



Cornelis™ Omni-Path Express™ Fabric Switches Command Line Interface

Reference Guide

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Revision History

Date	Rev	Description
Nov 2022	16.0	Minor changes throughout.
Jul 2021	15.0	Document has been rebranded for Cornelis Networks.
Sep 2020	14.0	Removed contentious terms from descriptive text; note that changes have not been made to code at this time.
Aug 2020	13.0	Updated "Best Practices" to include a pointer to "Updating the Certificate" in the <i>Cornelis Omni-Path Express Fabric Switches GUI User Guide</i> .
Jan 2020	12.0	- Updated links to OPX documentation set in "OPX Documentation Library". - Updated instructions for "Configuring the Syslog Server".
Oct 2019	11.0	Refreshed to include updated "Preface" information.
Sep 2018	10.0	- Updated fwVersion to clarify information in the Note section. - Updated sample output information for biosVersion, biosUpdate, bcFwVersion, bcFwUpdate, ShowLastBiosRetCode, showLastBcFwRetCode.
Apr 2018	9.0	- Updated prompt to state the new prompt will be saved across reboots if done by the admin. - Updated fwUpdate, fwUpdateSlot, fwUpdateChassis, and fwVersion to clarify behavior. - Added biosVersion, biosUpdate, bcFwVersion, bcFwUpdate, ShowLastBiosRetCode, showLastBcFwRetCode. - Added "How to Search the Omni-Path Documentation Set" to "Preface".
Oct 2017	8.0	- Added auditLog. - Added ismPortSetDiagnosticMode. - The <i>Omni-Path Fabric Suite FastFabric Command Line Interface Reference Guide</i> has been merged into the <i>Cornelis Omni-Path Express Fabric Suite FastFabric User Guide</i>. In this document, all references have been updated appropriately. See the "Documentation Library" for details.
Aug 2017	7.0	- Updated showInventory with new example. - Updated smLogLevel and changed loglevel 2 = INFINI_INFO+
Apr 2017	6.0	- Added showDefaultIpv6Route and setDefaultIpv6Route. - Updated filepath from /etc/sysconfig/ to /etc/ in "Configuring the Syslog Server". - Added "Documentation Library" to "Preface".
Dec 2016	5.0	Added "Cluster Configurator for OPX Fabric" to "Preface".

Date	Rev	Description
Aug 2016	4.0	- Updated genPost with new output description table. - Updated fwUpdate, fwUpdateSlot, and fwUpdateChassis to clarify behavior. - Added "Configuring the Syslog Server".
May 2016	3.0	- Added rlogin. - Updated .pkg to .spkg in fwUpdate Example. - Updated Example for userListShow.
Feb 2016	2.0	- Updated ismPort... commands to use portNameList instead of port. - Updated chassisQuery command to return external slot names instead of internal slot numbers. This change impacts other commands, including: reboot, hwMonitor, fruInfo, fwUpdateSlot, showLastScpRetCode, fwVersion, bootQuery, and bootSelect. - Renamed some commands in Network category, from IPoStl prefix to IPoIB prefix. - Added smListSecurityFiles
Nov 2015	1.0	- Added pmShowRunningTotals and showAllConfiguration - Renamed smShowGroups to smShowMcMember - Renamed smShowSubscriptions to smShowInform

1. Preface

This guide is part of the documentation set for the Cornelis Omni-Path Express (OPX) Fabric, which is an end-to-end solution consisting of Cornelis Omni-Path Express Host Fabric Interface Adapters (HFIs), OPX Switches, and fabric management and development tools.

The Cornelis Omni-Path Express Fabric delivers the next generation, High Performance Computing (HPC) network solution that is designed to cost-effectively meet the growth, density, and reliability requirements of large-scale HPC clusters.

Both the OPX Fabric and standard InfiniBand (IB) can send Internet Protocol (IP) traffic over the fabric, or *IPoFabric*. In this document it may also be referred to as *IP over IB* or *IPoIB*. From a software point of view, IPoFabric behaves the same way as IPoIB, and in fact uses an `ib_ipoib` driver to send IP traffic over the `ib0/ib1` ports.

1.1. Intended Audience

The intended audience for the OPX document set is network administrators and other qualified personnel.

1.2. Documentation Library

Go to the [Cornelis Customer Center](#) to download the publications from the Release Library. Use the tasks listed in this table to find the corresponding document.

Task	Document Title	Description
Using the OPX documentation set	<i>Cornelis Omni-Path Express Fabric Quick Start Guide</i>	A roadmap to Cornelis' comprehensive library of publications describing all aspects of the product family. This document outlines the basic steps for installing your OPX cluster and ensuring it is operational.
Setting up an OPX cluster	<i>Cornelis Omni-Path Express Fabric Setup Guide</i>	Provides a high-level overview of the steps required to stage a customer-based installation of the OPX Fabric. Procedures and key reference documents, such as OPX user and installation guides, are provided to clarify the process. Additional commands and best known methods are defined to facilitate the installation process and troubleshooting.
Installing hardware	<i>Cornelis Omni-Path Express Fabric Switches Hardware Installation Guide</i>	Describes the hardware installation and initial configuration tasks for OPX Director Class Switches and OPX Edge Switches.
	<i>Cornelis Omni-Path Express Host Fabric Interface Installation Guide</i>	Contains instructions for installing the OPX HFI in an OPX cluster.

Task	Document Title	Description
	<i>Cornelis Omni-Path Express Gateway Installation and Setup Guide</i>	Describes the hardware installation and set up tasks for the OPX Gateways.
Installing Host Software Installing HFI firmware Installing switch firmware (externally-managed switches)	<i>Cornelis Omni-Path Express Fabric Software Installation Guide</i>	Describes using a Text-based User Interface (TUI) to guide you through the installation process. You have the option of using command line interface (CLI) commands to perform the installation or install using the Linux distribution software.
Managing a switch using Chassis Viewer GUI Installing switch firmware (managed switches)	<i>Cornelis Omni-Path Express Fabric Switches GUI User Guide</i>	Describes the graphical user interface (GUI) of the OPX Chassis Viewer GUI. This document provides task-oriented procedures for configuring and managing the OPX Switch family. Help: GUI embedded help files
Managing a switch using the CLI Installing switch firmware (managed switches)	<i>Cornelis Omni-Path Express Fabric Switches Command Line Interface Reference Guide</i>	Describes the CLI task information for the OPX Switch family. Help: -help for each CLI
Managing a fabric using FastFabric	<i>Cornelis Omni-Path Express Fabric Suite FastFabric User Guide</i>	Provides instructions for using the set of fabric management tools designed to simplify and optimize common fabric management tasks. The management tools consist of TUI menus and CLI commands. Help: -help and man pages for each CLI. Also, all host CLI commands can be accessed as console help in the Fabric Manager GUI.
Managing a fabric using Fabric Manager	<i>Cornelis Omni-Path Express Fabric Suite Fabric Manager User Guide</i>	The Fabric Manager uses a well-defined management protocol to communicate with management agents in every OPX HFI and switch. Through these interfaces the Fabric Manager can discover, configure, and monitor the fabric.
	<i>Cornelis Omni-Path Express Fabric Suite Fabric Manager GUI User Guide</i>	Provides an intuitive, scalable dashboard and set of analysis tools for graphically monitoring fabric status and configuration. This document is a user-friendly alternative to traditional command-line tools for day-to-day monitoring of fabric health. Help: Fabric Manager GUI embedded help files
Configuring and administering HFI and IPoIB driver Running MPI applications on OPX	<i>Cornelis Omni-Path Express Fabric Host Software User Guide</i>	Describes how to set up and administer the OPX HFI after the software has been installed. This document is for cluster administrators and Message-Passing Interface (MPI) application programmers.

Task	Document Title	Description
Writing and running middleware that uses OPX software	<i>Cornelis Performance Scaled Messaging 2 (PSM2) Programmer's Guide</i>	Provides a reference for programmers working with the PSM2 Application Programming Interface (API). The Performance Scaled Messaging 2 API (PSM2 API) is a low-level user-level communications interface.
	<i>Cornelis Omni-Path Express OPX_Provider Installation and Setup Application Note</i>	Provides a reference for programmers working with the OPX provider.
Optimizing system performance	<i>Cornelis Omni-Path Express Fabric Performance Tuning User Guide</i>	Describes BIOS settings and parameters that have been shown to ensure best performance, or make performance more consistent, on the OPX Architecture. If you are interested in benchmarking the performance of your system, these tips may help you obtain better performance.
Designing an IP or LNet router on OPX	<i>Cornelis Omni-Path Express IP and LNet Router Design Guide</i>	Describes how to install, configure, and administer an IPoIB router solution (Linux IP or LNet) for inter-operating between an OPX Fabric and a legacy InfiniBand fabric.
Building Containers for OPX Fabrics	<i>Building Containers for Cornelis Omni-Path Express Fabrics using Docker and Singularity Application Note</i>	Provides basic information for building and running Docker and Singularity containers on Linux-based computer platforms that incorporate OPX networking technology.
Writing management applications that interface with OPX	<i>Cornelis Omni-Path Express Management API Programmer's Guide</i>	Contains a reference for programmers working with the OPX Architecture Management (OPAMGT) Application Programming Interface (API). The OPAMGT API is a C-API permitting in-band and out-of-band queries of the FM's Subnet Administrator and Performance Administrator.
Using NVM over Fabrics on OPX	<i>Configuring Non-Volatile Memory Express (NVMe) over Fabrics on Cornelis Omni-Path Express Application Note</i>	Describes how to implement a simple OPX Architecture-based point-to-point configuration with one target and one host server.
Learning about new release features, open issues, and resolved issues for a particular release	<i>Cornelis Omni-Path Express Fabric Software Release Notes</i>	
	<i>Cornelis Omni-Path Express Fabric Manager GUI Software Release Notes</i>	
	<i>Cornelis Omni-Path Express Fabric Switches Release Notes</i> (includes managed and externally-managed switches)	
	<i>Cornelis Omni-Path Express Fabric Unified Extensible Firmware Interface (UEFI) Release Notes</i>	
	<i>Cornelis Omni-Path Express Fabric Thermal Management Microchip (TMM) Release Notes</i>	
	<i>Cornelis Omni-Path Express Fabric Firmware Tools Release Notes</i>	

1.2.1. How to Search the Cornelis Omni-Path Express Documentation Set

Many PDF readers, such as Adobe Reader and Foxit Reader, allow you to search across multiple PDFs in a folder.

Follow these steps:

1. Download and unzip all the publications into a single folder.
2. Open Acrobat Reader and use **CTRL-SHIFT-F** to open the Advanced Search window.
3. Select **All PDF documents in...**
4. Select **Browse for Location** in the dropdown menu and navigate to the folder containing the PDFs.
5. Enter the string you are looking for and click **Search**.

Use advanced features to further refine your search criteria. Refer to your PDF reader Help for details.

1.3. Document Conventions

The following conventions are standard for Cornelis Omni-Path Express documentation:

- **Note:** provides additional information.
- **Caution:** indicates the presence of a hazard that has the potential of causing damage to data or equipment.
- **Warning:** indicates the presence of a hazard that has the potential of causing personal injury.
- Text in blue font indicates a hyperlink (jump) to a figure, table, or section in this guide. Links to websites are also shown in blue. For example:

See [Section 1.6 "License Agreements"](#) for more information.

For more information, visit www.cornelisnetworks.com.

- Text in **bold** font indicates user interface elements such as menu items, buttons, check boxes, key names, keystrokes, or column headings. For example:

Click the **Start** button, point to **Programs**, point to **Accessories**, and then click **Command Prompt**.

Press **CTRL+P** and then press the **UP ARROW** key.

- Text in Courier font indicates a file name, directory path, or command line text. For example:

Enter the following command: `sh ./install.bin`

- Text in *italics* indicates terms, emphasis, variables, or document titles. For example:

Refer to *Cornelis Omni-Path Express Fabric Software Installation Guide* for details.

In this document, the term *chassis* refers to a managed switch.

Procedures and information may be marked with one of the following qualifiers:

- **(Linux)** – Tasks are only applicable when Linux is being used.
- **(Host)** – Tasks are only applicable when OPX Host Software or OPXS is being used on the hosts.
- **(Switch)** – Tasks are applicable only when OPX Switches or Chassis are being used.
- Tasks that are generally applicable to all environments are not marked.

1.4. Best Practices

Note the following Cornelis recommendations:

- Update to the latest versions of OPX firmware and software to obtain the most recent functional and security updates.
- To improve security:
 - administrators should log out users and disable multi-user logins prior to performing provisioning and similar tasks.
 - update the default HTTPS certificate (refer to the *Cornelis Omni-Path Express Fabric Switches GUI User Guide*, “Updating the Certificate” for details).
 - using 48-bit CRC when the peak bandwidth is not critical in the fabric. 10.8.2.0 firmware introduced a feature to improve the detection of failing cables while also providing avoidance of possible downstream issues.

Due to the improved detection of failing cables provided by 10.8.2.0 firmware, it is possible that failing cables that were not previously detected by earlier firmware will now be detected by the 10.8.2.0 firmware. It is expected that the 48-bit CRC and the 10.8.2.0 firmware detection methods will have similar detection robustness. When a failing cable is identified, it is important to replace the cable at the earliest possible convenience.
- Ensure all fabrics contain at least one managed switch to troubleshoot potential issues with externally-managed edge switches.

1.5. Cornelis Omni-Path Express Fabric Design Generator for Cornelis Omni-Path Express Fabric

The Fabric Design Generator generates sample cluster configurations based on key cluster attributes, including a side-by-side comparison of up to four cluster configurations. The tool also generates parts lists and cluster diagrams.

To access the Cluster Configurator Fabric Design Generator for OPX Fabric, go to [Go to Cornelis™ Omni-Path Express™ Fabric Design Generator.](#)

1.6. License Agreements

This software is provided under one or more license agreements. Please refer to the license agreement(s) provided with the software for specific detail. Do not install or use the software until you have carefully read and agree to the terms and conditions of the license agreement(s). By loading or using the software, you agree to the terms of the license agreement(s). If you do not wish to so agree, do not install or use the software.

1.7. Technical Support

Technical support for Cornelis Omni-Path Express products is available 24 hours a day, 365 days a year. Please contact [Cornelis Networks Customer Support](#) by visiting www.cornelisnetworks.com or send your request directly to support@cornelisnetworks.com.

2. Introduction

This manual describes the command line interface (CLI) task information for the Cornelis Omni-Path Express (OPX) Switch family.

For details about the other documents for the OPX product line, refer to [Section 1.2 "Documentation Library"](#) of this document.

This manual is organized as follows:

- An overview of the CLI, including the command groups, online help, and keyboard shortcuts.
- [Section 3 "Groups and Commands"](#) describes the CLI commands.

2.1. CLI Overview

This section details the usage of the Command Line Interface (CLI) feature for the OPX Switch family. The CLI allows you to perform remote configuration and management tasks that mirror the functionality of the Chassis Viewer GUI.

The CLI is accessed through a terminal attached to the USB port or through the out-of-band (OOB) management port using Telnet and secure shell (SSH).

Accessing the CLI through the serial port does not require a login and password (unless configured to do so) and defaults to administrator privileges. Using the serial port allows permanent access to the switch, even if Telnet and SSH are not functioning.

For a standalone switch, Telnet to the IP address of the unit. Once connected, the CLI works as any Telnet session does.

To access the CLI using Telnet and SSH, a login and password are required. There are two user modes - operator and administrator. Their access privileges are:

Operator:

- Read only access

Administrator:

- Read and write access
- Reboot access
- Change operator and administrator passwords
- Disable user login and passwords, which allows all users administrator-level access without the need for a user name or password
- View all current user sessions
- Access all of the commands executed from any open operator session
- Log out any open user sessions
- Send messages to the open user sessions

The CLI allows multiple users to be logged in simultaneously. However, some commands are locked to users if another user is executing the same command.

2.2. Commands and Functional Groups

The CLI commands are grouped into functional areas as shown in the following table.

Type `list -noprompt` to display the list of command groups.

Table 1. Command Groups

Group	Description
General	Section 3.1 "General" General commands for user management and CLI configuration.
Chassis	Section 3.2 "Chassis" Chassis management commands, such as FRU info, fan/power supply state, and others.
Network	Section 3.3 "Network" Ethernet interface management commands.
Firmware	Section 3.4 "Firmware" Commands that display or modify firmware revision levels.
Fm	Section 3.5 "Fabric Management" Commands used for Subnet Manager (SM), Subnet Administration (SA), Performance Manager (PM), and Fabric Executive (FE) configuration and operation.
Log	Section 3.6 "Log" Commands for viewing log files as well as configuring logging parameters.
Ism	Section 3.7 "Interconnect Switch Management (ISM)" Port configuration and statistics commands.
Tm	Section 3.8 "Time Management" Commands for retrieving and setting the current system time, setting the time zone, and setting daylight saving time parameters.
Snmp	Section 3.9 "SNMP" Commands for configuring trap destinations and security parameters required to access the switch from an SNMP manager.
CaptureInfo	Section 3.10 "CaptureInfo" Analysis and debugging commands for capturing switch-specific information.

To list commands within a functional group, simply type the functional group name. For example, to list all of the firmware commands, type `list Firmware`. The system displays information similar to the following:

```
-> list firmware
fwUpdate      Used to update firmware.
fwListFiles   Used to display the set of files in the firmware ramdisk.
```

fwShowUpdateParams	Used to display the firmware default update parameters.
fwSetUpdateParams	Used to configure firmware default update parameters.
showCapability	Used to display the capabilities/features.
showLastScpRetCode	Used to display the return code from the last SCP Firmware or XML Config Push.
fwVersion	Used to display the firmware revisions.
bootQuery	Used to display firmware boot image information.
bootSelect	Used to modify the boot selection.

2.3. Online Help

The online help for the CLI provides all the necessary information to successfully run each command.

Access online help by typing `help CommandName` or `CommandName help`.

For example, typing `help list` displays the following information for the `list` command:

```
-> help list
NAME
    list

SYNOPSIS
    list [{all | <group>}] [-noprompt] [-verbose]

DESCRIPTION
    Used to display all the valid commands.

OPTIONS
    all          :List the commands for all groups.
    <group>      :List the commands in that particular group, see NOTES.
    -noprompt    :Just list the command groups.
    -verbose     :Print full help for each command, instead of summary.

NOTES
    Use 'list all' to display brief help for all available commands.
    Use 'list all -verbose' to display verbose help for all commands.
    Use 'list -noprompt' to display the list of command groups.
```

2.4. Keyboard Shortcuts

- Use the **UP ARROW** and **DOWN ARROW** keys to access the history of recently run commands.
- Use the **LEFT ARROW** and **RIGHT ARROW** keys to edit the current command.
- Press the **TAB** key after typing at least one character to either complete a command or to list all the available commands that begin with the typed characters.

2.5. Accessing the CLI

The CLI can be accessed in the following ways:

- through Ethernet, using Telnet or SSH
- using the switch serial port:
 - OPX Edge Switch (with optional management module): connects through the USB serial port
 - OPX Director Class Switch series: connects through the USB port on the SEEB module


NOTE

Be sure to connect to the SEEB serial port associated with the Management Module (MM) on the opposite side of the chassis.

The following instructions use Telnet.

1. Telnet to the IP address of the switch with the following command:

```
telnet <IP ADDRESS>
```


NOTE

The default IP address is 192.168.100.9 and the default netmask is 255.255.255.0.

2. The system prompts for a user name. The CLI has the following default user names:
 - Operator access: operator
 - Administrator access: admin
 Type the appropriate user name and press **ENTER**.
3. The system prompts for a password. The CLI has the following default passwords:
 - Operator access: operpass
 - Administrator access: adminpass
 Type the appropriate password and press **ENTER**. The system responds with:

```
Welcome to the <SWITCH> CLI. Type 'list' for the list of commands.
```

2.6. Configuring the Syslog Server

To avoid losing log information in the event of a hardware failure, Cornelis recommends that you configure a syslog server.


NOTE

To centralize logging for all switches in a fabric, you can configure each switch to point to the same syslog server, which has the syslog daemon (syslogd) running.

1. Add or un-comment the following two lines from /etc/rsyslog.conf to provide UDP syslog reception:

```
$ModLoad imudp
$UDPServerRun 514
```

2. In the /etc/rsyslog.conf file, add one of the following templates as the first rule:
 - If you are using DNS and your switches have hostnames, use the following template to generate the log filenames dynamically.

```
$template NameBasedLog, "/var/log/chassis/%HOSTNAME%.log"
if $fromhost-ip == '<DNS_PREFIX>' then ?NameBasedLog
```

where <DNS_PREFIX> is replaced with the name that is common across all of your switches.

For example, if the DNS name for the switches is prefixed with COR, then the rule reads:

```
$template NameBasedLog, "/var/log/chassis/%HOSTNAME%.log"
if $fromhost-ip == 'Cor' then ?NameBasedLog
```

and a log file for Cor-01 will be named /var/log/chassis/Cor-01.log

- If you are not using DNS, use the following template to create rules using the IP address(es) of the switch.

For example:

```
$template ChassisBasedLogSTF2M201, "/var/log/chassis/%HOSTNAME%_STF2_M201.log"
$template ChassisBasedLogSTF2M202, "/var/log/chassis/%HOSTNAME%_STF2_M202.log"
$template ChassisBasedLogSTF2, "/var/log/chassis/%HOSTNAME%_STF2.log"
if $fromhost-ip == '10.228.209.117' then ?ChassisBasedLogSTF2M201
if $fromhost-ip == '10.228.209.116' then ?ChassisBasedLogSTF2M202
if $fromhost-ip == '10.228.209.239' then ?ChassisBasedLogSTF2

$template ChassisBasedLogEDF1, "/var/log/chassis/%HOSTNAME%_EDF1.log"
if $fromhost-ip == '10.228.210.1' then ?ChassisBasedLogEDF1
```

3. Save the file and restart the daemon:

```
systemctl restart rsyslog
```

4. Initiate an SSH session to the Edge Switch or the Master Management Module (MM) on a Director Class Switch (DCS) and run the following command

substituting `<linux-host-ipaddr>` with the IP Address of the Linux host with the modified `/etc/rsyslog.conf`.

```
logsyslogconfig -h <linux-host-ipaddr>
```

For example:

```
logsyslogconfig -h 10.228.209.132
```

5. Test the configuration by generating a test log from the switch:

```
logSyslogTest -e
```

**NOTE**

On the DCS, in addition to running the above command on the Master, initiate an SSH session to the Standby and exit the session.

Two logs will be generated by the Standby MM, one upon SSH session start and one upon session end.

6. Ensure that the test log(s) generated in the previous step are present in the appropriate `/var/log/chassis/<log-file>` files.

**NOTE**

On older Linux versions, the file may be called `/etc/syslog.conf` and you might need to include the following additional line in the file:

```
SYSLOGD_OPTIONS="-r"
```

Additionally, your restart command might be:

```
systemctl restart syslogd
```

3. Groups and Commands

This section lists all CLI functional groups along with the commands for each group. The commands for all supported switches are listed. Any commands that are different for a particular switch are noted.

For more specific information for each functional group, run the command:

```
help GroupName
```

For more specific command information, run the command:

```
help CommandName
```

3.1. General

Commands in this category are used for user management and CLI configuration.

3.1.1. help

Displays help information for a specific command.

Syntax

To get help on a particular command, type:

```
[command] help
```

For convenience purposes, you can also type:

```
help [command]
```

**NOTE**

Tab completion mode does not work if you use the form `help [command]`.

Options

command Name of the command for which help information is requested.

Example

```
-> help list  
NAME
```

```
list
SYNOPSIS
list [group] [-noprompt]
DESCRIPTION
List available commands.
OPTIONS
group      - List the commands in that particular group
-noprompt  - Just list the command groups.
```

Notes

The following General Help text is returned when `help help` is entered:

```
-> help help
General Help
Type list or ? for the list of commands.
To get help on a particular command type: <command> help.
For convenience purposes you can also type: help <command>

Use the Up and Down arrow keys to browse command history, Left and Right arrow keys to
edit the current command and the Tab key for tab completion of a command.

Two alternate key bindings exist for the backspace and delete keys. If these keys are not
responding as expected, use the 'swapBsDel' command to swap the bindings.

Commands are grouped into subcategories. To list the commands in a subcategory, type in
the category heading. Category headings are identified by starting with a capital letter.
For example, to list all the commands that handle log configuration, type 'Log'.
```

The help descriptions use the following conventions. Formatting differences between the help output and this document are also noted.

- Square brackets [] indicate optional parameters. For example, [-noprompt]
- Angle brackets < > indicate user-selectable input. For example, <command>.



NOTE

In this document, user-selectable input is indicated with italics, such as *help command*

- Text outside the angle brackets < > is actual text that needs to be entered.

When there is more than one choice, the options are separated by pipe characters | within curly braces { }. For example, case {off | on}

3.1.2. list

Displays a list of all valid commands.

Syntax

```
list [{all | group}] [-noprompt] [-verbose]
```

Options

- | | |
|------------------|--|
| all | Lists the commands for all groups. |
| group | Displays a list of commands for a particular group. See Example for options. |
| -noprompt | Displays a list of the command groups only. |
| -verbose | Prints full help for each command, instead of a summary. |

Example

```
->list -noprompt
List of Valid Groups:
General      General commands for user management and CLI configuration.
Chassis      Chassis management commands. (FRU info, fan / power supply state,
              etc).
Network      Ethernet interface management commands.
Firmware     Used to display or modify firmware revision levels.
Fm           SM configuration and management.
Log          Log file display and configuration.
Ism          Port configuration and statistics.
Tm           Used to display and configures the system time.
Snmp         Snmp configuration commands.
CaptureInfo  Information capture commands for support personnel use.
```

Notes

Type `list all` to display brief help for all available commands.

Type `list all -verbose` to display verbose help for all commands.

Type `list -noprompt` to display the list of command groups.

3.1.3. history

Displays the command history for the CLI session.

Syntax

```
history
```

Options

None.

Example

```
-> history
command history [30 max lines]:
  ismPortCounters
  ismPortSetWidth Cable01 -verbose
  ismPortEnable help
  time
  timeZoneConf
  timeDSTConf
  history
```

3.1.4. reboot

Reboots the device.

Syntax

```
reboot [now] [-m] [slot slot] [-s] [-n] [all]
```

Options

<code>now</code>	Does not prompt before rebooting.
<code>-m</code>	Reboots Master Management Module (non-disruptive).
<code>slot <i>slot</i></code>	Reboots a specific device where <i>slot</i> = slotName (disruptive).
<code>-s</code>	Reboots Standby Management Module.
<code>-n</code>	Reboots Standby (remote) management card only (non-disruptive).
<code>all</code>	Reboots all local devices (excludes <code>-n/-m/-s</code> options).

Example

```
-> reboot
Disruptive reboot selected
Proceed with reboot? [N]
```

Notes

Default (no arguments) reboots the local device disruptively after the prompt.

Use the argument `all` to perform a disruptive reboot of all present Management Modules and cards.

You can reboot the local (Master) Management Module or the remote (Standby) Management Module with one or multiple arguments.

Non-disruptive reboots do not interfere with switch traffic if ASIC firmware is not changing.

If rebooting the local device from Telnet, SSH, or another method, you must reconnect after rebooting.

See also: [Section 3.2.8 "showInventory"](#).

3.1.5. killCliSession

Terminates an existing CLI session.

Syntax

```
killCliSession sessionNumber
```

Options

sessionNumber The session number that is returned from the who command.

Example

```
-> killCliSession  
must supply session number
```

Notes

This command logs out remote sessions. Use [Section 3.1.6 "who"](#) to obtain the list of active sessions.

3.1.6. who

Displays all the active CLI sessions.

Syntax

```
who
```

Options

None.

Example

```
->who  
user  role  index logged in      last cmd      type  ip address  
-----
```

```
admin admin 0      02:25:26 10/14/2015 02:25:26 10/14/2015 serial
admin admin 1      09:23:16 10/16/2015 09:59:01 10/16/2015 ssh    ::ffff:10.127.236.39
```

Notes

Displays a list of currently active CLI sessions. Note that a session can be *active*, but no user information is available. In most cases, this indicates the session is waiting for the user to enter login information.

For each session, the following information is displayed:

- user - user name of the logged in user
- role - security role of the user
- index - internal session index
- logged in - timestamp of when the user logged in
- last cmd - timestamp of the user's last command
- type - method used to connect to the system
- ip address - IP address of the user (if applicable)

3.1.7. broadcast

Writes a message to all active CLI sessions.

Syntax

```
broadcast "msg"
```

Options

"msg" Message text. The message text must be encapsulated in quotes " " and must be non-empty.

Example

```
-> broadcast "The system will be rebooted in 5 minutes."
```

3.1.8. swapBsDel

Toggles the key bindings for the backspace and delete characters.

Syntax

```
swapBsDel
```

Options

None.

Example

```
-> swapBsDel
```

Notes

Terminals may bind the backspace and delete key bindings differently. This command swaps two commonly used bindings, which allow you to use the backspace and delete keys properly without having to adjust your terminal settings.

Backspace and delete swapping is persistently maintained per user (that is, each login account can have a separate binding).

3.1.9. setTermWidth

Modifies the terminal width for text formatting purposes.

Syntax

```
setTermWidth width
```

Options

width Width of your terminal window. The minimum width is 20 characters. Note that not all commands adhere to this setting.

Example

```
-> setTermWidth 100
```

3.1.10. getTermWidth

Displays the terminal width for text formatting purposes.

Syntax

```
getTermWidth
```

Options

None.

Example

```
-> getTermWidth  
Current terminal width: 80 characters.
```

Notes

Displays the terminal width used for text formatting purposes. Note that not all commands adhere to this setting.

3.1.11. prompt

Modifies the CLI prompt (global for all active CLI sessions).

Syntax

```
prompt prompt
```

Options

prompt The new prompt, range 1 - 11 characters. The new prompt is saved across reboots if done by the admin.

Example

```
-> prompt "Edge-> "  
Edge->
```

Notes

If the prompt contains a space, asterisk, comma, parenthesis, or semicolon it must be enclosed with double quotes " ", for example: "**a prompt*". Also, if a prompt is not accepted, try to enclose it with double quotes.

The prompt must end in "-> " (note trailing space) for some FastFabric Tools to function correctly.

To reset to the default prompt, use "" as the *prompt* parameter. For example: prompt ""

3.1.12. case

Displays or modifies the case sensitivity of the command interpreter for the CLI session.

Syntax

```
case [{off | on}]
```

Options

off | on Turns case sensitivity off or on.

Example

```
-> case off  
Case sensitivity is now off
```

Notes

If no value is entered, the current setting is displayed.

When case sensitivity is on, the CLI input must match the exact character case (lower and upper case) as specified in the help text. When case sensitivity is turned off, the CLI input can be any combination of upper and lower case.

3.1.13. showLastRetCode

Displays the return code from the last executed command.

Syntax

```
showLastRetCode [-brief]
```

Options

-brief Displays only the numeric value of the return code.

Example

```
-> showLastRetCode  
Last Exit Code: 0: Success
```

Notes

This allows automated systems to determine if a command was successful or not.

3.1.14. echo

Echoes the input parameters back to the output.

Syntax

```
echo [text1 text2]
```

Options

text1 text2 Text to be echoed. If there are multiple arguments, they must be separated by spaces.

Example

```
-> echo text1 text2  
text1 text2
```

3.1.15. rlogin

Opens a terminal to local I/O devices within the chassis.

Syntax

```
rlogin [deviceName]
```

Options

deviceName The name of the device to connect.

Example

```
-> rlogin Slave
```

Notes

See also [Section 3.3.19 "hostShow"](#). You can escape out of the remote CLI session, and back to the local CLI, by typing]~.<Enter>.

3.1.16. logout

Terminates the current CLI session.

Syntax

```
logout
```

Options

None.

Notes

```
-> logout
```

3.1.17. user

Modifies user accounts.

Syntax

```
user [username]
```

Options

username Name of user account to change to.

Example

```
-> user operator  
User changed to: operator
```

Notes

Use this command to change to the operator account, or to the admin account.

3.1.18. passwd

Modifies a user account password.

Syntax

```
passwd [username] [-r]
```

Options

- username* User account name associated with the password change.
- r Resets user account password. This option is only allowed from serial connection.

Example

```
-> passwd operator1
Changing password for user: operator1
(current) password:
(new) password:
confirm the new password:
Password was updated successfully.
```



NOTE

Password text is not displayed.

Notes

The minimum password length is eight (8) characters. The maximum length is 40 characters.

If you call this command when logged in from an operator account, you can only reset the password for the current account and no arguments are accepted.

3.1.19. userAdd

Adds a user account.

Syntax

```
userAdd role username [password]
```

Options

- role* Options include:
- admin Administrator

operator Operator

support Support personnel

username New user account name. Must be between 4 and 32 characters.

password Optional password. If not supplied, the default password for that role is used.

Example

```
-> userAdd admin Bob
User added: Bob
Password is set to the default password for this role: admin
```

3.1.20. userRem

Removes a user account.

Syntax

```
userRem username
```

Options

username User account name to delete.

Example

```
-> userRem Bob
User deleted: Bob
```

3.1.21. userListShow

Displays all user accounts for this device.

Syntax

```
userListShow
```

Options

None.

Example

```
-> userlistshow
username      role
operator      operator
admin         admin
```

3.1.22. sshKey

Displays or modifies the configured set of SSH keys.

Syntax

```
sshKey [{show | add "key" | rem <index> | rem -all} [-u username]]
```

Options

show	Displays the SSH public keys in the user's authorized_keys file.
add "key"	Adds key to the user's authorized_keys file. Must be enclosed within double-quotes as shown: "key"
rem <i>index</i>	Removes key at <i>index</i> for the user.
rem -all	Removes all keys for the user.
-u <i>username</i>	Performs the operation on the user <i>username</i> (must have administrative privileges).



NOTE

Users with administrative privileges can use the -u option to manage keys for other users. When valid key is present, user can log in without a password.

Example

```
-> sshKey show
Index  Key
-----
1      "ssh-rsa AAAAB3NzaC1yc2EAAAABIwAAAQEArNiSexu30rZjs1HAXbDBwTgJgcxLF..."
```

3.1.23. loginMode

Displays or changes how users are authenticated when connecting to the GUI or CLI.

Syntax

```
loginMode [mode]
```

Options

mode Determines how users are able to login. Options include:

- 0 Username and password are required.
- 1 Password is not required.
- 2 Username and password are **not** required.
- 3 LDAP Authentication is required.

Example

```
-> loginmode  
Current login mode is: 2 = Username / password are not required
```

Notes

If no value is entered, the current setting is displayed.

When user names are disabled, all users are logged on as the administrative user. There is no way to change this behavior.

3.1.24. setldapSvrIpAddr

Displays or modifies the LDAP server IP address.

Syntax

```
setldapSvrIpAddr [ipaddress]
```

Options

ipaddress IP address of the LDAP server to be modified in the format 192.168.0.1. The LDAP server is contacted for remote authentication.



NOTE

If no value is entered, the current setting is displayed.

Example

```
-> setldapSvrIpAddr 192.168.0.29
```

3.1.25. setldapSvrPort

Displays or modifies the TCP port number to use for LDAP.

Syntax

```
setldapSvrPort [port]
```

Options

port The TCP port number to use for LDAP user login authentication.



NOTE

If no value is entered, the current setting is displayed.

Example

```
-> setldapSvrPort 389
```

3.1.26. idleTimeoutGet

Displays the idle timeouts for the CLI and GUI interfaces to the system. If set to zero, the timeout for that interface is disabled.

Syntax

```
idleTimeoutGet [--all | --cli | --gui]
```

Options

- all Display all timeouts. If no option is entered, this is the default behavior.
- cli Display the timeout for CLI sessions.
- gui Display the timeout for GUI sessions.

Example

```
-> idleTimeoutGet --all
CLI timeout is 600 seconds.
GUI timeout is 0 seconds.
```

3.1.27. idleTimeoutSet

Sets the idle timeout for the CLI and GUI interfaces.

Syntax

```
idleTimeoutSet [--all | --cli | --gui] timeout
```

Options

- all** Sets the idle timeout for both the CLI and the GUI to the same value.
- cli** Sets the idle timeout for the CLI. This is the default if no identifier is specified.
- gui** Sets the idle timeout for the GUI.
- timeout*** Value for idle timeout (in seconds). If set to 0, the timeout is disabled.

Example

```
-> idleTimeoutSet --all 700
CLI timeout is 700 seconds.
GUI timeout is 700 seconds.
```

3.1.28. sessionTimeoutDisable

Disables the idle timeout for the current CLI session.

Syntax

```
sessionTimeoutDisable
```

Options

None.

Example

```
-> sessionTimeoutDisable
Disabled session idle timeout.
```

Notes

This value does not persist across instances of the session. That is, each time you log on, it defaults back to the system default value.

3.1.29. sessionTimeoutEnable

Enables the idle timeout for the CLI session.

Syntax

```
sessionTimeoutEnable
```

Options

None.

Example

```
-> sessionTimeoutEnable  
Enabled session idle timeout.
```

Notes

This value does not persist across instances of the session. That is, each time you log on, it defaults back to the system default value.

3.1.30. loginMsgGet

Displays the CLI login message.

Syntax

```
loginMsgGet
```

Options

None.

Example

```
-> loginMsgGet  
Welcome message: Be certain to logout when you are finished using the CLI.
```


Notes

You can customize the login message using [Section 3.1.31 "loginMsgSet"](#).

3.1.31. loginMsgSet

Sets the welcome message displayed when logging onto the CLI.

Syntax

```
loginMsgSet {-clear | string}
```

Options

-clear Clears welcome message.
string Sets the welcome message.



NOTE

Must be encapsulated in double quotes.

Example

```
-> loginMsgSet "Be certain to logout when you are finished using the CLI."  
Welcome message set successfully
```

Notes

View the current message using [Section 3.1.30 "loginMsgGet"](#).

3.1.32. loginNameGet

Displays the text string that is shown prior to logging in through Telnet.

Syntax

```
loginNameGet
```

Options

None.

Example

```
-> loginNameGet  
login-name: Switch1
```

Notes

The login name is an arbitrary string displayed prior to a user attempting a login to a new CLI session. This command displays the current value of this string.

3.1.33. loginNameSet

Modifies the text string that is displayed prior to logging in through Telnet.

Syntax

```
loginNameSet {-clear | loginName}
```

Options

-clear Clears the login name.
loginName Sets the login name.

Example

```
-> loginNameSet Switch1  
login-name set successfully
```

Notes

The login name is an arbitrary string displayed prior to a user attempting a login to a new CLI session. This command modifies this string.

3.1.34. serialAuthGet

Displays the mode setting for serial console authentication. If enabled, user login and authentication are required on the serial console of the system.

Syntax

```
serialAuthGet
```

Options

None.

Example

```
-> serialAuthGet  
Serial authentication is currently disabled.
```

3.1.35. serialAuthSet

Modifies the serial console authentication mode setting.



NOTE

You must exit and log in again for the setting to take effect.

Syntax

```
serialAuthSet {0 | 1}
```

Options

- 0 Disables authentication.
- 1 Enables authentication.

Example

```
-> serialAuthSet 1  
Serial authentication set to enabled.
```

3.1.36. uiConfig

Displays or modifies the user interface access methods.

Syntax

```
uiConfig [-telnet {0|1}] [-https {0|1}] [-http {0|1}] [-sftp {0|1}] [-snmp {0|1}] [-snmpv1  
{0|1}] [-snmpv2 {0|1}] [-snmpv3 {0|1}] [-snmpreadonly {0|1}]  
[-ssh {0|1}]
```

Options

- | | |
|---------------|---|
| -telnet | Disables or enables access to the device through Telnet. <ul style="list-style-type: none">• 0 = Disable access• 1 = Enable access |
| -https | Disables or enables HTTPS access. <ul style="list-style-type: none">• 0 = Disable access• 1 = Enable access |
| -http | Disables or enables HTTP access. <ul style="list-style-type: none">• 0 = Disable access• 1 = Enable access |
| -sftp | Disables or enables SFTP access. <ul style="list-style-type: none">• 0 = Disable access• 1 = Enable access |
| -snmp | Disables or enables overall SNMP access. <ul style="list-style-type: none">• 0 = Disable access• 1 = Enable access |
| -snmpv1 | Disables or enables SNMP V1 access. <ul style="list-style-type: none">• 0 = Disable access• 1 = Enable access |
| -snmpv2 | Disables or enables SNMP V2 access. <ul style="list-style-type: none">• 0 = Disable access• 1 = Enable access |
| -snmpv3 | Disables or enables SNMP V3 access. <ul style="list-style-type: none">• 0 = Disable access• 1 = Enable access |
| -snmpreadonly | Disables or enables SNMP write access. <ul style="list-style-type: none">• 0 = Enable access• 1 = Disable access |
| -ssh | Disables or enables SSH access. <ul style="list-style-type: none">• 0 = Disable access• 1 = Enable access |

Example

```
-> uiconfig -telnet 0
Successfully modified configuration.
Option      Value
-----
-telnet      0
-http        1
-https       0
-sftp        1
-snmpp       1
-ssh         1
```

Notes

There are several access methods for this device. With no arguments, this command displays the access methods that can be configured, and whether each method is currently enabled or disabled.

This command can also be used to enable or disable various access methods. Use `-<proto> 0` to disable a protocol, and `-<proto> 1` to enable it. Multiple operations can be specified in a single command.

A reboot is not required for this command to take effect. Depending on the specific method, it may take 5-10 seconds for the change to take effect. Note that existing connections (for example, a Telnet session) are not affected by disabling the underlying access method.

Any access method supported by the device but not listed here, cannot be configured and is always enabled.

3.1.37. genPost

Displays power-on self-test (POST) results and runs on-demand tests.

If no argument is entered, the list of tests is displayed; however, no tests are run.

A single test can be run by entering its ID. All on-demand tests can be run by entering `all`.

The power-on tests are meaningful for a managed OPX Edge Switch. The CPU, DRAM, RAM, and Boot ROM are located on the Q7 module. The power-on tests run on every power cycle, so they are always automatically enabled.

Table 2. genPost Output Description

Output Field	Description
ID	Index. Tests that can be run on-demand have a numeric ID. Tests that cannot be run on-demand have * as the ID.

Output Field	Description
Gen POST Name	POST test name. Power-On Tests • CPU Test CPU. • MEM DRAM Test DRAM addressability and contents. • BOOTROM IMG CHKSUM Check boot ROM image checksum. • RUN-TIME IMG CHKSUM Check run-time image checksum. • JMP RAM Execute from RAM. On-Demand Tests • I2C PROBE Probe I2C bus for expected I2C devices present. • FAN TRAYS Check for expected number of fans present and operational. • REAL-TIME CLOCK Check for real-time clock operational. • PROTO Test the CLI and GUI interfaces to POST.
Result	After executing one or more tests, the screen is updated with the result of each test run.  NOTE Power-on tests always have a result of PASS, since all tests must complete successfully and the boot process must complete in order for the CLI to become operational.
ENA	Enabled flag: indicates whether a test is supported on a platform.
DEM	On-demand flag: indicates whether the test can be run on-demand or not.
PWR	Power-on flag: indicates whether the test can be run at power-on.
Result-Ext	Extended result information: displays information about a test failure.

Syntax

```
genPost [{all | test}]
```

Options

- all** Runs all tests.
- test** Runs specific test number.

Example

The CLI prompts you to enter a test number or enter all to run all tests.

```
-> genPost
```

ID	Gen	POST Name	Result	ENA	DEM	PWR	Result-Ext
*		POST TEST CPU	NO-RUN	Y	N	Y	
*		POST TEST MEM DRAM	NO-RUN	Y	N	Y	
*		POST TEST BOOTROM IMG CHKSUM	NO-RUN	Y	N	Y	
*		POST TEST RUN-TIME IMG CHKSUM	NO-RUN	Y	N	Y	
*		POST TEST JMP RAM	NO-RUN	Y	N	Y	
6		POST TEST I2C PROBE	NO-RUN	Y	Y	N	
7		POST TEST FAN TRAYS	NO-RUN	Y	Y	N	
8		POST TEST REAL-TIME CLOCK	NO-RUN	Y	Y	N	
9		POST TEST PROTO	NO-RUN	Y	Y	N	

```

Enter Test Index(0 to Exit, 'all' for All tests)
all
Running: all
POST PROTO Parameters P1:1 P2:2 P3:3

```

ID	Gen	POST Name	Result	ENA	DEM	PWR	Result-Ext
*		POST TEST CPU	NO-RUN	Y	N	Y	
*		POST TEST MEM DRAM	NO-RUN	Y	N	Y	
*		POST TEST BOOTROM IMG CHKSUM	NO-RUN	Y	N	Y	
*		POST TEST RUN-TIME IMG CHKSUM	NO-RUN	Y	N	Y	
*		POST TEST JMP RAM	NO-RUN	Y	N	Y	
6		POST TEST I2C PROBE	PASS	Y	Y	N	
7		POST TEST FAN TRAYS	FAIL	Y	Y	N	Fans (1) < minimum (4)
8		POST TEST REAL-TIME CLOCK	PASS	Y	Y	N	
9		POST TEST PROTO	PASS	Y	Y	N	ResultExt: Successful, no errors

```

Enter Test Index(0 to Exit, 'all' for All tests)
0

```

3.1.38. exit

Terminates the current CLI session.

Syntax

```
exit
```

Options

None.

Example

```
exit
```

3.2. Chassis

Commands in this category are used for chassis management, such as FRU information, fan/power supply state, and others.

3.2.1. hwCheck

Displays the hardware status for chassis, modules, fans, and power supplies.

Syntax

```
hwCheck [{-verbose | {0 | 1}}]
```

Options

Returns GOOD or provides detailed status/warning/error information. If an error/warning is detected, this command automatically provides verbose information. Options include:

- verbose Verbose output mode.
- 0 Quiet output (default).
- 1 Verbose output.

Example

```
-> hwcheck
Chassis hardware status: GOOD
-> hwcheck -verbose
Chassis hardware status: GOOD
Fan Tray 1 health:
    status=Operational
    errors=0
    warnings=0.
Power Supply 1 health:
    status=Engaged
    errors=0
    warnings=0
    fanErrors=0.
Power Supply 2 health:
```



```

status=Engaged
errors=0
warnings=0
fanErrors=0.
Omni-Path Edge Switch 100 Series health:
LTC4260 Voltage Min Val.      Max Val.      Status
12.995      10.800      14.300      Voltage is OK
LTC2974 Voltage Min Val.      Max Val.      Status
1.800       1.614       1.984      Voltage is OK
2.515       2.244       2.755      Voltage is OK
5.000       4.744       5.255      Voltage is OK
3.300       2.963       3.635      Voltage is OK
LTC3880 Voltage Min Val.      Max Val.      Status
0.999       0.945       1.054      Voltage is OK
LTC3880 Voltage Min Val.      Max Val.      Status
0.998       0.945       1.054      Voltage is OK
LTC3880 Voltage Min Val.      Max Val.      Status
0.899       0.804       0.995      Voltage is OK
LTC3880 Voltage Min Val.      Max Val.      Status
0.901       0.804       0.995      Voltage is OK
LTC3880 Voltage Min Val.      Max Val.      Status
3.334       3.161       3.508      Voltage is OK
Temperature      Warning      Critical      Actual
ASIC_EXT         90C         105C         30C
ASIC_INT         94C         104C         34C
QSFP_MAX         70C         100C         N/A
CPU_CORE         90C         100C         26C
Temperature Errors      = 0
Temperature Warnings    = 0
Temperature I/O Errors  = 0
Good Temperatures      = 3
Voltage Warnings        = 0
Voltage Errors          = 0
Voltage I/O Errors      = 0
Initialize Errors       = 0
Module Attention LED color = Off
Chassis LED color      = Green

```

3.2.2. hwMonitor

Displays current port states, fan speeds, temperatures, and voltages until disabled.

Syntax

```
hwMonitor [slot] [onepass] [-all]
```

Options

- slot* Slot name to display.
- onepass* Displays current values and exits. Does not continuously monitor.
- all* Displays all information screens.

Example

The CLI displays a different output depending on the OPX switch type. The display refreshes automatically.

Example for OPX Edge Switch

```
-> hwmonitor
System monitor, Uptime: 4 days 0 hours 21 minutes 1 seconds
Power Supply 1: online      Power Supply 2: offline
Fan Tray 1 Speed: 7620  7483  7554  7859  7749  7516

Temperatures: LTC2974 U42      [Unused]=25C
[Unused]=25C
[Unused]=25C
[ASIC_EXT]=32C
Temperatures: FROM ASIC      [ASIC_INT]=35C
Temperatures: FROM ASIC      [QSFP_MAX]=N/A
Temperatures: MGMT CARD      [CPU_CORE]=29C

Voltages: LTC4260 U2      [12.0v(Raw)]=12.880
Voltages: LTC3880 U4      [1.0v]=0.999
Voltages: LTC3880 U5      [1.0v]=0.999
Voltages: LTC3880 U6      [0.9v]=0.899
Voltages: LTC3880 U7      [0.9v]=0.898
Voltages: LTC3880 U8      [3.3v]=3.334
Voltages: LTC2974 U42      [1.8v]=1.799 [2.5v]=2.499 [5.0v]=5.000 [3.3v]=3.299

Omni-Path Port Status
Cable01[ Down ] Cable02[Active] Cable03[ Down ] Cable04[ Down ]
Cable05[ Down ] Cable06[ Down ] Cable07[ Down ] Cable08[ Down ]
Cable09[ Down ] Cable10[ Down ] Cable11[ Down ] Cable12[ Down ]
Cable13[Active] Cable14[ Down ] Cable15[ Down ] Cable16[ Down ]
Cable17[ Down ] Cable18[ Down ] Cable19[ Down ] Cable20[ Down ]
Cable21[ Down ] Cable22[ Down ] Cable23[ Down ] Cable24[Active]
Cable25[ Down ] Cable26[ Down ] Cable27[ Down ] Cable28[ Down ]
Cable29[ Down ] Cable30[ Down ] Cable31[Active] Cable32[ Down ]
Cable33[ Down ] Cable34[ Down ] Cable35[ Down ] Cable36[Active]
Cable37[ Down ] Cable38[ Down ] Cable39[ Down ] Cable40[ Down ]
Cable41[ Down ] Cable42[ Down ] Cable43[ Down ] Cable44[ Down ]
Cable45[ Down ] Cable46[Active] Cable47[ Down ] Cable48[ Down ]
```

Example for OPX Director Class Switch

```
-> hwMonitor M201
System monitor, Uptime: 0 days 4 hours 55 minutes 37 seconds

MODULES      MODULES(cont)  MODULES(cont)  Power & Fans
SLOT|P|TMP|VLT  SLOT|P|TMP|VLT  SLOT|P|TMP|VLT  SLOT|P|SPEED  SLOT|P|SPEED
| |E|W|E|W      | |E|W|E|W      | |E|W|E|W      | |      | |
M201 |*| | | | L101 |*| | | | | | | | | P201 | | F201 |*| 6840
M202 |*| | | | L102 |*| | | | | | | | | P202 |*| F202 |*| 6480
S105A|*| | | | L103 |*| | | | | | | | | P203 | | F203 |*| 6480
S105B|*| | | | L104 |*| | | | | | | | | P204 |*| F204 |*| 6840
Max Temp=60C (Management Module 202)
Legend: P=pres/abs TMP=Temperature VLT=Voltage E=Err W=Warn (X=Err/Warn found)
```

Notes

To exit monitoring, press the **Enter** key.

The character meanings on the main monitoring page include the following:

P (Power) column heading uses the following characters:

- * = Device is inserted and powered on.
- ! = Device is inserted and powered off.
- A = Device is required in the configuration, but is not inserted.
- = Device is not required in the configuration, and is not inserted. (Column is empty.)

TMP (Temperature) headings have two columns:

- E (Error) column heading uses the following characters:
 - X = A temperature error condition exists on the device.
 - = No temperature error condition on the device. (Column is empty.)
- W (Warning) column heading uses the following characters:
 - X = A temperature warning condition exists on the device.
 - = No temperature warning condition on the device. (Column is empty.)

VLT (Voltage) headings have two columns:

- E (Error) column heading uses the following characters:
 - X = A voltage error condition exists on the device.
 - = No voltage error condition on the device. (Column is empty.)
- W (Warning) column heading uses the following characters:
 - X = A voltage warning condition exists on the device.
 - = No voltage warning condition on the device. (Column is empty.)

3.2.3. showNodeDesc

Displays the node subnet management agent (SMA) description (or the default).

Syntax

```
showNodeDesc [-d]
```

Options

-d Shows the default node name for this unit.

Example

```
-> showNodeDesc  
Node (SMA) Description is = OmniPth000000f600000000
```

Notes

If no value is entered, the current node description is displayed.

3.2.4. setNodeDesc

Modifies the node SMA description.

Syntax

```
setNodeDesc "nodeString"
```

Options

nodeString Node description must be enclosed in quotes and must be no more than 64 characters.

Example

```
-> setNodeDesc "OmniPath Fabric Switch"  
Node (SMA) Description successfully changed to "OmniPath Fabric Switch"
```

3.2.5. setNodeDescFormat

Displays or modifies the node SMA description format modifier.

Syntax

```
setNodeDescFormat [format]
```

Options

format Description format type. If no value is entered, the current setting is displayed.
Options include:

- 0 Verbose format.
- 1 Brief format (consistent with the CLI/GUI Port Stat port naming).

Example

```
-> setNodeDescFormat
Format = 0
```

3.2.6. fruInfo

Displays FRU information.

Syntax

```
fruInfo {[slot] | -all}
```

Options

- slot* Slot name to display FRU information.
- all* Displays information for all available slots.

Examples

```
-> fruInfo
Display chassis info
xInfo_ChassisInfo:
  RecType:      1                LastRec:      0                LenMult:      0
  ReadOnly:     1                RecordFormat: 2                RecLen:       14
  LogicalLen:   020
  HdrChkSum:    c6
  ChassisGuid:  00117501ff5131bf
  SlotCount:    1                (IB Mods in Chassis)
  SlotNumbers:  81                (pairs:ext0|Slt1)
  CmeAccess:    80                (bits:ext0|Slt1|Cme)
  SlotNumber:   0 <-Record accessed via this slot
  CmeAccessBits: 2                (Access slot relative)
  ProxyAccess:  0                (Access slot relative)
  LockDrivesCTR: 0                (Clear to Remove interlock)
  MechLock:     1
  NodeCount:    0

xInfo_AssetTagInfo:
  RecType:      8                LastRec:      1                LenMult:      0
  ReadOnly:     0                RecordFormat: 1                RecLen:       c
  LogicalLen:   012
  HdrChkSum:    68
  FRUHandle:    1
  Asset Tag Enc: 4
  Asset Tag:    00 00 00 07

xInfo_FRUInfo:
  RecType:      2                LastRec:      0                LenMult:      0
```

```

ReadOnly:      1                      RecordFormat:  1                      RecLen:      74
LogicalLen: 116
HdrChkSum:    66
FruType:      4
FruHandle:    1
FRUGUIDType:  1
FruGuid:      00117501ff5131bf
SerNumEncLen: cd      SerNum:        USFU131500007
PtNumEncLen:  ca      PartNum:       H50565-004
ModelEncLen:  cb      ModelNum:      100SWE48QF2
VersionEncLen:c3      Version:       004
MfgEncLen:    d1      Manufacturer: Cornelis Networks
ProdNmEncLen: df      ProductName:   100 OP Edge 48p Q7 forward 2PSU
MfgIdEndLen:  1      MfgId:
MfgTime:      15/03/26 10:00
OemEncLen: 40      OemData:
  
```

3.2.7. chassisQuery

Displays information about the line cards in a chassis.

Syntax

```

chassisQuery [-master] [-slave] [slot] [-showType] [-type cardtype]
[-ignoreInvalidType]
  
```

Options

- master Displays the master slot name.
- slave Displays the standby slot name.
- slot* Slot name.
- showType Displays the card type.
- type *card_type* Displays slots that have the specified card type.



NOTE

Use `chassisQuery -showType` to display valid card types for the chassis.

- ignoreInvalidType Does not return an error if an invalid card type is supplied.



NOTE

This option is only valid when used with `-type`.

Example

Example for OPX Edge Switch

```
-> chassisQuery  
slots: Module
```

Example for OPX Director Class Switch

```
-> chassisQuery  
slots: M201 M202
```

Notes

If no options are entered, all currently occupied slots that support firmware update are displayed.

3.2.8. showInventory

Displays asset information on all entities in the chassis.

Syntax

```
showInventory
```

Options

None.

Example

```
-> showInventory  
  
Power Supply 1  
-----  
Manufacturer Id -  
Manufacturer Name - Cornelis Networks  
Part Number - J47711-xxx  
Product Name - Omni-Path Edge Switch 100 Series Power Supply  
  
Power Supply 2  
-----  
Manufacturer Id -  
Manufacturer Name - Cornelis Networks  
Part Number - J47711-xxx  
Product Name - Omni-Path Edge Switch 100 Series Power Supply
```

Fan Tray 1	

Manufacturer Id -	
Manufacturer Name -	Cornelis Networks
Part Number -	J46697-xxx
Product Name -	Omni-Path Edge Switch 100 Series Fan Tray
Fan Tray 2	

Manufacturer Id -	001175
Manufacturer Name -	Cornelis Networks
Part Number -	J46697-xxx
Product Name -	Omni-Path Edge Switch 100 Series Fan Tray
Module	

GUID -	00117501ff60260b
Manufacturer Id -	
Manufacturer Name -	Cornelis Networks
Mfg Date/Time -	2016/12/16 10:00
Model -	100SWE48QFH
Part Number -	J45152-001-01
Product Name -	100 OPA Edge 48p Mgmt Fwd HS
Serial Number -	USFU51160008A
Version -	001-01
Total devices found: 5	

3.2.9. setBeacon

Modifies or displays the chassis beacon LED setting.



NOTE

This command is only available on the OPX Director Class Switch.

Syntax

```
setBeacon [{0 | 1}]
```

Options

If no value is entered, the current setting is displayed. Options include:

- 0 Disable beacon.
- 1 Enable beacon.

Example

```
-> setBeacon 0
```

3.2.10. setSystemContact

Sets or displays the chassis system contact information.

Syntax

```
setSystemContact [contact]
```

Options

contact System contact string; must be enclosed in double quotes. Maximum length is 255 characters.

If no value is entered, the current setting is displayed.

Example

```
-> setSystemContact  
System Contact      : {no value}
```

3.2.11. setSystemName

Sets or displays the chassis system name.

Syntax

```
setSystemName [name]
```

Options

name System name string; must be enclosed in double quotes. Maximum length is 255 characters.

If no value is entered, the current setting is displayed.

Example

```
-> setSystemName  
System Name        : {no value}
```

3.2.12. setSystemLocation

Sets or displays the chassis system location.

Syntax

```
setSystemLocation [location]
```

Options

location System location string; must be enclosed in double quotes. Maximum length is 255 characters.

If no value is entered, the current setting is displayed.

Example

```
-> setSystemLocation
System Location      : {no value}
```

3.3. Network

Commands in this category are used for Ethernet interface management.

3.3.1. ifShow

Displays the interface statistics for the out-of-band (OOB) management port.

Syntax

```
ifShow [ifName]
```

Options

ifName The network interface name. If *ifName* is entered, only the interfaces belonging to that group are displayed. If no value is entered for *ifName*, all attached interfaces are displayed.

Example

```
-> ifShow
lo0      Link type:Local loopback Queue:none
         inet 127.0.0.1 mask 255.255.255.255
         inet6 unicast fe80::1%lo0 prefixlen 64 automatic
```

```

    inet6 unicast ::1 prefixlen 128
    UP RUNNING LOOPBACK MULTICAST NOARP ALLMULTI
    MTU:1500 metric:1 VR:0 ifindex:1
    RX packets:41 mcast:3 errors:0 dropped:0
    TX packets:41 mcast:3 errors:0
    collisions:0 unsupported proto:0
    RX bytes:1903 TX bytes:1903

gei0  Link type:Ethernet HWaddr 00:00:95:12:d3:1d Queue:none
      capabilities: TXCSUM TX6CSUM VLAN_MTU VLAN_TXHWTAG VLAN_RXHWTAG
      inet 10.228.209.95 mask 255.255.252.0 broadcast 10.228.211.255
      inet6 unicast 2002:ae4:d15f::ae4:d15f prefixlen 32
      inet6 unicast fe80::200:95ff:fe12:d31d%gei0 prefixlen 64 automatic
      UP RUNNING SIMPLEX BROADCAST MULTICAST
      MTU:1500 metric:1 VR:0 ifindex:2
      RX packets:226 mcast:0 errors:0 dropped:0
      TX packets:156 mcast:10 errors:0
      collisions:0 unsupported proto:0
      RX bytes:14k TX bytes:13k

```

3.3.2. routeShow

Displays the interface routes for the OOB management port.

Syntax

```
routeShow
```

Options

None.

Example

```

-> routeShow

INET route table - vr: 0, table: 254
Destination      Gateway          Flags    Use
If               Metric
0.0.0.0/0        10.228.208.1    UGS      40
gei              0 0
10.228.208.0/22  WRS-Template    UC        4
gei              0 0
WRS-Template     WRS-Template    UH        25
lo0              0
localhost       localhost       UH        17
lo0              0

INET6 route table - vr: 0, table: 254
Destination      Gateway          Flags    Use
If               Metric

```

```
localhost6          localhost6          UH      0
lo0                  0
2002::ae4::/32      2002::ae4:d15f::ae4:d15f      UC      0
gei                  0  0
2002::ae4:d15f::ae4:d15f      2002::ae4:d15f::ae4:d15f      UH      0
lo0                  0
fe80::%lo0/64       fe80::1%lo0          UC      0
lo0                  0
fe80::%gei0/64      fe80::200:95ff:fe12:d31d%gei0 UC      0
gei                  0  0
fe80::1%lo0         fe80::1%lo0          UH      0
lo0                  0
fe80::200:95ff:fe12:d31d%gei0 fe80::200:95ff:fe12:d31d%gei0 UH      0
lo0                  0

ipnet_cmd_route failed ret:0
```

3.3.3. ping

Sends ping packets to a specified IP address.

Syntax

```
ping {hostname | ipAddress} [packetCount]
```

Options

hostname The network hostname to ping. Hostname is limited to 64 characters.

ipAddress The IP address to ping.

packetCount The number of packets with which to ping the host (default is 5).

Example

```
-> ping 172.26.0.254
PING 172.26.0.254: 56 data bytes
64 bytes from 172.26.0.254: icmp_seq=0. time=0. ms
64 bytes from 172.26.0.254: icmp_seq=1. time=0. ms
64 bytes from 172.26.0.254: icmp_seq=2. time=0. ms
64 bytes from 172.26.0.254: icmp_seq=3. time=0. ms
64 bytes from 172.26.0.254: icmp_seq=4. time=0. ms
----172.26.0.254 PING Statistics----
5 packets transmitted, 5 packets received, 0% packet loss
round-trip (ms)  min/avg/max = 0/0/0
```

Notes

If *packetCount* is defined, the process exits after the defined number of packets are sent.

If *packetCount* is not defined, the process exits after the default 5 packets are sent.

3.3.4. ping6

Sends ping packets to a specified IPv6 address.

Syntax

```
ping6 [-n] [-c packetCount] [-I interface] ipv6Address
```

Options

- n Numeric output only.
- c *packetCount* The number of packets with which to ping the host (default is 5).
- I *interface* The local interface name to use (useful for link-local ping).
- ipv6Address* The network host to ping (scoped address accepted).

Notes

If *packetCount* is defined, the process exits after the defined number of packets are sent.

If *packetCount* is not defined, the process exits after the default 5 packets are sent.

3.3.5. showChassisIpAddr

Displays the chassis IP address.

Syntax

```
showChassisIpAddr
```

Options

None.

Example

```
-> showChassisIpAddr  
Chassis IP Address: 10.228.209.95 Net mask: 255.255.252.0
```

3.3.6. setChassisIpAddr

Modifies the chassis IP address and network mask.

Syntax

```
setChassisIpAddr [-h ipaddress] [-m netMask]
```

Options

- h *ipaddress* The new IP address in dotted notation format xxx.xxx.xxx.xxx.
- m *netMask* The network mask (may be in dotted notation or hexadecimal format).

Example

```
-> setChassisIpAddr -h 172.26.0.221 -m 255.255.240.0
```

Notes

Use the console port when changing the chassis IP address to avoid dropping the connection to the CLI and causing the device to become unreachable.

3.3.7. setChassisIpv6Addr

Changes the user-configured chassis IPv6 address.

Syntax

```
setChassisIpv6Addr {ipv6Address | maskLen}
```

Options

- ipv6Address* The new IPv6 address in notation format a:b:c:d:e:f:g:h; embedded 0s can be shortened, for example, a:b::g:h.
- maskLen* Network mask length (0-128).

Notes

Use the console port when changing the chassis IPv6 address to avoid dropping the connection to the CLI and causing the device to become unreachable.

3.3.8. delChassisIpv6Addr

Deletes the user-configured chassis IPv6 address.

Syntax

```
delChassisIpv6Addr
```

Options

None.

Notes

Use the console port when deleting the chassis IPv6 address to avoid dropping the connection to the CLI and causing the device to become unreachable. This command does not affect link-local or autoconfigured addresses.

3.3.9. showChassisIpv6Addr

Displays the user-configured chassis IPv6 address.

Syntax

```
showChassisIpv6Addr
```

Options

None.

Example

```
-> showChassisIpv6Addr  
Chassis IPv6 Address/Prefix Length: 2002:0ae4:d15f::0ae4:d15f/32
```

Notes

Only displays the user-configured IPv6 address. To see all the IPv6 addresses, including any autoconfigured addresses, use the command [Section 3.3.1 "ifShow"](#).

3.3.10. autoConfIPv6Enable

Enables IPv6 address autoconfiguration.

Syntax

```
autoConfIPv6Enable
```

Options

None.

Notes

This command allows prefix learning from attached routers. It does not affect link-local or manually configured addresses.

3.3.11. autoConfIPv6Disable

Disables IPv6 address autoconfiguration.

Syntax

```
autoConfIPv6Disable
```

Options

None.

Example

```
-> autoConfIPv6Disable
```

Notes

This command prevents prefix learning from attached routers. It does not affect link-local or manually configured addresses.

3.3.12. autoConfIPv6Show

Displays IPv6 address autoconfiguration settings.

Syntax

```
autoConfIPv6Show
```

Options

None.

Notes

```
-> autoConfIPv6Show  
00B IPv6 Autoconfig is enabled
```

3.3.13. ndpShow

Displays the IPv6 neighbors table.

Syntax

```
ndpShow
```

Options

None.

Example

```
-> ndpShow  
Neighbor                               Linklayer Address  Netif    Expire  St  
2002:ae4::                             00:00:95:12:d3:1d  gei0     perm    R  
2002:ae4:d15f::ae4:d15f                00:00:95:12:d3:1d  gei0     perm    R  
ff02::2                                33:33:00:00:00:02  gei0     587 s   S  
ff02::2                                link#1             lo0      577 s   S  
::1                                     link#1             lo0      perm    R  
ff02::1:ff12:d31d                      33:33:ff:12:d3:1d  gei0     564 s   S  
fe80::200:95ff:fe12:d31d               00:00:95:12:d3:1d  gei0     perm    R  
ff02::16                               33:33:00:00:00:16  gei0     585 s   S  
fe80::1                                link#1             lo0      perm    R  
fe80::                                  00:00:95:12:d3:1d  gei0     perm    R  
ipnet_cmd_ndp failed ret:0
```

3.3.14. showDefaultIpv6Route

Displays the default gateway IPv6 address.

Syntax

```
showDefaultIpv6Route
```

Options

None.

Example

```
-> showDefaultIpv6Route  
Gateway IPv6 Address: fe80::862b:2bff:fe5b:3b6
```

Notes

This is the IPv6 address for the default gateway to route packets from the OOB management port to an external network.

3.3.15. setDefaultIpv6Route

Modifies the default gateway IPv6 address.

Syntax

```
setDefaultIpv6Route -h ipv6address
```

Options

-h *ipv6address* The IPv6 address you wish to set in notation format a:b:c:d:e:f:g:h; embedded 0s can be shortened, for example, a:b::g:h.

Example

```
setDefaultIpv6Route -h *** AR MARY NEW EXAMPLE ***
```

Notes

Use this command to configure the IPv6 address for the default gateway to route packets from the OOB management port to an external network.

3.3.16. showDefaultRoute

Displays the default gateway IP address.

Syntax

```
showDefaultRoute
```

Options

None.

Example

```
-> showDefaultRoute  
Gateway IP Address: 172.26.0.254
```

Notes

This is the IP address for the default gateway to route packets from the OOB management port to an external network.

3.3.17. setDefaultRoute

Changes the default gateway IP address.

Syntax

```
setDefaultRoute -h ipaddress
```

Options

-h *ipaddress* The default gateway IP address in dotted decimal format (xxx.xxx.xxx.xxx).

Example

```
setDefaultRoute -h 172.26.0.235
```

Notes

Use this command to configure the IP address for the default gateway to route packets from the OOB management port to an external network.

3.3.18. arpShow

Displays the link level address resolution protocol (ARP) table.

Syntax

```
arpShow
```

Options

None.

Example

```
-> arpShow
10.228.209.95 at 00:00:95:12:d3:1d permanent published on gei0
10.228.211.255 at ff:ff:ff:ff:ff:ff on gei0
10.228.208.1 at 00:00:5e:00:01:50 on gei0
```

3.3.19. hostShow

Displays the host name table.

Syntax

```
hostShow
```

Options

None.

Example

```
-> hostShow
hostname      inet address      aliases
-----
localhost     127.0.0.1          CHASSIS
WRS-Template  10.228.209.95
home          10.228.211.254
switchA       127.1.1.1
```

3.3.20. dhcpEnable

Enables DHCP on the Ethernet interface.

Syntax

```
dhcpEnable
```

Options

None.

Example

```
-> dhcpEnable
DHCP is enabled
```

Notes

Enables the DHCP client subsystem, requests a DHCP lease, and then configures the interface with the lease data from the server.

3.3.21. dhcpDisable

Disables DHCP on the Ethernet interface.

Syntax

```
dhcpDisable
```

Options

None.

Example

```
-> dhcpDisable  
DHCP is disabled
```

Notes

Any DHCP-acquired IP address is released. The interface is then configured to the default static values from the current bootline.

3.3.22. dhcpShow

Displays the current DHCP leases.

Syntax

```
dhcpShow [{-verbose | -v}]
```

Options

- verbose Enables verbose output mode.
- v Enables verbose display.

Example

```
-> dhcpShow  
Client state = BOUND
```

```
Assigned IP address: 172.26.3.35
Client subnet mask: 255.255.240.0
DHCP server: 172.26.1.20
Default IP router: 172.26.0.1
Client lease duration: 518400 secs (421299 remaining)
```

3.3.23. dnsParamsShow

Displays the stored domain name system (DNS) parameters.

Syntax

```
dnsParamsShow
```

Options

None.

Example

```
-> dnsParamsShow
DNS Resolver      : Enabled
DNS Server Address : xxx.xxx.xxx.xxx
Local Domain Name : st.cornelisnetworks.com
```

Notes

This command retrieves the stored configuration parameters used for domain name resolution.

3.3.24. dnsParamsSet

Changes the DNS configuration parameters.

Syntax

```
dnsParamsSet [-s ipaddress] [-d domain name] [-e {1|0}]
```

Options

- s *ipaddress* DNS server IP address in dotted notation format (*xxx.xxx.xxx.xxx*)
- d *domain name* The local domain name where this switch is installed (limit 32 characters).

-e 0 = Disable the DNS resolver.
 1 = Enable the DNS resolver.

Example

```
-> dnsParamsSet -e 0
-> dnsParamsShow
DNS Resolver      : Disabled
DNS Server Address : xxx.xxx.xxx.xxx
Local Domain Name : st.cornelisnetworks.com
```

Notes

The DNS resolver cannot be enabled until both the server address and local domain name have been configured. It is necessary to manually reboot the switch in order to start or stop the DNS resolver.

3.3.25. IpoIbConfigShow

Displays the IP over InfiniBand (IPoIB) enable/disable setting.

Syntax

```
IpoIbConfigShow
```

Options

None.

Example

```
-> IpoIbConfigShow
IpoIb feature is currently disabled
```

3.3.26. IpoIbConfigEnable

Enables the IPoIB feature.

Syntax

```
IpoIbConfigEnable
```

Options

None.

Example

```
-> IpoIbConfigEnable
```

3.3.27. IpoIbConfigDisable

Disables the IPoIB feature.

Syntax

```
IpoIbConfigDisable
```

Options

None.

Example

```
-> IpoIbConfigDisable
```

3.3.28. IpoIbAddressShow

Displays the IPoIB IP address and associated netmask settings.



NOTE

IPoIB must be enabled to display these fields.

Syntax

```
IpoIbAddressShow
```

Options

None.

Example

```
-> IpoIbAddressShow
IP Address & Netmask are not configured for IpoIb interface
```

3.3.29. IpoIbAddressSet

Changes the IPoIB IP address and network mask settings.



NOTE

IPoIB must be enabled to display these fields.

Syntax

```
IpoIbAddressSet -h ipaddress [-m netMask]
```

Options

- h *ipaddress* The new IP address in dotted notation format xxx.xxx.xxx.xxx.
- m *netMask* Network mask (in hexadecimal format).

Example

```
-> IpoIbAddressSet -h 123.45.6.789
```

3.3.30. IpoIbAddressSetIPv6

Modifies the IPoIB IPv6 address and netmask.

Syntax

```
IpoIbAddressSetIPv6 ipv6Address/netMaskLen
```

Options

The option *ipv6Address/netMaskLen* is made up of two major components, separated by a /.

ipv6Address Notation format is: a:b:c:d:e:f:g:h, where embedded 0s can be shortened (for example, a:b::g:h).

netMaskLen Value between 0 and 128 inclusive.

Example

```
-> IpoIbAddressSetIPv6 ipv6Address/netMaskLen
```

3.3.31. IpoIbAddressShowIPv6

Displays the IPoIB IPv6 address and associated netmask settings.

Syntax

```
IpoIbAddressShowIPv6
```

Options

None.

Example

```
-> IpoIbAddressShowIPv6
```

3.4. Firmware

Commands in this category are used to manage firmware, such as display firmware revision, update firmware, and other tasks.

3.4.1. fwUpdate

Updates the firmware. You must reboot for the update to take effect.



NOTE

This command is only available on OPX Edge Switch.

Each switch has two firmware images that are installed by default. When you run `fwUpdate`, the *other* image is updated, not the one that is currently running. So, if you are running image1, the update replaces image2. You can then reboot, which runs image2, and then rerun `fwUpdate` to update image1.

Before you use this command, Cornelis recommends that you perform the following steps:

1. Run [Section 3.2.7 "chassisQuery"](#) to get slot info.
2. Run [Section 3.4.10 "bootQuery"](#) `<slot> -all`

The `bootQuery` output lists three versions:

- Primary: the image that will run at the next boot.

- Alternate: the other image.
- Active: the current image.

You can also use [Section 3.4.11 "bootSelect"](#) `<slot> -noprompt` to view this information.

Syntax

```
fwUpdate [hostip username password directory filename]
```

Options

Firmware update uses FTP to retrieve the firmware file, then writes the file to flash. If you omit any options, the system prompts you to provide them, as shown in the example.

hostip Host IP address where the firmware file resides.
username FTP user name.
password FTP user password.
directory After logging in, the directory to change to.
filename Name of the firmware file.

Example

```
-> fwUpdate
Enter 1 for FTP, 2 for local file: 1
Ftp Server IP Address:[192.168.0.195]
Ftp user name:[ftp] xxxxx
Ftp password:[ftp] xxxxx
File Directory:[PATH TO FIRMWARE FILE]
File name:[xxxx.spkg]
```

Notes

This command uses multiple modes to update firmware images:

- Mode 1 initiates an FTP transfer for the firmware package and saves the firmware image to flash.
- Mode 2 copies the firmware package from a local file system and saves the firmware image to flash.

If all options are passed from the command line, Mode 1 is the default. Any other modes are specified by omitting the command line options and entering the mode interactively when prompted. Some modes may not be available in all configurations.

3.4.2. fwUpdateSlot

Updates the firmware on a specific card. You must reboot for the update to take effect.



NOTE

This command is only available on the OPX Director Class Switch.

Each *slot* has two firmware images that are installed by default. When you run `fwUpdateSlot`, the *other* image is updated, not the one that is currently running. So, if you are running image1, the update replaces image2. You can then reboot, which runs image2, and then rerun `fwUpdateSlot` to update image1.

Before you use this command, Cornelis recommends that you perform the following steps:

1. Run [Section 3.2.7 “chassisQuery”](#) to get slot info.
2. Run [Section 3.4.10 “bootQuery”](#) `<slot> -all`

The `bootQuery` output lists three versions:

- Primary: the image that will run at the next boot.
- Alternate: the other image.
- Active: the current image.

You can also use [Section 3.4.11 “bootSelect”](#) `<slot> -noprompt` to view this information.

Syntax

```
fwUpdateSlot slot [hostip username password directory filename]
```

Options

Firmware update uses FTP to retrieve the firmware file, then writes the file to flash. If you specify only the *slot*, the system prompts you to provide the remaining information, as shown in the example.

<i>slot</i>	Chassis slot name to update.
<i>hostip</i>	Host IP address where the firmware file resides.
<i>username</i>	FTP user name.
<i>password</i>	FTP user password.
<i>directory</i>	After logging in, the directory to change to.
<i>filename</i>	Name of the firmware file.

Example

```
-> fwUpdateSlot M201
Enter 1 for FTP, 2 for local file: 1
Ftp Server IP Address:[192.168.0.195]
Ftp user name:[ftp] xxxxx
Ftp password:[ftp] xxxxx
File Directory:[PATH TO FIRMWARE FILE]
File name:[xxxx.spkg]
```

3.4.3. fwUpdateChassis

Updates the firmware for all cards in a chassis or management card only. You must reboot for the update to take effect.



NOTE

This command is only available on the OPX Director Class Switch.

Each *moduletype* has two firmware images that are installed by default. When you run `fwUpdateChassis`, the *other* image is updated, not the one that is currently running. So, if you are running image1, the update replaces image2. You can then reboot, which runs image2, and then rerun `fwUpdateChassis` to update image1.

Before you use this command, Cornelis recommends that you perform the following steps:

1. Run [Section 3.2.7 “chassisQuery”](#) to get slot info.
2. Run [Section 3.4.10 “bootQuery”](#) `<slot> -all`

The `bootQuery` output lists three versions:

- Primary: the image that will run at the next boot.
- Alternate: the other image.
- Active: the current image.

You can also use [Section 3.4.11 “bootSelect”](#) `<slot> -noprompt` to view this information.

Syntax

```
fwUpdateChassis moduletype [-noprompt] [reboot]
```

Options

Firmware update retrieves the firmware file from an FTP server, saves the file locally, then writes the file to flash. Using the `all` option updates all cards in the chassis. This assumes that all firmware files are in the same directory of the FTP server. You are prompted for the

names of each file for each *moduletype* present in the chassis. You are also prompted to save the entered values as defaults for future firmware updates.

moduletype Type of card to update. Values include:

all Updates all cards in the chassis.

management Updates the management card.

-noprompt When entered, the system does not prompt for FTP information, it uses the saved values.

reboot Upon successful completion, reboots the updated cards.

Example

```
-> fwUpdateChassis all reboot
```

3.4.4. fwListFiles

Lists the contents of the firmware directory.

Syntax

```
fwListFiles
```

Options

None.

Example

```
-> fwListFiles
Listing Directory /firmware:
drwxrwxrwx 1 0      0      1024 Oct 14 02:24 operator/
drwxrwxrwx 1 0      0      1024 Oct 14 02:24 admin/
drwxrwxrwx 1 0      0      1024 Oct 14 02:24 ivtester/
```

Notes

The firmware directory temporarily stores firmware files before they are written to flash.

3.4.5. fwShowUpdateParams

Displays the default update firmware settings.

Syntax

```
fwShowUpdateParams
```

Options

None.

Example

```
-> fwShowUpdateParams
Firmware update ftp configuration settings:
host:[10.127.236.39]
user:[ftp]
password:[ftp]
directory:[/pub]
filename management:[STL1.q7.10.0.0.991.51.spkg]
```

3.4.6. fwSetUpdateParams

Changes the default update firmware settings.

Syntax

```
fwSetUpdateParams [-c cardtype [-h hostname] [-u username] [-p password] [-d directory]
[-f filename]
```

Options

All options are shared across all card types, except for *filename*.

-c *cardtype* Options include: management



NOTE

The *cardtype* parameter is only required when specifying the *filename*.

- h *hostname* The host name or IP address of the FTP server. Maximum = 64 characters.
- u *username* The user name to access the FTP server.
- p *password* The password to access the FTP server.
- d *directory* The directory containing the firmware file.
- f *filename* The firmware file name.

3.4.7. showCapability

Displays capability and feature information for a specific release.

Syntax

```
showCapability [-key feature]
```

Options

-key feature Displays information for a particular feature.



NOTE

If no value is entered, the key features of the system are displayed.

Example

```
-> showCapability  
fwPush: 1  
slaveCli: 1  
smConfig: 1
```

3.4.8. showLastScpRetCode

Displays the return code from the last SCP firmware or XML configuration push operation to the unit.

Syntax

```
showLastScpRetCode [slot] [-all]
```

Options

slot The slot name in the chassis.

-all All slots in the chassis.

Example

Example for OPX Edge Switch

```
-> showLastScpRetCode Module  
SCP: Slot 0 Last Exit Code: 0: Success
```


Example for OPX Director Class Switch

```
-> showLastScpRetCode M201  
SCP: Slot 201 Last Exit Code: 0: Success
```

Notes

Use this command in automated systems to determine whether or not an SCP firmware or XML config push was successful.

3.4.9. fwVersion

Displays the firmware versions for a unit.



NOTE

The `fwVersion` command shows the Bootrom version that was used at boot, not the Bootrom version that was last installed. If you have recently updated firmware and did not reboot your node, you must reboot twice for the new Bootrom to become active. See [Section 3.4.1 “fwUpdate”](#), [Section 3.4.2 “fwUpdateSlot”](#), and [Section 3.4.3 “fwUpdateChassis”](#) for more details.

Syntax

```
fwVersion [slot]
```

Options

slot Slot name.

Example

```
-> fwVersion  
Omni-Path Edge Switch 100 Series Information -----  
Firmware Version: 10.0.0.991.51  
Firmware build:   10_0_0_991_51  
Firmware BSP:     q7  
Bootrom Version:  10.0.0.991.43
```

3.4.10. bootQuery

Displays boot image version information.

Syntax

```
bootQuery slot [-active] [-alternate] [-all]
```

Options

<i>slot</i>	Slot name.
<i>-active</i>	Displays the version of the active firmware image.
<i>-alternate</i>	Displays the version of the alternate firmware image.
<i>-all</i>	Displays the versions for the primary and alternate firmware images.

Example

Example for OPX Edge Switch

```
-> bootQuery Module -all
Primary firmware version: 10.0.0.991.51
Alternate firmware version: 10.0.0.991.42
Active firmware version: 10.0.0.991.51
```

Example for OPX Director Class Switch

```
-> bootQuery M201 -all
Primary firmware version: 10.0.0.991.51
Alternate firmware version: 10.0.0.991.42
Active firmware version: 10.0.0.991.51
```

3.4.11. bootSelect

Selects which boot image to start next.

Syntax

```
bootSelect slot [-i index] [-alternate] [-version version] [-noprompt]
```

Options

<i>slot</i>	The slot name using the next boot image.
<i>-i index</i>	The index of the boot image to be used next.
<i>-alternate</i>	Chooses the alternate image to be used next.
<i>-version version</i>	Chooses a specific version to be the image to be used next.

`-noprompt` Displays the current configuration only.

Example

```
-> bootselect Module
Currently installed firmware versions
index : alias      : version
-----
  1  : image1      : :10.0.0.0.604;
*# 2  : image2      : :10.0.0.0.608;

  * - indicates Primary image (will run at next reboot)
  # - indicates Active image

Default boot image index = 2

Enter new Default image index: [2]
->
```

Notes

In the output:

- * next to the image entry indicates the currently selected boot image.
- # indicates the currently active boot image.

3.4.12. biosVersion

Displays System BIOS version.

Syntax

```
biosVersion slot
```

Options

slot Slot name.

Example

```
MasterM202-> biosVersion M201
M201 Information -----
System BIOS Version: QA3xxxxx
```

3.4.13. biosUpdate

Updates the System BIOS version.

Syntax

```
biosUpdate [all] <slot> [-noprompt]
```

Options

all Updates the bios on all applicable Management Modules (MM).

<slot> Updates the bios for a specific MM.

-noprompt Does not prompt for update confirmation.

Example

```
-> MasterM202-> biosUpdate all
*****WARNING:
  Please DO NOT POWER OFF OR REBOOT the switch while the update is in progress.

Preparing to update M202 System BIOS
Continue? [Y] y

Preparing to update M201 System BIOS
Continue? [Y] y
Ftp Server IP Address:[xxx.xxx.xxx.xxx] xxx.xxx.xxx.xxx
Ftp user name:[FTP USERNAME] xxxxx
Ftp password:[FTP PASSWORD] xxxxx
File Directory:[PATH TO FIRMWARE FILE] xxxxxx
File name:[xxxx.q7.spkg] xxxx.q7.spkg
Updating M201
Updating M202

Waiting for System BIOS update to complete.....
DONE!
M202 System BIOS update status: Success
M201 System BIOS update status: Success

A reboot is required for System BIOS update(s) to take effect
```

3.4.14. bcFwVersion

Displays Board Controller firmware version.

Syntax

```
bcFwVersion slot
```

Options

slot Slot name.

Example

```
-> MasterM202-> bcFwversion
M202 Information -----
Board Controller Firmware Version: CGBCPxxx
M201 Information -----
Board Controller Firmware Version: CGBCPxxx
```

3.4.15. bcFwUpdate

Updates Board Controller firmware version.

Syntax

```
bcFwUpdate [all] <slot> [-noprompt]
```

Options

all Updates the firmware on all applicable Management Modules (MM).

<slot> Updates the firmware for a specific MM.

-noprompt Does not prompt for update confirmation.

Example

```
-> MasterM202-> bcFwUpdate all
*****WARNING:
Please DO NOT POWER OFF OR REBOOT the switch while the update is in progress.

Preparing to update M202 Board Controller Firmware
Continue? [Y]

Preparing to update M201 Board Controller Firmware
Continue? [Y]
Ftp Server IP Address:[xxx.xxx.xxx.xxx] xxx.xxx.xxx.xxx
Ftp user name:[FTP USERNAME] xxxxx
Ftp password:[FTP PASSWORD] xxxxx
File Directory:[PATH TO FIRMWARE FILE] xxxxxx
File name:[xxxx.q7.spkg] xxxxxx
Updating M201
Updating M202

Waiting for Board Controller Firmware update to complete.....
DONE!
```

```
M202 Board Controller Firmware update status: Success  
M201 Board Controller Firmware update status: Success
```

A reboot is required for Board Controller Firmware update(s) to take effect

3.4.16. ShowLastBiosRetCode

Used to display the return code from the last SFTP System BIOS Push. This allows for automated systems to determine if a System BIOS push was successful or not.

Syntax

```
showLastBiosRetCode [<slot>] [-all]
```

Options

<slot> The slot name.

-all All slots in the chassis.

Example

```
-> MasterM202-> showLastBiosRetCode -all  
M202 System BIOS Last Exit Code: 0: Success  
M201 System BIOS Last Exit Code: 0: Success
```

3.4.17. showLastBcFwRetCode

Used to display the return code from the last SFTP Board Controller Firmware Push. This allows for automated systems to determine if a Board Controller Firmware push was successful or not.

Syntax

```
showLastBcFwRetCode [<slot>] [-all]
```

Options

<slot> The slot name.

-all All slots in the chassis.

Example

```
-> MasterM202-> showLastBcFwRetCode -all
M202 Board Controller Firmware Last Exit Code: 0: Success
M201 Board Controller Firmware Last Exit Code: 0: Success
```

3.5. Fabric Management

Commands in this category are used for Subnet Manager (SM), Subnet Administration (SA), Performance Manager (PM), and Fabric Executive (FE) configuration and operation.

3.5.1. pmResetCounters

Resets various statistics and counters maintained by the PM.

Syntax

```
pmResetCounters
```

Options

None.

Example

```
-> pmResetCounters
```

3.5.2. pmShowCounters

Displays various statistics and counters maintained by the PM.

Syntax

```
pmShowCounters
```

Options

None.

Example

```
-> pmShowCounters
```

COUNTER:	THIS SWEEP	LAST SWEEP	TOTAL
----------	------------	------------	-------

PM Sweeps:	0	1	32039
Ports whose PMA failed query:	0	0	206
Nodes with 1 or more failed Ports:	0	0	197
Total transmitted PMA Packets:	0	228	7307203
PMA Query Retransmits:	0	0	7418
PMA Query Retransmits Exhausted:	0	0	206
PM TX GET(ClassPortInfo):	0	0	98
PM TX GET(PortSamplesControl):	0	0	0
PM TX GET(PortSamplesResult):	0	0	0
PM TX GET(PortCounters):	0	172	5507335
PM TX SET(PortCounters):	0	35	1119563
PM TX GET(PortCountersExtended):	0	11	352409
PM TX GET(VendorPortCounters):	0	0	0
PM TX SET(VendorPortCounters):	0	10	320380
PM RX GETRESP(*):	0	228	7299579
PM RX STATUS BUSY:	0	0	0
PM RX STATUS REDIRECT:	0	0	0
PM RX STATUS BADCLASS:	0	0	0
PM RX STATUS BADMETHOD:	0	0	0
PM RX STATUS BADMETHODATTR:	0	0	0
PM RX STATUS BADFIELD:	0	0	0
PM RX STATUS UNKNOWN:	0	0	0
PA RX GET(ClassPortInfo):	0	0	0
PA RX GET(GrpList):	0	0	13
PA RX GET(GrpInfo):	0	0	82
....			
....			
....			

3.5.3. pmShowRunningTotals

Displays the running total counters for all ports in the fabric maintained by the PM.

Syntax

```
pmShowRunningTotals
```

Options

None.

3.5.4. smAdaptiveRouting

Displays or dynamically sets SM Adaptive Routing when the feature is configured.

Syntax

```
smAdaptiveRouting [runningMode]
```


Options

runningMode 0 = adaptive routing is disabled.

1 = adaptive routing is enabled.

Example

```
-> smAdaptiveRouting
SmAdaptiveRouting is 0 (disabled)
```

Notes

The subnet manager must be running to use this command. Changes made with this command affect only the currently running SM in a fabric with multiple SMs running. Changes are lost if the SM is restarted or the chassis is rebooted. To make changes permanent, edit the Fabric Manager XML configuration file.

3.5.5. smControl

Starts and stops the embedded FM.

Syntax

```
smControl [start | stop | restart | status]
```

Options

start Starts the embedded FM.

stop Stops the embedded FM.

restart Restarts the embedded FM. Starts it if it's not already running.

status Prints out the embedded FM status.

Example

```
-> smControl start
Starting the SM...
```

3.5.6. smConfig

Configures startup parameters of the embedded subnet manager.

Syntax

```
smConfig [query] [startAtBoot yes|no] [startOnSlaveCmu yes|no]
```

Options

query	Displays present settings, no change.
startAtBoot	yes Displays present settings, no change. no Does not start the subnet manager at chassis boot.
startOnSlaveCmu	Starts the subnet manager at chassis boot. yes Starts the subnet manager on the standby CMU. no Does not start the subnet manager on the standby CMU.

Example

Option 1

```
-> smConfig  
Start at boot? [Y]  
Start on slave CMU? [N]
```

Option 2

```
-> smConfig startAtBoot yes startOnSlaveCmu yes  
Saving....  
Saving complete...
```

Notes

Use this command to configure the subnet manager. Changes to these parameters do not take effect until the next reboot of the Chassis Management Cards.

This command is only available on the master chassis management card.

3.5.7. smListSecurityFiles

Displays the FM security files stored in the flash.

Syntax

```
smList7SecurityFiles [-showSingleLine]
```

Options

`showSingleLine` Displays the file names on one line.

Example

```
-> smListSecurityFiles -showSingleLine
proc list_esm_security_files { } {
##
## list_esm_security_files
## -----
## return the list of FM security files in the given chassis
##
## Usage:
##     list_esm_security_files
## Arguments:
##     none
## Returns:
##     list of .pem files in chassis
##     -code error on failure
## Additional Information:
##     The global timeout is changed by this routine

    global spawn_id expect_out spawn_out timeout
    global expecting

    send_chassis_cmd "smListSecurityFiles -showSingleLine"

    # this could return no *.pem files, in which case "none" is output
    # The \r\n is needed to bound the + so we get all the data on the line
    set out [expect_list 60 "{files: \[0-9A-Za-z._ \]+\[\r\n\]}" { "usage" "Error"
"Failed" "roblem" "not found"} ]
    expect_chassis_prompt 60
    #log_message "out=$out"

    # The \r\n is needed to bound the + so we get all the data on the line
    # there may be trailing spaces, TCL lists will ignore
    regexp {: ([0-9A-Za-z._ ]+)[\r\n]+} $out line ret
    #log_message "ret=$ret"
    if { [ regexp -nocase "none" "$ret" ] } {
        set ret ""
    }

    return "$ret"
}
```

3.5.8. smPKeys

Displays partition keys (PKeys) in the PKey table when the subnet manager is running. Identical information can also be obtained using the CLI command on the management node: `opasaquery -o pkey`

Syntax

smPKeys

Options

None.

Example

```
-> smPKeys
LID: 0x00000002 PortNum: 0 BlockNum: 0
  0- 7: 0x8001 0x7fff 0xffff 0x0000 0x0000 0x0000 0x0000 0x0000
  8- 15: 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000
 16- 23: 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000
 24- 31: 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000
-----
LID: 0x00000002 PortNum: 9 BlockNum: 0
  0- 7: 0x8001 0x0000 0xffff 0x0000 0x0000 0x0000 0x0000 0x0000
  8- 15: 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000
 16- 23: 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000
 24- 31: 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000
-----
LID: 0x00000002 PortNum: 12 BlockNum: 0
  0- 7: 0x8001 0x0000 0xffff 0x0000 0x0000 0x0000 0x0000 0x0000
  8- 15: 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000
 16- 23: 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000
 24- 31: 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000
-----
LID: 0x00000002 PortNum: 41 BlockNum: 0
  0- 7: 0x8001 0x0000 0xffff 0x0000 0x0000 0x0000 0x0000 0x0000
  8- 15: 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000
 16- 23: 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000
 24- 31: 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000
-----
LID: 0x00000002 PortNum: 44 BlockNum: 0
  0- 7: 0x8001 0x0000 0xffff 0x0000 0x0000 0x0000 0x0000 0x0000
  8- 15: 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000
 16- 23: 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000
 24- 31: 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000
-----
LID: 0x00000003 PortNum: 1 BlockNum: 0
  0- 7: 0x8001 0x7fff 0xffff 0x0000 0x0000 0x0000 0x0000 0x0000
  8- 15: 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000
 16- 23: 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000
 24- 31: 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000
-----
LID: 0x00000004 PortNum: 1 BlockNum: 0
  0- 7: 0x8001 0x7fff 0xffff 0x0000 0x0000 0x0000 0x0000 0x0000
  8- 15: 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000
 16- 23: 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000
 24- 31: 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000
-----
```

```

LID: 0x00000005 PortNum: 1 BlockNum: 0
  0- 7: 0x8001 0x7fff 0xffff 0x0000 0x0000 0x0000 0x0000 0x0000
  8- 15: 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000
 16- 23: 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000
 24- 31: 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000
-----
LID: 0x00000001 PortNum: 1 BlockNum: 0
  0- 7: 0x8001 0x7fff 0xffff 0x0000 0x0000 0x0000 0x0000 0x0000
  8- 15: 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000
 16- 23: 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000
 24- 31: 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000
  
```

3.5.9. smForceSweep

Forces a fabric sweep by the embedded subnet manager.

Syntax

```
smForceSweep
```

Options

None.

Example

```
-> smForceSweep
```

Notes

This command has no output message. To see the resulting sweep information, the "Info" level log messages must be turned on. Refer to [Section 3.5.12 "smLogLevel"](#), [Section 3.5.13 "smLogMode"](#), and [Section 3.5.14 "smLogMask"](#).

3.5.10. smResetCounters

Resets various statistics and counters maintained by the subnet manager.

Syntax

```
smResetCounters
```

Options

None.

Example

```
-> smResetCounters
```

3.5.11. smRestorePriority

Restores normal priorities from elevated states for the SM and PM.

Syntax

```
smRestorePriority [sm|all]
```

Options

- sm Restore normal SM priority.
- all Restore normal priorities for the SM and PM.

Example

```
-> smRestorePriority
```

Notes

This command restores the normal priorities of various subnet managers after they have elevated their priority as a result of a failover. Issuing this command allows the "unsticking" of a sticky failover. Issuing this command without arguments restores the normal priorities of the SM. The priority of the PM is based on the priority of the SM.

3.5.12. smLogLevel

Displays or dynamically sets the subnet manager logging level.

Syntax

```
smLogLevel [loglevel]
```

Options

- loglevel Logging level. Options include:
 - 0 NONE+
 - 1 WARN+

- 2 NOTICE+
- 3 INFO+
- 4 VERBOSE+
- 5 DEBUG2+
- 6 DEBUG4+
- 7 TRACE+

Example

```
-> smLogLevel  
Log Level:2
```

Notes

The subnet manager must be running to use this command. Changes made with this command affect only the currently running SM in a fabric with multiple SMs running. Changes are lost if the SM is restarted or the chassis is rebooted. To make changes permanent, edit the Fabric Manager XML configuration file.

3.5.13. smLogMode

Displays or dynamically sets the subnet manager logging mode.

Syntax

```
smLogMode [logmode]
```

Options

logmode Logging mode. Options include:

- 0 Use normal logging levels.
- 1 Logging is quieted by downgrading the majority of fatal, error, warn, and info log messages.
- 3 (INFO) and only output user actionable events when LogLevel is 1 or 2.

Example

```
-> smLogMode  
Log Mode:0
```

Notes

The subnet manager must be running to use this command. Changes made with this command affect only the currently running SM in a fabric with multiple SMs running. Changes are lost if the SM is restarted or the chassis is rebooted. To make changes permanent, edit the Fabric Manager XML configuration file.

3.5.14. smLogMask

Displays or dynamically sets the subnet manager logging mask for a specific subsystem.

Syntax

```
smLogMask subsystem [mask]
```

Options

subsystem Subsystem. Options include: CS, MAI, CAL, DVR, IF3, SM, SA, PM, PA, FE, APP

mask Bit mask for logging to enable.

For the bit mask layout, see [Fabric Manager Shared Parameters](#).

Example

```
-> smLogMask SA
SA Log Mask: 0x1ff
```

Notes

The subnet manager must be running to use this command. Changes made with this command affect only the currently running SM in a fabric with multiple SMs running. Changes are lost if the SM is restarted or the chassis is rebooted. To make changes permanent, edit the Fabric Manager XML configuration file.

3.5.15. smPmStart

Controls the start of the performance manager (PM) and Fabric Executive (FE) during subnet manager (SM) start-up.

Syntax

```
smPmStart [enable | disable | none]
```


Options

- enable** Enables the start of the PM and FE at SM start-up.
- disable** Enables the start of the FE and disables the PM at SM start-up.
- none** Disables the start of PM and FE at SM start-up.

Example

```
-> smPmStart
SM is enabled
PM is enabled
FE is enabled
-> smPmStart disable
SM is enabled
PM is disabled
FE is enabled
```

Notes

The configuration can only be changed from the master Chassis Management Card.

3.5.16. smShowConfig

Displays the XML configuration file.

Syntax

```
smShowConfig [-infoOnly | -contentOnly] [-noprompt]
```

Options

- infoOnly** Displays the timestamp for the XML configuration file.
- contentOnly** Displays the contents of the XML configuration file.
- noprompt** Do not prompt to 'Continue' for each page of displayed output.

Example

Example 1

```
->smShowConfig -infoOnly
XML config file loaded 09:43:07     04/09/2015
```

Example 2

```
->smShowConfig
XML config file loaded 09:43:07 04/09/2015
<?xml version="1.0" encoding="utf-8"?>
<Config>
<!-- Common FM configuration, applies to all FM instances/subnets -->
<Common>
<!-- Various sets of Applications which may be used in Virtual Fabrics -->
<!-- Applications defined here are available for use in all FM instances. -->
<!-- Additional Applications may be defined here or per FM instance. -->
<!-- Applications specified per FM instance will add to -->
<!-- instead of replace those Application definitions. -->
<Applications>
...
...
...
Continue? [Y]
```

Notes

With no arguments, the XML configuration file timestamp and contents are displayed, one screen at a time. Enter Y or Enter at the prompt to continue displaying command output. Enter N at the prompt to terminate the output.

The `-infoOnly` and `-contentOnly` flags limit the information that is displayed. Use the `-noprompt` flag to send all output to the screen at once.

This command is only available on the master Chassis Management Card.

3.5.17. smShowLids

Displays all fabric LID information as known by the subnet manager.

Syntax

```
smShowLids
```

Options

None.

Notes

Use this command to display the current LID assignments for the devices in the fabric. This command requires the given chassis to be the master FM.

Similar information can also be obtained using the CLI commands on the management node:

- `opasaquery`

- opareport

3.5.18. smShowMcMember

Displays multicast member information in the embedded subnet manager.

Syntax

```
smShowMcMember [-h]
```

Options

- h Display the host name as part of the output.

Example

```
-> smShowMcMember
Multicast Groups:
  join state key: F=Full N=Non S=SendOnly Member
0xff12601bffff0000:00000001fffd5bb (c001)
  qKey = 0x00000000 pKey = 0xFFFF mtu = 4 rate = 3 life = 19 sl = 0
  0x001175000ffd5bb F
0xff12401bffff0000:00000000ffffffff (c000)
  qKey = 0x00000000 pKey = 0xFFFF mtu = 4 rate = 3 life = 19 sl = 0
  0x00117501a0007116 F 0x00117502003fffd5 F 0x00117500a00001ac F
  0x00117501a000015d F 0x00117500a00001a3 F 0x00117500a00001dc F
  0x00117500a000035a F 0x001175000ffd5c2 F 0x001175000ffd664 F
  0x001175000ffd9c2 F 0x001175000ffd9f8 F 0x001175000ffd5b9 F
  0x001175000ffda4a F 0x001175000ffd5bb F 0x001175000ffd9de F
```

Notes

Use this command to display multicast member information in the subnet manager. This command is not available unless the subnet manager is in Master mode.

Similar information can also be obtained using the CLI command on the management node:

- opashowmc

3.5.19. smShowServices

Displays subnet administration service records of the subnet manager.

Syntax

```
smShowServices
```

Options

None.

Example

```
-> smShowServices
*****
                There is 1 Service Records
*****
Service ID      = 0x1100D03C34834444
Service GID     = 0xFE80000000000000:00066A000600013C
Service P_Key   = 0x0000
Service Lease   = infinite
Service Key     =
0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00
Service Name    = SilverStorm Fabric Executive service Rev 1.1
Service Data 8  =
0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00
Service Data 16 =
0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000
Service Data 32 =
0x0000 0x0000 0x0000 0x0000
Service Data 64 =
0x0000000000000000 0x0000000000000000
Service Expire Time = 0x0100000000000000
```

Notes

The components (fields) of each service record are displayed. Each service record is stored in a location identified by a *Slot* number that is displayed before any component of that service record. If a group of slots does not contain service records, the first slot of the empty group is displayed as empty.

This command states that the SM is in STANDBY mode if the SM is not in MASTER mode.

Similar information can also be obtained using the CLI command on the management node:

- `opasaquery -o service`

3.5.20. smShowInform

Displays event forwarding (inform) table in the embedded subnet manager.

Syntax

```
smShowInform
```

Options

None.

Example

```
-> smShowInform
*****
                        There are 2 subscriptions
*****
Subscriber GID          = 0xFE80000000000000:00066A00D8000163
Subscriber LID          = 0x0071
Subscriber PKey         = 0xFFFF
Subscriber Start LID    = 0x0001
Subscriber End LID      = 0xBFFF
Subscriber Record ID    = 0x00000001
Subscriber Inform Info =
GID                    = 0x0000000000000000:0000000000000000
Start LID              = 0xFFFF
End LID                = 0x0000
Is Generic?            = Yes
Subscribe?             = Subscribe
Type                   = All Types
Trap Number            = 0x0040
Queue Pair Number      = 0x000001
Response Time Value    = 19
Producer Type          = Subnet Management
*****
Subscriber GID          = 0xFE80000000000000:00066A01A0007116
Subscriber LID          = 0x0007
Subscriber PKey         = 0xFFFF
Subscriber Start LID    = 0x0001
Subscriber End LID      = 0xBFFF
Subscriber Record ID    = 0x00000036
Subscriber Inform Info =
GID                    = 0x0000000000000000:0000000000000000
Start LID              = 0xFFFF
End LID                = 0x0000
Is Generic?            = Yes
Subscribe?             = Subscribe
Type                   = All Types
Trap Number            = 0x0043
Queue Pair Number      = 0x000001
Response Time Value    = 18
Producer Type          = Channel Adapter
*****
                        There are 2 subscriptions
```

Notes

Use this command to display the event forwarding (inform) table in the subnet manager. This command is not available unless the subnet manager is in Master mode.

Similar information can also be obtained using the CLI command on the management node:

- opasaquery -o inform

3.5.21. smShowCounters

Displays various statistics and counters maintained by the subnet manager.

Syntax

```
smShowCounters
```

Options

None.

Example

```
-> smShowCounters
COUNTER:                THIS SWEEP  LAST SWEEP    TOTAL
-----
SM State transition to DISCOVERY:      0         0         2
SM State transition to MASTER:         0         0         1
SM State transition to STANDBY:        0         0         1
SM State transition to INACTIVE:       0         0         0
Total transmitted SMA Packets:      123       711      2181
Direct Routed SMA Packets:          123       711      2122
LID Routed SMA Packets:              0         0        40
SMA Query Retransmits:              0         0        18
SMA Query Retransmits Exhausted:      0         0         3
SM TX GET(Notice):                   0         0         0
SM TX SET(Notice):                   0         0         0
SM RX TRAP(Notice):                  0         0         0
SM TX TRAPREPRESS(Notice):            0         0         0
SM TX GET(NodeDescription):           0        148       444
SM TX GET(NodeInfo):                 0        148       444
SM TX GET(SwitchInfo):               0         6         18
...
```

Notes

This command is not available unless the subnet manager is in Master mode.

3.5.22. smShowLidMap

Displays the LID-to-port GUID map for the subnet manager.

Syntax

```
smShowLidMap
```

Options

None.

Example

```
Edge-> smShowLidMap
-----
SM is currently in the MASTER state, with Topology Pass count = 3
-----
Lid 0x0001: guid = 0x001175010165b157, pass = 3, phkpstl057 hfi1_0
Lid 0x0002: guid = 0x001175010265baf7, pass = 3, OmniPth00117501ff65baf7
Lid 0x0003: guid = 0x001175010165ac3a, pass = 3, phkpstl058 hfi1_0
Lid 0x0004: guid = 0x001175010165ad44, pass = 3, phkpstl059 hfi1_0
Lid 0x0005: guid = 0x001175010165ae43, pass = 3, phkpstl060 hfi1_0
Lid 0x0006: guid = 0x0000000000000000, pass = 0
Lid 0xbfff: guid = 0x0000000000000000, pass = 0
```

Notes

Use this command to display the LID-to-port GUID map of the subnet manager. The pass count for a LID is incremented each time the SM sweep detects that LID.

If LMC has been used to assign multiple LIDs to a node, those assignments are reflected in the output.

This command is not available unless the subnet manager is in the Master mode.

Similar information can also be obtained using the CLI command on the management node:

- opasaquery
- opareport -o lids

3.5.23. smShowTopology

Displays the current LID assignments for the devices in the fabric.

Syntax

```
smShowTopology
```

Options

None.

3.5.24. smShowVFInfo

Displays Virtual Fabric (VF) information when running the subnet manager.

Syntax

```
smShowVFIInfo
```

Options

None.

3.5.25. smLooptestStart

Starts the SM Loop Test in normal mode with the specified number of 256-byte packets. If the SM has not been previously started, this command starts the SM. In the default mode, the SM uses an exhaustive approach to set up loop routes and includes each ISL in as many loops as possible. This ensures that each ISL is in the same number of loops and therefore sees the same amount of utilization. However, finding all possible loops is computationally intensive and can take a long time. In most cases, Cornelis recommends you use fast mode.

Syntax

```
smLooptestStart [packets]
```

Options

packets The number of 256-byte packets used when starting the SM Loop Test. Valid values = 0 - 10. Default = 0. If the number of packets is 0, then no packets are injected.

The Loop Test only operates if the SM is in the Master state.

Example

```
-> smLooptestStart
Waiting for SM to complete startup...N|2015/09/15 14:24:17.180U: Thread "esm_top"
(0xccace3f0)
  MSG:NOTICE|SM:OmniPath GUID=0x00117501e30027xx:port 0|COND:#5 SM state
to master|NODE:OmniPath GUID=0x00117501e3002711:port
0:0x00117501e3002711|DETAIL:transition from DISCOVERING to MASTER
topology_loopTest: DONE
W|2015/09/15 14:24:17.280U: Thread "esm_top" (0xccace3f0)
  MSG:WARNING|SM:OmniPath GUID=0x00117501e30027xx:port 0|COND:#1
Redundancy lost|NODE:OmniPath GUID=0x00117501e3002711:port
0:0x00117501e3002711|DETAIL:SM redundancy not available
topology_loopTest: DONE
.....done
The SM Loop Test is being started
Loop Test is setup, but no packets have been injected and no traffic is running
```


3.5.26. smLooptestFastModeStart

Starts the SM Loop Test in fast mode with the specified number of 256-byte packets. If the SM has not been previously started, this command starts the SM if the SM is in the Master state.

Syntax

```
smLooptestFastModeStart [packets]
```

Options

packets The number of 256-byte packets used when starting the SM Loop Test in Fast Mode. Valid values = 0 - 10. Default = 5. If the number of packets is 0, then no packets are injected.

Cornelis recommends you use the fast mode for ISL validation and link integrity testing. In fast mode, the loop test does not attempt to include each ISL in all possible loops, but includes it in at least the specified number of loops (using the MinISLRedundancy parameter). In typical fast mode operations, using the default MinISLRedundancy value = 4, injecting five packets into each loop is sufficient to get a high utilization on the ISLs.

Example

```
-> smLooptestFastModeStart
Waiting for SM to complete startup...Local LID changed to: 0
.N|2015/09/15 14:19:28.280U: Thread "esm_top" (0xcca0d828)
    MSG:NOTICE|SM:OmniPath GUID=0x00117500e30027xx:port 0|COND:#5 SM state
to master|NODE:OmniPath GUID=0x00117500e30027xx:port
0:0x00117500e3002711|DETAIL:transition from DISCOVERING to MASTER
Local LID changed to: 1
Local LID changed to: 1
topology_loopTest: DONE
W|2015/09/15 14:19:28.390U: Thread "esm_top" (0xcca0d828)
    MSG:WARNING|SM:OmniPath GUID=0x00117500e30027xx:port 0|COND:#1
Redundancy lost|NODE:OmniPath GUID=0x00117500e3002711:port
0:0x00117500e3002711|DETAIL:SM redundancy not available
topology_loopTest: DONE
.....done
The SM Loop Test is being started in Fast Mode
```

3.5.27. smLooptestStop

Stops the SM Loop Test.

Syntax

```
smLooptestStop
```

Options

None.

Example

```
-> smLooptestStop
Waiting for SM to complete shutdown...
A|2015/09/15 14:21:46.500U: Thread "esm_Start" (0x85738dd8)
    ESM: SM Control: Initiating shutdown of the subnet manager. Some errors and
    warnings are common during this process 0
N|2015/09/15 14:21:46.500U: Thread "esm_Start" (0x85738dd8)
    MSG:NOTICE|SM:OmniPath GUID=0x00117500e3002711:port 0|COND:#7 SM
    shutdown|NODE:OmniPath GUID=0x00117500e3002711:port 0:0x00117500e3002711
    .....N|2015/09/15 14:21:54.720U: Thread "INVALID" (0xcca13ac8)
    MSG:NOTICE|SM:OmniPath GUID=0x00117500e3002711:port 0|COND:#13 SM state
    to inactive|NODE:OmniPath GUID=0x00117500e3002711:port
    0:0x00117500e3002711|DETAIL:transition from MASTER to NOTACTIVE
    ...A|2015/09/15 14:21:57.720U: Thread "esm_Start" (0x85738dd8)
    ESM: SM Control: Subnet manager shutdown complete. 0
    .....done
The SM Loop Test is being stopped
```

Notes

Use this command to stop the SM Loop Test. Returns switch LFTs back to normal.



NOTE

This command will stop the SM if it was started by either the `smLooptestStart` command or the `smLooptestFastModeStart` command. If the SM was started using the `smcontrol start` command, this command will not stop the SM.

3.5.28. smLooptestInjectPackets

Injects packets into the SM Loop Test.

Syntax

```
smLooptestInjectPackets [packets]
```

Options

packets The number of packets to inject into the SM Loop Test. Valid values are 1 - 10 (default = 1).

Example

```
-> smLooptestInjectPackets 2
Sending 2 packets to all loops
Packets have been injected into the SM Loop Test
-> topology_loopTest: DONE
```

3.5.29. smLooptestInjectAtNode

Injects packets to a specific switch node for the SM Loop Test.

Syntax

```
smLooptestInjectAtNode [node index]
```

Options

node index The node index of the switch to inject packets.

Example

```
-> smLooptestInjectAtNode 3
Sending 2 packets to node index 3
Packets have been injected into the SM Loop Test for node 3
-> topology_loopTest: DONE
```

3.5.30. smLooptestInjectEachSweep

Enables/disables packet injection on each sweep for the SM Loop Test.

Syntax

```
smLooptestInjectEachSweep setting
```

Options

setting Options include:

- 1 Inject packets on each sweep.

- 0 Do not inject packets on each sweep for the SM Loop Test.

Example

```
-> smLooptestInjectEachSweep 1
sm_looptest_inject_packets_each_sweep: loop test will inject packets every sweep,
numPackets=2
The SM Loop Test will inject packets every sweep
```

3.5.31. smLooptestPathLength

Sets the loop path length for the SM Loop Test.

Syntax

```
smLooptestPathLength [length]
```

Options

length The loop path length for the SM Loop Test. Valid values are 2, 3 (default), and 4.

Example

```
-> smLooptestPathLength 3
The SM Loop Test path length has been set to 3
-> topology_loopTest: DONE
```

3.5.32. smLooptestMinISLRedundancy

Sets the minimum number of loops in which to include each ISL for the SM Loop Test in Fast Mode.

Syntax

```
smLooptestMinISLRedundancy [loops]
```

Options

loops The minimum number of loops to include in each ISL for the SM Loop Test. If no value is entered, the default (default = 4) is used.


NOTE

This command is only applicable if running the Loop Test in Fast Mode.

Example

```
-> smLooptestMinISLRedundancy 3
-> topology_loopTest: DONE
```

3.5.33. smLooptestShowLoopPaths

Displays the loop paths for the SM Loop Test.

Syntax

```
smLooptestShowLoopPaths [node index]
```

Options

node index The node index of the node to print the loop paths. If no value is entered, the default (all nodes) is used.

Example

```
-> smLooptestShowLoopPaths
Node Idx: 0, Guid: 0x00117500e3002711 Desc OmniPath GUID=0x00117500e3002711
-----
Node  Node      NODE GUID      Node  Path
Idx  Lid          #Ports  LID   PATH[n:p->n:p]
-----
  0  0x0001  0x00117500e3002711    36   0x0040  0:9->0:33
  0  0x0001  0x00117500e3002711    36   0x0042  0:33->0:9
-----
There are 2 total loop paths of <=4 links in length in the fabric!
Two LIDs are used per loop path to inject packets in clockwise and anti-clockwise
directions
```

3.5.34. smLooptestShowSwitchLft

Displays the switch LID Forwarding Table (LFT) for the SM Loop Test.

Syntax

```
smLooptestShowSwitchLft [node index]
```

Options

node index The node index of the switch for which to print the switch LFT. If no value is entered, the default (all switches) is used.

Example

```
-> smLooptestShowSwitchLft
Node[0000] LID=0x0001 GUID=0x00117500e3002711
[OmniPath GUID=0x00117500e3002711] Linear Forwarding Table
  LID    PORT
  -----
  0x0001 0000
  0x0005 0031
  0x0009 0017
  0x0010 0011
  0x0016 0021
  0x001d 0022
  0x0021 0025
  0x0040 0009
  0x0041 0033
  0x0042 0033
  0x0043 0009
```

3.5.35. smLooptestShowTopology

Displays the topology for the SM Loop Test.

Syntax

```
smLooptestShowTopology
```

Options

None.

Example

```
-> smLooptestShowTopology
sm_state = MASTER count = 481 LMC = 0, Topology Pass count = 4, Priority = 0,
Mkey = 0x0000000000000000
-----
OmniPath GUID=0x00117500e3002711
-----
Node[ 0] => 00117500e3002711 (2) ports=36, path=
  Port ---- GUID ---- (S) LID LMC _VL_ _MTU_ _WIDTH_
  ____SPEED____ CAP_MASK N# P#
  0 00117500e3002711 4 LID=0001 LMC=0000 1 1 4k 4k 1X-8X 4X
2.5-10 5.0 0200004a 0 0
```

```

      9 0000000000000000 4
2.5-10 10.0 00000000 0 33
      11 0000000000000000 4
2.5-10 10.0 00000000 1 1
      17 0000000000000000 4
2.5-10 10.0 00000000 2 1
      21 0000000000000000 4
2.5-10 10.0 00000000 3 1
      22 0000000000000000 4
2.5-10 10.0 00000000 4 1
      25 0000000000000000 4
2.5-10 10.0 00000000 5 1
      31 0000000000000000 4
2.5-10 10.0 00000000 6 1
      33 0000000000000000 4
2.5-10 10.0 00000000 0 9 9
-----
st164 HFI-1
-----
Node[ 1] => 001175000100d050 (1) ports=2, path=11
  Port ---- GUID ---- (S) LID LMC _VL_ _MTU_ _WIDTH_
  _SPEED_ CAP_MASK N# P#
      1 001175000100d051 4 LID=0010 LMC=0000 8 1 2k 2k 1X/4X 4X
2.5-10 10.0 02510868 0 11 11
-----
st10 HFI-1
-----
Node[ 2] => 00117500007eaa56 (1) ports=2, path=17
  Port ---- GUID ---- (S) LID LMC _VL_ _MTU_ _WIDTH_
  _SPEED_ CAP_MASK N# P#
      1 00117500007eaa56 4 LID=0009 LMC=0000 2 1 4k 2k 1X/4X 4X
2.5-10 10.0 07610868 0 17 17
-----
st166 HFI-1
-----
Node[ 3] => 00117500007ec376 (1) ports=1, path=21
  Port ---- GUID ---- (S) LID LMC _VL_ _MTU_ _WIDTH_
  _SPEED_ CAP_MASK N# P#
      1 00117500007ec376 4 LID=0016 LMC=0000 2 1 4k 2k 1X/4X 4X
2.5-10 10.0 07610868 0 21 21
-----
compute000 HFI-1
-----
Node[ 4] => 0011750300032de8 (1) ports=2, path=22
  Port ---- GUID ---- (S) LID LMC _VL_ _MTU_ _WIDTH_
  _SPEED_ CAP_MASK N# P#
      1 0011750300032de9 4 LID=001d LMC=0000 8 1 2k 2k 1X/4X 4X
2.5-10 10.0 02510868 0 22 22
-----
compute001 HFI-1
-----
Node[ 5] => 0011750300033694 (1) ports=2, path=25
  Port ---- GUID ---- (S) LID LMC _VL_ _MTU_ _WIDTH_
  _SPEED_ CAP_MASK N# P#
      1 0011750300033695 4 LID=0021 LMC=0000 8 1 2k 2k 1X/4X 4X
2.5-10 10.0 02510868 0 25 25

```

```
-----
st9 HFI-1
-----
Node[ 6] => 00117500007eaa1c (1) ports=1, path=31
  Port ---- GUID ---- (S) LID LMC _VL_ __MTU__ __WIDTH__
__SPEED__ CAP_MASK N# P#
      1 00117500007eaa1c 4 LID=0005 LMC=0000 2 1 4k 2k 1X/4X 4X
2.5-10 10.0 07610868 0 31 31
```

3.5.36. smLooptestShowConfig

Displays the configuration for the SM Loop Test.

Syntax

```
smLooptestShowConfig
```

Options

None.

Example

```
-> smLooptestShowConfig
Loop Test is running with following parameters:
Max Path Length  #Packets  Inject Point
-----
      4          00004      All Nodes
FastMode=1, FastMode MinISLRedundancy=4, InjectEachSweep=0, TotalPktsInjected
since start=4
```

3.6. Log

Commands in this category are used for log file display and configuration.

3.6.1. logShow

Displays the log file that is contained in RAM.

Syntax

```
logShow
```

Options

None.

Example

```
-> logShow
N|2015/10/14 02:20:14.820U: Thread "csmLogThread" (0x42358c0)
  MSG:NOTICE|CHASSIS:hds1swb6231|COND:#18 FRU state changed from offline to online|
FRU:Omni-Path Edge Switch 100 Series|PN:H50565-004
=====
I|2015/10/14 02:24:55.010U: Thread "startup" (0x3520a20)
  Log: Recovered 51127 bytes of log data from persistent store
A|2015/10/14 02:24:55.190U: Thread "startup" (0x3520a20)
  boot: Omni-Path Edge Switch 100 Series q7 Firmware Booting Version: 10.0.0.991.51
A|2015/10/14 02:24:55.190U: Thread "startup" (0x3520a20)
  boot: Memory: Physical: 0x7ff00000 Available: 0x7ff00000 Reserved: 0x0
A|2015/10/14 02:24:55.190U: Thread "startup" (0x3520a20)
  boot: Encapsulated PRR-A0 Firmware Version: PRR-A0
A|2015/10/14 02:24:55.190U: Thread "startup" (0x3520a20)
  boot: Reboot cause (7): Reboot Command Entered on CLI.
N|2015/10/14 02:24:57.710U: Thread "csmLogThread" (0x42358c0)
  MSG:NOTICE|CHASSIS:hds1swb6231|COND:#7 Power Supply N+1 redundancy available|
FRU:Chassis|PN:H50565-004
A|2015/10/14 02:25:15.970U: Thread "PrrVpdR1" (0x6f7dce8)
  PrrVpd: Enhanced port 0 is operational
A|2015/10/14 02:25:15.970U: Thread "PrrVpdR1" (0x6f7dce8)
  PrrVpd: Enhanced port 0 communication enabled
N|2015/10/14 02:25:16.820U: Thread "csmLogThread" (0x42358c0)
  MSG:NOTICE|CHASSIS:hds1swb6231|COND:#18 FRU state changed from offline to online|
FRU:Omni-Path Edge Switch 100 Series|PN:H50565-004
```

3.6.2. logClear

Deletes all entries in the log file.

Syntax

```
logClear [-noprmt]
```

Options

-noprmt Delete all log messages without prompting.

Example

```
-> logClear
Ram Log cleared
```

3.6.3. logConfigure

Configures the log settings.

Syntax

```
logConfigure
```

Options

None. This is an interactive command. See [Notes](#) section for configuration selections.

Example

```
-> logConfigure
Type Q or X to exit.
Please enter the number corresponding to what you want to configure.
index : name           : description
-----
  1   : Device          : Logging device. (IE. Ram, syslog, etc)
  2   : Preset           : General log filter.
Select: 1
Configurable devices
index : name           : |D|F|E|A|W|P|C|I|P|N|1|2|3|4|5|
-----
  1   : Ram             : |X|X|X|X|X| | | | |X| | | | |
  3   : Console          : |X|X|X|X|X| | | | |X| | | | |
  5   : Syslog           : |X|X|X|X|X| | | | |X| | | | |
Type Q or X to exit
Enter the device index you wish to configure: 1
Level: Dump [1]
Level: Fatal [1]
Level: Error [1]
Level: Alarm [1]
Level: Warning [1]
Level: Partial [0]
Level: Config [0]
Level: Info [0]
Level: Periodic [0]
Level: Notice [1]
Level: Debug1 [0]
Level: Debug2 [0]
Level: Debug3 [0]
Level: Debug4 [0]
Level: Debug5 [0]
Log device configuration changed
...
```

Notes

This is an interactive command to configure active log settings, options include:

- 2 Preset Enable or disable each log level that may be generated on the system. The log presets act as a general filter. For example, if the Info logging level is disabled in

the presets, no Info messages will be shown on any output device, regardless of the Info log setting for a device.

- 1 Device Enable a device to display or process log messages of each level. The level must also be active in Preset for log messages to be processed for a device. Choose a device to configure log levels for that device. If chosen, additional options are displayed:
- 5 Syslog Syslog server on the network.
 - 1 Ram Internal log storage for the switch.
 - 3 Console Switch serial console

3.6.4. logResetToDefaults

Restores the log file default settings.

Syntax

```
logResetToDefaults [-noprompt]
```

Options

-noprompt Restore the defaults without prompting.

Example

```
-> logResetToDefaults
Log configuration has been reset
```

3.6.5. logSyslogConfig

Configures the syslog host IP address and port.

To avoid losing log information in the event of a hardware failure, Cornelis recommends that you configure a syslog server. This command allows you to configure the host and port to send messages to and the facility to use in the messages. For additional details, see [Section 2.6 "Configuring the Syslog Server"](#).

Syntax

```
logSyslogConfig [-h hostname or ip_address] [-p port] [-f facility] [-m mode]
```

Options

<code>-h <i>hostname or ip_address</i></code>	Sets the syslog server hostname or IP address in dotted decimal format (xxx.xxx.xxx.xxx).																																																
<code>-p <i>port</i></code>	The host port number on which the syslog server is listening, in xxxx format.																																																
<code>-f <i>facility</i></code>	The syslog facility to use in the messages. Values include: <table><tr><td>0</td><td>kern</td></tr><tr><td>1</td><td>user</td></tr><tr><td>2</td><td>mail</td></tr><tr><td>3</td><td>daemon</td></tr><tr><td>4</td><td>auth</td></tr><tr><td>5</td><td>syslog</td></tr><tr><td>6</td><td>lpr</td></tr><tr><td>7</td><td>news</td></tr><tr><td>8</td><td>uucp</td></tr><tr><td>9</td><td>cron</td></tr><tr><td>10</td><td>authpriv</td></tr><tr><td>11</td><td>ftp</td></tr><tr><td>12</td><td>ntp</td></tr><tr><td>13</td><td>audit</td></tr><tr><td>14</td><td>alert</td></tr><tr><td>15</td><td>clock</td></tr><tr><td>16</td><td>local0</td></tr><tr><td>17</td><td>local1</td></tr><tr><td>18</td><td>local2</td></tr><tr><td>19</td><td>local3</td></tr><tr><td>20</td><td>local4</td></tr><tr><td>21</td><td>local5</td></tr><tr><td>22</td><td>local6</td></tr><tr><td>23</td><td>local7</td></tr></table>	0	kern	1	user	2	mail	3	daemon	4	auth	5	syslog	6	lpr	7	news	8	uucp	9	cron	10	authpriv	11	ftp	12	ntp	13	audit	14	alert	15	clock	16	local0	17	local1	18	local2	19	local3	20	local4	21	local5	22	local6	23	local7
0	kern																																																
1	user																																																
2	mail																																																
3	daemon																																																
4	auth																																																
5	syslog																																																
6	lpr																																																
7	news																																																
8	uucp																																																
9	cron																																																
10	authpriv																																																
11	ftp																																																
12	ntp																																																
13	audit																																																
14	alert																																																
15	clock																																																
16	local0																																																
17	local1																																																
18	local2																																																
19	local3																																																
20	local4																																																
21	local5																																																
22	local6																																																
23	local7																																																
<code>-m <i>mode</i></code>	Whether syslog is to be put into a special OEM mode. Values are 0 or 1.																																																

Example

```
-> logSyslogConfig -h 172.26.0.202
Successfully configured the syslog host
```

3.6.6. logShowConfig

Displays the current log configuration settings.

Syntax

```
logShowConfig
```

Options

None.

Example

```
-> logshowconfig

Log Configuration for: Omni-Path Edge Switch 100 Series
-----
Configurable devices
index : name      : |D|F|E|A|W|P|C|I|P|N|1|2|3|4|5|
-----
  1   : Ram        : |X|X|X|X|X|X| | | |X| | | | |
  3   : Console   : |X|X|X|X|X|X|X|X|X|X|X| | | | |
  5   : Syslog    : |X|X|X|X|X|X| | | |X| | | | |

Configurable presets
index : name      : state
-----
  1   : Dump      : Enabled
  2   : Fatal     : Enabled
  3   : Error     : Enabled
  4   : Alarm     : Enabled
  5   : Warning   : Enabled
  6   : Partial   : Enabled
  7   : Config    : Enabled
  8   : Info      : Enabled
  9   : Periodic  : Enabled
 15  : Notice     : Enabled
 10  : Debug1     : Disabled
 11  : Debug2     : Disabled
 12  : Debug3     : Disabled
 13  : Debug4     : Disabled
 14  : Debug5     : Disabled
```

3.6.7. logSyslogTest

Tests the Syslog configuration.

Syntax

```
logSyslogTest severityType
```

Options

severityType Options include:

- -e Send Error severity CSM test message to Syslog.
- -w Send Warning severity CSM test message to Syslog.
- -n Send Notice severity CSM test message to Syslog.

Example

```
-> logSyslogTest -e  
Currently configured Syslog host is: 0.0.0.0 port 514 facility 22  
Syslog configuration has been tested
```

Notes

This command tests the Syslog configuration by sending CSM messages to registered Syslog servers.

3.6.8. auditLog

Enables or disables logging of user activities (such as logging in and out) and operational commands (such as upgrading software or restarting the system).



NOTE

You must have administrative privileges to use this CLI.

Syntax

```
auditLog [{ 1 | 0}]
```

Options

If no value is entered, the current setting is displayed. Options include:

- 1 Enable logging of all CLI commands.
- 0 Disable logging of all CLI commands.

Example

```
-> auditLog 1
Successfully configured auditLog
```

3.7. Interconnect Switch Management (ISM)

Commands in this category are used for port configuration and statistics.

3.7.1. ismPortStats

Displays statistics for all ports.

Syntax

```
ismPortStats [-clear] [-all] [-link] [-performance] [-congestion] [-bubbles] [-si] [-security] [-other] [-noprompt] [-cols columns] [portNameList]
```

Options

- | | |
|-----------------------------|---|
| -clear | Clears the statistics. Statistics are displayed first, then cleared. |
| -all | Includes all counters and link status. |
| -link | Includes link status. |
| -performance | Includes performance transmit and receive counters. |
| -congestion | Includes congestion counters. |
| -bubbles | Includes performance bubble counters. |
| -si | Includes signal integrity counters. |
| -security | Includes security counters. |
| -other | Includes other counters. |
| -noprompt | Does not provide a Continue prompt for each page of display. |
| -cols <i>columns</i> | Sets the number of columns to be displayed per line. |
| <i>portNameList</i> | <ol style="list-style-type: none"> 1. Valid entries for <i>portNameList</i> depend on the chassis type. You can use all in the <i>portNameList</i>. 2. On Edge platforms, an example cable port name in the <i>portNameList</i> is: |

Cable01, that is, Cable Port 1.

On Director platforms, an example cable port name in the *portNameList* is:

L101AP01, that is, Leaf 101A Port 1.

On Director platforms, an example interswitch link name in the *portNameList* is:

S201AP24L101AP25, that is, Spine 201A port 24 which connects to Leaf 101A port 25.

Example

```
-> ismPortStats
Name          Cable01      Cable02      Cable03
PhysState      Up           Up           Up
PortState      Act          Act          Act
LinkWidth      4X           4X           4X
LinkSpeed      25Gbps      25Gbps      25Gbps
LinkDowned     26           23           23
InPKeyViol     0            0            0
OutPKeyViol    0            0            0
Continue? [Y] y

Name          Cable04      Cable05      Cable06
PhysState      Up           Up           Up
PortState      Act          Act          Act
LinkWidth      4X           4X           4X
LinkSpeed      25Gbps      25Gbps      25Gbps
LinkDowned     23           23           23
InPKeyViol     0            0            0
OutPKeyViol    0            0            0
Continue? [Y] n
```

Notes

If no specific counter groups are selected, the -link, -performance, and -si options are used by default.

-link counters include:

- Phys State - Physical state of the port.
- Port State - Logical link state.
- Link Width - Link width when the port initially reached LinkUp.
- Link Width Tx - Current TX link width.
- Link Width Rx - Current RX link width.
- Link Speed - Current link speed. Link rate is Link Width * Link Speed.

- Link Qual Indicator - Current link signal quality.
- performance counters include:
- Xmit Data - Data words transmitted.
 - Xmit Pkts - Packets transmitted.
 - MC Xmt Pkts - Multicast packets transmitted.
 - Rcv Data - Data words received.
 - Rcv Pkts - Packets received.
 - MC Rcv Pkts - Multicast packets received.
- congestion counters include:
- Congestion Discards - Packets discarded at egress due to congestion.
 - Rcv FECN - Packets received with FECN indicator.
 - Rcv BECN - Packets received with BECN indicator.
 - Mark FECN - Packets marked with FECN indicator.
 - Xmit Time Congestion - Flit times the port was in the congested state.
 - Xmit Wait - Idle output flits due to lack of credits/arb rules.
- bubbles counters include:
- Xmit Wasted BW - Idle output flits due to interleaving limits.
 - Xmit Wait Data - Idle output flits due to packet bubbles.
- si counters include:
- Uncorrectable Errors - UncorrectableErrors (for example, internal errors).
 - Link Downed - Number of link error recoveries that failed.
 - Rcv Errors - PortRcvErrors (for example, invalid packets).
 - Exc. Buffer Overrun - Packets dropped due to receiver overrun.
 - FM Config Errors - FMConfigErrors (for example, inconsistent link config).
 - Link Error Recovery - Number of link error recoveries that succeeded.
 - Local Link Integ Err - LTP retries initiated by LT layer.
- security counters include:
- Xmit Constraint - Outbound packets discarded due to security checks.
 - Rcv Constraint - Inbound packets discarded due to security checks.
- other counters include:
- Rcv Sw Relay Err - PortRcvSwitchRelayErrors (for example, invalid routing).

- Xmit Discards - PortXmitDiscards (for example, superset of congestion discards).
- Rcv Rmt Phys Err - Received packets already marked with an error.

3.7.2. ismPortCounters

Displays a table of performance counter and link status information with a row for each port of the switch.

If the -noprompt option is not used, the system prompts to continue the output after each group of ports are displayed.



NOTE

This command is best displayed with a terminal width of at least 120 columns.

Syntax

```
ismPortCounters [-clear] [-active] [-errors] [-potential] [-noprompt]
```

Options

- clear Clears the counters. Counters are first displayed, then cleared.
- active Displays only the counters for ports in the active state.
- errors Displays only the counters for ports with a signal integrity category error.
- potential Displays only the counters for ports with active width under their maximum supported value.
- noprompt Does not provide a Continue prompt for each page of display.

Example

```
-> ismPortCounters
```

Active				Transmit			Receive			Symbol
Name	Width	Potential	Packets	Words	Discard	Packets	Words	Errors		
Cable01	25Gbps	4X	3951205094	2800544271045	9	4154378847	3019711679236			
Cable02	25Gbps	4X	8993888342	5766797571908	0	9315042983	5518255518847			
Cable03	25Gbps	4X	6868061425	4318743689062	0	8561944708	5264142620113			
Cable04	25Gbps	4X	8262061496	5049268426836	1	6800356522	4251674103990			
Cable05	25Gbps	4X	8546497592	5227761745800	0	6941410928	4331259837656			

```

Cable06      8350835339 5037891440796      0 | 6958770839 4337087233138 |
0 | 25Gbps 4X 100%
Cable07      7021157994 4402588069177      0 | 8546345859 5122253460133 |
0 | 25Gbps 4X 100%
Cable08      3101749244 2075461900855      0 | 3817201891 2834664788232 |
0 | 25Gbps 4X 100%
Cable09      0          0          0 | 0          0 | 0 |
0.0Gbps 0X 0%
Cable10      0          0          0 | 0          0 | 0 |
0.0Gbps 0X 0%
Cable11      0          0          0 | 0          0 | 0 |
0.0Gbps 0X 0%
Cable12      0          0          0 | 0          0 | 0 |
0.0Gbps 0X 0%
Cable13      0          0          0 | 0          0 | 0 |
0.0Gbps 0X 0%
Cable14      0          0          0 | 0          0 | 0 |
0.0Gbps 0X 0%
Cable15      0          0          0 | 0          0 | 0 |
0.0Gbps 0X 0%
Cable16      0          0          0 | 0          0 | 0 |
0.0Gbps 0X 0%
Cable17      0          0          0 | 0          0 | 0 |
0.0Gbps 0X 0%
Cable18      0          0          0 | 0          0 | 0 |
0.0Gbps 0X 0%
Cable19      0          0          0 | 0          0 | 0 |
0.0Gbps 0X 0%
Cable20      0          0          0 | 0          0 | 0 |
0.0Gbps 0X 0%
Cable21      0          0          0 | 0          0 | 0 |
0.0Gbps 0X 0%
Cable22      0          0          0 | 0          0 | 0 |
0.0Gbps 0X 0%
Continue? [Y] n

```

Notes

Port counter descriptions:

- Transmit
 - Words - Number of data words transmitted by the port.
- Receive
 - Words - Number of data words received by the port.
- Active
 - Qual - Active link signal integrity quality measure (5 is best).
 - Speed - Active link speed of the port.
 - Tx - Active link transmit width of the port.
 - Rx - Active link receive width of the port.

- Potential - Utilization of the port based on its maximum supported link speed and maximum supported link width.
- Errs - Y indicates the port has one or more signal integrity counters that are non-zero.

3.7.3. ismLinearFwdb

Displays the entries in the linear forwarding table. LIDs and a corresponding port are shown. A packet addressed to a LID is forwarded to the corresponding port listed in the displayed table.

Syntax

```
ismLinearFwdb [switch]
```

Options

switch Switch number.

Example

```
-> ismLinearFwdb
Switch Switch 1 Linear Fwdb (LFTTOP = 0x3):
  LID :: Port
0001      10 (Cable10)
0002       0 ( )
0003       3 (Cable03)
```

3.7.4. ismMultiFwdb

Displays the Multicast Forwarding database for the switch.

Syntax

```
ismMultiFwdb [switch]
```

Options

switch Switch identifier.

Example

```
-> ismMultiFwdb
```

```
Switch Switch 1 Multicast Fwdb:
c003      11 (Cable11) 27 (Cable27)
c023      11 (Cable11) 27 (Cable27)
```

Notes

This command is best displayed with a terminal width of at least 120 columns.

3.7.5. ismSwitchInfoLid

Displays SMA switch information for a specific switch chip.

Syntax

```
ismSwitchInfoLid switch
```

Options

switch Switch index (number of a Leaf or Spine switch or of the local switch).

3.7.6. ismPortStatLid

Displays port statistics for a specific LID.

Syntax

```
ismPortStatLid lid port
```

Options

lid IBTA local identifier (LID of the Leaf or Spine switch or the local switch).

port Port number (defaults to 0).

3.7.7. ismPortInfoLid

Displays SMA port information for a specific LID.

Syntax

```
ismPortStatLid lid [port]
```

Options

lid IBTA local identifier (LID of the Leaf or Spine switch or the local switch).

port Port number (defaults to 0).

3.7.8. ismNodeInfoLid

Displays SMA node information for a specific LID.

Syntax

```
ismNodeInfoLid lid
```

Options

lid IBTA local identifier (LID of the Leaf or Spine switch or the local switch).

3.7.9. ismPortSetWidth

Displays or modifies the LinkWidth.Supported setting for a port. LinkWidth.Supported should be a subset of LinkWidthDowngrade.Supported for proper port operation.

Syntax

```
ismPortSetWidth [portNameList] [linkWidth] [-bounce] [-verbose]
```

Options

portNameList Valid entries for *portNameList* depend on the chassis type. Use the command `ismPortStats` to see the actual port names for the chassis. You can use all in the *portNameList*.

On Edge platforms, an example cable port name in the *portNameList* is:

Cable01, that is, Cable Port 1.

On Director platforms, an example cable port name in the *portNameList* is:

L101AP01, that is, Leaf 101A Port 1.

On Director platforms, an example interswitch link name in the *portNameList* is:

S201AP24L101AP25, that is, Spine 201A port 24 which connects to Leaf 101A port 25.

linkWidth Options include:

```

1  1X
2  2X
3  2X_1X
4  3X
5  3X_1X
6  3X_2X
7  3X_2X_1X
8  4X
9  4X_1X
10 4X_2X
11 4X_2X_1X
12 4X_3X
13 4X_3X_1X
14 4X_3X_2X
15 4X_3X_2X_1X

```

- bounce Brings the active links down and back up if a new value is set.

Calling this function with the -bounce option disruptively brings active links down and back up so the links use the new setting immediately. Otherwise, the new setting is used the next time links retrain.
- verbose Verbose output mode.

Example

```

-> ismPortSetWidth Cable01 -verbose
Cable01 link width supported: 4X_3X_2X_1X

```

Notes

If only the *portNameList* is entered, the current settings are displayed.

3.7.10. ismChassisSetWidth

Displays or modifies the LinkWidth.Supported setting for all chassis ports. LinkWidth.Supported should be a subset of LinkWidthDowngrade.Supported for proper port operation.

Syntax

```
ismChassisSetWidth [linkWidth] [-bounce] [-verbose]
```

Options

linkWidth Options include:

- 1 1X
- 2 2X
- 3 2X_1X
- 4 3X
- 5 3X_1X
- 6 3X_2X
- 7 3X_2X_1X
- 8 4X
- 9 4X_1X
- 10 4X_2X
- 11 4X_2X_1X
- 12 4X_3X
- 13 4X_3X_1X
- 14 4X_3X_2X
- 15 4X_3X_2X_1X

-bounce Brings the active links down and back up if a new value is set.

Calling this function with the -bounce option disruptively brings active links down and back up so the links use the new setting immediately. Otherwise, the new setting is used the next time links retrain.

-verbose Verbose output mode.

Example

```
-> ismChassisSetWidth
Cable01 link width supported: 2X
Cable02 link width supported: 2X
Cable03 link width supported: 2X
...
```


Notes

If no parameter is entered, the current settings are displayed.

3.7.11. ismModuleSetWidth

Displays or modifies the LinkWidth.Supported setting for each of the module ports. LinkWidth.Supported should be a subset of LinkWidthDowngrade.Supported for proper port operation.



NOTE

This command is only available on OPX HFI.

Syntax

```
ismModuleSetWidth [linkWidth] [-bounce]
```

Options

linkWidth Options include:

- 1 1X
- 2 2X
- 3 2X_1X
- 4 3X
- 5 3X_1X
- 6 3X_2X
- 7 3X_2X_1X
- 8 4X
- 9 4X_1X
- 10 4X_2X
- 11 4X_2X_1X
- 12 4X_3X
- 13 4X_3X_1X
- 14 4X_3X_2X
- 15 4X_3X_2X_1X

-bounce Brings the active links down and back up if a new value is set.

Calling this function with the `-bounce` option disruptively brings active links down and back up so the links use the new setting immediately. Otherwise, the new setting is used the next time links retrain.

Notes

If no parameter is entered, the current settings are displayed.

3.7.12. `ismIslSetWidth`

Displays or modifies the `LinkWidth.Supported` setting for each of the inter-switch-link (ISL) ports. `LinkWidth.Supported` should be a subset of `LinkWidthDowngrade.Supported` for proper port operation.



NOTE

This command is only available on OPX Director Class Switch.

Syntax

```
ismIslSetWidth [linkWidth] [-bounce] [-verbose]
```

Options

linkWidth Options include:

- 1 1X
- 2 2X
- 3 2X_1X
- 4 3X
- 5 3X_1X
- 6 3X_2X
- 7 3X_2X_1X
- 8 4X
- 9 4X_1X
- 10 4X_2X
- 11 4X_2X_1X
- 12 4X_3X
- 13 4X_3X_1X
- 14 4X_3X_2X

- 15 4X_3X_2X_1X
- bounce Brings the active links down and back up if a new value is set.
 Calling this function with the -bounce option disruptively brings active links down and back up so the links use the new setting immediately. Otherwise, the new setting is used the next time links retrain.
 - verbose Verbose output mode.

Notes

If no parameter is entered, the current settings are displayed.

3.7.13. ismPortSetLWDS

Displays or modifies the LinkWidthDowngrade.Supported (LWDS) setting for a port. This setting becomes effective on the next port bounce.

Syntax

```
ismPortSetLWDS [portNameList] [LinkWidthDownGradeSupported] [-bounce] [-verbose]
```

Options

- portNameList* Valid entries for *portNameList* depend on the chassis type. Use the command `ismPortStats` to see the actual port names for the chassis. You can use all in the *portNameList*.
- On Edge platforms, an example cable port name in the *portNameList* is:
- Cable01, that is, Cable Port 1.
- On Director platforms, an example cable port name in the *portNameList* is:
- L101AP01, that is, Leaf 101A Port 1.
- On Director platforms, an example interswitch link name in the *portNameList* is:
- S201AP24L101AP25, that is, Spine 201A port 24 which connects to Leaf 101A port 25.
- LinkWidthDownGradeSupported* Options include:
- | | |
|-----|-------|
| MP_ | 1X |
| 1 | |
| 2 | 2X |
| 3 | 2X_1X |

4	3X
5	3X_1X
6	3X_2X
7	3X_2X_1X
8	4X
9	4X_1X
10	4X_2X
11	4X_2X_1X
12	4X_3X
13	4X_3X_1X
14	4X_3X_2X
15	4X_3X_2X_1X

-bounce	Brings the active links down and back up if a new value is set. Calling this function with the -bounce option disruptively brings active links down and back up so the links use the new setting immediately. Otherwise, the new setting is used the next time links retrain.
-verbose	Verbose output mode.

Example

```
-> ismPortSetLWDS Cable01
Cable01 LWDS: 4X_3X_2X_1X
```

Notes

Calling this function with only the *portNameList* option displays the current values.

3.7.14. ismChassisSetLWDS

Displays or modifies the LinkWidthDowngrade.Supported (LWDS) setting for all chassis ports. This setting becomes effective on the next port bounce.

Syntax

```
ismChassisSetLWDS [LinkWidthDownGradeSupported] [-bounce] [-verbose]
```

Options

<i>LinkWidthDowngradeSupported</i>	Options include:
	1 1X
	2 2X
	3 2X_1X
	4 3X
	5 3X_1X
	6 3X_2X
	7 3X_2X_1X
	8 4X
	9 4X_1X
	10 4X_2X
	11 4X_2X_1X
	12 4X_3X
	13 4X_3X_1X
	14 4X_3X_2X
	15 4X_3X_2X_1X
-bounce	Brings the active links down and back up if a new value is set. Calling this function with the -bounce option disruptively brings active links down and back up so the links use the new setting immediately. Otherwise, the new setting is used the next time links retrain.
-verbose	Verbose output mode.

Notes

If no parameter is entered, the current settings are displayed.

3.7.15. ismModuleSetLWDS

Displays or modifies the LinkWidthDowngrade.Supported (LWDS) setting for each of the module ports. This setting becomes effective on the next port bounce.



NOTE

This command is only available on OPX HFI.

Syntax

```
ismModuleSetLWDS [LinkWidthDownGradeSupported] [-bounce]
```

Options

LinkWidthDownGradeSupported

Options include:

- 1 1X
- 2 2X
- 3 2X_1X
- 4 3X
- 5 3X_1X
- 6 3X_2X
- 7 3X_2X_1X
- 8 4X
- 9 4X_1X
- 10 4X_2X
- 11 4X_2X_1X
- 12 4X_3X
- 13 4X_3X_1X
- 14 4X_3X_2X
- 15 4X_3X_2X_1X

-bounce

Brings the active links down and back up if a new value is set.

Calling this function with the -bounce option disruptively brings active links down and back up so the links use the new setting immediately. Otherwise, the new setting is used the next time links retrain.

Example

```
-> ismModuleSetLWDS
Cable01 LWDS: 4X_3X_2X_1X
Cable02 LWDS: 4X_3X_2X_1X
Cable03 LWDS: 4X_3X_2X_1X
...
```

Notes

If no parameter is entered, the current settings are displayed.

3.7.16. ismIsISetLWDS

Displays or modifies the LinkWidthDowngrade.Supported (LWDS) setting for each of the inter-switch-link (ISL) ports. This setting becomes effective on the next port bounce.


NOTE

This command is only available on the OPX Director Class Switch.

Syntax

```
ismIsISetLWDS [LinkWidthDownGradeSupported] [-bounce] [-verbose]
```

Options

LinkWidthDownGradeSupported Options include:

- 1 1X
- 2 2X
- 3 2X_1X
- 4 3X
- 5 3X_1X
- 6 3X_2X
- 7 3X_2X_1X
- 8 4X
- 9 4X_1X
- 10 4X_2X
- 11 4X_2X_1X
- 12 4X_3X
- 13 4X_3X_1X
- 14 4X_3X_2X
- 15 4X_3X_2X_1X

- bounce** Brings the active links down and back up if a new value is set. Calling this function with the -bounce option disruptively brings active links down and back up so the links use the new setting immediately. Otherwise, the new setting is used the next time links retrain.
- verbose** Verbose output mode.

Notes

If no parameter is entered, the current settings are displayed.

3.7.17. ismPortSetFmEnabled

Displays or modifies the FM ENABLED setting for a port.

Syntax

```
ismPortSetFmEnabled portNameList [fmEnabled] [-bounce] [-verbose]
```

Options

- portNameList* Valid entries for *portNameList* depend on the chassis type. Use the command `ismPortStats` to see the actual port names for the chassis. You can use all in the *portNameList*.
- On Edge platforms, an example cable port name in the *portNameList* is: Cable01, that is, Cable Port 1.
- On Director platforms, an example cable port name in the *portNameList* is: L101AP01, that is, Leaf 101A Port 1.
- On Director platforms, an example interswitch link name in the *portNameList* is: S201AP24L101AP25, that is, Spine 201A port 24 which connects to Leaf 101A port 25.
- fmEnabled* Options include:
- 0 Disabled.
 - 1 Enabled.
- bounce Brings the active links down and back up if a new value is set.
- Calling this function with the -bounce option disruptively brings active links down and back up so the links use the new setting immediately. Otherwise, the new setting is used the next time links retrain.
- verbose Verbose output mode.

Example

```
-> ismPortSetFmEnabled Cable01
Cable01 FM_ENABLED: DISABLED
```


Notes

Calling this function with only the *portNameList* option displays its current values.

3.7.18. ismChassisSetFmEnabled

Displays or modifies the FM ENABLED setting for all chassis ports.

Syntax

```
ismChassisSetFmEnabled [fmEnabled] [-bounce] [-verbose]
```

Options

fmEnabled Options include:

0 Disabled.

1 Enabled.

-bounce Brings the active links down and back up if a new value is set.

Calling this function with the -bounce option disruptively brings active links down and back up so the links use the new setting immediately. Otherwise, the new setting is used the next time links retrain.

-verbose Verbose output mode.

Example

```
-> ismChassisSetFmEnabled
Cable01 FM_ENABLED: DISABLED
Cable02 FM_ENABLED: DISABLED
Cable03 FM_ENABLED: DISABLED
...
```

Notes

Calling this function without specifying a setting displays the current values.

3.7.19. ismPortSetCrcMode

Displays or modifies the cyclic redundancy check (CRC) mode setting for a port.

Syntax

```
ismPortSetCrcMode [portNameList] [crcMode] [-bounce] [-verbose]
```

Options

- portNameList* Valid entries for *portNameList* depend on the chassis type. Use the command `ismPortStats` to see the actual port names for the chassis. You can use all in the *portNameList*.
- On Edge platforms, an example cable port name in the *portNameList* is: `Cable01`, that is, Cable Port 1.
- On Director platforms, an example cable port name in the *portNameList* is: `L101AP01`, that is, Leaf 101A Port 1.
- On Director platforms, an example interswitch link name in the *portNameList* is: `S201AP24L101AP25`, that is, Spine 201A port 24 which connects to Leaf 101A port 25.
- crcMode* Options include:
- 0 16b
 - 1 14b_or_16b
 - 2 48b_or_16b
 - 3 48b_or_14b_or_16b
 - 4 per_lane_or_16b
 - 5 per_lane_or_14b_or_16b
 - 6 per_lane_or_48b_or_16b
 - 7 per_lane_or_48b_or_14b_or_16b
- bounce Brings the active links down and back up if a new value is set.
- Calling this function with the -bounce option disruptively brings active links down and back up so the links use the new setting immediately. Otherwise, the new setting is used the next time links retrain.
- verbose Verbose output mode.

Example

```
-> ismPortSetCrcMode Cable01
Cable01 CRD_MODE: 14b_or_16b
```

Notes

Calling this function with only the *portNameList* option displays its current values.

3.7.20. ismChassisSetCrcMode

Displays or modifies the CRC mode setting for all chassis ports.

Syntax

```
ismChassisSetCrcMode [crcMode] [-bounce] [-verbose]
```

Options

crcMode Options include:

- 0 16b
- 1 14b_or_16b
- 2 48b_or_16b
- 3 48b_or_14b_or_16b
- 4 per_lane_or_16b
- 5 per_lane_or_14b_or_16b
- 6 per_lane_or_48b_or_16b
- 7 per_lane_or_48b_or_14b_or_16b

-bounce Brings the active links down and back up if a new value is set.

Calling this function with the -bounce option disruptively brings active links down and back up so the links use the new setting immediately. Otherwise, the new setting is used the next time links retrain.

-verbose Verbose output mode.

Example

```
-> ismChassisSetCrcMode
Cable01 CRD_MODE: 14b_or_16b
Cable02 CRD_MODE: 14b_or_16b
Cable03 CRD_MODE: 14b_or_16b
...
```

Notes

If no parameter is entered, the current settings are displayed.

3.7.21. ismModuleSetCrcMode

Displays or modifies the CRC mode setting for all module ports.

**NOTE**

This command is only available on HFI Adapter.

Syntax

```
ismModuleSetCrcMode [crcMode] [-bounce]
```

Options

crcMode Options include:

- 0 16b
- 1 14b_or_16b
- 2 48b_or_16b
- 3 48b_or_14b_or_16b
- 4 per_lane_or_16b
- 5 per_lane_or_14b_or_16b
- 6 per_lane_or_48b_or_16b
- 7 per_lane_or_48b_or_14b_or_16b

-bounce Brings the active links down and back up if a new value is set.

Calling this function with the -bounce option disruptively brings active links down and back up so the links use the new setting immediately. Otherwise, the new setting is used the next time links retrain.

Example

```
-> ismModuleSetCrcMode
Cable01 CRD_MODE: 14b_or_16b
Cable02 CRD_MODE: 14b_or_16b
Cable03 CRD_MODE: 14b_or_16b
...
```

Notes

If no parameter is entered, the current settings are displayed.

3.7.22. ismIslSetCrcMode

Displays or modifies the CRC mode setting for all inter-switch-link ports.


NOTE

This command is only available on the OPX Director Class Switch.

Syntax

```
ismIslSetCrcMode [crcMode] [-bounce] [-verbose]
```

Options

crcMode Options include:

- 0 16b
- 1 14b_or_16b
- 2 48b_or_16b
- 3 48b_or_14b_or_16b
- 4 per_lane_or_16b
- 5 per_lane_or_14b_or_16b
- 6 per_lane_or_48b_or_16b
- 7 per_lane_or_48b_or_14b_or_16b

-bounce Brings the active links down and back up if a new value is set.

Calling this function with the -bounce option disruptively brings active links down and back up so the links use the new setting immediately. Otherwise, the new setting is used the next time links retrain.

-verbose Verbose output mode.

Notes

If no parameter is entered, the current settings are displayed.

3.7.23. ismPortSetVCU

Displays or modifies the Virtual lane Credit Units (VCU) setting for a port.

Syntax

```
ismPortSetVCU [portNameList] [vcu] [-bounce] [-verbose]
```

Options

- portNameList* Valid entries for *portNameList* depend on the chassis type. Use the command `ismPortStats` to see the actual port names for the chassis. You can use all in the *portNameList*.
- On Edge platforms, an example cable port name in the *portNameList* is: `Cable01`, that is, Cable Port 1.
- On Director platforms, an example cable port name in the *portNameList* is: `L101AP01`, that is, Leaf 101A Port 1.
- On Director platforms, an example interswitch link name in the *portNameList* is: `S201AP24L101AP25`, that is, Spine 201A port 24 which connects to Leaf 101A port 25.
- vcu* Valid options range from 0 to 7 inclusive. Default = 0.
- bounce Brings the active links down and back up if a new value is set.
- Calling this function with the -bounce option disruptively brings active links down and back up so the links use the new setting immediately. Otherwise, the new setting is used the next time links retrain.
- verbose Verbose output mode.

Example

```
-> ismPortSetVCU Cable01
Cable01 VCU: 0
```

Notes

If only the *portNameList* is entered, the current settings are displayed.

3.7.24. ismPortSetDiagnosticMode

Displays or modifies the diagnostic mode for a set of ports. Diagnostic mode is typically enabled by OEMs when doing margin testing of a port.



NOTE

The diagnostic mode setting is NOT persistent across a power cycle or reboot of the chassis.

Syntax

```
ismPortSetDiagnosticMode [portNameList] [{0 | 1}]
```

Options

portNameList Valid entries for *portNameList* depend on the chassis type. Use the command `ismPortStats` to see the actual port names for the chassis. You can use all in the *portNameList*.

On Edge platforms, an example cable port name in the *portNameList* is: `Cable01`, that is, Cable Port 1.

On Director platforms, an example cable port name in the *portNameList* is: `L101AP01`, that is, Leaf 101A Port 1.

On Director platforms, an example interswitch link name in the *portNameList* is: `S201AP24L101AP25`, that is, Spine 201A port 24 which connects to Leaf 101A port 25.

<enable> Options include:

- 0 Disabled.
- 1 Enabled.

Example

```
-> ismPortSetDiagnosticMode Cable01  
Cable01 DiagnosticMode: 0
```

Notes

A port that is in diagnostic mode no longer participates in fabric link management, so the port will not recognize and respond to link-level state changes (for example, Link Up/Down) until the port is moved back out of diagnostic mode.

If only the *portNameList* is entered, the current settings are displayed.

3.7.25. ismChassisSetVCU

Displays or modifies the VCU setting for all chassis ports.

Syntax

```
ismChassisSetVCU [vcu] [-bounce] [-verbose]
```

Options

- vcu** Valid options range from 0 to 7 inclusive. Default = 0.
- bounce** Brings the active links down and back up if a new value is set.
 Calling this function with the -bounce option disruptively brings active links down and back up so the links use the new setting immediately. Otherwise, the new setting is used the next time links retrain.
- verbose** Verbose output mode.

Example

```
-> ismChassisSetVCU
Cable01 VCU: 0
Cable02 VCU: 0
Cable03 VCU: 0
...
```

Notes

If no parameter is entered, the current settings are displayed.

3.7.26. ismModuleSetVCU

Displays or modifies the VCU setting for all module ports.



NOTE

This command is only available on the HFI Adapter.

Syntax

```
ismModuleSetVCU [vcu] [-bounce]
```

Options

- vcu** Valid options range from 0 to 7 inclusive. Default = 0.
- bounce** Brings the active links down and back up if a new value is set.
 Calling this function with the -bounce option disruptively brings active links down and back up so the links use the new setting immediately. Otherwise, the new setting is used the next time links retrain.

Example

```
-> ismModuleSetVCU
Cable01 VCU: 0
Cable02 VCU: 0
Cable03 VCU: 0
...
```

Notes

If no parameter is entered, the current settings are displayed.

3.7.27. ismIslSetVCU

Displays or modifies the VCU setting for all inter-switch-link ports.



NOTE

This command is only available on the OPX Director Class Switch.

Syntax

```
ismIslSetVCU [vcu] [-bounce] [-verbose]
```

Options

- vcu** Valid options range from 0 to 7 inclusive. Default = 0.
- bounce** Brings the active links down and back up if a new value is set.
 Calling this function with the -bounce option disruptively brings active links down and back up so the links use the new setting immediately. Otherwise, the new setting is used the next time links retrain.
- verbose** Verbose output mode.

Notes

If no parameter is entered, the current settings are displayed.

3.7.28. ismChassisSetMtu

Displays and sets the chassis maximum packet MTU Capability and VL Capability for all ports.

Syntax

```
ismChassisSetMtu [mtuCap [vLcap]] [-bounce]
```

Options

mtuCap Options include:

- 4 2048 bytes
- 5 4096 bytes
- 6 8192 bytes
- 7 10240 bytes

vLcap If the *vLcap* option is not specified, the command defaults to the maximum VLs for the selected *mtuCap*. Options include:

- 1 VL0
- 2 VL0-VL1
- 3 VL0-VL2
- 4 VL0-VL3
- 5 VL0-VL4
- 6 VL0-VL5
- 7 VL0-VL6
- 8 VL0-VL7

-bounce Brings the active links down and back up if a new value is set.

Calling this function with the -bounce option disruptively brings active links down and back up so the links use the new setting immediately. Otherwise, the new setting is used the next time links retrain.

Example

```
-> ismChassisSetMtu
Cable01 MTUCap=4(2048 bytes) VLCap=1(1 VLs)
Cable02 MTUCap=4(2048 bytes) VLCap=1(1 VLs)
Cable03 MTUCap=4(2048 bytes) VLCap=1(1 VLs)
...
```

Notes

If no value is entered for *mtuCap*, the current setting is displayed.

3.7.29. ismModuleSetMtu

Displays and sets the chassis maximum packet MTU Capability and VL Capability for all module ports.



NOTE

This command is only available on HFI Adapter.

Syntax

```
ismModuleSetMtu [mtuCap [vlCap]] [-bounce]
```

Options

mtuCap Options include:

- 4 2048 bytes
- 5 4096 bytes
- 6 8192 bytes
- 7 10240 bytes

vlCap If the *vlCap* option is not specified, the command defaults to the maximum VLs for the selected *mtuCap*. Options include:

- 1 VL0
- 2 VL0-VL1
- 3 VL0-VL2
- 4 VL0-VL3
- 5 VL0-VL4
- 6 VL0-VL5
- 7 VL0-VL6
- 8 VL0-VL7

-bounce Brings the active links down and back up if a new value is set.

Calling this function with the **-bounce** option disruptively brings active links down and back up so the links use the new setting immediately. Otherwise, the new setting is used the next time links retrain.

Example

```
-> ismModuleSetMtu
Cable01 MTUCap=4(2048 bytes) VLCap=1(1 VLs)
```

```
Cable02 MTUCap=4(2048 bytes) VLCap=1(1 VLs)
Cable03 MTUCap=4(2048 bytes) VLCap=1(1 VLs)
...
```

Notes

If no value is entered for *mtuCap*, the current setting is displayed.

3.7.30. ismPortEnable

Enables a port.

Syntax

```
ismPortEnable portNameList [-verbose]
```

Options

portNameList Valid entries for *portNameList* depend on the chassis type. Use the command `ismPortStats` to see the actual port names for the chassis. You can use all in the *portNameList*.

On Edge platforms, an example cable port name in the *portNameList* is:

Cable01, that is, Cable Port 1.

On Director platforms, an example cable port name in the *portNameList* is:

L101AP01, that is, Leaf 101A Port 1.

On Director platforms, an example interswitch link name in the *portNameList* is:

S201AP24L101AP25, that is, Spine 201A port 24 which connects to Leaf 101A port 25.

-verbose Verbose output mode.

Example

```
-> ismPortEnable Cable01 -verbose
Enabled port Cable01!
```

3.7.31. ismChassisSetEnable

Displays or modifies the port enable setting for each port in the chassis.

Syntax

```
ismChassisSetEnable [enable]
```

Options

enable Options include:

0 Disable

1 Enable

Example

```
-> ismChassisSetEnable
Cable01 is ENABLED
Cable02 is ENABLED
Cable03 is ENABLED
...
```

Notes

If no value is entered, the current setting is displayed.

When disabling ports, only cable ports are disabled.

3.7.32. ismModuleSetEnable

Displays or modifies the port enable setting for each port in the module.



NOTE

This command is only available on the HFI Adapter.

Syntax

```
ismModuleSetEnable [enable]
```

Options

enable Options include:

0 Disable

1 Enable

Notes

If no value is entered, the current setting is displayed.

3.7.33. ismPortDisable

Disables a port.

Syntax

```
ismPortDisable portNameList [-verbose]
```

Options

- portNameList*
- Valid entries for *portNameList* depend on the chassis type. Use the command `ismPortStats` to see the actual port names for the chassis. You can use all in the *portNameList*.
 - On Edge platforms, an example cable port name in the *portNameList* is:
Cable01, that is, Cable Port 1.
On Director platforms, an example cable port name in the *portNameList* is:
L101AP01, that is, Leaf 101A Port 1.
On Director platforms, an example interswitch link name in the *portNameList* is:
S201AP24L101AP25, that is, Spine 201A port 24 which connects to Leaf 101A port 25.
- verbose Verbose output mode.

3.7.34. ismChassisSetSpeed

Displays or modifies the LinkSpeed.Supported setting for all ports in the chassis.

Syntax

```
ismChassisSetSpeed [linkSpeed] [-bounce]
```

Options

- linkSpeed* Options include:
- 1 12.5 Gbps

- 2 25 Gbps
- 3 12.5 Gbps or 25 Gbps

-bounce Brings the active links down and back up if a new value is set.

Calling this function with the -bounce option disruptively brings active links down and back up so the links use the new setting immediately. Otherwise, the new setting is used the next time links retrain.

Example

```
-> ismChassisSetSpeed
Cable01 link speed supported is force 25.5
Cable02 link speed supported is force 25.5
Cable03 link speed supported is force 25.5
Cable04 link speed supported is force 25.5
Cable05 link speed supported is force 25.5
Cable06 link speed supported is force 25.5
Cable07 link speed supported is force 25.5
Cable08 link speed supported is force 25.5
Cable09 link speed supported is force 25.5
Cable10 link speed supported is force 25.5
...
```

Notes

Each external port must be connected to another similarly configured port to establish a link.

Calling this function without an option displays the current settings.

3.7.35. ismModuleSetSpeed

Displays or modifies the LinkSpeed.Supported setting for all ports in the module.



NOTE

This command is only available on the HFI Adapter.

Syntax

```
ismModuleSetSpeed [linkSpeed] [-bounce]
```

Options

linkSpeed Options include:

- 1 12.5 Gbps
- 2 25 Gbps
- 3 12.5 Gbps or 25 Gbps

-bounce Brings the active links down and back up if a new value is set.

Calling this function with the -bounce option disruptively brings active links down and back up so the links use the new setting immediately. Otherwise, the new setting is used the next time links retrain.

Notes

Each cable port must be connected to another similarly configured port to establish a link. Calling this function without an option displays the current settings.

3.7.36. ismIslSetSpeed

Displays or modifies the LinkSpeed.Supported setting for all inter-switch ports in the chassis.



NOTE

This command is only available on the OPX Director Class Switch.

Syntax

```
ismIslSetSpeed [linkSpeed] [-bounce]
```

Options

linkSpeed Options include:

- 1 12.5 Gbps
- 2 25 Gbps
- 3 12.5 Gbps or 25 Gbps

-bounce Brings the active links down and back up if a new value is set.

Calling this function with the -bounce option disruptively brings active links down and back up so the links use the new setting immediately. Otherwise, the new setting is used the next time links retrain.

Notes

This command sets the supported link speed on each of the internal switch-to-switch ports.

Calling this function without an option displays the current settings.

3.7.37. ismPortSetSpeed

Displays or modifies the LinkSpeed.Supported setting for a port.

Syntax

```
ismPortSetSpeed [portNameList] [linkSpeed] [-bounce]
```

Options

- portNameList* Valid entries for *portNameList* depend on the chassis type. Use the command `ismPortStats` to see the actual port names for the chassis. You can use all in the *portNameList*.
- On Edge platforms, an example cable port name in the *portNameList* is: Cable01, that is, Cable Port 1.
- On Director platforms, an example cable port name in the *portNameList* is: L101AP01, that is, Leaf 101A Port 1.
- On Director platforms, an example interswitch link name in the *portNameList* is: S201AP24L101AP25, that is, Spine 201A port 24 which connects to Leaf 101A port 25.
- linkSpeed* Options include:
- 1 12.5 Gbps
 - 2 25 Gbps
 - 3 12.5 Gbps / 25 Gbps
- bounce Brings the active links down and back up if a new value is set.
- Calling this function with the -bounce option disruptively brings active links down and back up so the links use the new setting immediately. Otherwise, the new setting is used the next time links retrain.

Example

```
-> ismPortSetSpeed Cable01
Cable01 link speed supported is force 25.5
```

Notes

Calling this function without an option displays the current settings.

3.7.38. ismPortSetBeacon

Displays or modifies the LED beacon indicator for a port.

Syntax

```
ismPortSetBeacon portNameList [{0 | 1}] [-verbose]
```

Options

portNameList Valid entries for *portNameList* depend on the chassis type. Use the command `ismPortStats` to see the actual port names for the chassis. You can use all in the *portNameList*.

On Edge platforms, an example cable port name in the *portNameList* is: `Cable01`, that is, Cable Port 1.

On Director platforms, an example cable port name in the *portNameList* is: `L101AP01`, that is, Leaf 101A Port 1.

On Director platforms, an example interswitch link name in the *portNameList* is:

`S201AP24L101AP25`, that is, Spine 201A port 24 which connects to Leaf 101A port 25.

{0 | 1} If no value is entered, the current setting is displayed. Options include:

0 Off

1 On

-verbose Verbose output mode.

Example

```
-> ismPortSetBeacon Cable01
Cable01 beacon is off
```

Notes

Calling this function without an option displays the current settings.

3.7.39. ismPortQsfpInfo

Displays information from the installed QSFPs.

Syntax

```
ismPortQsfpInfo [portNameList] [-verbose] [-binary]
```

Options

If no value is entered, the current setting is displayed. Options include:

portNameList Valid entries for *portNameList* depend on the chassis type. Use the command *ismPortStats* to see the actual port names for the chassis. You can use all in the *portNameList*.

On Edge platforms, an example cable port name in the *portNameList* is: Cable01, that is, Cable Port 1.

On Director platforms, an example cable port name in the *portNameList* is: L101AP01, that is, Leaf 101A Port 1.

On Director platforms, an example interswitch link name in the *portNameList* is:

S201AP24L101AP25, that is, Spine 201A port 24 which connects to Leaf 101A port 25.

-verbose Verbose output mode.

-binary In verbose mode, binary data is also displayed.

Example

```
ismPortQsfpInfo L102AP01

MasterM201-> ismPortQsfpInfo L102AP01
```

Port Spd sup Name	Cable Type	Vendor Name	Cbl Len	Part Number	Rv Number	Serial Number	Temp (C)
25G 50G							
L102AP01	QSFP-DD	AOC	Hisense	3m	DEF8504-2C03	12	U5T7BG00673
29.86	Y						

```

Total number of QSFPs found: 0
Total number of QSFP-DDs found: 1

ismPortQsfpInfo L102AP01 -verbose

MasterM201-> ismPortQsfpInfo L102AP01 -verbose

Port Name      : L102AP01
Cable Type     : QSFP-DD AOC (850nm VCSEL)
```

```

Vendor Name   : Hisense           Max/Alloc Power: 3.5 W / 3.5 W
Vendor OUI    : AC-4A-FE          Spec Rev       : QSFP-DD mgmt rev 0.6
Vendor P/N    : DEF8504-2C03      Firmware Rev   : 2.1
Vendor Rev    : 12                Temperature    : 29.87 C
Vendor S/N    : U5T7BG00673      25G/Ln Support : Yes
Date Code     : 2017-10-31        50G/Ln Support : No
Cable Length  : 3m
Far end conns: 2 (4x,4x)

Total number of QSFPs found: 0
Total number of QSFP-DDs found: 1
  
```

3.7.40. ismChassisBounce

Bounces enabled ports for an entire chassis.

Syntax

```
ismChassisBounce [-verbose]
```

Options

-verbose Verbose output mode.

3.7.41. ismModuleBounce

Bounces enabled ports for an entire module.



NOTE

This command is only available on the HFI Adapter.

Syntax

```
ismModuleBounce [-verbose]
```

Options

-verbose Verbose output mode.

3.7.42. ismIslBounce

Bounces all enabled inter-switch-link ports in the chassis.


NOTE

This command is only available on the OPX Director Class Switch.

Syntax

```
ismIslBounce [-verbose]
```

Options

-verbose Verbose output mode.

3.7.43. ismPortBounce

Bounces enabled ports.

Syntax

```
ismPortBounce portNameList [-verbose]
```

Options

portNameList Valid entries for *portNameList* depend on the chassis type. Use the command `ismPortStats` to see the actual port names for the chassis. You can use all in the *portNameList*.

On Edge platforms, an example cable port name in the *portNameList* is: `Cable01`, that is, Cable Port 1.

On Director platforms, an example cable port name in the *portNameList* is: `L101AP01`, that is, Leaf 101A Port 1.

On Director platforms, an example interswitch link name in the *portNameList* is:

`S201AP24L101AP25`, that is, Spine 201A port 24 which connects to Leaf 101A port 25.

-verbose Verbose output mode.

3.7.44. ismRemoveStateDump

Removes switch ASIC state dump files.

Syntax

```
ismRemoveStateDump [all] [-lid lid] [slot]
```

Options

- all* Removes all switch ASIC state dump files.
- lid lid* Removes the remote switch ASIC state dump file for a specified LID.
- slot* Removes the ASIC state dump file for the specified slot name.

3.7.45. ismShowStateDump

Displays contents of switch ASIC state dump files.

Syntax

```
ismShowStateDump [all] [-lid lid] [slot]
```

Options

- all* Displays the header contents of all switch ASIC state dump files.
- lid lid* Displays the header contents of a remote switch ASIC state dump file for a specified LID.
- slot* Displays the header contents of the ASIC state dump file for the specified slot name.

3.7.46. ismTakeStateDump

Captures switch ASIC state dump information.

Syntax

```
ismTakeStateDump {[-lid lid] | all | [slot]}
```

Options

- lid lid* Takes a switch ASIC state dump of the unmanaged switch with the specified *lid*.
- all* Takes a switch ASIC state dump of all chips and stores in a single file.
- slot* Takes a switch ASIC state dump of the specified slot name.

Notes

This command is only available in support Login mode. Contact Cornelis technical support for more information.

The state dump files are created in a local RAM file system. The naming convention is: / firmware/prr*.gz. Copy these files using sftp run from an external host.

After the files have been copied externally, Cornelis recommends you enter `reboot now all` to resume normal operation. You must do the file copy **before** the reboot, because the state dump files in the local RAM file system are not persistent across the reboot.

It is normal for the errors `PrrVpd: MadLocalProcess` and `Ism: Communication` to occur during and after capturing a state dump.

3.7.47. ismShowArConfig

Displays adaptive routing info for a specific switch chip or entire chassis.

Syntax

```
ismShowArConfig [switch]
```

Options

switch Switch index.

Examples

```
-> ismShowArConfig
Switch Name | Ena | Pau | LRO | Algo | Freq | Thresh | Events
-----|---|---|---|-----|---|-----|-----
Switch 1   | 0   | 0   | 0   | 0    | 0    | 0      | 0
```

3.7.48. ismShowArMoves

Displays adaptive routing adjustments for a specific switch chip or entire chassis.

Syntax

```
ismShowArMoves [switch]
```

Options

switch Switch index.

3.8. Time Management

Commands in this category are used for retrieving and setting the current system time, setting the time zone, and setting daylight saving time parameters.

3.8.1. time

Configures the time on the device.

Syntax

```
time [-S ipaddr] [-T hhmmss[mmddyyyy]]
```

Options

- S *ipaddr* Sets the NTP Server IP address.
- T *hhmmss[mmddyyyy]* Sets the local clock time hour, minutes, and seconds. Optionally, the month, day, and year can be set.

Example

```
-> time
09:52:12 10/16/2015
Configured to use the local clock

-> time -S 172.26.0.254
Configured the NTP server ip address successfully
13:53:02 10/16/2015
Configured to use NTP server IP address: 172.26.0.254
```

Notes

Time is configured locally (using a local clock) or is set to be updated by an NTP server. If you set the time locally, the unit unconfigures the NTP server IP address if set.

If no value is entered, the current system time is displayed.

3.8.2. timeZoneConf

Displays or configures the time zone setting.

Syntax

```
timeZoneConf [offset]
```


Options

offset The time offset in relation to Greenwich Mean Time (GMT). The *offset* parameter specifies a time zone the system uses when setting the time. In the United States, valid time zone offsets include:

- 5 Eastern Standard Time (GMT-5)
- 6 Central Standard Time (GMT-6)
- 7 Mountain Standard Time (GMT-7)
- 8 Pacific Standard Time (GMT-8)

Example

```
-> timeZoneConf -5
Timezone offset successfully configured
Current time zone offset is: -5
```

3.8.3. timeDSTConf

Configures and displays the Daylight Saving Time settings.

Syntax

```
timeDSTConf [sw sd sm ew ed em]
```

Options

sw Start which, valid options include:

- 1 1st
- 2 2nd
- 3 3rd
- 4 4th
- 5 5th

sd Start day, valid options include:

- 1 Sunday
- 2 Monday
- 3 Tuesday
- 4 Wednesday

5 Thursday

6 Friday

7 Saturday

sm Start month, valid options include:

3 March

4 April

5 May

6 June

7 July

8 August

9 September

10 October

11 November

ew End which, valid options include:

1 1st

2 2nd

3 3rd

4 4th

5 5th

ed End day, valid options include:

1 Sunday

2 Monday

3 Tuesday

4 Wednesday

5 Thursday

6 Friday

7 Saturday

em End month, valid options include:

3 March

4 April

5 May

6 June

- 7 July
- 8 August
- 9 September
- 10 October
- 11 November

Example

```
-> timeDSTConf 2 1 3 1 1 11
Timezone offset successfully configured
Current DST = Start: 2'nd Sunday of March End: 1'st Sunday of November
```

3.8.4. timeNtpTimeout

Displays or sets the number of seconds to wait for an NTP response.

Syntax

```
timeNtpTimeout [numSeconds]
```

Options

numSeconds New timeout setting (default = 2 seconds).

Example

```
-> timeNtpTimeout
Current NTP timeout value: 2 seconds
-> timeNtpTimeout 3
Current NTP timeout changed to 3 seconds
```

Notes

If no value is entered, the current setting is displayed.

NTP timeout is the amount of time (in seconds) for the system to wait for a response from the NTP server. This setting can be configured using the same command with the new timeout value (in whole seconds) as the only argument. The default setting is 2 seconds. The NTP timeout value is not used on line cards or standby CMUs.

3.8.5. timeNtpRefreshTime

Displays or sets the delay between syncing the clock using NTP.

Syntax

```
timeNtpRefreshTime [numSeconds]
```

Options

numSeconds New refresh delay setting.

Example

```
-> timeNtpRefreshTime
Current NTP refresh delay value: 60 seconds
-> timeNtpRefreshTime 50
Current NTP refresh delay changed to 50 seconds.
```

Notes

If no value is entered, the current setting is displayed.

The NTP refresh time is the delay in seconds between attempts to sync the clock via NTP. This value can be configured by using this same command with the new refresh time (in whole seconds) as the only argument. The NTP refresh time is not used on line cards or standby CMUs.

3.9. SNMP

Commands in this category are used for configuring trap destinations and SNMP security parameters.

3.9.1. snmpCommunityConf

Configures and displays the SNMP community strings.

Syntax

```
snmpCommunityConf [-r readonly_comm_str] [-w read_write_comm_str]
```

Options

- r *readonly_comm_str* A read-only community string.
- w *read_write_comm_str* A read/write community string.

Example

```
-> snmpCommunityConf -r public
Read Only Community String Was Set To: public
```

Notes

If no value is entered, the current settings are displayed.

To disable an entry, use a set of double quotes (for example, " ") as the community name.

3.9.2. snmpTargetAddr

Displays and modifies the snmpTargetAddrTable entries.

Syntax

```
snmpTargetAddr {show | add | edit | delete} -n name [-a address] [-p port] [-t timeout] [-r retry_count] [-l tag_list] [-v parameters] [-s storage_type] [-i status]
```

Options

show	Displays the contents of the snmpTargetAddrTable.
add	Adds a row to the snmpTargetAddrTable.
edit	Modifies an existing row in the snmpTargetAddrTable.
delete	Removes an existing row of the snmpTargetAddrTable.
-n <i>name</i>	Name. A unique name used to identify a row. Any name with a space (for example, xxx v3) must be surrounded by double quotes (" ").
-a <i>addr</i>	The target machine IP address in dotted decimal form.
-p <i>port</i>	The target port to send traps and information.
-t <i>timeout</i>	The time to wait for an information response.
-r <i>retry_count</i>	Retry count. The number of re-send attempts for information.
-l <i>tag_list</i>	Tag list. Indicates the traps and information that is sent.
-v <i>parameters</i>	Parameters. This maps to an entry in the snmpTargetAddrTable.
-s <i>storage_type</i>	Storage type. Determines whether the entry is saved in flash memory. Options include: volatile or nonVolatile (string).
-i <i>status</i>	Status. Options include:

- 1 Active
- 2 Not In Service
- 3 Not Ready

Example

```
-> snmpTargetAddr
rfc2573t:snmpTargetAddrTDomain: nms v1 : 1.3.6.1.6.1.1
rfc2573t:snmpTargetAddrTDomain: nms v2 : 1.3.6.1.6.1.1
rfc2573t:snmpTargetAddrTDomain: nms v3 : 1.3.6.1.6.1.1
rfc2573t:snmpTargetAddrTAddress: nms v1 : (ip addr)00.00.00.00 (port)0000
rfc2573t:snmpTargetAddrTAddress: nms v2 : (ip addr)00.00.00.00 (port)0000
rfc2573t:snmpTargetAddrTAddress: nms v3 : (ip addr)00.00.00.00 (port)0000
```

Notes

If no value is entered, the current settings are displayed.

The output is in the form: mib : mib_object : table_index : value

For more details on the snmpTargetAddrTable, see SNMP-TARGET-MIB, RFC 2573.

3.9.3. snmpTargetParams

Displays the snmpTargetParamsTable entries.

Syntax

```
snmpTargetParams [show]
```

Options

show Displays the contents of the snmpTargetParamsTable.

Example

```
-> snmpTargetParams
rfc2573t:snmpTargetParamsMPModel: v1 params : 0
rfc2573t:snmpTargetParamsMPModel: v2 params : 1
rfc2573t:snmpTargetParamsMPModel: v3 params : 3
rfc2573t:snmpTargetParamsSecurityModel: v1 params : 1
rfc2573t:snmpTargetParamsSecurityModel: v2 params : 2
rfc2573t:snmpTargetParamsSecurityModel: v3 params : 3
```

Notes

If no value is entered, the current settings are displayed.

The output is in the form: `mib : mib_object : table_index : value`

For more details on the `snmpTargetParamsTable`, see SNMP-TARGET-MIB, RFC-2573.

3.9.4. snmpNotifyProfile

Displays the `snmpNotifyFilterProfileTable` entries.

Syntax

```
snmpNotifyProfile [show]
```

Options

`show` Displays the contents of the `snmpNotifyFilterProfileTable`.

Example

```
-> snmpNotifyProfile
rfc2573n:snmpNotifyFilterProfileName: v1 params : v1 params
rfc2573n:snmpNotifyFilterProfileName: v2 params : v2 params
rfc2573n:snmpNotifyFilterProfileName: v3 params : v3 params
rfc2573n:snmpNotifyFilterProfileStorType: v1 params : 3
rfc2573n:snmpNotifyFilterProfileStorType: v2 params : 3
rfc2573n:snmpNotifyFilterProfileStorType: v3 params : 3
```

Notes

If no value is entered, the current settings are displayed.

The output is in the form: `mib : mib_object : table_index : value`

For more details on the `snmpNotifyFilterProfileTable`, see SNMP-NOTIFICATION-MIB, RFC-2573.

3.9.5. snmpNotifyFilter

Displays the `snmpNotifyFilterTable` entries.

Syntax

```
snmpNotifyFilter [show]
```

Options

show Displays the contents of the snmpNotifyFilterTable.

Example

```
-> snmpNotifyFilter
rfc2573n:snmpNotifyFilterMask: v1 params : 0
rfc2573n:snmpNotifyFilterMask: v2 params : 0
rfc2573n:snmpNotifyFilterMask: v3 params : 0
rfc2573n:snmpNotifyFilterType: v1 params : 1
rfc2573n:snmpNotifyFilterType: v2 params : 1
rfc2573n:snmpNotifyFilterType: v3 params : 1
```

Notes

If no value is entered, the current settings are displayed.

The output is in the form: mib : mib_object : table_index : value

For more details on the snmpNotifyFilterTable, see SNMP-NOTIFICATION-MIB, RFC-2573.

3.9.6. snmpNotify

Displays the snmpNotifyTable entries.

Syntax

```
snmpNotify [show]
```

Options

show Displays the contents of the snmpNotifyTable.

Example

```
-> snmpNotify
rfc2573n:snmpNotifyTag: switch : rfc1493
rfc2573n:snmpNotifyTag: interfaces : rfc2233
rfc2573n:snmpNotifyTag: rmon : rfc1757
rfc2573n:snmpNotifyTag: snmp : rfc1907
rfc2573n:snmpNotifyTag: tms : tmscom
rfc2573n:snmpNotifyType: switch : 1
```

Notes

If no value is entered, the current settings are displayed.

The output is in the form: `mib : mib_object : table_index : value`

For more details on the `snmpNotifyTable`, see SNMP-NOTIFICATION-MIB, RFC-2573.

3.9.7. snmpSystem

Displays and modifies the SNMP system information.

Syntax

```
snmpSystem {show | edit} [-n sysName] [-c sysContact] [-l sysLocation]
```

Options

- | | |
|-----------------------------|--|
| <code>show</code> | Shows the contents of the <code>snmpTargetAddrTable</code> . |
| <code>edit</code> | Modifies an existing row in the <code>snmpTargetAddrTable</code> . |
| <code>-n sysName</code> | Specifies system name information. |
| <code>-c sysContact</code> | Specifies system contact information. |
| <code>-l sysLocation</code> | Specifies system location information. |

Example

```
-> snmpSystem show
rfc1907:sysDescr: p : 20.28.4D.61.73.74.65.72.29
rfc1907:sysObjectID: : 1.3.6.1.4.1.10222.7.1.2
rfc1907:sysUpTime: : 1 Day(s), 23 Hour(s), 34 Minute(s), 47 Second(s)
rfc1907:sysContact: p : {no value}
rfc1907:sysName: p : 12800-040-254
rfc1907:sysLocation: p : Main Chassis Unit, Slot 254
rfc1907:sysServices: : 79
```

Notes

If no value is entered, the current setting is displayed.

The output is in the form: `mib : mib_object : table_index : value`.

3.9.8. snmpUsrSec

Displays and configures SNMP V3 users.

Syntax

```
snmpUsrSec [{add username | show [username] | edit username | delete username] [-a {MD5  
key | SHA key | NONE}]]
```

Options

<code>add <i>username</i></code>	Adds an entry to the V3 user table.
<code>show <i>username</i></code>	Shows entries in the V3 user table.
<code>edit <i>username</i></code>	Modifies an entry in the V3 user table.
<code>delete <i>username</i></code>	Removes an entry in the V3 user table.
<code>-a <i>algo</i></code>	Authentication algorithm and key. Options include: MD5 <i>key</i> MD5 authentication algorithm is used. SHA <i>key</i> SHA authentication algorithm is used. NONE No authentication algorithm is used.

Example

```
-> snmpUsrSec
User   : initialmd5
Auth   : MD5
Auth Key: 0x047b473f93211a17813ce5fff290066b
Priv   : NONE
User   : initialsha
Auth   : SHA
Auth Key: 0x1c8cbd687fb0f0a22ddd24315db0d84c09eb5ff3
Priv   : NONE
User   : initialnone
Auth   : NONE
Priv   : NONE
```

Notes

If no value is entered, the current settings are displayed.

Handles configuration and display of SNMP v3 users. Supported authentication algorithms are: NONE, MD5, and SHA. A key (passphrase) is required for all except the NONE algorithm.

No privacy algorithms are currently supported.

3.10. CaptureInfo

Commands in this category are used by support personnel for analysis and debugging.

3.10.1. capture

Displays information for this device.

Syntax

```
capture
```

Options

None.

Notes

The output of this command is intended for support personnel to capture switch configuration, logs, and other pertinent data.

3.10.2. showAllConfig

Displays fundamental chassis configuration information.

Syntax

```
showAllConfig
```

Options

None.

Notes

The output of this command is intended for support personnel to capture switch configuration, logs, and other pertinent data.

3.10.3. captureFw

Displays firmware information for this device.

Syntax

```
captureFw
```

Options

None.

Notes

The output of this command is intended for support personnel to capture switch configuration, logs, and other pertinent data.

3.10.4. captureSm

Displays Subnet Management information for this device.

Syntax

```
captureSm
```

Options

None.

Notes

The output of this command is intended for support personnel to capture switch configuration, logs, and other pertinent data.

3.10.5. captureIsm

Displays switch information for this device.

Syntax

```
captureIsm
```

Options

None.

Notes

The output of this command is intended for support personnel to capture switch configuration, logs, and other pertinent data.

3.10.6. captureChassis

Displays chassis information for this device.

Syntax

```
captureChassis
```

Options

None.

Notes

The output of this command is intended for support personnel to capture switch configuration, logs, and other pertinent data.

3.10.7. captureNetwork

Displays network information for this device.

Syntax

```
captureNetwork
```

Options

None.

Notes

The output of this command is intended for support personnel to capture switch configuration, logs, and other pertinent data.

3.10.8. captureLog

Displays log information for this device.

Syntax

```
captureLog
```

Options

None.

Notes

The output of this command is intended for support personnel to capture switch configuration, logs, and other pertinent data.

3.10.9. captureMisc

Displays miscellaneous information for this device.

Syntax

```
captureMisc
```

Options

None.

Notes

The output of this command is intended for support personnel to capture switch configuration, logs, and other pertinent data.

3.10.10. captureSnmp

Displays SNMP information for this device.

Syntax

```
captureSnmp
```

Options

None.

Notes

The output of this command is intended for support personnel to capture switch configuration, logs, and other pertinent data.

3.10.11. captureShell

Displays shell command information for this device.

Syntax

```
captureShell
```

Options

None.

Notes

The output of this command is intended for support personnel to capture switch configuration, logs, and other pertinent data.

4. Glossary of Acronyms

The following acronyms are used throughout the OPX Documentation Set.

ASIC	Application Specific Integrated Circuit - a customized chip designed for a particular purpose
BECN	Backward Explicit Congestion Notification - an alert sent to the sender that congestion has been detected; the sender should implement congestion avoidance procedures
BIOS	Basic Input Output System - firmware used to initialize and test system hardware components, and load a boot loader from a mass storage device which then initializes a kernel
CLI	Command Line Interface - text-based user interface used to run programs, manage files, and interact with a computer
CMU	Cluster Management Utility - a tool used for provisioning, managing, and monitoring clusters
CRC	Cycle Redundancy Check - an error-detecting code used to detect accidental changes to digital data
CSM	Control and Switching Module
DCS	Director Class Switch
DHCP	Dynamic Host Configuration Protocol - a network management protocol used to assign an Internet Protocol (IP) address to a device so they can communicate using IP
DNS	Domain Name System - a database that translates human readable website names into their numeric IP addresses
FE	Fabric Executive
FECN	Forward Explicit Congestion Notification - a networking function that is added to a received frame and lets the receiver know that congestion is occurring
FM	Fabric Manager
FRU	Field Replaceable Unit - a part or assembly that can be quickly and easily replaced by the user or technician without having to send the product or system to a repair facility
FTP	File Transfer Protocol - protocol used for the transfer of computer files from a server to a client on a computer network

GUI	Graphical User Interface - allows users to interact with computers through graphical icons
GUID	Globally Unique Identifier - a 128-bit text string generated when a unique reference number is needed to identify a component (e.g., hardware, software, account, node, etc.) on a computer or network
HFI	Host Fabric Interface - the hardware and software that allows one module to talk to another in an OPX Fabric.
HTTP	Hypertext Transfer Protocol - an application-layer protocol for transmitting hypermedia documents, such as HTML
HTTPS	Hypertext Transfer Protocol Secure - an extension of HTTP, it is used for secure communication over a computer network, where the communication protocol is encrypted using Secure Sockets Layer
IBTA	InfiniBand Trade Association - an organization chartered with maintaining and furthering the InfiniBand™ Architecture specification defining hardware transport protocols sufficient to support both reliable messaging and memory manipulation semantics without software intervention in the data movement path
IP	Internet Protocol - a set of rules for communicating over the internet
IPoIB	Internet Protocol over InfiniBand
ISL	Inter-Switch Link - a Cisco Systems proprietary protocol that maintains VLAN information in Ethernet frames as traffic flows between switches and routers, or switches and switches
LDAP	Lightweight Directory Access Protocol - an open, industry-standard application protocol for accessing and maintaining distributed directory information services over an IP network
LED	Light Emitting Diode - a semiconductor that emits light when current flows through it
LFT	LID Forwarding Table/Linear Forwarding Table
LID	Local Identifier
LMC	LID Mask Control
MD5	Message-Digest Method 5 Algorithm
MM	Management Module

MTU	Maximum Transmission Unit
NTP	Network Time Protocol
OEM	Original Equipment Manufacturer
OOB	Out -of-Band Management
OPX	Omni-Path Express
OPX HFI	Omni-Path Express Host Fabric Interface
OPX provider	OPX provider is a new enhanced libfabric provider that takes full advantage of the libfabric acceleration features while running over existing and future Omni-Path Express hardware.
PKey	Partition Key
PM	Performance Manager, Performance Management, Program Manager, Program Management
QSFP	Quad Small Form-factor Pluggable
SCP	System Control Processor
SEEB	Serial, Ethernet, Chassis EEPROM Board - a module
SFTP	Secure File Transfer Protocol
SHA	Secure Hash Algorithm
SM	Subnet Manager or Subnet Management
SMA	Subnet Management Agent
SNMP	Simple Network Management Protocol
SSH	Secure Shell
TCP	Transmission Control Protocol
UDP	User Datagram Protocol
USB	Universal Serial Bus
VCU	Virtual lane Credit Units
VL	Virtual Lane
XML	Extended Markup Language