



## **Stack Manager and High Availability Command Reference, Cisco IOS XE Release 3SE (Catalyst 3650 Switches)**

**First Published:** October 10, 2013

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## 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 <b>^D</b> or <b>Ctrl-D</b> 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.)
<b>bold font</b>	Commands and keywords and user-entered text appear in <b>bold font</b> .
<i>Italic font</i>	Document titles, new or emphasized terms, and arguments for which you supply values are in <i>italic font</i> .
Courier font	Terminal sessions and information the system displays appear in <code>courier font</code> .
<b>Bold Courier font</b>	<b>Bold Courier font</b> 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

Means *reader be warned*. In this situation, you might perform an action that could result in bodily injury.

## Related Documentation

**Note**

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

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- Cisco Catalyst 3650 Switch documentation, located at:  
[http://www.cisco.com/go/cat3650\\_docs](http://www.cisco.com/go/cat3650_docs)
- 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](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/en/US/docs/general/whatsnew/whatsnew.html>

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# Using the Command-Line Interface

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This chapter contains the following topics:

- [Information About Using the Command-Line Interface, page 1](#)
- [How to Use the CLI to Configure Features, page 5](#)

## 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 <b>logout</b> or <b>quit</b> .	Use this mode to <ul style="list-style-type: none"> <li>• Change terminal settings.</li> <li>• Perform basic tests.</li> <li>• Display system information.</li> </ul>
Privileged EXEC	While in user EXEC mode, enter the <b>enable</b> command.	Switch#	Enter <b>disable</b> 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 <b>configure</b> command.	Switch(config)#	To exit to privileged EXEC mode, enter <b>exit</b> or <b>end</b> , or press <b>Ctrl-Z</b> .	Use this mode to configure parameters that apply to the entire switch.
VLAN configuration	While in global configuration mode, enter the <b>vlan</b> <i>vlan-id</i> command.	Switch(config-vlan)#	To exit to global configuration mode, enter the <b>exit</b> command. To return to privileged EXEC mode, press <b>Ctrl-Z</b> or enter <b>end</b> .	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 <b>interface</b> command (with a specific interface).	Switch(config-if)#	To exit to global configuration mode, enter <b>exit</b> . To return to privileged EXEC mode, press <b>Ctrl-Z</b> or enter <b>end</b> .	Use this mode to configure parameters for the Ethernet ports.

Mode	Access Method	Prompt	Exit Method	About This Mode
Line configuration	While in global configuration mode, specify a line with the <b>line vty</b> or <b>line console</b> command.	Switch(config-line)#	To exit to global configuration mode, enter <b>exit</b> .  To return to privileged EXEC mode, press <b>Ctrl-Z</b> or enter <b>end</b> .	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
<b>Step 1</b>	<b>help</b>  <b>Example:</b> Switch# <b>help</b>	Obtains a brief description of the help system in any command mode.
<b>Step 2</b>	<i>abbreviated-command-entry ?</i>  <b>Example:</b> Switch# <b>di?</b> dir disable disconnect	Obtains a list of commands that begin with a particular character string.
<b>Step 3</b>	<i>abbreviated-command-entry &lt;Tab&gt;</i>  <b>Example:</b> Switch# <b>sh conf&lt;tab&gt;</b> Switch# <b>show configuration</b>	Completes a partial command name.

	Command or Action	Purpose
<b>Step 4</b>	?  <b>Example:</b> Switch> ?	Lists all commands available for a particular command mode.
<b>Step 5</b>	<i>command</i> ?  <b>Example:</b> Switch> <b>show</b> ?	Lists the associated keywords for a command.
<b>Step 6</b>	<i>command keyword</i> ?  <b>Example:</b> Switch(config)# <b>cdp holdtime</b> ? <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.




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

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## 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
<b>Step 1</b>	<b>terminal history [size number-of-lines]</b>  <b>Example:</b> Switch# <code>terminal history size 200</code>	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
<b>Step 1</b>	<b>Ctrl-P</b> or use the <b>up arrow</b> key	Recalls commands in the history buffer, beginning with the most recent command. Repeat the key sequence to recall successively older commands.
<b>Step 2</b>	<b>Ctrl-N</b> or use the <b>down arrow</b> key	Returns to more recent commands in the history buffer after recalling commands with <b>Ctrl-P</b> or the up arrow key. Repeat the key sequence to recall successively more recent commands.

	Command or Action	Purpose
<b>Step 3</b>	<b>show history</b>  <b>Example:</b> Switch# <code>show history</code>	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 <b>terminal history</b> global configuration command and the <b>history</b> 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
<b>Step 1</b>	<b>terminal no history</b>  <b>Example:</b> Switch# <code>terminal no history</code>	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 reenble it.

### SUMMARY STEPS

1. `terminal editing`
2. `terminal no editing`

### DETAILED STEPS

	Command or Action	Purpose
<b>Step 1</b>	<b>terminal editing</b>  <b>Example:</b> Switch# <code>terminal editing</code>	Reenables the enhanced editing mode for the current terminal session in privileged EXEC mode.

	Command or Action	Purpose
<b>Step 2</b>	<b>terminal no editing</b>  <b>Example:</b> Switch# <code>terminal no editing</code>	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
<b>Ctrl-B</b> or use the <b>left arrow</b> key	Moves the cursor back one character.
<b>Ctrl-F</b> or use the <b>right arrow</b> key	Moves the cursor forward one character.
<b>Ctrl-A</b>	Moves the cursor to the beginning of the command line.
<b>Ctrl-E</b>	Moves the cursor to the end of the command line.
<b>Esc B</b>	Moves the cursor back one word.
<b>Esc F</b>	Moves the cursor forward one word.
<b>Ctrl-T</b>	Transposes the character to the left of the cursor with the character located at the cursor.
<b>Delete</b> or <b>Backspace</b> key	Erases the character to the left of the cursor.
<b>Ctrl-D</b>	Deletes the character at the cursor.
<b>Ctrl-K</b>	Deletes all characters from the cursor to the end of the command line.
<b>Ctrl-U</b> or <b>Ctrl-X</b>	Deletes all characters from the cursor to the beginning of the command line.
<b>Ctrl-W</b>	Deletes the word to the left of the cursor.
<b>Esc D</b>	Deletes from the cursor to the end of the word.
<b>Esc C</b>	Capitalizes at the cursor.
<b>Esc L</b>	Changes the word at the cursor to lowercase.
<b>Esc U</b>	Capitalizes letters from the cursor to the end of the word.

<b>Ctrl-V</b> or <b>Esc Q</b>	Designates a particular keystroke as an executable command, perhaps as a shortcut.
<b>Return</b> key	Scrolls down a line or screen on displays that are longer than the terminal screen can display.  <b>Note</b> The More prompt is used for any output that has more lines than can be displayed on the terminal screen, including <b>show</b> command output. You can use the <b>Return</b> and <b>Space</b> bar keystrokes whenever you see the More prompt.
<b>Space</b> bar	Scrolls down one screen.
<b>Ctrl-L</b> or <b>Ctrl-R</b>	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
<b>Step 1</b>	<b>access-list</b>  <b>Example:</b> Switch(config)# <b>access-list 101 permit tcp</b>	Displays the global configuration command entry that extends beyond one line.  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

	Command or Action	Purpose
	<pre>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</pre>	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	<p><b>Ctrl-A</b></p> <p><b>Example:</b></p> <pre>Switch(config)# access-list 101 permit tcp 10.15.22.25 255.255.255.0 10.15.25\$</pre>	<p>Checks the complete syntax.</p> <p>The dollar sign (\$) appears at the end of the line to show that the line has been scrolled to the right.</p>
Step 3	<b>Return key</b>	<p>Execute the commands.</p> <p>The software assumes that you have a terminal screen that is 80 columns wide. If you have a different width, use the <b>terminal width</b> privileged EXEC command to set the width of your terminal.</p> <p>Use line wrapping with the command history feature to recall and modify previous complex command entries.</p>

## 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	<pre>{show   more} command   {begin   include   exclude} regular-expression</pre> <p><b>Example:</b></p> <pre>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</pre>	<p>Searches and filters the output.</p> <p>Expressions are case sensitive. For example, if you enter <b>  exclude output</b>, the lines that contain <b>output</b> are not displayed, but the lines that contain <b>OUTPUT</b> appear.</p>

## 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 active switch. You cannot manage stack members on an individual switch basis. You can connect to the active switch through the console port or the Ethernet management port of one or more stack members. Be careful with using multiple CLI sessions on the active switch. 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**

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

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

To debug the standby switch, use the **session standby ios** privileged EXEC command from the active switch to access the IOS console of the standby switch. To debug a specific stack member, use the **session switch stack-member-number** privileged EXEC command from the active switch to access the diagnostic shell of the stack member. For more information about these commands, see the switch command reference.

## 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 and High Availability Commands

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## 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| trace}

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

### Syntax Description

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

### Command Default

Debugging is disabled.

### Command Modes

Privileged EXEC

### Command History

Release	Modification
Cisco IOS XE 3.3SE	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.

# main-cpu

To enter the redundancy main configuration submode and enable the standby switch, use the **main-cpu** command in redundancy configuration mode.

## main-cpu

**Syntax Description** This command has no arguments or keywords.

**Command Default** None

**Command Modes** Redundancy configuration

Command History	Release	Modification
	Cisco IOS XE 3.3SE	This command was introduced.

**Usage Guidelines** From the redundancy main configuration submode, use the **standby console enable** command to enable the standby switch.

**Examples** This example shows how to enter the redundancy main configuration submode and enable the standby switch:

```
Switch(config)# redundancy
Switch(config-red)# main-cpu
Switch(config-r-mc)# standby console enable
Switch#
```

Related Commands	Command	Description
	<a href="#">standby console enable</a>	Enables access to the standby console switch.

# mode sso

To set the redundancy mode to stateful switchover (SSO), use the **mode sso** command in redundancy configuration mode.

**mode sso**

**Syntax Description** This command has no arguments or keywords.

**Command Default** None

**Command Modes** Redundancy configuration

Command History	Release	Modification
	Cisco IOS XE 3.3SE	This command was introduced.

**Usage Guidelines** The **mode sso** command can be entered only from within redundancy configuration mode.

Follow these guidelines when configuring your system to SSO mode:

- You must use identical Cisco IOS images on the switches in the stack to support SSO mode. Redundancy may not work due to differences between the Cisco IOS releases.
- If you perform an online insertion and removal (OIR) of the module, the switch resets during the stateful switchover and the port states are restarted only if the module is in a transient state (any state other than Ready).
- The forwarding information base (FIB) tables are cleared on a switchover. Routed traffic is interrupted until route tables reconverge.

**Examples** This example shows how to set the redundancy mode to SSO:

```
Switch(config)# redundancy
Switch(config-red)# mode sso
Switch(config-red)#
```

## policy config-sync prc reload

To reload the standby switch if a parser return code (PRC) failure occurs during configuration synchronization, use the **policy config-sync reload** command in redundancy configuration mode. To specify that the standby switch is not reloaded if a parser return code (PRC) failure occurs, use the **no** form of this command.

**policy config-sync {bulk|lbl} prc reload**

**no policy config-sync {bulk|lbl} prc reload**

### Syntax Description

<b>bulk</b>	Specifies bulk configuration mode.
<b>lbl</b>	Specifies line-by-line (lbl) configuration mode.

### Command Default

The command is enabled by default.

### Command Modes

Redundancy configuration

### Command History

Release	Modification
Cisco IOS XE 3.3SE	This command was introduced.

### Examples

This example shows how to specify that the standby switch is not reloaded if a parser return code (PRC) failure occurs during configuration synchronization:

```
Switch(config-red) # no policy config-sync bulk prc reload
```

# redundancy

To enter redundancy configuration mode, use the **redundancy** command in global configuration mode.

**redundancy**

**Syntax Description** This command has no arguments or keywords.

**Command Default** None

**Command Modes** Global configuration

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Cisco IOS XE 3.3SE	This command was introduced.

**Usage Guidelines** The redundancy configuration mode is used to enter the main CPU submode, which is used to enable the standby switch.

To enter the main CPU submode, use the **main-cpu** command while in redundancy configuration mode.

From the main CPU submode, use the **standby console enable** command to enable the standby switch.

Use the **exit** command to exit redundancy configuration mode.

**Examples** This example shows how to enter redundancy configuration mode:

```
Switch(config)# redundancy
Switch(config-red)#
```

This example shows how to enter the main CPU submode:

```
Switch(config)# redundancy
Switch(config-red)# main-cpu
Switch(config-r-mc)#
```

# redundancy config-sync mismatched-commands

To allow the standby switch to join the stack if a configuration mismatch occurs between the active and standby switches, use the **redundancy config-sync mismatched-commands** command in privileged EXEC mode.

**redundancy config-sync {ignore| validate} mismatched-commands**

## Syntax Description

<b>ignore</b>	Ignores the mismatched command list.
<b>validate</b>	Revalidates the mismatched command list with the modified running-configuration.

## Command Default

None

## Command Modes

Privileged EXEC

## Command History

Release	Modification
Cisco IOS XE 3.3SE	This command was introduced.

## Usage Guidelines

If the command syntax check in the running configuration of the active switch fails while the standby switch is booting, use the **redundancy config-sync mismatched-commands** command to display the Mismatched Command List (MCL) on the active switch and to reboot the standby switch.

The following is a log entry example for mismatched commands:

```
00:06:31: Config Sync: Bulk-sync failure due to Servicing Incompatibility. Please check
full list of mismatched commands via:
show redundancy config-sync failures mcl
00:06:31: Config Sync: Starting lines from MCL file:
interface GigabitEthernet7/7
! <submode> "interface"
- ip address 192.0.2.0 255.255.255.0
! </submode> "interface"
```

To display all mismatched commands, use the **show redundancy config-sync failures mcl** command.

To clean the MCL, follow these steps:

- 1 Remove all mismatched commands from the running configuration of the active switch.
- 2 Revalidate the MCL with a modified running configuration by using the **redundancy config-sync validate mismatched-commands** command.
- 3 Reload the standby switch.

You can ignore the MCL by doing the following:

- 1 Enter the **redundancy config-sync ignore mismatched-commands** command.
- 2 Reload the standby switch; the system changes to SSO mode.

**Note**

If you ignore the mismatched commands, the out-of-sync configuration at the active switch and the standby switch still exists.

- 3 Verify the ignored MCL with the **show redundancy config-sync ignored mcl** command.

If SSO mode cannot be established between the active and standby switches because of an incompatibility in the configuration file, a mismatched command list (MCL) is generated at the active switch and a reload into route processor redundancy (RPR) mode is forced for the standby switch.

**Note**

RPR mode is supported on Catalyst 3850 switches as a fallback in case of errors. It is not configurable.

If you attempt to establish an SSO after removing the offending configuration and rebooting the standby switch with the same image, the C3K\_REDUNDANCY-2-IOS\_VERSION\_CHECK\_FAIL and ISSU-3-PEER\_IMAGE\_INCOMPATIBLE messages appear because the peer image is listed as incompatible. You can clear the peer image from the incompatible list with the **redundancy config-sync ignore mismatched-commands EXEC** command while the peer is in a standby cold (RPR) state. This action allows the standby switch to boot in a standby hot (SSO) state when it reloads.

**Examples**

This example shows how to revalidate the mismatched command list with the modified configuration:

```
Switch# redundancy config-sync validate mismatched-commands
Switch#
```

# redundancy force-switchover

To force a switchover from the active switch to the standby switch, use the **redundancy force-switchover** command in privileged EXEC mode on a switch stack.

## redundancy force-switchover

**Syntax Description** This command has no arguments or keywords.

**Command Default** None

**Command Modes** Privileged EXEC

Command History	Release	Modification
	Cisco IOS XE 3.3SE	This command was introduced.

**Usage Guidelines** Use the **redundancy force-switchover** command to manually switch over to the redundant switch. The redundant switch becomes the new active switch that runs the Cisco IOS image, and the modules are reset to their default settings.

The old active switch reboots with the new image and joins the stack.

If you use the **redundancy force-switchover** command on the active switch, the switchports on the active switch go down.

If you use this command on a switch that is in a partial ring stack, the following warning message appears:

```
Switch# redundancy force-switchover
Stack is in Half ring setup; Reloading a switch might cause stack split
This will reload the active unit and force switchover to standby[confirm]
```

**Examples** This example shows how to manually switch over from the active to the standby supervisor engine:

```
Switch# redundancy force-switchover
Switch#
```

# redundancy reload

To force a reload of one or all of the switches in the stack, use the **redundancy reload** command in privileged EXEC mode.

**redundancy reload {peer| shelf}**

## Syntax Description

<b>peer</b>	Reloads the peer unit.
<b>shelf</b>	Reboots all switches in the stack.

## Command Default

None

## Command Modes

Privileged EXEC

## Command History

Release	Modification
Cisco IOS XE 3.3SE	This command was introduced.

## Usage Guidelines

Before using this command, see the “Performing a Software Upgrade” section of the *Stacking Configuration Guide (Catalyst 3650 Switches)* for additional information.

Use the **redundancy reload shelf** command to reboot all the switches in the stack.

## Examples

This example shows how to manually reload all switches in the stack:

```
Switch# redundancy reload shelf
Switch#
```

# 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

<b>/noverify</b>	(Optional) Specifies to not verify the file signature before the reload.
<b>/verify</b>	(Optional) Verifies the file signature before the reload.
<i>LINE</i>	(Optional) Reason for the reload.
<b>at</b>	(Optional) Specifies the time in hh:mm for the reload to occur.
<b>cancel</b>	(Optional) Cancels the pending reload.
<b>in</b>	(Optional) Specifies a time interval for reloads to occur.
<b>slot</b>	(Optional) Saves the changes on the specified stack member and then restarts it.
<i>stack-member-number</i>	(Optional) Stack member number on which to save the changes. The range is 1 to 9.
<b>standby-cpu</b>	(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 XE 3.3SE	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]: yes
```

Reload command is being issued on Active unit, this will reload the whole stack  
Proceed with reload? [confirm] **yes**

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
<a href="#">show switch</a>	Displays information related to the stack member or the switch stack.
<a href="#">switch priority</a>	Changes the stack member priority value.
<a href="#">switch renumber</a>	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

<i>stack-member-number</i>	Stack member number to access from the active switch. The range is 1 to 9.
----------------------------	--

## Command Default

None

## Command Modes

Privileged EXEC

## Command History

Release	Modification
Cisco IOS XE 3.3SE	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
<a href="#">reload</a>	Reloads the stack member and applies a configuration change.
<a href="#">show switch</a>	Displays information related to the stack member or the switch stack.
<a href="#">switch priority</a>	Changes the stack member priority value.
<a href="#">switch renumber</a>	Changes the stack member number.

## set trace capwap ap ha

To trace the control and provisioning of wireless access point high availability, use the **set trace capwap ap ha** privileged EXEC command.

**set trace capwap ap ha** [**detail** | **event** | **dump**] { **filter** [**none** [**switch** *switch*]] | *filter\_name* [*filter\_value* [**switch** *switch*]]] [**filtered** *switch* | **level** { **default** | *trace\_level* } [**switch** *switch*]]

### Syntax Description

<b>detail</b>	(Optional) Specifies the wireless CAPWAP HA details.
<b>event</b>	(Optional) Specifies the wireless CAPWAP HA events.
<b>dump</b>	(Optional) Specifies the wireless CAPWAP HA output.
<b>filter</b> <i>mac</i>	Specifies the MAC address.
<i>switch</i> <i>switch number</i>	Specifies the switch number.
<b>none</b>	(Optional) Specifies the no filter option.
<b>switch</b> <i>switch</i>	(Optional) Specifies the switch number.
<i>filter name</i>	Trace adapted flag filter name.
<i>filter_value</i>	(Optional) Value of the filter.
<b>switch</b> <i>switch</i>	(Optional) Specifies the switch number.
<b>filtered</b>	Specifies the filtered traces messages.
<i>switch</i>	Specifies the switch number.
<b>level</b>	Specifies the trace level.
<b>default</b>	Specifies the unset trace level value.
<i>trace_level</i>	Specifies the trace level.
<b>switch</b> <i>switch</i>	(Optional) Specifies the switch number.

### Command Default

None

### Command Modes

Privileged EXEC

**Command History**

Release	Modification
Cisco IOS XE 3.3SE	This command was introduced.

**Examples**

This example shows how to display the wireless CAPWAP HA:

```
Switch# set trace capwap ap ha detail filter mac WORD switch number
```

## set trace mobility ha

To debug the wireless mobility high availability in the switch, use the **set trace mobility ha** privileged EXEC command.

```
set trace mobility ha [event| detail| dump] {filter[mac WORD switch switch number] [none [switch switch]]
filter_name [filter_value [switch switch]]} level {default| trace_level} [switch switch] {filtered| switch}}
```

### Syntax Description

<b>event</b>	(Optional) Specifies the wireless mobility high availability events.
<b>detail</b>	(Optional) Specifies the wireless mobility high availability details.
<b>dump</b>	(Optional) Specifies the wireless mobility high availability output.
<b>filter</b>	Specifies to trace adapted flag filter.
<b>mac</b>	Specifies the MAC address.
<i>WORD switch</i>	Specifies the switch.
<i>switch number</i>	Specifies the switch number. The value ranges from one to four.
<b>none</b>	Specifies no trace adapted flag filter.
<b>switch switch</b>	(Optional) Specifies the switch number.
<i>filter_name</i>	Trace adapted flag filter name.
<i>filter_value</i>	Trace adapted flag filter value.
<b>switch switch</b>	Specifies the switch number.
<b>level</b>	Specifies the trace level value.
<b>default</b>	Specifies the un-set trace level value.
<i>trace_level</i>	Specifies the trace level value.
<b>switch switch</b>	Specifies the switch number.

<b>filtered</b>	Specifies the filtered trace messages.
<i>switch</i>	Specifies the switch.

**Command Default**      None

**Command Modes**      Privileged EXEC

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Cisco IOS XE 3.3SE	This command was introduced.

### Examples

This example shows how to display wireless mobility high availability details:

```
Switch# set trace mobility ha detail filter mac WORD
[08/27/13 10:38:35.349 UTC 1 8135] Invalid src ip: 169.254.1.1
[08/27/13 10:38:35.349 UTC 2 8135] Invalid sysIp: Skip plumbing MC-MA
tunnels.
[08/27/13 10:38:54.393 UTC 3 8135] Mobility version mismatch, v10 received,
or m
sglen mismatch msglen=74 recvBytes=0, dropping
```

## set trace qos ap ha

To trace wireless Quality of Service (QoS) high availability, use the **set trace qos ap ha** privileged EXEC command.

```
set trace QOS ap ha [event| error] {filter [MACnone [switch switch]] filter_name [filter_value [switch switch]]} level {default| trace_level} [switch switch]
```

### Syntax Description

<b>event</b>	(Optional) Specifies trace QoS wireless AP event.
<b>event mac</b>	Specifies the MAC address of the AP.
<b>event none</b>	Specifies no MAC address value.
<b>error</b>	(Optional) Specifies trace QoS wireless AP errors.
<b>error mac</b>	Specifies the MAC address of the AP.
<b>error none</b>	Specifies no value.
<b>filter</b>	Specifies the trace adapted flag filter.
<b>filter mac</b>	Specifies the MAC address of the AP.
<b>filter none</b>	Specifies no value.
<b>switch switch</b>	Specifies the switch number.
<i>filter_name</i>	(Optional) Specifies the switch filter name.
<i>filter_value</i>	(Optional) Specifies the switch filter value. Value is one.
<b>switch switch</b>	(Optional) Specifies the switch number. Value is one.
<b>level</b>	Specifies the trace level.
<b>default</b>	Specifies the trace QoS wireless AP default.
<i>trace_level</i>	Trace level.
<b>switch switch</b>	(Optional) Specifies the switch number. Value is one.

### Command Default

None

### Command Modes

Privileged EXEC

**Command History**

Release	Modification
Cisco IOS XE 3.3SE	This command was introduced.

**Examples**

This example shows how to trace wireless QoS high availability:

```
Switch# set trace qos ap ha
```

# show checkpoint

To display information about the Checkpoint Facility (CF) subsystem, use the **show checkpoint** command.

## show checkpoint clients entities statistics

Syntax Description	
<b>clients</b>	Displays detailed information about checkpoint clients.
<b>entities</b>	Displays detailed information about checkpoint entities.
<b>statistics</b>	Displays detailed information about checkpoint statistics.

**Command Default** None

**Command Modes** Privileged EXEC

Command History	Release	Modification
	Cisco IOS XE 3.3SE	This command was introduced.

## Examples

This example shows how to display all the CF clients.

```

Client residing in process : 8135
-----
Checkpoint client: WCM_MOBILITY
Client ID : 24105
Total DB inserts : 0
Total DB updates : 0
Total DB deletes : 0
Total DB reads : 0
Number of tables : 6
Client residing in process : 8135
-----
Checkpoint client: WCM_DOT1X
Client ID : 24106
Total DB inserts : 2
Total DB updates : 1312
Total DB deletes : 2
Total DB reads : 0
Number of tables : 1
Client residing in process : 8135
-----
Checkpoint client: WCM_APFROGUE
Client ID : 24107
Total DB inserts : 0
Total DB updates : 0
Total DB deletes : 0
Total DB reads : 0
Number of tables : 1
Client residing in process : 8135

```

## show checkpoint

```

-----
Checkpoint client: WCM_CIDS
  Client ID           : 24110
  Total DB inserts    : 0
  Total DB updates    : 0
  Total DB deletes    : 0
  Total DB reads      : 0
  Number of tables    : 0
  Client residing in process : 8135
-----

```

```

-----
Checkpoint client: WCM_NETFLOW
  Client ID           : 24111
  Total DB inserts    : 7
  Total DB updates    : 0
  Total DB deletes    : 0
  Total DB reads      : 0
  Number of tables    : 1
  Client residing in process : 8135
-----

```

```

-----
Checkpoint client: WCM_MCAST
  Client ID           : 24112
  Total DB inserts    : 0
  Total DB updates    : 0
  Total DB deletes    : 0
  Total DB reads      : 0
  Number of tables    : 1
  Client residing in process : 8135
-----

```

```

-----
Checkpoint client: wcm_comet
  Client ID           : 24150
  Total DB inserts    : 0
  Total DB updates    : 0
  Total DB deletes    : 0
  Total DB reads      : 0
  Number of tables    : 0
  Client residing in process : 8135
-----

```

All iosd checkpoint clients

```

-----
Client Name           Client ID   Entity ID   Bundle Mode
-----
Network RF Client     3          --         Off

Total API Messages Sent:           0
Total Transport Messages Sent:      0
Length of Sent Messages:           0
Total Blocked Messages Sent:        0
Length of Sent Blocked Messages:    0
Total Non-blocked Messages Sent:    0
Length of Sent Non-blocked Messages: 0
Total Bytes Allocated:              0
Buffers Held:                       0
Buffers Held Peak:                  0
Huge Buffers Requested:             0
Transport Frag Count:               0
Transport Frag Peak:                0
Transport Sends w/Flow Off:         0
Send Errs:                          0
Send Peer Errs:                    0
Rcv Xform Errs:                    0
Xmit Xform Errs:                   0
Incompatible Messages:              0
Client Unbundles to Process Memory: T
-----

```

```

-----
Client Name           Client ID   Entity ID   Bundle Mode
-----
SNMP CF Client       12         --         Off

Total API Messages Sent:           0
-----

```

```

Total Transport Messages Sent:          0
Length of Sent Messages:                0
Total Blocked Messages Sent:           0
Length of Sent Blocked Messages:       0
Total Non-blocked Messages Sent:       0
Length of Sent Non-blocked Messages:   0
Total Bytes Allocated:                  0
Buffers Held:                           0
Buffers Held Peak:                      0
Huge Buffers Requested:                 0
Transport Frag Count:                   0
Transport Frag Peak:                    0
Transport Sends w/Flow Off:             0
Send Errs:                              0
Send Peer Errs:                         0
Rcv Xform Errs:                         0
Xmit Xform Errs:                        0
Incompatible Messages:                  0
Client Unbundles to Process Memory:    T

```

```

-----
Client Name          Client      Entity      Bundle
                   ID          ID          Mode
-----

```

```

Online Diags HA      14          --          Off

```

```

Total API Messages Sent:                0
Total Transport Messages Sent:          0
Length of Sent Messages:                0
Total Blocked Messages Sent:           0
Length of Sent Blocked Messages:       0
Total Non-blocked Messages Sent:       0
Length of Sent Non-blocked Messages:   0
Total Bytes Allocated:                  0
Buffers Held:                           0
Buffers Held Peak:                      0
Huge Buffers Requested:                 0
Transport Frag Count:                   0
Transport Frag Peak:                    0
Transport Sends w/Flow Off:             0
Send Errs:                              0
Send Peer Errs:                         0
Rcv Xform Errs:                         0
Xmit Xform Errs:                        0
Incompatible Messages:                  0
Client Unbundles to Process Memory:    T

```

```

-----
Client Name          Client      Entity      Bundle
                   ID          ID          Mode
-----

```

```

ARP                  22          --          Off

```

```

Total API Messages Sent:                0
Total Transport Messages Sent:          0
Length of Sent Messages:                0
Total Blocked Messages Sent:           0
Length of Sent Blocked Messages:       0
Total Non-blocked Messages Sent:       0
Length of Sent Non-blocked Messages:   0
Total Bytes Allocated:                  0
Buffers Held:                           0
Buffers Held Peak:                      0
Huge Buffers Requested:                 0
Transport Frag Count:                   0
Transport Frag Peak:                    0
Transport Sends w/Flow Off:             0
Send Errs:                              0
Send Peer Errs:                         0
Rcv Xform Errs:                         0
Xmit Xform Errs:                        0
Incompatible Messages:                  0
Client Unbundles to Process Memory:    T

```

```

-----
Client Name          Client      Entity      Bundle

```

## show checkpoint

```

-----
                ID        ID        Mode
-----
TableId CF          27         --         Off

Total API Messages Sent:                0
Total Transport Messages Sent:           0
Length of Sent Messages:                 0
Total Blocked Messages Sent:             0
Length of Sent Blocked Messages:         0
Total Non-blocked Messages Sent:         0
Length of Sent Non-blocked Messages:     0
Total Bytes Allocated:                   0
Buffers Held:                             0
Buffers Held Peak:                       0
Huge Buffers Requested:                  0
Transport Frag Count:                    0
Transport Frag Peak:                     0
Transport Sends w/Flow Off:              0
Send Errs:                               0
Send Peer Errs:                          0
Rcv Xform Errs:                          0
Xmit Xform Errs:                         0
Incompatible Messages:                   0
Client Unbundles to Process Memory:      T
-----

Client Name          Client  Entity  Bundle
                   ID      ID      Mode
-----
Event Manager        33         0         Off

Total API Messages Sent:                0
Total Transport Messages Sent:          --
Length of Sent Messages:                 0
Total Blocked Messages Sent:             0
Length of Sent Blocked Messages:         0
Total Non-blocked Messages Sent:         0
Length of Sent Non-blocked Messages:     0
Total Bytes Allocated:                   0
Buffers Held:                             0
Buffers Held Peak:                       0
Huge Buffers Requested:                  0
Transport Frag Count:                    0
Transport Frag Peak:                     0
Transport Sends w/Flow Off:              0
Send Errs:                               0
Send Peer Errs:                          0
Rcv Xform Errs:                          0
Xmit Xform Errs:                         0
Incompatible Messages:                   0
Client Unbundles to Process Memory:      T
-----

Client Name          Client  Entity  Bundle
                   ID      ID      Mode
-----
LAN-Switch Port Mana 35         0         Off

Total API Messages Sent:                0
Total Transport Messages Sent:          --
Length of Sent Messages:                 0
Total Blocked Messages Sent:             0
Length of Sent Blocked Messages:         0
Total Non-blocked Messages Sent:         0
Length of Sent Non-blocked Messages:     0
Total Bytes Allocated:                   0
Buffers Held:                             0
Buffers Held Peak:                       0
Huge Buffers Requested:                  0
Transport Frag Count:                    0
Transport Frag Peak:                     0
Transport Sends w/Flow Off:              0
Send Errs:                               0
Send Peer Errs:                          0
Rcv Xform Errs:                          0

```

```

Xmit Xform Errs:                                0
Incompatible Messages:                          0
Client Unbundles to Process Memory:             T
-----
Client Name          Client      Entity      Bundle
                   ID          ID          Mode
-----
LAN-Switch PAgP/LACP    36          0          Off

Total API Messages Sent:                        0
Total Transport Messages Sent:                  --
Length of Sent Messages:                       0
Total Blocked Messages Sent:                   0
Length of Sent Blocked Messages:               0
Total Non-blocked Messages Sent:               0
Length of Sent Non-blocked Messages:           0
Total Bytes Allocated:                         0
Buffers Held:                                  0
Buffers Held Peak:                            0
Huge Buffers Requested:                       0
Transport Frag Count:                          0
Transport Frag Peak:                          0
Transport Sends w/Flow Off:                   0
Send Errs:                                     0
Send Peer Errs:                               0
Rcv Xform Errs:                               0
Xmit Xform Errs:                              0
Incompatible Messages:                         0
Client Unbundles to Process Memory:            T
-----
Client Name          Client      Entity      Bundle
                   ID          ID          Mode
-----
LAN-Switch VLANs      39          0          Off

Total API Messages Sent:                        0
Total Transport Messages Sent:                  --
Length of Sent Messages:                       0
Total Blocked Messages Sent:                   0
Length of Sent Blocked Messages:               0
Total Non-blocked Messages Sent:               0
Length of Sent Non-blocked Messages:           0
Total Bytes Allocated:                         0
Buffers Held:                                  0
Buffers Held Peak:                            0
Huge Buffers Requested:                       0
Transport Frag Count:                          0
Transport Frag Peak:                          0
Transport Sends w/Flow Off:                   0
Send Errs:                                     0
Send Peer Errs:                               0
Rcv Xform Errs:                               0

```

This example shows how to display all the CF entities.

```

KATANA_DOC#show checkpoint entities
                        Check Point List of Entities

CHKPT on ACTIVE server.

-----
Entity ID      Entity Name
-----
0              CHKPT_DEFAULT_ENTITY

Total API Messages Sent:                        0
Total Messages Sent:                          0
Total Sent Message Len:                       0
Total Bytes Allocated:                         0
Total Number of Members:                      10

Member(s) of entity 0 are:

```

Client ID	Client Name
168	DHCP Snooping
167	IGMP Snooping
41	Spanning-tree
40	AUTH MGR CHKPT CLIEN
39	LAN-Switch VLANs
33	Event Manager
35	LAN-Switch Port Mana
36	LAN-Switch PAgP/LACP
158	Inline Power Checkpoint

This example shows how to display the CF statistics.

```
KATANA_DOC#show checkpoint statistics
IOSd Check Point Status
CHKPT on ACTIVE server.
```

```
Number Of Msgs In Hold Q:          0
CHKPT MAX Message Size:           0
TP MAX Message Size:              65503
CHKPT Pending Msg Timer:          100 ms

FLOW_ON total:                    0
FLOW_OFF total:                    0
Current FLOW status is:            ON
Total API Messages Sent:           0
Total Messages Sent:               0
Total Sent Message Len:            0
Total Bytes Allocated:             0
Rcv Msg Q Peak:                    0
Hold Msg Q Peak:                   0
Buffers Held Peak:                 0
Current Buffers Held:              0
Huge Buffers Requested:            0
```

# show etherchannel summary

To show details on the ports, port-channel, and protocols in the controller, use the **show etherchannel summary** command.

## show ethernet summary

This command has no arguments or keywords.

**Command Default** None

**Command Modes** Privileged Mode.

Command History	Release	Modification
	Cisco IOS XE 3.3SE	This command was introduced.

## Examples

This example shows the details on the ports, port-channel, and protocols in the controller.

```
controller#show etherchannel summary
Flags:  D - down          P - bundled in port-channel
        I - stand-alone  s - suspended
        H - Hot-standby (LACP only)
        R - Layer3       S - Layer2
        U - in use       f - failed to allocate aggregator

        M - not in use, minimum links not met
        u - unsuitable for bundling
        w - waiting to be aggregated
        d - default port
```

```
Number of channel-groups in use: 2
Number of aggregators:          2
```

```
Group  Port-channel  Protocol  Ports
-----+-----+-----+-----
 2     Po2(SD)        -         -
23     Po23(SD)       -         -
```

# show platform ses

To display the platform information - the stack event sequencer in the controller, use the **show platform ses** in the privileged EXEC mode.

## show platform ses clients states

Syntax	Description
<b>clients</b>	Displays the SES client list.
<b>states</b>	Displays the SES card states.

**Command Default** None.

**Command Modes** Privileged EXEC mode.

Command History	Release	Modification
	Cisco IOS XE 3.3SE	This command was introduced.

**Usage Guidelines** Use this command in the privileged EXEC mode to view the ses clients and states detail.

**Examples** This example shows the stack event sequencer states.

```
Card #   Card State
=====  =====
1        NG3K_SES_CARD_ADD_COMPLETED(51)
2        NG3K_SES_CARD_EMPTY(0)
3        NG3K_SES_CARD_EMPTY(0)
4        NG3K_SES_CARD_EMPTY(0)
5        NG3K_SES_CARD_EMPTY(0)
6        NG3K_SES_CARD_EMPTY(0)
7        NG3K_SES_CARD_EMPTY(0)
8        NG3K_SES_CARD_EMPTY(0)
9        NG3K_SES_CARD_EMPTY(0)
```

This example shows all the associated clients of the stack event sequencer.

```
clientID = 5
clientSeq = 5
clientName = "MATM"
clientCallback @ 0xF49F7300
next = 0x909194B4
```

```
clientID = 6
clientSeq = 6
clientName = "L2 CONTROL"
clientCallback @ 0xF49CA3F0
next = 0x915E4E80
```

```
clientID = 7
```

```
clientSeq = 7
clientName = "CDP"
clientCallback @ 0xF49C7220
next = 0x915E4F08

clientID = 8
clientSeq = 8
clientName = "UDLD"
clientCallback @ 0xF49C75D0
next = 0x91854CA0

clientID = 9
clientSeq = 9
clientName = "LLDP"
clientCallback @ 0xF49E62F0
next = 0x90919F90

clientID = 10
clientSeq = 10
clientName = "L2M"
clientCallback @ 0xF49CE4D0
next = 0x90E35A5C

clientID = 11
clientSeq = 11
clientName = "Storm-Control"
clientCallback @ 0xF4BA8080
next = 0x9089E9B4

clientID = 12
clientSeq = 12
clientName = "Security Utils"
clientCallback @ 0xF466BFB0
next = 0x91855F14

clientID = 13
clientSeq = 13
clientName = "BACKUP-INT"
clientCallback @ 0xF4A191B0
next = 0x91D3511C

clientID = 14
clientSeq = 14
clientName = "SPAN"
clientCallback @ 0xF4A34F30
next = 0x90FFC8C8

clientID = 15
clientSeq = 15
clientName = "NG3K_SES_CLIENT_SECURITY_CTRL"
clientCallback @ 0xF4CD1D80
next = 0x95AE5834

clientID = 16
clientSeq = 16
clientName = "NG3K_SES_CLIENT_DAI"
clientCallback @ 0xF4CD0C50
next = 0x95AE4854

clientID = 17
clientSeq = 17
clientName = "NG3K_SES_CLIENT_DHCPDN"
clientCallback @ 0xF4CA9D30
next = 0x91DF7728

clientID = 18
clientSeq = 18
clientName = "NG3K_SES_CLIENT_IPSG"
clientCallback @ 0xF4CDED70
next = 0x9131DCD8

clientID = 20
clientSeq = 20
```

## show platform ses

```

clientName = "DTLS"
clientCallback @ 0xF49B2CB0
next = 0x9134508C

clientID = 21
clientSeq = 21
clientName = "STATS"
clientCallback @ 0xF49BD750
next = 0x9134746C

clientID = 22
clientSeq = 22
clientName = "PLATFORM_MGR"
clientCallback @ 0xF4AB2D40
next = 0x91323D20

clientID = 23
clientSeq = 23
clientName = "LEARNING"
clientCallback @ 0xF49F93C0
next = 0x9091D52C

clientID = 24
clientSeq = 24
clientName = "PLATFORM-SPI"
clientCallback @ 0xF4AAD6F0
next = 0x91F2AE14

clientID = 25
clientSeq = 25
clientName = "EEM"
clientCallback @ 0xF5393370
next = 0x913474F4

clientID = 26
clientSeq = 26
clientName = "NG3K_WIRELESS"
clientCallback @ 0xF4B130B0
next = 0x9131D144

clientID = 27
clientSeq = 27
clientName = "NG3K Environment Variables"
clientCallback @ 0xF4C6DA80
next = 0x00000000

KATANA_DOC#
KATANA_DOC#
KATANA_DOC#show platform ses clients
Client_list @ 0x915B312C

clientID = 0
clientSeq = 0
clientName = "TM Shim"
clientCallback @ 0xF4C79A90
next = 0x91182F24

clientID = 1
clientSeq = 1
clientName = "EM-HA"
clientCallback @ 0xF52CA730
next = 0x913245B8

clientID = 2
clientSeq = 2
clientName = "IFM"
clientCallback @ 0xF4A3EB20
next = 0x934B80E4

clientID = 3
clientSeq = 3
clientName = "PORT-MGR"
clientCallback @ 0xF49FD0A0

```

```
next = 0x91D36D08

clientID = 4
clientSeq = 4
clientName = "IDBMAN"
clientCallback @ 0xF4AF6040
next = 0x92121224

clientID = 5
clientSeq = 5
clientName = "MATM"
clientCallback @ 0xF49F7300
next = 0x909194B4

clientID = 6
clientSeq = 6
clientName = "L2 CONTROL"
clientCallback @ 0xF49CA3F0
next = 0x915E4E80

clientID = 7
clientSeq = 7
clientName = "CDP"
clientCallback @ 0xF49C7220
next = 0x915E4F08

clientID = 8
clientSeq = 8
clientName = "UDLD"
clientCallback @ 0xF49C75D0
next = 0x91854CA0

clientID = 9
clientSeq = 9
clientName = "LLDP"
clientCallback @ 0xF49E62F0
next = 0x90919F90

clientID = 10
clientSeq = 10
clientName = "L2M"
clientCallback @ 0xF49CE4D0
next = 0x90E35A5C

clientID = 11
clientSeq = 11
clientName = "Storm-Control"
clientCallback @ 0xF4BA8080
next = 0x9089E9B4

clientID = 12
clientSeq = 12
clientName = "Security Utils"
clientCallback @ 0xF466BFB0
next = 0x91855F14

clientID = 13
clientSeq = 13
clientName = "BACKUP-INT"
clientCallback @ 0xF4A191B0
next = 0x91D3511C

clientID = 14
clientSeq = 14
clientName = "SPAN"
clientCallback @ 0xF4A34F30
next = 0x90FFC8C8

clientID = 15
clientSeq = 15
clientName = "NG3K_SES_CLIENT_SECURITY_CTRL"
clientCallback @ 0xF4CD1D80
next = 0x95AE5834
```

```

clientID = 16
clientSeq = 16
clientName = "NG3K_SES_CLIENT_DAI"
clientCallback @ 0xF4CD0C50
next = 0x95AE4854

clientID = 17
clientSeq = 17
clientName = "NG3K_SES_CLIENT_DHCPSPN"
clientCallback @ 0xF4CA9D30
next = 0x91DF7728

clientID = 18
clientSeq = 18
clientName = "NG3K_SES_CLIENT_IPSG"
clientCallback @ 0xF4CDED70
next = 0x9131DCD8

clientID = 20
clientSeq = 20
clientName = "DTLS"
clientCallback @ 0xF49B2CB0
next = 0x9134508C

clientID = 21
clientSeq = 21
clientName = "STATS"
clientCallback @ 0xF49BD750
next = 0x9134746C

clientID = 22
clientSeq = 22
clientName = "PLATFORM_MGR"
clientCallback @ 0xF4AB2D40
next = 0x91323D20

clientID = 23
clientSeq = 23
clientName = "LEARNING"
clientCallback @ 0xF49F93C0
next = 0x9091D52C

clientID = 24
clientSeq = 24
clientName = "PLATFORM-SPI"
clientCallback @ 0xF4AAD6F0
next = 0x91F2AE14

clientID = 25
clientSeq = 25
clientName = "EEM"
clientCallback @ 0xF5393370
next = 0x913474F4

clientID = 26
clientSeq = 26
clientName = "NG3K_WIRELESS"
clientCallback @ 0xF4B130B0
next = 0x9131D144

clientID = 27
clientSeq = 27
clientName = "NG3K Environment Variables"
clientCallback @ 0xF4C6DA80
next = 0x00000000

```

## 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** {*oir-states*|*sdp-counters*|*sif-counters*} **switch** *stack-member-number*

### Syntax Description

<b>oir-states</b>	Displays Online Insertion and Removal (OIR) state information
<b>sdp-counters</b>	Displays Stack Discovery Protocol (SDP) counter information.
<b>sif-counters</b>	Displays Stack Interface (SIF) counter information.
<b>switch</b> <i>stack-member-number</i>	Specifies the stack member for which to display stack-manager information.

### Command Default

None

### Command Modes

Privileged EXEC

### Command History

Release	Modification
Cisco IOS XE 3.3SE	This command was introduced.

### Usage Guidelines

Use the **show platform stack-manager** command to collect data and statistics for the switch stack.

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.

# show redundancy

To display redundancy facility information, use the **show redundancy** command in privileged EXEC mode

```
show redundancy [clients| config-sync| counters| history [reload| reverse]] slaves[slave-name] {clients|
counters}| states| switchover history [domain default]]
```

## Syntax Description

<b>clients</b>	(Optional) Displays information about the redundancy facility client.
<b>config-sync</b>	(Optional) Displays a configuration synchronization failure or the ignored mismatched command list (MCL). For more information, see <a href="#">show redundancy config-sync</a> , on page 50.
<b>counters</b>	(Optional) Displays information about the redundancy facility counter.
<b>history</b>	(Optional) Displays a log of past status and related information for the redundancy facility.
<b>history reload</b>	(Optional) Displays a log of past reload information for the redundancy facility.
<b>history reverse</b>	(Optional) Displays a reverse log of past status and related information for the redundancy facility.
<b>slaves</b>	(Optional) Displays all slaves in the redundancy facility.
<i>slave-name</i>	(Optional) The name of the redundancy facility slave to display specific information for. Enter additional keywords to display all clients or counters in the specified slave.
<b>clients</b>	Displays all redundancy facility clients in the specified slave.
<b>counters</b>	Displays all counters in the specified slave.
<b>states</b>	(Optional) Displays information about the redundancy facility state, such as disabled, initialization, standby or active.
<b>switchover history</b>	(Optional) Displays information about the redundancy facility switchover history.
<b>domain default</b>	(Optional) Displays the default domain as the domain to display switchover history for.

## Command Default

None

## Command Modes

Privileged EXEC

**Command History**

Release	Modification
Cisco IOS XE 3.3SE	This command was introduced.

**Examples**

This example shows how to display information about the redundancy facility:

```
Switch# show redundancy
Redundant System Information :
-----
    Available system uptime = 6 days, 9 hours, 23 minutes
Switchovers system experienced = 0
    Standby failures = 0
    Last switchover reason = not known

    Hardware Mode = Simplex
Configured Redundancy Mode = SSO
Operating Redundancy Mode = SSO
Maintenance Mode = Disabled
Communications = Down          Reason: Simplex mode

Current Processor Information :
-----
    Active Location = slot 1
    Current Software state = ACTIVE
    Uptime in current state = 6 days, 9 hours, 23 minutes
    Image Version = Cisco IOS Software, IOS-XE Software, Catalyst 3
850 L3 Switch Software (CAT3850-UNIVERSALK9-M), Version 03.08.59.EMD EARLY DEPLO
YMENT ENGINEERING NOVA_WEEKLY BUILD, synced to DSGS_PI2_POSTPC_FLO_DSBU7_NG3K_11
05
Copyright (c) 1986-2012 by Cisco Systems, Inc.
Compiled Sun 16-S
    Configuration register = 0x102

Peer (slot: 0) information is not available because it is in 'DISABLED' state
Switch#
```

This example shows how to display redundancy facility client information:

```
Switch# show redundancy clients
Group ID = 1
clientID = 20002    clientSeq = 4    EICORE HA Client
clientID = 24100    clientSeq = 5    WCM_CAPWAP
clientID = 24101    clientSeq = 6    WCM_RRM HA
clientID = 24103    clientSeq = 8    WCM_QOS HA
clientID = 24105    clientSeq = 10   WCM_MOBILITY
clientID = 24106    clientSeq = 11   WCM_DOT1X
clientID = 24107    clientSeq = 12   WCM_APFROGUE
clientID = 24110    clientSeq = 15   WCM_CIDS
clientID = 24111    clientSeq = 16   WCM_NETFLOW
clientID = 24112    clientSeq = 17   WCM_MCAST
clientID = 24120    clientSeq = 18   wcm_comet
clientID = 24001    clientSeq = 21   Table Manager Client
clientID = 20010    clientSeq = 24   SNMP SA HA Client
clientID = 20007    clientSeq = 27   Installer HA Client
clientID = 29       clientSeq = 60   Redundancy Mode RF
clientID = 139      clientSeq = 61   IfIndex
clientID = 3300     clientSeq = 62   Persistent Variable
clientID = 25       clientSeq = 68   CHKPT RF
clientID = 20005    clientSeq = 74   IIF-shim
clientID = 10001    clientSeq = 82   QEMU Platform RF

<output truncated>
```

The output displays the following information:

- clientID displays the client's ID number.
- clientSeq displays the client's notification sequence number.
- Current redundancy facility state.

This example shows how to display the redundancy facility counter information:

```
Switch# show redundancy counters
Redundancy Facility OMs

      comm link up = 0
      comm link down = 0
      invalid client tx = 0
      null tx by client = 0
      tx failures = 0
      tx msg length invalid = 0

      client not rxing msgs = 0
      rx peer msg routing errors = 0
      null peer msg rx = 0
      errored peer msg rx = 0

      buffers tx = 0
      tx buffers unavailable = 0
      buffers rx = 0
      buffer release errors = 0

      duplicate client registers = 0
      failed to register client = 0
      Invalid client syncs = 0
```

Switch#

This example shows how to display redundancy facility history information:

```
Switch# show redundancy history
00:00:00 *my state = INITIALIZATION(2) peer state = DISABLED(1)
00:00:00 RF_EVENT_INITIALIZATION(524) op=0 rc=0
00:00:00 *my state = NEGOTIATION(3) peer state = DISABLED(1)
00:00:01 client added: Table Manager Client(24001) seq=21
00:00:01 client added: SNMP SA HA Client(20010) seq=24
00:00:06 client added: WCM_CAPWAP(24100) seq=5
00:00:06 client added: WCM_QOS_HA(24103) seq=8
00:00:07 client added: WCM_DOT1X(24106) seq=11
00:00:07 client added: EICORE HA Client(20002) seq=4
00:00:09 client added: WCM_MOBILITY(24105) seq=10
00:00:09 client added: WCM_NETFLOW(24111) seq=16
00:00:09 client added: WCM_APPFROGUE(24107) seq=12
00:00:09 client added: WCM_RRM_HA(24101) seq=6
00:00:09 client added: WCM_MCAST(24112) seq=17
00:00:09 client added: WCM_CIDS(24110) seq=15
00:00:09 client added: wcm_comet(24120) seq=18
00:00:22 RF_STATUS_REDUNDANCY_MODE_CHANGE(405) First Slave(0) op=0 rc=0
00:00:22 RF_STATUS_REDUNDANCY_MODE_CHANGE(405) Slave(6107) op=0 rc=0
00:00:22 RF_STATUS_REDUNDANCY_MODE_CHANGE(405) Slave(6109) op=0 rc=0
00:00:22 RF_STATUS_REDUNDANCY_MODE_CHANGE(405) Slave(6128) op=0 rc=0
00:00:22 RF_STATUS_REDUNDANCY_MODE_CHANGE(405) Slave(8897) op=0 rc=0
00:00:22 RF_STATUS_REDUNDANCY_MODE_CHANGE(405) Slave(8898) op=0 rc=0
00:00:22 RF_STATUS_REDUNDANCY_MODE_CHANGE(405) Slave(8901) op=0 rc=0
00:00:22 RF_EVENT_SLAVE_STATUS_DONE(523) First Slave(0) op=405 rc=0
00:00:22 RF_STATUS_REDUNDANCY_MODE_CHANGE(405) Redundancy Mode RF(29) op=0 rc=0
00:00:22 RF_STATUS_REDUNDANCY_MODE_CHANGE(405) IfIndex(139) op=0 rc=0
```

<output truncated>

This example shows how to display information about the redundancy facility slaves:

```
Switch# show redundancy slaves
Group ID = 1
Slave/Process ID = 6107 Slave Name = [installer]
```

```
Slave/Process ID = 6109   Slave Name = [eicored]
Slave/Process ID = 6128   Slave Name = [snmp_subagent]
Slave/Process ID = 8897   Slave Name = [wcm]
Slave/Process ID = 8898   Slave Name = [table_mgr]
Slave/Process ID = 8901   Slave Name = [iosd]
```

Switch#

This example shows how to display information about the redundancy facility state:

```
Switch# show redundancy states
      my state = 13 -ACTIVE
      peer state = 1 -DISABLED
      Mode = Simplex
      Unit ID = 1

Redundancy Mode (Operational) = SSO
Redundancy Mode (Configured) = SSO
Redundancy State = Non Redundant
Manual Swact = disabled (system is simplex (no peer unit))

Communications = Down      Reason: Simplex mode

      client count = 75
      client_notification_TMR = 360000 milliseconds
      keep_alive TMR = 9000 milliseconds
      keep_alive count = 0
      keep_alive threshold = 18
      RF debug mask = 0

Switch#
```

## show redundancy config-sync

To display a configuration synchronization failure or the ignored mismatched command list (MCL), if any, use the **show redundancy config-sync** command in EXEC mode.

```
show redundancy config-sync {failures {bem| mcl| prc}| ignored failures mcl}
```

### Syntax Description

<b>failures</b>	Displays MCL entries or best effort method (BEM)/Parser Return Code (PRC) failures.
<b>bem</b>	Displays a BEM failed command list, and forces the standby switch to reboot.
<b>mcl</b>	Displays commands that exist in the switch's running configuration but are not supported by the image on the standby switch, and forces the standby switch to reboot.
<b>prc</b>	Displays a PRC failed command list and forces the standby switch to reboot.
<b>ignored failures mcl</b>	Displays the ignored MCL failures.

### Command Default

None

### Command Modes

User EXEC  
Privileged EXEC

### Command History

Release	Modification
Cisco IOS XE 3.3SE	This command was introduced.

### Usage Guidelines

When two versions of Cisco IOS images are involved, the command sets supported by two images might differ. If any of those mismatched commands are executed on the active switch, the standby switch might not recognize those commands, which causes a configuration mismatch condition. If the syntax check for the command fails on the standby switch during a bulk synchronization, the command is moved into the MCL and the standby switch is reset. To display all the mismatched commands, use the **show redundancy config-sync failures mcl** command.

To clean the MCL, follow these steps:

- 1 Remove all mismatched commands from the active switch's running configuration.
- 2 Revalidate the MCL with a modified running configuration by using the **redundancy config-sync validate mismatched-commands** command.

- 3 Reload the standby switch.

Alternatively, you could ignore the MCL by following these steps:

- 1 Enter the **redundancy config-sync ignore mismatched-commands** command.
- 2 Reload the standby switch; the system transitions to SSO mode.


**Note**

If you ignore the mismatched commands, the out-of-synchronization configuration on the active switch and the standby switch still exists.

- 3 You can verify the ignored MCL with the **show redundancy config-sync ignored mcl** command.

Each command sets a return code in the action function that implements the command. This return code indicates whether or not the command successfully executes. The active switch maintains the PRC after executing a command. The standby switch executes the command and sends the PRC back to the active switch. A PRC failure occurs if these two PRCs do not match. If a PRC error occurs at the standby switch either during bulk synchronization or line-by-line (LBL) synchronization, the standby switch is reset. To display all PRC failures, use the **show redundancy config-sync failures prc** command.

To display best effort method (BEM) errors, use the **show redundancy config-sync failures bem** command.

**Examples**

This example shows how to display the BEM failures:

```
Switch> show redundancy config-sync failures bem
BEM Failed Command List
-----
```

The list is Empty

This example shows how to display the MCL failures:

```
Switch> show redundancy config-sync failures mcl
Mismatched Command List
-----
```

The list is Empty

This example shows how to display the PRC failures:

```
Switch# show redundancy config-sync failures prc
PRC Failed Command List
-----
```

The list is Empty

# 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** [**summary**]

## Syntax Description

<i>stack-member-number</i>	(Optional) Number of the stack member. The range is 1 to 9.
<b>detail</b>	(Optional) Displays detailed information about the stack ring.
<b>neighbors</b>	(Optional) Displays the neighbors of the entire switch stack.
<b>stack-ports</b>	(Optional) Displays port information for the entire switch stack.
<b>summary</b>	(Optional) Displays the stack cable length, the stack link status, and the loopback status.

## Command Default

None

## Command Modes

User EXEC  
Privileged EXEC

## Command History

Release	Modification
Cisco IOS XE 3.3SE	This command was introduced.

## Usage Guidelines

This command displays these states:

- **Initializing**—A switch has been just added to the stack and it has not completed the basic initialization to go to the ready state.
- **HA Sync in Progress**—After the standby is elected, the corresponding switch remains in this state until the synchronization is completed.
- **Syncing**—A switch that is added to an already existing stack remains in this state until the switch add sequence is complete.
- **Ready**—The member has completed loading the system- and interface-level configurations and can forward traffic.

- V-Mismatch—A switch in version mismatch mode. Version-mismatch mode is when a switch that joins the stack has a software version that is incompatible with the active switch.
- Provisioned—The state of a preconfigured switch before it becomes an active member of a switch stack. The MAC address and the priority number in the display are always 0 for the provisioned switch.
- Unprovisioned—The state of a switch when the provisioned switch number was unprovisioned using the **no switch switch-number provision** command.
- Removed—A switch that was present in the stack was removed using the **reload slot** command.
- Sync not started—When multiple switches are added to an existing stack together, the active switch adds them one by one. The switch that is being added is in the Syncing state. The switches that have not been added yet are in the Sync not started state.
- Lic-Mismatch—A switch has a different license level than the active switch.

A typical state transition for a stack member (including an active switch) booting up is Waiting > Initializing > 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-persistence wait-time if persistent MAC address is enabled.

## Examples

This example shows how to display summary stack information:

```
Switch# show switch
Switch/Stack Mac Address : 6400.f124.e900
```

Switch#	Role	Mac Address	Priority	H/W Version	Current State
1	Member	0000.0000.0000	0	0	Provisioned
2	Member	0000.0000.0000	0	0	Removed
*3	Active	6400.f124.e900	2	0	Ready
8	Member	0000.0000.0000	0	0	Unprovisioned

This example shows how to display detailed stack information:

```
Switch# show switch detail
Switch/Stack Mac Address : 2037.06ce.3f80 - Local Mac Address
Mac persistency wait time: Indefinite
```

Switch#	Role	Mac Address	Priority	H/W Version	Current State
*1	Active	2037.06ce.3f80	1	0	Ready
2	Member	0000.000.0000	0	0	Provisioned
6	Member	2037.06ce.1e00	1	0	Ready

  

Switch#	Stack Port Status		Neighbors	
	Port 1	Port 2	Port 1	Port 2
1	Ok	Down	6	None
6	Down	Ok	None	1

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
```

This example shows the output for the **show switch stack-ports summary** command. The table that follows describes the fields in the display.

**Table 4: Show switch stack-ports summary Command Output**

Field	Description
Switch#/Port#	Member number and its stack port number.
Stack Port Status	Status of the stack port. <ul style="list-style-type: none"> <li>• Absent—No cable is detected on the stack port.</li> <li>• Down—A cable is detected, but either no connected neighbor is up, or the stack port is disabled.</li> <li>• OK—A cable is detected, and the connected neighbor is up.</li> </ul>
Neighbor	Switch number of the active member at the other end of the stack cable.
Cable Length	Valid lengths are 50 cm, 1 m, or 3 m. If the switch cannot detect the cable length, the value is <i>no cable</i> . The cable might not be connected, or the link might be unreliable.
Link OK	Whether the stack cable is connected and functional. There may or may not be a neighbor connected on the other end. <i>The link partner</i> is a stack port on a neighbor switch. <ul style="list-style-type: none"> <li>• No—There is no stack cable connected to this port or the stack cable is not functional.</li> <li>• Yes—There is a functional stack cable connected to this port.</li> </ul>

Field	Description
Link Active	Whether a neighbor is connected on the other end of the stack cable. <ul style="list-style-type: none"> <li>• No—No neighbor is detected on the other end. The port cannot send traffic over this link.</li> <li>• Yes—A neighbor is detected on the other end. The port can send traffic over this link.</li> </ul>
Sync OK	Whether the link partner sends valid protocol messages to the stack port. <ul style="list-style-type: none"> <li>• No—The link partner does not send valid protocol messages to the stack port.</li> <li>• Yes—The link partner sends valid protocol messages to the port.</li> </ul>
# Changes to LinkOK	The relative stability of the link. If a large number of changes occur in a short period of time, link flapping can occur.
In Loopback	Whether a stack cable is attached to a stack port on the member. <ul style="list-style-type: none"> <li>• No— At least one stack port on the member has an attached stack cable.</li> <li>• Yes—None of the stack ports on the member has an attached stack cable.</li> </ul>

**Related Commands**

Command	Description
<a href="#">reload</a>	Reloads the stack member and applies a configuration change.
<a href="#">session</a>	Accesses the diagnostic shell of a specific stack member or the Cisco IOS prompt of the standby Switch
<a href="#">stack-mac update force</a>	Updates the stack MAC address to the MAC address of the active switch.
<a href="#">switch priority</a>	Changes the stack member priority value.
<a href="#">switch provision</a>	Supplies a configuration to a new switch before it joins the switch stack.
<a href="#">switch renumber</a>	Changes the stack member number.

## show trace messages capwap ap ha

To display wireless control and provisioning of wireless access points (CAPWAP) high availability, use the **show trace messages capwap ap ha** privileged EXEC command.

**show trace messages capwap ap ha** [**detail**| **event**| **dump**] [**switch** *switch*]

### Syntax Description

<b>detail</b>	(Optional) Displays wireless CAPWAP high availability details.
<b>detail</b> <i>switch number</i>	Specifies the switch number. Value is one.
<b>event</b>	(Optional) Displays wireless CAPWAP high availability events.
<b>event</b> <i>switch number</i>	Specifies the switch number. Value is one.
<b>dump</b>	(Optional) Displays wireless CAPWAP high availability output.
<b>dump</b> <i>switch number</i>	Specifies the switch number. Value is one.
<b>switch</b>	(Optional) Displays the switch number. The value is one.
<b>switch</b> <i>switch number</i>	Specifies the switch number. Value is one.

### Command Default

None

### Command Modes

Privileged EXEC

### Command History

Release	Modification
Cisco IOS XE 3.3SE	This command was introduced.

### Examples

This example shows how to display CAPWAP high availability output:

```
Switch# show trace messages mobility ha dump switch 1
| Output modifiers
<cr>
```

## show trace messages mobility ha

To display wireless mobility high availability, use the **show trace messages mobility ha** privileged EXEC command.

```
show trace messages mobility ha [event| detail| dump] [switch switch]
```

Syntax Description	
<b>event</b>	(Optional) Displays wireless mobility HA events.
<b>event</b> <i>switch</i>	Specifies the switch number. Value is one.
<b>detail</b>	(Optional) Displays wireless mobility HA details.
<b>detail</b> <i>switch</i>	Specifies the switch number. Value is one.
<b>dump</b>	(Optional) Displays the wireless mobility HA output debugging.
<b>dump</b> <i>switch</i>	Specifies the switch number. Value is one.
<b>switch</b> <i>switch</i>	(Optional) Displays the switch number.
<b>switch</b> <i>switch</i>	Specifies the switch number. Value is one.

**Command Default** None

**Command Modes** Privileged EXEC

Command History	Release	Modification
	Cisco IOS XE 3.3SE	This command was introduced.

**Examples** This example shows how to display wireless mobility high availability:

```
Switch# show trace messages mobility ha
```

## 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 active switch indefinitely, even after a new active switch takes over.

*time-value* (Optional) Time period in minutes before the stack MAC address changes to that of the new active switch. The range is 1 to 60 minutes.

### Command Default

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

### Command Modes

Global configuration

### Command History

Release	Modification
Cisco IOS XE 3.3SE	This command was introduced.

### Usage Guidelines

By default, the stack MAC address will always be the MAC address of the first active switch, even if a new active switch takes over. The same behavior occurs when you enter the **stack-mac persistent timer** command or the **stack-mac persistent timer 0** command.

When you enter the **stack-mac persistent timer** command with a *time-value*, the stack MAC address will change to that of the new active switch after the period of time that you entered whenever a new switch becomes the active switch. If the previous active switch rejoins the stack during that time period, the stack retains its MAC address for as long as the switch that has that MAC address is in the stack.

If the whole stack reloads the MAC address of the active switch is the stack MAC address.



#### Note

If you do not change the stack MAC address, Layer 3 interface flapping does not occur. This also means that a foreign MAC address (a MAC address that does not belong to any of the switches in the stack) could be the stack MAC address. If the switch with this foreign MAC address joins another stack as the active switch, two stacks will have the same stack MAC address. You must use the **stack-mac update force** command to resolve the conflict.

### Examples

This example shows how to enable a persistent MAC address:

```
Switch(config)# stack-mac persistent timer
```

You can verify your settings by entering the **show running-config** privileged EXEC command. If enabled, **stack-mac persistent timer** is shown in the output.

### Related Commands

Command	Description
<a href="#">stack-mac update force</a>	Updates the stack MAC address to the MAC address of the active switch.

# stack-mac update force

To update the stack MAC address to the MAC address of the active switch, use the **stack-mac update force** command in EXEC mode on the active switch.

## stack-mac update force

**Syntax Description** This command has no arguments or keywords.

**Command Default** None

**Command Modes** User EXEC  
Privileged EXEC

Command History	Release	Modification
	Cisco IOS XE 3.3SE	This command was introduced.

**Usage Guidelines** By default, the stack MAC address is not changed to the MAC address of the new active switch during a high availability (HA) failover. Use the **stack-mac update force** command to force the stack MAC address to change to the MAC address of the new active switch.

If the switch with the same MAC address as the stack MAC address is currently a member of the stack, the **stack-mac update force** command has no effect. (It does not change the stack MAC address to the MAC address of the active switch.)



**Note** If you do not change the stack MAC address, Layer 3 interface flapping does not occur. It also means that a foreign MAC address (a MAC address that does not belong to any of the switches in the stack) could be the stack MAC address. If the switch with this foreign MAC address joins another stack as the active switch, two stacks will have the same stack MAC address. You must use the **stack-mac update force** command to resolve the conflict.

**Examples** This example shows how to update the stack MAC address to the MAC address of the active switch:

```
Switch> stack-mac update force
Switch>
```

You can verify your settings by entering the **show switch** privileged EXEC command. The stack MAC address includes whether the MAC address is local or foreign.

**Related Commands**

<b>Command</b>	<b>Description</b>
<a href="#">show switch</a>	Displays information related to the stack member or the switch stack.
<a href="#">stack-mac persistent timer</a>	Enables the persistent MAC address feature.

# standby console enable

To enable access to the standby console switch, use the **standby console enable** command in redundancy main configuration submode. To disable access to the standby console switch, use the **no** form of this command.

**standby console enable**

**no standby console enable**

**Syntax Description** This command has no arguments or keywords.

**Command Default** Access to the standby console switch is disabled.

**Command Modes** Redundancy main configuration submode

Command History	Release	Modification
	Cisco IOS XE 3.3SE	This command was introduced.

**Usage Guidelines** This command is used to collect and review specific data about the standby console. The command is useful primarily for Cisco technical support representatives troubleshooting the switch.

**Examples** This example shows how to enter the redundancy main configuration submode and enable access to the standby console switch:

```
Switch(config)# redundancy
Switch(config-red)# main-cpu
Switch(config-r-mc)# standby console enable
Switch(config-r-mc)#
```

Related Commands	Command	Description
	<a href="#">main-cpu</a>	Enters the redundancy main configuration submode and enables the standby switch.

# 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

<i>stack-member-number</i>	Current stack member number. The range is 1 to 9.
<b>stack port</b> <i>port-number</i>	Specifies the stack port on the member. The range is 1 to 2.
<b>disable</b>	Disables the specified port.
<b>enable</b>	Enables the specified port.

## Command Default

The stack port is enabled.

## Command Modes

Privileged EXEC

## Command History

Release	Modification
Cisco IOS XE 3.3SE	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
<a href="#">show switch</a>	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 EXEC mode on the active switch.

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

## Syntax Description

<i>stack-member-number</i>	Current stack member number. The range is 1 to 9.
<i>new-priority-value</i>	New stack member priority value. The range is 1 to 15.

## Command Default

The default priority value is 1.

## Command Modes

User EXEC  
Privileged EXEC

## Command History

Release	Modification
Cisco IOS XE 3.3SE	This command was introduced.

## Usage Guidelines

The new priority value is a factor when a new active switch is elected. When you change the priority value the active switch is not changed immediately.

## Examples

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

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

## Related Commands

Command	Description
<a href="#">reload</a>	Reloads the stack member and applies a configuration change.
<a href="#">session</a>	Accesses the diagnostic shell of a specific stack member or the Cisco IOS prompt of the standby Switch
<a href="#">show switch</a>	Displays information related to the stack member or the switch stack.
<a href="#">switch rename</a>	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 active switch. 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

<i>stack-member-number</i>	Stack member number. The range is 1 to 9.
<i>type</i>	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 XE 3.3SE	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
<a href="#">show switch</a>	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 EXEC mode on the active switch.

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

## Syntax Description

<i>current-stack-member-number</i>	Current stack member number. The range is 1 to 9.
<i>new-stack-member-number</i>	New stack member number for the stack member. The range is 1 to 9.

## Command Default

The default stack member number is 1.

## Command Modes

User EXEC  
Privileged EXEC

## Command History

Release	Modification
Cisco IOS XE 3.3SE	This command was introduced.

## Usage Guidelines

If another stack member is already using the member number that you just specified, the active switch 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# 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**

<b>Command</b>	<b>Description</b>
<a href="#">reload</a>	Reloads the stack member and applies a configuration change.
<a href="#">session</a>	Accesses the diagnostic shell of a specific stack member or the Cisco IOS prompt of the standby Switch
<a href="#">show switch</a>	Displays information related to the stack member or the switch stack.
<a href="#">switch priority</a>	Changes the stack member priority value.





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