Converged Enhanced Ethernet

Command Reference

Supporting Fabric OS v7.0.1

BROCADE

Brocade Communications Systems, Incorporated

Document History

Title	Publication number	Summary of changes	Date
Converged Enhanced Ethernet Command Reference	*53-1001217-01*	New document.	March 2009
Converged Enhanced Ethernet Command Reference	*53-1001347-01*	Updated for Fabric OS v6.3.0	July 2009
Converged Enhanced Ethernet Command Reference	*53-1001762-01*	Added new commands for IGMP.	March 2010
Converged Enhanced Ethernet Command Reference	*53-1002062-01*	Added new commands for iSCSI TLV configuration.	October 2010
Converged Enhanced Ethernet Command Reference	*53-1002164-01*	Updated for Fabric OS v7.0.0.	April 2011
Converged Enhanced Ethernet Command Reference	*53-1002508-01*	Updated for Fabric OS v7.0.1.	December 2011

Contents

About This Document

In this chapter

How this document is organized

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

The document contains the following components:

- Chapter 1, "CLI Basics" describes how to access the switch and the CEE CLI command modes.
- Chapter 2, "CEE Commands" describes the commands to manage the configuration files and includes other file management commands.

Supported hardware and software

This document includes updated information specific to Fabric OS 7.0.1. The following hardware platforms are supported in this release of the CEE Administrator's Guide:

- Brocade 8000

The following blades are supported by this release of the CEE Administrator's Guide:

- Brocade FCOE10-24 blade

Within this manual, any appearance of the term "Brocade FCoE hardware" is referring to:

- Brocade 8000
- Brocade FCOE10-24 port blade

Although many different software and hardware configurations are tested and supported by Brocade Communications Systems, Inc. for Fabric OS 7.0.1, documenting all possible configurations and scenarios is beyond the scope of this document.

To obtain information about an OS version other than Fabric OS v7.0.1, refer to the documentation specific to that OS version.

What's new in this document

This document has been updated for for Fabric OS v7.0.1.

This document has been updated with corrections and updates for defects discovered since the release of the previous version.

For further information about new features and documentation updates for this release, refer to the release notes.

Document conventions

This section describes text formatting conventions and important notice formats used in this document.

Text formatting

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

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

For readability, command names in the narrative portions of this guide are presented in mixed lettercase: for example, **switchShow**. In actual examples, command lettercase is all lowercase.

. Command syntax conventions

Command syntax in this manual follows these conventions:

TABLE 1   Command syntax conventions

Convention	Description
[ ]	Default responses to system prompts appear in square brackets.
{x | y | z}	A choice of required keywords appears in braces separated by vertical bars. You must select one.
screen font	Examples of information displayed on the screen.
<>	Nonprinting characters, for example passwords, appear in angle brackets
[ ]	Keywords or arguments that appear within square brackets are optional.
bold face font	Commands and keywords.
italic	Variables for which you supply values.

Notes, cautions, and warnings

The following notices and statements are used in this manual. They are listed below in order of increasing severity of potential hazards.

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

ATTENTION
An Attention statement indicates potential damage to hardware or data.

CAUTION

A Caution statement alerts you to situations that can be potentially hazardous to you or cause damage to hardware, firmware, software, or data.

DANGER

A Danger statement indicates conditions or situations that can be potentially lethal or extremely hazardous to you. Safety labels are also attached directly to products to warn of these conditions or situations.

Key terms

For definitions specific to Brocade and Fibre Channel, see the technical glossaries on Brocade Connect. See "Brocade resources" on page xvi for instructions on accessing Brocade Connect.

Notice to the reader

This document may contain references to the trademarks of the following corporations. These trademarks are the properties of their respective companies and corporations.

These references are made for informational purposes only.

Corporation	Referenced Trademarks and Products
Microsoft Corporation	Windows, Windows NT, Internet Explorer
Oracle Corporation	Oracle, Java
Netscape Communications Corporation	Netscape
Red Hat, Inc.	Red Hat, Red Hat Network, Maximum RPM, Linux Undercover

Additional information

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

Brocade resources

To get up-to-the-minute information, go to *http://my.brocade.com* and register at no cost for a user ID and password.

White papers, online demonstrations, and data sheets are available through the Brocade website at:

> *http://www.brocade.com/products-solutions/products/index.page*

For additional Brocade documentation, visit the Brocade website:

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

Release notes are available on the MyBrocade website and are also bundled with the Fabric OS firmware.

Other industry resources

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

> *http://www.t11.org*

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

> *http://www.fibrechannel.org*

Getting technical help

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

1. General Information

   - Switch model

   - Switch operating system version

   - Error numbers and messages received

   - **supportSave** command output

   - Detailed description of the problem, including the switch or fabric behavior immediately following the problem, and specific questions

   - Description of any troubleshooting steps already performed and the results

   - Serial console and Telnet session logs

   - syslog message logs

2. Switch Serial Number

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

‖‖‖‖‖‖ ‖‖‖ ‖‖ ‖‖‖ ‖‖ ‖‖‖ ‖‖‖ ‖‖‖ ‖ ‖‖ ‖‖‖
FT00X0054E9
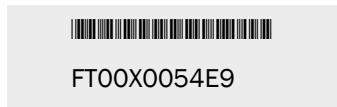
   The serial number label is located as follows:

   - *Brocade 8000* —On the switch ID pull-out tab located inside the chassis on the port side on the left.

3. World Wide Name (WWN)

   Use the **licenseIdShow** command to display the WWN of the chassis.

   If you cannot use the **licenseIdShow** command because the switch is inoperable, you can get the WWN from the same place as the serial number, except for the Brocade DCX. For the Brocade DCX, access the numbers on the WWN cards by removing the Brocade logo plate at the top of the nonport side of the chassis.

Document feedback

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

documentation@brocade.com

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

CLI Basics

In this chapter

Management tools

The Brocade FCoE hardware runs traditional Fabric OS software and can be managed using the same tools traditionally used for SAN management. Using the Fabris OS command line interface (CLI), administrators have access to all commands and utilities common to other Brocade switches. In addition, Fabris OS software on the Brocade 8000 enables Brocade Web Tools to support the following features for configuring and managing a Converged Ethernet Network:

- CEE interface display and configuration
- FCoE trunk display and configuration
- CEE configuration including link aggregation control protocol (LACP), Virtual LANs (VLANs), Quality of Service (QoS), and Link Layer Discovery Protocol (LLDP)/Data Center Bridging eXchange (DCBX) protocol
- FCoE login groups

CEE command line interface

The Brocade CEE CLI is designed to support the management of CEE and Layer 2 Ethernet switching functionality. The CEE CLI uses an industry-standard hierarchical shell familiar to Ethernet/IP networking administrators.

All conventional port-related Fabric OS CLI commands are only applicable to Fibre Channel. These commands have no knowledge of the Ethernet ports. The CEE features and CEE ports can only be configured through the CEE CLI interface, which is accessed by entering the **cmsh** command from the Fabric OS shell.

The system starts up with the default Fabric OS configuration and the CEE startup configuration. After logging in, you are in the Fabric OS shell. For information on accessing the CEE commands from the Fabric OS shell, see .

Some Fabric OS commands are available in the CEE shell. Enter the **Fabris OS ?** command at the CEE CLI privileged EXEC mode command prompt to view the available Fabric OS commands. The traditional Fabric OS command help found in the Fabric OS shell is not available through the CEE shell.

NOTE

The CEE configuration is not affected by the **configUpload** and **configDownload** commands entered in the Fabric OS shell.

Saving your configuration changes

Any configuration changes made to the switch are written into the running-config file. This is a dynamic file that is lost when the switch reboots. During the boot sequence, the switch resets all configuration settings to the values in the startup-config file.

To make your changes permanent, you must use either the **write memory** command or the **copy** command to commit the running-config file to the startup--config file.

Saving configuration changes with the copy command

Perform this task from privileged EXEC mode.

Enter the **copy** command to save the running-config file to the startup-config file.

```
switch#copy running-config startup-config
```

Saving configuration changes with the write memory command

Perform this task from privileged EXEC mode.

Enter the **write memory** command to save the running-config file to the startup-config file.

```
switch# write memory
Overwrite the startup config file (y/n): y
Building configuration...
```

CEE CLI RBAC permissions

Role-Based Action Control (RBAC) defines the capabilities that a user account has based on the role the account has been assigned. Table 2 displays the permissions matrix for CEE. Permissions are specifically defined as follows:

- OM—When you enter the **cmsh** command, you are put directly into privileged EXEC mode.
- O—When you enter the **cmsh** command, you are limited to EXEC mode.
- N—You are not allowed access to the CEE CLI.

TABLE 2   CEE RBAC permissions

Root	Factory	Admin	User	Operator	SwitchAdmin	FabricAdmin	ZoneAdmin	BasicSwitchAdmin	SecurityAdmin
OM	OM	OM	O	N	O	OM	N	N	O

O = observe, OM = observe and modify, N = access not allowed

Accessing the CEE CLI through the console or Telnet

The procedure to access the CEE CLI is the same through either the console interface or through a Telnet session; both access methods bring you to the login prompt.

NOTE
While this example uses the **admin** role to log in to the switch, any role listed in the "CEE CLI RBAC permissions" section can be used.

```
switch login: admin
Password:
switch:admin> cmsh
switch#
```

To return to the Fabric OS CLI, enter the following command.

```
switch#exit
switch:admin>
```

NOTE
Multiple users can use Telnet and issue commands using EXEC mode and privileged EXEC mode.

Accessing the CEE CLI from the Fabric OS shell

To enter the CEE CLI from the Fabric OS shell, enter the following command.

```
switch:admin> cmsh
switch#
```

To return to the Fabric OS shell, enter the following command.

```
switch#exit
switch:admin>
```

CEE CLI command modes

Figure 1 displays the CEE CLI command mode hierarchy.

FIGURE 1   CEE CLI command mode hierarchy
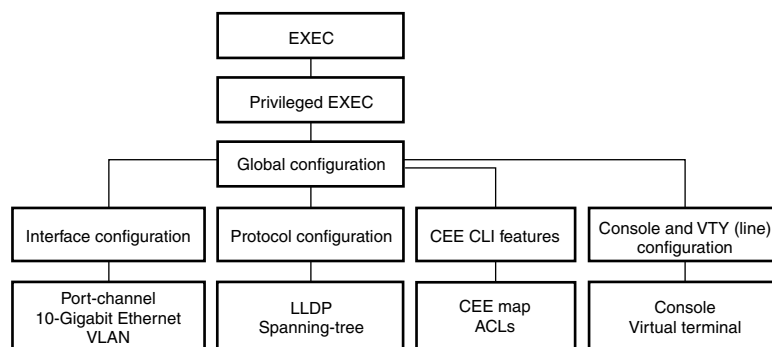
Table 3 lists the CEE CLI command modes and describes how to access them.

NOTE
At system startup, if you try to enter privileged EXEC mode before the system has fully booted, the following message is displayed:

```
%Info: Please wait. System configuration is being loaded.
```

After the system has fully booted, a RASlog message indicates that the CEE CLI is ready to accept configuration commands.

TABLE 3   CEE CLI command modes

Command mode	Prompt	How to access the command mode	Description
EXEC	`switch>`	Enter the **cmsh** command at the Fabric OS prompt after you have logged in as an appropriate user.	Display running system information and set terminal line parameters.
Privileged EXEC	`switch#`	From the EXEC mode, enter the **enable** command.	Display and change system parameters. Note that this is the administrative mode and also includes EXEC mode commands.
Global configuration	`switch(config)#`	From the EXEC mode, enter the **configure terminal** EXEC command.	Configure features that affect the entire switch.
Interface configuration	Port-channel: `switch(conf-if-po-63)#` 10-Gigabit Ethernet (CEE port): `switch(conf-if-te-0/1)#` VLAN: `switch(conf-if-vl-1)#`	From the global configuration mode, specify an interface by entering one of the following commands: • **interface port-channel** • **interface tengigabitethernet** • **interface vlan**	Access and configure individual interfaces.
Protocol configuration	LLDP: `switch(conf-lldp)#` Spanning-tree: `switch(conf-mstp)#` `switch(conf-rstp)#` `switch(conf-stp)#`	From the global configuration mode, specify a protocol by entering one of the following commands: • **protocol lldp** • **protocol spanning-tree mstp** • **protocol spanning-tree rstp** • **protocol spanning-tree stp**	Access and configure protocols.

TABLE 3   CEE CLI command modes (Continued)

Command mode	Prompt	How to access the command mode	Description

Feature configuration	CEE map:
	`switch(config-ceemap)#`
	
	Standard ACL:
	`switch(conf-macl-std)#`
	
	Extended ACL:
	`switch(conf-macl-ext)#`
		From the global configuration mode, specify a CEE feature by entering one of the following commands:
		• **cee-map**
		• **mac access-list**
			Access and configure CEE features.
			
			Identify traffic based on the MAC addresses, such as VLAN IDs and different encapsulations.
			
			Standard Access Control Lists filter the traffic on a source address and block traffic close to a destination.
			
			Extended Access Control Lists block traffic based on any given packet attribute.

Console and VTY (line) configuration	`switch(config-line)#`	From the global configuration mode, configure a terminal connected through the console port by entering the **line console** command. Configure a terminal connected through a Telnet session by entering the **line vty** command.	Configure a terminal connected through the console port or a terminal connected through a Telnet session. After you apply the access list to an interface, a Virtual Teletype (VTY), or through a command using the access list keyword, it becomes effective.

NOTE
Pressing **Ctrl+Z** or entering the **end** command in any mode returns you to privileged EXEC mode. Entering **exit** in any mode returns you to the previous mode.

CEE CLI keyboard shortcuts

Table 4 lists CEE CLI keyboard shortcuts.

TABLE 4   CEE CLI keyboard shortcuts

Keystroke	Description
Ctrl+B or the left arrow key	Moves the cursor back one character.
Ctrl+F or the right arrow key	Moves the cursor forward one character.
Ctrl+A	Moves the cursor to the beginning of the command line.
Ctrl+E	Moves the cursor to the end of the command line.
Esc B	Moves the cursor back one word.
Esc F	Moves the cursor forward one word.
Ctrl+Z	Returns to privileged EXEC mode.
Ctrl+P or the up arrow key	Displays commands in the history buffer with the most recent command displayed first.
Ctrl+N or the down arrow key	Displays commands in the history buffer with the most recent command displayed last.

NOTE
In EXEC and privileged EXEC modes, use the **show history** command to list the commands most recently entered. The switch retains the history of the last 1000 commands entered.

Using the do command as a shortcut

You can use the **do** command to save time when you are working in any configuration mode and you want to run a command in EXEC or privileged EXEC mode.

For example, if you are configuring an LLDP and you want to execute a privileged EXEC mode command, such as the **dir** command, you would first have to exit the LLDP configuration mode. However, by using the **do** command with the **dir** command, you can ignore the need to change configuration modes, as shown in the following example.

```
switch(conf-lldp)#do dir
Contents of flash://
   -rw-r-----          1276   Wed Feb  4 07:08:49 2009    startup_rmon_config
   -rw-r-----          1276   Wed Feb  4 07:10:30 2009    rmon_config
   -rw-r-----          1276   Wed Feb  4 07:12:33 2009    rmon_configuration
   -rw-r-----          1276   Wed Feb  4 10:48:59 2009    starup-config
```

Displaying CEE CLI commands and command syntax

Enter a question mark (**?**) in any command mode to display the list of commands available in that mode.

```
switch>?
Exec commands:
enable    Turn on privileged mode command
  exit       End current mode and down to previous mode
  help       Description of the interactive help system
  logout     Exit from the EXEC
  quit       Exit current mode and down to previous mode
  show       Show running system information
  terminal   Set terminal line parameters
```

To display a list of commands that start with the same characters, type the characters followed by the question mark (**?**).

```
switch>e?
  enable  Turn on privileged mode command
  exit    End current mode and down to previous mode
```

To display the keywords and arguments associated with a command, enter the keyword followed by the question mark (**?**).

```
switch#terminal ?
  length  Set number of lines on a screen
  no      Negate a command or set its defaults
```

If the question mark (**?**) is typed within an incomplete keyword, and the keyword is the only keyword starting with those characters, the CLI displays help for that keyword only.

```
switch#show d?
  dot1x  IEEE 802.1X Port-Based Access Control
  <cr>
```

If the question mark (**?**) is typed within an incomplete keyword but the keyword matches several keywords, the CLI displays help for all the matching keywords.

```
switch#show i?
  interface  Interface status and configuration
  ip         Internet Protocol (IP)
```

The CEE CLI accepts abbreviations for commands. The following example is the abbreviation for the **show qos interface all** command.

```
switch#sh q i a
```

If the switch does not recognize a command after **Enter** is pressed, an error message displays.

```
switch#hookup
       ^
% Invalid input detected at '^' marker.
```

If an incomplete command is entered, an error message displays.

```
switch#show
% Incomplete command.
```

CEE CLI command completion

To automatically complete the spelling of commands or keywords, begin typing the command or keyword and then press **Tab**. For example, at the CLI command prompt, type **te** and press **Tab**:

```
switch#te
```

The CLI displays:

```
switch#terminal
```

If there is more than one command or keyword associated with the characters typed, the CEE CLI displays all choices. For example, at the CLI command prompt, type **show l** and press **Tab**:

```
switch#show l
```

The CLI displays:

```
switch#show l
lacp  line  lldp
```

CEE CLI command output modifiers

You can filter the output of the CEE CLI **show** commands using the output modifiers described in Table 5.

TABLE 5   CEE CLI command output modifiers

Output modifier	Description
append	Appends the output to a file.
redirect	Redirects the command output to the specified file.
include	Displays the command output that includes the specified expression.
exclude	Displays the command output that excludes the specified expression.
append	Appends the command output to the specified file.
begin	Displays the command output that begins with the specified expression.

TABLE 5   CEE CLI command output modifiers (Continued)

Output modifier	Description
last	Displays only the last few lines of the command output.
tee	Redirects the command output to the specified file. Note that this modifier also displays the command output.
FLASH	Redirects the output to flash memory.

CEE Commands

advertise dcbx-fcoe-app-tlv

Advertises application Type, Length, Values (TLVs) to ensure interoperability of traffic over the Data Center Bridging eXchange protocol (DCBX), which runs over LLDP to negotiate an FCoE application TLV.

Synopsis   **advertise dcbx-fcoe-app-tlv**

no advertise dcbx-fcoe-app-tlv

Operands   None

Defaults   Advertise is enabled.

Command Modes   Protocol LLDP configuration mode

Description   Use this command to advertise application TLVs to ensure interoperability of traffic over DCBX packets. Converged Enhanced Ethernet (CEE) parameters related to FCoE must be negotiated before FCoE traffic can begin on a CEE link. An FCoE application TLV is exchanged over LLDP, which negotiates information such as FCoE priority, and Priority Flow Control (PFC) pause. Use the **no advertise dcbx-fcoe-app-tlv** command to return to the default setting.

Usage Guidelines   None

Examples   None

See Also   advertise dot1-tlv, advertise dot3-tlv, advertise optional-tlv

advertise dcbx-fcoe-logical-link-tlv

Advertises to any attached device the FCoE status of the logical link.

Synopsis **advertise dcbx-fcoe-logical-link-tlv**

no advertise dcbx-fcoe-logical-link-tlv

Operands None

Defaults Advertise is enabled.

Command Modes Protocol LLDP configuration mode

Description Use this command to advertise to any attached device the FCoE status of the logical link. Use the **no advertise dcbx-fcoe-logical-link-tlv** command to return to the default setting.

Usage Guidelines None

Examples None

See Also advertise dcbx-fcoe-app-tlv, advertise dcbx-iscsi-app-tlv

advertise dcbx-iscsi-app-tlv

Advertises application Type, Length, Values (TLVs) to ensure interoperability of traffic over the Data Center Bridging eXchange protocol (DCBX), which runs over LLDP to negotiate an iSCSI application TLV.

Synopsis   **advertise dcbx-iscsi-app-tlv**

no advertise dcbx-iscsi-app-tlv

Operands   None

Defaults   Advertise is enabled.

Command Modes   Protocol LLDP configuration mode

Description   Use this command to advertise application TLVs to ensure interoperability of traffic over DCBX packets. Converged Enhanced Ethernet (CEE) parameters related to iSCSI must be negotiated before iSCSI traffic can begin on a CEE link. An iSCSI application TLV is exchanged over LLDP, which negotiates information such as iSCSI priority, and Priority Flow Control (PFC) pause. Use the **no advertise dcbx-iscsi-app-tlv** command to return to the default setting.

Usage Guidelines   None

Examples   None

See Also   advertise dcbx-fcoe-app-tlv

advertise dcbx-tlv

Advertises to any attached device mandatory Data Center Bridging eXchange protocol (DCBX) Type, Length, Values (TLVs).

Synopsis	**advertise dcbx-tlv**
	no advertise dcbx-tlv
Operands	None
Defaults	Advertise is enabled.
Command Modes	Protocol LLDP configuration mode
Description	Advertises to any attached device mandatory Data Center Bridging eXchange protocol (DCBX) Type, Length, Values (TLVs). Use the **no advertise dcbx-tlv** command to return to the default setting.
Usage Guidelines	None
Examples	None
See Also	advertise dot1-tlv, advertise dot3-tlv, advertise optional-tlv

advertise dot1-tlv

Advertises to any attached device IEEE 802.1 organizationally specific Type, Length, Value (TLV).

Synopsis   **advertise dot1-tlv**

no advertise dot1-tlv

Operands   None

Defaults   Advertise is disabled.

Command Modes   Protocol LLDP configuration mode

Description   Use this command to advertise to any attached device IEEE 802.1 organizationally specific Type, Length, Value (TLV). Use the **no advertise dot1-tlv** command to return to the default setting.

Usage Guidelines   None

Examples   None

See Also   advertise dot3-tlv, advertise dcbx-tlv, advertise optional-tlv

advertise dot3-tlv

Advertises to any attached device IEEE 802.3 organizationally specific Type, Length, Value (TLV).

Synopsis	**advertise dot3-tlv** **no advertise dot3-tlv**
Operands	None
Defaults	Advertise is disabled.
Command Modes	Protocol LLDP configuration mode
Description	Use this command to advertise to any attached device IEEE 802.3 organizationally specific Type, Length, Value (TLV). Use the **no advertise dot3-tlv** command to return to the default setting.
Usage Guidelines	None
Examples	None
See Also	advertise dot1-tlv, advertise dcbx-tlv, advertise optional-tlv

advertise optional-tlv

Advertises the optional TLVs.

Synopsis	**advertise optional-tlv {management-address | port-description | system-capabilities | system-description | system-name}** **no advertise optional-tlv**

Operands   **management-address**
                         Describes the MAC address or IP address of the switch.

port-description   Describes information about the interface. This includes the name of the manufacturer, the product name, and the version of the interface hardware or software.

system-capabilities   Describes the capabilities of the device and its primary function.

system-description   Describes the system firmware version and the current image running on the system. This value is defined by the **system-description** command.

system-name   Describes the name of the system. This value is defined by the **system-name** command.

Defaults   Advertise is enabled.

Command Modes   Protocol LLDP configuration mode

Description   Use this command to display the optional TLVs. Use the **no advertise optional-tlv** command to return to the default setting.

Usage Guidelines   None

Examples   The following examples show how to advertise all of the options:

```
switch(conf-lldp)#advertise optional-tlv management-address
switch(conf-lldp)#advertise optional-tlv port-description
switch(conf-lldp)#advertise optional-tlv system-capabilities
switch(conf-lldp)#advertise optional-tlv system-name
switch(conf-lldp)#advertise optional-tlv system-description
```

See Also   system-description, system-name

bridge-priority

Specifies the priority of the bridge.

Synopsis	**bridge-priority** *priority*
	no bridge-priority
Operands	*priority* Specifies the bridge priority. The range of valid values is from 0 through 61440.
Defaults	The default priority is 32678.
Command Modes	Protocol Spanning Tree mode
Description	Use this command to set the bridge priority for the common instance. Using a lower priority value indicates that the bridge might become root. Use the **no bridge-priority** command to return to the default settings.
Usage Guidelines	This command must be used to specify the priority of the bridge. The priority values can be set only in increments of 4096.
Examples	To specify the bridge priority:

```
switch#configure terminal
switch(config)#protocol spanning-tree stp
switch(conf-stp)#bridge-priority 8192
```

See Also   protocol spanning-tree

cee

Applies the CEE map to an interface.

Synopsis   **cee default**

no cee

Operands   **default**   The CEE map name.

Defaults   The only map name allowed is "default".

Command   Interface configuration mode
Modes

Description Applies the configured CEE map to the interface.

Usage   Use **no cee** to remove the map from the interface.
Guidelines

Examples   Example of applying the CEE map to an interface.

```
switch(config)#interface tengigabit 0/1
switch(conf-if-te-0/1)#cee default
```

See Also   cee-map

cee-map

Enters the CEE map configuration mode.

Synopsis   **cee-map default**

no cee-map default

Operands   **default**   The CEE map name.

Defaults   The only map name allowed is "default".

Command Modes   Global configuration mode

Description   Only a single CEE map is allowed, named "default". It is created when the switch boots up.

Usage Guidelines   Use **no cee-map default** to revert to the default values for the map.

Examples   The initial configuration of the default CEE map is:

```
switch(config)#cee-map default
 priority-group-table 2 weight 40 pfc
 priority-group-table 3 weight 60
 priority-table 2 2 2 1 2 2 2 2
```

See Also   cee, fcoe-map

channel-group

Enables Link Aggregation on an interface.

Synopsis	**channel-group** *number* **mode** {**active** | **passive** | **on**} {**type standard** | **brocade**}
	no channel-group

Operands

number	Specifies a Link Aggregation Group (LAG) port channel-group number to which this link should administratively belong to. The range of valid values is from 1 through 63.
mode	Specifies the mode of Link Aggregation.
active	Enables the initiation of LACP negotiation on an interface.
passive	Disables LACP on an interface.
on	Enables static link aggregation on an interface.
type	Specifies the type of LAG.
standard	Specifies the 802.3ad standard-based LAG.
brocade	Specifies the Brocade proprietary hardware-based trunking.

Defaults By default, the type is set to **standard**.

Command Modes Interface configuration mode

Description Use this command to add an interface to a port-channel specified by the channel-group number. This command enables link aggregation on an interface, so that it may be selected for aggregation by the local system. Use the **no channel-group** command to remove the port-channel members.

Usage Guidelines Only a maximum of 24 LAGs can be created. Note the following guidelines:

- A maximum of four link aggregation groups can be created per switch when the **type** is set to **brocade**.
- A maximum of four links can become part of a single aggregation group when the **type** is set to **brocade** and they must be on the same port-channel.
- Links 0 through 7 belong to port-channel 1; links 8 through 15 belong to port-channel 2, and links 16 through 23 belong to port-channel 3.
- For the **standard** type, a maximum of 16 links can be aggregated per aggregation group and they can be members of any port-channel.

Examples To set the channel-group number to 4 and the mode to active:

```
switch(conf-if)#channel-group 4 mode active
```

See Also interface

cisco-interoperability

Configures the switch to interoperate with some legacy Cisco switches.

Synopsis	**cisco-interoperability** {**disable**| **enable**}	
Operands	**disable**	Disables Cisco interoperability for the Multiple Spanning Tree Protocol (MSTP) switch.
	enable	Enables Cisco interoperability for the MSTP switch.
Defaults	Cisco interoperability is disabled.	
Command Modes	Multiple Protocol Spanning Tree mode	
Description	Use this command to enable or disable the switch to interoperate with some legacy Cisco switches. For some switches, the MSTP field Version 3 Length does not adhere to the current standards.	
Usage Guidelines	If Cisco interoperability is required on any switch in the network, then all switches in the network must be compatible, and therefore enabled using this command for interoperability with a Cisco switch.	
Examples	To enable Cisco interoperability on a switch:	

```
switch#configure terminal
switch(config)#protocol spanning-tree mstp
switch(conf-mstp)#cisco-interoperability enable
```

To disable Cisco interoperability on a switch:

```
switch#configure terminal
switch(config)#protocol spanning-tree mstp
switch(conf-mstp)#cisco-interoperability disable
```

See Also	None

clear counters

Clears statistics on one or all interfaces on the switch.

Synopsis   **clear counters** {**all** | **access-list mac** *access_list_name* | {**interface port-channel** *number* | **tengigabitethernet** *slot/port* | *slot*}}

Operands   **all**   Specifies to clear statistics on all interfaces.

access-list mac *access_list_name*
                                  Specifies the name of the MAC access list.

interface   Use this keyword to specify any of the following interfaces:

    port-channel *number*
                                  Specifies the port-channel number. The range of valid values is from 1 through 63.

    tengigabitethernet
                                  Specifies a valid 10 Gbps Ethernet interface.

    slot   Specifies a valid slot number.

    port   Specifies a valid port number.

slot   Specifies the slot number of the line card. For the Brocade 8000 switch, the slot number is always 0 (zero).

Description   Use this command to clear statistics on one or on all interfaces.

Command Modes   Privileged EXEC mode

Defaults   None

Usage Guidelines   The **clear counters all** command does not clear counters for any of the protocol daemon statistics, such as LLDP, LACP, MSTP, and so on.

Examples   To clear the statistics for 10 Gbps Ethernet interface 0/1:

```
switch#clear counters interface tengigabitethernet 0/1
```

To clear the statistics for the MAC access list named "test":

```
switch#clear counters access-list mac test
```

See Also   show interface

clear counters access-list mac

Clears all the Media Access Control (MAC) access control list (ACL) counters for all interfaces that have an ACL applied on them or for a specific interface.

Synopsis	**clear counters access-list mac** *name* {**interface**	**port-channel** *number*	**tengigabitethernet** *slot/port*	**vlan** *vlan_id*}

Operands.

name	Specifies the name of the MAC ACL.

interface tengigabitethernet
Specifies a valid 10 Gbps Ethernet interface.

slot	Specifies a valid slot number.
port	Specifies a valid port number.

port-channel *number*
Specifies the port-channel number. The range of valid values is from 1 through 63.

vlan *vlan_id*	Specifies the VLAN number. The range of valid values is from 1 through 3583.

Defaults   None

Command Modes   Privileged EXEC mode

Description   Use this command to clear counters for all MAC ACL counters, or for a specific interface for the MAC ACL.

Usage Guidelines   If the **interface** keyword is not specified, then ACL counters on all interfaces that have this ACL applied are cleared. There are 255 ACL counters supported per port group.

Examples   To clear counters for the configured MAC ACL named test on an interface:

```
switch#clear counters access-list mac test interface tengigabitethernet 0/1
```

To clear counters for the configured MAC access list named test on all interfaces on which this ACL is applied:

```
switch#clear counters access-list mac test
```

See Also   show mac access-group, show statistics access-list mac

clear dot1x statistics

Clears all 802.1X statistics.

Synopsis	**clear dot1x statistics**
Operands	None
Defaults	None
Command Modes	Privileged access mode
Description	Use this command to clear all accumulated port authentication statistics on all ports.
Usage Guidelines	None
Examples	To clear dot1x statistics:

```
switch#clear dot1x statistics
```

See Also	clear dot1x statistics interface

clear dot1x statistics interface

Clears the 802.1X statistics for a port.

Synopsis   **clear dot1x statistics interface** [**tengigabitethernet** *slot/port*]

Operands   **tengigabitethernet**

Specifies a valid 10 Gbps Ethernet interface.

slot   Specifies a valid slot number.

port   Specifies a valid port number.

Defaults   None

Command Modes   Privileged access mode

Description   Use this command to clear all of the dot1x statistics for a specific interface port.

Usage Guidelines   None

Examples   To clear dot1x statistics on a port:

```
switch#clear dot1x statistics interface tengigabitethernet 0/1
```

See Also   clear dot1x statistics

clear ip igmp group

Clears information related to learned groups in the IGMP module.

Synopsis   **clear ip igmp group** {*A.B.C.D* {**interface tengigabitethernet** *slot/port* | **interface port-channel** *number* | **interface vlan** *vlan_id*} | **interface tengigabitethernet** *slot/port* | **interface port-channel** *number* | **interface vlan** *vlan_id*}

Operands   *A.B.C.D*   Specifies the group address, as a subnet number in dotted decimal format (for example, 10.0.0.1), as the allowable range of addresses included in the multicast group.

interface tengigabitethernet
                                Specifies a valid 10 Gbps Ethernet interface.

  slot   Specifies a valid slot number.

  port   Specifies a valid port number.

interface port-channel *number*
                                Specifies the interface is a port-channel. The range of valid values is from 1 through 63.

interface vlan *vlan_id*
                                Specifies which VLAN interface to display the snooping configuration-related information. The range of valid values is from 1 through 3583.

Defaults   None

Command Modes   Privileged EXEC mode

Description   Use this command to clear the group information in the IGMP database, including entries for either a specific group on all interfaces or specific groups on specific interfaces.

Usage Guidelines   None

Examples   To clear information for a learned group:

```
switch#clear ip igmp group 10.0.0.1 interface tengigabitethernet 0/1
```

See Also   None

clear ip igmp groups

Clears information related to learned groups in the IGMP protocol module.

Synopsis	**clear ip igmp groups**
Operands	None
Defaults	None
Command Modes	Privileged EXEC mode
Description	Use this command to clear all IGMP group information in the IGMP database.
Usage Guidelines	None
Examples	To clear information for all groups in IGMP:

```
switch#clear ip igmp groups
```

See Also	None

clear lacp

Clears the Link Aggregation Control Protocol (LACP) counters on a specific port-channel.

Synopsis   **clear lacp** *number* **counters**

Operands   *number*   Specifies the port channel-group number. The range of valid values is from 1
                                      through 63.

                 counters   Clears traffic counters.

Defaults   None

Command   Privileged EXEC mode
Modes

Description Use this command to clear the LACP counters per specified channel-group.

Usage   None
Guidelines

Examples   To clear the LACP counters for a specific port-channel:

                     switch#**clear lacp 10 counters**

See Also   show lacp counter

clear lacp counters

Clears the Link Aggregation Control Protocol (LACP) counters on all port-channels.

Synopsis   **clear lacp counters**

Operands   None

Defaults   None

Command Modes   Privileged EXEC mode

Description   Use this command to clear the LACP counters for all port-channels.

Usage Guidelines   None

Examples   To clear the counters for all port-channels:

```
switch#clear lacp counters
```

See Also   show lacp counter

clear lldp neighbors

Clears the Link Layer Discovery Protocol (LLDP) neighbor information on all or specified interfaces.

Synopsis	**clear lldp neighbors** [**interface tengigabitethernet** *slot/port*]

Operands **interface tengigabitethernet**
Specifies a valid 10 Gbps Ethernet interface for which to clear the LLDP neighbor information.

 slot Specifies a valid slot number.

 port Specifies a valid port number.

Defaults None

Command Modes Privileged EXEC mode

Description Use this command to clear the LLDP neighbor information about the devices learned through an interface.

Usage Guidelines If the **interface** operand is not specified, this command clears the LLDP neighbor information received on all the interfaces.

Examples To clear the LLDP neighbor information for all interfaces:

```
switch#clear lldp neighbors
```

To clear the LLDP neighbor information for a specific interface:

```
switch#clear lldp neighbors interface tengigabitethernet 0/1
```

See Also show lldp statistics

clear lldp statistics

Clears LLDP statistics for all interfaces or a specified interface.

Synopsis | **clear lldp statistics** [**interface tengigabitethernet** *slot/port*]

Operands | **interface tengigabitethernet**
Specifies a valid 10 Gbps Ethernet interface for which to clear the LLDP statistics.

slot | Specifies a valid slot number.

port | Specifies a valid port number.

Defaults | None

Command Modes | Privileged EXEC mode

Description | Use this command to clear LLDP statistics for all interfaces or a specified interface.

Usage Guidelines | If the **interface** operand is not specified, this command clears all the LLDP statistics on all interfaces.

Examples | To clear all the LLDP statistics for all interfaces:

```
switch#clear lldp statistics
```

To clear all the LLDP statistics for a specific interface:

```
switch#clear lldp statistics interface tengigabitethernet 0/1
```

See Also | show lldp neighbors

clear mac-address-table dynamic

Clears all dynamic entries in the mac-address tables.

Synopsis   **clear mac-address-table dynamic** { **address** *value* | **interface** [**port-channel** value | **tengabitethernet** slot/port] | **vlan** vlan_id}

Operands   **address** *value*   Clears the addresses for the specified MAC address .

interface port-channel *value*
                        Clears the addresses for the port-channel interface number. The rage of valid values is from 1 through 63.

interface tengigabitethernet
                        Clears the addresses for the 10 Gbps Ethernet interface.

slot   Specifies a valid slot number.

port   Specifies a valid port number.

interface vlan vlan_id
                        Clears the addresses for the specified VLAN. The range of valid values is from 1 through 3583.

Defaults   None

Command   Privileged EXEC mode
Modes

Description   This command clears all dynamic entries in the mac-address tables.

Usage   None
Guidelines

Examples   None

See Also   None

clear spanning-tree counter

Clears all spanning-tree counters on the interface.

Synopsis	**clear spanning-tree counter** {**interface**| **port-channel** *number*	**tengigabitethernet** *slot/port*}

Operands   **interface**   Specifies the interface on which to clear the spanning-tree counters.

port-channel *number*
Specifies the port-channel number. The range of valid values is from 1 through 63.

tengigabitethernet
Specifies a valid 10 Gbps Ethernet interface.

slot   Specifies a valid slot number.

port   Specifies a valid port number.

Defaults   None

Command
Modes   Privileged EXEC mode

Description   Use this command to clear the spanning-tree counters on the interface.

Usage
Guidelines   If the **interface** operand is not specified, spanning-tree counters are cleared for all interfaces.

Examples   To clear spanning-tree counters for all interfaces:

```
switch#clear spanning-tree counter
```

To clear spanning-tree counters for a 10 Gbps Ethernet interface:

```
switch#clear spanning-tree counter interface tengigabitethernet 0/1
```

To clear spanning-tree counters for port-channel 23:

```
switch#clear spanning-tree counter interface port-channel 23
```

See Also   show spanning-tree

copy

Copies one file to another location.

Synopsis   **copy** *source-file-url destination-file-url*

Operands   *source-file-url*   Specifies location of the source file to be copied using one of the following formats:

flash	Copies from URL [flash://]filename
FTP	Copies from URL ftp://[username[:password]@server/path]
SCP	Copies from URL scp://[username[:password]@server/path]

destination-file-url   Specifies the destination file using one of the following formats:

flash	Copies to URL [flash://]filename
FTP	Copies to URL ftp://[username[:password]@server/path]
SCP	Copies to URL scp://[username[:password]@server/path]
running-config	Copies to the current running configuration.
startup--config	Copies to the current startup configuration file.

Defaults   None

Command Modes   Privileged EXEC mode

Description   Use this command to copy a file to another location.

Usage Guidelines   The following guidelines apply when using this command:

- An error displays if there is no startup configuration file; for example:

```
switch #copy startup-config file2
% Error: No Startup-config.
```

- Use the **write memory** command to add entries in the startup configuration file.
- Use the **write erase** command to delete entries from the startup configuration file.

Examples   To copy the source file to a remote machine using FTP:

```
switch#copy ftp://user@10.10.10.10/file1 file2
Source password[]?
```

To copy the source file from a remote machine using SCP:

```
switch#copy scp://user:password@10.10.10.10/file1 file2
```

To copy the source file from a local switch:

```
switch#copy flash://file1 file2
```

To copy the startup configuration file to the local switch:

```
switch#copy startup-config file2
Building configuration...
```

To copy the startup configuration file to a remote server through flash:

```
switch#copy startup-config flash://file2
Building configuration...
```

To copy the startup configuration file to a remote server through FTP:

```
switch#copy startup-config ftp://admin@10.10.10.10/file2
Source password[]?
Building configuration...
```

To copy the startup configuration file to a remote server through SCP:

```
switch#copy startup-config scp://admin@10.10.10.10/file2
Source password[]?
Building configuration...
```

See Also   write erase

debug dot1x packet

Displays information about 802.1x traffic information.

Synopsis	**debug dot1x packet** {**all**	**interface tengigabitethernet** *slot/port* {**both**	**detail**	**tx**	**rx**}}
	no debug dot1x packet {**all**	**interface tengigabitethernet** *slot/port* {**both**	**detail**	**tx**	**rx**}}

Operands

all   Echoes all packets.

interface tengigabitethernet
                           Specifies a valid 10 Gbps Ethernet interface.

    slot   Specifies a valid slot number.

    port   Specifies a valid port number.

both   Echoes all 802.1X traffic

detail   Echoes detailed packet information

rx   Echoes received tracing only

tx   Echoes transmitted tracing only

Defaults   None

Command Modes   Privileged EXEC mode

Description   This command displays information about 802.1x traffic information.

Usage Guidelines   Use the **debug dot1x packet** command to disable debugging.

Examples   None

See Also   None

debug ip igmp all

Displays all IGMP information.

Synopsis   **debug ip igmp {all | group** *A.B.C.D* **| interface tengigabitethernet** *slot/port* **| interface port-channel** *number*| **interface vlan** *vlan_id*}

no debug ip igmp {all | group *A.B.C.D* **| interface tengigabitethernet** *slot/port*}

Operands   **all**   Displays all values.

group *A.B.C.D*   Specifies the group address, as a subnet number in dotted decimal format (for example, 10.0.0.1), as the allowable range of addresses included in the multicast group.

interface tengigabitethernet
                        Specifies a valid 10 Gbps Ethernet interface.

slot   Specifies a valid slot number.

port   Specifies a valid port number.

interface port-channel *number*
                        Specifies the interface is a port-channel. The range of valid values is from 1 through 63.

interface vlan *vlan_id*
                        Specifies which VLAN interface to display the snooping configuration-related information. The range of valid values is from 1 through 3583.

Defaults   None

Command   Privileged EXEC mode
Modes   EXEC mode

Description   Displays all of the IGMP packets received and sent, and IGMP host-related events.

Usage   Use the **no debug ip igmp** command to disable debugging.
Guidelines

Examples   None

See Also   None

debug lacp

Enables debugging for the Link Aggregation Control Protocol (LACP).

Synopsis	**debug lacp** {**all** | **cli** | **ha** | **event** | **nsm** | **pdu** {**rx all** | **rx interface tengigabitethernet** *slot/port*} | **tx all** | **tx interface tengigabitethernet** *slot/port*}| **sync** | **timer** | **trace level** *number*} **no debug lacp** {**all** | **cli** | **event** | **nsm** | **pdu** {**rx all** | rx **interface tengigabitethernet** *slot/port*} | **tx all** | **tx interface tengigabitethernet** *slot/port*}| **sync** | **timer** | **trace level** *number*}

Operands	**all**	Turns on all debugging.
	cli	Turns on command line interface (CLI) debugging.
	ha	Turns on High Availablity debugging.
	event	Turns on event debugging.
	nsm	Turns on Network Services Module (NSM) debugging.
	pdu	Turns on protocol data unit (PDU) debugging.
	rx all	Turns on debugging for received LACP packets on all interfaces.
	rx interface	Turns on debugging for received LACP packets on the specified interface.
	interface tengigabitethernet	Specifies the 10 Gbps Ethernet interface.
	slot	Specifies the slot number.
	port	Specifies the port number.
	tx all	Turns on debugging for transmitted LACP packets on all interfaces.
	tx interface	Turns on debugging for transmitted LACP packets on the specified interface.
	interface tengigabitethernet	Specifies the 10 Gbps Ethernet interface.
	slot	Specifies the slot number.
	port	Specifies the port number.
	sync	Turns on debugging for LACP sync transitions.
	timer	Turns on debugging for LACP timers.
	trace level *number*	Specifies the trace level number. The range of valid values is from 1 through 7.

Defaults	By default, debugging is not turned on. The default trace level is 6.
Command Modes	Privileged EXEC mode EXEC mode
Description	Use this command to enable debugging for Link Aggregation Control Protocol (LACP). Use the **no debug** command to disable debugging.

Usage Guidelines   To display debug outputs on a specific cmsh session, use the **terminal monitor** command.

Examples   To enable debugging of LACP PDUs for transmitted and received packets on all interfaces:

```
switch#debug lacp pdu tx all
switch#debug lacp pdu rx all
switch#show debug lacp
 LACP rx debugging is on
 LACP tx debugging is on
```

See Also   show debug lacp

debug lldp packet

Enables debugging for Link Layer Discovery Protocol (LLDP).

Synopsis   **debug lldp packet** {**all** | **interface tengigabitethernet** *slot/port*} {**both** | **detail** {**both** | **rx** | **tx** } | **rx** | **tx**}

no debug lldp packet { **all** | **interface tengigabitethernet** *slot/port* }

Operands   **all**   Turns on LLDP packet debugging on all interfaces.

interface tengigabitethernet
                 Specifies the 10 Gbps Ethernet interface.

slot   Specifies the slot number.

port   Specifies the port number.

both   Turns on debugging for both transmit and receive packets.

detail   Turns on debugging with detailed information.

rx   Turns on debugging for only received LLDP packets.

tx   Turns on debugging for only transmitted LLDP packets.

Defaults   By default, debugging is not turned on.

Command Modes Privileged EXEC mode

EXEC mode

Description   Use this command to enable debugging for Link Layer Discovery Protocol (LLDP).

Usage Guidelines To display debugging outputs on a particular cmsh session, use the **terminal monitor** command. Use the **no debug lldp packet** command to disable debugging.

Examples   To enable debugging of LLDP for both received and transmitted packets on 10 Gbps Ethernet interface 0/1:

```
switch#debug lldp packet interface tengigabitethernet 0/1 both
switch#show debug lldp
LLDP debugging status:
Interface te0/1    : Transmit Receive
```

See Also   show debug lldp

debug spanning-tree

Enables debugging for the Spanning Tree Protocol.

Synopsis	**debug spanning-tree** {**all** | **bpdu** {**rx** | **tx** {**all** | **interface port-channel** *number* | **interface tengigabitethernet** *slot/port*}}}
	no debug spanning-tree {**all** | **bpdu** {**rx** | **tx** {**all** | **interface port-channel** *number* | **interface tengigabitethernet** *slot/port*}}}

Operands	**all**	Turns on spanning-tree packet debugging on all interfaces.
	bpdu	Turns on Bridge Protocol Data Unit debugging.
	rx	Turns on debugging for only received spanning-tree packets.
	tx	Turns on debugging for only transmitted spanning-tree packets.
	interface port-channel *number*	
		Specifies the port-channel interface. The range of valid values is from 1 through 63.
	interface tengigabitethernet	
		Specifies the 10 Gbps Ethernet interface.
	slot	Specifies the slot number.
	port	Specifies the port number.

Defaults	By default, debugging is not turned on.
Command Modes	Privileged EXEC mode
	EXEC mode
Description	Use this command to enable debugging for the Spanning Tree Protocol.
Usage Guidelines	To display debugging outputs on a particular cmsh session, use the **terminal monitor** command.
	Use the **no debug** command to disable debugging.
Examples	To enable debugging of spanning-tree packets for both Rx and Tx on 10 Gbps Ethernet interface 0/1:

```
switch#debug spanning-tree bpdu rx interface tengigabitethernet 0/1
switch#debug spanning-tree bpdu tx interface tengigabitethernet 0/1
switch#show debug spanning-tree
MSTP debugging status:
  Spanning-tree rx debugging is off
    Te 0/1 rx is on
  Spanning-tree tx debugging is off
    Te 0/1 tx is on
```

See Also	show debug spanning-tree

delete

Deletes a specified file from flash memory.

Synopsis   **delete** *filename*

Operands   *filename*   Specifies the name of the file to be deleted from flash memory on the local switch using the following format: [flash://]filename.

Defaults   There is no default configuration for this command.

Command Modes   Privileged EXEC mode

Description   Use this command to delete a file from flash memory. After the file is deleted, it cannot be restored.

Usage Guidelines   None

Examples   To delete a file from flash memory:

```
switch#delete file1
% Warning: File will be deleted (from flash:)!
 Continue?(y/n):y

or

switch#delete flash://file1
% Warning: File will be deleted (from flash:)!
 Continue?(y/n):y
```

See Also   copy

deny (extended ACLs)

Configures a MAC address rule to drop traffic based on the source and destination MAC addresses.

Synopsis	**deny** {**any**	**host** *MAC _ACL*	*MAC_ACL*} {**any**	**host** *MAC _ACL*	*MAC _ACL*} {*EtherType*	**arp**	**fcoe**	**ipv4**} [**count**]
	no deny {**any**	**host** *MAC _ACL*	*MAC_ACL*} {**any**	**host** *MAC _ACL*	*MAC _ACL*} {*EtherType*	**arp**	**fcoe**	**ipv4**}

Operands	**any**	Specifies any source MAC address.
	host *MAC_ACL*	Specifies a host-specific source host MAC address for which to set deny conditions. Use the format HHHH.HHHH.HHHH.
	MAC_ACL	Specifies any MAC address for which to set deny conditions. Use the format HHHH.HHHH.HHHH.
	any	Specifies any destination MAC address.
	host *MAC_ACL*	Specifies a host-specific destination address for which to set deny conditions. Use the format HHHH.HHHH.HHHH.
	MAC_ACL	Specifies any destination address for which to set deny conditions. Use the format HHHH.HHHH.HHHH.
	Ethertype	Specifies the protocol number for which to set the deny conditions. The range of valid values is from 1536 through 65535.
	arp	Specifies to deny the Address Resolution Protocol (0x0806).
	fcoe	Specifies to deny the Fibre Channel over Ethernet Protocol (0x8906).
	ipv4	Specifies to deny the IPv4 protocol (0x0800).
	count	Enables counting of the packets matching the rule.

Defaults	By default, no MAC ACLs are configured.
Command Modes	Feature Access Control List configuration mode
Description	Use this command to configure rules to match and drop traffic based on the source and destination MAC addresses and the protocol type. You can also enable counters for a specific rule. There are 255 ACL counters supported per port group. Use the **no deny** command to remove a rule from the MAC ACL.
Usage Guidelines	The first set of {**any**	**host** *MAC_ACL*	*MAC_ACL*} parameters is specific to the source MAC address. The second set of {**any**	**host** *MAC_ACL*	*MAC_ACL*} parameters is specific to the destination MAC address. The **host** *MAC_ACL* parameters is used for host sources only.
Examples	To create a rule in an extended MAC ACL to drop IPv4 traffic from the source MAC address 0022.3333.4444 to the destination MAC address 0022.3333.5555 and to enable the counting of packets:

```
switch(conf-macl-ext)#deny 0022.3333.4444 0022.3333.5555 ipv4 count
```

To delete a rule from an extended MAC ACL:

```
switch(conf-macl-ext)#no deny 0022.3333.4444 0022.3333.5555 ipv4
```

See Also   mac access-list extended, permit (extended ACLs)

deny (standard ACLs)

Configures a MAC address rule to drop traffic based on the source MAC address.

Synopsis	**deny** {*MAC_ACL* | **any**} [**count**]
	no deny {*MAC_ACL* | **any**}

Operands

MAC_ACL	Specifies the source host MAC address for which to set deny conditions. Use the format HHHH.HHHH.HHHH.
any	Specifies any source MAC address.
count	Enables counting of the packets matching the rule.

Defaults By default, no MAC ACLs are configured.

Command Modes Feature Access Control List configuration mode

Description Use this command to configure rules to match and to drop traffic based on the source MAC address. You can also enable counters for a specific rule. There are 255 ACL counters supported per port group. Use the **no deny** command to remove a rule from the MAC ACL.

Usage Guidelines None

Examples To create a rule in a standard MAC ACL to drop traffic from the source MAC address 0022.3333.4444 and to enable the counting of packets:

```
switch(conf-macl-std)#deny 0022.3333.4444 count
```

To delete a rule from a standard MAC ACL:

```
switch(conf-macl-std)#no deny 0022.3333.4444
```

See Also mac access-list standard, permit (standard ACLs)

description (interface)

Specifies a string that contains the description of the interface.

Synopsis	**description** *line*
	no description
Operands	*line* Specifies characters describing the interface. The maximum number of characters is 64.
Defaults	None
Command Modes	Interface configuration mode
Description	Use this command to specify a string that contains the description of the interface. Use the **no description** command to remove the description.
Usage Guidelines	None
Examples	To set the string describing tengigabitethernet interface 0/1:

```
switch(conf-if-te-0/1)#description converged_101
```

See Also	None

description (LLDP)

Specifies a string that contains the description of the LLDP.

Synopsis   **description** *line*

no description

Operands   *line*   Characters describing LLDP.

Defaults   None

**Command
Modes**   Protocol LLDP configuration mode

Description   Use this command to specify a string that contains the description of the LLDP. Use the **no
description** command to remove the description.

**Usage
Guidelines**   None

Examples   To set the strings describing LLDP:

```
switch(conf-lldp)#description Brocade-LLDP
```

See Also   None

dir

Lists the contents of the current directory.

Synopsis   dir

Operands   None

Defaults   The default is the current directory.

**Command
Modes**   Privileged EXEC mode

EXEC mode

Description   Use this command to list the contents of the current directory.

**Usage
Guidelines**   None

Examples   To list the contents of the current directory:

```
switch#dir
Contents of flash://
   -rw-r-----             1276   Wed Feb  4 07:08:49 2009    startup_rmon_config
   -rw-r-----             1276   Wed Feb  4 07:10:30 2009    rmon_config
   -rw-r-----             1276   Wed Feb  4 07:12:33 2009    rmon_configuration
   -rw-r-----             1276   Wed Feb  4 10:18:15 2009    starup-config
```

See Also   delete

disable

Exits the privileged EXEC mode and returns to the EXEC mode.

Synopsis   **disable**

Operands   None

Defaults   None

Command Modes   Privileged EXEC mode

Description   Use this command to exit the privileged EXEC mode and return to the EXEC mode. See "CEE CLI command modes" on page 3.

Usage Guidelines   This is the only command that allows you to return to the EXEC mode. Using the **exit** or **quit** commands from the privileged EXEC mode ends the session instead of returning to the EXEC mode.

Examples   To return to the EXEC mode:

```
switch#disable
switch>
```

See Also   enable, end, exit, quit

do

Allows you to run commands in EXEC mode from the configuration mode.

Synopsis   **do** *command*

Operands   *command*   Specifies the command you want to run.

Defaults   None

Command Modes   All configuration modes

Description   Use this command to save time when you are configuring the switch in any configuration mode and you want to run a command in the privileged EXEC mode.

Usage Guidelines   None

Examples   To run the **clear counters all** command with the **do** command:

```
switch(config)#do clear counters all
```

To display the contents from the working directory using the **do** command:

```
switch(config)#do dir
Contents of flash://
   -rw-r-----              1276    Wed Feb  4 07:08:49 2009    startup_rmon_config
   -rw-r-----              1276    Wed Feb  4 07:10:30 2009     rmon_config
   -rw-r-----              1276    Wed Feb  4 07:12:33 2009     rmon_configuration
   -rw-r-----              1276    Wed Feb  4 10:48:59 2009      starup-config
```

See Also   None

dot1x authentication

Enables 802.1X on a port.

Synopsis	**dot1x authentication**
	no dot1x authentication
Operands	None
Defaults	None
Command Modes	Interface configuration mode
Description	Use this command to enable dot1x on a port. Use the **no dot1x authentication** command to disable dot1x on the port and remove the configuration from 802.1X management.
Usage Guidelines	None
Examples	To enable dot1x on a port:

```
switch(config)#interface tengigabitethernet 0/1
switch(conf-if-te-0/1)#dot1x authentication
```

See Also	None

dot1x enable

Enables 802.1X authentication globally.

Synopsis	**dot1x enable** **no dot1x enable**
Operands	None
Defaults	By default, authentication is disabled globally.
Command Modes	Global configuration mode
Description	Use this command to enable 802.1X. Use the **no dot1x enable** command to disable 802.1X authentication globally.
Usage Guidelines	None
Examples	To enable 802.1X authentication globally: `switch(config)#`**`dot1x enable`**
See Also	None

dot1x port-control

Controls the authorization of a port state.

Synopsis	**dot1x port-control {auto	force-authorized	force-unauthorized}**
	no dot1x port-control

Operands   **auto**   Enables authentication on a port.

forced-authorized   Forces a port to remain in an authorized state.

force-unauthorized

Forces a port to remain in an unauthorized state.

Defaults   The default port state is **auto.**

Command Modes   Interface configuration mode

Description   Use this command to control the authorization of a port state. Use the **no dot1x port-control** command to return to the default setting.

Usage Guidelines   None

Examples   To enable the port state to auto:

```
switch(config)#interface tengigabitethernet 0/1
switch(conf-if-te-0/1)#dot1x port-control auto
```

See Also   None

dot1x protocol-version

Sets the Extensible Authentication Protocol over LANs (EAPOL) version for 802.1x.

Synopsis   **dot1x protocol-version** *version_value*

Operands   *version_value*   Defines the EAPOL version. The range of valid values is from 1 through 2.

Defaults   The default EAPOL version is 2.

Command Modes   Interface configuration mode

Description   This commands sets the EAPOL version for 802.1x for the interface. There is little difference between version 1 and version 2. You should probably leave it set to version 2 unless you are having a specific issue.

Usage Guidelines   802.1x must be configured for the interface before executing this command.

Examples   None

See Also   None

dot1x quiet-period

Sets the number of seconds that a switch remains quiet between a failed authentication and an attempt to retry authentication.

Synopsis **dot1x quiet-period interval** *seconds*

no dot1x quiet-period

Operands **interval** *seconds* Specifies the time in seconds between attempts at authentication. The range of valid values is from 1 through 65535.

Defaults The default time is 60 seconds.

Command Modes Interface configuration mode

Description Use this command to set the time in seconds after which a switch attempts to perform authentication after a failed authentication. Use the **no dot1x quiet-period** command to return to the default setting. When a switch cannot authenticate a client, the switch remains idle for a quiet-period interval of time, then attempts the operation again.

Usage Guidelines Changing the quiet-period interval time to a number lower than the default can result in a faster response time.

Examples To change the interval time to 200 seconds:

```
switch(config)#interface tengigabiethernet 0/1
switch(conf-if-te-0/1)#dot1x quiet-period 200
```

See Also None

dot1x reauthenticate interface

Initiates reauthentication on a specified interface.

Synopsis **dot1x reauthenticate interface** *name*

Operands *name* Specifies the name of the interface.

Defaults None

Command Modes Privileged EXEC mode

Description Use this command to initiate the reauthentication on a specified interface.

Usage Guidelines None

Examples To initiate reauthentication on interface tengigabitethernet 0/1:

```
switch#dot1x reauthenticate interface tengigabitethernet 0/1
```

See Also None

dot1x reauthentication

Enables reauthentication on a port.

Synopsis	**dot1x reauthentication**
Operands	None
Defaults	None
Command Modes	Interface configuration mode
Description	Use this command to enable reauthentication on a port.
Usage Guidelines	None
Examples	To enable reauthentication on a port:

```
switch(config)#interface tengigabitethernet 0/1
switch(conf-if-te-0/1)#dot1x reauthentication
```

See Also	None

dot1x reauthMax

Sets the maximum number of times that a port attempts to reauthenticate.

Synopsis   **dot1x reauthMax** *number*

no dot1x reauthMax

Operands   *number*   Specifies the maximum number of reauthentication attempts before the port
goes to the unauthorized state. The range of valid values is from 1 through
10.

Defaults   The default number of times that a port attempts authentication is 2.

Command Modes   Interface configuration mode

Description   Use this command to set the maximum number of times that a port attempts to reauthenticate
before a port changes to the unauthorized state. Use the **no dot1x reauthMax** command to return
to the default setting.

Usage Guidelines   None

Examples   To set the maximum number of reauthentication attempts to 5:

```
switch(config)#interface tengigabitethernet 0/1
switch(conf-if-te-0/1)#dot1x reauthMax 5
```

To set the reauthentication maximum to the default value:

```
switch(config)#interface tengigabitethernet 0/1
switch(conf-if-te-0/1)#no dot1x reauthMax
```

See Also   None

dot1x timeout re-authperiod

Sets the number of seconds between reauthorization attempts.

Synopsis	**dot1x timeout re-authperiod** *seconds*
Operands	*seconds* Specifies the seconds between reauthorization attempts. The range of valid values is from 1 through 4294967295.
Defaults	The default time is 3600 seconds.
Command Modes	Interface configuration mode
Description	Use this command to set the number of seconds between reauthorization attempts.
Usage Guidelines	None
Examples	To set 25 seconds as the amount of time between reauthorization attempts:

```
switch(config)#interface tengigabitethernet 0/1
switch(conf-if-te-0/1)#dot1x timeout re-authperiod 25
```

See Also	None

dot1x timeout server-timeout

Sets the authentication server response timeout.

Synopsis	**dot1x timeout server-timeout** *seconds*
Operands	*seconds* Specifies the number of seconds that a switch waits for the transmission of packets by the switch to the authentication server. The range of valid values is from 1 through 65535.
Defaults	The default timeout is 30 seconds.
Command Modes	Interface configuration mode
Description	Use this command to set the authentication server response timeout.
Usage Guidelines	None
Examples	To set 40 seconds as the switch-to-authentication server transmission time:

```
switch(config)#interface tengigabitethernet 0/1
switch(config-if)#dot1x timeout server-timeout 40
```

See Also	None

dot1x timeout supp-timeout

Sets the time in seconds that a switch waits for a response to an Extensible Authentication Protocol (EAP) request frame from the client before resending the request.

Synopsis	**dot1x timeout supp-timeout** *seconds*
Operands	*seconds* Specifies the number of seconds that the switch waits for a response to the EAP frame. The range of valid values is from 1 through 65535.
Defaults	The default timeout is 30 seconds.
Command Modes	Interface configuration mode
Description	Use this command to specify the EAP response timeout.
Usage Guidelines	None
Examples	To set 40 seconds as the switch-to-client retransmission time for the EAP request frame:

```
switch(conf-if-te-0/1)#dot1x timeout supp-timeout 40
```

See Also	None

dot1x timeout tx-period

Sets the number of seconds that the switch waits for a response to an Extensible Authentication Protocol (EAP) request or identity frame from the client before retransmitting the request.

Synopsis   **dot1x timeout tx-period** *seconds*

Operands   *seconds*   Specifies the time in seconds between successive request ID attempts. The range of valid values is from 1 through 65535.

Defaults   The default timeout is 30 seconds.

Command Modes   Interface configuration mode

Description   Use this command to set the interval between successive attempts to request an ID (EAP ID Req).

Usage Guidelines   None

Examples   To set 34 as the number of seconds to wait for a response to an EAP request or identity frame from the client before retransmitting the request:

```
switch(config)#interface tengigabitethernet 0/1
switch(config-if)#dot1x timeout tx-period 34
```

See Also   None

enable

Enables the Privilege EXEC mode.

Synopsis   **enable**

Operands   None

Defaults   None

Command Modes   EXEC mode

Description   Use this command to enable the privileged EXEC command mode.

Usage Guidelines   To return to the EXEC mode from privileged EXEC mode, use the **disable** command. Using the **exit** or **quit** command from the privileged EXEC mode ends the session. See "CEE CLI command modes" on page 3.

Examples   To enable the privileged EXEC mode:

```
switch> enable
switch#
```

See Also   disable

end

Returns to the privileged EXEC command mode from all configuration modes.

Synopsis   **end**

Operands   None

Defaults   None

Command Modes   All configuration modes

Description   Use this command to return to the privileged EXEC command mode from any command mode. See "CEE CLI command modes" on page 3.

Usage Guidelines   None

Examples   To return to the privileged EXEC mode from interface configuration mode:

```
switch(config)#interface tengigabitethernet 0/0
switch(conf-if-te-0/0)#end
switch#
```

See Also   disable, enable, exit

erase flash

Erases all the files from flash memory.

Synopsis	**erase flash**
Operands	None
Defaults	None
Command Modes	EXEC mode
Description	Use this command to erase the files from flash memory.
Usage Guidelines	None
Examples	To erase the files from flash memory:

```
switch#erase flash
%% Warning: Erasing flash filesystem will remove all files in flash://.
Continue to erase?(y/n):y
switch#
```

See Also	dir, delete

error-disable-timeout enable

Enables the timer to bring the interface out of the error-disabled state.

Synopsis	**error-disable-timeout enable**
Operands	None
Defaults	None
Command Modes	Spanning Tree Protocol configuration mode
Description	Use this command to enable the timer to bring the interface out of the disabled state.
Usage Guidelines	When the Spanning Tree Protocol (STP) Bridge Protocol Data Unit (BPDU) guard disables a port, the port remains in the disabled state unless the port is enabled manually. This command allows you to enable the interface from the disabled state.
Examples	To bring the interface out of the disabled state:

```
switch(conf-rstp)#error-disable-timeout enable
```

See Also	error-disable-timeout interval

error-disable-timeout interval

Sets the interface to time out when an error occurs.

Synopsis	**error-disable-timeout interval** *seconds*
Operands	*seconds* Specifies the range of time in seconds for the interface to time out. The range of valid values is from 10 through 1000000.
Defaults	The default is 300 seconds. The timeout feature is disabled.
Command Modes	Spanning Tree Protocol configuration mode
Description	Use this command to set the interface to time out when an error occurs.
Usage Guidelines	None
Examples	To set the timeout value to 10 seconds:

```
switch(conf-rstp)#error-disable-timeout interval 10
```

See Also	error-disable-timeout enable

exec-timeout

Sets the interval that the EXEC command interpreter waits for user input.

Synopsis   **exec-timeout** *minutes seconds*

no exec-timeout

Operands   *minutes*   Specifies the time interval in minutes. The range is from 0 through 35791.

seconds   Specifies the time interval in seconds. The range is from 0 through 2147483.

Defaults   The default is 10 minutes.

Command Modes   Console and VTY (line) configuration mode

Description   Use this command to set the interval; the command interpreter waits for user input detected. Use **no exec-timeout** to disable the wait interval that the command interpreter waits.

Usage Guidelines   The **exec-timeout** command is used to set the time the Telnet session waits for an idle VTY session, before it time outs. An **exec-timeout** setting of 0 (zero) causes the Telnet session to wait indefinitely.

Examples   To configure the wait interval for the console session:

```
switch(config)#line console 0
switch(conf-line)#exec-timeout 2 30

switch(config)#line vty 0 9
switch(conf-line)#exec-timeout 30 30
```

See Also   line console, line vty, show line

exit

Exits the current mode and returns to the previous mode.

Synopsis	**exit**
Operands	None
Defaults	None
Command Modes	All command modes
Description	Use this command to exit the current mode, and return to the previous mode. When used in EXEC and privileged EXEC modes, the **exit** command terminates the session. See "CEE CLI command modes" on page 3.
Usage Guidelines	None
Examples	To exit the Interface configuration mode, and return to the global configuration mode:

```
switch(config)#interface tengigabitethernet 0/0
switch(conf-if-te-0/0)#exit
switch(config)#exit
```

See Also	disable, enable, end

fcoe-map

Activates the FCoE map configuration mode.

Synopsis	**fcoe-map default**
Operands	**default** The FCoE map name.
Defaults	The only map name allowed is "default".
Command Modes	Global configuration mode
Description	Only a single FCoE map is allowed, named "default".
	If you do not execute the **fcoe-vlan** command first, VLAN 1002 is created automatically and becomes the FCoE VLAN. If VLAN 1002 already exists, it is modified to become the FCoE VLAN.
Usage Guidelines	None
Examples	To activate the FCoE map:

```
switch(config)#fcoe-map default
    fcoe-map    : default
    fcoe-vlan   : 1002
```

See Also   cee-map, fcoeport, fcoe-vlan

fcoeport

Applies the FCoE map to an interface.

Synopsis **fcoeport**

Operands None

Defaults None

Command Modes Interface configuration mode

Description Use this command to apply the FCoE map to an interface. You must be in interface configuration mode for a selected interface.

This command makes the interface FCoE-capable. The CEE map is added to the interface, and if the interface is CEE-capable, the FCoE VLAN is added to the interface.

Usage Guidelines None

Examples To enter interface configuration mode and then apply the FCoE map:

```
switch(config)#interface tengigabitethernet 0/20
switch(conf-if-te-0/20)#fcoeport
```

See Also cee-map, fcoe-map, fcoe-vlan

fcoe-priority-bits

Sets the FCoE priority bit for LLDP.

Synopsis   fcoe-priority-bits {none | list *value_1* | *value_2* | *value_3* | *value_4* | *value_5* | *value_6* | *value_7* | *value_8*}

Operands
none	Removes all priority bits.
list	List the FCoE priorities for LLDP.
value_1	The first CoS value. The range of valid values is from 0 through 7.
value_2	The second CoS value. The range of valid values is from 0 through 7.
value_3	The third CoS value. The range of valid values is from 0 through 7.
value_4	The fourth CoS value. The range of valid values is from 0 through 7.
value_5	The fifth CoS value. The range of valid values is from 0 through 7.
value_6	The sixth CoS value. The range of valid values is from 0 through 7.
value_7	The seventh CoS value. The range of valid values is from 0 through 7.
value_8	The eighth CoS value. The range of valid values is from 0 through 7.

Defaults   The default list value is 3.

Command Modes   Protocol LLDP configuration mode

Description   The FCoE priority bit setting is a bitmap setting where each bit position stands for a priority. When you set a bit for a particular priority, that priority setting is applied to the FCoE traffic (that is, the incoming FCoE traffic will have that priority).

FCoE traffic is only supported on the priority level that also has flow control enabled. This means that the final advertised FCoE priority consists of the configured FCoE priority setting and the per-priority flow control setting.

Usage Guidelines   Though setting multiple bits is allowed (exercising the full range of values), there is no reason to set more than one bit because the adapters do not support multiple priorities for FCoE.

Examples   The following example sets the first CoS value:

```
switch(conf-lldp)#fcoe-priority-bits list 0
```

See Also   lldp fcoe-priority-bits

fcoe-vlan

Configures an FCoE VLAN to the FCoE map and deletes the previous FCoE VLAN.

Synopsis	**fcoe-vlan** *vlan_id*

Operands	*vlan_id*	Specifies the VLAN interface. The range of valid values is from 2 through 3583.

Defaults	The default VLAN is 1002.

Command Modes	Feature configuration mode

Description	Use this command to configure an FCoE VLAN to the FCoE map. Using this command deletes the previous FCoE VLAN.

Usage Guidelines	None

Examples	You must first enter FCoE map mode, then configure the VLAN:

```
switch(config)#fcoe-map default
switch(conf-fcoe-map)#fcoe-vlan 1002
```

See Also	cee-map, fcoeport

forward-delay

Specifies the time an interface spends in each of the listening and learning states.

Synopsis   **forward-delay** *seconds*

no forward-delay

Operands   *seconds*   Specifies the range of time in seconds that an interface spends in the
Spanning Tree Protocol (STP) learning and listening states. The range of valid
values is from 4 through 30.

Defaults   The default is 15 seconds.

**Command
Modes**   Spanning Tree Protocol configuration mode

Description Use this command to specify how long the listening and learning states last before the interface
begins the forwarding of all spanning-tree instances. Use the **no forward-delay** command to return
to the default settings.

**Usage
Guidelines**   STP interface states:

- Listening - The interface processes the Bridge Protocol Data Units (BPDUs) and awaits possible
new information that might cause it to return to the blocking state.

- Learning - The interface does not yet forward frames (packets). Instead it learns source
addresses from frames received and adds them to the filtering database (switching database).

- Forwarding - An interface receiving and sending data (normal operation). STP still monitors
incoming BPDUs that can indicate it should return to the blocking state to prevent a loop.

- Blocking - An interface that can cause a switching loop (no user data is sent or received), but it
might go to the forwarding state if the other links in use fail and the STP determines that the
interface may transition to the forwarding state. BPDU data continues to be received in the
blocking state.

When you change the spanning-tree forward-delay time, it affects all spanning-tree instances.
When configuring the forward-delay, the following relationship should be kept:

2*(forward-delay - 1)>=max-age>=2*(hello-time + 1)

Examples   To configure the forward-delay time to 18 seconds:

```
switch(conf-mstp)#forward-delay 18
```

See Also   hello-time, max-age, max-hops

fos

Executes Fabric OS commands from the from the cmsh shell.

Synopsis	**fos** *command*
Operands	*command* Specifies the Fabric OS command.
Defaults	None
Command Modes	Privileged EXEC mode
Description	Use this command to execute the following Fabric OS commands from the cmsh shell.

alishow

cfgactvshow

cfgshow

errclear

errshow

fabricshow

fcoe

firmwareshow

ipaddrshow

nsallshow

nscamshow

nsshow

portcfg

portcfgshow

portdisable

portenable

porterrshow

portlogshow

portperfshow

portrouteshow

portstatsclear

portstatsshow

slotpoweroff

slotpoweron

slotshow

supportsave

switchshow

zoneshow

Usage Guidelines The Fabric OS syntax applies to the listed commands. The **fcoelogincfg**, **fcoelogingroup**, and **fcoelogincfg** commands are not supported from the cmsh shell. See the *Fabric OS Command Reference* for additional information on these commands.

Examples To run the Fabric OS command **switchshow** from the Privilege EXEC mode:

```
switch#fos switchshow
switchName:     switch
switchType:     76.6
switchState:    Online
switchMode:     Native
switchRole:     Principal
switchDomain:   1
switchId:       fffc01
switchWwn:      10:00:00:05:1e:76:42:00
zoning:         OFF
switchBeacon:   OFF

Area Port Media Speed State      Proto
====================================
  0    0   --    N8   No_Module   FC
  1    1   --    N8   No_Module   FC
  2    2   --    N8   No_Module   FC
  3    3   --    N8   No_Module   FC
  4    4   --    N8   No_Module   FC
  5    5   --    N8   No_Module   FC
  6    6   --    N8   No_Module   FC
  7    7   --    N8   No_Module   FC
  8    8   --    10   Online      FCoE F-Port  20:08:00:05:1e:76:42:00
  9    9   --    10   Online      FCoE F-Port  20:09:00:05:1e:76:42:00
 10   10   --    10   Online      FCoE F-Port  20:0a:00:05:1e:76:42:00
 11   11   --    10   Online      FCoE F-Port  20:0b:00:05:1e:76:42:00
 12   12   --    10   Online      FCoE F-Port  20:0c:00:05:1e:76:42:00
 13   13   --    10   Online      FCoE F-Port  20:0d:00:05:1e:76:42:00
```

See Also None

hello

Sets the Hello transmit interval.

Synopsis	**hello** *seconds*
	no hello

Operands	*seconds*	Sets the Hello transmit interval. The range of valid values is from 4 through 180 seconds.

Defaults The default is 30 seconds.

Command Modes Protocol LLDP configuration mode

Description Use this command to set the interval between LLDP hello messages. Use the **no hello** command to return to the default setting.

Usage Guidelines None

Examples To set the time interval to 10 seconds between the transmissions:

```
switch(conf-lldp)#hello 10
```

See Also None

hello-time

Sets the interval between the hello Bridge Protocol Data Units (BPDUs) sent on an interface.

Synopsis   **hello-time** *seconds*

no hello-time

Operands   *seconds*   Specifies the time range in seconds for the interval between the hello BPDUs sent on an interface. The range of valid values is from 1 through 10.

Defaults   The default is 2 seconds.

Command Modes   Spanning Tree Protocol configuration mode

Description   Use this command to configure the spanning-tree bridge hello time, which determines how often the device broadcasts hello messages to other devices. Use the **no hello-time** command to return to the default settings.

Usage Guidelines   When configuring the hello-time, the **max-age** setting must be greater than the **hello-time** setting. The following relationship should be kept:

2*(forward-delay - 1)>=max-age>=2*(hello-time + 1)

Examples   To configure the spanning-tree bridge hello time to 5 seconds:

```
switch(conf-stp)#hello-time 5
```

See Also   forward-delay, max-age

instance

Maps a VLAN to a Multiple Spanning Tree Protocol (MSTP) instance.

Synopsis **instance** *instance_id* {**vlan** *vlan_id* | **priority** *priority_id*}

no instance *instance_id*

Operands *instance_id* Specifies the MSTP instance. The range of valid values is from 1 through 15.

vlan *vlan_id* Specifies the VLAN to map to an MSTP instance. The range of valid values is from 1 through 3583.

priority *priority_id*

Specifies the priority for the specified instance. The range of valid values is from 0 through 61440. The priority values can be set only in increments of 4096.

Defaults The default **priority** value is 32768.

Command Modes Multiple Spanning Tree Protocol configuration mode

Description Use this command to map a VLAN to an MTSP instance. You can group a set of VLANs to an instance. This command can be used only after the VLAN is defined. Use the **no instance** command to unmap the VLAN from the MSTP instance.

Usage Guidelines The following rules apply:

- VLANs must be created before mapping to instances.
- VLAN instance mapping is removed from the configuration if the underlying VLANs are deleted.

Examples To map a VLAN to an MTSP instance:

```
switch(conf-mstp)#instance 1 vlan 2, 3
switch(conf-mstp)#instance 2 vlan 4-6
switch(conf-mstp)#instance 1 priority 4096
```

See Also show spanning-tree

interface

Enters the interface configuration mode to configure an interface.

Synopsis **interface** {**port-channel** *number* | **tengigabitethernet** *slot/port* | **vlan** *vlan id*}

no interface {**port-channel** *number* | **vlan** *vlan id*}

Operands **port-channel** *number*

Specifies the port-channel number. The range of valid values is from 1 through 63.

tengigabitethernet Configures the specified 10 Gbps Ethernet interface.

slot Specifies a valid slot number.

port Specifies a valid port number.

vlan *vlan_id* Specifies the VLAN number. The range of valid values is from 1 through 3583.

Defaults None

Command Modes Global configuration mode

Description Use this command to create or enter the interface configuration mode to configure an interface.

Usage Guidelines None

Examples None

See Also show interface, interface vlan

interface vlan

Configures a VLAN interface.

Synopsis	**interface vlan** *vlan_id*
	no interface vlan *vlan_id*

Operands	*vlan_id*	Specifies the VLAN interface to configure. The range of valid values is from 1 through 3583.

Defaults VLAN 1 is predefined on the switch.

Command Modes Global configuration mode

Description Use this command to configure a VLAN interface. Use the **no interface vlan** *vlan_id* command to delete a VLAN interface.

Usage Guidelines All of the ports on the switch are a part of the default VLAN 1.

Examples To create a VLAN with ID 56:

```
switch(config)#interface vlan 56
switch-cmsh(conf-if-vl-56)#
```

See Also switchport, shutdown (interface)

ip igmp last-member-query-interval

Sets the last member query interval.

Synopsis	**ip igmp last-member-query-interval** *milliseconds*
Operands	*milliseconds* Response time in milliseconds. Valid range is from 100 through 25500 milliseconds.
Defaults	The default value is 1000 milliseconds.
Command Modes	Privileged EXEC mode
Description	The last member query interval is the amount of time in seconds that the IGMP router waits to receive a response to a group query message.
Usage Guidelines	None
Examples	None
See Also	None

ip igmp query-interval

Sets the query interval.

Synopsis   **ip igmp query-interval** *seconds*

Operands   *seconds*   Response time in seconds. Valid range is from 1 through 18000 seconds.

Defaults   The default value is 125 seconds.

Command
Modes
Privileged EXEC mode

Description   The query interval is the amount of time in seconds between IGMP query messages sent by the switch.

Usage
Guidelines
None

Examples   None

See Also   None

ip igmp query-max-response-time

Sets the maximum query response response time.

Synopsis   **ip igmp query-max-response-time** *seconds*

Operands   *seconds*   Response time in seconds. Valid range is 1 to 25 seconds.

Defaults   Default value is 10 seconds.

Command   Privileged EXEC mode
Modes

Description   When a host receives the query packet, it starts counting to a random value, less than the maximum response time. When this timer expires, the switch replies with a report, provided that no other host has responded yet.

Usage   None
Guidelines

Examples   None

See Also   None

ip igmp snooping enable (global version)

Enables the Internet Group Management Protocol (IGMP) snooping for all VLAN interfaces.

Synopsis	**ip igmp snooping enable** **no ip igmp snooping enable**
Operands	None
Defaults	IGMP snooping is globally disabled.
Command Modes	Global configuration mode
Description	Use this command to enable or disable the Internet Group Management Protocol (IGMP) snooping globally. Use the **no ip igmp snooping enable** command to return to the default setting.
Usage Guidelines	This command performs IGMP snooping at the interface level.
Examples	To enable IGMP globally:

```
switch(config)# ip igmp snooping enable
```

See Also   show ip igmp snooping, ip igmp snooping enable (VLAN version)

ip igmp snooping enable (VLAN version)

Enables the Internet Group Management Protocol (IGMP) snooping for a specific VLAN interface.

Synopsis   **ip igmp snooping enable**

no ip igmp snooping enable

Operands   None

Defaults   When snooping is enabled globally, IGMP snooping is enabled on all VLAN interfaces.

Command Modes   Interface VLAN configuration mode

Description   Use this command to enable or disable the Internet Group Management Protocol (IGMP) snooping on a specific VLAN interface.

Usage Guidelines   This command performs IGMP snooping at the VLAN interface level.

Use the no version of this command to disable the function.

Examples   To enable IGMP for a specific VLAN interface, enter Interface VLAN mode and execute the following commands:

```
switch(config)#interface vlan 10
switch(config-if-vl-10)#ip igmp snooping
```

See Also   show ip igmp snooping, ip igmp snooping enable (global version)

ip igmp snooping fast-leave

Enables snooping fast-leave.

Synopsis	**ip igmp snooping fast-leave**
	no ip igmp snooping fast-leave
Operands	None
Description	IGMP snooping fast-leave processing allows the removal of an interface from the forwarding table without sending out group-specific queries to the interface.
Command Modes	Global configuration mode
Defaults	This mode is disabled by default.
Usage Guidelines	Use **no ip igmp snooping fast-leave** to disable this function.
Examples	None
See Also	None

ip igmp snooping mrouter

Configures a VLAN port member to be a multicast router interface.

Synopsis   **ip igmp snooping mrouter {interface tengigabitethernet** *slot/port* **| interface port-channel** *number*}

no ip igmp snooping mrouter {interface tengigabitethernet *slot/port* **| interface port-channel** *number*}

Operands   **interface tengigabitethernet**
                        Specifies a valid 10 Gbps Ethernet interface.

   slot   Specifies a valid slot number.

   port   Specifies a valid port number.

   interface port-channel *number*
                        Specifies the interface is a port-channel. The range of valid values is from 1 through 63.

Defaults   None

Command Modes   Interface VLAN configuration mode

Description   Use this command to configure a VLAN port member to be a multicast router interface.

Usage Guidelines   Use **no ip igmp snooping mrouter** to return the interface to the default setting.

Examples   To configure a VLAN port member to be a multicast router interface:

```
switch(config)#interface vlan 10
switch(config-if-vl-10)#ip igmp snooping mrouter interface tengigabitethernet
0/1
```

See Also   None

ip igmp snooping mrouter-timeout

Configures the multicast router-timeout

Synopsis	**ip igmp snooping mrouter-timeout** *seconds*
Operands	*seconds* Timeout time in seconds. Valid range is from 1 through 60000 seconds.
Defaults	Default value is 300 seconds.
Command Modes	Privileged EXEC mode
Description	This command sets the timeout range for when multicast router ports are automatically learned.
Usage Guidelines	None
Examples	None
See Also	None

ip igmp snooping querier

Enables the IGMP snooping querier functionality for the VLAN.

Synopsis	**ip igmp snooping querier**
	no ip igmp snooping querier
Operands	None
Defaults	This feature is not enabled by default.
Command Modes	Interface VLAN configuration mode
Description	Use this command to activate or deactivate the IGMP snooping querier functionality for the VLAN.
Usage Guidelines	Use **no ip igmp snooping querier** to return to the default setting.
Examples	To enable the IGMP snooping querier feature:

```
switch(config)#interface vlan 10
switch(config-if-vl-10)#ip igmp snooping querier
```

See Also   None

ip igmp static-group

Configures the static group membership entries.

Synopsis   **ip igmp static-group** *A.B.C.D* {**interface tengigabitethernet** *slot/port* | **interface port-channel** *number*}

no ip igmp static-group *A.B.C.D* {**interface tengigabitethernet** *slot/port* | **interface port-channel** *number*}

Operands   *A.B.C.D*   Specifies the group address, as a subnet number in dotted decimal format (for example, 10.0.0.1), as the allowable range of addresses included in the multicast group.

interface tengigabitethernet
Specifies a valid 10 Gbps Ethernet interface.

slot   Specifies a valid slot number.

port   Specifies a valid port number.

interface port-channel *number*
Specifies the interface is a port-channel. The range of valid values is from 1 through 63.

Defaults   None

Command Modes   Privileged EXEC mode

Description   Using **ip igmp static-group**, packets to the group are fast-switched out of the interface, providing that the packets were received on the correct reverse path forwarding (RPF) interface. Static group membership entries are automatically added to the IGMP cache and mroute table.

Usage Guidelines   None

Examples   None

See Also   None

iscsi-priority-bits

Sets the iSCSI priority bitmap.

Synopsis | **iscsi-priority-bits list** *value_1 value_2 value_3 value_4 value_5 value_6 value_7*

no iscsi-priority-bits

Operands | *value_1* | The first priority bitmap value. The valid range of values is from 0 through 7.

value_2 | The second priority bitmap value. The valid range of values is from 0 through 7.

value_3 | The third priority bitmap value. The valid range of values is from 0 through 7.

value_4 | The fourth priority bitmap value. The valid range of values is from 0 through 7.

value_5 | The fifth priority bitmap value. The valid range of values is from 0 through 7.

value_6 | The sixth priority bitmap value. The valid range of values is from 0 through 7.

value_7 | The seventh priority bitmap value. The valid range of values is from 0 through 7.

Defaults | The default value for all value entries is 4.

Command Modes | Protocol LLDP configuration mode

Description | This command allows the user to set the iSCSI priority bitmap for use in the DCBX iSCSI TLV. Use the **no iscsi-priority-bits** command to return to the default value.

Usage Guidelines | None

Examples | None

See Also | None

lacp system-priority

Sets the Link Aggregation Control Protocol (LACP) system priority.

Synopsis	**lacp system-priority** *value*
	no lacp system-priority
Operands	*value* Specifies the value of the LACP system priority. The range of valid values is from 1 through 65535.
Defaults	The default system priority value is 32768.
Command Modes	Global configuration mode
Description	Use this command to set the system priority of a local system. This determines which system is responsible for resolving conflicts in the choice of aggregation groups. Use the **no lacp system-priority** command to reset the system priority to the default value.
Usage Guidelines	Lower numerical values have higher priorities.
Examples	To set the LACP system priority to 68:

```
switch(config)#lacp system-priority 68
```

To clear the configured LACP system priority:

```
switch(config)#no lacp system-priority
```

See Also	None

lacp timeout

Sets the timeout value used by LACP to exchange packets on a dynamic trunk port.

Synopsis	**lacp timeout {long	short}** **no lacp timeout**

Operands	**timeout** Specifies the number of seconds before invalidating a received Link Aggregation Control Protocol (LACP) data unit.
	
	    long Specifies a long timeout value.
	
	    short Specifies a short timeout value.

Defaults	By default, the short timeout value is 3 seconds for Brocade trunks. For standard trunks, the long timeout value is 90 seconds.
Command Modes	Interface configuration mode
Description	Use this command to set the short timeout value for Brocade trunks or to set the long timeout value for standard trunks.
Usage Guidelines	If the LACP_timeout bit (encoded in Actor_State and Partner_State fields) is set to 1, the short timeout takes effect; if set to 0 (zero), the long timeout takes effect. Use the **no lacp timeout** command to return to the default value.
Examples	To set the LACP short timeout value: `switch(conf-if-te-0/1)`**`#lacp timeout short`** To set the LACP long timeout value: `switch(conf-if-te-0/1)`**`#lacp timeout long`**
See Also	None

line console

Configures the Line configuration mode.

Synopsis   **line console 0**

Operands   None

Defaults   None

**Command
Modes**   Global configuration mode

Description   Use this command to configure the Line configuration mode, which allows you to configure the
virtual terminal line settings.

**Usage
Guidelines**   None

Examples   To configure the wait interval for the console session:

```
switch>enable
switch#configure terminal
switch(config)#line console 0
switch(config-line)#exec-timeout 2 30
switch(config-line)#exit
```

See Also   show line

line vty

Configures the virtual terminal line setting to allow you to set the wait time interval for the Telnet session to time out.

Synopsis　　**line vty** *first number last number*

Operands　　*first number*　　　　Specifies the first line number. The range of valid values is from 0 through 31.

last number　　　　Specifies the last line number. The range of valid values is from 0 through 31.

Defaults　　None

Command Modes　　Global configuration mode

Description　　Use this command to configure the virtual terminal line settings to set the exec-timeout.

Usage Guidelines　　None

Examples　　To configure the wait interval for the Telnet session to time out after 2 minutes, 30 seconds if there is no response from the user:

```
switch#configure terminal
switch(config)#line vty 23 31
switch(conf-line)#exec-timeout 2 30
```

See Also　　show line

lldp dcbx-version

Specifies which version of the Data Center Bridging eXchange (DCBX) protocol to use.

Synopsis	**lldp dcbx-version** {**cee** | **pre-cee**} **no lldp dcbx-version**
Operands	**cee** Specifies to use the Converged Enhanced Ethernet (CEE) DCBX version. **pre-cee** Specifies to use the standard DCBX version, which is the version released prior to the CEE DCBX release.
Defaults	None
Command Modes	Interface configuration mode
Description	Use this command to specify which version of the DCBX protocol to use.
Usage Guidelines	Use the **no lldp dcbx-version** command to deactivate this functionality.
Examples	To specify which DCBX version to use: `switch(conf-if-te-0/1)#`**`lldp dcbx-version cee`**
See Also	None

lldp disable

Disables LLDP on the interface.

Synopsis   **lldp disable**

no lldp disable

Operands   None

Defaults   By default, LLDP is enabled at both the global and interface levels.

Command   Interface configuration mode
Modes
LLDP protocol configuration mode

Description   Use this command to disable LLDP on the interface.

Usage   Use the **no lldp disable** command to enable LLDP on the interface.
Guidelines

Examples   To disable LLDP on the interface.

```
switch(conf-if-te-0/1)#lldp disable
```

See Also   None

lldp fcoe-priority-bits

Sets the priorities on which FCoE traffic will be allowed.

Synopsis	**lldp fcoe-priority-bits** *value*
	no lldp fcoe-priority-bits
Operands	*value* Specifies the bitmap value. The range of valid values is from 0 through 7.
Defaults	The default value is 3.
Command Modes	Interface configuration mode
Description	Use this command to set the priorities on which FCoE traffic will be allowed.
Usage Guidelines	The **no lldp fcoe-priority-bits** command returns to the default setting.
Examples	To set the priorities on which FCoE traffic will be allowed:

```
switch(conf-if-te-0/1)#lldp fcoe-priority-bits 0xff
```

See Also   protocol lldp

lldp iscsi-priority-bits

Sets the priorities on which iSCSI traffic will be allowed.

Synopsis   **lldp iscsi-priority-bits** *value*

             no lldp iscsi-priority-bits

Operands   *value*   Specifies the bitmap value. The range of valid values is from 0 through 7.

Defaults   The default value is 4.

Command   Interface configuration mode
Modes

Description Use this command to set the priorities on which iSCSI traffic will be allowed. The **no lldp
                 iscsi-priority-bits** command returns to the default setting.

Usage   None
Guidelines

Examples   To set the priorities on which iSCSI traffic will be allowed:

                 switch(conf-if-te-0/1)#**lldp iscsi-priority-bits 0xff**

See Also   protocol lldp

lldp profile

Applies a Link Layer Discovery Protocol (LLDP) profile on an interface.

Synopsis	**lldp profile** *name*
	no lldp profile
Operands	*name* Specifies the profile name.
Defaults	If the parameters are not defined in the profile, the default values are used.
Command Modes	Interface configuration mode
Description	Use this command to apply a Link Layer Discovery Protocol (LLDP) profile on an interface. Use the **no lldp profile** command to delete the profile from the interface.
Usage Guidelines	You must use the **lldp profile** command to create an LLDP profile before you can apply the profile to the interface. Only one LLDP profile can exist at any time for a particular interface. When this command is not present, the parameters defined in the global LLDP configuration are used.
Examples	To apply an LLDP profile on an interface:

```
switch(conf-if-te-0/1)#lldp profile test
```

See Also   protocol lldp

logout

Exits from EXEC and privileged EXEC mode.

Synopsis **logout**

Operands None

Defaults None

Command Modes Privileged EXEC mode

EXEC mode

Description Exits from EXEC and privileged EXEC command mode. See "CEE CLI command modes" on page 3.

Usage Guidelines None

Examples None

See Also None

mac access-group

Applies rules specified in a MAC ACL to traffic entering an interface.

Synopsis   **mac access-group** *name* **in**

                no mac access-group *name*

Operands   *name*   Specifies the name of the standard or extended MAC access list.

                in   Specifies to filter inbound packets only.

Default   There are no access lists applied to the interface.

Command Modes   Interface configuration mode

Description   Use this command to apply a MAC ACL to a Layer 2 or a VLAN interface. You create the MAC ACL by using the **mac access-list** global configuration command. Use the **no mac access-group** command to remove the MAC ACL from the interface.

Usage Guidelines   You can assign one MAC ACL (standard or extended) to an interface.

When a packet is received on an interface with a MAC ACL applied, the switch checks the rules in the ACL. If any of the rules match, the switch permits or drops the packet, according to the rule. If the specified ACL does not exist, the switch permits all the packets.

Examples   To apply a MAC ACL named macacl2 on an interface:

```
switch(conf-if)#mac access-group macacl2 in
```

To remove a MAC ACL named macacl2 from an interface:

```
switch(conf-if)#no mac access-group macacl2
```

See Also   mac access-list extended, mac access-list standard, show statistics access-list mac

mac access-list extended

Creates and assigns a name to the extended MAC access list.

Synopsis   **mac access-list extended** *name*

no mac access-list extended *name*

Operands   *name*   Assigns a name to the extended MAC access list. The maximum character limit is 63.

Defaults   None

Command Modes   Global configuration mode

Description   Use this command to create an extended MAC access list. If the ACL is already created, this command puts the switch in the extended MAC access-list configuration mode. Use the **no mac access-list extended** command to remove the access list.

Extended ACLs allow you to filter traffic based on the following:

- Source MAC address
- Destination MAC address
- EtherType

You can apply named extended MAC ACLs to VLANs and to Layer 2 interfaces.

Usage Guidelines   Standard and extended MAC ACLs cannot share the same name.

Examples   To create a extended MAC ACL named mac1:

```
switch(config)#mac access-list extended mac1
switch(conf-macl-ext)#
```

To delete a extended MAC ACL named mac1:

```
switch(config)#no mac access-list extended mac1
```

See Also   deny (extended ACLs), permit (extended ACLs), show statistics access-list mac

mac access-list standard

Creates and assigns a name to the standard MAC access list.

Synopsis   **mac access-list standard** *name*

no mac access-list standard *name*

Operands   *name*   Assigns a name to the standard standard MAC access list. The maximum character limit is 63.

Defaults   None

Command Modes   Global configuration mode

Description   Use this command to create a standard MAC access list. If the ACL is already created, this command puts the switch in the standard MAC access-list configuration mode. Use the **no mac access-list standard** command to remove the access list.

Standard ACLs allow you to filter traffic based on the source MAC address. You can apply named standard MAC ACLs to VLANs and to Layer 2 interfaces.

Usage Guidelines   Standard and extended MAC ACLs cannot share the same name.

Examples   To create a standard MAC ACL named mac1:

```
switch(config)#mac access-list standard mac1
switch(conf-macl-std)#
```

To delete a standard MAC ACL named mac1:

```
switch(config)#no mac access-list standard mac1
```

See Also   deny (standard ACLs), permit (standard ACLs), show statistics access-list mac

mac-address-table

Use this command to set the aging time or to add static addresses to the MAC address table.

Synopsis   **mac-address-table** {**aging-time** *seconds*| **static** *mac-addr* **forward** {**port-channel** *number* | **tengigabitethernet** *slot/port* | **vlan** *vlan_id*}}

no mac-address-table {**aging-time** | **static** *mac-addr* **forward** {**port-channel** *number* | **tengigabitethernet** *slot/port* | **vlan** *vlan_id*}}

Operands   **aging-time** *seconds*

Specifies the time in seconds that a learned MAC address will persist after the last update. If the aging time is set to zero (0), it means that aging is disabled. The range of valid values is from 10 through 100000.

static *mac-addr*   Specifies the Media Access Control (MAC) address (unicast or multicast) to add to the address table. Packets with this destination address received in the specified VLAN are forwarded to the specified interface.

forward   Forwards the MAC address to the interface.

port-channel *number*

Specifies the port-channel number. The range of valid values is from 1 through 63.

tengigabitethernet

Specifies a valid 10 Gbps Ethernet interface.

slot   Specifies a valid slot number.

port   Specifies a valid port number.

vlan *vlan_id*   Specifies the VLAN number. The range of valid values is from 1 through 3583.

Defaults   The default aging time is 300 seconds.

Command Modes   Global configuration mode

Description   Use this command to set the aging time or to add static addresses to the MAC address table.

Usage Guidelines   The **vlan** keyword is mandatory because the switch only supports independent VLAN learning (IVL). Use the **no mac-address-table** version of this command to disable functionality.

Examples   To add the static address 0011.2222.3333 to the MAC address table with a packet received on VLAN 100:

```
switch(config)#mac-address-table static 0011.2222.3333 forward
tengigabitethernet 0/1 vlan 100
```

To set the aging time to 10 minutes:

```
switch(config)#mac-address-table aging-time 600
```

See Also   show statistics access-list mac

max-age

Sets the interval time in seconds between messages that the spanning tree receives from the interface.

Synopsis	**max-age** *seconds*
	no max-age

Operands   *seconds*   Configures the Spanning Tree Protocol interface maximum age. The range of valid values is from 6 through 40.

Defaults   The default is 20 seconds.

Command Modes   Spanning Tree Protocol configuration mode

Description   Use this command to control the maximum length of time that passes before an interface saves its configuration Bridge Protocol Data Unit (BPDU) information. Use the **no max-age** command to return to the default configuration.

Usage Guidelines   When configuring the maximum age, the **max-age** setting must be greater than the **hello-time** setting. The following relationship should be kept:

2*(forward-delay - 1)>=max-age>=2*(hello-time + 1)

Examples   To configure the maximum age to 10 seconds:

```
switch(conf-rstp)#max-age 10
```

See Also   hello-time, forward-delay

max-hops

Configures the maximum number of hops for a Bridge Protocol Data Unit (BPDU) in an MSTP region.

Synopsis	**max-hops** *hop_count*
	no max-hops
Operands	*hop_count* Specifies the maximum number of hops for which the BPDU will be valid. The range of valid values is from 1 through 40.
Defaults	The default is 20 hops.
Command Modes	Multiple Spanning Tree Protocol configuration mode
Description	Use this command to configure the maximum number of hops for a BPDU in an MSTP region. This parameter is used by all the instances of the MSTP. Use the **no max-hops** command to return to the default value.
Usage Guidelines	Specifying the maximum hops for a BPDU prevents the messages from looping indefinitely on the interface. When you change the number of hops, it affects all spanning-tree instances.
Examples	To set the number of maximum hops to 25 for all MSTPs:

```
switch(config)#protocol spanning-tree mstp
switch(conf-mstp)#max-hops 25
```

See Also	show spanning-tree mst brief, show spanning-tree mst detail

mode

Sets the LLDP mode on the switch.

Synopsis	**mode tx | rx**
	no mode
Operands	**tx** Specifies to enable only the transmit mode.
	rx Specifies to enable only the receive mode.
Defaults	Both transmit and receive modes are enabled.
Command Modes	Protocol LLDP configuration mode
Description	Use this command to set the LLDP mode on the switch. Use the **no mode** command to return to the default setting.
Usage Guidelines	None
Examples	To enable only the transmit mode:

```
switch(conf-lldp)#mode tx
```

See Also   show lldp

mtu

Specifies the MTU on the interface.

Synopsis   **mtu** *size*

Operands   *size*   Specifies the size of the maximum transmission unit (MTU) of an interface. The allowed MTU size is from 1522 through 9208 bytes.

Defaults   By default, all 10 Gbps Ethernet interfaces use a default MTU of 2500 bytes.

Command Modes   Interface configuration mode

Description   Use this command to specify the MTU on the interface.

Usage Guidelines   Creating MTUs under VLAN interfaces is not valid.

Examples   None

See Also   None

multiplier

Sets the number of consecutive misses of hello messages before LLDP declares the neighbor as dead.

Synopsis	**multiplier** *value*
	no multiplier
Operands	*value* Specifies a multiplier value to use. The range of valid values is from 2 through 10.
Defaults	The default multiplier value is 4.
Command Modes	Protocol LLDP configuration mode
Description	Use this command to set the number of consecutive misses of hello messages before LLDP declares the neighbor as dead. Use the **no multiplier** command to return to the default setting.
Usage Guidelines	None
Examples	To set the number of consecutive misses:

```
switch(conf-lldp)#multiplier 2
```

See Also   hello

permit (extended ACLs)

Configures a MAC address rule to permit traffic based on the source and destination MAC addresses.

Synopsis	**permit** {**any** | **host** *MAC _ACL* | *MAC_ACL*} {**any** | **host** *MAC _ACL* | *MAC _ACL*} {*EtherType* | **arp** | **fcoe** | **ipv4**} [**count**]
	no permit {**any** | **host** *MAC _ACL* | *MAC_ACL*} {**any** | **host** *MAC _ACL* | *MAC _ACL*} {*EtherType* | **arp** | **fcoe** | **ipv4**}

Operands	**any**	Specifies any source MAC address.
	host *MAC_ACL*	Specifies a host-specific source MAC address for which to set permit conditions. Use the format HHHH.HHHH.HHHH.
	MAC_ACL	Specifies any MAC address for which to set permit conditions. Use the format HHHH.HHHH.HHHH.
	any	Specifies any destination MAC address.
	host *MAC_ACL*	Specifies a host-specific source MAC address for which to set permit conditions. Use the format HHHH.HHHH.HHHH.
	MAC_ACL	Specifies any host address for which to set permit conditions. Use the format HHHH.HHHH.HHHH.
	Ethertype	Specifies the protocol number for which to set the permit conditions. The range of valid values is from 1536 through 65535.
	arp	Specifies to permit the Address Resolution Protocol (0x0806).
	fcoe	Specifies to permit the Fibre Channel over Ethernet Protocol (0x8906).
	ipv4	Specifies to permit the IPv4 protocol (0x0800).
	count	Enables counting of the packets matching the filter rule.

Defaults	By default, no MAC ACLs are configured.

Command Modes	Feature Access Control List configuration mode

Description	Use this command to configure rules to match and to permit traffic based on the source and destination MAC addresses, and the protocol type. You can also enable counters for a specific rule. There are 255 ACL counters supported per port group. Use the **no permit** command to remove a rule from the MAC ACL.

Usage Guidelines	The first set of {**any** | **host** *MAC_ACL* | *MAC_ACL*} parameters is specific to the source MAC address. The second set of {**any** | **host** *MAC_ACL* | *MAC_ACL*} parameters is specific to the destination MAC address.

Examples	To create a rule in an extended MAC ACL to permit IPv4 traffic from the source MAC address 0022.3333.4444 to the destination MAC address 0022.3333.5555 and to enable the counting of packets:

```
switch(conf-macl-ext)#permit 0022.3333.4444 0022.3333.5555 ipv4 count
```

To delete a filter rule in an extended MAC ACL:

```
switch(conf-macl-ext)#no permit 0022.3333.4444 0022.3333.5555 ipv4
```

See Also   mac access-list extended, seq (extended MAC ACLs)

permit (standard ACLs)

Configures a MAC address rule to permit traffic based on the source MAC address.

Synopsis	**permit** {*MAC_ACL*	**any**} [**count**] **no permit** {*MAC_ACL*	**any**}
Operands	*MAC_ACL* Specifies the source host MAC address for which to set permit conditions. Use the format HHHH.HHHH.HHHH. **any** Specifies any source MAC address. **count** Enables the counting of the packets matching the rule.
Defaults	By default, no MAC ACLs are configured.
Command Modes	Feature Access Control List configuration mode
Description	Use this command to configure rules to match and to permit traffic based on the source MAC address. You can also enable counters for a specific rule. There are 255 ACL counters supported per port group. Use the **no permit** command to remove a rule from the MAC ACL.
Usage Guidelines	None
Examples	To create a rule in a standard MAC ACL to permit traffic from the source MAC address 0022.3333.4444 and to enable the counting of packets:

```
switch(conf-macl-std)#permit 0022.3333.4444 count
```

To delete a rule from a standard MAC ACL:

```
switch(conf-macl-std)#no permit 0022.3333.4444
```

See Also	mac access-list standard, seq (standard MAC ACLs)

port-channel path-cost

Sets the path-cost behavior.

Synopsis	**port-channel path-cost** {**custom**	**standard**}

Operands	**custom**	Specifies to use the custom behavior, which sets the path-cost changes according to the port-channel's bandwidth.
	standard	Specifies to use the standard behavior, which sets that the path-cost does not change according to the port-channel's bandwidth.

Defaults	The default path-cost is **standard.**

Command Modes	Spanning Tree Protocol configuration mode

Description	Use this command to set the path-cost behavior for the port-channel.

Usage Guidelines	None

Examples   To set the behavior for the path-cost to **custom**:

```
switch(conf-mstp)#port-channel path-cost custom
```

To set the behavior for the path-cost to **standard**:

```
switch(conf-mstp)#port-channel path-cost standard
```

See Also	None

priority-group-table

Configures the bandwidth for each Priority Group.

Synopsis   **priority-group-table** *pgid* [**weight** *weight*] [**pfc**]

no priority-group-table *pgid*

Operands   *pgid*   Specifies the Priority Group ID (PGID) assigned to a Priority Group. The range of valid values is from 0 through 7, and the range from 15.0 through 15.7 is for eight reserved strict priority PGIDs.

weight *weight*   Maps a weight to a Deficit Weighted Round Robin (DWRR) scheduler queue. This parameter is only valid for the DWRR Priority Group. The sum of all DWRR Priority Group weight values must equal 100 percent. The range of valid values is from 1 through 100.

pfc   Enables the Priority-based Flow Control (PFC) for each priority that gets mapped to the Priority Group.

Defaults   There is no default value for the weight. The PFC is disabled.

Command Modes   CEE map configuration mode

Description   Use this command to configure the bandwidth for each Priority Group, to associate a weight to a DWRR scheduler queue, and to enable the PFC.

You can define up to eight additional DWRR Priority Groups with the PGID values in the range from 0 through 7. Strict Priority Groups take priority in order from the lowest PGID value to the highest PGID value. For example, a PGID of 15.0 is a higher priority than a PGID of 15.1 and PGID 15.1 is higher priority than PGID 15.2.

Use the **no priority-group-table** *pgid* command to return the Priority Group to the default values. For the Strict Priority Group, the PGID is still valid, but the PFC is disabled. For the DWRR Priority Group, the PGID is no longer valid and is deleted; the PGID can only be deleted when it is not bound to any Priority-to-Priority Group Table entry.

TABLE 6   Bandwidth allocation to user Priority Groups

PGID	PG%	PFC	Description
0	50	Y	SAN
1	50	N	LAN

Usage Guidelines   A PGID value of 15 is a special value, which allows you to configure priorities with no bandwidth limit. The Strict Priority Groups 15.0 through 15.7 are predefined in the switch.

Examples   To define the CEE map and configure the bandwidth with the Priority Group, use the values in Table 6.

```
switch(config)#cee-map test
switch(conf-ceemap)#priority-group-table 0 weight 50 pfc
switch(conf-ceemap)#priority-group-table 1 weight 50
```

See Also   cee-map, priority-table, show qos maps

priority-table

Provisions the CEE Priority-to-Priority Group Table; this table maps each of the eight ingress CoSs into a Priority Group.

Synopsis   **priority-table** *pgid0 pgid1 pgid2 pgid3 pgid4 pgid5 pgid6 pgid7*

no priority-table

Operands   *pgid0*   Sets the Priority Group ID for all packets with CoS 0.

pgid1   Sets the Priority Group ID for all packets with CoS 1.

pgid2   Sets the Priority Group ID for all packets with CoS 2.

pgid3   Sets the Priority Group ID for all packets with CoS 3.

pgid4   Sets the Priority Group ID for all packets with CoS 4.

pgid5   Sets the Priority Group ID for all packets with CoS 5.

pgid6   Sets the Priority Group ID for all packets with CoS 6.

pgid7   Sets the Priority Group ID for all packets with CoS 7.

Defaults   The default CEE Priority mapping table matches the IEEE 802.1Q recommendation for systems supporting eight traffic classes. The 802.1Q maps CoS 0 (best effort) to Strict Priority Traffic Class 1 (PGID 15.6) and CoS 1 to below best effort Traffic Class 0 (PGID 15.7). All other CoS values go through unchanged; for example, CoS 2 maps to Traffic Class 2 (PGID 15.5), up to CoS 7 and Traffic Class 7 (PGID 15.0).

Command Modes   CEE map configuration mode

Description   Use this command to provision the CEE Priority-to-Priority Group Table. This table maps each of the eight ingress CoSs into a Priority Group. Use the **no priority-table** command to return the Priority mapping table to the default values.

Usage Guidelines   Only a single CoS can be mapped to a PFC-enabled priority queue. The CoS number must be identical to the priority queue number. If your configuration violates this restriction, an error message displays and the Priority Group Table is set back to the default values.

When the CEE map is applied, and the interface is connected to the CNA, only one strict priority PGID (PGID 15.0 to PGID 15.7) is allowed.

TABLE 7   **Mapping of incoming Priority-to-Priority Groups**

Priority	PGID
0	1
1	1
2	0
3	1
4	1
5	1

TABLE 7   Mapping of incoming Priority-to-Priority Groups (Continued)

Priority	PGID
6	1
7	15.0

Examples   To define a CEE map of the incoming Priority-to-Priority Groups, use the values in Table 7.

```
switch(config)#ceemap test
switch(conf-ceemap)#priority-table 1 1 0 1 1 1 1 15.0
```

See Also   cee, cee-map, priority-group-table

profile

Creates an LLDP profile.

Synopsis **profile** *name*

no profile *name*

Operands *name*   Assigns a name to the profile. The valid value is a maximum of 32 characters.

Defaults None

**Command
Modes** Protocol LLDP configuration mode

Description Use this command to create an LLDP profile.

**Usage
Guidelines** When you apply an LLDP profile on an interface using the **lldp profile** command, it overrides the global configuration. If a profile is not present, then the default global profile is used until you create a valid profile. Up to 64 profiles can be created, but the best practice is to limit this to one profile for each port.

Examples To create a profile named test:

```
switch(conf-lldp)#profile test
```

To delete a profile named test:

```
switch(conf-lldp)#no profile test
```

See Also lldp profile

protocol lldp

Enters the Link Layer Discovery Protocol (LLDP) configuration mode.

Synopsis   **protocol lldp**

no protocol lldp

Operands   None

Defaults   The LLDP and DCBX protocols are enabled.

Command Modes   Global configuration mode

Description   Use this command to enter LLDP configuration mode to be able to make changes to the parameters. Use the **no protocol lldp** command to return to the default setting.

Usage Guidelines   None

Examples   To clear all LLDP configurations:

```
switch(config)#no protocol lldp
```

See Also   None

protocol spanning-tree

Creates a context for the specified STP protocol.

Synopsis   **protocol spanning-tree {mstp | rstp | stp}**

no protocol spanning-tree

Operands   **mstp**   Specifies the Multiple Spanning Tree Protocol (MSTP).

rstp   Specifies the Rapid Spanning Tree (RSTP).

stp   Specifies the Spanning Tree Protocol (STP).

Defaults   By default, STP is not enabled. STP is not required in a loop-free topology.

Command   Global configuration mode
Modes

Description   Use this command to create a context for the protocol specified. Use the **no protocol spanning-tree** command to delete the context and all the configurations defined within the context or protocol for the interface.

Usage   Consider enabling STP to detect or avoid loops. You must turn off one form of STP before turning on
Guidelines   another form.

Packet drops or packet flooding may occur if you do not enable STP on all devices connected on both sides of parallel links.

Examples   To enable the Spanning Tree Protocol:

```
switch(config)#protocol spanning-tree stp
```

See Also   show spanning-tree

pwd

Print Working Directory (**pwd**) displays the contents of the current working directory.

Synopsis   **pwd**

Operands   None

Defaults   None

Command Modes   Privileged EXEC mode

EXEC mode

Description   Use this command to view the current working directory.

Usage Guidelines   None

Examples   To view the current working directory:

```
switch#pwd
flash:
```

See Also   None

qos cos

Specifies the interface Class of Service (CoS) value.

Synopsis	**qos cos** *value* **no qos cos**
Operands	*value* Specifies the CoS value. The range of valid values is from 0 through 7.
Defaults	The default CoS value is 0 (zero).
Command Modes	Interface configuration mode
Description	Use this command to specify the interface default CoS value. When the interface ingress QoS Trust is in the untrusted mode, then the Interface default CoS value is applied to all ingress traffic for user priority mapping. When the interface ingress QoS Trust is in the CoS mode, then the interface default CoS value is applied to all non-priority tagged ingress traffic for user priority mapping. Use the **no qos cos** command to return the CoS value to the default.
Usage Guidelines	If the interface is QoS trusted, the CoS value of the interface is used to assign a CoS value to all untagged packets entering the interface.
Examples	To set the interface CoS value to 2: `switch(conf-if-te-0/2)#`**`qos cos 2`** To return the interface CoS value to the default: `switch(conf-if-te-0/2)#`**`no qos cos`**
See Also	qos map cos-mutation, qos trust cos, show qos maps

qos cos-mutation

Applies a CoS-to-CoS mutation QoS map on an interface.

Synopsis **qos cos-mutation** *name*

no qos cos-mutation

Operands *name*   Specifies the name of the CoS-to-CoS mutation map.

Defaults There is no explicit CoS-to-CoS mutation QoS map applied; by default, the inbound CoS equals the outbound CoS.

Command Modes Interface configuration mode

Description Use this command to apply a CoS-to-CoS mutation QoS map on an interface.

Usage Guidelines This command applies a CoS-to-CoS mutation map on an interface. The **qos cos-mutation** command is not available if the interface is in CEE Provisioning mode. Use the **no qos cos-mutation** command to remove the CoS-to-CoS mutation map.

Examples To activate the CoS-to-CoS mutation QoS map on the interface:

```
switch(conf-if-te-0/1)#qos cos-mutation test
```

To remove the CoS-to-CoS mutation QoS map on the interface:

```
switch(conf-if-te-0/1)#no qos cos-mutation
```

See Also qos cos-mutation, show qos maps

qos cos-traffic-class

Applies a CoS-to-Traffic Class QoS map on an interface.

Synopsis   **qos cos-traffic-class** *name*

                no qos cos-traffic-class

Operands   *name*   Specifies the name of a previously created CoS-to-Traffic Class QoS map. Only one CoS-to-Traffic Class QoS map can exist at a time. An existing CoS-to-Traffic Class QoS map must be removed before a new one can be applied.

Defaults   There is no explicit CoS-to-Traffic Class QoS map applied; the implicit behavior is to match the IEEE 802.1Q recommendations for systems supporting eight Traffic Classes.

Command Modes   Interface configuration mode

Description   Use this command to apply a CoS-to-Traffic Class QoS map to an interface. Use the **no qos cos-traffic-class** command to remove the CoS-to-Traffic Class mapping.

Usage Guidelines   This command is not available when the interface is in the CEE Provisioning mode.

Examples   To apply a CoS-to-Traffic Class QoS map to an interface:

```
switch(conf-if-te-0/1)#qos cos-traffic-class test
```

See Also   qos map cos-traffic-class, qos trust cos, qos cos-mutation, show qos maps

qos map cos-mutation

Creates a QoS map for performing CoS-to-CoS mutation.

Synopsis	**qos map cos-mutation** *name cos0 cos1 cos2 cos3 cos4 cos5 cos6 cos7* **no qos map cos-mutation** *name*
Operands	*name* Specifies a unique name across all CoS-to-CoS mutation QoS maps defined within the system. If the named CoS-to-CoS mutation QoS map does not exist, then it is created. If the named CoS-to-CoS mutation QoS map already exists, then it is updated and new mapping is automatically propagated to all interfaces bound to the QoS map. *cos0* Sets the outbound CoS value for all packets with inbound CoS 0. *cos1* Sets the outbound CoS value for all packets with inbound CoS 1. *cos2* Sets the outbound CoS value for all packets with inbound CoS 2 *cos3* Sets the outbound CoS value for all packets with inbound CoS 3. *cos4* Sets the outbound CoS value for all packets with inbound CoS 4. *cos5* Sets the outbound CoS value for all packets with inbound CoS 5. *cos6* Sets the outbound CoS value for all packets with inbound CoS 6. *cos7* Sets the outbound CoS value for all packets with inbound CoS 7.
Defaults	There are no CoS-to-CoS mutation QoS maps defined.
Command Modes	Global configuration mode
Description	Use this command to create a QoS map for performing CoS-to-CoS mutation. A CoS-to-CoS mutation takes an inbound CoS value and maps it to an outbound CoS value. The inbound CoS value is the user priority after any interface ingress QoS trust and interface default CoS policy have been applied. The outbound CoS value is used in selecting Traffic Class and egress packet marking. The default is no CoS-to-CoS mutation QoS maps defined. Use the **no qos map cos-mutation** *name* command to delete the named CoS-to-CoS mutation QoS map. A QoS map can only be deleted if it is not bound to any interface.
Usage Guidelines	None
Examples	To create a CoS-to-CoS mutation QoS map to swap CoS 4 and CoS 5 and apply it on an interface, for example inbound CoS 4 is mapped to outbound CoS 5 and inbound CoS 5 is mapped to outbound CoS 4; all other CoS values go through unchanged: ```switch(config)#qos map cos-mutation test 0 1 2 3 5 4 6 7```
See Also	qos map cos-mutation, show qos maps

qos map cos-traffic-class

Creates a QoS map for performing CoS-to-Traffic Class mapping.

Synopsis **qos map cos-traffic-class** *name tc0 tc1 tc2 tc3 tc4 tc5 tc6 tc7*

no qos map cos-traffic-class

Operands.   *name*   Specifies the CoS-to-Traffic Class QoS map name. If the named CoS-to-Traffic Class QoS map does not exist, then it is created. If the named CoS-to-Traffic Class QoS map already exists, then it is updated and new mappings are automatically propagated to all interfaces bound to the QoS map.

tc0   Sets the Traffic Class value for all packets with outbound CoS 0.

tc1   Sets the Traffic Class value for all packets with outbound CoS 1.

tc2   Sets the Traffic Class value for all packets with outbound CoS 2.

tc3   Sets the Traffic Class value for all packets with outbound CoS 3.

tc4   Sets the Traffic Class value for all packets with outbound CoS 4.

tc5   Sets the Traffic Class value for all packets with outbound CoS 5.

tc6   Sets the Traffic Class value for all packets with outbound CoS 6.

tc7   Sets the Traffic Class value for all packets with outbound CoS 7.

Defaults   There are no CoS-to-Traffic Class QoS maps defined.

Command Modes   Global configuration mode

Description   Use this command to create a QoS map for performing CoS-to-Traffic Class mapping. A CoS-to-Traffic Class QoS map takes an outbound CoS value and maps it to a Traffic Class. The outbound CoS value is used as the packet user priority after applying the configured interface QoS trust, interface default CoS, and CoS-to-CoS mutation policies. Traffic Class is a reference to a scheduler queue and packet servicing policy. Use the **no qos map cos-traffic-class** *name* command to delete the CoS-to-Traffic Class QoS map specified by the name. The CoS-to-Traffic Class QoS map can only be deleted when it is not bound to any interface. All other CoS values go through unchanged. This mapping matches the default behavior recommended in IEEE 802.1Q for systems supporting eight Traffic Classes.

Usage Guidelines   None

Examples   To create a CoS-to-Traffic Class QoS map to map CoS 0 to Traffic Class 1 and CoS 1 to Traffic Class 0:

```
switch(config)#qos map cos-traffic-class test 1 0 2 3 4 5 6 7
```

To delete a CoS-to-Traffic Class QoS map:

```
switch(config)#no qos map cos-traffic-class test
```

See Also   qos trust cos, qos map cos-mutation

qos queue multicast scheduler

Configures the multicast Traffic Class packet expansion scheduler policy. All multicast Traffic Class packet expansion queues are serviced by Deficit Weighted Round Robin (DWRR).

Synopsis **qos queue multicast scheduler dwrr** *mTC0_WEIGHT mTC1_WEIGHT mTC2_WEIGHT mTC3_WEIGHT*

no qos queue multicast scheduler

Operands **dwrr**   Configures the DWRR multicast Traffic Class packet expansion policy.

mTC0_WEIGHT   Sets the DWRR weight for multicast Traffic Class 0 packet expansion in units of bandwidth percentage. The sum of all weight values must equal 100 percent. The range of valid values is from 0 through 100.

mTC1_WEIGHT   Sets the DWRR weight for multicast Traffic Class 1 packet expansion in units of bandwidth percentage. The sum of all weight values must equal 100 percent. The range of valid values is from 0 through 100.

mTC2_WEIGHT   Sets the DWRR weight for multicast Traffic Class 2 packet expansion in units of bandwidth percentage. The sum of all weight values must equal 100 percent. The range of valid values is from 0 through 100.

mTC3_WEIGHT   Sets the DWRR weight for multicast Traffic Class 3 packet expansion in units of bandwidth percentage. The sum of all weight values must equal 100 percent. The range of valid values is from 0 through 100.

Defaults The default weight value is 25 percent bandwidth for each multicast Traffic Class.

Command Modes Global configuration mode

Description Use this command to configure the multicast Traffic Class packet expansion scheduler policy. All multicast Traffic Class packet expansion queues are serviced by Deficit Weighted Round Robin (DWRR). This multicast Traffic Class packet expansion scheduler policy is applied uniformly across the entire system. Use the **no qos queue multicast scheduler** command to return the multicast Traffic Class packet expansion scheduler to the default value.

Usage Guidelines None

Examples To set the multicast Traffic Class packet expansion scheduler for Traffic Class 0 getting 10 percent bandwidth, Traffic Class 1 getting 20 percent bandwidth, Traffic Class 2 getting 30 percent bandwidth, and Traffic Class 3 getting 40 percent bandwidth:

```
switch(config)#qos queue multicast scheduler dwrr 10 20 30 40
```

To return the system to the default multicast Traffic Class packet expansion scheduler policy:

```
switch(config)#no qos queue multicast scheduler
```

See Also qos rcv-queue multicast rate-limit

qos queue scheduler

Configures the Traffic Class packet scheduler policy.

Synopsis   **qos queue scheduler strict-priority** *strict-priority number* **dwrr** *weight0 weight1 weight2 weight3 weight4 weight5 weight6 weight7*

no qos queue scheduler

Operands   **strict-priority**   Configures the Strict Priority Traffic Class policy. All Strict Priority Traffic Classes are serviced before any DWRR Traffic Classes.

strict-priority number
   Sets the number of the Strict Priority Traffic Class. This is the strict priority Traffic Class. For example if the strict priority number is 3, then the Strict Priority Traffic Class are Traffic Classes 7, 6, and 5. The range of valid values is from 0 through 8.

dwrr   Configures the Deficit Weighted Round Robin (DWRR) Traffic Class policy. There are a variable number of DWRR weight values accepted that are dependent on the setting of the strict priority number. The strict priority number plus the number of DWRR weight values must always add up to 8 Traffic Classes.

weight0   Sets the DWRR weight for Traffic Class 0 in units of bandwidth percentage left over after servicing all of the Strict Priority Traffic Classes. The sum of all weight values must equal 100 percent. The *weight0* value is only valid when the strict priority number is less than 8. The range of valid values is from 0 through 100 percent.

weight1   Sets the DWRR weight for Traffic Class 1 in units of bandwidth percentage left over after servicing all of the Strict Priority Traffic Classes. The sum of all weight values must equal 100 percent. The *weight1* value is only valid when the strict priority number is less than 7. The range of valid values is from 0 through 100 percent.

weight2   Sets the DWRR weight for Traffic Class 2 in units of bandwidth percentage left over after servicing all of the Strict Priority Traffic Classes. The sum of all weight values must equal 100 percent. The *weight2* value is only valid when the strict priority number is less than 6. The range of valid values is from 0 through 100 percent.

weight3   Sets the DWRR weight for Traffic Class 3 in units of bandwidth percentage left over after servicing all of the Strict Priority Traffic Classes. The sum of all weight values must equal 100 percent. The *weight3* value is only valid when the strict priority number is less than 5. The range of valid values is from 0 through 100 percent.

weight4   Sets the DWRR weight for Traffic Class 4 in units of bandwidth percentage left over after servicing all of the Strict Priority Traffic Classes. The sum of all weight values must equal 100 percent. The *weight4* value is only valid when the strict priority number is less than 4. The range of valid values is from 0 through 100 percent.

weight5   Sets the DWRR weight for Traffic Class 5 in units of bandwidth percentage left over after servicing all of the Strict Priority Traffic Classes. The sum of all weight values must equal 100 percent. The *weight5* value is only valid when the strict priority number is less than 3. The range of valid values is from 0 through 100 percent.

weight6   Sets the DWRR weight for Traffic Class 6 in units of bandwidth percentage left over after servicing all of the Strict Priority Traffic Classes. The sum of all weight values must equal 100 percent. The *weight6* value is only valid when the strict priority number is less than 2. The range of valid values is from 0 through 100 percent.

weight7   Sets the DWRR weight for Traffic Class 7 in units of bandwidth percentage left over after servicing all of the Strict Priority Traffic Classes. The sum of all weight values must equal 100 percent. The *weight7* value is only valid when the strict priority number is less than 1. The range of valid values is from 0 through 100 percent.

Defaults   The default strict priority value is 8. There is no default value for each weight value.

Command Modes   Global configuration mode

Description   Use this command to configure the Traffic Class packet scheduler policy. Eight Traffic Classes are supported with a configurable number of them being Strict Priority and any remaining ones being serviced by DWRR. This Traffic Class packet scheduler policy is applied uniformly across the entire system. Actual Traffic Class packet scheduling is performed independently by each switch. Use the **no qos queue scheduler** command to return the Traffic Class packet scheduler to the default value.

Usage Guidelines   None

Examples   To set the Traffic Class packet scheduler for Strict Priority Traffic Class 4 and DWRR Traffic Class 4 with Traffic Class 0 getting 10 percent bandwidth, Traffic Class 1 getting 20 percent bandwidth, Traffic Class 2 getting 30 percent bandwidth, and Traffic Class 3 getting 40 percent bandwidth:

```
switch(config)#qos queue scheduler strict-priority 4 dwrr 10 20 30 40
```

To return the system to the default Traffic Class packet scheduler policy:

```
switch(config)#no qos queue scheduler
```

See Also   qos rcv-queue multicast rate-limit

qos rcv-queue multicast rate-limit

Configures a limit on the maximum rate for multicast packet expansion.

Synopsis	**qos rcv-queue multicast rate-limit** *rate* [**burst** *burst-size*] **no qos rcv-queue multicast rate-limit**
Operands	*rate* Specifies the maximum rate for multicast packet expansion in units of packets per second (pkt/s). This places a limit on the sum of the first level expansion. For example, the ingress packets replicated for each egress switch plus the second level expansion. The range of valid values is from 6500 through 20000000 pkt/s. **burst** *burst-size* Configures a limit on the maximum burst size for multicast packet expansion, for example, packet replication. The burst size represents the maximum amount of multicast packet expansion that can be performed back-to-back as a single burst in units of packets (pkt). The range of valid values is from 50 through 65535 pkt.
Defaults	The default burst size is 4096 packets. The default rate value is 3000000 pkt/s.
Command Modes	Global configuration mode
Description	Use this command to configure a limit on the maximum rate for multicast packet expansion. This rate limit is applied uniformly across the entire system. This rate limit is enforced independently by each switch. Use the **no qos rcv-queue multicast rate-limit** command to return the multicast packet expansion rate limit to the default settings.
Usage Guidelines	None
Examples	To lower the maximum multicast packet expansion rate to 10000 pkt/s: `switch(config)#`**`qos rcv-queue multicast rate-limit 10000`** To return the system to the default multicast packet expansion rate limit values: `switch(config)#`**`no qos rcv-queue multicast rate-limit`**
See Also	qos rcv-queue multicast threshold

qos rcv-queue multicast threshold

Configures a limit on the maximum queue depth for multicast packet expansion queues.

Synopsis **qos rcv-queue multicast threshold** *mTC0 mTC1 mTC2 mTC3*

no qos rcv-queue multicast threshold

Operands *mTC0* Sets the Tail Drop Threshold for multicast Traffic Class 0 packet expansion queue in units of packets (pkt). The range of valid values is from 0 through 16383 packets.

mTC1 Sets the Tail Drop Threshold for multicast Traffic Class 1 packet expansion queue in units of packets (pkt). The range of valid values is from 0 through 16383 packets.

mTC2 Sets the Tail Drop Threshold for multicast Traffic Class 2 packet expansion queue in units of packets (pkt). The range of valid values is from 0 through 16383 packets.

mTC3 Sets the Tail Drop Threshold for multicast Traffic Class 3 packet expansion queue in units of packets (pkt). The range of valid values is from 0 through 16383 packets.

Defaults The default is 64 packets for each multicast Traffic Class.

Command Modes Global configuration mode

Description Use this command to configure a limit on the maximum queue depth for multicast packet expansion queues. The individual Tail Drop Threshold is specified for each of the four multicast traffic classes. These Tail Drop Thresholds are applied uniformly across the entire system. These queue depths are enforced independently by each switch. Use the **no qos rcv-queue multicast threshold** command to return the multicast expansion queues to the default value.

Usage Guidelines None

Examples To increase the multicast packet expansion Tail Drop Threshold to 1000 pkt for each multicast Traffic Class:

```
switch(config)#qos rcv-queue multicast threshold 1000 1000 1000 1000 1000 1000
1000 1000
```

To return the system to the default multicast packet expansion Tail Drop Threshold value:

```
switch(config)#no qos rcv-queue multicast threshold
```

See Also qos rcv-queue multicast rate-limit

qos trust cos

Specifies the interface QoS trust mode for incoming traffic.

Synopsis	**qos trust cos**
	no qos trust
Operands	None
Defaults	The QoS trust CoS mode set to the untrusted state.
Command Modes	Interface configuration mode
Description	Use this command to specify the interface ingress QoS trust mode, which controls user priority mapping of incoming traffic. The untrusted mode overrides all incoming priority markings with the interface default CoS. The CoS mode sets the user priority based on the incoming CoS value. If the incoming packet is not priority tagged, then fallback is to the interface default CoS value. Use the **no qos trust** command to return to the default.
Usage Guidelines	When a CEE map is applied on an interface, the **qos trust cos** command is not allowed. The CEE map always puts the interface in the CoS trust mode. This command is not applicable for port-channel interfaces.
Examples	To set the interface QoS to the trust mode:

```
switch(conf-if-te-0/1)#qos trust cos
```

To return the interface QoS to the default value or to the untrusted state:

```
switch(conf-if-te-0/1)#no qos trust
```

When a CEE map is applied, the switch does not allow the **qos trust cos** command and displays the following error:

```
switch(conf-if-te-0/1)#cee demo
switch(conf-if-te-0/1)#qos trust cos
% Error: QoS is not in non-CEE Provisioning mode
```

See Also	qos cos, show qos interface

quit

Exits the current mode and moves down to the previous mode.

Synopsis   **quit**

Operands   None

Defaults   None

Command Modes   All modes

Description   This command exits the current mode and moves to the next higher mode. See "CEE CLI command modes" on page 3.

Usage Guidelines   None

Examples   None

See Also   exit, end

region

Specifies the Multiple Spanning Tree Protocol (MSTP) region.

Synopsis   **region** *region-name*

no region

Operands   *region-name*   Assigns a name to an MSTP region. The *region-name* string has a maximum
length of 32 characters and is case-sensitive.

Defaults   None

**Command
Modes**   Multiple Spanning Tree Protocol configuration mode

Description   Use this command to assign a name to an MSTP region.

**Usage
Guidelines**   Use the **no region** command to delete the name.

Examples   To assign a name to an MSTP region named brocade1:

```
switch(config)#protocol spanning-tree mstp
switch(conf-mstp)#region brocade1
```

See Also   revision, show spanning-tree

rename

Renames a file in flash memory.

Synopsis   **rename** *sourcefile renamedfile*

Operands   *sourcefile*   Specifies the file name to change.

renamedfile   Specifies the new name of the file.

Defaults   None

Command Modes   Privileged EXEC mode

Description   Use this command to rename a file in flash memory.

Usage Guidelines   None

Examples   To rename a file in flash memory:

```
switch#rename file1 file2
switch#dir
Contents of flash://
-rw-r-----              1276   Wed Feb  4 13:16:00 2009 file2
```

See Also   None

resequence access-list mac

Specifies the renumbering of the rules in a MAC ACL.

Synopsis   **resequence access-list mac** {*name* | *seq_num* | *increment*}

Operands   *name*   Specifies the name of a standard or an extended MAC ACL.

          seq_num   Specifies the starting sequence number in the MAC ACL. The range of valid values is from 1 through 65535.

          increment   Specifies a value to increment the sequence number between rules. The range of valid values is from 1 through 65535.

Defaults   None

Command Modes   Privileged EXEC mode

Description   Use this command to reassign sequence numbers to entries of an existing MAC access list.

Usage Guidelines   Reordering the sequence numbers is useful when you need to insert rules into an existing MAC ACL and there are not enough sequence numbers available. When all sequence numbers between rules are exhausted, this command allows the reassigning of new sequence numbers to entries of an existing access list.

Examples   To reorder the rules in a MAC ACL:

```
switch#show running-config access-list mac test
!
mac access-list standard test
 seq 1 permit 0011.2222.3333
 seq 2 permit 0011.2222.4444
 seq 3 permit 0011.2222.5555
 seq 4 deny 0011.2222.6666
!

switch#resequence access-list mac test 10 10

switch#show running-config access-list mac test
!
mac access-list standard test
 seq 10 permit 0011.2222.3333
 seq 20 permit 0011.2222.4444
 seq 30 permit 0011.2222.5555
 seq 40 deny 0011.2222.6666
!
```

See Also   mac access-list extended, mac access-list standard, seq (extended MAC ACLs), seq (standard MAC ACLs)

revision

Assigns a version number to the Multiple Spanning Tree Protocol (MSTP) configuration.

Synopsis	**revision** *number*
	no revision

Operands	*number*	Specifies the revision or version number of the MSTP region. The range of valid values is from 0 through 255.

Defaults The default is 0.

Command Modes Multiple Spanning Tree Protocol configuration mode

Description Use this command to specify the configuration revision number. Use the **no revision** command to return to the default setting.

Usage Guidelines None

Examples To set the configuration revision to 1:

```
switch(config)#protocol spanning-tree mstp
switch(conf-mstp)#revision 1
```

See Also region, show spanning-tree

rmon alarm

Sets alarm conditions.

Synopsis **rmon alarm** *index* *snmp_oid* **interval** *seconds* {**absolute** | **delta**} **rising-threshold** *value* **event** *number* **falling-threshold** *value* **event** *number* **owner** *name*

no rmon alarm index *snmp_oid* **interval** *seconds* {**absolute** | **delta**} **rising-threshold** *value* **event** *number* [**falling-threshold** *value* **event** *number* **owner** *name*

Operands

index	Specifies the alarm index. The range of valid values is from 1 through 65535.
snmp_oid	Specifies the MIB object to monitor. The variable must be in the SNMP OID format, for example, 1.3.6.1.2.1.16.1.1.1.5.65535. The object type must be a counter32.
interval *seconds*	Specifies the alarm sample interval in seconds. The range of valid values is from 1 through 2147483648.
absolute	Sets the sample type as absolute.
delta	Sets the sample type as delta.
rising-threshold *value*	Specifies the alarm rising threshold. The range of valid values is from 0 through 4294967295.
event *number*	Specifies the event for the rising alarm. The range of valid values is from 1 through 65535.
falling-threshold *value*	Specifies the alarm falling threshold. The range of valid values is from 0 through 4294967295.
event *number*	Specifies the event for the falling alarm. The range of valid values is from 1 through 65535.
owner *name*	Specifies the identity of the owner. The maximum number of characters is 32.

Defaults There are no alarms configured.

Command Modes Global configuration mode

Description Use this command to set alarm conditions. Use the **no rmon alarm** command to disable the alarm conditions.

Usage Guidelines None

Examples To set alarm conditions:

```
switch(config)#rmon alarm 100 1.3.6.1.2.1.16.1.1.1.5.65535 interval 5 absolute
rising-threshold 10000 event 100 falling-threshold 1000 event 101 owner admin
```

See Also rmon event, show rmon

rmon collection

Collects Ethernet group statistics on an interface.

Synopsis   **rmon collection** {**stats** *number* [**owner** *name*] | **history** *index* {**buckets** *number* | **interval** *seconds* | **owner** *name*}

no **rmon collection stats** *number* [**owner** *name*]

Operands   **stats**   Specifies RMON ether statistics collection.

number   Specifies the RMON collection control index value. The range of valid values is from 1 through 65535.

owner *name*   Specifies the identity of the owner.

history *index*   vv

buckets *number*

The number of history instances. The range of valid values is from 1 through 65535

interval *seconds*   History sampling interval in seconds. The range of valid values is from 1 through 3600

owner *name*   Specifies the identity of the owner.

Defaults   The collection of RMON statistics is not enabled.

Command Modes   Interface configuration mode

Description   Use this command to collect Ethernet group statistics on an interface.

Usage Guidelines   Buckets refers to the number of history instances that can be configured. If 100 buckets are configured, then 100 unique instances are stored. The 101st entry over-writes the oldest entry.

Use the **no rmon collection** versions of this command to disable the collection of statistics.

Examples   To collect RMON statistics for the owner admin on 10 Gbps Ethernet interface 0/1:

```
switch(config)#interface tengigabitethernet 0/1
switch(conf-if-te-0/1)#rmon collection stats 2 owner admin
```

See Also   show rmon

rmon event

Adds or removes an event in the RMON event table associated to the RMON alarm number.

Synopsis   **rmon event** *index* [**description** *word*] [**log**] [**owner** *name*] [**trap** *word*]

no rmon event *index* [**description** *word*] [**log**] [**owner** *name*] [**trap** *word*]

Operands   *index*   Specifies the RMON event number. The range of valid values is from 1 through 65535.

description *word*   Specifies a description of the event.

log   Generates an RMON log when an event is triggered.

owner *name*   Specifies the owner of the event. The maximum number of characters is 32.

trap *word*   Specifies the SNMP community or string name to identify this trap.

Defaults   There are no events configured.

Command Modes   Global configuration mode

Description   Use this command to add or remove an event in the RMON event table that is associated with an RMON alarm number. Use the **no rmon event** command to remove the event configuration.

Usage Guidelines   None

Examples   To configure an RMON event:

```
switch(config)#rmon event 2 log description "My Errorstoday" owner gjack
```

See Also   show rmon

seq (extended MAC ACLs)

Inserts a rule anywhere in the MAC ACL.

Synopsis	**seq** *value* {**deny** | **permit**} {**any** | **host** *MAC _ACL* | *MAC_ACL*} {**any** | **host** *MAC _ACL* | *MAC _ACL*} {*EtherType* | **arp** | **fcoe** | **ipv4**} [**count**] **no seq** *value*
Operands	*value* Specifies the sequence number for the rule. The range of valid values is from 0 through 65535.

permit   Specifies rules to permit traffic.

deny   Specifies rules to deny traffic.

any   Specifies any source MAC address.

host *MAC_ACL*   Specifies a host-specific source MAC address for which to set permit or deny conditions. Use the format HHHH.HHHH.HHHH.

MAC_ACL   Specifies any source MAC address for which to set permit or deny conditions. Use the format HHHH.HHHH.HHHH.

any   Specifies any destination MAC address.

host *MAC_ACL*   Specifies a host-specific destination address for which to set permit or deny conditions. Use the format HHHH.HHHH.HHHH.

MAC_ACL   Specifies any destination address for which to set permit or deny conditions. Use the format HHHH.HHHH.HHHH.

Ethertype   Specifies the protocol number for which to set the permit or deny conditions. The range of valid values is from 1536 through 65535.

arp   Specifies to permit or deny the Address Resolution Protocol (0x0806).

fcoe   Specifies to permit or deny the Fibre Channel over Ethernet Protocol (0x8906).

ipv4   Specifies to permit or deny the IPv4 protocol (0x0800).

count   Enables the counting of the packets matching the rule.

Defaults	By default, no MAC ACLs are configured.
Command Modes	Feature Access Control List configuration mode
Description	Use this command to insert a rule anywhere in the MAC ACL; it configures rules to match and permits or drops traffic based on the source and destination MAC addresses, and the protocol type. You can also enable counters for a specific rule. There are 255 ACL counters supported per port group. Use the **no seq** *value* command to remove a rule from the MAC ACL.
Usage Guidelines	The first set of {**any** | **host** *MAC_ACL* | *MAC_ACL*} parameters is specific to the source MAC address. The second set of {**any** | **host** *MAC_ACL* | *MAC_ACL*} parameters is specific to the destination MAC address.

Examples   To create a rule in a extended MAC ACL to permit or drop IPv4 traffic from the source MAC address 0022.3333.4444 to the destination MAC address 0022.3333.5555 and to enable the counting of packets:

```
switch(conf-macl-ext)#seq 100 deny 0022.3333.4444 0022.3333.5555 ipv4 count
switch(conf-macl-ext)#seq 1000 permit 0022.3333.4444 0022.3333.5555 ipv4 count
```

To delete a rule from a extended MAC ACL:

```
switch(conf-macl-ext)#no seq 100
```

See Also   deny (extended ACLs), permit (extended ACLs), resequence access-list mac

seq (standard MAC ACLs)

Inserts a rule anywhere in the MAC ACL.

Synopsis	**seq** *value* {**deny** | **permit**} {**any** | **host** *MAC _ACL* | *MAC_ACL*} [**count**] **no seq** *value*

Operands	*value*	Specifies the sequence number for the rule. The range of valid values is from 0 through 65535.
	permit	Specifies rules to permit traffic.
	deny	Specifies rules to deny traffic.
	any	Specifies any source MAC address.
	host *MAC_ACL*	Specifies the host-specific source MAC address for which to set permit or deny conditions. Use the format HHHH.HHHH.HHHH.
	MAC_ACL	Specifies any source MAC address for which to set permit or deny conditions. Use the format HHHH.HHHH.HHHH.
	count	Enables the counting of the packets matching the rule.
Defaults	By default, no MAC ACLs are configured.	
Command Modes	Feature Access Control List configuration mode	
Description	Use this command to configure rules to match and permit or drop traffic based on source and destination MAC address and protocol type. You can also enable counters for a specific rule. There are 255 ACL counters supported per port group. Use the **no seq** *value* command to remove a rule from the MAC ACL.	
Usage Guidelines	None	
Examples	To create a rule in a standard MAC ACL to permit or to drop traffic from the source MAC address 0022.3333.4444 and to enable the counting of packets:	

```
switch(conf-macl-std)#seq 100 deny 0022.3333.4444 count
switch(conf-macl-std)#seq 1000 permit 0022.3333.4444 count
```

To delete a filter rule in a standard MAC ACL:

```
switch(conf-macl-std)#no seq 100
```

See Also	deny (standard ACLs), permit (standard ACLs), resequence access-list mac

show accounting

Displays the audit logs.

Synopsis	**show accounting logs**
Operands	None
Defaults	None
Command Modes	Privileged EXEC mode
	EXEC mode
Description	This command displays the audit logs for the switch, if any exist.
Usage Guidelines	None
Examples	None
See Also	None

show calendar

Displays the current date and time based on the switch hardware clock.

Synopsis   **show calendar**

Operands   None

Defaults   None

Command Modes   Privileged EXEC mode

EXEC mode

Description   Use this command to display the current date and time based on the switch hardware clock.

Usage Guidelines   None

Examples   To display calendar information:

```
switch#show calendar
16:33:30 UTC Tue Feb 14 2009
```

See Also   None

show cee maps

Displays information on the defined CEE maps.

Synopsis   **show cee maps** *name*

Operands   *name*   Restricts the output to report on only the named CEE map.

Defaults   The default behavior without the optional operand is to report on all defined CEE maps.

Command Modes   Privileged EXEC mode

EXEC mode

Description   Use this command to display information on a specified defined CEE map or on all of the defined CEE maps. For each CEE map, the configuration state is displayed with a list of all of the Layer 2 interfaces bound to the CEE map.

Usage Guidelines   None

Examples   To display information on all of the defined CEE maps:

```
switch#show cee maps
CEE Map test
   Precedence 1
   Priority Group Table
     0:  Weight 50, PFC Enabled, TrafficClass 4, BW% 50
     1:  Weight 50, PFC Disabled, TrafficClass 2, BW% 50
     15.0: PFC Disabled, TrafficClass 6
     15.1: PFC Disabled
     15.2: PFC Disabled
     15.3: PFC Disabled
     15.4: PFC Disabled
     15.5: PFC Disabled
     15.6: PFC Disabled
     15.7: PFC Disabled
   Priority Table
     CoS:    0    1    2    3    4    5    6    7
     --------------------------------------------
     PGID:   1    1    0    0    1    1    1 15.0
   FCoE CoS: 3
   Enabled on the following interfaces
   te0/4
```

See Also   cee, cee-map

show clock

Displays the time and date from the system clock.

Synopsis	**show clock**
Operands	None
Defaults	None
Command Modes	Privileged EXEC mode EXEC mode
Description	Use this command to display the time and date from the system clock.
Usage Guidelines	None
Examples	To display the time and date from the system clock:

```
switch#show clock
23:45:55.512800 UTC Wed Feb 18 2009
```

See Also   show calendar

show debug ip igmp

Displays the IGMP packets received and transmitted, as well as related events.

Synopsis **show debug ip igmp**

Operands None

Description This command displays the IGMP packets received and transmitted.

Command Modes Privileged EXEC mode

EXEC mode

Defaults None

Usage Guidelines None

Examples None

See Also None

show debug lacp

Displays the LACP debugging status on the switch.

Synopsis	**show debug lacp**
Operands	None
Defaults	None
Command Modes	Privileged EXEC mode EXEC mode
Description	Use this command to display the LACP debugging status on the switch.
Usage Guidelines	None
Examples	None
See Also	None

show debug lldp

Displays the LLDP debugging status on the switch.

Synopsis   **show debug lldp**

Operands   None

Defaults   None

Command Modes   Privileged EXEC mode

EXEC mode

Description   Use this command to display the LLDP debugging status on the switch.

Usage Guidelines   None

Examples   To display the LLDP debugging status on the switch:

```
switch#show debug lldp
LLDP debugging status:
Interface te0/0    : Transmit Receive  Detail
```

See Also   None

show debug spanning-tree

Displays the STP debugging status on the switch.

Synopsis	**show debug spanning-tree**
Operands	None
Defaults	None
Command Modes	Privileged EXEC mode EXEC mode
Description	Use this command to display the STP debugging status on the switch.
Usage Guidelines	None
Examples	None
See Also	None

show dot1x

Displays the overall state of dot1x on the system.

Synopsis   **show dot1x**

Operands   None

Defaults   None

Command Modes   Privileged EXEC mode

EXEC mode

Description   Use this command to display the overall state of dot1x on the system.

Usage Guidelines   None

Examples   To display the state of the system:

```
switch#show dot1x
802.1X Port-Based Authentication Enabled
PAE Capability:             Authenticator Only
Protocol Version:           2
Auth Server:                RADIUS

RADIUS Configuration
--------------------
Position:                   1
Server Address:             172.21.162.51
Port:                       1812
Secret:                     sharedsecret
Position:                   2
Server Address:             10.32.154.113
Port:                       1812
Secret:                     sharedsecret
```

See Also   None

show dot1x all

Displays detailed 802.1X information for all of the ports.

Synopsis   **show dot1x all**

Operands   None

Defaults   None

Command Modes   Privileged EXEC mode

EXEC mode

Description   Use this command to display detailed 802.1X information for all of the ports.

Usage Guidelines   None

Examples   To display detailed 802.1X information for all of the ports:

```
switch#show dot1x all
802.1X Port-Based Authentication Enabled
PAE Capability:             Authenticator Only
Protocol Version:           2
Auth Server:                RADIUS
RADIUS Configuration
--------------------
Position:                   1
Server Address:             172.21.162.51
Port:                       1812
Secret:                     sharedsecret
Position:                   2
Server Address:             10.32.154.113
Port:                       1812
Secret:                     sharedsecret
802.1X info for interface te0/1
-----------------------------------
Port Control:               Auto
Port Auth Status:           Unauthorized
Protocol Version:           2
ReAuthentication:           Disabled
Auth Fail Max Attempts:     0
ReAuth Max:                 2
Tx Period:                  30 seconds
Quiet Period:               60 seconds
Supplicant Timeout:         30 seconds
Server Timeout:             30 seconds
Re-Auth Interval:           3600 seconds
PAE State:                  Connected
BE State:                   Invalid
Supplicant Name:            --
Supplicant Address:         0000.0000.0000
Current Id:                 1
Id From Server:             0
```

See Also   None

show dot1x diagnostics interface

Displays all diagnostics information for the authenticator associated with a port.

Synopsis   **show dot1x diagnostics interface** *name*

Operands   *name*   Specifies the name of the interface.

Defaults   None

Command Modes   Privileged EXEC mode

EXEC mode

Description   Use this command to display all diagnostics information for the authenticator associated with a port.

Usage Guidelines   None

Examples   To display all diagnostics information for the authenticator associated with a port:

```
switch#show dot1x diagnostics interface tengigabitethernet 0/1
802.1X Diagnostics for interface te0/1
 authEnterConnecting: 0
 authEaplogoffWhileConnecting: 1
 authEnterAuthenticating: 0
 authSuccessWhileAuthenticating: 0
 authTimeoutWhileAuthenticating: 0
 authFailWhileAuthenticating: 0
 authEapstartWhileAuthenticating: 0
 authEaplogoggWhileAuthenticating: 0
 authReauthsWhileAuthenticated: 0
 authEapstartWhileAuthenticated: 0
 authEaplogoffWhileAuthenticated: 0
 BackendResponses: 0
 BackendAccessChallenges: 0
 BackendOtherrequestToSupplicant: 0
 BackendAuthSuccess: 0
 BackendAuthFails: 0
```

See Also   None

show dot1x interface

Displays the state of a specified interface.

Synopsis   **show dot1x interface** *name*

Operands   *name*   Specifies the name of the interface.

Defaults   None

Command Modes   Privileged EXEC mode

EXEC mode

Description   Use this command to display the state of a specified interface.

Usage Guidelines   None

Examples   To display the state of 10 Gbps Ethernet interface 0/1:

```
switch#show dot1x interface tengigabitethernet 0/1
Dot1x Global Status:       Enabled
802.1X info for interface te0/1
-----------------------------------
Port Control:            Auto
Port Auth Status:        Unauthorized
Protocol Version:        2
ReAuthentication:        Disabled
Auth Fail Max Attempts:  0
ReAuth Max:              2
Tx Period:               30 seconds
Quiet Period:            60 seconds
Supplicant Timeout:      30 seconds
Server Timeout:          30 seconds
Re-Auth Interval:        3600 seconds
PAE State:               Connected
BE State:                Invalid
Supplicant Name:         --
Supplicant Address:      0000.0000.0000
Current Id:              1
Id From Server:          0
```

See Also   None

show dot1x session-info interface

Displays all statistical information of an established session.

Synopsis   **show dot1x session-info interface** *name*

Operands   *name*   Specifies the name of the interface.

Defaults   None

Command Modes   Privileged EXEC mode

EXEC mode

Description   Use this command to display all statistical information of the established session for a specified interface.

Usage Guidelines   None

Examples   To display all statistical information of the established session:

```
switch#show dot1x session-info interface tengigabitethernet 0/1
802.1X Session info for te0/1
-------------------------------
User Name:              testuser
Session Time:           3 mins 34 secs
Terminate Cause:        Not terminated yet
```

See Also   None

show dot1x statistics interface

Displays the statistics of a specified interface.

Synopsis	**show dot1x statistics interface** *name*
Operands	*name* Specifies the name of the interface for which to display information.
Defaults	None
Command Modes	Privileged EXEC mode EXEC mode
Description	Use this command to display the statistics of a specified interface.
Usage Guidelines	None
Examples	To display the statistics for 10 Gbps Ethernet interface 0/1:

```
switch#show dot1x statistics interface tengigabitethernet 0/1
802.1X statistics for interface te0/1
  EAPOL Frames Rx: 0 - EAPOL Frames Tx: 0
  EAPOL Start Frames Rx: 0 - EAPOL Logoff Frames Rx: 0
  EAP Rsp/Id Frames Rx: 2 - EAP Response Frames Rx: 10
  EAP Req/Id Frames Tx: 35 - EAP Request Frames Tx: 0
  Invalid EAPOL Frames Rx: 0 - EAP Length Error Frames Rx: 0
  EAPOL Last Frame Version Rx: 0 - EAPOL Last Frame Src: 0000.0000.0000
```

See Also	None

show environment

Displays fan, temperature, redundant power system (RPS) availability, and power information for the switch.

Synopsis **show environment**

Operands None

Defaults None

Command Modes Privileged EXEC mode

EXEC mode

Description Use this command to display fan, temperature, redundant power system (RPS) availability, and power information for the switch.

Usage Guidelines None

Examples To display both fan and temperature environmental status:

```
switch#show environment
-- Fan Status --
Fan 1 is Ok
Fan 2 is Ok
Fan 3 is Ok

-- Power Supplies  --
PS0 is OK
PS1 is faulty

-- Unit Environment Status   --
Sensor  State            Centigrade      Fahrenheit
  ID
================================================
 1      Ok                 44              111
 2      Ok                 40              104
 3      Ok                 47              116
 4      Ok                 32               89
```

See Also None

show fcoe

show file

Displays the contents of a text file in the local flash memory.

Synopsis	**show file** *file_name*
Operands	*file_name* Specifies the file for which the contents are to be displayed.
Defaults	None
Command Modes	Privileged EXEC mode EXEC mode
Description	Use this command to display the contents of a text file in the local flash memory.
Usage Guidelines	None

Examples   To show the file system for internal flash:

```
switch#show file flash://file1
!
protocol spanning-tree mstp
  instance 1 vlan 100
!

[or]

switch#show file file1
!
protocol spanning-tree mstp
  instance 1 vlan 100
!
```

See Also   dir

show history

Displays the session command history.

Synopsis	**show history**
Operands	None
Defaults	None
Command Modes	Privileged EXEC mode EXEC mode
Description	This command displays the command history for the current session.
Usage Guidelines	None
Examples	None
See Also	None

show interface

Displays the configuration and status of an interface.

Synopsis   **show interface** {**tengigabitethernet** *slot/port* | **port-channel** *number*| **switchport**}

Operands   **tengigabitethernet**

Specifies a valid 10 Gbps Ethernet interface.

slot   Specifies a valid slot number.

port   Specifies a valid port number.

port-channel *number*

Specifies the interface is a port-channel. The range of valid values is from 1 through 63.

switchport   Specifies the Layer 2 interface.

Defaults   None

Command   Privileged EXEC mode
Modes
             EXEC mode

Description Use this command to show the running system status and configuration for a specified interface.

Usage   None
Guidelines

Examples   To display information for a 10 Gbps Ethernet interface:

```
switch#show interface tengigabitethernet 0/1
TenGigabitEthernet 0/1 is up, line protocol is down (link protocol down)
Hardware is Ethernet, address is 0005.1e53.ebab
    Current address is 0005.1e53.ebab
Pluggable media not present
Interface index (ifindex) is 402718721
MTU 2500 bytes
Beacon is turned off
LineSpeed: 10000 Mbit, Duplex: Full
Flowcontrol rx: on, tx: on
Last clearing of show interface counters: 11:55:28
Queueing strategy: fifo
Receive Statistics:
    0 packets, 0 bytes
    Unicasts: 0, Multicasts: 0, Broadcasts: 0
    64-byte pkts: 0, Over 64-byte pkts: 0, Over 127-byte pkts: 0
    Over 255-byte pkts: 0, Over 511-byte pkts: 0, Over 1023-byte pkts: 0
    Over 1518-byte pkts(Jumbo): 0
    Runts: 0, Jabbers: 0, CRC: 0, Overruns: 0
    Errors: 0, Discards: 0
Transmit Statistics:
    0 packets, 0 bytes
    Unicasts: 0, Multicasts: 0, Broadcasts: 0
    Underruns: 0
    Errors: 0, Discards: 0
Rate info (interval 299 seconds):
```

```
        Input 0.000000 Mbits/sec, 0 packets/sec, 0.00% of line-rate
        Output 0.000000 Mbits/sec, 0 packets/sec, 0.00% of line-rate
  Time since last interface status change: 11:55:28
```

To display Layer 2 information for all interfaces:

```
switch#show interface switchport

Interface name          : TenGigabitEthernet 0/8
Switchport mode         : access
Ingress filter          : enable
Acceptable frame types  : all
Default Vlan            : 1
Active Vlans            : 1
Inactive Vlans          : -

Interface name          : TenGigabitEthernet 0/19
Switchport mode         : converged
Ingress filter          : enable
Acceptable frame types  : all
Default Vlan            : 1
Active Vlans            : 1
Inactive Vlans          : 100

Interface name          : TenGigabitEthernet 0/20
Switchport mode         : trunk
Ingress filter          : enable
Acceptable frame types  : vlan-tagged only
Default Vlan            : 0
Active Vlans            : 1
Inactive Vlans          : -
```

See Also   None

show ip igmp groups

Displays information related to learned groups in the IGMP module.

Synopsis   **show ip igmp groups** {*A.B.C.D* | **detail**} {**interface** [**detail**] | **interface tengigabitethernet** *slot/port* [**detail**] | **interface port-channel** *number* [**detail**] | [**interface vlan** *vlan_id* [**detail**]}

Operands   *A.B.C.D*   Specifies the group address, as a subnet number in dotted decimal format (for example, 10.0.0.1), as the allowable range of addresses included in the multicast group.

        detail   Displays the IGMPv3 source information.

        interface tengigabitethernet
                        Specifies a valid 10 Gbps Ethernet interface.

        slot   Specifies a valid slot number.

        port   Specifies a valid port number.

        detail   Displays the IGMPv3 source information.

        interface port-channel *number*
                        Specifies the interface is a port-channel. The range of valid values is from 1 through 63.

        detail   Displays the IGMPv3 source information.

        interface vlan *vlan_id*
                        Specifies which VLAN interface to display the snooping configuration-related information. The range of valid values is from 1 through 3583.

        detail   Displays the IGMPv3 source information.

Defaults   None

Command Modes   Privileged EXEC mode

EXEC mode

Description   Use this command to display the IGMP database, including configured entries for either all groups on all interfaces, or all groups on specific interfaces, or specific groups on specific interfaces.

Usage Guidelines   None

Examples   None

See Also   None

show ip igmp interface

Displays IGMP information for the specified interface.

Synopsis	**show ip igmp interface vlan** *vlan_id*
Operands	**vlan** *vlan_id* Specifies the VLAN interface. The range of valid values is from 1 through 3583.
Defaults	None
Command Modes	Privileged EXEC mode EXEC mode
Description	This command displays information related to the IGMP configuration on the specified interface.
Usage Guidelines	None
Examples	None
See Also	None

show ip igmp mrouter

Displays multicast router information related to the IGMP configuration.

Synopsis   **ip igmp snooping mrouter {interface }vlan** *vlan_id*

Operands   **interface vlan** *vlan_id*

Specifies a valid 10 Gbps Ethernet interface. The range of valid values is from 1 through 3583.

Defaults   None

Command Modes   Privileged EXEC mode

EXEC mode

Description   This command displays multicast router information related to the IGMP configuration on the specified interface.

Usage Guidelines   None

Examples   None

See Also   None

show ip igmp snooping

Displays IGMP snooping information.

Synopsis   **show ip igmp snooping** {**interface vlan** *vlan_id* | **mrouter interface vlan** *vlan_id* | **statistics interface vlan** *vlan_id*}

Operands   **interface vlan** *vlan_id*
Specifies which VLAN interface to display the snooping configuration-related information. The range of valid values is from 1 through 3583.

mrouter interface vlan *vlan_id*
Specifies which VLAN interface to display the snooping configuration-related information. The range of valid values is from 1 through 3583.

statistics interface vlan *vlan_id*
Specifies which VLAN interface to display the snooping configuration-related information. The range of valid values is from 1 through 3583.

Defaults   None

Command Modes   Privileged EXEC mode

EXEC mode

Description   Use this command to display IGMP snooping information, multicast router port-related information for the specified VLAN, or to display snooping statistics for the specified VLAN in the IGMP module.

Usage Guidelines   None

Examples   To display IGMP snooping information for VLAN 5:

```
switch#show ip igmp snooping interface vlan 5
```

See Also   None

show ip interface

Displays the IP interface status and configuration of all interfaces or a specified interface.

Synopsis   **show ip interface** {**brief** | **port-channel** *number* **brief**| **tengigabitethernet** *slot/port* **brief**| **vlan** *vlan_id* **brief**}

Operands   **brief**   Specifies to display a brief summary of the IP status and configuration.

port-channel *number*
Specifies to display the port-channel number. The range of valid values is from 1 through 63.

tengigabitethernet
Specifies to display a specific 10 Gbps Ethernet interface.

slot   Specifies to display a valid slot number.

port   Specifies to display a valid port number.

vlan *vlan_id*   Specifies to display a the VLAN number. The range of valid values is from 1 through 3583.

Defaults   None

Command Modes   Privileged EXEC mode

EXEC mode

Description   Use this command to display the IP interface status and configuration of all interfaces or a specified interface.

Usage Guidelines   None

Examples   To display information about all of the interfaces in the summary format:

```
switch#show ip interface brief
Interface                 IP-Address      Status          Protocol
========                  ==========      ======          ========
Port-channel 10           unassigned      up                down
Port-channel 11           unassigned      up                down
Port-channel 12           unassigned      up                down
Port-channel 13           unassigned      up                up
Port-channel 14           unassigned      up                down
Port-channel 15           unassigned      up                up
TenGigabitEthernet 0/0    unassigned      up                up
TenGigabitEthernet 0/1    unassigned      up                down
TenGigabitEthernet 0/2    unassigned      up                up
TenGigabitEthernet 0/3    unassigned      up                up
TenGigabitEthernet 0/4    unassigned      up                down
TenGigabitEthernet 0/5    unassigned      up                down
TenGigabitEthernet 0/6    unassigned      up                down
TenGigabitEthernet 0/7    unassigned      up                up
TenGigabitEthernet 0/8    unassigned      up                up
TenGigabitEthernet 0/9    unassigned      up                up
TenGigabitEthernet 0/10   unassigned      up                down
TenGigabitEthernet 0/11   unassigned      up                down
```

```
               TenGigabitEthernet 0/12   unassigned      up                      up
               TenGigabitEthernet 0/13   unassigned      up                      up
               TenGigabitEthernet 0/14   unassigned      up                      down
               TenGigabitEthernet 0/15   unassigned      up                      up
               TenGigabitEthernet 0/16   unassigned      up                      down
               TenGigabitEthernet 0/17   unassigned      up                      up
               TenGigabitEthernet 0/18   unassigned      up                      down
               TenGigabitEthernet 0/19   unassigned      up                      up
               TenGigabitEthernet 0/20   unassigned      up                      up
               TenGigabitEthernet 0/21   unassigned      up                      up
               TenGigabitEthernet 0/22   unassigned      up                      up
               TenGigabitEthernet 0/23   unassigned      up                      up
               Vlan 1                    unassigned      administratively down   down
               Vlan 100                  unassigned      administratively down   down
               Vlan 200                  unassigned      administratively down   down
```

See Also   show interface

show lacp counter

Displays the Link Aggregation Control Protocol (LACP) counters on all port-channels or a specified interface.

Synopsis   **show lacp counter** *number*

Operands   *number*   Specifies the port-channel number to display. The range of valid values is from 1 through 63.

Defaults   None

Command Modes   Privileged EXEC mode

EXEC mode

Description   Use this command to display the LACP packet counters on all interfaces that belong to a port-channel or a specific interface.

Usage Guidelines   None

Examples   To show the LACP counters for port-channel 10:

```
switch#show lacp counter 10
% Traffic statistics
Port        LACPDUs           Marker          Pckt err
        Sent    Recv    Sent    Recv    Sent    Recv
% Aggregator   Po 10 1000000
Te 0/1     65      0       0       0           0   0
Te 0/2     64      0       0       0           0   0
Te 0/3     64      0       0       0           0   0
Te 0/4     0       0       0       0           0   0
switch#
```

See Also   clear lacp counters

show lacp sys-id

Displays the Link Aggregation Control Protocol (LACP) system ID and priority information.

Synopsis   **show lacp sys-id**

Operands   None

Defaults   None

Command Modes   Privileged EXEC mode

EXEC mode

Description   Use this command to display the LACP system ID and priority.

Usage Guidelines   The system priority and the system Media Access Control (MAC) address make up the system identification. The first two bytes are the system priority, and the last six bytes are the globally administered individual MAC addresses associated with the system.

Examples   To display the local system ID:

```
switch#show lacp sys-id
% System 8000,00-05-1e-76-1a-a6
```

See Also   None

show line

Displays line parameters.

Synopsis   **show line** {**first line** *number*| **last line** *number*}

Operands   **first line** *number*   Specifies the first line number. The range of valid values is from 0 through 31.

last line *number*   Specifies the last line number. The range of valid values is from 0 through 31.

Defaults   If the line is not specified, it displays all VTY and console information.

**Command
Modes**   Privileged EXEC mode

EXEC mode

Description   Use this command to display line parameters.

**Usage
Guidelines**   None

Examples   To display line parameters:

```
switch#show line 10 22
  Status     Type         Timeout(m/s)     Length
  Idle       console 0     10:0              24
  Idle       vty 10        10:0              24
  Idle       vty 11        10:0              24
  Idle       vty 12        10:0              24
  Idle       vty 13        10:0              24
  Idle       vty 14        10:0              24
  Idle       vty 15        10:0              24
  Idle       vty 16        10:0              24
  Idle       vty 17        10:0              24
  Idle       vty 18        10:0              24
  Idle       vty 19        10:0              24
  Idle       vty 20        10:0              24
  Idle       vty 21        10:0              24
  Idle       vty 22        121:1212          24

switch#show line 0
  Status     Type         Timeout(m/s)     Length
  Idle       console 0     10:0              24
* Active     vty 0         10:0              24
```

See Also   exec-timeout, line console, line vty

show lldp

Displays the global information for LLDP.

Synopsis   **show lldp**

Operands   None

Defaults   There are no default values for this comand.

Command Modes   Privileged EXEC mode

EXEC mode

Description   This command displays the global information for the LLDP settings.

Usage Guidelines   None

Examples
```
switch#show lldp
LLDP Global Information
  system-name: WT.IT.48
  system-description: Fibre Channel Switch
  description:
  State:                    Disabled
  Mode:                     Receive/Transmit
  Advertise transmitted:    30 seconds
  Hold time for advertise: 120 seconds
  Re-init Delay Timer:      2 seconds
  Tx Delay Timer:           1 seconds
  Transmit TLVs:            Chassis ID              Port ID
                            TTL                     IEEE DCBx
                            DCBx FCoE App           DCBx FCoE Logical Link
                            Link Prim               Brocade Link
    DCBx FCoE Priority Values: 4 5
    DCBx iSCSI Priority Values: 4
```

See Also   show lldp interface, show lldp neighbors, show lldp statistics

show lldp interface

Displays the LLDP status information on the specified interface.

Synopsis   **show lldp** [**interface tengigabitethernet** *slot/port*]

Operands   **interface tengigabitethernet**

Specifies a valid 10 Gbps Ethernet interface.

slot   Specifies a valid slot number.

port   Specifies a valid port number.

Defaults   None

Command   Privileged EXEC mode
Modes
EXEC mode

Description Use this command to display the LLDP status on the specified interface.

Usage   None
Guidelines

Examples   To display all the LLDP interface status information for a selected interface:

```
switch#show lldp interface tengigabitethernet 0/0
LLDP information for Te 0/0
  State:                  Enabled
  Mode:                   Receive/Transmit
  Advertise Transmitted:  30 seconds
  Hold time for advertise: 120 seconds
  Re-init Delay Timer:    2 seconds
  Tx Delay Timer:         1 seconds
  DCBX Version :          CEE
  Auto-Sense :            Yes
  Transmit TLVs:          Chassis ID              Port ID
                          TTL                     IEEE DCBX
                          DCBX FCoE App           DCBX FCoE Logical Link
                          Link Prim               Brocade Link
  DCBX FCoE Priority Bits: 0x8
```

See Also   show lldp, show lldp neighbors, show lldp statistics

show lldp neighbors

Displays LLDP information for all neighboring devices on the specified interface.

Synopsis	**show lldp neighbors** {**interface tengigabitethernet** *slot/port*	**detail**}

Operands   **interface tengigabitethernet**
                 Specifies a valid 10 Gbps Ethernet interface.

           slot   Specifies a valid slot number.

           port   Specifies a valid port number.

           detail   Displays all the LLDP neighbor information in detail for the specified interface.

Defaults   None

Command Modes   Privileged EXEC mode

                 EXEC mode

Description   Use this command to display LLDP information for all neighboring devices on the specified interface.

Usage Guidelines   If you do not use the **interface tengigabitethernet** operand, only the mandatory TLVs are displayed.

Examples   To display detailed LLDP neighbor information on a specific interface:

```
switch#show lldp neighbors interface tengigabitethernet 0/8 detail

Neighbors for Interface Te 0/8

MANDATORY TLVs
===============
Local Interface: Te 0/8    Remote Interface: Te 0/8 (IF Name)
Dead Interval: 120 secs  Remaining Life : 100 secs Tx: 536  Rx: 535
Chassis ID: 0005.1e76.1020 (MAC)
Remote Mac: 0005.1e76.102c

OPTIONAL TLVs
==============
Port Interface Description: Te 0/8
System Name: sw0
System Description: Fibre Channel Switch.
System Capabilities: Switching Routing
System Capabilities Enabled: Switching

Link Prim: 257
Remote Protocols Advertised:  Multiple Spanning Tree Protocol
Remote VLANs Configured: VLAN ID: 1  VLAN Name: default
AutoNego Support: Supported Not Enabled
AutoNego Capability: 0
Operational MAU Type: 0
Link Aggregation Capability: Capable
Link Aggregation Status: Disabled
Port Vlan Id: 1
```

```
Port & Protocol Vlan Flag: Supported Not enabled
Port & Protocol Vlan Id: 0
Link Aggregation Port Id: 0
Max Frame Size: 2500
Management Address: 10.32.152.21 (IPv4)
Interface Numbering: 2
Interface Number: 0x4080100 (67633408)
OID: 0x100f99b4

DCBX TLVs
===========

DCBX Version : pre-CEE
DCBX Ctrl OperVersion: 0   MaxVersion: 0   SeqNo: 2   AckNo: 1
DCBX ETS OperVersion: 0   MaxVersion: 0   EN: 1   Will: 0 Err: 0
Pri-Map: 15 15 15 15 15 15 15 15
BWG ID: 00   Percentage: 000
BWG ID: 01   Percentage: 000
BWG ID: 02   Percentage: 000
BWG ID: 03   Percentage: 000
BWG ID: 04   Percentage: 000
BWG ID: 05   Percentage: 000
BWG ID: 06   Percentage: 000
BWG ID: 07   Percentage: 000
DCBX PFC OperVersion: 0   MaxVersion: 0   EN: 1   Will: 0 Err: 0
Admin-Map: 0xf0
FCoE App OperVersion: 0   MaxVersion: 0   EN: 1   Will: 0 Err: 0
User-Pri-Map: 0x00
FCoE LLS OperVersion: 0   MaxVersion: 0   EN: 1   Will: 0 Err: 0
Logic Link Status: Down
LAN LLS OperVersion: 0   MaxVersion: 0   EN: 1   Will: 0 Err: 0
Logic Link Status: Up
switch#
```

See Also   show lldp, show lldp interface, show lldp statistics

show lldp statistics

Displays the LLDP statistics on all interfaces or a specified interface.

Synopsis   **show lldp statistics** [**interface tengigabitethernet** *slot/port*]

Operands   **interface tengigabitethernet**

Specifies a valid 10 Gbps Ethernet interface for which to display the LLDP statistics.

slot   Specifies a valid slot number.

port   Specifies a valid port number.

Defaults   None

Command Modes   Privileged EXEC mode

EXEC mode

Description   Use this command to display LLDP statistics on all interfaces or a specified interface.

Usage Guidelines   If you do not specify the **interface tengigabitethernet** operand, this command displays the LLDP statistics for all interfaces.

Examples   To display LLDP statistics on the specified interface:

```
switch#show lldp statistics interface tengigabitethernet 0/8
LLDP Interface statistics for Te 0/8
Frames transmitted: 555
Frames Aged out:    0
Frames Discarded:   0
Frames with Error:  0
Frames Recieved:    554
TLVs discarded:     0
TLVs unrecognized:  0
```

See Also   show lldp, show lldp interface, show lldp neighbors

show logging

Displays the internal syslog buffer of the switch.

Synopsis   **show logging**

Operands   None

Defaults   None

Command Modes   Privileged EXEC mode

EXEC mode

Description   Use this command to display the RASlog messages stored in the internal buffer.

Usage Guidelines   The RASlog messages contain the module name, error code, and message details.

Examples   To display the RASlog messages stored in the internal buffer:

```
switch#show logging
Fabos OS Version: v6.1.2

Number of Messages: 1024

2009/02/03-00:19:43: %NSM-4-1001:  Interface TenGigabitEthernet 0/4 is online.
2009/02/03-00:20:14: %NSM-4-1002:  Interface TenGigabitEthernet 0/4 is
protocol down.
2009/02/03-00:20:14: %NSM-4-1001:  Interface TenGigabitEthernet 0/4 is online.
2009/02/03-00:21:10: %NSM-4-1003:  Interface Port-channel 10 is link down
```

See Also   None

show mac access-group

Displays the current MAC ACL mapping to interfaces.

Synopsis **show mac access-group** {**interface port-channel** *number* | **tengigabitethernet** *slot/port* | **vlan** *vlan_id*}

Operands **interface** Specifies the interface for which to display the MAC ACL mapping.

port-channel *number*
Specifies the port-channel number. The range of valid values is from 1 through 63.

tengigabitethernet
Specifies a valid 10 Gbps Ethernet interface.

slot Specifies a valid slot number.

port Specifies a valid port number.

vlan *vlan_id* Specifies the VLAN number. The range of valid values is from 1 through 3583.

Defaults None

Command Modes Privileged EXEC mode

EXEC mode

Description Use this command to display the current MAC ACL mapping to interfaces.

Usage Guidelines If you do not specify an interface, this command shows MAC ACL mapping for all interfaces.

Examples To display the current MAC ACL mapping for 10 Gbps Ethernet interface 0/1:

```
switch#show mac access-group interface tengigabitethernet 0/1
Interface Te 0/1
    Inbound access-list is std_acl
```

To display the current MAC ACL mapping for interface VLAN 100:

```
switch#show mac access-group interface vlan 100
Interface Vl 100
    Inbound access-list is ext_acl
```

To display the current MAC ACL mapping for 10 Gbps Ethernet interface 0/7 where there is no ACL applied:

```
switch#show mac access-group interface tengigabitethernet 0/7
Interface Te 0/7
    Inbound access-list is not set
```

See Also show running-config, show statistics access-list mac

show mac-address-table

Displays a specific MAC address table static and dynamic entry or the MAC address table static and dynamic entries for a specific interface or VLAN.

Synopsis   **show mac-address-table** {**address** *mac-addr* | **aging-time** | **count** | **dynamic** | {**interface tengigabitethernet** *slot/port* | **port-channel** *number*} | **linecard interface tengigabitethernet** *slot/port* | **static** | **vlan** *vlan_id* }

Operands   **address** *mac-address*

Specifies a 48-bit MAC address. The valid format is H.H.H (available in EXEC mode only).

aging-time   Displays the aging time.

count   Displays the count of forwarding entries.

dynamic   Displays the dynamic MAC addresses.

interface tengigabitethernet

Specifies a valid 10 Gbps Ethernet interface.

slot   Specifies a valid slot number.

port   Specifies a valid port number.

port-channel *number*

Specifies the port-channel number. The range of valid values is from 1 through 63.

linecard   Displays the line card information.

interface tengigabitethernet

Specifies a valid 10 Gbps Ethernet interface.

slot   Specifies a valid slot number.

port   Specifies a valid port number.

static   Displays the static MAC addresses.

vlan *vlan_id*   Specifies the VLAN number. The range of valid values is from 1 through 3583.

Defaults   No static addresses are configured.

Command Modes   Privileged EXEC mode

EXEC mode

Description   Use this command to display a specific static or dynamic MAC address entry or all entries for a specific interface, a specific VLAN, a specific line card, or for all interfaces and all VLANs.

Usage Guidelines   None

Examples   To display a specific MAC address in the table:

```
switch#show mac-address-table address 0011.2222.3333
VlanId   Mac-address       Type      State      Ports
100      0011.2222.3333    Static    Inactive   Te 0/1
Total MAC addresses    : 1
```

To display the aging time for a specific MAC address table:

```
switch#show mac-address-table aging-time
MAC Aging-time : 300 seconds
```

To display a dynamic MAC address table:

```
switch#show mac-address-table dynamic
VlanId   Mac-address       Type       State      Ports
100      0011.2222.5555 Dynamic   Inactive   Te 0/1
100      0011.2222.6666 Dynamic   Inactive   Te 0/1
Total MAC addresses    : 2
```

See Also   None

show media

Displays the SFP information for all the interfaces present on a switch.

Synopsis   **show media**

Operands   None

Defaults   None

Command Modes   Privileged EXEC mode

EXEC mode

Description   Use this command to display a summary of all SFP information for the switch. The output will be several pages long.

Usage Guidelines   None

Examples   To display all SFP information:

```
switch#show media
Interface         TenGigabitEthernet 0/1
  Identifier      3    SFP
  Connector       7    LC
  Transceiver     0000000000000010 10_GB/s
  Name            id
  Encoding        6
  Baud Rate       103 (units 100 megabaud)
  Length 9u       0   (units km)
  Length 9u       0   (units 100 meters)
  Length 50u      8   (units 10 meters)
  Length 62.5u    3   (units 10 meters)
  Length Cu       0   (units 1 meter)
  Vendor Name     BROCADE
  Vendor OUI      42:52:4f
  Vendor PN       57-0000075-01
  Vendor Rev      A
  Wavelength      850 (units nm)
  Options         001a Loss_of_Sig,Tx_Fault,Tx_Disable
  BR Max          0
  BR Min          0
  Serial No       AAA108454100431
  Date Code       081108
  Temperature     44 Centigrade
  Voltage         3246.8  (Volts)
  Current         0.002  (mAmps)
  TX Power        0.1  (uWatts)
  RX Power        0.1  (uWatts)
(output truncated)
```

See Also   show media interface, show media linecard

show media interface

Displays the SFP information for a specific interface.

Synopsis   **show media interface tengigabitethernet** *slot/port*

Operands   **tengigabitethernet**   Specifies a valid 10 Gbps Ethernet interface.

　　　　　　slot　　　　　　　　Specifies a valid slot number.

　　　　　　port　　　　　　　　Specifies a valid port number.

Defaults   None

Command Modes   Privileged EXEC mode

　　　　　　　EXEC mode

Description   Use this command to display a summary of the SFP information for the specified interface.

Usage Guidelines   None

Examples   To display SFP information for an interface:

```
switch#show media interface tengigabitethernet 0/1
Interface       TenGigabitEthernet 0/1
  Identifier    3    SFP
  Connector     7    LC
  Transceiver   0000000000000010 10_GB/s
  Name          id
  Encoding      6
  Baud Rate     103 (units 100 megabaud)
  Length 9u     0   (units km)
  Length 9u     0   (units 100 meters)
  Length 50u    8   (units 10 meters)
  Length 62.5u  3   (units 10 meters)
  Length Cu     0   (units 1 meter)
  Vendor Name   BROCADE
  Vendor OUI    42:52:4f
  Vendor PN     57-0000075-01
  Vendor Rev    A
  Wavelength    850 (units nm)
  Options       001a Loss_of_Sig,Tx_Fault,Tx_Disable
  BR Max        0
  BR Min        0
  Serial No     AAA108454100431
  Date Code     081108
  Temperature   44 Centigrade
  Voltage       3246.8  (Volts)
  Current       0.002   (mAmps)
  TX Power      0.1   (uWatts)
  RX Power      0.1   (uWatts)
```

See Also   show media, show media linecard

show media linecard

Displays the SFP information for all the interfaces of a specific line card.

Synopsis   **show media linecard** *number*

Operands   *number*   Line card number.

Defaults   None

Command Modes   Privileged EXEC mode

EXEC mode

Description   Use this command to display a summary of the SFP information for a specific line card. The output contains information for each interface on the line card, and is several pages long.

Usage Guidelines   None

Examples   To show the SFP information for line card number 0:

```
switch#show media linecard 0
Interface         TenGigabitEthernet 0/1
  Identifier      3    SFP
  Connector       7    LC
  Transceiver     0000000000000010 10_GB/s
  Name            id
  Encoding        6
  Baud Rate       103 (units 100 megabaud)
  Length 9u       0   (units km)
  Length 9u       0   (units 100 meters)
  Length 50u      8   (units 10 meters)
  Length 62.5u    3   (units 10 meters)
  Length Cu       0   (units 1 meter)
  Vendor Name     BROCADE
  Vendor OUI      42:52:4f
  Vendor PN       57-0000075-01
  Vendor Rev      A
  Wavelength      850 (units nm)
  Options         001a Loss_of_Sig,Tx_Fault,Tx_Disable
  BR Max          0
  BR Min          0
  Serial No       AAA108454100431
  Date Code       081108
  Temperature     44 Centigrade
  Voltage         3246.8  (Volts)
  Current         0.002   (mAmps)
  TX Power        0.1  (uWatts)
  RX Power        0.1  (uWatts)
(output truncated)
```

See Also   show media, show media interface

show port-channel

Displays the Link Aggregation Group (LAG) information for a port-channel.

Synopsis	**show port-channel** {*channel-group-number* | **detail** | **load balance** | **summary**}
Operands	*channel-group number*

	Specifies a LAG port channel-group number to display. The range of valid values is from 1 through 63.
load-balance	Displays load balancing information.
detail	Displays detailed LAG information for a port-channel.
summary	Displays the summary information per channel-group.

Defaults	None
Command Modes	Privileged EXEC mode
	EXEC mode
Description	Displays the LAGs present on the system with details about the LACP counters on their member links.
Usage Guidelines	If you do not specify a port-channel, all port-channels are displayed.
	LAG interfaces are called port-channels.
Examples	To display information for port-channel 10:

```
switch#show port-channel 10
% Aggregator Po 10 0 Admin Key: 0010 - Oper Key 0010 Partner System ID:
0x0000,00-00-00-00-00-00 Partner Oper
 Key 0000
%   Link: Te 0/1 (67174401) sync: 0
%   Link: Te 0/2 (67239938) sync: 0
```

See Also	None

show power supply

Displays the current status of the power supply.

Synopsis	**show power supply**
Operands	None
Defaults	None
Command Modes	Privileged EXEC mode EXEC mode
Description	This command displays the current status of the power supply.
Usage Guidelines	None
Examples	None
See Also	None

show privilege

Displays the privilege level of the current status.

Synopsis	**show privilege**
Operands	None
Defaults	None
Command Modes	Privileged EXEC mode EXEC mode
Description	This command displays the privilege level of the current status.
Usage Guidelines	None
Examples	None
See Also	None

show processes cpu

Displays information about the active processes in the switch and their corresponding CPU utilization statistics.

Synopsis   **show processes cpu summary**

Operands   **summary**   Shows a summary of CPU usage by all processes.

Defaults   None

Command Modes   Privileged EXEC mode

EXEC mode

Description   Use this command to display information about the active processes in the switch and their corresponding CPU utilization statistics.

Usage Guidelines   None

Examples   To show the information for all processes:

```
switch#show processes cpu summary
CPU Utilization current: 0.90%; One minute: 0.00%; Five minutes: 0.00%;
Fifteen minutes: 0.00%
```

To show CPU usage information by individual processes:

```
switch#show processes cpu
CPU Utilization current: 0.90%; One minute: 0.00%; Five minutes: 0.00%;
Fifteen minutes: 0.00%
  PID    Process         CPU%   State    Started
    1    init            0.00   S        14:18:35 Feb 19, 2009
    2    ksoftirqd/0     0.00   S        14:18:35 Feb 19, 2009
    3    events/0        0.00   S        14:18:35 Feb 19, 2009
    4    khelper         0.00   S        14:18:35 Feb 19, 2009
    5    kthread         0.00   S        14:18:35 Feb 19, 2009
   40    kblockd/0       0.00   S        14:18:35 Feb 19, 2009
   73    pdflush         0.00   S        14:18:35 Feb 19, 2009
```

See Also   None

show processes memory

Displays the memory usage information based on processes running in the system.

Synopsis	**show processes memory summary**
Operands	**summary** Shows a summary of memory usage by all processes.
Defaults	None
Command Modes	Privileged EXEC mode EXEC mode
Description	Use this command to view memory usage information based on processes running in the system.
Usage Guidelines	None

Examples   To show a summary of memory usage by all processes:

```
switch#show processes memory summary
%Memory Used: 39.463%; TotalMemory: 1028020 KB; Total Used: 405688 KB; Total
Free: 622332 KB
```

To show memory usage information by individual processes:

```
switch#show processes memory
%Memory Used: 39.463%; TotalMemory: 1028020 KB; Total Used: 405688 KB; Total
Free: 622332 KB
   PID    Process        MEM%    Mem Used(bytes)  Heap Total   Heap Used
     1    init           0.00            1736704      -            -
     2    ksoftirqd/0    0.00                  0      -            -
     3    events/0       0.00                  0      -            -
     4    khelper        0.00                  0      -            -
     5    kthread        0.00                  0      -            -
```

See Also   None

show qos flowcontrol interface

Displays all of the configured flow control information for an interface.

Synopsis   **show qos flowcontrol interface** {**tengigabitethernet** *slot/port* | **all**}

Operands   **tengigabitethernet**

Reports QoS flow control statistics for a single 10 Gbps Ethernet interface.

slot   Specifies the 10 Gbps Ethernet line card slot number within the chassis.

port   Specifies the 10 Gbps Ethernet port number within the port.

all   Reports QoS flow control statistics for all interfaces within the system.

Defaults   None

Command Modes   Privileged EXEC mode

EXEC mode

Description   Use this command to display all of the configured flow control information for a specific interface.

Usage Guidelines   Use this command to display the runtime state retrieved from the dataplane reflecting the operation of 802.3x pause or Priority Flow Control (PFC) on an interface. The administrative state for pause generation and reception or processing is presented for the interface (802.3x mode) or for each CoS (PFC mode). TX_Pause frame generation statistics are always presented for the interface. The RX_Pause BitTimes is presented for the interface (802.3x mode) or for each CoS (PFC mode). When PFC is deployed under the CEE Provisioning model, then the command reports whether the Data Center Bridging eXchange protocol (DCBX) has overridden the user configuration.

Examples   To display all of the configured flow control information for a 10 Gbps Ethernet interface:

```
switch#show qos flowcontrol interface tengigabitethernet 0/1
Interface TenGigabitEthernet 0/1
  Mode PFC
  DCBX enabled for PFC negotiation
  TX 0 frames
        TX    TX    RX    RX Output Paused
  CoS Admin Oper Admin Oper  512 BitTimes
  ---------------------------------------
   0   Off  Off   Off  Off            0
   1   Off  Off   Off  Off            0
   2    On  Off    On  Off            0
   3   Off  Off   Off  Off            0
   4   Off  Off   Off  Off            0
   5   Off  Off   Off  Off            0
   6   Off  Off   Off  Off            0
   7   Off  Off   Off  Off            0
```

See Also   show qos interface, show cee maps

show qos interface

Displays a summary of all QoS configurations applied on an interface.

Synopsis   **show qos interface** {**tengigabitethernet** *slot/port* | **all**}

Operands   **tengigabitethernet**

Reports the QoS configuration for a single 10 Gbps Ethernet interface.

slot   Specifies the 10 Gbps Ethernet line card slot number within the chassis.

port   Specifies the 10 Gbps Ethernet port number within the line card.

all   Reports QoS configurations for all interfaces within the system.

Defaults   None

Command Modes   Privileged EXEC mode

EXEC mode

Description   Use this command to display a summary of all QoS configurations applied on an interface, including QoS Provisioning mode, CEE map, Layer 2 priority, Traffic Class mapping, congestion control, and the scheduler policy.

Usage Guidelines   If no interface is specified, QoS information about all interfaces is displayed.

Examples   To display all of the configured QoS information for a 10 Gbps Ethernet interface:

```
switch#show qos interface tengigabitethernet 0/1
Interface TenGigabitEthernet 0/1
  Provisioning mode cee
  CEE Map demo
  Default CoS 0
  Interface trust cos
  CoS-to-CoS Mutation map 'default'
                 In-CoS:   0   1   2   3   4   5   6   7
     ----------------------------------------------------
     Out-CoS/TrafficClass: 0/4 1/4 2/6 3/4 4/4 5/4 6/4 7/4
  Tail Drop Threshold 1081344 bytes
  Per-CoS Tail Drop Threshold (bytes)
          CoS:       0       1       2       3       4       5       6       7
     ----------------------------------------------------------------
     Threshold: 129761 129761 129761 129761 129761 129761 129761 129761
  Flow control mode PFC
     CoS2 TX on, RX on
  Multicast Packet Expansion Rate Limit 3000000 pkt/s, max burst 4096 pkts
  Multicast Packet Expansion Tail Drop Threshold (packets)
TrafficClass:     0   1   2   3   4   5   6   7
     ---------------------------------------------
Threshold:       64  64  64  64  64  64  64  64
  Traffic Class Scheduler configured for 0 Strict Priority queues
     TrafficClass:   0   1   2   3   4   5   6   7
     -------------------------------------------
        DWRRWeight:   0   0   0   0  60   0  40   0
  Multicast Packet Expansion Traffic Class Scheduler
TrafficClass:     0   1   2   3   4   5   6   7
```

```
        -------------------------------------------------
DWRRWeight:      25    25    25    25    25    25    25    25
```

See Also   cee-map, priority-table

show qos maps

Displays information on the defined QoS maps.

Synopsis   **show qos maps** {[**cos-mutation** [*name*]] | [**cos-traffic-class** [*name*]]}

Operands   **cos-mutation**   Specifies to report on all CoS-to-CoS mutation QoS maps.

   name   Specifies to report on only the named CoS-to-CoS mutation QoS map.

   cos-traffic-class   Specifies to report on all CoS-to-Traffic Class QoS maps.

   name   Specifies to report on only the named CoS-to-Traffic Class QoS map.

Defaults   The default behavior without any specified operands is to report on all defined QoS maps.

Command Modes   Privileged EXEC mode

EXEC mode

Description   Use this command to display information on the defined QoS maps. For each QoS map, the configuration state is displayed with a list of all interfaces bound to the QoS map.

Usage Guidelines   None

Examples   To display information on the defined QoS maps:

```
switch#show qos maps
  CoS-to-CoS Mutation map 'test'
      In-CoS:  0  1  2  3  4  5  6  7
      -------------------------------
      Out-CoS:  0  1  2  3  5  4  6  7
      Enabled on the following interfaces:
       Te 0/5

  CoS-to-Traffic Class map 'test'
         Out-CoS:  0  1  2  3  4  5  6  7
      ----------------------------------
      TrafficClass:  0  1  2  3  5  4  6  7
      Enabled on the following interfaces:
       Te 0/5
```

See Also   qos map cos-mutation, show qos interface

show qos queue interface

Displays the runtime state retrieved from the interface reflecting the number of packets and bytes sent and received for each priority.

Synopsis   **show qos queue interface** {**tengigabitethernet** *slot/port* | **all**}

Operands   **tengigabitethernet**

Specifies the 10 Gbps Ethernet interface.

slot   Specifies the 10 Gbps Ethernet interface line card slot number.

port   Specifies the 10 Gbps Ethernet interface port number within the line card.

all   Reports QoS statistics for all interfaces within the system.

Defaults   None

**Command
Modes**   Privileged EXEC mode

EXEC mode

Description   Use this command to display the runtime state retrieved from the interface reflecting the number of packets and bytes sent and received for each priority.

**Usage
Guidelines**   For a stand-alone switch, all ASICs are considered as slot number zero (0).

Examples   To display the queueing information for a 10 Gbps Ethernet interface:

```
switch#show qos queue interface tengigabitethernet 0/2
Interface TenGigabitEthernet 0/2
                RX              RX              TX              TX
    CoS      Packets         Bytes      TC    Packets         Bytes
   -------------------------------      -------------------------------
      0       680458      87098624       0          0              0
      1            0             0       1      32318              0
      2            0             0       2          0              0
      3            0             0       3          0              0
      4            0             0       4          0              0
      5            0             0       5          0              0
      6            0             0       6          0              0
      7            0             0       7          0              0
```

See Also   qos map cos-mutation, cee-map

show qos rcv-queue interface

Displays a summary of all QoS configurations applied to a Layer 2 interface.

Synopsis **show qos rcv-queue interface** {**tengigabitethernet** *slot/port* | **all**}

Operands **tengigabitethernet**
Specifies the 10 Gbps Ethernet interface.

slot Specifies the interface line card slot number.

port Specifies the interface port number within the line card.

all Reports QoS configurations for all interfaces within the system.

Defaults None

Command Modes Privileged EXEC mode

EXEC mode

Description Use this command to display a summary of all QoS configurations applied to a Layer 2 interface. This includes the QoS Provisioning mode, CEE Map, Layer 2 Priority, Traffic Class Mapping, Congestion Control, and the Scheduler policy.

Usage Guidelines None

Examples To display the runtime ingress queue state information retrieved from the dataplane for a 10 Gbps Ethernet interface:

```
switch#show qos rcv-queue interface tengigabitethernet 0/2
Interface TenGigabitEthernet 0/2
  In-use 404019 bytes, Total buffer 1081344 bytes
  0 packets dropped
          In-use        Max
  CoS      Bytes      Bytes
  -----------------------
    0          0    1081344
    1          0    1081344
    2     404019    1081344
    3          0    1081344
    4          0    1081344
    5          0    1081344
    6          0    1081344
    7          0    1081344
```

See Also show qos rcv-queue multicast

show qos rcv-queue multicast

Displays the runtime state retrieved from the dataplane reflecting any multicast packet expansion packet drops resulting from a queue crossing the maximum queue depth.

Synopsis　　**show qos rcv-queue multicast** {**tengigabitethernet** *slot/port* | **all**}

Operands　　**tengigabitethernet**

Specifies the 10 Gbps Ethernet interface.

slot　　　　　　Specifies the 10 Gbps Ethernet interface line card slot number.

port　　　　　　Specifies the 10 Gbps Ethernet interface port number within the line card.

all　　　　　　Reports QoS multicast packet expansion receive queueing statistics for all ASICs within the system.

Defaults　　None

Command Modes　　Privileged EXEC mode

EXEC mode

Description　　Use this command to display the runtime state information retrieved from the interface reflecting any multicast packet expansion packet drops resulting from a queue crossing the maximum queue depth.

Usage Guidelines　　For a stand-alone switch, all ASICs are considered as slot number zero (0).

Examples　　To display the queueing information:

```
switch#show qos rcv-queue multicast tengigabitethernet 0/2
Dropped Counts
  Linecard/Portset            TC 0            TC 1            TC 2            TC 3
  -----------------------------------------------------------------------------
           0/0                  0               0               0               0
```

See Also　　show qos rcv-queue interface

show rmon

Displays the current RMON status on the switch.

Synopsis   **show rmon alarms** [*number* [**brief**]] {**events** [*number* [**brief**]] | | **history** [*event_number*] | **history statistics** [*event_number*] | **logs** [*event_number*] | **statistics** [*number* [**brief**]]}

Operands   **alarms**   Specifies to display the RMON alarm table.

        number   Specifies the alarm index identification number. The range of valid values is from 1 through 65535.

        brief   Specifies to display a brief summary of the output.

        events   Specifies to display the RMON events table.

        number   Specifies the event index identification number. The range of valid values is from 1 through 65535.

        brief   Specifies to display a brief summary of the output.

        history   Specifies to display the RMON historical information.

        event_number   Specifies the event index identification number. The range of valid values is from 1 through 65535.

        history statistics   Specifies to display the RMON historical statistics.

        event_number   Specifies the event index identification number. The range of valid values is from 1 through 65535.

        logs   Specifies to display the RMON log table.

        event_number   Specifies the event index identification number. The range of valid values is from 1 through 65535.

        statistics   Specifies to display the statistics identification number.

        number   Specifies the statistics identification number. The range of valid values is from 1 through 65535.

        brief   Specifies a brief summary of the output.

Defaults   None

Command Modes   Privileged EXEC mode

EXEC mode

Description   Use this command to display the status of the current RMON on the switch.

Usage Guidelines   None

Examples   To display the RMON statistics:

```
switch#show rmon statistics
rmon collection index 4
    Interface index is Id: 67108864 , Name : TenGigabitEthernet 0/0
    Receive Statistics:
```

```
            218903 packets, 14015626 bytes,  0 packs dropped
            Multicasts: 218884, Broadcasts: 18

            Under-size : 0, Jabbers: 0, CRC: 0
            Fragments: 0, Collisions: 0
            64 byte pkts: 218722, 65-127 byte pkts: 174
            128-255 byte pkts: 0, 256-511 byte pkts: 6
            512-1023 byte pkts: 0, 1024-1518 byte pkts: 0
            Over 1518-byte pkts(Oversize - Jumbo): 0

        Owner: RMON_SNMP
        Status: ok(1)
```

To display the RMON events:

```
switch#show rmon events
event Index = 4
        Description "My Description"
        Event type Log & SnmpTrap
        Event community name admin
        Last Time Sent = 00:00:00
        Owner  admin
```

See Also   rmon alarm, rmon collection, rmon event

show running-config

Displays the contents of the configuration file currently running on the system.

Synopsis   **show running-config** {**access-list** | **cee-map** | **interface** | **lldp** | **rmon** | **spanning-tree**}

Operands   **access-list**   Displays the running configuration of the access list.

cee-map   Displays the QoS Converged Enhanced Ethernet (CEE) maps configuration.

interface   Displays the interface configuration.

lldp   Displays the LLDP configuration.

rmon   Displays the Remote Monitoring Protocol (RMON) configuration.

spanning-tree   Displays the STP switch configuration.

Defaults   None

Command Modes   Privileged EXEC mode

EXEC mode

Description   Use this command to display the contents of the configuration file currently running on the system. The **show running-config** command displays only the commands that were successfully executed.

Usage Guidelines   None

Examples   To display the content of the current configuration file:

```
switch#show running-config
!
no protocol spanning-tree
!
interface Vlan 1
!
interface TenGigabitEthernet 0/0
 shutdown
!
interface TenGigabitEthernet 0/1
 shutdown
!
interface TenGigabitEthernet 0/2
 shutdown
!
interface TenGigabitEthernet 0/3
 shutdown
!
interface TenGigabitEthernet 0/4
 shutdown
!
```

See Also   show startup-config, show running-config access-list mac, show running-config cee-map, show running-config dot1x, show running-config interface port-channel, show running-config interface tengigabitethernet, show running-config interface vlan, show running-config linecard, show running-config linecard, show running-config rmon

show running-config access-list mac

Displays MAC ACLs in the running configuration.

Synopsis   **show running-config access-list mac** [*acl-name*]

Operands   *acl-name*   Specifies a MAC ACL.

Defaults   None

Command Modes   Privileged EXEC mode

Description   Use this command to display the rules of MAC ACLs in the running configuration.

Usage Guidelines   This command is supported only on the local switch.

Examples   To display all MAC ACLs in the running-config of the local switch:

```
switch# show running-config access-list mac
mac access-list extended haha
 seq 10 deny 0000.0000.0011 0000.0000.0022
mac access-list extended ww
 seq 10 deny 0000.0000.1101 any 8100
rw
```

See Also   mac access-list extended, mac access-list standard

show running-config cee-map

Displays the Converged Enhanced Ethernet (CEE) map.

Synopsis **show running-configuration cee-map** *[name]*

Operands *name* The name of the CEE map to display.

Description Use this command to display properties of the configured CEE map.

Defaults None

Command Modes Privileged EXEC mode

Usage Guidelines None

Examples To display the CEE map:

```
switch(config)# show running-configuration cee-map
cee-map default
precedence 1
 priority-group-table 1 weight 40 pfc on
 priority-group-table 15.0 pfc off
 priority-group-table 15.1 pfc off
 priority-group-table 15.2 pfc off
 priority-group-table 15.3 pfc off
 priority-group-table 15.4 pfc off
 priority-group-table 15.5 pfc off
 priority-group-table 15.6 pfc off
 priority-group-table 15.7 pfc off
 priority-group-table 2 weight 60 pfc off
 priority-table 2 2 2 1 2 2 2 15.0
 remap fabric-priority priority 0
 remap lossless-prioirty priority 0
 !
```

See Also priority-group-table

show running-config dot1x

Displays the IEEE 802.1x Port Authentication configuration.

Synopsis   **show running-configuration dot1x**

Operands   None

Description   Use this command to display IEEE 802.1x Port Authentication information.

Defaults   None

Command Modes   Privileged EXEC mode

Usage Guidelines   None

Examples   None

See Also   dot1x enable, dot1x reauthentication

show running

show running-configuration igmp

Displays the IGMP configuration.

Synopsis **show running-configuration igmp**

Operands None

Description Use this command to display IGMP information.

Defaults None

Command Modes Privileged EXEC mode

Usage Guidelines None

Examples None

See Also ip igmp snooping enable (global version), ip igmp query-interval

show running-config interface port-channel

Displays the status of port-channel interfaces.

Synopsis   **show running-config interface port-channel** [*number*]

Operands   *number*   Specifies a valid port-channel number.

Description   Use this command to display the configuration of port channel interfaces.

Defaults   By default. this command displays the configuration of all port channel interfaces on the local switch.

Command Modes   Privileged EXEC mode

Usage Guidelines   None

Examples   To display configuration information about all port channel interfaces on a Brocade VDX 6710 switch:

```
switch# show running-config interface port-channel
interface Port-channel 1
 description 1
 shutdown
!
interface Port-channel 2
 switchport
 switchport mode access
 switchport access vlan 1
 shutdown
!
interface Port-channel 3
 shutdown
!
```

See Also   interface

show running-config interface tengigabitethernet

Displays the status of 10 GB Ethernet interfaces.

Synopsis   **show running-config interface tengigabitethernet** [*slot* | *port*]

Operands   *slot*   Specifies a valid slot number.

                port   Specifies a valid port number.

Description   Use this command to display the configuration of 10 GB Ethernet interfaces.

Defaults   By default. this command displays the configuration of all 10 GB interfaces on the local switch.

Command Modes   Privileged EXEC mode

Usage Guidelines   None

Examples   To display configuration information about an interfaces:

```
switch# show running-config interface tengigabitethernet 0/1
interface TenGigabitEthernet 0/1
shutdown
```

See Also   interface

show running-config interface vlan

Displays the status of VLAN interfaces.

Synopsis   **show running-config interface vlan** [*vlan-id*]

Operands   *vlan-id*   Specifies a VLAN by its VLAN ID.

Description   Use this command to display the configuration of VLAN interfaces.

Defaults   By default. this command displays the configuration of all VLAN interfaces on the local switch.

**Command
Modes**   Privileged EXEC mode

**Usage
Guidelines**   None

Examples   None

See Also   interface

show running-config linecard

Displays command-line session configuration information. xxxxx

Synopsis	**show running-config linecard** *slot*
Operands	*slot* The linecard to display.
Description	Use this command to display configuration information about a linecard.
Defaults	This command has no default configurations.
Command Modes	Privileged EXEC mode
Usage Guidelines	None
Examples	None
See Also	interface

show running-config rmon

Displays Remote Monitor configuration information.

Synopsis   **show running-config rmon**

Operands   None

Description   Use this command to display Remote Monitor configuration information.

Defaults   This command has no default configurations.

Command
Modes   Privileged EXEC mode

Usage
Guidelines   None

Examples   None

See Also   rmon alarm, rmon collection, rmon event

show spanning-tree

Displays all Spanning Tree Protocol information.

Synopsis	**show spanning-tree**
Operands	None
Defaults	None
Command Modes	Privileged EXEC mode
	EXEC mode
Description	Use this command to display all STP information.
Usage Guidelines	None
Examples	None
See Also	None

show spanning-tree brief

Displays the status and parameters of the Spanning Tree Protocol.

Synopsis   **show spanning-tree brief**

Operands   None

Defaults   None

Command Modes   Privileged EXEC mode

EXEC mode

Description   Use this command to display the status and parameters of the Spanning Tree Protocol. It includes the port roles and port states. The following describes the port roles, states, and types:

- Port roles—root port, designated port, alternate port, and backup port
- Port states—discarding, learning, and forwarding
- Port types—edge port (PortFast), point-to-point, and shared port

Usage Guidelines   None

Examples   To display the status and parameters of the Spanning Tree Protocol:

```
switch#show spanning-tree brief
Spanning-tree Mode: Rapid Spanning Tree Protocol

     Root ID      Priority 32768
                  Address  0005.1e76.1aa0
                  Hello Time 2, Max Age 20, Forward Delay 15

     Bridge ID    Priority 32768
                  Address  0005.1e76.1aa0
                  Hello Time 2, Max Age 20, Forward Delay 15, Tx-HoldCount 6
                  Migrate Time 3 sec

     Interface      Role  Sts  Cost      Prio  Link-type       Boundary  Edge
     --------------------------------------------------------------------------
     Te 0/0         DIS   DSC  2000      128   P2P             Yes       No
     Te 0/1         ALT   BLK  2000      128   P2P             Yes       No
     Te 0/2         RTPT  BLK  2000      128   P2P             Yes       No
     Te 0/3         DIS   BLK  2000      128   P2P             Yes       No
     Te 0/8         DIS   DSC  2000      128   P2P             Yes       No
     Te 0/19        DIS   DSC  2000      128   P2P             Yes       No
     Te 0/20        DIS   DSC  2000      128   P2P             Yes       No
```

See Also   show spanning-tree interface

show spanning-tree interface

Displays the state of the Spanning Tree Protocol for all named port-channels or 10 Gbps Ethernet interfaces.

Synopsis

show spanning-tree interface {**port-channel** *number* | **tengigabitethernet** *slot/port*}

Operands

port-channel *number*

Specifies the port-channel number. The range of valid values is from 1 through 63.

tengigabitethernet

Specifies a valid 10 Gbps Ethernet interface.

slot   Specifies a valid slot number.

port   Specifies a valid port number.

Defaults

None

Command Modes

Privileged EXEC mode

EXEC mode

Description

Use this command to display the state of the spanning tree for all named port-channels or 10 Gbps Ethernet interfaces.

Usage Guidelines

The following describes the port roles, states, and types:

- Port roles—root port, designated port, alternate port, and backup port
- Port states—discarding, learning, and forwarding
- Port types—edge port (PortFast), point-to-point, and shared port

Examples

To display information on a 10 Gbps Ethernet interface:

```
switch#show spanning-tree interface tengigabitethernet 0/0
Spanning-tree Mode: Rapid Spanning Tree Protocol
Root Id: 8000.0005.1e76.1aa0 (self)
 Bridge Id: 8000.0005.1e76.1aa0
Port Te 0/0 enabled
     IfIndex: 67108864; Id: 8000; Role: Disabled; State: Discarding
     Designated Path Cost: 0
     Configured Path Cost: 2000
     Designated Port Id: 0; Port Priority: 128
     Designated Bridge: 0000.0000.0000.0000
     Number of forward-transitions: 0
     Version Rapid Spanning Tree Protocol - Received None - Send RSTP
     Edgeport: off; AutoEdge: no; AdminEdge: no; EdgeDelay: 3 sec
     Configured Root guard: off; Operational Root guard: off
     Boundary: yes
     Bpdu-guard: off
     Bpdu-filter: off
     Link-type: point-to-point
     Received BPDUs: 0; Sent BPDUs: 0
```

See Also   show spanning-tree brief

show spanning-tree mst brief

Displays the status and parameters of the Multiple Spanning Tree Protocol (MSTP) instance information in brief.

| Synopsis | **show spanning-tree mst brief** |

| Operands | None |

| Defaults | None |

| Command Modes | Privileged EXEC mode |
| | EXEC mode |

| Description | Use this command to display the status and parameters of the Multiple Spanning Tree Protocol (MSTP) instance information. It includes the port roles, port states, and port types. |

| Usage Guidelines | The following describes the port roles, states, and types: |

- Port roles—root port, designated port, alternate port, and backup port
- Port states—discarding, learning, and forwarding
- Port types—edge port (PortFast), point-to-point, and shared port

| Examples | To display the status and parameters of the MSTP instance information: |

```
switch#show spanning-tree mst brief

Spanning-tree Mode: Multiple Spanning Tree Protocol

CIST Root ID            Priority 32768
                         Address  0005.1e76.1aa0
CIST Bridge ID          Priority 32768
                         Address  0005.1e76.1aa0
CIST Regional Root ID   Priority 32768
                         Address  0005.1e76.1aa0


Configured Hello Time 2, Max Age 20, Forward Delay 15
Max Hops 20, Tx-HoldCount 6
CIST Root  Hello Time 2, Max Age 20, Forward Delay 15, Max Hops 20
CIST Root path cost 0

Interface       Role  Sts  Cost      Prio  Link-type       Boundary  Edge
-------------------------------------------------------------------------
Te 0/0          DIS   DSC  2000      128   P2P             Yes       No
Te 0/1          ALT   BLK  2000      128   P2P             Yes       No
Te 0/2          RTPT  BLK  2000      128   P2P             Yes       No
Te 0/3          DIS   BLK  2000      128   P2P             Yes       No
Te 0/8          DIS   DSC  2000      128   P2P             Yes       No
Te 0/19         DIS   DSC  2000      128   P2P             Yes       No
Te 0/20         DIS   DSC  2000      128   P2P             Yes       No
```

| See Also | show spanning-tree mst instance, show spanning-tree mst interface |

show spanning-tree mst detail

Displays details on an interface for the active Multiple Spanning Tree Protocol (MSTP) instance running.

Synopsis   **show spanning-tree mst detail** {**interface port-channel** *number* | **interface tengigabitethernet** *slot/port*}

Operands   **interface**   Specifies the interface for which to display the spanning-tree information.

port-channel *number*

Specifies the port-channel of the interface. The range of valid values is from 1 through 63.

interface tengigabitethernet

Specifies a valid 10 Gbps Ethernet interface.

slot   Specifies a valid slot number.

port   Specifies a valid port number.

Defaults   None

Command Modes   Privileged EXEC mode

EXEC mode

Description   Use this command to display details on a specified interface for the active MSTP instance.

Usage Guidelines   None

Examples   To display MSTP information on the switch in detail:

```
switch#show spanning-tree mst detail
Spanning-tree Mode: Multiple Spanning Tree Protocol
CIST Root Id: 8000.0005.1e76.1aa0 (self)
 CIST Bridge Id: 8000.0005.1e76.1aa0
 CIST Reg Root Id: 8000.0005.1e76.1aa0 (self)
CIST Root Forward Delay: 15; Hello Time: 2; Max Age: 20; Max-hops: 20
 Configured Forward Delay: 15; Hello Time: 2; Max Age: 20; Max-hops: 20;
 Tx-HoldCount: 6
 Number of topology change(s): 0
Bpdu-guard errdisable timeout: disabled
 Bpdu-guard errdisable timeout interval: 300 sec
 Migrate Time: 3 sec
CIST Port Details.
 ==================
 Instance: 0; Vlans:1, 100
Port Te 0/0 enabled
     IfIndex: 67108864; Id: 8000; Role: Disabled; State: Discarding
     Designated External Path Cost: 0; Internal Path Cost 0
     Configured Path Cost: 2000
     Designated Port Id: 0; CIST Priority: 128
     Designated Bridge: 0000.0000.0000.0000
     CIST Port Hello Time: 2
     Number of forward-transitions: 0
```

```
            Version Multiple Spanning Tree Protocol - Received None - Send MSTP
            Edgeport: off; AutoEdge: no; AdminEdge: no; EdgeDelay: 3 sec
            Configured Root guard: off; Operational Root guard: off
            Boundary: yes
            Bpdu-guard: off
            Bpdu-filter: off
            Link-type: point-to-point
            Received BPDUs: 0; Sent BPDUs: 0
    Port Te 0/8 enabled
            IfIndex: 67633408; Id: 8008; Role: Disabled; State: Discarding
            Designated External Path Cost: 0; Internal Path Cost 0
            Configured Path Cost: 2000
            Designated Port Id: 0; CIST Priority: 128
            Designated Bridge: 0000.0000.0000.0000
            CIST Port Hello Time: 2
            Number of forward-transitions: 0
            Version Multiple Spanning Tree Protocol - Received None - Send MSTP
            Edgeport: off; AutoEdge: no; AdminEdge: no; EdgeDelay: 3 sec
            Configured Root guard: off; Operational Root guard: off
            Boundary: yes
            Bpdu-guard: off
            Bpdu-filter: off
            Link-type: point-to-point
            Received BPDUs: 0; Sent BPDUs: 0
    Port Te 0/19 enabled
            IfIndex: 68354563; Id: 8013; Role: Disabled; State: Discarding
            Designated External Path Cost: 0; Internal Path Cost 0
            Configured Path Cost: 2000
            Designated Port Id: 0; CIST Priority: 128
            Designated Bridge: 0000.0000.0000.0000
            CIST Port Hello Time: 2
            Number of forward-transitions: 0
            Version Multiple Spanning Tree Protocol - Received None - Send MSTP
            Edgeport: off; AutoEdge: no; AdminEdge: no; EdgeDelay: 3 sec
            Configured Root guard: off; Operational Root guard: off
            Boundary: yes
            Bpdu-guard: off
            Bpdu-filter: off
            Link-type: point-to-point
            Received BPDUs: 0; Sent BPDUs: 0
    Port Te 0/20 enabled
            IfIndex: 68420100; Id: 8014; Role: Disabled; State: Discarding
            Designated External Path Cost: 0; Internal Path Cost 0
            Configured Path Cost: 2000
            Designated Port Id: 0; CIST Priority: 128
            Designated Bridge: 0000.0000.0000.0000
            CIST Port Hello Time: 2
            Number of forward-transitions: 0
            Version Multiple Spanning Tree Protocol - Received None - Send MSTP
            Edgeport: off; AutoEdge: no; AdminEdge: no; EdgeDelay: 3 sec
            Configured Root guard: off; Operational Root guard: off
            Boundary: yes
            Bpdu-guard: off
            Bpdu-filter: off
            Link-type: point-to-point
            Received BPDUs: 0; Sent BPDUs: 0
    MSTI details.
```

See Also   show spanning-tree mst instance, show spanning-tree mst interface

show spanning-tree mst instance

Displays information on a specified Multiple Spanning Tree Protocol (MSTP) instance.

Synopsis **show spanning-tree mst instance** i*nstance_id* {brief | **interface port-channel** *number* | **interface tengigabitethernet** *slot/port*}

Operands *instance_id*   Specifies the MSTP instance for which to display information. The range of valid values is from 1 through 15.

brief   Displays a brief summary of the information.

interface   Specifies the interface for which to display the MSTP instance information.

port-channel *number*
                         Specifies the port-channel of the interface. The range of valid values is from 1 through 63.

interface tengigabitethernet
                         Specifies a valid 10 Gbps Ethernet interface for which to display the MSTP instance information.

slot   Specifies a valid slot number.

port   Specifies a valid port number.

Defaults None

Command Modes Privileged EXEC mode

EXEC mode

Description Use this command to display information on a specified instance of the MSTP.

Usage Guidelines None

Examples To display information on MSTP instance 1:

```
switch#show spanning-tree mst instance 1 interface tengigabitethernet 0/0

 Instance: 1; VLANs: 100
 MSTI Root Id: 8001.0005.1e76.1aa0 (self)
 MSTI Bridge Id: 8001.0005.1e76.1aa0
 MSTI Bridge Priority: 32768
```

See Also show spanning-tree mst brief, show spanning-tree mst detail

show spanning-tree mst-config

Displays the MST configuration information.

Synopsis	**show spanning-tree mst-config**
Operands	None
Defaults	None
Command Modes	Privileged EXEC mode EXEC mode
Description	Use this command to display the MST configuration information.
Usage Guidelines	None
Examples	None
See Also	None

show spanning-tree mst interface

Displays information for a specified interface for a Multiple Spanning Tree Protocol (MSTP) instance.

Synopsis **show spanning-tree mst interface** {**port-channel** *number*| **tengigabitethernet** slot/port}

Operands **port-channel** *number*

Specifies the port-channel of the interface. The range of valid values is from 1 through 63.

tengigabitethernet

Specifies a valid 10 Gbps Ethernet interface.

slot Specifies a valid slot number.

port Specifies a valid port number.

Defaults None

Command Modes Privileged EXEC mode

EXEC mode

Description Use this command to display MSTP protocol-specific information such as Common and Internal Spanning Tree (CIST) spanning-tree-related information, information to each MSTP instance (MSTI), and the state of the port specific to each MSTI.

Usage Guidelines None

Examples To display information for the MSTP interface:

```
switch#show spanning-tree mst interface tengigabitethernet 0/0
Spanning-tree Mode: Multiple Spanning Tree Protocol

 CIST Root Id: 8000.0005.1e76.1aa0 (self)
 CIST Bridge Id: 8000.0005.1e76.1aa0
 CIST Reg Root Id: 8000.0005.1e76.1aa0 (self)

    CIST Operational Port Hello Time: 0
    Number of forward-transitions: 0
    Version: Multiple Spanning Tree Protocol - Received None - Send MSTP
    Edgeport: off; AutoEdge: no; AdminEdge: no; EdgeDelay: 3 sec
    Configured Root guard: off; Operational Root guard: off
    Boundary: yes
    Bpdu-guard: off
    Bpdu-filter: off
    Link-type: point-to-point
    Received BPDUs: 0; Sent BPDUs: 0
Instance     Role  Sts  Cost      Prio  VLANs
 ---------------------------------------------------------------------
 0           DIS   DSC  2000      128   1
```

See Also show spanning-tree brief, show spanning-tree mst brief

show startup-config

Displays the content of the startup configuration file.

Synopsis   **show startup-config**

Operands   None

Defaults   None

Command Modes   Privileged EXEC mode

EXEC mode

Description   Use this command to display the contents of the startup configuration file.

Usage Guidelines   The following guidelines apply when using this command:

- An error displays if there are no entries in the startup configuration file; for example:

```
switch#show startup-config
% No Startup-config
```

- Use the **write memory** command to add entries to the startup configuration file.
- Using the **write erase** command to delete entries from the startup configuration file.

Examples   To show the content of the startup configuration file:

```
switch#show startup-config
!
no protocol spanning-tree
!
interface Vlan 1
!
interface TenGigabitEthernet 0/0
 shutdown
!
interface TenGigabitEthernet 0/1
 shutdown
!
interface TenGigabitEthernet 0/2
 shutdown
!
interface TenGigabitEthernet 0/3
 shutdown
```

See Also   write erase, write memory

show statistics access-list interface

Shows active ACL rules in the switch and if the rules have counters enabled.

Synopsis   **show statistics access-list interface** [**port-channel** *number* | **tengigabitethernet** *slot/port* | **vlan** *vlan_id*]

Operands   **port-channel** *number*
                         Specifies the port-channel number. The range of valid values is from 1 through 63.

            tengigabitethernet
                         Specifies a valid 10 Gbps Ethernet interface.

            slot   Specifies a valid slot number.

            port   Specifies a valid port number.

            vlan *vlan_id*   Specifies the VLAN number. The range of valid values is from 1 through 3583.

Defaults   None

Command   Privileged EXEC mode
Modes
            EXEC mode

Description Use this command to display the active rules on the switch and whether those rules have counters enabled.

Usage   None
Guidelines

Examples   To display the statistics for ACL applied on two interfaces, a 10 Gbps Ethernet interface and VLAN 100:

```
switch#show statistics access-list interface tengigabitethernet 0/1
switch#show statistics access-list interface vlan 100
```

See Also   show running-config, show statistics access-list mac

show statistics access-list mac

Shows active MAC ACL rules in the switch and if the rules have counters enabled.

Synopsis   **show statistics access-list mac** *name* {**interface** [**port-channel** *number* | **tengigabitethernet** *slot/port* | **vlan** *vlan_id*]}

Operands   *name*   Specifies a unique name for the MAC ACL.

interface   Specifies the interface for which to display the statistics.

port-channel *number*
                              Specifies the port-channel number. The range of valid values is from 1 through 63.

tengigabitethernet
                              Specifies a valid 10 Gbps Ethernet interface.

slot   Specifies a valid slot number.

port   Specifies a valid port number.

vlan *vlan_id*   Specifies the VLAN number. The range of valid values is from 1 through 3583.

Defaults   None

Command Modes   Privileged EXEC mode

EXEC mode

Description   Use this command to display the active rules on the switch and whether those rules have counters enabled.

Usage Guidelines   None

Examples   To display the statistics for standard and extended MAC ACL applied on two interfaces, 10 Gbps Ethernet interface and VLAN 100:

```
switch#show statistics access-list mac std_acl
mac access-list standard std_acl on interface Te 0/1
 seq 10 deny 0011.2222.3333 count (6312 frames)
 seq 20 deny 0011.2222.4444 count (20 frames)
 seq 30 deny 0011.2222.5555
 seq 40 deny 0011.2222.6666 count (100000 frames)

switch#show statistics access-list mac ext_acl
mac access-list extended ext_acl on interface Vl 100
 seq 10 deny 0011.2222.2222 0022.2222.2222 ipv4 count (4350 frames)
 seq 20 deny 0011.2222.2222 0022.2222.2222 fcoe count (0 frames)
 seq 30 deny 0011.2222.2222 0022.2222.2222 arp
 seq 40 deny 0011.2222.2222 0022.2222.2222 10000 count (560 frames)
```

If the rule is not written into the hardware, the output displays as in the following example:

```
seq 8 permit 00c0.e000.0080 count (unwritten)
```

If the rule is written into the hardware, but the counters are not enabled for that rule, the output displays as in the following example:

```
seq 9 permit 00c0.e000.0090 count (uncounted)
```

See Also   show running-config, show mac access-group, show statistics access-list interface

show system

Displays system information.

Synopsis   **show system** [**mac-address reserved**]

Operands   **mac-address reserved**
                    Displays the MAC address information.

Defaults   None

Command Modes   Privileged EXEC mode

                 EXEC mode

Description   Use this command to display system information and the MAC address details.

Usage Guidelines   None

Examples   To display the system information:

```
switch#show system mac-address reserved
Base MAC address : 00:05:1E:53:EB:86
End MAC address  : 00:05:1E:53:ED:86
switch#show system
Stack MAC        : 00:05:1E:76:42:00

   -- UNIT 0 --
Unit Name        : switch
Status           : Online
Hardware Rev     : 76.6
FC Port(s)       : 8
Tengig Port(s)   : 24
Up Time          : 18:28:27 up 4:09
FOS Version      : v6.1.2
Jumbo Capable    : yes
Burned In MAC    : 00:05:1E:76:42:00
Management IP    : 10.35.155.204
Status           : UP

   -- Power Supplies --
PS0 is OK
PS1 is OK

   -- Fan Status --
Fan 1 is Ok
Fan 2 is Ok
Fan 3 is Ok
```

See Also   show version, show environment

show tech-support

Displays output for troubleshooting.

Synopsis	**show tech-support**

Operands None

Defaults None

Command Modes Privileged EXEC mode

EXEC mode

Description Use this command to run a script that automatically runs a variety of **show** commands with output that is useful to Technical Support for troubleshooting.

Usage Guidelines None

Examples To display output for troubleshooting:

```
switch#show tech-support

------------------ date ------------------
Thu Feb 19 18:30:13 UTC 2009

--------------show version ------------------
Fabric Operating System Software
Fabric Operating System Version: 6.1
Copyright (c) 1995-2008 Brocade Communications Systems, Inc.
Build Time: 03:35:17 Feb 18, 2009
switch uptime: 04:11:09
Firmware name: v6.1.2

Switch Model Name: Brocade 8000
Control Processor: Freescale Semiconductor 8548E with 1016 MB of memory

4MB of boot flash memory.

  8 FC Port(s)
 24 Ten GigabitEthernet/IEEE 802.3 interface(s)

------------------ show running-config ------------------
!
switch#
```

See Also None

show users

Displays information on all users currently logged in to the switch.

Synopsis   show users

Operands   None

Defaults   None

Command Modes   Privileged EXEC mode

EXEC mode

Description   Use this command to view information on all users logged in to the switch.

Usage Guidelines

Type	Displays the line numbers.
Idle	Displays how long the session has been idle.
Location	Displays the IP address of the user.
User	Displays the user name of all users logged in.

Examples   To display information on users logged in to the switch:

```
switch#show users
    Type        Idle        Location        User
  * vty 0     00:00:00    172.21.252.244  root
```

See Also   show line

show version

Displays version information for the hardware and software.

Synopsis   **show version**

Operands   None

Defaults   None

Command Modes   Privileged EXEC mode

EXEC mode

Description   Use this command to display hardware and software version information.

Usage Guidelines   None

Examples   To display version information:

```
switch#show version
Fabric Operating System Software
Fabric Operating System Version: 6.1
Copyright (c) 1995-2008 Brocade Communications Systems, Inc.
Build Time: 03:35:17 Feb 18, 2009
E209 uptime: 04:14:43
Firmware name: v6.1.2

Switch Model Name: Brocade 8000
Control Processor: Freescale Semiconductor 8548E with 1016 MB of memory

4MB of boot flash memory.

  8 FC Port(s)
 24 Ten GigabitEthernet/IEEE 802.3 interface(s)
switch#
```

See Also   show system

show vlan

Displays information about a specific VLAN interface.

Synopsis   show vlan {*vlan_id* | **brief** |**classifier** | **fcoe**}

Operands   *vlan_id*   Specifies the VLAN interface to display. The range of valid values is from 1
                through 3583.

brief   Specifies to display VLAN information for all interfaces, including static and
                dynamic interfaces.

classifier   Specifies to display all VLAN classification information.

fcoe   Specifies to display all FCoe VLAN interfaces.

Defaults   None

Command   Privileged EXEC mode
Modes
            EXEC mode

Description   Use this command to display information about a specific VLAN.

Usage   None
Guidelines

Examples   To show information on a VLAN:

```
switch#show vlan 1
VLAN     Name              State    Ports

                                    (u)-Untagged, (t)-Tagged

                                    (c)-Converged

======= ================ ======= ==============================

1       default          ACTIVE   Te 0/0(t) Te 0/4(t) Te 0/5(t)

                                   Te 0/8(t) Te 0/10(t) Te 0/11(c)

                                   Po 1(t) Po 63(t)
```

See Also   None

show vlan classifier

Displays information about a specific VLAN classifier group.

Synopsis	**show vlan classifier** {**rule** *rule_id*	**group** *number*	**interface** {**group** *group number*	**port-channel** *number*	**tengigabitethernet** *slot/port*}

Operands
rule *rule_id*   Specifies the VLAN identification rule. The range of valid values is from 1 through 256.

group *number*   Specifies the VLAN classifier group number. The range of valid values is from 1 through 16.

interface group *number*
Specifies the VLAN classifier interface group number. The range of valid values is from 1 through 16.

interface port-channel *number*
Specifies the VLAN classifier port-channel number. The range of valid values is from 1 through 63.

interface tengigabitethernet
Specifies a valid 10 Gbps Ethernet interface.

slot   Specifies a valid slot number.

port   Specifies a valid port number

Defaults
None

Command Modes
Privileged EXEC mode

EXEC mode

Description
Use this command to display information about all configured VLAN classifier groups or a specific VLAN interface group.

Usage Guidelines
If a group ID is not specified, all configured VLAN classifier groups are shown. If a group ID is specified, a specific configured VLAN classifier group is shown.

Examples
To display the VLAN classifier for group 1:

```
switch#show vlan classifier group 1
vlan classifier group 1 rule 1
```

See Also
None

shutdown (interface)

Disables the selected interface.

Synopsis	**shutdown**
	no shutdown
Operands	None
Defaults	The interface is disabled.
Command Modes	Interface configuration mode
Description	Use this command to disable an interface.
Usage Guidelines	None

Examples　　To disable an interface:

```
switch(conf-if-te-0/1)#shutdown
```

To enable an interface:

```
switch(conf-if-te-0/1)#no shutdown
```

See Also　　interface, show ip interface, show interface

shutdown (Spanning Tree Protocol)

Disables the Multiple Spanning Tree Protocol (MSTP), Rapid Spanning Tree Protocol (RSTP), or the Spanning Tree Protocol (STP) globally.

Synopsis	**shutdown**
	no shutdown
Operands	None
Defaults	STP is not required in a loop-free topology and is not enabled by default.
Command Modes	Spanning Tree Protocol configuration mode
Description	Use this command to disable MSTP, RSTP, or STP globally.
Usage Guidelines	This command has no Usage Guidelines.
Examples	To disable STP globally:

```
switch(config)#protocol spanning-tree stp
switch(conf-rstp)#shutdown
```

To enable STP globally:

```
switch(config)#protocol spanning-tree stp
switch(conf-rstp)#no shutdown
```

See Also	None

spanning-tree autoedge

Enables automatic edge detection.

Synopsis	**spanning-tree autoedge** **no spanning-tree autoedge**
Operands	None
Defaults	Automatic edge detection is not enabled.
Command Modes	Interface configuration mode
Description	Use this command to automatically identify the edge port.
Usage Guidelines	The port can become an edge port if no Bridge Protocol Data Unit (BPDU) is received.
Examples	To enable automatic edge detection:

```
switch(conf-if-te-0/1)#spanning-tree autoedge
```

See Also   protocol spanning-tree

spanning-tree cost

Changes an interface's spanning-tree port path cost.

.Synopsis **spanning-tree cost** *cost*

Operands *cost* Specifies the path cost for the Spanning Tree Protocol (STP) calculations. The range of valid values is from 1 through 200000000.

Defaults The default path cost is 200000000.

Command Modes Interface configuration mode

Description Use this command to configure the path cost for spanning-tree calculations.

Usage Guidelines A lower path cost indicates a greater chance of becoming the root.

Examples To set the port path cost to 128:

```
switch(conf-if-te-0/1)#spanning-tree cost 128
```

See Also show spanning-tree

spanning-tree edgeport

Enables the edge port on an interface to allow the interface to quickly transition to the forwarding state.

Synopsis	**spanning-tree edgeport {bpdu-filter	bpdu-guard}**

Operands		
	bpdu-filter	Sets the edge port Bridge Protocol Data Unit (BPDU) filter for the port.
	bpdu-guard	Guards the port against the reception of BPDUs.

Defaults   Edge port is disabled.

Command Modes   Interface configuration mode

Description   Use this command to enable the edge port feature. This command is only for RSTP and MSTP. Use the **spanning-tree portfast** command for STP.

Usage Guidelines   Note the following details about edge ports and their behavior:

- A port can become an edge port if no BPDU is received.
- When an edge port receives a BPDU, it becomes a normal spanning-tree port and is no longer an edge port.
- Because ports directly connected to end stations cannot create bridging loops in the network, edge ports directly transition to the forwarding state, and skip the listening and learning states.

Examples   To enable a port to quickly transition to the forwarding state:

```
switch(conf-if-te-0/1)#spanning-tree edgeport
```

To set the edge port BPDU filter for the port:

```
switch(conf-if-te-0/1)#spanning-tree edgeport bpdu-filter
```

To guard the port against reception of BPDUs:

```
switch(conf-if-te-0/1)#spanning-tree edgeport bpdu-guard
```

See Also   spanning-tree autoedge

spanning-tree guard root

Enables the guard root to restrict which interface is allowed to be the spanning-tree root port or the path to the root for the switch.

Synopsis   **spanning-tree guard root**

               no spanning-tree guard root

Operands   None

Defaults   The guard root is disabled.

Command Modes   Interface configuration mode

Description   Use this command to enable the guard root on the interface. Use the **no spanning-tree guard root** command to disable the guard root on the selected interface.

Usage Guidelines   The root port provides the best path from the switch to the root switch.

The guard root protects the root bridge from malicious attacks and unintentional misconfigurations where a bridge device that is not intended to be the root bridge becomes the root bridge. This causes severe bottlenecks in the datapath. The guard root ensures that the port on which it is enabled is a designated port. If the guard root-enabled port receives a superior Bridge Protocol Data Unit (BPDU), it goes to a discarding state.

Examples   To enable the guard root:

```
switch(conf-if-te-0/1)#spanning-tree guard root
```

See Also   spanning-tree cost

spanning-tree hello-time

Configures the hello-time in seconds on the interface.

Synopsis   **spanning-tree hello-time** *seconds*

no spanning-tree hello-time

Operands   *seconds*   Sets the interval between the hello Bridge Protocol Data Units (BPDUs) sent
by the root switch configuration messages. The range of valid values is from
1 through 10.

Defaults   The default is 2 seconds.

Command   Interface configuration mode
Modes

Description   Use this command to set the interval time between the BPDUs sent by the root switch. Use the **no
spanning-tree hello-time** command to return to the default setting. This command is only for MSTP.

Usage   Changing the hello-time affects all spanning-tree instances. The **max-age** setting must be greater
Guidelines   than the **hello-time** setting.

Examples   To set the hello-time to 5 seconds:

```
switch(conf-if-te-0/1)#spanning-tree hello-time 5
```

See Also   forward-delay, max-age, show spanning-tree

spanning-tree instance

Sets restrictions for the port of a particular MSTP instance.

Synopsis	**spanning-tree instance** *instance_id* {**cost** *cost* | **priority** *priority* | **restricted-role** | **restricted-tcn**} **no spanning-tree instance** *instance_id* {**cost** *cost* | **priority** *priority* | **restricted-role** | **restricted-tcn**}

Operands	*instance_id*	Specifies the MSTP instance. The range of valid values is from 1 through 15.
	cost *cost*	Specifies the path-cost for a port. The range of valid values is from 1 through 20000000.
	priority *priority*	Specifies the port priority for a bridge in increments of 16. The range of valid values is from 0 through 240.
	restricted-role	Specifies to restrict the role of a port.
	restricted-tcn	Specifies to restrict the propagation of the topology change notifications from a port.

Defaults	The default path-cost value is 2000 on a 10 Gbps Ethernet interface.
Command Modes	Interface configuration mode
Description	Use this command to set restrictions for a port on a particular MSTP instance.
Usage Guidelines	Use this command for MSTP-specific configurations.
Examples	To set restrictions for the port of MSTP instance 1 with the cost of 40000: `switch(conf-if-te-0/1)#`**`spanning-tree instance 1 cost 40000`**
See Also	instance, show spanning-tree

spanning-tree link-type

Enables and disables the rapid transition for the Spanning Tree Protocol.

Synopsis	**spanning-tree link-type {point-to-point | shared}**
	no spanning-tree link-type
Operands	**point-to-point**　　Enables rapid transition.
	shared　　Disables rapid transition.
Defaults	The default is **point-to-point**.
Command Modes	Interface configuration mode
Description	Use this command to specify a link type for the Spanning Tree Protocol.
Usage Guidelines	This command overrides the default setting of the link type.
Examples	To specify the link type as shared:

```
switch(conf-if-te-0/0)#spanning-tree link-type shared
```

See Also	None

spanning-tree portfast

Enables the Port Fast feature on an interface to allow the interface to quickly transition to the forwarding state.

Synopsis	**spanning-tree portfast {bpdu-filter	bpdu-guard}**
Operands	**bpdu-filter** Sets the Port Fast BPDU filter for the port.
	bpdu-guard Guards the port against the reception of BPDUs.
Defaults	Port Fast is disabled.
Command Modes	Interface configuration mode

Description   Use this command to enable the Port Fast feature. This command is only for STP. Port Fast immediately puts the interface into the forwarding state without having to wait for the standard forward time. Use the **spanning-tree edgeport** command for MSTP and RSTP.

Usage Guidelines   If you enable **spanning-tree portfast bpdu-guard** on an interface and the interface receives a BPDU, the software disables the interface and puts the interface in the ERR_DISABLE state.

Examples   To enable a port to quickly transition to the forwarding state:

```
switch(conf-if-te-0/1)#spanning-tree portfast
```

To set the Port Fast BPDU filter for the port:

```
switch(conf-if-te-0/1)#spanning-tree portfast bpdu-filter
```

To guard the port against the reception of BPDUs:

```
switch(conf-if-te-0/1)#spanning-tree portfast bpdu-guard
```

See Also   spanning-tree autoedge

spanning-tree priority

Changes an interface's STP port priority.

Synopsis   **spanning-tree priority** *priority*

no spanning-tree priority *priority*

Operands   *priority*   Specifies the interface priority for the spanning tree. The range of valid values
is from 0 through 240. Port priority is in increments of 16.

Defaults   The default value is 128.

Command   Interface configuration mode
Modes

Description   Use this command to change an interface's spanning-tree port priority. Use the **no spanning-tree
priority** command to return to the default setting.

Usage   None
Guidelines

Examples   To configure the port priority to 16:

```
switch(conf-if-te-0/1)#spanning-tree priority 16
```

See Also   spanning-tree cost, show spanning-tree

spanning-tree restricted-role

Restricts the role of the port from becoming a root port.

Synopsis	**spanning-tree restricted-role**
	no spanning-tree restricted-role
Operands	None
Defaults	The restricted role is disabled.
Command Modes	Interface configuration mode
Description	Use this command to restricts the port from becoming a root port. Use the **no spanning-tree restricted-role** command to return to the default setting.
Usage Guidelines	None
Examples	To restrict the port from becoming a root port:

```
switch(conf-if-te-0/1)#spanning-tree restricted-role
```

See Also   show spanning-tree

spanning-tree restricted-tcn

Restricts the topology change notification (TCN) Bridge Protocol Data Units (BPDUs) sent on the port.

Synopsis   **spanning-tree restricted-tcn**

no spanning-tree restricted-tcn

Operands   None

Defaults   The restricted TCN is disabled.

Command Modes   Interface configuration mode

Description   Use this command to restrict the topology change notification Bridge Protocol Data Units (BPDUs) sent on the port.

Usage Guidelines   None

Examples   To restrict the TCN on a specific interface:

```
switch(conf-if-te-0/1)#spanning-tree restricted-tcn
```

See Also   show spanning-tree

spanning-tree shutdown

Enables or disables Spanning Tree Protocol (STP) on the interface.

Synopsis **spanning-tree shutdown**

no spanning-tree shutdown

Operands None

Defaults Spanning Tree Protocol is not enabled.

Command Modes Interface configuration mode

Description Use this command to disable STP on the interface or VLAN. Use the **no spanning-tree shutdown** command to enable STP on the interface or VLAN.

Once all of the interface ports have been configured for a VLAN, you can enable STP for all members of the VLAN with a single command. Whichever protocol is currently selected is used by the VLAN. Only one type of STP can be active at a time.

A physical interface port can be a member of multiple VLANs. For example, a physical port can be a member of VLAN 100 and VLAN 55 simultaneously. In addition, VLAN 100 can have STP enabled and VLAN 55 can have STP disabled simultaneously.

Usage Guidelines None

Examples To disable STP on a specific interface:

```
switch(config)#interface tengigabitethernet 0/1
switch(conf-if-te-0/1)#spanning-tree shutdown
```

To enable STP on VLAN 100 :

```
switch(config)#interface vlan 100
switch(conf-if-vl-100)#no spanning-tree shutdown
```

See Also protocol spanning-tree

spanning-tree tc-flush-standard

Flushes the Media Access Control (MAC) address based on the optimal scheme.

Synopsis	**spanning-tree tc-flush-standard**
	no spanning-tree tc-flush-standard
Operands	None
Defaults	MAC address flushing is enabled.
Command Modes	Global configuration mode
Description	Use this command to flush the MAC address based on the optimal scheme. Use the **no spanning-tree tc-flush-standard** command to disable the MAC address flushing.
Usage Guidelines	None
Examples	To disable the MAC address flushing upon receiving any topology change notification:

```
switch(config)#no spanning-tree tc-flush-standard
```

See Also	show spanning-tree brief

switchport

Puts the interface to Layer 2 mode and sets the switching characteristics of the Layer 2 interface to the defaults.

Synopsis   **switchport**

no switchport

Operands   None

Defaults   By default, all Layer 2 interfaces are mapped to default VLAN 1 and the interface is set to access mode.

Command Modes   Interface configuration mode

Description   Use this command to set the switching characteristics of the Layer 2 interface. Use the **no switchport** command to take the switch out of the Layer 2 mode.

Usage Guidelines   For changing the interface configuration mode to trunk or changing the default VLAN mapping, use additional **switchport** commands.

Examples   To put an interface in Layer 2 mode:

```
switch(conf-if-te-0/1)#switchport
```

To remove an interface from Layer 2 mode:

```
switch(conf-if-te-0/1)#no switchport
```

See Also   show vlan, show interface, switchport mode, switchport access, switchport trunk

switchport access

Sets the Layer 2 interface as access.

Synopsis   **switchport access vlan** *vlan_id*

no switchport access vlan

Operands   **vlan** *vlan_id*   Sets the port VLAN (PVID) to the specified *vlan_id*. The range of valid values is from 1 through 3583.

Defaults   By default, all Layer 2 interfaces are in access mode and belong to the VLAN ID 1.

Command Modes   Interface configuration mode

Description   Use this command to set the Layer 2 interface as access. In access mode, the interface only allows untagged and priority tagged packets. Use the **no switchport access vlan** command to set the PVID to the default VLAN 1.

Usage Guidelines   None

Examples   To set the Layer 2 interface PVID to 100:

```
switch(conf-if-te-0/19)#switchport access vlan 100
```

See Also   show vlan, show interface, switchport mode, switchport trunk

switchport converged

Adds or removes native and tagged VLANs on a Layer 2 interface.

Synopsis   **switchport converged** {**vlan** *vlan_id* | **allowed vlan** {**add** *vlan_id* | **all** | **none** | **remove** *vlan_id*}}

no switchport converged

Operands   **vlan** *vlan_id*   Sets the default native VLAN for the Layer 2 interface.

allowed vlan   Sets the VLANs that will transmit and receive through the Layer 2 interface.

add *vlan_id*   Adds a VLAN to transmit and receive through the Layer 2 interface. The range of valid values is from 2 through 3583.

all   Allows all VLANs to transmit and receive through the Layer 2 interface.

none   Allows no VLANs to transmit and receive through the Layer 2 interface.

remove *vlan_id*   Removes a VLAN that transmits and receives through the Layer 2 interface. The range of valid values is from 2 through 3583.

Defaults   The default native VLAN for a converged interface is 1.

Command Modes   Interface configuration mode

Description   Converged mode allows tagged and untagged traffic on the interface. The untagged traffic on should be tagged to a VLAN. By default it is assigned to VLAN 1. To change the default VLAN, use the command **switchport converged vlan** *<vlanid>*.

Usage Guidelines   None

Examples   To set the native VLAN of 200 on an interface:

```
switch(conf-if-te-0/19)#switchport converged vlan 200
```

To set the tagged VLAN on an interface to 100:

```
switch(conf-if-te-0/19)#switchport converged allowed vlan add 100
```

To remove the tagged VLAN 100 from the interface:

```
switch(conf-if-te-0/19)#switchport converged allowed vlan remove 100
```

See Also   show vlan, show interface, switchport mode, switchport trunk

switchport mode

Sets the mode of the Layer 2 interface.

Synopsis	**switchport mode** {**access**	**trunk**	**converged**}
Operands	**access** Sets the Layer 2 interface as access.
	trunk Sets the Layer 2 interface as trunk.
	converged Sets the Layer 2 interface as converged.
Defaults	None
Command Modes	Interface configuration mode
Description	Use this command to set the mode of the Layer 2 interface.
Usage Guidelines	Converged mode is not available in interface port-channel configuration mode.
Examples	To set the mode of the interface to access:

```
switch(conf-if-te-0/19)#switchport mode access
```

To set the mode of the interface to trunk:

```
switch(conf-if-te-0/19)#switchport mode trunk
```

To set the mode of the interface to converged:

```
switch(conf-if-te-0/19)#switchport mode converged
```

See Also   show vlan, show interface, switchport mode, switchport trunk

switchport trunk

Adds or removes tagged VLANs on a Layer 2 interface.

Synopsis	**switchport trunk allowed vlan** {**add** *vlan_id* | **all** | **except** *vlan_id* | **none** | **remove** *vlan_id*} **no switchport trunk**

Operands

allowed vlan	Sets the VLANs that will transmit and receive through the Layer 2 interface.
add *vlan_id*	Adds a VLAN to transmit and receive through the Layer 2 interface. The range of valid values is from 2 through 3583.
all	Allows all VLANs to transmit and receive through the Layer 2 interface.
except *vlan_id*	Allows all VLANs except the VLAN ID to transmit and receive through the Layer 2 interface. The range of valid values is from 2 through 3583.
none	Allows no VLANs to transmit and receive through the Layer 2 interface.
remove *vlan_id*	Removes a VLAN that transmits and receives through the Layer 2 interface. The range of valid values is from 2 through 3583.

Defaults   None

Command Modes   Interface configuration mode

Description   Use this command to add or remove tagged VLANs on a Layer 2 interface.

Usage Guidelines   None

Examples   To set the tagged VLAN on an interface to 100:

```
switch(conf-if-te-0/19)#switchport truck allowed vlan add 100
```

To remove the tagged VLAN 100 from the interface:

```
switch(conf-if-te-0/19)#switchport truck allowed vlan remove 100
```

See Also   show vlan, show interface, switchport mode, switchport trunk

system-description

Sets the global system description specific to LLDP.

Synopsis **system-description** *line*

no system-description

Operands *line* Specifies a description for the LLDP system. The valid value is a maximum of 50 characters.

Defaults None

Command Modes Protocol LLDP configuration mode.

Description Use this command to set the global system description specific to LLDP. Use the **no system-description** command to clear the global LLDP system description.

Usage Guidelines None

Examples To set the global system description specific to LLDP:

```
switch(conf-lldp)#system-description Brocade
```

See Also system-name

system-name

Sets the global system name specific to LLDP.

Synopsis	**system-name** *name*
Operands	*name* Specifies a system name for the LLDP. The valid value is a maximum of 32 characters.
Defaults	By default, the host name from the switch is used.
Command Modes	Protocol LLDP configuration mode
Description	Use this command to set the global system name specific to LLDP.
Usage Guidelines	The name used in this command must begin with a letter, and can consist of letters, digits, hyphens, and underscore characters. Spaces are prohibited. Special characters are not supported, and cause the name to truncate.
Examples	To specify a system name for the LLDP:

```
switch(conf-lldp)#system-name Brocade
```

See Also	system-description

terminal length

Sets the number of lines to display on a screen.

Synopsis	**terminal length** *number*
Operands	*number* Specifies the number of lines to display on a screen. The range of valid values is from 0 through 512.
Defaults	The default length is 24.
Command Modes	Privileged EXEC mode EXEC mode
Description	Use this command to set the number of lines to display on the screen.
Usage Guidelines	If 0 (zero), the switch does not pause between screens of output.
Examples	To set the number of lines to display on the screen to 30:

```
switch#terminal length 30
```

See Also	None

terminal monitor

Displays the RASlog and debug outputs on a terminal.

Synopsis **terminal monitor**

terminal no monitor

Operands None

Defaults The terminal monitor option is disabled.

Command Modes Privileged EXEC mode

EXEC mode

Description Use this command to enable or disable the display of the RASlog and debug outputs on a terminal.

Usage Guidelines None

Examples To enable the display of the RASlog and the debug outputs on a terminal:

```
switch#terminal monitor
```

To disable the display of the RASlog and the debug outputs on a terminal:

```
switch#terminal no monitor
```

See Also None

transmit-holdcount

Configures the maximum number of Bridge Protocol Data Units (BPDUs) transmitted per second for the Multiple Spanning Tree Protocol (MSTP) and the Rapid Spanning Tree Protocol (RSTP).

Synopsis   **transmit-holdcount** *number*

no transmit-holdcount

Operands   *number*   Specifies the value in seconds for the number of BPDUs than can be sent before pausing for one second. The range of valid values is from 1 through 10.

Defaults   The default is 6 seconds.

Command Modes   Multiple Spanning Tree Protocol configuration mode

Description   Use this command to configure the BPDU burst size by changing the transmit hold count value. Use the **no transmit-holdcount** command to return to the default setting.

Usage Guidelines   None

Examples   To change the number of BPDUs transmitted to 3 seconds:

```
switch(conf-mstp)#transmit-holdcount 3
```

See Also   show spanning-tree mst detail

undebug

Exits debug mode.

Synopsis	**undebug all**
Operands	None
Defaults	None
Command Modes	Privileged EXEC mode EXEC mode
Description	This command disables all debugging functions.
Usage Guidelines	None
Examples	None
See Also	None

vlan classifier activate group

Activates a VLAN classifier group.

Synopsis	**vlan classifier activate group** *number* **vlan** *vlan_id*
	no vlan classifier activate group

Operands

number	Specifies which VLAN classifier group to activate. The range of valid values is from 1 through 16.
vlan *vlan_id*	Specifies which VLAN interface to activate. The range of valid values is from 1 through 3583.

Defaults   None

Command Modes   Interface configuration mode

Description   Use this command to activate a VLAN classifier group for a specified VLAN. Use the **no vlan classifier activate group** command to remove the specified group.

Usage Guidelines   None

Examples   To activate VLAN classifier group 1 for VLAN 5:

```
switch-cmsh(conf-if-te-0/10)#vlan classifier activate group 1 vlan 5
```

See Also   None

vlan classifier group

Adds and deletes rules to a VLAN classifier group.

Synopsis   **vlan classifier group** *number* {**add rule** *number*| **delete rule** *number*}

no vlan classifier group *number*

Operands   *number*   Specifies the VLAN group number for which rules are to be added or deleted. The range of valid values is from 1 through 16.

add rule *number*   Specifies a rule is to be added. The range of valid values is from 1 through 256.

delete rule *number*   Specifies a rule is to be deleted. The range of valid values is from 1 through 256.

Defaults   None

Command Modes   Global configuration mode

Description   Use this command to add and delete rules from VLAN classifier groups.

Usage Guidelines   Use the **no vlan classifier group** *number* to delete a classifier group.

Examples   To add rule 1 to VLAN classifier group 1:

```
switch(config)#vlan classifier group 1 add rule 1
```

See Also   None

vlan classifier rule

Creates a VLAN classifier rule.

Synopsis   **vlan classifier rule** *rule_id* [**mac** *mac_address*] {**proto** {*hex_addr* **encap** {**ethv2** | **nosnapllc** | **snapllc**} | **arp encap** {**ethv2** | **nosnapllc** | **snapllc**} | **ip encap** {**ethv2** | **nosnapllc** | **snapllc**} | **ipv6 encap** {**ethv2** | **nosnapllc** | **snapllc**}

no vlan classifier rule

Operands   *rule_id*   Specifies the VLAN identification rule. The range of valid values is from 1 through 256.

mac   Specifies the Media Access Control (MAC) list.

mac_address   Specifies the MAC address-based VLAN classifier rule used to map to a specific VLAN.

proto   Specifies the protocol to use for the VLAN classifier rule.

hex_addr   An Ethernet hexadecimal value. The range of valid values is from 0x0000 through 0xffff

arp   Specifies to use the Address Resolution Protocol.

fcoe   Specificies to use FCoE protocol.

fip   Specifies to use the FIP protocol.

ip   Specifies to use the Internet protocol.

ipv6   Specifies to use the Internet protocol version 6.

encap   Specifies to encapsulate the Ethernet frames sent for the VLAN classifier rule.

ethv2   Specifies to use the Ethernet version 2 encapsulated frames.

nosnapllc   Specifies to use the Ethernet version 2 non-SNA frames.

snapllc   Specifies to use the Ethernet version 2 with SNA frames.

Defaults   None

Command Modes   Global configuration mode

Description   Use this command to dynamically classify Ethernet packets on an untagged interface into VLANs. Use the **no vlan classifier rule** *rule_id* command to delete the rule.

Usage Guidelines   VLAN classifiers are created individually and are managed separately. Up to 256 VLAN classifiers can be provisioned. One or more VLAN classifiers can be grouped into a classifier group. This classifier group can further be applied on an interface.

Examples   To create an ARP VLAN classifier rule:

```
switch(config)#vlan classifier rule 2 proto arp encap ethv2
```

See Also   show vlan

write erase

Removes the startup configuration from the switch.

Synopsis   **write erase**

Operands   None

Defaults   None

Command Modes   Privileged EXEC mode

Description   Use this command to remove a startup configuration.

Usage Guidelines   Executing the **write erase** command causes the running-configuration file for the switch is erased.

Examples   To clear a startup configuration:

```
switch#write erase
```

See Also   write memory

write memory

Copies the current running configuration to the startup configuration file.

Synopsis   **write memory**

Operands   None

Defaults   None

**Command
Modes**   Privileged EXEC mode

Description   Use this command to copy the current running configuration to the startup configuration file.

**Usage
Guidelines**   None

Examples   To write configuration data to the startup configuration file:

```
switch#write memory
Overwrite the startup config file (y/n): y
Building configuration...
```

See Also   write erase

2 write memory