BROCADE

Fabric OS
Command Reference Manual

Supporting Fabric OS v5.1.0

Supporting SilkWorm 200E, 3014, 3016, 3250, 3850, 3900, 4012, 4100, 4900, 7500, 24000, 48000

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Document History

The table below lists all versions of the *Fabric OS Command Reference Manual*.

Document Title	Publication Number	Summary of Changes	Publication Date
Fabric OS Reference v2.0	53-0001487-03		September 1999
Fabric OS Reference v2.2	53-0001558-02		May 2000
Fabric OS Reference v2.3	53-0000067-02		December 2000
Fabric OS Reference v3.0	53-0000127-03		July 2001
Fabric OS Reference v2.6	53-0000194-02		December 2001
Fabric OS Reference v3.0 / v4.0	53-0000182-02		March 2002
Fabric OS Reference v4.0.2	53-0000182-03		September 2002
Fabric OS Reference v3.1.0	53-0000500-02		April 2003
Fabric OS Reference v4.1.0	53-0000519-02		April 2003
Fabric OS Reference v4.1.2	53-0000519-03		May 2003
Fabric OS Reference v4.1.2	53-0000519-04		July 2003
Fabric OS Reference v4.1.2	53-0000519-05		August 2003
Fabric OS Reference v4.1.2	53-0000519-06		October 2003
Fabric OS Reference v4.2.0	53-0000519-07	Excluding edits and commands updated to support the SilkWorm 3250, 3850, and 24000 switches, added 3 commands, changed 20 commands, and deleted 10 commands. Also, revised the template.	December 2003
Fabric OS Command Reference Manual	53-0000519-08	Minor revision of the title page and "About This Document" and rewrite of Chapter 1.	March 2004
Fabric OS Command Reference Manual	53-0000519-08 Rev. A	Add 45 and delete 12 commands; also, extensive revisions were made to nearly every command to mirror the FOS man pages.	April 2004

Document Title	Publication Number	Summary of Changes	Publication Date
Fabric OS Command Reference Manual	53-0000519-09	Add 14, modify 128, and delete 7 commands.	September 2004
Fabric OS Command Reference Manual	53-0000519-10	Add 8, modify 164, and delete 5 commands. Add switchAdmin and MUA information to chapter 1. Modify chapter 5 from "Commands Unique to Fabric OS v4.x" to "MUA-Based Roles."	April 2005
Fabric OS Command Reference Manual	53-0000519-12	Revise with release note content and minor edits.	July 2005
Fabric OS Command Reference Manual	53-1000044-01	Add 22, modify 99, and delete 6 commands. Delete Chapter 3 "MUA-Based Roles," and move relevant content to Chapter 2 "Availability" sections. Convert Chapter 2, "Fabric OS Commands," content to Structured FrameMaker format to support XML delivery of command content (due to this process and a FrameMaker defect, some revised content is not indicated with change bars).	January 2006

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Chapter 3   Licensed Product Commands

Chapter 4   Exclusive Primary FCS Commands

Chapter 5   Control Processor Commands

Chapter 6   supportShow Reference

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About This Document

This document is a command reference manual written to help system administrators and technicians operate, maintain, and troubleshoot SAN products.

"About This Document" contains the following sections:

- "How This Document Is Organized," next
- "Supported Hardware and Software" on page xxii
- "What's New in This Document" on page xxiii
- "Document Conventions" on page xxvii
- "Additional Information" on page xxviii
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- "Document Feedback" on page xxxiii

How This Document Is Organized

This document is organized to help you find the particular information that you want as quickly and easily as possible.

The document contains the following components:

- "About This Document" provides information about this document.
- Chapter 1, "Using Fabric OS Commands" explores different methods to manage a Brocade SAN and Brocade SilkWorm switches.
- Chapter 2 , "Fabric OS Commands" provides command information.
- Chapter 3, "Licensed Product Commands" provides a subset of commands specific to Brocade licensed features such as Advanced Zoning, Extended Fabrics, Fabric Watch, ISL Trunking, and Advanced Performance Monitoring.
- Chapter 4, "Exclusive Primary FCS Commands" summarizes the subset of commands available when the security feature is installed and enabled.
- Chapter 5, "Control Processor Commands" lists the subset of active and standby control processor (CP) commands in SilkWorm 24000 and SilkWorm 48000 directors.
- Chapter 6, "supportShow Reference" explains the information displayed by the **supportShow** command.
- The index points you to the exact pages on which specific information is located.

Supported Hardware and Software

This document includes information specific to the new and changed functionality or support in the software from Brocade Fabric OS v5.0.1 to v5.1.0, supporting the following platforms:

- Brocade SilkWorm 200E switch
- Brocade SilkWorm 3014 switch
- Brocade SilkWorm 3016 switch
- Brocade SilkWorm 3250 switch
- Brocade SilkWorm 3850 switch
- Brocade SilkWorm 3900 switch
- Brocade SilkWorm 4012 switch
- Brocade SilkWorm 4100 switch
- Brocade SilkWorm 4900 switch
- Brocade SilkWorm 7500 switch
- Brocade SilkWorm 24000 director
- Brocade SilkWorm 48000 director

In those instances in which procedures or parts of procedures documented here apply to some switches but not to others, this guide identifies exactly which switches are supported and which are not.

Although many different software and hardware configurations are tested and supported by Brocade Communications Systems, Inc. for Fabric OS v5.1.0, documenting all possible configurations and scenarios is beyond the scope of this document.

This document does not support all Fabric OS versions. This document is specific to Fabric OS v5.1.0. To obtain information about an OS version other than v5.1.0, refer to the documentation specific to that OS version.

What's New in This Document

The following changes have been made since this document was last released:

- Information that was added:
  - The "Availability" section for each command lists multiple user account (MUA)-based availability; for instance, switchAdmin account access.
  - **defzone**
  - **fcipChipTest**
  - **fcipPathTest**
  - **fcrChipTest**
  - **fcrConfigure**
  - **fcrDisable**
  - **fcrEnable**
  - **fcrFabricShow**
  - **fcrPathTest**
  - **fcrPhyDevShow**
  - **fcrProxyConfig**
  - **fcrResourceShow**
  - **fcrRouteShow**
  - **fcrXlateConfig**
  - **lsanZoneShow**
  - **passwdCfg**
  - **portCfgEXPort**
  - **portCfgNPIVPort**
  - **portCfgVEXPort**
  - **portcmd**
  - **supportFfdc**
  - **zone**

- Information that was changed:
  - Chapter 1, "Using Fabric OS Commands"
  - **aliasJoin**
  - **aliShow**
  - **aptPolicy**
  - **backport**
  - **bladeBeacon**
  - **bladeDisable**
  - **bladeEnable**
  - **burninStatus**
  - **camTest**
  - **centralMemoryTest**
  - **cfgActvShow**
  - **cfgEnable**
  - **cfgShow**
  - **cfgSize**
  - **chassisConfig**
  - **chassisName**
  - **cmemRetentionTest**
  - **cmiTest**
  - **configure**
  - **crossPortTest**
  - **diagClearError**
  - **dnsConfig**
  - **errDump**
  - **errShow**
  - **fabStateClear**
  - **fanDisable**
  - **fanEnable**
  - **ficonShow**
  - **firmwareDownload**
  - **firmwareDownloadStatus**
  - **firmwareShow**
  - **haDump**
  - **haFailover**
  - **historyShow**
  - **interopMode**
  - **ipAddrSet**
  - **linkCost**

- **saveCore**
- **secModeEnable**
- **secPolicyAdd**
- **secStatsReset**
- **slotShow**
- **slTest**
- **snmpMibCapSet**
- **sramRetentionTest**
- **supportFfdc**
- **supportSave**
- **supportShow**
- **switchBeacon**
- **switchEnable**
- **switchName**
- **switchShow**
- **syslogdFacility**
- **topologyShow**
- **turboRamTest**
- **txdPath**
- **uRouteConfig**
- **userConfig**
- **wwn**
- **zoneShow**
- Chapter 3, "Licensed Product Commands"
- Chapter 5, "Control Processor Commands"
- Information that was deleted:
  - **diagSetEsdMode**
  - **perfClrAlpaCrc** renamed to **perfClearAlpaCrc**
  - **quietMode**
  - **slotOff**
  - **slotOn**
  - **voltShow**
  - Chapter 3, "MUA-Based Roles." The relevant content moved to the "Availability" section for each command.

For further information, refer to the release notes.

Document Conventions

This section describes text formatting conventions and important notices formats.

Text Formatting

The narrative-text formatting conventions that are used in this document are as follows:

bold text	Identifies command names
	Identifies GUI elements
	Identifies keywords and operands
	Identifies text to enter at the GUI or CLI
italic text	Provides emphasis
	Identifies variables
	Identifies paths and Internet addresses
	Identifies document titles
`code` text	Identifies CLI output
	Identifies syntax examples

For readability, command names in the narrative portions of this guide are presented in mixed lettercase: for example, **switchShow**. In actual examples, command lettercase is often all lowercase. Otherwise, this manual specifically notes those cases in which a command is case sensitive.

Notes, Cautions, and Warnings

The following notices appear in this document:

Note

A note provides a tip, emphasizes important information, or provides a reference to related information.

Caution

A caution alerts you to potential damage to hardware, firmware, software, or data.

Warning

A warning alerts you to potential danger to personnel.

Key Terms

For definitions of SAN-specific terms, visit the Storage Networking Industry Association online dictionary at *http://www.snia.org/education/dictionary*.

Additional Information

This section lists additional Brocade and industry-specific documentation that you might find helpful.

Brocade Resources

The following related documentation is provided on the Brocade Documentation CD-ROM and on the Brocade Web site, through Brocade Connect.

Note

Go to *http://www.brocade.com* and click **Brocade Connect** to register at no cost for a user ID and password.

Fabric OS

- *Fabric OS Administrator's Guide*
- *Fabric OS Command Reference Manual*
- *Fabric OS MIB Reference Manual*
- *Fabric OS System Error Message Reference Manual*

Fabric OS Optional Features

- *Web Tools Administrator's Guide*
- *Fabric Watch Administrator's Guide*
- *Fabric Manager Administrator's Guide*
- *Secure Fabric OS Administrator's Guide*
- *Web Tools EZ Administrator's Guide*

SilkWorm 48000

- *SilkWorm 48000 Hardware Reference Manual*
- *SilkWorm 48000 QuickStart Guide*

SilkWorm 24000

- *SilkWorm 24000 Hardware Reference Manual*
- *SilkWorm 24000 QuickStart Guide*

SilkWorm 24000/48000

- *Port Card and Filler Panel Replacement Procedure*
- *Control Processor Card Replacement Procedure*
- *Blower Assembly Replacement Procedure*

- *Cable Management Tray and Guide Replacement Procedure*
- *Chassis Door Replacement Procedure*
- *Chassis Replacement Procedure*
- *WWN LED Bezel/Card Replacement Procedure*
- *Modem Setup and Installation Procedure*
- *Power Supply and Filler Panel Replacement Procedure*
- *SilkWorm 12000/24000/48000 Migration Guide*
- *14U Rack Mount Kit Installation Procedure*
- *Mid-Mount Rack Kit Installation Procedure*

SilkWorm 7500

- *SilkWorm 7500 Hardware Reference Manual*
- *SilkWorm 7500 QuickStart Guide*
- *SilkWorm 7500 Fan Assembly Replacement Procedure*
- *SilkWorm Mid Sized Power Supply Replacement Procedure*

SilkWorm 4900

- *SilkWorm 4900 Hardware Reference Manual*
- *SilkWorm 4900 QuickStart Guide*
- *SilkWorm 4900 Fan Assembly Replacement Procedure*
- *SilkWorm Mid Sized Power Supply Replacement Procedure*

SilkWorm 4100

- *SilkWorm 4100 Hardware Reference Manual* (for v4.4.x and later software)
- *SilkWorm 4100 QuickStart Guide* (for v4.4.x and later software)

SilkWorm 3900

- *SilkWorm 3900 Hardware Reference Manual* (for v4.x software)
- *SilkWorm 3900 QuickStart Guide* (for v4.x software)
- *SilkWorm 3900 Fan Assembly Replacement Procedure*
- *SilkWorm 3900 Motherboard Assembly Replacement Procedure*
- *SilkWorm 3900 Power Supply Replacement Procedure*

SilkWorm 3250/3850

- *SilkWorm 3250/3850 Hardware Reference Manual* (for v4.x software)
- *SilkWorm 3250/3850 QuickStart Guide* (for v4.x software)

SilkWorm 3016

- *SilkWorm 3016 Hardware Reference Manual* (for v4.2.x and later software)
- *SilkWorm 3016 QuickStart Guide* (for v4.2.x and later software)
- *Brocade Enterprise and Entry SAN Switch Modules for IBM eServer BladeCenter Design, Deployment and Management Guide* (DDM)

SilkWorm 3014

- *SilkWorm 3014 Hardware Reference Manual* (for v5.x software)
- *SilkWorm 3014 QuickStart Guide* (for v5.x software)

SilkWorm 200E

- *SilkWorm 200E Hardware Reference Manual* (for v5.x software)

For practical discussions about SAN design, implementation, and maintenance, you can obtain *Building SANs with Brocade Fabric Switches* through:

> *http://www.amazon.com*

For additional Brocade documentation, visit the Brocade SAN Info Center and click the Resource Library location:

> *http://www.brocade.com*

Release notes are available on the Brocade Connect Web site and are also bundled with the Fabric OS firmware.

Optional Brocade Features

Optional Brocade features include:

Advanced Performance Monitoring
  Enables more effective end-to-end SAN performance analysis to enhance performance tuning, increase productivity, optimize resource utilization, and reduce costs.

Extended Fabrics
  Supports the reliable, high-speed connectivity of SilkWorm switches over dark fiber or Dense Wave Division Multiplexing (DWDM) equipment at distances up to 500 kilometers to enhance business continuance operations.

Fabric Watch
  Continuously monitors SAN fabrics for potential faults based on thresholds set for a variety of SAN fabric elements and events—automatically alerting administrators to potential problems before they become costly failures.

ISL Trunking
  Optimizes the performance and availability of SAN fabrics while simplifying ISL management. Two 4 Gbit/sec SilkWorm switches can automatically group up to eight ISLs into a single logical "trunk" with a total throughput of up to 32 Gbit/sec.

Advanced Zoning	Automatically groups SAN fabric-connected devices into logical zones that restrict access to "member" devices in the zone. Advanced Zoning uses hardware enforcement at both the port and WWN level to provide more robust data protection.
Secure Fabric OS	Provides a comprehensive security solution to help protect mission-critical data. Key features include centralized policy-based security management, management data encryption, and authentication to create a fabric-wide trusted environment with control over all levels of fabric access and communication.
FICON® CUP	Enables IBM host-based management programs to manage FICON fabric switches in-band by sending commands to the Fabric OS emulated control device.
FCIP Tunneling	The optional Fibre Channel over Internet protocol (FCIP) Tunneling Service enables Fibre Channel frames to "tunnel" through IP networks by dividing frames, encapsulating the result in IP packets on entering the tunnel, and then reconstructing them as they leave the tunnel. Fabric OS supports eight FCIP interswitch links between two SilkWorm switches (SilkWorm 7500 or SilkWorm 48000 with a FR4-18i blade) or routes. All 16 links can be used as FCIP links with the remaining links going to other routers.

Other Industry Resources

For additional resource information, visit the Technical Committee T11 Web site. This Web site provides interface standards for high-performance and mass storage applications for Fibre Channel, storage management, and other applications:

http://www.t11.org

For information about the Fibre Channel industry, visit the Fibre Channel Industry Association Web site:

http://www.fibrechannel.org

Getting Technical Help

Contact your switch support supplier for hardware, firmware, and software support, including product repairs and part ordering. To expedite your call, have the following information available:

1. **General Information**

   - Technical Support contract number, if applicable
   - Switch model
   - Switch operating system version
   - Error numbers and messages received
   - **supportSave** command output
   - Detailed description of the problem and specific questions
   - Description of any troubleshooting steps already performed and results
   - Serial console and telnet session logs
   - syslog message logs

2. **Switch Serial Number**

   The switch serial number and corresponding bar code are provided on the serial number label, as shown here:

   FT00X0054E9
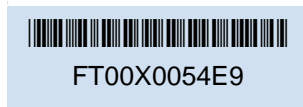
   The serial number label is located as follows:

   - *SilkWorm 3014 switches*: Top of chassis, under the insertion arm.
   - *SilkWorm 3016 and 4012 switches:* Side of switch module.
   - *SilkWorm 200E, 3200, and 3800 switches:* nonport side of chassis.
   - *SilkWorm 3250, 3850, 3900, 4100, 4900,* and *7500 switches*: Bottom of chassis.
   - *SilkWorm 24000, and 48000 directors:* Inside the front of the chassis, on the wall to the left of the ports.
   - *SilkWorm Multiprotocol Router Model AP7420:* On the bottom of the chassis and on the back of the chassis.

3. **World Wide Name (WWN)**

   - *SilkWorm 200E, 3014, 3016, 3250, 3800, 3850, 3900, 4012, 4100, 4900, 7500 switches and SilkWorm 24000, and 48000 directors:* Provide the license ID. Use the **licenseIdShow** command to display the license ID.
   - *SilkWorm Multiprotocol Router Model AP7420:* Provide the switch WWN. Use the **switchShow** command to display the switch WWN.
   - *All other SilkWorm switches:* Provide the switch WWN. Use the **wwn** command to display the switch WWN.

Document Feedback

Because quality is our first concern at Brocade, we have made every effort to ensure the accuracy and completeness of this document. However, if you find an error or an omission, or you think that a topic needs further development, we want to hear from you. Forward your feedback to:

documentation@brocade.com

Provide the title and version number and as much detail as possible about your issue, including the topic heading and page number and your suggestions for improvement.

Using Fabric OS Commands

This chapter explains how to manage a Brocade SAN and Brocade SilkWorm switches and directors. The following information is discussed:

- *"Understanding Access Levels,"* next
- *"Using the Fabric OS Command Line Interface" on page 1-3*

Refer to *Fabric OS Administrator's Guide* for information regarding optionally licensed features and information regarding configuration and management procedures.

Understanding Access Levels

Fabric OS supports two classes of user accounts: default and multiple user account (MUA).

Default accounts, introduced in early versions of Fabric OS, include root, factory, admin, and user. Each account has hard-coded permissions that define roles whose privileges correspond to the account name. The root and factory levels are reserved for support and manufacturing personnel. The admin and user accounts are intended for general switch and fabric administration activities. The admin role can perform all Fabric OS operations. The user role performs observation-only operations.

In Brocade Fabric OS v3.x and earlier, multiple-user access to a switch is limited. Each switch enables only a single session per access method, regardless of the user's access level. Switches can, however, be accessed simultaneously from different connections: for example, through the command line interface (CLI) and Brocade Web Tools. If this happens, changes from one connection might not be updated to the other, and some changes might be lost. When you connect using simultaneous multiple connections, ensure that you do not overwrite the work of another connection.

In Fabric OS v4.x/v5.x, multiple sessions are allowed. Each access level can have the number of simultaneous logins shown in Table 1-1.

Table 1-1 Fabric OS v4.x User Access Maximum Sessions

User Name	Maximum Number of Simultaneous Sessions
admin	2
user	4

The MUA role-based access control (RBAC) feature distinguishes between a user account and the role assigned to the account. The switchAdmin role, introduced in Fabric OS v5.0.1, has most of the existing admin role permissions, except the ability to perform zone and security configuration and user management. Refer to Table 1-2 for a high-level description of role permissions.

Table 1-2   Role Permissions

Functional Area	user	switchAdmin	admin
Zone configuration	View	View	Modify
Environmental	View	Modify	Modify
Logs (RAS)	View	Modify	Modify
Security	View	View	Modify
Switch configuration	View	Modify	Modify
Switch management	View	Modify	Modify
Port configuration	View	Modify	Modify
SNMP	View	Modify	Modify
Diagnostics	View	Modify	Modify
Devices	View	Modify	Modify
User management	View	N.A.	Modify
Fabric Watch	View	Modify	Modify
Advanced Performance Monitor	N.A.	Modify	Modify
Admin domain management	View	N.A.	Modify

The MUA feature was introduced in Fabric OS v3.2.0/v4.4.0 and the switchAdmin can log in; however, the role is restricted to user-level, observation-based functions.

Note

The admin access level has access to all the commands needed to manage and configure a switch or fabric. The admin account is the recommended login level.

For SilkWorm 3016 switches, the default admin account is USERID and the default password is PASSW0RD (with a zero, not the letter O). Refer to **userRename** for more information.

Using the Fabric OS Command Line Interface

The Fabric OS command line interface (accessed through either telnet or serial console) provides an administrator with full management capability on a SilkWorm switch. The Fabric OS CLI enables an administrator to monitor and manage entire fabrics, individual switches, and ports from a standard workstation. The entire suite of Fabric OS features and capabilities is available across an entire fabric, from a single access point. Selected commands must be issued from a sectelnet or SSH session, as indicated in the command description in this manual.

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 level or role and the license keys used to unlock certain features.

Fabric OS CLI is the complete fabric management tool for Brocade SANs, providing:

- Access to the full range of Fabric OS features, based on which license keys you purchase
- Assistance with configuration, monitoring, dynamic provisioning, and daily management of every aspect of storage area networks
- A deeper view of the tasks involved in managing a SilkWorm switch or director
- Configuration and management of the Brocade fabric on multiple levels
- Identification, isolation, and management of SAN events across every switch in the fabric
- Management switch licenses

The remainder of this guide describes each command, including a synopsis of its syntax, the users to which it is available, and a description of command use and behavior. The same information is available to you on your SilkWorm switch or director, using the **help** command. For example, to display the help or man page for **aliAdd**, type:

```
switch:admin> help aliadd
```

1

Fabric OS Commands

aaaConfig

Manages RADIUS configuration information.

Synopsis **aaaconfig** [*action*][*options*]

Availability admin

Description Use this command to manage the RADIUS configuration for the authentication, authorization, and accounting (AAA) services. This command displays, adds, removes, changes, enables, or disables RADIUS configuration.

When the command completes, any new configuration is saved persistently. It is effective for the next AAA request. The configuration applies to all switch instances in a platform supporting multiple switch domains.

Use the centralized RADIUS servers to manage AAA services for a switch, as defined in RFC 2865.

Note

This command can be executed when logged in through console, telnet, or SSH connection.

Operands The command takes as input an action and its associated options. Without any specified action, the command displays the usage. Specify action as one of following:

--show Displays the current AAA service configuration.

--add *server* [*options*]

Adds a RADIUS server to the configuration.

--remove *server* Removes a RADIUS server from the configuration.

--change *server* [*options*]

Changes a RADIUS server configuration.

--move *server to_position*

Moves a RADIUS server from the current position to a new position. When server is a required operand for an action, it must be either an IP address or a name in dot notation. If a name is used, DNS must be properly configured.

--radius [**on** | **off**] Turns on or off the current RADIUS configuration.

--switchdb [**on** | **off**] Turns on or off the switch local database as secondary authentication.

The following are the options for the **--add** and **--change** actions:

-p *port* RADIUS server port number

-s *secret*   Common secret between the switch and RADIUS server

-t *timeout*   Response timeout for the RADIUS server

-a [**pap** | **chap**]   Use PAP or CHAP as authentication protocol

The following provides a detailed description of each action type:

--show   List the current RADIUS servers, along with their parameters.

--add *server* [**-p** *port*][**-s** *secret*][**-t** *timeout*][**-a chap** | **pap**]

Add the specified server to the end of the RADIUS configuration list, with the specified port number, shared secret, timeout, and if PAP or CHAP is to be used as authentication protocol. *server* must be different from the servers in the existing configuration.

--remove *server*   Remove the specified server from the RADIUS configuration list. *server* must match a server in the existing configuration. To remove the last server, you must disable the RADIUS configuration first.

--change *server* [**-p** *port*][**-s** *secret*][**-t** *timeout*][**-a chap** | **pap**]

Change parameters for the specified server in the existing RADIUS configuration list. *server* must match one in the existing configuration.

--move *server to_position*

Move the specified server in the existing RADIUS configuration list from the current position to the specified new position. This rearranges the order in which the specified RADIUS server is used.

--radius [**on** | **off**]   Enable or disable the current RADIUS configuration for AAA services. This is used to switch the primary AAA services between RADIUS and the switch local database. To enable the RADIUS configuration, there must be at least one server existing in the configuration.

--switchdb [**on** | **off**]   Enable or disable the switch local database as the secondary AAA services. When enabled, if RADIUS requests a timeout for all RADIUS servers, the switch local database is used for authentication; otherwise, requests are denied.

Examples   To display the current RADIUS configuration:

```
switch:admin> aaaconfig --show

Position   ServerPortSecret  Timeout(s)   Auth-Protocol

1   192.168.233.48  1812   sharedsecret 3       CHAP
2   192.168.233.44  1812   sharedsecret 3       CHAP
3   radserver   1812   private   5 CHAP

Primary AAA Service: Switch database
Secondary AAA Service: None
```

To change the configuration for server 192.168.233.48:

```
switch:admin> aaaconfig --change 192.168.233.48 -p 3002 -s newsecret -t 1
```

See Also   none

agtCfgDefault

Resets the SNMP agent configuration to default values.

Synopsis	**agtcfgdefault**
Availability	admin, switchAdmin
Description	Use this command to reset the configuration of the SNMP agent associated with the switch default values.

This command prompts the user and only proceeds to reset on the user's confirmation. All new values successfully configured by the command takes effect immediately. These changes are persistent across power cycles and reboots. For dual-domain systems, **agtCfgDefault** operates on the SNMP agent associated with the current switch.

This command resets the following values:

sysDescr	The system (switch) description. The default value is Fibre Channel Switch in most platforms; however, the default system description value is platform specific. Different values might appear as the default for some specialized platforms.
sysLocation	The location of the system. The default value is End User Premise.
sysContact	The contact information for the system. The default value is Field Support. Refer to the *Fabric OS MIB Reference Manual* for detailed sysDescr, sysLocation, and sysContact descriptions.
authTraps	When enabled, the authentication trap, authenticationFailure, is transmitted to a configured trap recipient in the event that the agent received a protocol message that is not properly authenticated. In the context of SNMPv1 and SNMPv2c, this means that a request contains a community string that is not known to the agent. The default value for this parameter is 0 (disabled).

There are six communities, respective trap recipients, and trap recipients supported by the agent. The first three communities are for read-write (rw) access and the last three are for read-only (ro) access. The default value for the trap recipient of each community is 0.0.0.0. The default values for the community strings are:

- Community 1: Secret C0de
- Community 2: OrigEquipMfr
- Community 3: private
- Community 4: public
- Community 5: common
- Community 6: FibreChannel

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.

Trap Recipient Severity Level

The trap severity level is associated with each trap recipient IP address. The event trap level is in conjunction with the event's severity level. When an event occurs and if its severity level is at or below the set value, the SNMP event traps (swEventTrap, swFabricWatchTrap, and connUnitEventTrap) are sent to the trap recipients. By default, this value is set to 0, implying that no such traps are sent. Possible values are:

- 0   none

- 1   critical

- 2   error

- 3   warning

- 4   informational

- 5   debug

Refer to **errShow** for related information.

The ACL check is as follows: there are six ACLs to restrict SNMP get/set/trap operations to hosts under a host-subnet-area. Host-subnet-area is defined by comparing nonzero IP octets. For example, an ACL of 192.168.64.0 enables access by any hosts that start with the specified octets. The connecting host is enabled to set each host-subnet-area to be read-write or read-only. The highest privilege matched out of six entries is given to the access. The ACL check is turned off when all six entries contain 0.0.0.0.

Note

When secure mode is enabled, the access control list feature is incorporated into the WSNMP and RSNMP security policies. Community strings can be changed on the primary FCS switch only and will propagate changes across the fabric.

Operands   none

Examples   To reset the SNMP agent to default values:

```
switch:admin> agtcfgdefault
*****
This command will reset the agent's configuration back to factory default
*****
     Current SNMP Agent Configuration
     Customizable MIB-II system variables:
               sysDescr = Fibre Channel Switch.
           sysLocation = End User Premise
             sysContact = sweng
                authTraps = 0 (OFF)

     SNMPv1 community and trap recipient configuration:
       Community 1: Secret C0de (rw)
         Trap recipient: 192.168.15.41
         Trap recipient Severity level: 4
       Community 2: OrigEquipMfr (rw)
         No trap recipient configured yet

(continued on next page)
```

```
     Community 3: private (rw)
       No trap recipient configured yet
     Community 4: public (ro)
       No trap recipient configured yet
     Community 5: common (ro)
       No trap recipient configured yet
     Community 6: FibreChannel (ro)
       No trap recipient configured yet

  SNMP access list configuration:
  Entry 0:  Access host subnet area 192.168.64.0 (rw)]
  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

  *****
  Are you sure? (yes, y, no, n): [no] y
  Committing configuration...done.
  agent configuration reset to factory default
  Current SNMP Agent Configuration
  Customizable MIB-II system variables:
           sysDescr = Fibre Channel Switch.
         sysLocation = End User Premise
          sysContact = Field Support.
            authTraps = 0 (OFF)

  SNMPv1 community and trap recipient configuration:
    Community 1: Secret C0de (rw)
      No trap recipient configured yet
    Community 2: OrigEquipMfr (rw)
      No trap recipient configured yet
    Community 3: private (rw)
      No trap recipient configured yet
    Community 4: public (ro)
      No trap recipient configured yet
    Community 5: common (ro)
      No trap recipient configured yet
    Community 6: FibreChannel (ro)
      No trap recipient configured yet

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
```

See Also   **agtCfgSet**, **agtCfgShow**, **snmpConfig**

Note: Enter commands in lowercase only; mixed case is for readability.

agtCfgSet

Modifies the SNMP agent configuration.

Synopsis   **agtcfgset**

Availability   admin, switchAdmin

Description   Use this command to modify the configuration of the SNMP agent in the switch.

All values successfully configured by this command take effect immediately. These values are persistent across power cycles and reboots. For dual-domain systems, this command operates on the SNMP agent associated with the current switch.

This command updates the following values:

sysDescr	The system (switch) description. The default value is Fibre Channel Switch in most platforms; however, the default system description value is platform specific. Different values might appear as the default for some specialized platforms.
sysLocation	The location of the system. The default value is End User Premise.
sysContact	The contact information for the system. The default value is Field Support. Refer to the *Fabric OS MIB Reference Manual* for detailed sysDescr, sysLocation, and sysContact descriptions.
authTrapsEnabled	When enabled, the authentication trap, authenticationFailure, is transmitted to a configured trap recipient in the event that the agent received a protocol message that is not properly authenticated. In the context of SNMPv1 and SNMPv2c, this means that a request contains a community string that is not known to the agent. The default value for this parameter is 0 (disabled).

There are six communities, respective trap recipients, and trap recipients supported by the agent. The first three communities are for read-write (rw) access and the last three are for read-only (ro) access. The default value for the trap recipient of each community is 0.0.0.0. The default values for the community strings are:

- Community 1: Secret C0de
- Community 2: OrigEquipMfr
- Community 3: private
- Community 4: public
- Community 5: common
- Community 6: FibreChannel

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.

Trap Recipient Severity Level

The trap severity level is associated with each trap recipient IP address. The event trap level is in conjunction with the event's severity level. When an event occurs and if its severity level is at or below the set value, the SNMP event traps (swEventTrap, swFabricWatchTrap, and connUnitEventTrap) are sent to the trap recipients. By default, this value is set to 0, implying that no such traps are sent. Possible values are:

- 0   none

- 1   critical

- 2   error

- 3   warning

- 4   informational

- 5   debug

Refer to **errShow** for related information.

The ACL check is as follows: there are six ACLs to restrict SNMP get/set/trap operations to hosts under a host-subnet-area. Host-subnet-area is defined by comparing nonzero IP octets. For example, an ACL of 192.168.64.0 enables access by any hosts that start with the specified octets. The connecting host is enabled to set each host-subnet-area to be read-write or read-only. The highest privilege matched out of six entries is given to the access. The ACL check is turned off when all six entries contain 0.0.0.0.

Note

When secure mode is enabled, the access control list feature is incorporated into the WSNMP and RSNMP security policies. Community strings can be changed on the primary FCS switch only and will propagate changes across the fabric.

Operands   none

Note: Enter commands in lowercase only; mixed case is for readability.

Examples To modify the SNMP configuration values:

```
switch:admin> agtcfgset

    Customizing MIB-II system variables ...

    At each prompt, do one of the followings:
      o <Return> to accept current value,
      o enter the appropriate new value,
      o <Control-D> to skip the rest of configuration, or
      o <Control-C> to cancel any change.

    To correct any input mistake:
    <Backspace> erases the previous character,
    <Control-U> erases the whole line,
    sysDescr: [FC Switch]
    sysLocation: [End User Premise]
    sysContact: [Field Support]
    authTrapsEnabled (true, t, false, f): [true]

    SNMP community and trap recipient configuration:
    Community (rw): [Secret C0de]
    Trap Recipient's IP address in dot notation: [192.168.1.51]
    Trap recipient Severity level : (0..5) [0] 3
    Community (rw): [OrigEquipMfr]
    Trap Recipient's IP address in dot notation: [192.168.1.26]
    Trap recipient Severity level : (0..5) [0]
    Community (rw): [private]
    Trap Recipient's IP address in dot notation: [0.0.0.0] 192.168.64.88
    Trap recipient Severity level : (0..5) [0] 1
    Community (ro): [public]
    Trap Recipient's IP address in dot notation: [0.0.0.0]
    Community (ro): [common]
    Trap Recipient's IP address in dot notation: [0.0.0.0]
    Community (ro): [FibreChannel]
    Trap Recipient's IP address in dot notation: [0.0.0.0]

    SNMP access list configuration:
    Access host subnet area in dot notation: [0.0.0.0] 192.168.64.0
    Read/Write? (true, t, false, f): [true]
    Access host subnet area in dot notation: [0.0.0.0]
    Read/Write? (true, t, false, f): [true]
    Access host subnet area in dot notation: [0.0.0.0]
    Read/Write? (true, t, false, f): [true]
    Access host subnet area in dot notation: [0.0.0.0]
    Read/Write? (true, t, false, f): [true]
    Access host subnet area in dot notation: [0.0.0.0]
    Read/Write? (true, t, false, f): [true]
    Access host subnet area in dot notation: [0.0.0.0]
    Read/Write? (true, t, false, f): [true]
    Committing configuration...done.
    value = 1 = 0x1
```

See Also **agtCfgDefault**, **agtCfgShow**, **snmpConfig**,
SW_v5_x.mib, "Switch Management Information & Switch Enterprise Specific Trap",
RFC1157, "A Simple Network Management Protocol (SNMPv1)",
RFC1213, "Management information Base for Network Management of TCP/IP-based Internets: MIB-II"

agtCfgShow

Displays the SNMP agent configuration.

Synopsis   **agtcfgshow**

Availability   admin, switchAdmin, user

Description   Use this command to display the configuration of the SNMP agent in the switch.

 Note

On a dual-switch chassis, there is one SNMP agent per logical switch. This command is specific to the logical switch to which you are logged in.

The following information displays:

sysDescr	The system (switch) description. The default value is Fibre Channel Switch.
sysLocation	The location of the system. The default value is End User Premise.
sysContact	The contact information for the system. The default value is Field Support. Refer to the *Fabric OS MIB Reference Manual* for detailed sysDescr, sysLocation, and sysContact descriptions.
authTrapsEnabled	When enabled, the authentication trap, authenticationFailure, is transmitted to a configured trap recipient in the event that the agent received a protocol message that is not properly authenticated. In the context of SNMPv1 and SNMPv2c, this means that a request contains a community string that is not known to the agent. The default value for this parameter is 0 (disabled).

There are six communities, respective trap recipients, and trap recipients supported by the agent. The first three communities are for read-write (rw) access and the last three are for read-only (ro) access. The default value for the trap recipient of each community is 0.0.0.0. The community string length ranges from 2 to 16 characters. The default values for the community strings are:

- Community 1: Secret C0de
- Community 2: OrigEquipMfr
- Community 3: private
- Community 4: public
- Community 5: common
- Community 6: FibreChannel

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.

Trap Recipient Severity Level

The event trap level in conjunction with the event's severity level. When an event occurs and if its severity level is at or below the set value, the SNMP trap, swEventTrap, is sent to configured trap recipients. By default, this value is set to 0, implying that no swEventTrap is sent. Possible values are:

- 0   none

- 1   critical

- 2   error

- 3   warning

- 4   informational

- 5   debug

Refer to **errShow** for related information.

The ACL check is as follows: there are six ACLs to restrict SNMP get/set/trap operations to hosts under a host-subnet-area. Host-subnet-area is defined by comparing nonzero IP octets. For example, an ACL of 192.168.64.0 enables access by any hosts that start with the specified octets. The connecting host is enabled to set each host-subnet-area to be read-write or read-only. The highest privilege matched out of six entries is given to the access. The ACL check is turned off when all six entries contain 0.0.0.0.

Note

When secure mode is enabled, the access control list feature is incorporated into the WSNMP and RSNMP security policies. Community strings can be changed on the primary FCS switch only and will propagate changes across the fabric.

Operands   none

Note: Enter commands in lowercase only; mixed case is for readability.

agtCfgShow

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Examples   To display SNMP agent configuration information:

```
switch:admin> agtcfgshow
Current SNMP Agent Configuration
        Customizable MIB-II system variables:
                 sysDescr = FC Switch
              sysLocation = End User Premise
               sysContact = Field Support.
                 authTraps = 1 (ON)

    SNMPv1 community and trap recipient configuration:
      Community 1: Secret C0de (rw)
        Trap recipient: 192.168.1.51
        Trap recipient Severity level: 4
      Community 2: OrigEquipMfr (rw)
        Trap recipient: 192.168.1.26
        Trap recipient Severity level: 0
      Community 3: private (rw)
        No trap recipient configured yet
      Community 4: public (ro)
        No trap recipient configured yet
      Community 5: common (ro)
        No trap recipient configured yet
      Community 6: FibreChannel (ro)
        No trap recipient configured yet

    SNMP access list configuration:
    Entry 0:  Access host subnet area 192.168.64.0 (rw)]
    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
```

See Also   agtCfgDefault, agtCfgSet, snmpConfig

aliAdd

Adds a member to a zone alias.

Synopsis   **aliadd "***aliName***", "***member***;** *member***"**

Availability   admin

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 be preserved across switch reboots, it must be saved to flash memory using the **cfgSave** command. For the change to become effective, an appropriate zone configuration must be enabled using the **cfgEnable** command.

 Note

This command requires a Brocade Advanced Zoning license.

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

Operands   This command has the following required operands:

"*aliName*"   Specify the name of a zone alias, in quotation marks.

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

- A switch domain and port area number pair. View the area numbers for ports using the **switchShow** command.

- QuickLoop AL_PAs

- WWN

Examples   To add members to zone aliases array1, array2, and loop1:

```
switch:admin> aliadd "array1", "1,2"
switch:admin> aliadd "array2", "21:00:00:20:37:0c:72:51"
switch:admin> aliadd "loop1", "4,5[0x02]; 6,7[0xEF]"
```

See Also   **aliCreate**, **aliDelete**, **aliRemove**, **aliShow**

aliasDelete

Deletes a port from all local groups.

Synopsis   **aliasdelete** *portID*

Availability   admin, switchAdmin

Description   Use this command to delete a local port from all local groups. The group is deleted if it becomes empty after deleting the local port.

Use the **aliasShow** command to show the existing groups with its corresponding N_Ports.

Operands   The following **aliasDelete** operand is required:

portID   The port ID in its hexadecimal representation

Examples   To delete a port from an existing group:

```
switch:admin> aliasdelete 0x19c00
aliasDelete: succeeded
```

Exit Status   0   Successful operation

Non Zero   Indicates the operation has failed

See Also   **aliasJoin**, **aliasShow**, **fabricShow**, **switchShow**

aliasJoin

Creates a multicast alias group of N_Ports. If the group already exists, the N_Ports are added to the existing group.

Synopsis   **aliasjoin**

Availability   admin, switchAdmin

Description   Use this command to create an multicast alias group of N_Ports or to add N_Ports to an existent group. Any online N_Port defined in the fabric can be part of a group. An N_Port can be added from any switch that is part of the fabric.

To get a list of online ports currently defined in the fabric, use the **nsAllShow** command. If the user wants to add only local ports associated with the local switch, use the **nsShow** command to get list of ports associated with the local switch.

Operands   none

Examples   To create an alias group of N_Ports or to add N_Ports to an existing group:

```
switch:admin> aliasjoin
aliasJoin: To add ports to an existing or new multicast group
Number of ports in the group: (1..64) [1]
To set an authorization password? (yes, y, no, n): [no]
no password
Setting the authorization control
Add control: 0 by any, 1 only itself, 2 by creator: (0..2) [0]
Del control: 0 by any, 1 only itself, 2 by creator: (0..2) [0]
Lsn control: 0 by any, 1 by none: (0..1) [1]

Add control 0, Del control 0 Lsn control 1
Setting the Routing Bit: (0x0..0xc) [0x0]
using FC-4 Device Data ...
Setting FC-4 Type: (0x0..0x5d) [0x5]
using 0x05 ...
To set the alias qualifier in WWN format?  (yes, y, no, n): [yes]
Qualifier (in hex): [10:00:00:60:69:80:02:28]
Port ID (in hex): (0x0..0xeffa00) [0] 0x19c00
npList[0] = 0x19c00
aliasJoin: Join request to Group Address 0xfffb00 succeeds
```

Exit Status   0   Successful operation

Non Zero   Indicates the operation has failed

See Also   **aliasDelete**, **aliasPurge**, **aliasShow**, **fabricShow**, **nsAllShow**, **nsShow**

aliasPurge

Removes an alias group.

Synopsis   **aliaspurge** *groupID*

Availability   admin, switchAdmin

Description   Use this command to remove an alias group.

Operands   The following **aliasPurge** operand is required:

groupID   The group ID in hexadecimal representation

Examples   To remove an alias group:

```
switch:admin> aliaspurge 0xfffb00
aliasPurge: succeeded
```

Exit Status   0   Successful operation

Non Zero   Indicates the operation has failed

See Also   **aliasJoin**, **aliasShow**, **fabricShow**, **switchShow**

aliasShow

Displays local alias server information.

Synopsis   **aliasshow**

Availability   admin, switchAdmin, user

Description   Use this command to display local information. If there is no local alias group, a message is displayed. If there are multiple entries in the local alias group, they are displayed.

Operands   none

Examples   To display the entries in the local alias server:

```
switch:admin> aliasshow
{AliasID Creator Token [rb, type, grptype, qlfr] Member List

  fffb00  fffffd [00, 05, 10, 10000060 69800228] { 019c00 }
  }
  The Local Alias Server has 1 entry
```

Exit Status   0   Successful operation

Non Zero   Indicates the operation has failed

See Also   **fabricShow**, **switchShow**

aliCreate

Creates a zone alias.

Synopsis   **alicreate "***aliName***", "***member***;** *member***"**

Availability   admin

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

Zone alias members can be specified using the area number to represent a specific port and slot combination. Area numbers are automatically assigned to a port by the Fabric OS. You can view the Area numbers using the **switchShow** command.

This command changes the defined configuration. For the change to be preserved across switch reboots, it must be saved to flash memory using the **cfgSave** command. For the change to become effective, an appropriate zone configuration must be enabled using the **cfgEnable** command.

Note

This command requires a Brocade Advanced Zoning license.

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

Operands   This command has the following operands:

"*aliName***"**   Specify a name for the zone alias, in quotation marks. This operand is required. A zone alias name must begin with a letter and can be followed by any number of letters, digits and underscore characters. Names are case sensitive: for example, "Ali_1" and "ali_1" are different zone aliases. Spaces are ignored.

"*member***"**   Specify a member or list of members to be added to the alias, in quotation marks, separated by semicolons. This operand is required. An alias member can be specified by one or more of the following methods:

- A switch domain and port area number pair. View the area numbers for ports using the **switchShow** command.
- WWN
- QuickLoop AL_PAs

Examples   To create a zone alias:

```
switch:admin> alicreate "array1", "2,32; 2,33; 2,34"
switch:admin> alicreate "array2", "21:00:00:20:37:0c:66:23"
switch:admin> alicreate "loop1", "4,5[0x02]; 6,7[0xEF]; 5,4"
```

See Also   **aliAdd**, **aliDelete**, **aliRemove**, **aliShow**

Note: Enter commands in lowercase only; mixed case is for readability.

aliDelete

Deletes a zone alias.

Synopsis   **alidelete "***aliName***"**

Availability   admin

Description   Use this command to delete a zone alias.

This command changes the defined configuration. For the change to be preserved across switch reboots, it must be saved to flash memory using the **cfgSave** command. For the change to become effective, an appropriate zone configuration must be enabled using the **cfgEnable** command.

 Note

This command requires a Brocade Advanced Zoning license.

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

Operands   This command has the following operand:

"*aliName***"**   Specify the name of zone alias to be deleted. This operand must be enclosed in quotation marks. This operand is required.

Examples   To delete the zone alias array2:

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

See Also   **aliAdd**, **aliCreate**, **aliRemove**, **aliShow**

aliRemove

Removes a member from a zone alias.

Synopsis   **aliremove "***aliName***", "***member***;** *member***"**

Availability   admin

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 be preserved across switch reboots, it must be saved to flash memory using the **cfgSave** command. For the change to become effective, an appropriate zone configuration must be enabled using the **cfgEnable** command.

Note

This command requires a Brocade Advanced Zoning license.

When security 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 to have members removed, in quotation marks. This operand is required.

"*member*"   Specify a member or list of members to be removed from the alias, in quotation marks, separated by semicolons. An alias member can be specified by one or more of the following methods:

- A switch domain and port area number pair. View the area numbers for ports using the **switchShow** command.

- WWN

- QuickLoop AL_PAs

This operand is required. The member list is located by an exact string match; therefore, it is important to maintain the order when removing multiple members. For example, if a zone alias contains "1,2; 1,3; 1,4", then removing "1,3; 1,4" succeeds but removing "1,4; 1,3" fails.

Examples   Remove a World Wide Name from "array1":

```
switch:admin> aliremove "array1", "3,5"
switch:admin> aliremove "array1", "21:00:00:20:37:0c:76:8c"
switch:admin> aliremove "array1", "0xEF"
```

See Also   **aliAdd**, **aliCreate**, **aliDelete**, **aliShow**

aliShow

Displays zone alias information.

Synopsis   **alishow** [**"***pattern***"**][**,** *mode*]

Availability   admin, switchAdmin, user

Description   Use this command to display zone configuration information.

If a parameter is specified, it is used as a pattern to match zone alias names; those that match in the defined configuration are displayed.

Note

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

Operands   This command has the following optional operands:

"*pattern***"**   A POSIX-style regular expression used to match zone alias names. This operand must be enclosed in quotation marks. Patterns can contain:

- Question mark (?), which is a placeholder for any single character

- Asterisk (*), which is a placeholder for any string of characters

- Ranges, which are a placeholder for any character within the range. Ranges must be enclosed in brackets: for example, [0-9] or [a-f].

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 flash memory. The default value is 0.

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

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
```

See Also   **aliAdd**, **aliCreate**, **aliDelete**, **aliRemove**

aptPolicy

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

Synopsis   **aptpolicy** [*policy*]

Availability   admin, switchAdmin

Description   Use this command to change the performance algorithm on the switch. Several internal parameters are changed by the use of this command, and a detailed performance-tuning discussion is beyond the scope of this manual. The default parameters are optimal for most SAN applications; typical customers do not need to use this command.

When used with no arguments, this command displays a list of APT policies supported on this switch, as well as the current policy. This can be done at any time.

The switch must be disabled before using this command to change the current policy.

Operands   This command has the following operand:

policy   Specifies the new 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:

1. Ingress port on which the frame was received

2. Destination domain for the frame

The chosen path remains the same if Dynamic Load Sharing (DLS) feature is not enabled. If DLS is enabled, then a different path might be chosen on a fabric event. Refer to **dlsSet** for the definition of a fabric event.

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

Note that static routes are supported only with this policy.

3   Exchange-based routing policy

With this policy, the path chosen for an ingress frame is based on:

1. Ingress port on which the frame was received

2. FC address of the SID for this frame

3. FC address of the DID for this frame

4. FC Originator Exchange ID (OXID) for this frame

This policy allows for optimal utilization of the available paths as I/O traffic between different (SID, DID, OXID) pairs can use different paths. All frames received on a ingress port with the same (SID, DID, OXID) parameters takes the same path unless there is a fabric event. Refer to **dlsSet** for the definition of a fabric event.

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

Examples   To display the current policy (example from a SilkWorm 4100):

```
switch:admin> aptpolicy
    Current Policy: 3

    3: Default Policy
    1: Port Based Routing Policy
    2: Device Based Routing Policy
    3: Exchange Based Routing Policy
```

See Also   dlsReset, dlsSet, dlsShow, switchDisable

Note: Enter commands in lowercase only; mixed case is for readability.

authUtil

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authUtil

Displays and sets the authentication configuration.

Synopsis   **authutil** [**--show**][**--set** *value*]

Availability   admin, switchAdmin

Description   Use this command to display and set local switch authentication parameters. Use **--set** to change authentication parameters such as protocol and Diffie-Hellman group (DH group), which saves new configuration persistently. Authentication process uses the protocol that is set using this command.

When no protocol is set, the default setting of fcap, dhchap is used. The default setting of "*" (for example, "0,1,2,3,4") is used when no group is set. The new configuration is effective with the next authentication request.

Use **--show** to display the current authentication configuration of the switch. Use **portShow** to display the authentication type and associated parameters, if applicable, used on the port at port online or when enabling security, whichever occurs last.

Note

A security license is required to run this command in nonsecure as well as secure mode.

Operands   The operands are as follows:

--show   Displays local authentication configuration.

--set   Modifies authentication configuration. Values include:

   -a   Sets authentication protocol. Specify fcap to set only FCAP authentication, dhchap to set only DH-CHAP authentication, and all to set both FCAP and DH-CHAP (default). When authentication is set to all, implicit order is FCAP followed by DH-CHAP; for example, in authentication negotiation FCAP is given priority over DH-CHAP on the local switch, however a responder can still select DH-CHAP.

   -g   Sets DH group. Values 0 to 4 and "*" are valid values. DH group 0 is called NULL DH. A user can select other groups between 1 and 4. Each DH group specifies a key size and associated parameters implicitly. Higher group value provides stronger cryptography and higher level of security in authentication protocol. When DH group is set to a specified value, only that DH group is enabled in authentication. Specifying "*" as a group enables all DH groups 0, 1, 2, 3, and 4, in that order; for example, in authentication negotiation NULL DH is given priority over other groups, however a responder can still select other DH group.

Without any specified operands, the command displays the usage.

Examples   To display authentication configuration on the switch:

```
switch:admin> authutil --show
AUTH TYPE       HASH TYPE       GROUP TYPE
-----------------------------------
dhchap          sha1,md5     0,1,2,3,4
```

Note: Enter commands in lowercase only; mixed case is for readability.

To set DH-CHAP as 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 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 auth negotiate in order of 0, 1, 2, 3, and 4:

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

See Also   portShow, secAuthSecret

backplaneTest

Tests the backplane connection for a multiple-blade configured system.

Synopsis   **backplanetest** [**--slot** *number*][**-passcnt** *count*][**-payload** *value*][**-pat** *type*][**-ports** *itemlist*] [**-verbose** *mode*]

Availability   admin

Description   Use this command to verify the backplane connection for each blade through the backend external (BE) ports. This command can run only on a multiple-blade configured system. It assumes that all blades available on the specified switch have passed the blade diagnostics tests. This command verifies the backplane connection by using a functional blade's frame transmitter and receiver features.

Note

No other diagnostics can be executed until this test is completed.

This command is supported only on SilkWorm 24000 platforms.

Operands   This command has the following optional operands:

--slot *number*	Specifies the slot on which the diagnostic operates. The ports specified are relative to this slot number.
-passcnt *count*	Specifies the number of times to perform this test. The default value is 1.
-payload *value*	Specifies the byte size of the test frame payload. The payload size must be in multiples of 4, and the minimum size is 16. The default value is 512 bytes.
-pat *type*	Specifies the test-pattern type to use in the test frame payload. Twenty types of predefined patterns are provided with the test; the default is jCRPAT (type=17). Use **dataTypeShow** to display the pattern types supported with **backplaneTest**.
-ports *itemlist*	Specifies a list of blade ports to test. By default, all the blade ports in the specified slot are used. Refer to **itemList** for further details.
-verbose *mode*	Specifies verbose mode. If specified with a nonzero value, this mode displays the test progress in detail. The default value is to disable the mode.

Examples   To test backplane connections on a SilkWorm director:

```
switch:admin> backplanetest -ports 1/16, 18, 20 -payload 2048 -verbose 1
Running backplanetest .............

Test frame info for Backplane Connection Test:
# of frames:  1
sid data:    0xfffffd
did data:    0xfffffd
payload size: 2048 bytes

Test Complete: backplanetest Pass 1 of 1
Duration 0 hr, 0 min & 1 sec (0:0:1:715).
 passed.
```

backplaneTest

Diagnostics   When this command detects failure(s), the subtest might report one or more of the following error messages:

- `DATA`
- `TIMEOUT`
- `XMIT`

Refer to the *Fabric OS System Error Message Reference Manual* for more information.

See Also   **itemList**

backport

Tests for backend ASIC-to-ASIC links.

Synopsis **backport** [**-nframes** *count*][**-ports** *itemlist*][**-lb_mode** *mode*][**-fr_type** *type*][**-extonly** *mode*]

Availability admin

Description Use this command to test the backplane routing and virtual channel (VC) allocation. This test applies to single blade as well as multiblade systems.

The following items are tested:

- Proper backend port domain routing setup such that every user port has a valid path to every other user port. If a valid path does not exist between any two user ports, that path will fail to transmit the first frame between the two ports.

- Proper virtual channel mapping such that an arbitrarily large number of frames might be transmitted without running out of credit. If the VC credit mapping is not correct then the test will fail after enough frames have been sent to exhaust the initial credit.

- Proper trunking of backend ports. The frames send in bursts. If the trunking is not set up properly, the burst of frames do not arrive in-order.

- ASIC errors along each path. The test checks for CRC and ENC errors for each port used between the source and destination ports to help isolate failures. It also checks that each member of every trunk group along the path has sent or received at least one frame.

Area routing between user ports is not tested. Use of this command assumes that the same database is used for domain and area routes; therefore, domain results are indicative of area operation.

Note

Virtual channel mapping is not tested if **-extonly** is set to 1.

This command is supported only on SilkWorm 3014, 3016, 3250, 3850, 3900, 4012, 4100, and 24000 platforms.

Operands This command has the following operands:

-nframes *count* Specifies the number of frames per port to send. The test runs until the specified number of frames has been transmitted on each port. The total number of frames that this command circulates is determined at runtime. The default value is 10 and the minimum value is 3. Any value less than the minimum is ignored and the minimum value is used. The maximum value is dependant on the platform. It is determined by the number of front-end ports on the specific platform and the type of frame (single frame, spinfab, or spinfab 1K) specified.

-ports *itemlist* Specifies a list of user ports. The default value is all user ports. Refer to **itemList** for more information.

-lb_mode *mode*   Selects the loopback point for the test. By default, backport uses internal loopback.

Mode	Description
1	Port loopback (loopback plugs)
2	External (SERDES) loopback
5	Internal (parallel) loopback

-fr_type *type*   Specifies the frame type to send. The default value is 1.

Type	Description
0	Single frame
1	spinfab frames
2	spinfab 1K frames

-extonly *mode*   Specifies external-test-only mode. The default value is 0, which disables this mode. This command normally sends bursts of frames from each port under test to every other port in the list. With -extonly mode set to 1, the command sends only one burst of frames to each port from each ASIC pair-to-ASIC pair link. This tests all of the external connections with only K * N frames instead of the N^2 frames required in all-to-all mode.

This mode is intended to be used in ESS/burn-in testing to optimize test time. **backport** tests only the external connections between each ASIC pair. **txdPath** is used to test the internal ASIC pair-to-ASIC pair paths. The values are:

0	Send frames from all ports to all other ports.
1	Send only one burst of frames to each link.

Examples   To test for backend ASIC pair links:

```
switch:admin> backport -ports 1/1-1/3 -nframes 840
One moment please ...
backport running...
backport: Completed 840 frames, status:  passed.
```

Diagnostics   When the command detects failure(s), the test can report one or more of the following error messages:

- `ERR_STAT`
- `ERR_STATS`
- `INIT`
- `PORT_DIED`
- `PORT_STOPPED`
- `XMIT`

Refer to the *Fabric OS System Error Message Reference Manual* for more information.

See Also   **crossPortTest**, **itemList**, **portLoopbackTest**, **spinFab**, **spinSilk**, **txdPath**

bannerSet

Sets the banner on the local switch.

Synopsis   **bannerset** [*banner*]

Availability   admin, switchAdmin

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

The banner is a string of alphanumeric characters. It is displayed whenever a user tries to log in to a switch.

The banner can be created using the *banner* operand or by entering the **bannerSet** command without an operand, making the session interactive.

If you enter the banner text using the interactive method, the valid length is 1022 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.

Operands   This command has the following optional operand:

banner   Specify a text string to be displayed when a user logs in. If you enter the banner text using the banner operand, the valid length is 116 characters.

Examples   To set a new banner for a switch:

```
switch:admin> bannerset "My banner"

switch:admin> bannerSet
Please input context of security banner (press "." RETURN at the
beginning of a newline to finish input): Do not log into this
switch if you are not an authorized administrator.
.
```

See Also   **bannerShow**

Note: Enter commands in lowercase only; mixed case is for readability.

bannerShow

Displays the banner text.

Synopsis **bannershow**

Availability admin, switchAdmin

Description Use this command to display the contents of the banner.

Operands none

Examples To display the banner for a switch:

```
switch:admin> bannershow
Banner:
Do not log into this switch if you are not an authorized administrator.
```

See Also **bannerSet**

bcastShow

Displays broadcast routing information.

Synopsis   **bcastshow**

Availability   admin, switchAdmin, user

Description   Use this command to display the broadcast routing information for all ports in the switch. The broadcast routing information indicates all ports that are members of the broadcast distribution tree: ports that are able to send and receive broadcast frames.

Normally, all F_Ports and FL_Ports are members of the broadcast distribution tree. The broadcast path selection protocol selects the E_Port members of this tree in a manner designed to prevent broadcast routing loops.

The following fields display:

Group   The multicast group ID of the broadcast group (always 256)

Member Ports   A map of all ports in broadcast tree

Member ISL Ports   A map of all E_Ports in broadcast tree

The broadcast routing information for the ports is displayed as a set of hexadecimal bit maps. Each bit in a bit map represents a port, with the least significant bit in each row representing port 0, 32, 64, and so on.

Note

The output from this command varies, depending on switch type.

Operands   none

Examples   To display the broadcast routing information for all ports in the switch:

```
switch:admin> bcastShow

Group   Member Ports    Member ISL Ports
----------------------------------------
256     0x00012083      0x00002080
        0x00000440      0x00000400
        0x00770000      0x00700000
        0x00008200      0x00000000
        0x00000001      0x00000000
```

In this example, from a switch with 128 ports, the member ports consist of ports 7, 13, 42, 84, 85, and 86. The final Member Ports bit set represents the embedded port (frames sent to be handled by firmware) and is typically set.

See Also   **portRouteShow**

bladeBeacon

Sets blade beaconing mode on or off.

Synopsis   **bladebeacon** [*slotnumber*] *mode*

Availability   admin, switchAdmin

Description   Use this command to enable or disable blade beaconing or to display the current beaconing mode for one blade.

When beaconing is enabled, the port LEDs flash amber in a running pattern from left to right and right to left. The pattern continues until the user turns it off. This can be used to locate a physical unit.

Beaconing mode only takes over the port LEDs; it does not change the switch's functional behavior. The normal flashing LED pattern (associated with an active, faulty, or disabled port, for example) is suppressed and only the beaconing pattern is displayed. If a diagnostic frame-based test (such as **portLoopbackTest**, **crossPortTest**, or **spinSilk**) is executed, the two LED patterns are interwoven. The diagnostic test flickers the LEDs green and the beaconing mode runs the LEDs amber.

The **switchShow** command can be used to display if the status of blade beaconing mode is on or off.

Note

This command is only available on a SilkWorm director.

Operands   This command has the following operands:

slotnumber   Specifies the slot number to enable **bladeBeacon**.

mode   Specify a value of 1 to set beaconing mode on. Specify a value of 0 to set beaconing mode off. This operand is optional; if omitted, the current mode displays.

Examples   To enable beaconing on slot 3, display the beaconing mode, the disable the slot:

```
switch:admin> bladebeacon 2 1
switch:admin> bladebeacon 2
value = 1
switch:admin> bladebeacon 2 0
```

See Also   **switchShow**

bladeDisable

Disables all user ports on a blade.

Synopsis   **bladedisable** [*slotnumber*]

Availability   admin, switchAdmin

Description   Use this command to disable all user ports on a blade. All ports on the blade are taken offline. If the switch was connected to a fabric through this blade, the remaining switches reconfigure, and this switch will configure based on the other blade ports.

The blade must be disabled before making configuration changes or before running many of the diagnostic tests.

The blade does not need to be disabled before rebooting or powering off.

Observe and verify the disable process by watching the front panel LEDs change to slow flashing yellow as each port of the blade disables.

Note

A blade cannot be disabled or enabled when the switch is disabled or when the blade itself is disabled, faulted, powered off, or running diagnostics.

Operands   This command has the following operand:

slotnumber   Specifies the slot number on which the ports are to be disabled.

Examples   To disable blade 2 and then verify:

```
switch:admin> bladedisable 2
Blade 2 is being disabled...Done
switch:admin> slotshow

Slot   Blade Type   ID    Status
--------------------------------
  1     SW BLADE    2     ENABLED
  2     SW BLADE    2     ENABLED (User Ports Disabled)
  3     SW BLADE    2     ENABLED
  4     SW BLADE    2     ENABLED
  5     CP BLADE    1     ENABLED
  6     CP BLADE    1     ENABLED
  7     SW BLADE    2     ENABLED
  8     SW BLADE    2     ENABLED
  9     SW BLADE    2     ENABLED
 10     SW BLADE    2     ENABLED
```

See Also   **bladeEnable**, **portDisable**, **portEnable**, **switchShow**

bladeEnable

Enables all user ports on a blade.

Synopsis   **bladeenable** [*slotnumber*]

Availability   admin, switchAdmin

Description   Use this command to enable all user ports on a blade. All ports within the blade that did not fail the power-on self-test (POST) are enabled (except for persistently disabled ports); they might 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 at the end of the countdown, then 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 FC-SW for a complete description of this process.

Observe and verify the enable process by watching the front-panel LEDs change from slow flashing amber as each port enables. The LEDs change to green for online ports, unlighted for disconnected ports, or amber for ports that do not initialize.

Note

A blade cannot be disabled or enabled when the switch is disabled or when the blade itself is disabled, faulted, powered off, or running diagnostics.

Persistently disabled ports are not enabled by this command.

Operands   This command has the following operand:

slotnumber   Specifies the slot number to be enabled.

Examples   To display the slot status, enable the user ports in slot 4, and verify the setting:

```
switch:admin> slotshow

Slot   Blade Type   ID    Status
-------------------------------
  1     SW BLADE    2     ENABLED
  2     UNKNOWN           VACANT
  3     UNKNOWN           VACANT
  4     SW BLADE    2     ENABLED (User Ports Disabled)
  5     CP BLADE    1     ENABLED
  6     CP BLADE    1     ENABLED
  7     SW BLADE    2     ENABLED
  8     UNKNOWN           VACANT
  9     UNKNOWN           VACANT
 10     UNKNOWN           VACANT

switch:admin> bladeenable 4
slBlade 4 is being enabled...Done
switch:admin> slotshow

Slot   Blade Type   ID    Status
-------------------------------
  1     SW BLADE    2     ENABLED
  2     UNKNOWN           VACANT
  3     UNKNOWN           VACANT
  4     SW BLADE    2     ENABLED
  5     CP BLADE    1     ENABLED
  6     CP BLADE    1     ENABLED
  7     SW BLADE    2     ENABLED
  8     UNKNOWN           VACANT
  9     UNKNOWN           VACANT
 10     UNKNOWN           VACANT
```

See Also   **bladeDisable**, **portDisable**, **portEnable**, **switchShow**

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Note: Enter commands in lowercase only; mixed case is for readability.

burninErrClear

burninErrClear

Clears errors stored in the nonvolatile storage on the slot during burn-in.

Synopsis   **burninerrclear** *slotNum*

Availability   admin, switchAdmin

Description   Use this command to clear errors stored in the nonvolatile storage on the slot during burn-in.

> **Note**
>
> It is advisable to run the **burninErrClear** command prior to running **diagSetBurnin** and **diagSetCycle**.

Operands   The operand is a follows:

slotNum   A nonzero value that specifies the slot number from which to clear burn-in errors.

Examples   To clear burn-in errors from slot 2.

```
switch:admin> burninerrclear 2
```

See Also   **burninErrShow**

burninErrShow

Displays errors stored in the nonvolatile storage on the slot during burn-in.

Synopsis	**burninerrshow** *slotnumber*
Availability	admin, switchAdmin, user
Description	Use this command to display errors stored in the nonvolatile storage on the slot during burn-in.
Operands	The operand is as follows:

slotnumber   A nonzero value that specifies the slot number from which to display burn-in errors.

Examples   To display burn-in errors from slot 2:

```
switch:admin> burninerrshow 2
```

See Also   **burninErrClear**

burninLevel

Sets the diagnostics burn-in level.

Synopsis   **burninlevel** [*level* | **-show**]

Availability   admin

Description   Use this command to select or display the burn-in level. When the burn-in level is set to a value other than 0, the diagnostic daemon program performs burn-in testing in place of the power-on self-test (POST) phase II each time a switch blade is powered on. The mode becomes active as soon as this command is executed so that it does not require a reboot to take effect.

When a burn-in level other than 0 is selected, actual behavior is determined by the configuration of the diagnostics daemon and the burn-in scripts run.

A useful application of this command is to store errors on the local persistent error storage on which the error occurs. This happens when the burn-in level is other than 0. This preserves the errors prior to returning a board for service. For multibladed products, this is the independent blade, and for fixed-port-count products, this is the chassis-persistent storage. The error logs are viewed using the **burninErrShow** command.

Operands   The following are optional:

level   The burn-in level sets to this value.

-show   If specified, or if level is not specified, the current burn-in level setting displays.

Examples   To set the diagnostic burn-in level:

```
switch:admin> burninlevel -show
Burnin level is 0.
```

See Also   **burninErrShow**, **diagDisablePost**, **diagEnablePost**, **diagSetBurnin**

burninStatus

Displays the diagnostics burn-in status.

Synopsis   **burninstatus** [[**--slot**] *slotnumber*]

Availability   admin, switchAdmin

Description   Use this command to display the burn-in status of each blade in the system. The output contains the slot, state, current run number, current command in the run, total commands in a run, and the burn-in script name.

Operands   The following operands are optional:

--slot *slotnumber*   Optional specify to get the burn-in status of a single slot. If not specified, all slots are displayed.

Examples   To display the burn-in status for all slots:

```
switch:admin> burninstatus
Slot    State     Status  Run     Cmd    TotCmds PID     Script
1       ABORT     PASS    3       18     41      916     burnin
2       ABORT     PASS    3       18     41      920     burnin
3       ABORT     PASS    3       18     41      923     burnin
4       ABORT     FAIL    3       11     34      926     burnin
```

To display the burn-in status for slot 3:

```
switch:admin> burninstatus --slot 3
Slot    State     Status  Run     Cmd    TotCmds PID     Script
3       ABORT     PASS    3       18     41      923     burnin
```

See Also   **diagSetBurnin**

camTest

Verifies QuickLoop's Content Addressable Memory (CAM) SID translation.

Synopsis   **camtest** [**--slot** *slotnumber*][**-passcnt** *count*][**-txport** *itemlist*]

Availability   admin

Description   Use this command to verify that the CAM is functionally OK by performing hit and miss tests. The CAM is used by QuickLoop to translate the SID.

When a CAM is presented with a data, it checks if the data is present in its memory. A hit means the data is found in the CAM. A miss means the data is not found.

In this test, the CAM is filled with four kinds of data patterns:

1. a walking 1,

2. a walking 0,

3. a random pattern,

4. an inverted version of the random pattern above.

Once filled with each of the patterns above, a frame is sent and looped back internally. If a hit is expected (when the random or inverted random pattern is used) the original SID in the frame transmitted is received translated with the domain and area fields of the SID zeroed. If a miss is expected (when the walking 1 or walking 0 pattern is used) the original SID in the frame transmitted is received unchanged.

Note

This command cannot be executed on an enabled switch. You must first disable the switch using the **switchDisable** command.

This command is supported only on the SilkWorm 3014, 3016, 3250, 3850, 3900, and 24000 platforms.

Operands   This command has the following operand:

--slot *slotnumber*   Specify the slot number on which the diagnostic will operate. The ports specified will be relative to this slot number. The default is set to 0 and designed to operate on fixed-port-count products.

-passcnt *count*   Specify the number of times to perform this test. The default value is 1.

-txport *itemlist*   Specify a list of blade ports to test. By default, all the blade ports in the specified slot (**--slot**) will be used. Refer to **itemList** for more information.

Examples   To verify CAM is functioning correctly:

```
switch:admin> camtest -txports 1/1
Running camtest .............
Test Complete: camtest Pass 1 of 1
Duration 0 hr, 0 min & 7 sec (0:0:7:57).
 passed.
```

Diagnostics   When failures are detected, the subtest might report one or more of the following error messages:

```
DIAG-CAMFLTR
DIAG-CAMINIT
DIAG-CAMSID
DIAG-CAMSTAT
DIAG-CANTXMIT
```

Refer to the *Fabric OS System Error Message Reference Manual* for more information.

See Also   **centralMemoryTest**, **cmemRetentionTest**, **cmiTest**, **crossPortTest**, **itemList**, **portLoopbackTest**, **portRegTest**, **spinSilk**, **sramRetentionTest**

centralMemoryTest

Tests ASIC-pair central memory operation.

Synopsis   **centralmemorytest** [**--slot** *slotnumber*][**-passcnt** *count*][**-datatype** *type*][**-ports** *itemlist*][**-seed**]

Availability   admin

Description   Use this command to execute an address and data bus verification of the ASIC SRAMs that serve as the central memory.

Note

This command cannot be executed on an enabled switch. You must first disable the switch using the **switchDisable** command.

This command is supported only on the SilkWorm 3014, 3016, 3250, 3850, 3900, and 24000 platforms.

The test consists of six subtests, each described next.

Built-in Self-repair Subtest

The BISR subtest executes the built-in self-repair (BISR) circuitry in each ASIC. The BISR executes its own BIST, and cells found to be bad are replaced by redundant rows provided in each SRAM in the ASIC. Once the cells are replaced, the BIST is executed again.

The firmware sets up the hardware for the BISR/BIST operation and checks the results. If the done bit in each SRAM is not set within a time-out period, it reports the DIAG-CMBISRTO. If any of the SRAMs within the ASIC fails to map out the bad rows, its fail bit is set and the DIAG-CMBISRF error generated.

Data Read/Write Subtest

The data write/read subtest executes the address and data bus verifications by running a specified unique ramp pattern D to all SRAMs in all ASICs in the switch. When all SRAMs are written with pattern D, the SRAMs are read and compared against the data previously written. This procedure is repeated with the complemented pattern ~D to ensure that each data bit is toggled during the test.

The default pattern used (by POST also) is a QUAD_RAMP with a seed value of 0.

ASIC-to-ASIC Connection Subtest

Note

This subtest is not available on 2 Gbit/sec-capable switches.

The ASIC-to-ASIC connection subtest verifies that any port can read the data from any of the ASICs in the switch, thus verifying both the logic transmitting and receiving the data and the physical transmit data paths on the main board connecting all the ASICs to each other.

The test method is as follows:

1.   Fill the central memory of all ASICs with unique frames.

2.   Set up the hardware such that each ASIC is read by all of the ports in the switch. Data received is

compared against the frame written into the ASIC.

- Port 0 reads the central memory in ASIC 0.
- Port 1 reads the central memory in ASIC 0.
- Port 14 reads the central memory in ASIC 0.
- Port 15 reads the central memory in ASIC 0.
- Port 0 reads the central memory in ASIC 1.
- Port 1 reads the central memory in ASIC 1.
- Port 14 reads the central memory in ASIC 1.
- Port 15 reads the central memory in ASIC 1.
- Port 15 reads the central memory in ASIC 2.
- Port 15 reads the central memory in ASIC 3.

3. Repeat step 1 and step 2 the for the complemented pattern.

4. Repeat this procedure for each ASIC pair in the blade under test.

The pattern used is generated similarly as in data read/write subtest except that only 2112 bytes are generated.

Parity Error Subtest

The forced bad parity error subtest verifies that a bad parity can be detected, its error flag set, and interrupt bits set.

The test method is as follows:

1. Clear the error and interrupt bits of all ASICs.

2. Write 64 bytes with bad parity to all ASICs at offset 0.

3. Read each of the ASIC pairs at offset 0 and check that the error and interrupt bits are set.

4. Repeat steps 1 through 3 for offset 1 through 10.

Buffer Number Error Subtest

The forced bad buffer number error subtest verifies that the bad buffer number in the data packet can be detected and its error flag and interrupt bits set.

The test method is as follows:

1. Clear the error and interrupt bits of all ASICs.

2. Set up the hardware so that transmission of data includes a bad buffer.

3. For each of the 11 possible offsets for each ASIC X in the switch:

    a. Write a 64-byte pattern in the central memory.

    b. Read X from all ASIC Y in the switch.

    c. For ASIC X, ensure:

        - interrupt status bits set.

- the error type is buffer number error.

- the port number in error is the receiver port (which is the base port of ASIC Y).

  d. Check that all ASICs besides X are not interrupted or flagged with an error.

Reading the error register clears the CMEM interrupt bit, preparing for the next offset to test.

Chip Number Error Subtest

The forced bad chip number error subtest verifies that the bad buffer number in the data packet can be detected and its error flag and interrupt bits set.

The test method is as follows:

1. Clear the error and interrupt bits of all ASICs.

2. Set up the hardware so that transmission of data includes a bad buffer.

3. For each of the 11 possible offsets for each ASIC X in the switch:

   a. Write a 64-byte pattern in the central memory.

   b. Read X from all ASIC Y in the switch.

   c. For all ASIC Y, ensure:

   - interrupt status bits set.

   - the error type is chip number error.

   - the port number in error is the receiver port (which is the base port of ASIC Y).

Reading the error register clears the CMEM interrupt bit, preparing for the next offset to test.

Operands	This command has the following operands:

--slot *slotnumber*	Specify the slot number on which the diagnostic will operate. The ports specified will be relative to this slot number. The default is set to 0 and designed to operate on fixed port-count products.
-passcnt *count*	Specify the number of test passes to run. By default, the test runs one time.
-datatype *type*	Specify the type of data pattern to use. By default, type 9, QUAD_RAMP, is used. For a complete list of supported data patterns, run the **dataTypeShow** command. Some common settings are:

1	BYTE_FILL pattern
2	WORD_FILL pattern
3	QUAD_FILL pattern
9	QUAD_RAMP (Addr=Data) pattern
11	RANDOM pattern

-ports *itemlist*	Specify a list of blade ports to test. The Ports list is translated into a matching Quad list before the test is run. By default, all the blade ports in the specified slot (**--slot**) are tested. Refer to **itemList** for more information.
-seed *value*	Specify the data pattern seed to be used. The default seed value is 0.

Note: Enter commands in lowercase only; mixed case is for readability.

centralMemoryTest

2

Examples   To test the ASIC central memory:

```
switch:admin> centralmemorytest -ports 1/0-1/15
Running centralmemorytest ............
Test Complete: centralmemorytest Pass 1 of 1
Duration 0 hr, 0 min & 3 sec (0:0:3:158).
 passed.
```

Diagnostics   When this command detects failure(s), each subtest can report one or more of the following error messages:

Subtest 2

- LCMEM_ERR
- LCMRS_ERR
- LCMTO_ERR

Subtest 3

- CM_NO_BUF
- LCMEMTX_ERR
- LCMRS_ERR
- LCMTO_ERR

Subtest 4

- BAD_INT
- CM_ERR_PTN
- CM_ERR_TYPE
- TIMEOUT

Subtest 5

- BAD_INT
- CM_ERR_PTN
- CM_ERR_TYPE
- TIMEOUT

Subtest 6

- BAD_INT
- CM_ERR_PTN
- CM_ERR_TYPE
- TIMEOUT

Refer to the *Fabric OS System Error Message Reference Manual* for more information.

See Also   **camTest**, **cmemRetentionTest**, **cmiTest**, **crossPortTest**, **itemList**, **portLoopbackTest**, **portRegTest**, **spinSilk**, **sramRetentionTest**

2 Note: Enter commands in lowercase only; mixed case is for readability.

cfgActvShow

cfgActvShow

Displays current zone configuration information.

Synopsis   **cfgactvshow**

Availability   admin, switchAdmin, user

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.

Note

This command requires a Brocade Advanced Zoning license.

When security is enabled, this command can be issued on any switch in the fabric.

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***"**

Availability   admin

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

This command changes the defined configuration. For the change to be preserved across switch reboots, it must be saved to flash memory using the **cfgSave** command. For the change to become in effect, an appropriate zone configuration must be enabled using the **cfgEnable** command.

Note

This command requires a Brocade Advanced Zoning license.

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

Operands   This command has the following operands:

"*cfgName***"**   Specify a name for the zone configuration, in quotation marks. This operand is required.

"*member***"**   Specify a zone member or list of zone members to be added to the configuration, in quotation marks and separated by semicolons. This operand is required. Members can be specified in one or more of the following ways:

  • Zone names

  • QuickLoop names

  • FA (Fabric Assist) zone names

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

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

See Also   **cfgClear**, **cfgCreate**, **cfgDelete**, **cfgDisable**, **cfgEnable**, **cfgRemove**, **cfgSave**, **cfgShow**

cfgClear

Clears all zone configurations.

Synopsis   **cfgclear**

Availability   admin

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 using the **cfgClear** command, use the **cfgDisable** command to commit the transaction and then disable and clear the zone configuration in flash memory for all the switches in the fabric.

If no current zoning configuration exists, use the **cfgSave** command.

Note

This command requires a Brocade Advanced Zoning license.

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

Operands   none

Examples   To clear all zones and then clear flash memory:

```
switch:admin> cfgclear
The Clear All action will clear all Aliases, Zones, FA Zones
and configurations in the Defined configuration.
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.
Do you want to save Defined zoning configuration only?  (yes, y, no, n): [no] n
```

See Also   **cfgDisable**, **cfgEnable**, **cfgSave**

cfgCreate

Creates a zone configuration.

Synopsis   **cfgcreate** "*cfgName*", "*member*; *member*"

Availability   admin

Description   Use this command to create a new zone configuration.

A zone configuration name must begin with a letter that can be followed by any number of letters, numbers, and underscores. Names are case sensitive: for example, "Cfg_1" and "cfg_1" are different zone configurations. Blank spaces are ignored.

The zone configuration member list must have at least one member. Empty member lists are not allowed.

This command changes the defined configuration. For the change to be preserved across switch reboots, it must be saved to flash memory using the **cfgSave** command. For the change to become effective, an appropriate zone configuration must be enabled using the **cfgEnable** command.

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

 Note

This command requires a Brocade Advanced Zoning license.

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

Operands   This command has the following operands:

"*cfgName*"   Specify a name for the zone configuration, in quotation marks. This operand is required.

"*member*"   Specify a zone member or list of zone members to be added to the configuration, in quotation marks and separated by semicolons. This operand is required. Members can be specified in one or more of the following ways:

- Zone names

- QuickLoop names

- FA (Fabric Assist) zone names

Examples   To create a configuration containing three zones:

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

See Also   **cfgAdd**, **cfgClear**, **cfgDelete**, **cfgDisable**, **cfgEnable**, **cfgRemove**, **cfgSave**, **cfgShow**

Note: Enter commands in lowercase only; mixed case is for readability.

cfgDelete

Deletes a zone configuration.

Synopsis   **cfgdelete** "*cfgName*"

Availability   admin

Description   Use this command to delete a zone configuration.

This command changes the defined configuration. For the change to be preserved across switch reboots, it must be saved to flash memory using the **cfgSave** command. For the change to become in effect, an appropriate zone configuration must be enabled using the **cfgEnable** command.

Note

This command requires a Brocade Advanced Zoning license.

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

Operands   This command has the following operand:

"*cfgName*"   Specify a name for the zone configuration to be deleted, in quotation marks. This operand is required.

Examples   To delete a zone configuration:

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

See Also   **cfgAdd**, **cfgClear**, **cfgCreate**, **cfgDisable**, **cfgEnable**, **cfgRemove**, **cfgSave**, **cfgShow**

cfgDisable

Disables a zone configuration.

Synopsis **cfgdisable**

Availability admin

Description Use this command to disable the current zone configuration. The fabric returns to nonzoning mode, in which all devices see each other.

This command ends and commits the current zoning transaction buffer to both volatile and flash 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 is displayed on the other switches to indicate the aborting of the transaction.

> **Note**
>
> This command requires a Brocade Advanced Zoning license.
>
> When security is enabled, this command can be issued only from the primary FCS switch.

Operands none

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 enabled.
Do you want to disable zoning configuration? (yes, y, no, n): [no] y
```

See Also cfgClear, cfgEnable, cfgSave

cfgEnable

Enables a zone configuration.

Synopsis   **cfgenable "***cfgName***"**

Availability   admin

Description   Use this command to enable a zone configuration. The specified zone configuration is built by checking for undefined zone names, zone alias names, or other inconsistencies by expanding zone aliases, removing duplicate entries, and then installing the current configuration.

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

> **Note**
>
> This command requires a Brocade Advanced Zoning license.
>
> When security is enabled, this command can be issued only from the primary FCS switch.

Operands   This command has the following operand:

"*cfgName*"   Specify the name of a zone configuration to enable, in quotation marks. This operand is required.

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 ...
```

See Also   **cfgClear**, **cfgDisable**, **cfgSave**, **cfgShow**

cfgRemove

Removes a member from a zone configuration.

Synopsis   **cfgremove "***cfgName***", "***member* [**;** *member ...*]**"**

Availability   admin

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. For the change to be preserved across switch reboots, it must be saved to flash memory using the **cfgSave** command. For the change to become in effect, an appropriate zone configuration must be enabled using the **cfgEnable** command.

Note

This command requires a Brocade Advanced Zoning license.

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

Operands   The following operands are required:

"*cfgName*"   Specify a name for the zone configuration, in quotation marks.

"*member*"   Specify a zone member or list of zone members to be added to the configuration, in quotation marks and separated by semicolons. This operand is required. Members can be specified in one or more of the following ways:

- Zone names

- QuickLoop names

- FA (Fabric Assist) zone names

Examples   To remove a zone from a configuration:

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

See Also   **cfgAdd**, **cfgClear**, **cfgCreate**, **cfgDelete**, **cfgDisable**, **cfgEnable**, **cfgSave**, **cfgShow**, **cfgTransAbort**, **cfgTransShow**

cfgSave

Saves zone configuration to flash memory.

Synopsis   **cfgsave**

Availability   admin

Description   Use this command to save the current zone configuration. The defined configuration and the name of the enabled configuration are written to flash memory in all switches in the fabric.

The saved configuration is automatically reloaded by the switch on 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. **cfgSave** verifies that the enabled configuration is valid by performing the same tests as **cfgEnable**. If the tests fail, an error is displayed and the configuration is not saved. Tests might fail if a configuration has been modified since the last **cfgEnable**.

This command ends and commits the current transaction. 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 is displayed on the other switches to indicate the aborting of the transaction.

Note

This command requires a Brocade Advanced Zoning license.

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

Operands   none

Examples   To save a zone configuration:

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

See Also   **cfgAdd**, **cfgClear**, **cfgCreate**, **cfgDelete**, **cfgDisable**, **cfgEnable**, **cfgRemove**, **cfgShow**, **cfgTransAbort**, **cfgTransShow**

cfgShow

Displays zone configuration information.

Synopsis   **cfgshow** ["*pattern*"][**,** *mode*]

Availability   admin, switchAdmin, user

Description   Use this command to display zone configuration information.

If no operand is specified, all zone configuration information (both defined and effective) displays. If the local switch has an outstanding transaction, this command displays the newly 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 an operand is specified, it is used as a pattern to match zone configuration names in the defined configuration; those that match the pattern displays.

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.

This command does not display any zoning configuration output the first time a transaction is aborted on a local switch. Instead, this command displays the following warning:

```
Warning: Current Zoning Transaction was aborted.
Reason code = Zone Config update received
```

For example: a transaction is created on SW1 using the **cfgCreate** or **zoneCreate** commands. From another switch, SW2, in the fabric, execute a transaction-closing command such as **cfgDisable**, **cfgEnable**, or **cfgSave**. This sends a zone configuration update to all switches in the fabric and the open transaction on SW1 is aborted. Now if you issue **cfgShow** on SW1, only the warning displays and no zoning configuration information.

Note

This command requires a Brocade Advanced Zoning license.

When security is enabled, this command can be issued on any FCS switch in the fabric.

Operands   This command has the following operands:

"*pattern*"   A POSIX-style regular expression used to match zone configuration names. The pattern must be enclosed in quotation marks, and can contain:

- Question mark (?), which is a placeholder for any single character

- Asterisk (*), which is a placeholder for any string of characters

- Ranges, which are a placeholder for any character within the range. Ranges must be enclosed in brackets: for example, [0-9] or [a-f].

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 flash memory. The default value is 0. This operand is optional.

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 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
```

See Also   **cfgAdd**, **cfgClear**, **cfgCreate**, **cfgDelete**, **cfgDisable**, **cfgEnable**, **cfgRemove**, **cfgSave**, **cfgTransAbort**, **cfgTransShow**

cfgSize

Displays zone database size details.

Synopsis   **cfgsize** [*integer*]

Availability   admin, switchAdmin, user

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

The size details include the Zone DB maximum size, the committed size, and the transaction size. All sizes are in bytes.

Zone DB max size is the upper limit for the defined configuration, determined by the amount of flash memory available for storing the defined configuration. The Zone DB max size is further reduced due to a message header that is propagated with the zone configuration to all switches in the fabric.

Committed size is the size of the defined configuration currently stored in flash.

Transaction size is 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.

Refer to **cfgShow** for a description of defined and effective configurations.

Note

This command requires a Brocade Advanced Zoning license.

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

Operands   This command has the following operand:

integer   If a nonzero integer is specified as the parameter, the size of the flash memory allocated for the zone database is displayed. The zone database includes both the defined and effective configurations. This size is in kilobytes. This operand is optional.

Examples   To display size details of the defined configuration:

```
switch:admin> cfgsize
Zone DB max size - 127726 bytes
committed - 8812
transaction - 0
switch:admin> cfgsize 1
Zone DB flash size - 131028 bytes
```

See Also   **cfgShow**

Note: Enter commands in lowercase only; mixed case is for readability.

cfgTransAbort

Aborts the current zoning transaction.

Synopsis   **cfgtransabort** [*token*]

Availability   admin

Description   Use this command to abort the current zoning transaction without committing it. All changes made since the transaction was started will be removed and the zone configuration database 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.

 Note

This command requires a Brocade Advanced Zoning license.

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

Operands   This command has the following operand:

token   Specify the token ID of an abortable transaction. Use the **cfgTransShow** command to obtain the token ID of a transaction.

Examples   To abort the current transaction:

```
switch:admin> cfgtransabort
```

See Also   **cfgAdd**, **cfgClear**, **cfgCreate**, **cfgDelete**, **cfgDisable**, **cfgEnable**, **cfgRemove**, **cfgSave**, **cfgShow**, **cfgTransShow**

cfgTransShow

Displays information about the current zoning transaction.

Synopsis   **cfgtransshow**

Availability   admin, switchAdmin, user

Description   Use this command to display the ID of the current zoning transaction. It will also give the information about whether the transaction can be aborted or not. The transaction cannot be aborted if it is an internal zoning transaction.

> **Note**
>
> This command requires a Brocade Advanced Zoning license.
>
> When security is enabled, this command can be issued only from the primary FCS switch.

Operands   none

Examples   To display the current transaction:

```
switch:admin> cfgtransshow
There is no outstanding zone transactions
switch:admin> cfgclear
Do you really want to clear all configurations?  (yes, y, no, n): [no] y
Clearing All zoning configurations...
switch:admin> cfgtransshow
Current transaction token is 271010736
It is abortable
```

See Also   **cfgAdd**, **cfgClear**, **cfgCreate**, **cfgDelete**, **cfgDisable**, **cfgEnable**, **cfgRemove**, **cfgSave**, **cfgShow**, **cfgTransAbort**

2

Note: Enter commands in lowercase only; mixed case is for readability.

chassisConfig

chassisConfig

Displays or sets the configuration of the chassis.

Synopsis   **chassisconfig** [**-f**][*option*]

Availability   admin, switchAdmin, user

Description   Use this command to set the chassis configuration for products that support both single-switch and dual-switch operation. Each configuration specifies whether the chassis runs as one logical switch or two; and the port blade ID that is permitted on each logical switch. Any port blade ID that does not match the current configuration is considered incompatible, and does not power up.

When no arguments are provided, this command displays the current configuration of the chassis as well as a list of the supported configurations. When a specific option is provided to this command, all CPs currently in the system are immediately rebooted, returning in the mode that the user has specified. This can result in some blades being faulted as incompatible, based on the new configuration option. This command rejects without causing a reboot, if an option is not supported by the platform.

Of the following options, SilkWorm 24000 directors support options 1 and 2 and SilkWorm 48000 directors support option 5:

1	One 128-port switch (blade ID 4, 17 on slots 1 through 4 and 7 through 10; blade ID 5, 16 on slots 5 and 6)
2	Two 64-port switches (blade ID 4 on slots 1 through 4 and 7 through 10; blade ID 5 on slots 5 and 6)
5	One 256-port switch (blade ID 17, 18 on slots 1 through 4 and 7 through 10; blade ID 16 on slots 5 and 6)

Use the **slotShow** command to display the current set of blades in the system.

When the system changes from single to multiple domains and vice versa, configuration parameters that are not compatible are restored to factory defaults. The configuration data includes, but not limited to routing, port swap, fabric, zoning, port configuration, passwords, security, Brocade Fabric Watch, management server, time server, SNMP, performance monitoring, and general Brocade Fabric OS configuration values. It is recommended that the current configuration be saved using **configUpload** as a guide for adjustments after the configuration change.

Certain configuration values that are not considered switch based and determined not to cause adverse effects are left untouched for user convenience. These include SSL certificates, PKI certificates, licenses, and IP address.

When the **-f** (force) option is omitted, this command prompts for user consent to proceed further with the configuration change. It also prompts the user to upload the configuration data to a host so it can be used as a guide to re-establishing the configuration data in the new mode. Use the -f option to proceed without the interactive step.

Unless the chassis is currently configured as Option 1 (a single 128-port switch with SilkWorm blade IDs 4 and 17 and CP blade IDs 5 and 16), both CP blades should always contain firmware that supports this command. Use of earlier versions adversely affects switch operation.

Because this is a disruptive operation and has profound effect on the behavior of the chassis, it needs to be used selectively.

Users running secure mode should be particularly careful in using this command to change the number of domains on the local chassis, because security is disabled on all resulting local switches. These

switches are not able to participate in a secure fabric until secure mode is restored. Therefore, the fabric should have a primary FCS outside this chassis, to manage security throughout the fabric during this transition.

Note

User account data and passwords might not be saved using **configUpload**. User accounts created using the **userConfig** command are deleted and user accounts are reset to the factory default user accounts and passwords.

Operands   The operands are as follows:

-f   If specified, forces configuration changes without asking for confirmation or requesting a configuration upload.

option   Specifies the new configuration option to apply to the chassis. This operand is optional; if omitted, this command displays the current configuration option and a list of all valid options. Values include:

> **1**   One 128-port switch(blade ID 4, 17 on slots 1 through 4 and 7 through 10; blade ID 5, 16 on slots 5 and 6)

> **2**   Two 64-port switches (blade ID 4 on slots 1 through 4 and 7 through 10; blade ID 5 on slots 5 and 6)

> **5**   One 256-port switch (blade ID 17, 18 on slots 1 through 4 and 7 through 10; blade ID 16 on slots 5 and 6)

2

Note: Enter commands in lowercase only; mixed case is for readability.

chassisConfig

Examples To display the current configuration option on a SilkWorm 24000 director and to change the option:

```
switch:admin> chassisconfig

Current Option: 1

All Supported Options (With Blade ID 5 on slots 5-6)
----------------------------------------------------

Option 1: One 128-port switch
(Blade ID 4, 17 on slots 1-4, 7-10, Blade ID 5, 16 on slots 5-6)
Option 2: Two 64-port switches
(Blade ID 4 on slots 1-4, 7-10, Blade ID 5 on slots 5-6)
Option 3: Two 64-port switches
(Blade ID 4 on slots 1-4, ID 2 on slots 7-10, Blade ID 5 on slots 5-6)
Option 4: Two 64-port switches
(Blade ID 2 on slots 1-4, ID 4 on slots 7-10, Blade ID 5 on slots 5-6)

Please use slotshow to see the Blade IDs of the SW and CP blades.

switch:admin> chassisconfig 2

This will reboot all the CPs and the configuration data will be restored to
factory defaults if moved between single and multiple domains. This includes,
but are not limited to, port swap, routing, zoning, performance monitoring, port
config, fabric watch, management server, time server, snmp, security, fabric and
other FabOs configuration parameters.

Traffic will be disrupted and both the CPs comes up and will vary in the number
of switches and the Blade IDs they recognize based on the configuration
selected. Some configuration values are applicable to both single-domain and
multiple-domain switches, and are therefore not modified. (Examples: licenses,
IP addresses, host and switch names, SSL certificates, PKI certificates.) Please
read the man page for further information.


Please upload switch 0 configuration...
Server Name or IP Address [host]: 192.168.79.240
User Name [user]: ckonchad
File Name [config.txt]:
Password:
Upload complete

Are you sure you want to continue? (Y/N): y

Current Option changed to 2
Restoring switch 0 configuration to factory defaults... done.

(Telnet connection goes down at this point.)
```

See Also **configDownload**, **configUpload**, **slotShow**

chassisName

Displays or sets the chassis name for a switch.

Synopsis   **chassisname** [*name*]

Availability   admin, switchAdmin, user

Description   Use this command to display or change the name associated with the chassis. In dual-domain systems, there are up to two logical switches associated with a single chassis.

Operands   This command has the following operand:

name   Specifies a new name for the chassis, optionally in quotation marks. Chassis names can be up to 15 characters long, must begin with a letter, and can consist of letters, digits, or underscore characters. This operand is optional; if omitted, the current chassis name displays.

Examples   To change the chassis name to "dilbert":

```
switch:admin> chassisname dilbert
Please wait while committing configuration...
switch:admin> chassisname
dilbert
```

See Also   **switchName**

chassisShow

Displays all field replaceable units (FRUs).

Synopsis   **chassisshow**

Availability   admin, switchAdmin, user

Description   Use this command to inventory and display the FRU header content for each object in the chassis and chassis backplane version.

Refer to the table for more information about the lines and their meaning.

Table 2-3   Command Output Descriptions

Line	Description
1	If applicable, the first line displays the chassis backplane version number, in hexadecimal.
2	Object type: `CHASSIS`, `FAN`, `POWER SUPPLY`, `SW BLADE` (switch), `CP BLADE` (control processor), `WWN` (World Wide Name), or `UNKNOWN`. Object number: `Slot nn` (for blades), `Unit nn` (for everything else). If the FRU is part of an assembly, a brief description, in parenthesis, displays.
3	FRU header version number: `Header Version: x`
4	Value to calculate the object's power consumption: positive for power supplies and negative for consumers. `Power Consume Factor: -xxx`
5	Part number (up to 14 characters): `Factory Part Num: xx-xxxxxx-xx`
6	Serial number (up to 12 characters): `Factory Serial Num: xxxxxxxxxx`
7	FRU manufacture date: `Manufacture:Day: dd Month: mm Year: yyyy`
8	Date of the last FRU header update: `Update: Day: dd Month: mm Year: yyyy`
9	Cumulative time, in days, that the FRU has been powered on: `Time Alive:dddd days`
10	Current time, in days, since the FRU was last powered on: `Time Awake:ddd days`
11	Externally supplied ID (up to 10 characters): `ID: xxxxxxxxxx`
12	Externally supplied part number (up to 20 characters): `Part Num: xxxxxxxxxxxxxxxxxxxx`
13	Externally supplied serial number (up to 20 characters): `Serial Num:xxxxxxxxxxxxxxxxxxxx`
14	Externally supplied revision number (up to 4 characters): `Revision Num: xxxx`

Note

On some platforms, for certain FRU types, a few items might 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.

Operands   none

Examples   To display all FRUs for a switch:

```
switch:user> chassisshow

Chassis Backplane Revision: 1C

SW BLADE  Slot: 3
Header Version:        1
Power Consume Factor:  -180
Factory Part Num:      60-0001532-03
Factory Serial Num:    1013456800
Manufacture:           Day: 12  Month:  6  Year: 2001
Update:                Day: 15  Month:  7  Year: 2001
Time Alive:            28 days
Time Awake:            16 days
ID:                    555-374757
Part Num:              234-294-12345
Serial Num:            2734658
Revision Num:          A.00

CP BLADE  Slot: 6
Header Version:        1
Power Consume Factor:  -40
Factory Part Num:      60-0001604-02
Factory Serial Num:    FP00X600128
Manufacture:           Day: 12  Month:  6  Year: 2001
Update:                Day: 15  Month:  7  Year: 2001
Time Alive:            61 days
Time Awake:            16 days
ID:                    555-374757
Part Num:              236-296-12350
Serial Num:            2836542
Revision Num:          A.00
. . .
POWER SUPPLY  Unit: 2
Header Version:        1
Power Consume Factor:  1000
Factory Part Num:      60-0001536-02
Factory Serial Num:    A013450700
Manufacture:           Day: 14  Month:  6  Year: 2001
Update:                Day: 15  Month:  7  Year: 2001
Time Alive:            50 days
Time Awake:            16 days
ID:                    555-374757
Part Num:              238-298-12360
Serial Num:            1234567
. . .
FAN  Unit: 1
Header Version:        1
Power Consume Factor:  -50
Factory Part Num:      20-123456-12
Factory Serial Num:    B014934500
Manufacture:           Day:  6  Month:  7  Year: 2001
Update:                Day: 15  Month:  7  Year: 2001
Time Alive:            88 days
Time Awake:            16 days
ID:                    456-777888
Part Num:              230-290-12370

(output truncated)
```

See Also   slotShow

chipRegShow

Displays the port registers for a given chip number.

Synopsis   **chipregshow** [*slotnumber/*]*chipnumber* [*filter*]

Availability   all users

Description   Use this command to display the ASIC pair register contents for the specified chip on the specified blade slot.

Note

The output of this command is for support use only.

The command is supported only on SilkWorm 200E, 3014, 3016, 3250, 3850, 3900, 4012, 4100, 24000, and 48000 platforms.

Operands   This command has the following operands:

[*slotnumber/*]*chipnumber*
> Specifies the index of the chip within the specified blade to display. The default is set to 0 and designed to operate on fixed-port-count products.

filter   Specifies a filter string.

Examples   To display the port registers of a chip:

```
switch:admin> chipregshow 1/1 ffffffff
```

See Also   **minisPropShow**

Note: Enter commands in lowercase only; mixed case is for readability.

cmemRetentionTest

2

cmemRetentionTest

Tests the data retention of the central memory SRAMs.

Synopsis **cmemretentiontest** [**--slot** *slotnumber*][**-passcnt** *count*][**-datatype** *type*][**-ports** *itemlist*][**-seed** *value*]

Availability admin

Description Use this command to verify that data written into the central memory SRAMs in the ASIC pair is retained after a 10-second wait. The method used is to write a fill-pattern to all SRAMs, wait 10 seconds, and then read all SRAMs to verify that the data read matches the data previously written. The process is then repeated using the reverse version of the pattern.

Note

This command cannot be executed on an enabled switch. You must first disable the switch using the **switchDisable** command.

This command is supported only on SilkWorm 3014, 3016, 3250, 3850, 3900, 4012, and 24000 platforms.

Operands This command has the following operands:

--slot *slotnumber*   Specify the slot number on which the diagnostic will operate. The ports specified will be relative to this slot number. The default is set to 0 and designed to operate on fixed-port-count products.

-passcnt *count*   Specify the number of test passes to run. By default, the test will be run one time.

-datatype *type*   Specify the type of data pattern to use. By default, type 9, QUAD_RAMP, is used. For a complete list of supported data patterns, run the **dataTypeShow** command. Some common settings are:

Pattern	Type	Example
BYTE_FILL	1	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
WORD_FILL	2	0000 0000 0000 0000 0000 0000 0000 0000
QUAD_FILL	3	00000000 00000000 00000000 00000000
QUAD_RAMP	9	00000000 00000001 00000002 00000003
RANDOM	11	55 16 fc d7 17 65 a9 87 5f 44 be 5a d0 de bc a5

-ports *itemlist*   Specify a list of blade ports to test. The ports list is translated into a matching quad list before the test is run. By default, all the blade ports in the specified slot (**--slot**) are tested. Refer to the **itemList** help pages for further details.

-seed *value*   Specify the data pattern seed to be used. The default seed value is 0.

Note: Enter commands in lowercase only; mixed case is for readability.

cmemRetentionTest

Examples   To run the data-retention test on the central memory SRAMS:

```
switch:admin> cmemretentiontest --slot 7

Running cmemretentiontest ..............
Test Complete: cmemretentiontest Pass 1 of 1
Duration 0 hr, 1 min & 33 sec (0:1:33:16).
 passed.
```

Diagnostics   The following are possible error messages:

LCMEM_ERR
LCMRS_ERR
LCMTO_ERR

Refer to the *Fabric OS System Error Message Reference Manual* for more information.

See Also   **camTest**, **centralMemoryTest**, **cmiTest**, **crossPortTest**, **dataTypeShow**, **itemList**, **portLoopbackTest**, **spinSilk**, **sramRetentionTest**

cmiTest

Verifies the control message interface (CMI) bus between ASICs.

Synopsis   **cmitest** [**--slot** *slotnumber*][**-passcnt** *count*][**-txports** *itemlist*][**-rxports** *itemlist*][**-skip** *mask*]

Availability   admin

Description   Use this command to test:

- The multiplexed 4-bit CMI point-to-point connection between two ASICs.

- The message sent with a bad checksum sets the error and interrupt bits of the destination ASIC.

- The message sent with a good checksum does not set any error or interrupt bit in any ASIC pair.

The CMI is used to send transmission requests or completion messages between the ASIC transmitter and receiver.

Note

This command is supported only on SilkWorm 3014, 3016, 3250, 3850, 3900, 4012, and 24000 platforms.

Operands   This command has the following operands:

--slot *slotnumber*   Specifies the slot number to test. The default is set to 0 and designed to operate on fixed-port-count products.

-passcnt *count*   Specifies the number of test passes to run. By default, the test runs one time.

-txports *itemlist*   Specifies a list of ports to transmit data. By default, all the ports in the specified slot
(**--slot**) are used. Refer to **itemList** help pages for further details.

-rxports *itemlist*   Specifies a list of ports to receive data. By default, all the ports in the specified slot
(**--slot**) are used. Refer to **itemList** for more information.

-skip *mask*   Specifies tests to skip using a bit map as follows:

1   CMI data test (ignore checksum)

2   CMI checksum test

3   Enable all tests

Examples   To run a CMI test between two ASIC pairs:

```
switch:admin> cmitest -txports 7/0-7/7 -rxports 7/8-7/15
Running cmitest ..............
Test Complete: cmitest Pass 1 of 1
Duration 0 hr, 0 min & 2 sec (0:0:2:467).
passed.
```

Note: Enter commands in lowercase only; mixed case is for readability.

Diagnostics   Listed below are possible error messages if failures are detected:

- `DIAG-BADINT`
- `DIAG-CMICKSUM`
- `DIAG-CMIDATA`
- `DIAG-CMIINVCAP`
- `DIAG-CMINOCAP`
- `DIAG-CMISA1`
- `DIAG-INTNIL`

Refer to the *Fabric OS System Error Message Reference Manual* for more information.

See Also   **camTest**, **centralMemoryTest**, **cmemRetentionTest**, **crossPortTest**, **itemList**, **portLoopbackTest**, **spinSilk**, **sramRetentionTest**

configDefault

Restores the system configuration to default.

Synopsis   **configdefault**

Availability   admin

Description   Use this command to reset a subset of configuration settings to the default values.

All configuration parameters, with the following exceptions, are reset:

- Ethernet MAC address, IP address, and subnetmask

- IP gateway address

- License keys

- OEM customization

- Product ID and vendor ID

- SNMP configuration

- System name

- World Wide Name

- Brocade Advanced Zoning configuration

- Security parameters and policies

- User account passwords

- Switch PID format

- Ethernet link mode

Some configuration parameters are cached by the system. To avoid unexpected switch behavior, reboot the system after executing this command.

> **Note**
>
> Refer to the **configure** command for more information on default values for configuration parameters.
>
> This command cannot be executed on an enabled switch. You must first disable the switch using the **switchDisable** command.
>
> Some configuration parameters are cached by the system. To avoid unexpected system behavior, reboot the system after exciting this command.

Operands   none

Examples   To restore the system configuration to default values:

```
switch:admin> configdefault
Committing Configuration ...done.
```

See Also   **agtCfgDefault**, **configure**, **switchDisable**, **switchEnable**

configDownload

Downloads a switch configuration file from a host file.

Synopsis   **configdownload** [**-p ftp**]"*host*","*user*","*file*","*passwd*"

configdownload -p scp "*host*","*user*","*file*"

configdownload

Availability   admin, switchAdmin

Description   Use this command to download a switch configuration file from a host file. The configuration file is ASCII text and might have been generated using **configUpload**, or it might have been created by a user to download specific configuration changes. Refer to **configUpload** for a configuration file format description.

Note

The switchAdmin role is not allowed to change the zoning and security configuration. Therefore, zoning and security sections in the configuration being downloaded to the switch are ignored.

To mention the FTP server by name, you need to set up two DNS servers with **dnsConfig**.

To restore the configuration file from a Microsoft Windows NT system using file transfer protocol (FTP), the FTP server might have to be installed from the distribution media and enabled. The FTP service is widely available on UNIX hosts but less so on Windows hosts. The FTP server must be running before a download can occur.

Use **-p scp** to securely download the file through an SSH connection. Instead of entering a password on the command line, SCP prompts you for the password, if necessary. The SSH service is available on both UNIX and Windows hosts.

This command can be invoked without any operands, creating an interactive session.

The download might fail for the following reasons:

• The switch has not been disabled.

• The host name is not known to the switch.

• The host IP address cannot be contacted.

• The user does not have permission on the host.

• The user runs a script that prints something at login.

• The file does not exist on the host.

• The file is not a switch configuration file.

• The FTP server is not running on the host.

• The configuration data contains errors.

When the switch is in secure mode, 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 policy section, the FCS_POLICY must be exactly the same as the previous FCS_POLICY. Order of members must be maintained.

- If either security policies section has a RSNMP_POLICY, then that section must have a WSNMP_POLICY.

- After the switch is enabled, if the switch is the primary FCS, then its security and zoning information will be 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.

Note

A license key is only accepted if the boot.mac line matches the World Wide Name of the switch performing the download; otherwise, it is ignored.

Security parameters and the switch's 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 such as secure mode setting and version stamp are ignored; they are the lines in the configuration file that begin with "sec".

configDownload does not enable security mode, even if the configuration file is saved in security mode.

After **configDownload**, the policy might require up to 8 minutes to download.

The download process is additive; that is, the lines read from the file are added to the current switch configuration. This enables you to change a single configuration variable by downloading a file with a single line. All other variables remain unchanged.

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 might change the range of allowed values that can be assigned to the other parameters. As a result, the user might not be able to set all the values within the range displayed against each parameter. This utility 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. Since 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:" might be inserted into the configuration file immediately before the zoning lines (starting from the line "[Zoning]").

If the configuration file contains the keyword "enable: <zone_configuration>", then that zoning configuration enables 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 effective configuration remains as it was prior to **configDownload**; that is, all the "enable:" information is discarded.

- The defined configuration changes to reflect new zoning configuration.

Operands   This command has the following optional operands:

-p   Specifies the use of the FTP or SCP protocol. If a protocol is not specified, FTP is
                            the default.

"*host***"**   Specifies a host name or IP address in quotation marks: for example, "citadel" or
                            "192.168.1.48". The configuration file is downloaded from this host.

"*user***"**   Specifies the user name, in quotation marks: for example, "jdoe". This user name
                            is used to gain access to the host system.

"*file***"**   Specifies the file name, in quotation marks: for example, "config.txt". Absolute
                            path names might be specified using a forward slash (/). Relative path names
                            search for the file in the user's home directory on UNIX hosts and in the directory
                            on which the FTP server is running on Windows hosts.

"*passwd***"**   Specifies the password for the FTP login.

Examples   To download a configuration file using FTP from host "citadel", using account "jdoe" and file
                "config.txt":

```
switch:admin> configdownload -p ftp "citadel","jdoe","config.txt","passwd"
Committing configuration...done.
download complete
```

To download the same configuration file using SCP:

```
switch:admin> configDownload -p scp "citadel","jdoe","config.txt"
jdoe@citadel's password: ********
Committing configuration...done.
download complete
```

See Also   **configDefault**, **configShow**, **configUpload**, **configure**

configShow

Displays system configuration settings.

Synopsis   **configshow** ["*filter*"]

Availability   admin, switchAdmin, user

Description   Use this command to view the system configuration settings set by the **configure** command.

Note

Not all values displayed are applicable to all system models and configurations.

Operands   This command has the following optional operand:

"*filter*"   Specify a text string, in quotation marks, that limits the output of the command to only those entries that contain the text string.

Examples   To display system configuration settings:

```
switch:admin> configShow
RSCN.end-device.TransmissionMode:0
alpaList:1
cer.internal_port_code:1
cfgload.secure:0
diag.loopID:125
diag.mode.burnin:0
diag.mode.esd:0
diag.mode.lab:0
diag.mode.mfg:0
diag.postDisable:1
diag.retryDisable:0
diag.script.BURNIN:doburnin
diag.script.CP128.HOLDOFF:diagholdoff.sh
diag.script.CP128.POST1:cp128post1.sh
diag.script.CP128.POST2:cp128post2.sh
diag.script.PORT.HOLDOFF:diagholdoff.sh
diag.script.PORT.POST1:portpost1.sh
diag.script.PORT.POST2:portpost2.sh
diag.script.SWITCH.HOLDOFF:diagholdoff.sh
diag.script.SWITCH.POST1:switchpost1.sh
diag.script.SWITCH.POST2:switchpost2.sh
diag.test.crossPort.passes:5000
diag.test.passes:0
diag.test.portLoopback.passes:1000
diag.test.silkScreen.passes:180
diag.test.spinSilk.passes:120
ether.link.mode:AUTO
fabric.domain:2
fabric.ididmode:0
fabric.ops.BBCredit:16
fabric.ops.E_D_TOV:2000
fabric.ops.R_A_TOV:10000
fabric.ops.dataFieldSize:2112
fabric.ops.max_hops:7
fabric.ops.mode.fcpProbeDisable:0
fabric.ops.mode.isolate:0
(continued on next page)
```

Note: Enter commands in lowercase only; mixed case is for readability.

```
fabric.ops.mode.longDistance:0
fabric.ops.mode.noClassF:0
fabric.ops.mode.pidFormat:1
fabric.ops.mode.tachyonCompat:0
fabric.ops.mode.unicastOnly:0
fabric.ops.mode.useCsCtl:0
fabric.ops.vc.class.2:2
fabric.ops.vc.class.3:3
fabric.ops.vc.config:0xc0
fabric.ops.vc.linkCtrl:0
fabric.ops.vc.multicast:7
fabric.ops.wan_tov:0
fabric.principalSwSelMode:0
fc4.fcIp.address:0.0.0.0
fc4.fcIp.mask:0.0.0.0
fc4.fcp.productId:FC Switch
fc4.fcp.vendorId:BROCADE
fcAL.alwaysSendRSCN:0
fcAL.fanFrameDisable:0
fcAL.openSendCLS:4
fcAL.useAltBBCredit:0
ficu.EBCDICcodePage:37
ficu.fmsmode:0
ficu.keyctr:1
flannel.ops.frameColMethod:piling
flannel.ops.openBBCredit:4
gen.fabos:0
gen.zone:0
http.accesslog.enabled:0
http.enabled:1
http.errorlog.enabled:0
http.javaplugin.homeURL:http://java.sun.com/update
http.javaplugin.version:1,4,2,3
http.lookupName:10.33.74.127
http.port:80
http.ssl.enabled:0
http.ssl.port:443
http.ssllog.enabled:0
http.switchexplorer.isMainRightFrameEnabled:1
lcdContrast:128
lcdContrast.orange:208
lsportCfg:0,0x10000000;1,0x10000000;2,0x10000000;3,0x10000000;4,0x10000000;5,0x1000
0000;6,0x10000000;7,0x10010000;
ms.PlatEnable:1
ms.TDEnable:0
ns.DomRscnToDevForSwChg.enable:0
ns.EndDeviceRscnFormat:1
oemLogo:0
perf.cfgver:1
perf.eemonchks:0

(output truncated)
```

See Also **agtCfgShow**, **configure**, **diagDisablePost**, **diagEnablePost**, **ipAddrShow**, **licenseShow**, **syslogdIpShow**

configUpload

Uploads the switch configuration file to a host file.

Synopsis   **configupload** [**-p ftp | scp**][*host,user,file*[*,passwd*]]

Availability   admin, switchAdmin

Description   Use this command to upload the switch configuration to a host file.

To upload the configuration file from a Microsoft Windows NT system using file transfer protocol (FTP), the FTP server might have to be installed from the distribution media and enabled. The FTP service is widely available on UNIX hosts but less so on Windows hosts. The FTP server must be running before a download can occur.

Use **-p scp** to securely upload the file through an SSH connection. Instead of entering a password on the command line, SCP prompts you for the password, if necessary. The SSH service is available on both UNIX and Windows hosts.

If the command is entered without operands, it becomes interactive and prompts the user for input.

The upload might fail for the following reasons:

*   The host name is not known to the switch.

*   The host IP address cannot be contacted.

*   The user does not have permission on the host.

*   The user runs a script that prints something at login.

*   The FTP server is not running on the host.

There are three types of lines in the configuration file:

*   License keys are encrypted ASCii strings and are listed one key per line.

*   Comments have a bracket ([ ) as the first character of the line. (When read by **configDownload**, a line beginning with any punctuation is treated as a comment.)

*   Name:value pairs have the following syntax:

line	name : value
name	component {"." component}
space	{" "	t"}
component	{"a" - "z"	"A" - "Z"	"0" - "9"	"_"	"-"}
value	{<any character not including n">}

Note
Elements enclosed in curly braces ({...}) indicate zero or more occurrences of the enclosed elements.

The configuration file is written as three sections. The first section contains the switch boot parameters. It has variables such as the switch's name and IP address. This section corresponds to the first few lines of output of the **configShow** command.

The second section contains general switch configuration variables, such as diagnostic settings, fabric

Note: Enter commands in lowercase only; mixed case is for readability.

configuration settings, and SNMP settings. This section corresponds to the output of the **configShow** command (after the first few lines), although there are more lines uploaded than shown by the command.

The third sections contains zoning configuration parameters.

Note

No spaces are allowed between operands. None of the operands use quotation marks.

Operands   This command has the following optional operands:

host   Specify a host name or IP address, in quotation marks: for example, "citadel" or "192.168.1.48". The configuration file is downloaded from this host system.

user   Specify a user name in quotation marks: for example, "jdoe". This user name is used to gain access to the host.

file   Specify a file name in quotation marks; for example: "config.txt". Absolute path names might be specified using forward slash (/). Relative path names create the file in the user's home directory on UNIX hosts and in the directory where the FTP server is running on Windows hosts.

passwd   Specify a password, in quotation marks.

Examples   To upload a configuration file using FTP to host "citadel", using account "jdoe", and file "config.txt":

```
switch:admin> configupload "citadel","jdoe","config.txt","passwd"
upload complete
```

To upload the same configuration file using SCP:

```
switch:admin> configupload -p scp "citadel","jdoe","config.txt"
jdoe@citadel's password: ********
upload complete
```

To upload the configuration file interactively:

```
sw5:admin> configUpload
Protocol (scp or ftp) [ftp]: ftp
Server Name or IP Address [host]: 123.123.123.123
User Name [None]: user21
File Name [config.txt]: config-switch.txt
Password: xxxxxxxx
upload complete
```

See Also   **configDefault**, **configDownload**, **configShow**, **configure**

configure

Modifies system configuration parameters.

Synopsis   **configure**

Availability   admin, switchAdmin

Description   Use this command to change the following system configuration parameters:

- "Switch Fabric Settings"

- "Virtual Channel Settings"

- "F_Port Login Parameters"

- "Zoning Operation Parameters"

- "RSCN Transmission Mode"

- "Arbitrated Loop Parameters"

- "System Services"

- "Portlog Events Enable"

- "Application Attributes"

Note

If executed on an enabled switch, only the application attribute can be configured. To access all parameters controlled by this command, you must disable the switch using the **switchDisable** command.

The **configure** command is navigated using a series of menus. Top-level and associated submenus consist of a text prompt, a list of acceptable values, and a default value (in brackets).

Use the following options to control input:

Return	When entered at a prompt with no preceding input, accepts the default value (if applicable) and moves to the next prompt.
Interrupt (**Ctrl-C**)	Aborts the command immediately and ignores all changes made. This keystroke is common on many computers but can be different on your system.
End-of-file (**Ctrl-D**)	When entered at a prompt with no preceding input, terminates the command and saves changes made. This keystroke is common on many computers but might be different on your system.

Switch Fabric Settings

There are several settings that control the overall behavior and operation of the fabric. Some of these, such as the domain, are assigned automatically by the fabric and might differ from one switch to another in the fabric. Other parameters, such as the BB credit, can be changed for specific applications or operating environments but must be in agreement among all switches to allow formation of the fabric.

The fabric parameters are as follows:

Table 2-4   Configure Command Fabric Parameters

Field	Type	Default	Range
Domain	number	1	varies
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
Switch PID Format	number	1	1 to 2
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	0	0 or 1

Descriptions of the switch fabric setting fields are as follows:

Domain   The domain number uniquely identifies the switch in a fabric. This value is automatically assigned by the fabric. The range of valid values varies depending on the switch model and other system parameter settings.

R_A_TOV   The resource allocation time out value (R_A_TOV) is displayed 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 (E_D_TOV) is displayed in milliseconds. This timer is used to flag a potential error condition when an expected response is not received (an acknowledgment or reply in response to packet receipt, for example) 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 (WAN_TOV) displays 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 (MAX_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
The R_A_TOV, E_D_TOV, WAN_TOV, and MAX_HOPS configuration parameters are inter-related. 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, the user might 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 the user to re-enter some values, if the validation check fails.

Data Field Size
The data field size specifies the largest possible value, in bytes, and 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 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 are not present in the name server data base. Set this mode only if the switch N_Port discovery process (PLOGI, PRLI, INQUIRY) causes an attached device to fail.

Suppress Class F Traffic
When this mode is set to 1, all Class F interswitch frames are transmitted as Class 2 frames. This is to support remote fabrics that involve ATM gateways, which don't support class F traffic.

Switch PID Format   The formats are as follows:

0   Native PID format (16 based, 16 port format), for fabrics with legacy low-count-port switches.

1   Core PID format (0 based, 256 port format), preferred mode for mixed fabrics with legacy and new switches.

2   Extended edge PID format (16 based, 256 port format), used in mixed fabrics with legacy and new switches to avoid need to reboot host systems when static PID binded is used.

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.

Note

A Brocade Extended Fabrics license is required to set this mode.

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.

Insistent Domain ID mode

This mode enables a flag for the domain ID, so that the current domain setting for the switch is insistent: that is, remains the same over switch reboots, power cycles, CP failovers, firmware downloads, and fabric reconfigurations. If a switch does not get the selected insistent domain ID during a fabric reconfiguration, it segments itself out of the fabric.

Virtual Channel Settings

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.

The Virtual Channel Setting fields are as follows:

Table 2-5   Configure Command Virtual Channel Settings

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

VC Priority specifies the class of frame traffic given priority for a virtual channel.

F_Port Login Parameters

Specify the F_Port login parameters to limit the number of virtual port logins. These are switch-wide parameters applicable to all N_Port ID virtualization (NPIV) ports in the switch.

Table 2-6   F_Port Login Parameters

Field	Type	Default	Range
Maximum logins per switch	Number	15*ports	1 to 126*ports
Maximum logins per port	Number	126	1 to 255

Zoning Operation Parameters

The Zoning Operation Parameter field is as follows:

Disable NodeName Zone Checking

Specify 1 to disable using node WWN when specifying nodes in the zone database, or 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 interoperability.

RSCN Transmission Mode

The RSCN Transmission Mode fields are described in Table .

Table 2-7   RSCN Transmission Modes

Field	Type	Default	Range
End-device RSCN Transmission Mode	number	1	0 to 2
Domain RSCN to End-device for switch IP address or name change	number	0	0 to 1

End-device RSCN Transmission Mode

Values are as follows:

0   RSCN with single PID

1   RSCN with multiple PIDs

2   Fabric RSCN

Domain RSCN to End-device for switch IP address or name change

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.

Arbitrated Loop Parameters

The Arbitrated Loop Setting fields are described in the table.

Table 2-8   Configure Command Arbitrated Loop Settings

Field	Default	Range
Send FAN frames?	1	0 or 1
Enable CLOSE on OPEN received?	4	0 to 4
Always send RSCN?	0	0 or 1

Descriptions of the Arbitrated Loop Parameter fields are as follows:

Send FAN frames?   Specifies that fabric address notification (FAN) frames be sent to public loop devices to notify them of their node ID and address. When set to 1, frames are sent; when set to 0, frames are not sent.

Enable CLOSE on OPEN received?

> If this is set, a CLS is returned immediately to an OPN if no buffers are available. This is required for TachLite.

Always send RSCN? Following the completion of loop initialization, a remote state change notification (RSCN) is issued when FL_Ports detect the presence of new devices or the absence of preexisting devices. When set, an RSCN is issued upon completion of loop initialization, regardless of the presence or absence of new or pre-existing devices.

System Services

The System Services fields are shown in the table.

Table 2-9 Configure Command System Services Parameters

Field	Default	Range
rstatd	Off	On/Off
rusersd	Off	On/Off
telnetd	On	On/Off

Descriptions of the system service (setting) fields are as follows:

rstatd
Dynamically enables or disables a server that returns system operation information through remote procedure calls (RPC). The protocol provides for a wide range of system statistics.

The retrieval of this information is supported by a number of operating systems that support RPC. Most UNIX-based systems (HP-UX, Irix, Linux, Solaris, and so on.) use the RUP and RSYSINFO commands to retrieve the information. Refer to your local system documentation for the appropriate usage of the these or equivalent commands.

rusersd
Dynamically enables or disables a server that returns information about the user logged into the system through remote procedure calls (RPC). The information returned includes user login name, system name, login protocol or type, login time, idle time, and remote login location (if applicable).

The retrieval of this information is supported by a number of operating systems that support RPC. On most UNIX-based systems (HP-UX, Irix, Linux, Solaris, and so on.) the command to retrieve the information is rusers. Refer to your local system documentation for the appropriate usage of this or an equivalent command.

telnetd
Used to enable or disable the telnet interface to a switch, including sectelnet. If you are using SSH to manage a switch, you can disable the telnet interface for greater security. The default value is on (telnet enabled).

Portlog Events Enable

Port events can be disabled from logging. The default is enabled (on). When disabled, this event is not logged by the port log.

Application Attributes

Application attributes HTTP, SNMP, and RPCd are configurable; by default, all three attributes are enabled. Refer to the table for the application attributes that can be changed.

Table 2-10   Configurable Application Attributes

Application	File	Type	Default	Range
SSL	Certificate File	string	not set	varies
	CA Certificate File	string	not set	varies
	Length of crypto key	number	128	40, 56, 128
SNMP	SNMP Security Level	number	0	0, 1, 2
cfgload	Secure Config Upload and Download	boolean	off	on/off

Note

The secure protocols must not be enabled before setting SSL attributes correctly.

Operands   none

Examples   To set the configuration parameters for a switch:

```
switch:admin> configure

Configure...
Fabric parameters(yes, y, no, n): [no] yes
Domain:(1..239) [1]
R_A_TOV: (4000..120000) [10000]
E_D_TOV: (1000..5000) [2000] 5000
WAN_TOV: (0..30000) [0] 0
MAX_HOPS: (7..19) [7]
Data field size: (256..2112) [2112]
Sequence Level Switching: (0..1) [0] 1
Disable Device Probing: (0..1) [0]
Switch PID Format: (1..2) [1]
Per-frame Route Priority: (0..1) [0]
BB credit: (1..16) [16]

Insistent Domain ID Mode (yes, y, no, n): [no]
Virtual Channel parameters(yes, y, no, n): [no] yes
```

```
VC Priority 2: (2..3) [2]
VC Priority 3: (2..3) [2]
VC Priority 4: (2..3) [2]
VC Priority 5: (2..3) [2]
VC Priority 6: (2..3) [3]
VC Priority 7: (2..3) [3]

Switch Operating Mode (yes, y, no, n): [no] yes

Interoperability Mode: (0..1) [0]

Zoning Operation parameters (yes, y, no, n): [no] yes

Disable NodeName Zone Checking: (0..1) [0]

RSCN Transmission Mode (yes, y, no, n): [no] yes

End-device RSCN Transmission Mode
(0 = RSCN with single PID, 1 = RSCN with multiple PIDs, 2 = Fabric RSCN): (0..2) [0]

Arbitrated Loop parameters(yes, y, no, n): [no] yes
Alternate BB credit: (0..1) [0]
Send FAN frames?: (0..1) [1]
Enable CLOSE on OPEN received?: (0..1) [0]
Always send RSCN?: (0..1) [0]
Do Not Allow AL_PA 0x00?: (0..1) [0]

System services(yes, y, no, n): [no] yes

rstatd(on, off): [off]
rusersd(on, off): [off]
telnetd (on, off): [on]
Portlog events enable  (yes, y, no, n): [no] yes
start(a switch start or re-start event   )    (on, off): [on]
disable(a port is disabled                )    (on, off): [on]
enable(a port is enabled                  )    (on, off): [on]
ioctl(a port I/O control is executed)    )    (on, off): [on]

(output truncated)

Committing configuration...done.
```

See Also   **agtCfgDefault**, **agtCfgSet**, **agtCfgShow**, **configDefault**, **configShow**, **ipAddrSet**, **portCfgLongDistance**, **switchDisable**, **switchEnable**, **upTime**

crossPortTest

Tests functional operation of port external transmit and receive path.

Synopsis   **crossporttest** [**-nframes** *count*][**-lb_mode** *mode*][**-spd_mode** *mode*][**-norestore** *mode*][**-ports** *itemlist*]

Availability   admin

Description   This command verifies the intended functional operation of the switch by sending frames from port M's transmitter and looping them back through an external fiber cable into port N's receiver, thus exercising all the switch components, from the main board, to the media, to the fiber cable, to the media, and back to the main board. With **-lb_mode** set to 1, it is also possible to test ports with loopback plugs that connect each port back to itself.

The cables can be connected to any port combination with the one condition; the cables and media connected must be of the same technology. This means a short wave-length media port must be connected to another short wave-length media port, using a short wave-length cable, a long wave-length port must be connected to a long wave-length port, and a copper port must be connected to a copper port.

For best coverage, connected ports should be from different ASICs. For example, Ports 0 through 3 belong to ASIC 0, ports 4 through 7 belong to ASIC 1, and so forth. A connection from port 0 to port 15 exercises the transmit path between ASICs. A connection from port 0 to port 3 tests only the internal transmit path in ASIC 0.

Only one frame is transmitted and received at any one time. The port LEDs flicker green while the test is running.

Note

The command is supported only on SilkWorm 200E, 3014, 3016, 3250, 3850, 3900, 4012, 4100, 24000, and 48000 platforms; use **portLoopbackTest** or **miniCycle** instead.

The test method is as follows:

1. Determine which ports are connected to each other.

2. Enable ports for cabled loopback mode.

3. Create a Frame F of maximum data size (2112 bytes).

4. Transmit Frame F through Port M.

5. Pick up the frame from its cross-connected Port N. An error is reported if any port other than N actually received the frame.

6. Check if any of the eight statistic error counters are nonzero: ENC_in, CRC_err, TruncFrm, FrmTooLong, BadEOF, Enc_out, BadOrdSet, or DiscC3.

7. Check if the transmit, receive, or Class 3 receiver counters are stuck at some value.

8. Check if the number of frames transmitted is not equal to the number of frames received.

9. Repeat steps 3 through 8 for all ports present until the number of frames requested is reached or all ports are marked bad.

At each pass, a different data type is used to create the frame from a palette of seven types meaning that if a pass of seven is requested, seven different frames are used in the test. If eight passes, the first seven frames are unique, and the eighth is the same as the first. The data palette of seven 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, ...
```

The **crossPortTest** command behavior depends on the modes activated.

SwitchEnable or SwitchDisable Mode

In online mode (in which the switch is enabled prior to executing the **crossPortTest** command), only ports that are cable loopbacked to ports in the same switch are tested. Ports connected outside of the switch are ignored.

To run the **crossPortTest** command successfully the test must find at least one port (**-lb_mode** = 1, this is the default) or two ports (**-lb_mode** = 0) cable loopbacked to each other. If this criteria is not met, one of the following message is displayed:

```
Need at least 1 port(s) connected to run this test.
Need at least 2 port(s) cross-connected to run this test.
```

In offline mode (when the switch is disabled prior to executing the **crossPortTest** command) all ports are assumed to be cable loopbacked to different ports in the same switch. If one or more ports are not connected, the test aborts.

Note

All ports must be connected using loopback plugs or loopback cables for this test to run correctly in offline mode.

The test determines which port is connected to which port transmitting frames. If any ports are not properly connected (improperly seated SFPs or cables, bad SFPs or cables, or improper connection or improper connection of SWL to LWL), the following message is displayed:

```
One or more ports is not active, please double check
fibre channel connections on all ports.
```

Since this test includes the media and the fiber cable in its test path, its results combined with the results of **portLoopbackTest** and **spinSilk** can be used to determine which components of the switch are faulty. It is also possible to use loopback modes 3 and 5 to further isolate failures; refer to **-lb_mode**, below.

Operands   This command has the following operands:

-nframes *count*   Specify 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 10.

-lb_mode *mode*   Specify the loopback mode for the test. By default, **crossPortTest** uses mode 1 port loopback. Valid values are:

0   Cable loopback

1   Port loopback (loopback plugs)

2   External (SERDES) loopback

	3	Silkscreen loopback
	5	Internal (parallel) loopback

-spd_mode *mode*   Specify the speed mode for the test. This parameter is used only for Bloom and Condor ASIC-based products, for which it controls the speed at which each port is operated. For 1 Gbit/sec-only products it is ignored. The exact operation of each mode 5 through 8 depends upon the loopback mode selected. When speed modes 5 through 8 are used with cables, they must be connected even to odd or the test will fail. Valid values are:

0	Run test at both 1 Gbit/sec, 2 Gbit/sec, and 4 Gbit/sec (default).
1	Set all port speeds to 1 Gbit/sec.
2	Set all port speeds to 2 Gbit/sec.
4	Set all port speeds to 4 Gbit/sec.

For **-lb_mode** set to 0 or 1, the following speed modes is available to test the speed negotiation:

5	Set all even ports speed to AN; set all odd ports speed to 1 Gbit/sec.
6	Set all even ports speed to AN; set all odd ports speed to 2 Gbit/sec.
7	Set all odd ports speed to AN; set all even ports speed to 1 Gbit/sec.
8	Set all odd ports speed to AN; set all even ports speed to 2 Gbit/sec.

For **-lb_mode** set to 2 or 3, the following speed modes are available to test FIFO underrun:

5,7	Set all even ports speed to 2 Gbit/sec; set all odd ports speed to 1 Gbit/sec.
6,8	Set all even ports speed to 1 Gbit/sec; set all odd ports speed to 2 Gbit/sec.

-norestore *mode*   Specify 1 to force the test to skip part of the POST cleanup normally performed. This might be helpful during debug. This parameter should normally be left at the default value of 0.

-ports *itemlist*   Specify a list of user ports to test. By default, all the user ports in the current switch will be used. Refer to **itemList** for more information.

Examples   To run a functional test of all the ports on a switch:

```
switch:admin> crossporttest -ports 1/0-1/15

Running crossporttest .............

Ports Segmented (0)
Executing test ...
Test Complete: crossporttest Pass 10 of 10
Duration 0 hr, 0 min & 8 sec (0:0:8:725).
 passed.
```

See Also   **camTest**, **centralMemoryTest**, **cmemRetentionTest**, **cmiTest**, **itemList**, **portLoopbackTest**, **portRegTest**, **spinSilk**, **sramRetentionTest**

dataTypeShow

Displays sample data stream types used in some diagnostic commands.

Synopsis   **datatypeshow** [**-seed** *value*]

Availability   admin, switchAdmin, user

Description   Use this command to display sample data stream types used in diagnostic commands. There are 20 different sample data types. The command displays an example of each data stream.

Operands   This command has the following operand:

-seed *value*   Specify the data pattern seed value. If no seed is specified, then a seed value of 0 is used.

Examples   To display sample data streams you can use with diagnostics:

```
switch:admin> datatypeshow

Pattern        type       example

BYTE_FILL      1     00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
WORD_FILL      2     0000  0000  0000  0000  0000  0000  0000  0000
QUAD_FILL      3     00000000    00000000    00000000    00000000
BYTE_NOT       4     00 ff 00 ff 00 ff 00 ff 00 ff 00 ff 00 ff 00 ff
WORD_NOT       5     0000  ffff  0000  ffff  0000  ffff  0000  ffff
QUAD_NOT       6     00000000    ffffffff    00000000    ffffffff
BYTE_RAMP      7     00 01 02 03 04 05 06 07 08 09 0a 0b 0c 0d 0e 0f
WORD_RAMP      8     0000  0001  0002  0003  0004  0005  0006  0007
QUAD_RAMP      9     00000000    00000001    00000002    00000003
BYTE_LFSR      10    69 01 02 05 0b 17 2f 5e bd 7b f6 ec d8 b0 60 c0
RANDOM         11    55 16 fc d7 17 65 a9 87 5f 44 be 5a d0 de bc a5
CRPAT          12    bc bc 23 47 6b 8f b3 d7 fb 14 36 59 bc bc 23 47
CSPAT          13    7e 7e 7e 7e 7e 7e 7e 7e 7e 7e 7e 7e 7e 7e 7e 7e
CHALF_SQ       14    4a 4a 4a 4a 4a 4a 4a 4a 4a 4a 4a 4a 4a 4a 4a 4a
CQTR_SQ        15    78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78
RDRAM_PAT      16    00 ff 00 ff 00 ff 00 ff 00 ff 00 ff 00 ff 00 ff
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    00000000    11111111    22222222    33333333
```

See Also   none

date

Displays or sets the switch date and time.

Synopsis   **date** [**"***newdate***"**]

Availability   admin, switchAdmin, user

Description   Use this command to set the date and time. All switches maintain the current date and time in flash memory. If the security feature (secure mode) is not enabled, switch operation does not depend on the date and time. A switch with incorrect date values continues to function properly. The date and time are only used to record events in the various logs: for example, the error log and the port log.

To enable secure mode the fabric must be synchronized. Every switch in the fabric must receive a fabric timestamp from the primary FCS switch.

Use this command with no operands to display the local switch date and time. Specify an operand to set the date and time.

This command sets a common date and time for the entire fabric. If secure mode is not enabled, a change in date or time to one switch is forwarded to the principal switch and distributed to the fabric. If secure mode is enabled, date or time changes can be made only on the primary FCS switch and distributed to the fabric.

It might take up to 64 seconds for the switches in the fabric to be synchronized.

If the switches in the fabric are v5.x, v4.1.x, v3.1.x, or v2.6.x or higher, this command sets date and time for all switches in the fabric. If secure mode is disabled, a change in date and time to one switch is forwarded to the principal switch and distributes to the fabric.

 Note

This command becomes read-only if external NTP synchronization is enabled. For more information, refer to **tsClockServer**.

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. Refer to **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.

The date and time are specified in the following format, as used on many UNIX systems:

mmddHHMMyy   Where mm is the month, 01-12; dd is the date, 01-31; HH is the hour, 00-23; MM is minutes, 00-59; yy is the year, 00-99. Year values greater than 69 are taken to indicate 1970-1999; year values less than 70 are taken to indicate 2000-2069.

Operands   This command has the following operand:

"*newdate***"**   Specify the new date and time, in quotation marks. This operand is optional.

Note: Enter commands in lowercase only; mixed case is for readability.

Examples   To display the current date and time and then modify it:

```
switch:admin> date
Fri Jan 29 17:01:48 UTC 2000
switch:admin> date "0227123003"
Thu Feb 27 12:30:00 UTC 2003
```

See Also   **errShow**, **ficoncupset**, **ficoncupshow**, **portLogShow**, **tsClockServer**, **tsTimeZone**, **upTime**

dbgShow

Displays current values of debug and verbosity levels of the specified module.

Synopsis   **dbgshow** *module_name*

Availability   admin, switchAdmin, user

Description   Use this command to display the current values of debug and verbosity levels of the specified module. If no module name is specified, displays debug and verbosity levels of all modules.

Operands   This command has the following operand:

module_name   Specify the name of the module for which you want to view the debug and verbosity levels. Module names are case sensitive. This operand is optional.

Examples   To display information about a specific module named NS:

```
switch:admin> dbgshow NS
Module NS,      debug level = 1, verbose level = 1
```

See Also   **setDbg**

defzone

Activates or deactivates a default zone configuration, or displays the current configuration.

Synopsis   **defzone** [**--noaccess** | **--allaccess** | **--show**]

Availability   admin

Description   Use this command to activate or deactivate a default zone configuration, or display the current configuration.

Note

This command requires a Advanced Zoning license.

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

Names with the *d_efault_* prefix are reserved for default zoning use. No editing of these objects is permitted.

cfgShow does not display the names of the default zone 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 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 performed subsequent to the use of this command to commit the changes and distribute them to the fabric; for example:

```
switch:admin> defzone --noaccess
switch:admin> cfgsave
```

An audit log record is generated for each use of this command option.

With No Access default zone activated, the following applies:

- Perform a **cfgDisable** of the current effective zone configuration and the local switch converts the **cfgDisable** to **cfgEnable** **d_efault_Cfg**.

- When 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 a **cfgEnable** **d_efault_Cfg** command.

--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 doing 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:

```
switch:admin> defzone --allaccess
switch:admin> cfgsave
```

An audit log record is generated for each use of this command option.

--show   Displays the current state of the default zone access mode.

Examples   To create a default zone configuration:

```
switch:admin> cfgactvshow
Effective configuration:
 no configuration in effect
switch:admin> defzone --noaccess
switch:admin> cfgsave
switch:admin> defzone --show
Default Zone Access Mode
 committed - All Access
 transaction - No Transaction
```

See Also   **cfgActvShow**, **cfgDisable**, **cfgEnable**, **cfgSave**, **cfgShow**, **zoneCreate**, **zoneDelete**

diagClearError

Clears the diagnostics failure status.

Synopsis **diagclearerror** [[**--slot**] *slotnumber*] **-all**

Availability admin, switchAdmin

Description Use this command to clear the diagnostics failure status.

Operands This command has the following operand:

--slot *slotnumber* Specify the slot 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.

If no operand is specified, the default is to clear all bad port flags.

Examples To clear the diag software flag:

```
switch:admin> diagclearerror 8
ERROR: DIAG CLEARERR
Diagnostics Errors Cleared, port: 8/31
Err# 0120041 081F
```

See Also none

diagCommandShow

Displays diagnostic command descriptions.

Synopsis   **diagcommandshow** [*command*]

Availability   admin, switchAdmin, user

Description   Use this command to display a short description of a diagnostic command.

Note

Use **diagHelp** to look up diagnostic command help pages.

You can issue this command on the FR4-18i blade in a SilkWorm chassis; however, the command is not supported by the SilkWorm platform and does not effect any other feature operations. This availability is offered to maintain consistency across a mixed-blade environment.

Operands   This command has the following operands:

command   Specify a command name to display more detailed information.

Examples   To display a list of diagnostic commands, with descriptions:

```
switch:admin> diagcommandshow
bladepropshow           display blade properties
chippropshow            display chip properties
chipregshow             display contents of port registers
datatypeshow            display available diagnostic data types
diagcommandshow         display diagnostic command descriptions
diaghelp                display diagnostic command descriptions
diagmodeshow            display diagnostic mode configuration
diagoktorun             check to see if it is ok to run a diagnostic test
diagshow                display diagnostics status
diagstatus              display currently running diagnostic tests
itemlist                diagnostic list parameter syntax and grammar
                        information
minispropshow           display mini-switch ASIC property
minisregshow            display contents of mini-switch registers.
ptbufshow               dump port buffer contents
(output truncated)
```

See Also   **diagHelp**

diagDisablePost

Disables power-on self-test (POST).

Synopsis   **diagdisablepost**

Availability   admin, switchAdmin

Description   Use this command to disable POST. A reboot is not required for this command to take effect.

Operands   none

Examples   To disable the POST during future power ons:

```
switch:admin> diagdisablepost
Config update Succeeded
Diagnostic POST is now disabled.
```

See Also   **diagEnablePost**

diagEnablePost

Enables power-on self-test (POST) execution at next reboot.

Synopsis   **diagenablepost**

Availability   admin, switchAdmin

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.

Operands   none

Examples   To enable the POST during future power ons:

```
switch:admin> diagenablepost
Config update Succeeded
Diagnostic POST is now enabled.
```

See Also   **diagDisablePost**

diagEnv

Diagnostic debug parameters management package.

Synopsis **diagsetdebug** *value*

diagdebughelp

diagsetdebugnoncheck *value*

diagsetdebugnorestore *value*

diagsetfaillimit *value*

diagsetfrcerr *value*

diagshowusr

... more commands ...

Availability admin

Description All of diagnostic parameters can be set either by running relevant user commands or by setting them directly in some way. The latter method is supposed to be run only by in-house technicians but users. Diagnostic parameters are used primarily for debugging purposes and users should not tamper with those if not told so.

To display the values of diagnostic parameters, run diagshowusr as in the "Examples" section. For a complete list of the **diagEnv** commands, use diagdebughelp.

Each of these commands is an alias that evaluates the output of diagenv to set the diagnostic parameter for the current shell. For example the following alias is created to implement diagsetdebug.

```
function diagsetdebug () { eval `diagenv write USR_DEBUG $*` }
```

These aliases are created by **diagEnv** as well, by including the following command in the shell start-up script:

```
eval `diagenv alias`
```

For proper operation, the output **diagEnv** sends to stdout should be processed by the eval command to set the appropriate variables.

Caution

Your use of the functionality made available through this package is at your sole risk and you assume all liability resulting from such use.

Note

The effects of diagnostic parameters might be changed without notice.

You can issue this command on the FR4-18i blade in a SilkWorm chassis; however, the command is not supported by the SilkWorm platform and does not effect any other feature operations. This availability is offered to maintain consistency across a mixed-blade environment.

Operands The operand is as follows:

value Specify the value for the relevant diagnostic environment variable.

Examples   To display the values of the diagnostic parameters:

```
switch:admin> diagshowusr
Name            Environment                   Value
USR_DILATION    DIAG_USR_DLY_DILATION         1
USR_MEMDLY      DIAG_USR_MEMDLY               10
USR_SEED        DIAG_USR_SEED                 0x0
USR_SPECIAL     DIAG_USR_SPECIAL              0x0
(output truncated)
```

See Also   none

diagFailLimit

Sets the diagnostics fail limit.

Synopsis **diagfaillimit** [*limit* | **-show**]

Availability admin

Description Use this command to set the diagnostics fail limit to a specified value. The fail limit controls the number of failures before certain diagnostic test methods aborts. The exact use of this configuration setting depends on the test method.

The fail limit is saved in flash memory and stays set until the next execution of **diagFailLimit**.

The new fail limit becomes active as soon as this command is executed; it does not require a reboot to take effect.

Operands This command has the following optional operands:

limit   Specify the number of failures before a diagnostic test aborts. The limit value must be 1 or greater.

-show   Specify this operand to display the current fail limit setting.

If no operand is specified, the current value is displayed.

Examples To change the fail limit from 1 to 5:

```
switch:admin> diagfaillimit -show
Fail Limit is 1.
switch:admin> diagfaillimit 5
Fail Limit is now 5.
Config update Succeeded
```

See Also none

diagHelp

Displays diagnostic command information.

Synopsis   **diaghelp** [*command*]

Availability   admin, switchAdmin, user

Description   Use this command to display a short description of diagnostic commands that are available to the user if command is not specified. The command builds a database of command information during the first execution. This process takes a few seconds to complete.

Note

Use default operands when running diagnostics commands. Nondefault settings require detailed knowledge of the underlying hardware and are intended for support personnel only. Contact support if you want to use these operands.

Operands   This command has the following operand:

command   Specify a command name to display more detailed information.

Examples   To display diagnostic command information:

```
switch:admin> diaghelp
bladepropshow           display blade properties
chippropshow            display chip properties
chipregshow             display contents of port registers
datatypeshow            display available diagnostic data types
diagcommandshow         display diagnostic command descriptions
diaghelp                display diagnostic command descriptions
diagmodeshow            display diagnostic mode configuration
diagoktorun             check to see if it is ok to run a diagnostic test
diagshow                display diagnostics status
diagstatus              display currently running diagnostic tests
itemlist                diagnostic list parameter syntax and grammar
                        information
minispropshow           display ASIC pair property
minisregshow            display contents of ASIC pair registers.
ptbufshow               dump port buffer contents
(output truncated)
```

See Also   none

diagLoopId

Sets the diagnostics loop ID.

Synopsis   **diagloopid** [*id* | **-show**]

Availability   admin

Description   Use this command to select the loop ID to be used by FL mode diagnostics. The value entered will be converted from a loop ID to the corresponding AL_PA and used as the port address for any diagnostics that operate in FL_Port mode.

The mode becomes active as soon as this command is executed; it does not require a reboot to take effect.

The actual behavior of **diagLoopId** depends on the test methods that use it.

Note

Currently, no FL mode tests exist.

You can issue this command on the FR4-18i blade in a SilkWorm chassis; however, the command is not supported by the SilkWorm platform and does not effect any other feature operations. This availability is offered to maintain consistency across a mixed-blade environment.

Operands   This command has the following optional operands:

id   Specify the loop ID for FL_Port mode diagnostics.

-show   Specify **-show** to display the current loop ID.

If no operand is specified, the current value is displayed.

Examples   To display the loop ID:

```
switch:admin> diagloopid -show
FL mode Loop ID is 125.
```

See Also   none

diagModeShow

Displays diagnostic mode configuration.

Synopsis   **diagmodeshow**

Availability   admin, switchAdmin, user

Description   Use this command to display the current settings for several diagnostic configuration parameters. This command is most often used by burn-in scripts to display a summary of the configuration settings that were in effect when the script was run.

Note

Any automated use of this command should rely only on the names of the specific variables, not on their exact positions in the output. Earlier versions of this command listed *diag.mode.burnin.nExec* instead of *Burnin nExec* and *diag.mode.burnin.nExec* instead of *Burnin passnum*.

You can issue this command on the FR4-18i blade in a SilkWorm chassis; however, the command is not supported by the SilkWorm platform and does not effect any other feature operations. This availability is offered to maintain consistency across a mixed-blade environment.

Operands   none

Examples   To display the diagnostic mode:

```
switch:admin> diagmodeshow
diag.mode* parameters saved in flash:
        diag.mode.burnin               = 0
        diag.mode.burnin.level         = 0
        diag.mode.burnin.firstPowerUp  = Thu Feb 28 01:36:12 2002
        diag.mode.esd                  = 0
        diag.mode.gbic                 = 0
        diag.mode.splb                 = 0
        diag.mode.lab                  = 0
        diag.mode.mfg                  = 0
        diag.mode.bplb                 = 0
        diag.ports                     = TEST (type=INDEX, sz=512): 100.
        Burnin passnum                 = 1
        Burnin nExec                   = 0
        Silkworm Mode                  = OFF
        Disable Modes Print            = OFF
```

See Also   **burninLevel**, **setEsdMode**, **setGbicMode**, **setSplbMode**

2 Note: Enter commands in lowercase only; mixed case is for readability.

diagPost

diagPost

Sets or displays diagnostic POST configuration.

Synopsis   **diagpost** [*mode* | **-show**]

Availability   admin

Description   Use this command to enable or disable POST testing. The mode is saved in flash memory (and stays in that mode) until the next execution of **diagPost**. The mode becomes active as soon as this command is executed; it does not require a reboot to take effect.

POST mode modifies the behavior of the diagnostics daemon program to inhibit testing of switch blades when the system is first powered on or a new blade is added.

Note

To enable or disable diagnostic POST, the recommended method is to use **diagEnablePost** and **diagDisablePost**.

Operands   This command has the following operands:

mode   Specify 1 to enable, 0 to disable POST test. This operand is optional.

-show   Specify this operand to display the current mode. This operand is optional.

If no operand is specified, the current value is displayed.

Examples   To enable and then disable the POST test:

```
switch:admin> diagpost
Diagnostic POST is currently disabled.
switch:admin> diagpost 1
Config update Succeeded
Diagnostic POST is now enabled.
```

See Also   **diagDisablePost**, **diagEnablePost**

diagRetry

Sets or displays diagnostic retry mode.

Synopsis   **diagretry** [*mode* | **-show**]

Availability   admin

Description   Use this command to enable retry mode if the mode value is nonzero and to disable the retry mode if the mode value is 0. The mode is saved in flash memory (and stays in that mode) until the next execution of **diagRetry**. The mode becomes active as soon as this command is executed; it does not require a reboot to take effect.

Retry mode modifies the behavior of the diagnostic test methods, power-on self-test (POST), and burn-in scripts. The exact behavior depends on the tests and scripts that are run.

Operands   This command has the following optional operands:

mode   Specify 1 to enable, 0 to disable retry mode.

-show   Specify this operand to display the current mode setting.

If no operand is specified, the current value is displayed.

Examples   To view the current retry mode value:

```
switch:admin> diagretry -show
Diagnostic Retry Mode is currently enabled.
```

See Also   none

diagSetBurnin

Initializes the blade for a burn-in run.

Synopsis   **diagsetburnin** [**--slot** *slotnumber*][*script* | **-current**]

Availability   admin, switchAdmin

Description   This sets up the blade burn-in parameters for the registered burn-in script. The burn-in will start at the next run of power-on self-test (POST) on the designated blade(s).

The errors and activity logs are stored in flash memory. The activity log of the script is saved in */var/log/scriptname.slot.log*. The errors produced are available from the **burninErrShow** command on a per-blade basis. When power cycles occur, the burn-in activity is restarted at the test that was interrupted at the time of the power cycle. This command does not require a reboot to take effect.

> **Note**
>
> It is advisable to run the **burninErrClear** command prior to running **diagSetBurnin** and **diagSetCycle**.
>
> Boards must be installed prior to running this command and **diagSetCycle** must be run prior to **diagSetBurnin** if you want to use both commands.

Operands   This command has the following operands:

--slot *slotnumber*	Specify which slot number to update. If this option is not specified at all, then all slots on the switch are set up for burn-in.
script	Specify the name of the burn-in script to run.
-current	Set the name of burn-in script to current burn-in script.

Examples   To set the burn-in script and mode:

```
switch:admin> diagsetburnin --slot 1 -current
existing script is: /fabos/share/switchess.sh
Burnin mode is Enabled.
Removing all log files in /var/log for slot 1
Slot 1 burnin name is now /fabos/share/switchess.sh
Config update Succeeded
```

See Also   **burninErrShow**, **diagSetCycle**

Note: Enter commands in lowercase only; mixed case is for readability.

diagSetCycle

2

diagSetCycle

Sets diagnostic script parameters.

Synopsis   **diagsetcycle** *script* [**-show** | **-default** | [**-keyword** *value*]]

Availability   admin, switchAdmin

Description   Use this command to provide an interactive method to update diagnostic command parameters. If only script is specified, the command displays all configuration variables used by the specified script and enter an interactive session. Using the full parameters, variables can be updated noninteractively.

In interactive mode, the current value, default value, and description of purpose of the variable are displayed for each variable. If no new value is specified, the current value is left unchanged. If a new value is entered, its value is updated and stored in the configuration database for that blade type. This command does not require a reboot to take effect.

> **Note**
>
> It is advisable to run the **burninErrClear** command prior to running **diagSetBurnin** and **diagSetCycle**.

Operands   This command has the following operands:

script   Specify a script in which you want to change parameters.

-show   Specify this operand to display the parameters for the specified diagnostic script.

-default   Specify this operand to set the script parameters to default values.

-keyword *value*   The script parameters can be updated noninteractively using this style of option list. value is the keyword to update; the value should be specified manually in this case.

Examples   To update diagnostic command parameters:

```
switch:admin> diagsetcycle switchburnin.sh -show
CURRENT - KEYWORD         : DEFAULT
 1      - number_of_runs : 1
 2      - vib            : 2
 10     - thermal        : 10
 BURNIN - label          : BURNIN
 1      - tbr_passes     : 1
 1      - prt_on         : 1
 1      - cntmem_on      : 1
 1      - cmi_on         : 1
 1      - retention_on   : 1
 1      - cam_on         : 1
 50     - flt_passes     : 50
 25     - sta_passes     : 25
 100    - plb_nframes    : 100
 50     - txd_nframes    : 50
 200    - xpt_nframes    : 200
 20     - bpt_nframes    : 20
 50     - slk_nmegs      : 50
 30     - bpt_all_nframes: 30
 50     - slk_all_nmegs  : 50
```

See Also   **burninLevel**, **diagSetBurnin**, **diagStopBurnin**

diagShow

Displays diagnostics status.

Synopsis   **diagshow** [**--slot** *number*][**-uports** *itemlist*][**-bports** *itemlist*][**-use_bports** *value*]

Availability   all users

Description   Use this command to display the diagnostics status for the specified list of blade or user ports.

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 all user ports in the system.
-uports *itemlist*	Specify a list of user ports to display.
-bports *itemlist*	Specify a list of blade ports to display.
-use_bports *value*	If this value is not 0 the diagnostics status for the blade ports specified in -use_bports displays; otherwise, the user ports specified in -uports displays. The default value is 0.

Examples   To display diagnostic status on a switch blade:

```
switch:admin> diagshow
Diagnostics Status:  Fri Feb 08 15:25:24 2002
Slot: 1 UPORTS
Port    BPort    Diag    Active    Speed    ......
 0       15      OK       UP       2G Auto  ......
 1       14      OK       UP       2G Auto  ......
 2       13      OK       UP       2G Auto  ......
 3       12      OK       UP       2G Auto  ......
 4       31      OK       UP       2G Auto  ......
 5       30      OK       UP       2G Auto  ......
 6       29      OK       UP       2G Auto  ......
 7       28      OK       UP       2G Auto  ......
 8       47      OK       UP       2G Auto  ......
(output truncated)
```

See Also   **itemList**

diagShowTime

Sets or displays diagnostic show-time mode.

Synopsis   **diagshowtime** [*mode* | **-show**]

Availability   admin

Description   Use this command to enable show-time mode (if the mode value is not 0) or disable the show-time mode (if the mode value is set to 0). The mode is saved in flash memory (and stays in that mode) until the next execution of **diagShowTime**. The mode becomes active as soon as this command is executed; it does not require a reboot to take effect.

Show-time mode, when enabled, causes each test to display elapsed-time messages. It is normally used during burn-in and for test method debugging.

Note

diagSetShowtime is an alias of **diagShowTime**.

You can issue this command on the FR4-18i blade in a SilkWorm chassis; however, the command is not supported by the SilkWorm platform and does not effect any other feature operations. This availability is offered to maintain consistency across a mixed-blade environment.

Operands   This command has the following operands:

mode   Specify 1 (or any nonzero value) to enable show-time mode; specify 0 to disable show-time mode. This operand is optional.

-show   Specify this operand to display the current mode setting. This operand is optional.

If no operand is specified, the current value is displayed.

Examples   To enable show-time mode:

```
switch:admin> diagshowtime
Show Time mode is 0 (Disabled).
switch:admin> diagshowtime 1
Config update Succeeded
Show Time mode is now 1 (Enabled).
```

See Also   none

diagSkipTests

Enables or disables diagnostics skip test flags.

Synopsis   **diagskiptests** [*value* | **-show**]

Availability   admin

Description   Use this command to enable or disable the diagnostics skip test flags. The skip test flags are saved in flash memory and stay set until the next execution of **diagSkipTests**.

The mode becomes active as soon as this command is executed. It does not require a reboot to take effect.

The skip test flags are used to skip the execution of certain POSTs that might prove hazardous to normal switch operation. The exact use of this flag is determined by the POST scripts and the specific test methods used.

Operands   This command has the following operands:

value   Specify a bit mask for tests to skip.

-show   If specified or no value is given, the current skip test flags displays.

If no operand is specified, the current value is displayed.

Examples   To display the current skip test flags:

```
switch:admin> diagskiptests -show
Skip tests is 1.
```

See Also   none

diagStatus

Displays currently running diagnostic tests.

Synopsis   **diagstatus** [*slotnumber*]

Availability   all users

Description   Use this command to display currently running diagnostic test names.

Note

You can issue this command on the FR4-18i blade in a SilkWorm chassis; however, the command is not supported by the SilkWorm platform and does not effect any other feature operations. This availability is offered to maintain consistency across a mixed-blade environment.

Operands   The follow is optional:

slotnumber   Specifies the slot to display. If omitted, all blades in the system are assumed.

Examples   To display currently running diagnostic tests:

```
switch:admin> 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

2 Note: Enter commands in lowercase only; mixed case is for readability.

diagStopBurnin

diagStopBurnin

Terminates a blade burn-in run.

Synopsis **diagstopburnin** [**--slot** *number*]

Availability admin, switchAdmin

Description Use this command to determine which PID is running burn-in on a blade and terminate that activity. The burn-in script handles the logging cleanup.

This command does not require a reboot to take effect.

Operands This command has the following operands:

--slot *number* Specify the slot to stop burn-in. If no slot is specified, this command executes on all slots in the logical switch. This operand is optional.

Examples To stop burn-in mode on a switch:

```
switch:admin> diagstopburnin --slot 1
No burn-in script active on slot 1
 1 burninErrShow output:
0x1eea (fabos): Dec 19 14:42:18
Switch: 0, Error DIAG-MANUAL1, 1, " 1 Starting switchess ...
Err# 0140042 0100:101:000:001:24:37:

0xc84 (fabos): Dec 20 08:57:27
Switch: 0, Error DIAG-MANUAL1, 1, " 1 switchess: ABORT   ...
Err# 0140042 0100:101:000:000:25:41:

0x1b61 (fabos): Feb 07 19:02:28
Switch: 0, Error DIAG-MANUAL1, 1, " 1 Starting switchess ...
Err# 0140042 0100:101:000:001:26:39:

0x47ff (fabos): Feb 07 21:45:36
Switch: 0, Error DIAG-MANUAL1, 1, " 1 switchess: ABORT   ...
Err# 0140042 0100:101:000:002:26:41:1N
```

See Also **diagSetBurnin**

dlsReset

Disables the dynamic load sharing (DLS) option.

Synopsis   **dlsreset**

Availability   admin, switchAdmin

Description   Use this command to turn off DLS when a fabric change occurs. Refer to **dlsSet** for a full description of load sharing.

Note

This command should be used only if devices connected to the fabric cannot handle occasional routing changes correctly.

DLS is not supported in certain routing policies. Refer to **aptPolicy** for more information on routing policies.

Operands   none

Examples   To disable the dynamic load sharing option:

```
switch:admin> dlsreset
Committing configuration...done.
switch:admin> dlsshow
DLS is not set
```

See Also   **aptPolicy**, **dlsSet**, **dlsShow**

dlsSet

Enables the dynamic load sharing (DLS) option.

Synopsis   **dlsset**

Availability   admin, switchAdmin

Description   Use this command to turn on DLS when a fabric change occurs.

Routing is generally based on the incoming port and the destination domain. This means that all the traffic coming in from a port (either an E_Port or an Fx_Port) directed to the same remote domain is routed through the same output E_Port.

To optimize fabric routing, when there are multiple equivalent paths to a remote switch, traffic is shared among all the paths. Load sharing is recomputed when a switch is booted up or every time a change in the fabric occurs. A change in the fabric is defined as an E_Port going up or down or an Fx_Port going up or down.

During load sharing, recomputation, existing routes might be moved to maintain optimal balance. This can cause momentary frame loss along these routes.

In contrast, if DLS is turned off (using **dlsReset**), 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.

Note

DLS is not supported in certain routing policies. Refer to **aptPolicy** for more information on routing policies.

Operands   none

Examples   To enable the dynamic load sharing option:

```
switch:admin> dlsset
switch:admin> dlsshow
DLS is set
```

See Also   **aptPolicy**, **dlsReset**, **dlsShow**, **iodReset**, **iodSet**, **iodShow**, **uRouteShow**, **topologyShow**

dlsShow

Display the setting of the dynamic load sharing (DLS) option.

Synopsis   **dlsshow**

Availability   admin, switchAdmin, user

Description   Use this command to display whether DLS is on or off. One of two messages displays:

DLS is set   The DLS option is turned on. Load sharing is reconfigured with every change in the fabric, and existing routes can be moved to maintain optimal balance.

DLS is not set   The DLS option is turned off. Once placed, existing routes are never moved to maintain optimal balance.

Refer to **dlsSet** for a description of load sharing.

Operands   none

Examples   To display the current DLS option setting:

```
switch:admin> dlsshow
DLS is set
```

See Also   **dlsSet**, **dlsReset**

dnsConfig

Sets, displays, or removes domain name service (DNS) parameters.

Synopsis   **dnsconfig**

Availability   admin, switchAdmin

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.

Operands   none

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: [] domain.com
Enter Name Server IP address in dot notation: [] 123.123.123.123
Enter Name Server IP address in dot notation: [] 123.123.123.124
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
```

See Also   **configDownload**, **configUpload**, **firmwareDownload**, **ipAddrSet**, **ipAddrShow**

enclosureShow

Displays attributes of the switch enclosure.

Synopsis   **enclosureShow** *attribute*

Availability   admin, switchAdmin, user

Description   Use this command to display attributes of the switch enclosure. Currently, supported attributes are the vendor-specific enclosure identifier and the identifier of the enclosure interface to which the switch is attached.

Operands   This command has the following operand:

attribute   Attribute of the enclosure to display:

        id   Displays the vendor-specific enclosure identifier.

        modelname
                Displays the vendor-specific enclosure model name.

        slotid   Displays the identifier of the enclosure interface to which the switch is attached.

Examples   To display the identifier of the enclosure interface to which the switch is attached:

```
switch:admin> enclosureShow slotid

Bay 4
```

See Also   none

errClear

Clears all error log messages for all switch instances on this control processor (CP).

Synopsis	**errclear**
Availability	admin, switchAdmin
Description	Use this command to clear all internal and external error log messages for all switch instances on this CP.
Operands	none
Examples	To clear the error log messages:

```
switch:admin> errclear
```

See Also　**errDump**, **errShow**

errDelimiterSet

Sets the error log start and end delimiter for messages sent to the console and syslog.

Synopsis   **errdelimiterset** [**-s "***start delimiter string***"**][**-e "***end delimiter string***"**]

Availability   admin, switchAdmin

Description   Use this command to set the error log start and end delimiter 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.

If no arguments are supplied to the command, it instead displays the existing **errDelimiterSet** configuration. These delimiters are stored persistently.

Operands   The optional operands are as follows:

-s "*start delimiter string***"**

> Specifies the alphanumeric string for the start delimiter; up to 10 characters are allowed.

-e "*end delimiter string***"**

> Specifies the alphanumeric string for the end delimiter; up to 10 characters are allowed.

Examples   To display the start and end delimiter:

```
switch:admin> errdelimiterset

delimiter start string: <none>

delimiter end string: <none>
```

To change the start and end delimiter (with sample output):

```
switch:admin> errdelimiterset -s "Start" -e "End"

Start2003/03/10-09:54:03, [NS-1002], 1035,, ERROR, SWITCH43, Name Server received an
invalid request from device 10:02:32:A3:78:23:23:End
```

See Also   **errDump**, **errFilterSet**, **errShow**

2

Note: Enter commands in lowercase only; mixed case is for readability.

errDump

errDump

Displays the error log, without pagination.

Synopsis   **errdump** [**-s** *switch_instance*][**-r**][**-p**]

Availability   admin, switchAdmin, user

Description   Use this command to display external error log messages for all switch instances and the chassis, without pagination. The **-r** operand displays the messages in reversed order. 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 logged. AUDIT displays in the field.
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.

Operands   This command has the following operands:

-s *switch_instance*	Displays messages only from one switch instance. Valid values are 0 or 1. This operand is optional; if omitted, messages from all switch instances are displayed.
-r	Displays messages in reversed order. This operand is optional; if omitted, the messages display in the normal order.
-p	Displays error logs from Fabric OS versions prior to v4.2.

Examples   To display the error log, without pagination:

```
switch:user> errdump
Version: 4.4.0
2004/07/14-22:24:08, [HAMK-1003], 1,, INFO, switch1, Heartbeat up

2004/07/14-22:24:47, [FSSM-1002], 2,, INFO, switchChassis, HA
State is in sync

2004/07/14-22:25:29, [SEC-1192], 3,, INFO, switch2, Security
violation: Login failure attempt via SERIAL.
```

See Also   **errDelimiterSet**, **errFilterSet**, **errShow**

Note: Enter commands in lowercase only; mixed case is for readability.

errFilterSet

2

errFilterSet

Sets a filter for an error log destination.

Synopsis   **errFilterSet** [**-d "**_destination_**"**][**-v "**_severity_**"**]

Availability   admin, switchAdmin

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.

If no parameters are specified, this command displays the filters that are currently in use.

Operands   The operands are as follows:

-d "_destination_**"**   Specifies the destination to set the filter. The "console" string is the only valid value at this time.

-v "_severity_**"**   Specifies the minimum severity of the message to pass through the filter. Valid values are "INFO", "WARNING", "ERROR", and "CRITICAL".

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**
Availability	admin, switchAdmin, user
Description	Use this command to display a list of all defined error log modules.
Operands	none
Examples	To display a list of all defined error log modules:

```
switch:user> errmoduleshow

KT
UT
TRCE
KTRC
LOG
CDR
BLPU
PISP
PIXE
EGR
BL
PIC
PS
RTE
AS
AUTH
BLDE
BLM
BPRT
CER
CFLD
CFMN
CHPS
CONF
CPT
DIAG
EM
ERRL
FABR
FABS
FCIU
FCMC
FCPD
FCPH
FICU
FILB
FKLB

(output truncated)
```

See Also   **errDump**, **errShow**

errShow

Displays the error log messages, with pagination.

Synopsis   **errshow** [**-s** *switch_instance*][**-r**][**-p**]

Availability   admin, switchAdmin, user

Description   Use this command to display external error log messages for all switch instances and the chassis, one at a time. The **-r** operand displays the messages in a reversed order. 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 logged. AUDIT displays in the field.
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.

Operands   This command has the following operands:

-s *switch_instance*	Specifies to display messages only from one switch instance. Valid values are 0 or 1. This operand is optional; if omitted, messages from all switch instances are displayed.
-r	Specifies to display messages in reversed order. This operand is optional; if omitted, the messages display in the normal order.
-p	Displays error logs from Fabric OS versions prior to v4.2.

Note: Enter commands in lowercase only; mixed case is for readability.

errShow

Examples   To display the error log, with pagination:

```
switch:user> errshow

Version: 4.4.0
2004/07/14-22:24:08, [HAMK-1003], 1,, INFO, switch1, Heartbeat up

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

2004/07/14-22:24:47, [FSSM-1002], 2,, INFO, switchChassis, HA State is in sync

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

2004/07/14-22:25:29, [SEC-1192], 3,, INFO, switch2, Security violation: Login
failure attempt via SERIAL.
Type <CR> to continue, Q<CR> to stop:
```

See Also   **errDelimiterSet**, **errDump**, **errFilterSet**

exit

Logs out from a shell session.

Synopsis   **exit**

Availability   admin, switchAdmin, user

Description   Use this command to log out from a telnet, rlogin or serial port session. Telnet and rlogin connections are closed; the serial port returns to the `login:` prompt.

The **exit** command is an accepted synonym for **logout**, as is typing **Ctrl-D** at the beginning of a line.

Operands   none

Examples   To exit from a shell session:

```
switch:admin> exit
Connection to host lost.
```

See Also   **logout**

fabPortShow

Displays fabric port information.

Synopsis   **fabportshow** [*slotnumber*/]*portnumber*

Availability   admin, switchAdmin, user

Description   Use this command to display the state of a port, relative to the fabric, as well as a list of pending commands. The following information displays:

Port	Displays the port number.
State	The state of the port:

P0	Port Offline
P1	Port Online
P2	ELP ACC Received
P3	Link Reset Done
I0	Trunk Initiator: EMT Sent
I1	Trunk Initiator: ETP ACC Received
I2	Trunk Initiator: ETP Sent
I3	Trunk Initiator: Link Reset
T0	Trunk Target: EMT Received
T1	Trunk Target: ETP Received
T2	Trunk Target: Link Reset
LD	Dynamic long distance: ECP sent or received
T3	Trunk Target: Link reset done on slave
I4	Trunk Initiator: Link reset done on slave

List	IU list pointer.
Flags	Port flags:

0x00000001
    Slave connection

0x00000002
    Loopback connection

0x00000004
    Incompatible connection

0x00000008
    Overlapping domains

0x00000010
    Overlapping zones

0x00000020
    Done PTIO ioctl

0x00000040

  Sent an RJT to ELP

0x00000080

  BF received from the port

0x00000200

  Segmented by routing code

0x00000800

  Zoning has completed

0x00001000

  Segmented by Platform Management

0x00002000

  Segmented due to no license

0x00004000

  Segmented due to E_Port disabling

0x00008000

  DIA already sent for that port

0x00010000

  RDI already sent

0x00020000

  Port is true T port

0x00040000

  Port received an ELP

0x00080000

  Port received an ELP RJT

0x00100000

  LR pending due to ELP RJT rcv

0x00200000

  Received a DIA on this port

0x00400000

  Port is the EMT Initiator

0x00800000

  Security violation

0x01000000

  Security incompatibility

0x02000000

  Rcv a DIA ACC

0x040000000

  Port is security authenticating

0x080000000

  ECP RJT or retires exceeded

0x100000000

  Segmented due to duplicated WWN

0x200000000
Segmented due to E_Port isolation

nbrWWN	Neighboring switch's WWN
nbrPort	Neighboring switch's port
lr_tid	Link reset timer identifier and current state.
red_ports	All E_Ports that are connected to the same neighboring switch

Operands This command has the following operands:

slotnumber For bladed systems only, specifies the slot number of the port to display, followed by a slash (/).

portnumber Specifies the port number to display, relative to its slot for bladed systems. Use **switchShow** to list valid ports.

Examples To display fabric port information:

```
switch:admin> fabportshow 4/14
Fabric Port Information:
=======================

Port:        62
State:       P3
List:        0x10068418
List Count:  0
Flags:       0x280120
nbrWWN:      10:00:00:60:69:80:06:cf
red_ports:
10 11 62 63

Open commands pending:
=====================
No commands pending
```

See Also **portShow**

fabRetryShow

Displays the retry count of the fabric commands.

Synopsis   **fabretryshow**

Availability   admin, switchAdmin, user

Description   Use this command to display the retry count of the fabric commands. The SW_ISL (ISL ports) information displays the retry count for the following fabric commands:

ELP	Exchange Link Parameters
ELP	Exchange Link Parameters
HA_EFP	Exchange Fabric Parameters
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
FWN	Firmware Notification

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 GAID ELP_TMR GRE  ECP

16     0    0    0      0    0    0    0    0    0    0    0    0       0    0
17     0    0    0      0    0    0    0    0    0    0    0    0       0    0
```

See Also   **fabStatsShow**

fabricLog

Displays (all users) or manipulates (admin) the fabric log.

Synopsis   **fabriclog -s | -c | -d | -e | -r** *size*

Availability   admin, switchAdmin, user

Description   Use this command to display, clear, disable, enable, or resize the fabric log.

Operands   This command has the following operands:

-s | **--show**	Displays fabric log (all users).
-c | **--clear**	Clears fabric log.
-d | **--disable**	Disables fabric log. By default, the fabric log is enabled.
-e | **--enable**	Enables fabric log.
-r *size* | **--resize** *size*	Changes the maximum number of log entries. The given size has to be at least 2 and a power of 2; otherwise, the command fails.

Examples   To change the number of entries:

```
switch:admin> fabriclog -s
Time Stamp  Input and *Action                          S, P   Sn,Pn  Port  Xid
===========================================================================
11955:655   SCN Switch Online                          F2,NA  F2,NA  NA    NA
11955:657   *Start 2 * F_S_TOV Timer                   F2,NA  F2,NA  NA    NA
11955:657   *Start 60 * F_S_TOV Timer                  F2,NA  F2,NA  NA    NA
11955:669   RSCN Rcv addr: 0x3000000                   F2,NA  F2,NA  NA    NA
11957:65    SCN Port Online                            F2,P0  F2,P1  21    NA
11957:69    *ELP Send                                  F2,P1  F2,P1  21    0x277
11957:69    SCN Port Online                            F2,P0  F2,P1  44    NA
11957:75    *ELP Send                                  F2,P1  F2,P1  44    0x279
11957:77    ELP Receive                                F2,P1  F2,P1  44    0x277
11957:78    *ELP Sending ACC                           F2,P1  F2,P2  44    0x277
11957:82    ELP Receive                                F2,P1  F2,P1  21    0x279
11957:83    *ELP Sending ACC                           F2,P1  F2,P2  21    0x279
11957:87    ELP ACC Receive                            F2,P2  F2,P2  21    0x277
switch:admin> fabriclog -r 64

Warning: This command will clear the logs.

Are your sure you want to do the resize [y/n]? y

switch:admin> fabriclog -s
Time Stamp  Input and *Action                          S, P   Sn,Pn  Port  Xid
===========================================================================
```

See Also   **fabPortShow**, **fabStatsShow**

fabricPrincipal

Sets principal switch selection mode.

Synopsis   **fabricprincipal** [**-fhq**][*mode*]

Availability   admin, switchAdmin, user

Description   Use this command to set principal switch selection mode for the switch.

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 will actually achieve this status.

When dealing with larger 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 selection of switches should be connected together first, followed by the addition of the rest of the fabric.

Operands   This command has the following operands:

-f   Specify the **-f** option to force a fabric rebuild. This option is required when enabling principal switch mode. This option is not valid with the disabling principal switch mode.

-h   Specify the **-h** option to display command usage summary.

-q   Specify the **-q** option to display the current mode state.

mode   Specify 1 to enable, or 0 to disable principal switch mode (the mode activates when the fabric rebuilds). This operand is optional.

Examples   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)
```

See Also   **fabricShow**

fabricShow

Displays fabric membership information.

Synopsis   **fabricshow**

Availability   admin, switchAdmin, user

Description   Use this command to display information about switches in the fabric.

If the switch is initializing or disabled, the message "no fabric" is displayed. If the fabric is reconfiguring, some or all switches might not display; otherwise, the following fields display:

Switch ID	The switch Domain_ID and embedded port D_ID
World Wide Name	The switch WWN
Enet IP Addr	The switch Ethernet IP address
FC IP Addr	The switch FC IP address
Name	The switch symbolic name. An arrow (>) indicates the principal switch.

Operands   none

Examples   The following example illustrates a fabric of four switches. "sw180" is the principal switch. Three of the switches are configured to run IP over Fibre Channel.

```
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
```

See Also   switchShow

fabStateClear

Clears the fabric state information.

Synopsis   **fabstateclear**

Availability   admin, switchAdmin

Description   Use this command to clear the queue of fabric state information logged by the fabric.

Note

This command is obsoleted by **fabricLog -c**.

Operands   none

Examples   To clear the fabric state information:

```
switch:admin> fabstateshow
Time Stamp  Input and *Action                        S, P   Sn,Pn  Port  Xid
========================================================================
11955:655   SCN Switch Online                        F2,NA  F2,NA  NA    NA
11955:657   *Start 2 * F_S_TOV Timer                 F2,NA  F2,NA  NA    NA
11955:657   *Start 60 * F_S_TOV Timer                F2,NA  F2,NA  NA    NA
11955:669   RSCN Rcv addr: 0x3000000                 F2,NA  F2,NA  NA    NA
11957:65    SCN Port Online                          F2,P0  F2,P1  21    NA
11957:69    *ELP Send                                F2,P1  F2,P1  21    0x277
11957:69    SCN Port Online                          F2,P0  F2,P1  44    NA
11957:75    *ELP Send                                F2,P1  F2,P1  44    0x279
11957:77    ELP Receive                              F2,P1  F2,P1  44    0x277
11957:78    *ELP Sending ACC                         F2,P1  F2,P2  44    0x277
11957:82    ELP Receive                              F2,P1  F2,P1  21    0x279
11957:83    *ELP Sending ACC                         F2,P1  F2,P2  21    0x279
11957:87    ELP ACC Receive                          F2,P2  F2,P2  21    0x277
switch:admin> fabstateclear
switch:admin> fabstateshow
Time Stamp  Input and *Action                        S, P   Sn,Pn  Port  Xid
========================================================================
```

See Also   **fabStateShow**, **fabricLog**

fabStateResize

Changes the number of state entries.

Synopsis   **fabStateResize** *num*

Availability   admin, switchAdmin

Description   Use this command to change the number of logged state entries. This command also clears the logged entries.

Note

This command is obsoleted by **fabricLog -r** *size*.

Operands   This command has the following operand:

num   New number of entries. It has to be at least 2 and a power of 2; otherwise, the command fails.

Examples   To change the number of entries:

```
switch:admin> fabstateshow
Time Stamp  Input and *Action                      S, P   Sn,Pn  Port  Xid
=========================================================================
11955:655   SCN Switch Online                      F2,NA  F2,NA  NA    NA
11955:657   *Start 2 * F_S_TOV Timer               F2,NA  F2,NA  NA    NA
11955:657   *Start 60 * F_S_TOV Timer              F2,NA  F2,NA  NA    NA
11955:669   RSCN Rcv addr: 0x3000000               F2,NA  F2,NA  NA    NA
11957:65    SCN Port Online                        F2,P0  F2,P1  21    NA
11957:69    *ELP Send                              F2,P1  F2,P1  21    0x277
11957:69    SCN Port Online                        F2,P0  F2,P1  44    NA
11957:75    *ELP Send                              F2,P1  F2,P1  44    0x279
11957:77    ELP Receive                            F2,P1  F2,P1  44    0x277
11957:78    *ELP Sending ACC                       F2,P1  F2,P2  44    0x277
11957:82    ELP Receive                            F2,P1  F2,P1  21    0x279
11957:83    *ELP Sending ACC                       F2,P1  F2,P2  21    0x279
11957:87    ELP ACC Receive                        F2,P2  F2,P2  21    0x277
switch:admin> fabstateresize 64

Warning: This command will clear the logs.

Are your sure you want to do the resize [y/n]? y

switch:admin> fabstateshow
Time Stamp  Input and *Action                      S, P   Sn,Pn  Port  Xid
=========================================================================
```

See Also   **fabricLog**, **fabStateClear**, **fabStateShow**

Note: Enter commands in lowercase only; mixed case is for readability.

fabStateShow

2

fabStateShow

Displays the fabric state information.

Synopsis   **fabstateshow**

Availability   admin, switchAdmin, user

Description   Use this command to display the queue of fabric state information logged by the fabric.

Note

This command is obsoleted by **fabricLog -s**.

Operands   none

Examples   To display the fabric state information:

```
switch:admin> fabstateshow
Time Stamp   Input and *Action                      S, P   Sn,Pn  Port  Xid
=============================================================================
11955:655    SCN Switch Online                      F2,NA  F2,NA  NA    NA
11955:657    *Start 2 * F_S_TOV Timer               F2,NA  F2,NA  NA    NA
11955:657    *Start 60 * F_S_TOV Timer              F2,NA  F2,NA  NA    NA
11955:669    RSCN Rcv addr: 0x3000000               F2,NA  F2,NA  NA    NA
11957:65     SCN Port Online                        F2,P0  F2,P1  21    NA
11957:69     *ELP Send                              F2,P1  F2,P1  21    0x277
11957:69     SCN Port Online                        F2,P0  F2,P1  44    NA
11957:75     *ELP Send                              F2,P1  F2,P1  44    0x279
11957:77     ELP Receive                            F2,P1  F2,P1  44    0x277
11957:78     *ELP Sending ACC                       F2,P1  F2,P2  44    0x277
11957:82     ELP Receive                            F2,P1  F2,P1  21    0x279
11957:83     *ELP Sending ACC                       F2,P1  F2,P2  21    0x279
11957:87     ELP ACC Receive                        F2,P2  F2,P2  21    0x277
11957:92     ELP ACC Receive                        F2,P2  F2,P2  44    0x279
11957:94     SCN AC_PORT                            F2,P2  F2,P3  44    NA
11957:99     SCN AC_PORT                            F2,P2  F2,P3  21    NA
11957:106    SCN AC_PORT                            F2,P3  F2,P3  21    NA
11957:106    SCN AC_PORT                            F2,P3  F2,P3  44    NA
11957:364    SCN Port Online                        F2,P0  F2,P1  31    NA
11957:366    *ELP Send                              F2,P1  F2,P1  31    0x27b
11957:382    ELP ACC Receive                        F2,P1  F2,P2  31    0x27b
11957:404    SCN AC_PORT                            F2,P2  F2,P3  31    NA
11957:406    *EFP Send                              F2,P3  F2,P3  31    0x27c
11957:434    EFP ACC Receive                        F2,P3  F2,P3  31    0x27c
11957:514    SCN E_PORT                             F2,P3  F2,P3  31    NA
11957:987    SCN Domain 4 reachable                 F2,NA  F2,NA  NA    NA
11958:435    ELP Receive                            F2,P0  F2,P0  40    0x1bb
11958:436    *ELP Sending ACC                       F2,P0  F2,P2  40    0x1bb
11958:437    SCN Port Online                        F2,P0  F2,P1  25    NA
11958:465    SCN AC_PORT                            F2,P2  F2,P3  40    NA
11958:467    *EFP Send                              F2,P3  F2,P3  40    0x294
11958:497    EFP ACC Receive                        F2,P3  F2,P3  40    0x294
(output truncated)
```

See Also   **fabPortShow**, **fabStateClear**, **fabricLog**

fabStatsShow

Displays the fabric statistics.

Synopsis   **fabstatsshow**

Availability   admin, switchAdmin, user

Description   Use this command to display the statistics for the fabric. The information displays as follows:

- 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 due to:

  - Loopback

  - Incompatibility

  - Overlap

  - Zoning

  - E_Port segment

  - Licensing

  - Disabling E_Port

  - Platform DB

  - Security incompatibility

  - Security violation

  - ECP error

  - Duplicate WWN

  - E_Port isolated

Operands   none

Examples   To display the fabric statistics:

```
switch:admin> fabstatsshow
Description                     Count
---------------------------------------
Domain ID forcibly changed:        0
E_Port offline transitions:        0
Reconfigurations:                  1
Segmentations due to:
                 Loopback:         6 <
           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
```

See Also   **fabRetryShow**

fabSwitchShow

Displays the fabric switch state structure information.

Synopsis   **fabswitchshow**

Availability   admin, switchAdmin, user

Description   Use this command to display the fabric switch state structure information. This command is strictly for debugging; it is not intended as a user command.

Operands   none

Examples   To display fabric switch state structure:

```
switch:admin> fabswitchshow
Fabric Switch State Structure Information
=========================================
State:               D0
Stage:               warm done
Rdi Receive Timer:   0x10069400, IDLE STATE
Unconfirmed Sw Timer: 0x10069508, IDLE STATE
NTP Timer:           0x100695b8, IDLE STATE
ME Timer:            0x10069610, IDLE STATE
Principal Domain:    2
Upstream Port:       64
Principal Wwn:       10:00:00:60:69:80:06:ce
Principal Priority:  0x2
Flags:               0x40
me retry count:      0
inq_sem count:       1
dbg_sem count:       1
ha efp count:        0
fab_q current count: 0
fab_q high water:    8
fab_q age:           0 (sec)
dup xid occurrence:    0
iu nodes outstanding: 0
EFP update port:     2
FWN frames pending   0
test check point:    No check point set
fabric license:      TRUE
fabric EFP version:  7
last message:
20:30:29.826 *Snd inquiry (4)                     D0,NA  D0,NA  NA    NA

NTP ports online:

RSCN domain recovery list:

no domain RSCN's to recover
reachable domains:
1 3 4
3 domains reachable
Ports used for EFP/BF/DIA flood:
(output truncated)
```

See Also   **supportShow**

fanDisable

Disables a fan unit.

Synopsis   **fandisable** *unit*

Availability   admin, switchAdmin

Description   Use this command to disable a nonfaulty fan unit by setting the RPM speed to 0.

> **Note**
>
> This command is not available on nonbladed systems except for the SilkWorm 4100 and 4900.

Operands   This command has the following operand:

unit   Specifies the fan unit number to disable.

Examples   To disable a fan unit:

```
switch:admin> fandisable 1

Fan unit 1 has been disabled
```

See Also   **fanEnable**, **fanShow**

Note: Enter commands in lowercase only; mixed case is for readability.

fanEnable

Enables a fan unit.

Synopsis   **fanenable** *unit*

Availability   admin, switchAdmin

Description   Use this command to set a previously disabled fan unit back to the default RPM speed.

> **Note**
> This command is not available on nonbladed systems except for the SilkWorm 4100 and 4900.

Operands   This command has the following operand:

unit   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**

Availability   admin, switchAdmin, user

Description   Use this command to display the current status and speed of each fan in the system.

Fan status is displayed as:

OK	Fan is functioning correctly.
absent	Fan is not present.
below minimum	Fan is present but rotating too slowly or stopped.
above minimum	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.

Note

The output from this command varies depending on switch type and number of fans present.

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 power-on self-test (POST).

Synopsis   **fastboot**

Availability   admin, switchAdmin

Description   Use this command to reboot the CP. The reboot takes effect immediately as the CP resets and executes normal power-on booting sequence. However, POST is skipped, reducing boot time significantly.

If POST has been disabled using the **diagDisablePost** command, then **fastboot** is the same as **reboot**.

Operands   none

Examples   To perform a reboot without executing POST:

```
switch:admin> fastboot
```

See Also   **diagDisablePost**, **diagEnablePost**, **reboot**

fazoneAdd

Adds a member to a Fabric Assist (FA) zone.

Synopsis   **fazoneadd "***fazoneName***","***member***;** *member***"**

Availability   admin

Description   Use this command to add one or more members to an existing Fabric Assist zone.

This command does not change the defined configuration (which you can view using the **cfgShow** command). For the change to become effective, an appropriate Fabric Assist zone configuration must be enabled using the **cfgEnable** command. For the change to be preserved across switch reboots, it must be saved to flash memory using the **cfgSave** command.

Note

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

Operands   This command has the following operands:

fazoneName   Specify the name of the Fabric Assist zone, in quotation marks. This operand is required.

member   Specify a list of Fabric Assist zone members. The whole list must be enclosed in quotation marks and members separated by semicolons. A member can be specified by one or more of the following methods:

- Enter a fabric domain and area number pair (for example, 1,2). View the area numbers for ports using the **switchShow** command.

- WWNs (for example, 10:49:00:00:00:20:3f:2e). Refer to **fazoneCreate** for more details on the use of WWNs in Fabric Assist zones.

- Fabric Assist zone alias names.

- Exactly one Fabric Assist host member (for example, H{1,2}).

This operand is required.

Examples   To add aliases for some disk arrays to "Blue_fazone":

```
switch:admin> fazoneadd "Blue_fazone", "array3; array4; array5"
```

To add a Fabric Assist host member to "Blue_fazone":

```
switch:admin> fazoneadd "Blue_fazone", "H{5,6}"
```

To add another target member to "Blue_fazone":

```
switch:admin> fazoneadd "Blue_fazone", "10:49:00:00:00:20:3f:2e"
```

See Also   **fazoneCreate**, **fazoneDelete**, **fazoneRemove**, **fazoneShow**

fazoneCreate

Creates a Fabric Assist (FA) zone.

Synopsis   **fazonecreate "***fazoneName***","***member***;** *member ...***"**

Availability   admin

Description   Use this command to create a new Fabric Assist zone. You must specify a name and member list. The FA zone name must be unique among all Fabric Assist zone objects. The member list must be enclosed in quotation marks members separated by a semicolons.

A Fabric Assist zone name is in C language style. It must begin with a letter and be followed by any number of letters, digits, and underscore characters. Names are case sensitive; for example, "Zone_1" and "fazone_1" are different Fabric Assist zones. Spaces are ignored.

The Fabric Assist member list must have at least one FA host and at least one target member. Empty lists are not allowed.

When a Fabric Assist zone member is specified by physical fabric port number, then all devices connected to that port are in the Fabric Assist zone. If this port is an arbitrated loop, then all devices on the loop are in the Fabric Assist zone.

WWNs are specified as eight hex numbers separated by colons, for example, "10:00:00:60:69:00:00:8a". Zoning has no knowledge of the fields within a WWN; the eight bytes are simply compared with the node and port names presented by a device in a login frame (FLOGI or PLOGI).

When a Fabric Assist zone member is specified by node name, then all ports on that device are in the Fabric Assist zone. When a Fabric Assist zone member is specified by port name, only that single device port is in the Fabric Assist zone. Zone alias names have the same format as Fabric Assist zone names and are created with the **aliCreate** command. The alias must resolve to a list of one or more physical fabric port numbers, WWNs, or a Fabric Assist host.

A Fabric Assist host member is defined by wrapping the physical fabric port or a physical device (a WWN) between "H{" and "}". For example, "H{5,6}" or "H{10:00:00:60:69:00:00:8a}" is a Fabric Assist host. The type of Fabric Assist zone members used to define a Fabric Assist zone might be mixed and matched. For example, a Fabric Assist zone defined with the following members "2,12; 2,14; 10:00:00:60:69:00:00:8a" would contain devices connected to switch 2, ports 12 and 14, and the device with a WWN of "10:00:00:60:69:00:00:8a" (either node name or port name: whichever port in the fabric it is connected to.)

This command does not change the defined configuration (which you can view using the **cfgShow** command). For the change to become effective, an appropriate Fabric Assist zone configuration must be enabled using the **cfgEnable** command. For the change to be preserved across switch reboots, it must be saved to flash memory using the **cfgSave** command.

Note

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

Operands   The following operands are required:

      fazoneName   Specify a name for the Fabric Assist zone. The name must be enclosed in quotation marks. This operand is required.

      member   Specify a member or list of members to add to a Fabric Assist zone. The list must be enclosed in quotation marks, members separated by semicolons. A member can be specified by one or more of the following methods:

- Enter a fabric domain and area number pair (for example, 1,2). View the area numbers for ports using the **switchShow** command.

- WWNs (for example, 10:49:00:00:00:20:3f:2e).

- Fabric Assist zone alias names.

- Exactly one Fabric Assist host member (for example, H{1,2}).

                This operand is required.

Examples   To create three Fabric Assist zones using a mixture of port numbers and Fabric Assist zone aliases:

```
switch:admin> fazoneCreate "Red_fazone", "H{1,0}; loop1"
switch:admin> fazoneCreate "Blue_fazone", "H{1,1}; array1; 1,2; array2"
switch:admin> fazoneCreate "Green_fazone", "1,0; loop1; H{1,2}; array2"
```

See Also   **fazoneAdd**, **fazoneDelete**, **fazoneRemove**, **fazoneShow**

fazoneDelete

Deletes a Fabric Assist (FA) zone.

Synopsis   **fazonedelete "***fazonename***"**

Availability   admin

Description   Use this command to delete an existing Fabric Assist mode zone on a fabric.

This command does not change the defined configuration (which you can view using the **cfgShow** command). For the change to become effective, an appropriate Fabric Assist zone configuration must be enabled using the **cfgEnable** command. For the change to be preserved across switch reboots, it must be saved to flash memory using the **cfgSave** command.

> **Note**
>
> When security is enabled, this command can be issued only from the primary FCS switch.

Operands   The following operand is required:

fazonename   Specify the name of the zone to be deleted, in quotation marks.

Examples   To delete a Fabric Assist zone:

```
switch:admin> fazonedelete "Blue_fazone"
```

See Also   **fazoneAdd**, **fazoneCreate**, **fazoneRemove**, **fazoneShow**

fazoneRemove

Removes members from a Fabric Assist (FA) zone.

Synopsis   **fazoneremove "**_fazoneName_**", "**_member_**;** _member ..._**"**

Availability   admin

Description   Use this command to remove one or more members from an existing Fabric Assist zone.

Each deleted member must be found by an exact string match. Order is important when removing multiple members of a Fabric Assist zone. For example, if a Fabric Assist zone contains "array2; array3; array4", removing "array4; array3" fails but removing "array3; array4" succeeds. If issuing this command results in all members being removed, the Fabric Assist zone is deleted.

This command does not change the defined configuration (which you can view using the **cfgShow** command). For the change to become effective, an appropriate Fabric Assist zone configuration must be enabled using the **cfgEnable** command. For the change to be preserved across switch reboots, it must be saved to flash memory using the **cfgSave** command.

Note

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

Operands   The following operands are required:

fazoneName   Specify a name for the Fabric Assist zone, in quotation marks. This operand is required.

member   Specify a member or list of members to remove from a Fabric Assist zone. The list must be enclosed in quotation marks, members separated by semicolons. A member can be specified by one or more of the following methods:

- Enter a fabric domain and area number pair (for example, 1,2). View the area numbers for ports using the **switchShow** command.

- WWNs (for example, 10:49:00:00:00:20:3f:2e). Refer to **fazoneCreate** for more details on the use of WWNs in Fabric Assist zones.

- Fabric Assist zone alias names.

- Exactly one Fabric Assist host member (for example, H{1,2}).

This operand is required.

Examples   To remove "array2" from "Blue_fazone":

```
switch:admin> fazoneremove "Blue_fazone", "array2"
```

See Also   **fazoneAdd**, **fazoneCreate**, **fazoneDelete**, **fazoneShow**

fazoneShow

Displays Fabric Assist zone information.

Synopsis   **fazoneshow** [**"***pattern***"**[**,** *transflag*]]

Availability   admin, switchAdmin, user

Description   Use this command to display Fabric Assist zone information. Specifying this command with no parameters or with the second parameter set to 0 displays all Fabric Assist zone configuration information for both defined and effective configurations. Defined configuration information is shown from the transaction buffer. Refer to the **cfgShow** command for a description of this display.

If a parameter is specified, it is used as a pattern to match Fabric Assist zone names, and those that match in the defined configuration are displayed.

Note

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

Operands   This command has the following operands:

pattern   Specify a value to search for the name of a Fabric Assist zone. This can be any POSIX-style expression. Patterns can contain:

- Question mark (?), which matches any single character

- Asterisk (*), which matches any string of characters

- Ranges, which match any character within the range: for example, [0-9] or [a-f]

This operand is optional.

transflag   Specify 0 to display the information from the current transaction, or specify 1 to display information from the original buffer. This operand must be preceded by a pattern. This operand is optional; if omitted, the value defaults to 0.

Examples   To display all Fabric Assist zones beginning with the letters A through C:

```
switch:admin> fazoneshow "[A-C]*"
        fazone:  Blue_fazone
                1,1; array1; 1,2; array2
```

See Also   **fazoneAdd**, **fazoneCreate**, **fazoneDelete**, **fazoneRemove**

fcipChipTest

Tests functionality of components in the FCIP complex.

Synopsis   **fcipchiptest** [**--slot** *slotnumber*][**-testtype** *type*][**-unit** *number*]

Availability   admin, switchAdmin

Description   Use this command to verify the internal registers and memory of the network processor, FCIP FPGA, compression processor, and GigPHY.

Note

This command is supported only on SilkWorm FR4-18i blades and SilkWorm 7500 platforms.

Operands   This command has the following operands:

--slot *slotnumber*   Specifies the slot number on which the diagnostic operates. The default is 0 and operates on fixed-port-count products.

-testtype *type*   Specifies the test type to run. By default, the command runs all tests. Valid tests include:

0	All tests
1	Network processor SRAM test
2	FCIP FPGA internal register test
3	FCIP FPGA interrupt test
4	FCIP FPGA checksum test
5	Compression engine MBIST and LBIST

-unit *number*   Specifies the GbE port to test. By default, all GbE ports in the specified *slotnumber* are used. Valid *number* values include:

0	GbE port 0
1	GbE port 1
2	All GbE port

Examples   To run all tests on slot 7 and GbE port 1:

```
switch:admin> fcipchiptest --slot 7 -unit 1 -testtype 0
Running fcipchiptest ..............
Test Complete: fcipchiptest Pass 1 of 1
Duration 0 hr, 1 min & 15 sec (0:1:15:351).
 passed.
```

Diagnostics   When a failure is detected, the test might report one or more of the following error messages:

- CHIP_TEST_ERR

- CHIP_TEST_CHIP_INIT_ERR

- CHIP_TEST_IMAGE_VER_ERR

- CHIP_TEST_TIMEOUT_ERR

- CHIP_TEST_HEARBEAT_ERR

- CHIP_TEST_INVALID_RESULT

See Also   **fcipPathTest**

Note: Enter commands in lowercase only; mixed case is for readability.

fcipPathTest

2

fcipPathTest

Tests data path of the FCIP complex.

Synopsis **fcippathtest** [**--slot** *slotnumber*][**-unit** *number*][**-path** *mode*][**-nmegs** *count*][**-length** *data_length*] [**-compress** *mode*]

Availability admin, switchAdmin

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.

Note

This command is supported only on SilkWorm FR4-18i blades and SilkWorm 7500 platforms.

Operands This command has the following operands:

--slot *slotnumber* Specifies the slot number on which the diagnostic operates. The default is 0 and operates on fixed-port-count products.

-unit *number* Specifies the GbE port to test. By default, all GbE ports in the specified *slotnumber* are used. Valid *number* values include:

0	GbE port 0
1	GbE port 1
2	All GbE port

-path *mode* Specifies the loopback point for the test. By default, **fcipPathTest** uses PHY and central ASIC loopback. Valid *mode* values include:

1	SFP loopback
2	PHY loopback
3	FCIP FPGA GMAC loopback
4	FCIP FPGA FC loopback
5	Central ASIC FC loopback
7	SFP and central ASIC FC loopback
8	PHY and central ASIC FC loopback
9	FCIP FPGA GMAC and central ASIC FC loopback

-nmegs *count* Specifies the number of frames to send. The test progresses until the specified number of frames are transmitted on each port. The default value is 10.

-length *data_length* Specifies the data length of the frames used in the test. The default is 1,024; the maximum is 2,112 FC frames and 8,196 data packets.

-compress *mode* Specifies the compression device to select or to bypass data compression for the test. By default, data compression is used. This setting is applicable only to path mode 1, 2, 7, and 8.

Examples   To run the test on slot 2 with PHY loopback sending 10 frames:

```
switch:admin> fcippathtest --slot 2 -path 2 -nmegs 10
Running fcippathtest ..............
Test Complete: fcippathtest Pass 10 of 10
Duration 0 hr, 1 min & 50 sec (0:1:50:942).
 passed.
```

Diagnostics   When a failure is detected, the test might report one or more of the following:

- PATH_TEST_ERR

- PATH_TEST_CHIP_INIT_ERR

- PATH_TEST_IMAGE_ERR

- PATH_TEST_TIMEOUT_ERR

- PATH_TEST_HEARTBEAT_ERR

- PATH_TEST_INVALID_RESULT

- PATH_TEST_GE_PORT_ENABLE_ERR

- PATH_TEST_GE_PORT_DISABLE_ERR

See Also   fcipChipTest

fcPing

Sends a Fibre Channel Extended Link Service (ELS) Echo request to a pair of ports.

Synopsis   **fcping** [**-hbq**][**-n** *frames*][**-l** *length*][**-i** *wait*][**-p** *pattern*] *source destination*

Availability   admin, switchAdmin

Description   Use this command to perform a zoning check between the source and destination. In addition, two Fibre Channel ELS request 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 identifiers. 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 24-bit Fibre Channel port identifiers, port World Wide Names, or node World Wide Names. The two port identifiers are then used to determine if the identifiers are zoned together.

The ELS Echo requests comprise a 24-byte Fibre Channel frame header, a 4-byte ELS Echo request header, an 8-byte timestamp from **gettimeofday**, and an arbitrary number of bytes as specified by -l length to fill out the request frame. The source identifier in the ELS Echo request is the domain controller and the destination identifier is either source or destination.

The echo ELS might 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.

 Note

When a device does not respond to the ELS Echo request, further debugging is necessary to understand if this is due to the device not supporting this ELS Echo request. Do not assume that the device is not FC-connected.

Operands   This command has the following operands:

-n *frames*	Specifies the number of ELS Echo requests to send.
-l *length*	Specifies requests containing length bytes of data. The default is 0 bytes of data. Without data, the Fibre Channel Echo request frame size is 12 total bytes. This is a combination of 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.
-h	Causes the program to display the proper command line usage syntax information and then terminate.
-i *wait*	Specifies the interval, in seconds, between successive ELS Echo requests. The default is 0 seconds.
-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, -p ff causes the request frame to be filled with all 1s.
-b	Specifies to bypass the zone check functionality.

-q	Specifies quiet output. Only the zoning information and the summary line display on program termination.
source	Specifies the source port ID, port WWN, or node WWN.
destination	Specifies the destination port ID, port WWN, or node WWN.

Examples   To display one device that accepts the request and another device that rejects the request:

```
switch:admin> fcping 10:00:00:00:c9:29:0e:c4 21:00:00:20:37:25:ad:05
Source:        10:00:00:00:c9:29:0e:c4
Destination:   21:00:00:20:37:25:ad:05
Zone Check:    Not Zoned

Pinging 10:00:00:00:c9:29:0e:c4 [0x20800] with 12 bytes of data:
received reply from 10:00:00:00:c9:29:0e:c4: 12 bytes time:1162 usec
received reply from 10:00:00:00:c9:29:0e:c4: 12 bytes time:1013 usec
received reply from 10:00:00:00:c9:29:0e:c4: 12 bytes time:1442 usec
received reply from 10:00:00:00:c9:29:0e:c4: 12 bytes time:1052 usec
received reply from 10:00:00:00:c9:29:0e:c4: 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 21:00:00:20:37:25:ad:05 [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 22:00:00:04:cf:75:63:85
Source:        0x20800
Destination:   22:00:00:04:cf:75:63:85
Zone Check:    Zoned

Pinging 0x20800 with 12 bytes of data:
received reply from 0x20800: 12 bytes time:1159 usec
received reply from 0x20800: 12 bytes time:1006 usec
received reply from 0x20800: 12 bytes time:1008 usec
received reply from 0x20800: 12 bytes time:1038 usec
received reply from 0x20800: 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 22:00:00:04:cf:75:63:85 [0x217d9] 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
```

See Also   **gettimeofday**, **ping**

fcpLogClear

Clears the FCPD debug information log (debug command).

Synopsis   **fcplogclear**

Availability   admin

Description   Use this command to clear the debug information logged by FCPD.

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 (debug command).

Synopsis	**fcplogdisable**
Availability	admin
Description	Use this command to disable the debug information logged by FCPD.
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 (debug command).

<table>
<tr><td>**Synopsis**</td><td>**fcplogenable**</td></tr>
<tr><td>**Availability**</td><td>admin</td></tr>
<tr><td>**Description**</td><td>Use this command to enable the debug information logged for FCPD. Debug information logging is enabled by default.</td></tr>
<tr><td>**Operands**</td><td>none</td></tr>
<tr><td>**Examples**</td><td>To enable the FCPD debug information log:</td></tr>
</table>

```
switch:admin> fcplogenable
```

See Also **fcpLogClear**, **fcpLogDisable**, **fcpLogShow**

fcpLogShow

Displays the FCPD debug information log (debug command).

Synopsis   **fcplogshow**

Availability   admin, switchAdmin, user

Description   Use this command to display the debug information logged at various stages of FCP device probing.

Operands   none

Examples   To display the FCPD debug information log:

```
switch:admin> fcplogshow
 Time Stamp    Event       Port  file&lineno arg0    arg1     arg2     arg3     arg4


 ============================================================================================
 22:34:10.824 FlshOrProbe   26   1  459     81      :0       :0       :0       :0
 22:34:10.824 ProbeFlsh     26   1  2755    0       :0       :0       :0       :0
 22:34:10.825 SCNRcvd       26   1  3436    2       :0       :0       :0       :0
 22:34:14.232 FlshOrProbe   26   1  459     80      :0       :0       :0       :0
 22:34:14.232 PrbMsg        26   1  494     0       :0       :0       :0       :0
 22:34:14.233 StartProbe    26   1  961     1       :0       :0       :0       :0
 22:34:14.233 StartProbe    26   1  999     0       :0       :0       :8000    :0
 22:34:14.233 ProbeFlsh     26   1  2755    1       :0       :0       :0       :0
 22:34:14.234 SndPLOGI      26   1  1431    1002a690:11ace   :1       :0       :20526
 22:34:14.236 AsyResp       26   1  1540    1002a690:1002a768:80      :1       :10526
 22:34:14.236 ElsRsp        26   1  1606    11ace   :2000000 :20      :0       :980000
 22:34:14.238 SndPRLI       26   1  2026    1002a690:11ace   :2       :527     :0
 22:34:14.239 AsyResp       26   1  1540    1002a690:1002a8e8:80      :2       :10527
 22:34:14.239 ElsRsp        26   1  1606    11ace   :2100014 :0       :21      :980000
 22:34:14.240 SndINQ        26   1  2504    1002a690:2       :528     :0       :0
 22:34:14.244 AsyResp       26   1  1540    1002a690:1002a5f0:80      :5       :10528
 22:34:14.244 INQRsp        26   1  1852    1       :11ace   :880008  :11ace   :0
 22:34:14.244 AsyResp       26   1  1540    1002a690:1002a768:80      :5       :10528
 22:34:14.244 INQRsp        26   1  1852    7       :11ace   :980000  :11ace   :0
 22:34:14.245 SndLOGO       26   1  1939    11ace   :1002a690:0       :0       :20529
 22:34:14.245 SndLOGO       26   1  1946    74f     :0       :0       :0       :0
 22:34:14.247 AsyResp       26   1  1540    1002a690:1002a768:80      :4       :10529
 22:34:14.247 ElsRsp        26   1  1606    11ace   :2000000 :0       :0       :980000
 22:34:14.247 IUDel         26   1  1731    1002a690:1002a690:0       :0       :1
```

See Also   **fcpLogClear**, **fcpLogDisable**, **fcpLogEnable**

fcpProbeShow

Displays the Fibre Channel Protocol (FCP) probe information.

Synopsis   **fcpprobeshow** [*slotnumber*/]*portnumber*

Availability   admin, switchAdmin, user

Description   Use this command to display the FCP 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.

Operands   This command has the following operands:

slotnumber   For bladed systems only, specify the slot number of the port to display, followed by a slash (/).

portnumber   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 4/4

port 52 is L-Port and it is online.
nodes probed:          2
successful PLOGIs:     2
successful PRLIs:      2
successful INQUIRies:  2
successful LOGOs:      2
outstanding IUs:       0
probing state:         3
probing TOV:           0
probing count:         0
probing next:          0
pmap:                  0x00000000, 0x00000000, 0x00000000, 0x00000010
update map:            0x00000000, 0x00000000, 0x00000000, 0x00000010


list of devices(may include old devices on the loop):
0x2b4e2: IBM     DDYF-T09170R    F60N
0x2b4e4: IBM     DDYF-T09170R    F60N
```

See Also   **portLoginShow**, **portLogShow**

fcpRlsShow

Display the Fibre Channel Protocol (FCP) Read Link Status (RLS) information.

Synopsis   **fcprlsshow** [*slotnumber/*]*portnumber*

Availability   admin, switchAdmin, user

Description   Use this command to display the FCP RLS information for a particular device, which should be either an F_ or FL_Port. This information describes the number of loss-of-signal, loss-of-sync, CRC-error, and other failure events that have been detected on this port.

Operands   This command has the following operands:

slotnumber	For bladed systems only, specify the slot number of the port to display, followed by a slash (/).
portnumber	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 RLS information:

```
switch:admin> fcprlsshow 2/5

       link fail   loss sync   loss sig   prtc err   bad word   crc err
0xda           0           5          0          0        525         0
0xdc           0           3          0          0        330         0
```

See Also   **portLoginShow**, **portLogShow**

fcrChipTest

Tests the functionality of FC Router FPGA.

Synopsis   **fcrchiptest** [**--slot** *slotnumber*][**-testtype** *type*][**-unit** *number*]

Availability   admin

Description   Use this command to verify that all SRAM and register data bits in each ASIC can be independently written and read successfully.

The method used is to write a walking 1 pattern to each location. This is accomplished by writing a patter of 0x00000001 to register N, perform DMA read, and ensure the same pattern previously written is read back. Shift the pattern to the left by 1 bit (to 0x00000002), repeat the write, read, and compare the cycle. Shift again and repeat until the last writable bit in register N is reached (0x80000000 for a 32-bit register).

For example, a 6-bit register is effectively tested with the following patterns:

0x0001 0x0002 0x0004 0x0008

0x0010 0x0020 0x0040 0x0080

0x0100 0x0200 0x0400 0x0800

0x1000 0x2000 0x4000 0x8000

Repeat the above steps until all FPGA registers are tested.

The BIST test runs to verify the SRAM of the FPGAs.

Note

This command is supported only on SilkWorm FR4-18i blades and SilkWorm 7500 platforms.

Operands   This command has the following operands:

--slot *slotnumber*   Specifies the slot number on which the diagnostic operates. The default is 0 and operates on fixed-port-count products.

-testtype *type*   Specifies the test type to run. By default, the command runs all tests. Valid tests include:

0	All tests
1	DMA test
2	SRAM BIST test

-unit *number*   Specifies the FC Router FPGA to test. By default, all FC Router FPGA in the specified *slotnumber* are used. Valid *number* values include:

0	FC Router FPGA 0
1	FC Router FPGA 1
2	All FC Router FPGA

Examples   To run all tests on slot 7 and FC Router FPGA 1:

```
switch:admin> fcrchiptest --slot 7 -unit 1 -testtype 0
Running fcrchiptest ..............
Test Complete: fcrchiptest Pass 1 of 1
Duration 0 hr, 0 min & 4 sec (0:0:4:351).
 passed.
```

Diagnostics   When a failure is detected, the test might report one or more of the following:

- DMA_ALLOC_FAIL

- DMA_READ_ABORT

- DMA_READ_TIMEOUT

- CHIP_INIT_TIMEOUT

- BIST_TIMEOUT

- BIST_FAIL

See Also   **fcrPathTest**, **miniCycle**, **portLoopbackTest**

fcrConfigure

Sets FC Router configuration parameters.

Synopsis   **fcrconfigure**

Availability   admin

Description   Use this command to configure the FC Router parameters for this platform. This is an interactive command.

This command cannot execute on a system with the FC Router feature enabled. First disable FC routing by using either **fcrDisable** or **switchDisable**.

Operands   This command has the following parameter:

Backbone Fabric ID   A fabric ID uniquely identifies a fabric in FC Router configurations. The backbone fabric is the fabric attached to the U_Ports—for example, E/F_Ports—of this switch. The backbone fabric ID must be unique across all FC Router-connected fabrics.

Examples   To configure FC Router parameters:

```
fcr:admin> fcrconfigure
FC Router parameter set. <cr> to skip a parameter
Backbone fabric ID: (1-128)[100]
```

See Also   **fcrDisable**, **fcrEnable**, **switchDisable**, **switchEnable**

fcrDisable

Disables the FC Routing service on a switch.

Synopsis   **fcrdisable**

Availability   admin

Description   Use this command to disable Fibre Channel (FC) routing on a switch.

This command can be run while the switch state is "online". Instead of disabling the switch, issue this command to disable the FC Routing service only, then change the BB fabric ID using **fcrConfigure**. Issue **fcrEnable** to turn FC Routing on.

To run this command, all enabled EX_Ports and VEX_Ports on the switch must first be disabled, using either **portCfgEXPort** or **portCfgVEXPort**. If there are enabled EX_Ports or VEX_Ports when **fcrDisable** is issued, then the following message is displayed: "Please disable all EX/VEX_Ports first before running fcrdisable command."

If a XPath OS switch in the BB, it might take up to 8 minutes to complete the disable process. If you attempt to enable the feature too soon, the following message is displayed: "FC Routing service is in the process of being disable, please try again after a few minutes." If the feature is disabled already, the following message is displayed: "FC Routing service is already disabled." Use **switchShow** to display the current state of the FC Routing service.

Operands   none

Examples   To disable the FC Routing service:

```
fcr:admin> fcrdisable
FC Routing service is disabled
```

See Also   **fcrConfigure**, **fcrEnable**, **switchDisable**, **switchEnable**, **switchShow**

fcrEnable

Enables the FC Routing service on the switch.

Synopsis   **fcrenable**

Availability   admin

Description   Use this command to enable the Fibre Channel (FC) Routing service on a switch. By default, FC Routing is disabled.

This command can be run while the switch state is "online". If **fcrEnable** is issued while the switch is still busy disabling the FC Routing service (for instance, immediately after issuing **fcrDisable**), the following message is displayed: "FC Routing service is in the process of being disabled, please try again after a few minutes." If issued while the FC Routing service is enabled, the following message is displayed: "FC Routing service is already enabled." Use **switchShow** to display the current state of the FC Routing service on the switch.

Operands   none

Examples   To enable the FC Routing service:

```
fcr:admin> fcrenable
FC Routing service is enabled
```

See Also   **fcrConfigure**, **fcrDisable**, **switchDisable**, **switchEnable**, **switchShow**

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Note: Enter commands in lowercase only; mixed case is for readability.

fcrFabricShow

fcrFabricShow

Displays FC Routers on a backbone fabric.

Synopsis	**fcrfabricshow**
Availability	admin, switchAdmin, user
Description	Use this command to display the FC Routers that exist in an FC Router backbone fabric and to display information about these FC Routers.

The message "No active FC Routers found" displays if no active FC Routers are present on the backbone fabric. An FC Router is active if at least one EX_Port is enabled.

The following information displays for each FC Router found on the backbone fabric:

WWN	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.
EX_Ports	List of active EX_Ports for the FC Router and information about these EX_Ports. This information includes:

EX_Port
  The port number for the EX_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.

Operands	none
Examples	To display the FC Routers in the backbone fabric:

```
fcr:admin> fcrfabricshow
FCR WWN: 10:00:00:05:1e:13:59:00, Dom ID:   2, Info: 10.32.156.52,    "fcr_mars_9"
EX_Port      FID    Neighbor Switch Info (WWN, enet IP, name)
---------------------------------------------------------------------
7        10     10:00:00:05:1e:34:11:e5   10.32.156.33    "mojo_10"
4        116    10:00:00:05:1e:37:00:44   10.32.156.34    "mojo_11"
5        116    10:00:00:05:1e:37:00:44   10.32.156.34    "mojo_11"

FCR WWN: 10:00:00:05:1e:12:e0:00, Dom ID: 100, Info: 10.32.156.50,    "fcr_mars_8"
EX_Port      FID    Neighbor Switch Info (WWN, enet IP, name)
---------------------------------------------------------------------
4        95     10:00:00:05:1e:37:00:45   10.32.156.31    "mojo_5"
5        95     10:00:00:05:1e:37:00:45   10.32.156.31    "mojo_5"
6        95     10:00:00:05:1e:37:00:45   10.32.156.31    "mojo_5"
```

See Also	**fcrPhyDevShow**, **fcrProxyDevShow**, **fcrRouteShow**, **lsanZoneShow**, **switchShow**

fcrPathTest

Tests the data path connection between FC Router FPGA and the central ASIC.

Synopsis **fcrpathtest** [**--slot** *slotnumber*][**-unit** *number*][**-path** *mode*][**-nmegs** *count*]

Availability admin

Description Use this command to verify the data path connecting the FC Router FPGA and the central ASIC by sending frames from the FC Router FPGA port N's transmitter, and looping the frames back into the same port N's receiver. The loopback is accomplished at the parallel loopback path. The path exercised in this test does not include the media nor the fiber cable.

Only one frame is transmitted and received at any one time. External cable is not required to run this test. The port LEDs flicker green rapidly while the test is running.

The test method is as follows:

1. Set all ports present for parallel loopback.

2. Create a frame F of maximum data size (2,112 bytes).

3. Transmit frame F by way of the FC Router FPGA port N.

4. Pick up the frame from the same port N.

5. Check if any of the eight statistic error counters are nonzero:

   • ENC_in

   • CRC_err

   • TruncFrm

   • FrmTooLong

   • BadEOF

   • Enc_out

   • BadOrdSet

   • DropRxUnavail

6. Check if the transmit, receive, or Class 3 receiver counters are stuck at some value.

7. Check if the number of frames transmitted is not equal to the number of frames received.

8. Repeat steps 2 through 7 for all ports present until:

   a. The number of frames (or passCount) requested is reached.

   b. All ports are marked bad.

At each pass, a different data type is used to create the frame from a palette of seven; if a pass of seven is requested, seven different frames are used in the test. If eight passes, the first seven frames are unique and the eighth is the same as the first pass.

The data palette of seven includes:

```
1. CSPAT      0x7e, 0x7e, 0x7e, 0x7e, ...
2. BYTE_LFSR  0x69, 0x01, 0x02, 0x05, ...
3. CHALF_SQ   0x4a, 0x4a, 0x4a, 0x4a, ...
4. QUAD_NOT   0x00, 0xff, 0x00, 0xff, ...
```

```
5.  CQTR_SQ    0x78, 0x78, 0x78, 0x78, ...
6.  CRPAT      0xbc, 0xbc, 0x23, 0x47, ...
7.  RANDOM 0x25, 0x7f, 0x6e, 0x9a, ...
```

Note

This command is supported only on SilkWorm FR4-18i blades and SilkWorm 7500 platforms.

Operands   This command has the following operands:

--slot *slotnumber*   Specifies the slot number on which the diagnostic operates. The default is 0 and operates on fixed-port-count products.

-unit *number*   Specifies the FC Router FPGA to test. By default, all FC Router FPGA in the specified *slotnumber* are used. Valid *number* values include:

   0   FC Router FPGA 0

   1   FC Router FPGA 1

   2   All FC Router FPGA

-path *mode*   Specifies the loopback point for the test. By default, **fcrPathTest** uses central ASIC loopback. Valid *mode* values include:

   1   Central ASIC loopback

   2   FC Router FPGA Serdes loopback

   3   FC Router FPGA internal loopback

-nmegs *count*   Specifies the number of frames to send. The test progresses until the specified number of frames are transmitted on each port. The default value is 10.

Examples   To test slot 2 with FC Router FPGA Serdes loopback sending 10 frames:

```
switch:admin> fcrpathtest --slot 2 -path 2 -nmegs 10
Running fcrpathtest ..............
Test Complete: fcrpathtest Pass 10 of 10
Duration 0 hr, 0 min & 18 sec (0:0:18:942).
 passed.
```

Diagnostics   When a failure is detected, the test might report one or more of the following:

* DATA

* ERRSTAT

* INIT

* PORTDIED

* STATS

* TIMEOUT

* XMIT

See Also   **fcrChipTest**, **miniCycle**, **portLoopbackTest**

Note: Enter commands in lowercase only; mixed case is for readability.

fcrPhyDevShow

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fcrPhyDevShow

Displays the FC Router physical device information.

Synopsis **fcrphydevshow** [**-a**][**-f** *fabricid*][**-w** *wwn*]

Availability admin, switchAdmin, user

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 a 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 this FC Router.

The default output displays only physical device information relevant to this FR Router. Relevant physical devices include physical devices that are configured to be exported from fabrics attached to this 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 this 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.

Operands This command has the following operands:

-a   Displays all physical devices for all Fabric Router in the same backbone fabric whether or not they are relevant to this FC Router.

-f *fabricID*   Displays physical devices in the specified fabric.

-w *wwn*   Displays the physical devices relevant to this FC Router.

Examples To display the physical devices relevant to this 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
```

See Also **fcrFabricShow**, **fcrPhyDevShow**, **fcrRouteShow**, **lsanZoneShow**, **switchShow**

fcrProxyConfig

Displays or configures proxy devices presented by an FC Router.

Synopsis   **fcrproxyconfig** [**-s** *importedFID devWWN slot*][**-r** *importedFID devWWN*]

Availability   admin

Description   Use this command to display or set the persistent configuration of proxy devices presented by the local FC Router.

If no optional operand is provided, the 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 will 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.

The following information is displayed if no optional operand is given:

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 *XXYY*H, 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 7FH). The address of the proxy device is derived from the PID format (for example, native, core, or extended edge) and the proxy device slot.

"All slots empty" is displayed if no proxy device WWN is stored in any slot for all edge fabrics.

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 *XXYY*H, where *XX* is the translate domain area_ID [F0H through FFH] and *YY* is the port_ID [01H through 7FH]) for the edge fabric specified (1 through 128).

"WWN does not exist in any proxy device slot" is displayed if 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." is displayed if all slots are used for the specified edge fabric.

"The specified slot already contains a WWN, overwrite? [y]" is displayed if the specified slot already contains an entry. You are then prompted for overwrite confirmation.

-r *importedFID devWWN*

Removes the specified *devWWN* from its slot for the edge fabric specified by *importedFID* (1 through 128).

"WWN does not exist in any proxy device slot." is displayed if the WWN does not exist in any slot for the specified edge fabric.

Examples To display the persistent proxy device configuration:

```
fcr: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:

```
fcr: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:

```
fcr: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*]

Availability   admin, switchAdmin, user

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 interfabric 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.

Each line of output displays:

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 represented by this proxy device 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.

Operands   This command has the following operands:

-a   Displays all proxy devices for all FC Routers in the same backbone fabric whether or not they are relevant to this FC Router.

-f *fabricid*   Displays proxy devices in the specified fabric.

-w *wwn*   Displays proxy devices with the specified port WWN.

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
```

See Also   **fcrFabricShow**, **fcrProxyDevShow**, **fcrRouteShow**, **lsanZoneShow**, **switchShow**

fcrResourceShow

Displays FC Router physical resource usage.

Synopsis   **fcrresourceshow**

Availability   admin, switchAdmin, user

Description   Use this command to display the FC Router-available resources. The maximum number allowed versus the currently used is displayed for the 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 sued proxy device slots. A proxy device is presented to an edge fabric as being connected to a translate domain *slot*. A lost 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 SFPF 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 until the system reboots, 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 until the system reboots, 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   Display per physical port (EX_Port) resources, which includes:

Proxy Devices
The maximum versus the currently used proxy device.

NR_Port
The maximum versus the currently used NR_Port entries. Destination NR_Port entries are stored at every physical port for routing decision purposes.

Operands   none

Examples   To display the resource usage for the local FC Router:

```
fcr:admin> fcrresourceshow
Daemon Limits:
                            Max Allowed        Currently Used
                            ---------------------------------
        LSAN Zones:              1000                 2
        LSAN Devices:           10000                 5
        Proxy Device Slots:     10000                 0

                            WWN Pool Size         Allocated
                            ---------------------------------
        Phantom Node WWN:        8192               3148
        Phantom Port WWN:       32768               8585

        Port Limits:
        Max proxy devices:  2000
        Max NR_Ports:       1000
        Currently Used(column 1: proxy, column 2: NR_Ports):
         32 |        0          0
         33 |        0          0
         34 |        0          0
         35 |        0          2
         36 |        0          0
         37 |        0          0
         38 |        0          0
         39 |        0          0
         40 |        0          0
         41 |        0          0
         42 |        0          0
         43 |        0          0
         44 |        0          2
         45 |        0          0
         46 |        0          0
         47 |        0          0
        160 |        0          0
        161 |        0          0
        162 |        0          0
        163 |        0          0
        164 |        0          0
        165 |        0          0
        166 |        0          0
        167 |        0          0
        168 |        0          0
        169 |        0          0
        170 |        0          0
        171 |        0          0
        172 |        0          0
        173 |        0          0
        174 |        0          0
        175 |        0          0
```

See Also   **fcrFabricShow**, **fcrProxyDevShow**, **fcrRouteShow**, **lsanZoneShow**, **switchShow**

fcrRouteShow

Displays FC Router route information.

Synopsis   **fcrrouteshow**

Availability   admin, switchAdmin, user

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 interfabric 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 interfabric traffic. For the AP7420, there is a one-to-one relationship between an enables EX_Ports to exchange traffic across an intermediate fabric. NR_Ports are addressable entries 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 are 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 specified by the "Destination Fabric ID" column. This is useful to correlate the fabric ID listed in the "Destination Fabric ID" column with the actual fabric.

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
     switch#
```

See Also   **fcrFabricShow**, **fcrPhyDevShow**, **fcrProxyDevShow**, **lsanZoneShow**, **switchShow**

fcrXlateConfig

Displays or persistently configures a translate (xlate) domain ID for both the EX_port-attached fabric and the backbone fabric.

Synopsis   **fcrxlateconfig** *importedFabricID exportedFabricID preferredDomainID*

fcrxlateconfig [**-r**] *importedFabricID exportedFabricID*

Availability   admin, switchAdmin, user

Description   Use this command to display a translate domain ID or change the preferred domain ID.

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 might 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.

Information displayed is not related to the entire BB. The FC Router displays only connections to an edge fabric for which there are xlate 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.

Operands   This command has the following operands:

-r   Removes the preferred domain ID. The translate domain must be inactive to remove the preferred domain ID.

importedFabricID   Specifies the fabric ID (1 through 128) of the fabric that contains the translate domain.

exportedFabricID   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.

Examples   To display the translate domain configuration:

```
fcr:admin> fcrxlateconfig

            EdgeFid   RemoteFid   Domain    OwnerDid       XlateWWN
              002       003         001      N/A              N/A
              004       005         002      009    50:00:51:e1:30:30:0f:05
              005       004         003      015    50:00:51:e1:30:30:0f:04
To set the preferred domain ID of the translate domain created in fabric 2
that represents remote fabric 3 to a value of 8:

fcr: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
that represents remote fabric 3:

fcr:admin> fcrxlateconfig -r 2 3
xlate domain deleted
```

See Also   **portCfgEXPort**, **portCfgVEXPort**, **portDisable**, **portEnable**, **portShow**

fdmiCacheShow

Displays abbreviated remote FDMI device information, according to remote domain ID.

Synopsis   **fdmicacheshow**

Availability   admin, switchAdmin, user

Description   Use this command to display FDMI cache information for remote domains only.

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.

Operands   none

Examples   To display the FDMI cache:

```
switch:admin> fdmicacheshow
Switch entry for domain 3
  state:   known
  version: v310
  wwn:     10:00:00:60:69:90:03:c7

  HBAs:
    10:00:00:00:c9:25:9b:96

    Ports: 1
      10:00:00:00:c9:25:9b:96

  Total count of devices on the switch is 1
```

See Also   fdmiShow

Note: Enter commands in lowercase only; mixed case is for readability.

fdmiShow

Displays detailed FDMI device information.

Synopsis   **fdmishow**

Availability   admin, switchAdmin, user

Description   Use this command to display FDMI information for all HBAs and ports.

Detailed FDMI information is displayed for local HBAs and ports. This information includes the HBA with its corresponding ports, along with their respective attributes.

Only abbreviated FDMI information is shown for HBA and ports on remote switches.

Operands   none

Examples   To display FDMI information on a local switch:

```
switch:admin> fdmishow
Local HBA database contains:
  10:00:00:00:c9:25:9b:96
  Ports: 1
    10:00:00:00:c9:25:9b:96
    Port attributes:
      FC4 Types: 0x0001000001000000000000000000000000000000000000000000000000000000
      Supported Speed: 0x00000001
      Port Speed: 0x00000001
      Frame Size: 0x00000800
  HBA attributes:
    Node Name: 20:00:00:00:c9:25:9b:96
    Manufacturer: Emulex Network Systems
    Serial Number: 0000c9259b96
    Model: LP9000
    Model Description: Emulex LightPulse LP9000 1 Gigabit PCI Fibre Channel Adapter
    Hardware Version: 00000001
    Driver Version: SLI-2 SW_DATE:May  3 2002, v5-2.11a2 **CT_TEST 1**
    Firmware Version: 03814101
    OS Name and Version: Window 2000
    Max CT Payload Length: 0x00061300

Local Port database contains:
  10:00:00:00:c9:25:9b:96


Remote HBA database contains no entry.


Remote Port database contains no entry.
```

See Also   **fdmiCacheShow**

ficonClear

Clears the records from the specified FICON database.

Synopsis   **ficonclear** [*database*]

Availability   admin, switchAdmin, user

Description   Use this command to remove records from the local FICON database. The command effect depends on the specified database.

Operands   The operand is as follows:

database   Specifies the name of the FICON database. The databases are:

                      RLIR   Remove all entries from the link incidents database

                      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. "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 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**

ficoncupset modereg *bitname* **0 | 1**

Availability admin, switchAdmin

Description Use this command to set FICON-CUP (Control Unit Port) parameters for a switch. All the parameters described below can be set while the switch is online. Changes to parameters are effective immediately. A reboot is not required for the changes to take effect.

Operands The following operands are supported:

fmsmode	Enable or disable the FICON Management Server (FMS) mode for the switch. When the parameter is **fmsmode**, the argument is either enable or disable.

> **Note**
> If you use PID Format 2, you cannot enable **fmsmode**.

modereg	Set a bit in the FICON-CUP mode register. When the parameter is modereg, one of the following *bitname* operands should be specified, followed by 0 or 1:

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

Examples To enable FMS mode for the switch:

```
switch:admin> ficoncupset fmsmode enable
fmsmode for the switch is now Enabled
```

To set ASM bit in the mode register for the switch:

```
switch:admin> ficoncupset modereg ASM 1
Active=Saved Mode bit is set to 1
```

See Also **ficoncupshow**

ficoncupshow

Displays FICON-CUP parameters for a switch.

Synopsis   **ficoncupshow fmsmode**

ficoncupshow modereg [*bitname*]

Availability   admin, switchAdmin, user

Description   Use this command to display FICON-CUP (Control Unit Port) parameters for a switch.

Operands   The following operands are supported:

fmsmode   Display the FICON Management Server (FMS) mode for the switch.

modereg   Display the FICON-CUP mode register. When parameter is **modereg**, one of the following arguments can be specified as *bitname*:

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

If no argument is specified, all the mode register bits are displayed. If a mode register bit 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.

Examples   To display FMS mode for the switch:

```
switch:user> ficoncupshow fmsmode
fmsmode for the switch: Enabled
```

To display mode register for the switch:

```
switch:user> ficoncupshow modereg
 POSC  UAM  ASM  DCAM  ACP  HCP
 -----------------------------
    1    0    1    1    1    0
```

To display ASM bit in the mode register for the switch:

```
switch:user> ficoncupshow modereg ASM
 ASM
 ---
   1
```

See Also   **ficoncupset**

ficonHelp

Displays a list of FICON support commands.

Synopsis   **ficonhelp**

Availability   admin, switchAdmin, user

Description   Use this command to display a list of FICON support commands, with descriptions.

Operands   none

Examples   To display a list of FICON commands:

```
switch:admin> ficonhelp

ficonshow RNID           Displays all RNID (Registered Node Identification
                         Data) for FICON devices connected to the local switch.

ficonshow RNID fabric    Displays all RNID entries within the fabric.

ficonshow LIRR           Displays all LIRR (Link Incident Record Registration)
                         entries for FICON hosts that registered with the
                         local switch.

ficonshow LIRR fabric    Displays all LIRR entries within the fabric.

ficonshow SwitchRNID     Displays switch node identification data of the local
                         switch.

ficonshow SwitchRNID fabric    Displays switch node identification data of
                               each switch in the fabric.

ficonshow RLIR           Displays all RLIR (Registered Link Incident Record)
                         entries within the local switch.

ficonshow RLIR fabric    Displays all RLIR entries within the fabric.

ficonshow ILIR           Displays all ILIR (Implicit Link Incident Record)
                         entries within the local switch.

ficonshow ILIR fabric    Displays all ILIR entries within the fabric.

ficonclear RLIR          Clears the RLIR entries from the local RLIR database

ficonclear RNID          Clears the 'not current' entries from the local
                         RNID database.
```

See Also   none

ficonShow

Displays the contents of the specified FICON database.

Synopsis **ficonshow RNID** [*fabric*]

ficonshow LIRR [*fabric*]

ficonshow SwitchRNID [*fabric*]

ficonshow RLIR [*fabric*]

ficonshow ILIR [*fabric*]

Availability admin, switchAdmin, user

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 shown, and this specifies that all members are displayed, both local and remote.

The following information might 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 node ID of the storage port for RNID switch for SwitchRNID is valid.
0x10	Indicates 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 for RNID switch for RLIR 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]

- Power Supply [unit number]

- Hardware Slot [unit number]

- Blower [unit number]

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 PIDSame 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

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

0x00	Unspecified class.
0x01	Direct access storage device, if it is an storage port; otherwise, not channel-to-channel capable.
0x02	Magnetic tape, if it is an storage port; otherwise, a reserved field for a channel port.
0x03	Input unit record, if it is an storage port; otherwise, a reserved field for a channel port.
0x04	Output unit, if it is an storage port; otherwise, a reserved field for a channel port
0x05	Reserved field for a channel port.
0x06	Controller, if it is an storage port; otherwise, a reserved field for a channel port.
0x07	Terminal - Full screen if it is an storage port; otherwise, a reserved field for a channel port.
0x08	Terminal - Line mode if it is an 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

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:

- Link degraded but operational
- Link not operational

Port Type	Displays the port type:

- U is unknown.
- N is N_Port.
- NL is 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.

Operands   This command has the following operands:

database   Specify the database to display. Valid values are:

- **RNID**

- **LIRR**

- **SwitchRNID**

- **RLIR**

- **ILIR**

This operand is required.

fabric   Specify fabric to display both local and remote information; if omitted, only members of the named database that are local to the switch on which the command is issued displays.

Examples   To display the local RNID database:

```
switch:admin> ficonshow RNID
{
 {Fmt  Type PID    Registered Port WWN    Registered  Node WWN    flag Parm
  0x18 N    502b00 50:05:07:64:01:00:15:8d 50:05:07:64:00:c1:69:ca 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    flag Parm
  0x18 N    502e00 50:05:07:64:01:40:0f:ca 50:05:07:64:00:c1:69:ca 0x10 0x200105
  Type number:        002064
  Model number:       101
  Manufacturer:       IBM
  Plant of Manufacture: 02
  Sequence Number:    0000000169CA
  tag:                052e
 }
}
```

To display the local and remote LIRR database:

```
switch:admin> ficonshow LIRR fabric
{Fmt  Type PID    Listener Port WWN       Switch Port WWN        Listener Type
 0x18 N    502b00 50:05:07:64:01:00:15:8d 20:2b:00:60:69:80:1e:4e Conditional
 0x18 N    502e00 50:05:07:64:01:40:0f:ca 20:2e:00:60:69:80:1e:4e Conditional
 0x18 N    511b00 50:05:07:64:01:00:0f:ca 20:1b:00:60:69:80:1e:4f Conditional
 0x18 N    511c00 50:05:07:64:01:40:0d:d0 20:1c:00:60:69:80:1e:4f Conditional
 0x18 N    531800 50:05:07:64:01:40:13:70 20:18:00:60:69:33:33:33 Conditional
}
The LIRR database has 5 entries.
```

To display the local SwitchRNID 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.
```

To display the local ILIR database:

```
switch:user> ficonshow ILIR
{
 {FRU Failure [2]: Power Supply[2] failure occurred on Mon Jan 13 12:11:38 2003

  Fmt    Protocol Domain Fabric WWN          Switch WWN
  0x18   FICON    80     10:00:00:60:69:33:33:33 10:00:00:60:69:80:1e:4e

  FRU part number:      23000000602
  FRU serial number:    FL2L0001071

       {Listener Port Type Listener PID Listener Port WWN
        N              0x502b00     50:05:07:64:01:00:15:8d
        }
  }
 {FRU Failure [3]: Power Supply[4] failure occurred on Mon Jan 13 12:11:38 2003

  Fmt    Protocol Domain Fabric WWN          Switch WWN
  0x18   FICON    80     10:00:00:60:69:33:33:33 10:00:00:60:69:80:1e:4e

  FRU part number:      23000000602
  FRU serial number:    FL2L0001060

       {Listener Port Type Listener PID Listener Port WWN
        N              0x502b00     50:05:07:64:01:00:15:8d
        }
  }
}
The Local ILIR database has 2 entries.
```

See Also   ficonClear

filterTest

Tests frame filters.

Synopsis **filtertest** [**--slot** *slotnumber*][**-passcnt** *passcnt*][**-txports** *itemlist*][**-scamoff** *offset*][**-dcamoff** *offset*]
[**-fdefoff** *offset*]

Availability admin

Description Use this command to verify the ASIC frame-level filtering logic including every type of filter actions:

FLTACT_LIST_A   Action to handle the subgroup A-based filtering.

FLTACT_LIST_B   Action to handle the subgroup B-based filtering.

FLTACT_FROZEN   Action to handle the frame frozen process.

FLTACT_DISCARD Action to discard frame.

FLTACT_FORWARD

                    Action to forward frame.

This command can be run on every port and send the frame in internal loopback mode. The filter test requires two different ports in the same quadrant because the filter logic in the transmitter port cannot work if the frame is sent directory from the embedded port.

In this test, the filter definition covers the different filtering conditions, shown in the table.

Table 2-11   List of Filter Test Numbers, Definitions, and Action Types

Number	Filter Definition	Action Type
0	unconditional match	Forward
1	unconditional match	List A
2	unconditional match	List B
3	unconditional match	Frozen
4	unconditional match	Discard
5	SCAM no match and AL_PA match	List A
6	SCAM&DCAM match and AL_PA match	List A
7	Zone A match and AL_PA match	List A
8	Zone B match and AL_PA match	List B
9	Zone A&B match and AL_PA match	List B
10	Zone A|B match and AL_PA match	Frozen
11	Zone A|B match and AL_PA match	Discard

Note

This command is supported only on SilkWorm 3014, 3016, 3250, 3850, 3900, 4012, 12000, and 24000 platforms.

Operands This command has the following operands:

--slot *slotnumber* Specify the slot number on which the diagnostic operates. The port specified are relative to this slot number. The default is 0 and designed to operate on fixed-port-count products.

-passcnt *passcnt* Specify the number of times to perform this test. The default value is 1.

-txports *itemlist* Specify the user port numbers to perform this test. All user ports are set by default.

-scamoff *offset* Specify the program location to write SCAM test data in SCAM memory. The default value is 0. The maximum offset number is set if the specified number is larger than the limit.

-dcamoff *offset* Specify the program location to write DCAM test data in DCAM memory. The default value is 0. The maximum offset number is set if the specified number is larger than the limit.

-fdefoff *offset* Specify the program location to write filter test definition data in filter definition memory. The default value is 0. The maximum offset number is set if the specified number is larger than the limit.

Examples To run a frame filter test:

```
switch:admin> filtertest -txports 3/1-3/3

Running filtertest ..............
Test Complete: filtertest Pass 1 of 1
Duration 0 hr, 0 min & 2 sec (0:0:2:679).
 passed.
```

Diagnostics When it detects failures, the subtest might report one or more of the following error messages:

```
DIAG-ACTTEST
DIAG-FLTINIT
DIAG-FLTRCV
DIAG-FLTXMIT
DIAG-NUMTEST
```

Refer to the *Fabric OS System Error Message Reference Manual* for more information.

See Also **itemList**

firmwareCommit

Commits switch firmware.

Synopsis   **firmwarecommit**

Availability   admin, switchAdmin

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 flash 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 flash 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**, after the CP is rebooted, you must execute one of two commands:

- **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.

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**

2

Note: Enter commands in lowercase only; mixed case is for readability.

firmwareDownload

firmwareDownload

Downloads switch firmware from a remote host or local directory.

Synopsis   **firmwaredownload** [[**-s** [**-b -n**]] *host*,*user*,*pfile*,*passwd*]

Availability   admin, switchAdmin

Description   Use this command to download switch firmware from an FTP server or from a local NFS directory to the switch's nonvolatile storage area.

The new firmware is in the form of RPM packages with names defined in *pfile*, a binary file that contains specific firmware information (time stamp, platform code, version, and so forth) and the names of packages of the firmware to be downloaded. These packages are made available periodically to add features or to remedy defects. Contact customer support to obtain information about available firmware versions.

In dual-domain systems, this command by default downloads the firmware image to both CPs in rollover mode, to prevent disruption to application services. This operation depends on HA support. If HA is not available, you can still upgrade the CPs one at a time, using the **-s** option.

All systems supported by this firmware have two partitions of nonvolatile storage areas, a primary and a secondary, to store two firmware images. **firmwareDownload** always loads the new image into the secondary partition and swaps the secondary partition to be the primary. By default, it then reboots the system and activates the new image. Finally, it performs the **firmwareCommit** procedure automatically, to copy the new image to the other partition, unless **-n** is used. In systems with a blade processor (BP), after the firmware downloads to the standby CP and it reboots, then it downloads to the BP blades if there is a mismatch with the CP firmware.

For each non-director-class platform in your fabric, complete all firmware download changes before issuing **firmwareDownload** on the next switch to ensure a nondisruptive download.

The command supports both noninteractive and interactive modes. If it is invoked without any command line parameters, or if there is any syntax error in the parameters, the command goes into interactive mode, in which you are prompted for input.

To mention the FTP server by name, you need to set up two DNS servers with **dnsConfig**.

Refer to the *Fabric OS Administrator's Guide* "Maintaining Configurations and Firmware" chapter for limitations when changing Fabric OS versions. When installing Fabric OS, the procedure might vary, depending on which version of the Fabric OS you are migrating from. Refer to the release notes for unsupported Fabric OS versions.

Caution

For each non-director-class switch in your fabric, complete all firmware download changes before issuing the **firmwareDownload** command on the next switch to ensure a nondisruptive download.

Note

The switchAdmin role is not allowed to change the zoning and security configuration. Therefore, zoning and security sections in the configuration being downloaded to the switch are ignored.

Save your configuration if you are downgrading to Fabric OS v4.2.2. You might lose some of the enabled features available in the current firmware; for example, Fabric OS v5.x supports a zone DB of 256 Kb but v4.2.2 supports only 128 Kb.

Operands By default, **firmwareDownload** performs full install, autoreboot, and autocommit. These modes are selectable only in single-CP (**-s**) mode, in which case autoreboot is off by default. You can change these settings interactively or using the following options:

-s   Specify this operand to enable single-CP mode. In dual-CP systems, this mode enables you to upgrade a single CP and to select full install, autoreboot, and autocommit. In single-CP systems, this mode enables you to select full install, autoreboot, and autocommit.

-b   Specify this operand to activate autoreboot mode. After downloading firmware, the system must be rebooted. If single-CP mode is enabled and this operand is not specified, you must issue the **reboot** command manually to activate the downloaded image. If autoreboot mode is enabled, the switch reboots automatically after the **firmwareDownload** command has been run.

-n   Specify this operand to deactivate autocommit mode. By default, after running this command and after the reboot, the switch performs a **firmwareCommit** command automatically. When this mode is disabled, the user needs to issue the **firmwareCommit** command manually to replicate the downloaded image to both partitions of a CP.

host   Specify a host server name or IP address; for example, "citadel" or "192.168.166.30". The *pfile* is downloaded from this host. If this operand is not used, the *pfile* is considered to be accessible through a local directory.

user   Specify a user name for FTP server access; for example, "jdoe". This user name is used to gain access to the host. This operand can be omitted if *pfile* is accessible through a local directory or if the FTP user ID is anonymous.

pfile   Specify a fully qualified path and file name for the firmware package list, excluding the */SWBDxx* directory name: for example, if */v5.1.0/SWBD42/ release.plist* is a fully qualified path and file name, specify */v5.1.0/release.plist* as the *pfile*, not */v5.1.0/SWBD42/release.plist*. Absolute path names can be specified using forward slash (*/*).

passwd   Specify a password. This operand can be omitted if *pfile* is accessible through a local directory or if no password is required by the FTP server.

If no operand is specified, the operation becomes interactive and you are prompted for input.

Examples   To download the firmware to an HA switch:

```
switch:admin> firmwaredownload 192.168.166.30,johndoe,/pub/dist/release.plist,12345
The following BP blades are installed in the system.

Slot Name        Versions                        Scope of Impact
----------------------------------------------------------------
  2 FR4-18i        v5.1.0                          GigE
  7 FR4-18i        v5.1.0                          GigE

This command will upgrade both CPs and all BP blade above. If
you want to upgrade a single CP only, please use -s option.

You can run firmwareDownloadStatus to get the status of this
command.

This command will cause the active CP to reset and will require
that existing telnet, secure telnet or SSH sessions be restarted.

Do you want to continue [Y]: y
The firmware is being downloaded to the Standby CP. It may take up to 10 minutes.
```

Diagnostics   The command can fail with a return code of 0x12, if the *pfile* has not been specified properly, or if one of the following conditions is encountered:

- *host* is not known to the switch

- *host* cannot be reached by the switch

- *user* does not have permission on *host*

- The *pfile* does not exist on host

- The *pfile* is not in the right format

- Package specified in the *pfile* does not exist

- The FTP server is not running on *host*

- Platform is not supported by the firmware indicated.

Refer to the *Fabric OS System Error Message Reference Manual* for more information.

See Also   **firmwareCommit**, **firmwareDownloadStatus**, **firmwareRestore**, **firmwareShow**, **reboot**, **version**

firmwareDownloadStatus

Displays the status of a firmware download.

Synopsis   **firmwaredownloadstatus**

Availability   admin, switchAdmin

Description   Use this command to display an event log that records the progress and status of the current **firmwareDownload** command. The event log is created by the current **firmwareDownload** command and is kept until another **firmwareDownload** command is issued. There is a timestamp associated with each event.

In systems with two control processor (CP) cards, when **firmwareDownloadStatus** is run, the event logs in the two CPs are synchronized. The command can be run from either CP.

Operands   none

Examples   To display the status of a firmware download on a SilkWorm switch:

```
switch:admin> firmwaredownloadstatus
[1]: Fri Feb 15 22:17:03 2008
Firmware is being downloaded to the switch. This step may take up to 30 minutes.

[2]: Fri Feb 15 22:20:54 2008
Firmware has been downloaded to the secondary partition of the switch.

[3]: Fri Feb 15 22:22:19 2008
The firmware commit operation has started. This may take up to 10 minutes.

[4]: Fri Feb 15 22:22:51 2008
Switch is relocating an internal firmware image.

[5]: Fri Feb 15 22:25:15 2008
The commit operation has completed successfully.

[6]: Fri Feb 15 22:25:46 2008
The internal firmware image is relocated successfully.

[7]: Fri Feb 15 22:25:46 2008
Firmwaredownload command has completed successfully. Use firmwareshow to verify
the firmware versions.
```

To display the status of a firmware download on a SilkWorm director:

```
switch:admin> firmwaredownloadstatus
[1]: Mon Dec 19 18:40:19 2005
Slot 6 (CP1, active): Firmware is being downloaded to standby CP. This step may
take up to 30 minutes.

[2]: Mon Dec 19 18:46:18 2005
Slot 6 (CP1, active): Firmware has been downloaded successfully to Standby CP.

[3]: Mon Dec 19 18:46:25 2005
Slot 6 (CP1, active): Standby CP is going to reboot with new firmware.

[4]: Mon Dec 19 18:47:45 2005
Slot 6 (CP1, active): Standby CP booted successfully with new firmware.

[5]: Mon Dec 19 18:47:56 2005
Slot 8 (FR4-18i): Firmware is being downloaded to the blade. This step may take
up to 10 minutes.

[6]: Mon Dec 19 18:48:50 2005
Slot 5 (CP0, active): Forced failover succeeded. New Active CP is running new
firmware

[7]: Mon Dec 19 18:48:57 2005
Slot 5 (CP0, active): Firmware is being download to standby CP. This step may
take up to 30 minutes.

[8]: Mon Dec 19 18:49:28 2005
Slot 8 (FR4-18i): Firmware has been downloaded successfully. Blade is rebooting
with the new firmware.

[9]: Mon Dec 19 18:50:12 2005
Slot 8 (FR4-18i): Firmware commit has started on the blade. This may take up to
10 minutes.

[10]: Mon Dec 19 18:50:51 2005
Slot 8 (FR4-18i): The commit operation has completed successfully.

[11]: Mon Dec 19 18:55:39 2005
Slot 5 (CP0, active): Firmware has been downloaded successfully on Standby CP.

[12]: Mon Dec 19 18:55:46 2005
Slot 5 (CP0, active): Standby CP reboots.

[13]: Mon Dec 19 18:57:06 2005
Slot 5 (CP0, active): Standby CP booted successfully with new firmware.

[14]: Mon Dec 19 18:57:10 2005
Slot 5 (CP0, active): Firmware commit operation has started on both active and
standby CPs.

[15]: Mon Dec 19 19:01:38 2005
Slot 5 (CP0, active): Firmware commit operation has completed successfully on
active CP.

[16]: Mon Dec 19 19:01:39 2005
Slot 5 (CP0, 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

Availability admin, switchAdmin

Description Use this command to restore the former active firmware image. This command can only be run if autocommit was disabled during the **firmwareDownload**.

After a **firmwareDownload** and a **reboot** (with autocommit disabled), the downloaded firmware becomes active. If you then do not want to commit the firmware and want to restore the former firmware, run **firmwareRestore**. After running **firmwareRestore**, you can run **firmwareDownload** again.

This command reboots the system and makes the former firmware active. After reboot, both primary and secondary partitions restore to the former firmware.

This command only takes action if the system is booted after a **firmwareDownload**; otherwise, it returns with an error code.

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 !!
Broadcast message from root (ttyS0) Fri Oct 26 23:48:54 2001...


Doing firmwarecommit now.
Please wait ...
```

See Also **firmwareCommit**, **firmwareDownload**

firmwareShow

Displays the Fabric OS versions on both partitions of the local and remote CPs.

Synopsis   **firmwareshow**

Availability   admin, switchAdmin

Description   Use this command to display the Fabric OS versions on primary and secondary partitions. For systems with multiple control processor (CP) cards and AP blades, this command displays this information for both local and remote CPs and the AP blades.

Operands   none

Examples   To display the firmware version of a SilkWorm switch:

```
switch:admin> firmwareshow
Primary partition:      v5.1.0
Secondary Partition:    v5.1.0
```

To display the firmware version of a SilkWorm director with FR4-18i blades installed:

```
switch:admin> firmwareshow
Slot Name       Primary/Secondary Versions            Status
----------------------------------------------------------------
  5  CP0        v5.1.0                                Active *
               v5.1.0

  6  CP1        v5.1.0                                Standby
               v5.1.0

  8  FR4-18i    v5.1.0                                Enabled
               v5.1.0
```

See Also   **firmwareDownload**, **firmwareDownloadStatus**

fportTest

Functional test of F->N, N->F point-to-point path.

Synopsis **fporttest** [**-nframes** *count*][**-ports** *itemlist*][**-seed** *payload_pattern*][**-width** *pattern_width*] [**-size** *pattern_size*]

Availability admin

Description Use this command to verify the functional operation of the switch by sending ELS Echo frames from the switch F_Port transmitter and receiving ELS Echo ACC from the N_Port device into the F_Port receiver. This exercises all the switch components, from the main board, to the SFP, to the fiber cable, to the SFPs (of the N_Port devices and the switch F_Port), and back to the main board.

The cables and SFPs connected should be of the same technology; that is, a short wavelength SFP (switch) port is connected to another short wavelength SFP (device) port using a short wavelength cable, a long wavelength port is connected to a long wavelength port; and a copper port is connected to a copper port.

Only one frame is transmitted and received at any one time. The port LEDs rapidly flicker green while the test is running.

Note

This command is supported only on SilkWorm 200E, 3014, 3016, 3250, 3850, 3900, 4012, 4100, 24000, and 48000 platforms; use **portTest** instead.

The test method is as follows:

1. Determine which ports are F_Ports.

2. Create an ELS_Echo frame with payload size, data pattern build in or payload size, data pattern.

3. Transmit frame F through the F_Port, with D_ID, to the N_Port device.

4. Wait for the N_Port device to respond Echo ACC.

5. Compare Echo data transmitted to Echo data received.

6. Repeat steps 3 through 5 for all ports present until either the number of frames requested is reached, or all ports are marked bad.

You can specify a payload pattern to be used when executing this test. If the pattern is not user specified, then at every 30 pass, a different data type from a palette of seven is used to generate a different data pattern to create the frame. The data pattern is generated based on data type. Some data types might generate a different data pattern on every pass; other data types might not change the data pattern in every pass. These seven data types are repeated every 210 pass. The data palette is as follows:

```
CSPAT(0):       0x7e, 0x7e, 0x7e, 0x7e, ...
BYTE_LFSR(1):   0x69, 0x01, 0x02, 0x05, ...
CHALF_SQ(2):    0x4a, 0x4a, 0x4a, 0x4a, ...
QUAD_NOT(3):    0x00, 0xff, 0x00, 0xff, ...
CQTR_SQ(4):     0x78, 0x78, 0x78, 0x78, ...
CRPAT(5):       0xbc, 0xbc, 0x23, 0x47, ...
RANDOM(6):      0x25, 0x7f, 0x6e, 0x9a, ...
```

Operands   This command has the following operands:

-nframes *count*   Specify the number of times (or number of frames per port) to execute this test. If count is omitted, the default of 10 is used. This operand is optional.

-ports *itemlist*   Specify the ports to test. If itemlist is omitted, the test is executed on all online F_Ports in the specified slot. This operand is optional.

-seed *payload_pattern*

Specify the pattern of the test packets payload. Valid values are:

0	CSPAT (default)
1	BYTE_LFST
2	CHALF_SQ
3	QUAD_NOT
4	CQRT_SQ
5	CRPAT
6	RANDOM

All other values are modularized into one of these values.

-width *pattern_width* Specify the width of the pattern that the user specified. Valid values are:

1	byte (default)
2	word
4	quad

This operand is optional.

-size *pattern_size*   Specify the number of words in the test packet payload. If *pattern_size* is omitted, the default value is 512. This operand is optional.

Examples   To run **fportTest** on a switch:

```
switch:admin> fporttest -ports 1/0-1/15
Running fPortTest .......
Test Complete: "fporttest" Pass 10 of 10
Duration 0 hr, 0 min & 1 sec (0:0:0:127).
passed.
```

Diagnostics   The following are possible error messages if failures are detected:

```
DATA
INIT
PORT_DIED
EPI1_STATUS_ERR
ERR_STAT
ERR_STATS
ERR_STATS_2LONG
ERR_STATS_BADEOF
ERR_STATS_BADOS
ERR_STATS_C3DISC
ERR_STATS_CRC
ERR_STATS_ENCIN
ERR_STATS_ENCOUT
ERR_STATS_TRUNC
```

```
ERR_STAT_2LONG
ERR_STAT_BADEOF
ERR_STAT_BADOS
ERR_STAT_C3DISC
ERR_STAT_CRC
ERR_STAT_ENCIN
ERR_STAT_ENCOUT
ERR_STAT_TRUNC
FDET_PERR
FINISH_MSG_ERR
FTPRT_STATUS_ERR
LESSN_STATUS_ERR
MBUF_STATE_ERR
MBUF_STATUS_ERR
NO_SEGMENT
PORT_ABSENT
PORT_ENABLE
PORT_M2M
PORT_STOPPED
PORT_WRONG
RXQ_FRAME_ERR
RXQ_RAM_PERR
STATS
STATS_C3FRX
STATS_FRX
STATS_FTX
TIMEOUT
XMIT
```

Refer to the *Fabric OS System Error Message Reference Manual* for more information.

See Also   **crossPortTest**, **itemList**, **loopPortTest**, **portTest**, **spinFab**

fruReplace

Interactive interface to replace a field replaceable unit (FRU).

Synopsis   **frureplace** *fru*

Availability   admin, switchAdmin

Description   Use this command to guide the user in replacing a FRU. The command automatically performs the necessary backup and restore (steps to accommodate the replacement).

Operands   This the following operand is required:

fru   Specify the type of hardware component being replaced. WWN is the only supported value, specifying the replacement of the WWN card.

Examples   To replace the World Wide Name card:

```
switch:admin> frureplace wwn
This is the WWN card hot swap interface.
Continuing from this point will require
the whole process to be completed.
If this process is not complete due to a
power cycle, or CP failover, please follow
the recovery procedure in
Core Switch  WWN Card Removal and
Replacement document.
Do you wish to continue [y/n]? y

Backing up WWN card data, please
wait about 25 seconds for further
instruction.

Please install the new FRU now.

If this session lost for any reason,
please re-enter the frureplace command and
follow the instructions to complete the
operation.

Please enter the word `continue' after the
new WWN card has been installed: continue
Restoring the information to the
replacement FRU now, please wait about
20 seconds to complete
Verifying the replacement FRU now...
WWN card hot swap is now complete.
FRU replacement completed successfully!
```

See Also   none

fspfShow

Displays Fabric Shortest Path First (FSPF) protocol information.

Synopsis   **fspfshow**

Availability   admin, switchAdmin, user

Description   Use this command to display the FSPF protocol information and internal data structures to the FSPF module.

The following fields in the table display.

Table 2-12   fspfShow Display Fields

Field	Description
version	Version of FSPF protocol.
domainID	Domain number of local switch.
switchOnline	State of the local switch.
domainValid	TRUE if the domain of the local switch is currently confirmed.
isl_ports	Bit map of all the ISL. 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 the trunk slave ports.
f_ports	Bit map of all the Fx_Ports.
seg_ports	Bit map of all the segmented ports.
active_ports	Bit map of all the 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.

Operands   none

Note: Enter commands in lowercase only; mixed case is for readability.

Examples   To display FSPF protocol information:

```
switch:admin> fspfshow

    version        = 2
    domainID       = 131
    switchOnline   = TRUE
    domainValid    = TRUE
    isl_ports[0]   = 0x00000000
    isl_ports[1]   = 0x74000000
    trunk_ports[0] = 0x00000000
    trunk_ports[1] = 0x02000000
    f_ports[0]     = 0x00400000
    f_ports[1]     = 0x00000000
    seg_ports[0]   = 0x00000000
    seg_ports[1]   = 0x00000000
    active_ports[0] = 0x00400000
    active_ports[1] = 0x76000000
    minLSArrival   = 3
    minLSInterval  = 5
    LSoriginCount  = 3
    startTime      = 50222
    fspfQ          = 0x1003e640
    fabP           = 0x1003e630
    agingTID       = 0x1004ca28
    agingTo        = 10000
    lsrDlyTID      = 0x100507a8
    lsrDelayTo     = 5000
    lsrDelayCount  = 1
    ddb_sem        = 0x1003e6e8

    fabP:
    event_sch      = 0x0
```

See Also   **bcastShow**, **topologyShow**, **uRouteShow**

fwAlarmsFilterSet

Enables or disables alarms for Fabric Watch.

Synopsis   **fwalarmsfilterset** [*mode*]

Availability   admin, switchAdmin

Description   Use this command to configure alarm filtering for Fabric Watch. By turning off the alarms, all non-environment class alarms are suppressed. By turning on the alarms, all class alarms are generated.

Note

This command requires a Fabric Watch license.

Operands   This command has the following operand:

mode   Specify 1 to enable the alarms, 0 to disable the alarms. If no operand is specified, the default value is 0 (alarms deactivated). This operand is optional.

Examples   To enable alarms in Fabric Watch:

```
switch:admin> fwalarmsfilterset
Committing configuration...done.
FW: Alarms are disabled

switch:admin> fwalarmsfilterset 1
Committing configuration...done.
FW: Alarms are enabled
```

See Also   **fwAlarmsFilterShow**

2

Note: Enter commands in lowercase only; mixed case is for readability.

fwAlarmsFilterShow

fwAlarmsFilterShow

Displays alarm filtering for Fabric Watch.

Synopsis   **fwalarmsfiltershow**

Availability   admin, switchAdmin, user

Description   Use this command to display whether alarm filtering is enabled or disabled.

Note

This command requires a Fabric Watch license.

Operands   none

Examples   To display the status of alarm filtering in Fabric Watch:

```
switch:user> fwalarmsfiltershow
FW: Alarms are enabled

switch:user> fwalarmsfiltershow
FW: Alarms are disabled
```

See Also   **fwAlarmsFilterSet**

fwClassInit

Initializes all classes under Fabric Watch.

Synopsis   **fwclassinit**

Availability   admin, switchAdmin

Description   Use this command to initialize all classes under Fabric Watch. The command should only be used after installing a Fabric Watch license to start licensed Fabric Watch classes. Refer to **fwConfigure** for a list of classes.

Note

This command requires a Fabric Watch license.

Operands   none

Examples   To initialize all classes under Fabric Watch:

```
switch:admin> fwclassinit
fwClassInit: Fabric Watch is updating...
fwClassInit: Fabric Watch has been updated.
```

See Also   **fwConfigReload**, **fwConfigure**, **fwShow**

2

Note: Enter commands in lowercase only; mixed case is for readability.

fwConfigReload

fwConfigReload

Reloads the Fabric Watch configuration.

Synopsis   **fwconfigreload**

Availability   admin, switchAdmin

Description   Use this command to reload the Fabric Watch configuration. This command should only be used after downloading a new Fabric Watch configuration file from a host.

Note

This command requires a Fabric Watch license.

Operands   none

Examples   To reload the saved Fabric Watch configuration:

```
switch:admin> fwconfigreload
fwConfigReload: Fabric Watch configuration reloaded
```

See Also   **configDownload**, **configUpload**, **fwClassInit**, **fwConfigure**, **fwShow**

fwConfigure

Displays and modifies the Fabric Watch configuration.

Synopsis   **fwconfigure** [**--enable --port** *portNumber*] | [**--disable --port** *portNumber*]

Availability   admin, switchAdmin

Description   Use this command to display and modify threshold information for the Fabric Watch configuration. Switch elements monitored by Fabric Watch are divided into classes, which are further divided into areas. Each area can include multiple thresholds. In addition, the command can be used to disable or enable all thresholds associated with a given port.

 Note

This command requires a Fabric Watch license.

Not all platforms support fans or power supplies. If you attempt to configure values for these items, an "ERROR: No threshold available" error message is displayed.

The Fabric Watch classes and areas are provided in the table.

Table 2-13   fwConfigure Fabric Watch Classes and Areas

Class	Area
Environmental	Temperature Fan* Power Supply*
SFP	Temperature RXP TXP Current Voltage
Port	Link loss Sync loss Signal loss Protocol error Invalid words Invalid CRCS RXPerformance TXPerformance State Changes
Fabric	E_Port downs Fabric reconfigure Domain ID changes Segmentation changes Zone changes Fabric<->QL Fabric logins SFP state changes

Table 2-13 fwConfigure Fabric Watch Classes and Areas

Class	Area
E_Port	Link loss Sync loss Signal loss Protocol error Invalid words Invalid CRCS RXPerformance TXPerformance State Changes
F/FL_Port (Optical)	Link loss Sync loss Signal loss Protocol error Invalid words Invalid CRCS RXPerformance TXPerformance State Changes
AL_PA Performance Monitor	Invalid CRCS
EE Performance Monitor	Invalid CRCS RXPerformance TXPerformance
Filter Performance Monitor	Customer Define
Security	Telnet Violations HTTP Violations API Violations RSNMP Violations WSNMP Violations SES Violations MS Violations Serial Violations Front Panel Violations SCC Violations DCC Violations Login Violations Invalid Timestamps Invalid Signatures Invalid Certificates SLAP Failures SLAP Bad Packets TS Out of Sync No-FCS Incompatible Security DB Illegal Command
Resource	Flash

Operands This command has the following optional operands:

--enable --port *portNumber*
> Enables all thresholds associated with a certain port.

--disable --port *portNumber*
> Disables all thresholds associated with a certain port.

Examples To configure thresholds:

```
switch:admin> fwconfigure
     1 : Environment class
     2 : SFP class
     3 : Port class
     4 : Fabric class
     5 : E-Port class
     6 : F/FL Port (Optical) class
     7 : Alpa performance Monitor class
     8 : EE performance Monitor class
     9 : Filter performance Monitor class
    10 : Security class
    11 : Resource class
    12 : Quit
    Select a class => : (1..12) [1] 1

     1 : Temperature
     2 : Fan
     3 : Power Supply
     4 : return to previous page
    Select an area => : (1..4) [4] 1

    Index ThresholdName                  Status    CurVal
          LastEvent           LastEventTime    LastVal         LastState
    =========================================================================
        1    envTemp001                 enabled        33 C
                 started   10:28:59 on 02/01/2000         0 C     Informative
        2    envTemp002                 enabled        34 C
                 started   10:28:59 on 02/01/2000         0 C     Informative
        3    envTemp003                 enabled        36 C
                 started   10:28:59 on 02/01/2000         0 C     Informative
        4    envTemp004                 enabled        35 C
                 started   10:28:59 on 02/01/2000         0 C     Informative
        5    envTemp005                 enabled        36 C
                 started   10:28:59 on 02/01/2000         0 C     Informative

    1 : refresh
    2 : disable a threshold
    3 : enable a threshold
    4 : advanced configuration
    5 : return to previous page
    Select choice => : (1..5) [5]
```

See Also **fwClassInit, fwConfigReload, fwShow**

fwFruCfg

Displays or modifies FRU state alert configuration.

Synopsis   **fwfrucfg** [**--show**]

Availability   admin, switchAdmin

Description   Use this command to configure FRU states and actions. Based on these configuration settings, Fabric Watch generates action when an FRU state changes. To configure email alerts, use **fwMailCfg**.

 Note

This command requires a Fabric Watch license.

The command is not applicable to platforms without FRUs.

Operands   This command has the following operand:

--show   Displays the current FRU configuration setting.

If no operand is specified, the configuration prompt displays.

Examples   To change FRU state alert configuration:

```
switch:admin> fwfrucfg

  The current FRU configuration:
                  Alarm State      Alarm Action
  ------------------------------------------------
          Slot         0                 1
   Power Supply        0                 0
            Fan        0                 0
            WWN        0                 0

  Note that the value 0 for a parameter means that
  it is NOT used in the calculation

  Configurable Alarm States are:
  Absent-1, Inserted-2, On-4, Off-8, Faulty-16

  Configurable Alarm Actions are:
  Errlog-1, E-mail-16
  Slot Alarm State: (0..31) [0] 3
  Slot Alarm Action: (0..17) [1]
  Power Supply Alarm State: (0..31) [0]
  Power Supply Alarm Action: (0..17) [0]
  Fan Alarm State: (0..31) [0]
  Fan Alarm Action: (0..17) [0]
  WWN Alarm State: (0..31) [0]
  WWN Alarm Action: (0..17) [0]


  Fru configuration successfully changed
```

See Also   **fwConfigure**, **fwMailCfg**

fwHelp

Displays Fabric Watch command information.

Synopsis   **fwhelp**

Availability   admin, switchAdmin, user

Description   Use this command to display the commands that configure Fabric Watch.

Note

This command requires a Fabric Watch license.

Operands   none

Examples   To display a summary of Fabric Watch commands:

```
switch:user> fwhelp

  fanShow                  Show fan speeds
  fwAlarmsFilterSet        Configure alarms filtering for Fabric Watch
  fwAlarmsFilterShow       Show alarms filtering for Fabric Watch
  fwClassInit              Initialize all Fabric Watch classes
  fwConfigure              Configure Fabric Watch
  fwConfigReload           Reload Fabric Watch configuration
  fwFruCfg                 Configure FRU state and notification
  fwMailCfg                Configure Fabric Watch Email Alert
  fwPortDetailShow         Create a report with detailed port information
  fwSamShow                Show availability monitor information
  fwSet                    Set port persistence time
  fwSetToCustom            Set boundary & alarm level to custom
  fwSetToDefault           Set boundary & alarm level to default
  fwShow                   Show thresholds monitored or port persistence time
  sensorShow               Show sensor readings
  switchStatusPolicySet    Set switch status policy parameters
  switchStatusPolicyShow   Show switch status policy parameters
  switchStatusShow         Show overall switch status
  tempShow                 Show switch temp readings
```

See Also   none

fwMailCfg

Displays and configures Fabric Watch email alerts.

Synopsis **fwmailcfg**

Availability admin, switchAdmin

Description Use this command to display or modify the configuration and status of the Fabric Watch email alert in the switch.

Switch elements monitored by Fabric Watch are divided into classes, and email alerts are based on the classes. Each class can configure one email address as the alert message's receiver.

For an email alert to function correctly, add the CP0 and CP1 IP addresses and hostnames to DNS and also set the domain name and name server. The **ipAddrShow** and **dnsConfig** commands can be used to set and check this information.

Note

This command requires a Fabric Watch license.

Operands none

Examples To configure email settings:

```
switch:admin> fwmailcfg
  1  : Show Mail Configuration Information
  2  : Disable Email Alert
  3  : Enable Email Alert
  4  : Send Test Mail
  5  : Set Recipient Mail Address for Email Alert
  6  : Quit
Select an item  => : (1..6) [6] 1

    Config Show Menu
  -------------------------------------
    1  : Environment class
    2  : SFP class
    3  : Port class
    4  : Fabric class
    5  : E-Port class
    6  : F/FL Port (Optical) class
    7  : Alpa Performance Monitor class
    8  : End-to-End Performance Monitor class
    9  : Filter Performance Monitor class
   10  : Security class
   11  : Resource class
   12  : FRU Class
   13  : Quit
  Select an item => : (0..13) [11] 1
(continued on next page)
```

```
mail configuration information
-------------------------------------------
    Email Alert = disable
    Mail Recipients = NONE
-------------------------------------------

1  : Show Mail Configuration Information
2  : Disable Email Alert
3  : Enable Email Alert
4  : Send Test Mail
5  : Set Recipient Mail Address for Email Alert
6  : Quit
Select an item => : (1..6) [6] 5

    Mail Config Menu
-------------------------------------
    1  : Environment class
    2  : SFP class
    3  : Port class
    4  : Fabric class
    5  : E-Port class
    6  : F/FL Port (Optical) class
    7  : Alpa Performance Monitor class
    8  : End-to-End Performance Monitor class
    9  : Filter Performance Monitor class
   10  : Security class
   12  : FRU Class
   13  : Quit
Select an item => : (0..13) [11] 1
Mail To: [NONE] JoeDoe@bogus.com

Email Alert configuration succeeded!
```

See Also   **dnsConfig**, **fwConfigure**, **ipAddrSet**, **ipAddrShow**

fwPortDetailShow

Displays the port information for specified user ports.

Synopsis   **fwportdetailshow** [**--p** *portNumber*] | [**--s** *portState*]

Availability   admin, switchAdmin, user

Description   Use this command to print the overall status of the ports specified. The overall status is calculated based on the following contributors:

Port Errors

LFA	Number of link loss occurrences exceeded limit for time period
LSY	Number of sync loss occurrences exceeded limit for time period
LSI	Number of signal loss occurrences exceeded limit for time period
PER	Number of protocol errors exceeded limit for time period
INW	Number of invalid words exceeded limit for time period
CRC	Number of invalid CRC errors exceeded limit for time period
PSC	Port hardware state changed too often
BLP	Buffer limit port

SFP Errors

STM	SFP temperature is out of specification
SRX	SFP receive power is out of specification
STX	SFP transmit power is out of specification
SCU	SFP current is out of specification
SVO	SFP voltage is out of specification

The overall status can be in one of the followings:

Healthy	Every contributor is healthy
Marginal	One or more contributors are in this status
Faulty	Faulty hardware
Offline	Port has no connectivity or is disabled

If the overall status is not healthy, the contributing factors also are listed.

Note

This command requires a Fabric Watch license.

Operands   If no option is specified, all ports are displayed.

The following operands are supported:

--p *portNumber*   Yields a port detail report for a specific port.

--s *portState*   Yields a port detail report for the specified portState. Valid *portState* entries are:

h   Report based on all healthy ports

m   Report based on all marginal ports

f   Report based on all faulty ports

o   Report based on all offline ports

Examples   To retrieve a port detail report:

```
switch:user> fwportdetailshow --s h
  Port Detail Report                          Report time: 06/07/2004 03:11:44 PM
  Switch Name:    switch
  IP address:     10.255.255.255
  Port Exception report [by Healthy]


                                --------Port-Errors------------ -----SFP-Errors----
  Port# Type  State   Dur(H:M) LFA LSY LSI PER INW CRC PSC BLP STM SRX STX SCU SV0
  -------------------------------------------------------------------------------
  000    E   HEALTHY   001:11   -   -   -   -   -   -   -   -   -   -   -   -   -
  001    E   HEALTHY   001:11   -   -   -   -   -   -   -   -   -   -   -   -   -
  002    F   HEALTHY   001:11   -   -   -   -   -   -   -   -   -   -   -   -   -
  003    F   HEALTHY   001:11   -   -   -   -   -   -   -   -   -   -   -   -   -
  004    E   HEALTHY   001:11   -   -   -   -   -   -   -   -   -   -   -   -   -
  005    E   HEALTHY   001:11   -   -   -   -   -   -   -   -   -   -   -   -   -
  006    E   HEALTHY   001:11   -   -   -   -   -   -   -   -   -   -   -   -   -
  007    E   HEALTHY   001:11   -   -   -   -   -   -   -   -   -   -   -   -   -
  008    E   HEALTHY   001:11   -   -   -   -   -   -   -   -   -   -   -   -   -
  009    F   HEALTHY   001:11   -   -   -   -   -   -   -   -   -   -   -   -   -
  022    F   HEALTHY   001:11   -   -   -   -   -   -   -   -   -   -   -   -   -
  023    F   HEALTHY   001:11   -   -   -   -   -   -   -   -   -   -   -   -   -
  024    E   HEALTHY   001:11   -   -   -   -   -   -   -   -   -   -   -   -   -
  025    E   HEALTHY   001:11   -   -   -   -   -   -   -   -   -   -   -   -   -
  026    F   HEALTHY   001:11   -   -   -   -   -   -   -   -   -   -   -   -   -
  027    F   HEALTHY   001:11   -   -   -   -   -   -   -   -   -   -   -   -   -
  028    E   HEALTHY   001:11   -   -   -   -   -   -   -   -   -   -   -   -   -
  029    E   HEALTHY   001:11   -   -   -   -   -   -   -   -   -   -   -   -   -
  031    F   HEALTHY   001:11   -   -   -   -   -   -   -   -   -   -   -   -   -
```

See Also   **switchStatusShow**

fwSamShow

Displays switch availability monitor information.

Synopsis   **fwsamshow**

Availability   admin, switchAdmin, user

Description   Use this command to display information about port availability. The information displayed includes total uptime, total downtime, number of faulty occurrences, and total percent of downtime for each port.

> **Note**
>
> This command requires a Fabric Watch license.

Operands   none

Examples   To display port summary information on an eight port switch:

```
switch:user> fwsamshow

                          Total     Total      Down         Total
  Port#          Type     Up Time   Down Time  Occurrence   Offline Time
                          (Percent) (Percent)  (Times)      (Percent)
==========================================================================
    0            U_PORT      0          0          0            100
    1            U_PORT      0          0          0            100
    2            U_PORT      0          0          0            100
    3            E_PORT     21          0          0             78
    4            E_PORT     20          0          0             80
    5            U_PORT      0          0          0            100
    6            U_PORT      0          0          0            100
    7            U_PORT      0          0          0            100
```

See Also   **portShow**, **switchShow**

fwSet

Sets the parameters controlled by Fabric Watch.

Synopsis   **fwset** [**--port --persistence** *seconds*]

Availability   admin, switchAdmin, user

Description   Use this command to set parameters controlled by Fabric Watch. It allows the user to set the port persistence time (time in which a port must persistently be in a marginal state before being labeled as such)

Note

This command requires a Fabric Watch license.

Operands   The operand is as follows:

--port --persistence *seconds*
> Set port parameters. Currently only port persistence time can be set with this option. Port persistence time is the time period in which a port must be persistently in a state before being actually being recognized as such.

Examples   To set message levels and port persistence time:

```
switch:user> fwset --port --persistence 18
```

See Also   fwShow

fwSetToCustom

Sets boundary and alarm levels to custom values.

Synopsis   **fwsettocustom**

Availability   admin, switchAdmin

Description   Use this command to set boundary and alarm levels to custom values for all classes and areas in Fabric Watch.

Note

This command requires a Fabric Watch license.

Operands   none

Examples   To set alarm levels to custom values:

```
switch:admin> fwsettocustom
Committing configuration...done.
```

See Also   **fwSetToDefault**

fwSetToDefault

Returns boundary and alarm levels to the default values.

Synopsis   **fwsettodefault**

Availability   admin, switchAdmin

Description   Use this command to return boundary and alarm levels to defaults for all classes and areas in Fabric Watch.

Note

This command requires a Fabric Watch license.

Operands   none

Examples   To return alarm levels to default values:

```
switch:admin> fwsettodefault
Committing configuration...done.
```

See Also   **fwSetToCustom**

fwShow

Displays the thresholds monitored by Fabric Watch.

Synopsis   **fwshow** [**--port --persistence**] | [**--disable --port**]

Availability   admin, switchAdmin, user

Description   Use this command to display the thresholds monitored by Fabric Watch. This command also displays the port persistence time and ports with all thresholds disabled.

Note

This command requires a Fabric Watch license.

Operands   The operands are as follows:

--port --persistence   Displays the time that a port must be persistently in a state before being marked as such.

--disable --port   Displays the ports that have all associated thresholds disabled.

Examples   To display thresholds and port persistence time:

```
switch:user> fwshow
  1  : Show class thresholds
  2  : Detail threshold information
  3  : Show console message level
  4  : Show port persistence time
  5  : Quit
Select an item  => : (1..3) [3] 1

  1  : Environment class
  2  : SFP class
  3  : Port class
  4  : Fabric class
  5  : E-Port class
  6  : F/FL Port (Optical) class
  7  : Alpa Performance Monitor class
  8  : End-to-End Performance Monitor class
  9  : Filter Performance Monitor class
 10  : Security class
 11  : Resource class
 12  : Quit
Select an item  => : (1..12) [11] 1

 1 : Temperature
 2 : Fan
 3 : Power Supply
 4 : return to previous page
Select an area => : (1..4) [4] 2

 =================================================================
  Name                 Label                   Last value
  -------------------  ----------------------   -------------------
  envFan001            Env Fan 1                2576 RPM
  envFan002            Env Fan 2                2518 RPM
 envFan003             Env Fan 3               2481 RPM
(continued on next page)
```

Note: Enter commands in lowercase only; mixed case is for readability.

fwShow

2

```
switch:user> fwshow
  1  : Show class thresholds
  2  : Detail threshold information
  3  : Show console message level
  4  : Show port persistence time
  5  : Quit
  Select an item  => : (1..3) [3] 2

Enter Threshold Name : [] envFan001

     Env Temperature 1:

         Monitored for:        1283 (21 mins)
          Last checked:    10:50:21 on 02/01/2000

            Lower bound:           0 C
            Upper bound:          75 C
            Buffer Size:          10

         Value history:          33 C

               Disabled? No
                 Locked? No

            Raw history:          38 C
                                  38 C
                                  38 C
                  Flags: 0x      40 TRIGGERED
        Counter:
                 Access via: Function call
                 Address: 0x100155a8
               Argument: 0x00000001

                 Previous: 0x00000026 (38)
                  Current: 0x00000026 (38)

            Events:
             Style: Triggered
               Event 0 occurred 1 time, last at 16:30:17 on 12/09/2011
               Event 1 occurred 10 times, last at 16:49:02 on 12/09/2011
             * Event 5 occurred 1 time, last at 16:30:23 on 12/09/2011
          Callbacks:
            No callbacks are registered.

switch:user> fwshow --port --persistence
  FW: current port persistence time = 18s
switch:user> fwShow --disable --port
  Port    Threshold Status
  ========================
   1          disabled
```

See Also   fwClassInit, fwConfigReload, fwConfigure, fwSet

h

Displays shell history.

Synopsis   **h**

Availability   admin, switchAdmin, user

Description   Use this command to view the shell history. The shell history mechanism is similar to the UNIX Korn shell history facility. It has a built-in line editor similar to UNIX vi that enables previously typed commands to be edited. The **h** command displays the 20 most recent commands typed into the shell; the oldest commands are replaced as new ones are entered.

By default, "emacs" are used for CLI editing. From shell, enter **/bin/bash** or **/bin/sh** (both are the same executable, busybox OSS). Enter **set -o vi** to set the CLI mode to vi. To edit a command, press ESC to access edit mode and then use vi commands. The ESC key switches the shell to edit mode. The ENTER key gives the line to the shell from either editing or input mode.

Basic vi commands are as follows:

k	Move the cursor up
j	Move the cursor down
h	Move the cursor left
l	Move the cursor right
a	Append
i	Insert
x	Delete
u	Undo

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

haDisable

Disables the High Availability feature in the switch.

Synopsis   **hadisable**

Availability   admin, switchAdmin

Description   Use this command to disable the High Availability feature in the switch. If the HA feature is already disabled, this command does nothing.

Operands   none

Examples   To disable the High Availability feature:

```
switch:admin> hadisable
HA is disabled
```

See Also   **haEnable**

haDump

Displays information about the status of the High Availability feature in the switch.

Synopsis   **hadump**

Availability   admin, switchAdmin, user

Description   Use this command to display information about the status of the High Availability feature in the switch. This command displays the following information:

- Local CP state (slot number and CP ID)

- Remote CP state (slot number and CP ID)

- High Availability enabled/disabled

- Heartbeat up/down

- Health of standby CP:

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. Failover is disabled until the standby CP is repaired. The information of the failing device in the standby CP is displayed.
Unknown	The standby CP healthy state is unknown due to not existing, heartbeat is down, or healthy monitor detects a configuration file error.

- HA synchronization status:

HA State Synchronized

> The system is currently fully synchronized. If a failover became necessary, it would be nondisruptive.

HA State Not In Sync

> The system is unable to synchronize the two CPs, due to the standby CP being faulty or another system error. If a failover became necessary at this time, the standby CP reboots, and the failover is disruptive.

- IP and Fibre Channel addresses configured for the switch.

- Additional internal HA state information, subject to change.

Operands   none

Examples   To view information about the High Availability feature status:

```
switch:admin> hadump

hashow:
Local CP (Slot 6, CP1): Active
Remote CP (Slot 5, CP0): Standby, Healthy
HA enabled, Heartbeat Up, HA State synchronized

ipaddrshow:
SWITCH0
Ethernet IP Address: 10.64.118.104
Ethernet Subnetmask: 255.255.240.0
Fibre Channel IP Address: 0.0.0.0
Fibre Channel Subnetmask: 0.0.0.0

SWITCH1
Ethernet IP Address: 10.64.118.105
Ethernet Subnetmask: 255.255.240.0
Fibre Channel IP Address: 0.0.0.0
Fibre Channel Subnetmask: 0.0.0.0
(output truncated)
```

See Also   **haFailover**, **haShow**

haEnable

Enables the High Availability feature in the switch.

Synopsis **haenable**

Availability admin, switchAdmin

Description Use this command to enable the High Availability feature in the switch. If the HA feature is already enabled, this command does nothing.

Operands none

Examples To enable the High Availability feature in the switch:

```
switch:admin> haenable
HA is enabled
```

See Also **haDisable**

haFailover

Forces the failover mechanism so that the standby control processor (CP) becomes the active CP.

Synopsis   **hafailover**

Availability   admin, switchAdmin

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.

When 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.

> **Note**
>
> This command is supported only on systems with dual -CP cards.

Operands   none

Examples   To force the failover of the active CP to the standby CP in the switch:

```
switch:admin> hafailover
Local CP (Slot 6, CP1): Active, Warm Recovered
Remote CP (Slot 5, CP0): Standby, Healthy
HA enabled, Heartbeat Up, HA State synchronized

Warning: This command is being run on a redundant control
processor(CP) system. If the above status does not indicate
'HA State synchronized', then the CPs are not synchronized
and this operation will cause the active CP to reset. This
will cause disruption to devices attached to both switch 0
and switch 1 and will require that existing telnet sessions
be restarted. To reboot a single logical switch on this
system, use the switchreboot command while logged in to
that logical switch.

Are you sure you want to fail over to the standby CP [y/n]?
```

See Also   **haDisable**, **haEnable**, **haShow**

Note: Enter commands in lowercase only; mixed case is for readability.

haShow

Displays control processor (CP) status.

Synopsis   **hashow**

Availability   admin, switchAdmin, user

Description   Use this command to display control processor status, which includes:

- Local CP state (slot number and CP ID)
- Remote CP state (slot number and CP ID)
- High Availability enabled/disabled
- Heartbeat up/down
- Health of standby CP:

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. The logs should be checked to determine the appropriate repair action. Failover is disabled until the standby CP is repaired.
Unknown	The standby CP healthy state is unknown due to not existing, heartbeat is down, or healthy monitor detects a configuration file error.

- HA synchronization status:

HA State Synchronized
> The system is currently fully synchronized. If a failover became necessary, it would be nondisruptive.

HA State Not In Sync
> The system is unable to synchronize the two CPs, due to the standby CP being faulty or another system error. If a failover became necessary, at this time, the standby CP reboots, and the failover is disruptive.

Note

This command might not be supported on nonbladed systems.

Operands   none

Examples   To display CP status, first on a healthy standby CP and then on a faulty standby CP:

```
switch:admin> hashow
Local CP (Slot 6, CP1): Active
Remote CP (Slot 5, CP0): Standby, Healthy
HA Enabled, Heartbeat Up, HA State Synchronized

switch:admin> hashow
Local CP (Slot 6, CP1): Active
Remote CP (Slot 5, CP0): Standby, Failed
                        Backplane PCI fail, severity: CRITICAL
HA enabled, Heartbeat Up, HA State not in sync
```

See Also   **haDisable**, **haEnable**, **haFailover**

haSyncStart

Enables HA state synchronization.

Synopsis   **hasyncstart**

Availability   admin, switchAdmin

Description   Use this command to enable the HA state synchronization.

Examples   To enable the HA state synchronization:

```
switch:admin> hasyncstart
HA State synchronization has started
```

See Also   **haFailover**, **haShow**, **haSyncStop**

haSyncStop

Disables the HA state synchronization.

Synopsis	**hasyncstop**
Availability	admin, switchAdmin
Description	Use this command to temporarily disable the HA synchronization .The next failover that takes place after might be disruptive.
Operands	none
Examples	To disable the HA state synchronizing process:

```
switch:admin> hasyncstop
```

See Also   **haFailover**, **haShow**, **haSyncStart**

Note: Enter commands in lowercase only; mixed case is for readability.

help

Displays help information for commands.

Synopsis   **help** [*command*]

Availability   admin, switchAdmin, user

Description   Use this command without a operand to display an alphabetical list of individual commands. At the end of the list are commands that display groups of commands; for example, **diagHelp** displays a list of diagnostic commands.

The list displays only commands that are available to the current user; this can vary, according to:

- Login user level
- License key
- Switch model

To access help information for a specific command, enter the command name as an operand.

Operands   This command has the following optional operand:

command   Specify the command name, with or without quotation marks.

Examples   To display help information for the **passwd** command:

```
switch:admin> help passwd
```

See Also   **diagHelp**, **fwHelp**, **licenseHelp**, **perfHelp**, **routeHelp**, **zoneHelp**

historyLastShow

Displays the latest entry in the field replaceable unit (FRU) history log.

Synopsis   **historylastshow**

Availability   admin, switchAdmin, user

Description   Use this command to display the contents of the latest history log record. A history record contains three lines of information. The first line of each record contains the following data sets:

Object type	CHASSIS, FAN, POWER SUPPLY, SW BLADE (port blade), CP BLADE (control processor), WWN (World Wide Name card), or UNKNOWN.
Object number	Slot number for blades and unit number for everything else.
Event	Inserted, Removed, or Invalid.
Time of the event	Format: *Day Mon dd hh:mm:ss yyyy*

The second and third lines of a record each contain one data set, preceded by its name:

Factory Part Number *xx-yyyyyyy-zz* or Unknown

Factory Serial Number
xxxxxxxxxxx or Unknown

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 history log.

Synopsis   **historymode**

Availability   admin, switchAdmin, user

Description   Use this command to display the mode of the history buffer:

Rotating mode	New messages overwrite the oldest messages in the log.
First-in mode	Once the log is full, all additional logs are discarded so that the first set of logs to fill the buffer are preserved.

Operands   none

Examples   To change the history mode to first-in from rotating:

```
switch:admin> historymode
History Mode is: Rotating.
```

See Also   **historyLastShow**, **historyShow**

historyShow

Displays the entire field replaceable unit (FRU) history log.

Synopsis **historyshow**

Availability admin, switchAdmin, user

Description Use this command to display the entire history log, which records insertion and removal events for blades, power supplies, fans, and World Wide Name (WWN) cards. Each history record contains three lines of information. The first line of each record contains the following:

Object type	CHASSIS, FAN, POWER SUPPLY, SW BLADE (port blade), CP BLADE (control processor), WWN (WWN card), or UNKNOWN
Object number	Slot number for blades and unit number for everything else
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 respectively contain the factory part number and factory serial number, if applicable:

Factory Part Number *xx-yyyyyyy-zz* or Unknown

Factory Serial Number
> *xxxxxxxxxxx* or Unknown

SilkWorm directors support 100 history log entries; all other platforms, which contain FRUs, support 28 entries.

Operands none

Examples To display the history log of FRUs and removal events:

```
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

(output truncated)

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**

httpCfgShow

Displays the Java plug-in version.

Synopsis **httpcfgshow**

Availability admin, switchAdmin, user

Description Use this command to display the version of the Java plug-in supported by Web Tools. This command also displays the URL from which the plug-in can be downloaded.

Operands none

Examples To display the Java plug-in version:

```
switch:admin> httpcfgshow
Current HTTP configuration
javaplugin.version = 1,3,1
javaplugin.homeURL = http://java.sun.com/products/plugin
```

See Also none

i

Displays a task summary.

Synopsis **i** [*processID*]

Availability admin, switchAdmin, user

Description Use this command to display information about all of the processes or about a specific process if a process ID is supplied. One line is displayed per process. Fields displayed with this commands include those shown in the table.

Table 2-14 i Command Field Description

Field	Description
F	Process flags: ALIGNWARN 001 print alignment warning messages STARTING 002 being created EXITING 004 getting shut down PTRACED 010 set if ptrace (0) has been called TRACESYS 020 tracing system calls FORKNOEXEC 040 forked but did not exec SUPERPRIV 100 used super-user privileges DUMPCORE 200 dumped core SIGNALED 400 killed by a signal
S	Process state codes: D uninterruptible sleep (usually IO) R runable (on run queue) S sleeping T traced or stopped Z a defunct ("zombie") process
UID	The effective user ID number of the process
PID	The process ID of the process
PPID	The process ID of the parent process
C	Processor utilization for scheduling
PRI	Priority number of the process; higher numbers mean lower priority
NI	Nice value used in priority computation
ADDR	Memory address of the process
SZ	The total size of the process in virtual memory, in pages

Table 2-14 i Command Field Description (Continued)

Field	Description
WCHAN	The address of an event for which process is sleeping (if blank, process is running)
TTY	The controlling terminal of the process (? displayed for no controlling terminal)
TIME	The cumulative execution time for the process
CMD	The command name of the process

Operands   This command has the following operand:

processID   Specifies the process name or process ID for the process to display.

Examples   To display information about process ID 433:

```
switch:admin> i 433
F   S   UID   PID  PPID  C PRI  NI ADDR    SZ  WCHAN TTY   TIME     CMD
000 S     0   433     1  0  69   0   -  1283   5c64 ?   00:00:02 fabricd
```

See Also   **diagHelp**, **routeHelp**

ifModeSet

Sets the link operating mode for a network interface.

Synopsis **ifmodeset** ["*interface*"]

Availability admin, switchAdmin

Description Use this command to set the link operating mode for a network interface.

An operating mode is confirmed with a y or yes at the prompt. If the operating mode selected differs from the current mode, the change is saved and the command exits.

Changing the link mode is not supported for all network interfaces or for all Ethernet network interfaces. This command is only functional for the eth0 interface.

When selecting auto-negotiation, 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 exact same mode. The link does not work reliably if one side is set to auto-negotiate 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 might result in an inability to communicate with the system through its Ethernet interface. It is recommended that this command only is used from the serial console port. When used through an interface other than the serial console port, the command displays a warning message and prompts the user to for verification before continuing. this warning is not displayed and the user is not prompted when the command is used through the serial console port.

For dual-CP systems, the **ifModeSet** command affects the CP that you are currently logged in to. 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 might be set to operate in different modes.

Note

This command is not supported on SilkWorm 4100 switch and SilkWorm 24000 and 48000 directors that use a Broadcom PHY transceiver.

This command is not supported on SilkWorm 3016 switches. The internal Ethernet in the IBM eServer BladeCenter chassis operates exclusively in fixed 100-Mbit full-duplex mode. Using **ifModeSet** can disconnect your Ethernet connections to the SilkWorm 3016.

Operands This command has the following operand:

"*interface*" Specify the name of the interface. You can specify the name with quotation marks, but using them is not required. For example, you can use either eth0 or "eth0", where eth is the network interface and 0 is the physical unit.

Examples To advertise all modes of operation, when not entering this command through the serial console port, follow this scenario for the **ifModeSet** command:

```
switch:admin> ifmodeset 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] y
Proceed with caution.
Auto-negotiate (yes, y, no, n): [no] y
Advertise 100 Mbps / Full Duplex (yes, y, no, n): [yes] y
Advertise 100 Mbps / Half Duplex (yes, y, no, n): [yes] y
Advertise 10 Mbps / Full Duplex (yes, y, no, n): [yes] y
Advertise 10 Mbps / Half Duplex (yes, y, no, n): [yes] y
Committing configuration...done.
```

To force the link for the eth0 interface from auto-negotiation to 10 Mbit/sec half-duplex operation, when entering this command through the serial console port:

```
switch:admin> ifmodeset eth0
Auto-negotiate (yes, y, no, n): [yes] n
Force 100 Mbps / Full Duplex (yes, y, no, n): [no] n
Force 100 Mbps / Half Duplex (yes, y, no, n): [no] n
Force 10 Mbps / Full Duplex (yes, y, no, n): [no] n
Force 10 Mbps / Half Duplex (yes, y, no, n): [no] y
Committing configuration...done.
```

See Also **ifModeShow**

ifModeShow

Displays the link operating mode and MAC address for a network interface.

Synopsis   **ifmodeshow** [*interface*]

Availability   admin, switchAdmin, user

Description   Use this command to display the link operating mode and MAC address for a network interface.

Operands   This command has the following operand:

interface   Specify the name of the interface. You might specify the name with quotation marks, but using them is not required. For example, you can use either "eth0" or eth0, where eth is the network interface and 0 is the physical unit.

Examples   To display the link operating mode for the "eth0" Ethernet interface:

```
switch:admin> ifmodeshow eth0
Link mode: negotiated 100baseTx-HD, link ok
MAC Address: 00:60:69:D0:24:40
```

See Also   **ifModeSet**

interfaceShow

Displays FSPF interface information.

Synopsis   **interfaceshow** [*slotnumber*/][*portnumber*]

Availability   admin, switchAdmin, user

Description   Use this command to display the two data structures associated with FSPF interfaces (E_Ports) on the switch:

- The permanently allocated Interface Descriptor Block (IDB).

- The neighbor data structure. This data structure is allocated when a switch port becomes an E_Port. The neighbor data structure contains all the information relating to the switch that is connected to an adjacent switch.

This command displays the content of both data structures, if they have been allocated.

The following fields are displayed:

idbP	Pointer to IDB.
nghbP	Pointer to neighbor data structure.
ifNo	Interface number.
masterPort	Port number of the trunk master port, if present, of the trunk group of which this port is a part.
defaultCost	Default cost of sending a frame over the ISL connection to this interface.
cost	Cost of sending a frame over the ISL connected to this interface. A value of 1000 indicates a 1-Gb/sec link. A value of 500 indicates a 2-Gb/sec link.
delay	Conventional delay incurred by a frame transmitted on this ISL. A fixed value required by the FSPF protocol.
lastScn	Type of the last State Change Notification received on this interface.
lastScnTime	Time the last State Change Notification was received on this interface.
upCount	Number of times this interface came up, with respect to FSPF.
lastUpTime	Last time this interface came up.
downCount	Number of times this interface went down.
lastDownTime	Last time this interface went down.
downReason	Type of last State Change Notification that caused this interface to go down.
iState	Current state of this interface. The state can be UP or DOWN. An interface in DOWN state does not have an allocated neighbor data structure and cannot be used to route traffic to other switches.
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.
nghbCap	Neighbor capabilities. Should be 0.
nghbId	Domain ID of the neighbor (adjacent) switch.

idbNo	IDB number. Should be equal to *port_number*.
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 the last initializing state, NB_ST_INIT, on this interface.
firstHlo	Time the first hello sent on this interface.
nbstFull	Time 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 (LSU), 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.

Note: Enter commands in lowercase only; mixed case is for readability.

interfaceShow

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Operands   This command has the following operands:

slotnumber   For bladed systems only, specify the slot number of the port to display, followed
                      by a slash (/).

portnumber   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, the interface
                      information for all ports is displayed.

When no slot number and port number are specified, this command displays the interface information for
all ports on the switch (including non-E_Ports).

Examples   To display FSPF interface information:

```
switch:user> interfaceshow 1/4

idbP           = 0x1008b3d0

Interface 4 data structure:

nghbP          = 0x1008c668
ifNo           = 4
masterPort     = 4 (self)
defaultCost    = 500
cost           = 500
delay          = 1
lastScn        = 16
lastScnTime    = Apr 02 20:01:44.458
upCount        = 2
lastUpTime     = Apr 02 20:01:44.458
downCount      = 1
lastDownTime   = Apr 02 20:01:09.050
downReason     = 2
iState         = UP

Neighbor 4 data structure:

state          = NB_ST_FULL
lastTransition = Apr 02 20:01:44.512
nghbCap        = 0x0
nghbId         = 100
idbNo          = 4
remPort        = 52
nflags         = 0xf
initCount      = 1
lastInit       = Apr 02 20:01:44.460
firstHlo       = Apr 02 20:01:44.473
nbstFull       = Apr 02 20:01:44.512
delay          = 1
lastScn        = 16
&dbRetransList  = 0x1008c6a0
&lsrRetransList = 0x1008c6c4
&lsrAckList     = 0x1008c6e8
inactTID       = 0x1008c768
helloTID       = 0x1008c7a0
dbRtxTID       = 0x1008c7d8
lsrRtxTID      = 0x1008c848
inactTo        = 80000
helloTo        = 20000
rXmitTo        = 5000
(continued on next page)
```

```
nCmdAcc        = 7
nInvCmd        = 0
nHloIn         = 2
nInvHlo        = 0
nLsuIn         = 2
nLsaIn         = 3
attHloOut      = 2
nHloOut        = 2
attLsuOut      = 3
nLsuOut        = 3
attLsaOut      = 2
nLsaOut        = 2
```

See Also   **nbrStateShow**, **portShow**, **switchShow**

interopMode

Enables or disables Brocade switch interoperability with switches from other manufacturers.

Synopsis   **interopmode** [*mode*]

Availability   admin, switchAdmin

Description   Use this command to enable or disable interoperability mode for individual Brocade switches. This feature enables other manufacturers' switches to be used in a Brocade fabric.

This command must be executed on all Brocade switches in the fabric. Each switch must be rebooted after changing interoperability mode to take effect. In a heterogeneous fabric, several Brocade features are not available in order to provide maximum compatibility between switches.

Brocade domain IDs must be between 97 and 127 for successful connection to other switches. The firmware automatically assigns a valid domain ID, if necessary, when interoperability mode is enabled.

Before enabling interoperability mode, inspect the individual switches and the zoning database for compatibility, disable any features not supported in interoperability mode, and disable the Platform Management functions using the **msPlMgmtDeactivate** command.

When the switch is running in interoperability mode, the following parameters cannot be changed using the **configure** command: Port number zoning, Node WWN zoning, QuickLoop zoning, virtual channel encoded address, and Secure Fabric OS.

When interoperability mode is disabled, configuration parameters are returned to their default states and can be changed using the **configure** command.

Note

When you are in interoperability mode, the only type of zoning supported is port WWN zoning.

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

You must reboot the switch for the change to take effect.

Operands   This command has the following operand:

mode   Specify 1 to enable interoperability mode; specify 0 to disable interoperability mode. This operand is optional; if omitted, this command displays the current value.

If no operand is specified, the current value is displayed.

Examples   To enable interoperability mode:

```
switch:admin> interopmode 1
Please make sure the MS Platform service is disabled.
Please run "msPlMgmtDeactivate" command to disable the Platform service.
The switch effective configuration will be lost when the operating mode
is changed; do you want to continue? (yes, y, no, n): [no] y
Interopmode is enabled.

Note: You MUST reboot this switch for the new change to take effect.
```

interopMode

To disable interoperability mode:

```
switch:admin> interopmode 0
The switch effective configuration will be lost when the operating mode
is changed; do you want to continue? (yes, y, no, n): [no] y
Interopmode is disabled.

Note: You MUST reboot this switch for the new change to take effect.
```

See Also   **configure**

iodReset

Turns off the in-order delivery (IOD) option.

Synopsis   **iodreset**

Availability   admin, switchAdmin

Description   Use this command to turn off the IOD option. The IOD option is turned off by default; however, if the IOD option was turned on using **iodSet**, this command can be used to turn it off again. Disabling IOD allows fast re-routing after a fabric topology change.

This command might cause out-of-order delivery of frames during fabric topology changes.

Operands   none

Examples   To turn off the IOD option:

```
switch:admin> iodreset
switch:admin> iodshow

IOD is not set
```

See Also   **iodSet**, **iodShow**

iodSet

Enables the in-order delivery (IOD) option.

Synopsis   **iodset**

Availability   admin, switchAdmin

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.

The default behavior is for the IOD option to be off.

This command should be used with care, because it can cause a delay in the establishment of a new path when a topology change occurs. Only if there are devices connected to the fabric that do not tolerate occasional out-of-order delivery of frames, should this command be used.

Operands   none

Examples   To turn on the IOD option:

```
switch:admin> iodset
switch:admin> iodshow

IOD is set
```

See Also   **iodReset**, **iodShow**

iodShow

Displays the in-order delivery (IOD) option setting.

Synopsis   **iodshow**

Availability   admin, switchAdmin, user

Description   Use this command to display whether the IOD option is enabled or disabled.

Operands   none

Examples   To display the current setting of the IOD option:

```
switch:admin> iodshow

IOD is not set
```

See Also   **iodReset**, **iodSet**

ipAddrSet

Sets the IP address details for a switch or control processor (CP).

Synopsis   **ipaddrset** [**-cp** *number*][**-sw** *number*]

Availability   admin, switchAdmin

Description   Use this command to set the IP addresses on the switch or CP. If no option is provided on a chassis-based system, the command displays the usage. To set the CP IP address use -cp; to set the switch IP address use -sw. When setting the switch, the command prompts for the Ethernet IP address, Ethernet subnetmask, Fibre Channel IP address, and Fibre Channel subnetmask. When setting the CP, the command prompts for the Ethernet IP address, Ethernet subnetmask, host name, and gateway IP address.

Valid switch and CP values depend on the platform from which the command is being run. For a nonchassis-based switch, the command ignores all operands. The command prompts for the Ethernet IP address, Ethernet subnetmask, Fibre Channel IP address, Fibre Channel subnetmask, and gateway IP address.

Note

This command is not supported on SilkWorm 3016 switches. The Ethernet IP address, Ethernet subnet mask, and gateway IP address should not be configured using local mechanisms on the switch, such as the **ipAddrSet** command or Web Tools. Configure the values using the IBM eServer BladeCenter Management Module. This restriction does not apply to the Fibre Channel IP address and the Fibre Channel subnet mask.

Operands   This command has the following operands on a chassis-based system:

-cp *number*   Valid options include:

0	Sets the Ethernet IP address, Ethernet subnetmask, gateway IP address, and host name of CP0.
1	Sets the Ethernet IP address, Ethernet subnetmask, gateway IP address, and host name of CP1.

-sw *number*   Valid options include:

0	Sets the Ethernet IP address, Ethernet subnetmask, Fibre Channel IP address, and Fibre Channel subnetmask of logical switch 0.
1	Sets the Ethernet IP address, Ethernet subnetmask, Fibre Channel IP address, and Fibre Channel Subnetmask of logical switch 1.

If no option is specified the command displays the usage.

Examples   To set the IP address details for logical switch 1 on a chassis-based system:

```
switch:admin> ipaddrset -sw 1
Ethernet IP Address [192.168.166.148]:
Ethernet Subnetmask [255.255.255.0]:
Fibre Channel IP Address [none]:
Fibre Channel Subnetmask [none]:
Committing configuration...Done.
OK.
```

See Also   **ipAddrShow**

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Note: Enter commands in lowercase only; mixed case is for readability.

ipAddrShow

ipAddrShow

Display the IP address information for a switch or control processor (CP).

Synopsis   **ipaddrshow** [**-cp** *cp_number*] | [**-sw** *sw_number*]

Availability   admin, switchAdmin, user

Description   Use this command to display the IP addresses configured in the system.

The **-cp** option displays the CP IP address and the **-sw** option displays the switch IP addresses. For switches, the command displays the Ethernet IP address, Ethernet subnetmask, Fibre Channel IP address, and Fibre Channel subnetmask. For CPs, the command displays the Ethernet IP address, Ethernet subnetmask, host name, and gateway IP address.

Operands   This command has the following operands:

-cp *cp_number*   For dual-CP systems, specify CP card number to display (0 or 1).

-sw *sw_number*   For dual-domain systems, specify the switch number to display (0 or 1).

If no operands are specified, the command displays all the IP addresses configured in the system. For nonchassis-based switches, this command ignores all operands.

Examples   To display the IP address for logical switch 0:

```
switch:admin> ipaddrshow -sw 0
Ethernet IP Address: 192.168.166.147
Ethernet Subnetmask: 255.255.255.0
Fibre Channel IP Address: 0.0.0.0
Fibre Channel Subnetmask: 0.0.0.0
```

See Also   **ipAddrSet**

islShow

Displays ISL information.

Synopsis   **islshow**

Availability   admin, switchAdmin, user

Description   Use this command to display the current connections and status of the ISL of each port on this switch. The node WWN, domain ID, and switch name to which the ISL is connected, the speed and bandwidth of the connection, and whether this ISL is trunked are displayed.

The connection speed is not applicable to LE_Ports or VE_Ports, and the speed displays as "sp:-------".

Operands   none

Examples   To display the ISL connections for the switch:

```
switch:admin> islshow
1: 33-> 29 10:00:00:60:69:80:4f:84   3 Termonator8  sp:  2.000G bw:  4.000G TRUNK
2: 39->  7 10:00:00:60:69:45:68:04   3 Dazzler_1    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 Stealth_05   sp:  2.000G bw:  2.000G TRUNK
6:162->160 10:00:00:60:69:e2:09:fa   5 fcr_meteor2  sp:-------- bw:  0.001G
7:208-> 16 10:00:00:05:1e:37:02:73  39 sprint170    sp:-------- bw:  0.125G
```

See Also   **switchShow**, **trunkShow**

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|9**

*hex 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.

Note

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 might be a single element or a range of elements indicated by a "-" character and be mixed with individual values.

- Spaces and tab stops are skipped.

- Each item might be proceeded by an optional slot number and "/". 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.

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 will use the default slot 0.

- No list type except for user port lists might 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 **cmiTest** or **turboRamTest** and represents which ports on the current blade (specified with **--slot** *number*) are tested. A list of user ports is used by the higher-level tests, such as **spinSilk** or **crossPortTest**, 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.

The exact type of list required for any input parameter might be determined with the **diagCommandShow** test command. For item list parameters, the parameter type is PT_LIST and the list type is one of those shown in the table.

Table 2-15   Object Descriptions

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 four) ports
CHIPS	Blade	Chips, ASICs within a blade
MINIS	Blade	Mini-switches
SLOTS	Chassis	Slots
INDEX	n.a.	Anything

Operands   none

Examples   Refer to the command in next section for example outputs using **itemList**.

See Also   **backport**, **camTest**, **centralMemoryTest**, **cmemRetentionTest**, **cmiTest**, **crossPortTest**, **diagCommandShow**, **portLoopbackTest**, **portRegTest**, **spinSilk**, **sramRetentionTest**

killTelnet

Terminates an open telnet session.

Synopsis   **killtelnet**

Availability   admin, switchAdmin

Description   Use this command to terminate an open telnet session. The **killTelnet** command is an interactive menu-driven command. Upon invocation, it lists all the current telnet and serial port login sessions. It lists information such as the session number, login name, idle time, IP address of the connection, and timestamp of when the login session was opened. A prompt is then displayed, at which point you can specify the session number of the connection you want to terminate.

> **Note**
>
> The list of open sessions displayed with **killTelnet** includes the user's current session. Make sure you do not kill your own telnet session.

Examples   To terminate an open telnet connection:

```
switch:admin> killtelnet
Collecting login information....Done
                 List of telnet sessions (3 found)
_____
Session No    USER         TTY           IDLE         FROM              LOGIN@
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
    0         root0        ttyS0         1:17m        -                 5:13pm
    1         admin0       pts/0         16.00s       192.168.130.29    6:29pm
    2         admin0       pts/1         3.00s        192.168.130.29    6:31pm
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Enter Session Number to terminate (q to quit) 1
Collecting process information... Done.
      You have opted to terminate the telnet session:-
            logged in as "admin0 ", from "192.168.130.29 "
            since " 6:29pm" and has been inactive for "16.00s ",
            the current command executed being: "-rbash ".
            The device entry is: "pts/0 ".
      This action will effectively kill these process(es):-
                 USER          PID ACCESS COMMAND
/dev/pts/0          root      12868 f....  login
                   root      12869 f....  login
                   root      12877 f....  rbash
Please Ensure (Y/[N]): y
killing session.... Done!
Collecting login information....Done

                 List of telnet sessions (2 found)
_____
Session No    USER         TTY           IDLE         FROM              LOGIN@
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
    0         root0        ttyS0         1:17m        -                 5:13pm
    1         admin0       pts/1         3.00s        192.168.130.29    6:31pm
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Enter Session Number to terminate (q to quit) q
```

See Also   none

licenseAdd

Adds license keys to switch.

Synopsis **licenseadd "***license***"**

Availability admin, switchAdmin

Description Use this command to add license keys to the system.

Some features of the switch and the fabric to which it is connected are optional, licensed products. Without a license installed for such products, their services are not available.

A license key is a string of approximately 16 upper- and lowercase letters and numbers. Case is significant.

The license must be entered into the system exactly as issued. If entered incorrectly, the license might be accepted but the licensed products will not function. After entering the license, use the **licenseShow** command to check for correct function. If no licensed products are shown, then the license is invalid.

After you enter a license, the licensed product is available immediately and the system does not need to be rebooted. An exception to this general handling is that the switch must be rebooted if a fabric license is added to a switch that lacks a fabric license. In this case, the switch must be rebooted to allow the software to recognize the license and initialize itself correctly.

Also, there is special handling required when a trunking license is added to the switch. For a trunking license to become effective, the trunk ports need to be refreshed using the commands **portDisable** and **portEnable** or the switch must be refreshed using the commands **switchDisable** and **switchEnable**.

Operands This command has the following operand:

"*license***"** Specify a license key, in quotation marks. This operand is required.

Examples To add a license key to the switch:

```
switch:admin> licenseadd "aBcDeFGh12345"
adding license key "aBcDeFGh12345"
```

See Also **licenseRemove**, **licenseShow**

licenseHelp

Displays commands used to administer license keys.

Synopsis   **licensehelp**

Availability   admin, switchAdmin, user

Description   Use this command to display a list of the commands used to administer license keys.

Operands   none

Examples   To display license commands:

```
switch:admin> licensehelp

licenseAdd              Add a license to this switch
licenseIdShow           Show system license ID
licenseRemove           Remove a license from this switch
licenseShow             Show current licenses
```

See Also   **licenseAdd**, **licenseIdShow**, **licenseRemove**, **licenseShow**

licenseIdShow

Displays system license ID.

Synopsis　　**licenseidshow**

Availability　　admin, switchAdmin, user

Description　　Use this command to display the license ID of the system.

Some features of the switch and the fabric are optional, licensed products. Without a license installed for such products, the services provided by these features are not available.

For dual-domain systems, a single license enables both logical switches to use these products. The chassis is assigned a license ID from which a license is generated. Such licenses are locked and are only functional on the specific system for which they were issued.

This command displays to standard output the system license ID used for both generating and validating licenses on the system. The license ID format is eight pairs of hexadecimal values, separated by colons. Each hexadecimal value is between 00 (0) and FF (255).

Note

While the format of this identifier might be similar or even identical to other identifiers in the system, no inferences should be made about the relationships between them as they are subject to change independently of one another.

Operands　　none

Examples　　To display the license ID:

```
switch:admin> licenseidshow
a4:f8:69:33:22:00:ea:18
```

See Also　　**licenseAdd**, **licenseHelp**, **licenseRemove**, **licenseShow**

licenseRemove

Removes the license key from the system.

Synopsis **licenseremove "***license***"**

Availability admin, switchAdmin

Description Use this command to remove an existing license key from a switch. The existing license key must be entered exactly as shown by **licenseShow**, including case.

When the key has been entered, use the **licenseShow** command to verify that the key has been removed and the licensed product uninstalled.

After removing a license key, the switch must be rebooted. With no license key, **licenseShow** displays "No licenses."

Operands The following operand is required:

"*license***"** Specify the license key, in quotation marks. This operand is required.

Examples To remove a license key from the switch:

```
switch:admin> licenseremove "bQebzbRdScRfc0iK"
removing license key "bQebzbRdScRfc0iK"
```

See Also **licenseAdd**, **licenseHelp**, **licenseIdShow**, **licenseShow**

licenseShow

Displays current license keys.

Synopsis **licenseshow**

Availability admin, switchAdmin, user

Description Use this command to display current license keys, along with a list of licensed products enabled by these keys. The message "No license installed on this switch" is displayed when no licenses are installed.

Operands none

Examples To display the installed license keys on a switch:

```
switch:admin> licenseshow
bQebzbRdScRfc0iK:
    Web license
    Zoning license
SybbzQQ9edTzcc0X:
    Fabric license
```

See Also **licenseAdd**, **licenseHelp**, **licenseIdShow**, **licenseRemove**

linkCost

Sets or displays the fabric shortest path first (FSPF) cost of a link.

Synopsis   **linkcost** [*slotnumber*/][*portnumber*] [*cost*]

Availability   admin, switchAdmin

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 FSPF protocol compares the cost of various paths between a source switch and a destination switch by adding the costs of all the ISL's along each path. FSPF chooses the path with minimum cost. If multiple paths exist with the same minimum cost, FSPF employs load sharing over these paths.

Every ISL has a default cost that is inversely proportional to its bandwidth. For a 1-Gbit/sec ISL, the default cost is 1000. For a 2-Gbit/sec ISL, the default cost is 500. This simple algorithm is not effective when dealing with trunking ISLs greater than 2 Gbit/sec and less than 1-Gbit/sec bandwidths. Table 2-16 lists the link cost defaults.

Table 2-16   Link Cost Defaults

Link type	Link cost
<1-Gbit/sec ISL	2000 - (bandwidth of the ISL in Mbit/sec)
1-Gbit/sec ISL	1000
2-Gbit/sec ISL	500
>2-Gbit/sec trunks	500
4-Gbit/sec ISL	500
10-Gbit/sec ISL	500

This command can be used to set a non-default, "static" cost for any port.

When executed without arguments, this command displays the current cost of each port on the switch, even those are not ISL's. Active ISLs have an additional suffix of E_PORT attached to their interface number. If the port has a static cost assigned to it, then the suffix of STATIC is appended to the link cost. In this case, only the current link cost is displayed.

Use **interfaceShow** to display both the default and current link costs.

To remove a static cost from the database, execute this command with a cost of zero on the desired port. This port will then revert to its default link cost.

Note

Valid cost values are 0 to 65,535. Assigning a value outside this range displays an error message and rejects the value.

Operands   This command has the following operands:

slotnumber   For bladed systems only, specify the slot number of the port to display, followed by a slash (/).

portnumber   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, the cost of all ports is displayed.

cost   Specify the new cost of the link connected to the specified port number. This operand is optional.

If no operands are specified, the current values for all ports on the (logical) switch are displayed.

Examples   To display the cost of a link and set that cost:

```
switch:admin> linkcost
Slot    Interface      Cost
-----------------------------------
  2       0              500 (STATIC)
  2       1             1000
  2       2              500 (STATIC)
  2       3              200 (STATIC)
  2       4             1000
  2       5             1000
  2       6             1000
  2       7             1000
  2       8             1000
  2       9             1000
  2      10             1000
  2      11 (E_PORT)    2000 (STATIC)
  2      12             1000
  2      13             1000
  2      14             1000
  2      15             1000

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

switch:admin> linkcost 2/4 500
switch:admin> linkcost 2/4

Interface2/4           Cost   500 (STATIC)
switch:admin> linkcost 2/4 0
switch:admin> linkcost 2/4

Interface2/4           Cost  1000
```

See Also   **interfaceShow**, **lsDbShow**, **topologyShow**, **uRouteShow**

Note: Enter commands in lowercase only; mixed case is for readability.

login

Logs in as new user.

Synopsis   **login**

Availability   admin, switchAdmin, user

Description   Use this command to log in to the switch with another user name and password, without first logging out from the original session. If the user was originally connected using a telnet or rlogin session, that session is left open.

This command allows you to access commands that you cannot access at your current user level.

Operands   none

Examples   To log in as admin from the login user:

```
switch:user> login
login: admin
Password:xxxxxx
```

See Also   logout

logout

Logs out from a telnet, rlogin, or serial port session.

Synopsis   **logout**

Availability   admin, switchAdmin, user

Description   Use this command to log out from a telnet, rlogin, or serial port session. Telnet and rlogin connections are closed and the serial port returns to the "login:" prompt.

The **exit** command is accepted as a synonym for **logout**, as is **Ctrl-D** at the beginning of a line.

Note

If you close a telnet or sectelnet session by clicking the "**X**" in the upper-right corner, the window closes but the session stays open until it times out. Trying to open another session before the timeout has completed causes an error message to display.

Operands   none

Examples   To log out from an rlogin session:

```
switch:admin> logout
Connection to host lost.
```

See Also   **login**

loopPortTest

Functional test of L_Port M->M path on a loop.

Synopsis   **loopporttest** [**-nframes** *count*][**-ports** *itemlist*][**-seed** *payload_pattern*][**-width** *pattern_width*]

Availability   admin

Description   Use this command to verify the operation of the switch by sending frames from port M's transmitter and looping the frames back through an external fiber cable, including all the devices on the loop, into port M's receiver. This exercises all the switch components, from the main board, to the SFP, to the fiber cable, to the SFPs (of the devices and the switch), and back to the main board.

The cables and SFPs connected should be of the same technology, meaning that a short wavelength SFPed (switch) port is connected to another short wavelength SFPed (device) port through a short wavelength cable; and a long wavelength port is connected to a long wavelength port; and a copper port is connected to a copper port.

Only one frame is transmitted and received at any one time. The port LEDs flicker green rapidly while the test is running.

The test method is as follows:

1.   Determine which ports are L_Ports.

2.   Enable ports for cabled loopback mode.

3.   Create a frame F of data size (1024 bytes).

4.   Transmit frame F through port M, with D_ID to the FL_Port (AL_PA = 0).

5.   Pick up the frame from port M, the FL_Port.

6.   Check if any of the eight statistic error counters are nonzero: ENC_in, CRC_err, TruncFrm, FrmTooLong, BadEOF, Enc_out, BadOrdSet, DiscC3.

7.   Check if the transmit, receive, or class 3 receiver counters are stuck at some value.

8.   Check if the number of frames transmitted is not equal to the number of frames received.

9.   Repeat Steps 3 through 8 for all ports present until either the number of frames requested is reached or all ports are marked bad.

You can specify a payload pattern to be used when executing this test. If the pattern is not specified, then at every 30 passes, a different data type is used to generate a new pattern to create the frame. The data pattern is generated based on each data type. Some data types might generate different data patterns on every pass. The data types are repeated every 210 pass.

Note

The use of nondefault operands for diagnostics commands is recommended for advanced users and technical support only.

This command is supported only on SilkWorm 200E, 3014, 3016, 3250, 3850, 3900, 4012, 4100, 24000, and 48000 platforms; use **portTest** instead.

Operands   This command has the following operands:

-nframes *count*   Specify the number of times (or number of frames per port) to execute this test.

The default value is 10. The maximum value is 2,147,483,647, which is (2 ^ 31 - 1).

-ports *itemlist*   Specify a list of user ports to test. By default, all user ports in the current slot are tested. Refer to **itemList** for more information on selecting ports.

-seed *payload_pattern*

Specify the seed pattern of the test packets. The data types are:

1	CSPAT	0x7e, 0x7e, 0x7e, 0x7e, ...
2	BYTE_LFSR	0x69, 0x01, 0x02, 0x05, ...
3	CHALF_SQ	0x4a, 0x4a, 0x4a, 0x4a, ...
4	QUAD_NOT	0x00, 0xff, 0x00, 0xff, ...
5	CQTR_SQ	0x78, 0x78, 0x78, 0x78, ...
6	CRPAT	0xbc, 0xbc, 0x23, 0x47, ...
7	RANDOM	0x25, 0x7f, 0x6e, 0x9a, ...

-width *pattern_width*

Specify the width of the test pattern. Valid values include:

1	byte (default)
2	word
4	quad

This operand is optional.

Examples   To perform a loopback port test:

```
switch:admin> loopporttest -ports 1/0-1/15

Running Loop Port Test .......
Test Complete: "loopporttest" Pass 10 of 10
Duration 0 hr, 0 min & 1 sec (0:0:0:127).
passed.
```

See Also   **camTest**, **centralMemoryTest**, **cmemRetentionTest**, **cmiTest**, **crossPortTest**, **itemList**, **portLoopbackTest**, **portRegTest**, **spinSilk**, **sramRetentionTest**

lsanZoneShow

Displays logical SAN zone information.

Synopsis   **lsanzoneshow** [**-s**][**-f** *fabricid*][**-w** *wwn*][**-z** *zonename*]

Availability   admin, switchAdmin, user

Description   Use this command to display the interfabric 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 interfabric device import and export policy. The LSAN zones are established by zoning administration in each EX_Port-attached fabrics and backbone fabrics. Interfabric device sharing is allowed between two devices if the LSAN zones defined in their respective fabrics both allow the two devices to communicate: for instance, 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.

Operands   This command has the following operands:

-s   Displays state information for the device. Valid states include:

Exist   Device exists in this fabric (the fabric of the zone entry).

Imported

Device has been imported (proxy created) into this fabric.

Configured

Device is configured to be in an LSAN, but the device is not imported nor exists in 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.

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#
```

See Also   **fcrFabricShow**, **fcrPhyDevShow**, **fcrProxyDevShow**, **fcrRouteShow**, **switchShow**

2

Note: Enter commands in lowercase only; mixed case is for readability.

lsDbShow

lsDbShow

Displays the Fabric Shortest Path First (FSPF) link state database.

Synopsis   **lsdbshow** [*domain*]

Availability   admin, switchAdmin, user

Description   Use this command to display an FSPF link state database record for switches in the fabric, or one domain within it.

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.

The fields described in the table display.

Table 2-17   lsDbShow Display Fields

Field	Description
Domain	Domain number described by this LSR. A (self) keyword after the domain number 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.
uOutIfs	Internal variable.
uPathCost	Internal variable.
uOldHopCount	Internal variable.
uHopsFromRoot	Internal variable.
mOutIfs	Internal variable.
parent	Internal variable.
mPathCost	Internal variable.
mHopsFromRoot	Internal variable.
lsAge	Age, in seconds, of this LSR. An LSR is removed from the database when its age exceeds 3,600 seconds.

Table 2-17 lsDbShow Display Fields (Continued)

Field	Description
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 number.
advertiser	ID (domain number) 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 number 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 1 Gbit/sec link is 1,000.
costCnt	Always 0.
type	Always 1.

Operands   This command has the following operand:

domain   Specify the domain number of the LSR to be displayed. This operand is optional; if omitted, the entire link state database is displayed.

Examples   To display the link state record for a switch:

```
switch:admin> lsdbshow 1

Domain = 1 (self), Link State Database Entry pointer = 0x1004d430
lsrP            = 0x10053d18
earlyAccLSRs    = 0
ignoredLSRs     = 0
lastIgnored     = Never
installTime     = Apr 02 22:25:30.159
lseFlags        = 0xa
uOutIfsP[0]     = 0x00000000
uOutIfsP[1]     = 0x00000000
uPathCost       = 0
uOldHopCount    = 0
uHopsFromRoot   = 0
mOutIfsP[0]     = 0x00010000
mOutIfsP[1]     = 0x00000000
parent          = 0xb5
mPathCost       = 0
mHopsFromRoot   = 0

Link State Record:
Link State Record pointer = 0x10053d18
lsAge           = 16
reserved        = 0
type            = 1
options         = 0x0
lsId            = 1
advertiser      = 1
incarn          = 0x80000014
length          = 284
chksum          = 0x8453
linkCnt = 16,    flags = 0x0
LinkId =   2, out port =  16, rem port =  48, cost = 500, costCnt = 0, type = 1
LinkId =   2, out port =  17, rem port =  49, cost = 500, costCnt = 0, type = 1
LinkId =   2, out port =  18, rem port =  50, cost = 500, costCnt = 0, type = 1
LinkId =   2, out port =  19, rem port =  51, cost = 500, costCnt = 0, type = 1
LinkId =   2, out port =  24, rem port =  56, cost = 500, costCnt = 0, type = 1
LinkId =   2, out port =  25, rem port =  57, cost = 500, costCnt = 0, type = 1
LinkId =   2, out port =  26, rem port =  58, cost = 500, costCnt = 0, type = 1
LinkId =   2, out port =  27, rem port =  59, cost = 500, costCnt = 0, type = 1
LinkId =   2, out port =  32, rem port =   0, cost = 500, costCnt = 0, type = 1
LinkId =   2, out port =  33, rem port =   1, cost = 500, costCnt = 0, type = 1
LinkId =   2, out port =  34, rem port =   2, cost = 500, costCnt = 0, type = 1
LinkId =   2, out port =  35, rem port =   3, cost = 500, costCnt = 0, type = 1
LinkId =   2, out port =  44, rem port =  12, cost = 500, costCnt = 0, type = 1
LinkId =   2, out port =  45, rem port =  13, cost = 500, costCnt = 0, type = 1
LinkId =   2, out port =  46, rem port =  14, cost = 500, costCnt = 0, type = 1
LinkId =   2, out port =  47, rem port =  15, cost = 500, costCnt = 0, type = 1

The local switch has sixteen links in NB_ST_FULL state, all of them are
connected to switch 2.
```

See Also   **interfaceShow**, **nbrStateShow**

memShow

Displays the amounts of free and used memory in a switch.

Synopsis   **memshow** [**-b** | **-k** | **-m**]

Availability   admin, switchAdmin, user

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.

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   **saveCore**

miniCycle

Runs a functional test of internal and external transmit and receive paths at full speed.

Synopsis   **minicycle** [**--slot** *slotnumber*][**-nmegs** *count*][**-lb_mode** *mode*][**-spd_mode** *mode*][**-ports** *itemlist*]

Availability   admin, switchAdmin

Description   Use this command to verify the intended functional operation of an ASIC pair (miniswitch) at the maximum or selected speed by setting up the routing hardware so that frames received by port M are retransmitted by way of port N. Likewise, frames received by port N are retransmitted by way of port M. Each port M sends two frames to its partner, port N.

This test is run as a series of eight path tests. Each port on the ASIC pair is exchanging frames with one port on the adjacent ASIC in the same miniswitch. At the end of a path test, the frames are captured and the routing is changed so that each port exchanges frames with the next port on the adjacent ASIC of the same miniswitch.

Unlike implementation of the **spinSilk** command, a port is only exchanging frames with one other port at a time under the **miniCycle** command. Just as with **spinSilk**, all ports are active and exchanging frames simultaneously with **miniCycle**.

The path number being tested determines the partner port N for each port M (bold and italicized in the following example):

```
path 0: 0-8, 1-9, 2-10, 3-11, 4-12, 5-13, 6-14, 7-15
path 1: 7-8, 0-9, 1-10, 2-11, 3-12, 4-13, 5-14, 6-15
path 2: 6-8, 7-9, 0-10, 1-11, 2-12, 3-13, 4-14, 5-15
path 3: 5-8, 6-9, 7-10, 0-11, 1-12, 2-13, 3-14, 4-15
path 4: 4-8, 5-9, 6-10, 7-11, 0-12, 1-13, 2-14, 3-15
path 5: 3-8, 4-9, 5-10, 6-11, 7-12, 0-13, 1-14, 2-15
path 6: 2-8, 3-9, 4-10, 5-11, 6-12, 7-13, 0-14, 1-15
path 7: 1-8, 2-9, 3-10, 4-11, 5-12, 6-13, 7-14, 0-15
```

Note

The port numbers are relative to the ASIC pair. This test does not route frames from one ASIC-pair to another.

Ports cabled to other ports fail if port loopback mode is selected, and the port must have media and loopback plugs installed. For best coverage, you should use self-loopback plugs and port loopback mode (-lb_mode 1), as each port's external connectivity will be tested.

The frames are continuously transmitted and received in all ports in parallel. The port LEDs flicker green rapidly while the test runs.

The path test method is as follows:

1. Clear port statistics and error counters.

2. Enable ports for specified self-loopback mode.

3. Configure up the routing table so that when port M receives frames, the frames are routed back to the partner port N and vice versa.

4. Transmit two frames by way of port M and two frames by way of port N. The following four patterns will be used for the four frames, one pattern each:

    •   1000 bytes of CSPAT

- 480 bytes of RDRAM_PAT

- 2112 bytes of BYTE_LFSR

- 200 bytes of RANDOM

5. Periodically check status:

   a. Each port has not died.

   b. Each port's frames-transmitted counter is still incrementing.

   c. Each port's statistic error counters are nonzero:

      ```
      ENC_in, CRC_err, TruncFrm, FrmTooLong, BadEOF, Enc_out, BadOrdSet, DiscC3
      ```

6. Until one of the following is met:

   - The number of frames requested is met on all selected ports.

   - All ports are eventually marked bad.

   - The user aborts the procedure.

The path test is repeated for each path, unless it is aborted by a keyboard interrupt. The data is not read and checked as was done in **portLoopbackTest** and **crossPortTest**. There is no CPU intervention during a path test besides the periodic checks of the hardware counters. At the end of a path test, all statistics and routes are reset for the next path test.

An example of the data used is as follows:

```
CSPAT:       0x7e, 0x7e, 0x7e, 0x7e, ...
RDRAM_PAT:   0xff, 0x00, 0xff, 0x00, ...
BYTE_LFSR:   0x69, 0x01, 0x02, 0x05, ...
RANDOM:      0x25, 0x7f, 0x6e, 0x9a, ...
```

Because this test includes the media and the fiber cable loopback plug in its test path, its results combined with the results of **portLoopbackTest** and **spinSilk** can be used to determine which components of the switch are faulty.

Operands   The following operands are optional:

--slot *slotnumber*   Specifies the slot number on which the diagnostic operate. The ports specified are relative to this slot number. The default is set to 0 and designed to operate on fixed-port-count products.

-nmegs *count*   Specifies the number of million frames to send per path test. The path test will progress until the specified number of frames has been transmitted on each port. The default value for count is 1, so the total number of frames sent will be at least 8 million (1 million frames * 8 paths).

-lb_mode *mode*   Selects the loopback point for the test. By default, **miniCycle** uses external (SERDES) loopback.

   1   Port Loopback (loopback plugs)

   2   External (SERDES) loopback

   5   Internal (parallel) loopback

   7   Backend bypass and port loopback

   8   Backend bypass and SERDES loopback

   9   Backend bypass and internal loopback

-spd_mode *mode* Specifies the speed mode for the test. This parameter is only used for Bloom and Condor ASIC-based products, for which this parameter controls the speed at which each port operates. For 1 Gbit/sec-only products, this parameter is ignored. The exact operation of modes 5 through 8 depends on the loopback mode selected. When speed modes 5 through 8 are used with cables, they must be connected EVEN->ODD or the test fails.

0 Run test at 1 Gbit/sec, 2 Gbit/sec, and 4 Gbit/sec (default).

1 Set all port speeds to lock at 1 Gbit/sec.

2 Set all port speeds to lock at 2 Gbit/sec.

4 Set all port speeds to lock at 4 Gbit/sec.

For **-lb_mode** set to 1, the following speed modes are available to test the speed negotiation.

3 Set all even ports' speed for auto-negotiate. Set all odd ports' speed for 1 Gbit/sec.

4 Set all even ports' speed for auto-negotiate. Set all odd ports' speed for 2 Gbit/sec.

5 Set all odd ports' speed for auto-negotiate. Set all even ports' speed for 1 Gbit/sec.

6 Set all odd ports' speed for auto-negotiate. Set all even ports' speed for 2 Gbit/sec.

For **-lb_mode** set to 2, the following speed modes are available to test FIFO underrun.

3,5 Set all even ports' speed for 2 Gbit/sec. Set all odd ports' speed for 1 Gbit/sec.

4,6 Set all even ports' speed for 1 Gbit/sec. Set all odd ports' speed for 2 Gbit/sec.

-ports *itemlist* Specifies a list of blade ports to test. By default, all the blade ports in the specified slot (**--slot**) are used. Refer to itemlist for further details. If all ports in the ASIC pair are not specified, only paths between selected ports are tested.

```
ASIC-pair 0: -ports 0-15
ASIC-pair 1: -ports 16-31
ASIC-pair 2: -ports 32-47
ASIC-pair 3: -ports 48-63
```

Examples   To run a functional test on slot 1 using external (SERDES) loopback:

```
switch:admin> minicycle --slot 1 -lb_mode 2

Running minicycle ..............
One moment please ...
Path 0 ... Spinning ...
Path 1 ... Spinning ...
Path 2 ... Spinning ...
Path 3 ... Spinning ...
Path 4 ... Spinning ...
Path 5 ... Spinning ...
Path 6 ... Spinning ...
Path 7 ... Spinning ...
Test Complete: minicycle Pass 1 of 1
Duration 0 hr, 1 min & 4 sec (0:1:4:409).
 passed.
```

To run a functional test on ports 0, 1, 2, and 8 using port loopback:

```
switch:admin> minicycle -ports 0,1,2,8 -lb_mode 1
Back Plane Loop Back mode is ON.

Running mini Cycle ............
One moment please ...
Path 0 ... Spinning ...
Path 1 ... skipped.
Path 2 ... skipped.
Path 3 ... skipped.
Path 4 ... skipped.
Path 5 ... skipped.
Path 6 ... Spinning ...
Path 7 ... Spinning ...
Test Complete: "minicycle" Pass 1 of 1
Duration 0 hr, 0 min & 23 sec (0:0:23:100).
 passed.
```

Diagnostics   When it detects failure(s), the test reports one or more of the following error messages:

```
DATA
EPI1_STATUS_ERR
ERR_STATS_2LONG
ERR_STATS_BADEOF
ERR_STATS_BADOS
ERR_STATS_C3DISC
ERR_STATS_CRC
ERR_STATS_ENCIN
ERR_STATS_ENCOUT
ERR_STATS_TRUNC
ERR_STAT_2LONG
ERR_STAT_BADEOF
ERR_STAT_BADOS
ERR_STAT_C3DISC
ERR_STAT_CRC
ERR_STAT_ENCIN
ERR_STAT_ENCOUT
ERR_STAT_TRUNC
FDET_PERR
FINISH_MSG_ERR
FTPRT_STATUS_ERR
INIT
```

Note: Enter commands in lowercase only; mixed case is for readability.

```
LESSN_STATUS_ERR
MBUF_STATE_ERR
MBUF_STATUS_ERR
NO_SEGMENT
PORT_ABSENT
PORT_DIED
PORT_ENABLE
PORT_M2M
PORT_STOPPED
PORT_WRONG
RXQ_FRAME_ERR
RXQ_RAM_PERR
STATS
STATS_C3FRX
STATS_FRX
STATS_FTX
TIMEOUT
XMIT
```

Refer to the *Fabric OS System Error Message Reference Manual* for more information.

See Also   **backport**, **camTest**, **centralMemoryTest**, **cmemRetentionTest**, **cmiTest**, **crossPortTest**, **itemList**, **portLoopbackTest**, **portRegTest**, **spinSilk**, **sramRetentionTest**

minisPropShow

Displays ASIC pair properties.

Synopsis **minispropshow** [*slotnumber/*]*asicpair* | [**--slot** *slotnumber*] **-all**

Availability admin, switchAdmin, user

Description Use this command to display the ASIC pair properties.

Note

This command is not intended for normal user operation and is available to provide supplemental information during system debug.

Operands The operands are as follows:

slotnumber/asicpair Specifies the index of the ASIC pair within the specified blade to be displayed. If *slotnumber* is not provided, the current slot is assumed.

--slot *slotnumber* **-all** Specifies the slot on which to operate. The default is 0 and designed to operate on fixed-port-count products.

Examples To display all index 1 ASIC pair properties:

```
switch:user> minispropshow 1 -all

slot: 1, miniS: 0
[2/16]
<0,1657/0001 1,1657/0001>
(be,5) (be,4) (be,3) (be,2) (be,1) (be,0) (bi,55) (bi,54)
(bi,25) (bi,24) (bi,41) (bi,40) (fe,3) (fe,2) (fe,1) (fe,0)

slot: 1, miniS: 1
[2/16]
<2,1657/0001 3,1657/0001>
(be,11) (be,10) (be,9) (be,8) (be,7) (be,6) (bi,39) (bi,38)
(bi,9) (bi,8) (bi,57) (bi,56) (fe,7) (fe,6) (fe,5) (fe,4)

slot: 1, miniS: 2
[2/16]
<4,1657/0001 5,1657/0001>
(be,17) (be,16) (be,15) (be,14) (be,13) (be,12) (bi,23) (bi,22)
(bi,11) (bi,10) (bi,59) (bi,58) (fe,11) (fe,10) (fe,9) (fe,8)

slot: 1, miniS: 3
[2/16]
<6,1657/0001 7,1657/0001>
(be,23) (be,22) (be,21) (be,20) (be,19) (be,18) (bi,7) (bi,6)
(bi,27) (bi,26) (bi,43) (bi,42) (fe,15) (fe,14) (fe,13) (fe,12)
```

See Also none

msCapabilityShow

Displays the Management Server (MS) capabilities.

Synopsis **mscapabilityshow**

Availability admin, switchAdmin, user

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.

Note

Reliable commit service (RCS) is a fabric-wide capability and is supported only if all the switches in the fabric support RCS.

Operands none

Examples To display Management Server capability on a fabric:

```
switch1:user> mscapabilityshow
        Switch WWN        Capability  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.
                Others: Reserved.

Done.
```

See Also **msConfigure**, **msPlMgmtActivate**, **msPlMgmtDeactivate**, **msTdDisable**, **msTdEnable**, **msTdReadConfig**

msConfigure

Configures the Management Server (MS) access control list (ACL).

Synopsis   **msconfigure**

Availability   admin, switchAdmin

Description   Use this command to configure the MS ACL. MS allows a SAN management application to retrieve and administer the fabric and interconnect elements, such as switches. This application is located at the Fibre Channel well-known address, 0xFFFFFA.

If the MS ACL is empty (default), MS is available to all systems connected to the fabric. By populating the MS ACL with one or more World Wide Names (WWNs), access to MS is restricted to those WWNs only.

This command is interactive and provides the user with the following menu of choices:

- 0   Done (with the administration)
- 1   Display the ACL
- 2   Add member based on its port/node WWN
- 3   Delete member based on its port/node WWN

If the MS ACL is changed by adding or deleting WWNs, an additional prompt is given asking if the MS ACL should be saved to nonvolatile storage. The saved MS ACL becomes effective upon reboot.

The MS ACL is implemented on a per-switch basis and should be configured on the switch to which the management application is directly connected.

Note

When security is enabled, the MS ACL is not used. In such a case, access to MS is controlled by security by way of the MS_POLICY configuration.

Operands   none

Examples   To display the MS ACL:

```
switch:admin> msconfigure

0       Done
1       Display the access list
2       Add member based on its Port/Node WWN
3       Delete member based on its Port/Node WWN
select : (0..3) [1] 1

MS Access List consists of (5): {
20:01:00:60:69:00:60:10
20:02:00:60:69:00:60:10
20:03:00:60:69:00:60:10
20:02:00:60:69:00:60:03
20:02:00:60:69:00:60:15

0       Done
1       Display the access list
2       Add member based on its Port/Node WWN
3       Delete member based on its Port/Node WWN
select : (0..3) [1] 0

done ...
```

See Also   **msCapabilityShow**, **msPlatShow**, **msPlClearDB**, **msPlMgmtActivate**, **msPlMgmtDeactivate**, **msTdDisable**, **msTdEnable**, **msTdReadConfig**, **secPolicyShow**

msPlatShow

Displays the Management Server (MS) platform database.

Synopsis   **msplatshow**

Availability   admin, switchAdmin, user

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.

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**, **msConfigure**, **msPlatShowDBCB**, **msPlClearDB**, **msPlMgmtActivate**, **msPlMgmtDeactivate**

msPlatShowDBCB

Displays the Management Server (MS) platform service database control block.

Synopsis **msplatshowdbcb**

Availability admin, switchAdmin, user

Description Use this command to display the control block fields associated with the platform database.

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**, **msConfigure**, **msPlatShow**, **msPlClearDB**, **msPlMgmtActivate**, **msPlMgmtDeactivate**

msPlClearDB

Clears the Management Server (MS) platform database on all switches in the fabric.

Synopsis   **msplcleardb**

Availability   admin, switchAdmin

Description   Use this command to clear the MS platform database on all switches in the fabric. Because this operation is nonrecoverable, it should not be used unless it is intended to resolve a database conflict between two joining fabrics or to establish an entirely new fabric with an empty database.

> **Note**
>
> When security is enabled, this command can be issued only from the primary FCS switch.

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**, **msConfigure**, **msPlatShow**, **msPlatShowDBCB**, **msPlMgmtActivate**, **msPlMgmtDeactivate**

msPlMgmtActivate

Activates the Management Server (MS) platform service.

Synopsis   **msplmgmtactivate**

Availability   admin, switchAdmin

Description   Use this command to activate the MS platform service in the entire fabric. This command attempts to activate the MS platform service for each switch in the fabric. If successful, the change takes effect immediately and commits to the change to nonvolatile storage of each switch. After successful activation, all switches in the fabric boot with the MS platform service enabled.

By default, the MS platform service is disabled.

Before issuing, run the **msCapabilityShow** command to verify all switches in the fabric support MS platform service; otherwise, the command fails.

Note

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

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**, **msPlClearDB**, **msPlMgmtDeactivate**

msPlMgmtDeactivate

Deactivates the Management Server (MS) platform service.

Synopsis   **msplmgmtdeactivate**

Availability   admin, switchAdmin

Description   Use this command to deactivate the MS platform service in the entire fabric. This command deactivates the MS platform service for each switch in the fabric and commits the change to nonvolatile storage. After a successful deactivation, all switches in the fabric boot with the MS platform service disabled.

> **Note**
>
> When security is enabled, this command can be issued only from the primary FCS switch.

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**, **msConfigure**, **msPlatShow**, **msPlatShowDBCB**, **msPlClearDB**, **msPlMgmtActivate**

msTdDisable

Disables the Management Server (MS) topology discovery service.

Synopsis   **mstddisable** ["ALL"]

Availability   admin, switchAdmin

Description   Use this command to disable the management server topology discovery service of a local switch or an entire fabric. This change takes effect immediately and commits to the configuration database for all switches; therefore, persistent across power cycles and reboots.

If the **"ALL"** operand is used, this command attempts to disable the topology discovery service on all switches in the fabric.

Note

When security is enabled, and using the **"ALL"** operand, this command can be issued only from the primary FCS switch.

Operands   The optional operand is as follows:

"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:

```
switch: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"**]

Availability   admin, switchAdmin

Description   Use this command to enable the MS topology discovery service on a local switch or on the entire fabric. This change takes effect immediately and commits to the configuration database for all affected switches.

If the operand **"ALL"** is used, this command attempts to enable the MS topology discovery service on all switches in the fabric.

Note

When security is enabled, and using the **"ALL"** operand, this command can be issued only from the primary FCS switch.

Operands   This command has the following operand:

"ALL"   Enables the MS topology discovery service throughout the entire fabric. This operand is optional.

Examples   To enable the MS topology discovery service on the local switch only:

```
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 the 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 Management Server (MS) topology discovery service.

Synopsis   **mstdreadconfig**

Availability   admin, switchAdmin, user

Description   Use this command to check whether or not the management server topology discovery service is enabled.

Operands   none

Examples   To display the status of the topology discovery service:

```
switch:admin> mstdreadconfig

*MS Topology Discovery is enabled.
```

See Also   **msCapabilityShow**, **msConfigure**, **msPlMgmtActivate**, **msPlMgmtDeactivate**, **msTdDisable**, **msTdEnable**

myId

Displays the current login session details.

Synopsis **myid**

Availability admin, switchAdmin

Description Use this command to display the status of the system and the login session details.

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's mode (Active, Standby, or Unknown)

- The current system status (Redundant, Non-Redundant, or Unknown)

Operands none

Examples To display current login information:

```
switch:admin> myid
 Current Switch: switch
 Session Detail: switch (123.123.123.123) Active  Redundant
```

See Also version

nbrStateShow

Displays FSPF neighbor's state.

Synopsis   **nbrstateshow** [*slotnumber*/][*portnumber*]

Availability   admin, switchAdmin, user

Description   Use this command to display information about neighbors to the local switch, or information about a specific neighbor if a port number is supplied. FSPF defines a neighbor as a remote E_Port interface that is directly attached to the local switch. The following fields display:

Local Domain ID	Domain number of local switch.
Local Port	E_Port (interface) on local switch.
Domain	Domain number of remote switch.
Remote Port	E_Port (interface) on remote switch.
State	State of the neighbor. The E_Port is used to route frames only if the neighbor is in NB_ST_FULL state.

Operands   This command has the following operands:

slotnumber   For bladed systems only, specify the slot number of the port to display, followed by a slash (/).

portnumber   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.

Examples   To display information about switches directly connected to the local switch:

```
switch:user> nbrstateshow 2/0

Local Domain ID: 1

Local Port     Domain     Remote Port     State
--------------------------------------------------------
    16           2            48          NB_ST_FULL
```

See Also   **interfaceShow**

nbrStatsClear

Resets FSPF interface counters.

Synopsis **nbrstatsclear** [*slotnumber*/][*portnumber*]

Availability admin, switchAdmin

Description Use this command to reset the counters of FSPF frames transmitted and received on each interswitch link (ISL) or a specific ISL. These counters display using the using the **interfaceShow** command.

Use this command without operands to reset counters on all interfaces.

Operands This command has the following operands:

slotnumber   For bladed systems only, specify the slot number of the port to display, followed by a slash (/).

portnumber   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.

When this command is specified with no operand, the statistics are cleared for all interfaces.

Examples   To reset 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

switch:admin> nbrstatsclear 1/0
switch:admin> interfaceshow 1/0

idbP            = 0x10050a38

Interface 0 data structure:

nghbP           = 0x1004ce68
ifNo            = 0
masterPort      = 0 (self)
defaultCost     = 500
cost            = 500

(output truncated)

nCmdAcc         = 0
nInvCmd         = 0
nHloIn          = 0
nInvHlo         = 0
nLsuIn          = 0
nLsaIn          = 0
attHloOut       = 0
nHloOut         = 0
attLsuOut       = 0
nLsuOut         = 0
attLsaOut       = 0
nLsaOut         = 0
```

See Also   **interfaceShow**, **portShow**, **switchShow**

nodeFind

Displays all the device Name Server (NS) entries matching a given WWN, device PID, or alias.

Synopsis   **nodefind "WWN | PID | ALIAS"**

Availability   admin, switchAdmin, user

Description   Use this command to display the NS information for all the devices in the fabric that have either a port World Wide Name (WWN) or a node WWN matching with the given WWN; or have a device PID matching with the given PID; or have a defined configuration alias to which the device belongs matching with the given alias.

The message "No device is found" displays if there is no device matching the given WWN, PID, or alias.

Operands   This command has the following operand:

WWN | PID | ALIAS Specify the WWN, device PID, or alias that can be used to match the real device's data. WWN must have eight colon-separated fields, each consisting of one or two hexadecimal digits between 0 and ff, with no spaces. PID must begin with 0x or 0X; otherwise, it interprets as an alias.

Examples   To display all the device information matching the given data:

```
switch:admin> nodefind a320
Local:
 Type Pid    COS     PortName                    NodeName               SCR
 NL   0314d9;      3;22:00:00:04:cf:5d:dc:2d;20:00:00:04:cf:5d:dc:2d; 0
    FC4s: FCP [SEAGATE ST318452FC       0001]
    Fabric Port Name: 20:14:00:60:69:80:04:79
    Permanent Port Name: 22:00:00:04:cf:5d:dc:2d
    Device type: Physical Target
    Aliases: a320
 NL   0314d6;      3;22:00:00:04:cf:9f:78:7b;20:00:00:04:cf:9f:78:7b; 0
    FC4s: FCP [SEAGATE ST336605FC       0003]
    Fabric Port Name: 20:14:00:60:69:80:04:79
    Permanent Port Name: 22:00:00:04:cf:9f:78:7b
    Device type: Physical Target
    Aliases: a320
 NL   0314d5;      3;22:00:00:04:cf:9f:7d:e0;20:00:00:04:cf:9f:7d:e0; 0
    FC4s: FCP [SEAGATE ST336605FC       0003]
    Fabric Port Name: 20:14:00:60:69:80:04:79
    Permanent Port Name: 22:00:00:04:cf:9f:7d:e0
    Device type: Physical Target
    Aliases: a320
 NL   0314d4;      3;22:00:00:04:cf:9f:26:7e;20:00:00:04:cf:9f:26:7e; 0
    FC4s: FCP [SEAGATE ST336605FC       0003]
    Fabric Port Name: 20:14:00:60:69:80:04:79
    Permanent Port Name: 22:00:00:04:cf:9f:26:7e
    Device type: Physical Target
    Aliases: a320
```

nodeFind

To display all the device information matching the given WWN:

```
switch:admin> nodefind 20:00:00:e0:8b:01:ce:d3
Remote:
    Type Pid    COS     PortName                  NodeName
    NL   020eef;      3;20:00:00:e0:8b:01:ce:d3;20:00:00:e0:8b:01:ce:d3;
        Fabric Port Name: 20:0e:00:60:69:51:0b:ba
        Permanent Port Name: 20:00:00:e0:8b:01:ce:d3
    Device type: Physical Target
    Aliases:
```

To display all the device information matching the given PID:

```
switch:admin> nodefind 0x020eef
Remote:
    Type Pid    COS     PortName                  NodeName
    NL   020eef;      3;20:00:00:e0:8b:01:ce:d3;20:00:00:e0:8b:01:ce:d3;
        Fabric Port Name: 20:0e:00:60:69:51:0b:ba
        Permanent Port Name: 20:00:00:e0:8b:01:ce:d3
    Device type: Physical Target
    Aliases:
```

To display all the device information matching the given no match:

```
switch:admin> nodefind abcd
No device found.
```

See Also   **aliShow**, **nsAllShow**, **nscamShow**, **nsShow**

nsAliasShow

Displays local Name Server (NS) information, with aliases.

Synopsis   **nsaliasshow** [**-r -t**]

Availability   admin, switchAdmin, user

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.

The following message is displayed if there is no information in this switch:

```
There is no entry in the Local Name Server
```

The command **nsAllShow** displays information from all switches.

The display resulting from this command is identical to the command **nsShow**, with the exception of an additional line listing to which the aliases the device belongs. If there are no defined configuration aliases for that device, no alias is displayed.

Operands   This command has the following operands:

-r   Replaces the time-to-live (TTL) attribute output with state change registration (SCR) information in the display. This value indicates what type of registered state change notification (RSCN) a device registers to receive. Values include:

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 request issued. The RSCN request returns all affected N_Port_ID pages.

-t   Displays the device type. Of the two device type parts, the first part indicates the origination of the device. Currently, four originations are defined:

Physical
        Device connected to the Nx_Port, using FLOGI to login to the switch

Virtual   Contrived device by the switch

NPV   Device connected to the Nx_Port, using FDISC to log in to the switch

iSCSI   Device connected to the iSCSI port

The second part indicates the role of the device. Currently, four roles are defined:

Unknown (initiator/target)
        Device role is not detected

Initiator An SCSI initiator

Target   An SCSI target

Initiator+Target
        Both an SCSI initiator and an SCSI target

Examples   To display local NS information with aliases:

```
switch:admin> nsaliasshow
{
  Type Pid    COS      PortName                      NodeName                  TTL(sec)
  N    021200;     2,3;10:00:00:60:69:00:03:19;30:00:00:60:69:00:03:19; na
       FC4s: FCIP
       Fabric Port Name: 20:02:00:60:69:01:44:22
       Permanent Port Name: 10:00:00:60:69:00:03:19
       Aliases:
  N    021300;       3;10:00:00:60:69:00:02:d6;20:00:00:60:69:00:02:d6; na
       Fabric Port Name: 20:03:00:60:69:01:44:22
       Permanent Port Name: 10:00:00:60:69:00:02:d6
       Aliases: DeviceAlias
  NL   0214e2;       3;21:00:00:fa:ce:00:21:1e;20:00:00:fa:ce:00:21:1e; na
       FC4s: FCP [STOREX  RS2999FCPH3     MT09]
       Fabric Port Name: 20:04:00:60:69:01:44:22
       Permanent Port Name: 21:00:00:fa:ce:00:21:1e
       Aliases:
  NL   0214e4;       3;21:00:00:fa:ce:00:21:e1;20:00:00:fa:ce:00:21:e1; na
       FC4s: FCP [STOREX  RS2999FCPH3     CD09]
       Fabric Port Name: 20:04:00:60:69:01:44:22
       Permanent Port Name: 21:00:00:fa:ce:00:21:e1
       Aliases: MyAlias1 MyAlias2
  NL   0214e8;       3;21:00:00:fa:ce:04:83:c9;20:00:00:fa:ce:04:83:c9; na
       FC4s: FCP [STOREX  RS2999FCPH3     NS09]
       Fabric Port Name: 20:04:00:60:69:01:44:22
       Permanent Port Name: 21:00:00:fa:ce:04:83:c9
       Aliases:
  NL   0214ef;       3;21:00:00:ad:bc:04:6f:70;20:00:00:ad:bc:04:6f:70; na
       FC4s: FCP [STOREX  RS2999FCPH3     JB09]
       Fabric Port Name: 20:04:00:60:69:01:44:22
       Permanent Port Name: 21:00:00:ad:bc:04:6f:70
       Aliases:
 The Local Name Server has 6 entries }
```

To display local NS information with aliases with the **-r** option:

```
switch:admin> nsaliasshow -r
{
  Type Pid    COS      PortName                    NodeName                    SCR
  N    021200;     2,3;10:00:00:60:69:00:03:19;30:00:00:60:69:00:03:19; 3
       FC4s: FCIP
       Fabric Port Name: 20:02:00:60:69:01:44:22
       Permanent Port Name: 10:00:00:60:69:00:03:19
       Aliases:
  N    021300;       3;10:00:00:60:69:00:02:d6;20:00:00:60:69:00:02:d6; 1
       Fabric Port Name: 20:03:00:60:69:01:44:22
       Permanent Port Name: 10:00:00:60:69:00:02:d6
       Aliases: DeviceAlias
  NL   0214e2;       3;21:00:00:fa:ce:00:21:1e;20:00:00:fa:ce:00:21:1e; 0
       FC4s: FCP [STOREX  RS2999FCPH3     MT09]
       Fabric Port Name: 20:04:00:60:69:01:44:22
       Permanent Port Name: 21:00:00:fa:ce:00:21:1e
       Aliases:
  NL   0214e4;       3;21:00:00:fa:ce:00:21:e1;20:00:00:fa:ce:00:21:e1; 0
       FC4s: FCP [STOREX  RS2999FCPH3     CD09]
       Fabric Port Name: 20:04:00:60:69:01:44:22
       Permanent Port Name: 21:00:00:fa:ce:00:21:e1
       Aliases: MyAlias1 MyAlias2
  NL   0214e8;       3;21:00:00:fa:ce:04:83:c9;20:00:00:fa:ce:04:83:c9; 0
       FC4s: FCP [STOREX  RS2999FCPH3     NS09]
       Fabric Port Name: 20:04:00:60:69:01:44:22
       Permanent Port Name: 21:00:00:fa:ce:04:83:c9
       Aliases:
  NL   0214ef;       3;21:00:00:ad:bc:04:6f:70;20:00:00:ad:bc:04:6f:70; 0
       FC4s: FCP [STOREX  RS2999FCPH3     JB09]
       Fabric Port Name: 20:04:00:60:69:01:44:22
       Permanent Port Name: 21:00:00:ad:bc:04:6f:70
       Aliases:
 The Local Name Server has 6 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    021200;    2,3;10:00:00:60:69:00:03:19;30:00:00:60:69:00:03:19; 3
     FC4s: FCIP
     Fabric Port Name: 20:02:00:60:69:01:44:22
     Permanent Port Name: 10:00:00:60:69:00:03:19
     Device type: Physical Unknown(initiator/target)
     Aliases:
  N    021300;    3;10:00:00:60:69:00:02:d6;20:00:00:60:69:00:02:d6; 1
     Fabric Port Name: 20:03:00:60:69:01:44:22
     Permanent Port Name: 10:00:00:60:69:00:02:d6
     Device type: NPV Initiator
     Aliases: DeviceAlias
  NL   0214e2;    3;21:00:00:fa:ce:00:21:1e;20:00:00:fa:ce:00:21:1e; 0
     FC4s: FCP [STOREX  RS2999FCPH3     MT09]
     Fabric Port Name: 20:04:00:60:69:01:44:22
     Permanent Port Name: 21:00:00:fa:ce:00:21:1e
     Device type: Physical Target
     Aliases:
  NL   0214e4;    3;21:00:00:fa:ce:00:21:e1;20:00:00:fa:ce:00:21:e1; 0
     FC4s: FCP [STOREX  RS2999FCPH3     CD09]
     Fabric Port Name: 20:04:00:60:69:01:44:22
     Permanent Port Name: 21:00:00:fa:ce:00:21:e1
     Device type: Physical Target
     Aliases: MyAlias1 MyAlias2
  NL   0214e8;    3;21:00:00:fa:ce:04:83:c9;20:00:00:fa:ce:04:83:c9; 0
     FC4s: FCP [STOREX  RS2999FCPH3     NS09]
     Fabric Port Name: 20:04:00:60:69:01:44:22
     Permanent Port Name: 21:00:00:fa:ce:04:83:c9
     Device type: Physical Target
     Aliases:
  NL   0214ef;    3;21:00:00:ad:bc:04:6f:70;20:00:00:ad:bc:04:6f:70; 0
     FC4s: FCP [STOREX  RS2999FCPH3     JB09]
     Fabric Port Name: 20:04:00:60:69:01:44:22
     Permanent Port Name: 21:00:00:ad:bc:04:6f:70
     Device type: Physical Target
     Aliases:
 The Local Name Server has 6 entries }
```

See Also   nsAllShow, nsShow, switchShow

nsAllShow

Displays global name server information.

Synopsis   **nsallshow** [*type*]

Availability   admin, switchAdmin, user

Description   Use this command to display the 24-bit Fibre Channel addresses of all devices in all switches in the fabric. If the type operand is supplied, only devices of specified FC-PH type are displayed. If type is omitted, all devices are displayed.

Note

Specifying the type operand causes the switch to send out a query to every switch in the fabric. On a large fabric you should not run a script that repeatedly issues the **nsAllShow** command with a type operand specified.

Operands   This command has the following operand:

type   Specify the FC-PH type code. This operand is optional. The valid values for this operand are 0 to 255. Following are two specific FC-PH device type codes:

                            8 = FCP type device

                            4 , 5 = FC-IP type device

                            Other FC-PH types are displayed in the format "*x* ports supporting FC4 code," where *x* is the number of ports of a type and code is the FC-PH type code.

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
    12 Nx_Ports in the Fabric {
    011200 0118e2 0118e4 0118e8 0118ef 021200
    0214e2 0214e4 0214e8 0214ef
   }
switch:admin> nsallshow 8
    8 FCP Ports {
    0118e2 0118e4 0118e8 0118ef 0214e2 0214e4 0214e8 0214ef
     }
switch:admin> nsallshow 5
    2 FC-IP Ports in the Fabric {
    011200 021200}
```

See Also   **nsShow**, **switchShow**

nscamShow

Displays information about remote devices in the Name Server (NS) cache.

Synopsis   **nscamshow** [**-t**]

Availability   admin, switchAdmin, user

Description   Use this command to display the local NS cache information about the devices discovered in the fabric by the NS cache manager.

The message "No Entry found!" displays if the NS cache manager does not discover new switches or new devices in the fabric.

For each remote switch found, the output of this command displays the domain number, state, revision, owner, and a list of devices for that domain number. For each device found in the devices list, the following information is displayed:

Type	U for unknown, N for N_Port, NL for 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	Physical N_Port or NL_Port WWN

There might be additional lines if the device has registered FC4s, fabric port name, or port and node symbolic name.

Operands   The operand is as follows:

-t   Specify to display the device type. Of the two device type parts, the first part indicates the origination of the device. Currently, four originations are defined:

Physical
    Device connected to the Nx_Port, using FLOGI to login to the switch

Virtual   Contrived device by the switch

NPV   Device connected to the Nx_Port, using FDISC to log in to the switch

iSCSI   Device connected to the iSCSI port

The second part indicates the role of the device. Currently, four roles are defined:

Unknown (initiator/target)
    Device role is not detected

Initiator   An SCSI initiator

Target   An SCSI target

Initiator+Target
    Both an SCSI initiator and an SCSI target

Examples   To display all switch and device entries discovered by the NS in the fabric:

```
switch:admin> nscamshow
    nscam show for remote switches:
    Switch entry for 2
      state   rev     owner
      known   v430    0xfffc01
      Device list: count 1
        Type Pid     COS     PortName              NodeName
        N    021200;    2,3;10:00:00:60:69:00:ab:ba;10:00:00:60:69:00:ab:ba;
             FC4s: FCIP
             PortSymb: [28] "SEAGATE ST318452FC      0001"
             Fabric Port Name: 20:02:00:60:69:00:68:19
             Permanent Port Name: 10:00:00:60:69:00:ab:ba

    Switch entry for 4
      state   rev     owner
      known   v320   0xfffc01
      Device list: count 0
        No entry is found!
```

To display the output with the **-t** option:

```
switch:admin> nscamshow -t
    nscam show for remote switches:
    Switch entry for 2
      state   rev     owner
      known   v430    0xfffc01
      Device list: count 1
        Type Pid     COS     PortName              NodeName
        N    021200;    2,3;10:00:00:60:69:00:ab:ba;10:00:00:60:69:00:ab:ba;
             FC4s: FCIP
             PortSymb: [28] "SEAGATE ST318452FC      0001"
             Fabric Port Name: 20:02:00:60:69:00:68:19
             Permanent Port Name: 10:00:00:60:69:00:ab:ba
             Device type: Physical Initiator

    Switch entry for 4
      state   rev     owner
      known   v320   0xfffc01
      Device list: count 0
        No entry is found!
```

See Also   **nsAllShow**, **nsShow**, **switchShow**

nsShow

Displays local Name Server (NS) information.

Synopsis	**nsshow** [**-r -t**]
Availability	admin, switchAdmin, user
Description	Use this command to display local NS information about devices connected to this switch.

The following message is displayed if there is no information in this switch:

```
There is no entry in the Local Name Server
```

The **nsAllShow** command displays information from all switches.

Each line of output displays:

Type	U for unknown, N for N_Port, NL for NL_Port.
PID	24-bit Fibre Channel address.
COS	List of classes of service supported by device.
PortName	Device port World Wide Name (WWN).
NodeName	Device node WWN.
TTL	Time-to-live, in seconds, for cached entries or NA (not applicable) if the entry is local. This displays if the -r option is given.
SCR	State change registration of the device. This displays if the -r option is given.
Device type	Device type if -t is given.

Permanent Port Name Physical N_Port or NL_Port WWN.

There might be additional lines if the device has registered any of the following information (the switch automatically registers SCSI inquiry data for FCP target devices):

- FC4s supported
- IP address
- IPA
- Port and node symbolic names
- Fabric Port Name. This is the WWN of the port on the switch to which the device is physically connected.
- Hard address and/or port IP address

Operands   This command has the following operands:

-r   Replaces the TTL attribute output with SCR (state change registration) information in the display. This value indicates what type of RSCN a device registers to receive. Values include:

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 request issued. The RSCN request returns all effected N_Port_ID pages.

-t   Displays the device type. Of the two device type parts, the first part indicates the origination of the device. Currently, four originations are defined:

Physical
        Device connected to the Nx_Port, using FLOGI to login to the switch

Virtual   Contrived device by the switch

NPV   Device connected to the Nx_Port, using FDISC to log in to the switch

iSCSI   Device connected to the iSCSI port

The second part indicates the role of the device. Currently, four roles are defined:

Unknown (initiator/target)
        Device role is not detected

Initiator An SCSI initiator

Target   An SCSI target

Initiator+Target
        Both an SCSI initiator and an SCSI target

Note

Fabric OS v4.2.x or earlier does not include device type information. After a nondisruptive upgrade from those Fabric OS versions, the device type displays as "Physical Unknown(initiator/target)".

Examples   To display local NS information:

```
switch:admin> nsshow
{
 Type Pid    COS       PortName                      NodeName               TTL(sec)
  N    021200;    2,3;10:00:00:60:69:00:03:19;30:00:00:60:69:00:03:19; na
     FC4s: FCIP
     Fabric Port Name: 20:02:00:60:69:01:44:22
     Permanent Port Name: 10:00:00:60:69:00:03:19
  N    021300;      3;10:00:00:60:69:00:02:d6;20:00:00:60:69:00:02:d6; na
     Fabric Port Name: 20:03:00:60:69:01:44:22
     Permanent Port Name: 10:00:00:60:69:00:02:d6
  NL   0214e2;      3;21:00:00:fa:ce:00:21:1e;20:00:00:fa:ce:00:21:1e; na
     FC4s: FCP [STOREX  RS2999FCPH3     MT09]
     Fabric Port Name: 20:04:00:60:69:01:44:22
     Permanent Port Name: 21:00:00:fa:ce:00:21:1e
  NL   0214e4;      3;21:00:00:fa:ce:00:21:e1;20:00:00:fa:ce:00:21:e1; na
     FC4s: FCP [STOREX  RS2999FCPH3     CD09]
     Fabric Port Name: 20:04:00:60:69:01:44:22
     Permanent Port Name: 21:00:00:fa:ce:00:21:e1
  NL   0214e8;      3;21:00:00:fa:ce:04:83:c9;20:00:00:fa:ce:04:83:c9; na
     FC4s: FCP [STOREX  RS2999FCPH3     NS09]
     Fabric Port Name: 20:04:00:60:69:01:44:22
     Permanent Port Name: 21:00:00:fa:ce:04:83:c9
  NL   0214ef;      3;21:00:00:ad:bc:04:6f:70;20:00:00:ad:bc:04:6f:70; na
     FC4s: FCP [STOREX  RS2999FCPH3     JB09]
     Fabric Port Name: 20:04:00:60:69:01:44:22
     Permanent Port Name: 21:00:00:ad:bc:04:6f:70

The Local Name Server has 6 entries }
```

To display local NS information with **-r**:

```
switch:admin> nsshow -r
{
 Type Pid    COS       PortName                      NodeName                SCR
  N    021200;    2,3;10:00:00:60:69:00:03:19;30:00:00:60:69:00:03:19; 3
     FC4s: FCIP
     Fabric Port Name: 20:02:00:60:69:01:44:22
     Permanent Port Name: 10:00:00:60:69:00:03:19
  N    021300;      3;10:00:00:60:69:00:02:d6;20:00:00:60:69:00:02:d6; 1
     Fabric Port Name: 20:03:00:60:69:01:44:22
     Permanent Port Name: 10:00:00:60:69:00:02:d6
  NL   0214e2;      3;21:00:00:fa:ce:00:21:1e;20:00:00:fa:ce:00:21:1e; 0
     FC4s: FCP [STOREX  RS2999FCPH3     MT09]
     Fabric Port Name: 20:04:00:60:69:01:44:22
     Permanent Port Name: 21:00:00:fa:ce:00:21:1e
  NL   0214e4;      3;21:00:00:fa:ce:00:21:e1;20:00:00:fa:ce:00:21:e1; 0
     FC4s: FCP [STOREX  RS2999FCPH3     CD09]
     Fabric Port Name: 20:04:00:60:69:01:44:22
     Permanent Port Name: 21:00:00:fa:ce:00:21:e1
  NL   0214e8;      3;21:00:00:fa:ce:04:83:c9;20:00:00:fa:ce:04:83:c9; 0
     FC4s: FCP [STOREX  RS2999FCPH3     NS09]
     Fabric Port Name: 20:04:00:60:69:01:44:22
     Permanent Port Name: 21:00:00:fa:ce:04:83:c9
  NL   0214ef;      3;21:00:00:ad:bc:04:6f:70;20:00:00:ad:bc:04:6f:70; 0
     FC4s: FCP [STOREX  RS2999FCPH3     JB09]
     Fabric Port Name: 20:04:00:60:69:01:44:22
     Permanent Port Name: 21:00:00:ad:bc:04:6f:70

The Local Name Server has 6 entries }
```

To display local NS information with **-r** and **-t**:

```
switch:admin> nsshow -r -t
{
 Type Pid     COS       PortName                      NodeName                  SCR
  N    021200;    2,3;10:00:00:60:69:00:03:19;30:00:00:60:69:00:03:19; 3
       FC4s: FCIP
       Fabric Port Name: 20:02:00:60:69:01:44:22
       Permanent Port Name: 10:00:00:60:69:00:03:19
       Device type: Physical Unknown(initiator/target)
  N    021300;      3;10:00:00:60:69:00:02:d6;20:00:00:60:69:00:02:d6; 1
       Fabric Port Name: 20:03:00:60:69:01:44:22
       Permanent Port Name: 10:00:00:60:69:00:02:d6
       Device type: Physical Initiator
  N    021301;      3;10:00:00:60:69:00:02:d7;20:00:00:60:69:00:02:d7; 1
       Fabric Port Name: 20:03:00:60:69:01:44:22
       Permanent Port Name: 10:00:00:60:69:00:02:d6
       Device type: NPIV Initiator
  NL   0214e2;      3;21:00:00:fa:ce:00:21:1e;20:00:00:fa:ce:00:21:1e; 0
       FC4s: FCP [STOREX  RS2999FCPH3     MT09]
       Fabric Port Name: 20:04:00:60:69:01:44:22
       Permanent Port Name: 21:00:00:fa:ce:00:21:1e
       Device type: Physical Target
  NL   0214e4;      3;21:00:00:fa:ce:00:21:e1;20:00:00:fa:ce:00:21:e1; 0
       FC4s: FCP [STOREX  RS2999FCPH3     CD09]
       Fabric Port Name: 20:04:00:60:69:01:44:22
       Permanent Port Name: 21:00:00:fa:ce:00:21:e1
       Device type: Physical Target
  NL   0214e8;      3;21:00:00:fa:ce:04:83:c9;20:00:00:fa:ce:04:83:c9; 0
       FC4s: FCP [STOREX  RS2999FCPH3     NS09]
       Fabric Port Name: 20:04:00:60:69:01:44:22
       Permanent Port Name: 21:00:00:fa:ce:04:83:c9
       Device type: Physical Target
  NL   0214ef;      3;21:00:00:ad:bc:04:6f:70;20:00:00:ad:bc:04:6f:70; 0
       FC4s: FCP [STOREX  RS2999FCPH3     JB09]
       Fabric Port Name: 20:04:00:60:69:01:44:22
       Permanent Port Name: 21:00:00:ad:bc:04:6f:70
       Device type: Physical Target

The Local Name Server has 6 entries }
```

See Also   **nsAllShow**, **switchShow**

nsZoneMember

Displays the information of all the online devices zoned with the given device.

Synopsis   **nszonemember -a** | **-u** | *pid* | *wwn*

Availability   admin, switchAdmin, user

Description   Use this command to display information about all the online devices zoned with the given device. Issuing this command without operands displays all online devices zoned with the given device. Each line of output displays:

Type	U for unknown, N for N_Port, NL for 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	Physical N_Port or NL_Port WWN
DeviceType	The device's type

There might be additional lines if the device has registered any of the following information (the switch automatically registers SCSI inquiry data for FCP target devices):

• FC4 supported

• IP address (node)

• IPA

• port and node symbolic name (local device only)

• fabric port name

• hard address and/or port IP address

Operands   This command has the following operand:

-a   Displays each local device's online zoned device data, including the PID and zone alias.

-u   Displays all the unzoned devices in the entire fabric. The device data displayed includes the device PID and zone alias.

pid | *wwn*   Specifies the port ID or WWN, respectively, whose zoned devices are to be viewed. This operand is required.

Examples   To display information about all the online devices zoned with the given device:

```
switch:admin> nszonemember 0x0416e2
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]
       Fabric Port Name: 20:06:00:60:69:50:06:78
       Permanent Port Name: 22:00:00:20:37:d9:61:ac
       Device type: Physical Target

    No remote zoned members
```

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 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 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.
```

See Also   cfgShow, nscamShow, nsShow

passwd

Changes the password for a user level.

Synopsis **passwd** ["*user*"]

Availability admin, switchAdmin, user

Description Use this command to change the password for the user currently logged in or for another user. To change the password for a specific user, enter the command with the optional "user" operand.

Users logging in to the system by way of RADIUS are allowed to change the passwords of the roles they log in; for example, if a user's role in RADIUS is admin, and this command is executed, the system prompts for the old admin password. This command changes the passwords in the switch database only.

The hierarchy of user levels are (from greatest access to least) root, factory, admin, and user. Typically, all fabric management should be performed by admin.

If the fabric is not in secure mode, the behavior of the command is as follows:

- If you are changing your own user-level password, you are prompted to enter the old password and, if your entry is valid, the new password.

- If a you are changing another user-level password with greater privileges than your current login level, you are prompted to enter that user level's old password and, if your entry is valid, the new password.

- If you are logged in as the root user when changing another user-level password, you are not prompted to enter the old password.

- The command is disabled until you have changed all the login passwords from the manufacture default values.

If the fabric is in secure mode, the behavior of the command is as follows:

- The command can only be run on the primary FCS switch. The changed passwords will be distributed to all FCS switches. NonFCS switches will be updated if the password of the user account is changed.

- Changing the password of any user level causes the login session of that account (if logged in) to be terminated.

    Note
    If the security is enabled on the fabric, this command is disabled on all switches except the primary FCS. Refer to the *Secure Fabric OS Administrator's Guide* for more information.

A new password must follow these rules:

- Have 8 to 40 characters

- Must satisfy password policies configured by **passwdCfg**

Use the following keys to control input:

Return   When entered at a prompt with no preceding input, accepts the default value (if applicable) and moves to the next prompt.

Ctrl-D (end-of-file)   When entered at a prompt with no preceding input, terminates the command without changing the password. This is valid on most computers; however, your settings could be different.

Operands   This command has the following operand:

"*user*"   Specify the name of the user, in quotation marks, for which you want to modify the password. This operand is optional. Valid values are root, factory, admin, or user.

You can only specify this operand when you are logged in as root, factory, or admin. If you try to change the password of a user level higher in the hierarchy (for example, you are admin and attempting to change the root password), you are prompted to enter the current password of that level. If you try to change the password of a user level lower in the hierarchy, you are not prompted to enter the current password.

Examples   To change the password for the admin user:

```
switch:admin> passwd "admin"
Changing password for admin
Enter new password:
Re-type new password:
Password changed.
Saving password to stable storage.
Password saved to stable storage successfully.
```

Diagnostics   When failures are detected, the subtext might report one or more of the following error messages:

"user" is not a valid user name
                    You have not specified a user name that is a valid, recognized user name on the system.

Permission denied   You do not have permission to change the login name or password specified.

Incorrect password   You have not entered the correct password when prompted for the old password.

Password unchanged You have entered the carriage return special input case, choosing not to change the password.

Passwords do not match
                    You have not correctly verified the new password.

Refer to the *Fabric OS System Error Message Reference Manual* for more information.

See Also   **login**, **logout**, **passwdCfg**

passwdCfg

Manages the password policies.

Synopsis   **passwdcfg --help**

passwdcfg --set [**-lowercase** *value*][**-uppercase** *value*][**-digits** *value*][**-punctuation** *value*]
[**-minlength** *value*][**-history** *value*][**-minpasswordage** *value*][**-maxpasswordage** *value*]
[**-warning** *value*][**-lockoutthreshold** *value*][**-lockoutduration** *value*]

passwdcfg --setdefault

passwdcfg --showall

Availability   admin

Description   Use this command to manage password policies.

Note

passwdCfg is not supported when secure mode is enabled.

Use **--set** to configure the following password policies:

- Password strength policy

- Password history policy

- Password expiration policy

- Account lockout policy

The *password strength policy* enforces a set of rules that new passwords must satisfy. Configurable rules include lowercase and uppercase character, digits, punctuation occurrences and minimum length values. It is enforced only when a new password is defined. The password strength policy enforces 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.

The *password history policy* prevents reuse of a recently used passwords. The password history policy is enforced only when a new password is defined. The password strength policy does not verify a new password meets a minimal standard of "difference" from prior passwords, only that a newly specified password is different from the specified number of previously used passwords.

The password history policy is enforced across all user accounts when the you are setting your password. The password history policy is not enforced when an administrator sets a password for another user, but the user's password history is preserved and the password set by the administrator is recorded in the user's password history.

The *password expiration policy* forces expiration of a password after a configurable period of time. When a user's password expires, the user must change the password to complete the authentication process and open a user session. 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 except the root and factory accounts.

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 active 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.

Operands   This command has the following operands:

--help   Displays the **passwdCfg** synopsis.

--set   Configures the following parameters:

  -lowercase *value*
      Specifies the minimum number of lowercase alphabetic characters that must occur in the password. The default value is 0. The maximum value must be less than or equal to **-minlength** *value*.

  -uppercase *value*
      Specifies the minimum number of uppercase alphabetic characters that must occur in the password. The default value is 0. The maximum value must be less than or equal to **-minlength** *value*.

  -digits *value*
      Specifies the minimum number of numeric digits that must occur in the password. The default value is 0. The maximum value must be less than or equal to **-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 (:), is allowed. The default value is 0. The maximum value must be less than or equal to **-minlength** *value*.

  -minlength *value*
      Specifies the minimum length of the password. The minimum can be set as 8 to 40. Passwords must be between the minimum length specified to 40 characters. The default value is 8. The total of **-lowercase**, **-uppercase**, **-digits**, **-punctuation** must be less than or equal to **-minlength** *value*.

  -history *value*
      Specifies the number of past password values that are disallowed when setting a new password. A value of 1 to 24 can be specified. The default value is 1.

  -minpasswordage *value*
      Specifies the minimum number of days that must elapse before a password can be changed. **-minpasswordage** can be set at 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.

      When **-maxpasswordage** is set to a nonzero value, **-minpasswordage** must be set to a value less than or equal to **-maxpasswordage**.

-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 at 0 to 999. Setting this parameter to 0 disables password expiration. The default value is 0.

-warning *value*

Specifies the number of days prior to password expiration that a warning of password expiration is displayed. **-warning** can be set at 0 to 999. The default value to 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. **-lockoutthreshold** can be set at 0 to 999. Setting this parameter to 0 disables the lockout mechanism. The default value is 0.

-lockoutduration *value*

Specifies the time, in minutes, after which a previously locked account automatically unlocks. The **-lockoutduration** time elapses from the first time the failed login attempts exceeds the **-lockoutthreshold**. Subsequent failed login attempts during a lockout period do not further extend the lockout period. **-lockoutduration** can be set at 0 to 99999. Setting this parameter to 0 disables the lockout duration mechanism, requiring an administrative action to unlock the account. The default value is 30.

--setdefault   Resets all password policies to default values.

--showall   Displays all the password configuration parameters.

Examples   To display the current password configuration parameters:

```
switch:admin> passwdcfg --showall
passwdcfg.minlength: 8
passwdcfg.lowercase: 0
passwdcfg.uppercase: 0
passwdcfg.digits: 0
passwdcfg.punctuation: 0
passwdcfg.history: 1
passwdcfg.minpasswordage: 0
passwdcfg.maxpasswordage: 0
passwdcfg.warning: 0
passwdcfg.lockoutthreshold: 0
passwdcfg.lockoutduration: 30
passwdcfg.status: 0
```

To change the password configuration parameters:

```
switch:admin> passwdcfg --set -uppercase 2 -maxpasswordage 90
```

Diagnostics   If there is a failure, one or more of the following error messages displays:

Command not supported

> **passwdCfg** is not supported when secure mode is enabled.

minlength value out of range

> The **-minlength** *value* must 8 to 40.

lowercase value out of range

> The **-lowercase** *value* specified must be greater than or equal to 0 and less than or equal to **-minlength** *value*.

uppercase value out of range

> The **-uppercase** *value* specified must be greater than or equal to 0 and less than or equal to **-minlength** *value*.

digits value out of range

> The **-digits** *value* specified must be greater than or equal to 0 and less than or equal to **-minlength** *value*.

punctuation value out of range

> The **-punctuation** *value* specified must be greater than or equal to 0 and less than or equal to **-minlength** *value*.

total strength specification out of range

> The total of **-lowercase** *value*, **-uppercase** *value*, **-digits** *value*, and **-punctuation** *value* must be less than or equal to **-minlength** *value*.

history value out of range

> The **-history** *value* must be between 1 and 24.

minpasswordage value out of range

> The **-minpasswordage** *value* must be between 0 and 999.

maxpasswordage value out of range

> The **-maxpasswordage** *value* must be between 0 and 999.

warning value out of range

> The **-warning** *value* must be between 0 and 999.

invalid password expiration specification

> The **-minpasswordage** *value* or **-warning** *value* must be less than or equal to **-maxpasswordage** *value* when **-maxpasswordage** *value* is nonzero.

lockoutthreshold value out of range

> The **-lockoutthreshold** *value* must be between 0 and 999.

lockoutduration value out of range

> The **-lockoutduration** *value* must be between 0 and 999.

See Also   **passwd**, **userConfig**

pathInfo

Display routing and statistics information along a path, covering multiple switches.

Synopsis   **pathinfo** [*domain*][*src_portnumber*][*dst_portnumber*][**-r**]

Availability   admin, switchAdmin, user

Description   Use this command to display detailed routing information from a source port or area on the local switch to a destination port or area on another switch. This routing information describes the exact path that a user data stream takes to go from the source port to the destination port, including all intermediate switches.

The command does not make any retry attempts if there is a timeout or failure. It might fail if a switch along the path is busy: for instance, if a switch is performing a warm recovery or if a switch along the path does not support this feature.

 Note

If the advanced performance tuning (APT) policy in effect on the intermediate switches is not a port-based policy, subsequent data streams might not take the same path as displayed in the **pathInfo** output. Refer to **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 displays the path that would be used if the ports were active. If you specify a destination port that is not active, this command uses the embedded port as the destination.

For bladed systems, the ingress and egress points are specified as area numbers. For nonbladed systems, ingress and egress points are specified as ports. This agrees with the representation displayed by the **switchShow** command.

In addition, **pathInfo** can provide, upon request, statistics on every traversed interswitch link (ISL) that is part of the path. This feature is available in interactive mode only.

The routing and statistics information are provided by every switch along the path, based on the current routing-tables information and statistics calculated continuously in real-time. Each switch represents one hop of the total path.

Other options allow the collection of information on the reverse path, or on a user selected path (source route).

For each hop, the routing information output includes the following:

Hop	The hop number. The local switch is hop 0.
In Port	The port or area from which the switch receives frames. For hop 0, this is *src_portnumber*. For bladed systems, this is specified as the area number; otherwise, it is the port number.
Domain ID	The domain ID of the switch.
Name	The name of the switch.
Out Port	The output port that the frames use to reach the next hop. For the last hop, this is *dst_portnumber*. For bladed systems, this is specified as the area number; otherwise, it is the port number.
BW	The bandwidth of the output ISL, in Gbit/sec. It does not apply to the embedded port.

Cost   The cost of the output link used by FSPF routing protocol. Only applicable if the output link is currently recognized by FSPF.

When requested, statistics are reported below the routing information for each hop. These statistics are presented for both the input and output ports, for both receive and transmit modes. These statistics are divided into basic and extended statistics, which can be individually requested in interactive mode. Statistics are not reported for the embedded port.

To collect these statistics, this command uses a special frame, the **pathInfo** frame, that is sent hop-by-hop from the source switch to the destination switch. In order 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 variables that give an indication of ISL congestion along the path. They include the following:

B/s   Bytes per second received or transmitted; reports for multiple time periods, displayed in parentheses.

Txcrdz The length of time in milliseconds that the port has been prevented from transmitting frames due to lack of buffer-to-buffer credit. It is an indication of downstream congestion. This value reports for multiple time periods, displayed in parentheses. Note that other commands, such as **portStatsShow**, might express this value in units other than milliseconds.

Extended statistics   Extended statistics report variables of general interest. They include the following:

F/s   Frames per second received or transmitted; reports for multiple time periods, displayed in parentheses.

Words   Total number of 4-byte Fibre Channel words.

Frames Total number of frames.

Errors Total number of errors that might cause a frame not to be received correctly. This includes CRC errors, bad EOF errors, frame truncated errors, frame-too-short errors, and encoding errors inside a frame.

Reverse path   In general, the path from port A on switch X to port B on switch Y might be different from the path from port B to port A. The difference could be in the links traversed between the same sequence of switches, or the reverse path might even involve different switches. The **-r** option allows the user to determine both routing and statistics information for the reverse path, in addition to those for the direct path.

Source route   The source route option allows the user to specify a sequence of switches, ports, or areas that the **pathInfo** frame has to traverse to reach the destination. Therefore, the path might 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 areas, or a combination thereof. The next hop in the source route is described by either the output port or area to be used to reach the next hop, or the domain ID of the next hop.

The source route can specify a partial route from source to destination (in which case the remaining hops are chosen as the path from the input port or area on the

first hop not listed in the source route to the destination), as a full route, or as an arbitrary route across the fabric. The maximum hop count is enforced.

If the source route does not specify all the switches along a section of the path, a further option allows to specify a strict versus 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 will be ignored. In case of a loose source route, the switches in between will be reported. The concepts of strict and loose route apply to the portion(s) of the path described by domains, not to the part described by output ports or areas.

Operands The following operands are optional:

domain	ID of the destination domain. If omitted, the command prompts for all operands, including whether basic and extended statistics should be included.
src_portnumber	Port or area whose path to the destination domain is sought. The default is embedded port (-1). For bladed systems, the destination is specified as the area; otherwise, it is the port. If the source port is -1 with no additional arguments, basic statistics display for the route.
dst_portnumber	Port or area on the destination switch for each path being traced. This command returns the state of this port or area. The default is embedded port (-1), or if a destination port is specified that is not active. For bladed systems, the destination is specified as the area; otherwise, it is the port.
"-r"	Display reverse path in addition to forward path.

Without operands, **pathInfo** prompts for the preceding operands. The value of domain is mandatory; the values for the source and destination ports can be -1, to indicate the embedded port. Reverse-path tracing remains optional. In addition, this command prompts for following parameters:

max hops	The maximum number of hops that the **pathInfo** frame is allowed to traverse; default is 25.
basic stats	Requests the reporting of basic statistics on every link; default is no.
extended stats	Requests the reporting of extended statistics on every link; default is no.
source route	Specifies a sequence of switches or ports that the **pathInfo** frame should traverse; default is no. Note that if an output port (or area) to the next hop is specified, the user is not prompted for the domain of the next switch, which is determined by the port (or area) specified.
strict source rte	Specifies that the source route must be followed strictly as indicated, skipping possible intermediate switches. When using this option, the source route hops must be specified using domain rather than output port.
Timeout	The maximum time allowed to wait for the response; default is 10 seconds.

Examples   To display basic path information to a specific domain, using the command line (noninteractive mode):

```
switch:admin> pathinfo 91
Target port is Embedded
Hop  In Port  Domain ID (Name)    Out Port   BW   Cost
---------------------------------------------------------
0       E           9 (web226)        2       1G   1000
1       3          10 (web229)        8       1G   1000
2       8           8 (web228)        9       1G   1000
3       6          91 (web225)        E       -    -
```

To display basic and extended statistics using interactive mode:

```
switch:admin> pathinfo
Max hops: (1..127) [25]
Domain: (1..239) [-1] 8
Source port: (0..15) [-1]
Destination port: (0..255) [-1]
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: (1..30) [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            5            5            5
    Txcrdz (1s)         0            -            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 Port   BW   Cost
---------------------------------------------------------
2       14          8 (web228)        E       -    -
(output truncated)
```

See Also   **portStatsShow**, **switchShow**

pdShow

Displays data from a panic dump file.

Synopsis   **pdshow** [*panic_dump_file*]

Availability   admin, switchAdmin

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.

Operands   This command has the following optional operands:

panic_dump_file   Specify the full path name of a panic dump file.

Examples   To examine a panic dump file by the name *panic_dump* located under the directory */tmp*:

```
switch:admin> pdshow /tmp/panic_dump

                *** CAUTION ***
 *  Host  PLATFORM  (current) is: 'Unknown'
 *  PLATFORM got from pd file is: 'SW12000'
 *  Some results shown may be incorrect and/or missing
 *  It is best if this command is run on same PLATFORM as that of pdfile
            **************

_____********_____
*   File   :/core_files/panic/core.pd1038932352      *
*   SECTION:PD_MISC                                   *
-----------------------********------------------------
WatchDogRegister=0x0
Section=Startup time: Tue Dec  3 16:06:11 UTC 2002
Kernel=     2.4.19
Fabric OS=  v4.1.0_j_dist_1103
Made on=    Tue Dec 3 19:07:13 2002
Flash=      Tue Dec 3 13:19:06 2002
BootProm=   3.2.0
Section=HA show Output

(output truncated)
```

See Also   **portLogDump**, **saveCore**

perfAddEEMonitor

Adds an end-to-end monitor to a port.

Synopsis   **perfaddeemonitor** [*slotnumber/*]*portnumber SourceID DestID*

Availability   admin, switchAdmin

Description   Use this command to add an end-to-end performance monitor to a port. The performance monitor counts the number of words received, number of words transmitted, and number of CRC errors detected using either of the following two conditions:

- For frames received at the port, the frame SID is the same as SourceID and frame DID is the same as DestID, both RX_COUNT and CRC_COUNT will be updated accordingly. Note that the CRC_COUNT counts the CRC errors detected with the frames received at or transmitted from the associated port.

- For frames transmitted from the port, the frame DID is the same as SourceID and frame SID is the same as DestID, both TX_COUNT and CRC_COUNT will be updated accordingly.

To monitor traffic from host A to device B, add a monitor on port 2, specifying 0x050200 as the SID and 0x010100 as the DID. The RX count equals the number of words from host A to device B, whereas the TX count equals the number of words from device B to host A. The CRC count equals the total number of CRC errors for both directions. Adding a monitor on port 1, specifying 0x010100 as SID and 0X050200 as the DID has a similar effect, except the RX and TX counts are interchanged.

If ISL monitoring is enabled, end-to-end monitors cannot be added to E_Ports. Existing end-to-end monitors on E_Ports are deleted.

Identical monitors cannot be added to the same port. Two monitors are considered identical if they have the same SID and DID values after applying the end-to-end mask.

After a successful execution of this command, a monitor number is displayed. The monitor number is provided for manipulation of these performance monitors.

Note

This command requires a Performance Monitor license.

This command does not support virtual FC ports (VE/VEX_Port) and EX_Port.

Operands   This command has the following operands:

slotnumber   For bladed systems only, this operand specifies the slot number of the port on which the monitor is to be added, followed by a slash (/).

portnumber   Specifies the number of the port on which the monitor is to be added, relative to its slot for bladed systems. Use **switchShow** for a list of valid ports.

SourceID   Specify the 3-byte SID (Source ID) of the originator device. It should be in "0xDDAAPP" format, where DD is domain ID, AA is area ID and PP is AL_PA ID. For example, 0x050200 has a domain ID of 5, an area ID of 2, and an AL_PA ID of 0. SourceID and DestID both cannot be 0x000000.

DestID   Specify the 3-byte DID (destination ID) of the destination device. It should be in "0xDDAAPP" format, where DD is domain ID, AA is area ID and PP is AL_PA ID. For example, 0x050200 has a domain ID of 5, an area ID of 2, and an AL_PA ID of 0. SourceID and DestID both cannot be 0x000000.

Optionally, a comma can separate the operands. *SourceID* and *DestID* also can be enclosed in quotation marks. A space is required to separate the operands even when using commas.

Examples   To add an end-to-end monitor to blade 1 port 2:

```
switch:admin> perfaddeemonitor 1/2 "0x050200" "0x1182ef"
End-to-End monitor number 0 added.
```

See Also   **perfAddIPMonitor**, **perfAddReadMonitor**, **perfAddRWMonitor**, **perfAddSCSIMonitor**, **perfAddUserMonitor**, **perfAddWriteMonitor**, **perfClearEEMonitor**, **perfDelEEMonitor**, **perfShowEEMonitor**

2

Note: Enter commands in lowercase only; mixed case is for readability.

perfAddIPMonitor

perfAddIPMonitor

Adds a filter-based performance monitor for IP frame count.

Synopsis   **perfaddipmonitor** [*slotnumber/*]*portnumber* [*alias*]

Availability   admin, switchAdmin

Description   Use this command to define filter-based monitors to count the number of IP traffic frames. Only frames transmitted are counted.

After a successful execution of this command, a monitor number is displayed. The monitor number is provided for manipulation of these filter-based performance monitors. The optional user-defined alias is also displayed, if one is specified. All valid monitor numbers and user-defined aliases can be displayed with the **perfShowFilterMonitor** command.

The maximum number of filters is eight per port, including user-defined filters, read filters, write filters, read/write filters, SCSI frame monitor, and IP frame monitor.

> **Note**
>
> This command requires a Performance Monitor license.
>
> This command does not support virtual FC ports (VE/VEX_Port) and EX_Port.

Operands   The operands are as follows:

slotnumber   For bladed systems only, this operand specifies the slot number of the port on which the monitor is to be added, followed by a slash (/).

portnumber   Specifies the number of the port on which the monitor is to be added, relative to its slot for bladed systems. Use **switchShow** for a list of valid ports.

alias   Specify a name for this monitor. This string truncates to a maximum of 10 characters. It might be surrounded by quotation marks, in order to include spaces. This operand is optional. The default alias is "IP Frame".

Optionally, a comma can separate the operands. A space is required to separate the operands even when using commas.

Examples   To add an IP monitor to a port:

```
switch:admin> perfaddipmonitor 1/4 "IP_MONITOR"
 IP traffic frame monitor #0 added
```

See Also   **perfAddEEMonitor**, **perfAddReadMonitor**, **perfAddRWMonitor**, **perfAddSCSIMonitor**, **perfAddUserMonitor**, **perfAddWriteMonitor**

perfAddReadMonitor

Adds a filter-based performance monitor for the SCSI Read command.

Synopsis   **perfaddreadmonitor** [*slotnumber/*]*portnumber* [*alias*]

Availability   admin, switchAdmin

Description   Use this command to define filter-based monitors to count the number of SCSI FCP Read commands in Fibre Channel frames. Only frames transmitted are counted.

After successful execution of this command, a monitor number is displayed. The monitor number is provided for manipulation of these filter-based performance monitors. The optional user-defined alias is also displayed, if one was specified. All valid monitor numbers and user-defined aliases can be retrieved with the **perfShowFilterMonitor** command.

The maximum number of filters is eight per port including user-defined filters, read filters, write filters, read/write filters, SCSI frame monitor, and IP frame monitor.

Note

This command requires a Performance Monitor license.

This command does not support virtual FC ports (VE/VEX_Port) and EX_Port.

Operands   This command has the following operands:

slotnumber   For bladed systems only, this operand specifies the slot number of the port on which the monitor is to be added, followed by a slash (/).

portnumber   Specifies the number of the port on which the monitor is to be added, relative to its slot for bladed systems. Use **switchShow** for a list of valid ports.

alias   Specify a name for this monitor. This string truncates to a maximum of 10 characters. It might be surrounded by quotation marks, in order to include spaces. This operand is optional. The default alias is "SCSI Read".

Optionally, a comma can separate the operands. A space is required to separate the operands even when using commas.

Examples   To add an SCSI read monitor to a port:

```
switch:admin> perfaddreadmonitor 2/4 "SCSI_R"
SCSI Read filter monitor #2 added
```

See Also   **perfAddEEMonitor**, **perfAddIPMonitor**, **perfAddRWMonitor**, **perfAddSCSIMonitor**, **perfAddUserMonitor**, **perfAddWriteMonitor**

perfAddRWMonitor

Adds a filter-based performance monitor for the SCSI read and write commands.

Synopsis   **perfaddrwmonitor** [*slotnumber/*]*portnumber* [*alias*]

Availability   admin, switchAdmin

Description   Use this command to define filter-based monitors to count the number of SCSI FCP Read and Write commands in Fibre Channel frames. Only frames transmitted are counted.

After a successful execution of this command, a monitor number is displayed. The monitor number is provided for manipulation of these filter-based performance monitors. The optional user-defined alias is also displayed, if one was specified. All valid monitor numbers and user-defined aliases can be retrieved with the **perfShowFilterMonitor** command.

The maximum number of filters is eight per port, including user-defined filters, read filters, write filters, read/write filters, SCSI frame monitor, and IP frame monitor.

Note

This command requires a Performance Monitor license.

This command does not support virtual FC ports (VE/VEX_Port) and EX_Port.

Operands   This command has the following operands:

slotnumber   For bladed systems only, this operand specifies the slot number of the port on which the monitor is to be added, followed by a slash (/).

portnumber   Specifies the number of the port on which the monitor is to be added, relative to its slot for bladed systems. Use **switchShow** for a list of valid ports.

alias   Specify a name for this monitor. This string truncates to a maximum of 10 characters. It might be surrounded by quotation marks, in order to include spaces. This operand is optional. The default alias is "SCSI R/W".

Optionally, a comma can separate the operands. A space is required to separate the operands even when using commas.

Examples   To add an SCSI read and write monitor to a port:

```
switch:admin> perfaddrwmonitor 2/4 "SCSI_RW"
SCSI Read/Write monitor #1 is added
```

See Also   **perfAddEEMonitor**, **perfAddIPMonitor**, **perfAddReadMonitor**, **perfAddSCSIMonitor**, **perfAddUserMonitor**, **perfAddWriteMonitor**

Note: Enter commands in lowercase only; mixed case is for readability.

perfAddSCSIMonitor

2

perfAddSCSIMonitor

Adds a filter-based performance monitor for SCSI frame count.

Synopsis   **perfaddscsimonitor** [*slotnumber/*]*portnumber* [*alias*]

Availability   admin, switchAdmin

Description   Use this command to define filter-based monitors to count the number of SCSI traffic frames. Only frames transmitted are counted.

After a successful execution of this command, a monitor number is displayed. The monitor number is provided for manipulation of these filter-based performance monitors. The optional user-defined alias is also displayed, if one was specified. All valid monitor numbers and user-defined aliases can be retrieved with the **perfShowFilterMonitor** command.

The maximum number of filters is eight per port, including user-defined filters, read filters, write filters, read/write filters, SCSI frame monitor, and IP frame monitor.

Note

This command requires a Performance Monitor license.

This command does not support virtual FC ports (VE/VEX_Port) and EX_Port.

Operands   This command has the following operands:

slotnumber   For bladed systems only, this operand specifies the slot number of the port on which the monitor is to be added, followed by a slash (/).

portnumber   Specifies the number of the port on which the monitor is to be added, relative to its slot for bladed systems. Use **switchShow** for a list of valid ports.

alias   Specify a name for this monitor. This string truncates to a maximum of 10 characters. It might be surrounded by quotation marks, in order to include spaces. This operand is optional. The default alias is "SCSI Frame".

Optionally, a comma can separate the operands. A space is required to separate the operands even when using commas.

Examples   To add a SCSI traffic frame monitor to a port:

```
switch:admin> perfaddscsimonitor 2/4 "SCSI_FR"
SCSI traffic frame monitor #0 added
```

See Also   **perfAddEEMonitor**, **perfAddIPMonitor**, **perfAddReadMonitor**, **perfAddRWMonitor**, **perfAddUserMonitor**, **perfAddWriteMonitor**

2 Note: Enter commands in lowercase only; mixed case is for readability.

perfAddUserMonitor

perfAddUserMonitor

Adds a user-defined filter-based performance monitor.

Synopsis   **perfaddusermonitor** [*slotnumber/*]*portnumber* **"***grouplist***"** [*alias*]

Availability   admin, switchAdmin

Description   Use this command to define a custom filter for frame offsets and values.

For every offset, each group of comparison values is OR-ed together to determine a match. If there are multiple offsets, each resulting OR function is AND-ed to determine if the entire statement is true, thus incrementing the counter.

After a successful execution of this command, a monitor number is displayed. The monitor number is provided for manipulation of these filter-based performance monitors. The optional user-defined alias is also displayed, if one was specified. All valid monitor numbers and user-defined aliases can be retrieved with the **perfShowFilterMonitor** command.

The maximum number of filters is eight per port including user defined filters, read filters, write filters, read/write filters, SCSI frame monitor, and IP frame monitor. In addition, there should be no more than six different offsets for each filter and no more than four different values per offset defined by the user.

Note

This command requires a Performance Monitor license.

This command does not support virtual FC ports (VE/VEX_Port) and EX_Port.

Bloom-based platforms provide two unique unused offsets per port for user-defined filter monitors, other than the six offsets already reserved for predefined filter monitors. Condor-based platforms provide 15 unused offsets per port.

Operands   This command has the following operands:

slotnumber   For bladed systems only, this operand specifies the slot number of the port on which the monitor is to be added, followed by a slash (/).

portnumber   Specifies the number of the port on which the monitor is to be added, relative to its slot for bladed systems. Use **switchShow** for a list of valid ports.

"*grouplist***"**   Specify up to six sets of offset, mask, and ValueList, separated by semicolons (;). The entire grouplist operand must be enclosed in quotation marks. For example: "4, 0xff, 0x22; 12, 0xff, 0x01"

The grouplist component values are as follows:

Offset   Specify the offset within the frame. Offset 0 is the first byte of the SOF, and offset 4 is the first byte of the frame header. The offset must be in decimal format. Valid values for offset are 0, [4-63]. Offset 0 is a special case that can be used to monitor the first four bytes SOFx frames. EOF cannot be monitored.

Mask   Specify the mask value to be applied (AND-ed) to frame contents.

ValueList

Specify up to four values that need to be captured from frame contents. The *ValueList* can be either hexadecimal or decimal format.

SOFx frames are considered a special case. The Offset is specified as 0x0; *valueList* values are specified with:

0   SOFf

1   SOFc1

2   SOFi1

3   SOFn1

4   SOFi2

5   SOFn2

6   SOFi3

7   SOFn3

alias   Specify a name for this monitor. This string truncates to a maximum of 10 characters. It might be surrounded by quotation marks, in order to include spaces. This operand is optional.

Optionally, a comma can separate the operands. A space is required to separate the operands even when using commas.

Examples   To add a filter-based monitor for all Extended Link Service requests (R_CTL=0x22 and TYPE=0x01) to a port:

```
switch:admin> perfaddusermonitor 1/4 "4, 0xff, 0x22; 12, 0xff, 0x01"
User monitor #0 added
```

As a special case, to add a filter-based monitor for SOFi3 to a port:

```
switch:admin> perfaddusermonitor 1/4 "0, 0xff, 6"
User monitor #1 added
```

See Also   **perfAddEEMonitor**, **perfAddIPMonitor**, **perfAddReadMonitor**, **perfAddRWMonitor**, **perfAddSCSIMonitor**, **perfAddWriteMonitor**

perfAddWriteMonitor

Adds a filter-based performance monitor for the SCSI write command.

Synopsis   **perfaddwritemonitor** [*slotnumber*/]*portnumber* [*alias*]

Availability   admin, switchAdmin

Description   Use this command to define filter-based monitors to count the number of SCSI FCP write commands in Fibre Channel frames. Only frames transmitted are counted.

After a successful execution of this command, a monitor number is displayed. The monitor number is provided for manipulation of these filter-based performance monitors. The optional user-defined alias also is displayed, if one was specified. All valid monitor numbers and user-defined aliases can be retrieved with the **perfShowFilterMonitor** command.

The maximum number of filters is eight per port, including user-defined filters, read filters, write filters, read/write filters, SCSI frame monitor, and IP frame monitor.

> **Note**
>
> This command requires a Performance Monitor license.
>
> This command does not support virtual FC ports (VE/VEX_Port) and EX_Port.

Operands   This command has the following operands:

slotnumber   For bladed systems only, this operand specifies the slot number of the port on which the monitor is to be added, followed by a slash (/).

portnumber   Specifies the number of the port on which the monitor is to be added, relative to its slot for bladed systems. Use **switchShow** for a list of valid ports.

alias   Specify a name for this monitor. This string truncates to a maximum of 10 characters. It might be surrounded by quotation marks, in order to include spaces. This operand is optional. The default alias is "SCSI_Write".

Optionally, a comma can separate the operands. A space is required to separate the operands even when using commas.

Examples   To add an SCSI Write command monitor to a port:

```
switch:admin> perfaddwritemonitor 2/4 "SCSI_W"
 SCSI Write filter monitor #0 added
```

See Also   **perfAddEEMonitor**, **perfAddIPMonitor**, **perfAddReadMonitor**, **perfAddRWMonitor**, **perfAddSCSIMonitor**, **perfAddUserMonitor**

perfCfgClear

Clears the previously saved performance monitoring configuration settings from nonvolatile memory.

Synopsis   **perfcfgclear**

Availability   admin, switchAdmin

Description   Use this command to clear the previously saved end-to-end and filter configuration settings of performance monitoring from nonvolatile memory.

> **Note**
>
> This command requires a Performance Monitor license.
>
> This command does not support virtual FC ports (VE/VEX_Port) and EX_Port.

Operands   none

Examples   To clear the performance monitoring information from nonvolatile memory:

```
switch:admin> perfcfgclear
This will clear Performance Monitoring settings in FLASH.
The RAM settings won't change. Do you want to continue? (yes, y, no, n): [no] y
Please wait ...
Performance Monitoring configuration cleared from FLASH.
```

See Also   **perfCfgRestore**, **perfCfgSave**

perfCfgRestore

Restores performance monitoring configuration settings from nonvolatile memory.

Synopsis   **perfcfgrestore**

Availability   admin, switchAdmin

Description   Use this command to restore the performance monitoring configuration information from nonvolatile memory. This does not restore the information cleared using the **perfCfgClear** command; rather, it restores the configuration on nonvolatile memory. Any configuration changes that were not saved are lost using the **perfCfgRestore** command.

> **Note**
>
> This command requires a Performance Monitor license.
>
> This command does not support virtual FC ports (VE/VEX_Port) and EX_Port.

Operands   none

Examples   To restore the performance monitoring configuration information from nonvolatile memory:

```
switch:admin> perfcfgrestore
This will overwrite current Performance Monitoring settings
in RAM. Do you want to continue? (yes, y, no, n): [no] y
Please wait ...
Performance monitoring configuration restored from FLASH.
```

See Also   **perfCfgClear**, **perfCfgSave**

perfCfgSave

Saves performance monitoring configuration settings to nonvolatile memory.

Synopsis   **perfcfgsave**

Availability   admin, switchAdmin

Description   Use this command to save the current end-to-end (EE) and filter configuration settings of performance monitoring into nonvolatile memory. This enables the performance monitoring configuration to be saved across power cycles.

The number of monitors saved to flash memory has the following limitations:

- 16 EE monitors

- 16 filter monitors

- A total number of 512 monitors per a switch

When there are more than 512 monitors in the system, monitors are saved to the flash in the following order:

1. For each port (from 0 to MAX_PORT), the EE monitors in each port are saved to the flash first.

2. Filter monitors for each port are saved next.

When the total monitors per port or switch exceeds the limit, the following message is displayed: "Performance monitor count has exceeded limit. some monitors have been discarded."

Note

This command requires a Performance Monitor license.

This command does not support virtual FC ports (VE/VEX_Port) and EX_Port.

Operands   none

Examples   To save the current performance monitoring configuration to firmware:

```
switch:admin> perfcfgsave
This will overwrite previously saved Performance Monitoring
settings in FLASH. Do you want to continue? (yes, y, no, n): [no] y
Please wait ...
Performance monitoring configuration saved in FLASH.
```

See Also   **perfCfgClear**, **perfCfgRestore**

2

Note: Enter commands in lowercase only; mixed case is for readability.

perfClearAlpaCrc

perfClearAlpaCrc

Clears the CRC error count associated with a port and arbitrated loop physical address (AL_PA).

Synopsis   **perfclearalpacrc** [*slotnumber/*]*portnumber* [*ALPA*]

Availability   admin, switchAdmin

Description   Use this command to clear a specific CRC error counter associated with a specific port and AL_PA, or all such counters on a port.

Note

This command requires a Performance Monitor license.

This command does not support virtual FC ports (VE/VEX_Port) and EX_Port.

Operands   This command has the following operands:

slotnumber   For bladed systems only, this operand specifies the slot number of the port on which the monitor is to be added, followed by a slash (/).

portnumber   Specifies the number of the port on which the monitor is to be added, relative to its slot for bladed systems. Use **switchShow** for a list of valid ports.

ALPA   Specify the AL_PA address if you want to clear the CRC error counter for a particular device. This operand is optional; if omitted, this command clears the counters for all devices attached to the specified port.

Optionally, a comma can separate the operands. A space is required to separate the operands even when using commas.

Examples   To clear the CRC count on a particular AL_PA on a port and then clear the CRC count for all AL_PAs on a port:

```
switch:admin> perfclearalpacrc 2/15 0x59
CRC error count at ALPA 0x59 on port 31 is cleared.

switch:admin> perfclearalpacrc 2/15
This will clear all ALPA CRC Counts on port 31
Do you want to continue? (yes, y, no, n) y
Please wait ...
All alpa CRC counts are cleared on port 31.
```

See Also   **perfShowAlpaCrc**

perfClearEEMonitor

Clears statistics counters of an end-to-end performance monitors.

Synopsis **perfcleareemonitor** [*slotnumber/*]*portnumber* [*monitorId*]

Availability admin, switchAdmin

Description Use this command to clear statistics counters for all end-to-end performance monitors on a port, or an end-to-end monitor associated with a specific *monitorId*.

Issuing **portStatsClear** on a port also results in all end-to-end monitors clearing.

Note

This command requires a Performance Monitor license.

This command is deprecated; use **perfMonitorClear** instead.

This command does not support virtual FC ports (VE/VEX_Port) and EX_Port.

Operands This command has the following operands:

slotnumber   For bladed systems only, this operand specifies the slot number of the port on which the monitor is to be added, followed by a slash (/).

portnumber   Specifies the number of the port on which the monitor is to be added, relative to its slot for bladed systems. Use **switchShow** for a list of valid ports.

monitorId   Specify the monitor number to clear. Monitor numbers are defined when created and can be displayed using **perfShowEEMonitor**. This operand is optional. If not specified, all monitor counters on the port are cleared.

Optionally, a comma can separate the operands. A space is required to separate the operands even when using commas.

Examples To clear statistics counters for an end-to-end monitor:

```
switch:admin> perfcleareemonitor 1/2 5
End-to-End monitor number 5 counters are cleared

switch:admin> perfcleareemonitor 1/2
This will clear ALL EE monitors' counters on port 2, continue? (yes, y, no, n):
[no] y
```

See Also **perfAddEEMonitor**, **perfShowEEMonitor**

2

Note: Enter commands in lowercase only; mixed case is for readability.

perfClearFilterMonitor

perfClearFilterMonitor

Clears statistics counters of a filter-based performance monitors.

Synopsis **perfclearfiltermonitor** [*slotnumber/*]*portnumber* [*monitorId*]

Availability admin, switchAdmin

> **Note**
>
> This command requires a Performance Monitor license.
>
> This command is deprecated; use **perfMonitorClear** instead.
>
> This command does not support virtual FC ports (VE/VEX_Port) and EX_Port.

Description Use this command to clear statistics counters for all filter-based performance monitors on a port, or a filter-based monitor associated with a specific *monitorId*.

Issuing **portStatsClear** on a port also results in all filter-based monitors clearing.

Operands This command has the following operands:

slotnumber	For bladed systems only, this operand specifies the slot number of the port on which the monitor is to be added, followed by a slash (/).
portnumber	Specifies the number of the port on which the monitor is to be added, relative to its slot for bladed systems. Use **switchShow** for a list of valid ports.
monitorId	Specify the monitor number to clear. Monitor numbers are defined when created and can be displayed using **perfShowEEMonitor**. This operand is optional. If not specified, all monitor counters on the port are cleared.

Optionally, a comma can separate the operands. A space is required to separate the operands even when using commas.

Examples To clear statistics counters for a filter-based monitor:

```
switch:admin> perfclearfiltermonitor 1/2 4
Filter-based monitor number 4 counters are cleared

switch:admin> perfclearfiltermonitor 1/2
This will clear ALL filter-based monitors' counters on port 2, continue? (yes, y
, no, n): [no] y
```

See Also **perfAddUserMonitor**, **perfShowFilterMonitor**

perfDelEEMonitor

Deletes one or all end-to-end performance monitors from a port.

Synopsis   **perfdeleemonitor** [*slotnumber/*]*portnumber* [*monitorId*]

Availability   admin, switchAdmin

Description   Use this command to delete an end-to-end performance monitor from a port, or all such monitors associated with a port.

Note

This command requires a Performance Monitor license.

This command does not support virtual FC ports (VE/VEX_Port) and EX_Port.

Operands   This command has the following operands:

slotnumber   For bladed systems only, this operand specifies the slot number of the port on which the monitor is to be added, followed by a slash (/).

portnumber   Specifies the number of the port on which the monitor is to be added, relative to its slot for bladed systems. Use **switchShow** for a list of valid ports.

monitorId   Specify the monitor number to delete. Monitor numbers are defined when created and can be displayed using **perfShowEEMonitor**. This operand is optional. If not specified, all monitor counters on the port are deleted.

Optionally, a comma can separate the operands. A space is required to separate the operands even when using commas.

Examples   To delete an end-to-end monitor on a port, or all such monitors:

```
switch:admin> perfdeleemonitor 7/2 5
End-to-End monitor number 5 deleted

switch:admin> perfdeleemonitor 7/2
This will remove ALL EE monitors on port 2, continue? (yes, y, no, n): [no] y
```

See Also   **perfAddEEMonitor**, **perfShowEEMonitor**

perfDelFilterMonitor

Deletes one or all filter-based performance monitors from a port.

Synopsis   **perfdelfiltermonitor** [*slotnumber/*]*portnumber* [*monitorid*]

Availability   admin, switchAdmin

Description   Use this command to delete a filter-based performance monitor from a port, or all such monitors associated with a port.

Note

This command requires a Performance Monitor license.

This command does not support virtual FC ports (VE/VEX_Port) and EX_Port.

Operands   This command has the following operands:

slotnumber   For bladed systems only, this operand specifies the slot number of the port on which the monitor is to be added, followed by a slash (/).

portnumber   Specifies the number of the port on which the monitor is to be added, relative to its slot for bladed systems. Use **switchShow** for a list of valid ports.

monitorid   Specify the monitor number to delete. Monitor numbers are defined when created and can be displayed using **perfShowEEMonitor**. This operand is optional. If not specified, all monitor counters on the port are deleted.

Optionally, a comma can separate the operands. A space is required to separate the operands even when using commas.

Examples   To delete filter monitor 4 from a port, and then all filter monitors from the port:

```
switch:admin> perfdelfiltermonitor 2/3 4
The specified filter-based monitor is deleted.

switch:admin> perfdelfiltermonitor 2/3
This will remove ALL monitors on port 19, continue? (yes, y, no, n): [no] y
```

See Also   **perfAddUserMonitor**, **perfShowFilterMonitor**

perfHelp

Displays performance monitoring help information.

Synopsis   **perfhelp**

Availability   admin, switchAdmin

Description   Use this command to display the available performance monitoring help commands.

Note

This command requires a Performance Monitor license.

Operands   none

Examples   To display commands related to performance monitoring:

```
switch:admin> perfhelp

perfCfgSave                    Save Performance configuration to FLASH
perfCfgRestore                 Restore Performance configuration from FLASH
perfCfgClear                   Clear Performance settings from FLASH
perfClrAlpaCrc                 Clear ALPA device's CRC count
perfShowAlpaCrc                Get ALPA CRC count by port and ALPA
perfAddEEMonitor               Add end-to-end monitor to a port
perfDelEEMonitor               Delete an end-to-end monitor on port
perfClearEEMonitor             Clear an end-to-end monitors' counters on a port
perfShowEEMonitor              Show user-defined end-to-end monitors
perfSetPortEEMask              Set overall mask for E-to-E monitors
perfShowPortEEMask             Show the current end-to-end mask
perfAddUserMonitor             Add filter-based monitor
perfAddReadMonitor             Add filter-based monitor - SCSI Read
perfAddWriteMonitor            Add filter-based monitor - SCSI Write
perfAddRWMonitor               Add monitor - SCSI Read and Write
perfAddSCSIMonitor             Add monitor for SCSI frame count
perfAddIPMonitor               Add monitor for IP traffic frame count
perfDelFilterMonitor           Delete filter-based monitor
perfClearFilterMonitor         Clear filter-based monitors' counters on a port
perfShowFilterMonitor          Show filter-based monitors
perfMonitorClear            Clear end-to-end/filter-based/ISL monitors
perfMonitorShow             Show end-to-end/filter-based/ISL monitors
```

See Also   none

perfMonitorClear

Clears counters of end-to-end, filter-based, and ISL performance monitors on a port.

Synopsis   **perfmonitorclear --class** *monitor_class* [*slotnumber/*]*portnumber* [*monitorId*]

Availability   admin, switchAdmin

Description   Use this command to clear counters for performance monitors on a port, specified by class.. Monitor classes include end-to-end monitors (EE), filter-based monitors (FLT), and interswitch link monitors (ISL).

Issuing the **portStatsClear** command on a port clears all end-to-end and filter-based monitors (but not ISL monitors) for all the ports in the same quad.

Note

This command requires a Performance Monitor license.

This command does not support virtual FC ports (VE/VEX_Port) and EX_Port.

Operands   This operands are as follows:

--class	The monitor class, which can be one of EE (end-to-end), FLT (filter-based), or ISL (interswitch link). These values are case sensitive. This operand is required.
slotnumber	For bladed systems only, this operand specifies the slot number of the port on which the monitor is to be added, followed by a slash (/).
portnumber	Specifies the number of the port on which the monitor is to be added, relative to *its* slot for bladed systems. Use **switchShow** for a list of valid ports.
monitorId	Specifies the monitor number to clear. Monitor numbers are defined are created, and can be displayed using **perfMonitorShow**. This operand is optional; if omitted, this command clears all monitor counters of the appropriate monitor_class on the port. This operand does not apply to ISL monitors.

Examples   To clear statistics counters for an end-to-end monitor:

```
switch:admin> perfmonitorclear --class EE 1/2 5
End-to-End monitor number 5 counters are cleared

switch:admin> perfmonitorclear --class EE 1/2
This will clear ALL EE monitors' counters on port 2, continue?
(yes, y, no, n): [no] y
```

To clear statistics counters for a filter-based monitor:

```
switch:admin> perfmonitorclear --class FLT 1/2 4
Filter-based monitor number 4 counters are cleared

switch:admin> perfmonitorclear --class FLT 1/2
This will clear ALL filter-based monitors' counters on port 2, continue? (yes, y, no,
y): [no] y
```

To clear statistics counters for an ISL monitor:

```
switch:admin> perfmonitorclear --class ISL 1
This will clear ISL monitor on port 1, continue? (yes, y, no, n): [no] y
```

See Also **perfAddEEMonitor**, **perfAddIPMonitor**, **perfAddReadMonitor**, **perfAddRWMonitor**, **perfAddSCSIMonitor**, **perfAddUserMonitor**, **perfAddWriteMonitor**, **perfMonitorShow**

perfMonitorShow

Displays end-to-end, filter-based, and ISL monitors on a port.

Synopsis **perfmonitorshow --class** *monitor_class* [*slotnumber/*]*portnumber* [*interval*]

Availability admin, switchAdmin

Description Use this command to display previously created monitors on a port. Monitor classes include end-to-end monitors (EE), filter-based monitors (FLT), and ISL monitors (ISL).

ISL monitors are automatically activated on E_Ports (not including trunk slaves). End-to-end monitors are created using **perfAddEEMonitor**. Filter-based monitors are created using **perfAddIPMonitor**, **perfAddReadMonitor**, **perfAddRWMonitor**, **perfAddSCSIMonitor**, **perfAddUserMonitor**, or **perfAddWriteMonitor**.

For end-to-end monitors, this command displays (if no interval operand is specified):

Key	The monitor number
SID	Sending ID
DID	Destination ID
Owner_app	Telnet or Web Tools
Owner_ip_addr	The IP address of the originator that created the EE monitor
Tx_count	Number of FC words transmitted
Rx_count	Number of FC words received
Crc_count	Number of frames with CRC errors

If you do not specify a value for the interval operand, this command displays end-to-end monitor information and a cumulative count of the traffic detected by the monitor. If you specify a value for the interval operand, this command displays a snapshot of the traffic at the specified interval.

For filter-based monitors, this command can display (if no interval operand is specified) the following:

Key	The monitor number
Alias	The monitor alias name
Owner_app	Telnet or Web Tools
Owner_ip_addr	The IP address of the originator that created the filter monitor
Frame_count	Cumulative 64-bit frame count

If you do not specify a value for the interval operand, this command displays a cumulative count of the traffic detected by the monitor. If you specify a value for the interval operand, this command displays a snapshot of the traffic at the specified interval.

For ISL monitors, the command displays:

Tx_count	64-bit cumulative ISL transmit count for the whole ISL
Num_ports	Number of ports in this ISL
Num_domains	Total number of domains being monitored
Domain_count	64-bit cumulative transmit counter for each individual domain

---

Note

This command requires a Performance Monitor license.

This command does not support virtual FC ports (VE/VEX_Port) and EX_Port.

Operands The operands are as follows:

--class The monitor class, which can be one of EE (end-to-end), FLT (filter-based), or ISL (interswitch link). This operand is required.

slotnumber For bladed systems only, this operand specifies the slot number of the port on which the monitor is to be added, followed by a slash (/).

portnumber Specifies the number of the port on which the monitor is to be added, relative to its slot for bladed systems. Use **switchShow** for a list of valid ports.

interval Specifies an interval in (5 or more) seconds. In the case of end-to-end monitor, the Tx and Rx counts are in the unit of byte when this operand is specified. This operand is optional.

Examples To display end-to-end monitor on a port at an interval of every 6 seconds:

```
switch:admin> perfmonitorshow --class EE 4/5 6
perfmonitorshow 53, 6: Tx/Rx are # of bytes and crc is # of crc errors
     0              1              2              3              4
------------- ------------- ------------- ------------- -------------
crc   Tx   Rx crc   Tx   Rx crc   Tx   Rx crc   Tx   Rx crc   Tx   Rx
============= ============= ============= ============= =============
0     0    0  0     0    0  0     0    0  0     0    0  0     0    0
0     53m  4.9m 0   53m  4.9m 0   53m  4.9m 0   53m 4.9m 0   53m  0
0     53m  4.4m 0   53m  4.4m 0   53m  4.4m 0   53m 4.4m 0   53m  0
0     53m  4.8m 0   53m  4.8m 0   53m  4.8m 0   53m 4.8m 0   53m  0
0     53m  4.6m 0   53m  4.6m 0   53m  4.6m 0   53m 4.6m 0   53m  0
0     53m  5.0m 0   53m  5.0m 0   53m  5.0m 0   53m 5.0m 0   53m  0
0     53m  4.8m 0   53m  4.8m 0   53m  4.8m 0   53m 4.8m 0   53m  0
0     53m  4.5m 0   53m  4.5m 0   53m  4.5m 0   53m 4.5m 0   53m  0
0     52m  4.5m 0   52m  4.5m 0   52m  4.5m 0   52m 4.5m 0   52m  0
0     52m  5.0m 0   52m  5.0m 0   52m  5.0m 0   52m 5.0m 0   52m  0
0     52m  4.5m 0   52m  4.5m 0   52m  4.5m 0   52m 4.5m 0   52m  0
0     52m  4.6m 0   52m  4.6m 0   52m  4.6m 0   52m 4.6m 0   52m  0
```

To display EE monitors on a port:

```
switch:admin> perfmonitorshow --class EE 4/5
There are 7 end-to-end monitor(s) defined on port 53.
 KEY     SID     DID     OWNER_APP     OWNER_IP_ADDR     TX_COUNT           RX_COUNT             CRC_COUNT
-------------------------------------------------------------------------------------------------------
-------
   0  0x58e0f  0x1182ef    TELNET          N/A        0x0000000000000000  0x0000000000000000
0x0000000000000000

   0  0x21300  0x21dda    TELNET          N/A        0x00000004d0ba9915  0x0000000067229e65
0x0000000000000000
   1  0x21300  0x21ddc    TELNET          N/A        0x00000004d0baa754  0x0000000067229e65
0x0000000000000000
   2  0x21300  0x21de0    TELNET          N/A        0x00000004d0bab3a5  0x0000000067229e87
0x0000000000000000
   3  0x21300  0x21de1    TELNET          N/A        0x00000004d0bac1e4  0x0000000067229e87
0x0000000000000000
   4  0x21300  0x21de2    TELNET          N/A        0x00000004d0bad086  0x0000000067229e87
0x0000000000000000
   5  0x11000  0x21fd6    WEB_TOOLS   192.168.169.40  0x00000004d0bade54  0x0000000067229e87
0x0000000000000000
   6  0x11000  0x21fe0    WEB_TOOLS   192.168.169.40  0x00000004d0baed41  0x0000000067229e98
0x0000000000000000
```

To display filter-based monitor on a port at an interval of every 6 seconds:

```
switch:admin> perfmonitorshow --class FLT 2/5 6
perfmonitorshow 21, 6
    0         1         2         3         4         5         6
  #Frames   #Frames   #Frames   #Frames   #Frames   #Frames   #Frames
  -----------------------------------------------------------------
    0         0         0         0         0         0         0
   26k       187       681       682       682       494       187
   26k       177       711       710       710       534       176
   26k       184       734       734       734       550       184
   26k       182       649       649       649       467       182
   26k       188       754       755       755       567       184
   26k       183       716       716       717       534       183
   26k       167       657       656       655       488       167
   26k       179       749       749       749       570       179
   26k       164       752       752       752       588       164
   26k       190       700       700       700       510       190
   26k       181       701       701       701       520       181
   26k       200       750       750       751       550       201
   26k       180       692       692       691       512       179
   26k       179       696       696       696       517       179
   26k       187       720       720       720       533       187
   26k       200       722       722       722       522       200
   26k       204       717       717       717       513       204
```

To display filter monitor information on a port:

```
switch:admin> perfmonitorshow --class FLT 2/5
There are 7 filter-based monitors defined on port 21.

KEY   ALIAS      OWNER_APP       OWNER_IP_ADDR     FRAME_COUNT
-----------------------------------------------------------------
 0  SCSI_Frame TELNET               N/A       0x00000000002c2229
 1  SCSI_WR    TELNET               N/A       0x000000000000464a
 2  SCSI_RW    TELNET               N/A       0x000000000000fd8c
 3  SCSI_RW    WEB_TOOLS       192.168.169.40   0x0000000000007ba3
 4  SCSI_RW    WEB_TOOLS       192.168.169.190 0x0000000000004f0e
 5  SCSI_RD    WEB_TOOLS       192.168.169.40   0x0000000000002208
 6  SCSI_WR    WEB_TOOLS       192.168.169.40   0x000000000000033a
```

To display ISL monitor information on a port:

```
switch:admin> perfmonitorshow --class ISL 1/1
Total transmit count for this ISL: 1462326
Number of destination domains monitored: 3
Number of ports in this ISL: 2
Domain  97:            110379         Domain 98:            13965
Domain  99:           1337982
```

See Also   **perfShowEEMonitor**, **perfShowFilterMonitor**

perfSetPortEEMask

Sets overall mask for end-to-end (EE) performance monitors.

Synopsis   **perfsetporteemask** [*slotnumber/*]*portnumber TxSIDMsk TxDIDMsk RxSIDMsk RxDIDMsk*

Availability   admin, switchAdmin

Description   Use this command to set the mask for the EE performance monitors of a port. This command enables a user to selectively choose the kind of Fibre Channel frames in which the number of words are to be counted. On setting the EE mask on a port, all existing EE monitors on that port are deleted.

This command controls all three address fields (domain ID, area ID, and AL_PA ID) of both the source ID and destination ID, which can be used to trigger the monitor.

When a mask is set (0xff), the corresponding field will be used to trigger the monitor. If the mask is unset (0x00), the corresponding field will be ignored.

There is only one EE mask per port. The mask is applied to all eight EE monitors available on a port. The default EE mask value upon power-on is already set. When ISL monitoring is enabled, EE mask on E_Ports are controlled automatically and existing mask values for E_Ports are over-written.

Note

This command requires a Performance Monitor license.

This command does not support virtual FC ports (VE/VEX_Port) and EX_Port.

Operands   This command has the following operands:

slotnumber	For bladed systems only, this operand specifies the slot number of the port on which the monitor is to be added, followed by a slash (/).
portnumber	Specifies the number of the port on which the monitor is to be added, relative to its slot for bladed systems. Use **switchShow** for a list of valid ports.
TxSIDMsk	Specify the source ID mask in *dd:aa:pp* format, with quotation marks, , where *dd* is the domain ID mask, *aa* is the area ID mask, and *pp* is AL_PA ID mask. For example, 00:ff:00 uses TxSID area ID to trigger the EE monitor. *TxSIDMsk* represents transmitting source ID mask. Specify the following values to turn on or off a specific field:

00   Specifies that the field does not trigger EE monitors.

ff   Specifies that the field does triggers EE monitors.

TxDIDMsk	Specify the destination ID mask in *dd:aa:pp* format. Quotation marks are optional. *TxDIDMsk* represents transmitting destination ID mask. This operand is required.
RxSIDMsk	Specify the source ID mask in *dd:aa:pp* format. Quotation marks are optional. *RxSIDMsk* represents receiving source ID mask. This operand is required.
RxDIDMsk	Specify the destination ID mask in *dd:aa:pp* format. Quotation marks are optional. *RxDIDMsk* represents receiving destination ID mask. This operand is required.

Optionally, a comma can separate the operands. A space is required to separate the operands even when using commas.

Examples To set the overall mask for end-to-end monitors on a port:

```
switch:admin> perfsetporteemask 1/6 "00:00:00" "ff:ff:ff" "00:00:ff" "ff:00:00"
 Changing EE mask for this port will cause ALL EE monitors on this port to be
deleted.
 continue? (yes, y, no, n): [no] y
 The EE mask on port 6 is set and EE Monitors on this port are deleted
```

See Also **perfAddEEMonitor**, **perfShowEEMonitor**

2

Note: Enter commands in lowercase only; mixed case is for readability.

perfShowAlpaCrc

perfShowAlpaCrc

Displays the CRC error count by port or by arbitrated loop physical address (AL_PA).

Synopsis   **perfshowalpacrc** [*slotnumber/*]*portnumber* [*ALPA*]

Availability   admin, switchAdmin

Description   Use this command to display the CRC error count of one or all devices attached to a port. If the AL_PA operand is specified, only the CRC count for that AL_PA device is displayed. If the AL_PA operand is not specified, the CRC count for all the AL_PA devices on a specified port are displayed.

CRC count is a 64-bit counter. The CRC count value is displayed in hexadecimal.

Note

This command requires a Performance Monitor license.

This command is not supported on the SilkWorm 200E, 4100, and 48000 platforms.

This command does not support virtual FC ports (VE/VEX_Port) and EX_Port.

Operands   This command has the following operands:

slotnumber   For bladed systems only, this operand specifies the slot number of the port on which the monitor is to be added, followed by a slash (/).

portnumber   Specifies the number of the port on which the monitor is to be added, relative to its slot for bladed systems. Use **switchShow** for a list of valid ports.

ALPA   Specify the AL_PA address if you want to get the CRC errors for a particular device. This operand is optional; if omitted, this command displays CRC error counts for all devices attached to the specified port.

Optionally, a comma can separate the operands. A space is required to separate the operands even when using commas.

Examples   To display the CRC error count for all AL_PA devices on a port:

```
switch:admin> perfshowalpacrc 2/4
ALPA                 CRC_ERROR_COUNT
----------------------------------
0x01                 0
0x03                 0
```

See Also   **perfClearAlpaCrc**

perfShowEEMonitor

Displays end-to-end performance monitor information on a port.

Synopsis   **perfshoweemonitor** [*slotnumber/*]*portnumber* [*interval*]

Availability   admin, switchAdmin

Description   Use this command to display end-to-end monitor information on a port.

Refer to **perfMonitorShow** for details regarding this command's output.

Note

This command requires a Performance Monitor license.

This command is deprecated; use **perfMonitorShow** instead.

This command does not support virtual FC ports (VE/VEX_Port) and EX_Port.

Operands   This command has the following operands:

slotnumber   For bladed systems only, this operand specifies the slot number of the port on which the monitor is to be added, followed by a slash (/).

portnumber   Specifies the number of the port on which the monitor is to be added, relative to its slot for bladed systems. Use **switchShow** for a list of valid ports.

interval   Specify an interval, in seconds (5 or more). Tx and Rx counts are in the unit of byte when this operand is specified. This operand is optional.

Optionally, a comma can separate the operands. A space is required to separate the operands even when using commas.

Examples   To display end-to-end monitor frame traffic on a port at an interval of every 6 seconds:

```
switch:admin> perfshoweemonitor 4/5 6
perfshoweemonitor 53, 6: Tx/Rx are # of bytes and crc is # of crc errors
      0                 1                 2                 3                 4
 -------------    -------------    -------------    -------------    -------------
 crc   Tx   Rx    crc   Tx   Rx    crc   Tx   Rx    crc   Tx   Rx    crc   Tx   Rx
 =============    =============    =============    =============    =============
 0     0    0     0     0    0     0     0    0     0     0    0     0     0    0
 0    53m 4.9m    0    53m 4.9m    0    53m 4.9m    0    53m 4.9m    0    53m  0
 0    53m 4.4m    0    53m 4.4m    0    53m 4.4m    0    53m 4.4m    0    53m  0
 0    53m 4.8m    0    53m 4.8m    0    53m 4.8m    0    53m 4.8m    0    53m  0
 0    53m 4.6m    0    53m 4.6m    0    53m 4.6m    0    53m 4.6m    0    53m  0
 0    53m 5.0m    0    53m 5.0m    0    53m 5.0m    0    53m 5.0m    0    53m  0
 0    53m 4.8m    0    53m 4.8m    0    53m 4.8m    0    53m 4.8m    0    53m  0
 0    53m 4.5m    0    53m 4.5m    0    53m 4.5m    0    53m 4.5m    0    53m  0
 0    52m 4.5m    0    52m 4.5m    0    52m 4.5m    0    52m 4.5m    0    52m  0
 0    52m 5.0m    0    52m 5.0m    0    52m 5.0m    0    52m 5.0m    0    52m  0
 0    52m 4.5m    0    52m 4.5m    0    52m 4.5m    0    52m 4.5m    0    52m  0
 0    52m 4.6m    0    52m 4.6m    0    52m 4.6m    0    52m 4.6m    0    52m  0
```

perfShowEEMonitor

To display EE monitors on a port:

```
switch:admin> perfshoweemonitor 4/5
There are 7 end-to-end monitor(s) defined on port 53.
 KEY     SID     DID       OWNER_APP       OWNER_IP_ADDR      TX_COUNT          RX_COUNT
CRC_COUNT
 -----------------------------------------------------------------------------------------------
-------------
  0   0x21300  0x21dda   TELNET               N/A         0x00000004d0ba9915  0x0000000067229e65
0x0000000000000000
  1   0x21300  0x21ddc   TELNET               N/A         0x00000004d0baa754  0x0000000067229e65
0x0000000000000000
  2   0x21300  0x21de0   TELNET               N/A         0x00000004d0bab3a5  0x0000000067229e87
0x0000000000000000
  3   0x21300  0x21de1   TELNET               N/A         0x00000004d0bac1e4  0x0000000067229e87
0x0000000000000000
  4   0x21300  0x21de2   TELNET               N/A         0x00000004d0bad086  0x0000000067229e87
0x0000000000000000
  5   0x11000  0x21fd6   WEB_TOOLS       192.168.169.40 0x00000004d0bade54  0x0000000067229e87
0x0000000000000000
  6   0x11000  0x21fe0   WEB_TOOLS       192.168.169.40 0x00000004d0baed41  0x0000000067229e98
0x0000000000000000
```

See Also   **perfAddEEMonitor**

Note: Enter commands in lowercase only; mixed case is for readability.

perfShowFilterMonitor

2

perfShowFilterMonitor

Displays filter-based performance monitor information for a port.

Synopsis   **perfshowfiltermonitor** [*slotnumber/*]*portnumber* [*interval*]

Availability   admin, switchAdmin

Description   Use this command to display all the filter-based monitors defined on the specified port and the traffic count values.

Refer to **perfMonitorShow** for details regarding this command's output.

Note

This command requires a Performance Monitor license.

This command is deprecated; use **perfMonitorShow** instead.

This command does not support virtual FC ports (VE/VEX_Port) and EX_Port.

Operands   This command has the following operands:

slotnumber   For bladed systems only, this operand specifies the slot number of the port on which the monitor is to be added, followed by a slash (/).

portnumber   Specifies the number of the port on which the monitor is to be added, relative to its slot for bladed systems. Use **switchShow** for a list of valid ports.

interval   Specify an interval, in seconds (5 or more). This operand is optional.

Optionally, a comma can separate the operands. A space is required to separate the operands even when using commas.

Examples   To display filter monitor traffic on a port at an interval of every 6 seconds:

```
switch:admin> perfshowfiltermonitor 2/5 6
perfshowfiltermonitor 21, 6
0        1         2         3         4        5        6
 #Frames   #CMDs     #CMDs     #Frames   #Frames   #CMDs     #CMDs
----------------------------------------------------------------
    0        0         0         0         0        0        0
   26k      187       681       682       682      494      187
   26k      177       711       710       710      534      176
   26k      184       734       734       734      550      184
   26k      182       649       649       649      467      182
   26k      188       754       755       755      567      184
   26k      183       716       716       717      534      183
   26k      167       657       656       655      488      167
   26k      179       749       749       749      570      179
   26k      164       752       752       752      588      164
   26k      190       700       700       700      510      190
   26k      181       701       701       701      520      181
   26k      200       750       750       751      550      201
   26k      180       692       692       691      512      179
   26k      179       696       696       696      517      179
   26k      187       720       720       720      533      187
   26k      200       722       722       722      522      200
   26k      204       717       717       717      513      204
```

To display filter monitor information on a port:

```
switch:admin> perfshowfiltermonitor 2/5
There are 7 filter-based monitors defined on port 21.

KEY    ALIAS     OWNER_APP       OWNER_IP_ADDR     FRAME_COUNT
----------------------------------------------------------------
 0   SCSI_Frame TELNET                N/A        0x00000000002c2229
 1   SCSI_WR    TELNET                N/A        0x000000000000464a
 2   SCSI_RW    TELNET                N/A        0x000000000000fd8c
 3   SCSI_RW    WEB_TOOLS       192.168.169.40  0x0000000000007ba3
 4   SCSI_RW    WEB_TOOLS       192.168.169.190 0x0000000000004f0e
 5   SCSI_RD    WEB_TOOLS       192.168.169.40  0x0000000000002208
 6   SCSI_WR    WEB_TOOLS       192.168.169.40  0x000000000000033a
```

Note

If you do not specify an interval, the filter-based monitor frame count is displayed in 64-bit format and is cumulative.

See Also   **perfAddIPMonitor**, **perfAddReadMonitor**, **perfAddRWMonitor**, **perfAddSCSIMonitor**, **perfAddUserMonitor**, **perfAddWriteMonitor**

Note: Enter commands in lowercase only; mixed case is for readability.

perfShowPortEEMask

2

perfShowPortEEMask

Displays the current address mask for end-to-end performance monitors on a port.

Synopsis **perfshowporteemask** [*slotnumber/*]*portnumber*

Availability admin, switchAdmin

Description Use this command to display the current mask shared across all end-to-end (EE) performance monitors of a port. There are only two commands that can modify the value of the EE mask: **perfSetPortEEMask** and **perfCfgRestore**.

The end-to-end mask has 12 fields:

```
TxSID Domain:  on
TxSID Area:    on
TxSID ALPA:    on
TxDID Domain:  on
TxDID Area:    on
TxDID ALPA:    on
RxSID Domain:  on
RxSID Area:    on
RxSID ALPA:    on
RxDID Domain:  on
RxDID Area:    on
RxDID ALPA:    on
```

The fields that are marked "on" are used to trigger end-to-end monitors. The default value of the EE mask is all fields set to "on."

Note

This command requires a Performance Monitor license.

This command is deprecated; use **perfMonitorShow** instead.

This command does not support virtual FC ports (VE/VEX_Port) and EX_Port.

Operands This command has the following operand:

slotnumber   For bladed systems only, this operand specifies the slot number of the port on which the monitor is to be added, followed by a slash (/).

portnumber   Specifies the number of the port on which the monitor is to be added, relative to its slot for bladed systems. Use **switchShow** for a list of valid ports.

Examples To display the end-to-end mask on a port:

```
switch:admin> perfshowporteemask 2/4
The EE mask onport 20 is set by application NONE

TxSID Domain:  on
TxSID Area:    on
TxSID ALPA:    on
TxDID Domain:  on
TxDID Area:    on
TxDID ALPA:    on
RxSID Domain:  on
RxSID Area:    on
RxSID ALPA:    on
RxDID Domain:  on
RxDID Area:    on
RxDID ALPA:    on
```

See Also **perfAddEEMonitor**, **perfDelEEMonitor**, **perfSetPortEEMask**

pkiCreate

Creates public key infrastructure (PKI) objects.

Synopsis   **pkicreate**

Availability   admin, switchAdmin

Description   Use this command in nonsecure mode to create PKI objects:

- Switch private key and CSR

- Private key pass-phrase

- Install root certificate

This command does not create the switch certificate. The switch certificate should be obtained offline from Certificate Authority.

In secure mode, this command exits with a warning and does not create PKI objects.

Operands   none

Examples   To create PKI objects in nonsecure mode:

```
switch:admin> pkicreate
Installing Private Key and Csr...
Switch key pair and CSR generated...
Installing Root Certificate...
```

If run in secure mode, the following error message is displayed:

```
switch:admin> pkicreate

Warning !! Switch is in secure mode.
Cannot create new Pki Objects. Exiting...
```

See Also   **pkiRemove**, **pkiShow**

2

Note: Enter commands in lowercase only; mixed case is for readability.

pkiRemove

pkiRemove

Remove existing public key infrastructure (PKI) objects.

Synopsis   **pkiremove**

Availability   admin, switchAdmin

Description   Use this command to remove PKI objects in nonsecure mode. It removes switch private key, private key pass-phrase, CSR, root certificate, and switch certificate.

In secure mode, this command displays a message and does not remove PKI objects.

Operands   none

Examples   To remove PKI objects in nonsecure mode:

```
switch:admin> pkiremove

WARNING!!!

Removing Pki objects will impair the security functionality
of this fibre channel switch. If you want secure mode enabled,
you will need to get the switch certificate again.

About to remove Pki objects.
ARE YOU SURE (yes, y, no, n): [no] y
All PKI objects removed.
```

If run in secure mode, the following error message is displayed:

```
switch:admin> pkiremove

This Switch is in secure mode.
Removing Pki objects is not allowed. Exiting...
```

See Also   **pkiCreate**, **pkiShow**

Note: Enter commands in lowercase only; mixed case is for readability.

pkiShow

2

pkiShow

Displays existing public key infrastructure (PKI) objects.

Synopsis   **pkishow**

Availability   admin, switchAdmin, user

Description   Use this command to display existence of PKI objects, such as switch private key, private key passphrase, CSR, root certificate, and switch certificate.

Operands   none

Examples   To view PKI objects:

```
switch:admin> pkishow
Passphrase      : Exist
Private Key     : Exist
CSR             : Exist
Certificate     : Empty
Root Certificate: Exist
```

See Also   **pkiCreate**, **pkiRemove**

Note: Enter commands in lowercase only; mixed case is for readability.

portAlpaShow

Displays the arbitrated loop physical addresses (AL_PAs) of devices attached to a port.

Synopsis **portalpashow** [*slotnumber/*]*portnumber*

Availability admin, switchAdmin, user

Description Use this command to display the device AL_PAs present in a port and if these devices are public or private. If the port is not an active FL_Port or if it does not have any AL_PA, this command displays an error.

Operands This command has the following operands:

slotnumber For bladed systems only, specify the slot number of the port to display, followed by a slash (/).

portnumber Specify the port number to display, relative to its slot for bladed systems. Use **switchShow** to list valid ports.

Examples To display the AL_PAs of a port:

```
switch:user> portalpashow 4/14
AL_PA   type            AL_PA   type            AL_PA   type
0xe2    public          0xe4    public
```

See Also **switchShow**

portBufferShow

Displays the buffer usage information for a port group or for all port groups in the switch.

Synopsis   **portbuffershow** [*slotnumber/*][*portnumber*]

Availability   admin, switchAdmin, user

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	Displays the area number of the port.
Port Type	Displays as E (E_Port), F (F_Port), G (G_Port), L (L_Port), or U (U_Port) depending on the port type.
Lx Mode	Displays as L0 when the link is not in long distance mode, LE when the link is up to 10 Km, LM when the link is up to 25 Km, L1 when the link is up to 50 Km, L2 when the link is up to 100 Km or LD when the distance is to be determined dynamically.
Max/Resv Buffers	Displays the count of the maximum or reserved number of buffers that are allocated to the port based on the estimated distance (configured by the *desired_distance* operand of the **portCfgLongDistance** command). 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.
Buffer Usage	Displays the actual number of buffers allocate to the port. In LD mode, the number is determined by the actual distance and the user-specified desired distance (configured by the *desired_distance* operand of the **portCfgLongDistance** command).
Needed Buffers	Displays the number of buffers that are 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 fixed distance displays based on the port speed, for instance: 1G as 10 Km, 2G as 5 Km, and 4G as 2 Km. For the static long distance modes, the fixed distance displays; for instance, LE as 10 Km, LM as 25 Km, L1 as 50 Km, and L2 as 100 Km. For LD mode, the physical 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. The supported distance measurement is up to 500 Km. Distance measurement on a link longer than 500 Km might not be accurate.
Remaining Buffers	Displays the remaining (unallocated and reserved) buffers in a port group.

When there is no connection to a port or the port is disabled, or the port is not an E_Port some of the information in this display is not relevant, such as long distance mode, needed buffers, and link distance. In this case, the irrelevant fields display as hyphens.

Operands   The operands are as follows:

slotnumber   For bladed systems only, specifies the slot number of the port group to display, followed by a slash (/).

portnumber   Specifies the number of a port associated with the port group to display, relative to its slot for bladed systems. Use **switchShow** for a list of valid ports. This operand is optional; if omitted, this command displays the long distance buffer information for all the port groups of the switch. In the case where this command displays information for all the port groups of the switch, a divider line displays between the ports of each port group to assist in readability.

Examples   To display the long distance information a port:

```
switch:user> portbuffershow 17
User  Port  Lx   Max/Resv Buffer Needed     Link     Remaining
Port  Type  Mode Buffers  Usage  Buffers  Distance    Buffers
----  ----  ---- -------  ------ ------- ---------- ---------
 16          -      -       0      -         -
 17     E   L1      -      54     54       50km
 18          -      -       0      -         -
 19          -      -       0      -         -                54
```

See Also   **portCfgLongDistance**

portCamShow

Displays port-based filter CAM utilization.

Synopsis   **portcamshow** [*slotnumber/*][*portnumber*]

Availability   admin, switchAdmin, user

Description   Use this command to display the current filter CAM utilization of all ports or one port specified at input.

The following information is displayed:

SID 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.
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	Total number of free SID CAM entries per quad.
DID free	Total number of free DID CAM entries per quad.

Operands   This command has the following operands:

slotnumber	For bladed systems only, specify the slot number of the port to display, followed by a slash (/).
portnumber	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, information for all ports is displayed.

Examples   To display the filter CAM utilization for all ports on a switch:

```
switch:user> portcamshow

Ports of Slot 9
---------------------------------------------
Port  SID used  DID used  SID free  DID free
 0       0         0        64         512
 1       0         0        64         512
 2       0         0        64         512
 3       0         0        64         512
 4       0         0        64         512
 5       0         0        64         512
 6       0         0        64         512
 7       0         0        64         512
 8       0         0        63         511
 9       0         0        63         511
10       0         0        63         511
11       1         1        63         511
12       0         0        46         510
13       0         0        46         510
14       0         0        46         510
15      18         2        46         510
---------------------------------------------
(output truncated)
```

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)
```

See Also   **switchShow**

portcfg

Enables or disables a port's configuration.

Synopsis   **portcfg** *action* [*slot*/][**ge**]*port args*

Availability   admin, switchAdmin

Description   Use this command to configure the address resolution protocol (ARP) entries, IP interfaces on the gigabit Ethernet (GbE) port, static routes on the IP interface, FCIP tunnels, and registered state change notification (RSCN) suppression.

RSCN suppression is configurable for both FC and GbE ports; however, configuration options are dependent on the protocol.

Operands   This command has the following operands:

action   Actions include:

      arp [*slot*/][**ge**]*port args*
          args for **arp** include:

          add *ipaddr macaddr*
              Adds static ARP entries.

          delete *ipaddr*
              Deletes static ARP entries.

          flush   Flushes the ARP table.

      ipif [*slot*/][**ge**]*port args*
          args for **ipif** include:

          create *ipaddr netmask mtu_size*
              Creates IP interfaces.

          delete *ipaddr*
              Deletes IP interfaces.

      iproute [*slot*/][**ge**]*port args*
          args for **iproute** include:

          create *ipaddr netmask gateway_router metric*
              Creates IP routes.

          delete *ipaddr netmask*
              Deletes IP routes.

      fciptunnel [*slot*/][**ge**]*port args* [*optional_args*]
          args for **fciptunnel** include:

          create *tunnel_id remote_ipaddr local_ipaddr comm_rate*
              Creates FCIP tunnels. *optional_args* for **create** include:

              -c   Enables compression on the tunnel specified.

              -k *timeout*
                  Specifies the keep alive timeout, in seconds. *timeout* values are 8 to 7,200; default is 10.

-m *time* Specifies the minimum retransmit time, in milliseconds. *time* values are 20 to 5,000; default is 100.

-n *remote_wwn*
Specifies the remote-side FC entity WWN.

-r *retransmissions*
Specifies the maximum retransmissions. *retransmissions* values are 1 to 8; default is 8.

-s Disables selective acknowledgement code (SACK) on the tunnel specified.

-w Enables WAN TOV on the tunnel specified.

delete *tunnel_id*
Deletes FCIP tunnels.

rscnsupr [*slot*/][**ge**]*port args*
Manages RSCN suppression on the local port. *args* for **rscnsupr** include:

-range Specifies a range of ports in the same slot to apply the configuration.

--disable Disables the configuration. When disabled, device changes on the port generates RSCN to another end device that is zoned with this one. By default, RSCN suppression is disabled to all ports.

--enable Enables the configuration. When enabled, any device change on the port does not generate RSCN to any other end device.

Common parameters include:

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 ports to be configured, relative to its slot for bladed systems. For GbE ports, the ports are numbered **ge0** and **ge1**. Use **switchShow** for a list of valid ports.
ipaddr	Specifies the interface protocol as IP and the IP address on the GbE port. Use this parameter to bring up a native IP interface for link-level diagnostics, connectivity, and characterization of SLA.
macaddr	Specifies the MAC address which corresponds to the IP address in the ARP table.
netmask	Specifies the subnet mask for the specified port or route. Uses *a.b.c.d* format.
mtu_size	Specifies the maximum transfer unit (MTU) size for the IP interface. Valid values are 1,500 to 2,250.
gateway	Specifies the default gateway IP address for the route.
metric	Specifies the link metric associated with the route. Valid values are 0 to 255. The default is 0.
tunnel_id	Specifies the FCIP tunnel on the GbE port. Valid values are 1 through 7.
local_ipaddr	Specifies the IP address for the specified port.
remote_ipaddr	Specifies the remote-side IP address of an FCIP connection.

comm_rate   Specifies the committed traffic rate, in Kbit/sec, on the FCIP tunnel. Valid values
                     are 1,544 to 1,000,000, and 0 for uncommitted.

Examples   To add an ARP entry:

```
switch:admin> portcfg arp 3/ge0 add 192.168.255.25 00:01:02:03:04:60
Operation Succeeded
```

To create an IP interface:

```
switch:admin> portcfg ipif 4/ge0 create 192.168.100.50 255.255.255.0 1500
Operation Succeeded
```

To create a static IP route:

```
switch:admin> portcfg iproute ge0 create 172.16.123.231. 255.255.0.0 192.168.255.25
1
Operation Succeeded
```

To create an FCIP tunnel:

```
switch:admin> portcfg fciptunnel ge0 create 2 192.168.255.2 192.168.255.20 100000
Operation Succeeded
```

See Also   **configure**, **portShow**, **switchShow**

portCfgDefault

Restores the port configuration to default values.

Synopsis **portcfgdefault** [*slotnumber*/]*portnumber*

Availability admin, switchAdmin

Description Use this command to reset any special configuration values on a port to their factory defaults. You can view the current port configuration using the **portCfgShow** command.

Operands This command has the following operands:

slotnumber	For bladed systems only, specify the slot number of the port to display, followed by a slash (/).
portnumber	Specify the port number to display, relative to its slot for bladed systems. Use **switchShow** to list valid ports.

Examples To reset a port to factory defaults:

```
switch:admin> portcfgdefault 1/3
```

See Also **portCfgEPort**, **portCfgGPort**, **portCfgLongDistance**, **portCfgLPort**, **portCfgPersistentDisable**, **portCfgPersistentEnable**, **portCfgShow**, **portCfgSpeed**, **portCfgTrunkPort**

Note: Enter commands in lowercase only; mixed case is for readability.

portCfgEPort

2

portCfgEPort

Enables or disables a port from becoming an E_Port.

Synopsis　　**portcfgeport** [*slotnumber/*]*portnumber*, *mode*

Availability　　admin, switchAdmin

Description　　Use this command to enable or disable a port from becoming an E_Port. The E_Port capability is enabled by default unless this command is used to disable it.

When a port is configured as a non-E_Port through this command, an ISL connected to this port is segmented. No data traffic between two switches is routed through this port. Fabric management data, such as zoning information, are not exchanged through this port either.

Regardless of how many E_Ports are connected between two switches, the maximum routing paths are currently limited to 16 E_Ports.

Changes made by this command are persistent across switch reboots or power cycles.

Operands　　This command has the following operands:

slotnumber　　　For bladed systems only, specifies the slot number of the port to be configured, followed by a slash (/).

portnumber　　　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.

mode　　　Specify 1 to enable the port to become an E_Port. This is the default port state. Specify 0 to disable the port from becoming an E_Port.

Examples　　To disable a port from becoming an E_Port:

```
switch:admin> portcfgeport 2/3, 0
```

To enable a port to become an E_Port:

```
switch:admin> portcfgeport 1/3, 1
```

See Also　　**portShow**, **switchShow**

portCfgEXPort

Sets a port to be an EX_Port, and sets and displays EX_Port configuration parameters.

Synopsis   **portcfgexport** [*slotnumber/*]*portnumber* [**-a** *admin*][**-f** *fabricid*][**-r** *ratov*][**-e** *edtov*][**-d** *domainid*]
[**-p** *pidformat*][**-t** *fabric_parameter*]

Availability   admin, switchAdmin

Description   Use this command to configure a port as an EX_Port.

This command also displays and changes a port's EX_Port configuration. If no optional operands are given, this command displays the currently configured values; otherwise, it sets the specified attributes to the new values. The port must be disabled (for example, using **portDisable**) prior to setting EX_Port attributes. The port must be enabled (using **portEnable**) before the port can become active following EX_Port parameter changes.

When the port is not active, the preferred domain ID is configurable. This is the domain ID that 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 displayed.

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 is disabled due to a fabric ID oversubscription. If two fabrics have been assigned the same fabric ID, one of them is 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.

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's 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.

Operands   This command has the following operands:

-a *admin*	Specify 1 to enable or 2 to disable the admin.
-f *fabricid*	Specify 1 to 128 for the fabric ID.
-r *ratov*	Specify the R_A_TOV used for port negotiation (2000 - 12000).
-e *edtov*	Specify the E_D_TOV used for port negotiation (1000 - 60000).
-d *domainid*	Specify 1 to 239 for the preferred domain ID.
-p *pidformat*	Specify 0 for native, 1 for core, and 2 for extended edge port ID format.
-t *fabric_parameter*	Specify 1 to enable or 2 to disable negotiate fabric parameters.

Examples   To display the EX_Port configuration of port 2/0:

```
switch:admin> portcfgexport 2/0

      Port   2/0   info
   Admin:                  enabled
   State:                  OK
   Pid format:             core(N)
   Operate mode:           Brocade Native
   Edge Fabric ID:         16
   Front Domain ID:        160
   Front WWN:              50:06:06:9e:20:9f:ce:10
   Principal Switch:       7
   principal WWN:          10:00:00:60:69:c0:05:8a
   Fabric Parameters:      Auto Negotiate
   R_A_TOV:                9000(N)
   E_D_TOV:                2000(N)
   Edge fabric's primary wwn: N/A
   Edge fabric's version stamp: N/A
```

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
```

See Also   portCfgVEXPort, portDisable, portEnable, portShow

2 Note: Enter commands in lowercase only; mixed case is for readability.

portCfgGPort

portCfgGPort

Designates a port as a G_Port.

Synopsis   **portcfggport** [*slotnumber/*]*portnumber*, *mode*

Availability   admin, switchAdmin

Description   Use this command to designate a port as a G_Port. After this is done, the switch attempts to initialize that port as an F_Port only, and does not attempt loop initialization (FL_Port) on the port. A port designated as a G_Port can become an E_Port. This configuration can be cleared but not set on VE/VEX_Ports.

Changes made by this command are persistent across switch reboots or power cycles.

Operands   This command has the following operands:

slotnumber   For bladed systems only, specify the slot number of the port to be configured, followed by a slash (/).

portnumber   Specify the number of the port to be configured, relative to its slot for bladed systems. Use **switchShow** to display a list of valid ports.

mode   Specify a value of 1 to designate the port as a G_Port or specify a value of 0 to remove the G_Port designation from the port. A value of 0 is the default port state. This operand is required.

Examples   To configure a port as a locked G_Port:

```
switch:admin> portcfggport 1/3, 1
```

See Also   **configure**, **portCfgLPort**, **portShow**, **switchShow**

portCfgISLMode

Enables or disables ISL R_RDY mode on a port.

Synopsis   **portcfgislmode** [[*slotnumber*/]]*portnumber***,** *mode*

Availability   admin, switchAdmin

Description   Use this command to enable or disable ISL R_RDY mode on a port. If enabling ISL R_RDY mode on a port, make sure the PID format is consistent across the entire fabric. Refer to the **configure** command for more information on the core PID format. This configuration can be cleared but not set on VE/VEX_Ports.

ISL R_RDY mode sends an ELP with flow control mode 02. If a port is ISL R_RDY mode-enabled, it can only receive ELP with flow control mode 02; ELP with flow control mode 01 segments the fabric.

This mode cannot detect any inconsistencies in fabric operating mode parameters, such as the PID format of connected ports. Before using this mode, the fabric administrator must ensure all fabric-wide parameters are consistent for every switch in the fabric. The complete list of fabric operating mode parameters includes:

Disable Device Probing
fabric.ops.mode.fcpProbeDisable

Isolated Operation   fabric.ops.mode.isolate

Long Distance Fabric
fabric.ops.mode.longDistance

Suppress Class F Traffic
fabric.ops.mode.noClassF

Switch PID Format   fabric.ops.mode.pidFormat

Sequence Level Switching
fabric.ops.mode.tachyonCompat

Unicast-only Operation
fabric.ops.mode.unicastOnly

Per-frame Route Priority
fabric.ops.mode.useCsCtl

These parameters can be modified using **configure** (see **configure** for more information on the fabric parameters).

The following E_Port configurations are not applicable to a port configured for ISL R_RDY mode:

• Trunk port

• Long distance (L0.5, L1, or L2)

• VC link init

If configured, these port configuration parameters are ignored during the E_Port initialization. The **portCfgISLMode** and **portCfgLongDistance** levels 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.

If the PID format for two ISL R_RDY mode ports are not the same, zoning will drop frames.

This feature is persistent across reboots and power cycles.

Use the **portCfgShow** command to view whether ISL R_RDY mode is enabled on a port.

Note

The **portCfgISLMode** and **portCfgLongDistance** mode both cannot be enabled at the same time; otherwise, fabric segmentation occurs.

Operands   This command has the following operands:

slotnumber   For bladed systems only, specify the slot number of the port to display, followed by a slash (/).

portnumber   Specify the port number to display, relative to its slot for bladed systems. Use **switchShow** to list valid ports.

mode   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**, **portCfgLongDistance**, **portCfgShow**

portCfgLongDistance

Configures a port to support long-distance links.

Synopsis **portcfglongdistance** [*slotnumber/*]*portnumber* [*distance_level*][*vc_translation_link_init*] [*desired_distance*]

Availability admin, switchAdmin

Description Use this command to allocate enough full-size frame buffers on a particular port to support a long-distance link up to 500 Km. The port can be used only as an E_Port. This configuration can be cleared but not set on VE/VEX_Ports. Changes made by this command are persistent across switch reboots or power cycles.

Note

This command requires an Brocade Extended Fabrics license.

The value of *distance_level* can be one of the following (the numerical value representing each *distance_level* is shown in parentheses):

L0 (0)
: Specify L0 to configure the port to be a regular switch 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 10 Km, 5 Km, or 2.5 Km for the port at speeds of 1 Gbit/sec, 2 Gbit/sec, or 4 Gbit/sec, respectively.

L0.5 (4)
: Specify L0.5 (**portCfgShow** displays the two-letter code as LM) long distance, up to 25 Km. A total of 12, 25, or 50 full-size frame buffers are reserved for data traffic for the port at speeds of 1 Gbit/sec, 2 Gbit/sec, or 4 Gbit/sec, respectively.

L1 (1)
: Specify L1 long distance to support a long distance link up to 50 Km. A total of 25, 50, or 100 full-size frame buffers are reserved for data traffic for the port at speeds of 1 Gbit/sec, 2 Gbit/sec, or 4 Gbit/sec, respectively.

L2 (2)
: Specify L2 long distance to support a long distance link up to 100 Km. A total of 50, 100, or 200 full-size frame buffers are reserved for data traffic for the port at speeds of 1 Gbit/sec, 2 Gbit/sec, or 4 Gbit/sec, respectively. For previously released switches (Bloom1-based), the number of frames buffers is limited to 63.

LE (3)
: Specify LE mode is for E_Ports for distances beyond 5 Km and up to 10 Km. A total of 5, 10, or 20 full-size frame buffers are reserved for port speeds of 1 Gbit/sec, 2 Gbit/sec, or 4 Gbit/sec, respectively. LE does not require an Extended Fabrics license.

LD (5)
: Specify 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 250 full-size frame buffers are reserved, depending upon the distance measured during E_Port initialization. If the desired distance is provided, it is used as the upper limit to the measured distance. For Bloom1-based systems, the number of frame buffers is limited to 63.

LS (6)
: Specify LS mode to configure a long-distance link with a fixed buffer allocation.. Up to a total of 250 full-size frame buffers are reserved for data traffic, depending on the desired distance value provided with the **portCfgLongDistance** command. For Bloom1-based systems, the number of frame buffers is limited to 63.

Depending on the switch platform and the frame buffers availability within the port group, the LD or LS-level links can operate up to distances of 500 Km, 250 Km, or 125 Km at the fixed speed of 1 Gbit/sec, 2 Gbit/sec, or 4 Gbit/sec, respectively. (On some older switch platforms, the LD mode link can operate up to distances of 200 Km and 100 Km at the fixed speeds of 1 Gbit/sec and 2 Gbit/sec, respectively.)

A long-distance link also can be configured to be part of a trunk group (see **portCfgTrunkPort**). Two or more long-distance links in a port group forms a trunk group when they are configured for the same speed, the same distance level, and their link distances are nearly equal.

The *vc_translation_link_init* option enables the long-distance link initialization sequence. It must be set to 1 for a long-distance link not configured for ISL R_RDY mode; otherwise, it must be reset to 0.

desired_distance is a required parameter to configure a port as an LD and LS-mode link. For an LD-mode link, the desired distance is used as the upper limit of the link distance to calculate buffer availability for other ports in the same port group. When the measured distance is more than *desired_distance*, the *desired_distance* is used to allocate the buffers. In this case, the port operates in degraded mode instead being disabled due to insufficient buffers. For an LS-mode link, the actual distance is not measured, instead the *desired_distance* is used to calculate the buffers required for the port.

Pressing **Ctrl-D** cancels the configuration update.

When a port is configured to be a long-distance port, the output of **portShow** and **switchShow** displays the long-distance level. In the **portShow** output, the long-distance level is indicated as follows:

*   L0   normal

*   LE   standard <= 10 Km

*   L0.5 (LM)medium long <= 25 Km

*   L1   long <= 50 Km

*   L2   super long <= 100 Km

*   LD auto

*   LS static

In the **switchShow** output, the long distance mode displays as L*x*, where *x* is the second letter in two-letter distance-level code described earlier; for example, L0.5 mode displays "L0.5".

The **portCfgISLMode** and **portCfgLongDistance** LE, LD, or LS levels only can be enabled at the same time. Such an ISL uses 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. The **portCfgISLMode** and **portCfgLongDistance** L0.5, L1, or L2 levels cannot be enabled at the same time.

Note

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 buffers.

SilkWorm 3014, 3016, 3250, 3850, and 3900 switches and SilkWorm 24000 and 48000 directors using FC2-16 port blades, each port group contains four ports and uses a common pool of credits. Because the number of credits available for use within each port group is limited, configuring ports for extended links on these platforms might cause other ports to disable, if there are not enough buffer credits available. SilkWorm 200E, 4012, 4100, and 4900 switches and SilkWorm 48000 directors using FC4-16 and FC4-32 port blades, buffer credits are used by all ports on the chip. Buffer-limited port technology allows all ports to remain operational, even when extended links are in use.

Operands This command has the following operands:

slotnumber Specifies the slot number, for bladed systems only. The slot number must be followed by a slash (/).

portnumber Specifies a port number. Valid values for port number vary, depending on the switch type. Use **switchShow** to display a list of valid ports. This operand is required.

distance_level Refer to the "Description" section for information about the value.

vc_translation_link_init

Specifies the long-distance link-initialization sequence; 1 activates and 0 deactivates this mode. When the command is run without specifying a value, 1 is assigned automatically for the long-distance link in VC_RDY flow control; otherwise, 0 is assigned. This operand is optional.

desired_distance Refer to the "Description" section for information about the value.

Examples To configure a port to support a 100 Km link and be initialized using long-distance link initialization protocol:

```
switch:admin> portcfglongdistance 4/15 L2 1
switch:admin> portshow 4/15
portCFlags: 0x1
portFlags: 0x20001       PRESENT LED
portType:  1.1
portState: 2    Offline
portPhys:  4    No_Light
portScn:   0
portId:    013f00
portWwn:   20:3f:00:60:69:00:02:48
Distance:  super long <= 100km
portSpeed: 2Gbps

Interrupts:        9        Link_failure: 0         Frjt:          0
Unknown:           0        Loss_of_sync: 0         Fbsy:          0
Lli:               9        Loss_of_sig:  9
Proc_rqrd:         0        Protocol_err: 0
Timed_out:         0        Invalid_word: 0
Rx_flushed:        0        Invalid_crc:  0
Tx_unavail:        0        Delim_err:    0
Free_buffer:       0        Address_err:  0
Overrun:           0        Lr_in:        0
Suspended:         0        Lr_out:       0
Parity_err:        0        Ols_in:       0
2_parity_err:      0        Ols_out:      0
CMI_bus_err:       0
```

See Also **configure**, **portCfgISLMode**, **portCfgTrunkPort**, **portCfgShow**, **portShow**, **switchShow**

2 Note: Enter commands in lowercase only; mixed case is for readability.

portCfgLPort

portCfgLPort

Locks a port as an L_Port.

Synopsis **portcfglport** [*slotnumber/*]*portnumber locked_mode* [*private_mode*][*duplex_mode*]

Availability admin, switchAdmin

Description Use this command to designate a port as an L_Port. The switch then only attempts to initialize that port as an FL_Port. By default, the L_Port is a public L_Port. It can be set to private L_Port and the FLOGI is rejected. This configuration can be cleared but not set on VE/VEX_Ports.

The switch never attempts point-to-point (F_Port) initialization on the port.

Operands The operands are as follows:

slotnumber For bladed systems only, specify the slot number of the port to be configured, followed by a slash (/).

portnumber Specify a port number to be configured, relative to its slot for bladed systems. Use **switchShow** to display a list of valid ports. This operand is optional; if omitted, this command displays the L_Port conditions for all ports.

locked_mode Specify 1 to configure the specified port as a locked L_Port. Specify 0 to deconfigure the specified port from its previous role as a locked L_Port. This operand is required if portnumber is specified.

private_mode Specify 1 to configure the L_Port as a private L_Port. Specify 0 to configure the L_Port as a normal public L_Port. This operand is optional; if omitted; the default value of 0 is used. Private devices are supported only on SilkWorm 3014, 3016, 3250, 3850, and 3900 switches and SilkWorm 12000, 24000, and 48000 directors with FC2-16 blades. For other switches and blade types, option 1 is blocked.

duplex_mode Specify 2 to configure the specified port as a full-duplex L_Port with fairness. Specify 1 to configure the L_Port as a half-duplex L_Port with fairness. Specify 0 to configure the L_Port as a full-duplex L_Port. This operand is optional; if omitted, the default value of 0 is used.

If used without operands, this command reports the L_Port conditions for all ports present.

Examples   To configure a port as a locked L_Port:

```
switch:admin> portcfglport 4/15, 1
switch:admin> portcfgshow

[output from other slots suppressed]

Ports of Slot 4    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
Long Distance     .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
VC Link Init      .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
Locked L_Port     .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ON
Locked G_Port     .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
Disabled E_Port   .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
ISL R_RDY Mode    .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
Persistent Disable.. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..

              where AN:AutoNegotiate, ..:OFF, ??:INVALID.
```

To display the L_Port conditions:

```
switch:admin> portcfglport

[output from other slots suppressed]

Ports of Slot 4    0  1  2  3    4  5  6  7    8  9 10 11   12 13 14 15
-----------------+--+--+--+----+--+--+--+----+--+--+--+----+--+--+--+--
Locked L_Port     .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ON
Private L_Port    .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
Locked Loop HD    .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
Loop Fairness     .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
```

See Also   **configure**, **portShow**, **switchShow**

portCfgNPIVPort

Enables or disables N_Port ID virtualization (NPIV) functionality on a port.

Synopsis **portcfgnpivport** [*slotnumber*/]*portnumber*, *mode*

Availability admin, switchAdmin

Description Use this command to enable or disable NPIV functionality on a port. NPIV is applicable to an F_Port only. By default, NPIV is enabled for all Condor ASIC-based ports and disabled for all Bloom ASIC-based ports.

The following conditions must be met for a switch port to respond to NPIV requests from a NPIV device:

NPIV capable	NPIV capability is a switch blade or port attribute that is required for NPIV functionality to operate. Some blades within a switch, or some ports within a switch or blade, might not have NPIV capability. NPIV functionality cannot be enabled on such ports and they will not respond to NPIV requests.
NPIV enabled	NPIV functionality must be enabled on a port for it to respond to NPIV requests. By default, NPIV is enabled on all Condor ASIC-based ports and disabled on all Bloom ASIC-based ports. It can be selectively enabled or disabled on switch ports using this command.
NPIV HA	For a redundant control processor (CP) system to enable NPIV functionality, it must be running NPIV-enabled firmware versions on both the active and standby CPs. The requirement does not apply to single CP systems.

Up to a maximum of 255 virtual port IDs are allocated per NPIV port. The maximum number of virtual IDs can be configured from 0 to 255 per port. The default value is 126 per port. The number of virtual port IDs per switch also can be configured. See **configure** for more information on configuring these values.

Changes made by this command are persistent across switch reboots and power cycles.

Use the **portCfgShow** command to display if NPIV is enabled on a port. Use the **portCfgDefault** command to reset all port configurations, including the NPIV configuration of a port.

Operands This command has the following operands:

slotnumber	For bladed systems only, specify the slot number of the port to be configured, followed by a slash (/).
portnumber	Specify a port number to be configured, relative to its slot for bladed systems. Use **switchShow** to display a list of valid ports.
mode	Specify 1 to enable and 0 to disable the NPIV function.

Examples   To enable NPIV functionality on a port:

```
switch:admin> portcfgnpivport 1/3 1
```

To display NPIV functionality on a port:

```
switch:admin> portCfgShow
(output from other ports suppressed)
Ports of Slot 1    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
Long Distance     .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
VC Link Init      .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
Locked L_Port     .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
Locked G_Port     .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
Disabled E_Port   .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
ISL R_RDY Mode    .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
RSCN Suppressed   .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
Persistent Disable.. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
NPIV capability   .. .. .. ON   .. .. .. ..   .. .. .. ..   .. .. .. ..
EX Port           .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..

                  where AN:AutoNegotiate, ..:OFF, ??:INVALID.
                        LM:L0.5
```

To disable NPIV functionality on a port:

```
switch:admin> portcfgnpivport 1/3 0
```

See Also   **configure**, **portCfgDefault**, **portCfgShow**

portCfgPersistentDisable

Disables a port persistently.

Synopsis   **portcfgpersistentdisable** [*slotnumber*/]*portnumber*

Availability   admin, switchAdmin

Description   Use this command to persistently disable a port. Persistently disabled ports remain disabled across power cycles, switch reboots, and switch enables. By default, a port is enabled persistently. The change in configuration is effective immediately.

The persistent disable configuration overrides all other port configurations but it does not change the configuration of any other port settings. Use the **portCfgPersistentEnable** command to enable a port persistently. A persistent-enabled port reenables all previously set port configurations of that port.

The switch still runs power-on diagnostics and initializes a persistently disabled port. The **portEnable** command fails when directed to a persistently disabled port. The **switchEnable** command does not enable the persistently disabled ports of that switch, and the **bladeEnable** command does not enable the persistently disabled ports of that blade.

The persistent switch disable or enable configuration does not alter the persistent disable or enable configurations of the ports within the switch.

Because the default state of the port is persistently enabled, the persistent disable state is cleared by the **portCfgDefault** command.

This command is not allowed if the switch is operating in the FICON Management Server mode (fmsmode); instead, use **portDisable** with Active=Saved mode enabled.

Operands   This command has the following operands:

slotnumber   For bladed systems only, specify the slot number of the port to configure, followed by a slash (/).

portnumber   Specify a port number to configure, relative to its slot for bladed systems. Use **switchShow** to display a list of valid ports. This operand is optional; if omitted, this command displays the persistently-disabled condition for all ports.

Examples   To configure a port as persistently disabled and then display all ports that are permanently disabled:

```
switch:admin> portcfgpersistentdisable 9/3
switch:admin> portcfgpersistentdisable
Slot 9     0   1   2   3   4   5   6   7   8   9   10  11  12  13  14  15
---------+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---
Disabled   -   -   -  YES  -   -   -   -   -   -   -   -   -   -   -   -
(output truncated)
```

See Also   **ficoncupset**, **ficoncupshow**, **portCfgDefault**, **portDisable**, **portEnable**, **portCfgPersistentEnable**, **portShow**, **switchShow**

portCfgPersistentEnable

Enables a port persistently.

Synopsis   **portcfgpersistentenable** [*slotnumber/*]*portnumber*

Availability   admin, switchAdmin

Description   Use this command to persistently enable a port. Persistently enabled ports remain enabled across power cycles, switch reboots, and switch enables. By default, a port is enabled persistently. The change in configuration is effective immediately.

A persistent port enable reenables all previously set port configurations of that port. A persistently enabled port can temporarily be disabled by the **portDisable** or **switchDisable** command. The **switchDisable** command will also disable the persistently enabled ports of that switch.

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.

Operands   This command has the following operands:

slotnumber   For bladed systems only, specify the slot number of the port to configure, followed by a slash (/).

portnumber   Specify a port number to configure, relative to its slot for bladed systems. Use **switchShow** to display a list of valid ports. This operand is optional; if omitted, this command displays the persistently enabled condition for all ports.

When no operand is specified, the command reports the current port persistently enabled status for all ports in the switch. The value of YES is displayed for ports that are persistently enabled.

Examples   To configure a port as persistently enabled and then display all ports that are persistently enabled:

```
switch:admin> portcfgpersistentenable 9/3
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   **ficoncupset**, **ficoncupshow**, **portDisable**, **portEnable**, **portCfgPersistentDisable**, **portCfgShow**, **portShow**, **switchShow**

portCfgShow

Displays port configuration settings.

Synopsis   **portcfgshow** [*slotnumber/*][*portnumber*]

Availability   admin, switchAdmin, user

Description   Use this command to display the current configuration of a port. If no operand is specified, this command displays port configuration settings for all ports on a switch.

The following configuration information displays:

Speed	Displays as 1G, 2G, or AN (when in auto speed negotiation mode). This value is set by the **portCfgSpeed** command.
Trunk Port	Displays as ON when port is set for trunking or blank (..) when trunking is disabled on the port. This value is set by the **portCfgTrunkPort** command.
Long Distance	Displays the following:

blank (..)The mode is off

LE	The link is up to 10 km
LM	The link is up to 25 km
L1	The link is up to 50 km
L2	The link is up to 100 km
LD	The distance is determined dynamically

This value is set by the **portCfgLongDistance** command.

VC Link Init	Displays as blank (..) when the long-distance link initialization option is turned off and ON when it is turned on for long distance mode. This value is set by the **portCfgLongDistance** command.
Locked L_Port	Displays as ON when port is locked to L_Port only or blank (..) when L_Port lock mode is disabled (and it behaves as a U_Port). This value is set by the **portCfgLPort** command.
Locked G_Port	Displays as ON when port is locked to G_Port only or blank (..) when G_Port lock mode is disabled (and it behaves as a U_Port). This value is set by the **portCfgGPort** command.
Disabled E_Port	Displays as ON when port is not allowed to be an E_Port or blank (..) when the port is allowed to function as an E_Port. This value is set by the **portCfgEPort** command.
ISL R_RDY Mode	Displays as ON when the port has ISL R_RDY mode enabled or blank (..) when the port is ISL R_RDY mode disabled. This value is set by the **portCfgISLMode** command.
RSCN Suppression	Displays as ON when the port has RSCN suppression enabled or blank (..) when the port has RSCN suppression disabled. This value is set by the **portcfg** rscnsupr command.
Persistent Disable	Displays as ON when the port is persistently disabled. This value is set by the **portCfgPersistentDisable** command.

NPIV capability   Displays as ON when the port has NPIV functionality enabled or blank (..) when the port has the NPIV functionality disabled. This value is set by the **portCfgNPIVPort** command.

EX_Port   Displays as ON when the port is configured as an EX_Port port or blank (..) when the EX_Port is disabled. This value is set by the **portCfgEXPort** command.

Operands   This command has the following operands:

slotnumber   For bladed systems only, specifies the slot number of the port to display, followed by a slash (/).

portnumber   Specifies the port number to display, relative to its slot for bladed systems. Use **switchShow** to display a list of valid ports. This operand is optional; if omitted, this command displays information for all ports.

Examples   To display the configuration settings of a switch:

```
switch:user> portcfgshow

Ports of Slot 1    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       .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
Long Distance    .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
VC Link Init     .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
Locked L_Port    .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
Locked G_Port    .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
Disabled E_Port  .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
ISL R_RDY Mode   .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
RSCN Suppressed  .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
Persistent Disable.. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..

Ports of Slot 4    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       .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
Long Distance    .. .. .. ..   .. .. L2 ..   .. L1 L2 ..   .. .. .. L2
VC Link Init     .. .. .. ..   .. .. ON ..   .. ON ON ..   .. .. .. ON
Locked L_Port    .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
Locked G_Port    .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
Disabled E_Port  .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
ISL R_RDY Mode   .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
RSCN Suppressed  .. .. .. ..   ON .. .. ..   .. .. .. ..   .. .. .. ..
Persistent Disable.. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..

        where AN:AutoNegotiate, ..:OFF, ??:INVALID.
```

Note: Enter commands in lowercase only; mixed case is for readability.

To display the configuration settings of a port:

```
switch:user> portcfgshow 4/15
Area Number:              63
Speed Level:              AUTO
Trunk Port                OFF
Long Distance             OFF
VC Link Init              OFF
Locked L_Port             OFF
Locked G_Port             OFF
Disabled E_Port           OFF
ISL R_RDY Mode            OFF
RSCN Suppressed           OFF
Persistent Disable        OFF
```

See Also   **portcfg**, **portCfgEPort**, **portCfgGPort**, **portCfgLongDistance**, **portCfgLPort**, **portCfgSpeed**, **portCfgTrunkPort**

portCfgSpeed

Configures the port speed level.

Synopsis   **portcfgspeed** [*slotnumber*/]*portnumber***,** *speed_level*

Availability   admin, switchAdmin

Description   Use this command to configure the speed of a port to a particular level. After this command is issued, the port is disabled and enabled so that the port comes up with the new speed setting. This configuration can be cleared but not set on VE/VEX_Ports. The configuration is saved in the flash memory and is persistent across switch reboot or power cycle.

If the command is specified without an operand, you are prompted to enter the speed value. Enter **Ctrl-D** to cancel the configuration update.

The output of the **portShow** command displays the current achieved speed of a port and the **portCfgShow** command displays the user-desired speed setting for a port.

Operands   This command has the following operands:

slotnumber   For bladed systems only, specify the slot number of the port to be configured, followed by a slash (/).

portnumber   Specify a port number to be configured, relative to its slot for bladed systems. Use **switchShow** to display a list of valid ports.

speed_level   Specify the speed of a port. This operand is required. Valid values are one of the following:

0   Autosensing mode. The port automatically configures for the highest speed.

1   1-Gbit/sec mode. The port is at fixed speed of 1 Gbit/sec.

2   2-Gbit/sec mode. The port is at fixed speed of 2 Gbit/sec.

4   4-Gbit/sec mode. The port is at fixed speed of 4 Gbit/sec.

Examples   To configure the speed of a port to 2 Gbit/sec:

```
switch:admin> portcfgspeed 2/3, 2
```

See Also   **portCfgShow**, **portShow**, **switchCfgSpeed**

2

Note: Enter commands in lowercase only; mixed case is for readability.

portCfgTrunkPort

portCfgTrunkPort

Configures a port to be enabled or disabled for Brocade ISL Trunking license.

Synopsis **portcfgtrunkport** [*slotnumber/*]*portnumber mode*

Availability admin, switchAdmin

Description Use this command to enable or disable a port for trunking.

> **Note**
>
> This command requires a Brocade ISL Trunking license.

You can disable or enable trunking using the **portCfgTrunkPort** or **switchCfgTrunk** commands. When the command is executed to update the trunking configuration, the ports for which the configuration applies are disabled and reenabled with the new trunk configuration. As a result, the traffic through these ports might be disrupted for a period of time.

Operands This command has the following operands:

slotnumber   For bladed systems only, specify the slot number of the port to be configured, followed by a slash (/).

portnumber   Specify a port number to be configured, relative to its slot for bladed systems. Use **switchShow** to display a list of valid ports.

mode   Specify 1 to enable this port for trunking. Specify 0 to disable this port for trunking. This operand is required.

Examples To disable a port for trunking:

```
switch:admin> portcfgtrunkport 1/3 0
```

See Also **portCfgShow**, **portShow**, **switchCfgTrunk**, **switchShow**

portCfgVEXPort

Sets a port to be an VEX_Port, connected to a FC-IP and sets and displays VEX_Port configuration parameters.

Synopsis   **portcfgexport** [*slotnumber/*]*portnumber* [**-a** *admin*][**-f** *fabricid*][**-r** *ratov*][**-e** *edtov*][**-d** *domainid*][**-p** *pid-format*][**-t** *fabric_parameter*]

Availability   admin

Description   Use this command to configure a port as an VEX_Port.

This command also displays the port's VEX_Port configuration, or changes the configuration. If no optional operands are provided, it displays the currently configured values; otherwise, it sets the specified attributes to its new values. The port must be disabled (for example, using **portDisable**) prior to setting VEX_Port attributes. The port must be enabled (using **portEnable**) before the port can become active following VEX_Port parameter changes.

When the port is not active, the preferred domain ID is configurable. This is the domain ID that is used by the VEX_Port's front phantom domain to request a domain ID from the principal switch. The domain ID received becomes the subsequent preferred domain ID and is persistent and displayed.

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's 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. The port ID format is applicable only when *port_mode* is "Brocade Native".

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. The port ID format is applicable only when *port_mode* is "Brocade Native".

Operands   This command has the following operands:

-a *admin*	Specify 1 to enable or 2 to disable the admin.
-f *fabricid*	Specify 1 to 128 for the fabric ID.
-r *ratov*	Specify the R_A_TOV used for port negotiation (E_D_TOV*2 - 12000).
-e *edtov*	Specify the E_D_TOV used for port negotiation (1000 - R_A_TOV/2).
-d *domainid*	Specify 1 to 239 for the preferred domain ID.
-p *pidformat*	Specify 1 for core, 2 for extended edge, and 3 for native port ID format.
-t *fabric_parameter*	Specify 1 to enable or 2 to disable negotiate fabric parameters.

Examples   To display the VEX_Port configuration of port 2/16:

```
switch:admin> portcfgvexport 2/16

       Port   2/16   info
   Admin:                 enabled
   State:                 OK
   Pid format:            core(N)
   Edge Fabric ID:        16
   Front Domain ID:       160
   Front WWN:             50:06:06:9e:20:9f:ce:10
   Principal Switch:      7
   principal WWN:         10:00:00:60:69:c0:05:8a
   Fabric Parameters:     Auto Negotiate
   R_A_TOV:               9000(N)
   E_D_TOV:               2000(N)
   Edge fabric's primary wwn: N/A
   Edge fabric's version stamp: N/A
```

To set the fabric ID of port 2/21 to 5 and the port ID format to core:

```
switch:admin> portcfgvexport 2/21 -f 5 -p 1
```

To configure port 2/20 to be an VEX_Port and set the fabric ID to 4:

```
switch:admin> portcfgvexport 2/20 -a 1 -f 4
```

To disable fabric parameter negotiation on port 2/20 of an VEX_Port:

```
switch:admin> portcfgvexport 2/20 -t 2
```

See Also   **portCfgEXPort**, **portDisable**, **portEnable**, **portShow**

portcmd

Diagnoses intelligent ports.

Synopsis **portcmd** *action* [*slot*/]**ge***port args*

Availability admin

Description Use this command to ping or trace route to a destination IP host from an intelligent GbE port.

Operands This command has the following operands:

ping [*slot*/]**ge***port* **-s** *source_ip* **-d** *destination_ip* [**-z** *size* **-n** *num_requests*]

> Pings a destination IP address from one of the source IP interfaces on the GbE port. Valid arguments include:

> **-s** *source_ip*
>> Specifies the source IP interface that originates the ping request.

> **-d** *destination_ip*
>> Specifies the destination IP address to which to target the ping request.

> **-z** *size*   Overrides the default packet size to some fixed size in bytes. The size of the ping request must be less than the configured MTU size on the IP interface (see **portcfg** for details on setting the MTU size).

> **-n** *num_requests*
>> Generates specified number of ping requests.

slot   For bladed systems only, specifies the slot number.

ge*port*   Specifies the port number of the GbE port on the blade.

Examples To verify if packets can be sent to the destination IP address:

```
switch:admin> portcmd ping 4/ge0 -s 192.168.100.50 -d 192.168.100.40
Pinging 192.168.100.40 from ip interface 192.168.100.50 on 0/0 with 40 bytes of data
Reply from 192.168.100.40: bytes=40 rtt=0ms
Reply from 192.168.100.40: bytes=40 rtt=0ms
Reply from 192.168.100.40: bytes=40 rtt=0ms
Reply from 192.168.100.40: bytes=40 rtt=0ms
Ping Statistics for 192.168.100.40:
        Packets: Sent = 4, Received = 4, Loss = 0 (0 loss)
        Min  RTT = 0ms, Max RTT = 0ms Average = 0ms
```

See Also **portcfg**, **portShow**

portDebug

Sets debug level and verbose level of port modules.

Synopsis   **portdebug** *dbg_lvl*, *vbs_lvl*

Availability   admin, switchAdmin

Description   Use this command to set the debug level and verbose level of port modules.

Operands   This command has the following operands:

dbg_lvl   Specify the debug level to be set for port modules; valid values are 1 to 5.

vbs_lvl   Specify the verbose level to be set for port modules; valid values are 1 to 5.

Examples   To set debug level and verbose level of port modules:

```
switch:admin> portdebug 3 4
```

See Also   **dbgShow**

portDisable

Disables a port.

Synopsis   **portdisable** [*slotnumber/*]*portnumber*

Availability   admin, switchAdmin

Description   Use this command to disable a port. If the port is connected to another switch, the fabric might reconfigure. If the port is connected to one or more devices, the devices can no longer communicate with the fabric.

If the port was online before being disabled, a state transition will be indicated: RSCN, an SNMP trap, a Web pop-up window.

The front-panel LED of a disabled port flashes yellow with a two-second cycle.

Operands   This command has the following operand:

slotnumber   For bladed systems only, specify the slot number of the port to be configured, followed by a slash (/).

portnumber   Specify a port number to be configured, relative to its slot for bladed systems. Use **switchShow** to display a list of valid ports.

Examples   To disable a port:

```
switch:admin> portdisable 2/4
```

See Also   **portCfgPersistentDisable**, **portCfgPersistentEnable**, **portEnable**, **portShow**, **switchShow**

2 Note: Enter commands in lowercase only; mixed case is for readability.

portEnable

portEnable

Enables a port.

Synopsis   **portenable** [*slotnumber/*]*portnumber*

Availability   admin, switchAdmin

Description   Use this command to enable a port. If the port is connected to another switch, the fabric might reconfigure. If the port is connected to one or more devices, the devices can communicate with the fabric.

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 is rejected if the port's switch is disabled, the port's blade is not fully enabled (faulted, powered off, or disabled), or if the port itself is persistently disabled.

The front panel LED of an enabled and online port is green.

Operands   This command has the following operand:

slotnumber   For bladed systems only, specify the slot number of the port to be configured, followed by a slash (/).

portnumber   Specify a port number to be configured, relative to its slot for bladed systems. Use **switchShow** to display a list of valid ports.

Examples   To enable a port:

```
switch:admin> portenable 2/4
```

See Also   **portCfgPersistentDisable**, **portCfgPersistentEnable**, **portDisable**, **portShow**, **switchShow**

portErrShow

Displays port error summary.

Synopsis   **porterrshow**

Availability   admin, switchAdmin, user

Description   Use this command to display an error summary for all ports. The display contains one output line per port and shows error counters in ones, thousands (k), or millions (m).

The following fields are displayed:

frames tx	Frames transmitted
frames rx	Frames received
enc in	Encoding errors inside frames
crc err	Frames with CRC errors
too shrt	Frames shorter than minimum
too long	Frames longer than maximum
bad eof	Frames with bad end-of-frame delimiters
enc out	Encoding error outside of frames
disc c3	Class 3 frames discarded
link fail	Link failures (LF1 or LF2 states)
loss sync	Loss of synchronization
loss sig	Loss of signal
frjt	Frames rejected with F_RJT
fbsy	Frames busied with F_BSY

Operands   none

portErrShow

Examples   To display error counters for ports on a switch:

```
switch:admin> porterrshow
      frames  enc  crc  too  too  bad  enc disc link loss loss frjt fbsy
      tx    rx   in   err shrt long eof  out   c3 fail sync  sig
    ====================================================================
  0:    0    0    0    0    0    0    0    0    0    0    0    2    0    0
  1:    0    0    0    0    0    0    0    0    0    0    0    1    0    0
  2:    0    0    0    0    0    0    0    0    0    0    0    1    0    0
  3:   12   14    0    0    0    0    0    0    0    0    3    6    0    0
  4:  300  300    0    0    0    0    0    2    0    1    1    2    0    0
  5:    0    0    0    0    0    0    0    0    0    0    0    2    0    0
  6:   12   14    0    0    0    0    0    0    0    0    3    6    0    0
  7:    0    0    0    0    0    0    0    0    0    0    0    2    0    0
  8:    0    0    0    0    0    0    0    0    0    0    0    1    0    0
  9:    0    0    0    0    0    0    0    0    0    0    0    1    0    0
 10:    0    0    0    0    0    0    0    0    0    0    0    1    0    0
 11:    0    0    0    0    0    0    0    0    0    0    0    0    0    0
 12:    0    0    0    0    0    0    0    0    0    0    0    2    0    0
 13:    0    0    0    0    0    0    0    0    0    0    0    2    0    0
 14:    0    0    0    0    0    0    0    0    0    0    0    2    0    0
 15:    0    0    0    0    0    0    0    0    0    0    0    2    0    0
 16:    0    0    -    0    0    0    0    -    0    -    -    -    -    -
 17:    0    0    -    0    0    0    0    -    0    -    -    -    -    -
 18:    0    0    -    0    0    0    0    -    0    -    -    -    -    -
 19:    0    0    -    0    0    0    0    -    0    -    -    -    -    -
 20:    0    0    -    0    0    0    0    -    0    -    -    -    -    -
 21:    0    0    -    0    0    0    0    -    0    -    -    -    -    -
 22:    0    0    -    0    0    0    0    -    0    -    -    -    -    -
 23:    0    0    -    0    0    0    0    -    0    -    -    -    -    -
 24:    0    0    -    0    0    0    0    -    0    -    -    -    -    -
 25:    0    0    -    0    0    0    0    -    0    -    -    -    -    -
 26:    0    0    -    0    0    0    0    -    0    -    -    -    -    -
 27:    0    0    -    0    0    0    0    -    0    -    -    -    -    -
 28:    0    0    -    0    0    0    0    -    0    -    -    -    -    -
 29:    0    0    -    0    0    0    0    -    0    -    -    -    -    -
 30:    0    0    -    0    0    0    0    -    0    -    -    -    -    -
 31:    0    0    -    0    0    0    0    -    0    -    -    -    -    -
```

See Also   portShow, portStatsShow

portFlagsShow

Displays the port status bitmaps for all ports in a switch.

Synopsis	**portflagsshow**
Availability	admin, switchAdmin, user
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 and No_Light.
	Flags	Displays whether there is an SFP inserted in the port, whether the port is active, and the port type.

Operands   none

Examples   To display the port status for all ports in the switch:

```
switch:user> portflagsshow
 Slot    Port   SNMP            Physical       Flags
----------------------------------------------------
   1       0    Online          In_Sync        PRESENT ACTIVE E_PORT G_PORT LOGIN LED ACCEPT
   1       1    Online          In_Sync        PRESENT ACTIVE E_PORT G_PORT LOGIN LED ACCEPT
   1       2    Online          In_Sync        PRESENT ACTIVE E_PORT G_PORT LOGIN LED ACCEPT
   1       3    Online          In_Sync        PRESENT ACTIVE E_PORT G_PORT LOGIN LED ACCEPT
   1       4    Online          In_Sync        PRESENT ACTIVE E_PORT G_PORT LOGIN LED ACCEPT
   1       5    Online          In_Sync        PRESENT ACTIVE E_PORT G_PORT LOGIN LED ACCEPT
   1       6    Online          In_Sync        PRESENT ACTIVE E_PORT G_PORT LOGIN LED ACCEPT
   1       7    Online          In_Sync        PRESENT ACTIVE E_PORT G_PORT LOGIN LED ACCEPT
   1       8    Offline         No_Light       PRESENT LED
   1       9    Offline         No_Light       PRESENT LED
   1      10    Offline         No_Light       PRESENT LED
   1      11    Offline         No_Light       PRESENT LED
   1      12    Online          In_Sync        PRESENT ACTIVE E_PORT G_PORT LOGIN LED ACCEPT
   1      13    Online          In_Sync        PRESENT ACTIVE E_PORT G_PORT LOGIN LED ACCEPT
   1      14    Online          In_Sync        PRESENT ACTIVE E_PORT G_PORT LOGIN LED ACCEPT
   1      15    Online          In_Sync        PRESENT ACTIVE E_PORT G_PORT LOGIN LED ACCEPT
   4       0    Online          In_Sync        PRESENT ACTIVE E_PORT G_PORT LOGIN LED ACCEPT
   4       1    Online          In_Sync        PRESENT ACTIVE E_PORT G_PORT LOGIN LED ACCEPT
   4       2    Online          In_Sync        PRESENT ACTIVE E_PORT G_PORT LOGIN LED ACCEPT
   4       3    Online          In_Sync        PRESENT ACTIVE E_PORT G_PORT LOGIN LED ACCEPT
   4       4    Offline         No_Light       PRESENT LED
   4       5    Offline         No_Light       PRESENT LED
   4       6    Online          In_Sync        PRESENT ACTIVE F_PORT L_PORT LOGIN NOELP LED ACCEPT
   4       7    Online          In_Sync        PRESENT ACTIVE F_PORT L_PORT LOGIN NOELP LED ACCEPT
   4       8    Online          In_Sync        PRESENT ACTIVE E_PORT G_PORT LOGIN LED ACCEPT
   4       9    Online          In_Sync        PRESENT ACTIVE E_PORT G_PORT LOGIN LED ACCEPT
   4      10    Online          In_Sync        PRESENT ACTIVE E_PORT G_PORT LOGIN LED ACCEPT
   4      11    Online          In_Sync        PRESENT ACTIVE E_PORT G_PORT LOGIN LED ACCEPT
   4      12    Online          In_Sync        PRESENT ACTIVE E_PORT G_PORT LOGIN LED ACCEPT
   4      13    Online          In_Sync        PRESENT ACTIVE E_PORT G_PORT LOGIN LED ACCEPT
   4      14    Online          In_Sync        PRESENT ACTIVE E_PORT G_PORT LOGIN LED ACCEPT
   4      15    Online          In_Sync        PRESENT ACTIVE E_PORT G_PORT LOGIN LED ACCEPT
```

See Also   **portShow**, **switchShow**

portLedTest

Cycles user port LEDs.

Synopsis   **portledtest** [**-npass** *count*][**-ports** *itemlist*]

Availability   admin

Description   Use this command to exercise the user port LEDs in the current switch on and off by setting the ATTN LEDs to green for the ON condition and unlighted for the OFF condition. The SPEED LEDs are initially set to black before the command execution. The SPEED LEDs are set to green once the command is executing.

You must disable the current switch (using the **switchDisable** command) before running this command. After the command had completed, the ATTN LEDs flash amber, indicating that the command has finished and exited. You can enable the current switch (using the **switchEnable** command) to set the ATTN LEDs back to black.

Operands   This command has the following operands:

-npass *count*   Specify the number of times to perform this test. The default value is 10.

-ports *itemlist*   Specify a list of user ports to run the test. If omitted, all the active ports in the switch are assumed. For more information, refer to the **itemList** command.

Examples   To test port LEDs:

```
switch:admin> portledtest -ports 1/1-1/5
passed.
```

See Also   **itemList**, **switchDisable**, **switchEnable**

portLogClear

Clears the port log.

Synopsis   **portlogclear**

Availability   admin, switchAdmin

Description   Use this command to clear the port log. You might want to 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, the following message appears as the first line.

```
WARNING: port log is disabled
```

If the port log is disabled, **portLogClear** enables it. Certain errors automatically disable the port log to preserve information needed to understand the error (new events are not collected so that existing information is not overwritten).

The following errors disable the port log:

```
FCPH, EXCHBAD
FCPH, EXCHFREE
NBFSM, DUPEPORTSCN
UCAST, RELICPDB
```

Refer to the *Fabric OS System Error Message Reference Manual* for more information.

Operands   none

Examples   To clear the port log:

```
switch:admin> portlogclear
switch:admin> portlogshow
port log is empty
```

See Also   **portLogDump**, **portLogShow**

2

Note: Enter commands in lowercase only; mixed case is for readability.

portLogConfigShow

portLogConfigShow

Displays the current port log configuration.

Synopsis   **portlogconfigshow**

Availability   admin, switchAdmin

Description   Use this command to display the current port log configuration.

Operands   none

Examples   To display the current port log configuration:

```
switch:admin> portlogconfigshow
max portlog entries = 8192
```

See Also   **portLogResize**

Note: Enter commands in lowercase only; mixed case is for readability.

portLogDump

2

portLogDump

Displays the port log without page breaks.

Synopsis   **portlogdump** [*count*[**,** *saved*[**,** *portid*]]]

Availability   admin, switchAdmin, user

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 the user to press Enter between each page.

If the port log is disabled, the following message displays as the first line:

```
WARNING: port log is disabled
```

Refer to **portLogClear** command for more information. For a full explanation of the information displayed by this command, refer to the *Fabric OS Administrator's Guide*.

Operands   This command has the following operands:

count   Specify 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. Refer to **upTime** for conditions that cause a fault. The operand count is ignored when displaying the saved log. This operand is optional.

portid   Specify the port to display. All other ports will not be displayed. This operand is optional.

Examples   To display the port log for a port:

```
switch:user> portlogdump 20
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
08:35:28.466  tFabric     pstate  14    LR1
08:35:28.466  tReceive    pstate  14    LR3
08:35:28.466  tReceive    pstate  14    AC
08:35:28.483  tFabric     Tx      14    96   02fffffd,00fffffd,0006ffff,11100060
08:35:28.483  tReceive    Rx      14     0   c0fffffd,00fffffd,00060007
08:35:28.483  tReceive    Rx      14    96   03fffffd,00fffffd,00060007,02100060
08:35:28.483  tTransmit   Tx      14     0   c0fffffd,00fffffd,00060007
08:35:28.483  tFabric     ioctl   14    a1   0,0
08:35:28.483  tFabric     scn     14     5
```

See Also   **portLogClear**, **portLogShow**, **upTime**

portLogDumpPort

Displays the port log of specified port, without page breaks.

Synopsis   **portlogdumpport** *portid*

Availability   admin, switchAdmin, user

Description   Use this command to display the port log of specified port. The command displays all entries in the log without any page breaks. It is identical to **portLogShowPort**, except that **portLogShowPort** prompts the user to press Enter between each page.

Port logs are circular log files in the switch firmware, which can save up to 8,192 entries. Refer to **portLogConfigShow** to display the current port log size. Once the log is full, the newest log entries delete the oldest log entries. 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, the following message displays as the first line. Refer to **portLogClear** command for more information.

```
WARNING: port log is disabled
```

Refer to the *Fabric OS Administrator's Guide* for more information.

Operands   This command has the following operand:

portid   Specify the area number of port to display. If a port area number is specified, all other ports on the switch are ignored. This operand is optional.

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
08:35:28.466  tFabric     pstate  14  LR1
08:35:28.466  tReceive    pstate  14  LR3
08:35:28.466  tReceive    pstate  14   AC
08:35:28.483  tFabric     Tx      14   96  02fffffd,00fffffd,0006ffff,11100060
08:35:28.483  tReceive    Rx      14    0  c0fffffd,00fffffd,00060007
08:35:28.483  tReceive    Rx      14   96  03fffffd,00fffffd,00060007,02100060
08:35:28.483  tTransmit   Tx      14    0  c0fffffd,00fffffd,00060007
08:35:28.483  tFabric     ioctl   14   a1  0,0
08:35:28.483  tFabric     scn     14    5
```

See Also   **portLogClear**, **portLogShow**, **upTime**

portLogEventShow

Displays information about port log events.

Synopsis   **portlogeventshow**

Availability   admin, switchAdmin

Description   Use this command to display information about the ID associated with the various port log events. The Disabled field indicates if the port log for that event ID is disabled (1) or enabled (0).

Operands   none

Examples   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
26      sn              0
27      fcin            0
28      fcout           0
29      read            0
30      write           0
31      err             0
32      frame           0
33      msRemQ          0
34      msRemR          0
35      nsRemQ          0
36      nsRemR          0
37      rscn            0
38      state           0
39      xalloc          0
40      xfree           0
(continued on next page)
```

Note: Enter commands in lowercase only; mixed case is for readability.

```
41      xerr            0
42      xstate          0
43      seq             0
44      seqst           0
45      iu              0
46      payload         0
47      zone            0
48      cmd             0
49      event           0
50      msg             0
51      switch          0
52      ficonq          0
53      routing        0
```

See Also   **portLogTypeDisable**, **portLogTypeEnable**

portLoginShow

Displays port login status.

Synopsis   **portloginshow** [*slotnumber*/]*portnumber*

Availability   admin, switchAdmin, user

Description   Use this command to display port login received from devices attached to the specified port. Some information varies with the switch model and port type. The following lines display:

Type		Type of login:

Type   Type of login:

     fe   FLOGI, fabric login to fabric F_Port.

     ff   PLOGI, process login to specific N_Ports or well-known address, such as name server.

     fd   FDISC, virtual N_Port login.

PID   The port's 24-bit D_ID.

WWN   The port's World Wide Name.

credit   The credit for this login as appropriate. This is BB (buffer-to-buffer) credit for FLOGIs 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 of service includes class 2.

     8   Class of service includes class 3.

There is further information about the login after the above columns. This can include the DID (destination identifier) that the port is logged on to.

Operands   This command has the following operands:

slotnumber   For bladed systems only, specify the slot number of the port to be configured, followed by a slash (/).

portnumber   Specify a port number to be configured, relative to its slot for bladed systems. Use **switchShow** to display a list of valid ports.

Examples   To display login information for port 23:

```
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
```

See Also   **fcpProbeShow**, **portShow**

portLogPdisc

Sets or clears the debug_pdisc_flag.

Synopsis	**portlogpdisc** *lvl*
Availability	admin, switchAdmin
Description	Use this command to set or clear the debug_pdisc_flag.
Operands	This command has the following operand:

lvl   Specify either 0 to clear or 1 to set the debug_pdisc_flag.

Examples To set the pdisc_flag:

```
switch:admin> portlogpdisc 1
PDISC log setting = 1
```

See Also none

Note: Enter commands in lowercase only; mixed case is for readability.

portLogReset

2

portLogReset

Enables the port log facility.

Synopsis   **portlogreset**

Availability   admin, switchAdmin

Description   Use this command to enable the port log facility.

Refer to **portLogClear** for events that might disable the port log facility.

Operands   none

Examples   To enable the port log:

```
switch:admin> portlogreset
```

See Also   none

portLogResize

Resizes the port log to the specified number of entries.

Synopsis   **portlogresize** *num_entries*

availability   admin, switchAdmin

Description   Use this command to resize the port log to specified number of entries. If num_entries is less than the already configured port log size, no change is effected.

Operands   This command has the following operand:

num_entries   Specifies the number of entries to which portlog needs to be resized. The valid range of values is 8,192 to 32,768.

Examples   To resize the portlog:

```
switch:admin> portlogresize 12288
```

See Also   **portLogConfigShow**

portLogShow

Displays the port log.

Synopsis   **portlogshow** [*count*, *saved*, *portid*]

Availability   admin, switchAdmin, user

Description   Use this command to display the port log, page by page.

The **portLogShow** command displays the same information as **portLogDump**, but it enables you to press Enter after each page of output.

Port logs are circular log files in the switch firmware, which can save up to 32,768 entries. Refer to **portLogConfigShow** to display the current port log size. Once the log is full, the newest log entries delete the oldest log entries. Port logs capture switch-to-device, device-to-switch, switch-to-switch, some device-to-device, and control information.

If the port log is disabled, the following message displays as the first line. Refer to **portLogClear** command for more information.

```
WARNING: port log is disabled
```

The following information displays for each log entry:

Time	Displays the event date and time in milliseconds. The clock resolution is 16 milliseconds.
Task	Displays the name of the internal switch procedure that logged the event, interrupt if the event was logged in interrupt context, or unknown if the task no longer exists.
Event	Displays the task event that generated log entry. Possible events include:

	start	A switch start or re-start 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 busied
	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	A debug message
nbrfsm	Neighbor state transition
sn	Speed negotiation states
fcin	Incoming fibre channel information unit
fcout	Outgoing fibre channel information unit
read	Information unit header log from read operation
write	Information unit header log from write operation
err	Information unit header log of an fc error frame
frame	FC frame payload
nsRemQ	Interswitch name server query
rscn	RSCN
xalloc	Allocate an exchange
xfree	Free an exchange
xerr	Exchange error
xstate	Exchange state
payload	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	Same as ctin above.
errlog	Error level (refer to **errShow**)
loopscn	Current loop state during loop initialization, possible values are:

        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 transited 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 next)

enable   Mode: 0 normal; non-zero loopback

Tx & RxHeader 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 args 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 args 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 init timed out This value is usually equal to the first word of a loop init frame payload. Other possible values include:

2   LIP (req. INITIALIZING) timeout

94F0F0 ARB(F0) timeout

40   CLS timeout

Codes used in various fields are as follows:

state

1	Online
2	Offline
3	Testing
4	Faulty
5	E_Port
6	F_Port
7	Segmented

pstate

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

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
800b	Restart loop for QuickLoop looplet setup
800c	Restart loop for QuickLoop looplet re-initialization

Speed Negotiation States

INIT	Start negotiation
NM	Negotiate master

Note: Enter commands in lowercase only; mixed case is for readability.

portLogShow

2

WS	Wait for signal
NF	Negotiation follow
NC	Negotiation complete

For a full explanation of the information displayed by this command, refer to the *Fabric OS Administrator's Guide*.

Operands   This command has the following operands:

count   Specify the maximum number of lines to display. 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. Refer to **upTime** for a list of conditions that cause a fault. count is ignored when displaying the saved log. This operand is optional.

portid   Specify the area number of port to be displayed. If a port area number is specified, all other ports on the switch are ignored. This operand is optional.

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  02ffffff,00ffffff,08fbffff,14000000
17:05:30.384  PORT        Tx       0     0  c0ffffff,00ffffff,08fb0e02
17:05:30.384  PORT        debug    0         00c0ffee,00fd0118,00000000,00000001
17:05:30.389  PORT        Rx       1    40  02ffffff,00ffffff,08fdffff,14000000
17:05:30.389  PORT        Tx       1     0  c0ffffff,00ffffff,08fd0e03
17:05:30.389  PORT        debug    1         00c0ffee,00fd013c,00000000,00000001
17:05:30.504  PORT        Rx       2    40  02ffffff,00ffffff,08feffff,14000000
17:05:30.504  PORT        Tx       2     0  c0ffffff,00ffffff,08fe0e04
17:05:30.504  PORT        debug    2         00c0ffee,00fd0182,00000000,00000001
17:05:30.507  PORT        Rx       3    40  02ffffff,00ffffff,08ffffff,14000000
17:05:30.507  PORT        Tx       3     0  c0ffffff,00ffffff,08ff0e05
17:05:30.508  PORT        debug    3         00c0ffee,00fd0148,00000000,00000001
17:05:31.081  PORT        Tx       0    40  02ffffff,00ffffff,0e06ffff,14000000
17:05:31.082  PORT        debug    0         00c0ffee,00fd0188,14000000,00000001
17:05:31.084  PORT        Rx       0     0  c0ffffff,00ffffff,0e060902
17:05:31.772  PORT        Tx       1    40  02ffffff,00ffffff,0e07ffff,14000000
17:05:31.772  PORT        debug    1         00c0ffee,00fd014a,14000000,00000001
17:05:31.774  PORT        Rx       1     0  c0ffffff,00ffffff,0e070906
17:05:31.775  PORT        Tx       2    40  02ffffff,00ffffff,0e08ffff,14000000
17:05:31.775  PORT        debug    2         00c0ffee,00fd015c,14000000,00000001
17:05:31.777  PORT        Rx       2     0  c0ffffff,00ffffff,0e080907
17:05:31.778  PORT        Tx       3    40  02ffffff,00ffffff,0e09ffff,14000000
17:05:31.779  PORT        debug    3         00c0ffee,00fd015e,14000000,00000001
17:05:31.782  PORT        Rx       3     0  c0ffffff,00ffffff,0e090908
```

See Also   **portLogClear**, **portLogDump**, **upTime**

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Note: Enter commands in lowercase only; mixed case is for readability.

portLogShowPort

portLogShowPort

Displays the port log of specified port, with page breaks.

Synopsis   **portlogshowport** [*portid*]

Availability   admin, switchAdmin, user

Description   Use this command to display the port log, showing 22 entries at a time. It is identical to **portLogDumpPort**, except that **portLogDumpPort** does not prompt the user to press Enter between each page of output.

If the port log is disabled, the following message is printed as the first line (refer to **portLogClear** for details):

```
WARNING: port log is disabled
```

Refer to the **portLogDump** command for more information on the data returned by this command.

Operands   This command has the following operands:

portid   Specify a nonzero value that specifies which port displays.

Examples   To display a 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
08:35:28.483  tFabric      Tx      14    96  02fffffd,00fffffd,0006ffff,11100060
08:35:28.483  tReceive     Rx      14    0   c0fffffd,00fffffd,00060007
08:35:28.483  tReceive     Rx      14    96  03fffffd,00fffffd,00060007,02100060
08:35:28.483  tTransmit    Tx      14    0   c0fffffd,00fffffd,00060007
08:35:28.483  tFabric      ioctl   14    a1   0,0
08:35:28.483  tFabric      scn     14    5
(output truncated)
```

See Also   **portLogClear**, **portLogShow**, **upTime**

portLogTypeDisable

Disables the port log of a specified type.

Synopsis	**portlogtypedisable** *id*
Availability	admin, switchAdmin
Description	Use this command to disable the port log for a specified port log type.
Operands	This command has the following operand:

    id   Specify a nonzero value that corresponds to the port log type to be disabled. The values corresponding to different log types can be obtained by running **portLogEventShow**.

Examples   To disable event 2 from reporting to the port log:

```
switch:admin> portlogtypedisable 2
```

See Also   **portLogEventShow**, **portLogTypeEnable**

2 Note: Enter commands in lowercase only; mixed case is for readability.

portLogTypeEnable

portLogTypeEnable

Enables the port log of a specified type.

Synopsis   **portlogtypeenable** *id*

Availability   admin, switchAdmin

Description   Use this command to enable the port log for a specified port log type.

Operands   This command has the following operand:

id   Specify a nonzero value that corresponds to the port log type to be enabled. The values corresponding to different log types can be obtained by running **portLogEventShow**.

Examples   To enable event 2 to report to the port log:

```
switch:admin> portlogtypeenable 2
```

See Also   **portLogEventShow**, **portLogTypeDisable**

portLoopbackTest

Functional test of port N->N path.

Synopsis   **portloopbacktest** [**--slot** *number*][**-nframes** *count*][**-lb_mode** *mode*][**-spd_mode** *mode*]
[**-ports** *itemlist*]

Availability   admin, switchAdmin

Description   Use this command to verify the functional operation of the switch by sending frames from the port N transmitter and looping them back into the same port N receiver. The loopback is done at the parallel loopback path. The path exercised in this test does not include the media or the fiber cable.

Only one frame is transmitted and received at a time. No external cable is required to run this test. The port LEDs flicker green rapidly while the test is running.

Following is the test method:

1. Set all ports for parallel loopback.

2. Create a frame F of maximum data size (2,112 bytes).

3. Transmit frame F through port N.

4. Pick up the frame from the same port N.

5. Check the eight statistic error counters for nonzero values:

    ENC_in, CRC_err, TruncFrm, FrmTooLong, BadEOF, Enc_out, BadOrdSet, DiscC3

6. Check if the transmit, receive, or class 3 receiver counters are stuck at some value.

7. Check if the number of frames transmitted is not equal to the number of frames received.

8. Repeat Steps 2 through 7 for all ports present until:

    •   The number of frames (or passcount) requested is reached.

    •   All ports are marked bad.

At each pass, the frame is created from a different data type. 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:

```
1.  CSPAT:    0x7e, 0x7e, 0x7e, 0x7e, ...
2.  BYTE_LFSR: 0x69, 0x01, 0x02, 0x05, ...
3.  CHALF_SQ:  0x4a, 0x4a, 0x4a, 0x4a, ...
4.  QUAD_NOT:  0x00, 0xff, 0x00, 0xff, ...
5.  CQTR_SQ:   0x78, 0x78, 0x78, 0x78, ...
6.  CRPAT:     0xbc, 0xbc, 0x23, 0x47, ...
7.  RANDOM:    0x25, 0x7f, 0x6e, 0x9a, ...
```

Because this test does not include the media or the fiber cable in its test path, its results combined with the results of **crossPortTest** and **spinSilk** (both of which loop frames using an external loopback cable) can be used to determine which components of the switch are faulty.

Operands   This command has the following operands:

  --slot *number*   Specify the slot number on which the diagnostic will operate. The ports specified will be relative to this slot number. The default is set to 0 and designed to operate on fixed-port-count products.

-nframes *count*	Specify 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 10.
-lb_mode *mode*	Specify the loopback mode for the test. By default, this test uses internal loopback. Valid values are as follows:

1	Port Loopback (loopback plugs)
2	External (SERDES) loopback
5	Internal (parallel) loopback

-spd_mode *mode*	Specify the speed mode for the test. This parameter is used only with Bloom and Condor ASIC-based products, where it controls the speed at which each port is operated. For 1 Gbit/sec-only products, it is ignored. The exact operation of speed modes 5 through 8 depends upon the loopback mode selected. When speed modes 5 through 8 are used with cables, they must be connected even to odd or the test will fail.

0	Runs test at 1 Gbit/sec, 2 Gbit/sec, and 4 Gbit/sec.
1	Runs test at 1 Gbit/sec.
2	Runs test at 2 Gbit/sec (Bloom default).
4	Runs test at 4 Gbit/sec (Condor default).

For **lb_mode** set to 0 or 1, the following speed modes are available to test the speed negotiation:

3	Set all even ports' speed for autonegotiate; set all odd ports' speed for 1 Gbit/sec.
4	Set all even ports' speed for autonegotiate; set all odd ports' speed for 2 Gbit/sec.
5	Set all odd ports' speed for autonegotiate; set all even ports' speed for 1 Gbit/sec.
6	Set all odd ports' speed for autonegotiate; set all even ports' speed for 2 Gbit/sec.

For **lb_mode** set to 2 or 3, the following speed modes are available to test FIFO underrun.

3,5	Set all even ports' speed for 2 Gbit/sec; set all odd ports' speed for 1 Gbit/sec.
4,6	Set all even ports' speed for 1 Gbit/sec; set all odd ports' speed for 2 Gbit/sec.

-ports *itemlist*	Specify a list of blade ports to test. By default, all of the blade ports in the specified slot (**--slot**) are used. See **itemList** for more information.

Examples   To run a functional test of a connection:

```
switch:admin> portloopbacktest -ports 1/10-1/20 -nframes 1 -lb_mode 1
Running Port Loopback Test ....
passed.
```

Diagnostics   Following are possible error messages if failures are detected:

```
DATA
ERRSTAT
INIT
PORTDIED
STATS
TIMEOUT
XMIT
```

Refer to the *Fabric OS System Error Message Reference Manual* for more information.

See Also   **camTest**, **centralMemoryTest**, **cmemRetentionTest**, **cmiTest**, **crossPortTest**, **itemList**, **portRegTest**, **spinSilk**, **sramRetentionTest**

portName

Assigns or displays a port name.

Synopsis   **portname** [*slotnumber*/]*portnumber* [*name*]

Availability   admin, switchAdmin

Description   Use this command to assign or display a port name. This name is included in the **portShow** output; it should not be confused with the world wide port name.

Like all other configurable port attributes, port name persists across reboots and power cycles. It is not affected by **configDefault** command, but it will be cleared by **portCfgDefault**.

Operands   This command has the following operands:

slotnumber	For bladed systems only, specify the slot number of the port to be configured, followed by a slash (/).
portnumber	Specify a port number to be configured, relative to its slot for bladed systems. Use **switchShow** to display a list of valid ports.
name	Specify a port name. The port name is a character string up to 32 characters, including spaces and characters, and excluding commas (,), semicolons (;), backslashes (\), and the at sign (@). To erase a port name, specify this operand as an empty string in double-quotation marks. This operand is optional; if omitted, the current port name is displayed.

> **Note**
> 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 "|".

Without operands, the port names of all ports present are displayed.

Examples   To name to a port Tape drive 8:

```
switch:admin> portname 1/3, "Tape drive 8"
switch:admin> portname 1/3
Tape drive 8
```

To name to a port 'hello':

```
switch:admin> portname 2, 'hello'
sh: hello: command not found
hello
switch:admin> portname 2
hello
switch:admin> portname 2, \'hello\'
switch:admin> portname 2
'hello'
```

See Also   **configDefault**, **portCfgDefault**, **portShow**

portPerfShow

Displays port throughput performance in bytes, kilobytes, or megabytes.

Synopsis   **portperfshow** [*interval*]

Availability   admin, switchAdmin, user

Description   Use this command to display throughput information for all ports on the switch. Data displays in 8 or 16 columns, one column per port plus one column that displays the total for these ports. Results display every second or over the specified interval, until Enter, Ctrl-c, or Ctrl-d is pressed.

This command displays the number of bytes received plus the number of bytes transmitted per interval. Throughput values are displayed as either bytes, kilobytes (k), megabytes (m), or gigabytes (g). Values are always rounded down.

Operands   This command has the following operand:

interval   Specify the interval, in seconds, between each sample. Default is one second. This operand is optional.

Examples   To display port throughput for a switch:

```
switch:user> portperfshow 20
        0   1   2   3   4   5   6   7   8   9  10  11  12  13  14  15 Total
==========================================================================
slot 1: 0   0  23k  0   0 134k  0  12m  0 7.3m  0 312m  0 1.1g  0   0 1.4g

slot 2: 0 212m  0   0 784k  0   0   0  43m  0  85m  0 275k  0 498   0 341m

        0   1   2   3   4   5   6   7   8   9  10  11  12  13  14  15 Total
==========================================================================
slot 1: 0   0  26k  0   0 160k  0  13m  0 7.5m  0 310m  0 1.2g  0   0 1.3g

slot 2: 0 178m  0   0 812k  0   0   0  43m  0  87m  0 272k  0 330   0 310m
```

See Also   **portStatsShow**

Note: Enter commands in lowercase only; mixed case is for readability.

portRegTest

Reads and writes test of the ASIC SRAMs and registers.

Synopsis **portregtest** [**--slot** *slotnumber*][**-ports** *itemlist*][**-skiptests** *mask*][**-verbose** *mode*]

Availability admin, switchAdmin

Description Use this command to verify that SRAM and register data bits in each ASIC can be independently written and read.

The test method used is to write a walking 1 pattern to each bit location. This is done by writing a pattern of 0x00000001 to register N. Read and ensure that the same pattern previously written is read back. Shift the pattern to the left by 1 bit (to 0x00000002)and, repeat the write, read, and compare cycle. Shift again and repeat until the last writable bit in register N is reached (0x80000000 for a 32-bit register).

For example, a 6-bit register is effectively tested with the following patterns:

```
0x0001    0x0002    0x0004    0x0008
0x0010    0x0020    0x0040    0x0080
0x0100    0x0200    0x0400    0x0800
0x1000    0x2000    0x4000    0x8000
```

Repeat these steps until all ASIC SRAMs and registers are tested.

Note

The command is supported only on SilkWorm 200E, 3014, 3016, 3250, 3850, 3900, 4012, 4100, 24000, and 48000 platforms; use **turboRamTest** instead.

Operands This command has the following operands:

--slot *slotnumber*   Specify the slot number on which the diagnostic operates. The ports specified are relative to this slot number. The default is 0.

-ports *itemlist*   Specify a list of blade ports to test. By default, all the blade ports in the specified slot are used. Refer to **itemList** for further details.

-skiptests *mask*   A bit mask that defines which of the register test subtests to skip. By default, all subtests are performed. Valid mask values include one or more of the following:

0x2   Skip retry register test.

0x4   Skip statistics register test.

0x8   Skip walk-1 test.

0x10   Skip credit counter test.

-verbose *mode*   Specify a nonzero value to enable verbose mode. The default value is to disable this mode.

Examples To run a bit write/read test of the ASIC SRAMs and registers:

```
switch:admin> portregtest -ports 1/0-1/15
Running Port Register Test ....
Test Complete: "portregtest" Pass 1 of 1
Duration 0 hr, 0 min & 33 sec (0:0:33:447).
passed.
```

Diagnostics   When this command detects failure(s), the test might report one or more of the following error messages:

```
BUS_TIMEOUT
REGERR
REGERR_UNRST
```

Refer to the *Fabric OS System Error Message Reference Manual* for more information.

See Also   **camTest**, **centralMemoryTest**, **cmemRetentionTest**, **cmiTest**, **crossPortTest**, **itemList**, **portLoopbackTest**, **spinSilk**, **sramRetentionTest**

portRouteShow

Displays routing tables for the specified port.

Synopsis   **portrouteshow** [*slotnumber*/]*portnumber*

Availability   admin, switchAdmin, user

Description   Use this command to display the port address ID and the contents of the following port routing tables:

External unicast routing table	Displays how the specified port forwards unicast frames to remote domains in the following format: `domain_number: ports_bitmap` `domain_number` is the remote domain ID to which frames are ultimately routed. `ports_bitmap` contains the port number on the ASIC pair to which frames for the domain ID forward in bitmap hex format; for example, 0x0100 indicates port 8 on the ASIC pair The arrangements of ports on an ASIC pair is specific to the system type. For any active port, this table contains at least one entry, which routes unicast frames destined to the embedded port (value 0x10000) of the local domain..
Internal unicast routing table	Displays how the specified port forward unicast frames to locally attache Nx_Ports in the following format: `area_number: ports_bitmap` `area_number` represents the area number of a device (or set of looped devices) attached to the local switch. The format of `ports_bitmap` is the same as the external unicast routing table..
Broadcast routing table	Displays how the specified port forwards broadcast frames. There is one bit map entry in this table, similar to the bit maps in the other tables; however, this table typically has only Bit 16 set (value 0x10000), indicating this port always routes broadcast frames to the embedded port, for handling by the firmware.

Operands   This command has the following operands:

slotnumber	For bladed systems only, specifies the slot number of the port to display, followed by a slash (/).
portnumber	Specifies the number of the port to display, relative to its slot for bladed systems. Use **switchShow** to display a list of valid ports.

Examples   To display the routing tables for a port:

```
switch:user> portrouteshow 4/15
port address ID: 0x02bf00
external unicast routing table:
   1: 0x4 (vc=3)
   2: 0x10000 (vc=0)
internal unicast routing table:
  60: 0x8000 (vc=2)
  63: 0x1000 (vc=5)
broadcast routing table:
  0x10000
```

See Also   **bcastShow**, **fabricShow**, **switchShow**, **topologyShow**, **uRouteShow**

portShow

Displays port status.

Synopsis **portshow** [**arp** | **fciptunnel** | **ipif** | **iproute**] [*slot*/][**ge**]*port* [*args*]

Availability admin, switchAdmin, user

Description Use this command to display status information for the specified port. Additionally, use this command to display FCIP parameters on a GbE port, such as address resolution protocol (ARP) entries, IP routes, IP interfaces, and FCIP tunnels. Information varies with the switch model and port type.

If you issue **portShow** with the *slot*/*port* operand or no operands, the following fields display:

portName	Name assigned to the port by the command of the same name.
portHealth	Current health of the port (Fabric Watch license required).
Authentication	Authentication type and associated parameters, if applicable, used on the port at port online or when enabling security, whichever occurs last. States include:

    None   No authentication was done.

    FCAP   FCAP authentication was done.

    DHCHAP
        DH-CHAP authentication was done. It also displays the DH group and hash used for authentication.

portDisableResson	The reason that a port has been disabled, if it has not been disabled by **portDisable** or **portCfgPersistentDisable**.
portCFlags	Port control flags.
portFlags	Bit map of port status flags, including information on the type of port, whether it is fully online, and whether logins have been accepted on it.
portType	Port type and revision numbers.
portState	Port SNMP state:

    Online   Up and running.

    Offline   Not online; portPhys gives details.

    Testing   Running diagnostics.

    Faulty   Failed diagnostics.

    Persistently Disabled
        Persistently disabled.

portPhys	Physical port states include:

    No_Card
        No interface card present.

    No_Module
        No module (GBIC or other) present.

    No_Light
        Module is not receiving light.

	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.
	Diag_Flt
	Port failed diagnostics.
	Lock_Ref
	Locking to the reference signal.
portScn	Last state change notification for port.
port generation number	
	Port generation number for the last offline state change.
portId	24-bit port ID.
portIfId	User port's interface ID.
portWwn	Port WWN.
portWwn of devices(s) connected	
	Port WWNs of connected devices.
Distance	The port's long-distance level. In case of LD mode, the user configured limit and actual distances also are displayed. Refer to **portCfgLongDistance**.
portSpeed	The port's fixed speed (1, 2, or 4 Gbit/sec) or negotiated speed (N1, N2, or N4 Gbit/sec).
EX_Port Mode	The port is configured as an EX_Port. None of the EX_Port information is displayed if the port is not configured as an EX_Port.
Fabric ID	The fabric ID assigned to this EX_Port; therefore, it is the fabric ID of the edge fabric attached to this EX_Port.
Front Phantom	Information on the front phantom presented by this EX_Port. This information includes the preferred (if not active) or actual (if active) domain ID for the front domain and the WWN of the principal switch.
Pr Switch Info	Information on the principal switch of the edge fabric attached to this EX_Port. This information includes the domain ID and WWN of the principal switch.
BB XLate	Information on the xlate (translate) phantom domain presented at this port. This information 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	If the EX_Port is connected to an edge switch with no security, then the authentication is displayed as "None". If the edge switch is in secure mode, and assuming the DH-CHAP passwords are configured both on the router and the edge switch, the security type is displayed as "DH_CHAP". DH-CHAP is the only supported authentication type.

DH Group	If the EX_Port is connected to an edge switch with no security, then the value is "N/A". If the edge switch is in secure mode, then the value, 1 through 4, is displayed and is the negotiated value with the edge fabric. This value is not user configurable.
Hash Algorithm	If the EX_Port is connected to an edge switch with no security, then the value is "N/A". If the edge switch is in secure mode, then the hash algorithm type, MD5 or SHA-1, is displayed and is the negotiated value with the edge fabric. This value is not user configurable.
Edge fabric's primary WWN	
	If the EX_Port is connected to an edge switch with no security, then the value is "N/A". The WWN of the primary FCS is displayed when the edge fabric is secure and the primary FCS is online. A value of "No Primary" is displayed if the edge fabric is in secure mode but there is no primary FCS.
Edge fabric's version stamp	
	If the EX_Port is connected to an edge switch with no security, then the value is "N/A". The version stamp, in string format, specifies the version of the security database in the fabric and all switches must be the same, or else the port is disabled.

After the general information, there are three columns of counters. The first column displays 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.
Rx_flushed	Frames requiring translation.
Tx_unavail	Frames returned from an unavailable transmitter.
Free_buffer	Free buffer available interrupts.
Overrun	Buffer overrun interrupts.
Suspended	Transmission suspended interrupts.
Parity_err	Central memory parity errors.
2_parity_err	Secondary Tx parity errors.
CMI_bus_err	Control message interface errors.

The second column displays link error status block counters.

The third column displays 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.

Issue this command with the **arp** operand to display IP addresses, corresponding MAC addresses, and flags.

Issue this command with the **fciptunnel** operand to display the following fields:

- Tunnel Num

- Remote IP Addr

- Local IP Addr

- Remote WWN

- Local WWN

- Compression

- Committed Rate

- Min Retransmit Time

- Keepalive Timeout

- Max Retransmissions

- Wan TOV

- Status

Use **ipif** to display the following information:

- Interface

- IP Address

- NetMask

- MTU

Use **iproute** to display the following information:

- IP Address

- Mask

- Gateway

- Metric

- Flags

See **portcfg** for more information.

Operands	This command has the following operands:

arp   Displays ARP table.

fciptunnel   Displays FCIP tunnels on this GbE port. Possible optional *args* include:

        all   Displays all FCIP tunnels.

        tunnel_num
            Displays the specified FCIP tunnel.

ipif   Displays the IP interface.

iproute   Displays the IP route.

slot   For bladed systems only, specify the slot number of the port to be configured, followed by a slash (/).

[**ge**]*port*   Specify a port number to be configured, relative to its slot for bladed systems. Use **switchShow** to display a list of valid ports.

Examples   To display the state of a port:

```
switch:user> portshow 2/15
portName: Tape drive 8
portHealth: HEALTHY

Authentication: None
portDisableReason: None
portCFlags: 0x1
portFlags: 0x903        PRESENT ACTIVE E_PORT G_PORT U_PORT LOGICAL_ONLINE LOGIN
portType:  10.0
portState: 1    Online
portPhys:  6    In_Sync
portScn:   16   E_Port    Trunk port
port generation number:    0
portId:    012f00
portIfId:    43320010
portWwn:   20:2f:00:60:69:e4:20:42
portWwn of device(s) connected:
       None
Distance:  normal
portSpeed: N4Gbps

Interrupts:        0         Link_failure: 0         Frjt:          0
Unknown:           0         Loss_of_sync: 3         Fbsy:          0
Lli:              15         Loss_of_sig:  2
Proc_rqrd:         0         Protocol_err: 0
Timed_out:         0         Invalid_word: 0
Rx_flushed:        0         Invalid_crc:  0
Tx_unavail:        0         Delim_err:    0
Free_buffer:       0         Address_err:  0
Overrun:           0         Lr_in:        3
Suspended:         0         Lr_out:       1
Parity_err:        0         Ols_in:       0
2_parity_err:      0         Ols_out:      3
CMI_bus_err:       0
```

To display the ARP entries:

```
switch:admin> portshow arp ge0
GE Port 0/ge0
IP Address      Mac Address             Flags
-----------------------------------------------------------
192.168.255.25  00:01:02:03:04:60       Permanent, Resolved,
```

To display FCIP tunnels on a GbE port:

```
switch:admin> portshow fciptunnel 4/ge0 all
GE Port 4/ge1
    ------------------------------------------
        Tunnel ID 0
        Remote IP Addr 192.168.1.80
        Local IP Addr 192.168.1.70
        Remote WWN Not Configured
        Local WWN 10:00:00:60:69:e4:00:56
        Compression on
        Committed Rate 100000 Kbps (0.100000 Gbps)
        SACK on
        Min Retransmit Time 1000
        Keepalive Timeout 60
        Max Retransmissions 8
        Wan TOV 1
        Status : Active
    ------------------------------------------
        Tunnel ID 1
        Remote IP Addr 192.168.1.81
        Local IP Addr 192.168.1.71
        Remote WWN Not Configured
        Local WWN 10:00:00:60:69:e4:00:56
        Compression on
        Committed Rate 100000 Kbps (0.100000 Gbps)
        SACK on
        Min Retransmit Time 1000
        Keepalive Timeout 60
        Max Retransmissions 8
        Wan TOV 1
        Status : Active
```

To display IP interfaces on a GbE port:

```
switch:admin> portshow ipif ge0
GE Port 0/ge0
Interface       IP Address      NetMask         MTU
-----------------------------------------------------------
  0             192.168.255.20  255.255.255.0   1500
  1             192.168.255.21  255.255.255.0   1500
  2             192.168.255.22  255.255.255.0   1500
  3             192.168.255.23  255.255.255.0   1500
  4             192.168.255.28  255.255.255.0   1500
  5             192.168.255.26  255.255.255.0   1500
  6             192.168.255.27  255.255.255.0   1500
```

Note: Enter commands in lowercase only; mixed case is for readability.

To display IP routes on a GbE port:

```
switch:admin> portshow iproute ge0
GE Port 0/ge0
IP Address      Mask            Gateway         Metric  Flags
---------------------------------------------------------------
192.168.255.0   255.255.255.0   192.168.255.20  0       Interface,
192.168.255.0   255.255.255.0   192.168.255.21  0       Interface,
192.168.255.0   255.255.255.0   192.168.255.22  0       Interface,
192.168.255.0   255.255.255.0   192.168.255.23  0       Interface,
192.168.255.0   255.255.255.0   192.168.255.28  0       Interface,
192.168.255.0   255.255.255.0   192.168.255.26  0       Interface,
192.168.255.0   255.255.255.0   192.168.255.27  0       Interface,
172.16.123.231  255.255.0.0     192.168.255.25  1
```

See Also   **authUtil**, **portcfg**, **portCfgLongDistance**, **portcmd**, **portLoginShow**, **portName**, **switchShow**

portStats64Show

Displays the 64-bit hardware statistics for a port.

Synopsis   **portstats64show** [*slotnumber/*]*portnumber*

Availability   admin, switchAdmin, user

Description   Use this command to display the following hardware statistics for a port. Two integers are reported for most values. In such cases, the top word is the most significant.

stat64_wtx	Number of 4-byte words transmitted.
stat64_wrx	Number of 4-byte words received.
stat64_ftx	Frames transmitted.
stat64_frx	Frames received.
stat64_c2_frx	Class 2 frames received.
stat64_c3_frx	Class 3 frames received.
stat64_lc_rx	Link control frames received.
stat64_mc_rx	Multicast frames received.
stat64_mc_to	Multicast timeouts.
stat64_mc_tx	Multicast frames transmitted.
tim64_rdy_pri	Time R_RDY high priority.
tim64_txcrd_z	Time BB_credit zero.
er64_enc_in	Encoding errors inside of frames.
er64_crc	Frames with CRC errors.
er64_trunc	Frames shorter than minimum.
er64_toolong	Frames longer than maximum.
er_bad_eof	Frames with bad end-of-frame.
er64_enc_out	Encoding error outside of frames.
er64_disc_c3	Class 3 frames discarded.
stat64_rateTxFrame	Tx frame rate (fr/sec).
stat64_rateRxFrame	Rx frame rate (fr/sec).
stat64_rateTxPeakFrame	Tx peak frame rate (fr/sec).
stat64_rateRxPeakFrame	Rx peak frame rate (fr/sec).
stat64_rateTxByte	Tx Byte rate (bytes/sec).
stat64_rateRxByte	Rx Byte rate (Bytes/sec).
stat64_rateTxPeakByte	Tx peak Byte rate (Bytes/sec).

stat64_rateRxPeakByte

Rx peak Byte rate (Bytes/sec).

stat64_PRJTFrames   Number of P_RJT frames transmitted.

stat64_PBSYFrames   Number of P_BSY transmitted.

stat64_inputBuffersFull

Occasions on which input buffers are full.

stat64_rxClass1Frames

Class 1 frames received.

Operands   This command has the following operands:

slotnumber   For bladed systems only, specify the slot number of the port to be configured, followed by a slash (/).

portnumber   Specify a port number to be configured, relative to its slot for bladed systems. Use **switchShow** to display a list of valid ports.

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
                316             bottom_int : 4-byte words transmitted
stat64_wrx      0               top_int : 4-byte words received
                1486            bottom_int : 4-byte words receive
stat64_ftx      0               top_int : Frames transmitted
                69              bottom_int : Frames transmitted
stat64_frx      0               top_int : Frames received
                73              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
                37              bottom_int : Class 3 frames received
stat64_lc_rx    0               top_int : Link control frames received
                8               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
                60438254        bottom_int : Time R_RDY high priority
tim64_txcrd_z   0               top_int : Time BB_credit zero
                2               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
er_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
                9131157         bottom_int : Encoding error outside of frames
er64_disc_c3    0               top_int : Class 3 frames discarded
                0               bottom_int : Class 3 frames discarded
stat64_rateTxFrame      17          Tx frame rate (fr/sec)
stat64_rateRxFrame      17          Rx frame rate (fr/sec)
stat64_rateTxPeakFrame  17          Tx peak frame rate (fr/sec)
stat64_rateRxPeakFrame  17          Rx peak frame rate (fr/sec)
stat64_rateTxByte       79          Tx Byte rate (bytes/sec)
stat64_rateRxByte       371         Rx Byte rate (Bytes/sec)
stat64_rateTxPeakByte   79          Tx peak Byte rate (Bytes/sec)
stat64_rateRxPeakByte   371         Rx peak Byte rate (Bytes/sec)
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
```

See Also   **portStatsClear**, **portStatsShow**

portStatsClear

Clears the hardware statistics of a specified switch port.

Synopsis   **portstatsclear** [*slotnumber/*]*portnumber*

Availability   admin, switchAdmin

Description   Use this command to clear the hardware statistics, including the AL_PA-based CRC monitor, end-to-end monitor, and filter-based monitor statistics, for a specified switch port. For platforms with a Bloom-based ASIC, the command also clears the hardware statistics for associated ports in the target port quad. For platforms with a Condor-based ASIC, the command clears the hardware statistics only on the port designated.

Operands   This command has the following operands:

slotnumber   For bladed systems only, specify the slot number of the port to be configured, followed by a slash (/).

portnumber   Specify a port number to be configured, relative to its slot for bladed systems. Use **switchShow** to display a list of valid ports.

Examples   To clear the statistics for a port:

```
switch:admin> portstatsclear 4/15
```

See Also   **portStats64Show**, **portStatsShow**

portStatsShow

Displays port hardware statistics.

Synopsis   **portstatsshow** [*slotnumber*/]*portnumber*

portstatsshow [**ge** | **ip** | **fcip**] [*slotnumber*/]**ge***portnumber* [*ipaddress* | *tunnelnumber*]

Availability   admin, switchAdmin, user

Description   Use this command to display port hardware statistics counters. Some counters are platform and port specific and display only with those platforms and ports. All statistics have a maximum 32-bit value of 4,294,967,295.

stat_wtx	4-byte words transmitted.
stat_wrx	4-byte words received.
stat_ftx	Frames transmitted.
stat_frx	Frames received.
stat_c2_frx	Class 2 frames received.
stat_c3_frx	Class 3 frames received.
stat_lc_rx	Link control frames received.
stat_mc_rx	Multicast frames received.
stat_mc_to	Multicast timeouts.
stat_mc_tx	Multicast frames transmitted.
tim_rdy_pri	Amount of time that sending R_RDY or VC_RDY primitive signals is a higher priority than sending frames, due to diminishing credit reserves in the transmitter at the other end of the fiber. This is sampled once every 348 106.25 MHz clocks, and the counter is incremented by 1 if the condition is true.
tim_txcrd_z	Amount of time that frame transmission is blocked by a transmit credit of 0. This is sampled once every 348 106.25 MHz clocks, and the counter is incremented by 1 if the condition is true.
er_enc_in	Encoding errors inside frames.
er_crc	Frames with CRC errors.
er_trunc	Frames shorter than minimum.
er_toolong	Frames longer than maximum.
er_bad_eof	Frames with bad end-of-frame.
er_enc_out	Encoding error outside frames.
er_bad_os	Invalid ordered set (platform and port specific).
er_c3_timeout	Class 3 frames discarded due to timeout (platform and port specific).
er_c3_dest_unreach	Class 3 frames discarded due to destination unreachable (platform and port specific).

`er_other_discard`	Other discards (platform and port specific).
`er_zone_discard`	Class 3 frames discarded due to zone mismatch.
`er_crc_good_eof`	CRC error with good EOF (platform and port specific).
`er_inv_arb`	Invalid ARB.
`open`	Number of times the FL_Port entered OPEN state.
`transfer`	Number of times the FL_Port entered TRANSFER state.
`opened`	Number of times the FL_Port entered OPENED state.
`starve_stop`	Loop tenancies stopped due to starvation.
`fl_tenancy`	Number of times FL_Port had loop tenancy.
`nl_tenancy`	Number of times NL_Port had loop tenancy.
`zero_tenancy`	Number of times zero tenancy occurred.

Operands   This command has the following operands:

slotnumber	For bladed systems only, specifies the slot number of the port to be configured, followed by a slash (/).
[**ge**]*portnumber*	Specifies a port number to be configured, relative to its slot for bladed systems. Specify the optional **ge** option to display the GbE port hardware statistics. Use **switchShow** to display a list of valid ports.
ge	Displays the GbE statistics.
ip	Displays all the GbE port statistics related to IP addresses that are on (not zero). Optionally, use *ipaddress* to display statistics for the specified IP address.
fcip	Displays the GbE statistics on all FCIP tunnels. Optionally, use *tunnelnumber* to display statistics for the specified FCIP tunnel.

Examples   To display the basic set of statistics for a port:

```
switch:admin> portstatsshow 13
stat_wtx              0          4-byte words transmitted
stat_wrx              0          4-byte words received
stat_ftx              0          Frames transmitted
stat_frx              0          Frames received
stat_c2_frx           0          Class 2 frames received
stat_c3_frx           0          Class 3 frames received
stat_lc_rx            0          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           0          Time BB credit zero
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_c3_timeout         0          Class 3 frames discarded due to timeout
er_c3_dest_unreach    0          Class 3 frames discarded due to destination
unreachable
er_other_discard      0          Other discards
er_zone_discard       0          Class 3 frames discarded due to zone mismatch
er_crc_good_eof       0          Crc error with good eof
er_inv_arb            0          Invalid ARB
open                  0          loop_open
transfer              0          loop_transfer
opened                0          FL_Port opened
starve_stop           0          tenancies stopped due to starvation
fl_tenancy            0          number of times FL has the tenancy
nl_tenancy            0          number of times NL has the tenancy
zero_tenancy          0          zero tenancy
```

To display GbE port statistics for slot 8 and GbE port 1:

```
switch:admin> portstatsshow ge 8/ge1
ge_stat_tx_frms                        0   GE transmitted frames
ge_stat_tx_octets                      0   GE transmitted octets
ge_stat_tx_ucast_frms                  0   GE transmitted unicast frames
ge_stat_tx_mcast_frms                  0   GE transmitted multicast frames
ge_stat_tx_bcast_frms                  0   GE transmitted broadcast frames
ge_stat_tx_vlan_frms                   0   GE transmitted vlan frames
ge_stat_tx_pause_frms                  0   GE transmitted pause frames
ge_stat_rx_frms                        0   GE received frames
ge_stat_rx_octets                      0   GE received octets
ge_stat_rx_ucast_frms                  0   GE received unicast frames
ge_stat_rx_mcast_frms                  0   GE received multicast frames
ge_stat_rx_bcast_frms                  0   GE received broadcast frames
ge_stat_rx_vlan_frms                   0   GE received vlan frames
ge_stat_rx_pause_frms                  0   GE received pause frames
ge_err_carrier                         0   GE lost carrier sense
ge_err_length                          0   GE invalid length
ge_err_crc                             0   GE CRC Errors
ge_err_abort                           0   GE abort frames
ge_err_overrun                         0   GE overruns
ge_err_fifo_ovf                        0   GE Fifo overflow
```

To display statistics for FCIP tunnel 2, slot 8, and GbE port 1:

```
switch:admin> portstatsshow fcip 8/ge1 2
tunnel_id                              2    Tunnel ID
fcip_ip2fc_bytes                       0    uncompressed bytes
fcip_ip2fc_pkts                        0    pkt rvd by fcip entity from ip
fcip_ip2fc_wantov_drop                 0    pkt dropped due to wantov
fcip_fc2ip_pkts                        0    ve to fcip_entity pkts
fcip_fc2ip_bytes                       0    ve to fcip_entity bytes
```

To display port statistics for all IP addresses, slot 8, and GbE port 1:

```
switch:admin> portstatsshow ip 8/ge1
ip_err_crc                             0    IP CRC Errors
ip_err_hdr_cksum                       0    IP Checksum Errors
ip_err_tcp_data_chksum                 0    IP TCP Data Checksum Errors
```

To display port statistics for IP address 192.168.255.10, slot 8, and GbE port 1:

```
switch:admin> portstatsshow ip 8/ge1 192.168.255.10
ipaddr                    192.168.255.10   IP address
ip_out_octets                     159896   IP transmitted comp bytes
ip_out_octets                     159896   IP transmitted uncomp bytes
ip_out_pkts                         3476   IP transmitted packets
ip_out_ucast_pkts                   3476   IP transmitted unicast packets
ip_out_bcast_pkts                      0   IP transmitted broadcast packets
ip_out_mcast_pkts                      0   IP transmitted multicast packets
ip_in_octets                           0   IP received comp bytes
ip_in_octets                           0   IP received uncompbytes
ip_in_pkts                             0   IP received packets
ip_in_ucast_pkts                       0   IP received unicast packets
ip_in_bcast_pkts                       0   IP received broadcast packets
ip_in_mcast_pkts                       0   IP received multicast packets

ip_err_crc                             0   IP CRC Errors
ip_err_hdr_cksum                       0   IP Checksum Errors
ip_err_tcp_data_chksum                 0   IP TCP Data Checksum Errors
```

See Also   portErrShow, portShow

portSwap

Swaps area numbers of two ports.

Synopsis   **portswap** [*slotnumber1/*]*portnumber1* [*slotnumber2/*]*portnumber2*

Availability   admin, switchAdmin

Description   Use this command to swap area numbers for a pair of ports. Both ports must be disabled prior to executing this command and the port-swapping feature must be enabled using **portSwapEnable**.

> **Note**
>
> To undo a previous port swap, execute **portSwap** again on the same two ports.
>
> **portSwap** information is kept in its own database; it cannot be manipulated by editing the configuration database displayed by **configShow** and **configUpload**.

Operands   This command has the following operands:

slotnumber1	For bladed systems only, specify the slot number of the first port whose area number is to be swapped, followed by a slash (/).
portnumber1	Specify a port number to be configured, relative to its slot for bladed systems. Use **switchShow** to display a list of valid ports.
slotnumber2	For bladed systems only, specify the slot number of the second port whose area number is to be swapped, followed by a slash (/).
portnumber2	Specify a port number to be configured, relative to its slot for bladed systems.

Examples   To swap area numbers between a pair of ports:

```
switch:admin> portswap 1/e 2/5
portswap done
```

See Also   **portDisable**, **portEnable**, **portShow**, **portSwapDisable**, **portSwapEnable**, **portSwapShow**, **switchShow**

portSwapDisable

Disables the portswap feature.

Synopsis   **portswapdisable**

Availability   admin, switchAdmin

Description   Use this command to disable the portswap feature. The **portSwap** command cannot be used after this feature is disabled.

The enabled state of the portswap feature is persistent across reboots and power cycles.

Note

Enabling or disabling the portswap feature does not effect previously performed portswap operations.

Operands   none

Examples   To disable the portswap feature:

```
switch:admin> portswapdisable
```

See Also   **portDisable**, **portEnable**, **portShow**, **portSwapEnable**, **portSwapShow**, **switchShow**

portSwapEnable

Enables the portswap feature.

Synopsis **portswapenable**

Availability admin, switchAdmin

Description Use this command to enable the portswap feature. The **portSwap** command cannot be used unless the feature is first enabled with this command.

The enabled state of the portswap feature is persistent across reboots and power cycles.

> **Note**
>
> Enabling or disabling the portswap feature does not effect previously performed portswap operations.

Operands none

Examples To enable the portswap feature:

```
switch:admin> portswapenable
```

See Also **portDisable**, **portEnable**, **portShow**, **portSwapDisable**, **portSwapShow**, **switchShow**

portSwapShow

Displays the state of the portswap feature.

Synopsis   **portswapshow**

Availability   admin, switchAdmin, user

Description   Use this command to display the enabled state of the portswap feature, as well as port and area information for those ports whose area number id different from the default area number. The default area number of a port is same as its switch port number.

Operands   none

Examples   To display the enabled state of the portswap feature and information for ports whose area numbers have been swapped:

```
switch:admin> portswapshow
PortSwap is enabled
Slot    Slotport        Swport          Area
============================================
2       2               18              19
2       3               19              18
```

See Also   **portDisable**, **portEnable**, **portShow**, **portSwap**, **portSwapDisable**, **portSwapEnable**, **switchShow**

portTest

Performs a functional test of a switch in a live fabric.

Synopsis   **porttest** [**-ports** *itemlist*][**-iteration** *count*][**-userdelay** *time*][**-timeout** *time*][**-pattern** *pattern*] [**-patsize** *size*][**-seed** *seed*][**-listtype** *porttype*]

Availability   admin, switchAdmin

Description   Use this command to isolate problems to a single replaceable element and isolate problems to near-end terminal equipment, far-end terminal equipment, or transmission line. Diagnostics can be executed every day or on demand.

This command verifies the intended functional operation of the switch by sending frames from port M's transmitter, and looping the frames back through an external fiber cable into port M's receiver, thus exercising all the switch components from the main board, to the fiber cable, to the media (of the devices and the switch), and back to the main board.

The cables and media connected should be of the same technology: a short-wavelength media (switch) port is connected to another short-wavelength media (device) port using a short-wavelength cable; a long wavelength port is connected to a long-wavelength port, and a copper port is connected to a copper port.

Only one frame is transmitted and received at a time. The port LEDs flicker green while the test is running.

The following port types are supported:

*   E_Ports

*   F_Ports (must support ELS Echo)

*   L_Ports

*   N->N loopback ports

This command will not run on any other port type.

The command performs the following actions:

1.   Initiate tests on certain ports (**portTest** command).

2.   Stop active tests on certain ports (**stopPortTest** command).

3.   Get the snapshot of the test result (**portTestShow** command).

Once **portTest** is triggered, you can use **stopPortTest** to stop the test. Refer to the **stopPortTest** command for more information.

View the current progress of **portTest** by running **portTestShow**. Refer to the **portTestShow** command for more information.

If there is a port type change during **portTest** execution, the test will continue on a given port as long as it can be supported and it is asked to do so. If a request was made to test all possible ports on a given switch, **portTest** will start a new test using the new port type to start a appropriate test.

Operands   This command has the following operands:

-ports *itemlist*   Specify a list of user ports to test. By default, all the user ports in the switch are tested. Refer to **itemList** help pages for further details.

-iteration *count*   Specify the number of times (or number of frames per port) to execute this test.

Default value is 20. Valid values include:

0   Run the test on timeout mode.

-1   Run indefinitely.

-userdelay *time*   Specify the delay between frames sent by **portTest**, in milliseconds. The default value is 10 milliseconds.

-timeout *time*   Specify the number of seconds to run the test. Setting the iteration to 0 will set the **portTest** into timeout mode. The default value is 0.

-pattern *pattern*   Specify the pattern of the test packets payload. Twenty types of predefined patterns are provided with the test. Use the **dataTypeShow** command to view the types of pattern that are supported with **portTest**. **dataTypeShow** displays the pattern name, the pattern number to use with this option, and an example of this pattern. The default pattern type, if no pattern number is specified, is RANDOM (type=11)

-patsize *size*   Specify the size of the pattern. Default size of the pattern is 1024 bytes. Valid range of values are 4 bytes through 2112 bytes.

-seed *seed*   Specify the seed pattern to be used with pattern. Default seed value is 0xaa.

-listtype *porttype*   Specify the type of ports to run **portTest**. The following values are predefined for porttype:

-1   All ports (default).

-2   All L_Ports.

-3   All F_Ports.

-4   All E_Ports.

-5   All N->N loopback ports.

Examples   To run a functional test on an active switch:

```
switch:admin> porttest -ports 1/1-1/3
```

See Also   **crossPortTest**, **fportTest**, **loopPortTest**, **portLoopbackTest**, **portTestShow**, **spinFab**, **stopPortTest**

portTestShow

Displays information from **portTest**.

Synopsis   **porttestshow** [**-ports** *itemlist*]

Availability   admin, switchAdmin

Description   Use this command to display a snapshot of information from **portTest**. The following information displays:

- Pass or fail information on a given port.

- Port type tested.

- Current state of portTest (NO TEST, TESTING, or TEST DONE).

- Type of ports asked to test (ALL_PORTS, ALL_E_PORTS, ALL_L_PORTS, ALL_F_PORTS, ALL_LB_PORTS, or SINGLE_PORT).

- Pattern used in testing.

- Seed used in testing.

- User delay value.

- Total iteration asked to test.

- Current test iteration.

- Total fails on this test.

- Consecutive fails on this test.

- **portTest** start time.

- **portTest** stop time.

- Timeout value.

- Error code if any.

Operands   This command has the following operand:

-ports *itemlist*   Specify a list of user ports to test. By default, all the user ports in the current slot will be assumed. Refer to **itemList** help pages for further details.

Examples   To display information from **portTest**:

```
switch:admin> porttestshow 1
    Port 1 : PASS
    PortType: OTHER                      PortState: NO TEST
    PortInternalState: INIT                    PortTypeToTest: NO_TEST
    Pattern: 0x0           Seed: 0x0            UserDelay: 0
    TotalIteration: 0                    CurrentIteration: 0
    TotalFail: 0                         ConsecutiveFail: 0
    StartTime: NONE
    StopTime:  NONE
    Timeout: 0                           ErrorCode: 0
```

See Also   **crossPortTest**, **fportTest**, **loopPortTest**, **portLoopbackTest**, **portTest**, **spinFab**, **stopPortTest**

powerOffListSet

Sets slot power-off list order.

Synopsis	**powerofflistset**
Availability	admin, switchAdmin

Description Use this command to change the order in which slots are powered off. This command displays the current order and then prompts you to indicate the new order.

Whenever a power supply goes out of service or a field-replaceable unit (FRU) is inserted, the system available power is compared to the system required power to determine if there is enough power to operate. If there is less power available than the demand, the power-off list is processed until there is enough power for the system to operate.

If the system abruptly goes from a state in which there is enough power to run all inserted and powered on FRUs to a state in which there is not enough power to run everything, no processing of the power-off list can be done. This is because the lack of power causes the CP boards' processors to cease execution of the firmware. In this situation, all operation of the system terminates immediately: for instance, if two power supplies already have been removed from a SilkWorm director, and than a third one is removed so that suddenly only one power supply is available to power a fully loaded system. 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 only affects the order in which slots are powered off. On power up or when an additional power supply is added, slots are processed to verify that they can be powered up. This processing always starts at slot 1 and proceeds to the last slot in the chassis. Also, other FRUs in the chassis might use significant power yet the FRUs cannot be powered off by software. For example, a missing blower FRU might change the power computation enough to affect how many slot blades can be powered up.

The format of the display varies, depending on the switch model and the number of slots present.

Operands none

Examples   To modify the power-off list order:

```
switch:admin> powerofflistset

Slot    Current POL
------------------
 10       1st
  9       2nd
  8       3rd
  7       4th
  4       5th
  3       6th
  2       7th
  1       8th

1st slot to be powered off: (1..10) [10] 1
2nd slot to be powered off: (2..10) [9] 2
3rd slot to be powered off: (3..10) [8] 3
4th slot to be powered off: (4..10) [7] 4
5th slot to be powered off: (7..10) [7] 10
6th slot to be powered off: (7..9) [8] 9
7th slot to be powered off: (7..8) [8] 8
8th slot to be powered off: (7..7) [7] 7

Old POL    New POL    Power Off Order
-----------------------------------
  10          1          1st
   9          2          2nd
   8          3          3rd
   7          4          4th
   4         10          5th
   3          9          6th
   2          8          7th
   1          7          8th

Proceed to change the POL order? (yes, y, no, n): [no] y
```

See Also   **chassisShow**, **powerOffListShow**, **psShow**, **slotPowerOff**, **slotPowerOn**, **slotShow**

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Note: Enter commands in lowercase only; mixed case is for readability.

powerOffListShow

powerOffListShow

Displays slot power-off list order.

Synopsis   **powerofflistshow**

Availability   admin, switchAdmin, user

Description   Use this command to display the order in which the physical slots will be powered off. The system-available power is compared to the system demand power to determine if there is enough power to operate. If there is less power available than the demand, then the power-off list is processed until there is enough power for the system to operate.

Note that if the system abruptly goes from a state with enough power to run all inserted and powered FRUs to a state with too little power to run everything, no processing of the power off list can be done. This is due to the lack of power causes the CP boards' processors to cease executing the firmware. In this situation, all operation of the system terminates immediately. An example of this situation is when a third power supply is removed from the chassis, so that suddenly only one power supply is available to power a fully loaded system. However, if the system is running on two power supplies (this is not recommended) and one goes into predicted fail state (in which the power supply is still supplying power), the power off list processes as described.

The format of the display varies, depending on the switch model and the number of slots present.

Operands   none

Examples   To display the slot power off list order:

```
switch:admin> powerofflistshow

Slot 10 will be powered off 1st
Slot  9 will be powered off 2nd
Slot  8 will be powered off 3rd
Slot  7 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
Slot  2 will be powered off 9th
Slot  1 will be powered off 10th
```

See Also   **chassisShow**, **powerOffListSet**, **psShow**, **slotPowerOff**, **slotPowerOn**, **slotShow**

psShow

Displays power supply status.

Synopsis   **psshow**

Availability   admin, switchAdmin, user

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.

Operands   none

Examples   To view the status of the power supplies:

```
switch:admin> psshow

Power Supply #1 is OK
 DELTA DPS-1001AB-1E 23000000601 S1   IXD0111000088
Power Supply #2 is faulty
 DELTA DPS-1001AB-1E 23000000601 S1   IXD0111000162
Power Supply #3 is OK
 DELTA DPS-1001AB-1E 23000000601 S1   IXD0111000120
Power Supply #4 is absent
```

See Also   **chassisShow**, **fanShow**

qloopAdd

Adds a member to a QuickLoop.

Synopsis **qloopadd "***qloopName***", "***qloopMemberList***"**

Availability admin

Description Use this command to add one or more members to an existing QuickLoop.

When a configuration is enabled, all QuickLoops defined in the configuration must resolve to one or two switch World Wide Names (WWNs).

Zone alias names entered as members of this QuickLoop must be defined with WWNs. Zone alias names that are defined by domain and port number, or AL_PA are not accepted as members of the QuickLoop.

This command changes the defined configuration. For the change to be preserved across switch reboots, it must be saved to nonvolatile memory using the **cfgSave** command. For the change to become effective, an appropriate zone configuration must be enabled using the **cfgEnable** command.

Note

This command requires a Brocade Advanced Zoning license.

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

Use this command only with v2.6.x and v3.x systems in the fabric; QuickLoop is not supported in v4.x or v5.x.

Operands The following operands are required:

"*qloopName***"** Specify the name of QuickLoop, in quotation marks.

"*qloopMemberList***"** Specify a list of QuickLoop members, in quotation marks, separated by semicolons. Include one or more WWNs and zone alias names.

Examples To add an alias for a second WWN to "qlp1":

```
switch:admin> qloopadd "qlp1", "wwn2"
```

See Also **qloopCreate**, **qloopDelete**, **qloopRemove**, **qloopShow**

qloopCreate

Creates a QuickLoop.

Synopsis **qloopcreate** "*qloopName*", "*qloopMemberList*"

Availability admin

Description Use this command to create a QuickLoop.

A QuickLoop name must begin with a letter and be followed by any number of letters, digits, and underscore characters. Names are case sensitive, for example "Qloop_1" indicates a different QuickLoop than "qloop_1". Spaces are ignored. The QuickLoop member list must have one or two members; an empty list is not allowed.

When a configuration is enabled, all QuickLoops defined in the configuration must resolve to a maximum of two switch World Wide Names (WWNs). Zone alias names entered as members of this QuickLoop must be defined with WWNs. Zone alias names that are defined by domain and port number, or AL_PA are not accepted as members of the QuickLoop.

This command changes the defined configuration. For the change to be preserved across switch reboots, it must be saved to nonvolatile memory using the **cfgSave** command. For the change to become effective, an appropriate zone configuration must be enabled using the **cfgEnable** command.

> **Note**
>
> This command requires a Brocade Advanced Zoning license.
>
> When security is enabled, this command can only be issued from the primary FCS switch.
>
> Use this command only with v2.6.x and v3.x systems in the fabric; QuickLoop is not supported in v4.x or v5.x.

Operands The following operands are required:

"*qloopName*" Specify the name of QuickLoop to be created, in quotation marks. The qloopname cannot be used for another zone object.

"*qloopMemberList*" Specify a list of members to be added to QuickLoop, in quotation marks, separated by semicolons. Include one or more WWNs and zone alias names.

Examples To create two QuickLoops, a single switch and one dual switch:

```
switch:admin> qloopcreate "qlp1", "10:00:00:60:69:00:60:11"
switch:admin> qloopcreate "qlp2", "wwn2; wwn3"
```

See Also **qloopAdd**, **qloopDelete**, **qloopRemove**, **qloopShow**

qloopDelete

Deletes a QuickLoop.

Synopsis   **qloopdelete "***qloopName***"**

Availability   admin

Description   Use this command to delete a QuickLoop.

This command changes the defined configuration. For the change to be preserved across switch reboots, it must be saved to nonvolatile memory using the **cfgSave** command. For the change to become effective, an appropriate zone configuration must be enabled using the **cfgEnable** command.

Note

This command requires a Brocade Advanced Zoning license.

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

Use this command only with v2.6.x and v3.x systems in the fabric; QuickLoop is not supported in v4.x or v5.x.

Operands   The following operand is required:

"*qloopName***"**   Specify the name of QuickLoop, in quotation marks.

Examples   To delete QuickLoop "qloop2":

```
switch:admin> qloopdelete "qloop2"
```

See Also   **qloopAdd**, **qloopCreate**, **qloopRemove**, **qloopShow**

qloopRemove

Removes a member from a QuickLoop.

Synopsis   **qloopremove "***qloopName***", "***qloopMemberList***"**

Availability   admin

Description   Use this command to remove one or more members from a QuickLoop.

The member list is identified through an exact string match; therefore, when removing multiple members, order is important. For example, if a QuickLoop contains "wwn3; wwn4", removing "wwn3; wwn4" succeeds, but removing "wwn4; wwn3" fails.

If all members are removed, the QuickLoop is deleted.

When a configuration is enabled, all QuickLoops defined in the configuration must resolve to one or two switch WWNs.

This command changes the defined configuration. For the change to be preserved across switch reboots, it must be saved to nonvolatile memory using the **cfgSave** command. For the change to become effective, an appropriate zone configuration must be enabled using the **cfgEnable** command.

> **Note**
>
> This command requires a Brocade Advanced Zoning license.
>
> When security is enabled, this command can only be issued from the primary FCS switch.
>
> Use this command only with v2.6.x and v3.x systems in the fabric; QuickLoop is not supported in v4.x or v5.x.

Operands   The following operands are required:

"*qloopName*"   Specify the name of QuickLoop, in quotation marks.

"*qloopMemberList*"   Specify the list of QuickLoop members to be removed, in quotation marks, separated by semicolons. Include one or more WWNs and zone alias names.

Examples   To remove member "wwn2" from "qlp1":

```
switch:admin> qloopremove "qlp1", "wwn2"
```

See Also   **qloopAdd**, **qloopCreate**, **qloopDelete**, **qloopShow**

qloopShow

Displays QuickLoop information.

Synopsis   **qloopshow** [*pattern*][**,** *mode*]

Availability   all users

Description   Use this command to display QuickLoop configuration information.

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

If a parameter is specified, it is used as a pattern to match QuickLoop names; those that match in the defined configuration are displayed.

Note

This command requires a Brocade Advanced Zoning license.

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

Use this command only with v2.6.x and v3.x systems in the fabric; QuickLoop is not supported in v4.x or v5.x.

Operands   The following operands are optional:

pattern   Specify a POSIX style expression used to match QuickLoop names. Patterns can contain the following special characters:

- Question mark "?", which matches any single character

- Asterisk "*", which matches any string of characters

- Ranges "[0-9a-f]", which match any character within the range

- modeSpecify 1 to display the contents of RAM, specify 0 to display the contents of the transaction buffer. The default value is 0.

Examples   To display all QuickLoops beginning with the letter "q":

```
switch:admin> qloopshow "q*"
qloop: qlp1          10:00:00:60:69:00:60:11
                     10:00:00:60:69:00:30:02
 qloop: qlp2         10:00:00:60:69:00:60:13
```

See Also   **qloopAdd**, **qloopCreate**, **qloopDelete**, **qloopRemove**

rcsDisabled

Displays whether Reliable Commit Service (RCS) is enabled.

Synopsis   **rcsdisabled**

Availability   admin, switchAdmin

Description   Use this command to display whether RCS is enabled.

If displays "rcsDisabled = 0" displays, RCS is enabled; "rcsDisabled = 1" displays if RCS is disabled.

> **Note**
>
> This command can be issued on Fabric OS v4.1.x and above, and v5.x FCS switch in the fabric.

Examples   To display the RCS status:

```
switch:admin> rcsdisabled
    rcsDisabled = 0
```

See Also   none

reboot

Reboots either one control processor (CP) or the entire system.

Synopsis **reboot**

Availability admin, switchAdmin

Description Use this command to immediately reboot a CP in a director or an entire switch. The command line session is closed.

When this command is issued on a single-CP system, all switches in the system are entirely shut down and all Fibre Channel ports become inactive until the system restarts. When this command is issued on the active CP of a dual-CP system, the active CP reboots, the standby CP takes over as the active CP, and all Fibre Channel ports become inactive until the new active CP reinitializes these ports.

If this switch is part of a fabric, reboot the switch so that the remaining switches reconfigure.

When this command is issued on the standby CP, high availability (HA) synchronization is lost until the standby CP successfully restarts.

Operands none

Examples To reboot the CP:

```
switch:admin> reboot
Rebooting...
```

See Also **fastboot**, **switchReboot**

routeHelp

Displays a list of FSPF-related commands.

Synopsis   **routehelp**

Availability   admin, switchAdmin, user

Description   Use this command to display a list of FSPF-related commands.

Operands   none

Examples   To display a list of routing-related commands:

```
switch:admin> routehelp

bcastShow               Print broadcast tree information
dlsShow                 Print state of Dynamic Load Sharing
fspfShow                Print FSPF global information
interfaceShow           Print FSPF interface information
iodShow                 Print state of In-Order Delivery
LSDbShow                Print Link State Database entry
nbrStateShow            Print neighbor's summary information
topologyShow            Print paths to domain(s)
uRouteShow              Print port's unicast routing info
```

See Also   **bcastShow**, **interfaceShow**, **uRouteShow**

saveCore

Saves or removes core files created by daemons.

Synopsis   To FTP core files:

savecore [[**-f** *core_file_list*]... | **-F**][**-h** *ipaddress*][**-u** *user_name* | **-a**][**-p** *password*]
[**-d** *remote_directory*]

To remove core files:

savecore [[**-r** *core_files_list*]... | **-R**]

To list core files:

savecore -l

Availability   admin, switchAdmin

Description   Use this command to FTP core files, to remove core files, or to list core files. **saveCore** is an interactive command.

Operands   This command has the following operands:

-h *ipaddress*	Specify a host name if FTP requires it.
-u *user_name*	Specify a user name for the host name; default is anonymous.
-p *password*	Specify a password for the user name.
-a	Specify to use anonymous FTP to download the core files. This option cannot be used with the **-u** option.
-d *remote_directory*	Specify the name of the remote directory into which the core files are copied. The directory will be created if it does not already exist. It is assumed that the user has sufficient privilege to create files at this location.
-f *core_file_list*	Specify a list of the core file directories to transfer to a remote site. This list can be comma-separated directory list or just a single directory name. Only the standard core files directories can be specified (*/core_files and /mnt/core_files*); all other files or directories are ignored.
-R	Specify this option to remove all core files.
-r *core_files_list*	Specify this option to remove core files under the directory list given. Removes all the core files under the listed directories. The directory list is a comma-separated list of core files directory and other files, if any, will be ignored. No confirmation will be made before removal.
-l	Specify this option to list all core files.

Examples   To list all core files in a CP:

```
switch:admin> savecore -l
/core_files/panic/core.873
/core_files/zoned/core.1234
/core_files/zoned/core.5678
/mnt/core_files/nsd/core.873
/mnt/core_files/panic/core.873
```

To remove selected core files from a CP:

```
switch:admin> savecore -r /core_files/panic/,/core_files/zoned/,/mnt/core_files/nsd/
Removing: /core_files/panic/
Removing: /core_files/zoned/
Removing: /mnt/core_files/nsd/
```

To remove selected core files from the CP (using multiple -r operands):

```
switch:admin> savecore -r /core_files/panic/ -r /core_files/zoned/,/mnt/core_files
/nsd/
Removing: /core_files/panic/
Removing: /core_files/zoned/
Removing: /mnt/core_files/nsd/
```

To remove all core files:

```
switch:admin> savecore -R
removing core files under: /core_files/panic
removing core files under: /core_files/zoned
removing core files under: /mnt/core_files/nsd
removing core files under: /mnt/core_files/panic
```

To FTP all core files:

```
switch:admin>  savecore -h 192.168.204.188 -u jsmith -d core_files_here -p fexosophy
-F
/core_files/panic/core.873:                    1.12 kB   381.87 B/s
/core_files/zoned/core.1234:                   1.12 kB   382.14 B/s
/core_files/zoned/core.5678:                   1.12 kB   382.50 B/s
/mnt/core_files/nsd/core.873:                  1.12 kB   381.93 B/s
/mnt/core_files/panic/core.873:                1.12 kB   381.90 B/s
Files transferred successfully!
```

To FTP selected core file directories:

```
switch:admin> savecore -h 192.168.204.188 -u jsmith -d core_files_here -p password
-f /core_files/zoned/,/mnt/core_files/nsd/
/core_files/zoned//core.1234:                  1.12 kB   382.60 B/s
/core_files/zoned//core.5678:                  1.12 kB   381.95 B/s
/mnt/core_files/nsd//core.873:                 1.12 kB   382.53 B/s
Files transferred successfully!
```

To remove all core files using the savecore management utility:

```
switch:admin> savecore
following 1 directories contains core files:
        [ ]0: /mnt/core_files/panic

        Welcome to core files management utility.

        Menu
        1(or R): Remove all core files
        2(or F): FTP all core files
        3(or r): Remove marked files
        4(or f): FTP marked files
        5(or m): Mark Files for action
        6(or u): Un Mark Files for action
        9(or e): Exit

Your choice: 1
        /mnt/core_files/panic

        You have opted to remove ALL core files:-
Please confirm (Y/[N]): y
Removing files....
 removing core files under: /mnt/core_files/panic
Done!
switch:admin>
switch:admin> savecore
No core files found!
```

To FTP core files using the savecore management utility:

```
switch:admin> savecore
following 1 directories contains core files:
        [ ]0: /core_files/zoned

        Welcome to core files management utility.

        Menu
        1(or R): Remove all core files
        2(or F): FTP all core files
        3(or r): Remove marked files
        4(or f): FTP marked files
        5(or m): Mark Files for action
        6(or u): Un Mark Files for action
        9(or e): Exit

Your choice: F
/core_files/zoned
You have opted to FTP these core files:-
Please confirm (Y/[N]): y
Destination IP Address? 192.168.10.10
User Name [anonymous]? jsmith
Remote Directory [.]? brcd
Password: **********
/core_files/zoned/core.8323:                  1.12 kB  382.40 B/s
Files transferred successfully!
```

To remove core files from a selected directory:

```
switch:admin> savecore
following 2 directories contains core files:
        [ ]0: /core_files/nsd
        [ ]1: /core_files/zoned

Welcome to core files management utility.

        Menu
        1(or R): Remove all core files
        2(or F): FTP all core files
        3(or r): Remove marked files
        4(or f): FTP marked files
        5(or m): Mark Files for action
        6(or u): Un Mark Files for action
        9(or e): Exit

Your choice: m
Enter File Number to mark: 1
Enter CR To Continue....

following 2 directories contains core files:
        [ ]0: /core_files/nsd
        [*]1: /core_files/zoned

Welcome to core files management utility.


        Menu
        1(or R): Remove all core files
        2(or F): FTP all core files
        3(or r): Remove marked files
        4(or f): FTP marked files
        5(or m): Mark Files for action
        6(or u): Un Mark Files for action
        9(or e): Exit

Your choice: r
        /core_files/zoned

                You have opted to remove core files under these directories:-
Please confirm (Y/[N]): y
Removing files....
removing core files under: /core_files/zoned
Done!
```

See Also   none

secActiveSize

Displays the size of the active security database.

Synopsis   **secactivesize**

Availability   admin, switchAdmin

Description   Use this command to display the size of the active security database.

The maximum is 256 Kb.

This command is intended strictly for debugging purposes by technical support staff. The information displayed might not be supported between releases and is subject to change arbitrarily.

> **Note**
>
> This command must be issued in secure mode.

Operands   none

Examples   To display the size of the active security database:

```
switch:admin> secactivesize
    Size of security active data: 35 bytes (Max 262144 bytes)
```

See Also   **secDefineSize**, **secGlobalShow**

secAuthSecret

Manages the DH-CHAP shared secret key information.

Synopsis   **secauthsecret** [**--show**][**--set**][**--remove** [*wwn* | *domain* | *swname*] | **--all**]

Availability   admin, switchAdmin

Description   Use this command to manage the DH-CHAP shared secret key database used for the 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.

Note

A security license is required to run this command in nonsecure as well as secure mode.

Operands   The operands are as follows:

--show   Lists the WWNs to which shared secret is configured.

--set   Sets shared secrets with a WWN.

--remove [*wwn* | *domain* | *swname*]
    Removes the specified WWN entry from the database. If a domain name is specified, it is converted to WWN and then the entry is removed. If no option is specified, command is interactive.

--remove --all   Deletes the entire secret key database.

Without any specified operands, the command displays the usage.

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 set the shared secret:

```
switch:admin> secauthsecret --set

This command sets up secret keys for the DH-CHAP
authentication. The minimum length of a secret key is 8
characters and maximum 40 characters. 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 can 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 shared secrets >

Enter WWN, Domain, or switch name (Leave blank when done): 10:00:00:60:69:80
:05:14
Enter peer secret:
Re-enter peer secret:
Enter local secret:
Re-enter local secret:

Enter WWN, Domain, or switch name (Leave blank when done):
Are you done? (yes, y, no, n): [no] y
Saving data to key store... Done.
```

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

secCertUtil

Manages third-party PKI-based certificates in the switch.

Synopsis　　**seccertutil**

Availability　　admin, switchAdmin

Description　　Use this command to manage third-party certificates in the switch, as follows:

- Generate a public/private key pair.
- Generate a certificate signing request (CSR).
- Delete a CSR.
- List the certificates present in the switch.
- Display the contents of a certificate/CSR.
- Delete a specific certificate.
- Configure SSL certificate file name.
- Enable secure protocols.

The following is the usage statement for the utility:

seccertutil delcsr　　Delete CSR

seccertutil delete *file name*
　　　　　　　　　Delete certificate

seccertutil export　　Export CSR

seccertutil genkey　　Generate a new public/private key pair

seccertutil gencsr　　Generate a new CSR

seccertutil import [**-config cacert**] | [**-config swcert** [**-enable https**]]

　　　　　　　　　import　Import certificate

　　　　　　　　　-config swcert
　　　　　　　　　　　　Configure SSL certificate filename (optional)

　　　　　　　　　-config cacert
　　　　　　　　　　　　Configure CA certificate filename (optional)

　　　　　　　　　-enable https
　　　　　　　　　　　　Enable secure https (optional)

seccertutil showcsr　　Display CSR contents

seccertutil show　　List certificates

seccertutil show *file name*
　　　　　　　　　Display certificate content

Operands　　The operands are as follows:

genkey　　　　　　Generates a public/private key pair. This is the first step for setting up third-party certificates. The key length can be either 1,024 or 2,048 bits long. The greater the

length of the key, the more secure is the connection; however, the performance goes down. The keys are generated only after deleting existing CSR and all other certificates.

gencsr   Generates a new CSR for the switch. This is second step for setting up third-party certificates in the switch. To generate a CSR, the admin must answer a series of questions prompted by this option. Once all questions are answered, a CSR is generated and placed in a file named ip_address.csr, where the *ip_address* is the IP address of the switch.

delcsr   Deletes the CSR in the switch.

showcsr   Displays the contents of the CSR in the switch.

show   Displays a list of all certificates in the switch.

show *certificate name*

Displays the contents of the specified certificate.

delete *certificate name*

Deletes the specified certificate.

export   Exports a CSR to a host. This is typically used to submit the CSR to a CA who in turn issues a certificate.

import [**-config cacert**] | [**-config swcert** [**-enable https**]]

Import a certificate on to the switch. Use this for the following:

- Download a certificate issued by a CA after sending the CSR to the CA.

- Download an Issuing CA certificate.

- Set imported certificate with **-config** option. Specifying **cacert** sets the CA certificate file name in configuration and specifying **swcert** sets switch certificate file name in configuration.

- Enable secure protocols with **-enable** option. This option can be used only with **-config swcert**.

Examples   To generate a public/private key pair:

```
switch:admin> seccertutil genkey

Generating a new key pair will automatically do the following:
1. Delete all existing CSRs.
2. Delete all existing certificates.
3. Reset the certificate filename to none.
4. Disable secure protocols.

Continue (yes, y, no, n): [no]  y
Select key size [1024 or 2048]:
Generating new rsa public/private key pair
Done.
```

To generate a CSR:

```
switch:admin> seccertutil gencsr
 Country Name (2 letter code, eg, US):
 State or Province Name (full name, eg, California):
 Locality Name (eg, city name):
 Organization Name (eg, company name):
 Organizational Unit Name (eg, department or section name):
 Common Name (Fully qualified Domain Name, or IP address):
 generating CSR, file name is: <ip_address>.csr
 Done
```

To delete the CSR:

```
switch:admin> seccertutil delcsr
 WARNING!!!

 About to delete the switch CSR.
 ARE YOU SURE (yes, y, no, n): [no] y
```

To import a certificate:

```
switch:admin> seccertutil import
 Select protocol [ftp or scp]: ftp
 Enter IP address: ip address
 Enter remote directory: dir name where certificate is stored
 Enter certificate name (must have ".crt" or ".pem" suffix): filename
 Enter Login Name: login
 Enter Password: password
 Success: imported certificate [certificate file name].
```

To import a certificate with configure and enable option:

```
switch:admin> seccertutil import -config swcert -enable https
 Select protocol [ftp or scp]: ftp
 Enter IP address: ip address
 Enter remote directory: dir name where certificate is stored
 Enter certificate name (must have ".crt" or ".pem" suffix): filename
 Enter Login Name: login
 Enter Password: password
 Success: imported certificate [certificate file name].
 Certificate file in configuration has been updated.
 Secure http has been enabled.
```

To display contents of a CSR:

```
switch:admin> seccertutil showcsr
```

To display contents of a certificate:

```
switch:admin> seccertutil show certificate file name
```

See Also   none

secDefineSize

Displays the size of the defined security database.

Synopsis   **secdefinesize**

Availability   admin, switchAdmin

Description   Use this command to display the size of the defined security database.

The maximum size is 256 KB.

This command is intended strictly for debugging purposes by technical support staff. The information displayed might not be supported between releases and is subject to change arbitrarily.

Note

This command must be issued in secure mode.

Operands   none

Examples   To display the size of the defined security database:

```
switch:admin> secdefinesize
   Size of security defined data: 35 bytes (Max 262144 bytes)
```

See Also   **secActiveSize**, **secGlobalShow**

secFabricShow

Displays security-related fabric information.

Synopsis   **secfabricshow**

Availability   admin, switchAdmin, user

Description   This command displays the security-related information about the fabric.

The information displayed is as follows:

Role	Displays whether the switch is the primary FCS, backup FCS, or not FCS.
WWN	Displays the World Wide Name of the switch.
DId	Displays the domain of the switch.
Status	Displays the security state of the switch:

	Ready	This switch is in a stable state.
	Busy	This switch is updating its security database.
	Error	This switch's security database is inconsistent with the primary FCS.

Enet IP Addr	Displays the Ethernet IP address.
Name	Displays the switch name.
NoResp	Displays if the switch did not respond to the status query.
Unknown	Displays if the switch is in an unknown state.

Note

This command must be issued from a sectelnet or SSH session.

When this command is issued on multiple switches in the fabric, one or more of these switches can display a status of busy.

Operands   none

Examples   To display security-related fabric information on the primary FCS switch:

```
switch:admin> secfabricshow
Role    WWN                     DId Status  Enet IP Addr    Name
=================================================================
non-FCS 10:00:00:60:69:10:03:23   1 Ready   192.168.100.148 "nonfcs"
Backup  10:00:00:60:69:00:12:53   2 Ready   192.168.100.147 "backup"
Primary 10:00:00:60:69:22:32:83   3 Ready   192.168.100.135 "switch"
_____

Secured switches in the fabric: 3
```

See Also   **secPolicyDump**, **secPolicyShow**

secFcsFailover

Enables a backup FCS switch to take over as primary FCS switch.

Synopsis   **secfcsfailover**

Availability   admin

Description   Use this command to enable a backup FCS switch to take over as the primary FCS switch.

This command can be issued only on a backup FCS switch. After this command is issued, the primary FCS switch aborts its current transaction and moves the backup FCS switch to the top of the FCS list. The former primary FCS switch then activates the new policy set and the former backup FCS switch becomes the new primary FCS switch in the fabric.

The purpose of this command is to recover from a scenario in which all available access to the primary FCS switch is lost, such as the Ethernet and serial connections.

Operands   none

Examples   To enable a backup FCS switch to take over as the primary FCS switch:

```
switch:admin> secfcsfailover
This switch is about to become the Primary FCS switch.
All transactions of the current Primary FCS switch will be aborted.
ARE YOU SURE  (yes, y, no, n): [no] y

WARNING!!!
The FCS policy of Active and Defined Policy sets have been changed.
Review them before you issue secPolicyActivate again.
```

See Also   **secFabricShow**, **secModeDisable**, **secModeEnable**, **secModeShow**

secGlobalShow

Displays the current internal security state information.

Synopsis **secglobalshow**

Availability admin, switchAdmin

Description Use this command to display security server (secd) specific information as a snapshot of its current state. The information can include some of the following:

- The version and general information
- The current status of the RCS transaction
- The active and defined sizes of the security database

This command is intended strictly for debugging purposes by technical support staff only. The information displayed might not be supported between releases and is subject to change arbitrarily.

Note

This command must be issued when secure mode is enabled.

Operands none

Examples To view the current security state:

```
switch:admin> secglobalshow
```

See Also **secActiveSize**, **secDefineSize**

Note: Enter commands in lowercase only; mixed case is for readability.

secHelp

Displays information about security commands.

Synopsis **sechelp**

Availability admin, switchAdmin, user

Description Use this command to display a list of security commands.

Operands none

Examples To display a list of security telnet commands:

```
switch:admin> sechelp

 pkiCreate              Creates new pki objects
 pkiRemove              Removes pki objects
 pkiShow                Displays existence of pki objects
 secActiveSize          Displays size of the active (security) database
 secAuthSecret          Creates/Manages/Displays DHCHAP secret key details
 secCertUtil            Creates/Manages/Displays third party PKI certificates
 secDefineSize          Displays size of the defined (security) database
 secFabricShow          Displays security related fabric information
 secFCSFailover         Forces primary role to this FCS switch
 secGlobalShow          Displays current internal security state information
 secModeEnable          Enables secure mode
 secModeDisable         Disables secure mode
 secModeShow            Displays whether secure mode is enabled or disabled
 secNonFCSPasswd        Sets the admin passwd for non-FCS switches
 secPolicyAbort         Aborts changes to defined policy
 secPolicyActivate      Activates all policy sets
 secPolicyAdd           Adds members to an existing policy
 secPolicyCreate        Creates a new policy
 secPolicyDelete        Deletes an existing policy
 secPolicyFCSMove       Moves a member in the FCS policy
 secPolicyRemove        Removes members from an existing policy
 secPolicySave          Saves defined policy set and sends to all switches
 secPolicyShow          Shows members of one or more policies
 secPolicyDump          Displays all members of existing policies
 secStatsReset          Resets security statistics
 secStatsShow           Displays security statistics
 secTempPasswdSet       Sets temporary password
 secTempPasswdReset     Resets temporary password
 secTransAbort          Aborts current transaction
 secVersionReset        Resets version stamp
```

See Also none

secModeDisable

Disables secure mode.

Synopsis   **secmodedisable**

Availability   admin

Description   Use this command to disable secure mode on all switches in the fabric. This command deletes both the defined and active security database.

This command can be issued only in secure mode and only from the primary FCS switch.

Operands   none

Examples   To disable security mode:

```
primaryfcs:admin> secmodedisable
Please enter current admin account password:

Warning!!!
About to disable security.
ARE YOU SURE (yes, y, no, n): [no] y
```

See Also   **secFabricShow**, **secModeEnable**, **secModeShow**

secModeEnable

Enables secure mode.

Synopsis **secmodeenable** [**--quickmode**] | [[**--currentpwd**][**--lockdown**[=**scc** |=**dcc**]]
[**--fcs** *list_of_switches* | *list_of_switches*]]

Availability admin

Description Use this command to enable secure mode on all switches in the fabric. This command fails if any switch in the fabric is not capable of enforcing the security policies defined in the security database. If no operand is specified, the command becomes interactive.

Note

This command must be issued from a sectelnet or SSH session.

This command sets up security in the fabric by:

• Activating security mode on all switches in the fabric.

• Creating the security database, populated with a list of FCS switches in the FCS_POLICY.

• Distributing the security database to all switches in the fabric.

• Resetting the root, factory, admin, and user account passwords on all FCS switches.

• Resetting the admin and user account passwords on all non-FCS switches.

• Disabling the root and factory accounts on all non-FCS switches in the fabric.

The administrator is prompted to enter new passwords for the following accounts:

• factory

• root

• admin

• user

• non-FCS admin

The prompts do not display if the administrator chooses to use the passwords on the primary FCS with the **--currentpwd** option. With this option, the admin password is used for non-FCS admin as well.

If the fabric is not in secure mode and one or more specified FCS switches is present in the fabric, the command must be issued on the first active FCS in the list.

If the fabric is not in secure mode and no specified FCS switches are present in the fabric, the command can be issued on any switch. Only the **--fcs** option can be used in this case.

If the fabric is not in secure mode and this command is issued, the switches in the fabric with Fabric OS versions previous to v4.4.0 or v3.2.0 reboots automatically.

If the fabric is in secure mode and no FCS switches are present in the fabric, the command can be issued on any switch. This is used to recover a secure fabric that has no FCS switch. Only the **--fcs** option can be used in this case.

Note

Ensure that all users (using Fabric OS CLI or Web Tools) are logged off the fabric before enabling secure mode; otherwise, users on non-FCS switches lose their telnet sessions.

It is recommended that a maximum of 80 WWNs be specified in the FCS policy using the **secModeEnable** command. To add more WWNs use the **secPolicyAdd** command.

User accounts that are forcefully expired while in nonsecure mode cannot be used when secure mode is enabled. Passwords of such user accounts can be changed only after secure mode is disabled.

Use the **userRename** command to change the user-level ID to "user" and the admin-level ID to "admin" on the local switch if the following error message displays after you issue the **secModeEnable** command:

```
Switch does not have all default account names.
```

Operands   This command has the following operand:

list_of_switches   Specify a list of switches for the FCS policy. The list of switches must be enclosed in quotation marks, and each member switch must be separated from the others by semicolons. The members can be specified using domain, WWN, or switch name format, as follows:

```
"5; 10:00:00:60:69:00:00:20; star1"
```

If a member is specified by domain or switch name, the switch must be in the fabric or the command fails.

This operand is optional. If no operand is specified, the session becomes interactive and you are prompted to enter FCS member values.

--fcs *list_of_switches* Specify a list of switches for the FCS policy. Specifying "*" defaults this to all the switches currently present in the fabric. If a member is specified by domain or switch name, the switch must be in the fabric or the command fails.

If the list of FCS switches is not specified, the session becomes interactive and the user is prompted to enter FCS members.

--currentpwd   Use the current passwords of the switch the command is run on (the primary FCS switch) for root, factory, admin and user accounts. Non-FCS admin account password is set the same as FCS admin account password. The command does not prompt for new passwords. Only sessions whose account password has changed are logged out. This option can be used only on a fabric with secure mode disabled and only when the command is run on the switch specified as the primary FCS switch.

--lockdown[=**scc** |=**dcc**]

Create SCC and DCC policies to lockdown the fabric. SCC policy is populated with all the switches present in the fabric when the command is executed. DCC policies are populated with the devices present in the fabric when the command is executed, locking down devices on a per port basis. Ports with no devices attached to them also are locked down with an empty DCC policy so no device can be connected to them, preserving the fabric as is. The lockdown operand creates both SCC and DCC policies, with the optional argument of **--lockdown=scc** or **--lockdown=dcc**, only the specified policy is created. This operand can be used only on a fabric with secure mode disabled and only when the command is run on the switch specified as the primary FCS switch.

--quickmode   This option is a shorthand notation for a combination of the **--currentpwd**, **--lockdown**, and **--fcs "*"** options. On successful execution of the command, security is enabled in the fabric with all switches being FCS, all switches having passwords identical to that of the primary FCS and SCC, and DCC policies capturing and maintaining the current configuration of the fabric. This option can be used only on a fabric with secure mode disabled and only when the command is run on the switch specified as the primary FCS switch.

If no operand is specified, the session becomes interactive and the user is prompted to enter FCS switch members and passwords.

If the **--currentpwd** option is not used, the session becomes interactive and the user is prompted to enter new passwords for root, factory, admin, user, and non-FCS admin accounts.

Examples   To enable secure mode using **--quickmode**:

```
fcsprimary:admin> secmodeenable --quickmode

Your  use of  the certificate-based  security features  of the  software
installed on this equipment is subject to the End User License Agreement
provided  with the equipment and the Certification  Practices Statement,
which you may review at http://www.switchkeyactivation.com/cps. By using
these security features, you are consenting to be bound by the  terms of
these  documents.  If you  do not agree to the terms of these documents,
promptly contact the entity from which you obtained this software and do
not use these security features.

Do you agree to these terms?  (yes, y, no, n): [no] y

This command requires Switch Certificate,  Security license and Zoning
license to be installed on  every switch in the fabric.

PLEASE NOTE: On successful completion of this command, login sessions
may be closed and some switches may go through a reboot to form a secure
fabric.

Non-FCS admin password will be set the same as FCS admin password.

ARE YOU SURE  (yes, y, no, n): [no] y

Please enter current admin account password:

Secure mode is enabled.
```

To enable a security policy that includes three FCS switches specified by domain, WWN address, and switch name:

```
fcsprimary:admin> secmodeenable

Your  use of  the certificate-based  security features  of the  software
installed on this equipment is subject to the End User License Agreement
provided  with the equipment and the Certification  Practices Statement,
which you may review at http://www.switchkeyactivation.com/cps. By using
these security features, you are consenting to be bound by the  terms of
these  documents.  If you  do not agree to the terms of these documents,
promptly contact the entity from which you obtained this software and do
not use these security features.
Do you agree to these terms?  (yes, y, no, n): [no] y

This command requires Switch Certificate,  Security license and Zoning
license to be installed on  every switch in the fabric.

PLEASE NOTE: On successful completion of this command, login sessions
may be closed and some switches may go through a reboot to form a secure
fabric.

This is an interactive session to create a FCS list.

The new FCS list is empty.

Enter WWN, Domain, or switch name(Leave blank when done): 102
Switch WWN is 10:00:00:60:69:80:04:0f.

The new FCS list:
10:00:00:60:69:80:04:0f

Enter WWN, Domain, or switch name(Leave blank when done):
10:00:00:60:69:80:04:0e
Switch WWN is 10:00:00:60:69:80:04:0e.

The new FCS list:
10:00:00:60:69:80:04:0f
10:00:00:60:69:80:04:0e

Enter WWN, Domain, or switch name(Leave blank when done): sw1
Switch WWN is 10:00:00:60:69:80:04:0a.

The new FCS list:
10:00:00:60:69:80:04:0f
10:00:00:60:69:80:04:0e
10:00:00:60:69:80:04:0a

Enter WWN, Domain, or switch name(Leave blank when done):
Are you done?  (yes, y, no, n): [no] y
Is the new FCS list correct?  (yes, y, no, n): [no] y
Please enter current admin account password:

Warning:  Access to  the Root  and Factory accounts may be required  for
proper  support  of  the  switch.  Please  ensure  the Root  and  Factory
passwords are  documented in a secure location.  Recovery of a lost Root
or Factory password will result in fabric downtime.

Changing password for root
New FCS switch root password:
Re-type new password:
(output truncated)
```

To enable secure mode using **--currentpwd --fcs "*"**:

```
fcsprimary:admin> secmodeenable --currentpwd --fcs "*"

Your  use of  the certificate-based  security features  of the  software
installed on this equipment is subject to the End User License Agreement provided
with the equipment and the Certification  Practices Statement, which you may review
at http://www.switchkeyactivation.com/cps. By using
these security features, you are consenting to be bound by the  terms of these
documents.  If you  do not agree to the terms of these documents,
promptly contact the entity from which you obtained this software and do
not use these security features.
Do you agree to these terms?  (yes, y, no, n): [no] y

This command requires Switch Certificate,  Security license and Zoning
license to be installed on  every switch in the fabric.

PLEASE NOTE: On successful completion of this command, login sessions
may be closed and some switches may go through a reboot to form a secure
fabric.

Non-FCS admin password will be set the same as FCS admin password.
ARE YOU SURE  (yes, y, no, n): [no] y

Please enter current admin account password:

Secure mode is enabled.
```

See Also secFabricShow, secModeDisable, secModeShow, secPolicyShow, userRename

secModeShow

Displays whether security mode is enabled or disabled.

Synopsis **secmodeshow**

Availability admin, switchAdmin, user

Description Use this command to display the current security mode of the fabric. The fabric can be in secure mode or nonsecure mode.

The command displays secure mode as ENABLED or DISABLED. If the fabric is in secure mode, the following information displays:

Version stamp	Displays the current version and build date and time of the security database.
FCS switches	Displays a list of FCS switches.
Primary	Displays whether the switch is a primary FCS or backup FCS.
WWN	Displays the WWN of the FCS switch.
DId	Displays the domain of the FCS switch.
swName	Displays the alias name of the FCS switch.

This command can be issued on any switch in a fabric.

Operands none

Examples To display the current security mode of a fabric:

```
switch:admin> secmodeshow

    Secure Mode: ENABLED.
    Version Stamp: 9182, Wed Mar 17 16:37:01 2004.
    POS Primary WWN                  DId swName.
    ===============================================
    1   Yes     10:00:00:60:69:00:00:5a 21 switch47.
    2   No      12:00:00:60:60:03:23:5b 5  switch12.
```

See Also **secFabricShow**, **secModeDisable**, **secModeEnable**

secNonFcsPasswd

Sets the admin password for non-FCS switches.

Synopsis   **secnonfcspasswd**

Availability   admin

Description   Use this command to change the admin password on all non-FCS switches in the fabric. This command can be issued only from the primary FCS switch in secure mode. The changed passwords are persistent across reboots. All non-FCS switches that join the fabric in the future inherit this new password.

The password must be between 8 and 40 characters long and can consist of any combination of alphanumeric characters.

This command can be issued only in secure mode and only from the primary FCS switch.

Note

Ensure no non-FCS admin users are logged in when this command is executed, otherwise, users on non-FCS switches sessions terminate.

Operands   none

Examples   To set the admin password for all non-FCS switches in the fabric:

```
switch:admin> secnonfcspasswd
Changing password for admin
Non FCS switch admin password:
Re-type new password:

Login sessions with password changed will be terminated.
Password for non-FCS admin account has been changed successfully.
```

See Also   **passwd**, **secModeDisable**, **secModeEnable**, **secModeShow**, **secTempPasswdSet**

secPolicyAbort

Aborts all changes to the defined database that have not been saved.

Synopsis   **secpolicyabort**

Availability   admin

Description   Use this command to abort all changes to the defined security database that have not been saved to flash memory.

> **Note**
>
> This command can be issued only in secure mode and only from the primary FCS switch.

Operands   none

Examples   To abort all changes that have not been saved to flash memory:

```
primaryfcs:admin> secpolicyabort
Unsaved data has been aborted.
primaryfcs:admin> secpolicyabort
No new data to abort.
```

See Also   **secPolicyActivate**, **secPolicyAdd**, **secPolicyCreate**, **secPolicyDelete**, **secPolicyDump**, **secPolicyRemove**, **secPolicySave**, **secStatsShow**

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Note: Enter commands in lowercase only; mixed case is for readability.

secPolicyActivate

secPolicyActivate

Applies defined policy set to all switches in the fabric.

Synopsis   **secpolicyactivate**

Availability   admin

Description   Use this command to activate the current defined security policy to all switches in the fabric. After activation, the defined policy set becomes the active policy set.

Note

This command can be issued only in secure mode and only from the primary FCS switch.

Operands   none

Examples   To activate the defined security policy set to all switches in the fabric:

```
primaryfcs: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   **secPolicyAbort**, **secPolicyAdd**, **secPolicyCreate**, **secPolicyDelete**, **secPolicyDump**, **secPolicyRemove**, **secPolicySave**, **secStatsShow**

secPolicyAdd

Adds members to an existing security policy.

Synopsis   secpolicyadd **"***name***"[,** **"***member* [**;***member*...]**"]**

Availability   admin

Description   Use this command to add members to an existing access policy. The new members must not already be members within the policy or the command fails.

Each policy corresponds to a management method. The list of members of a policy acts as an access control list for that management method. When security is first enabled using the **secModeEnable** command, only the FCS_POLICY exists. 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 access method (the DCC_POLICY is an exception).

Note

This command can be issued only in secure mode and only from the primary FCS switch.

Do not add the WWNs of front or translate (xlate) domains to the FCS policy if the secure edge fabric is connected to an FC Router.

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 are:

- DCC_POLICY_*nnn*

- FCS_POLICY

- TELNET_POLICY

- HTTP_POLICY

- API_POLICY

- RSNMP_POLICY

- WSNMP_POLICY

- SES_POLICY

- MS_POLICY

- SERIAL_POLICY

- FRONTPANEL_POLICY

- SCC_POLICY

- OPTIONS_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 member switches for the security policy. The members must be enclosed in quotation marks and separated by semicolons. Depending on the policy type, members can be specified using IP address, WWN, domain, switch name, or other.

IP Address Member Policy Types

The following policy types require members be specified by IP address:

- TELNET_POLICY

- HTTP_POLICY

- API_POLICY

- RSNMP_POLICY

- WSNMP_POLICY

These policy types require member IPs to be specified in dot notation (for example, 124.23.56.122). If 0 is specified in one of the octets, any number can be matched.

WWN Member Policy Types

The following policy types require members be specified by WWN address:

- FCS_POLICY

- SES_POLICY

- MS_POLICY

- SERIAL_POLICY

- FRONTPANEL_POLICY

- SCC_POLICY

These policy types require members be specified as WWN strings, domain IDs, or switch names. If domain ID, 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. An empty DCC_POLICY does not stop access to the switch. The device is specified with a WWN string. The switch and port combination must be in the following format:

`<switch><port>`

`<switch>` can be specified using WWN, domain, or switch name.

`<port>` can be specified by port numbers separated by commas and enclosed in either brackets or parenthesis; for example, (2, 4, 6). Ports enclosed in brackets will 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.

OPTIONS_POLICY members

"NoNodeWWNZoning" is the only option.

Examples To add a member to the MS_POLICY using the device WWN:

```
switch:admin> secpolicyadd "MS_POLICY", "12:24:45:10:0a:67:00:40"
Member(s) have been added to MS_POLICY.
```

To add an SNMP manager to WSNMP_POLICY:

```
switch:admin> secpolicyadd "WSNMP_POLICY", "192.168.5.21"
Member(s) have been added to WSNMP_POLICY.
```

To add two devices to attach to domain 3, ports 1 and 3, in an existing empty DCC policy; 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:

```
switch: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.
```

See Also **secPolicyAbort**, **secPolicyActivate**, **secPolicyCreate**, **secPolicyDelete**, **secPolicyDump**, **secPolicyRemove**, **secPolicySave**, **secStatsShow**

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Note: Enter commands in lowercase only; mixed case is for readability.

secPolicyCreate

secPolicyCreate

Creates a new security policy.

Synopsis   **secpolicycreate "***name***"[, "***member***[;***member***...]"]**

Availability   admin

Description   Use this command to create a new security policy. All policies can be created only once, except for the DCC_POLICY_*nnn*. Each DCC_POLICY_*nnn* must each have a unique name.

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. When security mode is first enabled using the **secModeEnable** command, only the FCS_POLICY exists. 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 access method.

Note

The FCS_POLICY can only be created when enabling security mode using the **secModeEnable** command.

If a TELNET_POLICY or SERIAL_POLICY is created, that ends the current sectelnet or serial session and a warning is issued.

This command can be issued only in secure mode and only from the primary FCS switch.

Operands   This command has the following operands:

"*name*"   Specify the name of a policy you want to create. Valid values for this operand are:

- DCC_POLICY_*nnn*
- TELNET_POLICY
- HTTP_POLICY
- API_POLICY
- RSNMP_POLICY
- WSNMP_POLICY
- SES_POLICY
- MS_POLICY
- SERIAL_POLICY
- FRONTPANEL_POLICY
- SCC_POLICY
- OPTIONS_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_.

"*member*" Specify a list of members for the security policy. The members must be enclosed in quotation marks and separated by semicolons. Depending on the policy type, members can be specified using IP address, WWN, domain, or switch name.

IP Address Member Policy Types

The following policy types require members be specified by IP address:

- TELNET_POLICY

- HTTP_POLICY

- API_POLICY

- RSNMP_POLICY

- WSNMP_POLICY

These policy types require member IDs in dot notation (for example, 124.23.56.122). If 0 is specified in one of the octets, any number can be matched.

WWN Member Policy Types

The following policy types require members be specified by WWN address:

- SES_POLICY

- MS_POLICY

- SERIAL_POLICY

- FRONTPANEL_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 in the following format:

`<switch><port>`

`<switch>` can be specified using WWN, domain, or switch name.

`<port>` can be specified by port numbers separated by commas and enclosed in either brackets or parenthesis: for example, (2, 4, 6). Ports enclosed in brackets will 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.

OPTIONS_POLICY members

"NoNodeWWNZoning" is the only option.

SCC_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 SCC_POLICY, enter an asterisk (*) as the member value. This feature cannot be used by the other security telnet commands.

Examples   To create a new, single MS_POLICY that enables access through a device that has WWN of 12:24:45:10:0a:67:00:40.:

```
switch:admin> secpolicycreate "MS_POLICY", "12:24:45:10:0a:67:00:40"
MS_POLICY has been created.
```

To create a new front panel policy that only enables domains 3 and 4 to use the front panel:

```
switch:admin> secpolicycreate "FRONTPANEL_POLICY", "3; 4"
FRONTPANEL_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):

```
switch: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 telnet policy to allow anyone on the 192.168.5.0/24 network to access the fabric through sectelnet:

```
switch:admin> secpolicycreate "TELNET_POLICY", "192.168.5.0"
TELNET_POLICY has been created.
```

See Also   **secPolicyAbort**, **secPolicyActivate**, **secPolicyAdd**, **secPolicyDelete**, **secPolicyDump**, **secPolicyRemove**, **secPolicySave**, **secStatsShow**

secPolicyDelete

Deletes an existing security policy.

Synopsis   **secpolicydelete "***name***"**

Availability   admin

Description   Use this command to delete an existing defined policy. The FCS_POLICY cannot be deleted through this command, since this policy must exist to maintain security mode.

Each policy corresponds to a management method. The list of members of a policy acts as an access control list for that management method. When security mode is first enabled using the **secModeEnable** command, only the FCS_POLICY exists. 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.

Note

This command can be issued only in secure mode and only from the primary FCS switch.

Operands   This command has the following operands:

"*name*"   Specify the name of a security policy to delete. The policy name must be enclosed in quotation marks. Valid security policy names are:

- DCC_POLICY_*nnn*
- TELNET_POLICY
- HTTP_POLICY
- API_POLICY
- RSNMP_POLICY
- WSNMP_POLICY
- SES_POLICY
- MS_POLICY
- SERIAL_POLICY
- FRONTPANEL_POLICY
- SCC_POLICY
- OPTIONS_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.

This operand is required.

secPolicyDelete

Note

After security policy is deleted, fabric-wide switch access through that method is unrestricted.

Examples   To delete an existing security policy:

```
switch:admin> secpolicydelete "MS_POLICY"
About to delete policy MS_POLICY.
Are you sure (yes, y, no, n):[no] y
MS_POLICY has been deleted.
```

See Also   **secPolicyAbort**, **secPolicyActivate**, **secPolicyAdd**, **secPolicyCreate**, **secPolicyDump**, **secPolicyRemove**, **secPolicySave**, **secStatsShow**

secPolicyDump

Displays all members of existing security policies.

Synopsis **secpolicydump** ["*listtype*"][**,** "*name*"]

Availability admin, switchAdmin, user

Description Use this command to display, without page breaks, the members of an existing policy in the active and defined (saved) databases.

> **Note**
> This command can be issued only in secure mode but from any primary FCS switch.

Operands This command has the following operands:

"*listtype*" Specify which database to display. The name for active database is "Active"; the name for saved, defined database is "Defined". If not specified, all databases are displayed.

"*name*" Specify the name of a security policy you would like to display. Valid values for this operand are:

- DCC_POLICY_*nnn*
- FCS_POLICY
- TELNET_POLICY
- HTTP_POLICY
- API_POLICY
- RSNMP_POLICY
- WSNMP_POLICY
- SES_POLICY
- MS_POLICY
- SERIAL_POLICY
- FRONTPANEL_POLICY
- SCC_POLICY
- OPTIONS_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.

This operand is optional.

Examples To display all security policy information from all databases (active, updating, and defined), without page breaks:

```
primaryfcs:admin> secpolicydump
_____
                 DEFINED POLICY SET

FCS_POLICY
   Pos    Primary WWN                     DId swName
   _____
    1    Yes     10:00:00:60:69:30:15:5c    1 primaryfcs

HTTP_POLICY
   IpAddr

   _____
   192.155.52.0
_____


_____
                 ACTIVE POLICY SET

FCS_POLICY
   Pos    Primary WWN                     DId swName
   _____
    1    Yes     10:00:00:60:69:30:15:5c    1 primaryfcs

HTTP_POLICY
   IpAddr

   _____
   192.155.52.0
   192.155.53.1
   192.155.54.2
   192.155.55.3


_____
```

To display all security policy information for the TELNET_POLICY, without page breaks:

```
primaryfcs:admin> secpolicydump "*", "TELNET_POLICY"
_____
                 DEFINED POLICY SET

TELNET_POLICY
   IpAddr

   _____
   192.155.52.13
   192.155.52.11
_____


_____
                 ACTIVE POLICY SET

TELNET_POLICY
   IpAddr

   _____
   192.155.52.0
_____
```

See Also **secPolicyAbort**, **secPolicyActivate**, **secPolicyAdd**, **secPolicyCreate**, **secPolicyDelete**, **secPolicyRemove**, **secPolicySave**, **secStatsShow**

secPolicyFcsMove

Moves a member in the FCS policy.

Synopsis **secpolicyfcsmove** [*from*, *to*]

Availability admin

Description Use this command to move an FCS member from one position to another 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.

If no parameters are specified, the command becomes interactive, prompting you to supply valid values for the operands.

Note

This command can be issued only from secure mode and only from the primary FCS switch.

If a backup FCS is moved to the first position, it becomes the primary FCS after activation.

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.

If no operand is specified, the command becomes interactive and you are prompted for values.

Examples To move the backup FCS switch at position 2 to position 3 in the FCS list:

```
switch:admin> secpolicyfcsmove
Pos    Primary WWN                    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 WWN                    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.


_____
```

See Also **secFabricShow**, **secPolicyAbort**, **secPolicyActivate**, **secPolicyAdd**, **secPolicyCreate**, **secPolicyDelete**, **secPolicyDump**, **secPolicyRemove**, **secPolicySave**, **secStatsShow**

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Note: Enter commands in lowercase only; mixed case is for readability.

secPolicyRemove

secPolicyRemove

Removes members from an existing policy.

Synopsis **secpolicyremove "***name***"[, "***member* [**;***member*]**"]**

Availability admin

Description Use this command to remove members from an existing security policy. If a policy is empty after removing all members, all accesses to the policy are disallowed (the DCC_POLICY and OPTIONS_POLICY are exceptions). You cannot remove all members from FCS_POLICY, and you cannot remove the FCS members from SCC_POLICY.

Note

This command can be issued only from secure mode and only from the primary FCS switch..

Operands This command has the following operands:

"*name*"   Specify the name of an existing policy you want to remove members from. Valid values for this operand are:

- DCC_POLICY_*nnn*
- FCS_POLICY
- TELNET_POLICY
- HTTP_POLICY
- API_POLICY
- RSNMP_POLICY
- WSNMP_POLICY
- SES_POLICY
- MS_POLICY
- SERIAL_POLICY
- FRONTPANEL_POLICY
- SCC_POLICY
- OPTIONS_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.

This operand is required.

"*member*"   Specify a member or list of members to delete from the policy. The members must be enclosed in quotation marks and separated by semicolons. This operand is required. Depending on the policy type, members can be specified using IP address, WWN, domain, or switch name.

IP Address Member Policy Types

The following policy types require members be specified by IP address:

- TELNET_POLICY

- HTTP_POLICY

- API_POLICY

- RSNMP_POLICY

- WSNMP_POLICY

These policy types require member IDs in dot notation (for example, 124.23.56.122). If 0 is specified in one of the octets, it means any number can be matched.

WWN Member Policy Types

The following policy types require members be specified by WWN address:

- FCS_POLICY

- SES_POLICY

- MS_POLICY

- SERIAL_POLICY

- FRONTPANEL_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 following format:

```
<switch><port>
```

`<switch>` can be specified using WWN, domain, or switch name.

`<port>` can be specified by port number separated by commas, and enclosed in either brackets or parenthesis: for example, (2, 4, 6). Ports enclosed in brackets will 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.

Note: Enter commands in lowercase only; mixed case is for readability.

OPTIONS_POLICY members

"NoNodeWWNZoning" is the only option.

Examples   To remove a member that has a WWN of 12:24:45:10:0a:67:00:40 from MS policy:

```
switch:admin> secpolicyremove "MS_POLICY", "12:24:45:10:0a:67:00:40"
Member(s) have been removed from MS_POLICY.
```

See Also   **secPolicyAbort**, **secPolicyActivate**, **secPolicyAdd**, **secPolicyCreate**, **secPolicyDelete**, **secPolicyDump**, **secPolicySave**, **secStatsShow**

secPolicySave

Saves a defined security policy to flash memory on all switches in the fabric.

Synopsis   **secpolicysave**

Availability   admin

Description   Use this command to save a defined security policy to flash memory of all switches in the fabric.

> **Note**
> This command can be issued only from secure mode and only from the primary FCS switch.

Operands   none

Example   To save new policy set in all switches in the fabric:

```
switch:admin> secpolicysave
secpolicysave command was completed successfully.
```

See Also   **secPolicyAbort**, **secPolicyActivate**, **secPolicyAdd**, **secPolicyCreate**, **secPolicyDelete**, **secPolicyDump**, **secPolicyRemove**, **secStatsShow**

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Note: Enter commands in lowercase only; mixed case is for readability.

secPolicyShow

secPolicyShow

Displays an existing security policy.

Synopsis   **secpolicyshow** ["*listtype*"][, "*name*"]

Availability   admin, switchAdmin, user

Description   Use this command to display the members of an existing policy in the active or defined security policy database. You can specify which database to display. If a database is not specified, all databases are displayed.

You can specify to display a security policy by name. If no name is specified, all policies are displayed.

This command displays the policy database one page at a time. Use **secPolicyDump** to display the policy database without page breaks.

Note

This command can be executed on any FCS switch in fabric.

Operands   This command has the following operands:

"*listtype*"   Specify which database to display. The name for active database is "Active"; the name for saved, defined database is "Defined". This operand must be enclosed in quotation marks. If not specified, all databases are displayed.

This operand is optional. Use an asterisk (*) to specify both active and defined.

"*name*"   Specify the name of a security policy you would like to view. Valid values for this operand are:

- DCC_POLICY_*nnn*

- FCS_POLICY

- TELNET_POLICY

- HTTP_POLICY

- API_POLICY

- RSNMP_POLICY

- WSNMP_POLICY

- SES_POLICY

- MS_POLICY

- SERIAL_POLICY

- FRONTPANEL_POLICY

- SCC_POLICY

- OPTIONS_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 is case sensitive.

This operand is optional.

Examples   To display all security policies from active databases:

```
switch:admin> secpolicyshow "active"
_____
              ACTIVE POLICY SET

FCS_POLICY
   Pos    Primary WWN                    DId swName
   _____
     1    Yes    10:00:00:60:69:30:15:5c   1 primaryfcs

HTTP_POLICY
   IpAddr
   _____
   192.155.52.0


_____
```

To display all security policies from defined databases:

```
switch:admin> secpolicyshow "defined"
_____
              DEFINED POLICY SET

FCS_POLICY
   Pos    Primary WWN                    DId swName
   _____
     1    Yes    10:00:00:60:69:30:15:5c   1 primaryfcs

HTTP_POLICY
   IpAddr
   _____
   192.155.52.0
   192.155.53.1
   192.155.54.2
   192.155.55.3
   192.155.56.4


_____
```

See Also   **secPolicyAbort**, **secPolicyActivate**, **secPolicyAdd**, **secPolicyCreate**, **secPolicyDelete**, **secPolicyDump**, **secPolicyRemove**, **secPolicySave**

secStatsReset

Resets one or all security statistics to 0.

Synopsis   **secstatsreset** [**"***name***"**][**,"***list***"**]

Availability   admin

Description   Use this command to reset one or all security statistics to 0. This command can be issued to any switch. If issued on the primary FCS switch, this command can reset security statistics for any or all switches in the fabric.

Operands   This command has the following operands:

"*name***"**   Specify the name of a security statistic you would like to reset. If executed on the primary FCS, specify an asterisk (*) to represent all security policies. Valid values for this operand are:

- TELNET_POLICY
- HTTP_POLICY
- API_POLICY
- RSNMP_POLICY
- WSNMP_POLICY
- SES_POLICY
- MS_POLICY
- SERIAL_POLICY
- FRONTPANEL_POLICY
- SCC_POLICY
- DCC_POLICY
- LOGIN
- INVALID_TS
- INVALID_SIGN
- INVALID_CERT
- SLAP FAIL
- SLAP_BAD_PKT
- TS_OUT_SYNC
- NO_FCS
- INCOMP_DB
- ILLEGAL_CMD

The specified policy name must be all capitalized.

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.

This operand is optional and the default is all statistics. If the *list* operand is specified, this operand is required.

"*list***"**   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. This operand is optional and the default value is the local switch.

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:

```
switch:admin> secstatsreset "DCC_POLICY", "1;69"
Reset DCC_POLICY statistic.
```

See Also   **secFabricShow**, **secStatsShow**

secStatsShow

Displays one or all security statistics.

Synopsis **secstatsshow** ["*name*"][**,** "*list*"]

Availability admin, switchAdmin, user

Description Use this command to display one or all security statistics. This command can be issued to any switch. If issued on the primary FCS switch, this command can retrieve and display the security statistics for any or all switches in the fabric.

Note

This command displays security policy statistics in secure mode. In nonsecure mode, it only reports login statistics.

Operands This command has the following operands:

"*name*" Specify the name of a security statistic you would like to view. If executed on the primary FCS, specify an asterisk (*) to represent all security policies. Valid values for this operand are:

- TELNET_POLICY
- HTTP_POLICY
- API_POLICY
- RSNMP_POLICY
- WSNMP_POLICY
- SES_POLICY
- MS_POLICY
- SERIAL_POLICY
- FRONTPANEL_POLICY
- SCC_POLICY
- DCC_POLICY
- LOGIN
- INVALID_TS
- INVALID_SIGN
- INVALID_CERT
- SLAP FAIL
- SLAP_BAD_PKT
- TS_OUT_SYNC
- NO_FCS

Note: Enter commands in lowercase only; mixed case is for readability.

secStatsShow

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- INCOMP_DB

- ILLEGAL_CMD

The specified policy name must be all capitalized.

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.

This operand is optional and the default is all statistics. If the list operand is specified, then this operand is required.

"*list*"   Specify a list of domains to display the security statistics on. Specify an asterisk (*) to represent all switches in the fabric or specify a list of domains separated by semicolons. This operand is optional and the default value is the local switch.

Examples   To display the MS_POLICY statistics on the local switch:

```
switch:admin> secstatsshow "MS_POLICY"
Name    Value
===================
MS      20
```

To display statistic information for TELNET_POLICY for all switches in the fabric (example from an nonsecure switch):

```
switch: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   **secFabricShow**, **secStatsReset**

secTempPasswdReset

Resets a temporary password on a remote switch.

Synopsis   **sectemppasswdreset** [*domain*[**,** **"***login_name***"**]]

Availability   admin

Description   Use this command to remove temporary passwords that were set up using **secTempPasswdSet** command.

If a login name is not supplied, all passwords on the switch identified by the specified domain are refreshed. If the domain is also not supplied, all temporary passwords for all login levels are removed from every switch in the fabric.

Each switch has four accounts: root, factory, admin, and user. Root and factory accounts are disabled for non-FCS switches. If they are temporarily activated by **secTempPasswdSet**, those accounts are disabled by **secTempPasswdReset** or rebooting the switch.

Note

This command can be issued only from secure mode and only from the primary FCS switch.

Operands   This command has the following operands:

domain   Specify the domain of the switch from which the temporary passwords are to be removed. This operand is optional.

"*login_name***"**   Specify the name of the login account from which the temporary password are removed. This operand is optional.

Examples   To remove temporary passwords:

```
switch:admin> sectemppasswdreset 2, "root"
Account root has been successfully disabled on domain 2

switch:admin> sectemppasswdreset 2
Restoring password of every account on domain 2
Temporary password of each account on domain 2 has been successfully reset (if switch
is non fcs switch it will further display).
Root and factory accounts on domain 2 have been disabled.

switch:admin> sectemppasswdreset
All temporary passwords or account settings have been restored to
fabric-wide secure settings.
Passwords of permanent accounts have been reset to fabric-wide
values. Root and factory accounts on each Non FCS switch have
been disabled.
```

See Also   **secModeDisable**, **secModeEnable**, **secModeShow**, **secNonFcsPasswd**, **secTempPasswdSet**

secTempPasswdSet

Sets a temporary password on a remote switch.

Synopsis   **sectemppasswdset** *domain***, "***login_name***"**

Availability   admin

Description   Use this command to set a unique temporary password for a given account on a specific switch in the fabric. Use the **secTempPasswdReset** command to remove the temporary password or reboot the switch.

You can change any password on any switch. To change the password of an account that has higher level than that of the current user logged in to the primary FCS switch, you must enter the password of the same level account on the primary FCS switch.

The password setup on the target is not persistent and will be reset to the secure fabric-wide setting when this target switch is rebooted or when **secTempPasswdReset** is run on primary FCS switch.

Each switch has four accounts: root, factory, admin, and user. Root and factory accounts are disabled for non-FCS switches. This command can enable the root or factory account on a non-FCS switch when you specify a password for those accounts.

The password should between 8 and 40 characters.

Note

This command can be issued only from secure mode and only from the primary FCS switch.

Operands   This command has the following operands:

domain   Specify the domain of a switch for which you want to change the password. This operand is required.

"*login_name***"**   Specify the login name for which you want to change the password. This operand is required.

Examples   To set the password on a remote switch with a domain of 2:

```
switch:admin> sectemppasswdset 2, "root"
Please provide password of root on primary FCS switch
in order to change this password: ********
Set remote switch root password: ********
Re-enter new password: ********
Account root has been successfully enabled on domain 2
```

See Also   **passwd**, **secModeDisable**, **secModeEnable**, **secModeShow**, **secNonFcsPasswd**, **secTempPasswdReset**

secTransAbort

Aborts current security transaction.

Synopsis   **sectransabort**

Availability   admin

Description   Use this command to abort the current transaction. This command is used to recover from management application problems. This command aborts all current changes that have not been committed or activated.

Note

This command can be issued from any switch in secure mode.

Operands   none

Examples   To abort the current security transaction:

```
switch:admin> sectransabort
Transaction has been aborted.
```

See Also   **secPolicyAbort**, **secPolicyActivate**, **secPolicyAdd**, **secPolicyCreate**, **secPolicyDelete**, **secPolicyDump**, **secPolicyRemove**, **secPolicySave**, **secStatsShow**

secVersionReset

Resets the security version stamp to 0.

Synopsis   **secversionreset**

Availability   admin

Description   Use this command to reset the security version stamp of all switches in a fabric to 0, so that it can be joined to another secure fabric.

When merging two or more secure fabrics:

1. Determine which secure fabric will become the FCS_POLICY controller fabric: the dominant fabric to which all other secure fabrics will be merged.

2. Use the **secPolicyAdd**, **secPolicyRemove**, and **secPolicyActivate** commands to modify the FCS_POLICY of the merging fabrics to match the FCS_POLICY of the controller fabric. All secure fabrics to be merged must have identical FCS_POLICY lists. The FCS policies of merged fabrics must match exactly; they must contain the same FCS members and in the same order, or the merge will fail.

3. Reset the version stamp using the **secVersionReset** command on each secure fabric to be merged into the controller fabric. The controller fabric does not require a version reset.

4. Cascade the fabrics together. When the secure fabrics merge, the primary FCS switch in the controller fabric propagates its security policies across the newly formed fabric.

Note

This command must be issued from a sectelnet or SSH session and can be issued only from the primary FCS switch, a non-FCS when there is no FCS switch in the fabric, or from a disabled switch.

Operands   none

Examples   To reset the version stamp to 0:

```
switch:admin> secversionreset
About to reset version stamp to 0.
Are you sure (yes, y, no, n):[no] y
done.
Security Policy Version Stamp has been set to 0.
```

See Also   **secFabricShow**, **secModeDisable**, **secModeEnable**, **secModeShow**, **secTransAbort**

2 Note: Enter commands in lowercase only; mixed case is for readability.

sensorShow

sensorShow

Displays sensor readings.

Synopsis   **sensorshow**

Availability   admin, switchAdmin, user

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.

Operands   none

Examples   To view the 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**

setDbg

Sets debug level of the specified module.

Synopsis   **setdbg** [*module_name*][*level*]

Availability   admin, switchAdmin

Description   Use this command to set the debug level of a specified module.

Note

High debug level values can generate a large volume of messages, degrading the system response time.

Operands   This command has the following operands:

module_name   Specify the name of the module for which you want to view the debug and verbosity levels. Module names are case sensitive. This operand is optional; if omitted, this command displays the debug and verbose level for all modules.

level   Specify the debug level for the specified module (0 to 9). A 0 value (default) specifies that no messages are to display. Higher values cause more messages from that module to display. This operand is optional, if omitted, this command displays the current debug and verbose level of the specified module.

Examples   To set debug level of module named NS to value 3:

```
switch:admin> setdbg NS 3
switch:admin> dbgshow NS
Module NS,      debug level = 3, verbose level = 0
```

See Also   **dbgShow**

setEsdMode

Enables or disables ESD mode.

Synopsis   **setesdmode** [*mode* | **-show**]

Availability   admin

Description   Use this command to enable or disable ESD mode. The mode is saved in flash memory and stays in that mode until the next execution of **setEsdMode**. The mode becomes active as soon as this command is executed. It does not require a reboot to take effect.

ESD mode modifies the behavior of the diagnostic test methods and post scripts. The exact behavior varies but most commonly consists of disabling the ports defined with **diagEsdPorts** when **spinSilk** or other functional tests are run for ESD or EMI testing purposes.

Note

You can issue this command on the FR4-18i blade in a SilkWorm chassis; however, the command is not supported by the SilkWorm platform and does not effect any other feature operations. This availability is offered to maintain consistency across a mixed-blade environment.

Operands   This command has the following operands:

mode   Specify 1 to enable ESD mode, 0 to disable ESD mode. This operand is optional.

-show   Specify this operand to display the current mode setting. This operand is optional.

If no operand is specified, the current value displays.

Examples   To display the ESD mode:

```
switch:admin> setesdmode -show
Esd Mode is 0 (Disabled).
```

See Also   **spinSilk**

setGbicMode

Enables or disables media mode.

Synopsis   **setgbicmode** [*mode* | **-show**]

Availability   admin

Description   Use this command to enable GBIC media mode if the mode value is nonzero and disable the media mode if the mode value is 0. The mode is saved in flash memory and stays in that mode until the next execution of **setGbicMode**. The mode becomes active as soon as this command is executed. It does not require a reboot to take effect.

Media mode modifies the behavior of the diagnostic test methods so that ports without media installed are not tested. Normally, tests such as **crossPortTest** or **spinSilk** fail if any port is not operating properly, but with media mode enabled, the functional tests are skipped on ports that do not contain media.

Operands   This command has the following operands:

mode	Specify 1 to enable media mode or 0 to disable media mode. If no mode is specified, the current value is displayed. Any other value will enable media mode.
-show	Specify the **-show** operand to display the current setting. This operand is optional.

Examples   To enable the media mode:

```
switch:admin> setgbicmode 1
GBIC mode is now 1 (Enabled).
```

See Also   **crossPortTest**, **itemList**, **miniCycle**, **setMediaMode**, **setSfpMode**, **spinJitter**, **spinSilk**

Note: Enter commands in lowercase only; mixed case is for readability.

setMediaMode

Enables or disables media mode.

Synopsis   **setmediamode** [*mode* | **-show**]

Availability   admin

Description   Use this command to enable media mode if the mode value is nonzero and disable the media mode if the mode value is 0. The mode is saved in flash memory and stays in that mode until the next execution of **setMediaMode**. The mode becomes active as soon as this command is executed. It does not require a reboot to take effect.

Media mode modifies the behavior of the diagnostic test methods so that ports without media installed are not tested. Normally, tests such as **crossPortTest** or **spinSilk** fail if any port is not operating properly, but with media mode enabled, the functional tests are skipped on ports that do not contain media.

Operands   This command has the following operands:

mode   Specify 1 to enable media mode or 0 to disable media mode. If no mode is specified, the current value is displayed. Any other value will enable media mode.

-show   Specify the **-show** operand to display the current setting. This operand is optional.

Examples   To display the media mode:

```
switch:admin> setmediamode -show
Media mode is now 0 (disabled).
```

See Also   **crossPortTest**, **itemList**, **miniCycle**, **setGbicMode**, **setSfpMode**, **spinJitter**, **spinSilk**

setModem

Enables or disables modem dial-in to a control processor (CP).

Synopsis   **setmodem** [**-e**] | [**-d**]

Availability   admin, switchAdmin

Description   Use this command to enable or disable modem dial-in to a CP on those systems that support modem dial-in. When modem dial-in is enabled, you can log in to a CP through a modem, and a modem attached to the CP accepts the call. When modem dial-in is disabled, the modem attached to the CP does not accept the call. When entered with no operands, the command displays the currently state of modem dial-in.

Modem dial-in must be through a Hayes-compatible modem attached to a CP modem serial port. If the CP is active, the modem is configured to answer an incoming call on the first ring, unless modem dial-in has been disabled with this command. If the CP is standby, the modem is configured to answer an incoming call on the seventh ring, unless modem dial-in has been disabled.

In the recommended configuration, a separate modem is connected to each modem port of CP0 and CP1. These modems connect to the telephone outlet through a RJ-11 Y-adapter and standard telephone wire (see Figure).

During an incoming call, both modems ring and the one connected to the active CP answers the call first. If for any reason the active modem fails to answer, the caller is logged in to the standby CP.

When both CP cards are connected to a shared telephone line, callers are automatically dialed in to the active CP card, which answers on the first ring unless modem dial-in has been disabled. If the active CP card cannot answer for any reason, the standby CP card answers on the seventh ring and allows the login to proceed, unless modem dial-in has been disabled.

Refer to the hardware reference manual for your platform for complete modem installation instructions.

Two Modems Attached for High Availability

Optional Handset

Modem (two shown)

RJ-11 "Y" Adapter

Analog Telco Line

DB-25M to DB-9F
Modem Cable
(one per CP Card)

Note: Modem power connections
not shown

Modem Port
on CP Card
(one per CP Card;
RS-232 port interface)

2.015
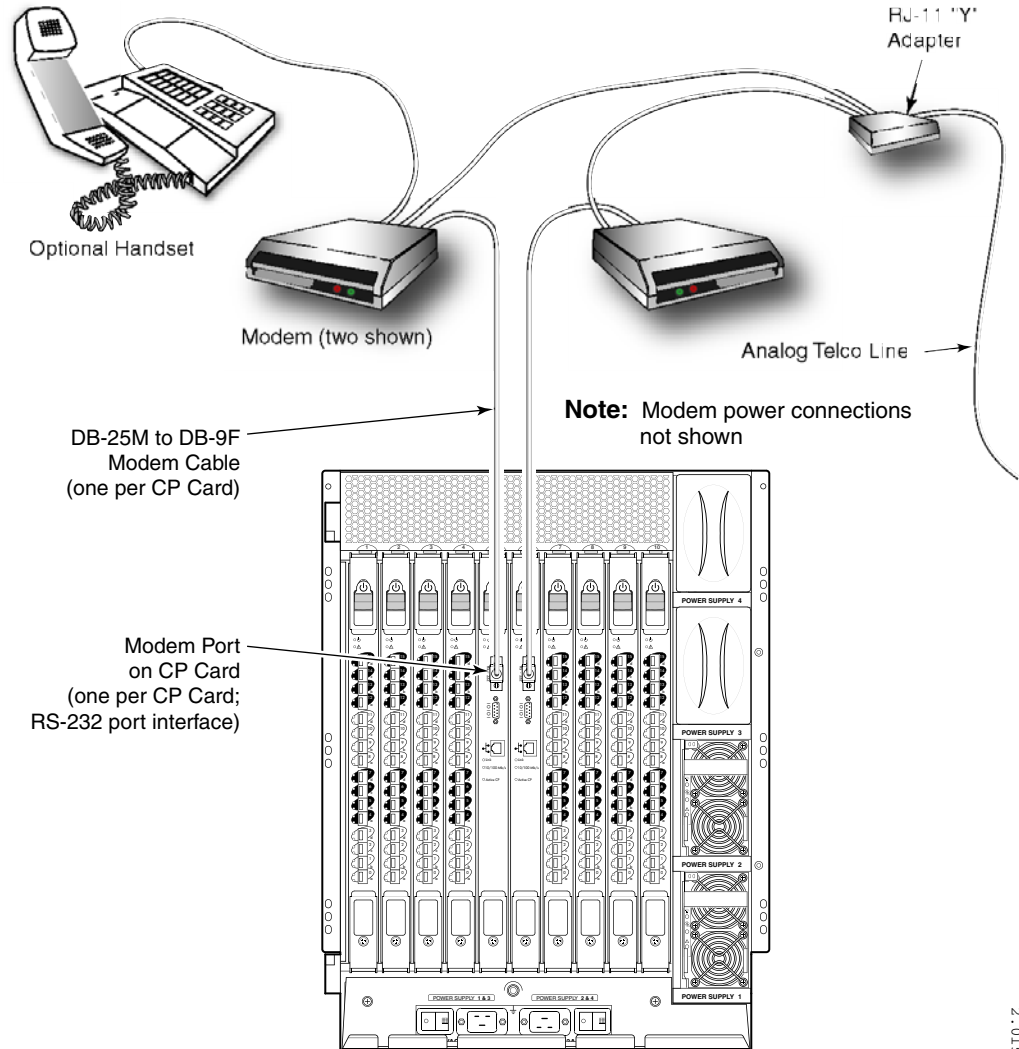
Operands   The optional operands are as follows:

-e   Specifies that modem dial-in be enabled.

-d   Specifies that modem dial-in be disabled.

Examples   To disable modem dial-in to a CP:

```
switch:admin> setmodem -d
disabling modem, please wait, this can take a couple of minutes...
modem disabled
```

See Also   none

setSfpMode

Enables or disables media mode.

Synopsis **setsfpmode** [*mode* | **-show**]

Availability admin

Description Use this command to enable SFP media mode if the mode value is nonzero and disable the media mode if the mode value is 0. The mode is saved in flash memory and stays in that mode until the next execution of **setSfpMode**. The mode becomes active as soon as this command is executed. It does not require a reboot to take effect.

Media mode modifies the behavior of the diagnostic test methods so that ports without media installed are not tested. Normally, tests such as **crossPortTest** or **spinSilk** fail if any port is not operating properly, but with media mode enabled, the functional tests are skipped on ports that do not contain media.

Operands This command has the following operands:

mode Specify 1 to enable media mode or 0 to disable media mode. If no mode is specified, the current value is displayed. Any other value will enable media mode.

-show Specify the **-show** operand to display the current setting. This operand is optional.

Examples To enable, disable, and then display the media mode:

```
switch:admin> setsfpmode 0
SFP mode is now 0 (disabled).
```

See Also **crossPortTest**, **itemList**, **miniCycle**, **setGbicMode**, **setMediaMode**, **spinJitter**, **spinSilk**

setSplbMode

Sets or displays single port loopback (SPLB) mode.

Synopsis   **setsplbmode** [*mode* | **-show**]

Availability   admin

Description   Use this command to enable MFG mode if mode is a nonzero, and disable SPLB mode if mode is 0. The mode is saved in flash memory and stays in that mode until the next execution of **setSplbMode**. The mode becomes active as soon as this command is executed. It does not require a reboot to take effect.

The SPLB mode, when enabled, forces the **spinSilk** command to disable two-port loopback for M->M connected ports. This might be useful to isolate internal switch problems from SFP problems since the internal paths are used much less with SPLB mode enabled.

Disabling SPLB mode, forces the **spinSilk** command to circulate frames between pairs of M->M connected ports as follows:

```
P1 TX >>> P1 RX -> P2 TX >>> P2 RX -> P1 TX
```

>>> is a cable or internal loopback .

-> is a routing table entry.

The connections between pairs of M->M ports are chosen to exercise the connections between as many chips (or bloom quadrants) as possible, subject to the setting of allow_intra_chip and the availability of pairs of M->M ports.

Any ports that are cross-cabled are routed to each other in the normal manner, regardless of the setting of SPLB mode:

```
P1 TX >>> P2 RX -> P1 TX
P2 TX >>> P1 RX -> P2 TX
```

Note

You can issue this command on the FR4-18i blade in a SilkWorm chassis; however, the command is not supported by the SilkWorm platform and does not effect any other feature operations. This availability is offered to maintain consistency across a mixed-blade environment.

Operands   This command has the following operands:

mode   Specify 1 to enable SPLB mode or 0 to disable SPLB mode. If no mode is specified, the current value is displayed. This operand is optional; if omitted, the command displays the current setting.

-show   Specify the -show operand to display the current setting. This operand is optional.

Examples   To enable or disable a two-port loopback:

```
switch:admin> setsplbmode -show
Splb Mode is 0 (Disabled)
```

See Also   **spinSilk**

setVerbose

Specifies module verbose level.

Synopsis   **setverbose** [*module_name*][*level*]

Availability   admin, switchAdmin

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.

Operands   This command has the following operands:

module_name   Specify the name of the module for which 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 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   **dbgShow**

sfpShow

Displays serial ID SFP information.

Synopsis **sfpshow** [*slotnumber*/][*portnumber*] | [**-all**]

Availability admin, switchAdmin, user

Description 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 SFPs capabilities, interfaces, manufacturer, and other information.

 Note

SFPs are polled by a background process. The **sfpShow** command retrieves the latest information from cache. The cache values for each SFP are updated when the SFP is hot plugged, when it is removed, or when the Fabric OS polls the SFPs. In the SilkWorm directors, if there is a lot of activity on the switch, poll updates might take several minutes.

Use this command with no operand to display a summary of all SFPs in the switch. The summary displays the SFP type (refer to **switchShow** for an explanation of the two-letter codes) and, for serial ID SFP, the vendor name and SFP serial number.

Use this command with the slotnumber and portnumber operands to display detailed information about the serial ID SFP in that port. Use the -all operand to display detailed information for all available SFPs.

For Finisar "smart" SFPs, five additional fields display: module temperature, voltage, received optical power, transmitted optical power (longwave only), and laser diode drive current.

Operands This command has the following operands:

slotnumber For bladed systems only, specify the slot number of the port to display, followed by a slash (/)

portnumber 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, this command displays a summary of all SFPs in the switch.

-all Displays detailed data for all available SFPs on the switch. This operand is not compatible with slotnumber/portnumber.

Examples   To display SFP summary information:

```
switch:user> sfpshow

Area  0: id (id) Vendor:  Serial No:
Area  1: id (sw) Vendor: FINISAR CORP.    Serial No: H1149T2
Area  2: id (sw) Vendor: FINISAR CORP.    Serial No: H112TUD
Area  3: id (sw) Vendor: FINISAR CORP.    Serial No: H11QET9
Area  4: id (sw) Vendor: IBM              Serial No: 21P53380BR0BE
Area  5: id (sw) Vendor: IBM              Serial No: 21P53380BS18A
Area  6: id (sw) Vendor: IBM              Serial No: 21P53380BS170
Area  7: id (sw) Vendor: IBM              Serial No: 21P53380BS26B
Area  8: --
Area  9: --
Area 10: --
Area 11: --
Area 12: --
Area 13: --
Area 14: --
Area 15: --
Area 16: id (sw) Vendor: AGILENT          Serial No: 0105091301045274
(output truncated)
```

To display detailed SFP information for a Finisar "smart" SFP:

```
switch:user> sfpshow 1/3
Identifier:  3    SFP
Connector:   7    LC
Transceiver: 050c402000000000 100,200_MB/s M5,M6 sw Inter_dist
Encoding:    1    8B10B
Baud Rate:   21   (units 100 megabaud)
Length 9u:   0    (units 100 meters)
Length 50u:  30   (units 10 meters)
Length 62.5u: 15   (units 10 meters)
Length Cu:   0    (units 1 meter)
Vendor Name: FINISAR CORP.
Vendor OUI:  00:90:65
Vendor PN:   FTRJ-8519-7D-2.5
Vendor Rev:
Options:     0012 Loss_of_Sig,Tx_Disable
BR Max:      0
BR Min:      0
Serial No:   H11QET9
Date Code:   020429
Temperature: 50 Centigrade
Current:     10634 mAmps
Voltage:     3164.8 mVolts
RX Power:    199.6 uWatts
TX Power:    235.2 uWatts
```

To display all SFP information:

```
switch:user> sfpshow -all

=============
Port  0:
=============
Identifier:  3    SFP
Connector:   7    LC
Transceiver: 050c402000000000 100,200_MB/s M5,M6 sw Inter_dist
Encoding:    1    8B10B
Baud Rate:   21   (units 100 megabaud)
Length 9u:   0    (units km)
Length 9u:   0    (units 100 meters)
Length 50u:  30   (units 10 meters)
Length 62.5u:15   (units 10 meters)
Length Cu:   0    (units 1 meter)
Vendor Name: IBM
Vendor OUI:  08:00:5a
Vendor PN:   IBM42P21SNY
Vendor Rev:  AA10
Wavelength:  0    (units nm)
Options:     001a Loss_of_Sig,Tx_Fault,Tx_Disable
BR Max:      5
BR Min:      5
Serial No:   21P7053164529
Date Code:   01060501

=============
Port  1:
=============
Identifier:  3    SFP
Connector:   7    LC
Transceiver: 050c402000000000 100,200_MB/s M5,M6 sw Inter_dist
Encoding:    1    8B10B
Baud Rate:   21   (units 100 megabaud)
Length 9u:   0    (units km)
Length 9u:   0    (units 100 meters)
Length 50u:  30   (units 10 meters)
Length 62.5u:15   (units 10 meters)
Length Cu:   0    (units 1 meter)
Vendor Name: IBM
Vendor OUI:  08:00:5a
Vendor PN:   IBM42P21SNY
Vendor Rev:  AA10
Wavelength:  0    (units nm)
Options:     001a Loss_of_Sig,Tx_Fault,Tx_Disable
BR Max:      5
BR Min:      5
Serial No:   21P70530005BW
Date Code:   01062301

(output truncated)
```

See Also   switchShow

Note: Enter commands in lowercase only; mixed case is for readability.

shellFlowControlDisable

2

shellFlowControlDisable

Disables XON/XOFF flow control on the console serial ports.

Synopsis   **shellflowcontroldisable**

Availability   admin, switchAdmin

Description   Use this command to disable XON/XOFF flow control on the console serial ports. 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 saves in the configuration database; therefore, persistent across reboots and power cycles.

On dual control processor (CP) systems, a reboot on the standby CP is required for this command to take effect. No action is required on the active CP.

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 to the shell task.

Synopsis   **shellflowcontrolenable**

Availability   admin, switchAdmin

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 saves in the configuration database; therefore, persistent across reboots and power cycles.

On dual control processor (CP) systems, a reboot on the standby CP is required for this command to take effect. No action is required on the active CP.

Caution

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**.

Operands   none

Examples   To enable flow control:

```
switch:admin> shellflowcontrolenable
Enabling flowcontrol
flow control is now enabled
```

See Also   **shellFlowControlDisable**

slotPowerOff

Removes power from a slot.

Synopsis   **slotpoweroff** *slotnumber*

Availability admin, switchAdmin

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.

Operands   This command has the following operand:

slotnumber   Specify the slot number of the blade to be powered down. This operand is required.

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** *slotnumber*

Availability   admin, switchAdmin

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.

Operands   This command has the following operand:

slotnumber   Specify the slot number of the blade to be powered on. This operand is required.

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**

Availability   admin, switchAdmin, user

Description   Use this command to inventory and display the current status of each slot in the system. The fields and their possible values are as follows:

Slot   Displays the physical slot number.

Blade Type   Displays the blade type:

- SW BLADE
  The blade is a switch.

- CP BLADE
  The blade is a control processor.

- UNKNOWN
  Blade not present or its type is not recognized.

ID   Displays the blade type ID:

ID	Blade type
1	CP1 control processor blade
2	FC-16 port blade
4	FC2-16 port blade
5	CP2 control processor blade
16	CP4 control processor blade
17	FC4-16 port blade
18	FC4-32 port blade
24	FR4-18i port blade

Status   Displays the status of the blade:

- 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 POST (power-on self-test).

- INITIALIZING
  The blade is present, powered on, and initializing hardware components.

- ENABLED
  The blade is on and enabled.

- ENABLED (User Ports Disabled)
  The blade is on but the external ports are disabled using **bladeDisable**.

- DISABLED
  The blade is powered on but disabled.

- FAULTY
  The blade is faulty because an error was detected.

- UNKNOWN
  The blade is inserted but its state cannot be determined.

Operands   none

Examples   To display the status of all slots in the system:

```
switch:admin> slotshow
Slot    Blade Type   ID     Status
--------------------------------
  1     SW BLADE    2     FAULTY
  2     SW BLADE    2     DISABLED
  3     SW BLADE    2     ENABLED
  4     SW BLADE    2     DIAG RUNNING POST2
  5     CP BLADE    1     ENABLED  (User Ports Disabled)
  6     CP BLADE    1     ENABLED
  7     AP BLADE    24    LOADING
  8     SW BLADE    2     DIAG RUNNING POST1
  9     SW BLADE    2     INSERTED, NOT POWERED ON
 10     UNKNOWN           VACANT
```

See Also   **bladeDisable**, **bladeEnable**, **chassisShow**, **slotPowerOff**, **slotPowerOn**

slTest

Tests the serial link of port N->N path.

Synopsis   **sltest** [**-ports** *itemlist*][**-lb_mode** *mode*][**-speed** *mode*][**-passcnt** *count*]

Availability   admin

Description   Use this command to verify the intended functional operation of the switch by sending SERDES BIST patterns from port N's transmitter, and looping the patterns back into the same port N's receiver. The loopback is done at the parallel and serial loopback paths. The path exercised in this test can include the media or the fiber cable.

The test patterns are transmitted and received continuously during the test duration. An external cable is optional to run this test.

The test method is as follows:

1. Set all ports present for one of the following modes: parallel, SERDES pads, or external cable loopback.

2. Program the port to repeatedly send predefined LPE.

3. Verify the primitive is received at the same port.

4. Check the receive port for possible code violation on nonframe data or BadOrdSet.

5. Repeat steps 2 through 4 for all ports present until:

    a. The number of **-passcnt** count requested is reached.

    b. All ports are marked bad.

    Note
    This command is supported only on SilkWorm 200E, 4012, 4100, 4900, and 48000 platforms.

Operands   The optional operands are as follows:

-lb_mode *mode*   Sets the loopback point for the test. By default, **slTest** uses internal loopback.

1	Port loopback (loopback plugs)
2	External (SERDES) loopback
5	Internal (parallel) loopback
7	Backend bypass and port loopback
8	Backend bypass and SERDES loopback

-speed *mode*   Specifies the speed mode for the test.

1	Runs the test at both 1 GBit/sec
2	Sets and locks all port speeds to 2 GBit/sec
3	Sets and locks all port speeds to 3 GBit/sec
4	Sets and locks all port speeds to 4 GBit/sec (default)

-ports *itemlist*   Specifies a list of blade ports to test. By default, all the blade ports in the specified slot (**--slot**) is used.

-passcnt *count*   Specifies the number of test repetitions. By default, the test runs once.

Refer to **itemList** for further details.

Examples   To test the serial link of the following port path:

```
switch:admin> sltest -ports 0/5-0/31 -speed 4 -lb_mode 1 passcnt 1
Running Port sltest ....
passed.
```

Diagnostic   When it detects failures, the test might report one or more of the following error messages:

DATA

ERRSTAT

INIT

STATS

TIMEOUT

See Also   **cmemRetentionTest**, **crossPortTest**, **itemList**, **portRegTest**, **spinSilk**

snmpConfig

Manages the SNMP agent configuration.

Synopsis   **snmpConfig --show** | **--set** | **--default** [**snmpv1** | **snmpv3** | **accessControl** | **mibCapability** | **system-Group**]

Availability   admin, , switchAdmin, user

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, and system group. It supports set, reset to default, and display operations.

Issue this command with incomplete parameters and it displays the command usage.

All values successfully changes by this command take effect immediately and are persistent across power cycles and reboots. For dual-domain systems, this command is specific to the SNMP agent associated with the current switch.

SNMPv1 Configuration Parameters

There are six communities, respective trap recipients and trap recipient severity level supported by the agent. The first three communities are for read-write (rw) access and the last three are for read-only (ro) access. The default value for the trap recipient of each community is 0.0.0.0. The length of community string should be in range of 2 to 16 characters. The default values for the community strings are:

*   Community 1: Secret C0de

*   Community 2: OrigEquipMfr

*   Community 3: private

*   Community 4: public

*   Community 5: common

*   Community 6: FibreChannel

Note

When secure mode is enabled, community strings can be changed on the primary FCS switch only and propagates changes across the fabric.

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 accessControl category.

Trap Recipient Severity Level

The event trap level in conjunction with the an event's severity level. When an event occurs and if its severity level is at or below the set value, the SNMP traps, Event Trap traps (swEventTrap, connUnitEventTrap and swFabricWatchTrap), 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

SNMPv3 Configuration Parameters

Two user roles, snmpadmin and snmpuser are supported. snmpadmin provides read-write access and snmpuser provides read-only access. Entries are added to USM table corresponding to each role. Total of three entries of role snmpadmin and three entries of role snmpuser are supported. Separate default passwords are provided for creation of authKey and privKey for each entry. Default set of passwords are published and default algorithm (MD5/SHA) is used to create initial set of auth keys. You can change these passwords using this option. You have the option to select authentication protocol MD5/SHA or no authentication for each entry.

Select the following combination of protocols:

- NoAuth/NoPriv

- Auth/NoPriv

- Auth/Priv

The length of user name string should be in range of 2 to 32 characters. Note that the default user names are defined with noAuth and noPriv protocol. The factory default SNMPv3 user names are:

- User 1: snmpadmin1

- User 2: snmpadmin2

- User 3: snmpadmin3

- User 4: snmpuser1

- User 5: snmpuser2

- User 6: snmpuser3

The user configuration is available in both secure and nonsecure mode. When user select the --default option, the user name and passwords are set to default.

In secure mode, the above configuration has to be updated by user on both primary and nonprimary switches individually and unlike community strings, user name and passwords is not distributed for other switches in the fabric.

When new passwords are entered for any user entry, new authKey and privKey are generated. You have to update the new passwords on the client (such as a MIB browser) also. AuthKey and privKey can also be updated using delta key mechanism provided by SNMPv3 protocol.

You are prompted for password and re-confirmation of password, if any protocol is selected other than NoAuth/NoPriv. The length of protocol passwords should be in range of 1 to 20 characters.

Note that 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. Also, in addition the trap recipient should be able to pass the ACL check as described in accessControl section. The trap recipient value should be associated with one of the six users of SNMPv3 and trap severity level. Note that the factory default value for the SNMPv3 trap recipient of each user is '0.0.0.0'.

accessControl Configuration Parameters

The ACL check is as follows: there are six ACLs to restrict SNMP get/set/trap operations to hosts under a host-subnet-area. Host-subnet-area is defined by comparing nonzero IP octets. For example, an ACL of 192.168.64.0 enables access by any hosts that start with the specified octets. The connecting host is enabled to set each host-subnet-area to be read-write or read-only. The highest privilege matched out of six entries is given to the 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.

Note: When secure mode is enabled, the Access Control List feature is incorporated into the WSNMP and RSNMP security policies.

mibCapability Configuration Parameters

This mibCapability option a turns on or off certain MIBS and TRAPS.

Note

The **agtCfgDefault** also resets the SNMP MIB and Trap Capability to default with other SNMP agent configuration.

If SNMP MIB is disabled, then corresponding traps also are disabled. If any trap group is disabled, then corresponding individual traps also are disabled.

The FE and SW MIBs are always accessible. **snmpMibCapSet** does not prompt you to turn these MIBs on or off.

FA-MIB	Specifying yes means the user can access FA-MIB variables with an SNMP manager. The default value is yes.
FICON-MIB	Specifying yes means the user can access FICON-MIB variables with an SNMP manager. The default value is yes.
HA-MIB	Specifying yes means the user can access Entity-MIB and HA-MIB variables with an SNMP manager. The default value is yes.
SW-TRAP	Specifying yes means the SNMP management application can receive SW-TRAPS from the switch. The default value is yes. Users can also turn on or off individual SW Traps. The individual SW traps are swFCPortScn, swEventTrap, swFabricWatchTrap and swTrackChangesTrap.
FA-TRAP	Specifying yes means the SNMP management application can receive FA-TRAPS from the switch. The default value is yes. Users can also turn on or off individual FA Traps. The individual FA Traps are connUnitStatusChange, connUnitEventTrap, connUnitSensorStatusChange and connUnitPortStatusChange.
SW-EXTTRAP	Specifying yes means user can receive SSN in the SW traps. The default value is 'no'.
FICON-TRAP	Specifying yes means the SNMP management application can receive FICON traps from the switch. The default value is 'yes'. Users can also turn on or off individual FICON Traps. The individual FICON Traps are linkRNIDDeviceRegistration, linkRNIDDeviceDeRegistration, linkLIRRListenerAdded, linkLIRRListenerRemoved and linkRLIRFailureIncident.

HA-TRAP
Specifying yes means the SNMP management application can receive HA traps from the switch. The default value is 'yes'. Users can also turn on or off individual HA Traps. The individual HA Traps are fruStatusChanged, cpStatusChanged, and fruHistoryTrap.

systemGroup Configuration Parameters

sysDescr
The system description. The default value is set as Fibre Channel Switch.

sysLocation
The location of the system (switch). The default value is set as End User Premise.

sysContact
The contact information for this system (switch). The default value is set as Field Support. Refer to the definition of sysDescr, sysLocation and sysContact in system group of MIB-II.

authTraps
When enabled, the authentication trap (authenticationFailure) is transmitted to a configured trap recipient in the event that the agent received a protocol message that is not properly authenticated. In the context of SNMPv1 and SNMPv2c, this means that a request contains a community string that is not known to the agent. The default value for this parameter is 0 (disabled).

Operands   This command supports following operands:

--show
Displays the SNMP agent configuration data of the specified category.

--set
Sets the SNMP agent configuration data of the specified category. This operand displays the current settings and then prompts you to change the values for each parameter.

--default
Sets the SNMP agent configuration data for a specified item to the default values. Generally, these default values might be available in the configuration database. It sets to factory default settings if the SNMP agent configuration parameters are not available in the configuration database.

--show, **--set**, and **--default** supports the following:

snmpv1
Selects SNMPv1-related configuration parameters. SNMPv1 parameters include the community string, trap recipient IP address, and trap severity level associated with each trap recipient IP address.

snmpv3
Selects SNMPv3-related configuration parameters. SNMPv3 parameters include user name, authentication protocol and password, SNMPv3 trap recipients IP address, associated user index, and trap severity level.

accessControl
Selects access-control-related parameters. accessControl parameters include access host subnet area and access permission (read-write).

mibCapability
Selects configuration parameters related to the SNMP agent's MIBs and trap capability parameters. mibCapability parameters include MIBs and traps supported by the SNMP agent.

systemGroup
Selects configuration parameters related to the system group. systemGroup parameters include sysDescr, sysLocation, sysContact, and authentication failure trap.

Examples   To change the SNMPv1 configuration:

```
switch:admin> snmpconfig --set snmpv1

SNMP community and trap recipient configuration:
Community (rw): [Secret C0de] admin
Trap Recipient's IP address in dot notation: [0.0.0.0] 10.32.225.1
Trap recipient Severity level : (0..5) [0] 1
Community (rw): [OrigEquipMfr]
Trap Recipient's IP address in dot notation: [10.32.225.2]
Trap recipient Severity level : (0..5) [1]
Community (rw): [private]
Trap Recipient's IP address in dot notation: [10.32.225.3]
Trap recipient Severity level : (0..5) [2]
Community (ro): [public]
Trap Recipient's IP address in dot notation: [10.32.225.4]
Trap recipient Severity level : (0..5) [3]
Community (ro): [common]
Trap Recipient's IP address in dot notation: [10.32.225.5]
Trap recipient Severity level : (0..5) [4]
Community (ro): [FibreChannel]
Trap Recipient's IP address in dot notation: [10.32.225.6]
Trap recipient Severity level : (0..5) [5]
Committing configuration...done.
```

To change the systemGroup configuration to default:

```
switch:admin> snmpconfig --default systemGroup
     *****
This command will reset the agent's system group configuration back to factory
default
     *****
            sysDescr = Fibre Channel Switch
         sysLocation = End User Premise
          sysContact = Field Support
            authTraps = 0 (OFF)

     *****
     Are you sure? (yes, y, no, n): [no] y
```

To change the SNMPv3 configuration:

```
switch:admin> snmpconfig --set snmpv3

    SNMPv3 user configuration:
    User (rw): [snmpadmin1] adminuser
    Auth Protocol [MD5(1)/SHA(2)/noAuth(3)]: (1..3) [3] 1
    New Auth Passwd:
    Verify Auth Passwd:
    Priv Protocol [DES(1)/noPriv[2]): (1..2) [2] 1
    New Priv Passwd:
    Verify Priv Passwd:
    User (rw): [snmpadmin2] shauser
    Auth Protocol [MD5(1)/SHA(2)/noAuth(3)]: (1..3) [3] 2
    New Auth Passwd:
    Verify Auth Passwd:
    Priv Protocol [DES(1)/noPriv[2]): (1..2) [2] 1
    New Priv Passwd:
    Verify Priv Passwd:
    User (rw): [snmpadmin3] nosec
    Auth Protocol [MD5(1)/SHA(2)/noAuth(3)]: (1..3) [3]
    Priv Protocol [DES(1)/noPriv[2]): (2..2) [2]
    User (ro): [snmpuser1]
    Auth Protocol [MD5(1)/SHA(2)/noAuth(3)]: (3..3) [3]
    Priv Protocol [DES(1)/noPriv[2]): (2..2) [2]
    User (ro): [snmpuser2]
    Auth Protocol [MD5(1)/SHA(2)/noAuth(3)]: (3..3) [3]
    Priv Protocol [DES(1)/noPriv[2]): (2..2) [2]
    User (ro): [snmpuser3]
    Auth Protocol [MD5(1)/SHA(2)/noAuth(3)]: (3..3) [3]
    Priv Protocol [DES(1)/noPriv[2]): (2..2) [2]

    SNMPv3 trap recipient configuration:
    Trap Recipient's IP address in dot notation: [0.0.0.0] 192.168.45.90
    UserIndex: (1..6) [1]
    Trap recipient Severity level : (0..5) [0] 4
    Trap Recipient's IP address in dot notation: [0.0.0.0] 192.168.45.92
    UserIndex: (1..6) [2]
    Trap recipient Severity level : (0..5) [0] 2
    Trap Recipient's IP address in dot notation: [0.0.0.0]
    Trap Recipient's IP address in dot notation: [0.0.0.0]
    Trap Recipient's IP address in dot notation: [0.0.0.0]
    Trap Recipient's IP address in dot notation: [0.0.0.0]
    Committing configuration...done.
```

To change the accessControl configuration:

```
switch:admin> snmpconfig --set accessControl

    SNMP access list configuration:
    Access host subnet area in dot notation: [0.0.0.0] 192.168.0.0
    Read/Write? (true, t, false, f): [true]
    Access host subnet area in dot notation: [0.0.0.0] 10.32.148.0
    Read/Write? (true, t, false, f): [true] f
    Access host subnet area in dot notation: [0.0.0.0]
    Read/Write? (true, t, false, f): [true]
    Access host subnet area in dot notation: [0.0.0.0] 10.33.0.0
    Read/Write? (true, t, false, f): [true] f
    Access host subnet area in dot notation: [0.0.0.0]
    Read/Write? (true, t, false, f): [true]
    Access host subnet area in dot notation: [0.0.0.0]
    Read/Write? (true, t, false, f): [true]
    Committing configuration...done.
```

To display the mibCapability configuration:

```
switch:admin> snmpconfig --show mibCapability
    FE-MIB: YES
    SW-MIB: YES
    FA-MIB: YES
    FICON-MIB: YES
    HA-MIB: YES
    SW-TRAP: YES
        swFCPortScn: YES
        swEventTrap: YES
        swFabricWatchTrap: YES
        swTrackChangesTrap: NO
    FA-TRAP: YES
        connUnitStatusChange: YES
        connUnitEventTrap: NO
        connUnitSensorStatusChange: YES
        connUnitPortStatusChange: YES
    SW-EXTTRAP: NO
    FICON-TRAP: NO
    HA-TRAP: YES
        fruStatusChanged: YES
        cpStatusChanged: YES
        fruHistoryTrap: NO
```

See Also   **agtCfgDefault**, **agtCfgSet**, **agtCfgShow**, **snmpMibCapSet**, **snmpMibCapShow**

SW_v5_x.mib, "Switch Management Information & Switch Enterprise Specific Trap"

RFC1157, "A Simple Network Management Protocol (SNMPv1)"

RFC1213, "Management information Base for Network Management of TCP/IP-based internets: MIB-II"

RFC2574, "User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3)"

snmpMibCapSet

Modifies options for configuring SNMP MIB trap capability.

Synopsis   **snmpmibcapset**

Availability   admin, switchAdmin

Description   This command enables a user to turn on or off certain MIBs and traps. This command also enables a user to turn on or off group information and SSN in SW trap messages. It first displays current settings and then prompts the user to change the values for each parameter.

FA-MIB	Specifying yes means the user can access FA-MIB variables with an SNMP manager. The default value is yes.
HA-MIB	Specifying yes means the user can access Entity-MIB and HA-MIB variables with an SNMP manager. The default value is yes.
SW-TRAP	Specifying yes means the SNMP management application can receive SW-TRAPS from the switch. The default value is yes.
FA-TRAP	Specifying yes means the SNMP management application can receive FA-TRAPS from the switch. The default value is yes.
SW-EXTTRAP	Specifying yes means the SNMP management application can receive SW-EXTTRAPS from the switch. The default value is yes.
HA-TRAP	Specifying yes means the SNMP management application can receive HA-TRAPS from the switch. The default value is yes.

Note

Traps in pre-Fabric OS v4.4.x code were turned on and off as a group (such as SW-TRAP and FA-TRAP); it was not possible to set individual traps (such as swSensorStatusChangeTrap, swTrackChangesTrap, or connUnitEventTrap). You can now individually turn traps on and off, which means that individual traps need to be turned on explicitly after the corresponding trap group is turned on. Because pre-v4.4.x software has only trap group settings, after upgrading to v4.4.x or later, individual traps are turned off by default even if the corresponding trap group is turned on before upgrading. If you have been previously monitoring these traps, use either **snmpMibCapSet** or **snmpConfig** to turn on the desired traps individually. See the *Fabric OS MIB Reference Manual* for more information.

Operands   none

Examples To view or modify the options for configuring SNMP MIB traps:

```
switch:admin> snmpmibcapset
  The SNMP Mib/Trap Capability has been set to support
  FE-MIB
  SW-MIB
  FA-MIB
  FICON-MIB
  HA-MIB
  SW-TRAP
     swFCPortScn
     swFabricWatchTrap
  FA-TRAP
     connUnitStatusChange
     connUnitSensorStatusChange
  HA-TRAP
     fruStatusChanged
     cpStatusChanged
  FA-MIB (yes, y, no, n): [yes]
  FICON-MIB (yes, y, no, n): [yes] n
  HA-MIB (yes, y, no, n): [yes]
  SW-TRAP (yes, y, no, n): [yes]
     swFCPortScn (yes, y, no, n): [yes]
     swEventTrap (yes, y, no, n): [no]
     swFabricWatchTrap (yes, y, no, n): [yes]
     swTrackChangesTrap (yes, y, no, n): [no] y
  FA-TRAP (yes, y, no, n): [yes] n
  SW-EXTTRAP (yes, y, no, n): [no]
  HA-TRAP (yes, y, no, n): [yes]
     fruStatusChanged (yes, y, no, n): [yes]
     cpStatusChanged (yes, y, no, n): [yes]
     fruHistoryTrap (yes, y, no, n): [no]
```

See Also **agtCfgDefault**, **agtCfgSet**, **agtCfgShow**

snmpMibCapShow

Displays options for configuring SNMP MIB trap capability.

Synopsis   **snmpmibcapshow**

Availability   admin, switchAdmin, user

Description   Use this command to display the SNMP MIBs and traps capability of the SNMP agent in the switch.

FA-MIB	Specifying yes means the user can access FA-MIB variables with an SNMP manager. The default value is yes.
FICON-MIB	Specifying yes means the user can access FICON-MIB variables with an SNMP manager. The default value is yes.
HA-MIB	Specifying yes means the user can access Entity-MIB and HA-MIB variables with an SNMP manager. The default value is yes.
SW-TRAP	Specifying yes means the SNMP management application can receive SW-TRAPS from the switch. The default value is yes. Users can also turn on or off individual SW Traps. The individual SW traps are swFCPortScn, swEventTrap, swFabricWatchTrap and swTrackChangesTrap.
FA-TRAP	Specifying yes means the SNMP management application can receive FA-TRAPS from the switch. The default value is yes. Users can also turn on or off individual FA Traps. The individual FA Traps are connUnitStatusChange, connUnitEventTrap, connUnitSensorStatusChange and connUnitPortStatusChange.
SW-EXTTRAP	Specifying yes means user can receive SSN in the SW traps. The default value is 'no'.
FICON-TRAP	Specifying yes means the SNMP management application can receive FICON traps from the switch. The default value is 'yes'. Users can also turn on or off individual FICON Traps. The individual FICON Traps are linkRNIDDeviceRegistration, linkRNIDDeviceDeRegistration, linkLIRRListenerAdded, linkLIRRListenerRemoved and linkRLIRFailureIncident.
HA-TRAP	Specifying yes means the SNMP management application can receive HA traps from the switch. The default value is 'yes'. Users can also turn on or off individual HA Traps. The individual HA Traps are fruStatusChanged, cpStatusChanged, and fruHistoryTrap.

> **Note**
>
> **agtCfgDefault** also resets the SNMP MIB and trap capability to default along with other SNMP agent configuration.
>
> The values can be changed, if user download the configuration data through **configDownload** command.
>
> All the new values successfully configured by **snmpMibCapSet** command takes effect immediately.
>
> If SNMP MIB is disabled, then the corresponding traps are disabled. If any trap group is disabled then the corresponding individual traps also are disabled.
>
> The FE and SW MIBs always are accessible. **snmpMibCapSet** does not prompt the user to turn on or off these MIBs.

Operands   none

Examples   To display the options for configuring the SNMP MIB capability:

```
switch:admin> snmpmibcapshow
  FE-MIB: YES
  SW-MIB: YES
  FA-MIB: YES
  FICON-MIB: NO
  HA-MIB: YES
  SW-TRAP: YES
     swFCPortScn: YES
     swEventTrap: NO
     swFabricWatchTrap: YES
     swTrackChangesTrap: YES
  FA-TRAP: NO
  SW-EXTTRAP: NO
  HA-TRAP: YES
     fruStatusChanged: YES
     cpStatusChanged: YES
     fruHistoryTrap: NO
```

See Also   **agtCfgDefault**, **agtCfgSet**, **agtCfgShow**, **snmpConfig**

spinFab

Runs functional test of switch-to-switch ISL cabling and trunk group operation.

Synopsis   **spinfab** [**-nmegs** *count*][**-ports** *itemlist*][**-setfail** *mode*]

Availability   admin

Description   Use this command to verify the intended functional operation of the ISL links between switches. At the maximum speed of 4 Gbit/sec, set the routing hardware such that test frames received by each E_Port retransmit on the same E_Port. Next, send several frames to the neighbor port attached to each active E_Port specified. The default action for such frames is to route them back to the sender, which never occurs for normal traffic. The frames circulate until the test stops them.

The frames are continuously transmitted and received in all ports in parallel. The port LEDs flicker green rapidly while the test is running. While the frames are circulating, the RX frame count and port CRC and encoder error statistics are monitored and errors will be generated if a port stops or a low-level error occurs. Every one million frames, the circulating frames are captured to verify that they are still circulating and that they are still in-order. In this manner, the entire path to the remote switch might be verified, as can be the proper in-order delivery operation of any trunk groups present.

The switch remains in normal operation while this test is running; however, some performance degradation occurs due to the ISL links being saturated with test frames. Because of this, you should use caution when running this test on live fabrics. Consider only testing one trunk group or ISL link at a time, and do not run the tests for extended periods of time.

This test is best combined with the online **crossPortTest** for ISL link-failure isolation. If this test fails, replace the cable with a loop-back plug and run **crossPortTest** to verify the local switch and media. If these pass, the fault lies in the cable or remote switch and media.

The frames are continuously transmitted and received in all ports in parallel. The port LEDs flicker green rapidly while the test is running.

Note

When trunk groups are present, the entire trunk group must be included in the range of ports to test or false failures can 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.

Operands   This command has the following operands:

-nmegs *count*   Specify in millions 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 10 million frames. This command only approximately counts the frames and the actual number of frames sent will be slightly larger, particularly at 2 Gbit/sec link speeds.

-ports *itemlist*   Specify a list of user ports to test. By default, all of the ISL ports in the current switch will be tested. Refer to **itemList** help pages for further details.

-setfail *mode*   Instruct **spinFab** how to mark failed ports. If set to 1, it will mark failing ports as FAILED. If set to 0, it will not mark failed ports as FAILED. It is to minimize the impact on live fabrics. This test normally logs errors but does not set the port status to FAILED. This parameter is provided to force the failing ports to be marked as FAILED in the same manner as other diagnostics. In test or qualification

environments without live traffic, this might be useful with large values of -nmegs count. This mode is disabled by default.

Examples   To test cascading ISL links:

```
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.
```

Diagnostics   When it detects failure(s), the test might report one or more of the following error messages:

```
DATA
ERR_STAT
ERR_STATS
ERR_STATS_2LONG
ERR_STATS_BADEOF
ERR_STATS_BADOS
ERR_STATS_C3DISC
ERR_STATS_CRC
ERR_STATS_ENCIN
ERR_STATS_ENCOUT
ERR_STATS_TRUNC
ERR_STAT_2LONG
ERR_STAT_BADEOF
ERR_STAT_BADOS
ERR_STAT_C3DISC
ERR_STAT_CRC
ERR_STAT_ENCIN
ERR_STAT_ENCOUT
ERR_STAT_TRUNC
FINISH_MSG_ERR
INIT
MBUF_STATE_ERR
NO_SEGMENT
PORT_ABSENT
PORT_DIED
PORT_ENABLE
PORT_M2M
PORT_STOPPED
PORT_WRONG
RXQ_RAM_PERR
STATS
STATS_C3FRX
STATS_FRX
STATS_FTX
TIMEOUT
XMIT
```

Refer to the *Fabric OS System Error Message Reference Manual* for more information.

See Also   **camTest**, **centralMemoryTest**, **cmemRetentionTest**, **cmiTest**, **crossPortTest**, **itemList**, **portLoopbackTest**, **spinSilk**, **sramRetentionTest**

spinJitter

Measures line-speed jitter.

Synopsis   **spinjitter** [**--slot** *number*][**-nmegs** *count*][**-lb_mode** *mode*][**-spd_mode** *mode*][**-ports** *itemlist*]

Availability   admin

Description   This test uses the same procedures as spinsilk but with a special pattern for line-speed jitter measurement. The test uses the following pattern:

```
jCRPAT   be d7 23 47 6b 8f b3 14 5e fb 35 59 be d7 23 47
```

For details about the procedures used in this test, refer to **spinSilk**.

Note

The command is supported only on SilkWorm 200E, 3014, 3016, 3250, 3850, 3900, 4012, 4100, 24000, and 48000 platforms; use **portLoopbackTest** or **miniCycle** instead.

Operands   The following are optional:

--slot *number*   Specifies the slot number on which the diagnostic operates. The ports specified are relative to this slot number. The default is set to 0 and designed to operate on fixed-port-count products.

-nmegs *count*   Specifies the number of frames to send in millions. The test progresses until the specified number of frames transmits on each port. The default value is 10, which represents 10 million frames.

-lb_mode *mode*   Selects the loopback point for the test. By default, **spinJitter** uses port loopback.

   1   Port loopback (loopback plugs)

   2   External (SERDES) loopback

   3   Silkscreen loopback

   5   Internal (parallel) loopback

-spd_mode *mode*   Specifies the speed mode for the test. This parameter is used for Bloom and Condor ASIC-based products only, for which it controls the speed at which each port operates. For 1G-only products, this parameter is ignored. The exact operation of modes 5 through 8 depends on the loopback mode selected. When speed modes 5 through 8 are used with cables, they must be connected EVEN->ODD or the test fails.

   0   Run test at 1 Gbit/sec, 2 Gbit/sec, and 4 Gbit/sec.

   1   Run test at 1 Gbit/sec.

   2   Run test at 2 Gbit/sec (Bloom default).

   4   Run test at 4 Gbit/sec (Condor default).

   For **-lb_mode** set to 0 or 1, the following speed modes are available to test the speed negotiation.

   3   Set all even ports' speed for autonegotiate. Set all odd ports' speed for 1 Gbit/sec.

4	Set all even ports' speed for autonegotiate. Set all odd ports' speed for 2 Gbit/sec.
5	Set all odd ports' speed for autonegotiate. Set all even ports' speed for 1 Gbit/sec.
6	Set all odd ports' speed for autonegotiate. Set all even ports' speed for 2 Gbit/sec.

For **-lb_mode** set to 2 or 3, the following speed modes are available to test FIFO underrun.

3,5	Set all even ports' speed for 2 Gbit/sec. Set all odd ports' speed for 1 Gbit/sec.
4,6	Set all even ports' speed for 1 Gbit/sec. Set all odd ports' speed for 2 Gbit/sec.

-ports *itemlist*   Specifies a list of user ports to test. By default, all the user ports in the specified slot (**--slot**) will be used. Refer to **itemList** for further details.

Examples   To measure line-speed jitter:

```
switch:admin> spinjitter -ports 1/0 - 1/2
Running SpinJitter .............
One moment please ...Ports Segmented (0)
switchName:     SW12000A
switchType:     10.1
switchState:    Offline
switchRole:     Disabled
switchDomain:   1 (unconfirmed)
switchId:       fffc01
switchWwn:      10:00:00:60:69:80:03:0c
switchBeacon:   OFF
blade1: Beacon: OFF
blade2: Beacon: OFF
blade3: Beacon: OFF
blade4: Beacon: OFF

Area Slot Port Gbic Speed State
====================================
  0    1    0   id   2G   Online    Testing  ......
  1    1    1   id   2G   Online    Testing  ......
  2    1    2   id   2G   Online    Testing  ......
(output truncated)
```

Diagnostics   When it detects failure(s), the test might report one or more of the following error messages:

```
DATA
EPI1_STATUS_ERR
ERR_STAT
ERR_STATS
ERR_STATS_2LONG
ERR_STATS_BADEOF
ERR_STATS_BADOS
ERR_STATS_C3DISC
ERR_STATS_CRC
ERR_STATS_ENCIN
ERR_STATS_ENCOUT
ERR_STATS_TRUNC
ERR_STAT_2LONG
```

Note: Enter commands in lowercase only; mixed case is for readability.

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```
ERR_STAT_BADEOF
ERR_STAT_BADOS
ERR_STAT_C3DISC
ERR_STAT_CRC
ERR_STAT_ENCIN
ERR_STAT_ENCOUT
ERR_STAT_TRUNC
FDET_PERR
FINISH_MSG_ERR
FTPRT_STATUS_ERR
INIT
LESSN_STATUS_ERR
MBUF_STATE_ERR
MBUF_STATUS_ERR
NO_SEGMENT
PORT_ABSENT
PORT_DIED
PORT_ENABLE
PORT_M2M
PORT_STOPPED
PORT_WRONG
RXQ_FRAME_ERR
RXQ_RAM_PERR
STATS
STATS_C3FRX
STATS_FRX
STATS_FTX
TIMEOUT
XMIT
```

Refer to the *Fabric OS System Error Message Reference Manual* for more information.

See Also   **backport**, **camTest**, **centralMemoryTest**, **cmemRetentionTest**, **cmiTest**, **crossPortTest**, **itemList**, **portLoopbackTest**, **portRegTest**, **spinSilk**, **sramRetentionTest**

spinSilk

Performs a functional test of internal and external transmit and receive paths.

Synopsis spinsilk [**-nmegs** *count*][**-lb_mode** *mode*][**-spd_mode** *mode*][**-verbose** *mode*][**-ports** *itemlist*]

Availability admin

Description Use this command to verify the intended functional operation of the switch, at the selected speed, by configuring the routing hardware so that frames received by port M are retransmitted by way of port N. Likewise, frames received by port N are retransmitted by way of port M. Each port M sends one frame to its partner port N.

The partner port N for each port M is determined by the external Fibre Channel cable connections, if present. If self-loopback plugs are used, the system assigns a set of partner ports to optimize test coverage. In this case, it is possible for each port to have up to 10 partner ports rather than a single partner selected by the cables.

The cables can connect to any port combination with the condition that the cables and media connected are of the same technology; for instance, a short wavelength media port connects to another short wavelength media port by way of a short wavelength cable, a long wavelength port connects to a long wavelength port, and a copper port connects to a copper port.

For the best coverage, use self-loopback plugs, as each port exchanges frames with up to 10 other predetermined ports. Frames are exchanged with a selected port from the ASIC (0-0, 0-1, 0-2, 0-3, and so forth), mirrored the port on next ASIC (0-4, 0-8, and so forth), and mirrored the port on next blade, where applicable (0-16, 0-32, and so forth). An error is reported if there are missing plugs.

If you want to use cables instead, the ports connected should be from different ASICs. Ports 0 through 3 belong to ASIC 0, ports 4 through 7 belong to ASIC 1, and so forth. A connection from port 0 to port 15 exercises the transmit path between ASICs. A connection from port 0 to port 3 tests only the internal transmit path in ASIC 0.

Note

If loopback modes 0 (cable) or 1 (loopback plug, default) are selected, you must have the appropriate termination on all tested ports. If not, the ports without the correct termination do not achieve synchronization and the test fails.

The command is supported only on SilkWorm 200E, 3014, 3016, 3250, 3850, 3900, 4012, 4100, 24000, and 48000 platforms.

The frames are transmitted and received continuously in all ports in parallel. The port LEDs flicker green rapidly while the test is running.

The test method is as follows:

1. Determine which ports are connected to each other.

2. Enable ports for cabled or self-loopback mode.

3. Configure the routing table such that when port M receives frames, they are routed back to the partner port N, and vice versa.

4. Transmit one frame through port M. The frame used is one of the following:

    • 2112 bytes of BYTE_LFSR

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spinSilk

Note: Enter commands in lowercase only; mixed case is for readability.

- 1000 bytes of CSPAT

- 128 bytes of RANDOM

- 512 bytes of RDRAM_PAT

The partner port N eventually sends four similar frames, as follows:

- 2112 bytes of BYTE_LFSR

- 928 bytes of CSPAT

- 200 bytes of RANDOM

- 480 bytes of RDRAM_PAT

5. Periodically check the following:

  a. No port has died.

  b. Each port's frames-transmitted counter is still incrementing.

  c. Each port's statistic error counters is nonzero—ENC_in, CRC_err, TruncFrm, FrmTooLong, BadEOF, Enc_out, BadOrdSet, DiscC3—until one of the following is met:

    - The number of million frames requested per port is met.

    - All ports are eventually marked bad.

    - You send a keyboard (or button) interrupt to abort.

The data is not read and checked, as with the **portLoopbackTest** and **crossPortTest** commands. There is no CPU intervention besides the periodic checks of the hardware counters.

An example of the data used is as follows:

```
CSPAT:      0x7e, 0x7e, 0x7e, 0x7e, ...
BYTE_LFSR:  0x69, 0x01, 0x02, 0x05, ...
RANDOM:     0x25, 0x7f, 0x6e, 0x9a, ...
RDRAM_PAT:  0xff, 0x00, 0xff, 0x00, ...
```

Because this test includes the media and the fiber cable in its test path, its results, combined with the results of **portLoopbackTest** and **spinSilk**, can be used to determine which components of the switch are faulty.

Operands   This command has the following operands:

-nmegs *count*   Specify the number of million frames to send. The test will progress until the specified number of frames has been transmitted on each port. The test result might display that more frames have been transmitted on some ports, but not less. The default value is 10, so the number of frames sent will be at least 10 million.

-lb_mode *mode*   Specify the loopback point for the test. By default, **spinSilk** uses loopback plugs as described earlier; however, for debugging purposes, you can select other loopback modes, as follows:

1   Port loopback (loopback plugs)

2   External (SERDES) loopback

3   Silkscreen loopback

5   Internal (parallel) loopback

-spd_mode *mode*   Specify the speed mode for the test. This parameter is used only for Bloom and Condor ASIC-based products, where it controls the speed at which each port is operated. For 1 Gbit/sec-only products, it is ignored. The exact operation of modes 5 through 8 depends upon the loopback mode selected. When speed modes 5 through 8 are used with cables, they must be connected EVEN to ODD or the test will fail.

0   Run test at 1 Gbit/sec, 2 Gbit/sec, and 4 Gbit/sec.

1   Run test at 1 Gbit/sec.

2   Run test at 2 Gbit/sec (Bloom default).

4   Run test at 4 Gbit/sec (Condor default).

For **-lb_mode** set to 1, the following speed modes are available to test the speed negotiation:

5   Set all even ports' speed to 1 Gbit/sec; set all odd ports' speed to auto negotiate.

6   Set all even ports' speed to 2 Gbit/sec; set all odd ports' speed to auto negotiate.

7   Set all even ports' speed to auto negotiate; set all odd ports' speed to 1 Gbit/sec.

8   Set all even ports' speed to auto negotiate; set all odd ports' speed to 2 Gbit/sec.

For **-lb_mode** set to 2 or 3, the following speed modes are available to test FIFO underrun:

7,5   Set all even ports' speed to 2 Gbit/sec; set all odd ports' speed to 1 Gbit/sec.

8,6   Set all even ports' speed to 1 Gbit/sec; set all odd ports' speed to 2 Gbit/sec.

-verbose *mode*   Specify a nonzero value to display more detailed information during the test. This mode should be used for debugging purposes. This operand is optional.

-ports *itemlist*   Specify a list of user ports to test. By default, all of the user ports in the current switch are tested. Refer to **itemList** for further details.

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Examples   To perform a functional test on selected ports:

```
switch:admin> spinsilk -ports 1/0 - 1/2
Running Spin Silk .............
One moment please ...Ports Segmented (0)
switchName:     switch
switchType:     10.1
switchState:    Offline
switchRole:     Disabled
switchDomain:   1 (unconfirmed)
switchId:       fffc01
switchWwn:      10:00:00:60:69:80:03:0c
switchBeacon:   OFF
blade1: Beacon: OFF
blade2: Beacon: OFF
blade3: Beacon: OFF
blade4: Beacon: OFF

Area Slot Port Gbic Speed State
===================================
  0    1    0   id   2G   Online    Testing  ......
  1    1    1   id   2G   Online    Testing  ......
  2    1    2   id   2G   Online    Testing  ......
(output truncated)
```

Diagnostics   Following are the possible error messages if failures are detected:

```
DATA
EPI1_STATUS_ERR
ERR_STAT
ERR_STATS
ERR_STATS_2LONG
ERR_STATS_BADEOF
ERR_STATS_BADOS
ERR_STATS_C3DISC
ERR_STATS_CRC
ERR_STATS_ENCIN
ERR_STATS_ENCOUT
ERR_STATS_TRUNC
ERR_STAT_2LONG
ERR_STAT_BADEOF
ERR_STAT_BADOS
ERR_STAT_C3DISC
ERR_STAT_CRC
ERR_STAT_ENCIN
ERR_STAT_ENCOUT
ERR_STAT_TRUNC
FDET_PERR
FINISH_MSG_ERR
FTPRT_STATUS_ERR
INIT
LESSN_STATUS_ERR
MBUF_STATE_ERR
MBUF_STATUS_ERRBAR>
NO_SEGMENT
PORT_ABSENT
PORT_DIED
PORT_ENABLE
PORT_M2M
PORT_STOPPED
PORT_WRONG
RXQ_FRAME_ERR
```

Note: Enter commands in lowercase only; mixed case is for readability.

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```
RXQ_RAM_PERR
STATS
STATS_C3FRX
STATS_FRX
STATS_FTX
TIMEOUT
XMIT
```

Refer to the *Fabric OS System Error Message Reference Manual* for more information.

See Also   **backport**, **camTest**, **centralMemoryTest**, **cmemRetentionTest**, **cmiTest**, **crossPortTest**, **itemList**, **portLoopbackTest**, **portRegTest**, **spinJitter**, **sramRetentionTest**

sramRetentionTest

Performs a data retention test of the miscellaneous SRAMs in ASIC.

Synopsis **sramretentiontest** [**--slot** *slotnumber*][**-passcnt** *count*][**-ports** *itemlist*][**-skip** *bitmask*][**-delay** *value*]

Availability admin

Description Use this command to verify that data written into the miscellaneous SRAMs in the ASIC are retained after a 10-second wait. The method used is to write a fill pattern to all SRAMs, wait 10 seconds, and then read all SRAMs, checking that the data read matches the data previously written. The test is repeated using the inverted version of the pattern.

For details about the patterns used in diagnostic tests, refer to the **dataTypeShow** command.

Note

The **sramRetentionTest** command cannot be executed on an operational switch. You must first disable the switch using the **switchDisable** command.

The command is supported only on SilkWorm 200E, 3014, 3016, 3250, 3850, 3900, 4012, 4100, 24000, and 48000 platforms; use **turboRamTest** instead.

Operands This command has the following operand:

--slot *slotnumber* Specify the number of the slot on which the diagnostic operates. The ports specified are relative to this slot number. The default is set to 0 and designed to operate on fixed-port-count products.

-passcnt *count* Specify the number of times to execute this test. The default value is 1.

-ports *itemlist* Specify a list of blade ports to test. By default, all the blade ports in the specified slot are used. Refer to **itemList** for more details.

-skip *bitmask* Specify patterns to omit in the test. Using this option, you can intentionally omit one or more patterns if needed. This command uses the following data patterns:

0x01 Skip BISR/BIST test

0x02 Skip central memory WR/RD by way of the embedded port test

0x04 Skip central memory WR/RD by way of the special memory interface test

0x08 Skip ASIC interconnect test

0x10 Skip parity error detection test

0x20 Skip loom-only buffer number error detection test

0x40 Skip loom-only chip number error detection test

0x80 Skip data retention test

-delay *value* Specify the delay between the read and write, in seconds. The default value is 10 seconds.

Examples   To run a data retention test:

```
switch:admin> sramretentiontest 2
Running SRAM Retention Test ... passed.
```

Diagnostics   Following are the possible error messages if failures are detected:

```
BUS_TIMEOUT
REGERR
REGERR_UNRST
```

Refer to the *Fabric OS System Error Message Reference Manual* for more information.

See Also   **camTest**, **centralMemoryTest**, **cmemRetentionTest**, **cmiTest**, **dataTypeShow**, **itemList**, **portLoopbackTest**, **spinSilk**

statsClear

Clears port and diagnostic statistics.

Synopsis   **statsclear** [**--slot** *slotnumber*][**-uports** *itemlist*][**-bports** *itemlist*][**-use_bports** *value*]

Availability   admin

Description   Use this command to clear the port and diagnostics statistics for the specified list of blade or user ports.

Note

You can issue this command on the FR4-18i blade in a SilkWorm chassis; however, the command is not supported by the SilkWorm platform and does not effect any other feature operations. This availability is offered to maintain consistency across a mixed-blade environment.

Operands   The following are optional:

--slot *slotnumber*	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 to clear.
-bports *itemlist*	Specifies the list of blade ports to clear.
-use_bports *value*	If value is nonzero, then the diagnostics statistics for the blade ports specified in -bports clears; otherwise, the user ports specified in **-uports** clears. 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**

statsTest

Runs a statistics counter diagnostic test.

Synopsis   **statstest** [**-passcnt** *count*][**-ports** *itemlist*]

Availability   admin

Description   Use this command to verify the ASIC statistics counter logic. It can run on every base port of the quadrant and send the frame through internal loopback with no CRC data to induce the CRC error. This command is also run from **camTest**.

This test covers the following statistics counter functionality:

- The number of received frames with CRC errors that matched the SID-DID pair specified in the LINK table. There are 16 of these statistics counters (0-15).

- The number of received words in frames that matched the SID-DID pair specified in the LINK table. There are 16 of these statistics counters (0-15).

- The number of transmitted words in frames that matched the SID-DID pair specified in the LINK table. There are 16 of these statistics counters (0-15).

- The number of frames with CRC error that matched the corresponding ALI (0-127), respectively.

This command cannot be executed on an operational switch. You must first disable the switch using the **switchDisable** command.

 Note

There is a link table that stores 16 pairs of SID-DID address. Each of the SID-DID pairs is named a link. This table is used for gathering statistics that match the link.

This command is supported only on SilkWorm 3014, 3016, 3250, 3850, 3900, 4012, and 24000 platforms; use **miniCycle** or **portLoopbackTest** instead.

Operands   This command has the following operands:

-passcnt *count*   Specify the number of times to perform this test. The default value is 1. This operand is optional.

-ports *itemlist*   Specify a list of user ports to run the test. If omitted, all the user ports in the switch are assumed. Refer to **itemList** for more information about selecting ports. This operand is optional.

Examples   To run a statistics counter test on a switch:

```
switch:admin> statstest -passcnt 1 -ports 1/0-15
Running Statistics Counter Test ....... passed.
```

Note: Enter commands in lowercase only; mixed case is for readability.

Diagnostics   When it detects failures, the subtest reports one or more of the following error messages:

```
DIAG-STSINIT
DIAG-STSNULL
DIAG-STSSID
DIAG-STSXMIT
DIAG-STSRCV
DIAG-STSFRMCNT
DIAG-STSWRDCNT
DIAG-STSALPACNT
```

Refer to the *Fabric OS System Error Message Reference Manual* for more information.

See Also   camTest, itemList

stopPortTest

Terminates the running **portTest**.

Synopsis   **stopporttest** [**-ports** *itemlist*]

Availability   admin

Description   Use this command to stop the currently running **portTest**. Refer to the **portTest** command for more information.

If **portTest** is running on a non-singlemode, use **stopPortTest** to stop the test.

Operands   This command has the following operand:

-ports *itemlist*   Specify a list of user ports to test. By default, all the user ports in the switch are tested. Refer to **itemList** help pages for further details.

Examples   To stop the **portTest** command:

```
switch:admin> stopporttest
```

See Also   **crossPortTest**, **fportTest**, **loopPortTest**, **portLoopbackTest**, **portTest**, **portTestShow**, **spinFab**

supportFfdc

Modifies or displays first-fault data capture (FFDC) daemon.

Synopsis   **supportffdc** [**--disable** | **--enable** | **--show**]

Availability   admin

Description   Use this command to disable or enable the FFDC events, or 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.

Operands   This command has the following operands:

--disable   Disables the FFDC.

--enable   Enables the FFDC.

--show   Displays the FFDC configuration parameters.

Without operands, the command syntax is displayed.

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, or a time interval to check the FTP server.

Synopsis   **supportftp** [**-S**]

supportftp -s [**-h** *hostip*][**-u** *username*][**-p** *password*][**-d** *remotedirectory*]

supportftp -t *hours*

supportftp -R

Availability   admin, switchAdmin

Description   Use this command to set, clear, or display support FTP parameters, or a time interval to check the FTP server.

Note

If there is no parameter specified, this command defaults to **supportFtp** -S.

Operands   This command has the following mutually exclusive operands:

-S   Displays FTP parameters.

-s   Sets FTP parameters. **-s** has the following optional operands:

    -h *hostip*
        Specifies FTP host IP address. It must be an IP address. *hostip* should be less than 48 characters.

    -u *username*
        Specifies FTP user name. *username* should be less than 48 characters.

    -p *password*
        Specifies FTP user password. If the user name is anonymous, the password is not needed. *password* should be less than 48 characters.

    -d *remotedirectory*
        Specifies remote directory to store trace dump files. **supportFtp** cannot take a slash (/) as a directory name. *remotedirectory* should be less than 48 characters.

-t   Sets time interval to check FTP server. **-t** has the following required operands:

hours   Checks the connectivity of FTP server at the indicated time interval (in hours).

-R   Clears FTP parameters.

Examples   To set the FTP parameters:

```
switch:admin> supportftp -s -h 192.168.67.126 -u anonymous -d tracedump
supportftp: ftp parameters changed.
```

To display a time interval to check the FTP server:

```
switch:admin> supportftp -t 24
supportftp: ftp check period changed.
```

See Also   **supportSave**, **supportShow**, **traceDump**, **traceFtp**, **traceTrig**

supportSave

Saves support information for RASLOG, TRACE, and **supportShow**.

Synopsis   **supportsave** [**-n**][**-c**][**-u** *user_name* **-p** *password*] **-h** *host_ip* **-d** *remote_dir* [**-R**]

Availability   admin, switchAdmin

Description   Use this command to save RASLOG, TRACE, and **supportShow**, core file, FFDC data, and other support information to a remote FTP location. On a dual-CP system, only the local CP information is saved and **supportShow** information is not available on the active CP. If no operands are specified, this command enters interactive mode. To reduce the chance of missing the correct trace dump, **supportSave** retrieves both old (the existing dump before the command) and new (the dump triggered by the command) trace dumps. The following output files are generated:

RASLOG	*chassisname-slot-YYYYMMDDHHMM-errDumpAll.ss*
Trace dumps	*chassisname-slot-YYYYMMDDHHMM-tracedump.dmp*
supportShow **-all**	*chassisname-slot-YYYYMMDDHHMM-supportShow*
Zone log	*chassisname-slot-YYYYMMDDHHMM-zone.ss*
RCS command log	*chassisname-slot-YYYYMMDDHHMM-rcscmd.ss*
NS event log	*chassisname-slot-YYYYMMDDHHMM-ns.ss*
FSPF log	*chassisname-slot-YYYYMMDDHHMM-fspfstateshow.ss*
FFDC	*ras-msgid-YYYYMMDDHHMM.ffdc*

All core files and panic dumps are saved in the specified remote directory
chassisname-slot-YYYYMMDDHHMM-core

The core files and panic dumps remain on the switch after the command is issued. The FFDC data is removed after the command is issued. If there are BP blades installed on the switch, it also retrieves a support file (as a *.tar.gz* file) from each slot.

Operands   The operands are as follows:

-n   Does not prompt you for confirmation. This operand is optional; if omitted, you are prompted for confirmation.

-c   Uses the FTP parameters saved by the command **supportFtp**. This operand is optional; if omitted, specify the FTP parameters through command line options or interactively. To display the current FTP parameters, run **supportFtp** (on a dual-CP system, run **supportFtp** on the active CP).

> **Note**
> The **-c** operand is mutually exclusive with **-u**, **-p**, **-h**, and **-d**.

-u *user_name*   Specifies the user name for the FTP server. This operand is optional; if omitted, anonymous FTP is used.

-p *password*   Specifies the password for the FTP server. This operand is optional; if omitted, anonymous FTP is used.

-h *host_ip*   Specifies the IP address for the FTP server.

-d *remote_dir*   Specifies the remote directory for the FTP server.

-R   Removes all core files on the CP and BP. It is exclusive with all other options.

Examples   To save RASLOG, TRACE, **supportShow**, and other support information to a FTP server in non-
interactive mode:

```
switch:admin> supportsave -n -u admin -p pass -h 192.168.1.1 -d tmp
Saving support information for switch:routing1, module:RASLOG...
...Save_files/routing1-S6-200508280151-RASLOG.ss:   28.00 B     9.35 B/s

Saving support information for switch:routing1, module:TRACE_OLD...
..._files/routing1-S6-200508280151-old-tracedump.dmp:   12.00 MB    1.92 MB/s

Saving support information for switch:routing1, module:TRACE_NEW...
..._files/routing1-S6-200508280151-new-tracedump.dmp:   12.00 MB    1.91 MB/s

Saving support information for switch:routing1, module:SUPPORTSHOW...
..........................................
..........................................
.............................
...rtSave_files/routing1-S6-200508280159-SUPPORTSHOW:    6.36 MB    1.35 MB/s

Saving support information for switch:routing1, module:Zone_Log...
...upportSave_files/routing1-S6-200508280207-ZOne_Log.ss:   27.71 kB    9.23 kB/s

Saving support information for switch:swd76, module:Zone_Log...
/tmp/supportSave_files/swd76-S6-200508280207-Zone_Log.ss:   48.16 kB   16.02 kB/s

Saving support information for switch:routing1, module:RCS_Log...
...portSave_files/routing1-S6-200508280207-rcscmd.ss:    4.65 kB    1.55 kB/s

Saving support information for switch:swd76, module:RCS_Log...
...supportSave_files/swd76-S6-200508280208-RCS_Log.ss:    9.05 kB    3.02 kB/s

Saving support information for switch:routing1, module:NS_evlog...
.../supportSave_files/routing1-S6-200508280208-NS_evlog.ss:    1.62 kB  551.19 B/s

Saving support information for switch:swd76, module:NS_evlog...
/tmp/supportSave_files/swd76-S6-200508280208-NS_evlog.ss:    2.72 kB  928.95 B/s

Saving support information for switch:routing1, module:FSPF_Log...
...e_files/routing1-S6-200508280208-FSPF_Log.ss:    2.04 kB  694.31 B/s

Saving support information for switch:routing1, module:CORE_FFDC...
No core or FFDC data files found!

Saving support information for switch:routing1, module:CHKCONFIG...
...e_files/routing1-S6-200508280208-CHKCONFIG.ss:    1.04 kB  694.31 B/s

Saving support information for switch:routing1, module:CONSOLE...
...e_files/routing1-S6-200508280208-CONSOLE:    64 kB  694.31 B/s

Saving support information for switch:routing1, module:CHKRPM...
...e_files/routing1-S6-200508280208-CHKRPM.ss:    10.04 kB  694.31 B/s

Saving support information for switch:routing1, module:DIAGLOG...
...rtSave_files/routing1-S6-200508280207-DIAGLOG.ss:   195.34 kB    64.62 kB/s
(output truncated)
```

To save RASLOG, TRACE, and **supportShow** , core file, FFDC data, and other information to a FTP server in interactive mode on a dual-CP system:

```
switch:admin> supportsave

This command will collect RASLOG, TRACE, supportShow, core file, FFDC data and
other support information and then transfer them to a FTP server. Only
the local CP's and BPs' information will be saved and supportShow information
is only available on the Active CP. This operation can take several
minutes.
NOTE: supportSave will transfer existing trace dump file first, then
automatically generate and transfer latest one. There will be two trace
dump files transfered after this command.
OK to proceed? (yes, y, no, n): [no]

Host IP: 192.168.1.1

User Name: admin

Password: *****

Remote Directory: tmp

Saving support information for switch:routing1, module:RASLOG...
...Save_files/routing1-S6-200508280151-RASLOG.ss:   28.00 B     9.35 B/s

Saving support information for switch:routing1, module:TRACE_OLD...
..._files/routing1-S6-200508280151-old-tracedump.dmp:   12.00 MB    1.92 MB/s

Saving support information for switch:routing1, module:TRACE_NEW...
..._files/routing1-S6-200508280151-new-tracedump.dmp:   12.00 MB    1.91 MB/s

Saving support information for switch:routing1, module:SUPPORTSHOW...
.........................................
.........................................
...............................
...rtSave_files/routing1-S6-200508280159-supportShow:    6.36 MB    1.35 MB/s

Saving support information for switch:routing1, module:Zone_Log...
...upportSave_files/routing1-S6-200508280207-Zone_Log.ss:   27.71 kB    9.23 kB/s

Saving support information for switch:swd76, module:Zone_Log...
/tmp/supportSave_files/swd76-S6-200508280207-Zone_Log.ss:   48.16 kB   16.02 kB/s

Saving support information for switch:routing1, module:RCS_Log...
...portSave_files/routing1-S6-200508280207-RCS_Log.ss:    4.65 kB    1.55 kB/s

Saving support information for switch:swd76, module:RCS_Log...
...supportSave_files/swd76-S6-200508280208-RCS_Log.ss:    9.05 kB    3.02 kB/s

Saving support information for switch:routing1, module:NS_evlog...
.../supportSave_files/routing1-S6-200508280208-NS_evlog.ss:   1.62 kB  551.19 B/s

Saving support information for switch:swd76, module:NS_evlog...
/tmp/supportSave_files/swd76-S6-200508280208-NS_evlog.ss:    2.72 kB  928.95 B/s

Saving support information for switch:routing1, module:FSPF_Log...
...e_files/routing1-S6-200508280208-FSPF_Log.ss:    2.04 kB  694.31 B/s
(output truncated)
```

See Also   **supportShow**

supportShow

Displays switch information for debugging purposes.

Synopsis **supportshow** [[*slotnumber*/]*portnumber1*-*portnumber2*][*lines*]

Availability admin, switchAdmin, user

Description Use this command to display support information from groups of preselected Fabric OS and Linux commands. You can specify the range of ports for which this information displays. These commands are organized by groups, but note that the order of the groups listed next is not the same as executed by the command.

Refer to Chapter 6, "supportShow Reference", for more information.

The commands can be arranged in groups, as follows:

- OS (ENABLED by default; Linux commands are not documented in this manual)
  - **mii-tool**
  - **du**
  - **ps**
  - **rpm**
  - **dmesg**
  - **fstab**
  - **mtab**
  - **cat/proc/meminfo**
  - various proc entries
  - find core files
- exception (ENABLED by default)
  - **errShow**
  - **pdShow**
- port (ENABLED by default)
  - **diagShow** (per-slot)
  - **portShow** (per-port)
  - **portLoginShow** (per-port)
  - **portRegTest** (per-port)
  - **portRouteShow** (per-port)
  - **portCamShow** (per-port)
  - **portLogDump** (per-port)
- fabric (ENABLED by default)
  - **fabricShow**

- • **dom**
  - • **islShow**
  - • **trunkShow**
  - • **topologyShow**
  - • **lsDbShow**
  - • **ess show**
  - • **fabStateShow**
  - • **fabStatsShow**
  - • **fabSwitchShow**
  - • **fabPortShow**
  - • **fspfShow**
  - • **nbrStateShow**
  - • **fcpLogShow**
  - • **zone stateshow**
  - • **portZoneShow**
  - • **cfgShow**
  - • **cfgSize**
  - • **rcssmshow**
  - • **rcsInfoShow**
  - • **rcsregistryshow**
  - • **zone mergeshow**
  - • **zone stateshow**
  - • **uRouteShow**
- • services (ENABLED by default)
  - • **fdmiCacheShow**
  - • **fdmiShow**
  - • **nsShow**
  - • **nsAllShow**
  - • **nscamShow**
  - • **nscamShow -t**
  - • **ns portshow**
- • security (ENABLED by default)
  - • **authUtil**
  - • **authUtil -dump -a**
  - • **secFabricShow**

Note: Enter commands in lowercase only; mixed case is for readability.

- **secGlobalShow**
- **secModeShow**
- **secPolicyDump**
- **secPolicyShow**
- **secStatsShow**
- network (ENABLED by default)
  - **bootenv**
  - **sin**
  - **df**
  - **ifconfig**
  - **route**
  - **hostname**
- portlog (ENABLED by default)
  - **portLogDump**
- system (ENABLED by default)
  - **myId**
  - **version**
  - **firmwareShow**
  - **upTime**
  - **switchStatusShow**
  - **switchShow**
  - **haDump** (includes **haShow** and **ipAddrShow**)
  - **tempShow**
  - **sensorShow**
  - **psShow**
  - **licenseShow**
  - **portFlagsShow**
  - **portCfgShow**
  - **portErrShow**
  - **fwSamShow**
  - **agtCfgShow**
  - **slotShow** (product-dependent)
  - **slotShow** **-d576**
  - **emtraceshow**
  - **emtraceshow2**

- • **emhsmtraceshow**

  - • **systraceshow -d**

  - • **fwAlarmsFilterShow**

  - • **chassisShow**

  - • **timeout**

  - • **historyShow**

  - • **portSwapShow**

  - • **configShow**

- • extend (DISABLED by default)

  - • buffers (per-port)

  - • credits (per-port)

  - • data (per-port)

  - • phantom (per-port)

  - • properties (per-port)

  - • statistics (per-port)

- • filter (DISABLED by default; this group has lengthy output)

  - • **filterportshow** (per-port)

- • perfmon (DISABLED by default)

  - • ps_dump (per-port; this group has lengthy output)

- • ficon (DISABLED by default; this group has lengthy output)

  - • **ficoncupshow fmsmode**

  - • **ficoncupshow modereg**

  - • **ficonDbg dump rnid**

  - • **ficonDbg log**

  - • **ficonShow ilir**

  - • **ficonShow lirr**

  - • **ficonShow rlir**

  - • **ficonShow rnid**

  - • **ficonShow switchrnid**

  - • **ficucmd dump -A**

Operands   This command has the following operands:

slotnumber/*portnumber1*-*portnumber2*

Specify the range of ports to display. If the slotnumber/portnumber parameter is omitted, all ports in the switch display in the per-port outputs. The slotnumber must be provided when specifying a range of ports on multi-bladed products.

lines   Specifies the number of lines of **portLogDump** output to display. If this parameter used, the slotnumber/portnumber parameter is required.

Examples   To display switch information for debugging:

```
switch:admin> supportshow 1/1-3
supportshow groups enabled: system
version:
Kernel:      2.4.19
Fabric OS:   v4.1.0
Made on:     Fri Jan 10 01:06:10 2003
Flash:       Thu Jan 17 00:06:52 2003
BootProm:    3.2.1

uptime:
 10:49am  up  3:25,  1 user,  load average: 1.55, 1.20, 1.11

switchshow:
switchName:     Ulysses2
switchType:     10.1
switchState:    Online
switchMode:     Native
switchRole:     Principal
switchDomain:   1
switchId:       fffc01
switchWwn:      10:00:00:60:69:80:03:0c
zoning:         OFF
switchBeacon:   OFF
blade1 Beacon:  OFF
blade2 Beacon:  OFF
blade4 Beacon:  OFF

Area Slot Port Media Speed State
====================================
  0   1   0   id    N2   Online    Loopback->Slot  1 Port  0
  1   1   1   id    N2   Online    Loopback->Slot  1 Port  1
  2   1   2   id    N2   Online    Loopback->Slot  1 Port  2
  3   1   3   id    N2   Online    Loopback->Slot  1 Port  3
  4   1   4   id    N2   Online    Loopback->Slot  1 Port  4
  5   1   5   id    N2   Online    Loopback->Slot  1 Port  5
  6   1   6   id    N2   Online    Loopback->Slot  1 Port  6

(output truncated)
```

See Also   **supportFtp**, **supportSave**, **supportShowCfgDisable**, **supportShowCfgEnable**, **supportShowCfgShow**, **traceDump**, **traceFtp**, **traceTrig**

Note: Enter commands in lowercase only; mixed case is for readability.

supportShowCfgDisable

2

supportShowCfgDisable

Disables a group of commands under the **supportShow** command.

Synopsis   **supportshowcfgdisable** [**os** | **exception** | **port** | **fabric** | **services** | **security** | **network** | **portlog** | **syste-mextend** | **filter** | **perfmon** | **ficon**]

Availability   admin, switchAdmin, user

Description   Use this command to disable a group of commands under the **supportShow** command. Use the **supportShowCfgEnable** command to enable groups of commands. Refer to Chapter 6, "supportShow Reference", for more information.

Operands   This command has the following operand:

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
perfmon	Disables the Performance Monitor group commands
ficon	Disables the FICON group commands

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 under the **supportShow** command.

Synopsis   **supportshowcfgenable** [os | exception | port | fabric | services | security | network | portlog | system | extend | filter | perfmon | ficon]

Availability   admin, switchAdmin, user

Description   Use this command to enable a group of commands under the **supportShow** command. Use the **supportShowCfgDisable** command to disable groups of commands.

Refer to Chapter 6, "supportShow Reference", for more information.

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
perfmon	Enables the Performance Monitor group commands
ficon	Enables the FICON group commands

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**

Availability   admin, switchAdmin, user

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.

Refer to Chapter 6, "supportShow Reference", for more information.

Operands   none

Examples   To display which groups of commands are enabled in the **supportShow** command:

```
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
 perfmon    disabled
 ficon      disabled
```

See Also   **supportShow**, **supportShowCfgDisable**, **supportShowCfgEnable**

switchBeacon

Sets switch beaconing mode on or off.

Synopsis   **switchbeacon** [*mode*]

Availability   admin, switchAdmin

Description   Use this command to enable or disable switch beaconing mode.

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. This can be used to beckon to locate a failing unit, for example.

Beaconing mode affects only the port LEDs. Other commands are still executable and functional. The normal flashing LED pattern (associated with an active, faulty, or disabled port) is suppressed and the beaconing pattern is shown. However, if diagnostic frame-based tests (**portLoopbackTest**, **crossPortTest**, and **spinSilk**) are executed, two patterns are interleaved. The diagnostic test flickers the LEDs green and simultaneously the beaconing mode runs the LEDs amber.

Use the **switchShow** command to display the status of beaconing.

Operands   This command has the following operand:

mode   Specify 1 to enable beacon mode or 0 to disable beacon mode. This operand is optional.

If no operand is specified, the current value is displayed.

Examples   To turn beaconing mode on:

```
switch:admin> switchbeacon 1
```

To turn beaconing mode off:

```
switch:admin> switchbeacon 0
```

See Also   switchShow

switchCfgPersistentDisable

Disables a switch persistently.

Synopsis   **switchcfgpersistentdisable**

Availability   admin, switchAdmin

Description   Use this command to persistently disable the switch. 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.

The disable process can be observed and verified by watching the front panel LEDs change to slow flashing yellow as each port is disabled.

A persistently disabled switch can be temporarily enabled using the **switchEnable** command. A temporarily enabled switch remains disabled after a reboot.

Note

Performance Monitoring cannot be added to any port on a persistently disabled switch.

Operands   none

Examples   To disable a switch persistently:

```
switch:admin> switchcfgpersistentdisable
```

See Also   **switchDisable**, **switchEnable**, **switchCfgPersistentEnable**, **switchShow**

switchCfgPersistentEnable

Enables a switch persistently.

Synopsis   **switchcfgpersistentenable**

Availability   admin, switchAdmin

Description   Use this command to persistently enable the switch. All Fibre Channel ports which did not fail power-on self-test (POST) are enabled, and can come online if connected to a device, or remain offline if disconnected. The switch might need to be enabled if it was previously disabled to make configuration changes or to run diagnostics.

If the switch is connected to a fabric, it rejoins the fabric. After this command is issued, the 10 second fabric stability count down is displayed. If this switch remains the principal switch at the end of the count down, then 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 FC-SW for a complete description of this process.

The enable process can be observed and verified by watching the front panel LEDs change from slow flashing yellow as each port is enabled. The LEDs change to green for online ports, or can remain black for disconnected ports, or yellow for ports that do not initialize.

Operands   none

Examples   To configure the switch as persistently enabled:

```
switch:admin> switchcfgpersistentenable
 10  9  8  7  6  5  4  3  2  1
 fabric: Principal switch
 fabric: Domain 1
```

See Also   **switchDisable**, **switchEnable**, **switchCfgPersistentDisable**, **switchShow**

switchCfgSpeed

Configures all ports of a switch to a particular speed.

Synopsis   **switchcfgspeed** *speed_level*

Availability   admin, switchAdmin

Description   Use this command to configure the speed of all the ports on a switch to a particular level. The configuration is saved in flash memory and persists across switch reboots or power cycles. If any port on the switch is not capable of the specified speed setting, an error message displays for that port.

The output of **portShow** displays the achieved speed level and **portCfgSpeed** displays the user's desired speed setting.

Operands   This command has the following operand:

speed_level   Specify the speed of a port. This operand is required. Valid values are one of the following:

0   Auto sensing mode. The port automatically configures for the highest speed.

1   1-Gbit/sec mode. The port is fixed at 1 Gbit/sec.

2   2-Gbit/sec mode. The port is fixed at 2 Gbit/sec.

4   4-Gbit/sec mode. The port is fixed at 4 Gbit/sec.

Examples   To set the speed level for all ports on a switch:

```
switch:admin> switchcfgspeed 0
Committing configuration...done.
```

See Also   **portCfgSpeed**, **portShow**

switchCfgTrunk

Enables or disables trunking on all the ports of a switch.

Synopsis	**switchcfgtrunk** *mode*
Availability	admin, switchAdmin
Description	Use this command to enable or disable trunking on all the ports of a switch.

> **Note**
>
> This command requires the Brocade ISL Trunking license.
>
> You can disable or enable trunking using the **portCfgTrunkPort** or **switchCfgTrunk** commands. When the command is executed to update the trunking configuration, the ports for which the configuration applies are disabled and reenabled with the new trunk configuration. As a result, the traffic through these ports might be disrupted for a short period of time.
>
> You can disable trunking on the ports even though the ISL Trunking license is not installed.

Operands   This command has the following operand:

mode   Specify 1 to enable trunking on all the ports on this switch. Specify 0 to disable trunking on all the ports on this switch. This operand is required.

Examples   To enable trunking on a switch:

```
switch:admin> switchcfgtrunk 0
Committing configuration...done.
```

See Also   **portCfgShow**, **portCfgTrunkPort**, **portShow**, **switchShow**

switchDisable

Disables the switch.

Synopsis   **switchdisable**

Availability   admin, switchAdmin

Description   Use this command to disable the switch. All Fibre Channel ports are taken offline; if the switch was part of a fabric, the remaining switches reconfigure.

The switch must be disabled before making configuration changes (using **configure** or **configDefault**) or before running many of the diagnostic tests. All commands that require the switch to be disabled send an error if invoked while the switch is enabled.

The switch does not need to be disabled before rebooting or powering off.

As each port is disabled, the front panel LED changes to a slow flashing yellow.

Operands   none

Examples   To disable the switch:

```
switch:admin> switchdisable
```

See Also   **switchCfgPersistentDisable**, **switchCfgPersistentEnable**, **switchEnable**, **switchShow**

switchEnable

Enables the switch.

Synopsis   **switchenable**

Availability   admin, switchAdmin

Description   Use this command to enable the switch. All Fibre Channel ports that passed POST are enabled. They can come online if connected to a device, or will remain offline if disconnected. Use **switchEnable** if you disable the switch to make configuration changes or to run diagnostics.

If the switch is connected to a fabric, it rejoins the fabric. If this switch remains the principal switch, then 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 FC-SW for a complete description of this process.

As each port is enabled, the front panel LED changes to green for online ports, black for disconnected ports, or yellow for uninitialized ports.

Operands   none

Examples   To enable a switch:

```
switch:admin> switchenable
```

See Also   **switchCfgPersistentDisable**, **switchCfgPersistentEnable**, **switchDisable**, **switchShow**

switchName

Displays or sets the switch name.

Synopsis   **switchname** [*name*]

Availability   admin, switchAdmin, user

Description   Use this command to display or set the switch name. 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 on the Fabric Web page, and in the output of various Fabric OS commands, such as **fabricShow**.

Use this command with the *name* operand to assign a new switch name. Enter this command with no operand to display the current switch name.

Changing the switch name causes a domain address format RSCN to be issued (refer to FC-FLA for a description of RSCNs).

The switch name also can be changed using Web Tools.

Operands   This command has the following operand:

name   Specify a new name for the switch. *name* can include up to 15 characters, must begin with a letter, can consist of letters, digits, hyphens, and underscore characters, and no spaces. This operand is optional; if omitted, this command displays the current switch name.

Examples   To change a switch name to dilbert (note the change in the prompt text):

```
switch:admin> switchname dilbert
dilbert:admin> switchname
dilbert
```

See Also   **chassisShow**, **switchShow**

switchReboot

Halts and reboots the operational switch.

Synopsis   **switchreboot**

Availability   admin, switchAdmin

Description   This command reboots the operational switch without disrupting the other switch in a dual-switch chassis.

This command is equal to running **switchShutdown** and **switchStart**.

Note

This command is not supported on single-domain systems.

Operands   none

Examples   To reboot an operational switch:

```
switch:admin> switchreboot
Stopping all switch daemons...Done.
Powering off slot 1...Done.
Powering off slot 4...Done.
Checking all slots are powered off...Done.
Cleaning up kernel modules...Done.
Initializing kernel modules...Done.
Starting all switch daemons...Done.
Powering on slot 1...Done.
Powering on slot 4...Done.
Checking diagnostics...Done.
setup FCIP IP: ifconfig fc0 ip=0.0.0.0, netmask=255.255.255.0
```

See Also   **switchShutdown**, **switchStart**

switchShow

Displays switch and port status.

Synopsis   **switchshow** [**-portcount**]

Availability   admin, switchAdmin, user

Description   Use this command to display switch and port status information. Information might vary by switch model: for instance, number of ports and domain ID values.

Note

For all Bloom and Bloom 2-based platforms, private device targets are displayed in **switchShow**. For Condor or Goldeneye-based platforms, private device targets are not displayed in **switchShow**.

The following section provides switch summary information; it is followed by a section covering summary information by port:

switchName   Displays the switch symbolic name.

switchType   Displays the switch model and revision numbers.

switchState   Displays the switch state: online, offline, testing, or faulty.

switchMode   Displays the switch operation mode: native or interop

switchRole   Displays the switch role: principal, subordinate, or disabled.

switchDomain   Displays the switch domain ID: 0 to 31 or 1 to 239.

switchId   Displays the switch embedded port D_ID.

switchWwn   Displays the switch World Wide Name (WWN).

switchBeacon   Displays the switch beaconing state (on or off).

bladeBeacon   Displays the blade beaconing state (on or off).

FC Router   Displays the FC Router state (on or off)

FC Router BB Fabric ID
                    Displays the backbone fabric ID for FC routing.

The switch summary is followed by one-line description for non-EX_Ports and one or two lines for EX_Ports:

Area   Part of the 24-bit port ID, which consists of domain, area number, and optional AL_PA.

Slot   Slot number; slots numbered from 1 to 4 and 7 to 10.

Port   Port number; ports are numbered from 0 to 15 or 0 to 31.

Media Type   Media types include:

                    --   no module present

                    sw   shortwave laser

                    lw   longwave laser

                    cu   copper

	id	serial ID
Speed	The speed of the port:	
	1/8G	125 Mbit/sec
	1/4G	250 Mbit/sec
	1/2G	500 Mbit/sec
	1G	1 Gbit/sec fixed transfer speed
	N1	1 Gbit/sec negotiated transfer speed
	2G	2 Gbit/sec fixed transfer speed
	N2	2 Gbit/sec negotiated transfer speed
	4G	4 Gbit/sec fixed transfer speed
	N4	4 Gbit/sec negotiated transfer speed
	AN	Auto negotiating
	UN	Unknown
Port State	Port state information:	

No_Card
    No interface card present.

No_Module
    No module (GBIC or other) present.

Mod_Val
    Module validation in process.

Mod_Inv
    Invalid module.

No_Light
    Module not receiving light.

No_Sync
    Module receiving light but out of sync.

In_Sync
    Module receiving light and in sync.

Laser_Flt
    Module signaling a laser fault.

Port_Flt
    Port marked faulty.

Diag_Flt
    Port failed diagnostics.

Lock_Ref
    Locking to the reference signal.

Testing Running diagnostics.

Offline Connection not established (for virtual ports only).

Online Port is up and running.

comment   The comment field is blank, or displays:

Disabled
> Port is disabled.

Bypassed
> Port is bypassed (loop only).

Loopback
> Port is in loopback mode.

E_Port   Fabric port; displays WWN and name of attached switch. If the port is configured as EX_Port, the WWN of the attached switch is the same as the router.

F_Port   Point-to-point port; displays WWN of attached N_Port.

G_Port   Point-to-point but not yet E_Port or F_Port.

L_Port   Loop port; displays number of NL_Ports.

(Trunk master)
> Port is the master port in a group of trunking ports.

(Trunk port, master is port #x)
> Port is configured as a trunking port; the master port is port #*x*.

(upstream)
> E_Port is an upstream path towards the principal switch of the fabric.

(downstream)
> E_Port is a downstream path away from the principal switch of the fabric.

Persistently Disabled
> This port has been disabled using **portCfgPersistentDisable**.

FICON   Persistent DID
> This port has been disabled since the switch could not obtain its configuration domain ID during the fabric reconfiguration when FICON mode was enabled. Refer to **ficonShow** for more information.

Fabric ID conflict
> Two different fabrics have been assigned the same fabric ID (EX_Ports only).

Fabric ID oversubscription
> One fabric has been assigned two different fabric IDs (EX_Ports only).

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. Refer to **portCfgLongDistance** for more information.

Note

The port state for disabled E_Ports display as In_Sync when the port is the interswitch link (ISL) between a SilkWorm 48000 and a SilkWorm 24000. If the ISL is between a SilkWorm 48000 and a SilkWorm 4100 or 200E, the disabled E_Port displays as No_Sync.

Operands   The operand is as follows:

-portcount   Displays the number of ports on the switch.

Examples   To display the port count:

```
switch:admin> switchshow -portcount
ports= 64
```

To display the port status for an E_Port:

```
san116:user> switchshow
      switchName:     san116
      switchType:     10.1
      switchState:    Online
      switchMode:     Native
      switchRole:     Subordinate
      switchDomain:   2
      switchId:       fffc02
      switchWwn:      10:00:00:60:69:00:02:48
      switchBeacon:   OFF
      blade1: Beacon: OFF
      blade4: Beacon: OFF

       Area     Slot     Port     Media  Speed   State
      --------------------------------------------------
         0        1        0       id     N2      Online       E-Port
10:00:00:60:69:00:02:1c"san130"
         1        1        1       id     N2      Online       E-Port
10:00:00:60:69:00:02:1c"san130"
         2        1        2       id     N2      Online       E-Port
10:00:00:60:69:00:02:1c"san130"
         3        1        3       id     N2      Online       E-Port
10:00:00:60:69:00:02:1c"san130"
         4        1        4       id     N2      Online       E-Port
10:00:00:60:69:00:02:1c"san130"
         5        1        5       id     N2      Online       E-Port
10:00:00:60:69:00:02:1c"san130"
         6        1        6       id     N2      Online       E-Port
10:00:00:60:69:00:02:1c"san130"
         7        1        7       id     N2      Online       E-Port
10:00:00:60:69:00:02:1c"san130"
(output truncated)
```

See Also   **ficonShow**, **portCfgLongDistance**, **switchDisable**, **switchEnable**, s**switchName**

switchShutdown

Halts the operational switch.

Synopsis   **switchshutdown**

Availability   admin, switchAdmin

Description   Use this command to halt switch operation on one switch without disrupting the other. This command disables a logical switch in a dual-switch chassis.

This command has to be used in combination with **switchStart**.

This command halts all the daemons associated with the switch, frees the resources and object states associated with the switch to a clear state, and disables all the ports and blades associated with the switch.

Note

This command is not supported on single-domain systems.

Operands   none

Examples   To halt the operational switch:

```
switch:admin> switchshutdown
Stopping all switch daemons...Done.
Powering off slot 1...Done.
Powering off slot 4...Done.
Checking all slots are powered off...Done.
Cleaning up kernel modules...Done.
```

See Also   **switchReboot**, **switchStart**

switchStart

Initializes a previously shut down switch.

Synopsis **switchstart**

Availability admin, switchAdmin

Description Use this command to initialize one switch without disrupting the other switch in the dual-switch chassis.

This command has to be used in combination with **switchShutdown**.

This command starts all the daemons associated with the switch, initializes the object states associated with the switch to a clear state, and enables all the ports and blades associated with the switch.

Note

This command is not supported on single-domain systems.

Operands none

Examples To initialize the current switch:

```
switch:admin> switchstart
Initializing kernel modules...Done.
Starting all switch daemons...Done.
Powering on slot 1...Done.
Powering on slot 4...Done.
Checking diagnostics...Done.
setup FCIP IP: ifconfig fc0 ip=0.0.0.0, netmask=255.255.255.0
```

See Also **switchReboot**, **switchShutdown**

Note: Enter commands in lowercase only; mixed case is for readability.

switchStatusPolicySet

2

switchStatusPolicySet

Sets the policy parameters that determine overall switch status.

Synopsis **switchstatuspolicyset**

Availability admin, switchAdmin

Description Use this command to set policy parameters for calculating the overall status of the switch enclosure. The policy parameter values determine how many failed or faulty units of each contributor are allowed before triggering a status change in the switch from HEALTHY to MARGINAL or DOWN. The status of the switch can be found by issuing the **switchStatusShow** command. The existence of policies such as Fans, PowerSupplies, WWN, CP, and Blade might differ from platform to platform.

The command displays the current parameters in a three-column table format, shown in the table. The command then prompts the user to change the values for each policy parameter. The default values for the policy parameters are shown here.

Table 2-18 Default Contributor, Values, and Status

Contributor	DOWN Default	MARGINAL Default
PowerSupplies	2	1
Temperatures	2	1
Fans	2	1
WWN	0	1
CP	0	1
Blade	0	1
Flash	0	1
MarginalPorts	2	1
FaultyPorts	2	1
MissingSFPs	0	0

Any single contributor can force the overall status of the switch to MARGINAL or DOWN. For example, assuming that the switch contributor values are set to the default values, if there is one faulty port in a switch, then this contributor would set the overall switch status to MARGINAL. If two ports were faulty, then this contributor would set the overall switch status to DOWN.

Operands none

Examples   To change the switch policies:

```
switch:admin> switchstatuspolicyset
To change the overall switch status policy parameters
The current overall switch status policy parameters:
                        Down    Marginal
       ---------------------------------
          PowerSupplies  2         1
           Temperatures  2         1
                  Fans  2         1
                   WWN  0         1
                    CP  0         1
                 Blade  0         1
                 Flash  0         1
         MarginalPorts  2         1
           FaultyPorts  2         1
           MissingSFPs  0         0

  Note that the value, 0, for a parameter, means that it is
  NOT used in the calculation.
  ** In addition, if the range of settable values in the
  ** prompt is (0..0), the policy parameter is NOT applicable
  ** to the switch. Simply hit the Return key.

  The minimum number of
  Bad PowerSupplies contributing to
                                DOWN status: (0..4) [2]
  Bad PowerSupplies contributing to
                                MARGINAL status: (0..4) [1]
  Bad Temperatures contributing to
                                DOWN status: (0..6) [2]
  Bad Temperatures contributing to
                                MARGINAL status: (0..6) [1]
  Bad Fans contributing to
                                DOWN status: (0..3) [2]
  Bad Fans contributing to
                                MARGINAL status: (0..3) [1]
  Down  WWN contributing to
                                DOWN status: (0..2) [0]
  Down  WWN contributing to
                                MARGINAL status: (0..2) [1]
  Down CP contributing to
                                DOWN status: (0..2) [0]
  Down CP contributing to
                                MARGINAL status: (0..2) [1]
  Down Blade contributing to
                                DOWN status: (0..4) [0]
  Down Blade contributing to
                                MARGINAL status: (0..4) [1]
  Out of range Flash contributing to
                                DOWN status: (0..1) [0]
  Out of range Flash contributing to
                                MARGINAL status: (0..1) [1]
  MarginalPorts contributing to
                                DOWN status: (0..64) [2]
  MarginalPorts contributing to
                                MARGINAL status: (0..64) [1]
(output truncated)
```

See Also   switchStatusPolicyShow, switchStatusShow

Note: Enter commands in lowercase only; mixed case is for readability.

switchStatusPolicyShow

2

switchStatusPolicyShow

Displays the policy parameters that determine overall switch status.

Synopsis   **switchstatuspolicyshow**

Availability   admin, switchAdmin, user

Description   Use this command to view the current policy parameters set for the switch. These policy parameters determine the number of failed or nonoperational units allowed for each contributor before triggering a status change in the switch.

The command displays the current parameters in a three-column format, shown in the table. The first column indicates the contributor, the second column indicates the minimum number that contributes to the DOWN status, and the third column indicates the minimum number that contributes to the MARGINAL status. The parameters can be set by the **switchStatusPolicySet** command. The existence of policies such as Fans, PowerSupplies, CP, WWN, and Blade might differ from platform to platform.

Table 2-19   Default Contributor, Values, and Status

Contributor	DOWN Default	MARGINAL Default
PowerSupplies	2	1
Temperatures	2	1
Fans	2	1
WWN	0	1
CP	0	1
Blade	0	1
Flash	0	1
MarginalPorts	2	1
FaultyPorts	2	1
MissingSFPs	0	0

The policy parameters determine the number of failed or nonoperational units for each contributor that trigger a status change in the switch. For example, if the FaultyPorts DOWN parameter is set to 3, and three ports fail in the switch, then the status of the switch changes to DOWN.

Operands   none

Examples   To display the switch policies:

```
switch:admin> switchstatuspolicyshow
  The current overall switch status policy parameters:
                        Down    Marginal
        ---------------------------------
           PowerSupplies  2         1
            Temperatures  2         1
                    Fans  2         1
                     WWN  0         1
                      CP  0         1
                   Blade  0         1
                   Flash  0         1
           MarginalPorts  2         1
             FaultyPorts  2         1
             MissingSFPs  0         0
```

See Also   switchStatusPolicySet, switchStatusShow

switchStatusShow

Displays overall switch status.

Synopsis **switchstatusshow**

Availability admin, switchAdmin, user

Description Use this command to display the overall status of the switch. In addition, users with a Fabric Watch license are able to view the list of unhealthy ports.

This command displays the overall switch status, along with the status of each of the following contributors:

- Power supplies
- Temperatures
- Fans
- WWN servers (dual CP systems only)
- Standby CP (dual CP systems only with HA enabled)
- Blades (bladed systems only)
- Flash
- Marginal ports
- Faulty ports
- Missing SFPs

Status values are HEALTHY, MARGINAL, or DOWN, depending on whether thresholds established by **switchStatusPolicySet** have been exceeded. The overall status is based on the most severe status of all contributors.

Refer to **switchStatusPolicyShow** for details on the calculation of contributors and overall switch status.

Operands none

Note: Enter commands in lowercase only; mixed case is for readability.

Examples To display a switch health report:

```
switch:user> switchstatusshow
  Switch Health Report                    Report time: 06/19/2003 10:48:31 AM
  Switch Name:    switch
  IP address:     10.10.255.255
  SwitchState:    MARGINAL
  Duration:       00:06

  Power supplies monitor  HEALTHY
  Temperatures monitor    HEALTHY
  Fans monitor            MARGINAL
  WWN servers monitor     HEALTHY
  Standby CP monitor      HEALTHY
  Blades monitor          HEALTHY
  Flash monitor           HEALTHY
  Marginal ports monitor  HEALTHY
  Faulty ports monitor    HEALTHY
  Missing SFPs monitor    HEALTHY


  All ports are healthy
```

See Also switchStatusPolicySet, switchStatusPolicyShow

switchUptime

Displays the amount of time the switch has been operating.

Synopsis	**switchuptime**
Availability	admin, switchAdmin, user
Description	Use this command to display the current time and the amount of time that the switch has been operational.
Operands	none
Examples	To view the uptime for the switch:

```
switch:user> switchuptime
9:50pm   up for 20 mins
```

See Also   **switchReboot**, **switchShutdown**, **switchStart**

Note: Enter commands in lowercase only; mixed case is for readability.

syslogdFacility

Changes the syslog facility.

Synopsis   **syslogdFacility** [**-l** *level*]

Availability   admin, switchAdmin

Description   Use this command to change the syslog facility to LOG_LOCAL0, LOG_LOCAL1, LOG_LOCAL2, LOG_LOCAL3, LOG_LOCAL4, LOG_LOCAL5, LOG_LOCAL6, or LOG_LOCAL7.

Syslog daemon (syslogd) is 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.

The specified facility is used when forwarding messages to the servers added through the command **syslogdIpAdd**. The default facility is LOG_LOCAL7.

Operands   This command has following operand:

-l *level*   Specifies the syslog facility. The range is from 0 through 7. This operand is optional; if omitted, the current facility is displayed.

Examples   To set the syslog facility to LOG_LOCAL1:

```
switch:admin> syslogdfacility -l 1
Syslog facility changed to LOG_LOCAL1
```

See Also   **syslogdIpAdd**, **syslogdIpRemove**, **syslogdIpShow**

syslogdIpAdd

Adds the IP address of a syslog daemon.

Synopsis   **syslogdipadd** *ip_address*

Availability   admin, switchAdmin

Description   Use this command to add the IP address of the server that is running the syslogd process. Syslog daemon (syslogd) is 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.

When one or more IP addresses are configured, the switch forwards all error log entries to the syslogd on the specified server(s). Up to six servers are supported.

Operands   This command has the following operand:

ip_address   Specify the IP address of the server running syslogd. This operand is required.

Examples   To add the address 192.168.1.60 to the list of machines to which system messages are sent:

```
switch:admin> syslogdipadd 192.168.1.60
```

See Also   **errShow**, **syslogdFacility**, **syslogdIpRemove**, **syslogdIpShow**

syslogdIpRemove

Removes the IP address of a syslog daemon.

Synopsis   **syslogdipremove** *ip_address*

Availability   admin, switchAdmin

Description   Use this command to remove the IP address of the server that is running the syslogd process.

Operands   This command has the following operand:

ip_address   Specify the IP address of the server running syslogd. This operand is required.

Examples   To remove the address 192.168.1.60 from the list of machines to which system messages are sent:

```
switch:admin> syslogdipremove 192.168.1.60
```

See Also   **errShow**, **syslogdFacility**, **syslogdIpAdd**, **syslogdIpShow**

syslogdIpShow

Displays all syslog daemon IP addresses.

Synopsis   **syslogdipshow**

Availability   admin, switchAdmin, user

Description   Use this command to display all syslog daemon IP addresses in the configuration database.

Operands   none

Examples   To display all syslog daemon IP addresses:

```
switch:admin> syslogdipshow
syslog.IP.address.1:    192.168.1.60
syslog.IP.address.2:    192.168.1.88
syslog.IP.address.3:    192.168.2.77
```

See Also   **errShow**, **syslogdFacility**, **syslogdIpAdd**, **syslogdIpRemove**

sysShutdown

Provides a graceful shutdown to protect the switch file systems.

Synopsis   **sysshutdown**

Availability   admin, switchAdmin

Description   For SilkWorm (nonbladed) switches, use this command to shutdown the switch operating system.

For SilkWorm directors, when **sysShutdown** is called in the active control processor (CP), the command shuts down the active CP, standby CP, and any AP blades.

After doing this, you need to manually power off the system. If you want to reboot the system, manually turn the power switch on.

Operands   none

Examples   To perform a system shutdown in a SilkWorm switch:

```
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
Broadcast message from root (ttyS0) Mon Sep 12 17:52:12 2005...

The system is going down for system halt NOW !!
INIT: Switching to runlevel:
INIT: Sending processes the TERM signal
ess095:root> Unmounting all filesystems.
The system is halted
flushing ide devices: hda
Power down.
```

To perform a system shutdown from the active CP in a dual-CP 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
This is the active Cp
2005/09/13-01:15:13, [FSSM-1003], 414,, WARNING, Silkworm48000, HA State out of sync
HA is disabled

Broadcast message from root (ttyS0) Tue Sep 13 01:15:14 2005...

The system is going down for system halt NOW !!
INIT: Switching to runlevel: 0
INIT: Sending processes the TERM signal
Unmounting all filesystems.
umount2: Device or resource busy
umount: /tmp: device is busy
The system is halted
flushing ide devices: hda
Power down.
ppc440gx System Halted
```

Note: Enter commands in lowercase only; mixed case is for readability.

sysShutdown

2

For the FR4-18i AP blade, to perform a system shutdown from the active CP:

```
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
This is the active Cp
2005/11/16-05:47:20, [FSSM-1003], 5641,, WARNING, Silkworm12000, HA State out of
sync
HA is disabled
Stopping blade 2
Shutting down the blade....
Stopping blade 8
Shutting down the blade....

Broadcast message from root (ttyS0) Wed Nov 16 05:47:20 2005...

The system is going down for system halt NOW !!
INIT: Switching to runlevel: 0
INIT: Sending processes the TERM signal
Unmounting all filesystems.
umount2: Device or resource busy
umount: /tmp: device is busy
The system is halted
flushing ide devices: hda
Power down.
ppc440gx System Halted
```

For the FR4-18i AP blade, to perform a system shutdown from the standby CP:

```
switch:admin> sysshutdown
Shut down the whole system is not support from the standby CP
For shut down the whole system
please run the sysshutdown from the active CP
```

See Also   haDisable, switchShutdown

systemVerification

Runs a suite of diagnostic tests on all switches in a fabric.

Synopsis   **systemverification** [**-parameters** | **-short**][[**-fru** *type*] **-unit** *id*]

Availability   admin, switchAdmin

Description   Use this command to run a comprehensive, system-wide test of all switches in a system. The command initiates a burn-in run on all switches within the current system. The optional -fru and -unit parameters allow you to focus the testing to a single blade in a multiblade system.

The run can be terminated by issuing a Ctrl-C from the initiating terminal. All of the burn-in features are operational during the **systemVerification** command. The **burninErrShow** displays the stored burn-in errlogs; the logs by blade are saved in */var/log/verify.slot* files. On fixed-port-count products, the slot defaults to 0.

The command monitors the testing and terminates the burn-in activity if all the elements fail. Each failing slot only outputs the first observed failure. Because this monitoring is a polling activity, the command number output might not be the exact command number that failed.

After the testing terminates, the **burninStatus** command output displays, and the **burninErrShow** messages for the failing slots displays. If all slots pass, then only the **burninStatus** command output displays.

The burn-in tests are designed to operate with switches connected to a fabric and restrict the frame loopback to inside the unit. If loopback plugs are installed in all ports, the burn-in parameter min_lb_mode can be changed to 1 to test the Fibre Channel through the loopback plug.

Operands   This command has the following options:

-parameters   Invokes the **diagSetCycle** command before starting the burn-in run. This allows users to modify the burn-in parameters prior to the run. These **diagSetCycle** parameters are copied to all switches in the system and override the original settings in the database. If the **diagSetCycle** parameters are not specified, the run uses the previously stored values. This option does not perform a **burninErrClear** operation prior to starting the testing operation.

-short   Sets the burn-in parameters that control the number of frames to 1. The primary use for this command is software regression testing, or quick validation that all hardware is operational. The shorter test cycle does not have enough test time to detect intermittent errors. This option performs a **burninErrClear** operation prior to starting the testing operation.

-fru *type*   Use to focus testing on a single FRU in the system. The valid options for type are BLADE, PS, FAN, and WWN; however, only BLADE is supported at this time. Since only one FRU type is supported, this parameter is optional, but -unit is required for single FRU testing.

-unit *id*   Use to focus testing on a single FRU in the system. The id for a FRU type of BLADE correlates to the slot number of the FRU to be tested.

Diagnostics   Each diagnostic test in this suit might report its own set of error messages when it detects failure(s). Refer to the Diagnostics section of individual diagnostic test help pages. These messages are available only in the log file.

Refer to the *Fabric OS System Error Message Reference Manual* for more information.

Examples   To initiate a system verification test on all switches in the fabric:

```
switch:admin> systemverification -short
     systemverification: Setting parameters for short run.
     systemverification: burnin parameters.
     CURRENT - KEYWORD       : DEFAULT
     1      - number_of_runs      : 1
      2      - vib    : 2
      10     - thermal       : 10
      SYSTEMVERIFICATION     - label : BURNIN
      2      - min_lb_mode   : 2
      1      - tbr_passes    : 1
      1      - prt_on        : 1
      1      - cntmem_on     : 1
      1      - cmi_on        : 1
      1      - retention_on  : 1
      1      - cam_on        : 1
      1      - flt_passes    : 50
      1      - sta_passes    : 25
      1      - plb_nframes   : 100
      1      - txd_nframes   : 50
      1      - xpt_nframes   : 200
      1      - bpt_nframes   : 20
      1      - slk_nmegs     : 50
      1      - bpt_all_nframes       : 30
      1      - slk_all_nmegs : 50
     systemverification: Arming the burnin run on switch 0.
     systemverification: Starting burnin on Switch 0
     systemverification: Monitoring progress of the burnin activity.
     systemverification: Outputting Status
     State          Status  Run     Cmd      TotCmds Script
     COMPLETED      PASS    1       22       22      switchburnin.sh
```

See Also   **burninErrShow**, **burninStatus**, **diagSetBurnin**, **diagSetCycle**

tempShow

Displays temperature readings.

Synopsis   **tempshow**

Availability   admin, switchAdmin, user

Description   Use this command to display the current temperature readings of all temperature sensors in a switch. For each sensor, this command displays the slot number (if applicable), the sensor state, and the temperature. The temperature readings are given in both Centigrade and Fahrenheit.

Refer to the hardware reference manual for your switch to determine the normal temperature range.

Operands   none

Examples   To display temperature and status sensors:

```
switch:user> tempshow

 Index   Slot    State    Centigrade     Fahrenheit
 ===================================================
    1      1      Ok          41            105
    2      2      Ok          39            102
    3      3      Absent
    4      4      Absent
    5      5      Ok          26             78
    6      6      Ok          27             80
```

See Also   **fanShow**, **psShow**, **sensorShow**, **slotShow**

timeout

Sets or displays the idle timeout value for a login session.

Synopsis   **timeout** [*timeval*]

Availability   admin, switchAdmin, user

Description   Use this command with out an operand to display, in minutes, the current timeout value 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 functionality of login sessions.

Operands   This command has the following operand:

timeval   Specify the number of minutes for the telnet timeout value. Valid values are 1 to 99,999, or 0 to disable login timeouts. This operand is optional; if omitted, the command displays the current timeout value.

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
```

See Also   none

2 Note: Enter commands in lowercase only; mixed case is for readability.

topologyShow

topologyShow

Displays the unicast fabric topology.

Synopsis   **topologyshow** [*domain*]

Availability   admin, switchAdmin, user

Description   Use this command to display the fabric topology, as it appears to the local switch, including:

- A list of all domains that are part of the fabric, and to each of those domains, all possible paths from the local switch.

- For each path cost, the number of hops from the local switch to the destination switch and a summary of all ports are routed through that path.

The display contains the following fields:

Local Domain ID	Domain number of local switch.
Local Translate Domain x owned by port	Port number associated with the local translate domain *x*.
Domain	Domain number of destination switch.
Metric	Cost of reaching destination domain.
Name	The name of the destination switch.
Path Count	The number of currently active paths to the destination domain.
Hops	The maximum number of hops to reach destination domain.
Out Port	Port to which incoming frame are forwarded to reach the destination domain.
In Ports	Input ports that use the corresponding out port to reach the destination domain. This is the same information provided by **portRouteShow** and **uRouteShow**.
Total Bandwidth	The maximum bandwidth of the out port. A bandwidth that is less than 0.512 Gbit/sec is adjusted to the nearest power of 2 value, while a bandwidth that is ranged from 0.512 Gbit/sec (included) to 1 Gbit/sec (no included) is adjusted to the 0.512 Gbit/sec value. There is no adjustment to the value if a bandwidth is greater or equal to 1 Gbit/sec.
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.

Operands   This command has the following operand:

domain   Specify the destination domain for which topology information is to be displayed. This operand is optional; if omitted, this command displays the topology information of all the domains in the fabric.

Examples   To display the unicast fabric topology:

```
switch:admin> topologyshow

2 domains in the fabric; Local Domain ID: 1
Local Translate Domain 4 owned by port: 5
Local Translate Domain 8 owned by port: 4

Domain:         6
Metric:         500
Name:           switch
Path Count:     4
        Hops:                   1
        Out Port:               60
        In Ports:               None
        Total Bandwidth:        2.000 Gbps
        Bandwidth Demand:       0 %
        Flags:                  D

        Hops:                   1
        Out Port:               61
        In Ports:               None
        Total Bandwidth:        2.000 Gbps
        Bandwidth Demand:       0 %
        Flags:                  D

        Hops:                   1
        Out Port:               62
        In Ports:               None
        Total Bandwidth:        2.000 Gbps
        Bandwidth Demand:       0 %
        Flags:                  D

        Hops:                   1
        Out Port:               58
        In Ports:               None
        Total Bandwidth:        2.000 Gbps
        Bandwidth Demand:       0 %
        Flags:                  D
```

See Also   **fcrXlateConfig**, **portRouteShow**, **uRouteShow**

traceDump

Displays, initiates, or removes a trace dump.

Synopsis   **tracedump** [**-S**][**-s** *slot*]

tracedump -n [**-s** *slot*]

tracedump -r [**-s** *slot*]

Availability   admin, switchAdmin

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.

Note

If there is no parameter specified, this command defaults to **traceDump -S**.

The default remote file name format is *chassisname-S#-YYYYMMDDHHMMSS.dmp*, in which *#* is the slot number (0 on nonbladed systems) and *YYYYMMDDHHMMSS* (year-month-day-hour-minute-second) is the trace dump time.

Operands   This command has the following mutually exclusive operands:

-S   Displays dump status.

-n   Initiates a background trace dump.

-r   Removes the content of a trace dump.

This command has the following optional operand:

-s *slot*   Specifies the slot number from which a trace dump is generated. If this is not supplied, the trace dump is generated from the local slot.

Examples   To initiate a background trace dump from slot 5:

```
switch:admin> tracedump -n -s 5
```

To remove a trace dump:

```
switch:admin> tracedump -r
trace dump removed
```

See Also   **supportFtp**, **supportSave**, **supportShow**, **traceFtp**, **traceTrig**

traceFtp

Displays, enables, or disables the trace auto-FTP, or retrieves the trace dump file.

Synopsis   **traceftp** [**-S**]

traceftp -e

traceftp -d

traceftp -n [**-s** *slot*][**-h** *hostip*][**-u** *username*][**-p** *password*][**-d** *remotedirectory*][**-f** *remotefile*]

Availability   admin, switchAdmin

Description   Use this command to display, enable, or disable trace auto-FTP or to retrieve a trace dump file from the switch to the FTP site immediately.

Note

If there is no parameter specified, this command defaults to **traceFtp -S**.

Default remote file name format for **traceFtp -n** is *switchname-S#-YYYYMMDDHHMMSS.dmp*, where *#* is the slot number (0 if it is on nonbladed system), and *YYYYMMDDHHMMSS* is trace dump time (year-month-day-hour-minute-second).

Operands   This command has the following mutually exclusive options:

-S	Displays trace auto-FTP feature.
-e	Enables trace auto-FTP feature.
-d	Disables trace auto-FTP feature.
-n	Retrieves a trace dump file from the switch immediately. This option does not work on the standby CP. Use **supportSave** on the standby CP to retrieve trace dumps as an alternative. The **-n** option has the following optional operands:
-s *slot*	Specifies the slot number from which a trace dump is generated. If this is not supplied, the trace dump is generated from the local slot.
-h *hostip*	Specifies FTP host IP address. It must be IP address. *hostip* should be less than 48 characters.
-u *username*	Specifies FTP user name. *username* should be less than 48 characters.
-p *password*	Specifies FTP user password. If the user name is anonymous, the password is not needed. *password* should be less than 48 characters.
-d *remotedirectory*	Specifies the remote directory which to store a trace dump file. **traceFtp** cannot take a slash (/) as a directory name. *remotedirectory* should be less than 48 characters.
-f *remotefile*	Specifies the remote file which to store a trace dump file. *remotefile* should be less than 48 characters.

Examples   To retrieve a trace dump file:

```
switch:admin> traceftp -n -h 192.168.67.126 -u anonymous -d tracedump -f dumpfile
ftp trace dump file in progress...
ftp trace dump file succeeded
```

To enable the auto-FTP feature:

```
switch:admin> traceftp -e
trace auto-FTP enabled
```

To disable the auto-FTP feature:

```
switch:admin> traceftp -d
trace auto-FTP disabled
```

See Also   **supportFtp**, **supportSave**, **supportShow**, **traceDump**, **traceTrig**

traceTrig

Sets, removes, or displays trace triggers.

Synopsis   **tracetrig** [**-S**][**-s** *slot*]

tracetrig -a [**-s** *slot*] *msgid*

tracetrig -r [**-s** *slot*] *msgid*

tracetrig -R [**-s** *slot*]

Availability   admin, switchAdmin

Description   Use this command to set, remove, or display trace triggers for the specified slot on the switch.

Note

If there is no parameter specified, this command defaults to tracetrig -S.

Operands   This command has the following mutually exclusive operands:

-S   Displays trace triggers for the specified slot.

-a   Sets a trace trigger for the specified slot.

-r   Removes a trace trigger from the specified slot.

-R   Removes all trace triggers from the specified slot.

This command has the following optional operand:

-s *slot*   Specifies the slot number from which a trace dump is generated. If this is not supplied, the trace dump is generated from the local slot.

The **-a** and **-r** options also have the following required operand:

msgid   Specifies the trigger number, using the RASLog message ID. This operand is required.

Examples   To set a trace trigger:

```
switch:admin> tracetrig -a NS-1001
trace trigger[NS-1001] is added
```

To remove a trace trigger:

```
switch:admin> tracetrig -r NS-1001
trace trigger[NS-1001] is removed
```

To remove all trace triggers:

```
switch:admin> tracetrig -R
all trace triggers are removed
```

See Also   **supportFtp**, **supportSave**, **supportShow**, **traceFtp**, **traceFtp**

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Note: Enter commands in lowercase only; mixed case is for readability.

trackChangesHelp

trackChangesHelp

Displays information on track-changes feature commands.

Synopsis **trackchangeshelp**

Availability admin, switchAdmin, user

Description Use this command to display information about the track-changes commands.

Examples To display information on the track-changes feature commands:

```
switch:admin> trackchangeshelp
trackChangesSet    Configure alert for login/logout/config update
trackChangesShow   Displays status of track changes
```

See Also **trackChangesSet**, **trackChangesShow**

trackChangesSet

Enables or disables configuring of track-changes feature.

Synopsis   **trackchangesset** [*mode*][**,** *snmptrapmode*]

Availability   admin, switchAdmin

Description   This command enables or disables the track-changes feature. An SNMP-TRAP mode can also be enabled. Trackable changes are:

- Successful login
- Unsuccessful login
- Logout
- Config file change from task
- Track changes on
- Track changes off

The output from the track-changes feature is dumped to the error log for the switch. Use the **errDump** command or **errShow** command to view the error log.

Operands   This command has the following operands:

mode   Specify 1 to enable the track-changes feature or specify 0 to disable the feature. The default (if no operand is specified) is to disable the track-changes feature. This operand is optional.

snmptrapmode   Specify 1 to enable errors to be sent to the SNMP-TRAP in addition to the errlog or specify 0 to disable the SNMP-TRAP messages. The default (if no operand is specified) is to disable SNMP-TRAP messages. This operand is optional.

Examples   To enable the track-changes feature:

```
switch:admin> trackchangesset 1, 1
Committing configuration...done.
switch:admin> trackchangesshow
Track changes status: ON
Track changes generate SNMP-TRAP: YES
```

See Also   **agtCfgSet**, **agtCfgShow**, **trackChangesHelp**, **trackChangesShow**

trackChangesShow

Displays status of track-changes feature.

Synopsis   **trackchangesshow**

Availability   admin, switchAdmin, user

Description   Use this command to display status of the track-changes feature. It displays if the feature is turned on or off and if SNMP traps are generated.

The output from the track-changes feature is dumped to the error log for the switch. Use the **errDump** command or **errShow** command to view the error log.

Operands   none

Examples   To display the status of the track-changes feature:

```
switch:admin> trackchangesshow
Track changes status: ON
Track changes generate SNMP-TRAP: YES
```

See Also   **trackChangesHelp**, **trackChangesSet**

Note: Enter commands in lowercase only; mixed case is for readability.

trunkDebug

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trunkDebug

Debugs a trunk link failure.

Synopsis   **trunkdebug** *port1 port2*

Availability   admin, switchAdmin

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
- Trunking not supported in switch interop mode
- port *port_id* is not E_Port
- port *port_id* trunking disabled
- port *port_id* speed is not 2G or 4G
- port *port_id* and port *port_id* are not on same port group
- port *port_id* and port *port_id* connect to different switches
- port *port_id* is not a trunking port due to: E_Port being disabled, or trunking might be disabled at remote port
- port *port_id* and port *port_id* cannot trunk, please check link length to make sure difference is less than 400 m

Operands   This command has the following operands:

port1   Specify the area number of port 1. Use the **switchShow** command to view the area numbers for a port. This operand is required.

port2   Specify the area number of port 2. Use the **switchShow** command to view the area numbers for a port. This operand is required.

Examples   To debug a trunk connection:

```
switch:admin> trunkdebug 43 44
Switch does not support trunking

switch:admin> trunkdebug 62 63
port 62 and 63 are trunked together
```

See Also   **portCfgTrunkPort**, **switchCfgTrunk**, **trunkShow**

trunkShow

Displays trunking information.

Synopsis	**trunkshow**
Availability	admin, switchAdmin, user
Description	Use this command to display trunking information. The following fields display:

Trunking Group Number

> Displays each trunking group on a switch. All the ports that are part of this trunking group are displayed.

Port to port connections

> Displays the port-to-port trunking connections.

WWN — Displays the WWN of the connected port.

deskew — The time difference for traffic to travel over each ISL compared to the time to the shortest ISL in the group. The number corresponds to nanoseconds divided by 10. The firmware automatically sets the minimum deskew value of the shortest ISL to 15.

Master — Displays whether this trunking port connection is the master port connection for the trunking group.

Operands   none

Examples   To display trunking information for a switch:

```
switch:admin> trunkshow
 1: 6 ->  4   10:00:00:60:69:51:43:04   deskew 15   MASTER

 2:15 -> 13   10:00:00:60:69:51:43:04   deskew 16   MASTER
   12 -> 12   10:00:00:60:69:51:43:04   deskew 15
   14 -> 14   10:00:00:60:69:51:43:04   deskew 17
   13 -> 15   10:00:00:60:69:51:43:04   deskew 16

 3:24 -> 14   10:00:00:60:69:51:42:dd   deskew 15   MASTER
```

See Also   **portCfgTrunkPort**, **switchCfgTrunk**

tsClockServer

Displays or sets the NTP Server address.

Synopsis   **tsclockserver** [*ipaddr*]

Availability   admin, switchAdmin, user

Description   Use this command to synchronize the local time of the principal or primary FCS switch to an external NTP server.

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 the security feature is not enabled) or the primary FCS switch (when the security feature is enabled) connect to the NTP server and broadcast time service updates.

All switches in the fabric maintain the current clock server IP address in flash memory. By default, this value is LOCL. Changes to the clock server IP address on the principal or primary FCS switch are propagated to all switches in the fabric.

Use this command with no parameters to display the current clock server IP address being used. Specify the ipaddr operand to set the clock server IP address and enable fabric-wide clock synchronization with the specified clock server.

The NTP server used must support a full NTP client. Fabric OS v3.1.0 and v2.6.1 have an SNTP client and hence will accept an SNTP or NTP server, but v4.1.0 has an NTP client, so for the proper functioning of a mixed fabric with external time synchronization it is necessary that an NTP server that supports a full NTP client be used.

The ipaddr specified should be the IP address of an NTP server and should be accessible from the switch. 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 IP address other than LOCL is specified, the **date** command is restricted to display only. Refer to the **date** command for more details.

Note

When secure mode is enabled, this command can be run on all switches to view the NTP server IP address. You can only modify the NTP server IP address on the primary FCS switch.

Operands   This command has the following operand:

ipaddr   Specify the IP address of the NTP server. This operand is optional. By default, this value is LOCL.

If no operand is specified, the current value displays.

Examples   To display the current clock server value (LOCL), set the value to an NTP server at the specified IP address and then verify that the new IP address was saved:

```
switch:admin> tsclockserver
LOCL
switch:admin> tsclockserver "123.123.123.123"
Updating Clock Server configuration...done.
switch:admin> tsclockserver
123.123.123.123
```

See Also   date

tsTimeZone

Displays or sets the system time zone.

Synopsis   **tstimezone** [*houroffset* [**,** *minuteoffset*]]

Availability   admin, switchAdmin, user

Description   Use this command to display or set the system time zone.

All switches maintain the current time zone setup in flash 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: that is, GMT. If all switches in a fabric are in one time zone, it is possible to leave the time zone setup at the default.

Time zone is used only in computing local time, which is used for error reporting and logging. An incorrect time zone setup do not affect the switch operation in any way.

System services started during the switch bootup reflect time-zone change only at the next reboot.

Enter this command with no parameters to display the time zone setup. With the valid parameters, it sets the time zone for an individual switch.

Negative houroffset values mean that the local time is behind GMT; for example, -8,0 is GMT-08:00

Positive houroffset values mean the that local time is ahead of GMT; for example, 3,0 is GMT+03:00

Note

In systems with multiple switches in a single chassis, the time zone of switch 0 is the system time zone.

Operands   This command has the following operands:

houroffset   Specify the number of hours relative to GMT. This operand must be specified as an integer. Valid values are -12 through 12. This operand is optional.

minuteoffset   Specify the number of minutes relative to houroffset. This operand must be specified as an integer. Valid values are -30, 0, or 30. This operand is optional.

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 Time Zone configuration...done.
System Time Zone change will take effect at next reboot.

switch:admin> tstimezone
Time Zone Hour Offset: -3
Time Zone Minute Offset: -30
```

See Also   date

turboRamTest

Performs a turbo SRAM logic test for 2-Gbit/sec ASICs.

Synopsis **turboramtest** [**--slot** *slotnumber*][**-passcnt** *count*][**-ports** *itemlist*]

Availability admin

Description This command verifies the on chip SRAM located in the 2 Gbit/sec ASIC using the turbo-RAM BIST circuitry. These same SRAMs are tested by **portRegTest** and **sramRetentionTest** using PCI operations but for this test, the BIST controller is able to perform the SRAM write and read operations at a much faster rate. It is also able to test one SRAM in each quadrant of every chip, in parallel.

The test flow for each SRAM is as follows:

1. Fill RAM with alternating FFFF 0000 pattern. (Subtest 1: turboram memory fill)

2. For each incrementing address, read FFFF 0000 pattern and write 0000 FFFF. (Subtest 2: turbo-ram r-m-w inc 1)

3. For each incrementing address, read 0000 FFFF pattern and write FFFF 0000. (Subtest 3: turbo-ram r-m-w inc 2)

4. For each decrementing address, read FFFF 0000 pattern and write 0000 FFFF. (Subtest 4: turbo-ram r-m-w dec 1)

5. For each decrementing address, read 0000 FFFF pattern and write FFFF 0000. (Subtest 5: turbo-ram r-m-w dec 2)

6. Repeat steps 1 through 5 with AAAA 5555 pattern.

Operands This command has the following optional operands:

--slot *slotnumber* Specifies the slot number on which the diagnostic operates. The ports specified are relative to this slot number. The default is 0 and designated to operate on fixed-port-count products.

-passcnt *count* Specifies the number of times to perform this test. The default value is 1.

-ports *itemlist* Specifies a list of blade ports to test. By default, all the blade ports in the specified slot are tested. Refer to the **itemList** command help page for more information.

Examples To execute this test:

```
switch:admin> turboramtest -passcnt 2 -ports 2/0-2/63
Running Turbo RAM Test ........ passed.
```

Diagnostics When it detects failure(s), the subtest might report one or more of the following error messages:

```
DIAG-WTEST
DIAG-INC_RWTEST
DIAG-DEC_RWTEST
DIAG-RAMINIT_TO
```

Refer to the *Fabric OS System Error Message Reference Manual* for more information.

See Also **centralMemoryTest**, **cmemRetentionTest**, **cmiTest, portRegTest, sramRetentionTest**

txdPath

Performs a functional test of ASIC pair TXA,TXD connections.

Synopsis   **txdpath** [**--slot** *slotnumber*][**-nframes** *count*][**-lb_mode** *mode*][**-spd_mode** *mode*][**-nonstop** *mode*] [**-ports** *itemlist*]

Availability   admin

Description   Use this command to verify the TXA, TXD, and CMI data paths between the chips within a mini-switch. This is done by configuring all of the ports on the mini-switch in internal loopback and sending a frame from each quadrant to each other port on the same mini-switch. The frame starts from the CPU and is transmitted by the first port which also receives the frame and deposits it in central memory. The second port then reads the frame from central memory using its own TXA,TXD path. The frame is then looped back one more time and is sent back to the CPU, where it is compared with the transmitted data.

Only one frame is transmitted and received at any one time. External cable is not required to run this test. The port LEDs flicker green rapidly while the test is running. The test method is as follows:

1. Set all ports present for parallel loopback. Then, for each pair of source quadrants and destination ports:

2. Set up a source port to route frames to a destination port and a destination port to route frames to the CPU.

3. Transmit frame F through the source port.

4. Pick up the frame from the destination port.

5. Check if any of the eight statistic error counters are not 0:

   ```
   ENC_in, CRC_err, TruncFrm, FrmTooLong, BadEOF, Enc_out, BadOrdSet, DiscC3
   ```

6. Repeat steps 2 through 5 for all ports present until either the number of frames (or -nmegs count) requested is reached, or, all ports are marked bad.

At each pass, a different data type is used to create the frame from a palette of seven; meaning if a pass of seven is requested, seven different frames are used in the test. If eight passes, the first seven frames are unique, and the eighth is the same as the first. The data palette of seven are:

1. `CSPAT: 0x7e, 0x7e, 0x7e, 0x7e, ...`

2. `BYTE_LFSR: 0x69, 0x01, 0x02, 0x05, ...`

3. `CHALF_SQ: 0x4a, 0x4a, 0x4a, 0x4a, ...`

4. `QUAD_NOT: 0x00, 0xff, 0x00, 0xff, ...`

5. `CQTR_SQ: 0x78, 0x78, 0x78, 0x78, ...`

6. `CRPAT: 0xbc, 0xbc, 0x23, 0x47, ...`

7. `RANDOM: 0x25, 0x7f, 0x6e, 0x9a, ...`

If seven passes are requested, the seven different data types are used in the test. If eight passes are requested, the first seven frames use unique data type.

Note

This command is supported only on SilkWorm 200E, 3014, 3016, 3250, 3850, 3900, 4012, 4100, 24000, and 48000 platforms; use **portLoopbackTest** or **miniCycle** instead.

Operands   This command has the following operands:

--slot *slotnumber*   Specifies the slot number on which the diagnostic operates. The ports specified are relative to this slot number. The default is set to 0 and designed to operate on fixed-port-count products.

-nmegs *count*   Specify the number of million frames to send. The test progresses until the specified number of frames has been transmitted on each port. The default value is 10, so the number of frames sent are at least 10 million.

-lb_mode *mode*   Specify the loopback point for the test. By default, this command uses loopback plugs, as described earlier. However, for debug purposes, you can select other loopback modes, as follows:

    1   Port loopback (loopback plugs)

    2   External (SERDES) loopback

    5   Internal (parallel) loopback

-spd_mode *mode*   Specify the speed for the test. This parameter is used only for Bloom and Condor ASIC-based products, where For 1 Gbit/sec-only products, this option is ignored. The exact operation of modes 5 through 8 depends upon the loopback mode selected. When speed modes 5 through 8 are used with cables, they must be connected even to odd or the test fails. Modes include:

    0   Run test at 1 Gbit/sec, 2 Gbit/sec, and 4 Gbit/sec (default).

    1   Set all port speeds to lock at 1 Gbit/sec

    2   Set all port speeds to lock at 2 Gbit/sec.

    4   Set all port speeds to lock at 4 Gbit/sec.

For **-lb_mode** set to 0 or 1, the following speed modes are available to test the speed negotiation:

    5   Set all even ports' speed for auto-negotiate, set all odd ports' speed for 1 Gbit/sec.

    6   Set all even ports' speed for auto-negotiate, set all odd ports' speed for 2 Gbit/sec.

    7   Set all odd ports' speed for auto-negotiate, set all even ports' speed for 1 Gbit/sec.

    8   Set all odd ports' speed for auto-negotiate, set all even ports' speed for 2 Gbit/sec.

For **-lb_mode** set to 2 or 3, the following speed modes are available to test FIFO underrun.

    5,7   Set all even ports' speed for 2 Gbit/sec, set all odd ports' speed for 1 Gbit/sec.

    6,8   Set all even ports' speed for 1 Gbit/sec, set all odd ports' speed for 2 Gbit/sec.

-nonstop *mode*   Specify nonstop mode. If set to a nonzero value, the test does not stop on the first error. The default value is 0.

-ports *itemlist*   Specify a list of user ports to test. By default, all of the user ports in the current switch are tested. This option can be used to restrict testing to the specified ports.

Examples   To run the **txdPath** test:

```
switch:admin> txdpath
Running TX Data Path Test ....
Test Complete: "txdpath" Pass 10 of 10
Duration 0 hr, 0 min & 47 sec (0:0:47:645).
```

Diagnostics   When it detects failure(s), the test can report one or more of the following error messages:

```
DATA
ERRSTAT
INIT
PORTDIED
STATS
TIMEOUT
XMIT
```

Refer to the *Fabric OS System Error Message Reference Manual* for more information.

See Also   **backport**, **camTest**, **centralMemoryTest**, **cmemRetentionTest**, **cmiTest**, **crossPortTest**, **itemList**, **portLoopbackTest**, **portRegTest**, **spinSilk**, **sramRetentionTest**

upTime

Displays length of time the system has been operational.

Synopsis   **uptime**

Availability   admin, switchAdmin, user

Description   **upTime** provides a one line display of the following information. 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.

For up and powered-on times 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.

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**

uRouteConfig

Configures a static route.

Synopsis   **urouteconfig** *in_area domain out_area*

Availability   admin, switchAdmin

Description   Use this command to configure static routes. A static route is a route that is assigned to a specific path (defined by port number *out_area*), a route that does not change when a topology change occurs unless the path used by the route becomes unavailable.

After this command is issued, if *out_area* is associated with a valid minimum-cost path, all frames coming in from *in_area* port addressed to domain are forwarded through *out_area* port.

If port number *out_area* port is not associated with such a path, the routing assignment is not immediately affected by this command. However, the static route is remembered so that it can be enforced if this port becomes the port of a valid path in the future.

If a static route requires some hardware resources that are already used, a platform conflict warning message is displayed and the configuration does not take effect.

The *in_area* port can be either an F_Port or an E_Port.

Note

When using static routes, load sharing might be affected. The switch attempts to achieve optimum load sharing, but if too many routes are statically configured to use the same output port, a fair load sharing might not be achievable.

To prevent routing loops, static route requests involving non-minimum-cost paths are not enforced.

Static route configuration is not supported on SilkWorm directors set to chassis configuration option 5 by **chassisConfig**.

Operands   This command has the following operands:

in_area   Specify the port to be statically routed.

domain   Specify the destination domain.

out_area   Specify the output port to which traffic is forwarded.

Examples   To configure a static route for all traffic coming in from port 1 and addressed to domain 2 to go through port 5:

```
switch:admin> urouteconfig 1 2 5
done.

switch:admin> urouteshow 1/1 2
Local Domain ID: 1

In Port    Domain   Out Port   Metric    Hops   Flags    Next (Dom, Port)
------------------------------------------------------------------------
   1         2         5         500        1      S          2,5
```

See Also   **configShow**, **interfaceShow**, **uRouteRemove**, **uRouteShow**

uRouteRemove

Removes a static route.

Synopsis   **urouteremove** *in_area domain*

Availability   admin, switchAdmin

Description   Use this command to remove a previously configured static route.

After this command is issued, the route to domain for *in_area* might change to use a different output port, only if dynamic load sharing (DLS) is set. If DLS is not set, the route remains as is, with its route attribute changed from static to dynamic.

in_area can be either an F_Port or an E_Port.

Operands   This command has the following operands:

in_area   Specify the input port of the static route to remove.

domain   Specify the destination domain of the static route to remove.

Examples   To remove a static route for all traffic coming in from port 1 and addressed to domain 2:

```
switch:admin> urouteremove 1 2
done.
```

See Also   **configShow**, **dlsShow**, **uRouteConfig**, **uRouteShow**

uRouteShow

Displays unicast routing information.

Synopsis **urouteshow** [*slotnumber*/][*portnumber*][**,** *domainnumber*]

Availability admin, switchAdmin, user

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 Area field displayed by the **switchShow** command. Refer to *Fabric OS Administrator's 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 Area field displayed by the **switchShow** command. For port swap operations, the value is equal to the Swport field displayed by the **portSwapShow** command. Refer to *Fabric OS Administrator's 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.
Flags	Indicates if route is dynamic (D) or static (S). A dynamic route is discovered automatically by the FSPF path selection protocol. A static route is assigned using the command **uRouteConfig**.
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 **portRouteShow** and **topologyShow**.

Operands This command has the following operands:

slotnumber	For bladed systems only, specify the slot number of the input port whose routes are displayed, followed by a slash (/).
portnumber	Specify a port number. Valid values for port number vary, depending on the switch type. 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.
domainnumber	Displays routing information for the specified domain. 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
 11          2          0         1500       2       D            4,0
             4          0          500       1       D            4,0
 16          1         27         1000       1       D            1,1
 27          2         16         1500       2       D            4,16
             4          0          500       1       D            4,0
```

To display the routing information of port 11 on slot 1:

```
switch:admin> urouteshow 1/11
Local Domain ID: 3
In Port    Domain    Out Port    Metric    Hops    Flags    Next (Dom, Port)
---------------------------------------------------------------------------
 11          2         16         1500       2       D            4,16
             4         16          500       1       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 **portRouteShow**, **topologyShow**, **uRouteConfig**, **uRouteRemove**

userConfig

Manages user accounts.

Synopsis   **userconfig** [*actions*][*arguments*]

Availability   admin, switchAdmin, user

Description   Use this command to display, add, delete, change, or recover switch accounts. You can create new login accounts to manage a switch. These accounts take on the permission or role of the default admin, switchAdmin, or user account. When the command completes, account name and other attributes are saved persistently. In a platform supporting multiple domains, the affected accounts apply only to the switch domain that the command was executed.

In secure mode, the actions associated with this command to add, delete, change or recover accounts are allowed only on the primary FCS switch. The primary FCS switch distributes the update to the entire fabric. As a result, all switches supporting customer-defined accounts will have the same account database. All accounts that not consistent with the primary FCS switch will be deleted and saved in the backup database. Administrators can use the **--recover** action to restore the accounts.

Note

User account data and passwords are not be saved using **configUpload**. User accounts created using the **userConfig** command are deleted and user accounts are reset to the factory default user accounts and passwords.

Operands   Without any specified actions, the command displays the usage. The operands are as follows:

--show *options*   Displays current or backup account information.

--add *username* [*options*]
                 Add a new account *username* to switch.

--delete *username*   Delete an account *username* from the switch.

--change *username* [*options*]
                 Change attributes for an account *username*.

--recover   Recover one or more accounts from backup created by Secure Fabric OS operations.

Note

--show is the only action available to either switchAdmin or user accounts. All other actions require the admin permission.

The following gives detailed description of each action type.

--show *username* | [**-a** | **-b**]

Displays information about the current login account, account named *username* or all accounts either in active or backup account database.

If running from an account with user or switchAdmin permission, the command can only display information about that account. The table lists the result of different combination of options.

Table 2-20 --show Option Combination

username	-a	-b	Accounts Displayed
No	No	No	Current login
Yes	No	No	*username*
No	Yes	No	All accounts
Yes	Yes	No	Not valid
No	No	Yes	All backup accounts
Yes	Yes	Yes	Not valid

--add *username* **-r** *rolename* [**-d** *description*][**-x**]

Add a new account named *username* to the switch, with the given authorization of *rolename*. The **-d** option gives a text description for the new account. The **-x** option specifies an expired password that must be changed the first time the user logs in. This command also prompts for an initial password.

The following rules apply to add a new account:

• *username* must be unique and is case sensitive.

• *username* must begin with a letter and contain only letters, numbers, and underscores.

• The maximum length of *username* is 40 characters.

• *description* is optional. The maximum length is 40 printable ASCII characters, except colons. Characters that are interpreted by shell (such as double quotes ("), single quotes ('), exclamation marks (!), and so forth) needs to be prefixed by the backslash (\) qualifier.

• *rolename* must be either user, switchAdmin, or admin in nonsecure mode; it must be user, admin, or nonfcsadmin in secure mode.

• There can be maximum 15 customer-created accounts for a switch.

--delete *username* Delete an existing account named *username* from the switch. This action does not take any options. It prompts for confirmation before proceeding. After an account is deleted, the CLI sessions associated with the account are terminated. The following rules apply to delete an account:

• You cannot delete any default accounts.

• An account cannot delete itself.

--change *username* [**-r** *rolename*][**-d** *description*][**-e yes** | **no**][**-x**][**-u**]

Change attributes for an existing account, named *username*, in the switch. The -r option specifies change to authorization *rolename*. The **-d** option specifies change to description. The **-e** option expects either **yes** or **no** to enable or disable an account. Once an account is disabled, the CLI sessions associated with the account are terminated. The **-x** option expires the current password, forcing a password change the next time the user logs in. The **-u** option unlocks the user account.

Note

The **-u** and **-x** options are available only in nonsecure mode.

The following rules apply to change an account:

- You cannot change the *rolename* or *description* of any default accounts.

- You cannot change the *rolename* or *description* for accounts at the same or higher authorization level.

- An account cannot change the *rolename* of itself.

- Except the default root account, no account can disable itself.

--recover

Recover all accounts from backup database. The backup database is created in Secure Fabric OS, when certain operations cause a switch to delete some of its customer created accounts. For details, read the secure mode description. Once accounts have been recovered, the accounts in the backup database are still present.

Examples

To add a new account:

```
switch:admin> userconfig --add joe -r admin -d "Joe Smith"

Setting initial password for joe
Enter new password:
Re-type new password:
Account joe has been successfully added.
```

To display current account information:

```
switch:admin> userconfig --show joe

Account name: joe
Role: admin
Description: Joe Smith
Enabled: Yes
```

To change account attributes:

```
switch:admin> userconfig --change joe -e no

Broadcast message from root Sat Apr 2 03:03:32 2005...

Security Policy, Password or Account Attribute Change: joe will be logged out
Attribute for account joe has been successfully changed.
```

See Also

userRename

Renames the user login name.

Synopsis   **userrename** *old_username new_username*

Availability   admin

Description   Use this command to change an existing account login name to a new login name. The following rules apply:

- *new_username* must begin with a letter and contain only alphanumeric characters or underscores.

- *new_username* must be between 1 and 40 characters long.

- *new_username* must be different from any existing account login name.

- If *old_username* is a default login name, *new_username* cannot be another default login name.

- If *new_username* is a default login name, it must indicate the same role as old_username.

When using Brocade Secure Fabric OS, rename the admin-level login name to the Brocade-specific default of admin and the user-level login name to the Brocade-specific default of user before enabling security; otherwise, the switch is not allowed in the secure fabric.

> **Note**
> This command is not supported on all platforms.

Operands   The following operands are required:

old_username   The current user login name

new_username   The new user login name

> **Note**
> These operands are case sensitive.

Examples   To rename the admin-level login name from "USERID" to "admin":

```
switch:admin> userrename USERID admin
```

See Also   **secModeEnable**

version

Displays firmware version information.

Synopsis   **version**

Availability   admin, switchAdmin, user

Description   Use this command to display firmware version information and build dates.

The following is displayed:

Kernel	Displays the version of switch kernel operating system
Fabric OS	Displays the version of switch Fabric OS
Made on	Displays the build date of firmware running in switch
Flash	Displays the build date of firmware stored in flash proms
BootProm	Displays 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.

Operands   none

Examples   To display the firmware version information in a switch:

```
switch:admin> version
Kernel:    2.4.19
Fabric OS:  v4.4.0
Made on:    Mon Oct 4 09:27:16 2004
Flash:      Tue Oct 5 12:13:47 2004
BootProm:   3.1.18
```

See Also   **firmwareDownload**, **reboot**

wwn

Displays a switch World Wide Name (WWN).

Synopsis **wwn**

Availability admin, switchAdmin, user

Description Use this command to display the WWN of a switch. All switches have a numeric address that is the unique Fibre Channel address used for communicating with the switch. The WWN displays in the output of the **switchShow** command.

WWNs must have eight colon-separated fields, each consisting of one or two hexadecimal digits between 0 and ff, with no spaces.

After changing the WWN, this command prompts you to reboot the system (or switch on dual-domain systems), because the change does not take effect until the switch restarts. This reboot can be deferred, in which case you are expected to eventually use **switchReboot** or **reboot** to propagate the change to all switch components. However, the restart of the switch must happen before any **firmwareDownload** or (for bladed systems) CP failover occurs; otherwise, the behavior of the switch could be unexpected.

This command cannot change the WWN of a switch in secure mode.

Note
When security mode is enabled, this command can be issued only from the primary FCS switch.

Operands none

Examples To display the switch WWN:

```
switch:admin> wwn
10:00:00:60:69:00:54:e9
```

See Also **switchShow**

zone

Performs zone-related operations.

Synopsis   **zone --copy -f** *source_ad*[**.***source_zone_object*][*dest_zone_object*]

zone --expunge "*zone_object***"**

zone --validate [**-m** *mode*][**"***zone_object***"**]

Availability   admin

Description   Use this command to perform zone-related operations on the fabric.

zone --copy

Use **zone --copy** to copy zone objects from the root zone database (AD0) or an AD zone database to the specified destination. This command fails if you do not have access rights to the source AD.

zone --expunge

Use **zone --expunge** to remove all references to the specified zone object and to delete the zone object.

Zone objects include:

*   Zone member

*   Zone alias

*   Zone

The removal of the zone object could result in other zone object removal, triggering a recursive deletion. For example, removing the last zone member from a zone results in the zone deletion.

The command displays the list of zone objects to be deleted and prompts you before deleting.

zone --validate

Use **zone --validate** to list all zone members that are not part of the current zone enforcement table. The reason for not being in the table might be one of the following:

*   The device is not online.

*   The device is online but it is not part of the current AD.

If a switch is specified using D,P in the AD membership list, all zone elements specified with WWNs associated to that D,P are considered for zone enforcement. If a device WWN is specified in the AD member list, the corresponding D,P the device WWN is not considered for zone enforcement.

The zone database used as input to this command is specified using *mode*. If the optional zone object name is specified, the validation is completed on that zone object alone; otherwise, all zones in the zone database are validated.

Operands   Operands specific to **--copy** include:

source_ad[*.source_zone_object*]

Specifies the source AD and the zone object under it. The zone object can be a zone configuration, zone alias, or zones. If *source_zone_object* is not specified, all zone configurations are copied to the current AD.

dest_zone_object   Identifies the destination zone object the within the current AD. If *dest_zone_object* is not specified, *source_zone_object* is copied (with the same name). If the destination zone object is not already present in the AD, one is created (with type as *source_zone_object*).

If a zone object (or subobject) that needs to be copied already exists in the current zone database, and if the contents are different, the copy operation fails.

-f   Validates the zone object's membership in the destination AD with a runtime filter. The entire zone object is copied if one or more members in the zone object are part of the AD.

If AD member list contains a D,P member, all zone objects with the device WWNs that are part of that D,P port are copied to the AD. If AD member list contains a device WWN member, all zone objects with the D,P to which the device WWN is connected are copied to the AD.

Operands specific to **--expunge** and **--validate** include:

"*zone_object***"**

Operands specific to **--validate** include:

-m *mode*   Valid *mode* flag values:

0   Uses the zone database from the current transaction buffer.

1   Uses the zone database stored in the persistent storage.

2   Uses the currently enforced zone database. This is the assumed default *mode* flag value if no mode flag is specified.

Examples   To copy all zone configurations from the root zone database (AD0) to the current AD:

```
switch:admin> zone --copy AD0
```

To copy cur_cfg1 zone configuration from the root zone database (AD0) to the current AD:

```
switch:admin> zone --copy AD0.cur_cfg1
```

To copy backup_zn zone from the root zone database (AD0) to the current AD:

```
switch:admin> zone --copy AD0.backup_zn
```

To copy backup_zn zone from the root zone database (AD0) to the current AD, with AD member list filtering:

```
switch:admin> zone --copy -f AD0.backup_zn
```

To delete all reference of zone member 100,5:

```
switch:admin> zone --expunge "100,5"
```

To delete all reference of zone backup_zn:

```
switch:admin> zone --expunge backup_zn
```

To delete all reference of zone alias backup_ali1:

```
switch:admin> zone --expunge backup_ali1
```

To validate all zones in the currently enforced zone database:

```
switch:admin> zone --validate
```

To validate all zones in the zone database in the current transaction buffer:

```
switch:admin> zone --validate -m 0
```

To validate all zones in the zone database in the persistent storage:

```
switch:admin> zone --validate -m 1
```

To validate the zone object zone_test in the zone database in the current transaction buffer:

```
switch:admin> zone --validate -m 0 zone_test
```

See Also   **zoneHelp**

zoneAdd

Adds a member to the zone.

Synopsis   zoneadd "*zoneName*", "*member*;*member*"

Availability   admin

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

This command changes the defined configuration. For the change to be preserved across switch reboots, it must be saved to flash memory using the **cfgSave** command. For the change to become effective, an appropriate zone configuration must be enabled using the **cfgEnable** command.

Note

This command requires a Brocade Advanced Zoning license.

When security mode 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, in quotation marks. This operand is required.

"*member*"   Specify a member or list of members to be added, in quotation marks, separated by semicolons. Valid values can be one or more of the following:

- A switch domain and port area number pair; for example, "2, 20". View the area numbers for ports using the **switchShow** command.
- Node or port WWN.
- QuickLoop AL_PA.
- Zone alias name.

Examples   To add aliases for three disk arrays to "Blue_zone":

```
switch:admin> zoneadd "Blue_Zone", "array3; array4; array5"
```

See Also   **zoneCreate**, **zoneDelete**, **zoneRemove**, **zoneShow**

zoneCreate

Creates a zone.

Synopsis   **zonecreate "***zonename***", "***member***;***member***"**

Availability   admin

Description   Use this command to create a new zone.

A zone name is a C-style name beginning with a letter and followed by any number of letters, digits, and underscore characters. Names are case sensitive; for example, "Zone_1" indicates a different zone than "zone_1". Spaces are ignored. Zone names are limited to 64 characters.

The zone member list must have at least one member. The members are described by a list of member definitions, separated by semicolons.

Specify ports by domain and port area number. The values are entered as a pair of numbers "s,p" where "s" is the switch number (domain ID) and "p" is the port area number. For example, "2, 20" specifies port area number 20 on switch domain 2. When a zone member is specified by port area number, all devices connected to that port are in the zone. If this port is an arbitrated loop, all devices on the loop are in the zone.

Specify a World Wide Name as eight hex numbers separated by colons: for example, "10:00:00:60:69:00:00:8a". Zoning compares the WWN with the node and port names presented by a device in a login frame (FLOGI or PLOGI). When a zone member is specified by node name, then all ports on that device are in the zone. When a zone member is specified by port name, then only that single device port is in the zone.

Specify a QuickLoop AL_PA as a QuickLoop name followed by a list of AL_PAs: for example, "qloop1[01,02]". QuickLoop names have the same format as zone names and are created with the qloopCreate command to define a switch or pair of switches that form the QuickLoop.

Specify a zone alias name using the same format as a zone name. A zone alias is created with the **aliCreate** command. The alias must resolve to a list of one or more of the following:

- A switch domain and port area number pair. View the area numbers for ports using the **switchShow** command.

- World Wide Names.

- QuickLoop AL_PAs.

The types of zone members used to define a zone can be mixed. For example, a zone defined with the members "2,12; 2,14; 10:00:00:60:69:00:00:8a" would contain all devices connected to switch 2, ports 12 and 14, and to the device with the World Wide Name "10:00:00:60:69:00:00:8a" (either node name or port name), at the port in the fabric to which it is connected.

This command changes the defined configuration. For the change to be preserved across switch reboots, it must be saved to flash memory using the **cfgSave** command. For the change to become effective, an appropriate zone configuration must be enabled using the **cfgEnable** command.

Note

This command requires a Brocade Advanced Zoning license.

Use this command to create a "broadcast" zone. This is a special zone used to specify those nodes that can receive broadcast traffic. Broadcast traffic is usually meant for servers and not for storage devices.

This zone must be named "broadcast". Only one broadcast zone can exist within a fabric. This type of zone is hardware enforced; the switch controls data transfer to a port.

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

Operands   The following operands are required:

"*zonename*"   Name for a zone to be created, in quotation marks. This name cannot be used for any other zone object. Zone names are limited to 64 characters.

"*member*"   List of members to be included in zone, in quotation marks, separated by semicolons. Can be one or more of the following:

- A switch domain and port area number pair: for example, "2, 20". View the area numbers for ports using the **switchShow** command.
- World Wide Names.
- QuickLoop AL_PAs.
- Zone alias names.

Examples   To create three zones using a combination of port numbers and zone aliases:

```
switch:admin> zonecreate "Red_zone", "1,0; loop1"
switch:admin> zonecreate "Blue_zone", "1,1; array1; 1,2; array2"
switch:admin> zonecreate "Green_zone", "1,0; loop1; 1,2; array2"
```

See Also   **zoneAdd**, **zoneDelete**, **zoneRemove**, **zoneShow**

zoneDelete

Deletes a zone.

Synopsis **zonedelete "***zonename***"**

Availability admin

Description Use this command to delete a zone.

This command changes the defined configuration. For the change to be preserved across switch reboots, it must be saved to flash memory using the **cfgSave** command. For the change to become effective, an appropriate zone configuration must be enabled using the **cfgEnable** command.

Note

This command requires a Brocade Advanced Zoning license.

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

Operands This command has the following operand:

"*zonename***"**   Name of the zone to be deleted, in quotation marks. This operand is required.

Examples To delete the zone "Blue_zone":

```
switch:admin> zonedelete "Blue_zone"
```

See Also **zoneAdd**, **zoneCreate**, **zoneRemove**, **zoneShow**

zoneHelp

Displays help information for zone commands.

Synopsis   **zonehelp**

Availability   admin, switchAdmin, user

Description   Use this command to display help information for zone commands.

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

fazoneAdd            Add a member to a fabric assist zone
fazoneCreate         Create a fabric assist zone
fazoneDelete         Delete a fabric assist zone
fazoneShow           Print Fabric Assist Zone information

cfgClear             Clear all zone configurations
cfgDisable           Disable a zone configuration
cfgEnable            Enable a zone configuration
cfgSize              Print size details of zone database
cfgTransAbort        Abort zone configuration transaction
```

See Also   **aliAdd**, **aliCreate**, **aliDelete**, **aliRemove**, **aliShow**, **cfgClear**, **cfgDisable**, **cfgEnable**, **cfgSize**, **cfgTransAbort**, **fazoneAdd**, **fazoneCreate**, **fazoneDelete**, **fazoneShow**

zoneObjectCopy

Copies a zone object.

Synopsis **zoneObjectCopy "***objectName***", "***newName***"**

Availability admin

Description Use this command to copy a zone object to a new zone object. The resulting object has the same type as the original object. You can use this command for all zone object types, including cfg, zone, and alias.

A zone configuration name must begin with a letter that can be followed by any number of letters, numbers, and underscores. Names are case sensitive; for example, "Cfg_1" and "cfg_1" are different zone configurations. Spaces are ignored.

This command changes the defined configuration. For the change to be preserved across switch reboots, it must be saved to flash memory using the **cfgSave** command. For the change to become effective, an appropriate zone configuration must be enabled using the **cfgEnable** command.

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

Note

This command requires a Brocade Advanced Zoning license.

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

Operands This command has the following operands:

"*objectName***"** The name of the object that you want to copy. This operand is required.

"*newName***"** The name of the object that you want created. This operand is required.

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**

Note: Enter commands in lowercase only; mixed case is for readability.

zoneObjectExpunge

Expunges a zone object.

Synopsis   **zoneObjectExpunge "***objectName***"**

Availability   admin

Description   Use this command to expunge a zone object. In addition, to performing a simple delete, this command also removes the object from the member lists of all other objects. Afterwards, this object is completely removed from the database. You can use this command for all zone object types, including cfg, zone, and alias.

This command changes the defined configuration. For the change to be preserved across switch reboots, it must be saved to flash memory using the **cfgSave** command. For the change to become effective, an appropriate zone configuration must be enabled using the **cfgEnable** command.

> **Note**
>
> This command requires a Brocade Advanced Zoning license.
>
> When security mode is enabled, this command can be issued only from the primary FCS switch.

Operands   This command has the following operand:

"*objectName***"**   The name of the object that you want to expunge. This operand is required.

Examples   To create a configuration containing three zones:

```
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
```

See Also   **cfgAdd**, **cfgClear**, **cfgDelete**, **cfgDisable**, **cfgEnable**, **cfgRemove**, **cfgSave**, **cfgShow**, **zoneObjectCopy**, **zoneObjectRename**

zoneObjectRename

Renames a zone object.

Synopsis   **zoneObjectRename "***objectName***", "***newName***"**

Availability   admin

Description   Use this command to rename a zone object. You can use this command for all zone object types, including cfg, zone, and alias.

A zone configuration name must begin with a letter that can be followed by any number of letters, numbers, and underscores. Names are case sensitive; for example, "Cfg_1" and "cfg_1" are different zone configurations. Spaces are ignored.

This command changes the defined configuration. For the change to be preserved across switch reboots, it must be saved to flash memory using the **cfgSave** command. For the change to become effective, an appropriate zone configuration must be enabled using the **cfgEnable** command.

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

Note

This command requires a Brocade Advanced Zoning license.

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

Operands   This command has the following operands:

"*objectName***"**   The name of the object that you want to rename. This operand is required.

"*newName***"**   The new name of the object. This operand is required.

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**

zoneRemove

Removes a member from a zone.

Synopsis   **zoneremove** "*zonename*"**,** "*member***;***member*"

Availability   admin

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

The member list is located by an exact string match; therefore, it is important to maintain the order when removing multiple members. For example, if a zone contains "array2; array3; array4", removing "array3; array4" succeeds but removing "array4; array3" fails.

If all members are removed, the zone is deleted.

This command changes the defined configuration. For the change to be preserved across switch reboots, it must be saved to flash memory using the **cfgSave** command. For the change to become effective, an appropriate zone configuration must be enabled using the **cfgEnable** command.

> **Note**
>
> This command requires a Brocade Advanced Zoning license.
>
> When security mode is enabled, this command can be issued only from the primary FCS switch.

Operands   The following operands are required:

"*zonename*"   Name of the zone, in quotation marks.

"*member*"   List of members to be removed from zone, in quotation marks, separated by semicolons. Can be one or more of the following:

- A switch domain and port area number pair: for example, enter "2,20" to view the area numbers for ports using the **switchShow** command.
- World Wide Names.
- QuickLoop AL_PAs.
- Zone alias names.

Examples   To remove "array2" from "Blue_zone":

```
switch:admin> zoneremove "Blue_zone", "array2"
switch:admin> zoneremove "Blue_zone", "2,20"
```

See Also   **zoneAdd**, **zoneCreate**, **zoneDelete**, **zoneShow**

Note: Enter commands in lowercase only; mixed case is for readability.

zoneShow

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zoneShow

Displays zone information.

Synopsis   **zoneshow** ["*pattern*"][**,** *mode*]

Availability   admin, switchAdmin, user

Description   Use this command to display zone configuration information.

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

If a parameter is specified, it is used as a pattern to match zone configuration names, and those that match in the defined configuration are displayed.

Note

This command requires a Brocade Advanced Zoning license.

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

Operands   The following operand is optional:

"*pattern*"   A POSIX-style regular expression used to match zone configuration names. The pattern must be enclosed in quotation marks. Patterns can contain:

- A question mark "?", which matches any single character.

- An asterisk "*", which matches any string of characters.

- Ranges, which match any character within the range: for example, [0-9] or [a-f].

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 flash memory. The default value is 0. This operand is optional.

Examples   To display all zones beginning with the letters "A" through "C":

```
switch:admin> zoneshow "[A-C]*"
zone: Blue_zone 1,1; array1; 1,2; array2
```

See Also   **zoneAdd**, **zoneCreate**, **zoneDelete**, **zoneRemove**

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zoneShow

Licensed Product Commands

This chapter summarizes the commands that are only available with a license key.

- *"Advanced Zoning Commands,"* next
- *"QuickLoop Fabric Assist Mode Commands" on page 3-2*
- *"Extended Fabrics Command" on page 3-3*
- *"Fabric Watch Commands" on page 3-3*
- *"ISL Trunking Commands" on page 3-4*
- *"Advanced Performance Monitoring Commands" on page 3-4*
- *"Secure Fabric OS Commands" on page 3-5*

Note

For more information about Advanced Zoning, QuickLoop, Extended Fabrics, Fabric Watch, Trunking, or Performance Monitoring, refer to the *Fabric OS Administrator's Guide*.

Advanced Zoning Commands

The following commands are available with the purchase of a Brocade Advanced Zoning license key.

Table 3-1   Zoning Commands

Command	Description
Zone Alias	
aliAdd	Adds a member to a zone alias.
aliCreate	Creates a zone alias.
aliDelete	Deletes a zone alias.
aliRemove	Removes a member from a zone alias.
Zoning	
zoneAdd	Adds a member to a zone.
zoneCreate	Creates a zone.
zoneDelete	Deletes a zone.
zoneRemove	Removes a member from a zone.
Zone Configuration	

Table 3-1   Zoning Commands (Continued)

Command	Description
cfgAdd	Adds a zone to a zone configuration.
cfgCreate	Creates a zone configuration.
cfgDelete	Deletes a zone configuration.
cfgRemove	Removes a zone from a zone configuration.
Zone Management	
defzone	Activates or deactivates a default zone configuration, or displays the current configuration.
cfgClear	Clears all zone configurations.
cfgDisable	Disables a zone configuration.
cfgEnable	Enables a zone configuration.
cfgSave	Saves zone configurations in flash memory.
cfgTransAbort	Aborts the current zoning transaction.
zone	Performs zone-related operations.
zoneObjectCopy	Copies a zone object.
zoneObjectExpunge	Expunges a zone object.
zoneObjectRename	Renames a zone object.

QuickLoop Fabric Assist Mode Commands

The following commands are for QuickLoop Fabric Assist mode.

Table 3-2   QuickLoop Fabric Assist Mode Command

Command	Description
fazoneAdd	Adds member(s) to an existing QuickLoop Fabric Assist zone.
fazoneCreate	Creates a QuickLoop Fabric Assist zone.
fazoneDelete	Deletes an existing QuickLoop Fabric Assist zone.
fazoneRemove	Removes member(s) from an existing QuickLoop Fabric Assist zone.
qloopAdd	Adds a member to a QuickLoop.
qloopCreate	Creates a QuickLoop.
qloopDelete	Deletes a QuickLoop.
qloopRemove	Removes a member from a QuickLoop.
qloopShow	Displays QuickLoop information.

Note

The QuickLoop Fabric Assist mode is not available on Fabric OS v4.x or v5.x.

Extended Fabrics Command

The following command is available with the purchase of a Brocade Extended Fabrics license key.

Table 3-3   Extended Fabrics Commands

Command	Description
portCfgLongDistance	Configure a port to support long-distance links.

Fabric Watch Commands

The following commands are available with the purchase of a Brocade Fabric Watch license key.

Table 3-4   Fabric Watch Commands

Command	Description
fwAlarmsFilterSet	Enable or disable alarms for Fabric Watch.
fwAlarmsFilterShow	Display alarm filtering for Fabric Watch.
fwClassInit	Initialize all classes under Fabric Watch.
fwConfigReload	Reload the Fabric Watch configuration.
fwConfigure	Display and enable modification of the Fabric Watch configuration and status.
fwFruCfg	Display and changes FRU state alert configuration.
fwMailCfg	Configure email alerts in Fabric Watch.
fwSetToCustom	Set boundary and alarm levels to custom values.
fwSetToDefault	Set boundary and alarm levels to the default values.
fwShow	Display the thresholds monitored by Fabric Watch.

ISL Trunking Commands

The following commands are available with the purchase of a Brocade Trunking license key. For more detailed information about trunking refer to the *Fabric OS Administrator's Guide*.

Table 3-5 Brocade Trunking Commands

Command	Description
portCfgTrunkPort	Configure a port for trunking.
switchCfgTrunk	Configure a switch for trunking.
trunkDebug	Debug a trunk link failure.

Advanced Performance Monitoring Commands

The following commands are available with the purchase of a Brocade Advanced Performance Monitoring license key.

Table 3-6 Performance Monitoring Commands

Command	Description
perfAddEEMonitor	Add an end-to-end monitor to a port.
perfAddIPMonitor	Add an IP monitor to a port.
perfAddReadMonitor	Add a SCSI Read monitor to a port.
perfAddRWMonitor	Add a SCSI Read and Write monitor to a port.
perfAddSCSIMonitor	Add a SCSI traffic frame monitor to a port.
perfAddUserMonitor	Add a user-defined monitor to a port.
perfAddWriteMonitor	Add a SCSI Write monitor to a port.
perfCfgClear	Clear the performance monitoring settings from flash memory.
perfCfgRestore	Restore performance monitoring settings from flash memory.
perfCfgSave	Save the current performance monitoring settings to flash memory.
perfClearEEMonitor	Clear statistics counters of an end-to-end (EE) monitor on a port.
perfClearFilterMonitor	Clear statistics counters of a filter-based monitor.
perfClearAlpaCrc	Clear an AL_PA device CRC count by the port and AL_PA.
perfDelEEMonitor	Delete an end-to-end monitor on port.

Table 3-6   Performance Monitoring Commands (Continued)

Command	Description
perfDelFilterMonitor	Delete a filter-based monitor.
perfSetPortEEMask	Set overall mask for end-to-end (EE) monitors.
perfShowAlpaCrc	Display the AL_PA CRC count by port or by AL_PA.
perfShowEEMonitor	Display user-defined end-to-end monitors on a port.
perfShowFilterMonitor	Display filter-based monitors for a port.
perfShowPortEEMask	Display the current end-to-end mask of a port.

Secure Fabric OS Commands

The following commands are available with the purchase of a Brocade Security license key. For more detailed information about security, refer to the *Secure Fabric OS Administrator's Guide*.

Table 3-7   Brocade Secure Fabric OS Commands

Command	Description
secFabricShow	Displays security related fabric information.
secFcsFailover	Enables a backup FCS switch to take over as primary FCS switch.
secHelp	Display information about security telnet commands.
secModeDisable	Disable security mode.
secModeEnable	Enable security mode.
secModeShow	Display if security mode is enabled or disabled.
secNonFcsPasswd	Set the admin password for non-FCS switches.
secPolicyAbort	Aborts all changes to the defined database that have not been saved.
secPolicyActivate	Apply defined policy set to all switches in the fabric.
secPolicyAdd	Add members to an existing policy.
secPolicyCreate	Create a new policy.
secPolicyDelete	Delete an existing policy.
secPolicyDump	Display all members of existing policies.
secPolicyFcsMove	Move a member in the FCS policy.
secPolicyRemove	Remove members from an existing policy.
secPolicySave	Save a defined security policy to flash memory on all switches in the fabric.
secPolicyShow	Display an existing security policy.

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Table 3-7   Brocade Secure Fabric OS Commands (Continued)

Command	Description
secStatsReset	Reset security statistic for a policy or all policies to 0.
secStatsShow	Display security statistic for a policy or for all policies.
secTempPasswdReset	Reset a password on a remote switch.
secTempPasswdSet	Set a temporary password on a remote switch.
secTransAbort	Abort current security transaction.
secVersionReset	Reset the version stamp to 0.

Exclusive Primary FCS Commands

This chapter summarizes the commands that are available on the primary FCS only when the security feature is installed and enabled.

Commands Exclusive to the Primary FCS

The following commands are available on the primary FCS only when security is installed and enabled.

Table 4-1   Commands Exclusive to the Primary FCS

Command	Notes
agtCfgDefault	Must be run from the primary FCS switch.
agtCfgSet	Can be run on all switches, but it needs to be run on the primary FCS to modify community strings
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	Must be run from the primary FCS switch.
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.
cfgTransAbort	Must be run from the primary FCS switch.
cfgTransShow	Must be run from the primary FCS switch.
date	This command can be run on all switches to view the current date. You can only modify the date from the primary FCS switch.

Table 4-1 Commands Exclusive to the Primary FCS (Continued)

Command	Notes
fazoneAdd	Must be run from the primary FCS switch.
fazoneCreate	Must be run from the primary FCS switch.
fazoneDelete	Must be run from the primary FCS switch.
fazoneRemove	Must be run from the primary FCS switch.
fazoneShow	Must be run from the primary FCS switch.
msConfigure	Can be run on all switches, but it does not display ACL in secure mode.
msPlClearDB	Must be run from the primary FCS switch.
msPlMgmtActivate	Must be run from the primary FCS switch.
msPlMgmtDeactivate	Must be run from the primary FCS switch.
msTdDisable	**msTdDisable "ALL"** must be run from the primary FCS switch.
msTdEnable	**msTdEnable "ALL"** must be run from the primary FCS switch.
passwd	Must be run from the primary FCS switch.
secFabricShow	Must be run from the primary FCS switch.
secModeDisable	Must be run from the primary FCS switch.
secNonFcsPasswd	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.
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.
secTempPasswdReset	Must be run from the primary FCS switch.
secTempPasswdSet	Must be run from the primary FCS switch.
secVersionReset	Must be run from the primary FCS switch. Can also be run on a single non-FCS switch which is segmented from a fabric.
tsClockServer	Can be run on all switches to view the NTP server's IP address. You can only modify the NTP server's IP address on the primary FCS switch.
wwn	This command can be run on all switches to view the WWN. With security enabled the WWN of a switch cannot be modified.
zoneAdd	Must be run from the primary FCS switch.

Table 4-1 Commands Exclusive to the Primary FCS (Continued)

Command	Notes
zoneCreate	Must be run from the primary FCS switch.
zoneDelete	Must be run from the primary FCS switch.
zoneRemove	Must be run from the primary FCS switch.
zoneShow	Must be run from the primary FCS switch.

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Control Processor Commands

This chapter lists the commands available when logged in to the standby CP in a SilkWorm 24000 or 48000 director. The full set of commands for your user level are available to the active CP.

Commands Supported on the Standby CP

The following commands are supported when logged into the standby CP.

Table 5-1   Commands Supported on the Standby CP

Command	Description
date	Display or set the system date and time.
dbgShow	Displays current values of debug and verbosity levels of the specified module.
errClear	Clear error log.
errDump	Display error log (no page breaks).
errModuleShow	Displays all the defined error log modules.
errShow	Display error log.
fastboot	Reboot this switch, bypassing POST.
firmwareCommit	Commit firmware to stable storage.
firmwareDownload	Download firmware into switch.
firmwareDownloadStatus	Display the progress and status of firmwaredownload.
firmwareRestore	Restore the old firmware in the switch.
firmwareShow	Display firmware versions in the switch.
h	Display shell history.
haDump	Dump HA debug data.
haShow	Display High Availability status.
help	Display this list.
ifModeSet	Set the link operating mode for a network interface.
ifModeShow	Display the link operating mode for a network interface.
killTelnet	Terminate telnet/serial login sessions interactively.

Table 5-1 Commands Supported on the Standby CP (Continued)

Command	Description
login	Logs in as new user.
logout	Logs out from a telnet, rlogin, or serial port session.
memShow	Display memory usage in the system.
myId	Display the current login session details.
pdShow	Display information from panic dump file.
reboot	Reboot the standby CP.
saveCore	FTP or remove core files generated by daemons.
setModem	Enables or disables modem dial-in to a control processor (CP).
supportSave	Saves support information for RASLOG, TRACE, and **supportShow**.
switchName	Display this switch's name.
tsClockServer	Display time zone.
upTime	Display how long switch has been up.
version	Display firmware version.

supportShow Reference

This chapter explains the information displayed by the **supportShow** command. This chapter has the following sections:

- *"supportShow Control Commands,"* next
- *"supportShow Command Groups" on page 6-2*
- *"Proc Entry Information Displayed" on page 6-4*

supportShow Control Commands

The **supportShow** command is used to display support information by executing groups of preselected Fabric OS and Linux commands. The information displayed by the **supportShow** command can be controlled by a set of control commands:

supportShowCfgShow Display which groups of commands are enabled to display under **supportShow**.

supportShowCfgEnable Enable a group of commands to display under **supportShow**.

supportShowCfgDisable Disable a group of commands from displaying under **supportShow**.

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supportShow Command Groups

Table 6-1 displays the command groups under supportshow, and which Fabric OS or Linux commands are executed by that group.

Table 6-1   supportShow Command Groups

Command Group	Fabric OS v3.2.0	Fabric OS v4.x/v5.x
os	mqshow i memShow mallocshow fastcheckheap	mii-tool –vv /usr/bin/du -xh / | /bin/sort: /bin/ps –elfh /bin/echo /bin/rpm –qa /bin/cat /var/log/dmesg /bin/cat /etc/fstab /bin/cat /etc/mtab printing proc entries.
exception	faultshow traceshow errDump	errDump –a/-p
port	portShow portregshow portstructshow bloomdatashow portRouteShow portsemshow bloomsemshow semashow 1	diagShow portShow portloginshow portregshow portRouteShow
fabric	fabricShow islShow trunkShow topologyShow fashow qlshow cfgShow fabStatsShow fablogdump	fabricShow islShow trunkShow topologyShow fabStateShow fabSwitchShow fabStatsShow fabPortShow fspfShow fcplogshow zone-stateshow portzoneshow portCamShow cfgSize cfgShow rcssmshow rcsinfoshow rcsregistryshow

Table 6-1 supportShow Command Groups (Continued)

Command Group	Fabric OS v3.2.0	Fabric OS v4.x/v5.x
services	**nsShow** **nsAllShow** **nscamShow**	**fdmiCacheShow** **ficonDbg dump rnid** **ficonDbg log** **ficonShow ilir** **ficonShow lirr** **ficonShow rlir** **ficonShow rnid** **fdmiShow** **nsShow** **nsAllShow** **nscamShow**
security	**secModeShow** **secPolicyDump** **secStatsShow** **secFabricShow**	**secModeShow** **secPolicyDump** **secStatsShow** **secFabricShow**
network	**ipAddrShow** **ifshow** **ipstatshow** **udpstatshow** **tcpstatshow** **inetstatshow** **mbufshow** **arpshow** **routeshow** **routestatshow** **hostshow** **feidumpprint** **i557dump** **feiiteraterfdrings**	**/sbin/bootenv** **/sbin/sin** **/bin/df** **/sbin/ifconfig** **/sbin/route** **/bin/hostname**
portlog	**portLogDump** (no parameters) **portLogDump 0, 1**	**portLogDump**

Table 6-1 supportShow Command Groups (Continued)

Command Group	Fabric OS v3.2.0	Fabric OS v4.x/v5.x
system	**version** **upTime** **switchShow** **tempShow** **psShow** **licenseShow** **diagShow** **portFlagsShow** **portErrShow** **portCfgShow** **configShow**	**myId** **version** **firmwareShow** **upTime** **switchStatusShow** **switchShow** **haDump** **tempShow** **sensorShow** **psShow** **fanShow** **licenseShow** **portFlagsShow** **portCfgShow** **sfpShow** **portErrShow** **fwSamShow** **agtCfgShow** **slotShow** **chassisShow** **switchStatusPolicyShow** **fwAlarmsFilterShow** **timeout** **historyShow** **configShow**
extend	**bloomlistdisplay** **bloomfdetshow** **bloomramdump**	**ptbufshow** **ptcreditshow** **ptDataShow** **ptPhantomShow** **ptPropShow** **ptStatsShow**
filter	**filtershow**	**filterportshow**
perfmon	**ps_dump**	**ps_dump –a –n port#**

Note

Many of the commands executed by **supportShow** are intended for support use only. These commands are not intended for end-users.

Proc Entry Information Displayed

The **os** command group prints a number of proc entries. Table 6-2 displays example proc entry information.

Table 6-2   Proc Entry Information Displayed

Proc Display Command	Proc Example Display
/proc/cmdline	/proc/cmdline quiet
/proc/cpuinfo	/proc/cpuinfo cpu : 405GP clock : 200MHz revision : 1.69 (pvr 4011 0145) bogomips : 199.47 machine : Brocade Silkworm plb bus clock : 100MHz pci bus clock : 33MHz
/proc/devices	/proc/devices Character devices: 1 mem 2 pty 3 ttyp 4 ttyS 5 cua 7 vcs 10 misc 89 i2c 90 mtd 128 ptm 136 pts 162 raw 245 swd 246 ham 247 fc 248 fc-switch 249 fabsys 250 fss_kt 251 fss_data 252 fss_mgmt 253 portlog 254 platform Block devices: 1 ramdisk 3 ide0 7 loop
/proc/filesystems	/proc/filesystems nodev rootfs nodev bdev nodev proc nodev sockfs nodev tmpfs nodev shm nodev pipefs ext2 nodev ramfs nodev nfs nodev devpts xfs nodev dfs

Table 6-2   Proc Entry Information Displayed (Continued)

Proc Display Command	Proc Example Display
| /proc/interrupts | ```
/proc/interrupts
CPU0
0: 0 IBM UIC Level serial
1: 591 IBM UIC Level serial
2: 2696197 IBM UIC Level IBM OCP IIC
10: 0 IBM UIC Level OCP EMAC MAL SERR
11: 1512 IBM UIC Level OCP EMAC TX EOB
12: 343895 IBM UIC Level OCP EMAC RX EOB
13: 0 IBM UIC Level OCP EMAC TX DE
14: 0 IBM UIC Level OCP EMAC RX DE
26: 52017 IBM UIC Level bloom
30: 1060300 IBM UIC Level ide0
FIT: 0
PIT: 15879069
BAD: 0
``` |
| /proc/meminfo | ```
/proc/meminfo
total: used: free: shared: buffers: cached:
Mem: 129740800 97079296 32661504 0 118784 45764608
Swap: 0 0 0
MemTotal: 126700 kB
MemFree: 31896 kB
MemShared: 0 kB
Buffers: 116 kB
Cached: 44692 kB
SwapCached: 0 kB
Active: 23464 kB
Inactive: 49472 kB
HighTotal: 0 kB
HighFree: 0 kB
LowTotal: 126700 kB
LowFree: 31896 kB
SwapTotal: 0 kB
SwapFree: 0 kB
``` |
| /proc/modules | ```
/proc/modules
dubby-module 582614 2
chubby-module 3128618 126 [dubby-module]
dfs 5458 1 [dubby-module]
consolelog-module 8539 0 (unused)
panicdump-module 15279 0 [chubby-module consolelog-module]
xfsnotificationhandler 4858 0 (unused)
``` |
| /proc/mounts | ```
/proc/mounts
rootfs / rootfs rw 0 0
dev/hda1 / xfs rw,noatime 0 0
/proc /proc proc rw 0 0
none /dev/pts devpts rw 0 0
none /tmp ramfs rw 0 0
/dev/hda2 /mnt xfs rw,noatime 0 0
/diag /diag dfs rw 0 0
``` |

Table 6-2   Proc Entry Information Displayed (Continued)

Proc Display Command	Proc Example Display
| /proc/mtd | ```
/proc/mtd
dev: size erasesize name
mtd0: 00010000 00010000 "boot environment"
mtd1: 00070000 00010000 "boot prom"
mtd2: 01000000 00040000 "Entire user flash"
mtd3: 00400000 00040000 "kernel and initrd (1)"
mtd4: 00400000 00040000 "kernel and initrd (2)"
mtd5: 00400000 00040000 "log data (1)"
mtd6: 00400000 00040000 "log data (2)"
``` |
| /proc/partitions | ```
/proc/partitions
major minor #blocks name
3 0 250880 hda
3 1 124912 hda1
3 2 124928 hda2
``` |
| /proc/pci | ```
/proc/pci
PCI devices found:
Bus 0, device 0, function 0:
Host bridge: IBM 405GP PLB to PCI Bridge (rev 1).
Master Capable. Latency=7.
Prefetchable 32 bit memory at 0x0 [0x7fffffff].
Bus 0, device 4, function 0:
IDE interface: CMD Technology Inc PCI0649 (rev 2).
IRQ 30.
Master Capable. Latency=64. Min Gnt=2.Max Lat=4.
I/O at 0x1008 [0x100f].
I/O at 0x1000 [0x1003].
I/O at 0x2000 [0x2007].
I/O at 0x3000 [0x3003].
I/O at 0x4000 [0x400f].
Bus 0, device 6, function 0:
Non-VGA unclassified device: Brocade Communications Systems,
Inc. Bloom switch (rev 0).
IRQ 26.
--<output truncated>--
``` |
| /proc/slabinfo | ```
/proc/slabinfo
slabinfo - version: 1.1
kmem_cache 74 102 112 3 3 1
ip_mrt_cache 0 0 96 0 0 1
tcp_tw_bucket 2 40 96 1 1 1
tcp_bind_bucket 5 113 32 1 1 1
tcp_open_request 0 59 64 0 1 1
inet_peer_cache 1 59 64 1 1 1
ip_fib_hash 11 113 32 1 1 1
ip_dst_cache 65 168 160 7 7 1
arp_cache 2 30 128 1 1 1
blkdev_requests 128 160 96 4 4 1
xfs_chashlist 193 404 16 2 2 1
xfs_ili 2004 5668 152 135 218 1
xfs_ifork 0 0 56 0 0 1
xfs_efi_item 0 12 328 0 1 1
xfs_efd_item 0 12 328 0 1 1
--<output truncated>--
``` |

Table 6-2 Proc Entry Information Displayed (Continued)

Proc Display Command	Proc Example Display
/proc/stat	/proc/stat cpu 184683 47107 88647 15558673 cpu0 184683 47107 88647 15558673 page 54635 71305 swap 0 0 intr 4154525 0 591 2696197 0 0 0 0 0 0 0 0 1520 343900 0 0 0 0 0 0 0 0 0 0 0 0 0 52017 0 0 0 1060300 0 disk_io: (3,0):(61121,5352,115463,55769,944835) ctxt 44089966 btime 1048729603 processes 17684
/proc/tty/drivers	/proc/tty/drivers serial /dev/cua 5 64-65 serial:callout serial /dev/ttyS 4 64-65 serial pty_slave /dev/pts 136 0-255 pty:slave pty_master /dev/ptm 128 0-255 pty:master pty_slave /dev/ttyp 3 0-255 pty:slave pty_master /dev/pty 2 0-255 pty:master /dev/vc/0 /dev/vc/0 4 0 system:vtmaster /dev/ptmx /dev/ptmx 5 2 system /dev/console /dev/console 5 1 system:console /dev/tty /dev/tty 5 0 system:/dev/tty
/proc/uptime	/proc/uptime 158791.21 155710.77
/proc/version	/proc/version Linux version 2.4.19 (swrel@sierra) (gcc version 2.95.3 20010112 (prerelease)) #1 Wed Mar 26 00:04:35 PST 2003

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