM-1024    ENABLED   INFO               INFO
RM-1020    ENABLED   INFO               INFO
RM-1021    ENABLED   INFO               INFO
RM-1022    ENABLED   INFO               INFO
```

To display the status and configuration of a specified message.

```
switch:admin>  rasadmin --show -log IPAD-1002
Message    Status    Default Severity   Current Severity
IPAD-1002  DISABLED  INFO               INFO
```

To display the status and configuration for all external messages:

```
switch:admin> rasadmin --show -all
Message    Status    Default Severity   Current Severity
FCIP-1000  ENABLED   CRITICAL           CRITICAL
FCIP-1001  ENABLED   INFO               ERROR
FCIP-1002  ENABLED   INFO               INFO
```

To enable an internal RASlog messages to be sent to syslog (this is done per instruction from support):

```
switch:admin> rasadmin --enable -syslog RAS-5001
2012/07/20-13:49:35, [LOG-1009], 385, SLOT 4 | CHASSIS, INFO, PLUTO_25,
Internal Log message RAS-5001 has been enabled for syslog logging.
```

To disable an internal RASlog messages to be sent to syslog (this is done per instruction from support):

```
switch:admin> rasadmin --disable -syslog RAS-5001
```

```
2012/07/20-13:49:35, [LOG-1010], 385, SLOT 4 | CHASSIS, INFO, PLUTO_25,
Internal Log message RAS-5001 has been disabled for syslog logging.
```

To configure quiet time for audit messages (in this example, the quiet time is enabled for a duration of forever):

```
switch:admin> rasadmin --quiet -enable 1
```

To configure quiet time for audit messages (in this example, the quiet time is automatically enabled at 22:00 daily and turns off on the next day at 02:00):

```
switch:admin> rasadmin --quiet -enable 1 -stime 22:00 -etime 02:00
```

To enable quiet time for raslog messages (in this example, quiet time is automatically enabled on Monday and Wednesday at 07:00 and turns off at 12:00):

```
switch:admin> rasadmin --quiet -enable 2 -stime 07:00 -etime 12:00 -dow 1,3
```

To disable quiet time for raslog messages:

```
switch:admin> rasadmin --quiet -disable 2
```

To display configured quiet time:

```
switch:admin> rasadmin --quiet -show
Type    QuietTime  StartTime  EndTime  DayOfWeek
---------------------------------------------
AUDIT   ON         22:00      02:00    EVERYDAY
RASLOG  ON         07:00      12:00    MON, WED
```

To enable or disable system keepalive period:

```
switch:admin> rasadmin --alive -period 1
System keep alive audit logging configuration  set to 1 hour(s)
switch:admin>  rasadmin --show -alive
System keep alive period: 1
switch:admin>  rasadmin --alive -period 0
System keep alive audit logging configuration  set to 0 hour(s)
switch:admin>  rasadmin --show -alive
System keep alive period: 0
```

See Also

rasMan

rasMan

Displays RASlog message text and documentation.

Synopsis

rasman *message_id*
rasman --help

Description

Use this command to display documentation for a specified RASlog message. The message is specified by its message ID. The command output is identical to the documentation provided in the *Brocade Fabric OS Message Reference Manual*. For each message, the command displays the following information:

MESSAGE Displays the message text.

MESSAGE TYPE	Displays the message type. The message type can be one or more of the following: LOG, FFDC, or AUDIT.
CLASS	A class value is displayed for audit messages only. Supported audit classes include SECURITY, FIRMWARE, FABRIC, LS (logical switch), CLI, MAPS, and RAS.
SEVERITY	Indicates the message severity as one of the following: INFO, ERROR, WARNING, CRITICAL.
PROBABLE CAUSE	Describes what may be causing the message.
RECOMMENDED ACTION	Describes the recommended action.

Notes

This command is available to all supported roles.

This command displays only external messages in the numeric range of 1000-4999.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

message_id	Specifies the message ID in the following format: <module ID>-<message number>. The message ID is case sensitive and should be entered exactly as shown in the RASlog message displayed on the console. For example, ZONE-3018 is a valid message ID, but zone-3018 is not valid.
--help	Displays the command usage.

Examples

To display documentation for a ZONE audit message:

```
switch:admin> rasman ZONE-3009
Log Messages                                        ZONE-3009(7m)

MESSAGE
     ZONE-3009 - Event: <Event Name> Status:  success,
     Info:  <Event Description>

MESSAGE TYPE
     AUDIT

CLASS
     ZONE

SEVERITY
     INFO

PROBABLE CAUSE
     Indicates that the specified zone transaction has
     been successful.

RECOMMENDED ACTION
     Verify that the event was planned. If the event was
     planned, no action is required. If the event was not
     planned, take appropriate action as defined by your
     enterprise security policy.
```

See Also

rasAdmin

reBoot

Reboots the control processor (CP).

Synopsis

```
reboot [-f]
```

Description

Use this command to perform a "cold reboot" (power off/restart) of the control processor. This operation may be disruptive, and the command prompts for confirmation before executing. When you reboot a switch connected to a fabric, all traffic to and from that switch stops. All Fibre Channel ports on that switch including E_Ports become inactive until the switch comes back online.

The behavior of this command depends on the platform:

- When issued on a standalone (single-processor) switch, this command performs a cold reboot of the switch.
- When issued on an enterprise-class platform (Brocade X6-4 Director or Brocade X6-8 Director) with two CPs (active and standby), the following rules apply:
  - When the Standby CP reboots, it goes down and there is no failover because there is no traffic on that switch. When the Standby CP comes up again, it is temporarily no longer in sync with the Active CP.
  - When the Active CP reboots, it fails over to the Standby CP. The Standby CP becomes the new Active CP and traffic is disrupted.
  - When HA is in sync, and **reboot -f** is issued on the Active CP of a director, the Standby CP takes over as the active CP without traffic disruption. If HA is not in sync, and **reboot -f** is issued on the Active CP, the Standby CP takes over as the Active CP and traffic is disrupted. Beginning with Fabric OS v9.2.2, the **-f** option is no longer supported.
  - When HA is disabled and **reboot** is issued on the Active CP, both the Active and Standby CPs reboot with the original mastership retained. The original Active CP remains the Active CP after the reboot, and the original Standby CP remains the Standby CP. After the reboot, HA is enabled.
  - When HA is disabled and **reboot** is issued on the Standby CP, the Standby CP reboots without prompting. It boots up with the default switch only, even if the Active CP has multiple logical switches configured. After the Standby CP boots up, HA is still disabled.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

-f	Causes the CP to fail over to the Standby CP without affecting any of the Fibre Channel Ports. Note that the recommended way to force a failover without affecting any Fibre Channel ports is to issue the **haFailover** command. Beginning with Fabric OS v9.2.2, the **-f** option is no longer supported.

Examples

To reboot a standalone switch with a single CP:

```
switch:admin> reboot
Warning: This command is being run on a control processor (CP)
based system and will cause the active CP to reboot.
```

```
This will cause disruption to all traffic in this chassis.
Are you sure you want to reboot the active CP [y/n]? y

2024/04/22-06:17:10 (GMT), [RAS-1007], 1696, SLOT 1 | CHASSIS,
   INFO, X7-8, System is about to reload.
Rebooting! Mon Apr 22 06:17:13 GMT 2024
Reboot from OSS

Broadcast message from maintenance@sw0 (ttyS0) (Mon Apr 22 06:17:13 2024):
The system is going down for reboot NOW!
INIT: Switching to runlevel: 6
INIT: Sending processes configured via /etc/inittab the TERM signal
```

To reboot a CP when HA is enabled:

```
switch:admin> reboot
Warning: This command is being run on a control processor (CP)
based system and will cause the active CP to reboot.
This will cause disruption to all traffic in this chassis.
Are you sure you want to reboot the active CP [y/n]? y

2024/04/22-06:09:24 (GMT), [RAS-1007], 1247, SLOT 2 | CHASSIS,
   INFO, X7-8, System is about to reload.
Rebooting! Mon Apr 22 06:09:27 GMT 2024
Reboot from OSS

Broadcast message from maintenance@sw0 (ttyS0) (Mon Apr 22 06:09:27 2024):
The system is going down for reboot NOW!
INIT: Switching to runlevel: 6
```

To reboot a CP when **haFailover** is disabled:

```
switch:admin> reboot

Warning: This command is being run on a control processor (CP)
based system and will cause the active CP to reboot.
This will cause disruption to all traffic in this chassis.
Are you sure you want to reboot the active CP [y/n]? y

2024/04/22-06:17:10 (GMT), [RAS-1007], 1696, SLOT 1 | CHASSIS,
   INFO, X7-8, System is about to reload.
Rebooting! Mon Apr 22 06:17:13 GMT 2024
Reboot from OSS

Broadcast message from maintenance@sw0 (ttyS0) (Mon Apr 22 06:17:13 2024):
The system is going down for reboot NOW!
INIT: Switching to runlevel: 6
```

See Also

fastBoot

relayConfig

Sets and displays the relay host IP address. Also, enables the secure SMTP mode.

Synopsis

```
relayconfig --config -rla_ip relay_ip
 -rla_dname domain_name
relayconfig --config -secure_smtp {true|false}
relayconfig --config -rla_ip relay_ip
 -rla_dname domain_name -secure_smtp {true|false}
relayconfig --delete
relayconfig --show
relayconfig --help
```

Description

Use this command to configure or display the relay host that is used to send the Monitoring and Alerting Policy Suite (MAPS) e-mail notifications. You can configure the e-mail recipients using the **mapsConfig --emailcfg** command.

Beginning with Fabric OS v9.2.2, the command allows to enable secure EMAILs by establishing a secure connection with the SMTP server using authentication mechanisms. Also, end-to-end messages are encrypted over the secured TLS session.

For an e-mail alert to function correctly, add the CP0 and CP1 IP addresses and host names to DNS and also set the domain name and name server. The **ipAddrShow** and **dnsConfig** commands can be used to set and verify this information.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--config	Sets the relay host IP address and domain name.	
	-rla_ip *relay_ip*	Specifies the IP address of the relay host.
	-rla_dname *domain_name*	Specifies the domain name of the relay host.
	-secure_smtp {true|false}	Enables or disables secure SMTP. This option is supported only from Fabric OS v9.2.2.
--delete	Deletes the relay host configuration.	
--show	Displays the relay host configuration.	
--help	Displays the command usage.	

Examples

To set relay host IP address:

```
switch:admin> relayconfig --config -rla_ip 192.0.2.0 \
   -rla_dname "broadcom.com"
```

To display the relay host configuration:

```
switch:admin> relayconfig --show
Relay Host:        192.0.2.0
Relay Domain Name: broadcom.com
Secure SMTP:       Enabled
```

To delete the relay host configuration:

```
switch:admin> relayconfig --delete
```

To enable secure SMTP mode:

```
switch:admin> relayConfig --config -rla_ip 1.1.1.1
-rla_dname relay.smtp.company.com -secure_smtp true
2024/02/06-09:02:37 (PST), [MAPS-1017], 375, FID 128, INFO, cassian6,
MAPS relayConfig got updated to relay_IP: 1.1.1.1,
domain: relay.smtp.company.com, secure SMTP mode: Enabled.
```

To enable secure SMTP mode independentely:

```
switch:admin> relayConfig --config -secure_smtp true
2024/04/29-17:23:58 (GMT), [MAPS-1019], 40, FID 128, INFO, sw0,
MAPS secure SMTP mode got updated to: Enabled.
```

See Also

mapsConfig

roleConfig

Manages user-defined roles.

Synopsis

```
roleconfig --add <role_name> [-desc <description>]
     [-class <rbac_class_list> [-perm <permission>]]
roleconfig --change <role_name> {[-class <rbac_class_list>
 -perm <permission>] [-desc <description>]}
roleconfig --delete <role_name> [-force]
roleconfig --copy <new_role> -role <source_role>
roleconfig --show {<role_name> | -all [-default]}
roleconfig --help
```

Description

Use this command to create or modify user-defined roles, to define permissions for these roles based on role-based access control (RBAC) permissions and meta-object format (MOF) classes, and to display the configured roles. Two types of access control restriction exist in Fabric OS:

- Restriction by MOF class: A MOF class groups similar Fabric OS commands into feature sets that share the same access permissions. By assigning one or more MOF classes to a role, the account with the specified role can access all the commands included in these classes. For example, the predefined role ZoneAdmin can access the commands under the MOF class Zoning, but not those under the UserManagement class. With the **roleConfig** command you could define a special admin role called myzonesec and assign access to this role for both the zoning and the userManagement class.
- Restriction by RBAC access level: You can further restrict access by setting RBAC one of the following access levels for the role. The RBAC permissions are set per class.

- O = observe
- OM = observe-modify
- N = none/not available

Use the **--show** option to display information about user-defined roles and default roles. Use the **classConfig** command to display information about MOF classes and associated commands. Note that you cannot modify the predefined Fabric OS roles.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--add Creates a role with the specified name and optional attributes. The new role is created with two default RBAC classes, "localuserenvironment" and "nocheck" and has the default permissions observe and modify ("OM). A configuration download will always reset the permissions of these two default classes to "OM."

--change Modifies an existing user-defined role.

- ***<role_name>*** Specifies the name for the role to be created or modified. The name must be unique; it is case-insensitive and can contain only alpha characters. The role name must be at least 4 characters long and cannot exceed 16 characters. The maximum number of user-defined roles allowed on a chassis is 64. This operand is required.

  The following operands are optional with **--add** and **--change**:

- **-desc *<description>*** Specifies a description for the role of up to 63 characters. Allows only printable ASCII characters whose ASCII value is greater than or equal to 32 and less than 127 characters. Colons (:) are not permitted.
- **-class *<class_list>*** Specifies one or more MOF classes to which the role should have access. Classes must be separated by commas. The requested class permissions cannot be higher than those of the Fabric OS Admin role. The maximum length allowed is 1024 characters.
- **-perm *<permissions>*** Specifies the RBAC permissions for the role. The RBAC permissions restrict what the user can do with the commands included in the classes to which the role has access. Valid RBAC permissions include the following:
  - **OM** Observe and modify.
  - **O** Observe only.
  - **N** No access. This parameter is not valid with the **--add** option.

--delete *<role_name>* [-force] Deletes the specified user-defined role. This command prompts for confirmation unless you use the **-force** option. The role must exist in the database and the role cannot currently be assigned to a user account. You cannot delete any of the predefined Fabric OS roles.

--copy Clones an existing user-defined role by copying an existing role to a new role name. The new role inherits all the classes and permissions of the source role. You can further modify the newly created role. The following operands are required:

- ***<new_role>*** The name for the new role must be unique; it is case-insensitive and can contain only alpha characters. The role name must be at least 4 characters long and cannot exceed 16 characters.
- **-role *<source_role>*** Specifies the name of the existing role to be copied.

--show Displays information about the specified roles. For each role, the command displays the role name, description, assigned classes and RBAC permissions for each class. The following displays options are exclusive:

- ***<role_name>*** Displays information about the specified user-defined role.
- **-all [-default]** Displays a listing of all user-defined roles. When used together with the optional **-default** option, both the user-defined roles and the predefined Fabric OS roles are displayed.

--help Displays the command usage.

Examples

To create a role with Zoning and SecurityAdmnin permissions and OM access:

```
switch:admin> roleconfig --add myzonesec \
     -d "Zone and Security Admin" -c Security,zoning -p OM
```

To change the access permissions of the previously created role and to display the results:

```
switch:admin> roleconfig --change myzonesec -c pki -p N
switch:admin> roleconfig --change myzonesec -c security -p O
switch:admin> roleconfig --change myzonesec -c zoning -p OM
switch:admin> roleconfig --show myzonesec
Role Name   : myzonesec
Description : Zone and Security Admin

 RBAC Class                              Permission
 ----------                              ----------
  Security                                 O
  Zoning                                   OM

Role permissions changed successfully.
```

To copy the role myszonesec:

```
switch:admin> roleconfig --copy superrole -r myzonesec
Role 'superrole' is copied successfully.
```

To delete a role:

```
switch:admin> roleconfig --delete myzonesec
You are going to delete a user defined role.
Are you sure? (yes, y , no, n) [no] y
Role 'myzonesec' is deleted successfully.
```

See Also

classConfig

ron

Configures and displays the registered organization name (RON).

Synopsis

ron --set *org_name*

ron --show

```
ron --help
```

Description

Use this command to configure and display the registered organization name.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Any update to the **ipAddrSet** command will trigger the validation of RON.

Operands

This command has the following operands:

--set *org_name*	Sets the registered organization name with the specified name.
--show	Displays the registered organization name configured in the system.
--help	Displays the command usage.

Examples

To configure and display the registered organization name:

```
switch:admin> ron --set "XXXX_Organization"
Registered Organization Name will be set to: XXXX_Organization
Once changes are committed, it cannot be modified.
Are you sure you want to commit these changes? (Y/N)? y
Registered Organization Name is set successfully.
switch:admin> ron --set "YYYY_Organization"
Registered Organization Name is already set.
switch:admin> ron --show
Registered Organization Name : XXXX_Organization
Registration complete on : Sep 2017
switch:admin> ron --help
================================================================================
This CLI is used to set or display Registered Organization Name. --set is a one-time
operation. Organization name once set cannot be modified.
================================================================================
ron --set org_name
                Sets Registered Organization Name. Max of 28 characters are allowed
                for organization name. Organization name once set cannot be modified.
ron --show
                Displays the Registered Organization Name
ron --help
                Displays information and usage
```

See Also

None

routeHelp

Displays a list of FSPF-related commands.

Synopsis

routehelp

Description

Use this command to display a list of fabric-shortest-path-first (FSPF)-related commands.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display a list of routing-related commands:

```
switch:admin> routehelp

aptPolicy          Get and set Advanced Performance
                   Tuning policy
dlsReset           Turn off Dynamic Load Sharing
dlsSet             Turn on Dynamic Load Sharing
dlsShow            Print state of Dynamic Load Sharing
fspfShow           Print FSPF global information
interfaceShow      Print FSPF interface information
iodReset           Turn off In-Order Delivery
iodSet             Turn on In-Order Delivery
iodShow            Print state of In-Order Delivery
linkCost           Set or print the FSPF cost of a link
LSDbShow           Print Link State Database entry
nbrStateShow       Print neighbor's summary information
nbrStatsClear      Reset FSPF neighbor's counters
topologyShow       Print paths to domain(s)
uRouteShow         Print port's unicast routing info
```

See Also

uRouteShow

sBoot

Displays FOS Secure Boot (FosSB) information.

Synopsis

sboot --show

sboot --help

Description

This command is supported only on the Brocade Gen 6 platforms running v9.1.x or later; and on the Brocade Gen 7 platforms running Fabric OS v9.0.x or later.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--show	Displays the secure boot information, which includes FOS version, Platform, Secure Boot Status, Revoked Keys, Super Root Key Hash, Secure Monitor Status Register, and Secure State. Displays both the local CP and remote CP information in a dual CP system.
--help	Displays the command usage.

Examples

To display secure boot information on a pizza box:

```
switch:admin> sboot --show
  FOS version     : v9.0.0
  Platform      : SWBD181
  Secure Boot Status   : Enabled
  Super Root Key Hash R0  : 0x8ce174ca
  Super Root Key Hash R1  : 0xb19f4bb4
  Super Root Key Hash R2  : 0xc2b0858d
  Super Root Key Hash R3  : 0xff703106
  Super Root Key Hash R4  : 0x5e0f0cfa
  Super Root Key Hash R5  : 0x5d722b70
  Super Root Key Hash R6  : 0x33b15389
  Super Root Key Hash R7  : 0x4ed6f189
  Secure Monitor Status Register: 8000ad00
  Secure State     : Trusted
```

To display secure boot information on a chassis:

```
switch:admin> sboot --show
========
Local CP
========
  FOS version      : v9.0.0
  Platform       : SWBD180
  Secure Boot Status    : Enabled
  Super Root Key Hash R0   : 0x8ce174ca
  Super Root Key Hash R1   : 0xb19f4bb4
  Super Root Key Hash R2   : 0xc2b0858d
  Super Root Key Hash R3   : 0xff703106
  Super Root Key Hash R4   : 0x5e0f0cfa
  Super Root Key Hash R5   : 0x5d722b70
  Super Root Key Hash R6   : 0x33b15389
  Super Root Key Hash R7   : 0x4ed6f189
  Secure Monitor Status Register  : 8000ad00
```

```
  Secure State      : Trusted

=========
Remote CP
=========
  FOS version      : v9.0.0
  Platform       : SWBD180
  Secure Boot Status    : Enabled
  Super Root Key Hash R0   : 0x8ce174ca
  Super Root Key Hash R1   : 0xb19f4bb4
  Super Root Key Hash R2   : 0xc2b0858d
  Super Root Key Hash R3   : 0xff703106
  Super Root Key Hash R4   : 0x5e0f0cfa
  Super Root Key Hash R5   : 0x5d722b70
  Super Root Key Hash R6   : 0x33b15389
  Super Root Key Hash R7   : 0x4ed6f189
  Secure Monitor Status Register  : 8000ad00
  Secure State      : Trusted
```

See Also

None

sddQuarantine

Clears or displays the quarantined ports.

Synopsis

sddquarantine --clear {[*<slot>*/]*<port>* | **all**} [**-force**]
sddquarantine --show
sddquarantine --help

Description

Use this command to clear or display ports that are quarantined by the MAPS action "SDDQ".

The slow drain device quarantine (SDDQ) feature is used to automatically detect the slow-drain devices and move the slow-drain flows to a low priority virtual channel (VC) from the existing VC (medium or high) thus freeing up the resources for the regular flows in the existing VC. Due to this automatic isolation from the regular flows, the effects of the slow-drain flows on the fabric are reduced. Once the traffic flowing through an F_Port is isolated, the F_Port is marked as Slow Drain Quarantined. You can use the **--clear** option to clear the Slow Drain Quarantined state on the port.

If the quarantined ports go offline or disabled, the ports remain in Slow Drain Quarantined state. Once the ports come online, the flows destined to the port are quarantined. This command is supported both in Fabric OS and Access Gateway ports.

It is possible that the quarantine port can be moved to a different logical switch if you download the VF configuration. Clear the quarantine port if the port does not exist in the logical switch.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--clear Clears the specified port or all ports from the Slow Drain Quarantined state. This option is not allowed if the latency or frame loss condition persists on the ports. The **-force** option overrides the default behavior. Valid options include the following:

- ***<slot>*** For bladed systems only, specifies the slot number for which to set or display the cost, followed by a slash (/).
- ***<port>*** Specifies the port number for which to set or display the cost, relative to its slot for bladed systems. Use **switchShow** to list of valid ports.
- **all** Clears all the ports currently quarantined in the local switch.
- **-force** Clears the quarantined ports even when the latency or frame loss condition persists. This operand is optional.

--show Displays all the local quarantined ports, ports on which VC translation is not enforced due to zoning count restriction, and the fabric-wide quarantined device information. The Locality column displays whether or not the device is remote, local, and/or AG-connected.

--help Displays the command usage.

Examples

To clear quarantined state for a port:

```
switch:admin> sddquarantine --clear 33
Initiated clearing port from quarantined state
```

To forcibly clear quarantined state for a port:

```
switch:admin> sddquarantine --clear 33 -force
Initiated clearing port from quarantined state
```

To clear quarantined state for all ports:

```
switch:admin> sddquarantine --clear all
The clear action was not initiated for the following port(s). Try with individual ports
                3
Initiated quarantine action on other ports
```

To display the offline quarantined local ports and the online quarantined device information across the fabric:

```
switch:admin> sddquarantine --show
-------------------------------------------------------
Ports marked as Slow Drain Quarantined in the Local Switch:
    3/14, 6/6, 6/17, 6/18, 6/35, 11/0, 11/1, 11/2,
   11/3, 11/5, 11/7, 11/8, 11/9, 11/12, 11/14, 11/43,
   11/44, 11/47, 12/4, 12/13, 12/18, 12/20, 12/42
-------------------------------------------------------
Online Quarantined Devices across the fabric
--------------------------------------------------------------------------------
Port |PID   |PWWN                   |Locality  |Port Name     |Zone Aliases     |
--------------------------------------------------------------------------------
14   |240e00|10:00:00:90:fa:94:28:13|LOCAL     |slot3 port14  |-                |
195  |27c301|10:10:8c:7c:ff:07:3a:01|REMOTE    |-             |x3650M3_126036_p7|
196  |27c401|10:10:8c:7c:ff:07:16:00|REMOTE    |-             |x3650M3_126036_p0|
```

To display the offline quarantined local ports and the online quarantined device information on the Access Gateway (directly attached devices):

```
switch:admin> sddquarantine --show
-------------------------------------------------------
Ports marked as Slow Drain Quarantined in the Local Switch: 4
-------------------------------------------------------
Online Quarantined Devices in Access Gateway
--------------------------------------------------------------------
Port  |PID     |PWWN                       |Locality  |Port Name|
--------------------------------------------------------------------
4     |220645  |10:00:00:90:fa:c7:e1:cf    |LOCAL     |port4    |
```

See Also

mapsConfig, mapsRule, switchShow

secActiveSize

Displays the size of the active security database.

Synopsis

```
secactivesize
```

Description

Use this command to display the size of the active security database. The command also displays the maximum database size.

The maximum security database size is 1 megabyte per logical switch. With up to eight partitions, the total database size on a chassis can be up to 8 megabytes. On switches that are not Virtual Fabric-capable, the security database is limited to 1 megabyte.

Notes

The effective security DB size is the lowest supported by the fabric. The presence of a Standby CP that runs an earlier version of the operating system will drop the effective security DB size on an Active CP.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the size of the active security database:

```
switch:admin> secactivesize
   Size of security active data: 35 bytes
   (Max 1048576 bytes)
```

See Also

secDefineSize

secAuthSecret

Manages the DH-CHAP shared secret key information.

Synopsis

```
secauthsecret --show [<wwn> | <domain> | <swname>]
secauthsecret --set
secauthsecret --remove [<wwn> | <domain> | <swname>]
secauthsecret --remove -all
```

Description

Use this command to manage the DH-CHAP shared secret key database used for authentication. This command displays, sets, and removes shared secret key information from the database or deletes the entire database. If you are performing set or remove operations, when the command is completed new data is saved persistently. New data is effective with the next authentication request. The configuration applies to a switch instance only.

Port level authentication security must be enabled before encryption configuration can be enabled. Pre-shared secret keys should be configured on both ends of the ISL to perform authentication. For encrypted ports, an authentication key of 32 characters is recommended. Spaces are not allowed.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--show	Lists the WWNs for which a shared secret is configured. In Access Gateway mode, since you cannot configure using domain ID or switchname, these fields will be displayed as -1 and Unknown respectively.
--set	Sets shared secrets. You can set shared secrets for F_Port, N_Port in Access Gateway mode and E, EX_Port and F_Port on Fabric OS. This command is interactive. In Access Gateway mode, you can specify only a WWN. In Fabric OS, you can specify a WWN or switchname or domain ID. Spaces are not allowed.
--remove [<*wwn*> | <*domain*> | <*swname*>]	Removes the specified WWN entry from the database. If a domain name is specified, it is converted to a WWN and then the entry is removed. If no option is specified, the command is interactive. In Access Gateway mode, you can specify only a WWN. In Fabric OS, you can specify a WWN or switchname or domain ID.
--remove -all	Deletes the entire secret key database.

Examples

To list the shared secret WWN:

```
switch:admin> secauthsecret --show

WWN                       DId    Name
----------------------------------------
10:00:00:60:69:80:5b:e8    1    switch
```

To list the shared secret WWN in Access Gateway mode:

```
switch:admin> secauthsecret --show

WWN                       DId    Name
---------------------------------------
10:00:00:60:69:80:5b:e8    -1    Unknown
```

To set the shared secret:

```
switch:admin> secAuthSecret --set

This command is used to set up secret keys for the DH-CHAP authentication.
The minimum length of a secret key is 12 characters and maximum 40
characters. Ensure that peer and local secrets are not same.
Setting up secret keys does not initiate DH-CHAP
authentication. If switch is configured to do DH-CHAP, it is performed
whenever a port or a switch is enabled.

Warning: Please use a secure channel for setting secrets. Using
an insecure channel is not safe and may compromise secrets.

Following inputs should be specified for each entry.

1. WWN for which secret is being set up.
2. Peer secret: The secret of the peer that authenticates to peer.
3. Local secret: The local secret that authenticates peer.

Press enter to start setting up secrets >

Enter peer WWN, Domain, or switch name (Leave blank when done): 10:00:00:05:33:e7:b3:60
Enter peer secret:
Re-enter peer secret:
Enter local secret:
Re-enter local secret:

Enter peer WWN, Domain, or switch name (Leave blank when done):
Are you done? (yes, y, no, n): [no] y
Saving data to key store... Done.
2019/11/15-02:21:51, [AUTH-1001], 1086, SLOT 2 | FID 128, INFO, sw0,
Secret key database update has been successfully completed.
```

To delete the entire secret key database:

```
switch:admin> secAuthSecret --remove -all

This command deletes database of DH-CHAP secret keys.
If a fabric requires authentication, deleting this
database may cause switch to segment from the fabric.

Do want to remove secret key database?
 (yes, y, no, n): [no] y
Deleting secret key database... Done.
```

See Also

None

secCertMgmt

Manages certificates on a switch.

Synopsis

```
seccertmgmt generate -csr {https|radius|ldap|syslog}
     [-type rsa] [-keysize {1024|2048|4096|8192}]
     [-hash {sha1|sha256|sha384|sha512}] [-years <value>] [-f]
seccertmgmt generate -csr {https|radius|ldap|syslog}
 -type dsa [-keysize {1024|2048|4096|8192}]
     [-hash {sha1|sha256}] [-years <value>] [-f]
seccertmgmt generate -csr {fcap|commoncert} [-type rsa]
     [-keysize {1024|2048|4096}] [-hash {sha1|sha256}]
     [-years <value>] [-f]
seccertmgmt generate -csr extn -keypair_tag <keypair_name> [-type ecdsa]
     [-keysize P384] [-hash sha384] [-years <value>] [-f]
seccertmgmt generate -cert https [-type rsa] [-keysize {1024|2048|4096|8192}]
     [-hash {sha1|sha256|sha384|sha512}]
     [-years <value>] [-f]
seccertmgmt generate -cert https -type dsa [-keysize {1024|2048|4096|8192}]
     [-hash {sha1|sha256}] [-years <value>] [-f]
seccertmgmt generate -csr https -type ecdsa [-keysize P384]
     [-hash {sha1|sha256|sha384|sha512}] [-years <value>] [-f]
seccertmgmt generate -cert https -type ecdsa [-keysize P384]
     [-hash {sha1|sha256|sha384|sha512}] [-years <value>] [-f]
seccertmgmt generate -cert extn -keypair_tag <keypair_name> [-type ecdsa]
     [-keysize P384] [-hash sha384] [-years <value>] [-f]
seccertmgmt delete -cert {fcap | commoncert | https | radius | ldap |
 syslog | extn {<certificate_name> [-keypair_tag <keypair_tag>] |
 -keypair_tag <keypair_tag>} | all} [-f]
seccertmgmt delete -csr {fcap | commoncert | https | radius | ldap |
 syslog | extn {<csr_name> | -keypair_tag <keypair_tag>}} [-f]
seccertmgmt delete -ca -client {fcap | commoncert | radius |
 ldap | syslog | extn <certificate_name> | all} [-f]
seccertmgmt delete -ca -server {https | radius | ldap |
 syslog|rsa|asc|fa|smtps|extn <certificate_name> | all} [-f]
seccertmgmt delete -all {default | fcap | commoncert | https | radius | ldap |
 syslog | extn | smtps} [-f]
seccertmgmt import -cert {fcap | commoncert | https | radius | ldap |
 syslog} [-protocol {scp | ftp}] [-ipaddr <IP_address>]
     [-remotedir <remote_directory>] [-certname <certificate_name>]
     [-login <login_name>] [-password <password>]
seccertmgmt import -cert extn -certname <certificate_name> [-keypair_tag <keypair_tag>]
     [-protocol {scp | ftp}] [-ipaddr <IP_address>]
     [-remotedir <remote_directory>] [-cacert <preimported_local_ca_cert>]
     [-login <login_name>] [-password <password>]
seccertmgmt import -ca -client {fcap | commoncert |
 radius | ldap | syslog} [-protocol {scp | ftp}]
     [-ipaddr <IP_address>] [-remotedir <remote_directory>]
     [-certname <certificate_name>] [-login <login_name>]
     [-password <password>]
```

```
seccertmgmt import -ca -server {https | radius | ldap
     | syslog | asc | rsa | fa | smtps} [-protocol {scp | ftp}]
     [-ipaddr <IP_address>] [-remotedir <remote_directory>]
     [-certname <certificate_name>] [-login <login_name>]
     [-password <password>]
seccertmgmt import -ca {-client | -server} extn -certname <certificate_name>
     [-protocol {scp | ftp}] [-ipaddr <IP_address>]
     [-remotedir <remote_directory>] [-login <login_name>]
     [-password <password>]
seccertmgmt export -cert {fcap | commoncert | https | radius | ldap |
 syslog} [-protocol {scp | ftp}] [-ipaddr <IP_address>]
     [-remotedir <remote_directory>] [-login <login_name>]
     [-password <password>]
seccertmgmt export -cert extn -certname <certificate_name>
     [-keypair_tag <keypair_tag>] [-protocol {scp | ftp}]
     [-ipaddr <IP_address>] [-remotedir <remote_directory>]
     [-login <login_name>] [-password <password>]
seccertmgmt export -ca -client {fcap | commoncert |
 radius | ldap | syslog} [-protocol {scp | ftp}]
     [-ipaddr <IP_address>] [-remotedir <remote_directory>]
     [-login <login_name>] [-password <password>]
seccertmgmt export -ca -server {https | radius | ldap
     |syslog | rsa | fa | smtps} [-protocol {scp | ftp}]
     [-ipaddr <IP_address>] [-remotedir <remote_directory>]
     [-login <login_name>] [-password <password>]
seccertmgmt export -ca {-client | -server} extn -certname <certificate_name>
     [-protocol {scp | ftp}] [-ipaddr <IP_address>]
     [-remotedir <remote_directory>] [-login <login_name>]
     [-password <password>]
seccertmgmt export -csr {fcap | commoncert | https | radius |
 ldap | syslog } [-protocol {scp | ftp}] [-ipaddr <IP_address>]
     [-remotedir <remote_directory>] [-login <login_name>]
     [-password <password>]
seccertmgmt export -csr extn {-certname <certificate_name> |
 -keypair_tag <keypair_tag>} [-protocol {scp | ftp}]
     [-remotedir <remote_directory>] [-login <login_name>]
     [-ipaddr <IP_address>]
     [-password <password>]
seccertmgmt show -cert {fcap | commoncert | https | radius | ldap |
 syslog} [-hexdump | -verbose]
seccertmgmt show -cert extn [<certificate_name>][-keypair_tag <keypair_tag>]
     [-hexdump | -verbose]
seccertmgmt show -ca -client {fcap | commoncert | radius |
 ldap | syslog} [-hexdump | -verbose]
seccertmgmt show -ca -client extn [<certificate_name>]
     [-hexdump | -verbose]
seccertmgmt show -ca -server {https | radius | ldap |
 syslog | asc | kafka | rsa | fa | smtps} [-hexdump | -verbose]
seccertmgmt show -ca -server extn [<certificate_name>]
     [-hexdump | -verbose]
seccertmgmt show -csr {fcap | commoncert | https | radius |
```

```
 ldap | syslog} [-hexdump | -verbose]
seccertmgmt show -csr extn [<csr_name> | -keypair_tag <keypair_tag>]
     [-hexdump | -verbose]
seccertmgmt show -all [-hexdump | -verbose]
seccertmgmt --help
```

Description

Use this command to manage third-party certificates on a switch, including Public Key Infrastructure (PKI) based certificates, Lightweight Directory Access Protocol (LDAP) certificates, FCAP certificates, RADIUS certificates, syslog certificates, RSA server CA certificates, federated server CA certificates, SMTPS server CA certificates, and extension platform certificates of IPsec tunnel. This command also imports or exports certificates from or to a remote host. This command supports IPV4 and IPV6 addresses.

Use this command to do the following:

- Generate a certificate or Certificate Signing Request (CSR).
- Import a certificate or CA certificate.
- Export a certificate, CA certificate, or CSR.
- Delete a certificate, CA certificate, or CSR.
- Display the contents of a certificate, CA certificate, or CSR.

This command takes an action and associated arguments. The command runs noninteractively when the arguments associated with a given action are specified on the command line. When invoked without operands, this command displays the usage.

KAFKA secure streaming is more efficient for Brocade SANnav Management Portal to gather information and data from the switch. The KAFKA certificate is imported automatically by the SANnav Management Portal and it can be removed only by the same application. User cannot manage the certificate through CLI. The certificate is imported when the switch is discovered and it will be deleted when SANnav imports a new certificate during rediscovery.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

The **-keysize** values 1024, 2048, 4096 and **-hash** types sha1 and sha256 are alone supported in FCAP CSR generation.

The CSR generation includes IP as an optional value in the SAN to make sure that the Certificate is signed by the third party CA.

It is recommended not to use DSA and MD5 certificates for certificate signing.

ECDSA key algorithm is supported only with HTTPS and EXTN.

The client CA must be deleted if commoncerts are removed from a switch.

Operands

This command has the following operands:

generate	Generates a new certificate or CSR for the switch.
import	Imports a certificate or CSR. Use this command to import a certificate from the server or to download a certificate issued by a CA after sending the CSR to the CA. The private key and certificate in the file to be imported can be in any order.
export	Exports a certificate or CSR to a host. This command is typically used to submit a CSR to the Certification Authority (CA) that issues the certificate.

delete	Deletes the specified certificate, CSR, or FCAP keypair.
delete -all	Deletes all the certificates for the specified type.
show	Lists all existing PKI-based certificates on the switch.

-cert	Specifies a switch certificate.
-ca	Specifies a CA certificate.
-csr	Specifies a CSR file. The generation of CSR for HTTPS does not disable the HTTPS service. The newly generated CSR and key is kept reserved and overwrites the existing on importing the corresponding signed certificate.
fcap | commoncert | https | radius | ldap | rsa | syslog | extn | kafka | asc | fa | smtps	Specifies the certificate type.
-type [rsa | dsa | ecdsa]	Specifies the key pair type.
-keysize <*value*>	Specifies the size of the key. Valid values are 1024, 2048, 4096, 8192, or P384. The greater the value, the more secure is the connection; however, performance degrades with size.
-hash <*type*>	Specifies the hash type. Valid values are sha1, sha256, sha384, or sha512.
-years <*value*>	Specifies the number of years the certificate is valid for.
-keypair_tag <*keypair_tag*>	Specifies the key pair name to uniquely identify a keypair. This option is valid only with **extn** certificate type and is mandatory when you generate a certificate or CSR. This option is optional only for the export of the remote certificate.
-protocol {scp | ftp}	Specifies the protocol as either FTP or SCP. The maximum character length for FTP path should not exceed 237 characters while exporting or importing the certificate.
-ipaddr <*ip_address*>	Specifies the IP address of the remote host.
-remotedir <*remote_directory*>	Specifies the remote directory. Provide a fully qualified path name.
-certname <*certificate_name*>	Specifies the certificate name.
-cacert <*preimported_local_ca_cert*>	Specifies the preimported local CA certificate name. This option is valid only with **extn** certificate type.
-login <*login_name*>	Specifies the login name for the server. The slash (/) character is not allowed in *login name*.
-password <*password*>	Specifies the password for the user account. When using SCP, for security reasons, do not enter a password on the command line. Use the interactive version instead. Use **CTRL-C** to skip the password. Beginning with Fabric OS v9.2.2, this option is made as interactive and requires valid user input during execution.
-client	Specifies a client CA certificate.
-server	Specifies a server CA certificate.
-hexdump	Displays raw hex data for all certificates.
-all	Specifies all certificates or CSRs.
-f	Executes without prompting for a confirmation.

Examples

To generate a certificate for use with self-signed HTTPS:

```
switch:admin> seccertmgmt generate -cert https -type rsa \
```

```
   -keysize 2048 -hash sha1 -years 5
Generating a new certificate will automatically do the following
1. Delete existing switch certificate(s).
2. Disable secure protocol HTTPS

Warning: Certificate generation is CPU intensive and can cause high CPU usage

Continue (yes, y, no, n): [no] y
Generating ... ...Generated self-signed https certificate successfully.
```

To generate a CSR:

```
switch:admin> seccertmgmt generate -csr radius -type rsa \
   -keysize 2048 -hash sha256
Generating a  CSR will automatically do the following:
1. Delete all existing CSRs.
2. Delete existing switch certificate.
3. Reset the certificate filename to none.

Warning:
        Key-pair generation is CPU intensive and can cause high CPU usage
        Private IPs and hostnames should not be part of SCN and/or SAN per CA/Browser forum.


Continue (yes, y, no, n): [no] y
Country Name (2 letter code, eg, US):US
State or Province Name (full name, eg, California):California
Locality Name (eg, city name)an Jose
Organization Name (eg, company name):Broadcom
Common Name (Fully qualified Domain Name, or IP address):10.xx.xx.xx
Email Address:aaaaaaaaaaaa@broadcom.com

Do you want to continue including IP in the SAN? (yes, y, no, n): [no] y
Generating CSR, file name is: 10.20.30.40.csr
```

To import an HTTPS CA certificate from a remote host to the local switch:

```
switch:admin> seccertmgmt import -ca -server https -protocol scp -ipaddr 10.xx.xx.xx \
   -remotedir /home/localpath/CA -certname cacert.pem -login admin
Password: ******
Success: imported https certificate [cacert.pem].
Certificate file in configuration has been updated.
```

To import an HTTPS certificate from a remote host to the local switch:

```
switch:admin> seccertmgmt import -cert https -protocol scp
-ipaddr 10.17.56.56 -remotedir /home/localpath/CERT -certname 92.pem -login admin
Password: ********
```

To import a FA certificate from a remote host to the local switch:

```
switch:admin> seccertmgmt import -ca -server fa -protocol scp
-ipaddr 10.17.20.20 -remotedir /pub/shared/federated_auth/import -certname ca.cert.pem
-login user
user@10.17.20.20's password:
Success: imported fa server CA certificate [ca.cert.pem].
```

To export an HTTPS CA certificate from the switch to the remote host:

```
switch:admin> seccertmgmt export -ca -server https -protocol scp -ipaddr 10.xx.xx.xx \
   -remotedir /home/localpath/CA -login admin
Password: ******
Success: exported https certificate [cacert.pem].
```

To export an HTTPS certificate from the switch to the remote host:

```
switch:admin> seccertmgmt export -cert https -protocol scp -ipaddr 10.xx.xx.xx \
   -remotedir /home/admin/CERT -login admin
Password: ********
```

To export a FA certificate from a remote host to the local switch:

```
switch:admin> seccertmgmt export -ca -server fa -protocol scp
-ipaddr 10.17.20.20 -remotedir /pub/shared/federated_auth/export/ -login user
user@10.17.20.20's password:
Success: exported fa CA swFaca.pem
```

To export an HTTPS CA certificate:

```
switch:admin> seccertmgmt export -cert https -protocol scp -ipaddr 10.xx.xx.xx
-remotedir /tmp/user -login admin -password XXXXXXXXXX
Success: exported https CERT servercert.pem
```

To delete an HTTPS CA certificate:

```
switch:admin> seccertmgmt delete -ca -server https
WARNING!!!

About to delete https: CA file(s)

Continue (yes, y, no, n): [no] y
Deleted HTTPS ca certificate
```

To display the contents of a FA certificate:

```
switch:admin> seccertmgmt show -ca -server fa
Issued To
    countryName               = US
    stateOrProvinceName       = California
    localityName              = San Jose
    organizationName          = Broadcom
    commonName                = FederatedCA

Issued By
    countryName               = US
    stateOrProvinceName       = California
    localityName              = San Jose
    organizationName          = Broadcom
    commonName                = FederatedCA

Period Of Validity
    Begins On                Jan 25 08:56:46 2023 GMT
    Expires On               Jan 20 08:56:46 2043 GMT
Fingerprints
```

```
    SHA1 Fingerprint  B8:7B:2E:04:E0:D2:9B:2C:7E:24:6D:20:45:CD:D4:30:0F:57:9B:25
    SHA256 Fingerprint
 56:9D:E9:3C:B9:D8:BF:9F:43:D9:D3:A5:EB:A7:1B:76:92:0A:D3:C3:66:9F:EA:D1:59:1C:B0:18:D3:95:8E:CF
Crypto Algorithm
    Signature Algorithm      sha256WithRSAEncryption
    Public Key Algorithm     rsaEncryption
    Public-Key               4096 bit
```

To display the contents of an HTTPS certificate:

```
switch:admin> seccertmgmt show -cert https
Issued To
    countryName               = US
    stateOrProvinceName       = California
    localityName              = San Jose
    organizationName          = ABC
    commonName                = 10.xx.xx.xx

Issued By
    countryName               = US
    stateOrProvinceName       = California
    localityName              = San Jose
    organizationName          = ABC
    commonName                = 10.xx.xx.xx

Period Of Validity
    Begins On                Feb 20 06:42:50 2023 GMT
    Expires On               Feb 19 06:42:50 2025 GMT

Fingerprints
    SHA1 Fingerprint  82:00:E7:C0:EA:D8:E9:26:10:49:AA:A0:DA:C4:4D:2E:E5:73:3F:E5
    SHA256 Fingerprint
 02:8F:AE:ED:C4:84:0F:67:20:8D:90:08:FE:B9:D5:64:61:BE:AA:13:31:D0:67:98:82:6F:14:7B:E4:17:E8:35

Crypto Algorithm
    Signature Algorithm      sha256WithRSAEncryption
    Public Key Algorithm     rsaEncryption
    Public-Key               2048 bit
```

To display the list of available certificates:

```
switch:admin> seccertmgmt show -all
ssh private key:
   Does not Exist

ssh public keys available for users:
   None

Certificate Files:
----------------------------------------------------------------------
Protocol   Client CA Server CA  SW        CSR     PVT Key Passphrase
----------------------------------------------------------------------
FCAP       Empty     NA         Empty     Exist   Exist   Exist
RADIUS     Empty     Exist      Empty     Empty   Empty   NA
```

```
LDAP       Empty     Empty      Empty     Empty   Empty   NA
RSA        NA        Empty      NA        NA      NA      NA
FA         NA        Empty      NA        NA      NA      NA
SYSLOG     Empty     Exist      Empty     Empty   Empty   NA
HTTPS      NA        Empty      Empty     Empty   Empty   NA
KAFKA      NA        Empty      NA        NA      NA      NA
ASC        NA        Empty      NA        NA      NA      NA
SMTPS      NA        Empty      NA        NA      NA      NA
```

See Also

None

secCryptoCfg

Configures and displays cryptographic parameters and templates.

Synopsis

```
seccryptocfg --replace -type SSH {[-cipher <cipher_string>]
     [-kex <value>] [-mac <value>]} [-force]
seccryptocfg --replace -type https -cipher <cipher_string> [-force]
seccryptocfg --default -type {https | SSH} [-force]
seccryptocfg --apply {<template_name> |
 -group {SSH | AAA | LOG | HTTPS | X509v3
     | Compliance | SMTPS} -attr <attribute>
 -value <value_for_attribute>} [-force]
seccryptocfg --import <template_name> -server <ip_address>
 -name <user>
 -proto {scp | sftp | ftp}
 -file <remote_file_name>
seccryptocfg --export <template_name> -server <ip_address>
 -name <user>
 -proto {scp | sftp | ftp}
 -file <remote_file_name>
seccryptocfg --lstemplates
seccryptocfg --verify <template_name>
seccryptocfg --delete <template_name>
seccryptocfg --show [<template_name>]
seccryptocfg --show -crypto-module-version
seccryptocfg --showlogs <indicatorlogs> [-standby]
seccryptocfg --help
```

Description

Use this command to perform the following functions:

- Configure cryptographic parameters such as ciphers, key exchange (kex) algorithm, hostkey algorithm, public key algorithm, and message authentication code (MAC) algorithm for SSH or HTTPS.
- Reset the cryptographic parameters to default.
- Set the template configuration.
- Import a template file.
- Export a template file.
- Display the list of templates available.
- Verify the configuration against the template.
- Delete a template file.
- Display the configured cryptographic or template parameters.

When the cryptographic parameters are configured, this command restarts the SSH or HTTPS daemon for the changes to take effect. This command prompts for confirmation unless you use the **-force** option.

A maximum of eight templates including the default templates are supported. You cannot overwrite the default configurations but can upload the configurations, edit, and then download it with a different name. You can create a new template similar to default templates, download, and apply. In case of chassis, the configurations that are applied through template have to be supported on both Active and Standby CP versions. The seccryptocfg configuration fails if both are running in different firmware versions and the configuration applied is not valid for Standby CP. For more information on the format and rule of the template, refer to *Brocade Fabric OS Administration Guide*.

Setting the protocol to **Any** for RADIUS or LDAP or Syslog or RSA or SMTPS in template supports the maximum protocol version of TLSv1.2 (TLS protocol from TLSv1 to TLSv1.2 can be used); whereas the protocol to **Any** for HTTPS supports the maximum protocol version of TLSv1.3 (TLS protocol from TLSv1 to TLSv1.3 can be used).

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

To explicitly configure or deconfigure ciphersuites, the input must be provided using the SSL ciphersuite name. Configuring using the TLS ciphersuite name does not work. For example, to configure TLS ciphersuite TLS_DH_RSA_WITH_AES_256_GCM_SHA384, use the SSL ciphersuite name DHE-RSA-AES256-GCM-SHA384. The TLS ciphersuite name TLS_DH_RSA_WITH_AES_256_GCM_SHA384 does not work.

TLS cipher strings that can yield at least one ciphersuite are considered valid input. Invalid ciphers in the input are ignored.

Zeroizing the SNMP Keys using **secCryptoCfg** command will zeroize all the SNMPv3 accounts except SNMP global informs.

Operands

This command has the following operands:

--replace -type SSH | https
Configures the specified ciphers, kex, and MAC algorithms for SSH or HTTPS and restarts the SSH or HTTPS daemon.

-cipher <*cipher_string*>
Specifies the SSH or HTTPS cipher list. You can either specify one or more ciphers separated by a comma, for example, 3des-cbc,aes128-cbc,aes192-cbc. The following ciphers are configured by default. You can modify the cipher list using this operand except for the Ciphers_tlsv1.3.

For SSH:

- aes128-ctr
- aes192-ctr
- aes256-ctr
- aes128-cbc
- 3des-cbc
- aes192-cbc
- aes256-cbc

For HTTPS:

- ECDSA
- ECDH
- RSA
- AES
- 3DES
- !RSAPSK
- !DHEPSK
- !PSK
- !DSS
- !AESCCM8
- !AESCCM
- !ARIAGCM
- !CAMELLIA
- !CHACHA20
- !SEED
- !RC4

-kex <*value*> Specifies the SSH kex algorithms list. You can either specify one or more kex algorithms separated by a comma, for example, ecdh-sha2-nistp256,diffie-hellman-group-exchange-sha256. The following kex algorithms are configured by default. You can modify the kex algorithms list using this operand.

- ecdh-sha2-nistp256
- ecdh-sha2-nistp384
- ecdh-sha2-nistp521
- diffie-hellman-group-exchange-sha256
- diffie-hellman-group-exchange-sha1
- diffie-hellman-group14-sha1
- diffie-hellman-group1-sha1

-mac <*value*> Specifies the SSH MAC list. You can either specify one or more MAC algorithms separated by a comma, for example, hmac-md5,hmac-sha1. The following MAC algorithms are configured by default. You can modify the MAC algorithms list using this operand.

- hmac-sha1
- hmac-sha2-256
- hmac-sha2-512

--default -type SSH | https Resets the cipher, kex, hostkey algorithm, public key algorithms, and MAC configurations to default.

-force Executes without prompting for a confirmation.

--apply <*template_name*> Sets a default or user-defined template file. The following default templates are supported:

- default_generic
- default_strong
- default_fips
- default_cc

--apply -group Sets an attribute and value to the specified group. Valid groups include the following:

- SSH
- AAA
- LOG
- HTTPS
- X509v3
- Compliance
- SMTPS

-attr <*template_name*> Sets up single attribute for the specified value. The following attributes are supported for the Compliance group. Attributes *ZeroizeExtn* and *FIPSExtn* are supported only with Brocade SX6 blade.

- SelfTests.
  - The **all** option supports DH, DRBG, AES, AES_GCM, RSA, RSA2048_SHA256, DES, DSA, SHA1, SHA256, SHA384, SHA512, HMAC_SHA1, HMAC_SHA224, HMAC_SHA256, HMAC_SHA384, HMAC_SHA512, SHA3, ECDSA, and ECDH tests.
  - The **default** option supports AES, AES_GCM, RSA, SHA512, HMAC_SHA512, and ECDSA tests.
- CryptoIntegrityTest
- Zeroize
- ZeroizeExtn
- FIPSExtn
- FIPSInside
- BootUpSelfTests
- Ciphers_tlsv1.3
- RSA_Protocol
- RSA_Ciphers
- FA_Protocol
- FA_Ciphers
- HostKeyAlgorithms
- PubKeyAlgorithms
- SMTPS_Protocol
- SMTPS_Ciphers

-value <*value_for_attribute*> Sets up the configuration value matching the provided key string. The TLSv1.3 is only applicable to HTTPS and TLSv1.1 is not supported. Range sizes include the following:

- TLSv1-TLSv1.2
- TLSv1-TLSv1.3
- TLSv1.2-TLSv1.3
- TLSv1-TLSv1
- TLSv1.2-TLSv1.2
- TLSv1.3-TLSv1.3
- sshproposal

--import Imports a template file from a specified external host.

--export Exports a template file to the specified external host.

<*template_name*> Specifies the template name.

-server <*ip_address*> Specifies the IP address of the remote host.

	-name <*user*>	Specifies the user name for the host. Depending on your host configuration, this command may prompt for a password. The user name value can be a combination of alphanumeric characters with special characters hyphen(-), underscore(_), and period(.).
	-proto scp | sftp | ftp	Specifies the protocol as either SCP, SFTP, or FTP.
	-file <*remote_file_name*>	Specifies the remote input file or directory. Provide a fully qualified path name. Allows 128 character length and the maximum allowed file size is 20KB. The characters supported are enclosed single quotation mark ('), enclosed double quotation mark ("), back quote (`), backslash (\), underscore (_), and dollar sign($).
--lstemplates	Displays the list of templates available.	
--verify <*template_name*>	Verifies the running configuration against a required configuration specified in the template file.	
--delete <*template_name*>	Deletes the specified template file.	
--show [<*template_name*>]	Displays the configured cipher, kex, MAC algorithms, hostkey algorithms, and public key algorithms. If the template name is specified, this command displays the configuration contents in the specified template file. In addition, displays the crypto module version, FIPS inside, and bootup selftest state.	
--show -crypto-module-version	Displays the crypto module version.	
--showlogs <*indicatorlogs*>	Displays the FIPS indicator logs generated when FIPS-inside mode is enabled in the switch. An error message is displayed upon execution if FIPS-inside mode is not enabled.	
	-standby	Displays the indicator logs generated in the standby CP of a chassis.
--help	Displays the command usage.	

Examples

To configure ciphers, kex, and MAC for SSH and HTTPS:

```
switch:admin> seccryptocfg --replace -type SSH -cipher \
    3des-cbc,aes128-cbc,aes192-cbc -kex diffie-hellman-group-exchange-sha1 \
    -mac hmac-sha2-256
```

To configure ciphers for SSH:

```
switch:admin> seccryptocfg --replace -type SSH -cipher \
   aes128-ctr,aes192-ctr
This command requires the daemon(s) SSH to be restarted.
Existing sessions will be terminated.
Please confirm and provide the preferred option
Press Yes(Y,y), No(N,n) [N]:y
```

To configure ciphers for HTTPS:

```
switch:admin> seccryptocfg --replace -type https -cipher \
   '!ECDH:!DH:HIGH:-MD5:!CAMELLIA'
This command requires the daemon(s) HTTP to be restarted.
Existing sessions will be terminated.
Please confirm and provide the preferred option
Press Yes(Y,y), No(N,n) [N]:no
```

To configure ciphers for HTTPS using the **-force** option:

```
switch:admin> seccryptocfg --replace -type https -cipher \
```

```
   '!ECDH:!DH:HIGH:-MD5:!CAMELLIA' -force
HTTP cipher list configured successfully.
```

To configure ciphers for TLS 1.3:

```
switch:admin>  seccryptocfg --apply -group HTTPS -attr Ciphers_tlsv1.3 -value
"TLS_AES_256_GCM_SHA384:TLS_CHACHA20_POLY1305_SHA256:TLS_AES_128_GCM_SHA256"
```

To configure RSA_Protocol:

```
switch:admin>  seccryptocfg --apply -group AAA
-attr RSA_Protocol -value 'TLSv1-TLSv1.2'
Config change is Successful.
```

To configure RSA_Ciphers:

```
switch:admin>  seccryptocfg --apply -group AAA -attr RSA_Ciphers -value
'ECDSA:ECDH:RSA:AES:!AESGCM:!3DES:!RSAPSK:!DHEPSK:!PSK:!DSS:!ARIAGCM:
!CAMELLIA:!CHACHA20:!SSLv3:!TLSv1:!AESCCM'
Config change is Successful.
```

To set the default CC configuration template (non-interactively):

```
switch:admin> seccryptocfg --apply default_cc -force
Validating....
Applying...

Template configurations applied successfully
Terminating all SSH/SCP sessions running

All SSH accounts will be logged out
```

To import a template file:

```
switch:admin> seccryptocfg --import cc_import -server 192.0.2.0 \
   -name brocade -proto scp -file /users/home40/brocade/default_cc
brocade@192.0.2.0's password:

Import successful
```

To export a template file:

```
switch:admin> seccryptocfg --export default_cc -server 192.0.2.0 \
   -name brocade -proto scp -file /users/home40/brocade
brocade@192.0.2.0's password:

Export successful
```

To display the list of templates available:

```
switch:admin> seccryptocfg --lstemplates

List of templates:
default_generic
default_fips
cc_import
default_strong
default_cc
```

To verify a template file:

```
switch:admin> seccryptocfg --verify default_strong
Validating ....
Verifying ....
Failed for ....
   SSH:Kex,Mac,Enc
Failed: System configuration is not compliant with input template
switch:admin> seccryptocfg --verify default_cc
Validating ....
Verifying ....
Passed: System configuration is compliant with the input template
```

To delete a template file:

```
switch:admin> seccryptocfg --delete cc_import
```

To display the configured ciphers, kex, MAC algorithms, host key algorithms, and public key algorithms:

```
switch:admin> seccryptocfg --show
SSH Crypto:
SSH Cipher                : aes128-ctr,aes192-ctr,aes256-ctr
SSH Kex                   : ecdh-sha2-nistp256,ecdh-sha2-nistp384,ecdh-sha2-nistp521,diffie-hellman-
group-exchange-sha256,diffie-hellman-group14-sha256,diffie-hellman-group16-sha512,diffie-hellman-group18-
sha512,curve25519-sha256
SSH MAC                   : hmac-sha2-256,hmac-sha2-512
SSH HostKeyAlgorithms     : ecdsa-sha2-nistp256,ecdsa-sha2-nistp384,ecdsa-sha2-nistp521,rsa-sha2-512,rsa-
sha2-256
SSH PubKeyAlgorithms      : ecdsa-sha2-nistp256,ecdsa-sha2-nistp384,ecdsa-sha2-nistp521,rsa-sha2-512,rsa-
sha2-256
TLS Ciphers:
HTTPS                     : ECDSA:ECDH:RSA:AES:!3DES:!RSAPSK:!DHEPSK:!PSK:!DSS:!ARIAGCM:!CAMELLIA:!CHACHA20:!
SSLv3:!TLSv1:!AESCCM
HTTPS_TLS_v1.3            :
 TLS_AES_256_GCM_SHA384:TLS_AES_128_GCM_SHA256:TLS_AES_128_CCM_8_SHA256:TLS_AES_128_CCM_SHA256
RADIUS                    : ECDSA:ECDH:RSA:AES:!3DES:!RSAPSK:!DHEPSK:!PSK:!DSS:!ARIAGCM:!CAMELLIA:!CHACHA20:!
SSLv3:!TLSv1:!AESCCM
LDAP                      : ECDSA:ECDH:RSA:AES:!3DES:!RSAPSK:!DHEPSK:!PSK:!DSS:!ARIAGCM:!CAMELLIA:!CHACHA20:!
SSLv3:!TLSv1:!AESCCM
SYSLOG                    : ECDSA:ECDH:RSA:AES:!3DES:!RSAPSK:!DHEPSK:!PSK:!DSS:!ARIAGCM:!CAMELLIA:!CHACHA20:!
SSLv3:!TLSv1:!AESCCM
RSA                       : ECDSA:ECDH:RSA:AES:3DES:!RSAPSK:!DHEPSK:!PSK:!DSS:!AESCCM8:!AESCCM:!ARIAGCM:!
CAMELLIA:!CHACHA20:!SEED:!RC4
FA                        : ECDSA:ECDH:RSA:AES:3DES:!RSAPSK:!DHEPSK:!PSK:!DSS:!AESCCM8:!AESCCM:!ARIAGCM:!
CAMELLIA:!CHACHA20:!SEED:!RC4
SMTPS                     : ECDSA:ECDH:RSA:AES:3DES:!RSAPSK:!DHEPSK:!PSK:!DSS:!AESCCM8:!AESCCM:!ARIAGCM:!
CAMELLIA:!CHACHA20:!SEED:!RC4
TLS Protocol:
HTTPS                     : TLSv1.3
RADIUS                    : TLSv1.2
LDAP                      : TLSv1.2
SYSLOG                    : TLSv1.2
RSA                       : Any
FA                        : TLSv1.2
SMTPS                   : TLSv1.2
```

```
X509v3:
Validation               : Basic
Compliance:
CryptoVersion            : 9.2.1
FIPS Inside              : Disabled
BootUp Selftests         : Disabled
```

To display the crypto module version:

```
switch:admin> seccryptocfg --show -crypto-module-version
CryptoVersion            : 9.2.0
```

To display configuration contents in a specific template file:

```
switch:admin> seccryptocfg --show default_cc
[Ver] 0.3
[SSH]
Enc:aes128-cbc,aes256-cbc,aes128-ctr,aes256-ctr,aes128-gcm@openssh.com,aes256-gcm@openssh.com
Kex:diffie-hellman-group14-sha1,diffie-hellman-group14-sha256,
    ecdh-sha2-nistp256,ecdh-sha2-nistp384,ecdh-sha2-nistp521
Mac:hmac-sha1,hmac-sha2-256,hmac-sha2-512
HostKeyAlgorithms:ecdsa-sha2-nistp256,ecdsa-sha2-nistp384,ecdsa-sha2-nistp521,rsa-sha2-512,rsa-sha2-256
PubKeyAlgorithms:ecdsa-sha2-nistp256,ecdsa-sha2-nistp384,ecdsa-sha2-nistp521,rsa-sha2-512,rsa-sha2-256
[AAA]
RAD_Ciphers:ECDSA:ECDH:RSA:AES:!3DES:!RSAPSK:!DHEPSK:!PSK:!DSS:!ARIAGCM:!CAMELLIA:!CHACHA20:!SSLv3:!TLSv1:!
AESCCM
LDAP_Ciphers:ECDSA:ECDH:RSA:AES:!3DES:!RSAPSK:!DHEPSK:!PSK:!DSS:!ARIAGCM:!CAMELLIA:!CHACHA20:!SSLv3:!TLSv1:!
AESCCM
RAD_Protocol:TLSv1.2
LDAP_Protocol:TLSv1.2
[LOG]
Syslog_Ciphers:ECDSA:ECDH:RSA:AES:!3DES:!RSAPSK:!DHEPSK:!PSK:!DSS:!ARIAGCM:!CAMELLIA:!CHACHA20:!SSLv3:!TLSv1:!
AESCCM
Syslog_Protocol:TLSv1.2
[HTTPS]
Ciphers:ECDSA:ECDH:RSA:AES:!3DES:!RSAPSK:!DHEPSK:!PSK:!DSS:!ARIAGCM:!CAMELLIA:!CHACHA20:!SSLv3:!TLSv1:!AESCCM
Protocol:TLSv1.2
Ciphers_tlsv1.3:TLS_AES_256_GCM_SHA384:TLS_AES_128_GCM_SHA256:TLS_AES_128_CCM_8_SHA256:TLS_AES_128_CCM_SHA256
[X509v3]
Validation:Strict
[Compliance]
BootUpSelfTests:yes
Zeroize:no
FIPSInside:no
SelfTests:default
CryptoIntegrityTest:yes
FIPSExtn:no
```

To apply single attribute configuration to a specified group:

```
switch:admin> secCryptoCfg --apply -group X509v3
-attr Validation -value Basic
2020/06/29-12:38:19, [WEBD-1004], 569, FID 128, INFO, sw0, HTTP server and
weblinker process will be restarted due to configuration change.
Terminating all SSH/SCP sessions running
```

```
All SSH accounts will be logged out
```

To apply attribute configuration as FA_Ciphers:

```
switch:admin> seccryptocfg --apply -group AAA -attr FA_Ciphers -value
'ECDSA:ECDH:RSA:AES:!AESGCM:!3DES:!RSAPSK:!DHEPSK:!PSK:!DSS:!ARIAGCM:!CAMELLIA:!CHACHA20:!SSLv3:!TLSv1:!
AESCCM'
Config change is Successful
```

To apply attribute configuration as FA_Protocol:

```
switch:admin> seccryptocfg --apply -group AAA
-attr FA_Protocol -value 'TLSv1-TLSv1.2'
Config change is Successful
```

To display FIPs indicator logs:

```
switch:admin> secCryptoCfg --showlogs indicatorlogs
2022/02/16-06:19:16: Executed
  aes_init_key in ECB mode by process pid=7733
2022/02/16-06:19:16: Executed
  RAND_DRBG_bytes by process pid=7733
2022/02/16-06:19:16: Executed
  aes_init_key in ECB mode by process pid=7733
2022/02/16-06:19:16: Executed
  aes_init_key in ECB mode by process pid=7733
2022/02/16-06:19:16: Executed
  aes_init_key in ECB mode by process pid=7733
2022/02/16-06:19:16: Executed
  ECDSA_verify by process pid=7733
2022/02/16-06:19:16: Executed
  RAND_DRBG_bytes by process pid=7733
2022/02/16-06:19:16: Executed
  aes_init_key in ECB mode by process pid=7733
...
```

See Also

None

secDefineSize

Displays the size of the defined security database.

Synopsis

secdefinesize

Description

Use this command to display the size of the defined security database. The command also displays the maximum database size.

The maximum security database size is 1 Megabyte per logical switch. With up to eight partitions, the total database size on a chassis can be up to 8 Megabytes. On switches that are not Virtual Fabric-capable, the security database is limited to 1 Megabyte.

The effective security DB size is the lowest supported by the fabric. The presence of a Standby CP that runs an earlier version of the operating system drops the effective security DB size on an Active CP.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the size of the defined security database

```
switch:admin> secdefinesize
   Size of security defined data: 35 bytes
   (Max 1048576 bytes)
```

See Also

secActiveSize

secPolicyAbort

Aborts all unsaved changes to the defined database.

Synopsis

secpolicyabort

Description

Use this command to abort all changes to the defined security database that have not been saved to flash memory and to abort changes to policy creation and modification operations from all the switches if a fabric-wide consistency policy is not set for the particular policy.

Notes

When an FCS policy is enabled, this command can be issued only from the Primary FCS switch.

Only the user who made the changes to the defined database may use this command to abort them.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To abort all changes that have not been saved to nonvolatile memory:

```
primaryfcs:admin> secpolicyabort
Unsaved data has been aborted.
primaryfcs:admin> secpolicyabort
```

```
No new data to abort.
```

See Also

secPolicyActivate, secPolicyAdd, secPolicyDelete, secPolicyDump, secPolicyRemove, secPolicySave, secStatsShow

secPolicyActivate

Saves and activates the Defined Security Policy Set.

Synopsis

secpolicyactivate

Description

Use this command to activate the current defined security policy to all switches in the fabric. This activates the policy set on the local switch or all switches in the fabric depending on the fabric-wide consistency policy.

If there are changes to the SCC, DCC, or FCS policies in the current CLI or API transaction that have not been saved to the Defined Security Policy Set, then this command saves the changes to the Defined Security Policy Set first, and then activates it. If there are no changes, but the Defined Security Policy Set differs from the Active Security Policy Set, then the Defined Security Policy Set is activated. If there are no changes and the Defined Security Policy Set is the same as the Active Security Policy Set, then nothing is done.

After activation the defined policy set becomes the Active Policy Set.

Use **secPolicyShow** to display the members of an existing policy in the Active or Defined Security Policy Sets.

Notes

The behavior of this command is the same for tolerant and strict fabric-wide consistency.

When an FCS policy is enabled, this command can be issued only from the Primary FCS switch.

Any modifications to the SCC, DCC, and FCC DB are saved and activated. When **secPolicyActivate** is issued after the **secPolicySave** command, it might fail.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To activate the defined security policy set on all switches in the fabric:

```
switch:admin> secpolicyactivate
About to overwrite the current Active data.
ARE YOU SURE (yes, y, no, n): [no] y
secpolicyactivate command was completed successfully.
```

See Also

fddCfg, secPolicyAdd, secPolicyDelete, secPolicyDump, secPolicyShow

secPolicyAdd

Adds members to an existing security policy.

Synopsis

```
secpolicyadd "<name>","<member>[;<member>...]"
secpolicyadd "<name>" "<member>[;<member>...]"
```

Description

Use this command to add one or more members to an existing access policy.

Each policy corresponds to a management method. The list of members of a policy acts as an access control list for that management method. Before a policy is created, there is no enforcement for that management method; all access is granted. After a policy has been created and a member has been added to the policy, that policy becomes closed to all access except from included members. If all members are then deleted from the policy, all access is denied for that management method (the DCC_POLICY is an exception).

Attempting to add a member to a policy that already is a member causes this command to fail.

In a Virtual Fabric Environment, when you create a DCC lockdown policy on a logical switch, the DCC policy is created for each port in the chassis, even though the ports are not currently present in the local logical switch. This is done to provision the DCC policy for the ports that may be moved later. If a policy seems stale at any point, use **secPolicyDelete** to remove all stale DCC policies.

Fabric-wide consistency policies can be configured on per logical switch basis, which applies the FCS policy to the corresponding fabric connecting to the logical switch. Automatic policy distribution for DCC, SCC and FCS remains unchanged and can be configured on a per logical switch basis.

All DCC and SCC security policy members are sorted based on their world wide names (WWNs) in order to avoid a segmentation of ports. This is not the case for switches running earlier firmware versions; on these switches, security member lists are unsorted. When a switch with an unsorted security policy member list tries to join a switch that runs Fabric OS v7.4.2x or later and is configured with an ordered security policy list, port segmentation occurs because of mismatching security policy lists.

Notes

When an FCS policy is enabled, this command can be issued only from the Primary FCS switch. The **secpolicyadd** command can be issued on all switches for SCC and DCC policies as long as fabric-wide consistency policy is not set for the particular policy.

Do not add the WWNs of front or translate (xlate) domains to the FCS policy if the edge fabric is connected to an FC Router.

Backup FCS switches typically cannot modify the policy. However, if the Primary FCS switch in the policy list is not reachable, then a backup FCS switch is allowed to modify the policy.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

"<name>"	Specify the name of an existing policy to which you want to add members. Valid values for this operand include the following:

- DCC_POLICY_*nnn*
- FCS_POLICY
- SCC_POLICY

The specified policy name must be capitalized.

The DCC_POLICY_*nnn* name has the common prefix DCC_POLICY_ followed by a string of user-defined characters. These characters do not have to be capitalized like regular policy names, but they are case-sensitive.

"<*member*>" Specify a list of one or more member switches to be included in the security policy. The list must be enclosed in quotation marks; members must be separated by semicolons. Depending on the policy type, members are specified as follows.

FCS_POLICY or SCC_POLICY Members This policy type requires member IDs to be specified as WWN strings, Domains, or switch names. If Domain IDs or switch names are used, the switches associated must be present in the fabric or the command fails.

DCC_POLICY Members The DCC_POLICY_*nnn* is a list of device port names associated with a specific switch and port index combination. An empty DCC_POLICY does not stop access to the switch. The device port name is specified by its port WWN string. The switch and port index combination must be in the *switch port* format, where *switch* can be specified as a WWN, a domain, or a switch name, and *port* is specified by port numbers separated by commas and enclosed in either brackets or parentheses; for example, (2, 4, 6). Ports enclosed in brackets include the devices currently attached to those ports.

The following examples illustrate several ways to specify the port values:

(1-6)	Selects ports 1 through 6.
(*)	Selects all ports on the switch.
[3, 9]	Selects ports 3 and 9 and all devices attached to those ports.
[1-3, 5]	Selects ports 1 through 3 and 5 and all devices attached to those ports.
[*]	Selects all ports on the switch and devices currently attached to those ports.

Examples

To add a member to the SCC_POLICY using the device WWN:

```
primaryfcs:admin> secpolicyadd "SCC_POLICY", \
     "12:24:45:10:0a:67:00:40"
Member(s) have been added to SCC_POLICY.
```

To add two devices to attach to domain 3, ports 1 and 3, in an existing empty DCC policy; the port WWN of the first device is 11:22:33:44:55:66:77:aa and port WWN of the second device is 11:22:33:44:55:66:77:bb:

```
primaryfcs:admin> secpolicyadd "DCC_POLICY_abc", \
     "11:22:33:44:55:66:77:aa;11:22:33:44:55:66:77:bb;3(1,3)"
Member(s) have been added to DCC_POLICY_abc.
```

To add a security policy:

```
switch:admin> secpolicyadd SCC_POLICY,\
   "10:00:00:05:1e:a3:01:d9"
switch:admin> secpolicyshow
_____________________________________
```

```
            ACTIVE POLICY SET
_____________________________________
            DEFINED POLICY SET
SCC_POLICY
   WWN                     DId swName
   -------------------------------------
   10:00:00:05:1e:a1:ef:b9   2 sw0
   10:00:00:05:1e:a3:00:59   5 sw0
   10:00:00:05:1e:a2:f9:09   3 sw0
   10:00:00:05:1e:a3:01:d9   3 sw0
```

See Also

fddCfg, secPolicyActivate, secPolicyDelete, secPolicyDump

secPolicyCreate

Creates a new security policy.

Synopsis

secpolicycreate "<*name*>"[,"<*member*>[;<*member*>...]"]

secpolicycreate "<*name*>" ["<*member*>[;<*member*>...]"]

Description

Use this command to create a new policy and to edit Switch Connection Control (SCC), Device Connection Control (DCC), and Fabric Configuration Server (FCS) policies on the local switch. All policies can be created only once, except for the DCC_POLICY_*nnn*. Each DCC_POLICY_*nnn* must have a unique *name*. This command can be issued on all switches in the current fabric for SCC and DCC policies if they are not intended to be fabric-wide.

Adding members while creating a policy is optional. You can add members to a policy later, using the **secPolicyAdd** command.

Each policy corresponds to a management method. The list of members of a policy acts as an access control list for that management method. Before a policy is created, there is no enforcement for that management method, which is all access is granted. After a policy is created and a member is added to the policy, that policy is closed to all access except to include members. If all members are then deleted from the policy, all access is denied for that management access method.

All newly created policies are saved on the local switch only, unless the switch has a fabric-wide consistency policy for that policy.

In a Virtual Fabric environment, when you create a DCC lockdown policy on a logical switch, the DCC policy is created for each port in the chassis, even though the ports are not currently present in the local logical switch. This is done to provision the DCC policy for the ports that may be moved later. If a policy seems stale at any point, use the **secPolicyDelete** command to remove all stale DCC policies.

Fabric wide consistency policies can be configured on a logical switch basis, which applies the FCS policy to the corresponding fabric connecting to the logical switch. Automatic policy distribution behavior for DCC, SCC and FCS remains unchanged and can be configured on a logical switch basis.

All DCC and SCC security policy members are sorted based on their world wide names (WWNs) in order to avoid a segmentation of ports. This is not the case for switches running earlier firmware versions; on these switches, security member lists are unsorted. When a switch with an unsorted security policy member list tries to join a switch and is configured with an ordered security policy list, port segmentation occurs because of mismatching security policy lists.

Notes

When an FCS policy is enabled, this command can be issued only from the Primary FCS switch.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

"*name*" Specify the name of the policy you want to create. Valid values for this operand include the following:

- DCC_POLICY_*nnn*
- SCC_POLICY
- FCS_POLICY

The specified policy name must be capitalized.

The DCC_POLICY_*nnn* name has the common prefix DCC_POLICY_ followed by a string of user-defined characters. These characters do not have to be capitalized like regular policy names. Valid values for DCC_POLICY_*nnn* are user-defined alphanumeric or underscore characters. The maximum length is 30 characters, including the prefix DCC_POLICY_.

secpolicycreate DCC_POLICY "*" may be used to indicate DCC lockdown. This command creates a unique policy for each port in the fabric locking it down to the device connected or creating an empty policy to disallow any device to be connected to it. This can be done only when there are no other DCC policies defined on the switch. The switch must be in an enabled state for DCC lockdown to succeed. On a disabled switch, executing **secpolicycreate** DCC_POLICY "*" will not create any DCC policies.

"*member*" Specify one or more members to be included in the security policy. The member list must be enclosed in double quotation marks and members separated by semicolons. The member list must be separated from the name field by a comma and a space. Depending on the policy type, members are specified as follows:

DCC_POLICY Members The DCC_Policy_*nnn* is a list of devices associated with a specific switch and port index combination. An empty DCC_POLICY does not stop access to the switch. The device is specified by its port WWN. The switch and port combination must be in the switch *port* format.

switch can be specified using a WWN, domain, or switch name.

port can be specified by port numbers separated by commas and enclosed in either brackets or parentheses: for example, (2, 4, 6). Ports enclosed in brackets include the devices currently attached to those ports.

The following examples illustrate several ways to specify the port values:

(1-6)	Selects ports 1 through 6.
(*)	Selects all ports on the switch.
[3, 9]	Selects ports 3 and 9 and all devices attached to those ports.
[1-3, 5]	Selects ports 1 through 3 and 5 and all devices attached to those ports.
[*]	Selects all ports on the switch and devices currently attached to those ports.

SCC_POLICY and FCC_POLICY Members This policy type requires member IDs to be specified as WWN strings, domains, or switch names. If domain or switch names are used, the switches associated must be present in the fabric or the command fails.

To add all switches in the current fabric as members of the policy, enter an asterisk enclosed in quotation marks (*) as the member value. This feature cannot be used by the other security commands.

Examples

To create an FCS policy (While creating the FCS policy, the local switch WWN is automatically included in the list. Switches included in the FCS list are FCS switches and the remaining switches in the fabric are non-FCS switches. Out of the FCS list, the switch that is in the first position becomes the Primary FCS switch and the remaining switches become backup FCS switches. If the first switch in the FCS list is not reachable, the next switch becomes the Primary):

```
primaryfcs:admin> secpolicycreate "FCS_POLICY", "3; 4"
FCS_POLICY has been created.
```

To create a device policy to allow two devices to attach to domain 3 ports 1 and 3 (the WWN of first device is 11:22:33:44:55:66:77:aa and the WWN of second device is 11:22:33:44:55:66:77:bb):

```
primaryfcs:admin> secpolicycreate "DCC_POLICY_aB_7", \
     "11:22:33:44:55:66:77:aa;11:22:33:44:55:66:77:bb;3[1,3]"
DCC_POLICY_abc has been created.
```

To create a SCC policy in a fabric with three switches:

1. Check if a policy exists.

```
switch:admin> secpolicyshow
_________________________________________________
                ACTIVE POLICY SET
_________________________________________________
                DEFINED POLICY SET
```

2. Identify switches in the fabric.

```
switch:admin> fabricshow
Switch ID   Worldwide Name       Enet IP Addr FC IP Addr Name
-----------------------------------------------------------------
2:fffc02 10:00:00:05:1e:39:5f:67 192.0.2.0 10.20.30.53 "sw1"
                            fec0:60:69bc:60:260:69ff:fe80:d4a
4:fffc04 10:00:00:05:1e:04:ef:0e 192.0.2.0 10.20.30.49 'sw2"
                            fec0:60:69bc:54:205:1eff:fe04:ef0e
200: fffcc8 10:00:00:05:1e:35:cd:ef 192.0.2.0 10.20.30.117 \
                                      "nSW4100_98"
```

3. Create a SCC policy that includes switches with domain IDs 2 and 4.

```
switch:admin> secpolicycreate "SCC_POLICY","2;4"
 SCC_POLICY has been created.
```

4. Activate the policy.

```
switch:admin> secpolicyactivate
 About to overwrite the current Active  Policy Set.
 ARE YOU SURE  (yes, y, no, n): [no] y
 secpolicyactivate command was completed successfully.
```

To create an SCC policy that includes all switches in the fabric:

```
switch:admin> secpolicycreate "SCC_POLICY",*
 SCC_POLICY has been created.
```

To create a security policy:

```
switch:admin> secpolicycreate "SCC_POLICY",\
```

```
   "10:00:00:05:1e:a1:ef:b9; 10:00:00:05:1e:a3:00:59; \
   10:00:00:05:1e:a2:f9:09"
SCC_POLICY created as user specified.
switch:admin> secpolicyshow
_____________________________________
            ACTIVE POLICY SET
_____________________________________
            DEFINED POLICY SET
SCC_POLICY
   WWN                     DId swName
   -----------------------------------
   10:00:00:05:1e:a1:ef:b9   2 sw0
   10:00:00:05:1e:a3:00:59   5 sw0
   10:00:00:05:1e:a2:f9:09   3 sw0
```

To cancel creation of SCC policy:

```
switch:admin> secpolicycreate "SCC_POLICY"
An empty SCC_POLICY is being created.
On activating, switches with an empty SCC_POLICY
will be isolated since no switch is allowed to join.
ARE YOU SURE  (yes, y, no, n): [no] n

Request cancelled...
Rejection of policy creation has not closed the transaction,
If there are no new defined data then please use secpolicyabort
to close or secpolicysave to save the defined data.
```

See Also

fddCfg, secPolicyActivate, secPolicyAdd, secPolicyDelete, secPolicyDump

secPolicyDelete

Deletes an existing security policy.

Synopsis

secpolicydelete *<name>*

Description

Use this command to delete an existing security policy from the defined security database. Run **secPolicyActivate** to delete the policies from the active security policy list. Deleting a security policy does not cause any traffic disruption.

Each policy corresponds to a management method. The list of members of a policy acts as an access control list for that management method. Before a policy is created, there is no enforcement for that management method; all access is granted. After a policy has been created and a member has been added to the policy, that policy becomes closed to all access except from included members. If the policy is deleted all access is granted.

Notes

When an FCS policy is enabled, this command can be issued only from the Primary FCS switch.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

The following operand is required:

"<*name*>" Specify the name of a security policy to delete. The policy name must be capitalized. Quotation marks are optional. Once a security policy is deleted, fabric-wide switch access through that method is unrestricted. Valid security policy names include the following:

- **DCC_POLICY_nnn** Deletes the specified Device Connection Control (DCC) policy. The DCC_POLICY_nnn name has the common prefix DCC_POLICY_ followed by a string of user-defined characters. These characters do not have to be capitalized.
- **ALL_DCC_POLICY** Deletes all DCC policies from the defined policy list.
- **ALL_STALE_DCC_POLICY** Deletes all stale DCC policies from the defined policy list. DCC policies become stale when the ports are removed from a logical switch.
- **SCC_POLICY** Deletes the Switch Connection Control policy from the defined policy list.
- **FCS_POLICY** Deletes the Fabric Configuration Server policy from the defined policy list.

Examples

To delete an existing security policy:

```
switch:admin> secpolicydelete "DCC_POLICY_ab1"
About to delete policy DCC_POLICY_ab1.
Are you sure (yes, y, no, n):[no] y
DCC_POLICY has been deleted.
```

To delete all existing DCC policies in the fabric:

```
primaryfcs:admin> secpolicydelete ALL_DCC_POLICY
  About to clear all the DCC policies
  ARE YOU SURE  (yes, y, no, n): [no] y
```

To delete all stale DCC policies in the fabric:

```
primaryfcs:admin> secpolicydelete ALL_STALE_DCC_POLICY
About to clear all STALE DCC policies
ARE YOU SURE  (yes, y, no, n): [no] y
```

See Also

secPolicyActivate, secPolicyAdd, secPolicyCreate, secPolicyDump, secPolicyShow

secPolicyDump

Displays the members of one or all existing security policies.

Synopsis

```
secpolicydump ["<listtype>"[,"<name>"]]
secpolicydump ["<listtype>" ["<name>"]]
```

Description

Use this command to display, without page breaks, the members of an existing policy in the active and defined (saved) databases. When issued without operands, this command displays the members of all security policies.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

This command can be issued from all FCS switches in the fabric.

Operands

This command has the following optional operands:

"<*listtype*>" Specifies the database to display, enclosed in double quotation marks. The name for an active database is "Active"; the name for a saved, defined database is "Defined" or an asterisk (*) for both Active and Defined. If *listtype* is not specified, all databases are displayed.

"<*name*>" Specifies the security policy for which to display the members. Valid values for this operand include the following:

- DCC_POLICY_*nnn*
- FCS_POLICY
- SCC_POLICY

The specified policy name must be capitalized and enclosed in double quotation marks.

The DCC_POLICY_*nnn* name has the common prefix DCC_POLICY_ followed by a string of user-defined characters. These characters do not have to be capitalize. If *name* is not specified, all existing policies are displayed.

Examples

To display all security policy information from all databases without page breaks:

```
switch:admin> secpolicydump
   ACTIVE POLICY SET
FCS_POLICY
Pos Primary WWN                   DId swName
_____________________________________________
1    Yes    10:00:00:60:69:30:15:5c 1 primaryfcs
2     No    10:00:00:60:69:30:1e:62 4 switch
_____________________________________________
_____________________________________________
            DEFINED POLICY SET
FCS_POLICY
Pos Primary WWN                   DId swName
_____________________________________________
1   Yes     10:00:00:60:69:30:15:5c 1 primaryfcs
2    No     10:00:00:60:69:30:1e:62 4 switch
_____________________________________________
```

To display all security policies in the active database:

```
switch:admin> secpolicydump "active"


_____________________________________________
                ACTIVE POLICY SET
FCS_POLICY
  Pos   Primary WWN                     DId swName
  -----------------------------------------------
    1   Yes     10:00:00:05:1e:39:5f:67 3 NeptuneSec
```

```
    2   No      10:00:00:05:1e:90:09:4a    - Unknown

SCC_POLICY
  WWN                     DId swName
  --------------------------------------------------
  10:00:00:05:1e:39:5f:67   3 NeptuneSec
  10:00:00:05:1e:90:09:4a   - Unknown

DCC_POLICY_h1
  Type    WWN                     DId swName
  --------------------------------------------------
  Switch  10:00:00:05:1e:39:5f:67   3 NeptuneSec.
  =Index=> 34.
  Device  21:00:00:e0:8b:13:5e:8d
  Device  21:00:00:e0:8b:13:5e:8e
```

To display all security policies in the defined database:

```
switch:admin> secpolicydump "Defined"

_____________________________________________________
                DEFINED POLICY SET
FCS_POLICY
  Pos   Primary WWW                     DId swName
  --------------------------------------------------
    1   Yes     10:00:00:05:1e:39:5f:67 3 NeptuneSec
    2   No      10:00:00:05:1e:90:09:4a - Unknown

SCC_POLICY
  WWN                     DId swName
  --------------------------------------------------
  10:00:00:05:1e:39:5f:67   3 NeptuneSec
  10:00:00:05:1e:90:09:4a   - Unknown

DCC_POLICY_h1
  Type    WWN                     DId swName
  --------------------------------------------------
  Switch  10:00:00:05:1e:39:5f:67   3 NeptuneSec.
  =Index=> 34.
  Device  21:00:00:e0:8b:13:5e:8d
  Device  21:00:00:e0:8b:13:5e:8e
```

To display the FCS policies in the defined database:

```
switch:admin> secpolicydump "Defined","FCS_POLICY"

_____________________________________________________
                DEFINED POLICY SET
FCS_POLICY
  Pos   Primary WWW                     DId swName
  --------------------------------------------------
    1   Yes     10:00:00:05:1e:39:5f:67 3 NeptuneSec
    2   No      10:00:00:05:1e:90:09:4a - Unknown
```

To display the SCC policies in the defined database:

```
switch:admin> secpolicydump "Defined","SCC_POLICY"
```

```
_____________________________________________
                DEFINED POLICY SET
SCC_POLICY
  WWN                     DId swName
  ---------------------------------------------
  10:00:00:05:1e:39:5f:67   3 NeptuneSec
  10:00:00:05:1e:90:09:4a   - Unknown
```

To display the SCC policies in the active database:

```
switch:admin> secpolicydump "Active","SCC_POLICY"

_____________________________________________
                ACTIVE POLICY SET
SCC_POLICY
   WWN                     DId swName
   ---------------------------------------------
   10:00:00:05:1e:39:5f:67   3 NeptuneSec
   10:00:00:05:1e:90:09:4a   - Unknown
```

See Also

secPolicyActivate, secPolicyAdd, secPolicyCreate, secPolicyDelete, secPolicyShow

secPolicyFCSMove

Moves a member in the FCS policy.

Synopsis

secpolicyfcsmove [<*from*>, <*to*>]

Description

Use this command to move an FCS member from one position to another position in the FCS list. Only one FCS can be moved at a time. The first FCS switch in the list that is also present in the fabric is the Primary FCS.

Notes

If a backup FCS is moved to the first position, it becomes the primary FCS after activation.

An FCS policy must be enabled to execute this command, and the command must be issued from the primary FCS switch.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

from	Specify the position of the FCS switch you want to move.
to	Specify the position to which you want to move the FCS switch.

Examples

To move the backup FCS switch from position 2 to position 3 in the FCS list (interactively):

```
switch:admin> secpolicyfcsmove
```

```
Pos   Primary WWW                     DId swName.
================================================
 1   Yes     10:00:00:60:69:10:02:18   1 switch5.
 2   No      10:00:00:60:69:00:00:5a   2 switch60.
 3   No      10:00:00:60:69:00:00:13   3 switch73.

Please enter position you'd like to move \
   from  : (1..3) [1] 2

Please enter position you'd like to move \
   to  : (1..3) [1] 3
_____________________________________________________
                DEFINED POLICY SET

FCS_POLICY
 Pos   Primary WWW                     DId swName
 _____________________________________________________
  1   Yes     10:00:00:60:69:10:02:18   1 switch5.
  2   No      10:00:00:60:69:00:00:13   3 switch73.
  3   No      10:00:00:60:69:00:00:5a   2 switch60.
_____________________________________________________
```

To move Backup FCS switch from position 3 to position 1 in the FCS list(non-interactively):

```
switch:admin> secpolicyshow
_____________________________________________________
    ACTIVE POLICY SET
1   Yes     10:00:00:05:1e:39:5f:67   2 switch1
2   No      10:00:00:05:1e:04:ef:0e   4 switch2
3   No      10:00:00:05:1e:35:cd:ef 200 switch3

switch:admin> secpolicyfcsmove 3,1
_____________________________________________________
       DEFINED POLICY SET
FCS_POLICY
Pos   Primary WWW                     DId swName
-----------------------------------------------------
1   No      10:00:00:05:1e:35:cd:ef 200 switch3
2   Yes     10:00:00:05:1e:39:5f:67   2 switch1
3   No      10:00:00:05:1e:04:ef:0e   4 switch2

switch:admin> secpolicyactivate
About to overwrite the current Active  Policy Set.
ARE YOU SURE  (yes, y, no, n): [no] y
secpolicyactivate command was completed successfully.

switch:admin> secpolicyshow
_____________________________________________________
           ACTIVE POLICY SET
FCS_POLICY
Pos   Primary WWW                     DId swName
-----------------------------------------------------
1   Yes     10:00:00:05:1e:35:cd:ef 200 switch3
```

```
 2   No      10:00:00:05:1e:39:5f:67   2 switch1
 3   No      10:00:00:05:1e:04:ef:0e   4 switch2
```

See Also

secPolicyActivate, secPolicyAdd, secPolicyCreate, secPolicyDelete, secPolicyDump, secPolicyShow

secPolicyRemove

Removes members from an existing security policy.

Synopsis

```
secpolicyremove "<name>","<member>[;<member>...]"
secpolicyremove "<name>" "<member>[;<member>...]"
```

Description

Use this command to remove one or more members from an existing security policy. It is not possible to remove all members from the FCS_POLICY; the local switch WWN cannot be deleted from the FCS policy.

Beginning with Fabric OS v7.4.x, it is not possible to remove all members from the SCC_POLICY using asterisk(*) and the local switch WWN cannot be removed from the SCC policy.

The command also prompts for confirmation before removing any member if HIF is enabled.

Notes

If an FCS policy is enabled, this command must be issued from the primary FCS switch.

After removing members from an existing security policy, execute the **secPolicyActivate** command to activate the current defined policy.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

"*name*" Specify the name of an existing policy you want to remove members from. This operand is required. Valid values for this operand include the following:

- DCC_POLICY_*nnn*
- FCS_POLICY
- SCC_POLICY

The specified policy name must be capitalized.

The DCC_POLICY policy name has the common prefix DCC_POLICY_ followed by a string of user-defined characters. These characters do not have to be capitalized like regular policy names, but are case-sensitive.

"*member*" Specify a member or list of members to delete from the policy. The list must be enclosed in quotation marks; members must be separated by semicolons. This operand is required. Depending on the policy type, members can be specified using IP address, WWN, domain, or switch name.

WWN Member Policy Types The following policy types require members be specified by WWN address:

- FCS_POLICY
- SCC_POLICY

These policy types require member IDs be specified as WWN strings, domains, or switch names. If domain or switch names are used, the switches associated must be present in the fabric or the command fails.

DCC_POLICY Members

The DCC_Policy_nnn is a list of devices associated with a specific switch and port combination. The device is specified with a WWN string. The switch and port combination must be specified in the *switch port* format where *switch* can be specified by switch WWN, domain, or switch name. The *port* parameter can be specified by port number separated by commas, and enclosed in either brackets or parentheses: for example, (2, 4, 6). Ports enclosed in brackets include the devices currently attached to those ports.

The following examples illustrate several ways to specify the port values:

(1-6)	Selects ports 1 through 6.
(*)	Selects all ports on the switch.
[3, 9]	Selects ports 3 and 9 and all devices attached to those ports.
[1-3, 5]	Selects ports 1 through 3 and 5 and all devices attached to those ports.
[*]	Selects all ports on the switch and devices currently attached to those ports.

Examples

To remove a member that has a WWN of 12:24:45:10:0a:67:00:40 from SCC policy:

```
switch:admin> secpolicyremove "SCC_POLICY",  \
     "12:24:45:10:0a:67:00:40"
Member(s) have been removed from SCC_POLICY.
```

To remove a member with SCC policy and HIF enabled:

```
switch:admin> secpolicyremove "SCC_POLICY" "10:00:00:27:f8:d0:b3:8f"
HIF mode is enabled. About to remove SCC_POLICY member(s).
ARE YOU SURE  (yes, y, no, n): [no] y
```

See Also

secPolicyAbort, secPolicyActivate, secPolicyAdd, secPolicyCreate, secPolicyDelete, secPolicyDump, secPolicySave, secStatsShow

secPolicySave

Saves a defined security policy to persistent memory.

Synopsis

secpolicysave

Description

Use this command to save a defined security policy to persistent memory. **secPolicySave** saves the modified SCC, DCC, and FCS policies to the Defined Security Policy Set on the local switch.

Notes

This command is always a local switch operation. A fabric-wide consistency configuration does not affect the behavior of this command.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To save a defined policy set to persistent memory:

```
switch:admin> secpolicysave
secpolicysave command was completed successfully.
```

See Also

fddCfg, secPolicyAbort, secPolicyActivate, secPolicyAdd, secPolicyCreate, secPolicyDelete, secPolicyDump, secPolicyRemove, secStatsShow

secPolicyShow

Displays an existing security policy including the FCS policy.

Synopsis

```
secpolicyshow ["<policy_type>"[,"<name>"]]
secpolicyshow ["<policy_type>" ["<name>"]]
```

Description

Use this command to display the members of an existing policy in the Active or Defined security policy set. The command can be issued from all FCS switches.

This command displays the policy database one page at a time. Use the **secPolicyDump** command to display the policy database without page breaks.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

<policy_type>	Specify which policy to display, in quotation marks. Valid values are "Active", "Defined", or an asterisk (*) for both Active and Defined. This operand is optional. If not specified, all databases are displayed.
"<name>"	Specify the name of the security policy you want to view, in quotation marks. The specified policy name must be capitalized. This operand is optional. Valid values for this operand include the following: • DCC_POLICY_*nnn* • FCS_POLICY • SCC_POLICY

The DCC_POLICY_*nnn* name has the common prefix DCC_POLICY_ followed by a string of user-defined characters. These characters do not have to be capitalized like regular policy names, but they are case-sensitive.

Examples

To display all security policies from active databases:

```
switch:admin> secpolicyshow "active","FCS_POLICY"


 ____________________________________________________
              ACTIVE POLICY
FCS_POLICY
   Pos   Primary WWW                     DId swName
_____________________________________________________
    1   Yes    10:00:00:60:69:30:15:5c   1 primaryfcs
    2   No     10:00:00:60:69:30:1e:62   4 switch
____________________________________________________
```

To display all security policies from defined databases:

```
switch:admin> secpolicyshow "defined"
_____________________________________________________
              DEFINED POLICY
FCS_POLICY
   Pos   Primary WWW                     DId swName
_____________________________________________________
    1   Yes    10:00:00:60:69:30:15:5c   1 primaryfcs
    2   No     10:00:00:60:69:30:1e:62   4 switch
____________________________________________________
```

See Also

fddCfg, secPolicyActivate, secPolicyAdd, secPolicyCreate, secPolicyDelete, secPolicyDump

secStatsReset

Resets one or all security statistics to 0.

Synopsis

```
secstatsreset [<name> ["<domain>[;<domain>]"]]
secstatsreset <name>, "<domain>[;<domain>]"
secstatsreset [<name>] ["*"]
secstatsreset <name>, "*"
```

Description

Use this command to reset one or all security statistics to 0. This command can be issued on any switch to reset the security statistics on the local switch or chassis. If an FCS policy is enabled and **secStatsReset** is issued on the primary FCS switch, this command can reset security statistics for any or all switches in the fabric.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

When invoked without operands, this command displays the security statistics on the local switch or chassis. The following operands are optional:

<name> Specify the name of a security statistic you would like to reset. The specified policy name must be capitalized. If executed on the primary FCS, specify an asterisk (*) to reset all security policies. Valid values for this operand include the following:

- TELNET_POLICY
- HTTP_POLICY
- SCC_POLICY
- DCC_POLICY
- LOGIN
- AUTH FAIL
- TS_OUT_SYNC
- ILLEGAL_CMD

To access DCC policies, enter DCC_POLICY. Violations are not tracked for individual DCC policies. The statistics for all DCC_POLICY violations are grouped together.

<domain> Specify a list of domain IDs on which to reset the security statistics. Specify an asterisk (*) to represent all switches in the fabric or specify a list of domains, separated by semicolons and enclosed in quotation marks. This option can only be executed when an FCS policy is enabled and when the command is issued from the primary FCS switch. When domain is specified, the name operand is required.

Examples

To reset all statistics on the local switch:

```
switch:admin> secstatsreset
About to reset all security counters.
ARE YOU SURE (yes, y, no, n):[no] y
Security statistics reset to zero.
```

To reset DCC_POLICY statistics on domains 1 and 69:

```
primaryfcs:admin> secstatsreset DCC_POLICY, "1;69"
Reset DCC_POLICY statistic.
```

See Also

secStatsShow

secStatsShow

Displays one or all security statistics.

Synopsis

```
secstatsshow [<name> ["<domain>[;<domain>]"]]
secstatsshow <name>, "<domain>[;<domain>]"
secstatsshow [<name>] ["*"]
secstatsshow <name>, "*"
```

Description

Use this command to display one or all security statistics. This command can be issued on any switch to display local security statistics. If an FCS policy is enabled and **secStatsShow** is issued on the primary FCS switch, this command can retrieve and display the security statistics for any or all switches in the fabric.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

When invoked without operands, this command displays the security statistics on the local switch or chassis. The following operands are optional:

<name> Specify the name of the security statistic you want to view. The specified policy name must be capitalized. If executed on the primary FCS, specify an asterisk (*) to represent all security policies in the fabric. Valid values for this operand include the following:

- TELNET_POLICY
- HTTP_POLICY
- SCC_POLICY
- DCC_POLICY
- LOGIN
- AUTH_FAIL
- TS_OUT_SYNC
- ILLEGAL_CMD

To access DCC policies, enter DCC_POLICY. Violations are not tracked for individual DCC policies. The statistics for all DCC_POLICY violations are grouped together.

The INVALID_CERT policy name is not supported.

<domain> Specify one or more domains for which to display the security statistics. Specify an asterisk (*) in quotation marks to represent all switches in the fabric or specify a list of domains separated by semicolons. This option can only be executed when an FCS policy is enabled and the command is issued from the primary FCS switch. When *domain* is specified, the *name* operand is required.

Examples

To display the LOGIN policy statistics for the local domain.

```
switch:admin> secstatsshow LOGIN

Fabric Statistics:

Domain 1:
Name                 Value
========================================

LOGIN                2
```

To display statistic information for TELNET_POLICY for all switches in the fabric from the primary FCS switch.

```
primaryfsc:admin> secstatsshow TELNET_POLICY,"*"

Fabric Statistics:
```

```
Domain 1:
Name              Value
========================================

TELNET_POLICY     0

Domain 69:
Name              Value
========================================

TELNET_POLICY     0

Domain 70:
Name              Value
========================================

TELNET_POLICY     0
```

See Also

secStatsReset

sensorShow

Displays sensor readings.

Synopsis

sensorshow

Description

Use this command to display the current temperature, fan, and power supply status and readings from sensors located on the switch. The actual location of the sensors varies, depending on the switch type.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To view all sensor values:

```
switch:admin> sensorshow
sensor  1: (Temperature) is Ok, value is 39 C
sensor  2: (Temperature) is Absent
sensor  3: (Temperature) is Absent
sensor  4: (Temperature) is Absent
sensor  5: (Temperature) is Ok, value is 26 C
sensor  6: (Temperature) is Ok, value is 27 C
```

```
sensor  7: (Fan        ) is Ok, speed is 2537 RPM
sensor  8: (Fan        ) is Ok, speed is 2537 RPM
sensor  9: (Fan        ) is Ok, speed is 2556 RPM
sensor 10: (Power Supply ) is Ok
sensor 11: (Power Supply ) is Absent
sensor 12: (Power Supply ) is Ok
sensor 13: (Power Supply ) is Absent
```

See Also

fanShow, tempShow

setContext

Sets the logical switch context to a specified FID.

Synopsis

setcontext {*FID* | *switchname*}

Description

Use this command to set the logical switch context to a specified fabric ID (FID) or unique switch name. The FID uniquely defines a partition as a logical switch. Use **lscfg --show** to display currently configured partitions and their FIDs.

A logical switch context defines the boundaries within which a user can execute commands in a Virtual Fabric-aware environment. In a Virtual Fabric-aware environment, all commands are context-specific. When a user executes a switch-wide command, the command applies to the current logical switch context.

On legacy platforms, or if a logical switch context is not set explicitly, switch commands apply to the default logical switch context (FID 128). When the context is changed, switch-wide commands apply to the new logical switch context.

You must have chassis permissions to access all logical switches in the chassis and to use the **setContext** command to change the current context to any partition configured on the chassis. A user without chassis permissions can change contexts only within the list of FIDs specified in the user's access permissions. Refer to **userConfig** for more information.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

If a logical switch FID is deleted, users logged in to that switch are logged out.

Operands

This command has the following operand:

FID	Specifies the fabric ID of the logical switch instance for which the context is set.
switchname	Specifies the name of the logical switch for which the context is set.

Examples

To change the logical switch context to FID 20:

```
switch:admin> setcontext 20
```

To change the logical switch context to switch_20:

```
switch:admin> setcontext switch_20
```

See Also

lsCfg, userConfig

setVerbose

Specifies module verbose level.

Synopsis

```
setverbose <module_name> <level>
```

Description

Use this command to set the verbose level of the specified module. These levels filter the display of the debug message to the serial console. By default, no debug messages are displayed.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

<module_name>	Specify the name of the module for which the verbose level is to be set; module names are case-sensitive.
<level>	Specify the verbose level (0 to 9).

Examples

To set the verbose level of a module named NS to value 3:

```
switch:admin> setverbose NS 3
switch:admin> dbgshow NS
Module NS, debug level = 0, verbose level = 3
```

See Also

errModuleShow

sfpProgram

Adjusts the register settings of the SFP Rx transceiver to balance the scope of the bandwidth when connected to another vendor's transmitter. These settings can be applied to a specific SFP port or to a group of SFP ports. Do not use this command unless directed by Customer Support.

Synopsis

```
sfpProgram [<slot_number>/]<port_number>
sfpProgram [<slot_number>/]<start_port_number>-<end_port_number>
sfpProgram [<slot_number>/]<port_number> --show
sfpProgram [<slot_number>/]<start_port_number>-<end_port_number> --show
```

Description

Use this command to adjust the register settings of the SFP Rx transceiver to balance the scope of the bandwidth when connected to another vendor's transmitter.

To run the command on any desired port, the specific port must be disabled to permit changes to the optic settings. The new setting will take effect upon re-enabling the port.

Use this command only with Broadcom 32G JAAx optics with specific vendor storage, using vendor-specific optics. The part numbers for the secure version of the JAAx optics is 57-1000485-01 and the non-secure version is 57-1000333-01. This command is intended to resolve port initialization interoperability issues encountered with those specific optics. The issues might include the following ports if these vendor storage ports are connected to Brocade X6 Directors, Brocade G620 Switches, or Brocade G630 Switches.

- Ports encountering FEC uncorrectable errors
- Ports going into no_sync, port_Flt state, and so on

This command provides the ability to address situations resulting from the transmit or receive pair being outside their collective margin boundaries.

Once the settings are programmed, the new values persist through power cycles and transmit to different ports. These settings are irreversible.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

[<*slot_number*>/]	Specifies a slot number.
<*port_number*>	Specifies a port number.
<*start_port_number*>-<*end_port_number*>	Specifies a port range.
--show	Displays JAA9 and JAAA optics that are programmed after a successful execution of the command.

Examples

To program switch port 17:

```
switch:admin> sfpprogram 17

Port 17 is not disabled, retry after disabling.

switch:admin>  portdisable 17
switch:admin>  sfpprogram 17
switch:admin>  portenable 17
```

To program the range of ports from 17 through 20:

```
switch:admin> sfpprogram 17-20
```

To display the optics that are programmed:

```
switch:admin> sfpprogram 17-20 --show
sfpprogram 17-20 --show
Port 17 is programmed
Port 20 is NOT programmed 0x55 0xbd
```

See Also

None

sfpShow

Displays transceiver module (SFP/SFPDD/QSFP) information.

Synopsis

```
sfpshow
sfpshow  [<slot>/]<port> [-link] [-force]
sfpshow [<slot>/]ge<port> [-f]
sfpshow [[<slot>/]<port>] -tuning
sfpshow -pid <pid>sfpshow -all
sfpshow -health
sfpshow --help
```

Description

The term SFP is generically used for all supported module transceivers in this section.

Use this command to display information about Serial Identification SFPs, also known as module definition "4" SFPs. These SFPs provide extended information that describes the SFP capabilities, interfaces, manufacturer, and other information.

Use this command without operands to display a summary of all SFPs in the switch. For each port, the summary displays the SFP type and, for serial ID SFP, the vendor name and SFP, serial number, and speed capability (in Gigabit). See **switchShow** for an explanation of the two-letter codes.

Use this command with a port number to display detailed information about the serial ID SFP in the specified port. In this mode, this command displays values described in the "Gigabit Interface Converter" spec by Sun Microsystems, et al. The detailed view also displays the total number of Monitoring and Alerting Policy Suite (MAPS) state transitions for each SFP and a time stamp of the last polling time. The power-on time is displayed for 32, 53 or 64G transceivers.

Use the **-all** operand to display detailed information for all available SFPs. On switches running Fabric OS v9.0.x or later, this view includes the power on time for the switch in years and hours.

For "smart" SFPs including SFPs, this command displays additional fields, including module temperature, voltage, received optical power, transmitted optical power (long wave only), laser diode drive current, optional status/control register, alarm and warning flags, as well as high and low thresholds programmed on the SFPs.

A "Can not read Serial Data!" message indicates that an SFP ID could not be detected on that location (it could be a fixed port type, or an unsupported SFP type, or an interchassis link without a cable).

Notes

The identifier field has the value **3** for SFPs.

The **sfpShow** command does not reflect changes in the **sfpShow** output if any SFPs are replaced or removed while a port or a switch is disabled.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

The identifier field has the following values to indicate the various transceiver types:

- 1 for GBIC
- 2 for On-board
- 3 for SFP
- 6 for XFP
- 12 for QSFP
- 13 for QSFP+
- 17 for QSFP28
- 26 for SFPDD

Operands

This command has the following operands:

<slot>	For bladed systems only, specifies the slot number of the port to display, followed by a slash (/)
<port>	Specifies the number of the port for which to display the SFP information, relative to its slot for bladed systems. Use **switchShow** for a list of valid ports. This operand is optional; if omitted, this command displays a summary of all SFPs on the switch.
-link [-force]	Displays the diagnostic information from cached data for a local switch port and the peer port. Also displays the link latency value for local switch port applicable only in Brocade Gen 7 devices. The computed latency value is ASIC to ASIC roundtrip latency, which includes the cable and optical (both local and peer side) latency. The **-force** option displays the real-time diagnostic information from the registers for a port.
-f	Refreshes the SFP information. This option is valid only when **sfpShow** is issued for a specific port.
-tuning	Reads TX Input EQ Control, RX Output Emphasis Control, and RX Amplitude Control of QSFP28.
-pid <*pid*>	Specifies the diagnostics information of a remote FC F_Port along with its peer port. This option is supported only on FC F_Ports.
-all	Displays detailed data for all available SFPs on the switch. This operand is not compatible with <*slot*>/<*port*> operands.
-health	Displays SFP health status information from MAPS for optical transceivers 10G/16G or faster. When any of the diagnostic SFP parameters such as current, voltage, receiver power, transmit power, and temperature crosses user-configured low and high thresholds, the SFP health state changes. Possible health states include the following: **Green** — SPF operates within MAPS thresholds. **Yellow** — At least one SFP parameter monitored by MAPS has crossed a low or high threshold. **No License** — The switch does not have a Fabric Vision license. **Unknown** — This state displays for 8, 4, and 2G SPF types not supported by this feature. **Paused** — Health monitoring is not enabled on the switch.
--help	Displays the command usage.

Examples

To display SFP information including SFP health parameters:

```
switch:admin> sfpshow -health
Slot  1/Port  0: id
Slot  1/Port  1: id
Slot  1/Port  2: id
Slot  1/Port  3: id
Slot  1/Port  4: id
Slot  1/Port  5: id
Slot  1/Port  6: id
```

```
Slot  1/Port  7: id
Slot  1/Port  8: id
Slot  1/Port  9: id
Slot  1/Port 10: id
Slot  1/Port 11: id
Slot  1/Port 12: id
Slot  1/Port 13: id
Slot  1/Port 14: id
Slot  1/Port 15: id
Slot  2/Port  0: id
Slot  2/Port  1: id
Slot  2/Port  2: id
Slot  2/Port  3: id
Slot  2/Port  4: id
Slot  2/Port  5: id
Slot  2/Port  6: id
Slot  2/Port  7: id
Slot  2/Port  8: id
Slot  2/Port  9: id
Slot  2/Port 10: id
Slot  2/Port 11: id
Slot  2/Port 12: id
Slot  2/Port 13: id
Slot  2/Port 14: id
Slot  2/Port 15: id
Slot  3/Port  0: id (sw) Vendor: BROCADE \
   Serial No: HAA110491000HJ2  Speed: 4,8,16_Gbps Health: Green
Slot  3/Port  1: id (sw) Vendor: BROCADE \
   Serial No: HAA110491000HN2  Speed: 4,8,16_Gbps Health: Green
Slot  3/Port  2: id (sw) Vendor: BROCADE \
   Serial No: HAA110491000HZ2  Speed: 4,8,16_Gbps Health: Green
Slot  3/Port  3: id (sw) Vendor: BROCADE \
  Serial No: HAA110491000HS2  Speed: 4,8,16_Gbps Health: Green
Slot  3/Port  4: id (sw) Vendor: BROCADE \
  Serial No: HAA110491000HM2  Speed: 4,8,16_Gbps Health: Green
Slot  3/Port  5: id (sw) Vendor: BROCADE \
   Serial No: HAA110491000HY2  Speed: 4,8,16_Gbps Health: Green
Slot  3/Port  6: id (sw) Vendor: BROCADE \
 Serial No: HAA110491000J62  Speed: 4,8,16_Gbps Health: Green
Output truncated
```

To display detailed information about a single 16G QSFP:

```
switch:admin> sfpshow 3/44
QSFP No: 11 Channel No: 0
Identifier:             13 QSFP+
Connector:              12 MPO Parallel Optic
Transceiver:            0000000000000000 16_Gbps sw Short_dist
Encoding:               5 64B66B
Baud Rate:              140 (units 100 megabaud)
Length 9u:              0 (units km)
Length 50u (OM4):       100 (units m)
Length 62.5u:           0 (units m)
Vendor Name:            BROCADE
```

```
Vendor OUI:             00:05:1e
Vendor PN:              57-1000294-01
Vendor Rev:             A
Wavelength:             850 (units nm)
Options:                00000fde
Max Case Temp:          70 (C)
Device Tech:            0x00
Serial No:              HUA1140700000A1
Date Code:              140215
DD Type:                0x8
Enh Options:            0x0
Status/Ctrl:            0x0
Alarm flags[0,1] =      0x0, 0x0
Warn Flags[0,1] =       0x0, 0x0
Temperature:            32 Centigrade
Current:                7.502 mAmps
Voltage:                3272.6 mVolts
RX Power:               -1.8 dBm (659.9uW)
State transitions:      1
Last poll time: 02-16-2016 PST Tue 22:18:49
```

To display SFP information when a new SFP is inserted in a disabled port:

```
switch:user> sfpshow 0
Identifier:  3    SFP
Connector:   7    LC
Transceiver: 540c404000000000 2,4,8_Gbps M5,M6 sw Short_dist
Encoding:    1    8B10B
Baud Rate:   85   (units 100 megabaud)
Length 9u:   0    (units km)
Length 9u:   0    (units 100 meters)
Length 50u:  5    (units 10 meters)
Length 62.5u:2    (units 10 meters)
Length Cu:   0    (units 1 meter)
Vendor Name: Company
Vendor OUI:  00:05:1e
Vendor PN:   57-1000012-01
Vendor Rev:  A
Wavelength:  850  (units nm)
Options:     003a Loss_of_Sig,Tx_Fault,Tx_Disable
BR Max:      0
BR Min:      0
Serial No:   UAF109280000J24
Date Code:   090711
DD Type:     0x68
Enh Options: 0xfa
Status/Ctrl: 0x0
Alarm flags[0,1] = 0x0, 0x0
Warn Flags[0,1] = 0x0, 0x0
Temperature:   Not Available
Current    :   Not Available
Voltage    :   Not Available
RX Power   :   Not Available
TX Power   :   Not Available
```

```
Last poll time:   Polling has not started
```

To display detailed information about all SFPs:

```
switch:admin> sfpshow -all
(output truncated)
=============
Slot  8/Port 50:
=============

=============
Slot  8/Port 51:
=============

=============
Slot  8/Port 52:
=============
QSFP No: 13 Channel No:0
Identifier:  13   QSFP+
Connector:   12   MPO Parallel Optic
Transceiver: 0000000000000000 16_Gbps  id
Encoding:    5    64B66B
Baud Rate:   140  (units 100 megabaud)
Length 9u:   0    (units km)
Length 50u:  25   (units 2 meters)
Length 62.5u:0    (units 1 meter)
Length Cu:   0    (units 1 meter)
Vendor Name: BROCADE
Vendor OUI:  00:05:1e
Vendor PN:   57-0000090-01
Vendor Rev:  A
Wavelength:  850  (units nm)
Options:     00000fde
Max Case Temp: 70 (C)
Device Tech: 0x00
Serial No:   HTA110491002833
Date Code:   101207
DD Type:     0x8
Enh Options: 0x0
Status/Ctrl: 0x0
Alarm flags[0,1] = 0x0, 0x0
Warn Flags[0,1] = 0x0, 0x0
Temperature: 38      Centigrade
Current:     6.394   mAmps
Voltage:     3266.0  mVolts
RX Power:    -0.1    dBm (977.0uW)

State transitions: 1
Last poll time: 02-03-2012 UTC Fri 07:36:05
(output truncated)
```

To display SFPs on a Brocade X7-8 Director with a FC64-48 blade:

```
switch:admin> sfpshow
```

```
Slot  6/Port  0: id (sw) Vendor: BROCADE          Serial No: MAA12104C008655S Speed: 16,32,64_Gbps
Slot  6/Port  1: id (sw) Vendor: BROCADE          Serial No: MAA12104C001755S Speed: 16,32,64_Gbps
Slot  6/Port  2: id (sw) Vendor: BROCADE          Serial No: MAA12105C015985S Speed: 16,32,64_Gbps
Slot  6/Port  3: id (sw) Vendor: BROCADE          Serial No: MAA12104C006065S Speed: 16,32,64_Gbps
Slot  6/Port  4: id (sw) Vendor: BROCADE          Serial No: MAA12105C015675S Speed: 16,32,64_Gbps
```

To display SFP details on a Brocade X7-8 Director with a FC64-48 blade:

```
switch:admin> sfpshow 6/0
Identifier:  3    SFP
Connector:   7    LC
Transceiver: 2a04406000000000 16,32,64_Gbps M5 sw Inter,Short_dist
Encoding:    8    PAM4
Baud Rate:   578  (units 100 megabaud)
Length 9u:   0    (units km)
Length 9u:   0    (units 100 meters)
Length 50u (OM2):  0    (units 10 meters)
Length 50u (OM3):  7    (units 10 meters)
Length 62.5u:   0    (units 10 meters)
Length 50u (OM4):  10   (units 10 meters)
Vendor Name: BROCADE
Vendor OUI:  00:05:1e
Vendor PN:   57-1000495-01
Vendor Rev:  B
Wavelength:  850  (units nm)
Options:     283a Loss_of_Sig,Tx_Fault,Tx_Disable
BR Max:      231
BR Min:      0
Serial No:   MAA12104C008655S
Date Code:   210122
DD Type:     0x68
Enh Options: 0xfa
Status/Ctrl: 0x0
Pwr On Time: 0.50 years (4371 hours)
E-Wrap Control: 0
O-Wrap Control: 0
Alarm flags[0,1] = 0x0, 0x0
Warn Flags[0,1] = 0x0, 0x0
Temperature: 28      Centigrade
Current:     5.514   mAmps
Voltage:     3303.8  mVolts
RX Power:    -1.7    dBm (674.1uW)
TX Power:    -1.3    dBm (740.8 uW)

State transitions: 1
Last poll time: 10-20-2021 PDT Wed 16:56:54
```

To display detailed information for GbE port on a Brocade X6-4 Director:

```
switch:admin> sfpshow 7/ge15
Identifier:  3    SFP
Connector:   7    LC
Transceiver: 6804404000000000 8,16,32_Gbps M5 sw Short_dist
Encoding:    6    64B66B
Baud Rate:   255  (units 100 megabaud)
Length 9u:   0    (units km)
Length 9u:   0    (units 100 meters)
Length 50u (OM2):  3    (units 10 meters)
Length 50u (OM3):  7    (units 10 meters)
Length 62.5u:0    (units 10 meters)
Length Cu:   10   (units 1 meter)
Vendor Name: BROCADE
Vendor OUI:  00:05:1e
Vendor PN:   57-1000333-01
Vendor Rev:  A
Wavelength:  850  (units nm)
Options:     083a Loss_of_Sig,Tx_Fault,Tx_Disable
BR Max:      112
BR Min:      0
Serial No:   JAF316230000LCA
Date Code:   160604
DD Type:     0x68
Enh Options: 0xfa
Status/Ctrl: 0x0
Alarm flags[0,1] = 0x5, 0x20
Warn Flags[0,1] = 0x5, 0x20
Temperature: 44      Centigrade
Current:     7.824   mAmps
Voltage:     3282.1  mVolts
RX Power:    -1.2    dBm (756.1uW)
TX Power:    -1.6    dBm (699.1 uW)

State transitions: 1
Last poll time: 08-31-2017 UTC Thu 19:15:28
```

To display detailed information about a QSFP:

```
switch:admin> sfpshow 8/0
QSFP No: 0 Channel No:0
Identifier:  13   QSFP+
Connector:   12   MPO Parallel Optic
Transceiver: 0000000000000004 10_Gbps id
Encoding:    5    64B66B
Baud Rate:   103  (units 100 megabaud)
Length 9u:   0    (units km)
Length 50u (OM3): 100  (units m)
Length 62.5u:0    (units m)
Vendor Name: BROCADE
Vendor OUI:  00:17:6a
Vendor PN:   57-1000042-01
Vendor Rev:  01
Wavelength:  850  (units nm)
```

```
Options:     00000fde
Max Case Temp: 70 C)
Device Tech: 0x00
Serial No:   XXXXXX16
Date Code:   100722
DD Type:     0x8
Enh Options: 0x0
Status/Ctrl: 0x0
Alarm flags[0,1] = 0x0, 0x0
Warn Flags[0,1] = 0x0, 0x0
Temperature: 36      Centigrade
Current:     6.132   mAmps
Voltage:     3285.8  mVolts
RX Power:    -0.3    dBm (926.2uW)

State transitions: 1
Last poll time: 05-29-2013 UTC Wed 11:11:47
```

To display information about a QSFP on a Brocade G620 switch:

```
switch:admin> sfpshow 60
QSFP No: 1 Channel No:0
Identifier: 17 QSFP28
Connector: 12 MPO Parallel Optic
Transceiver: 0802404000000080 32_Gbps OM3 sw Short_dist
Encoding: 5 64B66B
Baud Rate: 255 (units 100 megabaud)
Length 9u: 0 (units km)
Length 50u (OM4): 100 (units m)
Length 62.5u:0 (units m)
Vendor Name: BROCADE
Vendor OUI: 00:05:1e
Vendor PN: 57-1000331-01
Vendor Rev: A
Wavelength: 850 (units nm)
Options: 0007ffde Loss_of_Sig,Loss_of_Sig_Inverted
Max Case Temp: 0 (C)
Device Tech: 0x00
Serial No: ZTA11517000001F
Date Code: 150528
DD Type: 0xc
Enh Options: 0x0
Status/Ctrl: 0x0
Alarm flags[0,1] = 0x0, 0x0
Warn Flags[0,1] = 0x0, 0x0
Temperature: 50 Centigrade
Current: 7.494 mAmps
Voltage: 3315.4 mVolts
RX Power: -inf dBm (0.0 uW)
TX Power: -25.2 dBm (3.0 uW)

State transitions: 1
Last poll time: 11-05-2015 UTC Thu 04:36:18
```

To display information about a SFP-DD on a Brocade G730 switch:

```
switch:admin> sfpshow 96
SFPDD No:           0 Channel No:0
Identifier:         26   SFPDD
Connector:          38   SN
Transceiver:        2800000000000000 16,32,64_Gbps  id
Encoding:           8    PAM4
Length SMF:         0.00 (units km)
Length 9um (OM5):   50   (units 2 meter)
Length 50um (OM4):  50   (units 2 meter)
Length 62.5um (OM3):35   (units 2 meter)
Length Cu (OM2):    0    (units 1 meter)
Vendor Name:        Company
Vendor OUI:         00:05:1e
Vendor PN:          57-1000505-01
Vendor Rev:         1
Wavelength:         850  (units nm)
BR Max:             0
BR Min:             0
Serial No:          WAA12125C001446S
Date Code:          210809
DD Type:            0x0
Enh Options:        0x0
Status/Ctrl:        0x0
Pwr On Time   :     0.12 years (1077 hours)
E-Wrap Control:     0
O-Wrap Control:     0
Alarm flags[0,1] =  0x0, 0x0
Warn Flags[0,1] =   0x0, 0x0
Temperature:        42      Centigrade
Current:            7.046   mAmps
Voltage:            3279.0  mVolts
RX Power:           -1.0    dBm (785.4uW)
TX Power:           -0.3    dBm (928.4 uW)

State transitions: 1
Last poll time: 10-20-2021 PDT Wed 16:36:38
```

To display the cached data for a port:

```
switch:admin> sfpshow 12/23 -link
Identifier:  3    SFP
Connector:   7    LC
Transceiver: 7004404000000000 4,8,16_Gbps M5 sw Short_dist
Encoding:    6    64B66B
Baud Rate:   140  (units 100 megabaud)
Length 9u:   0    (units km)
Length 9u:   0    (units 100 meters)
Length 50u (OM2):  3    (units 10 meters)
Length 50u (OM3):  10   (units 10 meters)
Length 62.5u:0    (units 10 meters)
Length Cu:   0    (units 1 meter)
Vendor Name: BROCADE
```

```
Vendor OUI:  00:05:1e
Vendor PN:   57-0000088-01
Vendor Rev:  A
Wavelength:  850  (units nm)
Options:     003a Loss_of_Sig,Tx_Fault,Tx_Disable
BR Max:      0
BR Min:      0
Serial No:   HAF3154000008H2
Date Code:   150929
DD Type:     0x68
Enh Options: 0xfa
Status/Ctrl: 0x0
Pwr On Time: 2.12 years (18576 hours)
E-Wrap Control: 0
O-Wrap Control: 0
Alarm flags[0,1] = 0x5, 0x0
Warn Flags[0,1] = 0x5, 0x0
Temperature: 41      Centigrade
Current:     8.158   mAmps
Voltage:     3337.1  mVolts
RX Power:    -3.4    dBm (459.6uW)
TX Power:    -2.9    dBm (514.3 uW)

State transitions: 1
Roundtrip Link Latency: 420nSec
Port Speed Capabilities     4Gbps 8Gbps 16Gbps   32Gbps

PEER Port Gbic Info

Vendor Name: BROCADE
Serial num:  HAA214421009W85
Vendor PN:   57-0000088-01
Vendor Rev:  A
Date Code:   141029
      Laser Type: Short Wave Laser
      SFP Type:   Optical Port Type
      Connector Type:   SFP+
Following SFP Parameters are Valid
      Temperature: 50      Centigrade [Range -128 - +128 C]
      Current:     6.954   mAmps    [Range 0 - 131 mAmps]
      Voltage:     3307.7  mVolts   [Range 0 - 3600 mVolts]
      Rx Power:    535.2   uW      [Range 0 - 6550 uW]
      Tx Power:    593.6   uW      [Range 0 - 6550 uW]
Signal Loss (Upstream) :  0 uW
Signal Loss (Downstream):  -8.7    dBm (134.0 uW)
Port Speed Capabilities   2Gbps 4Gbps 8Gbps 16Gbps

                                     Alarm                   Warn
                                low      high         low         high
Temperature alerts(Centigrade): -5         85          0           75
Voltage alerts(mVolts)        : 30000      -29536      31300       -30936
Tx Bias alerts(uA)            : 1250       6000        1000        5750
Tx Power alerts(uW)           : 1260       12589       2510        7940
```

```
Rx Power alerts(uW)           : 316        12589       316         7940
Last poll time: 05-10-2018 UTC Thu 08:33:13
```

To display the information of a remote switch port:

```
switch:admin> sfpshow -pid 0x060000
SWITCH PORT SFP

Vendor Name: BROCADE
Serial num:  HAF3150800003M8
Vendor PN:   57-0000088-01
Vendor Rev:  A
Date Code:   150215
       Laser Type:      Short Wave Laser
       SFP Type:        Optical Port Type
       Connector Type:  SFP+
Following SFP Parameters are Valid
       Temperature: 43      Centigrade [Range -128 - +128 C]
       Current:     8.094   mAmps    [Range 0 - 131 mAmps]
       Voltage:     3346.9  mVolts   [Range 0 - 3600 mVolts]
       Rx Power:    429.5   uW      [Range 0 - 6550 uW]
       Tx Power:    563.3   uW      [Range 0 - 6550 uW]
Port Speed Capabilities   4Gbps 8Gbps 16Gbps 32Gbps

PEER PORT SFP

Vendor Name: BROCADE
Serial num:  HAA1130710CLVZ2
Vendor PN:   57-0000088-01
Vendor Rev:  A
Date Code:   130215
       Laser Type:      Short Wave Laser
       SFP Type:        Optical Port Type
       Connector Type:  SFP+
Following SFP Parameters are Valid
       Temperature: 56      Centigrade [Range -128 - +128 C]
       Current:     6.100   mAmps    [Range 0 - 131 mAmps]
       Voltage:     3288.0  mVolts   [Range 0 - 3600 mVolts]
       Rx Power:    520.2   uW      [Range 0 - 6550 uW]
       Tx Power:    435.3   uW      [Range 0 - 6550 uW]
Signal Loss (Upstream)  :  -13.7  dBm (43.1  uW)
Signal Loss (Downstream):  -22.4  dBm (5.8   uW)
Port Speed Capabilities  2Gbps 4Gbps 8Gbps 16Gbps
```

To display the tuning information for a specified port number:

```
switch:admin> sfpshow 5/7 -tuning
Slot 5/Port 7:
TX Input EQ Control (Ch 1: Bit 7-4, Ch 2: Bit 3-0) = 0x33
TX Input EQ Control (Ch 3: Bit 7-4, Ch 4: Bit 3-0) = 0x33
Rx Output Emphasis Control (Ch 1: Bit 7-4, Ch 2: Bit 3-0) = 0x11
Rx Output Emphasis Control (Ch 3: Bit 7-4, Ch 4: Bit 3-0) = 0x11
Rx Amplitude Control (Ch 1: Bit 7-4, Ch 2: Bit 3-0) = 0x33
Rx Amplitude Control (Ch 1: Bit 7-4, Ch 2: Bit 3-0) = 0x33
```

To display the tuning information for all the ports:

```
switch:admin> sfpshow -tuning
Slot 3/Port 0:
TX Input EQ Control (Ch 1: Bit 7-4, Ch 2: Bit 3-0) = 0x88
TX Input EQ Control (Ch 3: Bit 7-4, Ch 4: Bit 3-0) = 0x88
Rx Output Emphasis Control (Ch 1: Bit 7-4, Ch 2: Bit 3-0) = 0x33
Rx Output Emphasis Control (Ch 3: Bit 7-4, Ch 4: Bit 3-0) = 0x33
Rx Amplitude Control (Ch 1: Bit 7-4, Ch 2: Bit 3-0) = 0x11
Rx Amplitude Control (Ch 1: Bit 7-4, Ch 2: Bit 3-0) = 0x11
Slot 3/Port 1:
TX Input EQ Control (Ch 1: Bit 7-4, Ch 2: Bit 3-0) = 0x88
TX Input EQ Control (Ch 3: Bit 7-4, Ch 4: Bit 3-0) = 0x88
Rx Output Emphasis Control (Ch 1: Bit 7-4, Ch 2: Bit 3-0) = 0x33
Rx Output Emphasis Control (Ch 3: Bit 7-4, Ch 4: Bit 3-0) = 0x33
Rx Amplitude Control (Ch 1: Bit 7-4, Ch 2: Bit 3-0) = 0x11
Rx Amplitude Control (Ch 1: Bit 7-4, Ch 2: Bit 3-0) = 0x11
Slot 3/Port 2:
TX Input EQ Control (Ch 1: Bit 7-4, Ch 2: Bit 3-0) = 0x88
TX Input EQ Control (Ch 3: Bit 7-4, Ch 4: Bit 3-0) = 0x88
Rx Output Emphasis Control (Ch 1: Bit 7-4, Ch 2: Bit 3-0) = 0x33
Rx Output Emphasis Control (Ch 3: Bit 7-4, Ch 4: Bit 3-0) = 0x33
Rx Amplitude Control (Ch 1: Bit 7-4, Ch 2: Bit 3-0) = 0x11
Rx Amplitude Control (Ch 1: Bit 7-4, Ch 2: Bit 3-0) = 0x11
output truncated
```

See Also

switchShow

sfpUpgrade

Programs the SFP with the latest SFP microcontroller firmware and digital signal processing firmware.

Synopsis

```
sfpUpgrade [--show | -s | --verbose | -v]
     {--all | -a | <port_range> | --fid all | -l all}
sfpUpgrade {--help | -h}
```

Description

This command allows to upgrade the 64G SFPs with the latest firmware. The port has to be disabled before upgrade else the command will fail. User must explicitly enable the port once the upgrade is complete.

This command is supported only on the Brocade Gen 7 platforms.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

<port_range>	Specifies a range or set of ports. The range of ports specified must all reside in the current logical switch.
--show | -s	Displays the current and the latest version of SFP.

--all | -a	Upgrades the firmware on all 64G SFP ports present in the current logical switch.
--fid all | -l all	Upgrades the firmware on all 64G SFP ports present across all the logical switches and takes "all" as an argument. User must have access to all FIDs to execute this option. Use **userconfig** command to permit admin role to the logical switches. For example, **userconfig --add/addlf** *username* **-r admin -l** *LF_list* **-c admin**.
--verbose | -v	Displays the verbose information.
--help | -h	Displays command usage.

Examples

To upgrade sfp firmware for a single port:

```
switch:admin> sfpupgrade 15
[00/15 | ***]:Current MCU version : 0x14 (latest: 0x15)
[00/15 | ***]:Current DSP version : 0xda0710 (latest: 0xda0710)
[00/15 | ***]:MCU version : Out-dated, needs upgrade
[00/15 | ***]:LUT marker : Up-to-date
[00/15 | ***]:DSP version : Up-to-date
[**/** | ***]:Number of sfps queued for upgrade: 1
*****************************************************
SFP upgrade validations done. Attempting SFP upgrade on
incompatible SFPs may lead to the SFP being non-operational.
This operation needs to run till completion, if interrupted,
the SFPs may become inoperable.
*****************************************************
Are you sure to continue upgrade [y/n]: y
[**/** | ***]:upgrade sessions active:1 (requested: 1)
[00/15 | MCU]:Upgrade started
[00/15 | MCU]:complete 35%
[00/15 | MCU]:complete 73%
[00/15 | MCU]:Upgrade completed
[00/15 | MCU]:wait for module refresh
[00/15 | MCU]:Upgrade successful
[00/15 | ***]:Start SFP Power-cycle
[00/15 | ***]:SFP Power-cycle completed
```

To upgrade range of ports in the current logical switch:

```
switch:admin> sfpupgrade 8/16-18 --show
[08/16 | ***]:Current MCU version : 0x14 (latest: 0x15)
[08/16 | ***]:Current DSP version : 0xda0710 (latest: 0xda0710)
[08/16 | ***]:Current upgrade state : Upgrade complete
[08/16 | ***]:MCU version : Out-dated, needs upgrade
[08/16 | ***]:LUT marker : Up-to-date
[08/16 | ***]:DSP version : Up-to-date
[**/** | ***]:*** SFP Upgrade prerequisite status ***
[08/16 | ***]:Media Validation : Passed
[08/16 | ***]:Port disabled : Passed
[08/17 | ***]:Current MCU version : 0x14 (latest: 0x15)
[08/17 | ***]:Current DSP version : 0xda0710 (latest: 0xda0710)
[08/17 | ***]:Current upgrade state : Upgrade complete
[08/17 | ***]:MCU version : Out-dated, needs upgrade
[08/17 | ***]:LUT marker : Up-to-date
[08/17 | ***]:DSP version : Up-to-date
```

```
[**/** | ***]:*** SFP Upgrade prerequisite status ***
[08/17 | ***]:Media Validation : Passed
[08/17 | ***]:Port disabled : Passed
[08/18 | ***]:Current MCU version : 0x14 (latest: 0x15)
[08/18 | ***]:Current DSP version : 0xda0710 (latest: 0xda0710)
[08/18 | ***]:Current upgrade state : Upgrade complete
[08/18 | ***]:MCU version : Out-dated, needs upgrade
[08/18 | ***]:LUT marker : Up-to-date
[08/18 | ***]:DSP version : Up-to-date
[**/** | ***]:*** SFP Upgrade prerequisite status ***
[08/18 | ***]:Media Validation : Passed
[08/18 | ***]:Port disabled : Passed
[**/** | MCU]:Image Integrity Check : Passed
[**/** | MCU]:Image Integrity Check : Passed
[**/** | DSP]:Image Integrity Check : Passed
switch:admin> sfpupgrade 8/16-18
[08/16 | ***]:Current MCU version : 0x14 (latest: 0x15)
[08/16 | ***]:Current DSP version : 0xda0710 (latest: 0xda0710)
[08/16 | ***]:MCU version : Out-dated, needs upgrade
[08/16 | ***]:LUT marker : Up-to-date
[08/16 | ***]:DSP version : Up-to-date
[08/17 | ***]:Current MCU version : 0x14 (latest: 0x15)
[08/17 | ***]:Current DSP version : 0xda0710 (latest: 0xda0710)
[08/17 | ***]:MCU version : Out-dated, needs upgrade
[08/17 | ***]:LUT marker : Up-to-date
[08/17 | ***]:DSP version : Up-to-date
[08/18 | ***]:Current MCU version : 0x14 (latest: 0x15)
[08/18 | ***]:Current DSP version : 0xda0710 (latest: 0xda0710)
[08/18 | ***]:MCU version : Out-dated, needs upgrade
[08/18 | ***]:LUT marker : Up-to-date
[08/18 | ***]:DSP version : Up-to-date
[**/** | ***]:Number of sfps queued for upgrade: 3
*******************************************************
SFP upgrade validations done. Attempting SFP upgrade on
incompatible SFPs may lead to the SFP being non-operational.
This operation needs to run till completion, if interrupted,
the SFPs may become inoperable.
*******************************************************
Are you sure to continue upgrade [y/n]: y
[**/** | ***]:upgrade sessions active:3 (requested: 3)
[08/17 | MCU]:Upgrade started
[08/18 | MCU]:Upgrade started
[08/16 | MCU]:Upgrade started
[08/17 | MCU]:complete 27%
[08/18 | MCU]:complete 27%
[08/16 | MCU]:complete 27%
[08/17 | MCU]:complete 55%
[08/18 | MCU]:complete 56%
[08/16 | MCU]:complete 55%
[08/17 | MCU]:complete 85%
[08/18 | MCU]:complete 86%
[08/16 | MCU]:complete 85%
[08/17 | MCU]:Upgrade completed
```

```
[08/17 | MCU]:wait for module refresh
[08/18 | MCU]:Upgrade completed
[08/18 | MCU]:wait for module refresh
[08/16 | MCU]:Upgrade completed
[08/16 | MCU]:wait for module refresh
[08/17 | MCU]:Upgrade successful
[08/18 | MCU]:Upgrade successful
[08/16 | MCU]:Upgrade successful
[08/17 | ***]:Start SFP Power-cycle
[08/18 | ***]:Start SFP Power-cycle
[08/16 | ***]:Start SFP Power-cycle
[08/17 | ***]:SFP Power-cycle completed
[08/18 | ***]:SFP Power-cycle completed
[08/16 | ***]:SFP Power-cycle completed
*******************************************************
* SFP Upgrade Report *
*******************************************************
No. of SFPs queued for upgrade : 3
No. of SFPs upgrade complete : 3
No. of SFPs upgrade failed : 0
*******************************************************
switch:admin> sfpupgrade 8/16-18 --show
[08/16 | ***]:Current MCU version : 0x15 (latest: 0x15)
[08/16 | ***]:Current DSP version : 0xda0710 (latest: 0xda0710)
[08/16 | ***]:Current upgrade state : Upgrade complete
[08/16 | ***]:MCU version : Up-to-date
[08/16 | ***]:LUT marker : Up-to-date
[08/16 | ***]:DSP version : Up-to-date
[08/17 | ***]:Current MCU version : 0x15 (latest: 0x15)
[08/17 | ***]:Current DSP version : 0xda0710 (latest: 0xda0710)
[08/17 | ***]:Current upgrade state : Upgrade complete
[08/17 | ***]:MCU version : Up-to-date
[08/17 | ***]:LUT marker : Up-to-date
[08/17 | ***]:DSP version : Up-to-date
[08/18 | ***]:Current MCU version : 0x15 (latest: 0x15)
[08/18 | ***]:Current DSP version : 0xda0710 (latest: 0xda0710)
[08/18 | ***]:Current upgrade state : Upgrade complete
[08/18 | ***]:MCU version : Up-to-date
[08/18 | ***]:LUT marker : Up-to-date
[08/18 | ***]:DSP version : Up-to-date
```

See Also

None

shellFlowControlDisable

Disables XON/XOFF flow control on the console serial port.

Synopsis

shellflowcontroldisable

Description

Use this command to disable XON/XOFF flow control on the console serial port. Flow control is disabled by default.

Because this command changes the flow control on the console serial port, it must be executed from a session that is logged in from the console serial port. This command cannot run from a Telnet session.

This setting is saved in the configuration database; therefore, it is persistent across reboots and power cycles.

Notes

On dual-CP systems, a reboot on the standby CP is required for this command to take effect. No action is required on the active CP.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To disable flow control:

```
switch:admin> shellflowcontroldisable
Disabling flowcontrol
flow control is now disabled
```

See Also

shellFlowControlEnable

shellFlowControlEnable

Enables XON/XOFF flow control on the console serial port.

Synopsis

```
shellflowcontrolenable
```

Description

Use this command to enable XON/XOFF flow control to the shell task. Flow control is disabled by default.

Because this command changes the flow control on the console serial port, it must be executed from a session that is logged in from the console serial port. This command cannot run from a Telnet session.

This setting is saved in the configuration database; therefore, it is persistent across reboots and power cycles.

Notes

On dual-CP systems, a reboot on the standby CP is required for this command to take effect. No action is required on the active CP.

If flow control is enabled and if the console output is suspended for an extended period of time, the switch might reboot. It is recommended to disable the flow control, using **shellFlowControlDisable**.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To enable flow control:

```
switch:admin> shellflowcontrolenable
Enabling flowcontrol
flow control is now enabled
```

See Also

shellFlowControlDisable

slotCfg

Recovers incompatible faulted blades and restores the blades to the default configuration.

Synopsis

```
slotcfg --default [-reset] <slot_number>
slotcfg --help
```

Description

This **slotcfg** command recovers the incompatible faulty blades and resets all configurations on that slot to default values. For example, if a FC64-48 is replaced with a FC64-64, the blade is identified as faulty with the message `The blade is incompatible with the current switch configuration.` and this fault is identified as **(91)** in the **slotshow** command. Additionally, you can use **slotcfg** to set all port configurations on a blade back to default values. The **slotcfg** command is not supported on CP or core blade slots.

Notes

Use **configdefault** command to clear all configurations in a switch. To default, the specific configurations in a Brocade SX6 Extension blade or an extension configurations in a switch, use **extnCfg --config -default** command.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--default <*slot_number*> In a chassis, sets all ports in a specified slot to the default configuration.

-reset <*slot_number*> In a chassis, moves all ports in the specified slot number to the default switch and resets the slot or ports to the default configuration. This command recovers faulted port blades and faulty 0x91 due to a Blade ID change that occurs when a port blade is replaced with a different blade type.

--help Displays the command usage.

Examples

To set the ports to the default configuration:

```
switch:admin> slotcfg --default 12
This sets all ports on slot 12 to the default configuration and will automatically
power off the blade [Use 'slotPowerOn 12' to power on the slot manually].

Do you want to continue (Y/N)?: y

switch:admin> slotpoweron 12
Powering on slot 12
```

To set and move a particular slot or ports to the default configuration:

```
switch:admin>  slotcfg --default -reset 12
This sets all ports on slot 12 to the default configuration and will automatically
power off the blade [Use 'slotPowerOn 12' to power on the slot manually].

Do you want to continue (Y/N)?: y

switch:admin>  slotpoweron 12
Powering on slot 12
```

See Also

configDefault, extnCfg, lsCfg

slotCfgPersistence

Sets or removes the persistent disable flag on a slot, and displays all the persistently disabled slots in the chassis.

Synopsis

```
slotcfgpersistence
 slotcfgpersistence {--poweroff | --poweron} <slot_number>
 slotcfgpersistence --help
```

Description

Use this command to set or remove the persistent disable flag on a slot. Execute this command without operands to display all persistently disabled slots on the chassis.

When the persistent disable flag is set on a slot, the blade present in the slot is powered off. The blade is powered on after removing persistent disable flag on the slot.

Persistently disabled slots remain disabled across power cycles, switch reboots, HA failover, and switch enables. The **slotShow** command reports the persistently disabled slots with a string "Persistent".

On power up, insert the blade and on reboot the blade will be powered off if the persistent slot power off is set on the slot. The **slotCfgPersistence** settings remain unaffected and will be applied after reboot.

Notes

After **configDownload**, the system must be rebooted for **slotCfgPersistence** settings to take effect.

You can use the **slotPowerOn** command to temporarily power on a blade that is persistently disabled. After the system is powered up or rebooted, the blade will be powered off.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

<slot_number>	Specifies the slot number of the blade.
--poweroff	Sets the persistent disable flag on the specified slot.
--poweron	Removes the persistent disable flag on the specified slot.
--help	Displays command usage.

Examples

To set the persistent disable flag on a slot:

```
switch:admin> slotcfgpersistence --poweroff 8
```

To display the persistent disabled slots on a chassis:

```
switch:admin> slotcfgpersistence
slot 8 is Persistent disable
```

To remove the persistent disable flag on a slot:

```
switch:admin> slotcfgpersistence --poweron 8
```

See Also

slotPowerOff, slotPowerOn, slotShow

slotPowerOff

Removes power from a slot.

Synopsis

```
slotpoweroff <slot_number> [-force]
 slotpoweroff {--help | -h}
```

Description

Use this command to turn off the power to a blade unit. The slot must have a valid blade unit present and the blade unit must be of a type that can be powered off.

This command is supported on 8G-capable, 16G-capable, 32G-capable, and 64G-capable core blades also. There is no frame loss when there are no ICLs connected.

This command, when executed on a core blade, displays a warning message and prompts for confirmation as powering off the last core blade will disable the chassis.

Verify if any port channel is configured or not when you execute `slotpoweroff` or `slotpoweron` and pulling the slot out. If the port channel is configured then the timeout value must be configured to **long** if configured as **short** to avoid potentially disruptive behavior.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

This command can cause the peer ports, if any, connected to the ASIC ports on the blade of the specified slot experience uncorrected FEC errors.

Operands

This command has the following operand:

<*slot_number*> [-force]	Specify the slot number of the blade to be powered down. This operand is required. On core blades, the command prompts for confirmation unless you use the **-force** option.
{--help | -h}	Displays command usage.

Examples

To power off blade unit 3:

```
switch:admin> slotpoweroff 3
Slot 3 is being powered off
```

See Also

powerOffListSet, powerOffListShow, slotPowerOn, slotShow

slotPowerOn

Restores power to a slot.

Synopsis

```
slotpoweron <slot_number>
slotpoweron {--help | -h}
```

Description

Use this command to turn on the power to a blade unit. The slot must have a valid blade unit present and the blade unit must be currently powered off. The **slotShow** command reports such slots as being in the state of INSERTED, NOT POWERED ON.

This command is supported on 8Gb/s-capable, 16Gb/s-capable, and 32Gb/s-capable core blades also. There is no frame loss when there are no ICLs connected.

Verify if any port channel is configured or not when you execute `slotpoweroff` or `slotpoweron` and pulling the slot out. If the port channel is configured then the timeout value must be configured to **long** if configured as **short** to avoid potentially disruptive behavior.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

<*slot_number*>	Specify the slot number of the blade to be powered on. This operand is required.
{--help | -h}	Displays command usage.

Examples

To power on blade unit 3:

```
switch:admin> slotpoweron 3
```

```
Powering on slot 3.
```

See Also

slotPowerOff, slotShow

slotShow

Displays the status of all slots in the system.

Synopsis

```
slotshow [-m | -p | --help]
```

Description

Use this command to display the current status of each slot in the system. Depending on the option used, the command retrieves information on blade type, blade ID, status, model name, and power usage for each slot in the switch or chassis.

This command does not display the model names for unsupported blades. If a blade is not supported, only the Blade ID is displayed, and the Status field registers as FAULTY(9). Use the list below to identify the model name associated with an unsupported blade.

When no operand is specified, **slotShow** displays the blade type, blade ID, and status for each slot. In this view, the fields and their possible values are as follows:

Slot Displays the physical slot number.

Blade Type Displays the blade type as one of the following:

- **SW BLADE** The blade is a switch.
- **CP BLADE** The blade is a control processor.
- **CORE BLADE** The blade is a core switch blade.
- **AP BLADE** The blade is an application processor.
- **UNKNOWN** The blade not present or its type is not recognized.

ID Displays the blade type ID as one of the following:

- **50** CP8 control processor blade
- **51** FC8-48 switch blade
- **52** Core8 core blade
- **55** FC8-32 switch blade
- **75** FX8-24 application processor blade
- **96** FC16-48 switch blade
- **97** FC16-32 switch blade
- **98** CR16-8 core blade
- **99** CR16-4 core blade
- **153** FC16-64 switch blade
- **175** CPX6 control processor blade. Applicable to Brocade Gen 6 chassis director. CPX6+ control processor blade. Applicable to Brocade Gen 6 chassis director upgraded to Brocade Gen 7.
- **176** CR32-4 core blade
- **177** CR32-8 core blade
- **178** FC32-48 switch blade
- **186** SX6 application processor blade
- **204** FC32-64 switch blade
- **214** CR64-4 core blade

215	CR64-8 core blade
216	FC64-48 switch blade
218	FC32-X7-48 switch blade
220	CPX7 or CPX control processor blade
232	FC64-64 port blade

Status Displays the status of the blade as one of the following:

VACANT	The slot is empty.
INSERTED, NOT POWERED ON	The blade is present in the slot but is turned off.
POWERING UP	The blade is present and powering on.
LOADING	The blade is present, powered on, and loading the initial configuration.
DIAG RUNNING POST1	The blade is present, powered on, and running the POST (power-on self-test).
DIAG RUNNING POST2	The blade is present, powered on, and running the reboot power on self tests.
INITIALIZING	The blade is present, powered on, and initializing hardware components.
ENABLED	The blade is on and fully enabled.
DISABLED	The blade is powered on but disabled.
FAULTY	The blade is faulty because an error was detected. A fault code of 53 may also indicate the possibility of a rolling reboot detection (RRD) on the specified blade. In the case of an RRD, investigate and correct the cause, then reboot the control processor (CP) to recover the blade.
UNKNOWN	The blade is inserted but its state cannot be determined.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

In a X7-4 chassis, slot 1 and 2 (Blade ID 220) are occupied by control processor blades and slot 5 and 6 (Blade ID 214) are occupied by core blades. In a X7-8 chassis, slot 1 and 2 (Blade ID 220) are occupied by the control processor blades and slot 7 and 8 (Blade ID 215) are occupied by core blades.

Operands

This command supports the following operands:

-p In addition to the basic slot status view, displays the following information about power consumption:

- Total direct current (DC) power consumption for the chassis and individual values for each blade (in Watts). Usage for other components such the WWN card or fans is included in the calculation but not listed per component. Note that the data displayed in the "DC Power Consumption" column and in the summary field "Total DC Power consumption" indicate the maximum allowed power consumption, not a real-time value.
- Total alternating current (AC) power consumption in Watts. This value indicates the maximum allowed AC power consumption; it is not a real-time value.
- AC efficiency, as a percentage of total and BTU.
- Power efficiency in Watts/port and Watts/Gb.

-m In addition to the basic slot status view, displays the Brocade model name for each blade.

--help Displays the command usage.

Examples

To display the status of all slots on a Brocade X7-8:

```
switch:user> slotshow

Slot   Blade Type     ID    Status
----------------------------------
  1     CP BLADE    220     ENABLED
  2     CP BLADE    220     ENABLED
  3     AP BLADE    186     ENABLED
  4     AP BLADE    186     ENABLED
  5     SW BLADE    216     ENABLED
  6     SW BLADE    216     ENABLED
  7     CORE BLADE  215     ENABLED
  8     CORE BLADE  215     ENABLED
  9     AP BLADE    186     ENABLED
 10     SW BLADE    204     ENABLED
 11     SW BLADE    204     ENABLED
 12     AP BLADE    186     ENABLED
```

To display the Brocade model name for each blade on a Brocade X7-8:

```
switch:user> slotshow -m

Slot   Blade Type     ID    Model Name     Status
--------------------------------------------------
  1     CP BLADE    220     CPX7           ENABLED
  2     CP BLADE    220     CPX7           ENABLED
  3     AP BLADE    186     SX6            ENABLED
  4     AP BLADE    186     SX6            ENABLED
  5     SW BLADE    216     FC64-48        ENABLED
  6     SW BLADE    216     FC64-48        ENABLED
  7     CORE BLADE  215     CR64-8         ENABLED
  8     CORE BLADE  215     CR64-8         ENABLED
  9     AP BLADE    186     SX6            ENABLED
 10     SW BLADE    204     FC32-64        ENABLED
 11     SW BLADE    204     FC32-64        ENABLED
 12     AP BLADE    186     SX6            ENABLED
```

To display power consumption information on a Brocade X7-8:

```
switch:user> slotshow -p

Slot   Blade Type     ID   DC Power       Status
                          Consumption
-------------------------------------------------
  1     CP BLADE    220        49W        ENABLED
  2     CP BLADE    220        49W        ENABLED
  3     AP BLADE    186       420W        ENABLED
  4     AP BLADE    186       420W        ENABLED
  5     SW BLADE    216       254W        ENABLED
  6     SW BLADE    216       254W        ENABLED
```

```
  7     CORE BLADE  215       505W        ENABLED
  8     CORE BLADE  215       505W        ENABLED
  9     AP BLADE    186       420W        ENABLED
 10     SW BLADE    204       387W        ENABLED
 11     SW BLADE    204       387W        ENABLED
 12     AP BLADE    186       420W        ENABLED
Total DC Power Consumption:
4972 watts
Total AC Power Consumption:
5524 watts AC @ 90% efficiency (18855 BTU)
Power Efficiency:
1.28 watts per port, 0.05 watts per Gb
```

To display the Brocade model name for each blade on a Brocade X7-4:

```
switch:user> slotshow -m

Slot   Blade Type       ID  Model Name  Status
--------------------------------------------------
  1    CP BLADE        220  CPX7        ENABLED
  2    CP BLADE        220  CPX7        ENABLED
  3    SW BLADE        216  FC64-48     ENABLED
  4    UNKNOWN                          VACANT
  5    CORE BLADE      214  CR64-4      ENABLED
  6    CORE BLADE      214  CR64-4      ENABLED
  7    UNKNOWN                          VACANT
  8    SW BLADE        216  FC64-48     ENABLED
```

To display power consumption information on a Brocade X7-4:

```
switch:user> slotshow -p
Slot   Blade Type     ID   DC Power       Status
                           Consumption
--------------------------------------------------
  1     CP BLADE      220      49W       ENABLED
  2     CP BLADE      220      49W       ENABLED
  3     SW BLADE      216      254W      ENABLED
  4     UNKNOWN                -         VACANT
  5     CORE BLADE    214      252W      ENABLED
  6     CORE BLADE    214      252W      ENABLED
  7     UNKNOWN                -         VACANT
  8     SW BLADE      216      254W      ENABLED
Total DC Power Consumption:
1712 watts
Total AC Power Consumption:
1902 watts AC @ 90% efficiency (6492 BTU)
Power Efficiency:
3.30 watts per port, 0.15 watts per Gb
```

See Also

chassisShow, slotPowerOff, slotPowerOn

slotStatsClear

Clears hardware statistics for all the ports or the ports in specified slot or chip.

Synopsis

```
slotstatsclear
slotstatsclear [-s <slot1>[-<slot2>]]
     [-c <chip1>[-<chip2>]]
slotstatsclear -h
```

Description

Use this command to clear all the port hardware statistics such as ALPA-based CRC monitor, End-to-End monitor, and Filter-based performance monitor statistics for one or more ports in the switch. Execute this command without operands to clear all the port hardware statistics in the switch.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-s <*slot1*>[-<*slot2*>]	Clears all ports on a slot or on a range of slots. Specify a range (1-3), or a list of slots separated by a comma (1,5,7), or a combination of both (1-3,5,7-9).
-c <*chip1*>[-<*chip2*>]	Clears all ports on a chip or on a range of chips. Specify a range (1-3), or a list of chips separated by a comma (1,5,7), or a combination of both (1-3,5,7-9). On chassis-based systems, this operand must be specified along with **-s** operand.
-h	Displays the command usage.

Examples

To clear hardware statistics for all the slots:

```
switch:admin> slotstatsclear
```

To clear hardware statistics for specific slot:

```
switch:admin> slotstatsclear -s 3
```

To clear hardware statistics for slot range:

```
switch:admin> slotstatsclear -s 3-4
```

To clear hardware statistics for specific chip:

```
switch:admin> slotstatsclear -c 1
```

To clear hardware statistics for chip range:

```
switch:admin> slotstatsclear -c 1-2
```

See Also

portStatsClear

snmpConfig

Manages the SNMP agent configuration.

Synopsis

```
snmpconfig --add snmpv1 -index <index> -community <community_name>
 -groupname {ro | rw} [-host {<ipv4> | <ipv6> | <dns>}
     [-port <udp_port>] [-severity <severity_level>]]
snmpconfig --set snmpv1 [-index <index> {[-community
     <community_name>][-groupname {ro | rw}]]
snmpconfig --set snmpv1 -index <index> {[-host {<ipv4> | <ipv6> | <dns>}]
     [-port <udp_port>] [-severity <severity_level>]}
snmpconfig --set snmpv1 -index <index> -default
snmpconfig --add snmpv3 -index <index> -user <user_name>
 -groupname {ro | rw} [-auth_proto <auth_protocol>
 -auth_passwd <auth_password> [-priv_proto <priv_protocol>
 -priv_passwd <priv_password>]] [-engine_id <engine_id>]
snmpconfig --set snmpv3 -index <index> -default
snmpconfig --set snmpv3 {-enable | -disable} informs
snmpconfig --set snmpv3 {-enable | -disable} passwd_encryption
snmpconfig --set snmpv3 [-index <index> {[-user <user_name>]
     [-groupname {ro | rw}] [-auth_proto <auth_protocol> -auth_passwd
     <auth_password> [-priv_proto <priv_protocol> -priv_passwd <priv_password>]]
      [-engine_id <engine_id>]}
snmpconfig --set snmpv3 -trap_index <trap_index> -user_index <index>
 -host {<ipv4> | <ipv6> | <dns>}
     [-port <udp_port>] [-severity <severity_level>]
     [-notify_type {trap | informs}]
snmpconfig --set mibcapability [-mib_name <mib_name> -bitmask <bit_mask>]
snmpconfig --set accesscontrol [-index <index> {[-host <ip_address>]
     [-access {ro | rw}]}]
snmpconfig --set systemgroup [-sysdescr <sysdescr>] [-syslocation <syslocation>]
     [-syscontact <syscontact>]
snmpconfig --set systemgroup -authTrapEnabled {TRUE | FALSE}
snmpconfig --set seclevel [-snmpget <security_level>] [-snmpset <security_level>]
snmpconfig --set auditinterval [-interval <minute>]
snmpconfig {--enable | --disable} mibcapability
 -mib_name <mib_name> [-trap_name <trap_name>]
snmpconfig --enable snmpv1
snmpconfig --disable snmpv1
snmpconfig --delete snmpv1 -index <index>
snmpconfig --delete snmpv3 -index <index>
snmpconfig --show {snmpv1 | snmpv3 | accesscontrol | mibcapability |
 systemgroup | seclevel | auditinterval}
snmpconfig --default {snmpv1 |snmpv3 | accesscontrol | mibcapability |
 systemgroup | seclevel | auditinterval}
snmpconfig --help
```

Description

Use this command to manage the configuration of the SNMP agent in the switch. The configuration includes SNMPv1 and SNMPv3 configuration, access control list (ACL), MIB capability, system group, and security level settings. The command supports add and delete for SNMPv1 and SNMPv3 accounts; whereas set, reset to default, and display operations are supported for all SNMP configurations. The add and delete operations are supported only on SNMPv1 and SNMPv3 user accounts. This command supports enabling or disabling a single MIB or all MIBs, configuring a single trap, and managing all traps. The maintenance account cannot be configured as authenticated user like community string in the SNMPv1 or username in SNMPv3 of the **snmpConfig** command.

An agent configuration interface allows both interactive and command line options (non-interactive) for all parameters except for **--add** and **--delete** operands.

By default, device will not have any user or communities configured. Configure either SNMPv1 communities or SNMPv3 users to access the switch via SNMP. In case of firmware upgrade from v8.2.x to v9.0.x or later, all the default and non-default SNMP accounts will be carried forward after the successful upgrade to the new firmware.

SNMPv1 Configuration Parameters

The SNMP agent supports maximum six communities and their associated access (rw) or (ro), trap recipients, and trap severity levels. The length of the community string must be in range of 2 to 20 characters.

For an SNMP management station to receive a trap generated by the agent, the administrator must configure a trap recipient to correspond to the IP address of the management station. In addition, the trap recipient must be able to pass the access control list (ACL) check as described in the Access Control Configuration Parameters.

Beginning with Fabric OS v9.2.2, SNMPv1 configuration is no longer supported.

SNMPv3 Configuration Parameters

The SNMPv3 configuration supports 12 users and their associated trap recipients and severity levels. Each snmpv3 user account can be configured either with read-write or read-only access group. In Fabric OS v9.0.x or later, no default SNMPv1 community or SNMPv3 user entries and the administrator needs to configure using **snmpconfig --add** command.

When new passwords are entered for any user entry, a new **authKey** and **privKey** are generated. The new passwords must be updated on the client (e.g., MIB browser) as well.

The system prompts for password confirmation if a protocol other than **NoAuth**/**NoPriv** is selected. Protocol passwords must be between 8 and 32 characters.

In order for an SNMP management station to receive SNMPv3 traps generated by the agent, the administrator must configure a trap recipient value to correspond to the IP address of the management station. In addition, the trap recipient must pass the ACL check as described in the Access Control section. The trap recipient must be associated with one of the 12 users of SNMPv3 and trap severity level. The factory default value for the SNMPv3 trap recipient of each entry is 0.0.0.0.

Access Control Configuration Parameters

There are six ACLs to restrict SNMP get, set, and trap operations to hosts. The host is defined by comparing nonzero IP octets. For example, an ACL of 192.168.64.0 enables access to the hosts. The connecting host is enabled to set each host to be read-write or read-only. The closest match out of six entries is given access. The ACL check is turned off when all six entries contain 0.0.0.0. The default values of all six entries are 0.0.0.0. For IPv6 address, the format is specified by an IPv6 address. A warning message *This command is being deprecated. Please use ipfilter.* is displayed when set or show the SNMP ACL.

MIB Capability Configuration Parameters

The **mibCapability** option turns certain MIBS and associated SNMP traps on or off. If a specific MIB is disabled, the corresponding traps also are disabled. If any trap group is disabled, the corresponding individual traps are also disabled.

SNMP Traps are identified by their bit mask and can be read directly from the switch configuration. The MIB and trap status (enabled or disabled) status is recorded in a 64- bit counter. The last bit (bit 0) is reserved for the MIB and the remaining bits are reserved for the traps of that MIB. The trap's position is allocated based on the last ID of the trap OID. For example, the last ID of the swEventTrap is 5 so its position will be 5th from the right. The following is a listing of valid SNMP traps and their bit masks:

MIB	Trap Name and position	Bit mask	Default
FE-MIB		0x1	Enabled
SW-MIB		0x1	Enabled
	swFCPortScn (3)	0x8	Enabled
	swEventTrap (4)	0x10	Enabled
	swIPv6ChangeTrap (7)	0x80	Enabled
	swPmgrEventTrap (8)	0x100	Enabled
	swFabricReconfigTrap (10)	0x200	Enabled
	swFabricSegmentTrap (9)	0x400	Enabled
	swExtTrap (11)	0x800	Disabled
	swStateChange (12)		Disabled
	swMovePort (13)		Disabled
	swBrcdGenericTrap (15)		Enabled
	swDeviceStatusTrap (16)		Enabled
	swZoneConfigChangeTrap (17)		Disabled
FA-MIB		0x1	Enabled
	connUnitStatusChange(1)	0x2	Enabled
	connUnitEventTrap (4)	0x10	Enabled
	connUnitPortStatusChange (6)	0x40	Enabled
FICON-MIB		0x1	Enabled
	linkRNIDDeviceRegistration (1)	0x2	Enabled
	linkRNIDDevicedeRegistration(2)	0x4	Enabled
	linkLIRRListenerAdded (3)	0x8	Enabled
	linkLIRRListenerRemoved (4)	0x10	Enabled
	linkRLIRFailureIncident (5)	0x20	Enabled
HA-MIB		0x1	Enabled
	fruStatusChanged (1)	0x2	Enabled
	cpStatusChanged (2)	0x4	Enabled
	fruHistoryTrap (3)	0x8	Enabled
FCIP-MIB		0x1	Enabled
IF-MIB		0x1	Enabled
	linkUpTrap (3)	0x8	Enabled
	linkdownTrap (4)	0x10	Enabled
MAPS-MIB		0x1	Enabled
	mapsTrapAM (1)	0x2	Enabled
	mapsQuietTimeExpirationTrap (2)	0x4	Enabled
T11-FC-ZONE-SERVER-MIB		0x1	Disabled
	t11ZsRequestRejectNotify (1)	0x2	Disabled

```
t11ZsMergeFailureNotify (2)    0x4    Disabled
t11ZsMergeSuccessNotify (3)    0x8    Disabled
t11ZsDefZoneChangeNotify (4)   0x10    Disabled
t11ZsActivateNotify (5)        0x20    Disabled
```

Note: The Zone Mib parameters are for restricted usage only.

Use the **--show mibcapability** option to display the traps configurable under each MIB.

Notes

This command is subject to Virtual Fabric restriction that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--help Displays the command usage.

--enable Enables the SNMP agent configuration for the specified category. This operand is valid only with **mibcapability** and **snmpv1**. When used with the **snmpv1** operand, this command restores access to SNMPv1.

--disable Disables an agent configuration for the specified category. This operand is valid only with **mibcapability** and **snmpv1**. When used with the **snmpv1** operand, this command blocks access to SNMPv1. All requests for v1 version will be dropped by the switch, and SNMPv1 traps will be blocked from being sent, even if trap destinations are present.

--show Displays the SNMP agent configuration data of the specified category. When used with the **snmpv1** operand, this command displays whether access to SNMPv1 is enabled or disabled.

--add Creates new SNMPv1 or SNMPv3 accounts respectively.

--delete Deletes SNMPv1 or SNMPv3 accounts respectively.

--set Sets the SNMP agent configuration data of the specified category.

- **snmpv1** Selects SNMPv1-related configuration parameters. These parameters include the community string, trap recipient IP address, and trap severity level associated with each trap recipient IP address. Beginning with Fabric OS v9.2.2, SNMPv1 configuration is no longer supported.
- **snmpv3** Selects SNMPv3-related configuration parameters. These parameters include the user name, authentication protocol and password, the privacy protocol and password, the SNMPv3 trap recipient's IP address, its associated user index, and trap severity level.
- **-index *index*** Specifies the index for which the user details are configured. The valid index values are from 1 through 6 for SNMPv1 and from 1 through 12 for SNMPv3.
- **-community *community_name*** Specifies the community string. If special characters are used in the *community_name*, the *community_name* must be enclosed in single quotes. Beginning with Fabric OS v9.2.2, this option is made as interactive, requires valid user input during execution, and will result in command failure or error if used.
- **-host {<*ipv4*> | <*ipv6*> | <*dns*>}** Specifies the IP address of the host. IPv4, IPv6, and DNS hosts are supported.
- **-port *udp_port*** Specifies the UDP port where SNMP traps will be received. Valid port IDs range from 0 through 65535. The default port is 162. This command prompts for confirmation only when you specify the port number within the range of 0 through 49151.
- **-severity *severity_level*** Specifies the trap recipient severity level. When an event occurs and its severity level is at or below the set value, the Event Trap traps (swEventTrap and

connUnitEventTrap), are sent to configured trap recipients. By default, this value is set at 0, implying that no Event Trap is sent. Possible values are:

- **0**: None
- **1**: Critical
- **2**: Error
- **3**: Warning
- **4**: Informational
- **5**: Debug

--default

Sets the SNMP agent configuration data for a specified item to the default values. Generally, these default values may be available in the configuration database. The command sets to factory defaults if the SNMP agent configuration parameters are not available in the configuration database. This operand is valid with **snmpv1**, **snmpv3**, **accesscontrol**, **mibcapability**, **systemgroup**, **seclevel**, and **auditinterval**. The default value for SNMPv1 community and SNMPv3 accounts are empty.

-enable | -disable [informs]

Enables or disables informs. If informs are enabled, all trap destinations receive inform requests. If informs are disabled, all trap destinations receive trap requests. When informs are enabled, the engine ID must be set to correspond to the management engine IP address. Informs are by default disabled.

-enable | -disable [passwd_encryption]

Enables or disables password encryption. If password encryption is enabled, both authentication and privacy passwords are encrypted. If the password encryption is disabled, the authentication and privacy passwords are reset to default. Beginning with Fabric OS v9.2.0, password encryption is enabled by default.

When password encryption is enabled, the configuration key attribute values for the SNMPv3 users must not be modified in the uploaded configuration file. If the configuration file is modified and downloaded to the switch, the **configDownload** may fail for the filter SNMP. Even if the SNMP configurations are downloaded successfully, the calculated digest value may be incorrect and the SNMPv3 query as well as the trap may fail for that user.

Beginning with Fabric OS v9.2.0, an error message is displayed while configuring the snmpv3 users with valid authentication and privacy protocol, and the password with less than 8 characters. Reconfigure the password using **snmpconfig –-set snmpv3** command.

-user *user_name*

Specifies the name of the user that connects to the agent. The user name must be between 2 and 32 characters long.

-auth_proto *auth_protocol*

Specifies the authentication protocol as MD5, SHA, SHA512 or no authentication for each entry. Beginning with Fabric OS v9.2.0, it is strongly recommended to use SHA512. MD5 and SHA protocols support are deprecated and will not be supported in a future release. The following values are supported:

- 1 - MD5
- 2 - SHA
- 3 - noAuth
- 4 - SHA512

-auth_passwd *auth_password*

Specifies the authentication password that enables the agent to receive packets from the host. Passwords are plain text and must be added each time for each configuration replay. The password must be between 8 and 32 characters long. Beginning with Fabric OS v9.2.2, this option is made as interactive, requires valid user input during execution, and will result in command failure or error if used.

-priv_proto *priv_protocol*

Specifies privacy authentication level setting. Starting FOS 9.2.0, it is strongly recommended to use AES128 or AES256. The privacy protocol DE5 is deprecated and will not be supported in a future release. The following values are supported:

- 1 - DES
- 2 - noPriv
- 3 - AES128
- 4 - AES256

-priv_passwd ***priv_password***
Specifies the privacy password that encrypts the content of the message received or sent to the agent. Passwords are plain text and must be added each time for each configuration replay. The password must be between 8 and 32 characters long. The privacy password alone cannot be configured. You configure the privacy password with the authentication password. Beginning with Fabric OS v9.2.2, this option is made as interactive, requires valid user input during execution, and will result in command failure or error if used.

-engine_id ***engine_id***
Configures a user-defined engine ID for the SNMP agent.

-notify_type trap | informs
Specifies the type of notification traps that are sent for the host. Traps and informs are supported. The default notify type is traps.

-groupname ro | rw
Modifies the access given to the communities or to the users and there is no default value. The **-groupname ro** configures read-only and **-groupname rw** configures read-write access groups for SNMPv1 communities and SNMPv3 users using **--add** and **--set** options. For Fabric OS v8.2.x and earlier, the **-groupname** option is static with the first three SNMPv1/v3 entries having **rw** and the remaining three entries having **ro** access. Beginning from Fabric OS v9.0.0, the **-groupname** option can be executed with **snmpconfig -add** command to allow the user to modify the access level.

-user_index ***index***
Indicates the USM user index that is associated with the SNMPv3 host recipient.

-trap_index ***trap_index***
Index that is associated with the host address.

--set mibcapability
Configures MIBs.

-mib_name ***mib_name***
Specifies the name of the MIB to be configured. This operand is required if you want to configure MIB traps noninteractively. Valid MIB names include the following.

- FE-MIB
- SW-MIB
- FA-MIB
- FICON-MIB
- HA-MIB
- FCIP-MIB
- IF-MIB
- MAPS-MIB
- T11-FC-ZONE-SERVER-MIB

-bitmask ***bit_mask***
Specifies the bit mask for the MIB. Refer to the table above for valid values.

-trap_name ***trap_name***
Specifies the name of the trap to be enabled or disable. This operand is optional. Use **snmpconfig --show mibcapability** for a listing of valid traps.

accessControl
Selects access-control-related parameters. These parameters include the access host subnet area and access permission (read-write).

-host ***ip_address***
Specifies the host IP address with or without a subnet mask.

-access [ro | rw]
Specifies the read-write (rw) or read-only (ro) access to the host.

systemGroup
Selects configuration parameters related to the system group.

-sysdescr ***sysdescr***
Specifies the system description. The default value is "Fibre Channel Switch".

-syslocation ***syslocation***
Specifies the location of the system (switch). The default value is "End User Premise". The string must be at least 4 characters in length; the maximum length is 255 characters. If special characters are used in the *syslocation*, the *syslocation* must be enclosed in single quotes.

-syscontact ***syscontact***
Specifies the contact information for this system (switch). The default value is "Field Support". Refer to the definition of sysDescr, sysLocation and sysContact in the system group of MIB-II. The string must be at least 4 characters in length; the maximum length is 255 characters. If special characters are used in the *syscontact*, the *syscontact* must be enclosed in single quotes. The display format includes chassis name, city, state, and country.

-authtrapenabled [TRUE | FALSE] Enables or disables the authentication traps. When enabled, the authentication trap (authenticationFailure) is transmitted to a configured trap recipient in the event that the agent receives a protocol message that is not properly authenticated. In the context of SNMPv1, this means that a request contains a community string that is not known to the agent.The default value for this parameter is FALSE (disabled).

secLevel Sets an agent security level.

-snmpget *security_level* Specifies security level for all SNMP GET requests. A warning message is displayed when setting the security level to "No Access" for GET operation.

-snmpset *security_level* Specifies security level for SNMP SET requests only. Values include the following:

- **0** - No security.
- **1** - Authentication only.
- **2** - Authentication and Privacy.
- **3** - No Access

auditinterval Sets the SNMP audit interval.

-interval *minute* Specifies the the SNMP audit interval in minutes. Valid value range is from 1 through 1440. Default value is 60.

Examples

To display the SNMPv1 configuration:

```
switch:admin> snmpconfig --show snmpv1
  Community 1: Secret C0de (rw)
    Trap recipient: 10.10.10.1
    Trap port: 162
    Trap recipient Severity level: 0
  Community 2: OrigEquipMfr (rw)
    Trap recipient: 10.10.10.2
    Trap port: 162
    Trap recipient Severity level: 0
  Community 3: private (rw)
    Trap recipient: 10.10.10.3
    Trap port: 162
    Trap recipient Severity level: 0
  Community 4: public (ro)
    Trap recipient: 10.10.10.4
    Trap port: 162
    Trap recipient Severity level: 0
  Community 5: common (ro)
    Trap recipient: 10.10.10.5
    Trap port: 162
    Trap recipient Severity level: 0
  Community 6: FibreChannel (ro)
    Trap recipient: 10.10.10.6
    Trap port: 162
    Trap recipient Severity level: 0
SNMPv1:Enabled
```

To add the SNMPv1 communities:

```
switch:admin> snmpconfig --add snmpv1 -index 2 -groupname rw -host 10.20.30.40
```

```
-port 4000 -severity 3
Warning: The SNMPv1 is deprecated. Please use SNMPv3. Support for SNMPv1 will be removed in a future release.
```

To add snmpv3 user with index more than 6 and with group name:

```
switch:admin> snmpconfig --add snmpv3 -index 9 -user mytest1 -groupname rw
Committing configuration.....done.

switch:admin> snmpconfig --show snmpv3
SNMP Informs = 0 (OFF)
SNMPV3 user password encrypted  = 0 (OFF)
SNMPv3 USM configuration:
User 1 (ro): snmpadmin1
        Auth Protocol: noAuth
        Priv Protocol: noPriv
User 2 (ro): snmpadmin2
        Auth Protocol: MD5
        Priv Protocol: DES
User 3 (ro): snmpadmin3
        Auth Protocol: noAuth
        Priv Protocol: noPriv
User 4 (ro): snmpuser1
        Auth Protocol: noAuth
        Priv Protocol: noPriv
User 5 (ro): snmpuser2
        Auth Protocol: SHA
        Priv Protocol: AES128
User 6 (ro): snmpuser3
        Auth Protocol: noAuth
        Priv Protocol: noPriv
User 7:
User 8:
User 9 (rw): mytest1
        Auth Protocol: noAuth
        Priv Protocol: noPriv
User 10:
User 11:
User 12:

SNMPv3 Trap/Informs configuration:
Trap Entry 1:     192.0.2.0
    Trap Port: 162
    Trap User: snmpuser2
    Trap recipient Severity level: 4
    Notify Type: TRAP(1)
Trap Entry 2:     No trap recipient configured yet
    Notify Type: TRAP(1)
Trap Entry 3:     No trap recipient configured yet
    Notify Type: TRAP(1)
Trap Entry 4:     No trap recipient configured yet
    Notify Type: TRAP(1)
Trap Entry 5:     No trap recipient configured yet
    Notify Type: TRAP(1)
```

```
Trap Entry 6:     No trap recipient configured yet
    Notify Type: TRAP(1)
```

To set the SNMPv1 configuration of a switch noninteractively:

```
switch:admin> snmpconfig --set snmpv1 -index 2  \
    -port 4000 -severity 3
Warning: The SNMPv1 is deprecated. Please use SNMPv3. Support for SNMPv1 will be removed in a future release.
```

To set the SNMPv3 configuration of a switch interactively:

```
switch:admin> snmpconfig --set snmpv3 -index 2 -user user1 \
    -auth_proto 2 -priv_proto 3 -engine_id "xx:xx:xx:xx:xx:xx:xx:xx"
Warning: The authentication protocols MD5 and SHA are deprecated.
Using SHA512 is recommended and required to upgrade to the next release.
Warning: The Privacy protocol DES is deprecated. It is recommended to use AES protocols.
New Auth Passwd:
Verify Auth Passwd:
New Priv Passwd:
Verify Priv Passwd:
Committing configuration.....done.
.
```

To set the severity level for switch events and MAPS alerts interactively:

```
switch:admin> snmpconfig --set mibcapability
[...]
SW-TRAP (yes, y, no, n): [yes]
  swFCPortScn (yes, y, no, n): [yes]
  swEventTrap (yes, y, no, n): [yes]
    DesiredSeverity: (0..4) [0] 4
  swIPv6ChangeTrap (yes, y, no, n): [yes]
    DesiredSeverity: (0..4) [0] 4
  swPmgrEventTrap (yes, y, no, n): [yes]
[...]
```

To enable the **mapsTrapAM** noninteractively:

```
switch:admin> snmpconfig  --enable mibcapability \
     -mib_name BROCADE-MAPS-MIB -trap_name mapsTrapAM
Operation succeeded
```

To enable the **swEventTrap** of the SW-MIB category only (this operation disables all other SNMP traps in this MIB category):

```
switch:admin> snmpconfig  --set mibcapability \
     -mib_name SW-MIB -bitmask 0x10
Operation succeeded

switch:admin> snmpconfig  --show mibcapability
[...]
SW-TRAP: NO
        swFCPortScn: YES
        swEventTrap: YES
                DesiredSeverity:4
        swIPv6ChangeTrap: YES
                DesiredSeverity:None
```

```
        swPmgrEventTrap: YES
        swFabricReconfigTrap: YES
        swFabricSegmentTrap: YES
        swExtTrap: NO
        swStateChangeTrap: NO
        swPortMoveTrap: NO
        swBrcdGenericTrap: YES
        swDeviceStatusTrap: YES
        swZoneConfigChangeTrap: NO
[...]
```

To enable the SW-MIB MIB only without changing the current trap configuration:

```
switch:admin> snmpconfig --enable mibcapability  \
     -mib_name SW-MIB
Operation succeeded

switch:admin> snmpconfig --show mibcapability
[...]
SW-TRAP: YES
        swFCPortScn: YES
        swEventTrap: YES
                DesiredSeverity:4
        swIPv6ChangeTrap: YES
                DesiredSeverity:4
        swPmgrEventTrap: YES
        swFabricReconfigTrap: YES
        swFabricSegmentTrap: YES
        swExtTrap: NO
        swStateChangeTrap: NO
        swPortMoveTrap: NO
        swBrcdGenericTrap: YES
        swDeviceStatusTrap: YES
        swZoneConfigChangeTrap: NO
[...]
```

To re-enable all traps under the SW-MIB category:

```
switch:admin> snmpconfig --set mibcapability \
     -mib_name SW-MIB -bitmask 0xFFF
Operation succeeded

switch:admin> snmpconfig  --show mibcapability
[...]
SW-TRAP: YES
        swFault: YES
        swSensorScn: YES
        swFCPortScn: YES
        swEventTrap: YES
                DesiredSeverity:None
        swIPv6ChangeTrap: YES
        swPmgrEventTrap: YES
        swFabricReconfigTrap: Yes
        swFabricSegmentTrap: Yes
```

```
        swExtTrap: Yes
        swStateChangeTrap: NO
        swPortMoveTrap: NO
        swBrcdGenericTrap: NO
[...]
```

To display the configuration for all MIBs and associated traps:

```
switch:admin> snmpconfig --show mibcapability
FE-MIB: YES
SW-MIB: YES
FA-MIB: YES
FICON-MIB: YES
HA-MIB: YES
FCIP-MIB: YES
IF-MIB: YES
BROCADE-MAPS-MIB: YES
T11-FC-ZONE-SERVER-MIB: NO
SW-TRAP: YES
            swFCPortScn: YES
            swEventTrap: YES
                         DesiredSeverity:None
            swIPv6ChangeTrap: YES
            swPmgrEventTrap: YES
            swFabricReconfigTrap: YES
            swFabricSegmentTrap: YES
            swExtTrap: NO
            swStateChangeTrap: NO
            swPortMoveTrap: NO
            swBrcdGenericTrap: YES
            swDeviceStatusTrap: YES
            swZoneConfigChangeTrap: NO
FA-TRAP: YES
            connUnitStatusChange: YES
            connUnitEventTrap: YES
            connUnitPortStatusChange: YES
FICON-TRAP: YES
            linkRNIDDeviceRegistration: YES
            linkRNIDDeviceDeRegistration: YES
            linkLIRRListenerAdded: YES
            linkLIRRListenerRemoved: YES
            linkRLIRFailureIncident: YES
HA-TRAP: YES
            fruStatusChanged: YES
            cpStatusChanged: YES
            fruHistoryTrap: YES
IF-TRAP: YES
            linkDown: YES
            linkUp: YES
MAPS-TRAP: YES
            mapsTrapAM: YES
            mapsQuietTimeExpirationTrap: YES
T11-FC-ZONE-SERVER-TRAP: NO
            t11ZsRequestRejectNotify: NO
```

```
            t11ZsMergeFailureNotify: NO
            t11ZsMergeSuccessNotify: NO
            t11ZsDefZoneChangeNotify: NO
            t11ZsActivateNotify: NO
```

Note: The Zone Mib parameters are for restricted usage only.

To set the access control configuration noninteractively:

```
switch:admin> snmpconfig --set accesscontrol -index 1 -host 2.3.4.5 -access ro
Warning:  'snmpconfig --set accesscontrol' command is being deprecated. Please use ipfilter.
ipfilter --addrule policyname -rule rule_num -sip source_IP
-dp dest_port -proto protocol -act permit | deny
[-type INPUT | FWD] -dip destination_IP
```

To display the access control configuration:

```
switch:admin> snmpconfig --show accesscontrol
Warning:  'snmpconfig --show accesscontrol' command is being deprecated. Please use ipfilter.
ipfilter --addrule policyname -rule rule_num -sip source_IP
-dp dest_port -proto protocol -act permit | deny
[-type INPUT | FWD] -dip destination_IP

SNMP access list configuration:
Entry 0:  No access host configured yet
Entry 1:  No access host configured yet
Entry 2:  No access host configured yet
Entry 3:  No access host configured yet
Entry 4:  No access host configured yet
Entry 5:  No access host configured yet
```

To configure system group parameters and verify the configuration noninteractively:

```
switch:admin> snmpconfig --set systemgroup -syscontact "Field Support" \
   -authTrapEnabled false -sysdescr "Fibre Channel Switch" \
   -syslocation "X6-4,San Jose,California,United States"

sysDescr    = Fibre Channel Switch
sysLocation = X6-4,San Jose,California,United States
sysContact  = Field Support.
authTrapEnabled = 0 (FALSE)
```

To set the SNMP security level and verify the configuration noninteractively:

```
switch:admin> snmpconfig --set seclevel -snmpset 0
SET seclevel cannot be less than GET. Changing SET seclevel to be \
   same as GET. Do you want to continue? (yes, y, no, n): [no] y

switch:admin> snmpconfig --show seclevel
GET security level = 1, SET level = 1
SNMP GET Security Level: Authentication only
SNMP SET Security Level: Authentication only
```

To get the SNMP security level and verify the configuration noninteractively:

```
switch:admin> snmpconfig --set seclevel -snmpget 3
Warning: Modifying the security access level to No Accessfor GET operation might impact the
```

```
SNMP GET / SNMP Walk querytriggered by the applications monitoring the system.
SET seclevel cannot be less than GET.Changing SET seclevel to be same as GET.
Do you want to continue? (yes, y, no, n): [no] y
2021/11/12-11:32:44 (GMT), [SNMP-1005], 5452, FID 128, INFO, Tyr41,
     SNMP configuration attribute, SNMP GET Security Level, has changed from 0 to 3.
2021/11/12-11:32:44 (GMT), [SNMP-1005], 5453, FID 128, INFO, Tyr41,
     SNMP configuration attribute, SNMP SET Security Level, has changed from 0 to 3.
switch:admin> snmpconfig --show seclevel

GET security level = 3, SET level = 3
SNMP GET Security Level: No Access
SNMP SET Security Level: No Access
```

To set the audit interval and verify the configuration noninteractively:

```
switch:admin> snmpconfig --set auditinterval -interval 90
Committing configuration.....done.

switch:admin> snmpconfig --show auditinterval
SNMP Audit Interval (in min): 90
```

To configure groupname to RW or RO for SNMPv1 and SNMPv3:

```
switch:admin>snmpconfig --set snmpv1 -index 2 -groupname ro
Warning: The SNMPv1 is deprecated. Please use SNMPv3. Support for SNMPv1 will be removed in a future release.

switch:admin> snmpconfig --set snmpv3 -index 2 -groupname ro
Committing configuration.....done.
```

To display the SNMPv3 configuration with informs disabled interactively:

```
switch:admin> snmpconfig --show snmpv3

SNMP Informs = 0 (OFF)

SNMPV3 user password encrypted = 1 (ON)

SNMPv3 USM configuration:
User 1 (rw): user
     Auth Protocol: noAuth
     Priv Protocol: noPriv
User 2:
User 3:
User 4:
User 5:
User 6 (rw): testsnmpv3
     Auth Protocol: MD5
     Priv Protocol: DES
User 7:
User 8:
User 9:
User 10 (ro): user10
     Auth Protocol: noAuth
     Priv Protocol: noPriv
User 11:
```

```
User 12:

SNMPv3 Trap/Informs configuration:
Trap Entry 1: 2620:100:c:f001::41
Trap Port: 162
Trap User: testsnmpv3
Trap recipient Severity level: 4
Notify Type: TRAP(1)
Trap Entry 2: No trap recipient configured yet
Notify Type: TRAP(1)
Trap Entry 3: No trap recipient configured yet
Notify Type: TRAP(1)
Trap Entry 4: 192.0.2.0
Trap Port: 162
Trap User: testsnmpv3
Trap recipient Severity level: 5
Notify Type: TRAP(1)
Trap Entry 5: No trap recipient configured yet
Notify Type: TRAP(1)
Trap Entry 6: No trap recipient configured yet
Notify Type: TRAP(1)
```

To enable inform requests to be sent instead of trap requests interactively:

```
switch:admin> snmpconfig --set snmpv3
SNMP Informs = 1 (ON)

SNMPV3 user password encrypted = 1 (ON)

SNMPv3 USM configuration:
User 1 (rw): user
     Auth Protocol: noAuth
     Priv Protocol: noPriv
     Engine ID: 00:00:00:00:00:00:00:00:00
User 2:
User 3:
User 4:
User 5:
User 6 (rw): testsnmpv3
     Auth Protocol: MD5
     Priv Protocol: DES
     Engine ID: 10:00:00:00:00:00:00:00:cd
User 7:
User 8:
User 9:
User 10 (ro): user10
     Auth Protocol: noAuth
     Priv Protocol: noPriv
     Engine ID: 00:00:00:00:00:00:00:00:00
User 11:
User 12:

SNMPv3 Trap/Informs configuration:
Trap Entry 1: 2620:100:c:f001::41
```

```
Trap Port: 162
Trap User: testsnmpv3
Trap recipient Severity level: 4
Notify Type: TRAP(1)
Trap Entry 2: No trap recipient configured yet
Notify Type: TRAP(1)
Trap Entry 3: No trap recipient configured yet
Notify Type: TRAP(1)
Trap Entry 4: 192.0.2.0
Trap Port: 162
Trap User: testsnmpv3
Trap recipient Severity level: 5
Notify Type: INFORM(2)
Trap Entry 5: No trap recipient configured yet
Notify Type: TRAP(1)
Trap Entry 6: No trap recipient configured yet
Notify Type: TRAP(1)
```

To block access to SNMPv1/2c

```
switch:admin> snmpconfig --disable snmpv1
Warning: The SNMPv1 is deprecated. Please use SNMPv3. Support for SNMPv1 will be removed in a future release.
```

To display the configuration for all MIBs and associated traps in AG mode:

```
switch:admin> snmpconfig --show mibcapability
SW-MIB: YES
FA-MIB: YES
HA-MIB: YES
IF-MIB: YES
BROCADE-MAPS-MIB: YES
SW-TRAP: YES
    swFCPortScn: YES
    swEventTrap: YES
         DesiredSeverity:None
FA-TRAP: YES
    connUnitStatusChange: YES
    connUnitEventTrap: YES
    connUnitPortStatusChange: YES
HA-TRAP: YES
    fruStatusChanged: YES
    cpStatusChanged: YES
    fruHistoryTrap: YES
IF-TRAP: YES
    linkDown: YES
    linkUp: YES
MAPS-TRAP: YES
    mapsTrapAM: YES
    mapsQuietTimeExpirationTrap: YES
```

See Also

None

snmpStatistics

Changes or displays the SNMP throttling attributes.

Synopsis

```
snmpstatistics --set snmp {[-maxPT <max_pt_level>]
   [-avgPT <avg_pt_level>] [-mul <mul_value>]}
 snmpstatistics {--enable | --disable | --clear} snmp
snmpstatistics --show
snmpstatistics --help
```

Description

Use this command to change or display the SNMP throttling parameters.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

module	Specifies a module such as SNMP.
--set	Configures the SNMP throttling parameters for the specified module.
	-maxPT *max_pt_level* — Specifies the maximum processing time in milliseconds.
	-avgPT *avg_pt_level* — Specifies the average processing time in milliseconds.
	-mul *mul_value* — Specifies the base interval. The default value is 1 second.
--enable	Enables SNMP throttling.
--disable	Disables SNMP throttling.
--clear	Clears SNMP throttling configuration parameters and statistics.
--show	Displays the SNMP throttling configuration parameters and statistics.
--help	Displays the command usage.

Examples

To set the throttling configuration parameters:

```
switch:admin> snmpStatistics --set SNMP -maxPT 250 -avgPT 10 -mul 5
```

To enable SNMP throttling:

```
switch:admin> snmpstatistics --enable snmp
```

To disable SNMP throttling:

```
switch:admin> snmpstatistics --disable snmp
```

To clear SNMP throttling parameters and statistics:

```
switch:admin> snmpstatistics --clear snmp
```

To display SNMP throttling parameters and statistics:

```
switch:admin> snmpstatistics --show
snmpInPkts = 130
snmpOutPkts = 132
snmpInBadVersions = 0
snmpInBadCommunityNames = 0
snmpInBadCommunityUses = 0
snmpInASNParseErrs = 0
snmpInTooBigs = 0
snmpInNoSuchNames = 0
snmpInBadValues = 0
snmpInReadOnlys = 0
snmpInGenErrs = 0
snmpInTotalReqVars = 3718
snmpInTotalSetVars = 0
snmpInGetRequests = 130
snmpInGetNexts = 0
snmpInSetRequests = 0
snmpInGetResponses = 0
snmpInTraps = 0
snmpOutTooBigs = 0
snmpOutNoSuchNames = 0
snmpOutBadValues = 0
snmpOutGenErrs = 0
snmpOutGetRequests = 0
snmpOutGetNexts = 0
snmpOutSetRequests = 0
snmpOutGetResponses = 130
snmpOutTraps = 2
snmpSilentDrops = 0
snmpProxyDrops = 0

Throttling config:
Flag                 :     Off
MOD ID               :     0
Avg PT               :     10 milli second
Max PT               :     250 milli second
MUL                  :     5

Throttling Statistics:
last PT              :     0 milli second
Act Avg PT           :     0 nano second
No Of Throttle       :     0
No Of PKT Throttle   :     0
No Of samples        :     0

Debug Stats:
Start Time           :     0 second: 0 nano second
End Time             :     0 second: 0 nano second
Remaining PT         :     0 milli second
```

See Also

snmpConfig, snmpTraps

snmpTraps

Sends or displays SNMP traps.

Synopsis

```
snmptraps --send [-trap_name <trap_name>]
 snmptraps --show [port]
 snmptraps --block -port [<slot/>]<port>
 snmptraps --unblock -port {[<slot/>]<port> | ALL}
 snmptraps --help
```

Description

Use this command to manage specific Simple Network Management Protocol (SNMP) traps.

Use the **--send** option to send a specific SNMP trap to a configured SNMP trap recipient. Or use the **--send** option without operands to send all supported traps to all configured SNMP trap recipients. When the command is issued to send all traps, the message returned indicates only the total number of traps sent and not the individual trap names.

You can block or unblock certain port traps on specified ports. This feature provides control over a subset of port traps including the following: SwFCPortScn, ConnUnitPortStatusChange, and SwFabricSegmentTrap.

Use the **--show** option with the **port** operand to display the status of blocked ports. When used without operands, the **--show** option displays all Management Information Base (MIB) objects and associated traps that are supported in Fabric OS.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--send	Sends one or all SNMP traps to all configured recipients or to a specified recipient. The following operands are optional: **-trap_name** ***trap_name*** — Specifies the trap by name. Use **snmptraps --show** for a listing of valid traps.
--block [*slot*]*port*	Blocks the following port traps on the specified port: SwFCPortScn, ConnUnitPortStatusChange, and SwFabricSegmentTrap.
--unblock [*slot*]*port* | ALL	Removes the trap blocking from the specified port or from all ports.
--show [port]	Displays all configured SNMP traps and MIBs. When used with the optional **port** argument, this command displays the ports that are blocked from receiving certain software traps.
--help	Displays the command usage.

Examples

To send all traps to the configured recipients:

```
switch:admin> snmpTraps --send
Number of traps sent : 27
```

To send a FRU history trap:

```
switch:admin> snmpTraps --send -trap_name    \
fru-history-trap
```

To display the traps and MIBs supported in Fabric OS:

```
switch:admin> snmpTraps --show

#  |Mib Name        |Supported Traps
---|----------------|--------------------------------
001|SW-MIB          |sw-fc-port-scn
   |                |sw-ip-v6-change-trap
   |                |sw-pmgr-event-trap
   |                |sw-event-trap
   |                |sw-fabric-reconfig-trap
   |                |sw-fabric-segment-trap
   |                |sw-state-change-trap
   |                |sw-zone-config-change-trap
   |                |sw-port-move-trap
   |                |sw-brcd-generic-trap
   |                |sw-device-status-trap
002|FICON-MIB       |link-rnid-device-registration
   |                |link-rnid-device-deregistration
   |                |link-lirr-listener-added
   |                |link-lirr-listener-removed
   |                |link-rlir-failure-incident
003|FA-MIB          |conn-unit-status-change
   |                |conn-unit-port-status-change
   |                |conn-unit-event-trap
004|MIB-2           |cold-restart-trap
   |                |warm-restart-trap
005|IF-MIB          |if-link-up-trap
   |                |if-link-down-trap
006|RFC1157         |snmp-authentication-trap
007|HA-MIB          |fru-status-change-trap
   |                |fru-history-trap
   |                |cp-status-change-trap
008|MAPS-MIB        |maps-trap
   |                |maps-quiet-time-trap
009|T11-FC-ZONE-SERVER-MIB|t11ZsRequestRejectNotify
   |                |t11ZsMergeSuccessNotify
   |                |t11ZsMergeFailureNotify
   |                |t11ZsDefZoneChangeNotify
   |                |t11ZsActivateNotify
```

Note: The Zone Mib parameters are for restricted usage only.

To block a single port from receiving traps:

```
switch:admin> snmpTraps --block -port 3/13
```

To unblock a previously blocked port:

```
switch:admin> snmpTraps --unblock -port 3/13
```

To display the blocked port status:

```
switch:admin> snmpTraps --show port
Port      0     1     2     3     4     5     6     7     8     9
-----------------------------------------------------------------
Blocked     |     |     |     |     |     |     |     |     |     |

Port     10    11    12    13    14    15    16    17    18    19
-----------------------------------------------------------------
Blocked     |     |     |     |     |     |     |   Y |   Y |     |

Port     20    21    22    23    24    25    26    27    28    29
-----------------------------------------------------------------
Blocked     |     |     |     |     |     |     |     |     |     |

Port     30    31    32    33    34    35    36    37    38    39
-----------------------------------------------------------------
Blocked     |     |     |     |     |     |     |     |     |     |
```

To display the traps and MIBs supported in AG mode:

```
switch:admin> snmptraps --show

#  |Mib Name        |Supported Traps
---|----------------|--------------------------------
001|SW-MIB          |sw-fc-port-scn
   |                |sw-event-trap
002|FA-MIB          |conn-unit-status-change
   |                |conn-unit-port-status-change
   |                |conn-unit-event-trap
003|MIB-2           |cold-restart-trap
   |                |warm-restart-trap
004|IF-MIB          |if-link-up-trap
   |                |if-link-down-trap
005|RFC1157         |snmp-authetication-trap
006|HA-MIB          |fru-status-change-trap
   |                |fru-history-trap
   |                |cp-status-change-trap
007|MAPS-MIB        |maps-trap
   |                |maps-quiet-time-trap
```

See Also

snmpConfig

spinFab

Runs functional test of interswitch link (ISL) cabling and trunk group operation.

Synopsis

spinfab

```
[-nmegs <count>]
[-ports <itemlist>]
[-setfail <mode>]
[-fports <flag>]
[-nframes <number>]
[-pattern <number>/<name>]
[-timeout <length>]
```

Description

Use this command to verify the intended functional operation of interswitch links (ISLs) at the maximum speed by setting up the routing hardware so that test frames received by each E_Port are retransmitted on the same E_Port. Several frames are subsequently sent to the neighbor port attached to each active E_Port specified. Because the default action for such frames is to route them back to the sender, which never occurs during normal traffic, the frames circulate until the test terminates.

The frames are continuously transmitted and received in all ports in parallel. For SFP ports, the port LEDs flicker green rapidly while the test is running. The ICL or QSFP port LEDs glow steady green and blinking is not supported.

M->N/M->M loopback ports are tested as well, using the same algorithm, if loopback cables or loopback plugs are present in the switch.

While the frames are circulating, the RX frame count and port CRC and encoder error statistics are monitored. If a port stops or a low-level error occurs, the test generates an error message. Every one million frames, the circulating frames are captured to verify that they are still circulating and in the appropriate order. In this manner, the test can verify the entire path to the remote switch as well as the proper in-order delivery operation of any trunk groups present.

In case of trunk master ports, all the slave ports are also monitored for low-level errors.

The switch remains in normal operation while this test is running. However, some performance degradation may occur due to the ISLs being saturated with test frames. For this reason, use caution when running this test on live fabrics. Consider testing only one trunk group or ISL at a time, and do not run the tests for extended periods of time.

Combine this test with **portLoopBackTest** for ISL link failure isolation. If **spinFab** fails, replace the cable with a loopback plug and run **portLoopBackTest** to verify the local switch and media. If these pass, the fault lies in the cable, the remote switch, or media.

The frame size depends on the amount of buffer credit available on the port. There are eight possible frames that can be sent. Especially with trunking groups, all eight possible frames are used unless there is extensive traffic running on the link. The payload sizes of those eight frames are 1024, 12, 8,1024, 512, 1024, 12, and 1024.

The maximum length allowed for the command parameter is 500 characters.

Notes

The following port types support the **spinFab** diagnostics.

- Loopback ports
- E_Ports
- Interchassis link (ICL) E_Ports
- ICLs configured as D_Ports
- D_Ports
- Trunk master ports
- Trunk slave ports
- Ports in logical switches
- Ports in Base Switches
- Loopback ports in D_Port mode between two logical switches on the same switch
- Ports on non-VF connected to VF-configured switch
- Long distance ports
- D_Ports connected to AG switch in D_Port mode
- ICL D_Ports connected to AG switch in D_Port mode
- Loopback ports in D_Port mode connected to AG switch

The following ports do not support the **spinFab** test:

- F_Ports connected to HBA
- F_Port connections to N_Port on AG switch
- F_Port on VF-enabled switch
- Ports on AG switch connected to HBA
- AE_Ports
- AF_Ports
- EX_Ports
- E_Ports connected to EX_Ports
- F_Ports converted to D_Ports
- Core blade connected to port blade

When trunk groups are present, the entire trunk group must be included in the range of ports to test or false failure notifications may occur. If multiple ISL links are present between two switches that support trunking, then it is likely that trunk groups are present and all ports between the two switches should be tested at the same time.

You cannot interrupt the test by pressing the return key (<cr>).

This command supports a maximum of 16 paths to a single remote domain.

When new logical switches are created, appropriate switch domain must be set to avoid domain ID overlap when running spinfab. With insistent DID turned off to overcome this issue, DID negotiation depends on when the switch is powered on. A reboot of the switches with links already established re-configures the domain if the domain ID is already in use by another switch in the fabric, to avoid convergence.

Spinfab tests skips F_Ports if Virtual Fabric is enabled on any platform.

Spinfab is not supported on F_Port that is configured as a D_Port. Please use the **portDPortTest** command for the link validation on F_Ports configured as D_Ports.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-nmegs <*count*> Specifies the number of frames to send in millions. The test progresses until the specified number of frames has been transmitted on each port. The default value is 10 million frames. This command only approximately counts the frames and the actual number of frames sent will be slightly larger, particularly at link speeds of 4G or higher.

-ports <*itemlist*> Specifies a list of user ports to test. By default, all of the ISL ports in the current switch are tested. See **itemList** for further details.

-setfail <*mode*> Instructs **spinFab** how to mark failed ports. Valid values include the following:

- **0** Does not mark failing ports as FAILED (default). This option minimizes the impact on live fabrics.
- **1** Marks the failing ports as FAILED. In test or qualification environments without live traffic, this may be useful with large values of **-nmegs** *count*. This mode is disabled by default.

-fports <*flag*> Instructs **spinFab** to include or exclude F_Ports in the testing. This feature is disabled by default. If enabled, **spinFab** tests the F_Ports connected to HBAs along with other valid ports (E-ports & Loopback ports). The HBA must be running firmware v2.1.1 or higher. Valid flag values include the following:

- **0** Does not include F_Ports in the port list for testing (default).
- **1** Includes F_Ports in the port list for testing.

-nframes <*number*> Determines how many frames will be sent by spinfab on the link to spin. Default is 2. The maximum number is 5. If you want to configure more than 5 use **-nframes 0**.

-pattern <*number*>/ <*name*> Forces spinfab to use a particular data pattern for the frames it spins between ports. The pattern can be a user defined pattern or is selected from a set of twenty five predefined pattern types. Use the **datatypeshow** command to view the predefined patterns supported with spinfab. For each pattern, the **datatypeshow** command displays the name, the pattern type number, and an example. Specify the pattern by its name after the **-pattern** option. If pattern is not specified, it defaults to jCRPAT (type=17). To use a user defined pattern, follow the **-pattern** option with a 32 bit hexadecimal number.

-timeout <*length*> Defines a time limit (in seconds) for the running of spinfab. Spinfab will keep track of how long the test has run and stop testing once the timeout limit has been reached. The overall accuracy will be in the tens of seconds.

Examples

To test cascading ISLs:

```
switch:admin> spinfab -ports 1/0 - 1/2
spinfab running...
spinfab: Completed 11 megs, status:  passed.
        port 0 test status: 0x00000000 -- passed.
        port 1 test status: 0x00000000 -- passed.
        port 2 test status: 0x00000000 -- passed.
Test Complete: "spinfab" Pass 10 of 10
Duration 0 hr, 0 min & 41 sec (0:0:41:877).
passed.
```

See Also

itemList, portLoopbackTest, portPerfShow

sshUtil

Manages SSH client and server configuration.

Synopsis

```
sshutil allowuser <user name>
sshutil showuser
sshutil importpubkey
sshutil showpubkeys
sshutil delpubkeys [-all]
sshutil genkey -rsa -keysize {2048 | 4096 | 8192}
sshutil genkey -dsa
sshutil genkey -ecdsa -keysize {P256 | P384 |P521}
sshutil exportpubkey {-rsa | -dsa | -ecdsa}
sshutil delprivkey {-rsa | -dsa | -ecdsa}
sshutil addknownhost {<IP Address> | <Hostname FQDN>}
     [:<Port>] -fp <fingerprint> [-f]
sshutil delknownhost [-all]
sshutil showknownhost [-all]
sshutil stricthostkeycheck {-value {yes | no}}
sshutil stricthostkeycheck {-show}
sshutil genhostkey -rsa -keysize {2048 | 4096 | 8192}
sshutil genhostkey -dsa
sshutil genhostkey -ecdsa -keysize {P256 | P384 |P521}
sshutil showhostkey
sshutil delhostkey {-rsa | -dsa | -ecdsa}
sshutil rekeyinterval <value>
sshutil showrekey
sshutil help
```

Description

Use this command to enable and manage SSH public key authentication on a switch. SSH public key authentication provides a mechanism for authenticating an authorized user without a password. SSH public key authentication is more secure than password authentication and can be used to securely access services that require automatic login.

SSH public key authentication works as follows: An authorized user generates a pair of encryption keys (public and private) on a local machine (a switch or a server). Messages encrypted with the private key can only be decrypted by the public key, and vice versa. The private key remains on the local machine; the public key is exported to a remote host. The remote host responds to login requests by sending a brief message encrypted with the public key. The private key on the local host decrypts the message, and the login succeeds.

Use the **sshUtil** command to do the following:

- Configure a user to manage keys on a switch.
- Generate a private/public key pair on the local switch.
- Import a public key for a specified user from a remote host to the local switch.
- Export the public key from the local switch to a remote host.
- Delete the public keys associated with a specified user or all users on the local switch.
- Delete the private key on the local switch.
- Add a known host name to the known hosts file.
- Delete the known host name or IP address from the file .ssh/known_hosts.
- Generate, display, and delete the SSH host keys.
- Configure and display SSH stricthostkeycheck attribute for outgoing connection.
- Configure and display SSH rekey interval.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Outgoing public key authentication from the switch to a remote host is restricted to Fabric OS Commands which use secure copy (SCP), such as **configDownload** or **configUpload**.

This command supports generation of a public/private key pair on the switch to enable outgoing connections between a switch and a remote host. To set up incoming connections, you must first generate the public/private key pair on a remote host and then import the public key to the switch. Use the SSH utility **ssh-keygen -t** *key_type* (key type can be rsa, dsa, or ecdsa) to generate the keys on the remote host. Refer to your UNIX system documentation for details on this command. For servers with openssh-7.0 and later, by default the dsa key is not supported and known hosts cannot be added using the dsa keys.

Operands

This command supports the following operands:

allowuser <*user name*> Configures the specified user to perform key management operations such as to generate a key pair, export the public key, and delete the private key. The default admin is, by default, a configured user. Only one user can be configured at any given time.

The following operand is required:

<user name> Specifies login name for the configured user. The user must be in the switch user database and must have admin privileges on the switch.

showuser Displays the currently configured user. This operation can only be performed by the default admin.

importpubkey Imports a public key from a remote host to the local switch. The protocol used is SCP. This operation supports authentication for incoming connections. For this operation to succeed, a public/private key pair must be generated on the remote host prior to the import by issuing **ssh-genkey -t** *host_key_algorithm* (a UNIX command). The command prompts for a user name for whom the public key is imported. Once the public key is imported successfully, the user for whom the key was imported can perform public key authentication with the switch from the remote host, on which the private key resides.

importpubkey prompts for the following input parameters:

<user name> Enter the user name for whom the key is imported.

<IP Address> Enter the IP address for the remote host. IPv4 and IPv6 addresses are supported.

<remote directory> Enter the path where the public key is stored on the remote host. The default directory where SSH stores public keys is ~username/.ssh.

<public key name> Enter the name of the file in which the public key is stored on the remote host. This is a user-generated file name that must have a .pub extension.

	<login name> Enter the user login name for the remote host. The slash (/) character is not allowed in *login name*. ***<password>*** Enter the password for the remote user.
showpubkeys	Displays all imported public keys associated with the specified user. Public keys generated on the switch are not shown. This command interactively prompts for a username. ***<user name>*** Enter the username for whom you want to display the public keys.
delpubkey {-rsa | -dsa | -ecdsa}	Deletes all imported public keys associated with a specified user on the switch or with all users. The deletion of any user-defined user also deletes the public keys imported for that particular user. This command prompts for the user name associated with the public keys. Enter "all" to delete the public keys of all users. Deletion of a configured user's public keys effectively blocks incoming connections from this user that rely on public key authentication with the switch.
genkey {-rsa | -dsa | -ecdsa}	Generates a private or public key pair for the selected type on the local switch. This option can be performed only by a configured user. This option enables authentication for outgoing connections from the switch to a remote host. You must export the public key to a remote host to complete the setup. Beginning from FOS v9.0.0, user will not be prompted and keys are generated without any authentication. For incoming connections, see **importpubkey** option for details.
exportpubkey {-rsa | -dsa | -ecdsa}	Exports the public key from the switch to a specified remote host to support outgoing connections from the switch to a remote host. This option can only be performed by a configured user. The successfully exported public key must be appended to the authorized_keys file on the remote host. Use the **cat ~/.ssh/outgoing.pub >> ~/.ssh/***filename* command to append the file. **exportpubkey** prompts for IP Address, remote directory, login name and password. Refer to **importpubkey** for a description of these parameters.
delprivkey	Deletes the private key for outgoing connection from the switch. This option can only be performed by a configured user. Deletion of a configured user's private keys effectively blocks outgoing connections initiated by this user that rely on public key authentication with a remote host.
addknownhost *<IP Address>* | *<Hostname FQDN>*	Prompts the user to add remote host keys to the known hosts file (can be performed only by the allowed users). To add remote servers as knownhosts, the remote host keys must follow ssh_host_rsa_key/ssh_host_dsa_key/ssh_host_ecdsa_key as filename for any keysize. This option can only be performed by the allowed user. **:<Port>** Allows to add port number along with the host address. **-fp *<fingerprint>*** Fingerprint value of the remote host key. **-f** Forces to overwrite remote host keys to known hosts file.
delknownhost [-all]	Deletes the known host name or IP address from the file .ssh/known_hosts. This option can only be performed by the allowed user. On deletion of a known host name or IP address from the .ssh/known_hosts file, the next SSH connection prompts the user to accept a new public key. **-all** Deletes all the known host names or IP addresses from the file.
showknownhost [-all]	Displays the host keys (can be performed only by the allowed users) and fingerprint of the IP address or hostname FQDN from the known hosts. This option can only be performed by the allowed user.
stricthostkeycheck -value {yes | no}	Configures the SSH **stricthostkeycheck** attribute in the ssh_config file.
stricthostkeycheck -show	Displays the current configuration of SSH **strictshostkeycheck** attribute value from the ssh_config file.
genhostkey {-rsa | -dsa | -ecdsa}	Generates a host key and installs it on the switch.
showhostkey	Displays the host keys installed on the switch.
delhostkey {-rsa | -dsa | -ecdsa}	Deletes the host keys installed on the switch. Deleting the last available host key is not allowed. Generate a new host key to replace the existing key and proceed with the deletion.

rekeyinterval <*value*>	Configures time duration in seconds for regenerating the session keys. The rekey process is initiated after every configured seconds. Valid values are 0, or from 900 through 3600. If you set the rekey interval to 0, rekey process is not initiated for the session.
showrekey	Displays the configured rekey interval in seconds.
help	Displays the command usage.

Examples

To configure a user for managing of SSH key authentication:

```
switch:admin> sshutil allowuser username
Allowed user has been successfully changed to username.
```

To display the configured user:

```
switch:admin> sshutil showuser
   username
```

To set up SSH public key authentication on a switch for incoming connections:

1. Generate a private/public key pair on a remote host (accept default directory and file name):
```
   username@remotehost> ssh-keygen -t dsa
   Key pair generated successfully.
```
2. Import the public key from the remote host to the local switch:
```
   switch:username> sshutil importpubkey
      Enter user name for whom key is imported: username
      Enter IP address:Remote host IP Address
      Enter remote directory: ~userdir/.ssh
      Enter public key name(must have .pub suffix):id_dsa.pub
      Enter login name:username
      Password:******
      public key is imported successfully.
```
3. Connect to switch using remote ssh client with the **-i** *private_key* option:
```
   username@remotehost> ssh username@ip_address -i id_dsa
```

To display the imported public keys on a switch:

```
switch:username> sshutil showpubkeys
Enter user name whose ssh public key is to be displayed: username
user's public keys
ssh-dss AAAAB3NzaC1kc3MAAACBANXuRsJoIA0PFJtGuZVLfqvfSr\
DYPplWuFouOmTcmuNvpTnd+yoZ
u3C/lAu930HLTmhfxeke/NWRIdj2MJS8yTf30a0u4bf9MSNB8Pt453P/+ \
   7VHHxNBYsh+Z++Dv1hfcTeb
0s53bdf7jyYSUdj1k+w//sNTaz0DCs0+rimo4l2NAAAAFQDCuHKRctSH \
   D8PRYu5Ee1yWCQKT/wAAAIAo
AMvr1ooq0JVXmXfd0VKcC7AImzFYgRa/FOxZBe4JDkCAXztFk5wnAFy \
   UbyTWEoC955mkYGqZRydMrSNM
9wLCAf2DTxXxuHFujA1REL5NGdZqRWo2Sk5HLkYQQYM1w9r9vfK  \
   QnFH3wYsnHV2sq7+tyRlXfwE416ee
chdwWVpmjgAAAIEAqxcaE1vY4o/cBq1Py62lPaZTcfOHS3jjdKgSO  \
   BKPCCVeNyx4gxnmqvihtyroeWAY
dBDK4CFgyhut16a/QmdFjn6iyiNR2SGV7X9xqkjPN8H4EhIPXGxoD  \
   VOfY1Vdt3V3KUxVeEI+vTBI2KJd
PmmLfyEKZqCHOlwBx+HuuZP2BnU= username@host
```

To delete all imported public keys for a single user:

```
switch:username> sshutil delpubkeys
Enter user name for whom ssh public key is to deleted \
   or all for all users:username
WARNING: It deletes all the ssh public keys for user. \
    Do you want to proceed(Yes or No, default is No)?yes
ssh public keys associated to username are deleted.
```

To set up SSH public key authentication on a switch for outgoing connections:

1. Generate a private/public key pair on the local switch:

```
switch:username> sshutil genkey -rsa
A private key file of this algorithm type already exists and will be overwritten.
Do you want to proceed(yes, y, no, n)[no]?y
Key pair generated successfully.
```

2. Export the public key to a remote host:

```
switch:username> sshutil exportpubkey
   Enter IP address: remote host IP Address
   Enter remote directory: ~username/.ssh
   Enter login name:username
   Password:******
   public key out_going.pub is exported successfully.
```

3. Append the public key to the authorized_keys file on the remote host:

```
username@remotehost> cat ~/.ssh/outgoing.pub >> \
       ~/.ssh/authorized_keys
```

To delete the private key on a switch:

```
switch:username> sshutil delprivkey
   private key is deleted successfully.
```

To add a known host or IP address from the file .ssh/known_hosts:

```
switch:username> sshutil addknownhost   \
     192.0.2.0 -fp 52:d5:5d:89:c1:c8:1a:60:4c:a4:81:3b:d3:35:53:40 -f
Known Host(s) added Successfully
```

To delete a known host or IP address from the file .ssh/known_hosts:

```
switch:username> sshutil delknownhost
IP Address/Hostname to be deleted:10.100.20.40
Known Host deleted successfully.
```

To display a single remote host key provided hash type:

```
switch:username> sshutil showknownhost -all
HOST IP:        10.10.10.103
KEY TYPE:       ssh-rsa
HOST KEY:
AAAAB3NzaC1yc2EAAAABIwAAAQEA5qBcYi6vGFse/+bWxaEisl5liK4VwjNw/IdSMa1uhzffDSw2X821q+
VPhufGu9TiIuOj7/Wm57xSPNdk1akaEcsX/xFR59lpUXHPJFv5zKjcng5eUDo5AK5+ZBxB8AyEqIJR6vyj
6kp4Oj63cSOF7uRoTYcoDq2bNlPf4vg/PSjYWTmIA+qlBOms1yQCM0bW2Z+L9QSaJEo1pBMavoQ7FobicS
j37GKAdP3uYip4CrgmK66idnLE3ZX2xhR4TDpDmnBNJaqpFjiqR6vFij32aEgD7RmZvaCyB41LpKqgiiZs
YIJs116A9H3lMyVPcFDtvvFW0J+c9iufWgr9VHmtgw==
FINGERPRINT:
```

```
MD5:0c:48:0c:98:9a:a9:9e:ac:08:e7:47:91:a2:3d:d8:fa
SHA1:5cOE+jZ/swttCfpHVWZBNV2XVvU
SHA256:74aJPvuOIvLUipSj4Ni3OghYNpYbopI4dktrbWeGv5A
SHA384:IEJ/mmOouUmJPJKFypu8nU9KRIhk8AkrVNcUffOYhZVkqd0dSt5VwH1Sz+5qHkr+
SHA512:4WL3DyLHiUddPBFKhiN07q734Aa57PVVaVzD5SPMVTWe+KjNvgNHuKJimwza5tG7d+ghKrz6t/
f9c6/NgUMkoA

HOST IP:        10.10.10.63
KEY TYPE:       ssh-rsa
HOST KEY:
AAAAB3NzaC1yc2EAAAABIwAAAQEA0OjFqlp9M2Dzwi8p6KzuqoLYZv2iVyDR5AzUcsZpM+8W9Y385/zhR
IyVka4Ff/8k20ADf8q6RC9WU1t+gXgS/G2BQDf8y7OcQKBpUlntUnU4zFkZD6Hu55G5E/cS/cOD/T3iw18
pIHybmo+JYtXC13F9RmirCF1AG2w7sgedRv5Yp2CZ9jin2sIKlFa95P2NQgkOYi2rlD39KSxlZOzm+pB+
ZJSJkrgBU2xGx3OriE+iVkVL3GIL1Q2KZd5ajGiQ/TKqiic18kK3HOHWqJpCPIdFZaXRmDr59DHeEe6323
WMFu3yB/KYaLkgRc94M8jI58zaTDZNKn2xfuL8ATiMyw==
FINGERPRINT:
MD5:dd:c2:10:ac:5a:39:14:cb:18:6d:5e:be:e4:5a:21:ea
SHA1:QL1LtINrYmgDsCFPz53ISMkrFJ4
SHA256:zNhxJNsWBALdDTZQd6IwtLZmilyrRn6Ih+HkGcmpTtc
SHA384:hvNzWTwhEBMueLmj5dlRDYLsZQeKCHc39ZEc20sagb83aecJN2TCDBoyQVqr+/Tx
SHA512:tnqTbNrQby3ZFbuHOb62EnllEhrMNE5XMqKNJ3HdzkMr9l+aePJvCUesVwhOYhhSWHbuCJsq1a6
GpQXwTpuhoQ
```

To delete all the known hosts or IP addresses from the file .ssh/known_hosts:

```
switch:username> sshutil delknownhost -all
This Command will delete all the known host keys.
Please Confirm with Yes(Y,y), No(N,n) [N]: Y

All known hosts are successfully deleted.
```

To configure the rekey interval to 900 seconds:

```
switch:username> sshutil rekeyinterval 900
SSH daemon will be restarted and all SSH session will be terminated
Do you want to proceed(yes, y, no, n)[no]?y
Rekey Time Interval Configured to 900 seconds.
```

To display the configured rekey interval:

```
switch:username> sshutil showrekey
Configured Interval: 900 seconds.
```

See Also

None

statsClear

Clears port and diagnostic statistics.

Synopsis

statsclear

[**--slot** *slot*]

[**-uports** *itemlist*]

[**-bports** *itemlist*]

```
[-use_bports value]
```

Description

Use this command to clear the port and diagnostics statistics for the specified list of blade or user ports.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

The following are optional:

--slot *slot*	Specifies the slot on which to operate. If this option is not specified, the default slot is assumed. The default slot is 0 and designed to operate on fixed-port-count products, if **-use_bports** sets with nonzero value.
-uports *itemlist*	Specifies the list of user ports for which statistics are to be cleared.
-bports *itemlist*	Specifies the list of blade ports for which statistics are to be cleared.
-use_bports *value*	Specify a nonzero value to clear the diagnostics statistics for the blade ports specified in **-bports** clears. A value of zero (0) clears the user ports specified in **-uports**. The default value is 0.

Examples

To clear port and diagnostic statistics:

```
switch:admin> statsclear -bports 1/10-1/62 -use_bports 1
```

See Also

itemList

supportFfdc

Modifies or displays the first-fault data capture (FFDC) daemon.

Synopsis

```
supportffdc {--disable | --enable | --show}
```

Description

Use this command to disable or enable the FFDC events, or to display the current configuration. If disabled, the daemon does not capture any data even when a message with FFDC attributes is logged. FFDC is enabled by default. When executed without operands, the command prints the usage.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--disable	Disables the FFDC.
--enable	Enables the FFDC.

--show Displays the FFDC configuration parameters.

Examples

To display the FFDC configuration:

```
switch:admin> supportffdc --show
First Failure Data Capture (FFDC) is disabled.
```

To enable the FFDC events:

```
switch:admin> supportffdc --enable
First Failure Data Capture (FFDC) is enabled.
```

See Also

None

supportFtp

Sets, clears, or displays support FTP parameters and enables or disables auto file transfer.

Synopsis

```
supportftp [-S]
 supportftp -s [-h <host> -u <username> -p <password>
 -d <remotedirectory> -l <protocol>
     [-o <port>]]
 supportftp {-t <hours> | -R | -e | -d}
```

Description

Use this command to set, clear, or display **supportFtp** parameters. The parameters set by this command are used by the **supportSave** and **traceDump** commands.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-S Displays the current **supportFtp** parameters.

-s Sets the **supportFtp** parameters. The following operands are optional. If the **-s** option is specified without further operands, the command interactively prompts for these parameters.

- **-h *host*** Specifies the host. Provide an IP address or a server name. IPv4 and IPv6 addresses are supported. To specify the host by name, a DNS entry must exist for the server.
- **-u *username*** Specifies the user name. The user name must be less than 48 characters long. It must begin with a letter and spaces are not permitted. The characters that do not support are tilde (~), single quotation mark ('), exclamation mark (!), number sign (#), dollar sign($), percentage (%), caret (^), ampersand(&), asterisk(*), plus sign (+), equals sign (=), pipe (|), parenthesis (), curly braces {}, square brackets [], double

quotation mark ("), colon (:), comma (,), question mark (?), semicolon (;), greater than (>), and less than (<).

-p *password* Specifies the account password. The password must be less than 48 characters long. When using the reserved user names such as *anonymous* or *FTP*, a password is not required. Beginning with Fabric OS v9.2.2, this option is made as interactive and requires user input during execution.

-d *remotedirectory* Specifies the remote directory where the trace dump files are stored. The directory name must be less than 48 characters long. Specifying the root directory as the remote directory (/) is not allowed.

-l *protocol* Specifies the transfer protocol. Valid values are file transfer protocol (FTP), secure copy protocol (SCP), or secure FTP (SFTP).

-o *SCP | SFTP port* Specifies the server port number. Valid protocols are **scp** (secure copy protocol) and **sftp** (secure file transfer protocol). The valid range is from 1 through 65535.

-t *hours* Specifies the time interval, in units of hours, at which the server connectivity is checked. The fractional value for time interval is converted to the nearest lower integer value, for example, a value of 6.5 hours is truncated to 6 hours.

-R Clears all **supportFtp** parameters.

-e Enables auto file transfer. Trace dump files are automatically transferred to a designated FTP server. The server parameters must be set before you can enable auto file transfer.

-d Disables auto file transfer.

Examples

To set the FTP parameters:

```
switch:admin> supportftp -s -h xxxx::x:xxx:xxxx:xxxx  \
            -u admin -d /work/admin/support -l scp
Password[********]:
supportftp: parameters changed
```

To display the FTP parameters:

```
switch:admin> supportftp
Host IP Addr:           xxxx::x:xxx:xxxx:xxxx
User name:              admin
Remote Dir:             support
Auto Upload protocol:   sftp
Auto-FTP:       Off
```

To set FTP parameters interactively:

```
switch:admin> supportftp -s
Host IP Addr[xxxx::x:xxx:xxxx:xxxx]:10.20.30.40
User Name[admin]: admin
Password[********]:password
Remote Dir[support]:
Auto upload protocol[ftp]:scp
Port option for SCP/SFTP[2000]:
Auto file transfer parameters changed
```

To set the time interval at which the FTP server connectivity is checked:

```
switch:admin> supportftp -t 24
```

```
supportftp: ftp check period changed.
```

To enable auto file transfer:

```
switch:admin> supportftp -e
support auto file transfer enabled.
```

To disable auto file transfer:

```
switch:admin> supportftp -d
support auto file transfer disabled.
```

See Also

supportSave, supportShow, traceDump

supportInfoClear

Clears all the default port statistic counters and portlogs in a chassis or switch.

Synopsis

```
supportinfoclear --clear [ -RASlog] [-force]
supportinfoclear --help
```

Description

Use this command to clear all the default port statistic counters, and portlogs in a chassis or switch. Use the **-RASlog** option to clear error logs along with statistics and portlogs on the active CP. On the standby CP, the **-RASlog** option clears only the error logs.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--clear	Clears port statistic counters and portlogs in a chassis or switch. The command prompts for a confirmation.	
	-RASlog	Clears error logs along with port statistic counters and portlogs in a chassis or switch. The command prompts for a confirmation.
	-force	Executes without prompting for a confirmation.
--help	Displays command usage.	

Examples

To clear port statistic counters and portlogs:

```
switch:admin> supportinfoclear --clear
Execution of the command will clear the default collection of counters and port logs in the chassis.
Would you like to continue [y/n]?: y
```

To clear port statistic counters and portlogs along with error logs:

```
switch:admin> supportinfoclear --clear -RASlog
Execution of the command will clear the error logs along with default collection of counters and port logs in
 the chassis.
Would you like to continue [y/n]?: y
```

See Also

errClear, portLogClear, portStatsClear, statsClear

supportLink

Configures a Brocade Support Link (BSL) to collect and upload critical device information to a BSL server module over a secured channel.

Synopsis

```
supportlink --enable
 supportlink --disable
 supportlink --default
 supportlink --send
 supportlink --collect
supportlink --config {[-user <user_name>]
     [-stime <start_time_in_hour_[0-23]>]
     [-sdate {Mon|Tue|Wed|Thu|Fri|Sat|Sun| <MM/DD/YYYY>}]
     [-cstime <collection_time_in_24_hour_format>]
     [-endtimeperiod <service_end_time_period_[0-12]>]
     [-retry <service_retry_time>]
     [-period <in_day>] [-frequency <service_frequency_in_hours>]
     [-server <server-ip/domain-name>]
     [-port <port_number>] [-grouptag <user_group_tag_field>]
     [-proxyserver <server_ip/domain_name>] [-proxyport <proxyport>]
     [-proxyprotocol <proxy_protocol>] [-proxyuser <proxy_user_name>]
     [-proxypass <proxy_password>]}
 supportlink --config -anonymize {enable | disable}
 supportlink --clear -anonymizeddata
 supportlink --configtag [-Orgnaization <value>]
     [-SiteID <value>] [-OEM <value>]
     [-name <tag_name> -value <tag_value>]
 supportlink --deletetag -name <tag_name>
 supportlink --troubleshoot [-upload <upload_parameter> |
 -no-packet-dump]
 supportlink --show [history | inventory]
     [anonymizeddata [detail | <hashvalue>]]
```

Description

Use this command to configure BSL to provide support for cloud data service configuration.

BSL is disabled by default and needs to be enabled manually.

By configuring or activating this command/feature you agree to the automatic transfer of support data sent back to Broadcom. While this is not intended to transfer any personal data, it is possible that the personal data could be included in the support data.

By configuring or activating this command/feature you are accepting Broadcom Terms of Use (https://www.broadcom.com/company/legal/terms-of-use). Your privacy is important to Broadcom. For more information, refer to our privacy policy (https://www.broadcom.com/company/legal/privacy-policy).

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--config Configures Support Link parameters.

-user ***<user_name>***	The existing user name or an Email address from the server.
-stime ***<start_time_in_hour_[0-23]>***	The start time for the service to take place. The default value is 21 and the valid values ranges from 0 through 23.
[-sdate {Mon | Tue | Wed | Thu | Fri | Sat | Sun | ***<MM/DD/YYYY>*****}]**	The start date or the day for the service in **"MM/DD/YYYY"** format. The start date must be an exact weekday or a date. For example, if Sunday is configured the **-period** must be set to 7 days to make it as weekly runs. If the exact date is configured, for example 07/30/2018, the **-period** must be set to any value as per the maximum and minimum timer configuration.
-endtimeperiod ***<service_end_time_period_[0-12]>***	The collection happens within the end time period taken randomly from the start time. The default value is 12 and the valid values ranges from 0 through 12.
-cstime ***<collection_time_in_24_hour_format>***	The data collection start time in HH:MM 24-hour clock format.
-retry ***<service_retry_time>***	The service starts again after an hour(s) elapsed from the failure, if a non-zero value is set. The default value is 0 and the valid values ranges from 0 through 22.
-period ***<in_day>***	The frequency in which the service must be triggered. The default value is 7. For example, if Sunday is configured the **-period** must be set to 7 days to make it as weekly runs. If the exact date is configured, for example 07/30/2018, the **-period** must be set to any value as per the maximum and minimum timer configuration.
-server ***<server_ip/domain_name>***	The server address or the domain name of the server.
-port ***<port_number>***	The server port number.
-grouptag ***<user_group_tag_field>***	The organizational group of switches. The group name can be up to 64 characters in length.
-proxyserver ***<server_ip/domain_name>***	The proxy server address or the proxy domain name of the server.
-proxyport ***<proxyport>***	The proxy server port number.
-proxyprotocol ***<proxy_protocol>***	The protocol used for proxy server. The supported proxy protocols are http, https, socks4, socks4a, socks5, and socks5h.
-proxyuser ***<proxy_username>***	The username of the proxy server.
-proxypass ***<proxy_password>***	The password to the proxy server. Beginning with Fabric OS v9.2.2, the **-proxypass** opiton is not a valid parameter and will result in command failure or error if used.

-frequency <*service_frequency_in_hours*> Configures the hourly frequency of BSL collection.

-anonymize Enables or disables the Data anonymization feature. By default, Data anonymization is disabled.

--enable | --disable Enables or disables Support Link. Support Link is disabled by default.

--default Resets the custom configurations to default and removes the other used-defined configurations.

--send Manually triggers an immediate Support Link upload. Automatic uploads will still occur as per the configured schedule.

--collect Collects and compresses the support data. An error message is displayed when multiple operations run at a time.

--clear -anonymizeddata Clears anonymized data that is collected in the previous supportlink collection.

--troubleshoot Triggers Support Link troubleshooting operation and diagnoses the common network connectivity problems. The failure might due to the handshake in SSL/TLS connections. Certificate validity, file formats, issuer, common-name, and permissions were the reason for the failure.

-upload <*upload_parameter*> Uploads two log files to the remote directory. One file to get all the troubleshooting log files and the other is to trace the switch files. The following are the parameters supported:

-host The domain or IP address.

-user The user name.

-password The password. Beginning with Fabric OS v9.2.2, the **-proxypass** opiton is not a valid parameter and will result in command failure or error if used.

-port The port number.

-protocol The protocol can be either SCP or FTP or SFTP.

-path The remote directory.

-no-packet-dump Triggers Support Link troubleshooting operation without capturing the packet dump. This will not run the packet capture utility in the backend. Also, we might lose the ability to narrow down the network connectivity issues in some scenarios.

--configtag Allows user to group switches into smaller groups outside the switch. The **-Organization**, **-SiteID**, and **-OEM** are predefined tags. Users are allowed to configure values to these predefined tags.

-name <*tag_name*> -value <*tag_value*> Allows to configure additional three tags. The <*tag_name*> should not exceed the length of 64 characters and <*tag_value*> length should not exceed 32 characters.

--deletetag Deletes the tag name and value.

--show Displays the BSL configuration information.

history Displays the error details from Support Link operation.

inventory Displays the base64 format of the `/var/log/inventory.tar.gz` file.

anonymizeddata [detail | <*hashvalue*>] Displays or lists the Anonymized data and the hash value in the last supportLink data collection.

Examples

To configure a Support Link and display the configuration information:

```
switch:admin> supportlink --config -server bsnconnect.broadcom.com  \
-port 8030 -user user@broadcom.com -sdate 10/19/2024 -stime 21  \
-endtimeperiod 2 -retry 22 -period 1    \
-cstime 20:00 -grouptag SCALE
```

```
Password: ****
Verify Password: ****

Configuration succeeded.

switch:admin> supportlink --show
Support Link State              : Enabled
Next Collection Time            : Wed Oct 20 20:00:00 2024
Next Service Start Time         : Wed Oct 20 22:56:00 2024

Support Link Configurations:
   Server Address               : bsnconnect.brocade.com
   Server Port                  : 8030
   User name                    : user@brocade.com
   Start Date                   : 10/19/2024
   Start Time (in hour)         : 21
   End Time Period (in hour)    : 2
   Period (in day)              : 1
   Retry Time (in hour)         : 22
   Collection Time (in HH:MM)   : 20:00
   User Group Tag               : SCALE
   Organization                 : ABC Inc
   SiteID                       : San Jose
   OEM                          : XYZ Corp
   Custom Tag 1 Name            : Lab_location
   Custom Tag 1 Value            : New York
   Custom Tag 2 Name            : Primary Fabric
   Custom Tag 2 Value            : Even Fabric
   Custom Tag 3 Name            : Fabric Type
   Custom Tag 3 Value            : FCR Backbone Fabric
   Data Anonymization           : Enabled
```

To enable Support Link:

```
switch:admin> supportlink --enable
Automatic transfer of support data to Broadcom has been enabled.  \
By enabling this function the admin agrees that data, which is   \
not intended to transfer personal data, however personal data    \
could be included, will be automatically transferred to Broadcom.

switch:admin> supportlink --show
Support Link State              : Enabled
Next Collection Time            : Wed Feb 23 20:00:00 2024
Next Service Start Time         : Wed Feb 23 22:29:00 2024
Last Collection Time            : Tue Feb 22 20:06:39 2024
Last Upload Time                : Tue Feb 22 22:29:02 2024

Support Link Configurations     :
   Server Address               : bsnconnect.broadcom.com
   Server Port                  : 8030
   User name                    : support@broadcom.com
   Start Date                   : 10/09/2024
```

```
   Start Time (in hour)         : 21
   End Time Period (in hour)    : 2
   Period (in day)              : 1
   Retry Time (in hour)         : 22
   Collection Time (in HH:MM)   : 20:00
   User Group Tag               : fabricA
   Organization                 : ABC Inc
   SiteID                       : San Jose
   OEM                          : XYZ Corp
   Custom Tag 1 Name            : Lab_location
   Custom Tag 1 Value            : New York
   Custom Tag 2 Name            : Primary Fabric
   Custom Tag 2 Value            : Even Fabric
   Custom Tag 3 Name            : Fabric Type
   Custom Tag 3 Value            : FCR Backbone Fabric
   Data Anonymization           : Enabled
```

To disable Support Link:

```
switch:admin> supportlink --disable
Automatic transfer of support data to Broadcom has been disabled.

switch:admin> supportlink --show

Support Link State              : Disabled
Next Collection Time            : Wed Oct 20 20:00:00 2024
Next Service Start Time         : Wed Oct 20 22:56:00 2024

Support Link Configurations:
   Server Address               : bsnconnect.brocade.com
   Server Port                  : 8030
   User name                    : john.doe@brocade.com
   Start Date                   : 10/19/2024
   Start Time (in hour)         : 21
   End Time Period (in hour)    : 2
   Period (in day)              : 1
   Retry Time (in hour)         : 22
   Collection Time (in HH:MM)   : 20:00
   User Group Tag               : SCALE
   Organization                 : ABC Inc
   SiteID                       : San Jose
   OEM                          : XYZ Corp
   Custom Tag 1 Name            : Lab_location
   Custom Tag 1 Value            : New York
   Custom Tag 2 Name            : Primary Fabric
   Custom Tag 2 Value            : Even Fabric
   Custom Tag 3 Name            : Fabric Type
   Custom Tag 3 Value            : FCR Backbone Fabric
   Data Anonymization           : Enabled
```

To enable anonymize feature:

```
switch:admin> supportlink --config -anonymize enable
Configuration succeeded.
```

To trigger Support Link operation:

```
switch:admin> supportlink --send
Supportlink data service has been started.
```

To trigger Support Link operation to collect and compress support data:

```
switch:admin> supportlink --collect
Supportlink data service is in-progress. Please try after some time.
```

To trigger Support Link troubleshooting operation:

```
switch:admin> supportlink --troubleshoot
Diagnosis started...
ASC Server   : connect.broadcom.com
Proxy Server : 10.2.2.20
Resolving ASC DNS host(Success)
Pinging ASC server (Success)
Pinging ASC proxy server (Success)
Connecting to HTTPS ASC server (Failed)
Diagnosis    : SSL/TLS handshake failure observed. Please check if server  \
certificates are imported to switch or validity, issuer and common   \
name of the certificates.
```

To upload Support Link troubleshooting logs:

```
switch:admin> supportlink --troubleshoot -upload  \
-user admin -host 10.20.30.40  \
-path /home/user -protocol scp

Password: ****
Verify Password: ****

Diagnosis logs are uploaded successfully.
```

To trigger Support Link troubleshooting operation without packet capture:

```
switch:admin> supportlink --troubleshoot -no-packet-dump  \
Diagnosis started...
ASC Server        : connect.broadcom.com
Pinging ASC server...(Failed)
Diagnosis         : Please check ASC server IP connectivity.
```

To display error history from Support Link operation:

```
switch:admin> supportlink --show history  \
Index  Date                     Server         Port  Error Code  Error Message
1      2024-02-07 12:52:00 GMT  broadcom.com   443   -7          Supportlink inventory failed
```

```
                                                                  due to Inventory file open error
2      2024-02-07 12:52:00 GMT  broadcom.com   2030  6           Supportlink login failed due
                                                                  to Couldn't resolve host name
```

To clear anonymizeddata:

```
switch:admin> supportlink --clear -anonymizeddata  \

switch:admin> supportlink --show anonymizeddata
==========================================================================================
Property Value               SHA-256
==========================================================================================
```

To configure tag namess:

```
switch:admin> supportLink --configTag -Organization "BroadcomInc"
switch:admin> supportLink --configTag -SiteID "SanJose"
switch:admin> supportLink --configTag -OEM "IBM"
switch:admin> supportLink --configTag -name "tagname1" -value "value1"
switch:admin> supportLink --configTag -name "tagname2" -value "value2"
switch:admin> supportLink --configTag -name "tagname3" -value "value3"

switch:admin> supportlink --show

Server Address               : bsnconnect.broadcom.com
   Server Port                 : 443
   User name                   : bsl_sl_default_user
   Start Date                  : 06/01/2019
   Start Time (in hour)        : 0
   End Time Period (in hour)   : 2
   Period (in day)             : 1
   Frequency (in hour)         : 0
   Retry Time (in hour)        : 0
   Collection Time (in HH:MM)  : 1:51
   User Group Tag              :
   Organization                : ABC Inc
   SiteID                      : San Jose
   OEM                         : XYZ Corp
   Custom Tag 1 Name           : Lab_location
   Custom Tag 1 Value           : New York
   Custom Tag 2 Name           : Primary Fabric
   Custom Tag 2 Value           : Even Fabric
   Custom Tag 3 Name           : Fabric Type
   Custom Tag 3 Value           : FCR Backbone Fabric
   Data Anonymization          : Enabled
```

To delete a tag:

```
switch:admin> supportlink --deletetag -name "tagname1"

switch:admin> supportlink --show
```

```
Server Address               : bsnconnect.broadcom.com
   Server Port                  : 443
   User name                    : bsl_sl_default_user
   Start Date                   : 06/01/2019
   Start Time (in hour)         : 0
   End Time Period (in hour)    : 2
   Period (in day)              : 1
   Frequency (in hour)          : 0
   Retry Time (in hour)         : 0
   Collection Time (in HH:MM)   : 1:51
   User Group Tag               :
   Organization                 : ABC Inc
   SiteID                       : San Jose
   OEM                          : XYZ Corp
   Custom Tag 1 Name            : Lab_location
   Custom Tag 1 Value            : New York
   Custom Tag 2 Name            : Primary Fabric
   Custom Tag 2 Value            : Even Fabric
   Custom Tag 3 Name            : Fabric Type
   Custom Tag 3 Value            : FCR Backbone Fabric
   Data Anonymization           : Enabled
```

To display the inventory:

```
switch:admin> supportlink --show inventory

50s/63/EXvU/17/82Rf99g/922e+9lt/+8MHdz7sSedPf/Ln7p381Z+95S23vvT37mbf/rbv+q63
fc3JY4/ee8tj977g137xyf/fx51/9fd822/9i+Zf/d9f/ak/+6uTv77/7t/67V96819+/m897yf/
…
2H2dX33eD//uL3/713Z/5+9d3PzDN+jvf8dzj/3pB05/9Au/+1f+8P/81F9/1Rd/3H/+kg/8Uu6m
+XN//+Uv+857/+fT3/NDhZMf2fiZ3/nVwv73v/XNn3Y7/30vaf3q679o/+O+5Vt7x9e+91993K/8
xW9evO3/fnns4yY6kV/41c+vnH3jv3jkm8K0N/SiF73oRS960Yte9KIXvVyv/w85lwlfABjxAA==
```

To display the anonymized data:

```
switch:admin> supportlink --show anonymizeddata
==========================================================================================
Property Value        SHA-256
==========================================================================================
sw0                   switchname_a797...12e482162678
192.xx.xxx.xx         ipaddr_b46fd8d2...0a4be003a0ad
192.xx.xxx.xx         ipaddr_f481f830...640465e52b1a
10.xxx.xxx.x          ipaddr_d28ef944...cd83f3c995fd
255.xxx.xxx.x         ipaddr_28fce27b...6a761bbfe494
10.xxx.xx.x           ipaddr_b7b2d69e...b804c27467ab
G8000                 switchname_edf5...836a6241e9f7
fcrfabric             switchname_413f...a106e8561e17
```

To display the anonymized data in detail:

```
switch:admin> supportlink --show anonymizeddata detail
==================================================================================================================
```

```
Property Value        SHA-256
=========================================================================================================
sw0                   switchname_a7972f0b67c82636d5f249c27991fed080e4a89cc64558bcad4912e482162678
192.xx.xxx.xx         ipaddr_b46fd8d20890339084b8224c1be93f6e0b257fe1ccb2fe5d87180a4be003a0ad
192.xx.xxx.xx         ipaddr_f481f8300b46be619d9afb55658910d53f7c246201be49d7585e640465e52b1a
10.xxx.xxx.x          ipaddr_d28ef944abf286297e4c633e93efb871c13c873f3c59b5c81cefcd83f3c995fd
255.xxx.xxx.0         ipaddr_28fce27b7b7fd2b1956b0461fe0660bafb42944beb840a3f43746a761bbfe494
10.xxx.xx.x           ipaddr_b7b2d69e4715880dc8615dea16f7adc087c64f4628249961aa3cb804c27467ab
G8000                 switchname_edf5741d6e1c766f6b7158f2cf45d2c63dbf27675d5dad56fc50836a6241e9f7
fcrfabric             switchname_413f676e90820cac8e76c2f89ead294016bcec784afffac741eaa106e8561e17
```

To display the anonymized data with hash value:

```
switch:admin> supportlink --show anonymizeddata
switchname_413f676e90820cac8e76c2f89ead294016bcec784afffac741eaa106e8561e17
*Property Value: fcrfabric
```

See Also

mgmtApp

supportSave

Saves RASLOG, TRACE, **supportShow**, core file, FFDC data, and other support information

Synopsis

```
supportsave
supportsave [-n] [-k] [-a] [-s] [-c |
 -u <user_name> [-p <password>]
 -h <host_ip> -d <remote_dir>
 -l <protocol> [-b <port>]]
 supportsave [-R]
 supportsave [-U -d <remote_dir>]
 supportsave [-t <timeout_multiplier>]
 supportsave [-P | -O]
```

Description

Use this command to collect RASLOG, TRACE, **supportShow**, core file, FFDC data and other support information to a remote FTP location. On platforms that support USB, the information can also be stored on an attached USB device. On a dual-CP system, information is saved for the local and the remote CP. **SupportShow** information is available on Active and Standby CPs. To reduce the chance of missing the correct trace dump, **supportSave** retrieves old (the dump created prior to the current one) and new (the dump triggered by the command) trace dumps.

The files generated by this command are compressed before being sent off the switch. The core files and panic dumps remain on the switch after the command is run. The FFDC data are removed after the command has finished.

If there are blade processor (BP) blades installed on the switch, a support file (a.tar.gz file) is generated from each slot.

This command accepts IPv4 and IPv6 addresses. If the configured IP address is in IPv6 format, the RAS auto file transfer and event notification to syslog will not work in the case where the Fabric OS version is downgraded. You must reconfigure auto file transfer and syslog with IPv4 IP addresses.

In a Virtual Fabric environment, **supportSave** saves all chassis-based information and iterates through the defined switch-based information for all logical switches. Chassis permissions are required to execute this command.

Note that quotes should be used around path entries to ensure proper handling of special shell characters.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

If you use anonymous FTP to run **supportSave** on a chassis with multiple AP blades, configure the FTP Windows server to allow unlimited anonymous users.

Operands

When invoked without operands, this command goes into interactive mode. The following operands are optional:

-n	Does not prompt for confirmation. This operand is optional; if omitted, you are prompted for confirmation.
-k	Used to transfer the core and FFDC files. This operand can be specified with the **-c** and **-c -n** operands.
-a	Enables Challenge Response Authentication (CRA). CRA is supported only with the SCP protocol.
-s	Specifies the serial mode supportsave collection.
-c	Uses the FTP, SCP, or SFTP parameters saved by the **supportFtp** command. This operand is optional; if omitted, specify the FTP, SCP, or SFTP parameters through command line options or interactively. To display the current **supportFTP** parameters, run **supportFtp** (on a dual-CP system, run **supportFtp** on the active CP). The **-c** option is mutually exclusive with **-u**, **-p**, **-h**, and **-d**.
-u <*user_name*>	Specifies the user name for the FTP, SCP, or SFTP server. The user name can include upto 383 characters. It must begin with a letter and spaces are not permitted. The characters that do not support are tilde (~), single quotation mark ('), exclamation mark (!), number sign (#), dollar sign($), percentage (%), caret (^), ampersand(&), asterisk(*), plus sign (+), equals sign (=), pipe (|), parenthesis (), curly braces {}, square brackets [], double quotation mark ("), colon (:), comma (,), question mark (?), semicolon (;), greater than (>), and less than (<). Use at (@) or backslash (\\) in username to separate username and domain. This operand is optional; if omitted, anonymous FTP is used.
-p <*password*>	Specifies the password for the FTP, SCP, or SFTP server. This operand is optional with FTP; if omitted, anonymous FTP is used. Beginning with Fabric OS v9.2.2, this option is made as interactive and requires user input during execution.
-h <*host_ip*>	Specifies the IPv4 or IPv6 address for the remote server.
-d <*remote_dir*>	Specifies the remote directory to which the file is to be transferred. By default, the remote directory is created in the */support* directory of the USB device.
-R	Removes all core files on the CP and BP. This option cannot be used with any other options.
-l <*protocol*>	Specifies the transfer protocol. Valid values are file transfer protocol (FTP), secure copy (SCP), or secure FTP (SFTP). If you plan to use SCP to transfer files, it is important to test the **supportSave** command prior to its use with various SCP-mode services. Because the **supportSave** command makes several access requests to copy files, it is important that the SCP-mode service be configured so that passwords are not required for each attempted transfer by the **supportSave** command. Failure to configure the service correctly may result in significant delays in obtaining transferred output from the **supportSave** command. When using secure copy (SCP), **supportSave** may create a directory specified by the **-d** option if it does not already exist and the parent directory has the appropriate permissions. Use of FTP requires the directory to exist on the remote server.
-b <*port*>	Specifies the server port number. Valid protocols are **scp** (secure copy protocol) and **sftp** (secure file transfer protocol). The valid range is from 1 through 65535.

-U	Saves support data to an attached USB device. When using this option, a target directory must be specified with the **-d** option.
-t <*timeout_multiplier*>	Extends predefined **SupportSave** timeout values by the value of the timeout multiplier. Use this option to repeat the **supportSave** operation when **supportSave** completion indicates that one or more modules timed out during the process. For example, **-t 2** doubles the timeout values for each of the **SupportSave** modules. Valid multiplier values are 2 to 5. The default is 1.
-P	Collects the supportlink data as part of the data for all existing modules. Supported only on the active CP.
-O	Collects only the supportlink data on the execution of the **supportsave** command. The logs for the existing modules are not copied to the remote server if the option is used in the command. Supported only on the active CP.

Examples

To save RASLOG, TRACE, **supportShow**, and other support information to an FTP server in interactive mode:

```
switch:admin> supportsave
This command collects RASLOG, TRACE, supportShow,
   core file, FFDC data
and then transfer them to a FTP/SCP/SFTP server
   or a USB device.
This operation can take several minutes.
OK to proceed? (yes, y, no, n): [no] y

Host IP or Host Name: 192.0.2.0
User Name: admin
Remote Directory: /temp/support

Protocol (ftp | scp |sftp): scp
SCP/SFTP Server Port Number [22]:
Do you want to continue with CRA (Y/N) [N]:
Password: *******
Saving support information:
SLOT  SWITCH  MODULE          CLI SIZE     FILE SIZE      CLI TIME       MODULE  TIME LOAD AVERAGE
CP0    sw0    RAS            636.039 KB   3956.489 KB   7.922022 secs  27.293317 secs 0.3/0.3/0.3
CP0    sw0    FTR_START        3.488 KB      0.000 KB   0.640100 secs   3.694284 secs 0.3/0.3/0.3
CP0    sw0    SSHOW_ISWITCH    5.382 KB      0.000 KB   5.505864 secs   8.611739 secs 0.6/0.4/0.3
CP0    sw0    SSHOW_SYS       32.573 KB      0.000 KB  14.391223 secs  17.473962 secs 0.5/0.4/0.3
CP0    sw0    FABRIC          10.484 KB      0.000 KB   3.270941 secs   6.250575 secs 0.8/0.4/0.3
CP0    sw0    DIAG            26.493 KB      0.000 KB   0.766468 secs   3.864095 secs 0.8/0.4/0.3
CP0    sw0    RTE              2.172 KB      0.000 KB   0.197964 secs   3.311117 secs 0.8/0.4/0.3
CP0    sw0    IF_TREE          2.012 KB      0.000 KB   0.13943  secs   3.71403  secs 0.8/0.4/0.3
CP0    sw0    ISCSID_DBG       0.034 KB      0.000 KB   0.10164  secs   2.970698 secs 0.8/0.4/0.3
CP0    sw0    AGDUMP           0.111 KB      0.000 KB   0.85487  secs   3.42871  secs 0.9/0.5/0.4
CP0    sw0    AGWWNS           0.151 KB      0.000 KB   0.239609 secs   3.240508 secs 0.9/0.5/0.4
CP0    sw0    AGWWN_CFG        0.036 KB      0.000 KB   0.11193  secs   2.988801 secs 0.9/0.5/0.4
CP0    sw0    VPWWN_CFG        0.402 KB      0.000 KB   1.318254 secs   4.307598 secs 0.9/0.5/0.4
CP0    sw0    CFS_CFG          0.320 KB      0.000 KB   0.842962 secs   3.836475 secs 0.9/0.5/0.4
CP0    sw0    SSHOW_PLOG       1.652 KB      0.000 KB   1.315775 secs   4.337202 secs 0.9/0.5/0.4
CP0    sw0    SSHOW_EX         1.532 KB      0.000 KB   1.284018 secs   4.375119 secs 0.9/0.5/0.4
CP0    sw0    SSHOW_OS       535.687 KB      0.060 KB  10.225997 secs  17.286719 secs 0.9/0.5/0.
(output truncated)
```

To collect support information on a switch and save it to an attached USB device (timeout values are doubled):

```
switch:admin> supportsave -U -d mysupportsave
2022/12/12-11:01:53, [SS-1015], 4, CHASSIS, INFO, sw0, supportSave started.
Saving support information:
SLOT  SWITCH   MODULE          CLI SIZE     FILE SIZE      CLI TIME      MODULE TIME   LOAD AVERAGE
CP0    sw0     RAS            297.657 KB   2558.551 KB  13.318518 secs  18.313517 secs 0.1/0.1/0.0
CP0    sw0     FTR_START        0.063 KB      0.000 KB   0.624927 secs   1.458400 secs 0.2/0.1/0.0
CP0    sw0     SSHOW_ISWITCH    5.387 KB      0.000 KB   9.368971 secs  11.537431 secs 0.4/0.1/0.0
CP0    sw0     SSHOW_SYS       33.928 KB      0.000 KB  14.58332  secs  14.946904 secs 0.4/0.1/0.0
CP0    sw0     DIAG             1.816 KB      0.000 KB   1.639806 secs   2.423623 secs 0.9/0.2/0.1
CP0    sw0     RTE              1.161 KB      0.000 KB   0.199514 secs   0.614340 secs 1.0/0.3/0.1
CP0    sw0     IF_TREE          2.394 KB      0.000 KB   0.15197  secs   0.578978 secs 1.0/0.3/0.1
CP0    sw0     ISCSID_DBG       0.034 KB      0.000 KB   0.11419  secs   0.556701 secs 1.0/0.3/0.1
CP0    sw0     AGDUMP           0.111 KB      0.000 KB   0.96308  secs   0.604292 secs 1.0/0.3/0.1
CP0    sw0     AGWWNS           0.151 KB      0.000 KB   0.272476 secs   0.501953 secs 1.0/0.3/0.1
CP0    sw0     AGWWN_CFG        0.036 KB      0.000 KB   0.14000  secs   0.543661 secs 1.0/0.3/0.1
CP0    sw0     VPWWN_CFG        0.731 KB      0.000 KB   4.461212 secs   5.350985 secs 1.0/0.3/0.1
CP0    sw0     CFS_CFG          0.449 KB      0.000 KB   2.244695 secs   3.61439  secs 1.1/0.3/0.1
CP0    sw0     SSHOW_PLOG       0.999 KB      0.000 KB   1.823815 secs   2.620605 secs 1.1/0.3/0.1
CP0    sw0     FABRIC          26.320 KB      0.000 KB  20.926913 secs  21.778882 secs 0.9/0.2/0.1
CP0    sw0     SSHOW_EX         0.376 KB      0.000 KB   1.458026 secs   2.546638 secs 1.2/0.4/0.1
CP0    sw0     SSHOW_OS       186.564 KB      0.060 KB  13.649329 secs  15.562299 secs 1.1/0.3/0.1
CP0    sw0     SSHOW_CONDB    211.569 KB      0.000 KB   0.786982 secs   1.922030 secs 1.5/0.5/0.2
CP0    sw0     SSHOW_FABRIC    22.540 KB      0.000 KB  12.348678 secs  13.216743 secs 1.3/0.4/0.1
CP0    sw0     SSHOW_FCOE       0.113 KB      0.000 KB   1.244903 secs   1.810279 secs 1.5/0.5/0.2
CP0    sw0     SSHOW_UCID       0.111 KB      0.000 KB   1.110257 secs   2.22874  secs 1.5/0.5/0.2
CP0    sw0     SSHOW_SERVICE    2.269 KB      0.000 KB   5.418311 secs   6.398632 secs 1.5/0.5/0.2
(output truncated)
```

To run **supportSave** without confirmation on a chassis with AP blades included using **supportFTP** parameters (only Active CP output is shown):

```
switch:admin> supportsave -n -c
2022/12/12-11:05:55, [SS-1015], 6, CHASSIS, INFO, sw0, supportSave started.
Saving support information:
 SLOT  SWITCH  MODULE        CLI SIZE     FILE SIZE        CLI TIME     MODULE TIME LOAD AVERAGE
CP0    sw0     RAS           316.393 KB   2259.109 KB  12.966469 secs  22.320246 secs 1.0/0.9/0.4
CP0    sw0     FTR_START       0.063 KB      0.000 KB   0.605471 secs   3.627440 secs 1.0/0.9/0.4
CP0    sw0     SSHOW_ISWITCH   5.482 KB      0.000 KB   9.465061 secs  12.458427 secs 1.2/0.9/0.4
CP0    sw0     SSHOW_SYS      33.949 KB      0.000 KB  13.214818 secs  16.339804 secs 1.2/0.9/0.4
CP0    sw0     DIAG            0.515 KB      0.000 KB   1.285179 secs   4.280649 secs 1.3/1.0/0.4
CP0    sw0     RTE             1.161 KB      0.000 KB   0.212112 secs   3.307281 secs 1.5/1.0/0.4
CP0    sw0     IF_TREE         2.394 KB      0.000 KB   0.15558  secs   3.112016 secs 1.8/1.1/0.5
CP0    sw0     ISCSID_DBG      0.034 KB      0.000 KB   0.11550  secs   3.21404  secs 1.8/1.1/0.5
CP0    sw0     AGDUMP          0.111 KB      0.000 KB   0.92839  secs   3.74188  secs 1.9/1.1/0.5
CP0    sw0     AGWWNS          0.151 KB      0.000 KB   0.284850 secs   3.316808 secs 1.8/1.1/0.5
CP0    sw0     FABRIC         28.054 KB      0.000 KB  19.68530  secs  22.176559 secs 1.3/1.0/0.4
CP0    sw0     AGWWN_CFG       0.036 KB      0.000 KB   0.12463  secs   3.101788 secs 1.8/1.1/0.5
CP0    sw0     CFS_CFG         0.448 KB      0.000 KB   2.413470 secs   5.437013 secs 1.8/1.1/0.5
CP0    sw0     VPWWN_CFG       0.730 KB      0.000 KB   4.340392 secs   7.299928 secs 1.8/1.1/0.5
CP0    sw0     SSHOW_PLOG      1.019 KB      0.000 KB   1.739502 secs   5.35537  secs 1.8/1.1/0.5
CP0    sw0     SSHOW_EX        0.420 KB      0.000 KB   1.426115 secs   4.467603 secs 1.8/1.1/0.5
CP0    sw0     SSHOW_OS      187.926 KB      0.060 KB   8.509313 secs  14.967391 secs 1.8/1.1/0.5
CP0    sw0     SSHOW_CONDB   211.569 KB      0.000 KB   0.963671 secs   4.558313 secs 1.8/1.2/0.5
```

```
CP0    sw0     SSHOW_FCOE      0.111 KB      0.000 KB   1.162984 secs   4.139100 secs 1.9/1.2/0.5
CP0    sw0     SSHOW_FABRIC   22.539 KB      0.000 KB  11.878456 secs  14.975524 secs 1.8/1.2/0.5
CP0    sw0     SSHOW_UCID      0.113 KB      0.000 KB   1.108650 secs   4.163338 secs 1.9/1.2/0.6
CP0    sw0     SSHOW_SERVICE   2.264 KB      0.000 KB   5.62852  secs   8.107613 secs 1.9/1.2/0.6
CP0    sw0     SSHOW_NET       9.694 KB      0.000 KB   2.461756 secs   5.461355 secs 1.9/1.2/0.6
CP0    sw0     SSHOW_SEC       8.562 KB      0.000 KB   8.119110 secs  11.103673 secs 1.9/1.2/0.6
(output truncated)
```

To collect the supportlink data as part of the data for all the existing modules:

```
switch:admin> supportsave -n -h 10.10.10.10 -u pmx -l sftp -d /work/pmx/ss/tmp1/ -P
Preparing SupportSave, please wait...
Password:
Saving support information:
SLOT  SWITCH   MODULE                CLI SIZE     FILE SIZE   CLI TIME        MODULE TIME  LOAD AVERAGE
CP0    sw48    RAS                 570.104 KB      0.000 KB  36.282128 secs  48.588055 secs 0.3/1.3/1.3
CP0    sw48    IF_TREE              19.367 KB      0.000 KB   0.34472  secs   1.160876 secs 0.7/1.3/1.3
CP0    sw48    RTE                  14.097 KB      0.000 KB   0.274047 secs   1.398356 secs 0.6/1.3/1.3
CP0    sw48    ISCSID_DBG            0.089 KB      0.000 KB   0.14614  secs   1.36821  secs 0.7/1.3/1.3
CP0    sw48    FTR_START             5.225 KB      0.000 KB   1.398144 secs   2.420436 secs 0.5/1.3/1.3
CP0    sw48    AGDUMP                0.111 KB      0.000 KB   0.213079 secs   1.242579 secs 0.7/1.3/1.3
CP0    sw48    AGWWNS                0.062 KB      0.000 KB   0.13251  secs   1.28005  secs 0.7/1.3/1.3
CP0    sw48    AGWWN_CFG             0.063 KB      0.000 KB   0.11564  secs   1.34125  secs 1.1/1.3/1.3
 CP0    sw48    PERF                  0.404 KB      0.000 KB   1.305007 secs   2.401816 secs 7.2/3.5/2.1
CP0    sw48    DM_FTR_FFDC           1.100 KB      0.664 KB   4.805116 secs   7.767740 secs 7.2/3.5/2.1
CP0    sw48    SSHOW_ASICDB        146.729 KB      0.000 KB  71.905970 secs  72.990499 secs 4.6/2.2/1.6
(output truncated)
```

To collect only the supportlink data:

```
switch:admin> supportsave -n -h 10.10.10.10 -u pmx -l sftp -d /work/pmx/ss/tmp1/ -O
Preparing SupportSave, please wait...
Password:
Saving support information:
SLOT  SWITCH   MODULE          CLI SIZE     FILE SIZE    CLI TIME     MODULE TIME    LOAD AVERAGE
CP0    sw48    PERF            0.403 KB     0.000 KB   1.507269 secs  17.183316 secs 0.4/1.7/1.4
Summary worker: 8, cpu load: 7 upload size:     0 KB, time: 21 secs upload: 1 load:0.5/1.7/1.4
```

See Also

supportShow, supportFtp

supportShow

Displays switch information for debugging purposes.

Synopsis

supportshow

supportshow *slot*[*/port1-port2*]

Description

Use this command to display support information from groups of preselected Fabric OS and Linux commands and other support and debugging information. You can specify a port or a range of ports for which to display this information. These commands are organized by groups, but note that the order of the groups listed below is not the same as executed by the command.

The FCIP commands are supported only on the Brocade 7810 switch and Brocade SX6 blade. On unsupported platforms, the command displays a "not applicable to this platform" message next to the FCIP command group.

SupportShow executes commands in the following command groups. Use **supportShowCfgenable** or **supportShowCfgDisable** to modify the settings for each group.

os	OS group commands, enabled by default.
exception	Exception group commands, enabled by default.
port	Port group commands, enabled by default.
fabric	Fabric group commands, enabled by default.
services	Service group commands, enabled by default.
security	Security group commands, enabled by default.
network	Network group commands, enabled by default.
portlog	Portlog group commands, enabled by default.
system	System group commands, enabled by default.
extend	Extend group commands, disabled by default.
filter	Filter group commands, disabled by default.
ficon	FICON group commands, disabled by default.
iswitch	FC Router group commands, disabled by default.
asic_db	ASIC DB group commands, disabled by default.
fcip	FCIP group commands, disabled by default.
ag	Access Gateway group commands, disabled by default.
crypto	Encryption group commands, disabled by default.
fcoe	FCoE group commands, enabled by default.
ucid	UCID group commands, enabled by default.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

This is a diagnostic command and should only be run for diagnostic support.

Output generated by this command may vary by switch configuration and platform. Output may change without notice.

Operands

This command has the following operands:

slot	On bladed systems only, specifies a slot number.
port1-port2	Specifies a port or a range of ports for which to display **supportShow** information. This operand is optional; if omitted, the command displays information for all ports. The following values are supported: • A single port in *port1-port1* format, for example, "5/8-8". • A port range where the beginning and end port are separated by a dash, for example, "5/8-13".

Examples

To display debugging information for switch ports:

```
switch:admin> supportshow 3-4
Non-VF
======================
Date:
Mon Nov 29 13:55:48 GMT 2021

Time Zone:
Time Zone Hour Offset: 0
Time Zone Minute Offset: 0

Version:
Kernel   : 4.1.35rt41
Fabric OS: FOS_92x
Made on  : Mon Nov 29 09:32:38 2021
Flash    : Mon Nov 29 13:55:48 2021
BootProm : 4.0.14-sb

supportshow groups enabled:
 os         enabled
 exception  enabled
 port       enabled
 fabric     enabled
 services   enabled
 security   enabled
 network    enabled
 portlog    enabled
 system     enabled
 extend     disabled
 filter     disabled
 ficon      disabled
 iswitch    enabled
 asic_db    enabled
 fcip       enabled
 ag         enabled
 fcoe       enabled
 ucid       enabled

**** Begin start_port_log_cmd group ****
Mon Nov 29 13:55:48 GMT 2021
portlogdump:
portlogdump        :
time         task       event   port cmd  args
-------------------------------------------------
Mon Nov 29 13:55:48 GMT 2021
08:55:50.937 PORT       debug   200       deadce99,00000000,000003ea,00000005
08:55:51.419 PORT       debug   200       00000000,abcddcba,00000001,00010400
08:55:51.492 PORT       debug   200       deadce99,00000000,00000005,000003e9
08:55:53.509 PORT       debug   200       deadce99,00000000,000003e9,000003e8
08:55:53.541 PORT       scn       2    4  00000000,00000000,00000800
08:55:53.549 PORT       scn     200    0  00000001,ffffffef,00000400
08:56:03.591 PORT       scn     200    0  00000000,00000000,00000800
08:57:27.367 PORT       scn       0   36  00000000,85dcbc40,00000001
08:57:27.435 PORT       scn       1   36  4302802e,85dcbc40,00000001
```

```
08:57:27.435 PORT       scn       2   36  4302802f,85dcbc40,00000001
08:57:27.435 PORT       scn       3   36  85f95e40,85dcbc40,00000001
08:57:27.435 PORT       scn       4   36  85f99900,85dcbc40,00000001
08:57:27.435 PORT       scn       5   36  85f9a3c0,85dcbc40,00000001
08:57:27.435 PORT       scn       6   36  85f9ae40,85dcbc40,00000001
08:57:27.435 PORT       scn       7   36  85f9b900,85dcbc40,00000001
08:57:27.466 SPEE       sn      201   WS  11000f1c,00000000,00000000
08:57:27.466 SPEE       sn      201   NC  1000000a,00000000,00000000
08:57:27.466 INTR       pstate  201  OL1
08:57:27.495 SPEE       sn      201   WS  11000f1c,00000000,00000000
08:57:27.495 SPEE       sn      201   NC  1000000a,00000000,00000000
08:57:27.495 INTR       pstate  201  OL1
08:57:27.500 PORT       scn       0   19  00000000,00000000,00000020
08:57:27.500 PORT       scn       1   19  00000000,00000000,00000020
08:57:27.500 PORT       scn       2   19  00000000,00000000,00000020
08:57:27.500 PORT       scn       3   19  00000000,00000000,00000020
08:57:27.500 PORT       scn       4   19  00000000,00000000,00000020
08:57:27.500 PORT       scn       5   19  00000000,00000000,00000020
08:57:27.500 PORT       scn       6   19  00000000,00000000,00000020
08:57:27.501 PORT       scn       7   19  00000000,00000000,00000020
08:57:27.501 PORT       scn      12   28  89e84088,85313c90,00000001

(output truncated)
```

See Also

supportFtp, supportSave, supportShowCfgDisable, supportShowCfgEnable, supportShowCfgShow, traceDump

supportShowCfgDisable

Disables a group of commands under the **supportShow** command.

Synopsis

```
supportshowcfgdisable {os | exception | port | fabric
     | services  | security | network | portlog | system | extend
     | filter | ficon | iswitch | asic_db | ag | fcoe | ucid}
```

Description

Use this command to disable a group of commands under the **supportShow** command. Use the **supportShowCfgEnable** command to enable groups of commands.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

os	Disables the OS group commands.
exception	Disables the exception group commands.

port	Disables the port group commands.
fabric	Disables the fabric group commands.
services	Disables the service group commands.
security	Disables the security group commands.
network	Disables the network group commands.
portlog	Disables the portlog group commands.
system	Disables the system group commands.
extend	Disables the extend group commands.
filter	Disables the filter group commands.
ficon	Disables the FICON group commands.
iswitch	Disables the FC Router group commands.
asic_db	Disables the ASIC DB group commands.
ag	Disables the Access Gateway group commands.
fcoe	FCoE group commands, enabled by default.
ucid	UCID group commands, enabled by default.

Examples

To disable the OS group of commands under the **supportShow** command:

```
switch:admin> supportshowcfgdisable os
Config update Succeeded
```

See Also

supportShow, supportShowCfgEnable, supportShowCfgShow

supportShowCfgEnable

Enables a group of commands to be displayed under the **supportShow** command.

Synopsis

```
supportshowcfgenable {os | exception | port | fabric
     | services | security | network | portlog | system
     | extend | filter | ficon | iswitch | asic_db
     | ag | fcoe | ucid}
```

Description

Use this command to enable a group of commands to be displayed under the **supportShow** command. Use the **supportShowCfgDisable** command to disable groups of commands.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

os	Enables the OS group commands.
exception	Enables the exception group commands.

port	Enables the port group commands.
fabric	Enables the fabric group commands.
services	Enables the service group commands.
security	Enables the security group commands.
network	Enables the network group commands.
portlog	Enables the portlog group commands.
system	Enables the system group commands.
extend	Enables the extend group commands.
filter	Enables the filter group commands.
ficon	Enables the FICON group commands.
iswitch	Enables the FC Router group commands.
asic_db	Enables the ASIC DB group commands.
ag	Enables the Access Gateway group commands.
fcoe	FCoE group commands, enabled by default.
ucid	UCID group commands, enabled by default.

Examples

To enable a group of commands under the **supportShow** command:

```
switch:admin> supportshowcfgenable os
Config update Succeeded
```

See Also

supportShow, supportShowCfgDisable, supportShowCfgShow

supportShowCfgShow

Displays the groups of commands enabled for display by the **supportShow** command.

Synopsis

```
supportshowcfgshow
```

Description

Use this command to display the groups of commands enabled for display by the **supportShow** command. Use the **supportShowCfgEnable** and the **supportShowCfgDisable** commands to modify which groups are displayed.

The FCIP commands are supported only on the Brocade 7810 switch and the Brocade SX6 platforms and cannot be configured to collect or display data on unsupported platforms.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display command groups configured for data collection:

```
switch:admin> supportshowcfgshow
 os         enabled
 exception  enabled
 port       enabled
 fabric     enabled
 services   enabled
 security   enabled
 network    enabled
 portlog    enabled
 system     enabled
 extend     disabled
 filter     disabled
 ficon      disabled
 iswitch    enabled
 asic_db    enabled
 fcip       enabled
 ag         enabled
 fcoe       enabled
 ucid       enabled
```

See Also

supportShow, supportShowCfgDisable, supportShowCfgEnable

switchBeacon

Sets switch beaconing mode on or off.

Synopsis

switchbeacon [<*mode*> | **--help**]

Description

Use this command to enable or disable switch beaconing mode. Switch beaconing can be used to locate a failing unit.

When beaconing mode is turned on, the port LEDs flash amber, left to right and right to left, from port 0 to the highest port number and back to port 0. The beaconing mode continues until you turn it off.

The beaconing LED pattern continues until you turn it off. Beaconing mode takes over the port LEDs. Other commands are still executable and functional. Running diagnostic commands overwrites the LED port beaconing pattern.

The normal flashing LED pattern (associated with an active, faulty or disabled port for example) is suppressed and only the beaconing pattern is shown. However, if diagnostic frame-based tests (such as **portLoopbackTest**) are executed, two patterns are interleaved. The diagnostic test flickers the LEDs green and the beaconing mode runs the LEDs amber at the same time.

The **switchBeacon** command is one of the commands that controls beaconing. Each command has a clearly defined scope of action:

- The **portBeacon** command enables or disables beaconing on a specified port.
- The **switchBeacon** command enables or disables beaconing on all ports in the current logical switch.
- The **chassisBeacon** command enables or disables beaconing on all ports in the chassis.
- The **portPeerBeacon** command enables or disables beaconing to identify the interconnections between ports.

The actions of the beaconing commands are independent and mutually exclusive. For example, if you enabled beaconing on the logical switch (1) and you want to enable beaconing on the entire chassis, you must first disable switch beaconing

with the **switchBeacon** command before you can use the **chassisBeacon** command to enable beaconing on the entire chassis. Likewise, existing **portBeacon** settings remain unaffected if you enable or disable beaconing on the switch or on the chassis. Failure to disable existing beaconing commands before using a different type of beaconing may cause the commands to interfere with each other in unexpected ways.

To determine beaconing status, use the **switchBeacon** or **chassisBeacon** command without operands. A value of 0 indicates that the command is disabled, a value of 1 indicates that the command is enabled. Issue the **portBeacon --show** command to display beaconing for a specific port. The **switchShow** command displays the status of the **switchBeacon** command only.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

<mode>	Specify 1 to enable beaconing mode or 0 to disable beaconing mode. This operand is optional. If no operand is specified, the current value is displayed.
--help	Displays the command usage.

Examples

To turn beaconing mode on and to verify the configuration:

```
switch:admin> switchbeacon 1
switch:admin> switchbeacon
value = 1
```

To turn beaconing mode off to verify the configuration::

```
switch:admin> switchbeacon 0
switch:admin> switchbeacon
value = 0
```

See Also

chassisBeacon, portBeacon, portPeerBeacon, switchShow

switchCfgPersistentDisable

Disables a switch persistently.

Synopsis

```
switchcfgpersistentdisable
switchcfgpersistentdisable --setdisablestate
switchcfgpersistentdisable --disable
switchcfgpersistentdisable --help
```

Description

Use this command to persistently disable the switch immediately or after reboot. All Fibre Channel ports are taken offline. If the switch was part of a fabric, the remaining switches reconfigure. The switch remains disabled even after a reboot.

As each port is disabled, the front panel LEDs change to a slow-flashing amber.

You can temporarily enable a persistently disabled switch with the **switchEnable** command. A temporarily enabled switch remains disabled after a reboot.

Notes

Performance Monitoring cannot be added to any port on a persistently disabled switch.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--setdisablestate	Sets the switch in disable state. The switch is disabled persistently after the next reboot.
--disable	Disables the switch persistently.
--help	Displays command usage.

Examples

To disable a switch persistently:

```
switch:admin> switchcfgpersistentdisable
Switch's persistent state set to 'disabled'
```

To set the state of a switch to disable so that the switch is disabled during next reboot:

```
switch:admin> switchcfgpersistentdisable -setdisablestate
Switch's persistent state set to 'disabled'
Switch persistent disable set
```

See Also

switchDisable, switchEnable, switchCfgPersistentEnable, switchShow

switchCfgPersistentEnable

Enables a switch persistently.

Synopsis

switchcfgpersistentenable

Description

Use this command to enable the switch that is disabled either persistently using **switchcfgpersistentdisable** command or nonpersistently using **switchdisable** command. All Fibre Channel ports that passed the power-on self-test (POST) are enabled and come online if connected to a device, or remain offline if disconnected.

If the switch is connected to a fabric, it rejoins the fabric. If this switch remains the principal switch, it assigns itself a domain ID. If another switch assumes the principal role, then this switch becomes a subordinate switch, and accepts a domain ID from the principal. Refer to the FC-SW specification for a complete description of this process.

As each port is enabled, the front panel LEDs change from slow-flashing amber to green for online ports, or to nonflashing amber for ports that do not initialize. Disconnected ports remain unlit.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To persistently enable a previously persistently disabled switch:

```
switch:admin> switchcfgpersistentenable
Switch's persistent state set to 'enabled'
```

See Also

switchDisable, switchEnable, switchCfgPersistentDisable, switchShow

switchCfgSpeed

Configures the speed for all ports on a switch.

Synopsis

switchcfgspeed *<speed_level>*

Description

Use this command to configure the port speed on a switch. This command sets the speed for all user ports. If any port on the switch is not capable of the specified speed setting, an error message is displayed for that port. The configuration is saved in nonvolatile memory and persists across switch reboots or power cycles.

On Brocade Gen 6 platforms, the **switchCfgSpeed** command checks if the requested speed is allowed, based on the combination configured for the octet that contains the first eight physical ports of the switch or blade. If the requested speed is not supported by the current octet speed combination, this command logs a RASlog message and moves on to the next port. Use the **portCfgOctetSpeedCombo** command to set the suggested combination before re-executing the **switchCfgSpeed** command.

Use the **portShow** command to display actual port speed settings. Use the **portCfgShow** command to display user-configured speed settings.

Notes

This configuration cannot be set on VE_Ports or VEX_Ports.

Speed configuration is not applicable to FCoE ports.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

<speed_level> Specifies the speed for all ports on a switch. This operand is required. Valid values are as follows:

4 The port is set at a fixed speed of 4G.

8	The port is set at a fixed speed of 8G.
16	The port is set at a fixed speed of 16G (not supported on 8G platforms).
32	The port is set at a fixed speed of 32G (not supported on 8G platforms).
53	The port is set at a fixed speed of 53G. (supported only on the core blades of the Brocade Gen 7 platform)
64	The port is set at a fixed speed of 64G. (supported only on the port blades and pizza boxes of the Brocade Gen 7 platform)

Examples

To set the autosensing mode for all ports on a switch:

```
switch:admin> switchcfgspeed 0
Committing configuration...done.
```

See Also

portCfgOctetSpeedCombo, portCfgSpeed, portShow

switchCfgTrunk

Enables or disables trunking on all the ports of a switch.

Synopsis

switchcfgtrunk *<mode>*

Description

Use this command to enable or disable trunking on all the ports of a switch. Use **portCfgTrunkPort** to enable or disable trunking on a single port.

When the command is executed to update the trunking configuration, the ports to which the configuration applies are disabled and subsequently re-enabled with the new trunking configuration. Traffic through these ports may be temporarily disrupted. The command issues a message that lists the VE/VEX_Ports to which the configuration does not apply.

Although trunking configuration changes are applied at the switch level, they are tracked as a per-port attribute and no switch-wide attribute is maintained to keep track of these changes. Whenever a new port comes online as part of the switch, you must reapply the trunking configuration. For example, If you remove a blade from a chassis while trunking is enabled for the ports on the blade, and you disable trunking on the switch after you removed the blade, the blade ports will come online with trunking enabled after you reinsert the blade. To avoid potentially disruptive behavior, reapply the trunking configuration.

Trunking on Inter-Chassis Link (ICL) ports is always enabled and cannot be turned off by this command.

Disabling trunking fails if a Trunk Area (TA) is enabled on the port.

Notes

Enabling trunking requires an ISL Trunking license. You may disable trunking without a license.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

The following operand is required:

<mode> Specify 1 to enable trunking on all ports. Specify 0 to disable trunking on all ports.

Examples

To enable trunking on all ports of a switch:

```
switch:admin> switchcfgtrunk 1
Configuration applied to all ports except the following \
VE/VEX_Ports (ports 176 - 191).
```

To disable trunking on all ports of a switch:

```
switch:admin> switchcfgtrunk 0
Committing configuration...done.
```

See Also

portCfgShow, portCfgTrunkPort, portShow, switchShow

switchDecommission

Writes zeros to the memory of the compact flash, resets customer-specific IP data in the SEEPROM, and resets the FRU to remove sensitive data. The device is not operational after the command is executed and it can be returned to the service provider.

Synopsis

```
switchdecommission
switchdecommission --help
```

Description

The command is supported only on Brocade Gen 6 and Brocade Gen 7 platforms.

The command writes zeros to the compact flash memory, clears customer-specific data such as the IP address configuration from the SEEPROM, and clears the data from the FRU such as the supplier ID, revision number, serial number, and part number. On standalone switches, the factory serial number is also cleared and the device reboots. In FCIP switches, the DP compact flash is also written with zeros.

This is a disruptive operation, after which the switch is not usable.

The user is prompted for a decommission authorization code (DAC) from the service provider to continue with the decommission of a switch. The command fails for invalid DAC input. The DAC input is node specific and is valid for 48 hours from the time of generation. The length of the DAC code is a maximum of 90 bytes.

The DAC code has an embedded decommission confirmation code that is extracted and displayed when the decommission operation is completed successfully.

The switch or chassis must be disabled before the execution of the command. HA must also to be disabled before the command operation. The **switchdecommission** operation must be executed on both CPs in a chassis, and it is recommended to complete the operation on an individual CP before proceeding with the other CP. It is recommended to run the command from the console session to follow the completion status; whereas the same cannot be seen in a telnet or SSH terminal as the connection will be terminated.

On a chassis, when the command is executed from the active CP, the IP address from the standby CP management interface is also erased, so it must be reconfigured.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

--help	Displays the command usage.

Examples

To decommission a switch:

```
switch:admin> switchdecommission
This operation will erase the firmware on the switch Would like to continue[y/n]: y

**********************************************************************
Please contact your service provider for a special authorization code.
License ID : (xx:xx:xx:xx:xx:xx:xx:xx)
**********************************************************************
Enter decommission authorization code(DAC): XXXXX

Authorization successful.
Decommission started on CP, Please wait for 5 minutes before power off the switch
IP address is being changed...
Done.

2021/05/07-03:20:24 (GMT), [RAS-1007], 271, CHASSIS, INFO, G8000, System is about to reload.
Rebooting! Fri May  7 03:20:27 GMT 2021
05/07/21 03:20:33 Executing platform yield
05/07/21 03:20:33 platform yield completed!
05/07/21 03:20:33 Unmounting /mnt filesystem
05/07/21 03:20:34 Unmounting /tmp filesystem
05/07/21 03:20:34 Unmounting / filesystem
05/07/21 03:20:34 Unmounted all filesystems.
05/07/21 03:20:34 Please stand by while rebooting the system...
reboot: Restarting system

BootROM version: 3.0.30
Copyright (C) 2017 Brocade Communication.

CPU0:  T1022E, Version: 1.1, (0x85290211)
Core:  e5500, Version: 2.1, (0x80241021)
Single Source Clock Configuration
Clock Configuration:
    CPU0:1200 MHz, CPU1:1200 MHz,
    CCB:500  MHz,
    DDR:800  MHz (1600 MT/s data rate) (Asynchronous), IFC:62.500 MHz
    FMAN1: 500 MHz
    QMAN:  250 MHz
    PME:   250 MHz
L1: D-cache 32 KiB enabled
    I-cache 32 KiB enabled
```

```
Model ID: 178
Board: A_WING, 36-bit Addressing
reset reason was 0x00000002: CPU request
I2C:   ready
SPI:   ready
DRAM:  Initializing....
Detected UDIMM VR9FU127228HBJB1
Using Internal Tune Configuration for Viking DDR4 module
ctrl_num = 0: DIMM in SR mode, bypass initialization
2 GiB left unmapped
SODIMM in SR mode, use DMA to write to calibration addr
 DDR: 4 GiB (DDR4, 64-bit, CL=12, ECC on)
testdram value not set, dram test not run
Now running in RAM - U-Boot at: 7ff00000
Flash: 16 MiB
L2: 256 KiB enabled
Corenet Platform Cache: 256 KiB enabled
Using SERDES1 Protocol: 134 (0x86)
MMC:   FSL_SDHC: 0
   pci_init_board: devdisr=0
 PCIE0 connected to Slot 1 as Root Complex (base addr fe240000)
     Link Width(x1) gen2, regs @ 0xfe240000
 PCIE0: Bus 00 - 01
 PCIE1 connected to Slot 2 as Root Complex (base addr fe250000)
     Link Width(x1) gen2, regs @ 0xfe250000
 PCIE0: Bus 02 - 03
In: serial
Out:   serial
Err:   serial
Net:   board eth init!
Fman1: Uploading microcode version 106.4.10
FM1@DTSEC1 connected to FIXED_SGMII
FM1@DTSEC4 connected to Broadcom BCM5461S
FM1@DTSEC1, FM1@DTSEC4 [PRIME]
usb reset 0
resetting USB...
USB0:   USB EHCI 1.00
scanning bus 0 for devices... Manufacturer u-boot
Product   EHCI Host Controller
SerialNumber
- Vendor: 0x0000  Product 0x0000 Version 1.0
Manufacturer UNIGEN
Product   PHA4000IS1-BTC
SerialNumber 07007A43E68B0060
- Vendor: 0x1c79  Product 0x3100 Version 1.0
2 USB Device(s) found
    scanning usb for storage devices... 1 Storage Device(s) found
setting prt to 2

## Booting kernel from Legacy Image at 02000000 ...
   Image Name:   Linux-4.1.35rt41
   Created:      2021-05-06  11:34:45 UTC
   Image Type:   PowerPC Linux Kernel Image (gzip compressed)
```

```
   Data Size: 4542473 Bytes = 4.3 MiB
   Load Address: 00000000
   Entry Point:  00000000
   Verifying Checksum ... OK
## Loading init Ramdisk from Legacy Image at 03000000 ...
   Image Name:
   Created:      2021-05-07   3:52:00 UTC
   Image Type:   PowerPC Linux RAMDisk Image (gzip compressed)
   Data Size: 8452793 Bytes = 8.1 MiB
   Load Address: 00000000
   Entry Point:  00000000
   Verifying Checksum ... OK
## Flattened Device Tree blob at 00c00000
   Booting using the fdt blob at 0xc00000
   Uncompressing Kernel Image ... OK
   Loading Ramdisk to 037f0000, end 03fffab9 ... OK
   Loading Device Tree to 037d6000, end 037ef262 ... OK
setup_arch: initmem
Silkworm CPLD [board: 178, rev: 2:max 65536:]
Uboot wdt counter value: 3
arch: exit

/pcie@ffe240000: PCICSRBAR @ 0xff000000 paddr_hi 0xdfffffff paddr_lo 0xd0000000 hose_offset 0xb30000000
/pcie@ffe250000: PCICSRBAR @ 0xff000000 paddr_hi 0xefffffff paddr_lo 0xe0000000 hose_offset 0xb30000000
Freescale FM module, FMD API version 21.1.0
Freescale FM Ports module
m41t11: I2C Real-Time-Clock detected on iic0 addr 0x68
## Commencing Switch Decommissioning process...
POST CODE: 0x9c
(Re)start USB...
******************************************************************************
Switch Decommission has started. Please do not power off the switch


Switch is successfully decommissioned!

******************************************************************************

Switch Decommission Confirmation Code:
******************************************************************************
xxxxxxxxx
******************************************************************************
000: reboot: Restarting system
POST CODE: 0xa2

## Switch is decommissioned, and is not operational.
```

See Also

None

switchDisable

Disables all user ports on a switch.

Synopsis

```
switchdisable [--force]
```

Description

Use this command to disable all user ports on a switch. All Fibre Channel ports are taken offline. If the switch was part of a fabric, the remaining switches reconfigure. As each port is disabled, the front panel LED changes to a slow-flashing amber.

The switch must be disabled before making configuration changes or before running offline diagnostic tests. Commands that require the switch to be disabled generate an error message if invoked while the switch is enabled. It is not necessary to disable the switch before rebooting or powering off.

When this command is executed on a logical switch, only the ports allocated to the logical are disabled. To disable the entire chassis, use the **chassisDisable** command.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--force	Disables the switch without confirmation. This operand is optional.

Examples

To disable the switch:

```
switch:admin> switchdisable
   This will disable the switch and is disruptive to all connections.
   Are you sure you want to continue disabling the switch? (yes, y, no, n): [no]: yes
```

To disable the switch without confirmation:

```
switch:admin> switchdisable --force
```

See Also

chassisEnable, chassisDisable, switchCfgPersistentDisable, switchCfgPersistentEnable, switchEnable, switchShow

switchEnable

Enables all user ports on a switch.

Synopsis

```
switchenable
```

Description

Use this command to enable all user ports on a switch. All Fibre Channel ports that passed the power-on self test (POST) are enabled. They can come online if connected to a device, or remain offline if disconnected. Use **switchEnable** to re-enable the switch after making configuration changes or running offline diagnostics.

If the switch is connected to a fabric, it rejoins the fabric. If the switch remains the principal switch, it assigns itself a domain ID. If another switch assumes the principal role, then the re-enabled switch becomes a subordinate switch and accepts a domain ID from the principal.

As each port is enabled, the front panel LED changes to green for online ports, or to amber for uninitialized ports. Disconnected ports remain unlit.

When this command is executed on a logical switch, only the ports allocated to the logical switch are enabled. To enable the entire chassis, use the **chassisEnable** command.

Notes

This command also enables the ports of a disabled blade on the switch.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To enable a switch:

```
switch:admin> switchenable
```

See Also

chassisDisable, chassisEnable, switchCfgPersistentDisable, switchCfgPersistentEnable, switchDisable, switchShow

switchName

Displays or sets the switch name.

Synopsis

```
switchname [name]
```

Description

Use this command to display or set the switch name. Once you set the switchname, you must re-login for the change to be in effect. All switches have a symbolic name that is primarily used for switch management. This name is shown in the Fabric OS CLI prompt, under each switch icon in Web Tools, in all the switch event RASLog messages, and in the output of various Fabric OS Commands, such as **fabricShow**.

Enter this command without an operand to display the current switch name. Use this command with the *name* operand to assign a new switch name. It is recommended to have unique switch name in the fabric.

Changing the switch name causes a domain address format registered state change notification (RSCN) to be issued. Refer to the FC-FLA specification for a description of RSCNs).

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

name Specifies the name for the switch. A switch name can be up to 30 characters in length. It can begin with either a letter or number and can consist of letters, numbers, hyphens, periods, and underscore characters. Spaces are not allowed. A switch name that begins with a numeric character must at least have either an alphabetic (A-Z, a-z) character or an underscore or a dash or a period. A switch name with only numeric character is not valid. For example, the switch name 12345678 is invalid. The case used in the name is recorded and will be displayed, but does not make the name unique. It is recommended to have unique switch name in the fabric.
When FICON Management Server (FMS) mode is enabled, the switch name can include up to 24 characters only.

Examples

To change the switch name to a name starting with a character (note the change in the prompt text):

```
switch:admin> switchname Lab1_demo_1298765_AY4TYI60
Lab1_demo_1298765_AY4TYI60:admin>
```

To change the switch name to a name starting with a character and containing dashes (-):

```
switch:admin> switchname Lab1-demo-1298765-AY4TYI60
Lab1-demo-1298765-AY4TYI60:admin>
```

To change the switch name to a name starting with a numeric:

```
switch:admin> switchname 174-switch
174.switch:admin> switchname
174.switch
```

To change the switch name to a name with a period:

```
switch:admin> switchname switch.73
switch.73:admin> switchname
switch.73
switch.73:admin>
```

See Also

chassisShow, switchShow

switchShow

Displays switch and port status.

Synopsis

```
        switchshow
        switchshow [-slot
slot] [-portname | -qsfp]
```

```
switchshow [-perf | -perftxrx]
switchshow [-portcount]
```

Description

Use this command to display switch, blade, and port status information. Output may vary depending on the switch model.

When used without operands, **switchShow** displays the following information:

switchName	Switch name.
switchType	Switch model and revision numbers.
switchState	Switch state: Online, Offline, Testing, or Faulty. When you issue the **switchcfgPersistentDisable** command followed by the **switchEnable** command, the switch state changes to, "Online (Temporary)". The switch remains in this state until you issue the **switchcfgPersistentEnable** command.
switchMode	Switch operation mode: Access Gateway (if AG is enabled).
switchRole	Switch role: Principal, Subordinate, or Disabled.
switchDomain	Switch domain ID: 1 to 239.
switchId	Switch embedded port D_ID.
switchWwn	Switch world wide name (WWN).
switchBeacon	Switch beaconing state: On or Off.
zoning	The name of the active zone is displayed in parentheses. Active only when Access Gateway mode is disabled.
FC Router	FC Router state: On or Off.
FC Router BB Fabric ID	The backbone fabric ID for FC routing.
Fabric Name	The name assigned to the fabric. The fabric name is set with the **fabricName** command.
HIF Mode	Indicates HIF mode of the switch. Values are ON or OFF. The HIF mode can be set using the **configure** command.
Allow XISL Use	Allows the switch to use interswitch links (XILS) in the base fabric to carry traffic to this logical switch. Values are ON or OFF.
LS Attributes	On a switch in Virtual Fabric mode, this field displays logical switch attributes, including the fabric ID associated with the logical switch, the switch role (default switch, base switch, or FICON mode logical switch), and the fabric Address Mode (0, 2 or 3). If Virtual Fabrics are disabled, only the Address Mode is displayed. The fabric Address Mode value is set by the configure command (Enable a 256 Area Limit).

The switch summary is followed by one-line description for non-EX_Ports and one or two lines for EX_Ports:

Index	Port index is a number between 0 and the maximum number of supported ports on the platform. The port index identifies the port number relative to the switch.
Slot	Slot number; 1-12.
Port	Port number; 0-15, 0-31, or 0-63.
PortWWN	Port world wide name (WWN).
Address	The 24-bit Address Identifier.
Media	Media types include the following:

--	No module present. Applicable to all port types.
cu	Displays when the copper (default) GbE port ge0 or ge1 is active. If the optical GbE port is active and an SFP is installed (copper or optical), "id" is displayed. If nothing is installed on the optical port, the Media field shows "**--**". The "cu" field also displays for inter-chassis links (ICLs).
id	Serial ID. Indicates that an SFP is installed. Use **sfpShow** to get more information about the SFP, including the serial number.

Speed	The speed of the port. Valid port speeds include the following:

1G	1Gb/s fixed transfer speed (not supported on 16Gb/s-capable ports)
N1	1Gb/s negotiated transfer speed (not supported on 16Gb/s-capable ports)
2G	2Gb/s fixed transfer speed (only supported with use of 8Gb/s SFPs)
N2	2Gb/s negotiated transfer speed (only supported with use of 8Gb/s SFPs)
4G	4Gb/s fixed transfer speed
N4	4Gb/s negotiated transfer speed
8G	8Gb/s fixed transfer speed
N8	8Gb/s negotiated transfer speed
10G	10Gb/s fixed transfer speed
N10	10Gb/s negotiated transfer speed
16G	16Gb/s fixed transfer speed
N16	16Gb/s negotiated transfer speed
32G	32Gb/s fixed transfer speed
N32	32Gb/s negotiated transfer speed
64	64Gb/s fixed transfer speed
N64	64Gb/s negotiated transfer speed
AN	Autonegotiating
UN	Unknown

State Port state information. Valid states include the following:

No_Card	No interface card present.
No_Module	No module (GBIC or other) present.
Mod_Val	Module validation in process.
Mod_Inv	Module speed mismatch or incompatible SFP.
Mod_Uns	Module unsupported.
No_Light	The module is not receiving light. This state is not applicable to 16Gb/s-capable interchassis link (ICL) ports.
No_SigDet	No signal is detected on the port. For 16Gb/s-capable interchassis link (ICL) ports, this state replaces the No_Light indicator. It indicates that a quad small form-factor pluggable (QSFP) has been installed but is not connected with a cable.
No_Sync	The module is receiving light but is out of sync.
In_Sync	The module is receiving light and in sync.
Laser_Flt	The module is signaling a laser fault.
Port_Flt	The port is marked faulty.
Hard_Flt	The port is hard faulted.
Lock_Ref	The port is locking to the reference signal.
Testing	The port is running diagnostics.
Offline	A port connection is not established (for virtual ports only).
Online	The port is up and running.
Transient	The port is disabled and re-enabled by MAPS to recover from the bottleneck condition caused by the target device.

Proto Protocol support by GbE port. Valid protocols include the following:

ISCSI	The port supports ISCSI (deprecated).
FCIP	The port supports FCIP.
FCoE	The port supports Fibre Channel over Ethernet.
LAN	The port supports LAN.

comment Optionally displays one of the following:

Copper or Optical	Displays which GbE port is currently active in the Brocade 7810 Switch. **Copper** indicates that the RJ-45 GbE port is currently active. **Optical** (default) indicates that the currently active GbE port accepts both copper and optical connections (SFPs).
Disabled	The port is disabled. Port disable reasons may be stated in parenthesis:
	Disabled (FMS Mode) — The port is disabled and in Ficon Server Management mode.
	Disabled (No area available for PID assignment) — The port is disabled because a PID could not be assigned for the stated reason.
	Disabled (persistent) ***disable reason*** — This port has been disabled with the **portCfgPersistentDisable** command.
	Disabled (Persistently disabled port) ***disable reason*** — This port has been disabled for unspecified reasons.
	Disabled (Fabric Vision License required) — This D_Port has been disabled because the Fabric Vision license is not installed on the switch.
	Disabled (Insistent Domain ID) — This port has been disabled because the switch did not get the requested domain ID.
	Disabled (EX_Port IR POD License Limit Exceeded) — The EX_Port has been disabled because the Integrated Routing license limit for the number of EX_Ports allowed in a switch has exceeded.
	Disabled (License not Installed for Integrated Routing) — The EX_port has been disabled because License for Integrated Routing not installed in the switch.
	Disabled (Incompatible AMP Version) — This port has been disabled because of Analytics Monitoring Platform (AMP) version conflict.
	Disabled (Port not bound to Address in FICON Switch) — This port has been disabled because it is not bound to an area after migrating into a FICON switch. Use the **portaddress --bind** command to bind the port.
	Disabled (Decommissioned) — The E_Port has been disabled by decommissioning operation.
	Disabled (Port Throttled) — The port has been disabled due to high CPU utilization and will be up later when the CPU load is lower or when the number of ports attempting ASN is less than threshold due to CPU load, whichever happens earlier.
Bypassed	The port is bypassed (loop only).
Loopback	The port is in loopback mode.

D_Port	Diagnostic port; D_Port feature can be configured on both E_Port and F_Port. D_Port on E_Port displays the world wide node name (WWNN) of the remote switch and D_Port on F_Port displays the world wide port name (WWPN) of remote port.
E_Port	Fabric port; displays the world wide name (WWN) and name of the attached switch. If the port is configured as an EX_Port, the WWN of the attached switch is the same as the router.
F_Port	Point-to-point port; displays the WWN of the attached N_Port. If that specific F_Port receives 1 FDISC frame, **switchShow** displays the total number of NPIV Public ports as 1, for example: F_Port 1 NPort + 1 NPIV devices. If the base device logs out with NPIV devices logged in, the command displays the number of NPIV devices, for example, F_Port 1 NPort + 2 NPIV.
G_Port	Point-to-point port, but not yet E_Port or F_Port.
L_Port	Loop port; displays the number of NL_Ports.
EX_Port	Router port; displays the WWN of the attached edge switch.
VF_Port	FCoE Virtual F_Port. Displays the WWN of the attached ENode. For example, if there are NPIV devices logged in (2 FDISCs were received), then **switchShow** displays the total number of NPIV Public ports as 2 (VF_Port 1 NPort + 2 NPIV public).
VF_Port Disabled	FCoE Virtual F_Port is disabled.
D_Port Dynamic	The port is in Dynamic D_Port mode. Use the **configure** command to set the Dynamic D_Port mode.
D_Port On-demand	The port is in On-demand D_Port mode. Use the **configure** command to set the On-demand D_Port mode.
D_Port protocol violation	The port is stuck in G_Port state. The Static D_Port configuration is removed but the remote port is still in Static D-Port mode, which results in the switch port stuck in G_Port mode.
D_Port F_Port *WWN* Dynamic	The port is connected to a device port in the D_Port mode.
(Impaired)	The port is not used for routing, if the port is marked as Impaired.
SIM Port	The port is a simulated (SIM) port.
Mirror Port	The port is a mirror port.
(Trunk master)	The port is the master port in a group of trunking ports.
(Trunk port, master is port #x)	The port is configured as a trunking port; the master port is port #*x*.
(upstream)	The E_Port is an upstream path toward the principal switch of the fabric.
(downstream)	The E_Port is a downstream path away from the principal switch of the fabric.
FICON Persistent DID	This port has been disabled, because the switch could not obtain its configuration domain ID during the fabric reconfiguration when **fmsmode** was enabled. See the **ficonCupSet** help page for more information.
Fabric ID conflict	Two different fabrics have been assigned the same fabric ID. Applicable only to EX_Ports and Logical Fabric environments.
Fabric ID oversubscribed	One fabric has been assigned two different fabric IDs (EX_Ports only).
AoQ	Application-oriented QoS; indicates that an F_Port or N_Port has negotiated a link that is capable of quality of service (QoS). Both sides of the link have QoS capability and agreed on the protocol. The link could be between an HBA and an Access Gateway, between an Access Gateway and an edge switch, or between an HBA and an edge switch.
LB mode	If the Access Gateway cannot negotiate QoS capabilities with the edge switch, an HBA connected to the Access Gateway will not be able to negotiate a QoS link with the Access Gateway.

(logical)	Indicates a logical port. The **switchShow** output shows all logical ports currently present in the logical switch. The command displays -1 for the slot for logical ports and the user port number for slot port. The logical port numbers are not persistent and may change when the logical interswitch links (LISLs) are deleted and recreated. A logical port is shown to be in one of the following states: E_Port (if the port is online), offline, or disabled. When the port is disabled, a reason is provided.
segmented	Indicates a segmented or disabled port along with one of the following segmentation reasons:

(Encrypt incompatible)	Port segmentation or port disable due to encryption incompatibility.
(Compress incompatible)	Port segmentation or port disable due to mismatched configurations.
(Encrypt limitation)	Port segmentation or port disable due to reaching encryption limitations.
(Compress limitation)	Port segmentation or port disable due to reaching compression limitations.
(Authentication failure)	Port segmentation or port disable due to authentication failure.
(Defzone conflict)	Port segmentation due to defzone states.
(Type mismatch)	D_Port configuration mismatch between local and remote switch.
(D-port mode mismatch, Not D-port)	The local port is configured as D_Port and remote port is not a D_Port. This segmentation reason is displayed for the local port.
(D-port mode mismatch, Static D-port)	The local port is configured as D_Port and remote port is not a D_Port. This segmentation reason is displayed for the remote port.
(ESC mismatch, AMP Version Conflict)	Port segmentation due to Analytics Monitoring Platform (AMP) version mismatch.
(Incompatible AMP Version)	Port segmentation due to incompatible Analytics Monitoring Platform (AMP) version.

When used with the **-slot** option, the command displays the following blade-specific information:

slot	Slot number.
Blade Type	Type of blade, for example, Core blade or AP blade. See **slotShow** command for a listing of supported blade types.
ID	A numeric blade ID that specifies the blade type. See **slotShow** command for a listing of supported blade IDs.
Status	Enabled or disabled.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

For all FCoE ports, the speed is Unknown. The default configuration of an FCoE port is an F_Port configuration. After a successful reboot **switchShow** displays all FCoE ports as online.

If a port is configured as a long distance port, the long distance level is displayed in the format of L*x*, where *x* represents the long distance level number. See **portCfgLongDistance** for the level description.

When a port is configured as an N_Port and is online, **switchShow** displays its type as an N_Port. Also, **switchShow** displays the WWN of the border switch attached to this N_Port as a 24-bit Port Identifier assigned to this port by the enterprise fabric.

In an AD context, if one of the L_Ports or NPIV Ports is a part of the current AD, the complete device information attached to the port is displayed.

Operands

This command has the following operands:

-slot *slot*	Displays blade information. You can specify this operand with **-portname** or **-qsfp**.
-portname	Displays the name for each port on the switch. The port name is set by the **portName** command.
-qsfp	Displays the output of the **switchShow** command with a QSFP column added. If a QSFP is installed on the port, the QSFP number is displayed for the port. This number corresponds to the physical QSFP number that can be found on the front of each Core Blade. A double dash (--) indicates that QSFP is not supported on that blade. This option is applicable on all switches that has QSFP installed.
-portcount	Displays the number of ports on the switch. This operand is exclusive.
-perf	Displays the TX and RX performance in a single column.
-perftxrx	Displays the TX and RX performance in two separate columns.

Examples

To display the port count:

```
switch:admin> switchshow -portcount
FC ports =  198, GE ports =  12
```

To display a QoS-capable Core Access Gateway with online AoQ F_Ports and N_Ports:

```
switch:admin>   switchshow
switchName:     brocade123
switchType:     191.0
switchState:    Online
switchMode:     Access Gateway Mode
switchRole:     Subordinate
switchDomain:   2
switchWwn:      10:00:c4:f5:7c:02:07:58
switchBeacon:   OFF
Index Port Address  Media Speed   State       Proto
==================================================
   0   0   040000   id    N32      Online      FC  N-Port  10:00:c4:f5:7c:00:45:00 0x030000 (AoQ)
   1   1   040100   id    N32      Online      FC  N-Port  10:00:c4:f5:7c:00:45:00 0x030100 (AoQ)
   2   2   040200   id    N32      Online      FC  N-Port  10:00:c4:f5:7c:00:45:00 0x030200 (AoQ)
   3   3   040300   id    N64      Mod_Inv     FC  "Speed Mismatch / Incompatible SFP"(Ports on Demand license
 not assigned or reserved yet)
   4   4   040400   --    N64      No_Module   FC  (Ports on Demand license not assigned or reserved yet)
   5   5   040500   --    N64      No_Module   FC  (Ports on Demand license not assigned or reserved yet)
   6   6   040600   id    N16      Online      FC  F-Port  1 N Port + 4 NPIV public
   7   7   040700   id    N16      In_Sync     FC
   8   8   040800   id    N32      No_Sync     FC
   9   9   040900   --    N64      No_Module   FC
```

```
  10  10   040a00   --    N64      No_Module   FC  (Ports on Demand license not assigned or reserved yet)
  11  11   040b00   --    N64      No_Module   FC  (Ports on Demand license not assigned or reserved yet)
  12  12   040c00   --    N64      No_Module   FC  (Ports on Demand license not assigned or reserved yet)
  13  13   040d00   --    N64      No_Module   FC  (Ports on Demand license not assigned or reserved yet)
  14  14   040e00   --    N64      No_Module   FC  (Ports on Demand license not assigned or reserved yet)
  15  15   040f00   --    N64      No_Module   FC  (Ports on Demand license not assigned or reserved yet)
  16  16   041000   --    N64      No_Module   FC  (Ports on Demand license not assigned or reserved yet)
  17  17   041100   --    N64      No_Module   FC  (Ports on Demand license not assigned or reserved
  18  18   041200   --    N64      No_Module   FC  (Ports on Demand license not assigned or reserved yet)
  19  19   041300   --    N64      No_Module   FC  (Ports on Demand license not assigned or reserved yet)
  20  20   041400   id    N32      Online      FC  F-Port  20:15:c4:f5:7c:01:4a:88 0x030201 (AoQ)
  21  21   041500   id    N32      No_Light    FC
  22  22   041600   --    N64      No_Module   FC  (Ports on Demand license not assigned or reserved yet)
  23  23   041700   --    N64      No_Module   FC  (Ports on Demand license not assigned or reserved yet)
  24  24   041800   --    N64      No_Module   FC  (Ports on Demand license not assigned or reserved yet)
  25  25   041900   --    N64      No_Module   FC  (Ports on Demand license not assigned or reserved yet)
  26  26   041a00   id    N32      No_Light    FC  Disabled (Initiator/Target connected to N-Port)
  27  27   041b00   id    N32      No_Light    FC  Disabled (Initiator/Target connected to N-Port)
  28  28   041c00   id    N32      No_Light    FC  Disabled (Initiator/Target connected to N-Port)
  29  29   041d00   id    N32      No_Light    FC  Disabled (Initiator/Target connected to N-Port)
  30  30   041e00   id    N32      No_Light    FC  Disabled (Initiator/Target connected to N-Port)
  31  31   041f00   id    N32      No_Light    FC  Disabled (Initiator/Target connected to N-Port)
```

To display switch information on a Virtual Fabrics-enabled switch with an assigned fabric name:

```
switch:admin> switchshow
switchName:     brocade218
switchType:     62.1
switchState:    Online
switchMode:     Native
switchRole:     Principal
switchDomain:   1
switchId:       fffc01
switchWwn:      10:00:00:60:69:80:04:92
zoning:         ON (testcfg1)
switchBeacon:   OFF
FC Router:      OFF
Fabric Name:    Fabric_A12
HIF Mode:       ON
Allow XISL use: ON

LS Attributes:    [FID: 128, Base Switch: No, \
    Default Switch: Yes, Ficon Switch: No, \
    Address Mode 0]
Index Port Address  Media Speed   State       Proto
==================================================
   0   0   010000   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved yet)
   1   1   010100   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved yet)
   2   2   010200   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved yet)
   3   3   010300   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved yet)
   4   4   010400   id    N32      Online      FC  Loopback->Port  4
   5   5   010500   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved yet)
   6   6   010600   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved yet)
   7   7   010700   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved yet)
```

```
   8   8   010800   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved yet)
   9   9   010900   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved yet)
  10  10   010a00   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved yet)
  11  11   010b00   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved yet)
  12  12   010c00   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved yet)
  13  13   010d00   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved yet)
  14  14   010e00   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved yet)
(output truncated)
```

To display blade information and port names:

```
switch:admin> switchshow -slot 5 -portname

FC Router:      OFF
Allow XISL Use: OFF
LS Attributes:    [FID: 128, Base Switch: No, \
    Default Switch: Yes, Ficon Switch: No, \
    Address Mode 0]

Slot   Blade Type        ID    Status
-----------------------------------------------
5      COREBLADE     52    ENABLED

Index  Slot Port         PortWWN           Name
=========================================================
384    5     0   20:04:00:05:33:0e:df:00  MyName_portname0
385    5     1   20:04:00:05:33:0e:df:01  ------
386    5     2   20:04:00:05:33:0e:df:02  ------
```

To display QSFP information:

- Ports 3/60-63 indicate no QSFP is present.
- Slot 5 and 8 have QSFPs installed and the number is the group ID.
- Port 5/6 is an example of non-contiguous ports crossing QSFP group boundaries.

```
switch:admin> switchshow -qsfp
switchName:     sw0
switchType:     120.1
switchState:    Online
switchMode:     Native
switchRole:     Subordinate
switchDomain:   60
switchId:       fffc3c
switchWwn:      10:00:00:05:1e:40:68:78
zoning:         ON (WB_DEFAULT_CFG_LSAN)
switchBeacon:   OFF
FC Router:      OFF
Fabric Name:    fabric
HIF Mode:       OFF
Allow XISL Use: OFF
LS Attributes:  [FID: 128, Base Switch: No,
    Default Switch: Yes, Ficon Switch: No, Address Mode 0]

Index Port  QSFP Address Media  Speed      State       Proto
=========================================================
```

```
  0   0   --    010000   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
  1   1   --    010100   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
  2   2   --    010200   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
  3   3   --    010300   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
  4   4   --    010400   id    N32      Online      FC  Loopback->Port  4
  5   5   --    010500   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
  6   6   --    010600   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
  7   7   --    010700   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
  8   8   --    010800   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
  9   9   --    010900   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
 10  10   --    010a00   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
 11  11   --    010b00   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
 12  12   --    010c00   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
 13  13   --    010d00   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
 14  14   --    010e00   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
 15  15   --    010f00   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
 16  16   --    011000   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
 17  17   --    011100   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
 18  18   --    011200   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
 19  19   --    011300   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
 20  20   --    011400   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
 21  21   --    011500   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
 22  22   --    011600   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
 23  23   --    011700   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
 24  24   --    011800   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
 25  25   --    011900   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
 26  26   --    011a00   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
```

```
 27  27   --    011b00   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
 28  28   --    011c00   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
 29  29   --    011d00   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
 30  30   --    011e00   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
 31  31   --    011f00   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
 32  32   --    012000   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
 33  33   --    012100   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
 34  34   --    012200   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
 35  35   --    012300   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
 36  36   --    012400   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
 37  37   --    012500   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
 38  38   --    012600   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
 39  39   --    012700   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
 40  40   --    012800   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
 41  41   --    012900   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
 42  42   --    012a00   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
 43  43   --    012b00   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
 44  44   --    012c00   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
 45  45   --    012d00   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
 46  46   --    012e00   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
 47  47   --    012f00   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
 48  48   --    013000   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
 49  49   --    013100   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved
yet)
```

To display media type information (relevant output excerpts only):

- The following example shows **switchshow** output for the ge0 and ge1 ports on a Brocade 7810:

```
[...]
ge0  cu    1G   Offline    FCIP  Copper  Disabled (Unsupported blade mode)
ge1  cu    1G   Offline    FCIP  Copper  Disabled (Unsupported blade mode)
ge2  id    1G   No_Module  FCIP
```

```
ge3  id    1G   No_Module  FCIP
ge4  id    1G   No_Light   FCIP
ge5  id    1G   No_Light   FCIP
ge6  id    1G   No_Module  FCIP
ge7  id    1G   No_Module  FCIP
[...]
```

- The **sfpShow** output for the same switch displays the serial number for the SFP.

```
[...]
Port 31: id (sw) Vendor: BROCADE Serial No: UAF1081800000MK
  Speed: 200,400,800_MB/s
Port 32: --
[...]
```

To display output when an authentication fails for a reason and the port gets disabled:

```
[...]
15  15   id    N2   No_Light         Disabled (Authentication Required)
[...]
```

To display the neighbor switch WWN for the segmented ISLs during ELP and post ELP:

```
switch:admin>   switchshow
switchName:     swd77
switchType:     71.2
switchState:    Online
switchMode:     Native
switchRole:     Principal
switchDomain:   1
switchId:       fffc01
switchWwn:      10:00:00:05:1e:a2:ec:9c
zoning:         OFF
switchBeacon:   OFF
FC Router:      OFF
Fabric Name:    fabric
HIF Mode:       OFF
Allow XISL Use: OFF
LS Attributes:  [FID: 128, Base Switch: No, Default Switch: Yes, Ficon Switch: No, Address Mode 0]
Index Port Address Media Speed State     Proto
=============================================
   0   0   010000   id     N8   No_Light    FC  Disabled (Persistent)
   1   1   010100   id     N8   No_Light    FC  Disabled (Persistent)
   2   2   010200   id     N4   No_Light    FC
   3   3   010300   id     N4   No_Light    FC
   4   4   010400   id     N8   No_Light    FC  Disabled (Persistent)
   5   5   010500   id     N8   No_Light    FC  Disabled (Persistent)
   6   6   010600   id     N8   No_Light    FC  Disabled (Persistent)
   7   7   010700   id     N8   No_Light    FC  Disabled (Persistent)
   8   8   010800   --     N8   No_Module   FC  Disabled (Persistent)
   9   9   010900   id     N4   Online      FC  E-Port  \
     10:00:00:05:1e:a3:00:59 segmented,(RA TOV incompat)
  10  10   010a00   id     N8   No_Light    FC  Disabled (Persistent)
```

To display the output when any of the ICL links get disabled with no ICL license installed:

```
switch:admin> switchshow slot -7
```

```
switchName:      BRM
switchType:      180.0
switchState:     Online
switchMode:      Native
switchRole:      Subordinate
switchDomain:    3
switchId:        fffc03
switchWwn:       10:00:88:94:71:df:d4:25
zoning:          ON (weekend_io_brm_min)
switchBeacon:    OFF
FC Router:       OFF
Fabric Name:     fabric
HIF Mode:        OFF
Allow XISL Use:  OFF
LS Attributes:   [FID: 128, Base Switch: No, Default Switch: Yes, Ficon Switch: No, Address Mode 0]
Slot Blade Type ID Model Name Status
-----------------------------------------------------
7 COREBLADE 215 CR64-8 ENABLED

Index Slot Port Address Media Speed State   Proto
==============================================================
768   7    0    ------   id   32G   No_Sync FC Disabled (No ICL License)
769   7    1    ------   id   32G   No_Sync FC Disabled (No ICL License)
770   7    2    ------   id   32G   No_Sync FC Disabled (No ICL License)
771   7    3    ------   id   32G   No_Sync FC Disabled (No ICL License)
772   7    4    ------   id   32G   No_Sync FC Disabled (No ICL License)
773   7    5    ------   id   32G   No_Sync FC Disabled (No ICL License)
774   7    6    ------   id   32G   No_Sync FC Disabled (No ICL License)
775   7    7    ------   id   32G   No_Sync FC Disabled (No ICL License)
776   7    8    ------   id   32G   No_Sync FC Disabled (No ICL License)
777   7    9    ------   id   32G   No_Sync FC Disabled (No ICL License)
778   7   10    ------   id   32G   No_Sync FC Disabled (No ICL License)
779   7   11    ------   id   32G   No_Sync FC Disabled (No ICL License)
780   7   12    ------   id   32G   No_Sync FC Disabled (No ICL License)
781   7   13    ------   id   32G   No_Sync FC Disabled (No ICL License)
```

To display the output of license names on switchshow for Gen 6 platform:

```
switch:admin> license --show
License Id : 90:xx:xx:xx:xx:xx

 License 1 :
 ------------------------------------------------------------
 License key : 1ab1b32bchuwye34yi2yiuy32iihi23i
 License features : xxx
 License Capacity : 5

 License 2 :
 ------------------------------------------------------------
 License key : cwidci2u3h29898080hio989838hdffd
 License features : xxxx.

 License 3 :
 ------------------------------------------------------------
```

```
 License serial number : FOS-xx-x-xx-xxxxxxxx
 License features : xxx
 xxx
 xxx
 Generation date : 10/23/2019

 License 4 :
 ------------------------------------------------------------
 License serial number : FOS-xx-x-xx-xxxxxxxx
 License features : xxx
 License Capacity : xxx
 Generation date : 10/23/2019


switch:admin> switchshow
switchName   :    TEST
switchType   :    162.0
switchState  :    Online
switchMode   :    Native
switchRole   :    Subordinate
switchDomain :    5
switchId     :    fffc05
switchWwn    :    10:00:00:27:f8:f0:f6:90
zoning       :    ON (cfga_1)
switchBeacon :    OFF
FC Router    :    OFF
Fabric Name  :    SNMP
HIF Mode     :    OFF
Allow XISL Use:    ON
LS Attributes:    [FID: 128, Base Switch: No, Default Switch: Yes, Ficon Switch: No, Address Mode 0]

Index Port Address  Media Speed   State       Proto
==================================================
   0   0   050000   id    N16      No_Light    FC
   1   1   050100   id    N16      No_Light    FC
   2   2   050200   id    N16      Online      FC  F-Port  1 N Port + 20 NPIV public
   4   4   050400   id    N16      No_Light    FC
   5   5   050500   --    N32      No_Module   FC
   6   6   050600   id    N16      No_Light    FC
   7   7   050700   id    N16      No_Light    FC
   8   8   050800   id    N16      No_Light    FC
   9   9   050900   id    N16      No_Light    FC
  10  10   050a00   id    N16      Online      FC  F-Port  30:13:00:05:33:5b:7d:86
  11  11   050b00   id    N8       Online      FC  F-Port  30:12:00:05:33:5b:7d:86 (AoQ)
  12  12   050c00   --    N32      No_Module   FC
  13  13   050d00   id    N16      Online      FC  E-Port  10:00:00:05:1e:53:c9:72 "PPlus" (Trunk master)
  14  14   050e00   id    16G      Online      FC  E-Port  10:00:00:05:1e:53:c9:72 "PPlus" (Trunk master)
  15  15   050f00   id    N16      No_Light    FC
  16  16   051000   id    N32      Online      FC  F-Port  10:00:00:90:fa:94:22:c5
  17  17   051100   id    16G      Online      FC  E-Port  10:00:00:05:1e:53:c9:72 "PPlus" (Trunk master)
  18  18   051200   id    N16      Online      FC  E-Port  10:00:00:27:f8:f1:e5:c0 "sw0" (Trunk master)
  19  19   051300   id    N32      Online      FC  E-Port  10:00:00:27:f8:f1:e5:c0 "sw0" (upstream)(Trunk
 master)
```

```
 20  20   051400   id    N32      Online      FC  F-Port  1 N Port + 3 NPIV public
 21  21   051500   id    N16      Online      FC  E-Port  (Trunk port, master is Port 22 )
 22  22   051600   id    N16      Online      FC  E-Port  10:00:50:eb:1a:9c:75:30 "Odin" (Trunk master)
 23  23   051700   id    N16      Online      FC  E-Port  10:00:50:eb:1a:9c:75:30 "Odin" (Trunk master)
 25  25   051900   id    N32      No_Light    FC
 26  26   051a00   --    N32      No_Module   FC
 28  28   051c00   id    16G      Online      FC  E-Port  segmented,10:00:00:05:1e:53:c9:74 (ESC mismatch,
Fabric ID)(Trunk master)
 29  29   051d00   id    16G      Online      FC  E-Port  10:00:00:05:1e:53:c9:72 "PPlus" (Trunk master)
 30  30   051e00   id    N16      No_Light    FC
 31  31   051f00   id    N32      Online      FC  E-Port  10:00:c4:f5:7c:01:1f:80 "Tyr" (Trunk master)
 33  33   052100   id    N32      Online      FC  E-Port  10:00:00:27:f8:f1:e5:c0 "sw0" (Trunk master)
 34  34   052200   id    N32      No_Light    FC
 36  36   052400   id    N16      No_Light    FC
 37  37   052500   id    N32      No_Light    FC
 38  38   052600   id    N16      No_Light    FC  (Ports on Demand license not assigned or reserved yet)
 40  40   052800   id    N16      No_Light    FC
 41  41   052900   --    N32      No_Module   FC  (Ports on Demand license not assigned or reserved yet)
 42  42   052a00   id    N32      No_Light    FC
 43  43   052b00   id    N32      No_Light    FC
 44  44   052c00   --    N32      No_Module   FC
 46  46   052e00   --    N32      No_Module   FC
 47  47   052f00   --    N32      No_Module   FC
 50  50   053200   id    N32      No_SigDet   FC
 52  52   053400   --    N32      No_Module   FC  (QFLEX Ports on Demand license not assigned or reserved
yet)
 53  53   053500   --    N32      No_Module   FC  (QFLEX Ports on Demand license not assigned or reserved
yet)
 54  54   053600   --    N32      No_Module   FC  (QFLEX Ports on Demand license not assigned or reserved
yet)
 55  55   053700   --    N32      No_Module   FC  (QFLEX Ports on Demand license not assigned or reserved
yet)
 56  56   053800   --    N32      No_Module   FC
 57  57   053900   --    N32      No_Module   FC
 58  58   053a00   --    N32      No_Module   FC
 59  59   053b00   --    N32      No_Module   FC
 60  60   053c00   --    N32      No_Module   FC  (QFLEX Ports on Demand license not assigned or reserved
yet)
 61  61   053d00   --    N32      No_Module   FC  (QFLEX Ports on Demand license not assigned or reserved
yet)
 62  62   053e00   --    N32      No_Module   FC  (QFLEX Ports on Demand license not assigned or reserved
yet)
 63  63   053f00   --    N32      No_Module   FC  (QFLEX Ports on Demand license not assigned or reserved
yet)
```

To display the output of FCoE ports:

```
switch:admin> switchshow
switchName:     SW0
switchType:     180.0
switchState:    Online
switchMode:     Native
switchRole:     Principal
switchDomain:   1
```

```
switchId:       fffc01
switchWwn:      10:00:88:94:71:a5:e0:13
zoning:         ON (TOT_testing_random_active)
switchBeacon:   OFF
FC Router:      OFF
Fabric Name:    D03_FCOE_FID100
HIF Mode:       OFF
Allow XISL Use: ON
LS Attributes: [FID: 100, Base Switch: No, Default Switch: No, Ficon Switch: No, Address Mode 0]
Index Slot Port Address Media Speed State    Proto
============================================================
34     3   34   012200  id    N32   Online   FC   F-Port 20:01:00:11:0d:01:0c:00
43     3   43   012b00  id    N32   Online   FC   F-Port 10:00:00:10:9b:56:e9:84
47     3   47   012f00  id    N32   Online   FC   F-Port 10:00:00:10:9b:56:e9:7b
636   11   60   017c80  id    10G   Online   ETH
637   11   61   017d80  id    10G   No_Sync  ETH
638   11   62   017e80  id    10G   No_Sync  ETH
639   11   63   017f80  id    10G   No_Sync  ETH  Disabled (Persistent) (None)
1216  -1 1216   ------  --    --    Online   FC   E-Port 10:00:88:94:71:c4:e0:22 "G630_FID100" (downstream)
1800  -1 1800   0100c0  --    --    Online   FCoE VF-Port 10:00:8c:7c:ff:74:1a:01
1801  -1 1801   0100c0  --    --    Offline  FCoE
1802  -1 1802   0100c0  --    --    Offline  FCoE
1803  -1 1803   0100c0  --    --    Offline  FCoE
```

To display TX and RX performance in a single column:

```
switch:admin> switchshow -perf
...
...
...
LS Attribute: [Inherited FID: 44]
PERF     Index Port Address  Media Speed State    Proto
============================================================
0          0   0   0a0000   id    16G  Online      FC  F-Port  20:05:00:11:0d:8e:01:00
0          1   1   0a0100   id    16G  Online      FC  Mirror Port
0          2   2   0a0200   --    16G  No_Module   FC
0          3   3   0a0300   id    16G  Laser_Flt   FC
0          4   4   0a0400   id    16G  Online      FC  F-Port  10:00:8c:7c:ff:2f:8a:01
0          5   5   0a0500   id    16G  Online      FC  F-Port  10:00:8c:7c:ff:2e:da:00
*          6   6   0a0600   id    16G  Online      FC  SIM-Port 20:06:88:94:71:42:b1:0f
*          7   7   0a0700   id    16G  Online      FC  SIM-Port 20:07:88:94:71:42:b1:0f
0          8   8   0a0800   id    16G  Online      FC  AE-Port 10:00:50:eb:1a:48:1b:62 "SOLO_C01_1" (Trunk
 master)
0          9   9   0a5500   --    16G  No_Module   FC
252.59m   10  10   0a0a00   id    16G  Online      FC  E-Port  (Trunk port, master is Port 11  )
1.32g     11  11   0a0b00   id    16G  Online      FC  E-Port  10:00:00:27:f8:f3:9b:d7
 "VENATOR_C03_44" (upstream)(Trunk master)
119.14m   12  12   0a0c00   --    --   Online      VE  VE-Port  10:00:00:05:33:65:a4:c4 "SKYBOLT_1_44"
0         13  13   0a0d00   --    --   Offline     VE
0         14  14   0a0e00   --    --   Offline     VE
0         15  15   0a0f00   --    --   Online      VE  VE-Port  10:00:00:27:f8:f3:98:87 "ALLEGIANCE_C03_44"
0             ge0           cu    1G   Offline    FCIP Copper  Disabled (Unsupported blade mode)
0             ge1           cu    1G   Offline    FCIP Copper  Disabled (Unsupported blade mode)
15.6m         ge2           id    10G  Online     FCIP
```

```
0             ge3           id    1G   No_Module  FCIP
0             ge4           id    1G   No_Module  FCIP
0             ge5           id    1G   No_Module  FCIP
0             ge6           id    1G   No_Module  FCIP
27.6k         ge7           id    10G  Online     FCIP
```

To display TX and RX performance in two separate columns:

```
switch:admin> switchshow -perftxrx
LS Attribute: [Inherited FID: 44]
TX      RX      Index Port Address  Media Speed State    Proto
=====================================================================
0       0          0   0   0a0000   id    16G  Online      FC  F-Port  20:05:00:11:0d:8e:01:00
0       0          1   1   0a0100   id    16G  Online      FC  Mirror Port
0       0          2   2   0a0200   --    16G  No_Module   FC
0       0          3   3   0a0300   id    16G  Laser_Flt   FC
0       0          4   4   0a0400   id    16G  Online      FC  F-Port  10:00:8c:7c:ff:2f:8a:01
0       0          5   5   0a0500   id    16G  Online      FC  F-Port  10:00:8c:7c:ff:2e:da:00
*                  6   6   0a0600   id    16G  Online      FC  SIM-Port 20:06:88:94:71:42:b1:0f
*                  7   7   0a0700   id    16G  Online      FC  SIM-Port 20:07:88:94:71:42:b1:0f
0       0          8   8   0a0800   id    16G  Online      FC  AE-Port 10:00:50:eb:1a:48:1b:62
 "SOLO_C01_1" (Trunk master)
0       0          9   9   0a5500   --    16G  No_Module   FC
0       253.46m   10  10   0a0a00   id    16G  Online      FC  E-Port  (Trunk port, master is Port 11  )
0       1.32g     11  11   0a0b00   id    16G  Online      FC  E-Port  10:00:00:27:f8:f3:9b:d7
 "VENATOR_C03_44" (upstream)(Trunk master)
0       119.31m   12  12   0a0c00   --    --   Online      VE  VE-Port  10:00:00:05:33:65:a4:c4 "SKYBOLT_1_44"
```

See Also

fabricName, portCfgLongDistance, switchDisable, switchEnable, switchName

switchType

Displays the product name of a chassis or a switch.

Synopsis

switchtype

Description

This command is used to display the product name of a chassis or a switch in the system.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Examples

To display the product name:

```
switch:admin> switchtype
X6-8
```

See Also
None

switchViolation

Dumps the DCC violations for a switch.

Synopsis
```
switchViolation --dump -dcc
```

Description
Use this command to display all Device Connection Control (DCC) violations that have occurred on a switch. Internally the command searches "errdumpall" for the DCC violations. For each DCC violation, the command displays the device WWN and the port where the violation occurred.

Notes
This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

This command can be executed only on the active CP. This command does not support High Availability (HA).

Operands
This command has the following operands. If executed without operands, the command prints the usage.

--dump	Displays specified policy violation.
-dcc	Specifies the violation type as DCC.

Examples
To display DCC violations for a switch:

```
switch:admin> switchviolation --dump -dcc
Device WWN                    Port
-----------------------------------
22:00:00:04:cf:75:59:87       10
```

See Also
None

syslogAdmin

Configures a syslog server host.

Synopsis
```
syslogadmin --set -ip {<ip_address> | <hostname>}
     [-secure] [-port <port_num>]
syslogadmin --set -facility <level>
syslogadmin --set -sourceip chassis
syslogadmin --remove -ip {<ip_address> | <hostname>}
syslogadmin --remove -sourceip chassis
syslogadmin --show {-ip | -facility | -sourceip}
```

```
syslogadmin --help
```

Description

Use this command to configure a switch to forward all error log entries to a remote syslog server, to set the syslog facility to a specified log file, to remove a syslog server, and to display the list of configured syslog servers. Brocade switches use the syslog daemon, a process available on most UNIX systems that reads and forwards system messages to the appropriate log files or users, depending on the system configuration. Up to six servers are supported.

By default, the switch uses UDP protocol to send the error log messages to the syslog server. The default UDP port is 514. User defined port number can be configured to the UDP protocol. Use the **-secure** option to configure the switch to send the error log messages securely using the Transport Layer Security (TLS) protocol. TLS is an encryption protocol over the TCP/IP network protocol and it can be used only with the TCP-based destinations (tcp() and tcp6()). The default TLS port is 6514. While enabling secure syslog mode, you must specify a port that is configured to receive the log messages from the switch.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--set -ip {<*ip_address*> | <*hostname*>} Configures a syslog server with the specified IP address or hostname. IPv4 and IPv6 addresses are supported. Only one syslog server can be specified at any given time. To configure more than one server, the command must be executed for each server.

- **[-secure] [-port <*port_num*>]** Enables secure syslog mode to send the error log messages securely using the TLS protocol to the syslog server. The secure syslog mode is disabled by default. The **-port** operand is optional. If secure mode is enabled and port number is not specified, the default TLS port number (6514) is set.
- **-sourceip chassis** Sets the syslog source IP address to chassis IP. The default is active CP IP.

--set -facility <*level*> Sets the syslog facility. Valid levels are 0 through 7. The default is 7.

0	LOG_LOCAL0
1	LOG_LOCAL1
2	LOG_LOCAL2
3	LOG_LOCAL3
4	LOG_LOCAL4
5	LOG_LOCAL5
6	LOG_LOCAL6
7	LOG_LOCAL7 (default)

--remove -ip {<*ip_address*> | <*hostname*>} Removes the specified syslog server. IPv4 and IPv6 addresses are supported.

- **-sourceip chassis** Removes the syslog source IP configuration.

--show Displays the list of configured syslog servers and the facility level.

- **-ip** Displays all syslog server IP addresses and hostnames.
- **-facility** Displays the configured syslog facility.
- **-sourceip** Displays the syslog source IP configuration information.

--help Displays the command usage.

Examples

To configure unsecured UDP port while configuring syslog server:

```
switch:admin> syslogadmin --set -ip 10.20.30.40 -port 512
Changing the unsecured port
Syslog IP address 10.32.25.26 and port 512 added

switch:admin>  syslogadmin --show -ip
syslog.1 10.2.11.23 port 512
syslog.2 10.1.23.42 secure:  port 11
syslog.3 10.25.28.24 secure:  port 66
syslog.4 10.20.30.40 port 512
```

To configure an IPv4 secure syslog server to which error log messages are sent:

```
switch:admin> syslogadmin --set -ip 11.20.30.40 -secure -port 2000
```

To configure an IPv6 non-secure syslog server:

```
switch:admin> syslogadmin --set -ip xxxx:xx:xxxx:xx:xxx:xxxx:xxxx:xxxx
```

To configure a syslog server using a hostname:

```
switch:admin> syslogadmin --set -ip host-xx-xxx
```

To set the syslog facility to LOG_LOCAL2:

```
switch:admin> syslogadmin --set -facility 2
switch:admin> syslogadmin --show -facility
Syslog facility: LOG_LOCAL2
```

To display all syslog IP addresses configured on a switch:

```
switch:admin> syslogadmin --show -ip
syslog.1   10.20.30.40
syslog.2   xxxx:xx:xxxx:xx:xxx:xxxx:xxxx:xxxx
syslog.3   win2k2-58-113
```

To remove the IP address from the list of servers to which error log messages are sent:

```
switch:admin> syslogadmin --remove -ip xxxx:xx:xxxx:xx:xxx:xxxx:xxxx:xxxx
```

To set and display the syslog source IP Address to chassis IP:

```
switch:admin> syslogadmin --set -sourceip chassis
Syslog source IP set to chassis IP

switch:admin> syslogadmin --show -sourceip
Syslog source IP : chassis
```

To remove the syslog source IP configuration:

```
switch:admin> syslogadmin --remove -sourceip chassis
Syslog source IP removed
```

See Also

None

sysShutDown

Provides a graceful shutdown to protect the switch file systems.

Synopsis

sysshutdown

Description

On standalone platforms, use this command to shut down the switch operating system.

On enterprise-class platforms, when **sysShutDown** is called on the active control processor (CP), the command shuts down the active CP, standby CP, and any AP blades.

Some platforms will only shut down the operating systems; others will shut down the operating system as well as shut off the power, that is, the LEDs will turn black.

After executing this command, manually power off the system. To reboot the system, manually turn the power switch on.

Notes

This command is not supported on the standby CP.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To perform a system shutdown on a standalone platform:

```
switch:admin> sysshutdown
This command will shutdown the operating systems on your
switch. You are required to power-cycle the switch in
order to restore operation.
Are you sure you want to shutdown the switch [y/n]? y

The system is going down for system halt NOW !!
INIT: Switching to runlevel:
INIT: Sending processes the TERM signal
ess095:admin> Unmounting all filesystems.
The system is halted
flushing ide devices: hda
Power down.
```

To attempt a system shutdown from the standby CP (not supported):

```
switch:admin> sysshutdown
This command will shutdown the operating systems on your switch.
You are required to power-cycle the switch in order to restore operation.
Are you sure you want to shutdown the switch [y/n]? y

The system is going down for system halt NOW!pts/0) (Mon Nov 15 07:31:32 2021
```

See Also
haDisable

tcpTimeStamp

Enables or disables the TCP Timestamping in the TCP frame.

Synopsis
```
tcptimestamp {--enable | --disable | --help}
```

Description

Use this command to enable or disable TCP Timestamping in the TCP frame. By default, Timestamping in TCP frame is enabled.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--enable	Enables the TimeStamping in TCP frame.
--disable	Disables the TimeStamping in TCP frame.
--help	Displays the command usage.

Examples

To disable the timestamping in TCP frame:

```
switch:user> tcptimestamp --disable
```

To enable the timestamping in TCP frame:

```
switch:user> tcptimestamp --enable
```

See Also
None

tempShow

Displays temperature readings.

Synopsis
```
tempshow [-details | --help]
```

Description

Use this command to display the current temperature readings of all temperature sensors in a switch. For each sensor, this command displays the sensor ID (an index number), the slot number (if applicable), the sensor index, the sensor state (OK or absent), and the temperature. The temperature readings are given in both Centigrade and Fahrenheit.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Refer to the hardware reference manual for your switch to determine the normal temperature range.

Operands

This command has the following operand:

-details	Displays an additional column for the sensor index. Sensor index indicates the position of the sensor in the system.
--help	Displays the command usage.

Examples

To display temperature and status sensors with the sensor index:

```
switch:user> tempshow
Sensor ID|Slot |Sensor Index|State     |Centigrade |Fahrenheit |
-----------------------------------------------------------------
1        |1    |0           |Ok        |35         |95         |
2        |1    |1           |Ok        |34         |93         |
3        |1    |2           |Ok        |43         |109        |
4        |1    |3           |Ok        |34         |93         |
5        |1    |4           |Ok        |41         |105        |
6        |2    |0           |Absent    |0          |0          |
7        |4    |0           |Ok        |33         |91         |
8        |4    |1           |Ok        |42         |107        |
9        |4    |2           |Ok        |42         |107        |
10       |4    |3           |Ok        |44         |111        |
```

See Also

fanShow, psShow, sensorShow, slotShow

timeOut

Sets or displays the idle timeout value for a shell or SSH login session.

Synopsis

```
timeout
timeout [<timeval>]
timeout --session <timeval>
timeout [--show]
timeout --help
```

Description

Use this command without an operand to display the current timeout value (in minutes) after which idle logins are automatically terminated.

Use this command with the *timeval* operand to set the login timeout value to the specified interval. A value of 0 disables timeout of login sessions.

The new timeout value takes effect with the next logins.

Notes

This **timeout** command also terminates firmware download operation.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

<timeval>	Specifies the number of minutes for the Telnet timeout value. Valid values are from 1 through 99,999, or 0 to disable login timeouts. This operand is optional; if omitted, the command displays the current timeout value.
--session	Configures the session idle timeout. Currently, this option supports only SSH session.
--show	Displays the current Shell and SSH sessions timeout values.
--help	Displays the command usage.

Examples

To set the idle timeout to 10 minutes:

```
switch:admin> timeout 10
         IDLE Timeout Changed to 10 minutes
The modified IDLE Timeout will be in effect after NEXT login
```

To perform session idle timeout:

```
switch:admin> timeout --session 11
SSH daemon will be restarted and all SSH session will be terminated
Do you want to proceed(yes, y, no, n)[no]? yes
Session Idle Timeout changed to 11 minutes

Broadcast message from user@sw0 (pts/0) (Wed Nov 27 11:39:18 2019):

All SSH accounts will be logged out
```

To display current Shell and SSH sessions timeout values:

```
switch:admin> timeout --show
Shell Idle Timeout is 111 minutes
Session Idle Timeout is 11 minutes.
```

See Also

None

topologyShow

Displays the unicast fabric topology.

Synopsis

topologyshow [**-index**] [**-nopage**] [<*domain*>]
topologyshow [**--help** | **--errors**]

Description

Use this command to display the fabric topology as it appears to the local switch. The display varies depending on the hardware configuration. The following rules apply:

- On all switches, the command displays the number of domains in the fabric and the local Domain IDs. If translate domains are configured, existing translate domains and associated ports are displayed.
- On an edge fabric, the command displays the following additional details for all domains in the fabric (including local translate domains):
  - All possible paths from the local switch to each of the remote domains.
  - For each path, the cost, the associated output port on the local switch, the path cost, and the number of hops from the local switch to the destination switch.
  - A summary of all ports that are routed through that path.
- On a backbone fabric, the command displays details for remote domains only. Details for local translate domains are not displayed.
- If there are two switches in the Backbone and the edge fabric is directly connected to both of those switches, **topologyshow** does not display the description of the translate domain associated with that edge fabric. In this case the translate domain is considered local to both of the switches in the backbone.
- If there is only one switch in the backbone, no domain details are displayed (all domains are local).

Depending on the fabric, the display may contains the following fields:

Local Domain ID	The domain number of local switch.
Local Translate Domain x owned by port	The port number associated with the local translate domain *x*.
Domain	The domain number of destination switch.
Metric	The cost of reaching destination domain.
Name	The name of the destination switch.
Path Count	The number of currently active paths to the destination domain. The maximum number of paths supported is 16. If there are more than 16 paths, the path count displays as 16 of *number of paths available*, for example, "16 of 20".
Hops	The maximum number of hops to reach destination domain.
Out Port	The port to which incoming frames are forwarded to reach the destination domain.
In Ports	The input ports that use the corresponding out port to reach the destination domain. This is the same information provided by **portRouteShow** and **uRouteShow** but in a different format.
Total Bandwidth	The maximum bandwidth of the out port. A bandwidth that is less than 0.512Gb/s is adjusted to the nearest power of 2 value. A bandwidth in the range of 0.512Gb/s (included) to 1Gb/s (not included) is adjusted to the 0.512Gb/s value. No adjustment takes place if the bandwidth is greater or equal to 1Gb/s.
Bandwidth Demand	The maximum bandwidth demand by the in ports.
Flags	Always D, indicating a dynamic path. A dynamic path is discovered automatically by the FSPF path selection protocol.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

The following operand is optional:

<domain>	Specify the destination domain for which to display the topology information. This option is applicable only to **-index** and **-nopage** options.
-index	Display port index numbers instead of slot or port numbers in the output.

-nopage	Disables the paging format to display the output.
--errors	Displays the topology errors report for LISL-LISL path restrictions, nonrouting domain restrictions, and unreachable domains error.

Examples

To display the topology on a single switch: domain is local, details are not displayed.

```
switch:admin> topologyshow

   1 domains in the fabric; Local Domain ID: 97
```

When executed from an edge fabric, **topologyshow** displays details for all domains, including local domains and local translate domains:

```
switch:admin> topologyshow

6 domains in the fabric; Local Domain ID: 7

Domain:         1
Metric:         10500
Name:           fcr_xd_1_1
Path Count:     1

    Hops:                   2
    Out Port:               11
    In Ports:               0 1 2 3 4 5 6 7 8 9 15
    Total Bandwidth:        8.000 Gbps
    Bandwidth Demand:       1275 %
    Flags:                  D

Domain:         2
Metric:         1000
Name:           fcr_fd_2
Path Count:     1

    Hops:                   2
    Out Port:               15
    In Ports:               0 1 2 3 4 5 6 7 8 9 11
    Total Bandwidth:        2.000 Gbps
    Bandwidth Demand:       4000 %
    Flags:                  D

Domain:         3
Metric:         10500
Name:           fcr_xd_3_5
Path Count:     1
    Hops:                   2
    Out Port:               11
    In Ports:               0 1 2 3 4 5 6 7 8 9 15
    Total Bandwidth:        8.000 Gbps
    Bandwidth Demand:       1275 %
    Flags:                  D
```

```
Domain:         111
Metric:         500
Name:           peng3900101
Path Count:     1

    Hops:                   1
    Out Port:               15
    In Ports:               0 1 2 3 4 5 6 7 8 9 11
    Total Bandwidth:        2.000 Gbps
    Bandwidth Demand:       4000 %
    Flags:                  D
(output truncate)
```

The command is executed from the backbone in a fabric with five switches. The fabric has five domains, but details are only shown for the three remote domains, not for the two local translate domains.

```
switch:admin> topologyshow

5 domains in the fabric; Local Domain ID: 2
Local Translate Domain 4 owned by port: 24
Local Translate Domain 5 owned by port: 23 33

Domain:         1
Metric:         500
Name:           pengsaturn104
Path Count:     1

    Hops:                   1
    Out Port:               0
    In Ports:               23 24 33 38 39
    Total Bandwidth:        8.000 Gbps
    Bandwidth Demand:       350 %
    Flags:                  D

Domain:         3
Metric:         10500
Name:           fcr_xd_3_6
Path Count:     1

    Hops:                   2
    Out Port:               0
    In Ports:               23 24 33 38 39
    Total Bandwidth:        8.000 Gbps
    Bandwidth Demand:       350 %
    Flags:                  D
```

To display the topology with index numbers:

```
switch:admin> topologyshow -index
1 domain(s) in the fabric; Local Domain ID: 188

Domain:         178
Metric:         500
Name:           G610
```

```
Path Count:     1

        Hops:                   1
        Out Port (index):       112
        In Ports (index):       246 247
        Total Bandwidth:        24.000 Gbps
        Bandwidth Demand:       133 %
        Flags:                  D
```

To display the errors for the topology:

```
switch:admin> topologyshow --errors
My domain:
72

LISL-LISL Path Restrictions:
29, 30

Non-Routing Domain Restrictions:
None

Unreachable domain(s):
29, 30, 31
```

See Also

uRouteShow

traceDump

Initiates, or removes a trace dump, or displays the trace dump status.

Synopsis

```
tracedump -S
tracedump -R
tracedump -n [-s slot]
tracedump -r [-s slot]
tracedump -c
```

Description

Use this command to initiate a background trace dump, to remove the content of a trace dump, or to display the dump status on the switch.

When executed without operands, this command defaults to **traceDump -S**.

Execution of **traceDump -n** generates a local trace dump locally. The default file name format for the trace dump file is as follows:

trace_type.YYYYMMDDHHMMSS.trc0.od

type	Indicates the tracedump type. Valid types include Panicdump, CLI, Reboot, etc.
YYYYMMDDHHMMSS	Indicates the trace dump time stamp (year-month-day-hour-minute-second).
trc.od	The compressed trace dump archive file extension.

For example, the filename for a new BFOS tracedump received from slot 10 on chassisABC would be tracecli.202111101333.trc.od.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following mutually exclusive operands:

-S	Displays the trace dump status This operand is optional. If omitted, the same status information is displayed.
-n	Initiates a background trace dump.
-r	Clears the status of a particular trace dump on a specified slot.
-R	Clears the status of a particular trace dump on all slots.
-c	Clears all trace dump buffers. This operation resets the trace buffer contents.
-s *slot*	Specifies the slot number from which a trace dump is generated. If a slot is not supplied, the trace dump is generated from the local slot. This operand is optional.

Examples

To initiate a background trace dump from slot 5:

```
switch:admin> tracedump -n -s 5
```

To display the trace dump status on a Gen6 switch:

```
switch:admin> tracedump -S
Dump status for switch:

slot: 1
Type            Timestamp
---------------------------------
Reboot          2016/03/16 10:50
FFDC(EM-1100)   2016/03/17 02:13
Panicdump       2016/03/17 02:24
CLI             2016/03/17 02:47

slot: 2
Type            Timestamp
---------------------------------
Reboot          2016/03/16 10:50
Reboot          2016/03/17 02:24
Reboot          2016/03/17 02:47
```

To clear the status of a trace dump:

```
switch:admin> tracedump -R
trace dump removed
```

To clear the content of the trace dump buffer:

```
switch:admin> tracedump -c
Cleared Trace Buffer contents
```

See Also

supportFtp, supportSave, supportShow

trafClass

Creates, manages, and displays configuration information specific to Traffic Class (TC). Allows to manage membership criteria to the user defined traffic class, updates feature specific properties, and displays traffic classes information.

Synopsis

```
trafClass --create <name>
 -interfaces <domain>/<slot>/<port>
     [,<domain>/<slot>/<port>]
 -features <sFlow>
 trafClass --delete <name>
 trafClass --memberAdd <name>
 -interfaces <domain>/<slot>/<port>
     [,<domain>/<slot>/<port>]
 trafClass --memberRemove <name>
 -interfaces <domain>/<slot>/<port>
     [,<domain>/<slot>/<port>]
 trafClass --config [<name>] -features <sFlow>
     {[-enabled {true | false}] [-collectorPort <n>]
     [-collectorIpAddress <IP_address>]}
 trafClass --show [-trafficClassName <name>
     | -features <feature>]
 trafClass --sflowShow [-trafficClassName <name>]
 trafClass --sflowInterfacesShow [-trafficClassName <tc_name> |
 -interfaces <domain>/<slot>/<port>]
```

Description

This command is used to create, manage, and display configuration information specific to traffic class. Manages membership criteria to or from an user defined traffic class, updates feature specific properties, and displays traffic class information. The traffic class configuration is supported only on IPS supported platforms.

The **--sflowShow** and **--sflowInterfacesShow** commands are applicable only to local switches. Even if traffic class is created to have interfaces from multiple domains, all the **--show** commands display only sFlow interfaces from the local domain.

All the traffic class configuration is globally available and updated.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--create <*name*>	Creates user defined traffic class. User defined traffic class is supported only for sFlow feature and supports only alphanumeric names up to 16 characters. The prefix “sys" or "SYS” is reserved for the system created traffic class.

--config [<*name*>] -features <*sFlow*>	Configures sFlow agents collector IP and the port number. This configuration is specific only to user defined traffic class when provided else it is specific to **sysTcDefault** traffic class.
-enabled {true | false}	Enables or Disables sFlow on a scope defined by the specified traffic class. This configuration is specific only to user defined traffic class when provided else it is specific to **sysTcDefault** traffic class.
-collectorIpAddress <*IP_address*> -collectorPort <*n*>	Configures sFlow collector IP and port number. Traffic Class name is optional. If no traffic class name is provided, updates feature properties of sysTcDefault.
-interfaces <*domain*>/<*slot*>/<*port*> [,<*domain*>/<*slot*>/<*port*>]	Specifies the interface or a set of interfaces. The interfaces is mandatory and it is not required that it should present in the fabric. Supported interfaces format is D/S/P, D/S/*, D/*/*, */*/*. It is automatically pruned when a duplicate or overlapping interfaces list is provided. The prune logic is “1/1/1, 1/1/2, */*/*” becomes “*/*/*” and “1/1/1, 1/1/2, 1/1/*, 2/1/1, 2/1/1” becomes “1/1/*, 2/1/1” after pruning.
--delete	Deletes an existing traffic class. This operation is not supported on the system created **sysTcDefault** traffic class.
--memberAdd	Adds one or more interface to an existing traffic class. This operation is not supported on **sysTcDefault** traffic class. The interface format and prune logic must be followed as like **trafClass –-create** option.
--memberRemove	Removes one or more interface from an existing traffic class. This operation is not supported on **sysTcDefault** traffic class. It is allowed to remove all interfaces from a traffic class.
--show	Displays traffic classes defined. Use **-features** or **-trafficClassName** options to filter the output.
--sflowShow [-trafficClassName <*name*>]	Displays the details of sFlow configuration parameters for a particular traffic class including high level statistics. Displays all the traffic classes configured if not specified.
--sflowInterfacesshow	Displays the details of sFlow configuration parameters and high level metrics for all the interfaces within a particular traffic class or for a particular interface if specified. Use **-interfaces** or **-trafficClassName** options to filter the output.
--help	Displays the command usage.

Examples

To create a traffic class:

```
switch:admin> trafClass --create usertc1 -interfaces 102/0/40 -features sFlow
```

To add or remove interface member:

```
switch:admin> trafClass --memberAdd usertc1 -interfaces 102/0/41

switch:admin> trafClass --memberRemove usertc1 -interfaces 102/0/41
```

To delete a traffic class:

```
switch:admin> trafClass --delete usertc1
```

To display traffic classes defined:

```
switch:admin> trafClass --show -trafficClassName TC001
trafficClassName   : TC001
applicableTraffic  : Traffic on [Interfaces : (1/0/32,1/0/33,103/0/32,103/0/33)]
features           : sFlow
sFlowEnabled       : true
counterPollInterval: 20
packetSampleRate   : 1 in 1.048M packets (1048576)
maxHeaderSize      : 128
maxDatagramSize    : 1500
collectorIpAddress : 10.155.108.123
collectorPort      : 6343
```

To configure sFlow:

```
switch:admin> trafClass --config usertc1 -feature sFlow
-collectorIpAddress "10.20.30.40" -collectorPort "6343"
```

To enable and display sFlow:

```
switch:admin> trafClass --config usertc1 -feature sFlow -enabled true

switch:admin> trafClass --show -features sFlow

trafficClassName   : TC001
applicableTraffic  : Traffic on [Interfaces : (1/0/32,1/0/33,103/0/32,103/0/33)]
features           : sFlow
sFlowEnabled       : true
counterPollInterval: 20
packetSampleRate   : 1 in 1.048M packets (1048576)
maxHeaderSize      : 128
maxDatagramSize    : 1500
collectorIpAddress : 10.155.108.123
collectorPort      : 6343


trafficClassName   : sysTcDefault
applicableTraffic  : All traffic (except exceptions made via user defined traffic class)
features           : trafficOptimizer,sFlow
sFlowEnabled       : false
counterPollInterval: 20
packetSampleRate   : 1 in 1.048M packets (1048576)
maxHeaderSize      : 128
maxDatagramSize    : 1500
collectorIpAddress : 10.155.108.123
collectorPort      : 6343
trafOptEnabled     : true
flowControl        : off
```

To display the details of both configuration and operational parameters:

```
switch:admin> trafClass --sflowShow

trafficClassName     : sysTcDefault
interfaces           : 103/0/34
enabled              : false
counterPollInterval  : 20
packetSampleRate     : 1 in 1.048M packets (1048576)
maxHeaderSize        : 128
maxDatagramSize      : 1500
collectorIpAddress   : 10.155.108.123
collectorPort        : 6343
agentIpAddress       : 10.38.25.103
packetCount          : 0  (0)
packetSampleCount    : 0  (0)
```

```
packetSampleDropCount: 0  (0)
counterSampleCount   : 0  (0)
udpDatagramsCount    : 0  (0)


trafficClassName     : TC001
interfaces           : 103/0/32,103/0/33
enabled              : true
counterPollInterval  : 20
packetSampleRate     : 1 in 1.048M packets (1048576)
maxHeaderSize        : 128
maxDatagramSize      : 1500
collectorIpAddress   : 10.155.108.123
collectorPort        : 6343
agentIpAddress       : 10.38.25.103
packetCount          : 60.81M (60817408)
packetSampleCount    : 58  (58)
packetSampleDropCount: 0  (0)
counterSampleCount   : 78  (78)
udpDatagramsCount    : 133  (133)
```

To display the details of both configuration and operational parameters for a particular traffic class name:

```
switch:admin> trafClass --sflowShow -trafficClassName userTc1
trafficClassName     : TC001
interfaces           : 103/0/32,103/0/33
enabled              : true
counterPollInterval  : 20
packetSampleRate     : 1 in 1.048M packets (1048576)
maxHeaderSize        : 128
maxDatagramSize      : 1500
collectorIpAddress   : 10.155.108.123
collectorPort        : 6343
agentIpAddress       : 10.38.25.103
packetCount          : 254.8M (254803968)
packetSampleCount    : 243  (243)
packetSampleDropCount: 0  (0)
counterSampleCount   : 88  (88)
udpDatagramsCount    : 318  (318)
```

To display the details of sFlow configuration parameters and high level metrics for all the interfaces:

```
switch:admin> trafClass --sflowInterfacesShow
interface                  : 103/0/34
trafficClassName           : sysTcDefault
counterPollInterval        : 20
packetSampleRate           : 1 in 1.048M packets (1048576)
maxHeaderSize              : 128
enabled                    : false
ingress                    : false
egress                     : false
packetCount                : 0  (0)
```

```
packetSampleCount          : 0  (0)
packetSampleDropCount      : 0  (0)
packetSampleSequenceNumber : 0
counterSampleCount         : 0  (0)
counterSampleSequenceNumber: 0
inOctets                   : 0  (0)
inUnicastPackets           : 0  (0)
inErrors                   : 0  (0)
inDiscards                 : 0  (0)
outOctets                  : 0  (0)
outUnicastPackets          : 0  (0)


interface                  : 103/0/32
trafficClassName           : TC001
counterPollInterval        : 20
packetSampleRate           : 1 in 1.048M packets (1048576)
maxHeaderSize              : 128
enabled                    : true
ingress                    : true
egress                     : false
packetCount                : 284.1M (284164096)
packetSampleCount          : 271  (271)
packetSampleDropCount      : 0  (0)
packetSampleSequenceNumber : 271
counterSampleCount         : 45  (45)
counterSampleSequenceNumber: 45
inOctets                   : 2.250T (2250504505016)
inUnicastPackets           : 1.478G (1478859443)
inErrors                   : 2  (2)
inDiscards                 : 0  (0)
outOctets                  : 4.646G (4646608088)
outUnicastPackets          : 62.41M (62412249)


interface                  : 103/0/33
trafficClassName           : TC001
counterPollInterval        : 20
packetSampleRate           : 1 in 1.048M packets (1048576)
maxHeaderSize              : 128
enabled                    : true
ingress                    : true
egress                     : false
packetCount                : 8.388M (8388608)
packetSampleCount          : 8  (8)
packetSampleDropCount      : 0  (0)
packetSampleSequenceNumber : 8
counterSampleCount         : 45  (45)
counterSampleSequenceNumber: 45
inOctets                   : 4.652G (4652414384)
inUnicastPackets           : 62.47M (62471389)
inErrors                   : 0  (0)
inDiscards                 : 0  (0)
```

```
outOctets                  : 2.252T (2252570754524)
outUnicastPackets          : 1.480G (1480203829)
```

To display the details of sFlow configuration parameters with metrics for a particular traffic class:

```
switch:admin> trafClass --sflowInterfacesshow -trafficClassName userTc1
interface                  : 103/0/32
trafficClassName           : TC001
counterPollInterval        : 20
packetSampleRate           : 1 in 1.048M packets (1048576)
maxHeaderSize              : 128
enabled                    : true
ingress                    : true
egress                     : false
packetCount                : 378.5M (378535936)
packetSampleCount          : 361  (361)
packetSampleDropCount      : 0  (0)
packetSampleSequenceNumber : 361
counterSampleCount         : 47  (47)
counterSampleSequenceNumber: 47
inOctets                   : 2.374T (2374056315144)
inUnicastPackets           : 1.560G (1560039734)
inErrors                   : 2  (2)
inDiscards                 : 0  (0)
outOctets                  : 4.803G (4803210796)
outUnicastPackets          : 64.52M (64527646)


interface                  : 103/0/33
trafficClassName           : TC001
counterPollInterval        : 20
packetSampleRate           : 1 in 1.048M packets (1048576)
maxHeaderSize              : 128
enabled                    : true
ingress                    : true
egress                     : false
packetCount                : 10.48M (10485760)
packetSampleCount          : 10  (10)
packetSampleDropCount      : 0  (0)
packetSampleSequenceNumber : 10
counterSampleCount         : 47  (47)
counterSampleSequenceNumber: 47
inOctets                   : 4.809G (4809224900)
inUnicastPackets           : 64.58M (64589579)
inErrors                   : 0  (0)
inDiscards                 : 0  (0)
outOctets                  : 2.376T (2376131993568)
outUnicastPackets          : 1.561G (1561390298)
```

To display the details of sFlow configuration parameters with metrics for a particular interface:

```
switch:admin> trafClass --sflowInterfacesshow -interface 103/0/32
interface                  : 103/0/32
```

```
trafficClassName           : TC001
counterPollInterval        : 20
packetSampleRate           : 1 in 1.048M packets (1048576)
maxHeaderSize              : 128
enabled                    : true
ingress                    : true
egress                     : false
packetCount                : 470.8M (470810624)
packetSampleCount          : 449  (449)
packetSampleDropCount      : 0  (0)
packetSampleSequenceNumber : 449
counterSampleCount         : 50  (50)
counterSampleSequenceNumber: 50
inOctets                   : 2.557T (2557615179840)
inUnicastPackets           : 1.680G (1680646346)
inErrors                   : 2  (2)
inDiscards                 : 0  (0)
outOctets                  : 5.035G (5035185616)
outUnicastPackets          : 67.66M (67661139)
```

See Also

ipsArpTable, ipsInterface, ipsLag, ipsNeighborInfo, ipsPathVerify, ipsPing, ipsReachable, ipsRouteTable, ipsStaticArp, ipsStaticRoute, ipsTraceRoute, ipsVrf, ipsVlan

trafOpt

Configures information specific to Traffic Optimizer (TO).

Synopsis

```
trafopt --show [-profile | -pg]
trafopt --show -profile <profile_name>
trafopt --show -pg <performance_group_name>
trafopt --show -flow {-pg <performance_group_name> |
 -srcdev {<devID> | "*"} | -dstdev {<devID> | "*"} |
 -srcdev {<devID> | "*"} -dstdev {<devID> | "*"}}
trafopt --activate <profile_name>
trafopt --schedule <profile_name> -delay <days>
trafopt --abort_schedule
trafopt --update -profile <profile_name> {-add | -remove}
 -protocol {scsi | nvme}
 -speed <speeds seperated by comma>
trafopt --help
```

Description

This command is used to configure the profile parameters related to Traffic Optimizer. It is also used to view the statistics of performance groups (PGs) associated with the current Traffic Optimizer profile. The Traffic Optimizer feature automatically groups traffic flows with similar predefined attributes, such as flow destination speed and priority, as performance groups.

The command is not supported on AG platforms.

The **-profile** option does not take effect on the FCR backbone-to-edge fabric topology configuration. But it supports the FCR edge-to-edge fabric topology under certain circumstances such as, the Gen 7 platforms must be in an end-to-end path, installed with FOS v9.1.0 or later, IFL links are to be formed on both ends of the link, the base fabric TO profile must be the same as the edge fabric TO profile, and all the backbone switches and edge switches must run with same TO profile.

Refer to *Brocade Fabric OS Administration Guide* for more details.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--show Displays a summary of all PGs under the effective Traffic Optimizer profile.

- **-profile** Displays all available profiles.
  - ***<profile_name>*** Displays the details of the profiles. Supports the **Sys_TrafOpt_Version1**, **Sys_TrafOpt_Version2**, **Sys_TrafOpt_Ips_Version1**, and **TrafOpt_Custom** profiles.
- **-pg** Displays all active performance groups.
  - ***<performance_group_name>*** Displays the definition of the PG, a summary of the monitoring parameters for all the flows associated with the PG, and the action taken on the flows, if any. The Traffic Optimizer statistics are refreshed every 5 minutes. The PG_SYSTC_DEFAULT is the PG corresponding to the system defined traffic class with Traffic Optimizer feature enabled in IP Storage logical switch.
- **-flow** Displays all or the top flows associated with the PG. Executing the **trafopt –show** command displays the aggregated statistics for any PG. Statistics are not displayed when an active IT flow count exceeds the scale flow limit supported by Flow Vision for a specified platform.
  - **-pg *<performance_group_name>*** Displays the flows that are associated with the specified performance group.
  - **-srcdev {*<devID>* | "*"}** Displays the flows that are associated with the specified source FCID.
  - **-dstdev {*<devID>* | "*"}** Displays the flows that are associated with the specified destination FCID.
  - **-srcdev {*<devID>* | "*"} -dstdev {*<devID>* | "*"}** Displays the flows that are associated with the specified source and destination FCID.

--activate Activates a specific TO profile. Execute **trafopt --show -profile** to list the profile names.

--schedule Schedules a particular profile to be activated in the specified number of days.

- **-delay *<days>*** Denotes the delay in number of days. Valid values can be from 1 to 60 days. By default, the Sys_TrafOpt_Version2 profile is activated in 30 days after upgrading from v9.0.x.

--abort_schedule Cancels any scheduled TO profile activation. The profile name is the profile that is already scheduled for activation. When migrating from Fabric OS v9.0.x to Fabric OS v9.1.x, the system will start the timer for 30 days to activate the Sys_TrafOpt_Version2 profile. The profile remains in Sys_TrafOpt_Version1 when the user triggers **--abort_schedule** to cancel the scheduled timer.

--update Updates the configuration for the custom profile template.

- **-profile *<profile_name>*** Denotes the custom profile name.
- **{-add | -remove}** Denotes the configuration of the custom profile that needs to be added or removed.
- **-protocol {scsi | nvme}** Denotes the protocol configuration.
- **-speed *<speeds seperated by comma>*** Denotes the speed configuration.

--help Displays the command usage.

Examples

To display the details of the active profile:

```
switch:admin> trafopt --show
All Performance Group statistics of active profile

Active Profile: Sys_TrafOpt_Version2
-------------------------------------------------------------------------------------------------------------------------------
Performance Groups              |          Flow        |               |               |  Aggregate    |
 Aggregate    |
                                |----------------------|   IO Error    |    MAX IO     |  Throughput   |  IOPS
         |
(Name)                          |Active| High Latency  |   Count       |    Latency    |  (bytes/sec)  |
 (IOs/sec)    |
                                |count | violation     |               |               |               |
          |
-------------------------------------------------------------------------------------------------------------------------------
                                |      | 5min  | 24hr  | 5min  | 24hr  | 5min  |  24hr | 5min  | 24hr  | 5min
  | 24hr  |
-------------------------------------------------------------------------------------------------------------------------------
  PG_4G_8G_16G                  |1     |0      |0      |0      |0      |0      |4.849m |0      |  409  |0
  |0      |
  PG_SCSI_64G #                 |2     |0      |0      |0      |0      |0      |   86u |0      |  409  |0
  |0      |
  PG_SCSI_32G #                 |1     |0      |0      |0      |0      |0      |   60u |0      |  409  |0
  |0      |
  PG_NVME_64G #                 |0     |0      |0      |0      |0      |0      |0      |0      |0      |0
  |0      |
  PG_NVME_32G #                 |0     |0      |0      |0      |0      |0      |0      |0      |0      |0
  |0      |
  PG_SDDQ_QOS_LOW_1             |1     |0      |0      |0      |0      |8.015m |32.82m |3.024G |2.994G |6.194K
 |6.132K |
  PG_SDDQ_QOS_LOW_2             |1     |0      |0      |0      |0      |7.973m |28.96m |3.103G |3.025G |6.356K
 |6.196K |
  PG_QOS_HIGH_1                 |0     |0      |0      |0      |0      |0      |0      |0      |0      |0
  |0      |
```

```
  PG_QOS_HIGH_2                 |0     |0      |0      |0      |0      |0      |0      |0      |0      |0
  |0      |
  PG_QOS_HIGH_3                 |1     |0      |0      |0      |0      |8.080m |32.95m |1.442G |1.437G |2.954K
 |2.944K |
  PG_QOS_HIGH_4                 |0     |0      |0      |0      |0      |0      |0      |0      |0      |0
  |0      |
  PG_QOS_HIGH_5                 |0     |0      |0      |0      |0      |0      |0      |0      |0      |0
  |0      |
-------------------------------------------------------------------------------------------------------------------------------
| #- Performance Groups that are not fully functional in all the switches in the fabric.
          |
-------------------------------------------------------------------------------------------------------------------------------
Number of Available Traffic Optimizer Profiles : 3
No scheduled Profile to Activate
-----------------------------------------------------------------------------------------------
```

To display the details of the active profile in IPS logical switch:

```
switch:admin> trafopt --show
All Performance Group statistics of active profile

Active Profile: Sys_TrafOpt_Ips_Version1
-------------------------------------------------------------------------------------------------------------------
Performance Groups     |   Active     |    Egress congestion   |  Egress Aggregate    |  Egress Aggregate |
                       |   Flow       |    Frame drop          |  Throughput          |  Frame Transfer   |
(Name)                 |   Count      |    count               |  (bytes/sec)         |  (Frame/sec)      |
                       |              |                        |                      |                   |
-------------------------------------------------------------------------------------------------------------------
                       |              | 5min       |  24hr     | 5min      | 24hr     | 5min    | 24hr    |
-------------------------------------------------------------------------------------------------------------------
PG_SYSTCDEFAULT        | 0            | 0          | 0          | 0        |0         | 0       | 0       |
-------------------------------------------------------------------------------------------------------------------
Number of Available Traffic Optimizer Profiles : 1
No scheduled Profile to Activate
-----------------------------------------------------------------------------------------------
```

To display the performance of the flows specific to a performance group:

```
switch:admin> trafopt --show -pg PG_4G_8G_16G
Aggregated performance statistics of all flows belonging to a Performance Group

Performance Group Name: PG_4G_8G_16G
-----------------------------------------------------------------------------------------------------------
                | Active|Stats   |RD|  Flow       |    IO      |  MAX IO    | Aggregate  | Aggregate  |
VC              | Flow  |Duration|/ | High Latency|   Error    |  Latency   | Throughput | IOPs       |
Used            | Count |        |WR| violation   |   Count    |            | (bytes/Sec)| (IOs/Sec)  |
                |       |        |  |             |            |            |            |            |
-----------------------------------------------------------------------------------------------------------
2,3,4,5         |69     |5min    |RD|0            |0           |0           |0           |0           |
                |       |        |-----------------------------------------------------------------------|
                |       |        |WR|0            |0           |0           |0           |0           |
                |       |-----------------------------------------------------------------------------|
                |       |24hr    |RD|0            |0           |       1u   |0           |0           |
                |       |        |-----------------------------------------------------------------------|
```

```
                 |       |        |WR|0            |0           |0           |0           |0           |
-----------------------------------------------------------------------------------------------------------|
```

To display a particular flow in a performance group:

```
switch:admin> trafopt --show -flow -pg PG_NVME_64G
=============================================================================================
Name              : sys_flow_monitor
Performance Group : PG_NVME_64G
Active Flow       : 4
---------------------------------------------------------------------------------------------

Timebase         : 5 Minutes
---------------------
| I/O Brief Metrics |
-----------------------------------------------------------------------------------------------------------------------------------
|        |       | RD|        |              |      |     |   Max Time   |   Max Time   |  Avg IOs/sec | Avg
 Bytes/sec|   Max Count  |  Total Count |  Total Count |
|  SID   |  DID  | WR| Device |     Flow     | Port |Proto|      ECT     |      FRT     |     IOPS     |
 BPS     |  Pending IOs |  Exceptions  |  Violations  |
|        |       |   | Type   |   Hierarchy  | Index|     |  5min / All  |  5min / All  |  5min / All  |
 5min / All  |  5min / All  |  5min / All  |  5min / All  |
-----------------------------------------------------------------------------------------------------------------------------------
|  cdf901| 4a0b00| RD|      T |         IT->N|    11| NVMe|       /1.885m|       /1.883m|       /      |
  /3.870K|       /    3 |       /      |       /      |
|  cdf901| 4a0b00| WR|      T |         IT->N|    11| NVMe|       /  683u|       /  122u|       /      |
  /  198 |       /    2 |       /      |       /      |
|  c9f901| 4a0b00| RD|      T |         IT->N|    11| NVMe|       /1.969m|       /1.968m|       /      |
  / 1012 |       /    4 |       /      |       /      |
|  c9f901| 4a0b00| WR|      T |         IT->N|    11| NVMe|       /  912u|       /  600u|       /      |
  /  272 |       /    2 |       /      |       /      |
|  c8f901| 4a0b00| RD|      T |         IT->N|    11| NVMe|       /1.959m|       /1.958m|       /      |
  /1.179K|       /    4 |       /      |       /      |
|  c8f901| 4a0b00| WR|      T |         IT->N|    11| NVMe|       /1.038m|       /  798u|       /      |
  /  119 |       /    2 |       /      |       /      |
|  ccf901| 4a0b00| RD|      T |         IT->N|    11| NVMe|       /1.955m|       /1.953m|       /      |
  /1.528K|       /    3 |       /      |       /      |
|  ccf901| 4a0b00| WR|      T |         IT->N|    11| NVMe|       /  779u|       /  555u|       /3.925K|
  /245.3M|       /    2 |       /      |       /      |
-----------------------------------------------------------------------------------------------------------------------------------
===================================================================================================================================
```

To display the flow details for all source device IDs:

```
switch:admin> trafopt --show -flow -srcdev "*"
All the flows and their associated Performance Group
-------------------------------------------------------------------------
Performance                 SrcDev          DstDev          VC num
Group
-------------------------------------------------------------------------
PG_4G_8G_16G                0x4a3700        0xcdf301        5
PG_4G_8G_16G                0x4a3700        0xcdf101        3
PG_SCSI_32G                 0x4a2200        0xccf501        16
PG_SCSI_32G                 0x4a5800        0xcdf401        15
```

```
PG_SCSI_32G                 0x4a2200        0xc8f501        16
PG_NVME_32G                 0x4a0b00        0xc9f601        23
PG_NVME_32G                 0x4a0b00        0xccf701        23
PG_NVME_64G                 0x4a0b00        0xc9f901        24
PG_NVME_64G                 0x4a0b00        0xcdf901        24
PG_NVME_64G                 0x4a0b00        0xc8f901        24
PG_NVME_64G                 0x4a0b00        0xccf901        24
```

To display the flow details for a particular source device ID:

```
switch:admin> trafopt --show -flow -srcdev 0x4a3700
Flows associated with Source dev 0x4a3700
----------------------------------------------------------------------
Performance                 SrcDev          DstDev          VC num
Group
----------------------------------------------------------------------
PG_4G_8G_16G                0x4a3700        0xcdf801        2
PG_4G_8G_16G                0x4a3700        0xcdf201        4
PG_4G_8G_16G                0x4a3700        0xcdf301        5
PG_4G_8G_16G                0x4a3700        0xcdf101        3
```

To display the flow details for a source device ID and destination device ID:

```
switch:admin> trafopt --show -flow -srcdev
0x4a3700 -dstdev 0xcdf101
Flows associated with Source dev 0x4a3700 Destination dev 0xcdf101
----------------------------------------------------------------------
Performance                 SrcDev          DstDev          VC num
Group
-------------------------------------------------------------------------
PG_4G_8G_16G                0x4a3700        0xcdf101        3
```

To display all flows and performance groups for all destination devices:

```
switch:admin> trafopt --show -flow -dstdev "*"
All the flows and their associated Performance Group
------------------------------------------------------------------------------------
Performance                 SrcDev          DstDev          VC num
Group
------------------------------------------------------------------------------------
PG_4G_8G_16G                0x4a3700        0xcdf301        5
PG_4G_8G_16G                0x4a3700        0xcdf101        3
PG_SCSI_32G                 0x4a2200        0xccf501        16
PG_SCSI_32G                 0x4a5800        0xcdf401        15
PG_SCSI_32G                 0x4a2200        0xc8f501        16
PG_NVME_32G                 0x4a0b00        0xc9f601        23
PG_NVME_32G                 0x4a0b00        0xccf701        23
PG_NVME_64G                 0x4a0b00        0xc9f901        24
PG_NVME_64G                 0x4a0b00        0xcdf901        24
PG_NVME_64G                 0x4a0b00        0xc8f901        24
PG_NVME_64G                 0x4a0b00        0xccf901        24
```

To display performance groups and their associated profile details:

```
switch:admin> trafopt --show -profile
Active Profile: Sys_TrafOpt_Version2
```

```
Available Traffic Optimizer profiles to activate

Number of Profiles: 3
==============================================================================================
|         Profile Name |          Description             |          Use-cases              |
==============================================================================================
|Sys_TrafOpt_Version1  | This System profile contains Pe  |Optimal for fabrics which needs  |
|                      | rformance Groups that are creat  | isolation across multiple gene  |
|                      | ed based on device speed         |ration speed devices             |
|                      |                                  |                                 |

----------------------------------------------------------------------------------------------
|Sys_TrafOpt_Version2* | This System profile contains Pe  |Optimal for fabrics which need   |
|                      | rformance Groups that are creat  |isolation across multiple gener  |
|                      | ed based on device speed, proto  |ation speeds, protocols and als  |
|                      | col and congestion state         |o protection from congestion ev  |
|                      |                                  |ents.                            |

----------------------------------------------------------------------------------------------
|TrafOpt_Custom        | This custom profile contains Pe  |Optimal for customer fabrics wh  |
|                      | rformance Groups that are creat  |ich support limited number of s  |
|                      | ed based on user inputs on the   |peeds and protocols and also re  |
|                      | fabric environment like speed a  |quire protection from congestio  |
|                      | nd protocol.                     |n events                         |
|                      |                                  |                                 |

----------------------------------------------------------------------------------------------
Active profile is marked with *.
----------------------------------------------------------------------------------------------
```

To display performance groups and their associated profile details in an IPS logical switch:

```
switch:admin> trafopt --show -profile
Active Profile: Sys_TrafOpt_Ips_Version1

Available Traffic Optimizer profiles to activate

Number of Profiles: 1
==================================================================================================
|         Profile Name     |          Description             |          Use-cases             |
==================================================================================================
|Sys_TrafOpt_Ips_Version1  | This System profile is designed  | Optimal for IP storage fabrics.|
|                          | for IP Storage network. The perf |                                |
|                          | ormance groups are created based |                                |
|                          | on nature of the traffic i.e.    |                                |
|                          | Lossy.                           |                                |
----------------------------------------------------------------------------------------------
Active profile is marked with *.
----------------------------------------------------------------------------------------------
```

To schedule a profile:

```
switch:admin> trafopt --schedule Sys_TrafOpt_Version2 -delay 30
```

```
Profile migration scheduled successfully.

switch:admin> trafopt --show
All Performance Group statistics of active profile

Active Profile: Sys_TrafOpt_Version1
-----------------------------------------------------------------------------------------------------------------------------
Performance Groups              |          Flow        |               |               |  Aggregate    |
 Aggregate    |
                                |----------------------|   IO Error    |    MAX IO     |  Throughput   |  IOPS
         |
(Name)                          |Active| High Latency  |   Count       |    Latency    |  (bytes/sec)  |
 (IOs/sec)    |
                                |count | violation     |               |               |               |
          |
-----------------------------------------------------------------------------------------------------------------------------
                                |      | 5min  | 24hr  | 5min  | 24hr  | 5min  |  24hr | 5min  | 24hr  | 5min
  | 24hr  |
-----------------------------------------------------------------------------------------------------------------------------
  PG_4G_8G_16G                  |0     |0      |0      |0      |0      |0      |0      |0      |0      |0
  |0      |
  PG_SCSI_64G                   |0     |0      |0      |0      |0      |0      |0      |0      |0      |0
  |0      |
  PG_SCSI_32G                   |0     |0      |0      |0      |0      |0      |0      |0      |0      |0
  |0      |
  PG_SDDQ_QOS_LOW_1             |0     |0      |0      |0      |0      |0      |0      |0      |0      |0
  |0      |
  PG_SDDQ_QOS_LOW_2             |0     |0      |0      |0      |0      |0      |0      |0      |0      |0
  |0      |
  PG_QOS_HIGH_1                 |0     |0      |0      |0      |0      |0      |0      |0      |0      |0
  |0      |
  PG_QOS_HIGH_2                 |0     |0      |0      |0      |0      |0      |0      |0      |0      |0
  |0      |
  PG_QOS_HIGH_3                 |0     |0      |0      |0      |0      |0      |0      |0      |0      |0
  |0      |
  PG_QOS_HIGH_4                 |0     |0      |0      |0      |0      |0      |0      |0      |0      |0
  |0      |
  PG_QOS_HIGH_5                 |0     |0      |0      |0      |0      |0      |0      |0      |0      |0
  |0      |
-----------------------------------------------------------------------------------------------------------------------------
| #- Performance Groups that are not fully functional in all the switches in the fabric.
          |
-----------------------------------------------------------------------------------------------------------------------------
Number of Available Traffic Optimizer Profiles : 3
Profile scheduled to Activate: Sys_TrafOpt_Version2
Activate Delay: 30 days 0 hours 0 minutes
-------------------------------------------------------------------------------------------
```

To abort a schedule:

```
switch:admin> trafopt --abort_schedule
Aborted the profile schedule successfully.
```

```
switch:admin> trafopt --show
All Performance Group statistics of active profile

Active Profile: Sys_TrafOpt_Version1
-----------------------------------------------------------------------------------------------------------------------------
Performance Groups              |          Flow        |               |               |  Aggregate    |
 Aggregate    |
                                |----------------------|   IO Error    |    MAX IO     |  Throughput   |  IOPS
         |
(Name)                          |Active| High Latency  |   Count       |    Latency    |  (bytes/sec)  |
 (IOs/sec)    |
                                |count | violation     |               |               |               |
          |
-----------------------------------------------------------------------------------------------------------------------------
                                |      | 5min  | 24hr  | 5min  | 24hr  | 5min  |  24hr | 5min  | 24hr  | 5min
  | 24hr  |
-----------------------------------------------------------------------------------------------------------------------------
  PG_4G_8G_16G                  |0     |0      |0      |0      |0      |0      |0      |0      |0      |0
  |0      |
  PG_SCSI_64G                   |0     |0      |0      |0      |0      |0      |0      |0      |0      |0
  |0      |
  PG_SCSI_32G                   |0     |0      |0      |0      |0      |0      |0      |0      |0      |0
  |0      |
  PG_SDDQ_QOS_LOW_1             |0     |0      |0      |0      |0      |0      |0      |0      |0      |0
  |0      |
  PG_SDDQ_QOS_LOW_2             |0     |0      |0      |0      |0      |0      |0      |0      |0      |0
  |0      |
  PG_QOS_HIGH_1                 |0     |0      |0      |0      |0      |0      |0      |0      |0      |0
  |0      |
  PG_QOS_HIGH_2                 |0     |0      |0      |0      |0      |0      |0      |0      |0      |0
  |0      |
  PG_QOS_HIGH_3                 |0     |0      |0      |0      |0      |0      |0      |0      |0      |0
  |0      |
  PG_QOS_HIGH_4                 |0     |0      |0      |0      |0      |0      |0      |0      |0      |0
  |0      |
  PG_QOS_HIGH_5                 |0     |0      |0      |0      |0      |0      |0      |0      |0      |0
  |0      |
-----------------------------------------------------------------------------------------------------------------------------
| #- Performance Groups that are not fully functional in all the switches in the fabric.
          |
-----------------------------------------------------------------------------------------------------------------------------
Number of Available Traffic Optimizer Profiles : 3
No scheduled Profile to Activate
-----------------------------------------------------------------------------------------------
```

To activate a Traffic Optimizer profile:

```
switch:admin> trafopt --activate Sys_TrafOpt_Version2
Profile activation completed successfully.

switch:admin> trafopt --show
All Performance Group statistics of active profile

Active Profile: Sys_TrafOpt_Version2
```

```
-----------------------------------------------------------------------------------------------------------------------------------
Performance Groups              |          Flow        |               |               |  Aggregate    |
 Aggregate    |
                                |----------------------|   IO Error    |    MAX IO     |  Throughput   |  IOPS
         |
(Name)                          |Active| High Latency  |   Count       |    Latency    |  (bytes/sec)  |
 (IOs/sec)    |
                                |count | violation     |               |               |               |
          |
-----------------------------------------------------------------------------------------------------------------------------------
                                |      | 5min  | 24hr  | 5min  | 24hr  | 5min  |  24hr | 5min  | 24hr  | 5min
  | 24hr  |
-----------------------------------------------------------------------------------------------------------------------------------
  PG_4G_8G_16G                  |0     |0      |0      |0      |0      |0      |0      |0      |0      |0
  |0      |
  PG_SCSI_64G                   |0     |0      |0      |0      |0      |0      |0      |0      |0      |0
  |0      |
  PG_SCSI_32G                   |0     |0      |0      |0      |0      |0      |0      |0      |0      |0
  |0      |
  PG_NVME_64G                   |0     |0      |0      |0      |0      |0      |0      |0      |0      |0
  |0      |
  PG_NVME_32G                   |0     |0      |0      |0      |0      |0      |0      |0      |0      |0
  |0      |
  PG_SDDQ_QOS_LOW_1             |0     |0      |0      |0      |0      |0      |0      |0      |0      |0
  |0      |
  PG_SDDQ_QOS_LOW_2             |0     |0      |0      |0      |0      |0      |0      |0      |0      |0
  |0      |
  PG_QOS_HIGH_1                 |0     |0      |0      |0      |0      |0      |0      |0      |0      |0
  |0      |
  PG_QOS_HIGH_2                 |0     |0      |0      |0      |0      |0      |0      |0      |0      |0
  |0      |
  PG_QOS_HIGH_3                 |0     |0      |0      |0      |0      |0      |0      |0      |0      |0
  |0      |
  PG_QOS_HIGH_4                 |0     |0      |0      |0      |0      |0      |0      |0      |0      |0
  |0      |
  PG_QOS_HIGH_5                 |0     |0      |0      |0      |0      |0      |0      |0      |0      |0
  |0      |
-----------------------------------------------------------------------------------------------------------------------------------
| #- Performance Groups that are not fully functional in all the switches in the fabric.
          |
-----------------------------------------------------------------------------------------------------------------------------------
Number of Available Traffic Optimizer Profiles : 3
No scheduled Profile to Activate
-------------------------------------------------------------------------------------------
```

To update a Custom Profile:

```
switch:admin> trafopt --update -profile
TrafOpt_Custom -add -protocol scsi -speed 4

Updation of configuration for custom profile is successful.

switch:admin> trafopt --show -profile TrafOpt_Custom
========================================
```

```
Profile Name             : TrafOpt_Custom
Status                   : Inactive
Pending Definition       : SCSI-16G, SCSI-8G, SCSI-4G


Performance Groups associated with profile
==========================================================================================
| Performance Groups Category    |           Description                                |
==========================================================================================
| PG_DEFAULT                     | Flows which do not belong to user-selected speed/protocol will   |
|                                | be classified here                                                |
------------------------------------------------------------------------------------------
| PG_SCSI_16G                    | Flows destined to SCSI 16G devices                                |
------------------------------------------------------------------------------------------
| PG_SCSI_8G                     | Flows destined to SCSI 8G devices                                 |
------------------------------------------------------------------------------------------
| PG_SCSI_4G                     | Flows destined to SCSI 4G devices                                 |
------------------------------------------------------------------------------------------
| PG_OVER_SUBSCRIPTION_DEFAULT   | Flows destined to oversubscribed devices present in PG_DEFAULT   |
------------------------------------------------------------------------------------------
| PG_OVER_SUBSCRIPTION_16G       | Flows destined to 16G oversubscribed devices                      |
------------------------------------------------------------------------------------------
| PG_OVER_SUBSCRIPTION_8G        | Flows destined to 8G oversubscribed devices                       |
------------------------------------------------------------------------------------------
| PG_OVER_SUBSCRIPTION_4G        | Flows destined to 4G oversubscribed devices                       |
------------------------------------------------------------------------------------------
| PG_SDDQ_QOS_LOW_1              | User Configured QoS-Low and Credit Stall Flows                    |
| PG_SDDQ_QOS_LOW_2              |                                                                   |
------------------------------------------------------------------------------------------
| PG_QOS_HIGH_1                  | User configured QoS-High flows                                    |
| PG_QOS_HIGH_2                  |                                                                   |
| PG_QOS_HIGH_3                  |                                                                   |
| PG_QOS_HIGH_4                  |                                                                   |
| PG_QOS_HIGH_5                  |                                                                   |
------------------------------------------------------------------------------------------

switch:admin> trafopt --update -profile
TrafOpt_Custom -remove -protocol scsi -speed 16
Updation of configuration for custom profile is successful.

switch:admin> trafopt --show -profile TrafOpt_Custom
========================================
Profile Name             : TrafOpt_Custom
Status                   : Inactive
Pending Definition       : SCSI-8G, SCSI-4G


Performance Groups associated with profile
==========================================================================================
| Performance Groups Category    |           Description                                |
==========================================================================================
| PG_DEFAULT                     | Flows which do not belong to user-selected speed/protocol will   |
|                                | be classified here                                                |
```

```
-----------------------------------------------------------------------------------------------
| PG_SCSI_8G_1                    | Flows destined to SCSI 8G devices                            |
| PG_SCSI_8G_2                    |                                                              |
-----------------------------------------------------------------------------------------------
| PG_SCSI_4G_1                    | Flows destined to SCSI 4G devices                            |
| PG_SCSI_4G_2                    |                                                              |
-----------------------------------------------------------------------------------------------
| PG_OVER_SUBSCRIPTION_DEFAULT    | Flows destined to oversubscribed devices present in PG_DEFAULT   |
-----------------------------------------------------------------------------------------------
| PG_OVER_SUBSCRIPTION_8G         | Flows destined to 8G oversubscribed devices                  |
-----------------------------------------------------------------------------------------------
| PG_OVER_SUBSCRIPTION_4G         | Flows destined to 4G oversubscribed devices                  |
-----------------------------------------------------------------------------------------------
| PG_SDDQ_QOS_LOW_1               | User Configured QoS-Low and Credit Stall Flows               |
| PG_SDDQ_QOS_LOW_2               |                                                              |
-----------------------------------------------------------------------------------------------
| PG_QOS_HIGH_1                   | User configured QoS-High flows                               |
| PG_QOS_HIGH_2                   |                                                              |
| PG_QOS_HIGH_3                   |                                                              |
| PG_QOS_HIGH_4                   |                                                              |
| PG_QOS_HIGH_5                   |                                                              |
-----------------------------------------------------------------------------------------------
```

To display active performance groups:

```
switch:admin> trafopt --show -pg
Active Performance Groups associated with Sys_TrafOpt_Version2:

  PG_4G_8G_16G            (Flows destined to 4G, 8G and 16G devices)
  PG_SCSI_64G             (Flows destined to SCSI 64G devices)
  PG_SCSI_32G             (Flows destined to SCSI 32G devices)
  PG_NVME_64G             (Flows destined to NVME 64G devices)
  PG_NVME_32G             (Flows destined to NVME 32G devices)
  PG_SDDQ_QOS_LOW_1       (User configured Qos-Low flows)
  PG_SDDQ_QOS_LOW_2       (User configured Qos-Low flows)
  PG_QOS_HIGH_1           (User configured Qos-High flows)
  PG_QOS_HIGH_2           (User configured Qos-High flows)
  PG_QOS_HIGH_3           (User configured Qos-High flows)
  PG_QOS_HIGH_4           (User configured Qos-High flows)
  PG_QOS_HIGH_5           (User configured Qos-High flows)
```

See Also

None

trunkDebug

Debugs a trunk link failure.

Synopsis

trunkdebug *<port1> <port2>*

Description

Use this command to debug a trunk link failure. This command reports one of the following messages, based on the trunking properties of the two specified ports:

- Switch does not support trunking
- Trunking license required
- port *port_id* is not E_Port/F_Port/EX_Port
- port *port_id* trunking disabled
- port *port_id* speed is not 4G, 8G, 10G, 16G, 32G, 53G, or 64G
- port *port_id* and port *port_id* are not in same port group
- port *port_id* and port *port_id* connect to different switches
- port *port_id* and port *port_id* connect to the switch WWN
- port *port_id* is not a trunking port due to: E_Port/F_Port/EX_Port being disabled, or trunking might be disabled at remote port
- port *port_id* and port *port_id* cannot trunk; verify the link length to make sure the difference is less than 400m for a Brocade Gen 6 platform. For a Brocade Gen 7 platform, the link lengths are as follows:
  - For Long Distance links at any speed, the difference must be less than 400m.
  - For non-Long Distance links at speeds less than 64G, the difference must be less than 400m.
  - For non-Long Distance links at 64G speed, the difference must be less than 30m.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

port1	Specifies the port index number of port 1. Use the **switchShow** command to view the index numbers for a port. This operand is required.
port2	Specifies the port index number of port 2. Use the **switchShow** command to view the index numbers for a port. This operand is required.

Examples

To debug a trunk connection:

```
switch:admin> trunkdebug 104 105
port 104 and 105 connects to different devices
port 104 connecting to device xx:xx:xx:xx:xx:xx:xx:xx
port 105 connecting to device xx:xx:xx:xx:xx:xx:xx:xx
```

See Also

portCfgTrunkPort, switchCfgTrunk, trunkShow

trunkShow

Displays trunking information.

Synopsis

```
trunkshow [-perf [-swname] | -swname | -slotport]
```

Description

Use this command to display trunking information of E_Ports, F_Ports, and EX_Ports.

In case of firmware upgrade, the neighbor port number and neighbor WWN for F_Port trunk will not be available and displayed as NA. The information will be available once the trunk ports are toggled.

The command displays the following fields:

Trunking Group Number	Displays each trunking group on a switch. All ports that are part of this trunking group are displayed.
Port to port connections	Displays the port-to-port trunking connections.
WWN	Displays the world wide name of the connected port.
Domain	Displays the domain IDs of the switches directly connected to the physical ports. In case of an FC Router backbone fabric interlinking several edge fabrics, the domain ID displayed for an E_Port trunk refers to a domain of a switch within the backbone fabric, whereas the domain ID displayed for an EX_Port trunk refers to the domain ID of a switch in the edge fabric. Because they are independent fabrics, it is possible that both the backbone and the edge fabric may have the same domain ID assigned to switches. If this is the case, run **switchShow** to obtain information on the port types of the local switch and the WWNs of the remote switches. Refer to the Example section for an illustration.
deskew	The difference between the time it takes for traffic to travel over each ISL and the time it takes through the shortest ISL in the group plus the minimum deskew value. The value is expressed in nanoseconds divided by 10. For Brocade Gen 6 platform, the minimum deskew value is from 4 through 14 and for Brocade Gen7 platform the minimum deskew value is from 1 through 10.
Type	Displays whether the trunking port connection is an E_Port or F_Port or an EX_Port.
Master	Displays whether this trunking port connection is the master port connection for the trunking group.
*** (AG device)**	Displays whether the connected device is from Access Gateway switch.

When used with the **-perf** option, the command output displays the following additional information:

bandwidth	The bandwidth (Rx, Tx, and the combined total for Tx+Rx) of the trunk group. Values are displayed as either bits per second (b/s), kilobits per second (Kb/s), megabits per second (Mb/s), or gigabits per second (Gb/s), rounded down to the next integer.
capacity	Displays the maximum frame transmission/reception capacity in Gb/s.
utilization	Displays the utilized frame rate(Rx, Tx, and the combined total for Tx+Rx) of the trunk group. Results are displayed for the previous second. Values are displayed as either bits per second (b/s), kilobits per second (Kb/s), megabits per second (Mb/s), or gigabits per second (Gb/s), rounded down to the next integer.
%	Displays the percentage of link utilization (Rx, Tx, and the combined total for Tx+Rx). Even when the link utilization is 100%, the value will be lesser than the bandwidth value, due to the 8b/10b encoding and the control words transmitted. For example, the throughput for an 8Gb/s link at 100% utilization would be approximately 6.8Gb/s.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

-perf	Displays the total bandwidth, throughput, and percentage of link utilization information for the trunk group (Rx, Tx, and combined total for Tx+Rx). This operand is optional.
-swname	Displays the neighbor switch name. This operand is optional.
-slotport	Displays the neighbor port detail in *slot/port* format. This operand is optional.

Examples

To display trunking information for a switch:

```
switch:admin> trunkshow
1:   97-> 1  10:00:c4:f5:7c:00:ac:e0 1 deskew 5 E-Port MASTER
     96-> 0  10:00:c4:f5:7c:00:ac:e0 1 deskew 5

2:  104-> 12 30:0c:c4:f5:7c:16:99:94   deskew 6 F-Port MASTER
    105-> 13 20:0d:c4:f5:7c:16:99:94   deskew 5

3:  107-> 11 20:0b:c4:f5:7c:00:4b:c0   deskew 5 F-Port * MASTER
    106-> 10 20:0a:c4:f5:7c:00:4b:c0   deskew 5

* AG device
```

To display trunking information for a switch post upgrade from FOS v8.x to FOS v9.0.1:

```
switch:admin> trunkshow
1:  0-> NA          NA                 deskew 5 F-Port    MASTER
    2-> NA          NA                 deskew 5

2: 17->323 10:00:88:94:71:a5:99:63   2 deskew 5 E-Port    MASTER
   19->324 10:00:88:94:71:a5:99:63   2 deskew 5
   16->322 10:00:88:94:71:a5:99:63   2 deskew 5

3: 24->326 10:00:88:94:71:a5:99:63   2 deskew 0 E-Port    MASTER

NA - Information is currently not available
```

To display trunking information for a switch that is part of an FC Router backbone fabric interlinking several edge fabrics (see the EX_Port with WWN "10:00:00:05:1e:35:b3:03" and the E_Port with WWN "10:00:00:05:1e:37:12:13" in the output below):

```
switch:admin> trunkshow
4: 49->  0 10:00:00:05:1e:35:b3:03   4 deskew 16 EX-Port   MASTER
   54->  2 10:00:00:05:1e:35:b3:03   4 deskew 16
   53->  5 10:00:00:05:1e:35:b3:03   4 deskew 16
   50->  6 10:00:00:05:1e:35:b3:03   4 deskew 15
   51->  4 10:00:00:05:1e:35:b3:03   4 deskew 16
   52->  7 10:00:00:05:1e:35:b3:03   4 deskew 67
   55->  3 10:00:00:05:1e:35:b3:03   4 deskew 16
   48->  1 10:00:00:05:1e:35:b3:03   4 deskew 15

5: 71-> 22 10:00:00:05:1e:37:12:13   4 deskew 17 E-Port    MASTER
   67-> 17 10:00:00:05:1e:37:12:13   4 deskew 16
   70-> 20 10:00:00:05:1e:37:12:13   4 deskew 16
   69-> 21 10:00:00:05:1e:37:12:13   4 deskew 16
   66-> 18 10:00:00:05:1e:37:12:13   4 deskew 17
   68-> 23 10:00:00:05:1e:37:12:13   4 deskew 17
   64-> 16 10:00:00:05:1e:37:12:13   4 deskew 15
   65-> 19 10:00:00:05:1e:37:12:13   4 deskew 16

switch:admin> switchshow
 48 4  0 013000 id  N4   Online   EX-Port  \
```

```
   (Trunk port, master is Slot  4 Port  1 )
 49 4  1 013100 id  N4   Online   EX-Port \
    10:00:00:05:1e:35:b3:03 "SW4100_33" (fabric id = 100 )\
    (Trunk master) E-Port   \
    50:00:51:e3:70:bb:af:c1 "fcr_xd_9_100"
 50 4  2 013200 id  N4   Online   EX-Port \
    (Trunk port, master is Slot  4 Port  1 )
 51 4  3 013300 id  N4   Online   EX-Port  \
   (Trunk port, master is Slot  4 Port  1 )
 52 4  4 013400 id  N4   Online   EX-Port  \
   (Trunk port, master is Slot  4 Port  1 )
 53 4  5 013500 id  N4   Online   EX-Port  \
   (Trunk port, master is Slot  4 Port  1 )
 54 4  6 013600 id  N4   Online   EX-Port  \
   (Trunk port, master is Slot  4 Port  1 )
 55 4  7 013700 id  N4   Online   EX-Port  \
   (Trunk port, master is Slot  4 Port  1 )
64 7  0 014000 id  N4   Online   E-Port  \
   (Trunk port, master is Slot  7 Port  7 )
 65 7  1 014100 id  N4   Online   E-Port  \
   (Trunk port, master is Slot  7 Port  7 )
 66 7  2 014200 id  N4   Online   E-Port  \
   (Trunk port, master is Slot  7 Port  7 )
 67 7  3 014300 id  N4   Online   E-Port  \
   (Trunk port, master is Slot  7 Port  7 )
 68 7  4 014400 id  N4   Online   E-Port  \
   (Trunk port, master is Slot  7 Port  7 )
 69 7  5 014500 id  N4   Online   E-Port  \
   (Trunk port, master is Slot  7 Port  7 )
 70 7  6 014600 id  N4   Online   E-Port  \
   (Trunk port, master is Slot  7 Port  7 )
 71 7  7 014700 id  N4   Online   E-Port  \
   10:00:00:05:1e:37:12:13 "SW4900_43" (downstream)(Trunk master)
```

To display trunking information along with bandwidth information:

```
switch:admin> trunkshow -perf
1: 32-> 32 10:00:00:27:f8:f0:3a:77 83 deskew 0 E-Port MASTER
   Tx: Bandwidth 16.00Gbps, Capacity 13.60Gbps, Utilization 0.00bps (0.00%)
   Rx: Bandwidth 16.00Gbps, Capacity 13.60Gbps, Utilization 0.00bps (0.00%)
   Tx+Rx: Bandwidth 32.00Gbps, Capacity 27.20Gbps, Utilization 0.00bps (0.00%)

2: 52-> 52 10:00:00:27:f8:f0:3a:77 83 deskew 6 E-Port MASTER
   53-> 53 10:00:00:27:f8:f0:3a:77 83 deskew 5
   54-> 54 10:00:00:27:f8:f0:3a:77 83 deskew 5
   55-> 55 10:00:00:27:f8:f0:3a:77 83 deskew 5
   Tx: Bandwidth 64.00Gbps, Capacity 54.40Gbps, Utilization 0.00bps (0.00%)
   Rx: Bandwidth 64.00Gbps, Capacity 54.40Gbps, Utilization 0.00bps (0.00%)
   Tx+Rx: Bandwidth 128.00Gbps, Capacity 108.80Gbps, Utilization 0.00bps (0.00%)

3: 62-> 62 10:00:c4:f5:7c:16:98:75 82 deskew 5 E-Port MASTER
   63-> 63 10:00:c4:f5:7c:16:98:75 82 deskew 5
   Tx: Bandwidth 32.00Gbps, Capacity 27.20Gbps, Utilization 26.54Gbps (97.59%)
   Rx: Bandwidth 32.00Gbps, Capacity 27.20Gbps, Utilization 26.55Gbps (97.59%)
```

```
   Tx+Rx: Bandwidth 64.00Gbps, Capacity 54.40Gbps, Utilization 53.09Gbps (97.59%)
```

To display trunking information along with switch name:

```
switch:admin> trunkshow -swname
 1:103->103 10:00:00:05:33:e7:d0:10  10 SWITCH-X7_4    deskew 5 E-Port    MASTER
   102->102 10:00:00:05:33:e7:d0:10  10 SWITCH-X7_4    deskew 6
```

To display trunking information, with switch name and bandwidth information:

```
switch:admin> trunkshow -perf -swname
1:281->407 10:00:88:94:71:df:c2:ed 15 x7-8 deskew 0 E-Port MASTER
  Tx: Bandwidth 32.00Gbps, Capacity 27.20Gbps, Utilization 0.00bps (0.00%)
  Rx: Bandwidth 32.00Gbps, Capacity 27.20Gbps, Utilization 0.00bps (0.00%)
  Tx+Rx: Bandwidth 64.00Gbps, Capacity 54.40Gbps, Utilization 0.00bps (0.00%)

2:287-> 18 10:00:d8:1f:cc:7e:22:50 239 sw0_128 deskew 0 E-Port MASTER
  Tx: Bandwidth 32.00Gbps, Capacity 27.20Gbps, Utilization 0.00bps (0.00%)
  Rx: Bandwidth 32.00Gbps, Capacity 27.20Gbps, Utilization 0.00bps (0.00%)
  Tx+Rx: Bandwidth 64.00Gbps, Capacity 54.40Gbps, Utilization 0.00bps (0.00%)

3:380-> 56 10:00:88:94:71:98:c3:62 27 G620_27 deskew 5 E-Port MASTER
  381-> 57 10:00:88:94:71:98:c3:62 27 G620_27 deskew 5
  382-> 58 10:00:88:94:71:98:c3:62 27 G620_27 deskew 5
  383-> 59 10:00:88:94:71:98:c3:62 27 G620_27 deskew 5
  Tx: Bandwidth 128.00Gbps, Capacity 108.80Gbps, Utilization 0.00bps (0.00%)
  Rx: Bandwidth 128.00Gbps, Capacity 108.80Gbps, Utilization 0.00bps (0.00%)
  Tx+Rx: Bandwidth 256.00Gbps, Capacity 217.60Gbps, Utilization 0.00bps (0.00%)
```

To display neighbor details:

```
switch:admin> trunkshow -slotport
1: 0/ 16-> 3/ 40   10:00:00:05:33:e7:d0:10  20 deskew 0 E-Port    MASTER
```

See Also

portCfgTrunkPort, switchCfgTrunk

tsClockServer

Displays or sets the Network Time Protocol (NTP) Server addresses.

Synopsis

```
tsclockserver [ipaddr [;ipaddr ...]]
tsclockserver --set ipaddr  [-index key_index]
tsclockserver --change ipaddr -index key_index
tsclockserver --addkey -index key_index
 -type key_type -key key
tsclockserver --delkey {-index key_index | -all}
tsclockserver --authspec {symmetric | noauth}
tsclockserver --legacy {enable | disable}
tsclockserver --show
tsclockserver --showkeys [-s]
tsclockserver LOCL
tsclockserver --help
```

Description

Use this command to configure the switch clock server to external NTP servers.

This command accepts a list of NTP server addresses. The NTP server addresses can be passed in either IPV4 or IPV6 address format or as a DNS server name. When multiple NTP server addresses are specified and legacy mode is enabled, **tsClockServer** sets the first synchronizable server as the active NTP server. The remaining addresses are stored as backup servers, which can take over if the active NTP server fails. When legacy mode is disabled, all servers in the clock server list are used as NTP servers.

The time server daemon synchronizes fabric time by sending updates of the Principal or Primary FCS local switch time periodically to every switch in the fabric. The time server daemon runs on all switches in the fabric, but only the Principal switch (when an FCS policy is not enabled) or the Primary FCS switch (when an FCS policy is enabled) broadcasts the time updates across the fabric. As any VF-enabled switch synchronizes to configured NTP server on its own, received time update is dropped. Only the non-VF switches adjusts the clock to the time update received.

All switches in the fabric maintain the current clock server IP address in nonvolatile memory. By default, this value is **LOCL**., that is, the local clock of the Principal or the Primary FCS switch is the default clock server. Changes to the clock server on the Principal or Primary FCS switch are propagated to all switches in the fabric.

Because there is only single clock on the switch, for the time server to function as intended, ensure that clock server configuration is same across the fabric including logical switches.

Use this command without parameters to display the active NTP server and the configured NTP server list. Specify the NTP server(s) as operand to set the clock server and enable fabric-wide clock synchronization with the specified clock server. A value of **LOCL** may be specified as operand to set the clock server back to default. One instance of clock is present per switch, only the default switch can update the system clock and hardware clock on receiving a time update. The clock can also be updated using **date** command in any switch context, if the clock server configured is **LOCL**.

Each **ipaddr** specified should be the IP address of an NTP server and should be accessible from the switch. The NTP server must support a full NTP client. When a clock server IP address other than **LOCL** is specified but is not used by the fabric, a warning is displayed and logged. when a clock server other than local (LOCL) is configured, the **date** command is restricted to display only. See the **date** help for details.

Notes

When an FCS policy is enabled, this command can be run on all switches to view the clock server value. However, you can only modify the clock server value from the Primary FCS switch.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

ipaddr	Specify the IP address of the NTP server or **LOCL** to use the local clock of the Principal or Primary FCS switch as the clock server. If more than one IP address is specified, separate the IP addresses by semicolons and enclose the list in double quotation marks. This operand is optional; if omitted, the current NTP server configuration is displayed. The default NTP server is **LOCL**.
--set *ipaddr* [-index *key_index*]	Sets NTP server(s) and selects symmetric key index(es). The **-index** suboption is optional and this defaults to **NONE** if no key index is selected. The server list and the key index list must be equal in length otherwise an error is returned and restarts NTP service. For all key types, for the maximum key length, NTP will not consider anything greater than 64. If a combination of legacy setting with the new **--set** is executed, the new **--set** takes precedent over the legacy setting. To remove all servers, *server* must be set to **LOCL**. To remove a symmetric key association, *key_index* must be set to **NONE**.
--change *ipaddr* [-index *key_index*]	Modifies NTP server symmetric key index. This option restarts the NTP service.

--addkey	Inserts symmetric key for use and verifies that the key index is not already in use. The index value must be a positive integer from 1 to 65535. A maximum of 256 keys with hexadecimal characters were allowed. Beginning with Fabric OS v9.2.2, the **-key** option is made as interactive and not a valid command line argument.
--delkey	Deletes symmetric key through key index or deletes all the symmetric keys through **-all** option. Verifies that the key is not in use by a server before deleting.
--authspec	Enables symmetric authentication or disables NTP authentication. The default value is **noauth**. This option restarts the NTP service. The following are the supported authentication types and its boundary conditions. • MD5 - minimum key length is 20; maximum key length 255 • HMAC-SHA1 - minimum key length is 40; maximum key length 255 • HMAC-SHA256 - minimum key length is 64; maximum key length 255 • CMAC-AES-128 - minimum key length is 32; maximum key length 255
--legacy	Enables or disables the legacy mode. This option restarts the NTP service.
--show	Displays NTP servers and authentication state information.
--showkeys	Dumps all the symmetric keys. Execute with **-s** in admin role to extract key information.
--help	Displays command usage.

Examples

To display the default clock server:

```
switch:admin> tsclockserver
LOCL
```

To set the NTP server to a specified IP address:

```
switch:admin> tsclockserver 123.123.123.123
Updating Clock Server configuration...done.
Updated with the NTP servers

switch:admin> tsclockserver
Active NTP Server              123.123.123.123
Configured NTP Server List     123.123.123.123
```

To configure multiple NTP servers:

```
switch:admin> tsclockserver "12.134.125.24; 12.234.87.01"
Updating Clock Server configuration...done.
```

To display NTP Authentication keys:

```
switch:admin> tsclockserver --showkeys
NTP Authentication Keys:
1 MD5  *****
11 SHA1 *****
```

To display NTP server authentication state:

```
switch:admin> tsclockserver --show
Active NTP Server    LOCL
Configured NTP Server List  LOCL
Configured NTP Key Index List NONE
Configured NTP Authspec Mode: NTP AUTHENTICATION DISABLED
Configured NTP Legacy Mode:  LEGACY MODE ENABLED
```

To set server and key index associated with each server:

```
switch:admin> tsclockserver --set "192.0.2.0;192.0.2.2"
-index "2;3"
Updating Clock Server configuration...
2021/06/25-23:42:05 (GMT), [TS-1013], 160, FID 128, INFO, sw0,
    NTP Clock Server List modified to 10.156.6.10;10.156.6.11 from LOCL.
2021/06/25-23:42:05 (GMT), [TS-1014], 161, FID 128, INFO, sw0,
    NTP Key Index List modified to 2;3 from NONE;NONE.
```

To change a single server's key index:

```
switch:admin> tsclockserver --change 192.0.2.0 -index NONE
Updating Clock Server key index...
2021/06/25-23:42:05 (GMT), [TS-1014], 161, FID 128, INFO, sw0,
    NTP Key Index List modified to NONE;3 from 2;3.
```

To add and delete a key:

```
switch:admin> tsclockserver --addkey -index 2 -type MD5
Enter key
2024/08/26-17:35:21 (GMT), [TS-1015], 35, FID 128, INFO, Brocade7810,
NTP Key with index 2 and key type MD5 added.

switch:admin> tsclockserver --delkey -index 2
Deleting authentication key ...
2024/08/26-17:35:21 (GMT), [TS-1016], 165, FID 128, INFO, sw0,
    NTP Key with index 2 deleted.
```

See Also

date

tsTimeZone

Displays or sets the system time zone.

Synopsis

tstimezone

tstimezone [**--interactive** | <**timezonename**>]

tstimezone [**--old**] <*hourOffset*> [,] [<*minuteOffset*>]

Description

Use this command to display or set the system time zone.

All switches maintain the current time zone setup in nonvolatile memory. Changing the time zone on a switch updates the local time zone setup and is reflected in local time calculations.

All switches are by default in the 0,0 time zone:, which is, GMT. If all switches in a fabric are located in the same time zone, you may leave the default time zone setup.

Time zone is used in computing local time for error reporting and logging. An incorrect time zone setup does not affect the switch operation in any way.

The time zone can be represented by the numerical difference from UTC rather than the country code in some cases.

The time zone can be specified in the following two ways, by name or in an hours and minutes offset format:

- The offset format is specified with the **--old** option, followed by an hour offset value and optionally a minute offset value. This option can be skipped if already in offset format.
- The time zone name format uses the timezone database, which automatically adjusts for Daylight Saving Time.

By default, the switch is in offset mode (**--old**), with zero offsets, that is, time is displayed in GMT. Use **tsTimeZone** <*timezonename*> to change the offset format to the timezone name format.

When executed without parameters, this command displays the current time zone configuration in the format in which it was set.

- Negative hour offset values mean that the local time is behind GMT; for example, -8,0 is GMT-08:00.
- Positive hour offset values mean the that local time is ahead of GMT; for example, 3,0 is GMT+03:00.

When Virtual Fabrics are enabled, the hardware clock is updated by the default switch in the chassis, and the time zone set on any logical switch applies to all logical switches on the chassis. The **tsTimeZone** command requires chassis permissions.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--old	Specifies the time zone in the offset format. This option can be skipped if already in offset format.	
	<hourOffset>	Specifies the number of hours relative to GMT. This operand must be specified as an integer. Valid values are -12 to 12. This operand is required with the **--old** option.
	<minuteOffset>	Specifies the number of minutes relative to hour offset. This operand must be specified as an integer and is valid only with the **--old** option. Valid values are -30, 0, or 30. This operand is optional; if not specified, the value defaults to 0.
<timezonename>	Specifies the name of a time zone from the time zone database. Use **tstimezone --interactive** for a listing of valid time zone name.	
--interactive	Interactively sets the timezone in name format.	

Examples

To display the current time zone setup and then change it to GMT-3:30:

```
switch:admin> tstimezone
Time Zone Hour Offset: 0
Time Zone Minute Offset: 0

switch:admin> tstimezone -3, -30
Updating timezone in progress. Please wait..
Timezone has been updated successfully.

switch:admin> tstimezone
Time Zone Hour Offset: -3
Time Zone Minute Offset: -30
```

To set the current timezone to the zone to Pacific Time using the interactive command mode:

```
 switch:admin> tsTimeZone --interactive
Please identify a location so that time zone rules can be set correctly.
```

```
Please select a continent or ocean.
1) Africa
2) Americas
3) Antarctica
4) Arctic Ocean
5) Asia
6) Atlantic Ocean
7) Australia
8) Europe
9) Indian Ocean
10) Pacific Ocean
Enter number or control-D to quit ?2
Please select a country.
 1) Anguilla                      28) Haiti
 2) Antigua & Barbuda             29) Honduras
 3) Argentina                     30) Jamaica
 4) Aruba                         31) Martinique
 5) Bahamas                       32) Mexico
 6) Barbados                      33) Montserrat
 7) Belize                        34) Nicaragua
 8) Bolivia                       35) Panama
 9) Bonaire Sint Eustatius & Saba 36) Paraguay
10) Brazil                        37) Peru
11) Canada                        38) Puerto Rico
12) Cayman Islands                39) Sint Maarten
13) Chile                         40) St Barthelemy
14) Colombia                      41) St Kitts & Nevis
15) Costa Rica                    42) St Lucia
16) Cuba                          43) St Martin (French part)
17) Curacao                       44) St Pierre & Miquelon
18) Dominica                      45) St Vincent
19) Dominican Republic            46) Suriname
20) Ecuador                       47) Trinidad & Tobago
21) El Salvador                   48) Turks & Caicos Is
22) French Guiana                 49) United States
23) Greenland                     50) Uruguay
24) Grenada                       51) Venezuela
25) Guadeloupe                    52) Virgin Islands (UK)
26) Guatemala                     53) Virgin Islands (US)
27) Guyana
Enter number or control-D to quit ?49
Please select one of the following time zone regions.
 1) Eastern (most areas)          16) Central - ND (Morton rural)
 2) Eastern - MI (most areas)     17) Central - ND (Mercer)
 3) Eastern - KY (Louisville area) 18) Mountain (most areas)
 4) Eastern - KY (Wayne)          19) Mountain - ID (south); OR (east)
 5) Eastern - IN (most areas)     20) MST - Arizona (except Navajo)
 6) Eastern - IN (Da, Du, K, Mn)  21) Pacific
 7) Eastern - IN (Pulaski)        22) Alaska (most areas)
 8) Eastern - IN (Crawford)       23) Alaska - Juneau area
 9) Eastern - IN (Pike)           24) Alaska - Sitka area
10) Eastern - IN (Switzerland)    25) Alaska - Annette Island
11) Central (most areas)          26) Alaska - Yakutat
```

```
12) Central - IN (Perry)           27) Alaska (west)
13) Central - IN (Starke)          28) Aleutian Islands
14) Central - MI (Wisconsin border)29) Hawaii
15) Central - ND (Oliver)
Enter number or control-D to quit ?18

The following information has been given:
        United States
        Mountain Time
Therefore TZ='America/Denver' will be used.
Local time is now:      Tue Nov  6 02:43:16 MST 2012.
Universal Time is now:  Tue Nov  6 09:43:16 UTC 2012.
Is the above information OK?
1) Yes
2) No
Enter number or control-D to quit ?1
Updating timezone in progress. Please wait..
Time Zone has been updated successfully.
```

To revert back to the offset format and verify the configuration:

```
switch admin> tstimezone --old 2
Updating timezone in progress. Please wait..
Time Zone has been updated successfully.

switch admin> tstimezone
Time Zone Hour Offset: 2
Time Zone Minute Offset: 0
```

See Also

date

turboRamTest

Performs a turbo SRAM test of ASIC chips.

Synopsis

turboramtest
[**--slot** <*slot*>]
[**-passcnt** <*count*>]

Description

Use this command to verify the chip SRAM located in the ASIC using the turbo-RAM BIST circuitry. The BIST controller is able to perform the SRAM write and read operation at a much faster rate than the PCI operation.

Notes

Do not abort this test prematurely, using **CTRL-C** or **q** to quit. Doing so may cause the test to report unexpected errors. Errors may vary depending on the hardware platform.

You cannot interrupt the test by pressing the return key (<cr>).

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

This diagnostic cannot be run on an operational switch. You must disable the switch using the **chassisDisable** command before you can run this test. After the test completes, re-enable the switch using the **chassisEnable** command.

Operands

This command has the following optional operands:

--slot <*slot*>	Specifies the slot number on which the diagnostic operates. All eligible blade ports in the specified slot are tested. This operand is optional. The default value is 0 and operates on fixed port count products.
-passcnt <*count*>	Specifies the number of times to perform this test. This operand is optional. The default value is 1.

Examples

To run the SRAM test with two passes:

```
switch:admin> turboramtest -passcnt 2
Platform bladeType 154

Running turboramtest ..............

WARNING:
This test should NOT be aborted in the middle. If aborted, current
blade or fixed configuration switch may become unusable.
Reset the blade or the switch to recover.

Running Condor3 turboramtest on slot 0 Condor 0
Condor3 turboramtest on slot 0 condor 0 PASSED

 PASSED.
```

See Also

chassisDisable, chassisEnable

upTime

Displays length of time the system has been operational.

Synopsis

uptime

Description

This command displays the current time, how long the system has been running, how many users are currently logged on, and the system load averages for the past 1, 5, and 15 minutes.

If the uptime is less than 60 seconds, the time is displayed in seconds. For times greater than or equal to 60 seconds, the time is displayed in minutes. The output format adjusts accordingly.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the length of time the system has been operational:

```
switch:admin> uptime
12:03am up 4:56, 3 users, load average: 1.17, 1.08, 1.08
```

See Also

date, fastBoot, reBoot

uRouteShow

Displays unicast routing information.

Synopsis

urouteshow [**--help** | [<*slot*>/]<*port*> [<*domain*>]]

Description

Use this command to display the unicast routing information for a port, as it is known by the FSPF path selection and routing task. The routing information describes how a frame that is received from a port on the local switch is to be routed to reach a destination switch.

The following information displays:

Local Domain ID	Domain number of local switch.
In Port	Port from which a frame is received. Except for the cases in which you perform a port swap or enable extended-edge PID (PID Format 2) on a switch, the value is equal to the port index field displayed by the **switchShow** command. Refer to *Brocade Fabric OS Administration Guide* for more information regarding the extended edge PID format.
Domain	Destination domain of incoming frame.
Out Port	Port to which the incoming frame is to be forwarded. Except for the cases in which you perform a port swap or enable extended edge PID (PID Format 2) on a switch, the value is equal to the port index field displayed by the **switchShow** command. Refer to *Brocade Fabric OS Administration Guide* for more information regarding the extended-edge PID format.
Metric	Cost of reaching the destination domain.
Hops	Maximum number of hops required to reach the destination domain. If the number of hops are different for some multiple equal cost paths (to reach the same domain), then it displays the maximum number.
Flags	Indicates route type as either dynamic (D) or static (S). A dynamic route is discovered automatically by the FSPF path selection protocol.
Next (Dom, Port)	Domain and port number of the next hop. These are the domain number and the port number of the switch to which Out Port is connected.

The information provided by this command should match what is provided by **topologyShow**.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

<slot>	For bladed systems only, specify the slot number of the input port whose routes are displayed, followed by a slash (/).
<port>	Specify the number of the input port whose routes are to be displayed, relative to its slot for bladed systems. Use **switchShow** to display a list of valid ports. This operand is optional; if omitted, the command displays routing information for all input ports in the switch.
<domain>	Specify a remote domain in the fabric for which routing information is to be displayed. This operand is optional; if omitted, the routing information for all domains in the fabric is displayed.

Examples

To display the routing information of all the active ports:

```
switch:admin> urouteshow
Local Domain ID: 3
In Port Domain Out Port Metric Hops Flags Next (Dom, Port)
---------------------------------------------------------
  0       1      11     1000    1    D            1,0

 Type <CR> to continue, Q<CR> to stop:
 11       2       0     1500    2    D            4,0

 Type <CR> to continue, Q<CR> to stop:
          4       0      500    1    D            4,0
 16       1      27     1000    1       D         1,1

 Type <CR> to continue, Q<CR> to stop:

 27       2      16     1500    2       D         4,16
```

To display the routing information of port 11 to domain 4 only:

```
switch:admin> urouteshow 1/11, 4

Local Domain ID: 3

In Port Domain Out Port Metric Hops Flags Next (Dom, Port)
---------- ------------------------------------------------
  11       4      16     500     1     D         4,16
```

See Also

topologyShow

usbStorage

Manages data files on an attached USB storage device.

Synopsis

```
usbstorage {-e | --enable}
usbstorage {-d | --disable}
```

```
usbstorage {-l | --list} [-all | -dir] <path>
usbstorage {-r | --remove} <target>
usbstorage {-h | --help}
```

Description

Use this command to control a USB device attached to the Active CP. When the USB device is enabled, other applications, such as **supportSave**, **firmwareDownload**, or **configDownload**/**configUpload** can conveniently store and retrieve data from the attached storage device. See the help pages for these commands for specific information on how the USB device is accessed by each application. Refer to the Fabric OS Release Notes, for the list of supported USB devices.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

This command is available only on the Active CP.

On the Brocade 7810, the USB may continue blinking even after the USB device is disabled.

Operands

This command has the following operands:

-e | --enable	Enables the USB device. The USB device must be enabled before the list and remove functions are available.
-d | --disable	Disables an enabled USB device. This command prevents access to the device until it is enabled again.
-r | --remove <*target*>	Removes target from the usbstorage. This command removes all data associated with the specified target.
-l | --list <*path*>	Lists the content from the USB device or folder path in usbstorage.
	-all <*path*> Lists all files and folders in the specified path.
	-dir <*path*> Lists all folders in the specified path.
-h | --help	Displays the command usage.

Examples

To enable an attached USB device:

```
switch:admin> usbstorage -e
USB storage enabled
```

To list the contents of the attached USB device:

```
switch:admin> usbstorage -l
          ras090_all.txt          551kB 2023 Mar 07 09:41
          test/                   15MB  2023 Mar 15 15:55
          test_folder.txt         551kB 2023 Mar 08 09:47
          v9.x.x/                 4MB   2023 Mar 13 08:56
          v9.x.x_G7_ENTP/         152MB 2023 Mar 10 13:24
          Available space on USB storage 80%
```

To remove a firmware target from the firmware application area:

```
switch:admin> usbstorage -r v9.x.x
```

To disable an attached USB device:

```
switch:admin> usbstorage -d
USB storage disable
```

See Also

supportSave, firmwareDownload, configUpload, configDownload

userConfig

Manages user accounts.

Synopsis

```
Supported combinations in VF mode:
userconfig --show [<username> | -a | -r <rolename>]
userconfig --showlf {-l <LF_ID_list> | -c}
userconfig --add <username> -r <role>
 -l <LF_ID_list> [-h <LF_ID>]
     [-c <chassis_role>] [-d <description>]
     [-base64][-p <password>] [-x]
     [-at <start_time>-<end_time> |
 -access-time <start_time>-<end_time>]
userconfig --change <username> {[-l <LF_ID_list>
 -r <role>] [-h <LF_ID>] [-c <chassis_role>]
     [-d <description>] [-x] [-e {yes | no}]
     [-u] [-at <start_time>-<end_time> |
 -access-time <start_time>-<end_time>]}
userconfig --addlf <username> {[-h <LF_ID>]
     [-c <chassis_role>]
     [-r <role> -l <LF_ID_list>]}
userconfig --deletelf <username> {[-l <LF_ID_list>]
     [-c]}[-h <LF_ID>]
userconfig --delete <username>
userconfig --help
Supported combinations in non VF mode:
userconfig --show [<username> | -a | -r <rolename>]
userconfig --add <username> -r <role>
     [-d <description>] [-p <password>] [-x]
     [-base64] [-at <start_time>-<end_time> |
 -access-time <start_time>-<end_time>]
userconfig --change <username> {[-r <role>]
     [-d <description>] [-x] [-e {yes | no}]
     [-u] [-at <start_time>-<end_time> |
 -access-time <start_time>-<end_time>]}
userconfig --delete <username>
userconfig --help
```

Description

Use this command to manage user accounts on a switch. In a Virtual Fabric-enabled environment, you can configure the account's username, its role, and the logical fabrics that the account may access. An account can have different roles for different Logical Fabrics. An account can access multiple Logical Fabrics, but only one Logical Fabric at a time.

When executed without operands, this command displays the usage. The logical fabric command options are displayed only if Logical Fabrics are enabled on the switch.

You can execute the **userConfig** command on any switch. When the command completes, account information is saved persistently. On platforms supporting multiple switch domains, account information is saved only to the switch domain, in which the command was executed.

Use the **distribute** command to distribute the account database manually to other switches in the fabric. Target switches must be configured to accept the database. Accounts that are not consistent with the distributed database are overwritten. Account recovery from backup or access to backup data is not supported..

This command supports all user-defined roles in addition to the default roles provided with Fabric OS. To display the user-defined roles with their associated access permissions, use the **roleConfig --show -all** command. To display all roles, including the default roles, use the **roleConfig --show -all -default** command.

In a Logical Fabric environment, you can additionally define access to chassis-level commands. An account can have one role in the Logical Fabric, and another role regarding chassis commands.

An asterisk (*) next to the account name in the **userConfig --show** and **userConfig --show -a** output indicates that the password for that user account is still at the default value.

Notes

The **userConfig** command operates on the switch-local user database only, regardless of whether the switch is configured to use RADIUS or LDAP authentication.

The account database supports a maximum of 252 customer created accounts.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--show Displays user account information. Only accounts with access permissions compatible with the SecurityAdmin and Admin roles can show information about accounts other than the current login account. The following operands are optional:

- ***<username>*** Specifies the account login name. When no operand is specified, the command displays the current account information.
- **-a** Displays information about all accounts.
- **-r *<rolename>*** Displays information about all accounts with the specified role.

--showlf Displays Logical Fabric permissions in an Logical Fabrics-enabled environment. Only users with access permissions compatible with the SecurityAdmin or Admin role may execute this command. An operand is required with this command. The following operands are mutually exclusive:

- **-l *<LF_ID_list>*** For each Logical Fabric in the *LF_ID_list*, this option displays a list of users that include that Logical Fabric in their Logical Fabrics permissions. Specify a range (1-5), or a list of Logical Fabric IDs separated by a comma (1,2,3), or a combination of both (1-5,7). Only users with access permissions compatible with the SecurityAdmin or Admin role may execute this command.
- **-c** Displays a list of users who have permission to execute chassis commands.

--add | --change Creates a new user account or modifies an existing user account. The following restrictions apply when you create or modify a user account:

- You cannot change the role, the Logical Fabric permissions, the home Logical Fabric of any default account.
- You cannot change the role, the Logical Fabric permissions, or the description of accounts at the same or a higher authorization level.
- You cannot change the role, the Logical Fabric permissions, or the home Logical Fabric of your own account.
- Logical Fabric permissions must be a subset of the respective Logical Fabric permissions of the account that creates or modifies a user account.
- In an Logical Fabric-enabled environment, you can change the role associated with existing Logical Fabrics but you cannot add new Logical Fabrics or delete any existing Logical Fabrics.
- You cannot use **change** if the default FID was modified after user creation. **--addlf** must be used to add newly created Logical Fabrics to user.
- The account name cannot be the same as an existing user account, a default role, a user-defined role, or a system role. System roles are used by internal switch processes and include the following: smmsp, nobody, udrole, sys, users, utmp. If the specified username already exists, this command fails with an appropriate message. Choose a different username and reissue the command.

The following operands are supported with the **--add** and **--change** option

<username>	Specifies the login name of the account to be created or modified. Enter a valid login name to modify an existing account. For new accounts, the name must be unique and must begin with an alphabetic character. User names are case-sensitive and can contain up to 32 alphanumeric characters, including periods (.) and underscore (_) characters.
-r *<role>*	In an Logical Fabric-enabled environment, this operand specifies the account's role for all Logical Fabrics provided with the Logical Fabric list. When you create a user account in an Logical Fabric-enabled environment, you can specify only one role for the user. This role is associated with each of the Logical Fabric IDs in the specified LF_ID_list. Once the account is created, you can use the **--addlf** option to create another list of Logical Fabric IDs with its own set of associated roles. You can assign any role to the account, user-defined or default. Use the **roleconfig --show** command for a listing of valid roles. This operand is required with the **--add** option; it is optional with the **--change** option.
-h *<LF_ID>*	Specifies the home Logical Fabric depending on the environment. This operand is optional. If no Logical Fabric is specified with the **--add** option, the system assigns the lowest numbered Logical Fabric the user is authorized to access.
-l *<LF_ID_list>*	Specifies the Virtual Fabrics the user is authorized to access. The Logical Fabrics in LF_ID_list and the existing Logical Fabric permissions for username must be a subset of the Logical Fabric permissions of the account that executes this command. This operand is required with the **--add** option. It is optional with the **--change** option.
-c *<chassis_role>*	Specifies the account's access permissions at the chassis level. The chassis role allows the user to execute chassis-related commands in an Logical Fabric-enabled environment. To assign the chassis role to an account, the executing account must have chassis-level permissions. Valid chassis roles include the default roles and any of the user-defined roles. Use the **roleconfig --show** command for a listing of valid roles.
-d *<description>*	Provides a description for the new account. This operand is optional. The maximum length is 32 printable ASCII characters. Some characters that are interpreted by the shell (", ', ! etc.) require a preceding escape character (\). To include spaces, place the description in double quotation marks. Colons are not permitted.
-base64	The specified password is considered to be in base64 encoded format and it will be decoded internally. A hash is calculated for the decoded string and stored in the system. This option is supported only in Fabric OS v9.2.2.

-at | -access-time <*start_time*>-<*end_time*> Specifies the time range the users can access the switch through Telnet, SSH, console or Web. Outside the configured time, access will be denied and the existing sessions for the user will be terminated on the configured *end_time*. The *start_time* and *end_time* must be specified in the *hh:mm* 24-hour clock format. The firmwaredownload will continue even when the user gets logged out upon expiry of time limit.

If *end_time* is less than the *start_time*, then it is considered as next day end time. For example, the command **-access-time 23:20-07:20** represents time interval in between two days.

-x Optionally specifies an expired password that must be changed the first time the user logs into a new or modified account.

The following optional operand is available only with the **--add** option:

-p <*password*> Specifies a password for the account. This operand is optional; if omitted, the command prompts for an initial password for the account. The password must satisfy all currently enforced password rules. By default the password is created with the configured expiration period.

Beginning with Fabric OS v9.2.2, this option is made as interactive and not a valid command line argument.

-e {yes | no} Enables or disables an account. Specify "yes" to enable or "no" to disable an account. Once an account is disabled, the CLI sessions associated with the account are terminated.

-u Unlocks the specified user account. User accounts can get locked after several attempts to log in with an invalid password. Refer to the **passwdCfg** help page for more information.

--addlf | --deletelf Adds Logical Fabric or chassis permissions to a user account or deletes Logical Fabric or chassis permission from a user account. The following operands are supported:

<*username*> Specifies the account login name.

-h <*LF_ID*> Specifies the account's home Logical Fabric. This operand is optional.

- If a home Logical Fabric is specified with the **--addlf** option, the home Logical Fabric must be one of the Logical Fabrics in *LF_ID_list*. If a home Logical Fabric is not specified and the account did not previously have a home Logical Fabric, the home Logical Fabric is set to the lowest numbered Logical Fabric in the user's Logical Fabric permissions.
- If a home Logical Fabric is specified with the **--deletelf** option, the home Logical Fabric must be one of the Logical Fabrics in the Logical Fabric permissions remaining after the Logical Fabrics specified in *LF_ID_list* have been removed. If a home Logical Fabric is not specified, the current home Logical Fabric remains unchanged, if it is still in the user's Logical Fabric permissions. If a home Logical Fabric is not specified and the current home Logical Fabric is deleted, the new home Logical Fabric is set to the lowest numbered Logical Fabric in the user's Logical Fabric permissions.

The account's existing Logical Fabric permission and the *LF_ID_list* must be a subset of the Logical Fabric permissions of the account executing this command.

-l <*LF_ID_list*> Specifies the logical fabric IDs to be added or deleted. Specify a range (1-5) or a list of Logical Fabric IDs separated by comma (1,2,3), or a combination of both (1-5,7).

-r <*role*> Specifies the role associated with the Logical Fabric ID list given in this command. This operand is required when you specify an *LF_ID_list* operand.

-c [<*chassis_role*>] Specifies the account's access permissions regarding chassis-level commands. To remove an account's chassis permissions, specify **-c** only. To add chassis permissions, specify a chassis role with the **-c** option.

--delete <*username*> Deletes the specified account from the switch. This command prompts for confirmation. Once an account is deleted, the CLI sessions associated with the account are terminated.

The following restrictions apply when you delete an account:

- You cannot delete a default account.
- You cannot delete your own account.

LF_ID list and associated Logical Fabric permissions for *username* must be a subset of the Logical Fabric permissions of the account that executes the **userConfig --delete** command.

--help Displays the command usage. In a Logical Fabric-enabled environment, options specific to Logical Fabrics are displayed.

Examples

To create a new account named "test" with admin role and admin chassis permissions in the Logical Fabric member list 1-10:

```
switch:admin> userconfig --add test -l 1-10
-r admin -c admin
Setting initial password for test
Enter new password:
Re-type new password:
Account test has been successfully added.
```

To display current account information:

```
switch:admin> userconfig --show test
Account name: test
Role: admin
Description:
Enabled: Yes
Password Last Change Date: Sat Jun 14 2008
Password Expiration Date: Not Applicable
Locked: No
RoleLFMaps: admin: 1-10 chassis
Chassis Role: admin
Home Context: 1
Day Time Access: N/A
Rest Auth Token: Yes
```

To grant user access permissions to the test account for the Virtual Fabrics 11-15:

```
switch:admin> userconfig --addlf test -r user -l 11-15
New LFs/Chassis role for account test has been
   successfully added.
```

To change the test account's access permissions for the Logical l Fabrics 5 and 6 to ZoneAdmin and the chassis permission to user:

```
switch:admin> userconfig --change test -r zoneadmin
-l 1-5 -c user -h 4
```

To display the test account information:

```
switch:admin> userconfig --show test
Account name: test
Description:
Enabled: Yes
Password Last Change Date: Tue Dec 20 2022 (UTC)
Password Expiration Date: Not Applicable (UTC)
Locked: No
Home LF Role: zoneadmin
Role-LF List: zoneadmin: 1-5
Chassis Role: user
Home LF: 4
Day Time Access: N/A
REST Auth Token: No
```

To remove chassis permissions from the test account for the Logical Fabrics 1-3.

```
switch:admin> userconfig --deletelf test -l 1-3 -c
LFs/chassis role for account test has been successfully deleted.
```

To display information for all accounts with admin privileges:

```
switch:admin> userconfig --show -r admin

Account name: admin
Description: Administrator
Enabled: Yes
Password Last Change Date: Wed Dec 21 2022 (UTC)
Password Expiration Date: Not Applicable (UTC)
Locked: No
Home LF Role: admin
Role-LF List: admin: 1-128
Chassis Role: admin
Home LF: 128
Day Time Access: N/A
REST Auth Token: No
```

See Also

roleConfig

version

Displays firmware version information.

Synopsis

version

Description

Use this command to display firmware version information and build dates.

The command output includes the following:

Kernel	The version of switch kernel operating system.
Fabric OS	The version of switch Fabric OS. Displays the local CP version if executed in a chassis.
Made on	The build date of firmware running in switch.

Flash	The build date of firmware stored in flash proms.
BootProm	The version of the firmware stored in the boot PROM

Usually the Made on and Flash dates are the same, because the switch starts running flash firmware at power-on. However, in the time period between **firmwareDownload** and the next **reboot**, the dates can differ.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the firmware version information in a switch:

```
switch:admin> version
Kernel   : 4.1.35rt41
Fabric OS: v9.2.x
Made on  : Mon Apr 15 06:40:42 2024
Flash:     Sat Jul 22 12:18:02 2023
BootProm : 4.0.14-sb
```

See Also

firmwareDownload, reBoot

wwn

Displays the world wide name (WWN) and factory serial number of the switch or chassis.

Synopsis

```
wwn [-sn]
```

Description

Use this command to display the WWN associated with a switch or chassis and to display the factory serial number. The WWN is a 64-bit number that has eight colon-separated fields each consisting of one or two hexadecimal digits between 0 and ff. The WWN is a factory-set parameter that cannot be changed by the end user. The WWN is used as the license ID in many cases, but the only official string to be used for requesting licenses is the **license --show -lid** output. Alternately, use **switchShow** to display the WWN.

In addition to the WWN, all switches have a unique 24-bit Fibre Channel address that is used for communicating with the switch. Use **fabricShow** to display the FC address in addition to the WWN.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-sn On enterprise-class platforms, this operand displays the chassis factory serial number following the WWN. On standalone platforms, it displays the factory serial number. This operand is optional; if omitted, this command displays only the WWN for the switch or chassis.

Examples

To display the WWN:

```
switch:admin> wwn
10:00:00:05:1e:7a:7a:00
```

To display the WWN and chassis factory serial number:

```
switch:admin> wwn -sn

WWN: 10:00:00:05:1e:7a:7a:00
SN:  ANP0645D05B

switch:admin> chassisshow | grep ANP0645D05B
Chassis Factory Serial Num: ANP0645D05B
switch:admin>
```

To display the license ID:

```
switch:admin> license --show -lid
10:00:00:05:1e:7a:7a:00
```

To display the WWN and the Fibre Channel address:

```
switch:admin> fabricshow
Switch ID   Worldwide Name     Enet IP Addr FC IP Addr Name
-----------------------------------------------------------
1:fffc01 10:00:00:05:1e:7a:7a:00 192.0.2.20  0.0.0.0 "sw03"
2:fffc02 10:00:00:05:1e:b3:00:9e 192.0.2.40  0.0.0.0 "ras39"
3:fffc03 10:00:00:05:1e:93:c4:00 192.0.2.10  0.0.0.0 "sw5"
4:fffc04 10:00:00:05:1e:55:5c:69 192.0.2.80  0.0.0.0 >"sp39"
```

See Also

chassisShow, fabricShow, license, switchShow

wwnAddress

Binds an FC Port ID to a device WWN.

Synopsis

wwnaddress --bind <*WWN*> <*PID*>
wwnaddress --unbind <*WWN*>
wwnaddress --show
wwnaddress --findPID <*WWN*>
wwnaddress --help

Description

Use this command to manage address assignments for a given device world wide name. The allocation of a PID to a specified device WWN supports the persistence of the PID based on the WWN of the device to which the PID is bound. If the PID is not bound to a device WWN, the device can get the same or a different PID irrespective of which port it logs in to a given switch partition.

This command fails under any of the following conditions:

- The PID is currently bound to another port through port address binding. Use **portaddress --unbind** to free up the PID.
- The WWN is already bound with a different PID, or the PID is bound to another WWN. Use **wwnaddress --unbind** to remove the PID-WWN binding.
- There is no space left in the WWN-PID table for an additional entry. Use **wwnaddress --unbind** to free up space in the table.
- If any N_Port ID Virtualization (NPIV) device have static PIDs configured and the acquired area is not the same as the one being requested, the FDISC coming from that device is rejected and the error is noted in the RASLog.

The command provides a **--show** option that displays the currently bound address for all WWNs. Alternately, you can use the **--findPID** option to display the PID currently bound to a specified WWN.

Notes

Dynamic Area Mode and WWN-Based persistent PID must be enabled on the switch before you can assign an address with this command. See **configure** command for more information.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--bind Assigns the lower two bytes of the Fibre Channel address to the specified WWN.

- ***<WWN>*** Specifies the WWN for the device to which the PID should be assigned.
- ***<PID>*** Specifies the PID (the lower 16 bits of the address excluding the domain part) in hexadecimal format to be bound to the device WWN. Note that only the upper 10 bits of the PID can be used for a unique route. Therefore, not all addresses in the 16-bit range are available.

--unbind Removes the WWN-PID binding corresponding to the specified device WWN.

- ***<WWN>*** Specifies the WWN for the device from which to remove the PID binding.

--show Displays all WWN-PID entries currently present in the partition.

--findPID Displays the PID currently bound to the specified device WWN.

- ***<WWN>*** Specifies the device WWN.

--help Displays the command usage.

Examples

To bind a 16-bit address to a device WWN:

```
switch:admin> wwnaddress --bind
   10:00:00:06:2b:0f:76:5f 0x9000
```

To unbind a given address from a WWN:

```
switch:admin> wwnaddress --unbind
   10:00:00:06:2b:0f:76:5f
```

To display all WWN address bindings on the current partition:

```
switch:admin> wwnaddress --show
#   WWN                     Area  Age Flag
==========================================
1) 10:00:00:06:2b:0f:71:0c  0x405  53  0x12
2) 10:00:00:05:1e:5e:2c:11  0x9900 101 0x21
3) 10:00:00:06:2b:0f:71:0d  0x503  37  0x12
4) 10:00:00:06:2b:0f:71:0e  0x304  43  0x12
5) 10:00:00:06:2b:0f:71:0f  0x303  38  0x12
6) 10:00:00:06:2b:0f:70:14  0x401  29  0x12
7) 10:00:00:06:2b:0f:70:15  0x505  46  0x12
8) 10:00:00:06:2b:0f:70:16  0x402  33  0x12
9) 10:00:00:06:2b:0f:70:17  0x406  47  0x12
10) 10:00:00:06:2b:0f:72:20  0x403  30  0x12
11) 10:00:00:06:2b:0f:72:21  0x501  36  0x12
12) 10:00:00:06:2b:0f:72:23  0x502  34  0x12
13) 10:00:00:06:2b:0f:6e:30  0x301  35  0x12
14) 10:00:00:06:2b:0f:6e:31  0x102  42  0x12
15) 10:00:00:06:2b:0f:6e:32  0x302  39  0x12
16) 10:00:00:06:2b:0f:6e:33  0x504  45  0x12
17) 10:00:00:06:2b:0f:76:5e  0x404  101 0x12
18) 10:00:00:06:2b:0f:76:5f  0x101  41  0x12
19) 20:20:00:05:1e:0b:61:cc  0x400  28  0x22
20) 20:21:00:05:1e:0b:61:cc  0x500  31  0x22
21) 20:22:00:05:1e:0b:61:cc  0x300  32  0x22
22) 20:23:00:05:1e:0b:61:cc  0x100  40  0x22
23) 10:00:00:06:2b:0f:6d:ee  0x305  50  0x12
24) 10:00:00:06:2b:0f:6d:ef  0x103  49  0x12
```

To display the WWW address binding for device 20:22:00:05:1e:0b:61:cc:

```
switch:admin> wwnaddress --findPid 20:22:00:05:1e:0b:61:cc
WWN                     PID
============================
 20:22:00:05:1e:0b:61:cc  0x300
```

See Also

portAddress

wwnRecover

Utility to recover mismatch of data in WWN card. Errors may be due to corruption, defect, or other causes.

Synopsis

wwnrecover

Description

Use this command to recover one or both WWN cards from errors detected by the audit routine. The audit routine is triggered upon for first one hour after the boot up of the system, periodically every 24 hours thereafter, and upon detection

of insertion of either of the WWN card. The audit routine performs consistency checks on each of the following sections of data maintained in the WWN cards for use by the corresponding system component:

- License ID data sections within the same WWN card
- IP address data sections across the two WWN cards
- DCE data sections across the two WWN cards
- License ID data sections across the two WWN cards
- Chassis configuration data sections across the two WWN cards
- Chassis serial and part number sections across the two WWN cards
- Registered Organization Name (RON) data sections across the two WWN cards

Error resulting from a mismatch in data may be encountered on one or more sections. The recovery mechanism may vary depending on the nature of the error encountered and is also based on the data section. The **wwnrecover** operation presents a summary of all the errors detected and prompts you through the recovery process interactively for all data sections. For each data section, you will be prompted with an option to recover WWN1 card data from WWN2 card data or vice-versa or to exit without recovering the corresponding data section. For example, if WWN2 is replaced by a minimally programmed factory replacement card, WWN recovery recommends to recover most of the data sections on WWN2 from WWN1. However, in a rare case where a bit corruption occurs in one data section on one card and another bit corruption in a different data section on the other card, the recovery for each of the affected data sections will be different. WWN recovery is not possible if the license ID differs on both WWN cards.

In the event of any of the following issues with WWN card operations, the system logs the corresponding RASlog message:

- Mismatch between the two WWN cards detected by the audit routine (EM-1220 message).
- Insertion of either of the two WWN cards detected by the system (EM-1221 message).
- Access failure by the audit routine during read/write to either of the WWN cards (EM-1222 message).

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To perform WWN recovery (the following example shows that no WWN errors were detected):

```
switch:admin> wwnrecover
No WWN Error is detected. Exiting.
```

To perform WWN recovery (the following example shows the WWN errors and the recovery process):

```
switch:admin> wwnrecover
WWN Discrepancies (Error:64) detected.

Please attempt recovery of these errors (where possible)
by navigating to the required recovery selection
from the following WWN Recovery Options Menu.

Please note that in the event of a mismatch in the LicenseIds,
between WWN1 and WWN2 cards, wwn recovery may not be possible.
In this case a factory programmed card with a matching LicenseId
```

```
must be used, as a replacement card, to complete the wwn recovery.

WWN 1 and WWN 2 Non-Critical Seeprom data is mismatched.

      WWN Non-Critical Seeprom Problem Details

WWN Seeprom Chassis Serial Number Mismatch.
WWN 1 Serial Number: BADSerial
WWN 2 Serial Number: GOODSerial

            WWN Recovery Options

0. Exit

3. Recover WWN 2 from WWN 1

4. Recover WWN 1 from WWN 2

Enter Selection > 4
You have opted to recover WWN1 from WWN 2.
Are you sure? Please Confirm: (yes, y, no, n): [no] y
Recovering Serial Number...
Serial Number Recovery completed.

WWN Seeprom Chassis Part Number Mismatch.
WWN 1 part Number: GoodPARTNO
WWN 2 Part Number: BadPARTNo

            WWN Recovery Options

0. Exit

3. Recover WWN 2 from WWN 1

4. Recover WWN 1 from WWN 2

Enter Selection > 3
You have opted to recover WWN2 from WWN1.
Are you sure? Please Confirm: (yes, y, no, n): [no] y
Recovering Part Number...
Part Number Recovery completed.
```

See Also

license, wwn

zone

Performs specific zone operations.

Synopsis

zone --help

zone --copy "<*source*>" "<*destination*>" [**-f**]

```
zone --expunge "<zone_object>" [-f]
zone --validate [-verbose] [[-f] | [[-m <mode>]
     [-i] ["<pattern>"]]]
```

Description

Use the **--copy**, **--expunge**, and **--validate** options to perform specific zoning operations. These commands follow a batched-transaction model.

Notes

Peer Zones are not allowed to be edited using this command.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command takes as an operand an action and its associated arguments. When executed without operands, the command displays the usage.

--help Displays the command usage.

Commands for performing specific zone operations

--copy Copies a specified zone object or all zone objects. The current transaction buffer is used for this operation. The following operands are optional:

- **"<*source*>"** The name of the source object to copy. This object can be a zone configuration, a zone alias, or a zone. Double quotation marks are optional, but required when specifying names that contain special characters.
- **"<*destination*>"** Identifies the name of the destination object. Double quotation marks are optional, but required when specifying names that contain special characters.
- **-f** Overwrites existing zone object without confirmation.

--expunge Removes all references to the specified zone object and then deletes the zone object. The command displays the list of zone objects to be deleted and prompts for confirmation before deleting the zone objects. The removal of zone object references can trigger the removal of zones not specified in the command. For example, removing the last zone member from a zone deletes the zone, and may trigger a recursive deletion of other zones. The following operand is required:

- **"<*zone_object*>"** Specifies a zone object. A zone object can be a zone member, zone alias, or a zone. The zone object must be enclosed in double quotation marks.
- **-force** Removes all references to the specified zone object without confirmation. This operand is optional.

--validate Evaluates the enforceability of each zone member. Zone members that are defined using world wide name are flagged as nonexistent if the specified device is not present within the fabric (i.e., offline). Zone members that are defined using domain and port index are flagged as nonexistent if either the specified port index is out of bounds, or if the specified domain is not a member of the fabric.

The following operands are optional:

- **-verbose** Displays the property members of peer zones along with the default **zone --validate** command output.
- **-f** Specifies that zone members that are not enforceable should be expunged in the transaction buffer. This pruning operation affects both the transaction buffer and the defined buffer. You cannot specify a mode or a zone object together with the -f option.

<mode>	Specifies the zone database location. This operand is optional. If no mode option is specified, the validated output of all the three buffers is displayed. Supported mode flag values include the following:
0	Uses the zone database from the current transaction buffer.
1	Uses the zone database stored in persistent storage.
2	Uses the currently enforced zone database.
"*<zone_object>*"	Specifies a zone object. A zone object can be a zone member, a zone alias, or a zone.
-i	Lists all zone members for a given pattern without case distinction.
"*<pattern>*"	A pattern used to match parent configuration, alias, or zone objects. This operand is optional. Patterns can contain: • An asterisk (*) to match any string of characters.

Examples

Specific zone operation commands

The following example shows a scenario of an invalid configuration. If you attempt to create a zone z10 with an alias a10, then create a zone with name a10, z10 expects a10 to be an alias and results in an invalid configuration.

To validate all zones in the currently enforced zone database:

```
switch:admin> zonecreate "z10", "a10"

switch:admin> zonecreate a10, 1,2

switch:admin> zone --validate
Defined configuration:
zone: a10 1,2*
zone: z10 a10~

Effective configuration:
No Effective configuration: (No Access)
-----------------------------------
~ - Invalid configuration
* - Member does not exist
```

To delete all references associated with zone member 100,5:

```
switch:admin> zone --expunge "100,5"
You are about to expunge one configuration
or member. This action could result in removing
many zoning configurations recursively.
[Removing the last member of a configuration
   removes the configuration.]
    Do you want to expunge the member?
   (yes, y, no, n): [no] yes
```

To delete all references without confirmation:

```
switch:admin> zone --expunge "zone1" -force
You have expunged a configuration or member.
This action could result in removing many zoning configurations
```

```
recursively. [Removing the last member of a configuration
removes the configuration.]
```

To validate all zones in the zone database in the current transaction buffer:

```
switch:admin> zone --validate -m 0
    Defined configuration:
     cfg:   redconfig
                    greenzone; regzone
     zone:  bluezone
                    1,1*; 1,2*
     zone:  greenzone 20:01:00:05:1e:01:23:e0*; 1,1*
     zone:  regzone 1,4*; 1,5*
     -----------------------------------
     ~ - Invalid configuration
     * - Member does not exist
```

To validate all zones in the zone database in the persistent storage (defined configuration):

```
switch:admin> zone --validate -m 1
    Defined configuration:
     cfg:   redconfig
                    greenzone; regzone
     zone:  bluezone
                    1,1*; 1,2*
     zone:  greenzone 20:01:00:05:1e:01:23:e0*; 1,1*
     zone:  regzone 1,4*; 1,5*
     -----------------------------------
     ~ - Invalid configuration
     * - Member does not exist
```

To validate all zones in the zone database in the effective configuration:

```
switch:admin> zone --validate -m 2
    Effective configuration:
     cfg:   redconfig
     zone:  greenzone
                    20:01:00:05:1e:01:23:e0*
                    1,1*
     zone:  regzone 1,4*
                    1,5*
    -----------------------------------
    ~ - Invalid configuration
    * - Member does not exist
```

To prune all the zone members that are not enforceable:

```
switch:admin> zone --validate -f
You are about to prune the zone configurations,
based on zone --validate output.
Do you want to prune the zone
configurations (yes, y, no, n): [no] y
```

To validate the zone members beginning with "gre", regardless of the case:

```
switch:admin> zone --validate -i "gre*"
Defined configuration:
```

```
     zone:  greenzone 20:01:00:05:1e:01:23:e0*; 1,1*

Effective configuration:
     zone:  greenzone
                    20:01:00:05:1e:01:23:e0*
                    1,1*
    -----------------------------------
    ~ - Invalid configuration
    * - Member does not exist
```

See Also

zoneHelp

zoneAdd

Adds a member to the zone or Peer Zone.

Synopsis

```
zoneadd "<zoneName>", "<member>[; <member>...]"
zoneadd --peerzone "<zoneName>" -principal "<principal_member>[; <principal_member>...]"
     [-members "<member>[; <member>...]"]
zoneadd --peerzone "<zoneName>" [-principal "<principal_member>[; <principal_member>...]"]
 -members "<member>[; <member>...]"
```

Description

Use this command to add one or more members to an existing zone or peer zone.

This command changes the defined configuration. For the change to be preserved across switch reboots, save the configuration to nonvolatile memory with the **cfgSave** command. For the change to become effective, enable the configuration with the **cfgEnable** command.

Target Driven Peer Zones are not allowed to be edited using this command.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

Operands

The following operands are required:

"<zoneName>"	Specify the name of an existing zone. Double quotation marks are optional. Refer to the **zoneCreate** command for more information on name and member specifications. The dollar sign ($) must be prefixed with a backslash (\) while using it in the command prompt.
"<member>"	Specify a member or list of members to be added. The list must be enclosed in double quotation marks. Members must be separated by semicolons. Members can be specified in one or more of the following ways:

	• A switch domain and port index number pair; for example, "2, 20". Use **switchShow** for a listing of valid port index numbers. • Node or port WWN. • Zone alias name. • Zone alias pattern. Use a pattern preceded by the wildcard symbol asterisk (*) to include members in the zone that matches the pattern.
--peerzone "<*zoneName*>"	Specifies the peer zone name to which one or more principal or members should be added.
-principal "<*principal_member*>"	Specify a principal or list of principal members to be added. The list must be enclosed in double quotation marks. Principal members must be separated by semicolons. You can specify a WWN, D, I, or zone alias. Peer zones cannot have mixed members; they must either have D,I members including members of an alias present in the peer zone or WWN members including members of an alias present in the peer zone.
-members "<*member*>"	Specify a member or list of members to be added to the Peer Zone. You can specify a WWN, D, I, or zone alias. Peer zones cannot have mixed members; they must either have D,I members including members of an alias present in the peer zone or WWN members including members of an alias present in the peer zone.

Examples

To add aliases for three disk arrays to "Blue_zone":

```
switch:admin> zoneadd "Blue_Zone", "array3; array4; array5"
```

To add aliases for all the arrays that matches a pattern:

```
switch:admin> zoneadd matt, "ze*;bond*; j*"
switch:admin> cfgshow
Defined configuration:
 zone: matt   30:06:00:07:1e:a2:10:20; 3,2; zeus; \
     bond; jake; jeff; jones
 zone: sloth  bawn; bolt; bond; brain; brit; bru; \
     10:00:00:00:01:1e:20:20
 alias:       bawn   3,5; 4,8
 alias:       bolt   10:00:00:02:1f:02:00:01
 alias:       bond   10:00:05:1e:a9:20:00:01; 3,5
 alias:       brain  11,4; 22,1; 33,6
 alias:       brit   12,1
 alias:       bru    5,3; 12,4
 alias:       geek   2,7; 4,11; 20:10:00:05:1e:a9:20:87
 alias:       jake   4,7; 8,9; 14,11
 alias:       jeff   30:00:00:05:1e:a1:cd:02; \
     40:00:00:05:1e:a1:cd:04
 alias:       jones  7,3; 4,5
 alias:       zeus   4,7; 6,8; 9,2

Effective configuration:
No Effective configuration: (No Access)
```

To add a member to a peer zone:

```
switch:admin> zoneadd --peerzone peerzone_wwn_mbrs \
   -members "10:00:05:1e:a9:20:00:02"
```

See Also

zoneCreate, zoneDelete, zoneRemove, zoneShow

zoneCreate

Creates a zone or a Peer Zone.

Synopsis

```
zonecreate "<zonename>", "<member>[; <member>...]"
zonecreate --peerzone "<zonename>" -principal "<principal>[; <principal>...]"
     [-members "<member>[; <member>...]"]
```

Description

Use this command to create a new zone or a peer zone.

This command changes the defined configuration. For the change to be preserved across switch reboots, save it to nonvolatile memory with the **cfgSave** command. For the change to become effective, enable the zone configuration with the **cfgEnable** command.

Target Driven Peer Zones are not allowed to be created using this command.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

Operands

The following operands are required:

"*zonename*" Specify a unique name for the zone to be created. Double quotation marks are optional. A zone name can either begin with a letter or number and can consist of letters, numbers, hyphen (-), underscore (_), dollar ($), or caret (^) characters. Names are case-sensitive. For example, "Zone_1" and "zone_1" indicate different zones. Zone names are limited to 64 characters. Spaces are ignored.

The dollar sign ($) must be prefixed with a backslash (\) while using it in the command prompt.

"*member*" Specify a member or a list of members to be included in the zone. The list must be enclosed in double quotation marks. Members must be separated by semicolons. The list must have at least one member; empty lists are not allowed.

A member can be specified in one or more of the following ways:

- **Domain and port index pair**: Specify a port by domain and port index, for example, "2, 20" specifies port index 20 on switch domain 2. When a zone member is specified by port index, all devices connected to that port are in the zone. If this port is an arbitrated loop, then all devices on the loop are in the zone. Use **switchShow** for a list of valid port index numbers.
- **World wide name**: Specify a world wide name as eight hex numbers separated by colons, for example "10:00:00:60:69:00:00:8a". By default, enforcement compares the zone member with the node and port names of the device. When a zone member matches by node name, then all ports are zoned on that device. When a zone member matches by port name, then the zoning takes place only to that single

device port. The node name comparison can be disabled so that zoning enforcement will consider only port name. See **configure** help for more information.

- **Zone alias name**: Specify a zone alias name using the same format as a zone name. See **aliCreate** help for zone alias naming requirements.
- **Zone alias pattern**: Use a pattern preceded by the wildcard symbol asterisk (*) to include members in the zone that matches the pattern.

--peerzone "*zoneName*" Creates a new Peer Zone.

-principal "*principal*" Specify a principal or list of principal members to be included in the Peer Zone. The list must be enclosed in double quotation marks. Principal members must be separated by semicolons. You can specify a WWN, D, I, or zone alias. Peer zones cannot have mixed members; they must either have D,I members including members of an alias present in the peer zone or WWN members including members of an alias present in the peer zone.

-members "*member*" Specify a member or list of members to be included in the Peer Zone. You can specify a WWN, D, I, or zone alias. Peer zones cannot have mixed members; they must either have D,I members including members of an alias present in the peer zone or WWN members including members of an alias present in the peer zone. This operand is optional.

When creating a zone, you can combine different ways of specifying zone members. For example, a zone defined with the following members: "2,12; orange_dev" and "orange_dev" alias with the member "2,14" contains all devices connected to switch 2, ports 12 and 14.

Examples

To create three zones using a combination of port numbers and zone aliases:

```
switch:admin> zonecreate "Purple_zone", "1,0"

switch:admin> zonecreate "Blue_zone", "1,1; array1; 1,2; array2"

switch:admin> zonecreate "Green_zone", "1,0; 1,2; array2"
```

To create a zone with the specified zone alias and to include the members that matches a pattern:

```
switch:admin> zonecreate sloth, "b*; 10:00:00:00:01:1e:20:20"
switch:admin> cfgshow
Defined configuration:
 zone:  matt   30:06:00:07:1e:a2:10:20; 3,2
 zone:  sloth  bawn; bolt; bond; brain; brit; \
     bru; 10:00:00:00:01:1e:20:20
 alias: bawn   3,5; 4,8
 alias:       bolt   10:00:00:02:1f:02:00:01
 alias:       bond   10:00:05:1e:a9:20:00:01; 3,5
 alias:       brain  11,4; 22,1; 33,6
 alias:       brit   12,1
 alias:       bru    5,3; 12,4
 alias:       geek   2,7; 4,11; 20:10:00:05:1e:a9:20:87
 alias:       jake   4,7; 8,9; 14,11
 alias:       jeff   30:00:00:05:1e:a1:cd:02; \
     40:00:00:05:1e:a1:cd:04
 alias:       jones  7,3; 4,5
 alias:       zeus   4,7; 6,8; 9,2
```

To create Peer Zones:

```
switch:admin> zonecreate --peerzone peerzone_wwn_mbrs \
```

```
    -principal "10:00:00:00:01:1e:20:20" -members "10:00:00:02:1f:02:00:01;10:00:05:1e:a9:20:00:01"

switch:admin> zonecreate --peerzone peerzone_di_mbrs -principal "10,1" -members "20,1;20,2"
```

See Also

zoneAdd, zoneDelete, zoneRemove, zoneShow

zoneDelete

Deletes a zone or Peer Zone.

Synopsis

```
zonedelete "<zoneName>"
```

Description

Use this command to delete a zone or Peer Zone.

This command changes the defined configuration. For the change to be preserved across switch reboots, save the configuration to nonvolatile memory using the **cfgSave** command. For the change to become effective, enable the configuration with the **cfgEnable** command.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

This command is not supported on the Brocade Analytics Monitoring Platform.

Operands

The following operand is required:

"<zoneName>"	Specify the name of the zone to be deleted. Double quotation marks are optional, but required when specifying names that contain special characters. Refer to the **zoneCreate** command for more information on name and member specifications. The dollar sign ($) must be prefixed with a backslash (\) while using it in the command prompt.

Examples

To delete the zone "Blue_zone":

```
switch:admin> zonedelete "Blue_zone"
```

To delete the Peer Zone "peerzone_di_mbrs":

```
switch:admin> zonedelete "peerzone_di_mbrs"
```

See Also

zoneAdd, zoneCreate, zoneRemove, zoneShow

zoneFabricLock

Configures the zone fabric lock timeout duration and displays the zone fabric lock information.

Synopsis

```
zonefabriclock --timeout timeoutvalue_in_mins
zonefabriclock --show
zonefabriclock --help
```

Description

This command is used to modify the zone fabric lock timeout duration. A minimum of 5 minutes and a maximum of 30 minutes is allowed. Also displays the detailed information of the zone fabric lock.

The timeout value is a fabric-wide setting. All switches in the fabric must either accept or reject the new timeout value. You cannot modify the timeout value when a zone fabric lock is active in a fabric.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--timeout ***timeoutvalue_in_mins***	Specifies the zone fabric lock timeout duration.
--show	Displays the detailed information of the current zone fabric lock state such as the domain and the client that currently holds the zone fabric lock, the remaining timeout in the timer, transaction ID, etc.
--help	Displays the command usage.

Examples

To update the zone fabric lock timeout duration:

```
switch:admin> zonefabriclock --timeout 10
switch:admin>
```

To display zone fabric lock information:

```
switch:admin> zonefabriclock --show
Fabric-Lock State               : Active
Lock-Principal Domain           : 2
Lock-Principal Transaction Token: 0x1c3f
Client                          : admin/admin/none/console/CLI
Timeout                         : 8 mins 30 secs
Time Remaining                  : 6 mins 27 secs
Fabric Supported                : Yes
Locally-Configured Timeout      : 5 mins
```

To display the locally-configured lock timeout value:

```
switch:admin> configshow -pattern zoning.FabLockTimeout
zoning.FabLockTimeout:5
```

See Also

cfgTransShow

zoneHelp

Displays a description of zoning commands.

Synopsis

zonehelp

Description

Use this command to display short descriptions of zoning commands.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display zone command help information:

```
switch:admin> zonehelp
aliadd             Add a member to a zone alias
alicreate          Create a zone alias
alidelete          Delete a zone alias
aliremove          Remove a member from a zone alias
alishow            Print zone alias information
bootluncfg                 Configure boot LUN for an HBA
cfgactvshow        Display Effective zone configuration \
                   information
cfgadd             Add a member to a configuration
cfgclear           Clear all zone configurations
cfgcreate          Create a zone configuration
cfgdelete          Delete a zone configuration
cfgdisable         Disable a zone configuration
cfgenable          Enable a zone configuration
cfgremove          Remove a member from a configuration
cfgsave            Save zone configurations in flash
cfgshow            Print zone configuration information
cfgsize            Print size details of zone database
cfgtransabort      Abort zone configuration transaction
cfgtransshow       Print zone configurations in transaction buffer
defzone            Activates or deactivates a default zone
                   configuration.
nszonemember       Display the information of all the online devices
                   which are zoned with the given device.
zone               Copies/Removes/Validates zone objects
zoneadd            Add a member to a zone
```

```
zonecreate         Create a zone
zonedelete         Delete a zone
zonefabriclock     Configures and displays zone fabric lock information
zonehelp           Print zoning help info
zoneobjectcopy     Copies a zone object
zoneobjectexpunge  Expunges a zone object
zoneobjectrename   Rename a zoning Object
zoneremove         Remove a member from a zone
zoneshow           Print zone information
```

See Also

None

zoneObjectCopy

Copies a zone object.

Synopsis

zoneObjectCopy "<*objectName*>", "<*newName*>"

Description

Use this command to make a copy of an existing zone object and give it a new name. The resulting object is of the same type as the original object. You can use this command for all zone object types, including cfgs, zones, and aliases.

Target Driven Peer Zones are not allowed to be edited using this command.

This command changes the defined configuration. For the change to be preserved across switch reboots, save the configuration to nonvolatile memory with the **cfgSave** command. For the change to become effective, enable the configuration with the **cfgEnable** command.

This command is not applicable for special zones or deprecated zone object types.

Notes

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

The following operands are required:

"<*objectName*>"	The name of the object that you want to copy. Double quotation marks are optional, but required when specifying names that contain special characters.
"<*newName*>"	The name of the object that you want created. Double quotation marks are optional, but required when specifying names that contain special characters.

A zone configuration name can either begin with a letter or number and can consist of letters, numbers, hyphen (-), underscore (_), dollar ($), or caret (^) characters. Names are case-sensitive. For example, "Cfg_1" and "cfg_1" are different zone configurations. Blank spaces are ignored.

The dollar sign ($) must be prefixed with a backslash (\) while using it in the command prompt.

See **zoneCreate** help for more information on name and member specifications.

Examples

To create a configuration containing three zones:

```
switch:admin> cfgshow "*"
     cfg:   USA_cfg    Red_zone; White_zone; Blue_zone

switch:admin> zoneobjectcopy "USA_cfg", "UK_cfg"

switch:admin> cfgshow "*"
     cfg:   UK_cfg     Red_zone; White_zone; Blue_zone
     cfg:   USA_cfg    Red_zone; White_zone; Blue_zone
```

See Also

cfgAdd, cfgClear, cfgDelete, cfgDisable, cfgEnable, cfgRemove, cfgSave, cfgShow, zoneObjectRename

zoneObjectExpunge

Expunges a zone object.

Synopsis

zoneObjectExpunge {"*<objectName>*" [**-force** | **-f**] | **--help**}

Description

Use this command to expunge a zone object. In addition to deleting the object, this command also removes the object from the member lists of all other objects. After successful execution of this command, the specified object no longer exists the database. You can use this command for all zone object types, including cfgs, zones, and aliases.

Target Driven Peer Zones and user created Peer Zones are allowed to be expunged.

Aliases that are members of a Target Driven Peer Zone are not allowed to be expunged.

This command changes the defined configuration. For the change to be preserved across switch reboots, save the configuration to nonvolatile memory with the **cfgSave** command. For the change to become effective, enable the configuration with the **cfgEnable** command.

Notes

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

"*<objectName>*"	The name of the object that you want to expunge. Double quotation marks are optional, but required when specifying names that contain special characters. This operand is required. See **zoneCreate** help for more information on name and member specifications. Note that the dollar sign ($) must be prefixed with a backslash (\) while using it in the command prompt.
-force | -f	Expunges a zone object without confirmation. This operand is optional.
--help	Displays the command usage.

Examples

To expunge a zone from the zone database:

```
switch:admin> cfgshow
    Defined configuration:
     cfg:   USA_cfg Red_zone; White_zone; Blue_zone
     zone:  Blue_zone
            1,1; array1; 1,2; array2
     zone:  Red_zone
            1,0; loop1
     zone:  White_zone
            1,3; 1,4
     alias: array1  21:00:00:20:37:0c:76:8c; \
                  21:00:00:20:37:0c:71:02
     alias: array2  21:00:00:20:37:0c:76:22; \
                 21:00:00:20:37:0c:76:28
     alias: loop1   21:00:00:20:37:0c:76:85; \
                  21:00:00:20:37:0c:71:df

switch:admin> zoneobjectexpunge "White_zone"

switch:admin> cfgshow
    Defined configuration:
     cfg:   USA_cfg    Red_zone; Blue_zone
     zone:  Blue_zone
            1,1; array1; 1,2; array2
     zone:  Red_zone
            1,0; loop1
     alias: array1  21:00:00:20:37:0c:76:8c; \
                    21:00:00:20:37:0c:71:02
     alias: array2  21:00:00:20:37:0c:76:22; \
                    21:00:00:20:37:0c:76:28
     alias: loop1   21:00:00:20:37:0c:76:85; \
                    21:00:00:20:37:0c:71:df
```

To expunge a zone without confirmation:

```
switch:admin> zoneobjectexpunge Red_zone -force
You have expunged a configuration or member.
This action could result in removing many zoning configurations
recursively. [Removing the last member of a configuration
removes the configuration.]
```

See Also

cfgAdd, cfgClear, cfgDelete, cfgDisable, cfgEnable, cfgRemove, cfgSave, cfgShow, zoneObjectCopy, zoneObjectRename

zoneObjectRename

Renames a zone object.

Synopsis

zoneObjectRename "<*objectName*>", "<*newName*>"

Description

Use this command to rename a zone object. You can use this command for all zone object types, including cfgs, zones, and aliases.

Target Driven Peer Zones are not allowed to be edited using this command.

This command changes the defined configuration. For the change to be preserved across switch reboots, save the configuration to nonvolatile memory with the **cfgSave** command. For the change to become effective, enable the configuration must be enabled with the **cfgEnable** command.

This command is not applicable for special zones or deprecated zone object types.

Notes

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

The following operands are required:

"*<objectName>*"	The name of the object you want to rename. Double quotation marks are optional, but required when specifying names that contain special characters.
"*<newName>*"	The new name of the object. Double quotation marks are optional, but required when specifying names that contain special characters."

A zone configuration name can either begin with a letter or number and can consist of letters, numbers, hyphen (-), underscore (_), dollar ($), or caret (^) characters. Names are case-sensitive. For example, "Cfg_1" and "cfg_1" are different zone configurations. Quotation marks are optional. Spaces are ignored.

The dollar sign ($) must be prefixed with a backslash (\) while using it in the command prompt.

See **zoneCreate** help for more information on name and member specifications.

Examples

To create a configuration containing three zones:

```
switch:admin> cfgshow "*"
     cfg:   USA_cfg    Red_zone; White_zone; Blue_zone

switch:admin> zoneobjectrename "USA_cfg", "UK_cfg"

switch:admin> cfgshow "*"
     cfg:   UK_cfg     Red_zone; White_zone; Blue_zone
```

See Also

cfgAdd, cfgClear, cfgDelete, cfgDisable, cfgEnable, cfgRemove, cfgSave, cfgShow, zoneObjectCopy

zoneObjectReplace

Replaces zone members.

Synopsis

```
zoneobjectreplace {<oldmember> <newmember> | --help}
```

Description

Use this command to replace the existing member of a zone or a Peer Zone with a new member. This command can be used to replace members of an alias, but an alias itself cannot be replaced.

The property member of a Peer Zone cannot be replaced using this command.

Target Driven Peer Zones are not allowed to be edited using this command.

For the change to become effective, enable the configuration with the **cfgEnable** command.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

This command is not supported on the Brocade Analytics Monitoring Platform.

Operands

The following operands are required:

<oldmember>	Specifies the the zone member that has to be replaced. You can specify WWN or Domain,Index (D,I).
<newmember>	Specifies the new zone member with which to replace the old zone member. You can specify WWN or D,I.
--help	Displays the command usage.

Examples

To replace zone member:

```
switch:admin> zoneobjectreplace \
     "20:00:00:05:1e:a1:af:b2" "10:00:00:05:1e:a1:10:c1"
switch:admin> cfgshow
Defined configuration:
 cfg:   cfg     lsan_m
 cfg:   cfg1    zone2; zone3
 zone:  lsan_m  20:15:00:05:1e:a2:f9:b1; 20:13:00:05:1e:a2:f9:b1
 zone:  zone1   2,3; 20:00:00:05:1e:a1:af:b1; zali_1
 zone:  zone2   5,7; 2,9
 zone:  zone3   10:00:00:05:1e:a1:10:c1; 20:10:00:05:1e:a9:20:12
 alias: zali_1  10:00:00:05:1e:a1:ef:b9; 2,3; 1,11

Effective configuration:
 cfg:   cfg
 zone:  lsan_m    20:15:00:05:1e:a2:f9:b1 20:13:00:05:1e:a2:f9:b1
```

See Also

zoneAdd, zoneCreate, zoneDelete, zoneRemove, zoneShow

zoneRemove

Removes a member from a zone or Peer Zone.

Synopsis

zoneremove "*<zonename>*", "*<member>*[; *<member>*...]"

```
zoneremove --peerzone "<zonename>" -principal "<principal_member>[; <principal_member>...]"
     [-members "<member>[; <member>...]"]
zoneremove --peerzone "<zonename>" [-principal "<principal_member>[; <principal_member>...]"]
 -members "<member>[; <member>...]"
```

Description

Use this command to remove one or more members from an existing zone, and to remove one or more members or principal members from a Peer Zone.

If all members are removed, the zone is deleted.

If all members (principal and non-principal members) are removed, the Peer Zone is deleted. If all non-principal members are removed but there is still a principal member, the Peer Zone will still exist. If all principal members are removed, even though non-principal members still exist, the Peer Zone will be deleted.

This command changes the defined configuration. For the change to be preserved across switch reboots, save the configuration to nonvolatile memory with the **cfgSave** command. For the change to become effective, enable the configuration with the **cfgEnable** command.

Target Driven Peer Zones are not allowed to be edited using this command.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

This command is not supported on the Brocade Analytics Monitoring Platform.

Operands

The following operands are required:

"*<zonename>*"	Specify the name of the zone from which to remove a member or principal (Peer Zone only). Double quotation marks are optional. See **zoneCreate** help for more information on name and member specifications. The dollar sign ($) must be prefixed with a backslash (\) while using it in the command prompt.
"*<member>*"	Specify a member or a list of members to be removed from the specified zone. The list must be enclosed in double quotation marks. Members must be separated by semicolons. A member can be one or more of the following: • A switch domain and port index pair: for example, "2,20". Use **switchShow** for a list of valid port index numbers. • A world wide name • A zone alias name • Zone alias pattern. Use a pattern preceded by the wildcard symbol asterisk (*) to include members in the zone that matches the pattern.
--peerzone "*<zonename>*"	Specifies the Peer Zone name from which one or more principal or members are to be removed.
-principal "*<principal_member>*"	Specify a principal or list of principal members to be removed from a Peer Zone. The list must be enclosed in double quotation marks. Principal members must be separated by semicolons. You can specify a WWN, D, I, or zone alias. Peer zones cannot have mixed members; they must either have D,I members including members of an alias present in the peer zone or WWN members including members of an alias present in the peer zone.

-members "<*member*>" Specify a member or list of members to be removed from a Peer Zone. You can specify a WWN, D, I, or zone alias. Peer zones cannot have mixed members; they must either have D,I members including members of an alias present in the peer zone or WWN members including members of an alias present in the peer zone.

Examples

To remove "array2" from "Blue_zone":

```
switch:admin> zoneremove "Blue_zone", "array2"
```

To remove all the members and aliases matching a pattern:

```
switch:admin> zoneremove matt,"30:06:00:07:1e:a2:10:20; ja*; 3,2"
switch:admin> cfgshow
Defined configuration:
 zone: matt   zeus; bond; jeff; jones
 zone: sloth  bawn; bolt; bond; brain; brit; \
     bru; 10:00:00:00:01:1e:20:20
 alias:       bawn   3,5; 4,8
 alias:       bolt   10:00:00:02:1f:02:00:01
 alias:       bond   10:00:05:1e:a9:20:00:01; 3,5
 alias:       brain  11,4; 22,1; 33,6
 alias:       brit   12,1
 alias:       bru    5,3; 12,4
 alias:       geek   2,7; 4,11; 20:10:00:05:1e:a9:20:87
 alias:       jake   4,7; 8,9; 14,11
 alias:       jeff   30:00:00:05:1e:a1:cd:02; \
     40:00:00:05:1e:a1:cd:04
 alias:       jones  7,3; 4,5
 alias:       zeus   4,7; 6,8; 9,2

Effective configuration:
No Effective configuration: (No Access)
```

To remove a member from a Peer Zone:

```
switch:admin> zoneremove --peerzone peerzone_wwn_mbrs \
   -members "10:00:05:1e:a9:20:00:02"
```

See Also

zoneAdd, zoneCreate, zoneDelete, zoneShow

zoneShow

Displays zone information.

Synopsis

zoneshow ["<*pattern*>"[,<*mode*>]]
zoneshow --sort [**-verbose**]["<*pattern*>"][,<*mode*>]
zoneshow --ic [**-verbose**] "<*pattern*>"[,<*mode*>]
zoneshow --alias [**-ic**] [**-verbose**] "<*pattern*>"
zoneshow --transdiffs [**-verbose**]
zoneshow --transdiffsonly [**-verbose**]

```
zoneshow --validate [-verbose] ["<pattern>"] [ ,<mode>]
zoneshow --peerzone {all | user | target}
     [-pattern "<pattern>" [-i]] [-mode <mode>]
zoneshow --verbose ["<pattern>"][ ,<mode>]
zoneshow --help
```

Description

Use this command to display zone configuration information. This command includes sorting and search options to customize the output. If a pattern is specified, the command displays only matching zone configuration names in the defined configuration. When used without operands, the command displays all zone configuration information for the Defined and the Effective configuration.

Use the **--transdiffs** and **--transdiffsonly** options to view changes in the current transaction.

The command output displays the changes in the current transaction by the following notations:

- An asterisk (*) before any tag indicates a change in that zone, zone configuration, alias or any other entity in the zone configuration.
- A plus (+) before any entity indicates that it is a newly added entity.
- A minus (-) before any entity indicates that it is a deleted entity.

See **cfgShow** help for a description of this display.

Notes

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--sort Displays D,I zone members, WWNs, and zone alias in ascending order. For Peer Zones, the principal and peer members are sorted separately.

--ic Displays all zone configuration names for a given pattern without case distinction.

- **-verbose** Displays the property members of peer zones along with the default **zoneShow** command output. This option is also applicable with **--sort**, **--alias**, **--transdiffs**, **--transdiffsonly**, and **--validate** operands.

--verbose Displays the property members of peer zones along with the default **zoneShow** command output.

"*<pattern>*" A pattern used to match parent zone object names. This operand is optional. Patterns can contain:

- An asterisk (*) to match any string of characters.

<mode> Specify 0 to display the contents of the transaction buffer (the contents of the current transaction), or specify 1 to display the contents of the nonvolatile memory. The default value is 0. This operand is optional.

--alias Displays all the zones containing the given alias pattern. The *pattern* operand is mandatory. The pattern can contain:

- An asterisk (*) to match any string of characters.

--transdiffs Displays the changes in the current transaction.

--transdiffsonly Displays only the changes in the current transaction.

--validate Evaluates the enforceability of each zone member. Zone members that are defined using world wide name are flagged as nonexistent if the specified device is not present within the fabric (i.e., offline). Zone members that are defined using domain and port index are flagged as nonexistent if either the specified port index is out of bounds, or if the specified domain is not a member of the fabric.

"<*pattern*>" Specify the exact zone name or a portion of the zone name followed by an asterisk (*) at the end to match any string of characters. Double quotation marks are optional, but required when specifying names that contain special characters.

Refer to the **zoneCreate** command for more information on name and member specifications. The dollar sign ($) must be prefixed with a backslash (\) while using it in the command prompt.

<*mode*> Specifies the zone database location. This operand is optional. If no mode option is specified, the validated output of all the three buffers is displayed. Supported mode flag values include the following:

0 | trans	Uses the zone database from the current transaction buffer.
1 | def	Uses the zone database stored in persistent storage.
2 | eff	Uses the currently enforced zone database.

--peerzone Displays the Peer Zone configuration information (Peer Zone name, Peer Zone type, property member, principal members, and peer members) for the Defined and the Effective configuration. The following operands are valid:

all	Displays configuration information for all Peer Zones.
user	Displays configuration information for the user created Peer Zones.
target	Displays configuration information for the target created Peer Zones.
-pattern "<*pattern*>"	Filters zone name patterns. This option is limited only to peer zone names. Double quotation marks are optional, but required when specifying names that contain special characters
-mode <*mode*>	Specifies the mode. • 0 or trans: Displays the content of the transaction buffer. • 1 or def: Displays the content of the committed defined database. • 2 or eff: Displays the content of the effective zone configuration.
-i	Performs pattern filtering without case distinction.

--help Displays the command usage.

Examples

To display all zones:

```
switch:admin> zoneshow
Defined configuration:
         cfg:   cfg1   red
         zone:  blue   44,5; 10:00:00:00:00:01:00:00; 3,4
         zone:  red    3,4; 1,2; 4,5; 2,3

Effective configuration:
         cfg:   cfg1
         zone:  red    3,4
                       1,2
                       4,5
                       2,3
```

To sort the zones in ascending order:

```
switch:admin> zoneShow --sort
Defined configuration:
cfg:   cfg1  red
```

```
zone:  blue  10:00:00:00:00:01:00:00; 3,4; 44,5
zone:  red   1,2; 2,3; 3,4; 4,5

Effective configuration:
cfg:   cfg1
zone:  red   1,2
             2,3
             3,4
             4,5
```

To display the red zone only using pattern search:

```
switch:admin> zoneshow red
zone:   red    3,4; 1,2; 4,5; 2,3
```

To combine a pattern search with the sorting option:

```
switch:admin> zoneshow --sort red
zone:   red    1,2; 2,3; 3,4; 4,5
```

To display the filtered content of the transaction buffer:

```
switch:admin> zoneshow "red", 1
zone:   red   3,4; 1,2; 4,5; 2,3
```

To display the filtered and sorted content of the transaction buffer:

```
switch:admin> zoneshow --sort "red', 1
zone:   red   1,2; 2,3; 3,4; 4,5
```

To display all green zones using pattern search, regardless of the case:

```
switch:admin> zoneshow --ic "GREEN*"
zone:   GREEN   44,4; 21:00:00:20:37:0c:71:02; 8,9
zone:   green   2,2; 2,3; 21:00:00:20:37:0c:76:8c
```

To display the zone members of alias "ali10":

```
switch:admin> zoneshow --alias "ali10"
zone:   zone20 ali10
```

To display the zone members of aliases beginning with "ali1":

```
switch:admin> zoneshow --alias "ali1*"
zone:   zone1  1,2; ali12; 3,3; 30:04:00:05:1e:0b:55:0f; 30:05:00:05:1e:0b:55:0f
zone:   zone   15 9,8; 2,5; 3,3; ali13
zone:   zone   17 ali1
zone:   zone   20 ali10
```

To display the changes in the current transaction:

```
switch:admin> zoneshow --transdiffs
Defined configuration:
cfg:     fabric_cfg
        green_zone
zone:   blue_zone
        21:00:00:20:37:0c:76:8c
*zone: green_zone
        21:00:00:20:37:0c:76:01; -1,4
```

```
*zone: red_zone
        3,3; 3,4; +5,5; +5,6

Effective configuration:
cfg:     fabric_cfg
zone:   green_zone
        21:00:00:20:37:0c:76:01
        1,4
```

To display only the changes in the current transaction:

```
switch:admin> zoneshow --transdiffsonly
*zone:  green_zone
            21:00:00:20:37:0c:76:01; -1,4
*zone:  red_zone
            3,3; 3,4; +5,5; +5,6
```

To display validated output of all zones in the zone database:

```
switch:admin> zoneshow --validate
Defined configuration:
 cfg:   cfg1    zone1; zone10; zone2
 zone:  zone1   20:1c:00:05:1e:57:b1:c6*; 20:1d:00:05:1e:57:b1:c6
 zone:  zone10  20:1e:00:05:1e:57:b1:c6; 20:1f:00:05:1e:57:b1:c6*
 zone:  zone2   20:03:00:05:1e:57:b1:c6; 20:1f:00:05:1e:57:b1:c6*


Effective configuration:
 cfg:   cfg1
 zone:  zone1   20:1c:00:05:1e:57:b1:c6*
        20:1d:00:05:1e:57:b1:c6
 zone:  zone10  20:1e:00:05:1e:57:b1:c6
        20:1f:00:05:1e:57:b1:c6*
 zone:  zone2   20:03:00:05:1e:57:b1:c6
        20:1f:00:05:1e:57:b1:c6*
-----------------------------------
~ - Invalid configuration
* - Member does not exist
```

To display validated output for a zone:

```
switch:admin> zoneshow --validate "zone1"
Defined configuration:
 zone:  zone1   20:1c:00:05:1e:57:b1:c6*; 20:1d:00:05:1e:57:b1:c6

Effective configuration:
 zone:  zone1   20:1c:00:05:1e:57:b1:c6*
        20:1d:00:05:1e:57:b1:c6
-----------------------------------
~ - Invalid configuration
* - Member does not exist
```

To display validated output for zone members beginning with "zone":

```
switch:admin> zoneshow --validate "zone*"
Defined configuration:
```

```
 zone:  zone1   20:1c:00:05:1e:57:b1:c6*; 20:1d:00:05:1e:57:b1:c6
 zone:  zone10  20:1e:00:05:1e:57:b1:c6; 20:1f:00:05:1e:57:b1:c6*
 zone:  zone2   20:03:00:05:1e:57:b1:c6; 20:1f:00:05:1e:57:b1:c6*
 zone:  zone200 20:1d:00:05:1e:57:b1:c6; 20:1f:00:05:1e:57:b1:c6*

Effective configuration:
 zone:  zone1   20:1c:00:05:1e:57:b1:c6*
        20:1d:00:05:1e:57:b1:c6
 zone:  zone10  20:1e:00:05:1e:57:b1:c6
        20:1f:00:05:1e:57:b1:c6*
 zone:  zone2   20:03:00:05:1e:57:b1:c6
        20:1f:00:05:1e:57:b1:c6*
------------------------------------
~ - Invalid configuration
* - Member does not exist
```

To display validated output for a zone in the current transaction buffer:

```
switch:admin> zoneshow --validate "zone200" 0
Defined configuration:
 zone:  zone200  20:1d:00:05:1e:57:b1:c6; 20:1f:00:05:1e:57:b1:c6*
------------------------------------
~ - Invalid configuration
* - Member does not exist
```

To display the complete Peer Zoning configuration:

```
switch:admin> zoneshow --peerzone all
Defined configuration:
 zone: peerzone_di_mbrs
   Property Member: 00:02:00:00:00:02:00:01
   Created by: User
   Principal Member(s):
                10,1
   Peer Member(s):
                20,1; 20,2
 zone: peerzone_wwn_mbrs
   Property Member: 00:02:00:00:00:03:00:01
   Created by: User
   Principal Member(s):
                10:00:00:00:01:1e:20:20
   Peer Member(s):
                10:00:00:02:1f:02:00:01; \
                10:00:05:1e:a9:20:00:01
Effective configuration:
 zone: peerzone_wwn_mbrs
   Property Member: 00:02:00:00:00:03:00:01
   Created by: User
   Principal Member(s):
                10:00:00:00:01:1e:20:20
   Peer Member(s):
                10:00:00:02:1f:02:00:01
                10:00:05:1e:a9:20:00:01
1 Peer Zones in Eff Cfg
```

To filter zone name pattern for the peer zone name "peer1":

```
switch:admin> zoneshow --peerzone all -pattern "peer1"
 zone: peer1
   Property Member: 00:02:00:00:00:03:00:02
   Created by: User
   Principal Member(s):
  10:00:d8:1f:cc:3d:33:11; 10:00:d8:1f:cc:3d:33:7c
   Peer Member(s):
  10:00:d8:1f:cc:3d:33:22; 10:00:d8:1f:cc:3d:33:33;
  10:00:d8:1f:cc:3d:33:44; 10:00:d8:1f:cc:3d:33:55;
  10:00:d8:1f:cc:3d:33:66
```

To display the content of the transaction mode:

```
switch:admin> zoneshow --peerzone all -mode 0
Defined configuration:
 zone: peer1
   Property Member: 00:02:00:00:00:03:00:02
   Created by: User
   Principal Member(s):
  10:00:d8:1f:cc:3d:33:11; 10:00:d8:1f:cc:3d:33:7c
   Peer Member(s):
  10:00:d8:1f:cc:3d:33:22; 10:00:d8:1f:cc:3d:33:33;
  10:00:d8:1f:cc:3d:33:44; 10:00:d8:1f:cc:3d:33:55;
  10:00:d8:1f:cc:3d:33:66
 zone: peer2
   Property Member: 00:02:00:00:00:03:00:02
   Created by: User
   Principal Member(s):
  20:00:d8:1f:cc:3d:33:11; 20:00:d8:1f:cc:3d:33:7c
   Peer Member(s):
  20:00:d8:1f:cc:3d:33:22; 20:00:d8:1f:cc:3d:33:33;
  20:00:d8:1f:cc:3d:33:44; 20:00:d8:1f:cc:3d:33:55;
  20:00:d8:1f:cc:3d:33:66
 zone: peer3
   Property Member: 00:02:00:00:00:03:00:02
   Created by: User
   Principal Member(s):
  30:00:d8:1f:cc:3d:33:11; 30:00:d8:1f:cc:3d:33:7c
   Peer Member(s):
  30:00:d8:1f:cc:3d:33:22; 30:00:d8:1f:cc:3d:33:33;
  30:00:d8:1f:cc:3d:33:44; 30:00:d8:1f:cc:3d:33:55;
  30:00:d8:1f:cc:3d:33:66
 zone: peer4
   Property Member: 00:02:00:00:00:03:00:02
   Created by: User
   Principal Member(s):
  40:00:d8:1f:cc:3d:33:11; 40:00:d8:1f:cc:3d:33:7c
   Peer Member(s):
  40:00:d8:1f:cc:3d:33:22; 40:00:d8:1f:cc:3d:33:33;
  40:00:d8:1f:cc:3d:33:44; 40:00:d8:1f:cc:3d:33:55;
  40:00:d8:1f:cc:3d:33:66
 zone: peer5
```

```
    Property Member: 00:02:00:00:00:03:00:02
    Created by: User
    Principal Member(s):
   50:00:d8:1f:cc:3d:33:11; 50:00:d8:1f:cc:3d:33:7c
    Peer Member(s):
   50:00:d8:1f:cc:3d:33:22; 50:00:d8:1f:cc:3d:33:33;
   50:00:d8:1f:cc:3d:33:44; 50:00:d8:1f:cc:3d:33:55;
   50:00:d8:1f:cc:3d:33:66

 Effective configuration:
  zone: peer1
    Property Member: 00:02:00:00:00:03:00:02
    Created by: User
    Principal Member(s):
   10:00:d8:1f:cc:3d:33:11
   10:00:d8:1f:cc:3d:33:7c
    Peer Member(s):
   10:00:d8:1f:cc:3d:33:22
   10:00:d8:1f:cc:3d:33:33
   10:00:d8:1f:cc:3d:33:44
   10:00:d8:1f:cc:3d:33:55
   10:00:d8:1f:cc:3d:33:66
  zone: peer2
    Property Member: 00:02:00:00:00:03:00:02
    Created by: User
    Principal Member(s):
   20:00:d8:1f:cc:3d:33:11
   20:00:d8:1f:cc:3d:33:7c
    Peer Member(s):
   20:00:d8:1f:cc:3d:33:22
   20:00:d8:1f:cc:3d:33:33
   20:00:d8:1f:cc:3d:33:44
   20:00:d8:1f:cc:3d:33:55
   20:00:d8:1f:cc:3d:33:66

 2 Peer Zones in Eff Cfg
```

To perform pattern filtering:

```
switch:admin> zoneshow --peerzone user -pattern "PEE*" -i
 zone: peer1
   Property Member: 00:02:00:00:00:03:00:02
   Created by: User
   Principal Member(s):
  10:00:d8:1f:cc:3d:33:11; 10:00:d8:1f:cc:3d:33:7c
   Peer Member(s):
  10:00:d8:1f:cc:3d:33:22; 10:00:d8:1f:cc:3d:33:33;
  10:00:d8:1f:cc:3d:33:44; 10:00:d8:1f:cc:3d:33:55;
  10:00:d8:1f:cc:3d:33:66
 zone: peer2
   Property Member: 00:02:00:00:00:03:00:02
   Created by: User
   Principal Member(s):
  20:00:d8:1f:cc:3d:33:11; 20:00:d8:1f:cc:3d:33:7c
```

```
   Peer Member(s):
  20:00:d8:1f:cc:3d:33:22; 20:00:d8:1f:cc:3d:33:33;
  20:00:d8:1f:cc:3d:33:44; 20:00:d8:1f:cc:3d:33:55;
  20:00:d8:1f:cc:3d:33:66
 zone: peer3
   Property Member: 00:02:00:00:00:03:00:02
   Created by: User
   Principal Member(s):
  30:00:d8:1f:cc:3d:33:11; 30:00:d8:1f:cc:3d:33:7c
   Peer Member(s):
  30:00:d8:1f:cc:3d:33:22; 30:00:d8:1f:cc:3d:33:33;
  30:00:d8:1f:cc:3d:33:44; 30:00:d8:1f:cc:3d:33:55;
  30:00:d8:1f:cc:3d:33:66
 zone: peer4
   Property Member: 00:02:00:00:00:03:00:02
   Created by: User
   Principal Member(s):
  40:00:d8:1f:cc:3d:33:11; 40:00:d8:1f:cc:3d:33:7c
   Peer Member(s):
  40:00:d8:1f:cc:3d:33:22; 40:00:d8:1f:cc:3d:33:33;
  40:00:d8:1f:cc:3d:33:44; 40:00:d8:1f:cc:3d:33:55;
  40:00:d8:1f:cc:3d:33:66
 zone: peer5
   Property Member: 00:02:00:00:00:03:00:02
   Created by: User
   Principal Member(s):
  50:00:d8:1f:cc:3d:33:11; 50:00:d8:1f:cc:3d:33:7c
   Peer Member(s):
  50:00:d8:1f:cc:3d:33:22; 50:00:d8:1f:cc:3d:33:33;
  50:00:d8:1f:cc:3d:33:44; 50:00:d8:1f:cc:3d:33:55;
  50:00:d8:1f:cc:3d:33:66
```

To display the property members of peer zones:

```
switch:admin> zoneshow --verbose
Defined configuration:
cfg:        c2            peer_zone3; peer_zone5; peer_zone7
zone:    peer_zone1             00:02:00:00:00:02:01:01; test1; edit123; alias67
zone:    peer_zone2             00:02:00:00:00:03:00:01; 30:08:00:05:33:88:e3:f3;
                                30:08:00:05:33:88:e3:f4; 30:08:00:05:33:88:e3:f5
zone:    peer_zone3             00:02:00:00:00:03:01:02; edit123; alias67; test1
zone:    peer_zone5             00:02:00:00:00:03:03:06; alias67; edit123; test1
zone:    peer_zone7             00:02:00:00:00:02:01:02; edit123; alias67

Effective configuration:
cfg:        c2
zone:    peer_zone3
                                00:02:00:00:00:03:01:02
                                30:08:00:05:33:88:e3:f5
                                30:08:00:05:33:88:e3:f6
                                30:08:00:05:33:88:e3:f8
                                30:08:00:05:33:88:e3:f7
                                30:08:00:05:33:88:e3:fa
                                30:08:00:05:33:88:e3:fc
```

```
zone:    peer_zone5
                              00:02:00:00:00:03:03:06
                              30:08:00:05:33:88:e3:f5
                              30:08:00:05:33:88:e3:f6
                              30:08:00:05:33:88:e3:f8
                              30:08:00:05:33:88:e3:f7
                              30:08:00:05:33:88:e3:fa
                              30:08:00:05:33:88:e3:fc
zone:    peer_zone7
                              00:02:00:00:00:02:01:02
                              7,6
                              7,7
                              7,4
                              7,5
                              7,10
                              7,11
```

See Also

None

Primary FCS Commands

The following table summarizes the commands that are available only on the primary Fabric Configuration Server (FCS) when the FCS policy is enabled.

Table 4: Primary FCS Commands

Command	Description
aliAdd	Must be run from the primary FCS switch.
aliCreate	Must be run from the primary FCS switch.
aliDelete	Must be run from the primary FCS switch.
aliRemove	Must be run from the primary FCS switch.
aliShow	Can be run on all FCS switches.
cfgActvShow	Can be run on all FCS switches.
cfgAdd	Must be run from the primary FCS switch.
cfgClear	Must be run from the primary FCS switch.
cfgCreate	Must be run from the primary FCS switch.
cfgDelete	Must be run from the primary FCS switch.
cfgDisable	Must be run from the primary FCS switch.
cfgEnable	Must be run from the primary FCS switch.
cfgRemove	Must be run from the primary FCS switch.
cfgSave	Must be run from the primary FCS switch.
cfgShow	Can be run on all FCS switches.
cfgSize	Can be run on all FCS switches.
cfgTransAbort	Must be run from the primary FCS switch.
cfgTransShow	Can be run on all FCS switches.
date	Can be run on all switches to view the current date. You can modify the date only from the primary FCS switch.
defZone	The `defzone --show` command can be run on all switches. All other options must be run from the primary FCS switch.
msPlClearDB	Must be run from the primary FCS switch.
msPlMgmtActivate	Must be run from the primary FCS switch.
msPlMgmtDeactivat e	Must be run from the primary FCS switch.
msTdDisable	The `msTdDisable "ALL"` command must be run from the primary FCS switch.
msTdEnable	The `msTdEnable "ALL"` command must be run from the primary FCS switch.
secPolicyAbort	Must be run from the primary FCS switch.
secPolicyActivate	Must be run from the primary FCS switch.
secPolicyAdd	Must be run from the primary FCS switch.
secPolicyCreate	Must be run from the primary FCS switch.
secPolicyDelete	Must be run from the primary FCS switch.
secPolicyDump	Can be run on all FCS switches.

Command	Description
secPolicyFCSMove	Must be run from the primary FCS switch.
secPolicyRemove	Must be run from the primary FCS switch.
secPolicySave	Must be run from the primary FCS switch.
secPolicyShow	Can be run on all FCS switches.
secStatsReset	If the domainlist is specified as argument (secstatsreset [name][,"domain[;domain]"]), then the command must be run from primary FCS switch.
secStatsShow	Can be run on all FCS switches.
snmpConfig	Can be run on all FCS switches.
tsClockServer	Can be run on all switches to view the NTP server's IP address. You can modify the NTP server's IP address only on the primary FCS switch.
zoneAdd	Must be run from the primary FCS switch.
zoneCreate	Must be run from the primary FCS switch.
zoneDelete	Must be run from the primary FCS switch.
zoneFabricLock	Must be run from the primary FCS switch.
zoneObjectCopy	Must be run from the primary FCS switch.
zoneObjectExpunge	Must be run from the primary FCS switch.
zoneObjectRename	Must be run from the primary FCS switch.
zoneRemove	Must be run from the primary FCS switch.
zoneShow	Can be run on all FCS switches.

Command Availability

Summarizes the validation check that a command pass through along with restrictions for Virtual Fabric and remote domain execution commands.

Command Validation Checks

Before a command is issued, it is validated against the following checks.

1. Active or standby availability: On enterprise-class platform systems, checks that the command is available on the control processor (CP).
2. Role-Based Access Control (RBAC) availability: Checks that the invoking user's role is permitted to invoke the command. If the command modifies the system state, the user's role must have the modify permission for the command. If the command only displays the system state, the user's role must have the observe permission for the command. Some commands both observe and modify the system state and thus require the observe-modify permission. The following RBAC permissions are supported:
   - O = Observe
   - OM = Observe-modify
   - N = None or not available
3. Virtual Fabric availability: If Virtual Fabrics are enabled, commands are checked for context and switch type as follows:
   - Virtual Fabric context (VF) = Command applies to the current logical switch only or to a specified logical switch. Virtual Fabric commands are further constrained by one of the following switch types:
     - All Switches (All) = Command can be run in any switch context.
     - Base Switch (BS) = Command can be run only on the base switch.
     - Default Switch (DS) = Command can be run only on the default switch.
     - N/A = Switch type is not applicable to the command.
   - Chassis context (CH) = Command applies to the chassis on which it is issued.
   - Switch and Chassis context (VF/CH) = Command applies to the switch and the chassis.
   - Disallowed = Command cannot be issued when Virtual Fabrics is enabled.
4. Command-specific: Checks whether the command is supported on the platform for which it is targeted.
5. Remote domain execution: Commands can be issued from a specified remote domain or logical switch context. In most cases, the show commands and the commands with show options are supported.

NOTE
To determine RBAC permissions for a specified command and associated major options, use the `classConfig --showcli` command. See "Using Fabric OS Commands", for more information.

Restrictions for Virtual Fabric and Remote Domain Execution Commands

Table 5: Virtual Fabric and Remote Domain Execution Restrictions for Fabric OS Commands

Command Name	Context	Switch Type	Remote Domain Execution
aaaConfig	CH	N/A	Disallowed
ag	VF	All	Disallowed
agAutoMapBalance	VF	All	Disallowed

Command Name	Context	Switch Type	Remote Domain Execution
agShow	VF	All	Disallowed
aliAdd	VF	All	Disallowed
aliCreate	VF	All	Disallowed
aliDelete	VF	All	Disallowed
aliRemove	VF	All	Disallowed
aliShow	VF	All	Disallowed
appServer	VF	All	Disallowed
aptPolicy	VF	All	Disallowed
auditCfg	CH	N/A	Disallowed
auditDump	CH	N/A	Disallowed
authUtil	VF	All	Disallowed
bannerSet	VF	N/A	Disallowed
bannerShow	VF	N/A	Disallowed
bladeVerShow	CH	N/A	Disallowed
cfgActvShow	VF	All	Disallowed
cfgAdd	VF	All	Disallowed
cfgClear	VF	All	Disallowed
cfgCreate	VF	All	Disallowed
cfgDelete	VF	All	Disallowed
cfgDisable	VF	All	Disallowed
cfgEnable	VF	All	Disallowed
cfgRemove	VF	All	Disallowed
cfgSave	VF	All	Disallowed
cfgShow	VF	All	Disallowed
cfgSize	VF	All	Disallowed
cfgTransAbort	VF	All	Disallowed
cfgTransShow	VF	All	Disallowed
chassisBeacon	CH	N/A	Disallowed
chassisDisable	CH	N/A	Disallowed
chassisDistribute	CH	N/A	Disallowed
chassisEnable	CH	N/A	Disallowed
chassisName	CH	N/A	Disallowed
chassisShow	CH	N/A	Allowed
classConfig	CH	N/A	Disallowed
cliHistory	CH/ VF	All	Disallowed
configDefault	VF/CH	N/A	Disallowed
configDownload	VF/CH	N/A	Disallowed
configList	CH	N/A	Disallowed
configRemove	VF	N/A	Disallowed
configShow	VF/CH	N/A	Disallowed

Command Name	Context	Switch Type	Remote Domain Execution
configUpload	VF/CH	N/A	Disallowed
configure	VF	All	Disallowed
configureChassis	CH	N/A	Disallowed
creditRecovMode	CH	N/A	Allowed
dataTypeShow	CH	N/A	Disallowed
date	VF	All	Disallowed
defZone	VF	All	Disallowed
deviceLogin	VF	All	Allowed
diagClearError	CH	N/A	Disallowed
diagDisablePost	CH	N/A	Disallowed
diagEnablePost	CH	N/A	Disallowed
diagHelp	VF	All	Disallowed
diagPost	CH	N/A	Disallowed
diagShow	VF	All	Disallowed
diagStatus	CH	N/A	Disallowed
distribute	VF	All	Disallowed
dlsReset	VF	All	Disallowed
dlsSet	VF	All	Disallowed
dlsShow	VF	All	Allowed
dnsConfig	CH	N/A	Disallowed
enclosureShow	CH	N/A	Disallowed
errClear	CH	N/A	Disallowed
errDelimiterSet	CH	N/A	Disallowed
errDump	VF/CH	N/A	Disallowed
errFilterSet	CH	N/A	Disallowed
errModuleShow	VF	N/A	Disallowed
errShow	VF/CH	N/A	Disallowed
ethIf	CH	N/A	Allowed
extnCfg	VF	All	Disallowed
extnPerfMon	VF	All	Disallowed
fabRetryShow	VF	All	Allowed
fabRetryStats	VF	All	Allowed
fabricLog	VF	All	Disallowed
fabricName	VF	All	Allowed
fabricNotification	VF	All	Disallowed
fabricPrincipal	VF	All	Allowed
fabricShow	VF	All	Allowed
fabStatsShow	VF	All	Allowed
factoryFanShow	CH	N/A	Disallowed
factoryReset	CH	All	Disallowed

Command Name	Context	Switch Type	Remote Domain Execution
fanDisable	CH	N/A	Disallowed
fanEnable	CH	N/A	Disallowed
fanShow	CH	N/A	Allowed
fastBoot	CH	N/A	Disallowed
fcipHelp	VF	All	Disallowed
fcipLedTest	CH	N/A	Disallowed
fcipPathTest	CH	N/A	Disallowed
fcLag	VF	All	Disallowed
fcoe	VF	All	Disallowed
fcPing	VF	All	Disallowed
fcpLogClear	VF	All	Disallowed
fcpLogDisable	VF	All	Disallowed
fcpLogEnable	VF	All	Disallowed
fcpLogShow	VF	All	Disallowed
fcpProbeShow	VF	All	Allowed
fcpRlsProbe	VF	All	Allowed
fcpRlsShow	VF	All	Allowed
fcrBcastConfig	VF	BS	Allowed
fcrConfigure	VF	All	Disallowed
fcrEdgeShow	VF	BS	Allowed
fcrFabricShow	VF	BS	Allowed
fcrIclPathBWMonitor	VF	All	Disallowed
fcrLsanCount	VF	BS	Allowed
fcrLsanMatrix	VF	BS	Allowed
fcrPhydevShow	VF	BS	Allowed
fcrProxyConfig	VF	BS	Disallowed
fcrProxyDevShow	VF	BS	Allowed
fcrResourceShow	VF	BS	Allowed
fcrRouterPortCost	VF	BS	Allowed
fcrRouteShow	VF	BS	Allowed
fcrXlateConfig	VF	BS	Allowed
fddCfg	VF	All	Disallowed
fdmiCacheShow	VF	All	Allowed
fdmiShow	VF	All	Allowed
femDump	CH	N/A	Allowed
ficonCfg	VF	All	Disallowed
ficonClear	VF	All	Disallowed
ficonCupSet	VF	All	Disallowed
ficonCupShow	VF	All	Allowed
ficonHelp	VF	All	Disallowed

Command Name	Context	Switch Type	Remote Domain Execution
ficonShow	VF	All	Allowed
firmwareActivate	CH	N/A	Disallowed
firmwareCleanInstall	CH	N/A	Disallowed
firmwareCommit	CH	N/A	Disallowed
firmwareDownload	CH	N/A	Disallowed
firmwareDownloadStatus	CH	N/A	Allowed
firmwareRestore	CH	N/A	Disallowed
firmwareShow	VF	N/A	Allowed
firmwareSync	CH	N/A	Disallowed
flow	VF	All	Allowed
fosConfig	CH	N/A	Disallowed
fosExec	VF	All	Disallowed
fpgaUpgrade	CH	All	Disallowed
fpiProfile	VF	All	Allowed
frameLog	VF	All	Allowed
fruDump	CH	N/A	Allowed
fspfShow	VF	All	Allowed
gePortErrShow	VF	All	Allowed
gePortPerfShow	VF	All	Allowed
haDisable	CH	N/A	Disallowed
haDump	CH	N/A	Allowed
haEnable	CH	N/A	Disallowed
haFailover	CH	N/A	Disallowed
haReboot	CH	N/A	Disallowed
haRedundancy	CH	N/A	Allowed
haShow	CH	N/A	Allowed
haShutdown	CH	N/A	Disallowed
help	VF	All	Disallowed
history	VF	All	Disallowed
historyLastShow	CH	N/A	Allowed
historyMode	CH	N/A	Disallowed
historyShow	CH	N/A	Allowed
iflShow	VF	All	Allowed
iodReset	VF	All	Disallowed
iodSet	VF	All	Allowed
iodShow	VF	All	Allowed
ipAddrSet	CH	N/A	Disallowed
ipAddrShow	VF	All	Disallowed
ipFilter	CH	N/A	Disallowed
ipsArpTable	VF	IPS_SWITCH_ONLY	Disallowed

Command Name	Context	Switch Type	Remote Domain Execution
ipsConfigurationSize	VF	IPS_SWITCH_ONLY	Disallowed
ipsDiag	VF	IPS_SWITCH_ONLY	Disallowed
ipsInterface	VF	IPS_SWITCH_ONLY	Disallowed
ipsLag	VF	IPS_SWITCH_ONLY	Disallowed
ipsNeighborInfo	VF	IPS_SWITCH_ONLY	Allowed
ipsPathVerify	VF	IPS_SWITCH_ONLY	Allowed
ipsPing	VF	IPS_SWITCH_ONLY	Allowed
ipsReachable	VF	IPS_SWITCH_ONLY	Allowed
ipsRouteTable	VF	IPS_SWITCH_ONLY	Disallowed
ipsStaticArp	VF	IPS_SWITCH_ONLY	Disallowed
ipsStaticRoute	VF	IPS_SWITCH_ONLY	Disallowed
ipsTraceRoute	VF	IPS_SWITCH_ONLY	Disallowed
ipsVlan	VF	IPS_SWITCH_ONLY	Disallowed
ipsVrf	VF	IPS_SWITCH_ONLY	Disallowed
islShow	VF	All	Allowed
isnsConfig	VF	IPS_SWITCH_ONLY	Disallowed
isnsDD	VF	IPS_SWITCH_ONLY	Disallowed
isnsDDSet	VF	IPS_SWITCH_ONLY	Disallowed
isnsShow	VF	IPS_SWITCH_ONLY	Disallowed
itemList	VF	All	Disallowed
killTelnet	CH	N/A	Disallowed
lacp	VF	All	Disallowed
ldapCfg	CH	N/A	Disallowed
lfCfg	CH	N/A	Allowed
license	CH	All	Disallowed
linkCost	VF	All	Disallowed
lldp	VF	All	Disallowed
logicalGroup	VF	All	Allowed
logOut	VF	All	Disallowed
lsanZoneShow	VF	BS	Disallowed
lsCfg	CH	N/A	Allowed
lsDbShow	VF	All	Allowed
mapsConfig	VF	All	Allowed
mapsDb	VF	All	Allowed
mapshelp	VF	All	Disallowed
mapsPolicy	VF	All	Allowed
mapsRule	VF	All	Disallowed
mapsSam	VF	All	Allowed
memShow	CH	N/A	Disallowed
mgmtApp	VF/CH	All	Disallowed

Command Name	Context	Switch Type	Remote Domain Execution
motd	CH	N/A	Disallowed
msCapabilityShow	VF	All	Disallowed
msPlatShow	VF	All	Disallowed
msPlatShowDBCB	VF	All	Disallowed
msPlClearDB	VF	All	Disallowed
msPlMgmtActivate	VF	All	Disallowed
msPlMgmtDeactivate	VF	All	Disallowed
msTdDisable	VF	All	Disallowed
msTdEnable	VF	All	Disallowed
msTdReadConfig	VF	All	Disallowed
myId	VF	N/A	Disallowed
nbrShow	VF	All	Allowed
nbrStateShow	VF	All	Allowed
nbrStatsClear	VF	All	Disallowed
nodeFind	VF	All	Disallowed
nodeWWN	VF	All	Disallowed
nsAliasShow	VF	All	Disallowed
nsAllShow	VF	All	Disallowed
nsCamShow	VF	All	Disallowed
nsDevLog	VF	All	Disallowed
nsShow	VF	All	Disallowed
nsZoneMember	VF	All	Disallowed
nsZoneShow	VF	All	Disallowed
objServer	VF	All	Disallowed
openSource	CH	BASE_SWITCH	Allowed
passwd	VF/CH	N/A	Disallowed
passwdCfg	CH	N/A	Disallowed
pathBwConfig	VF	All	Disallowed
pathInfo	VF	All	Disallowed
pdShow	CH	N/A	Disallowed
portAddress	VF	All	Allowed
portBeacon	VF	All	Disallowed
portBufferCalc	VF	All	Disallowed
portBufferShow	VF	All	Allowed
portCamShow	VF	All	Allowed
portCfg	VF	All	Disallowed
portCfgAppHeader	VF	All	Allowed
portCfgAutoDisable	VF	All	Allowed
portCfgBreakout	VF	All	Disallowed
portCfgCleanAddress	VF	All	Allowed

Command Name	Context	Switch Type	Remote Domain Execution
portCfgCompress	VF	All	Allowed
portCfgCongestionSignal	VF	All	Disallowed
portCfgCreditRecovery	VF	All	Allowed
portCfgDefault	VF	All	Disallowed
portCfgDPort	VF	All	Disallowed
portCfgEncrypt	VF	All	Disallowed
portCfgEport	VF	All	Disallowed
portCfgEportCredits	VF	All	Allowed
portCfgEXPort	VF	All	Disallowed
portCfgFaultDelay	VF	All	Disallowed
portCfgFec	VF	All	Allowed
portCfgFlexPort	VF	All	Disallowed
portCfgFlogiLogout	VF	All	Disallowed
portCfgFportBuffers	VF	All	Disallowed
portCfgGE	VF	All	Disallowed
portCfgISLMode	VF	All	Disallowed
portCfgLld	VF	All	Allowed
portCfgLongDistance	VF	All	Disallowed
portCfgLossTov	VF	All	Disallowed
portCfgMsAcl	VF	All	Disallowed
portCfgNPIVPort	VF	All	Disallowed
portCfgNPort	VF	All	Disallowed
portCfgOctetSpeedCombo	CH	N/A	Disallowed
portCfgPersistence	VF	All	Disallowed
portCfgPersistentDisable	VF	All	Disallowed
portCfgPersistentEnable	VF	All	Disallowed
portCfgQos	VF	All	Disallowed
portCfgShow	VF	All	Disallowed
portCfgSpeed	VF	All	Disallowed
portCfgTdz	VF	All	Disallowed
portCfgTrunkPort	VF	All	Disallowed
portChannel	VF	All	Disallowed
portChannelShow	VF	All	Disallowed
portCmd	VF	All	Disallowed
portDecom	VF	All	Disallowed
portDisable	VF	All	Disallowed
portDPortTest	VF	All	Allowed
portEnable	VF	All	Disallowed
portEncCompShow	VF	All	Allowed
portErrShow	VF	All	Allowed

Command Name	Context	Switch Type	Remote Domain Execution
portFlagsShow	VF	All	Allowed
portImpair	VF	All	Allowed
portLedTest	CH	N/A	Disallowed
portLogClear	VF	All	Disallowed
portLogConfigShow	VF	All	Disallowed
portLogDisable	VF	All	Disallowed
portLogDump	VF	All	Disallowed
portLogDumpPort	VF	All	Disallowed
portLogEnable	VF	All	Disallowed
portLogEventShow	VF	All	Disallowed
portLoginShow	VF	All	Disallowed
portLogReset	VF	All	Disallowed
portLogResize	VF	All	Disallowed
portLogShow	VF	All	Disallowed
portLogShowPort	VF	All	Disallowed
portLogTypeDisable	VF	All	Disallowed
portLogTypeEnable	VF	All	Disallowed
portLoopbackTest	CH	N/A	Disallowed
portName	VF	All	Disallowed
portPeerBeacon	VF	All	Allowed
portPerfShow	VF	All	Disallowed
portShow	VF	All	Disallowed
portStats64Show	VF	All	Allowed
portStatsClear	VF	All	Disallowed
portStatsShow	VF	All	Allowed
portTrunkArea	VF	All	Allowed
portZoneShow	VF	All	Disallowed
powerOffListSet	CH	N/A	Disallowed
powerOffListShow	CH	N/A	Allowed
psShow	CH	N/A	Allowed
psUtil	CH	All	Disallowed
rasAdmin	CH	N/A	Disallowed
rasMan	VF	All	Disallowed
reBoot	CH	N/A	Disallowed
relayConfig	CH	N/A	Allowed
roleConfig	CH	N/A	Disallowed
ron	CH	N/A	Disallowed
routeHelp	VF	All	Disallowed
sBoot	CH	All	Disallowed
sddQuarantine	VF	All	Disallowed

Command Name	Context	Switch Type	Remote Domain Execution
secActiveSize	VF	All	Disallowed
secAuthSecret	VF	All	Disallowed
secCertMgmt	CH	N/A	Disallowed
secCryptoCfg	CH	N/A	Disallowed
secDefineSize	VF	All	Disallowed
secPolicyAbort	VF	All	Disallowed
secPolicyActivate	VF	All	Disallowed
secPolicyAdd	VF	All	Disallowed
secPolicyCreate	VF	All	Disallowed
secPolicyDelete	VF	All	Disallowed
secPolicyDump	VF	All	Disallowed
secPolicyFCSMove	VF	All	Disallowed
secPolicyRemove	VF	All	Disallowed
secPolicySave	VF	All	Disallowed
secPolicyShow	VF	All	Disallowed
secStatsReset	VF	All	Disallowed
secStatsShow	VF	All	Disallowed
sensorShow	CH	N/A	Allowed
setContext	VF	All	Disallowed
setVerbose	CH	N/A	Disallowed
sfpShow	VF	All	Disallowed
sfpProgram	CH	All	Allowed
sfpUpgrade	VF	All	Allowed
shellFlowControlDisable	CH	N/A	Disallowed
shellFlowControlEnable	CH	N/A	Disallowed
slotCfg	CH	All	Disallowed
slotCfgPersistence	CH	All	Disallowed
slotPowerOff	CH	N/A	Disallowed
slotPowerOn	CH	N/A	Disallowed
slotShow	VF	All	Disallowed
slotStatsClear	VF	All	Disallowed
snmpConfig	CH	N/A	Disallowed
snmpStatistics	CH	N/A	Disallowed
snmpTraps	CH	N/A	Disallowed
spinFab	VF	All	Disallowed
sshUtil	CH	N/A	Disallowed
statsClear	VF	All	Disallowed
supportFfdc	CH	N/A	Disallowed
supportFtp	CH	N/A	Disallowed
supportInfoClear	CH	N/A	Allowed

Command Name	Context	Switch Type	Remote Domain Execution
supportLink	CH	N/A	Disallowed
supportSave	CH	N/A	Allowed
supportShow	CH	All	Disallowed
supportShowCfgDisable	CH	N/A	Disallowed
supportShowCfgEnable	CH	N/A	Disallowed
supportShowCfgShow	CH	N/A	Disallowed
switchBeacon	VF	All	Disallowed
switchCfgPersistentDisable	VF	All	Disallowed
switchCfgPersistentEnable	VF	All	Disallowed
switchCfgSpeed	VF	All	Disallowed
switchCfgTrunk	VF	All	Disallowed
switchDecommission	CH	All	Disallowed
switchDisable	VF	All	Disallowed
switchEnable	VF	All	Disallowed
switchName	VF	All	Disallowed
switchShow	VF	All	Allowed
switchType	CH	N/A	Allowed
switchViolation	VF	All	Disallowed
syslogAdmin	CH	N/A	Disallowed
sysShutdown	CH	N/A	Disallowed
tcpTimeStamp	CH	N/A	Disallowed
tempShow	CH	N/A	Allowed
timeOut	CH	N/A	Disallowed
topologyShow	VF	All	Allowed
traceDump	CH	N/A	Disallowed
trafClass	VF	IPS_SWITCH_ONLY	Disallowed
trafOpt	VF	All	Disallowed
trunkDebug	VF	All	Allowed
trunkShow	VF	All	Allowed
tsClockServer	VF	All	Disallowed
tsTimeZone	CH	N/A	Disallowed
turboRamTest	CH	N/A	Disallowed
upTime	CH	N/A	Disallowed
uRouteShow	VF	All	Allowed
usbStorage	CH	N/A	Disallowed
userConfig	CH/VF	All/NA	Disallowed
version	VF	N/A	Allowed
wwn	VF	All	Disallowed
wwnAddress	VF	All	Disallowed
wwnRecover	VF	All	Disallowed

Command Name	Context	Switch Type	Remote Domain Execution
zone	VF	All	Disallowed
zoneAdd	VF	All	Disallowed
zoneCreate	VF	All	Disallowed
zoneDelete	VF	All	Disallowed
zoneFabricLock	VF	All	Disallowed
zoneHelp	VF	All	Disallowed
zoneObjectCopy	VF	All	Disallowed
zoneObjectExpunge	VF	All	Disallowed
zoneObjectRename	VF	All	Disallowed
zoneObjectReplace	VF	All	Disallowed
zoneRemove	VF	All	Disallowed
zoneShow	VF	All	Disallowed

New and Modified Commands in Fabric OS v9.2.0

Lists the added and modified commands in the initial release of Fabric OS v9.2.0.

FOS-92x-Command-RM100; April 28, 2023

New Command

- sfpProgram

Deprecated Commands

- bcastShow
- firmwareCheck
- msconfigure

Revision History

The revision history provides a list of the important changes made in each version of the document.

FOS-92x-Command-RM104; October 15, 2024

New Commands

- ipsConfigurationSize
- ipsDiag
- isnsConfig
- isnsDD
- isnsDDSet
- isnsShow
- objServer

Modified Commands

- aaaConfig
- appServer
- configDownload
- configUpload
- FCoE
- femDump
- firmwareCleanInstall
- firmwareDownload
- firmwareShow
- flow
- fosExec
- frameLog
- fruDump
- haEnable
- haFailover
- haReboot
- haShow
- iflShow
- ipfilter
- ipsArpTable
- ipsInterface
- ipsLag
- ipsNeighborInfo

- ipsPathVerify
- ipsPing
- ipsReachable
- ipsRouteTable
- ipsStaticArp
- ipsStaticRoute
- ipsTraceRoute
- ipsVlan
- ipsVrf
- islShow
- license
- lsDbShow
- mapsConfig
- mgmtApp
- nbrShow
- nodeFind
- nsAliasShow
- nsCamShow
- nsShow
- nsZoneMember
- passwd
- passwdCfg
- pathBwConfig
- pathInfo
- portCfg
- portCfgAutoDisable
- portCfgDPort
- portCfgLld
- portCfgLongDistance
- portCfgShow
- portCfgSpeed
- portDPortTest
- portShow
- reBoot
- relayConfig
- secCertMgmt
- secCryptoCfg
- sfpProgram
- slotShow
- snmpConfig
- snmpTraps

- sshUtil
- supportFtp
- supportLink
- supportSave
- supportShow
- supportShowCfgDisable
- supportShowCfgEnable
- supportShowCfgShow
- switchDisable
- syslogAdmin
- trafClass
- tsClockServer
- tsTimeZone
- userConfig
- version

Deprecated Commands

- bootLunCfg
- chassisUpgrade
- fcrLsan
- i
- interfaceShow
- portCfgUpload
- portTest
- portTestShow
- stopPortTest

FOS-92x-Command-RM103; March 5, 2024

Modified Commands

- FCoE
- flow
- ipsNeighborInfo
- ipsReachable
- ipsTraceRoute
- portLedTest
- supportSave

FOS-92x-Command-RM102; December 20, 2023

New Commands

- ipsArpTable
- ipsInterface
- ipsLag
- ipsNeighborInfo
- ipsPathVerify
- ipsPing
- ipsReachable
- ipsRouteTable
- ipsStaticArp
- ipsStaticRoute
- ipsTraceRoute
- ipsVlan
- ipsVrf
- portCfgLld
- trafClass

Modified Commands

- aaaConfig
- ag
- configDownload
- configShow
- configureChassis
- creditRecovMode
- deviceLogin
- diagShow
- distribute
- errDump

- ethIf
- extnCfg
- extnPerfMon
- fabricPrincipal
- fabStatsShow
- fanDisable
- fanEnable
- fcPing
- fcrFabricShow
- femDump
- ficonCupShow
- firmwareDownload
- fpiProfile
- frameLog
- haReboot
- historyMode
- iflShow
- license
- lldp
- logicalGroup
- lsCfg
- mapsConfig
- mapsPolicy
- mapsRule
- mapsSam
- mgmtApp
- portAddress
- portBufferCalc
- portCfg
- portCfgDPort
- portCfgEXPort
- portCfgFec
- portCfgFlexPort
- portCfgGE
- portCfgLongDistance
- portCfgShow
- portCfgSpeed
- portCfgUpload
- portChannel
- portCmd
- portDPortTest

- portName
- portShow
- portStats64Show
- portTest
- portTestShow
- secCertMgmt
- secCryptoCfg
- secPolicyRemove
- sfpShow
- sfpUpgrade
- slotCfg
- snmpStatistics
- sshUtil
- stopPortTest
- supportLink
- supportSave
- switchCfgSpeed
- switchShow
- trafOpt
- tsTimeZone
- usbStorage
- version

Deprecated Commands

- chassisCfgPerrThreshold
- faPwwn
- sysHealth

FOS-92x-Command-RM101; June 21, 2023

Modified Commands

- aaaConfig
- portCfgDPort
- portChannel
- portDPortTest
- secCertMgmt
- secCryptoCfg
- sfpProgram

FOS-92x-Command-RM100; April 28, 2023

Initial document version.

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