Stack Manager Command Reference, Cisco IOS Release 15.2(2)E (Catalyst 2960-XR Switch)

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C O N T E N T S

Preface

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Document Conventions

This document uses the following conventions:

Convention	Description
^ or Ctrl	Both the ^ symbol and Ctrl represent the Control (Ctrl) key on a keyboard. For example, the key combination **^D** or **Ctrl-D** means that you hold down the Control key while you press the D key. (Keys are indicated in capital letters but are not case sensitive.)
bold font	Commands and keywords and user-entered text appear in **bold** font.
Italic font	Document titles, new or emphasized terms, and arguments for which you supply values are in *italic* font.
`Courier` font	Terminal sessions and information the system displays appear in `courier` font.
`Bold Courier` font	**`Bold Courier`** font indicates text that the user must enter.
[x]	Elements in square brackets are optional.
...	An ellipsis (three consecutive nonbolded periods without spaces) after a syntax element indicates that the element can be repeated.
|	A vertical line, called a pipe, indicates a choice within a set of keywords or arguments.
[x | y]	Optional alternative keywords are grouped in brackets and separated by vertical bars.

Convention	Description
{x | y}	Required alternative keywords are grouped in braces and separated by vertical bars.
[x {y | z}]	Nested set of square brackets or braces indicate optional or required choices within optional or required elements. Braces and a vertical bar within square brackets indicate a required choice within an optional element.
string	A nonquoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.
< >	Nonprinting characters such as passwords are in angle brackets.
[ ]	Default responses to system prompts are in square brackets.
!, #	An exclamation point (!) or a pound sign (#) at the beginning of a line of code indicates a comment line.

Reader Alert Conventions

This document may use the following conventions for reader alerts:

Note   Means *reader take note*. Notes contain helpful suggestions or references to material not covered in the manual.

Tip   Means *the following information will help you solve a problem*.

Caution   Means *reader be careful*. In this situation, you might do something that could result in equipment damage or loss of data.

Timesaver   Means *the described action saves time*. You can save time by performing the action described in the paragraph.

Warning   IMPORTANT SAFETY INSTRUCTIONS

This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. Use the statement number provided at the end of each warning to locate its translation in the translated safety warnings that accompanied this device. Statement 1071

SAVE THESE INSTRUCTIONS

Related Documentation

Note Before installing or upgrading the switch, refer to the switch release notes.

- Catalyst 2960-XR Switch documentation, located at:

- Cisco SFP and SFP+ modules documentation, including compatibility matrixes, located at:

  http://www.cisco.com/en/US/products/hw/modules/ps5455/tsd_products_support_series_home.html

- Error Message Decoder, located at:

  https://www.cisco.com/cgi-bin/Support/Errordecoder/index.cgi

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

http://www.cisco.com/c/en/us/td/docs/general/whatsnew/whatsnew.html

Subscribe to the *What's New in Cisco Product Documentation* as a Really Simple Syndication (RSS) feed and set content to be delivered directly to your desktop using a reader application. The RSS feeds are a free service and Cisco currently supports RSS version 2.0.

Using the Command-Line Interface

Information About Using the Command-Line Interface

Command Modes

The Cisco IOS user interface is divided into many different modes. The commands available to you depend on which mode you are currently in. Enter a question mark (?) at the system prompt to obtain a list of commands available for each command mode.

You can start a CLI session through a console connection, through Telnet, a SSH, or by using the browser.

When you start a session, you begin in user mode, often called user EXEC mode. Only a limited subset of the commands are available in user EXEC mode. For example, most of the user EXEC commands are one-time commands, such as **show** commands, which show the current configuration status, and **clear** commands, which clear counters or interfaces. The user EXEC commands are not saved when the switch reboots.

To have access to all commands, you must enter privileged EXEC mode. Normally, you must enter a password to enter privileged EXEC mode. From this mode, you can enter any privileged EXEC command or enter global configuration mode.

Using the configuration modes (global, interface, and line), you can make changes to the running configuration. If you save the configuration, these commands are stored and used when the switch reboots. To access the various configuration modes, you must start at global configuration mode. From global configuration mode, you can enter interface configuration mode and line configuration mode.

This table describes the main command modes, how to access each one, the prompt you see in that mode, and how to exit the mode.

Table 1: Command Mode Summary

Mode	Access Method	Prompt	Exit Method	About This Mode
User EXEC	Begin a session using Telnet, SSH, or console.	`Switch>`	Enter **logout** or **quit**.	Use this mode to • Change terminal settings. • Perform basic tests. • Display system information.
Privileged EXEC	While in user EXEC mode, enter the **enable** command.	`Switch#`	Enter **disable** to exit.	Use this mode to verify commands that you have entered. Use a password to protect access to this mode.
Global configuration	While in privileged EXEC mode, enter the **configure** command.	`Switch(config)#`	To exit to privileged EXEC mode, enter **exit** or **end**, or press **Ctrl-Z**.	Use this mode to configure parameters that apply to the entire switch.
VLAN configuration	While in global configuration mode, enter the **vlan** *vlan-id* command.	`Switch(config-vlan)#`	To exit to global configuration mode, enter the **exit** command. To return to privileged EXEC mode, press **Ctrl-Z** or enter **end**.	Use this mode to configure VLAN parameters. When VTP mode is transparent, you can create extended-range VLANs (VLAN IDs greater than 1005) and save configurations in the switch startup configuration file.
Interface configuration	While in global configuration mode, enter the **interface** command (with a specific interface).	`Switch(config-if)#`		Use this mode to configure parameters for the Ethernet ports.

Mode	Access Method	Prompt	Exit Method	About This Mode
			To exit to global configuration mode, enter **exit**. To return to privileged EXEC mode, press **Ctrl-Z** or enter **end**.	
Line configuration	While in global configuration mode, specify a line with the **line vty** or **line console** command.	`Switch(config-line)#`	To exit to global configuration mode, enter **exit**. To return to privileged EXEC mode, press **Ctrl-Z** or enter **end**.	Use this mode to configure parameters for the terminal line.

Using the Help System

You can enter a question mark (?) at the system prompt to display a list of commands available for each command mode. You can also obtain a list of associated keywords and arguments for any command.

SUMMARY STEPS

1. **help**
2. *abbreviated-command-entry* **?**
3. *abbreviated-command-entry* <Tab>
4. **?**
5. *command* **?**
6. *command keyword* **?**

DETAILED STEPS

	Command or Action	**Purpose**
Step 1	**help** **Example:** Switch# **help**	Obtains a brief description of the help system in any command mode.
Step 2	*abbreviated-command-entry* **?** **Example:** Switch# **di?** dir disable disconnect	Obtains a list of commands that begin with a particular character string.
Step 3	*abbreviated-command-entry* <Tab> **Example:** Switch# **sh conf**<tab> Switch# **show configuration**	Completes a partial command name.
Step 4	**?** **Example:** Switch> **?**	Lists all commands available for a particular command mode.
Step 5	*command* **?** **Example:** Switch> **show ?**	Lists the associated keywords for a command.
Step 6	*command keyword* **?** **Example:** Switch(config)# **cdp holdtime ?** <10-255> Length of time (in sec) that receiver must keep this packet	Lists the associated arguments for a keyword.

Understanding Abbreviated Commands

You need to enter only enough characters for the switch to recognize the command as unique.

This example shows how to enter the **show configuration** privileged EXEC command in an abbreviated form:

Switch# **show conf**

No and Default Forms of Commands

Almost every configuration command also has a **no** form. In general, use the **no** form to disable a feature or function or reverse the action of a command. For example, the **no shutdown** interface configuration command reverses the shutdown of an interface. Use the command without the keyword **no** to reenable a disabled feature or to enable a feature that is disabled by default.

Configuration commands can also have a **default** form. The **default** form of a command returns the command setting to its default. Most commands are disabled by default, so the **default** form is the same as the **no** form. However, some commands are enabled by default and have variables set to certain default values. In these cases, the **default** command enables the command and sets variables to their default values.

CLI Error Messages

This table lists some error messages that you might encounter while using the CLI to configure your switch.

Table 2: Common CLI Error Messages

Error Message	Meaning	How to Get Help
`% Ambiguous command: "show con"`	You did not enter enough characters for your switch to recognize the command.	Reenter the command followed by a question mark (?) without any space between the command and the question mark. The possible keywords that you can enter with the command appear.
`% Incomplete command.`	You did not enter all of the keywords or values required by this command.	Reenter the command followed by a question mark (?) with a space between the command and the question mark. The possible keywords that you can enter with the command appear.
`% Invalid input detected at '^' marker.`	You entered the command incorrectly. The caret (^) marks the point of the error.	Enter a question mark (?) to display all of the commands that are available in this command mode. The possible keywords that you can enter with the command appear.

Configuration Logging

You can log and view changes to the switch configuration. You can use the Configuration Change Logging and Notification feature to track changes on a per-session and per-user basis. The logger tracks each configuration command that is applied, the user who entered the command, the time that the command was entered, and the parser return code for the command. This feature includes a mechanism for asynchronous

notification to registered applications whenever the configuration changes. You can choose to have the notifications sent to the syslog.

> **Note**   Only CLI or HTTP changes are logged.

How to Use the CLI to Configure Features

Configuring the Command History

The software provides a history or record of commands that you have entered. The command history feature is particularly useful for recalling long or complex commands or entries, including access lists. You can customize this feature to suit your needs.

Changing the Command History Buffer Size

By default, the switch records ten command lines in its history buffer. You can alter this number for a current terminal session or for all sessions on a particular line. This procedure is optional.

SUMMARY STEPS

1.   **terminal history** [**size** *number-of-lines*]

DETAILED STEPS

	Command or Action	Purpose
Step 1	**terminal history** [**size** *number-of-lines*] **Example:** `Switch# terminal history size 200`	Changes the number of command lines that the switch records during the current terminal session in privileged EXEC mode. You can configure the size from 0 to 256.

Recalling Commands

To recall commands from the history buffer, perform one of the actions listed in this table. These actions are optional.

> **Note**   The arrow keys function only on ANSI-compatible terminals such as VT100s.

SUMMARY STEPS

1. **Ctrl-P** or use the **up arrow** key
2. **Ctrl-N** or use the **down arrow** key
3. **show history**

DETAILED STEPS

	Command or Action	**Purpose**
Step 1	**Ctrl-P** or use the **up arrow** key	Recalls commands in the history buffer, beginning with the most recent command. Repeat the key sequence to recall successively older commands.
Step 2	**Ctrl-N** or use the **down arrow** key	Returns to more recent commands in the history buffer after recalling commands with **Ctrl-P** or the up arrow key. Repeat the key sequence to recall successively more recent commands.
Step 3	**show history** **Example:** `Switch# show history`	Lists the last several commands that you just entered in privileged EXEC mode. The number of commands that appear is controlled by the setting of the **terminal history** global configuration command and the **history** line configuration command.

Disabling the Command History Feature

The command history feature is automatically enabled. You can disable it for the current terminal session or for the command line. This procedure is optional.

SUMMARY STEPS

1. **terminal no history**

DETAILED STEPS

	Command or Action	**Purpose**
Step 1	**terminal no history** **Example:** `Switch# terminal no history`	Disables the feature during the current terminal session in privileged EXEC mode.

Enabling and Disabling Editing Features

Although enhanced editing mode is automatically enabled, you can disable it and reenable it.

SUMMARY STEPS

1. **terminal editing**
2. **terminal no editing**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**terminal editing** **Example:** Switch# **terminal editing**	Reenables the enhanced editing mode for the current terminal session in privileged EXEC mode.
Step 2	**terminal no editing** **Example:** Switch# **terminal no editing**	Disables the enhanced editing mode for the current terminal session in privileged EXEC mode.

Editing Commands Through Keystrokes

The keystrokes help you to edit the command lines. These keystrokes are optional.

Note The arrow keys function only on ANSI-compatible terminals such as VT100s.

Table 3: Editing Commands

Editing Commands	Description
Ctrl-B or use the **left arrow** key	Moves the cursor back one character.
Ctrl-F or use 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-T	Transposes the character to the left of the cursor with the character located at the cursor.
Delete or **Backspace** key	Erases the character to the left of the cursor.
Ctrl-D	Deletes the character at the cursor.
Ctrl-K	Deletes all characters from the cursor to the end of the command line.
Ctrl-U or **Ctrl-X**	Deletes all characters from the cursor to the beginning of the command line.
Ctrl-W	Deletes the word to the left of the cursor.
Esc D	Deletes from the cursor to the end of the word.
Esc C	Capitalizes at the cursor.
Esc L	Changes the word at the cursor to lowercase.
Esc U	Capitalizes letters from the cursor to the end of the word.

Ctrl-V or **Esc Q**	Designates a particular keystroke as an executable command, perhaps as a shortcut.
Return key	Scrolls down a line or screen on displays that are longer than the terminal screen can display.
	Note The More prompt is used for any output that has more lines than can be displayed on the terminal screen, including **show** command output. You can use the **Return** and **Space** bar keystrokes whenever you see the More prompt.
Space bar	Scrolls down one screen.
Ctrl-L or **Ctrl-R**	Redisplays the current command line if the switch suddenly sends a message to your screen.

Editing Command Lines That Wrap

You can use a wraparound feature for commands that extend beyond a single line on the screen. When the cursor reaches the right margin, the command line shifts ten spaces to the left. You cannot see the first ten characters of the line, but you can scroll back and check the syntax at the beginning of the command. The keystroke actions are optional.

To scroll back to the beginning of the command entry, press **Ctrl-B** or the left arrow key repeatedly. You can also press **Ctrl-A** to immediately move to the beginning of the line.

Note The arrow keys function only on ANSI-compatible terminals such as VT100s.

The following example shows how to wrap a command line that extends beyond a single line on the screen.

SUMMARY STEPS

1. **access-list**
2. **Ctrl-A**
3. **Return** key

DETAILED STEPS

	Command or Action	**Purpose**
Step 1	**access-list**	Displays the global configuration command entry that extends beyond one line.
	Example:	When the cursor first reaches the end of the line, the line is shifted ten spaces to the left and redisplayed. The dollar sign ($) shows that the
	`Switch(config)# access-list 101 permit tcp`	

	Command or Action	Purpose
	`10.15.22.25 255.255.255.0 10.15.22.35` `Switch(config)# $ `**`101 permit tcp`** **`10.15.22.25 255.255.255.0 10.15.22.35`** **`255.25`** `Switch(config)# $`**`t tcp 10.15.22.25`** **`255.255.255.0 131.108.1.20 255.255.255.0`** **`eq`** `Switch(config)# $`**`15.22.25 255.255.255.0`** **`10.15.22.35 255.255.255.0 eq 45`**	line has been scrolled to the left. Each time the cursor reaches the end of the line, the line is again shifted ten spaces to the left.
Step 2	**Ctrl-A** **Example:** `Switch(config)# `**`access-list 101 permit tcp`** ` `**`10.15.22.25 255.255.255.0 10.15.2$`**	Checks the complete syntax. The dollar sign ($) appears at the end of the line to show that the line has been scrolled to the right.
Step 3	**Return** key	Execute the commands. The software assumes that you have a terminal screen that is 80 columns wide. If you have a different width, use the **terminal width** privileged EXEC command to set the width of your terminal. Use line wrapping with the command history feature to recall and modify previous complex command entries.

Searching and Filtering Output of show and more Commands

You can search and filter the output for **show** and **more** commands. This is useful when you need to sort through large amounts of output or if you want to exclude output that you do not need to see. Using these commands is optional.

SUMMARY STEPS

1. {**show** | **more**} *command* | {**begin** | **include** | **exclude**} *regular-expression*

DETAILED STEPS

	Command or Action	Purpose
Step 1	{**show** | **more**} *command* | {**begin** | **include** | **exclude**} *regular-expression* **Example:** `Switch# `**`show interfaces	include protocol`** `Vlan1 is up, line protocol is up` `Vlan10 is up, line protocol is down` `GigabitEthernet1/0/1 is up, line protocol is down` `GigabitEthernet1/0/2 is up, line protocol is up`	Searches and filters the output. Expressions are case sensitive. For example, if you enter | **exclude output**, the lines that contain **output** are not displayed, but the lines that contain **output** appear.

Accessing the CLI on a Switch Stack

You can access the CLI through a console connection, through Telnet, a SSH, or by using the browser.

You manage the switch stack and the stack member interfaces through the stack master. You cannot manage stack members on an individual switch basis. You can connect to the stack master through the console port or the Ethernet management port of one or more stack members. Be careful with using multiple CLI sessions on the stack master. Commands that you enter in one session are not displayed in the other sessions. Therefore, it is possible to lose track of the session from which you entered commands.

> **Note**   We recommend using one CLI session when managing the switch stack.

If you want to configure a specific stack member port, you must include the stack member number in the CLI command interface notation.

Accessing the CLI Through a Console Connection or Through Telnet

Before you can access the CLI, you must connect a terminal or a PC to the switch console or connect a PC to the Ethernet management port and then power on the switch, as described in the hardware installation guide that shipped with your switch.

If your switch is already configured, you can access the CLI through a local console connection or through a remote Telnet session, but your switch must first be configured for this type of access.

You can use one of these methods to establish a connection with the switch:

- Connect the switch console port to a management station or dial-up modem, or connect the Ethernet management port to a PC. For information about connecting to the console or Ethernet management port, see the switch hardware installation guide.

- Use any Telnet TCP/IP or encrypted Secure Shell (SSH) package from a remote management station. The switch must have network connectivity with the Telnet or SSH client, and the switch must have an enable secret password configured.

    - The switch supports up to 16 simultaneous Telnet sessions. Changes made by one Telnet user are reflected in all other Telnet sessions.

    - The switch supports up to five simultaneous secure SSH sessions.

After you connect through the console port, through the Ethernet management port, through a Telnet session or through an SSH session, the user EXEC prompt appears on the management station.

Stack Manager Commands

debug platform remote-commands

To enable debugging of remote commands, use the **debug platform remote-commands** command in privileged EXEC mode. To disable debugging, use the **no** form of this command.

debug platform remote-commands

no debug platform remote-commands

Syntax Description   This command has no arguments or keywords.

Command Default   Debugging is disabled.

Command Modes   Privileged EXEC

Command History

Release	Modification
Cisco IOS 15.0(2)EX1	This command was introduced.

Usage Guidelines   The **undebug platform remote-commands** command is the same as the **no debug platform remote-commands** command.

When you enable debugging on a switch stack, it is enabled only on the stack master. To enable debugging on a stack member, you can start a session from the stack master by using the **session** *switch-number* privileged EXEC command. Enter the **debug** command at the command-line prompt of the stack member. You also can use the **remote command** *stack-member-number LINE* privileged EXEC command on the stack master switch to enable debugging on a member switch without first starting a session.

Related Commands

Command	Description
remote command	Monitors all or specified stack members.
session	Accesses a specific stack member from the stack master.

debug platform stack-manager

To enable debugging of the stack manager software, use the **debug platform stack-manager** command in privileged EXEC mode. To disable debugging, use the **no** form of this command.

debug platform stack-manager {**all**| **rpc**| **sdp**| **sim**| **ssm**| **tdm**| **trace**}

no debug platform stack-manager {**all**| **rpc**| **sdp**| **sim**| **ssm**| **tdm**| **trace**}

Syntax Description

all	Displays all stack manager debug messages.
rpc	Displays stack manager remote procedure call (RPC) usage debug messages.
sdp	Displays the Stack Discovery Protocol (SDP) debug messages.
sim	Displays the stack information module debug messages.
ssm	Displays the stack state-machine debug messages.
tdm	Displays the stack manager topology discovery use debug messages.
trace	Traces the stack manager entry and exit debug messages.

Command Default   Debugging is disabled.

Command Modes   Privileged EXEC

Command History

Release	Modification
Cisco IOS 15.0(2)EX1	This command was introduced.

Usage Guidelines   This command is supported only on stacking-capable switches.

The **undebug platform stack-manager** command is the same as the **no debug platform stack-manager** command.

When you enable debugging on a switch stack, it is enabled only on the stack master. To enable debugging on a stack member, you can start a session from the stack master by using the **session** *switch-number* EXEC command. Enter the **debug** command at the command-line prompt of the stack member. You also can use the **remote command** *stack-member-number LINE* EXEC command on the stack master switch to enable debugging on a member switch without first starting a session.

Related Commands

Command	Description
remote command	Monitors all or specified stack members.
session	Accesses a specific stack member from the stack master.

reload

To reload the stack member and to apply a configuration change, use the **reload** command in privileged EXEC mode.

reload [**/noverify**| **/verify**] [*LINE*| **at**| **cancel**| **in**| **slot** *stack-member-number*| **standby-cpu**]

Syntax Description

/noverify	(Optional) Specifies to not verify the file signature before the reload.
/verify	(Optional) Verifies the file signature before the reload.
LINE	(Optional) Reason for the reload.
at	(Optional) Specifies the time in hh:mm for the reload to occur.
cancel	(Optional) Cancels the pending reload.
in	(Optional) Specifies a time interval for reloads to occur.
slot	(Optional) Saves the changes on the specified stack member and then restarts it.
stack-member-number	(Optional) Stack member number on which to save the changes. The range is 1 to 8.
standby-cpu	(Optional) Reloads the standby route processor (RP).

Command Default   Immediately reloads the stack member and puts a configuration change into effect.

Command Modes   Privileged EXEC

Command History

Release	Modification
Cisco IOS 15.0(2)EX1	This command was introduced.

Usage Guidelines   If there is more than one switch in the switch stack, and you enter the **reload slot** *stack-member-number* command, you are not prompted to save the configuration.

Examples   This example shows how to reload the switch stack:

```
Switch# reload
System configuration has been modified. Save? [yes/no]: y
```

```
Proceed to reload the whole Stack? [confirm] y
```

This example shows how to reload a specific stack member:

```
Switch# reload slot 6
Proceed with reload? [confirm] y
```

This example shows how to reload a single-switch switch stack (there is only one member switch):

```
Switch# reload slot 3
System configuration has been modified. Save? [yes/no]: y
Proceed to reload the whole Stack? [confirm] y
```

Related Commands

Command	Description
show switch	Displays information related to the stack member or the switch stack.
switch stack port	Disables or enables the specified stack port on the member.
switch renumber	Changes the stack member number.

remote command

To monitor all or specified stack members, use the **remote command** privileged EXEC command.

remote command {**all**| *stack-member-number*} *LINE*

Syntax Description

all	Applies to all stack members.
stack-member-number	The stack member. The range is 1 to 8.
LINE	The command to execute.

Command Modes   Privileged EXEC

Command History

Release	Modification
Cisco IOS 15.0(2)EX1	This command was introduced.

Usage Guidelines   The commands that you use in the LINE command-to-execute string (such as **debug**, **show**, or **clear**) apply to a specific stack member or to the switch stack.

Examples   This example shows how to execute the **undebug** command on the switch stack:

```
Switch(config)# remote command all undebug all
Switch :1 :
------------
All possible debugging has been turned off
Switch :5 :
------------
All possible debugging has been turned off
Switch :7 :
------------
All possible debugging has been turned off
```

This example shows how to execute the **debug udld event** command on stack member 5:

```
Switch(config)# remote command 5 undebug all
Switch :5 :
------------
UDLD events debugging is on
```

Related Commands

Command	Description
reload	Reloads the stack member and applies a configuration change.
show switch	Displays information related to the stack member or the switch stack.

Command	Description
switch stack port	Disables or enables the specified stack port on the member.
switch renumber	Changes the stack member number.

session

To access a specific stack member use the **session** command in privileged EXEC mode on the stack master.

session *stack-member-number*

Syntax Description

stack-member-number	Stack member number to access from the stack master. The range is 1 to 8.

Command Default None

Command Modes Privileged EXEC

Command History

Release	Modification
Cisco IOS 15.0(2)EX1	This command was introduced.

Usage Guidelines When you access the member, its member number is appended to the system prompt.

Use the **session** command from the master to access a member Switch

Use the **session** command with **processor 1** from the master or a standalone switch to access the internal controller. A standalone Switch is always member 1.

Examples This example shows how to access stack member 3:

```
Switch# session 3
Switch-3#
```

Related Commands

Command	Description
reload	Reloads the stack member and applies a configuration change.
show switch	Displays information related to the stack member or the switch stack.
switch stack port	Disables or enables the specified stack port on the member.
switch renumber	Changes the stack member number.

show platform stack compatibility configuration

To display switch stack compatibility information, use the **show platform stack compatibility configuration** command in privileged EXEC mode.

show platform stack compatibility configuration {**current**| **failure-log**| **mismatch** [**switch** *switch-number*]}

Syntax Description		
current	Displays currently configured system level features.
failure-log	Displays non-baseline feature configuration failure log.
mismatch	Displays configured non-baseline features that are causing a mismatch.
switch *switch-number*	(Optional) Displays configured non-baseline features that are causing a mismatch for the specified switch. The range is 1 to 8.

Command Default None

Command Modes Privileged EXEC

Command History

Release	Modification
Cisco IOS 15.0(2)EX1	This command was introduced.

Usage Guidelines Use this command only when you are working directly with your technical support representative while troubleshooting a problem. Do not use this command unless your technical support representative asks you to do so.

Examples This example shows how to display switch stack compatibility information:

```
Switch# show platform stack compatibility configuration current
```

show platform stack compatibility feature

To display switch stack state machine and message trace feature compatibility information, use the **show platform stack compatibility feature** command in privileged EXEC mode.

show platform stack compatibility feature {**all**| **independent** [**feature-id** *feature-id*]| **interdependent** [**feature-id** *feature-id*]| **port** [**feature-id** *feature-id*]}

Syntax Description

all	Displays all non-baseline features.
independent	Displays switch-level independent features.
feature-id *feature-id*	(Optional) Displays switch-level independent, system-level interdependent or port-level independent features with the specified feature ID.
interdependent	Displays system-level interdependent features.
port	Displays port-level independent features.

Command Default   None

Command Modes   Privileged EXEC

Command History

Release	Modification
Cisco IOS 15.0(2)EX1	This command was introduced.

Usage Guidelines   The **show platform stack compatibility** commands display feature incompatibility information between stack members in a mixed stack. Compatibility checks ensure that features that are supported across members of a stack using a forwarding ASIC with different capabilities will function effortlessly and error free.

Use this command only when you are working directly with your technical support representative while troubleshooting a problem. Do not use this command unless your technical support representative asks you to do so.

Examples   This example shows how to display all non-baseline features:

```
Switch# show platform stack compatibility feature all
            System Level Interdependent Features
============================================================
1: FHRR hardware vlan entry sharing feature
2: Jumbo MTU Routing Support
3: VRF on PVLAN interface
4: Global VRF config with greater than MAX policies
```

```
5: Routing keyword in IPv6 ACL
6: Ahp keyword in IPv6 ACL
7: Unsupported prefixes in IPv6 ACL
8: Unicast Reverse Path Forwarding
9: Multiple FHRP support
10: Gateway Load Balancing ProtocolVLAN-based FSPAN
11: CTS tagging and role-based enforcement
12: SPAN support 4 source session
13: Unknown

              Switch Level Independent Features
==================================================================

              Port Level Independent Features
==================================================================
1: Routing keyword in IPv6 ACL
2: Ahp keyword in IPv6 ACL
3: Unsupported prefixes in IPv6 ACL
4: Port-based FSPAN
5: IPv6 QoS match protocol support
6: IPv6 QoS ipv6 named ACL support
```

show platform stack compatibility table

To display feature compatibility tables for the switch stack, use the **show platform stack compatibility table** command in privileged EXEC mode.

show platform stack compatibility table {**all**| **independent**| **interdependent**| **port**}

Syntax Description

all	Displays all feature compatibility tables.
independent	Displays a switch-level independent feature compatibility table.
interdependent	Displays a system-level interdependent feature compatibility table.
port	Displays a port-level independent feature compatibility table.

Command Default   None

Command Modes   Privileged EXEC

Command History

Release	Modification
Cisco IOS 15.0(2)EX1	This command was introduced.

Usage Guidelines   The **show platform stack compatibility** commands display feature incompatibility information between stack members in a mixed stack. Compatibility checks ensure that features that are supported across members of a stack using a forwarding ASIC with different capabilities will function effortlessly and error free.

Use this command only when you are working directly with your technical support representative while troubleshooting a problem. Do not use this command unless your technical support representative asks you to do so.

Examples   This example shows how to display all feature compatibility tables:

```
Switch# show platform stack compatibility feature all
      System Level Interdependent Feature Matrix
================================================================
1: FHRR hardware vlan entry sharing feature
     Supported by switch versions: 1 3 4
2: Jumbo MTU Routing Support
     Supported by switch versions: 1 3 4
3: VRF on PVLAN interface
     Supported by switch versions: 1 3 4
4: Global VRF config with greater than MAX policies
     Supported by switch versions: 1 3 4
5: Routing keyword in IPv6 ACL
```

```
        Supported by switch versions: 1 3 4
6: Ahp keyword in IPv6 ACL
        Supported by switch versions: 1 3 4
7: Unsupported prefixes in IPv6 ACL
        Supported by switch versions: 1 3 4
8: Unicast Reverse Path Forwarding
        Supported by switch versions: 1 3 4
9: Multiple FHRP support
        Supported by switch versions: 1 3 4
10: Gateway Load Balancing ProtocolVLAN-based FSPAN
        Supported by switch versions: 1 2 3 4
11: CTS tagging and role-based enforcement
        Supported by switch versions: 1 3 4
12: SPAN support 4 source session
        Supported by switch versions: 3
13: Unknown
        Supported by switch versions: 4


        Switch Level Independent Feature Matrix
================================================================


        Port Level Independent Feature Matrix
================================================================
1: Routing keyword in IPv6 ACL
        Supported by ASIC versions: 1 2 3
2: Ahp keyword in IPv6 ACL
        Supported by ASIC versions: 1 2 3
3: Unsupported prefixes in IPv6 ACL
        Supported by ASIC versions: 1 2 3
4: Port-based FSPAN
        Supported by ASIC versions: 1 2 3
5: IPv6 QoS match protocol support
        Supported by ASIC versions: 1 2 3
6: IPv6 QoS ipv6 named ACL support
        Supported by ASIC versions: 1 2 3
```

show platform stack manager

To display platform-dependent switch-stack information, use the **show platform stack manager** command in privileged EXEC mode.

show platform stack manager {**all**| **counters**| **trace** [**cs** [**cs**]| **sdp** [**reverse**]| **state** [**reverse**]| **tdm**]}

Syntax Description

all	Displays all information for the entire switch stack.
counters	Displays the stack manager counters.
trace	Displays trace information.
cs	(Optional) Displays information about changes in stack-related trace messages.
sdp	(Optional) Displays Stack Discovery Protocol (SDP) information.
reverse	(Optional) Displays trace information in reverse chronological order (from recent to older chronological sequence).
state	(Optional) Displays stack state machine information.
tdm	(Optional) Displays information about topology discovery including a summary of the stacking over Ethernet state machine events and messages.

Command Default   None

Command Modes   Privileged EXEC

Command History

Release	Modification
Cisco IOS 15.0(2)EX1	This command was introduced.

Usage Guidelines   Use this command only when you are working directly with your technical support representative while troubleshooting a problem. Do not use this command unless your technical support representative asks you to do so.

Note   This command is supported only on stacking-capable switches.

The summary information about the switch stack shows these states:

- Waiting—A switch is booting up and waiting for communication from other switches in the stack. The switch has not determined whether or not it is stack master.
  Stack members not participating in election remain in the waiting state until the stack master is elected and ready.

- Initializing—A switch has determined whether it is stack master. If not, the switch receives its system- and interface-level configuration from the stack master and loads it.

- Ready—The member has completed loading the system- and interface-level configurations and can forward traffic.

- Master Re-Init—The state immediately after a reelection and a different member is elected the stack master. The new stack master is reinitializing its configuration. This state applies only to the new stack master.

- Ver Mismatch—A switch in version mismatch mode. Version-mismatch mode is when a switch that joins the stack has a different stack protocol minor version number than the stack master.

A typical state transition for a stack member (including stack master) booting up is Waiting > Initializing > Ready.

A typical state transition for a stack member to stack master after an election is Ready > Master Re-Init > Ready.

A typical state transition for a stack member in version mismatch (VM) mode is Waiting > Ver Mismatch.

show switch

To display information that is related to the stack member or the switch stack, use the **show switch** command in EXEC mode.

show switch [*stack-member-number*| **detail**| **neighbors**| **stack-ports**| **stack-ring speed**]

Syntax Description

stack-member-number	(Optional) Number of the stack member. The range is 1 to 8.
detail	(Optional) Displays detailed information about the stack ring.
neighbors	(Optional) Displays the neighbors of the entire switch stack.
stack-ports	(Optional) Displays port information for the entire switch stack.
stack-ring	(Optional) Displays information about the stack ring.
speed	Displays the stack ring speed.

Command Default None

Command Modes User EXEC

Privileged EXEC

Command History

Release	Modification
Cisco IOS 15.0(2)EX1	This command was introduced.

Usage Guidelines This command displays these states:

- Waiting—A switch is booting up and waiting for communication from other switches in the stack. The switch has not determined whether or not it is a stack master.

  Stack members not participating in a stack master election remain in the waiting state until the stack master is elected and ready.

- Initializing—A switch has determined whether it has stack master status. If it is not the stack master, it is receiving its system- and interface-level configuration from the stack master and loading it.

- Ready—The member has completed loading the system- and interface-level configurations and can forward traffic.

- Master Re-Init—The state immediately after a master reelection and a different member is elected master. The new master is reinitializing its configuration. This state applies only to the new master.

- Ver Mismatch—A switch in version mismatch mode. Version-mismatch mode is when a switch joining the stack has a different stack protocol minor version number than the master.

- SDM Mismatch—A switch in Switch Database Management (SDM) mismatch mode. SDM mismatch is when a member does not support the SDM template running on the master.

- Provisioned—The state of a preconfigured switch before it becomes an active member of a switch stack, or the state of a stack member after it has left the switch stack. The MAC address and the priority number in the display are always 0 for the provisioned switch.

A typical state transition for a stack member (including a master) booting up is Waiting > Initializing > Ready.

A typical state transition for a stack member becoming a stack master after a stack master election is Ready > Master Re-Init > Ready.

A typical state transition for a stack member in version mismatch (VM) mode is Waiting > Ver Mismatch.

You can use the **show switch** command to identify whether the provisioned switch exists in the switch stack. The **show running-config** and the **show startup-config** privileged EXEC commands do not provide this information.

The display also includes stack MAC-persistency wait-time if persistent MAC address is enabled.

Examples

This example shows how to display summary stack information:

This example shows how to display detailed stack information:

This example shows how to display the member 6 summary information:

```
Switch# show switch 6
Switch#   Role      Mac Address     Priority    State
-------------------------------------------------------
 6        Member    0003.e31a.1e00    1          Ready
```

This example shows how to display the neighbor information for a stack:

```
Switch# show switch neighbors
 Switch #     Port A      Port B
 --------     ------      ------
    6          None          8
    8           6          None
```

This example shows how to display stack-port information:

```
Switch# show switch stack-ports
 Switch #     Port A      Port B
 --------     ------      ------
    6          Down          Ok
    8           Ok         Down
```

Related Commands

Command	Description
reload	Reloads the stack member and applies a configuration change.
remote command	Monitors all or specified stack members.
session	Accesses a specific stack member from the stack master.

Command	Description
switch stack port	Disables or enables the specified stack port on the member.
switch provision	Supplies a configuration to a new switch before it joins the switch stack.
switch renumber	Changes the stack member number.

stack-mac persistent timer

To enable the persistent MAC address feature, use the **stack-mac persistent timer** command in global configuration mode on the switch stack or on a standalone switch. To disable the persistent MAC address feature, use the **no** form of this command.

stack-mac persistent timer [**0**| *time-value*]

no stack-mac persistent timer

Syntax Description

0	(Optional) Continues using the MAC address of the current stack master after a new stack master takes over.
time-value	(Optional) Time period in minutes before the stack MAC address changes to that of the new stack master. The range is 1 to 60 minutes. When no value is entered, the default is 4 minutes. We recommend that you configure an explicit value for this command.

Command Default

Persistent MAC address is disabled. The MAC address of the stack is always that of the first stack master.

When the command is entered with no value, the default time before the MAC address changes is four minutes. We recommend that you configure an explicit value for this command.

Command Modes

Global configuration

Command History

Release	Modification
Cisco IOS 15.0(2)EX1	This command was introduced.

Usage Guidelines

The MAC address of the switch stack is determined by the MAC address of the stack master. In the default state (persistent MAC address disabled), if a new switch becomes stack master, the stack MAC address changes to the MAC address of the new stack master.

When persistent MAC address is enabled, the stack MAC address does not change for a time period. During that time, if the previous stack master rejoins the stack as a stack member, the stack retains its MAC address for as long as that switch is in the stack. If the previous stack master does not rejoin the stack during the specified time period, the switch stack takes the MAC address of the new stack master as the stack MAC address.

You can set the time period to be from 0 to 60 minutes.

- If you enter the command with no value, the default delay is 4 minutes.

- If you enter **0**, the stack continues to use the current stack MAC address until you enter the **no stack-mac persistent timer** command.

• If you enter a time delay of 1 to 60 minutes, the stack MAC address of the previous stack master is used until the configured time period expires or until you enter the **no stack-mac persistent timer** command.

Note When you enter the **stack-mac persistent timer** command with or without keywords, a message appears warning that traffic might be lost if the old master MAC address appears elsewhere in the network domain. You should use this feature cautiously.

If you enter the **no stack-mac persistent timer** command after a switchover, before the time expires, the switch stack moves to the current stack master MAC address.

If the whole stack reloads, when it comes back up, the MAC address of the stack master is the stack MAC address.

Examples This example shows how to configure the persistent MAC address feature, with the warning messages for each configuration. It also shows how to verify the configuration:

```
Switch(config)# stack-mac persistent timer
WARNING: Use of an explicit timer value with the command is recommended.
WARNING: Default value of 4 minutes is being used.
WARNING: The stack continues to use the base MAC of the old Master
WARNING: as the stack-mac after a master switchover until the MAC
WARNING: persistency timer expires. During this time the Network
WARNING: Administrators must make sure that the old stack-mac does
WARNING: not appear elsewhere in this network domain. If it does,
WARNING: user traffic may be blackholed.

Switch(config)# stack-mac persistent timer 0
WARNING: Stack MAC persistency timer value of 0 means that, after a
WARNING: master switchover, the  current  stack-mac  will  continue
WARNING: to be used indefinitely.
WARNING: The  Network  Administrators must  make  sure that the old
WARNING: stack-mac  does  not  appear  elsewhere in this network
WARNING: domain. If it does, user traffic may be blackholed.

Switch(config)# stack-mac persistent timer 7
WARNING: The stack continues to use the base MAC of the old Master
WARNING: as the stack-mac after a master switchover until the MAC
WARNING: persistency timer expires. During this time the Network
WARNING: Administrators must make sure that the old stack-mac does
WARNING: not appear elsewhere in this network domain. If it does,
WARNING: user traffic may be blackholed.

Switch(config)# end
Switch(config)# show switch
Switch/Stack Mac Address : 0cd9.9624.dd80
Mac persistency wait time: 7 mins
                                    H/W    Current
Switch#  Role   Mac Address     Priority Version  State
--------------------------------------------------------
*1       Master 0cd9.9624.dd80     1      4        Ready
```

You can verify your settings by entering either of two privileged EXEC commands:

• **show running-config**—If enabled, stack-mac persistent timer and the time in minutes appears in the output.

• **show switch**—If enabled, Mac persistency wait time and the number of minutes appears in the output.

Related Commands

Command	Description
show switch	Displays information related to the stack member or the switch stack.

switch stack port

To disable or enable the specified stack port on the member, use the **switch** command in privileged EXEC mode on a stack member.

switch *stack-member-number* **stack port** *port-number* {**disable**| **enable**}

Syntax Description

stack-member-number	Current stack member number. The range is 1 to 8.
stack port *port-number*	Specifies the stack port on the member. The range is 1 to 2.
disable	Disables the specified port.
enable	Enables the specified port.

Command Default   The stack port is enabled.

Command Modes   Privileged EXEC

Command History

Release	Modification
Cisco IOS 15.0(2)EX1	This command was introduced.

Usage Guidelines   A stack is in the full-ring state when all members are connected through the stack ports and are in the ready state.

The stack is in the partial-ring state when the following occurs:

- All members are connected through their stack ports but some are not in the ready state.

- Some members are not connected through the stack ports.

Note   Be careful when using the **switch** *stack-member-number* **stack port** *port-number* **disable** command. When you disable the stack port, the stack operates at half bandwidth.

If you enter the **switch** *stack-member-number* **stack port** *port-number* **disable** privileged EXEC command and the stack is in the full-ring state, you can disable only one stack port. This message appears:

```
Enabling/disabling a stack port may cause undesired stack changes. Continue?[confirm]
```

If you enter the **switch** *stack-member-number* **stack port** *port-number* **disable** privileged EXEC command and the stack is in the partial-ring state, you cannot disable the port. This message appears:

```
Disabling stack port not allowed with current stack configuration.
```

Examples

This example shows how to disable stack port 2 on member 4:

```
Switch# switch 4 stack port 2 disable
```

Related Commands

Command	Description
show switch	Displays information related to the stack member or the switch stack.

switch priority

To change the stack member priority value, use the **switch priority** command in global configuration mode on the stack master.

switch *stack-member-number* **priority** *new-priority-value*

Syntax Description

stack-member-number	Current stack member number. The range is 1 to 8.
new-priority-value	New stack member priority value. The range is 1 to 15.

Command Default The default priority value is 1.

Command Modes Global configuration

Command History

Release	Modification
Cisco IOS 15.0(2)EX1	This command was introduced.

Usage Guidelines The new priority value is a factor when a new stack master is elected. When you change the priority value the stack master is not changed immediately.

Examples This example shows how to change the priority value of stack member 6 to 8:

```
Switch(config)# switch 6 priority 8
Changing the Switch Priority of Switch Number 6 to 8
Do you want to continue?[confirm]
```

Related Commands

Command	Description
reload	Reloads the stack member and applies a configuration change.
session	Accesses a specific stack member from the stack master.
show switch	Displays information related to the stack member or the switch stack.
switch renumber	Changes the stack member number.

switch provision

To supply a configuration to a new switch before it joins the switch stack, use the **switch provision** command in global configuration mode on the stack master. To delete all configuration information that is associated with the removed switch (a stack member that has left the stack), use the **no** form of this command.

switch *stack-member-number* **provision** *type*

no switch *stack-member-number* **provision**

Syntax Description

stack-member-number	Stack member number. The range is 1 to 8.
type	Switch type of the new switch before it joins the stack.

Command Default

The switch is not provisioned.

Command Modes

Global configuration

Command History

Release	Modification
Cisco IOS 15.0(2)EX1	This command was introduced.

Usage Guidelines

For *type*, enter the model number of a supported switch that is listed in the command-line help strings.

To avoid receiving an error message, you must remove the specified switch from the switch stack before using the **no** form of this command to delete a provisioned configuration.

To change the switch type, you must also remove the specified switch from the switch stack. You can change the stack member number of a provisioned switch that is physically present in the switch stack if you do not also change the switch type.

If the switch type of the provisioned switch does not match the switch type in the provisioned configuration on the stack, the switch stack applies the default configuration to the provisioned switch and adds it to the stack. The switch stack displays a message when it applies the default configuration.

Provisioned information appears in the running configuration of the switch stack. When you enter the **copy running-config startup-config** privileged EXEC command, the provisioned configuration is saved in the startup configuration file of the switch stack.

⚠

Caution   When you use the **switch provision** command, memory is allocated for the provisioned configuration. When a new switch type is configured, the previously allocated memory is not fully released. Therefore, do not use this command more than approximately 200 times, or the switch will run out of memory and unexpected behavior will result.

Examples   This example shows how to provision a switch with a stack member number of 2 for the switch stack. The **show running-config** command output shows the interfaces associated with the provisioned switch.

```
Switch(config)# switch 2 provision WS-xxxx
Switch(config)# end
Switch# show running-config | include switch 2
!
interface GigabitEthernet2/0/1
!
interface GigabitEthernet2/0/2
!
interface GigabitEthernet2/0/3
<output truncated>
```

You also can enter the **show switch** user EXEC command to display the provisioning status of the switch stack.

This example shows how to delete all configuration information about stack member 5 when the switch is removed from the stack:

```
Switch(config)# no switch 5 provision
```

You can verify that the provisioned switch is added to or removed from the running configuration by entering the **show running-config** privileged EXEC command.

Related Commands

Command	Description
show switch	Displays information related to the stack member or the switch stack.

switch renumber

To change the stack member number, use the **switch renumber** command in global configuration mode on the stack master.

switch *current-stack-member-number* **renumber** *new-stack-member-number*

Syntax Description

current-stack-member-number	Current stack member number. The range is 1 to 8.
new-stack-member-number	New stack member number for the stack member. The range is 1 to 8.

Command Default   The default stack member number is 1.

Command Modes   Global configuration

Command History

Release	Modification
Cisco IOS 15.0(2)EX1	This command was introduced.

Usage Guidelines   If another stack member is already using the member number that you just specified, the stack master assigns the lowest available number when you reload the stack member.

Note   If you change the number of a stack member, and no configuration is associated with the new stack member number, that stack member loses its current configuration and resets to its default configuration.

Do not use the **switch** *current-stack-member-number* **renumber** *new-stack-member-number* command on a provisioned switch. If you do, the command is rejected.

Use the **reload slot** *current stack member number* privileged EXEC command to reload the stack member and to apply this configuration change.

Examples   This example shows how to change the member number of stack member 6 to 7:

```
Switch(config)# switch 6 renumber 7
WARNING:Changing the switch number may result in a configuration change for that switch.
The interface configuration associated with the old switch number will remain as a provisioned
 configuration.
Do you want to continue?[confirm]
```

Related Commands

Command	Description
reload	Reloads the stack member and applies a configuration change.
session	Accesses a specific stack member from the stack master.
show switch	Displays information related to the stack member or the switch stack.
switch stack port	Disables or enables the specified stack port on the member.

I N D E X