Single IP Management

reload

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

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

Syntax Description

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

Command Default

Immediately reloads the group member and puts a configuration change into effect.

Command Modes

Privileged EXEC

Command History

Release	Modification
Cisco IOS Release 15.2(7)E1	This command was introduced.

Usage Guidelines

If there is more than one switch in the switch group, 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 group:

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

This example shows how to reload a specific group member:

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

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

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

show switch hstack-ports

To display the group port number for a particular group port use the **show switch hstack-ports** command in privileged EXEC mode.

show switch hstack-ports

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

Privileged EXEC

Command History

Release	Modification
Cisco IOS Release 15.2(7)E	This command was introduced.

The following is sample output from the **show switch hstack-ports** command showing the status of the Single IP Management port for a 1G switch:

```
Device#show switch hstack-ports
 Horizontal stack port status :
Gi Ports   Stack Port   Operational Status   Next Reload Status   Media Type
--------- ------------ -------------------- -------------------- -------------
Gi1/0/25      NA           N/W Port           N/W Port            Fiber
Gi1/0/26      1            Stack Port         Stack Port          Fiber
Gi1/0/27      2            Stack Port         Stack Port          Fiber
Gi1/0/28      NA           N/W Port           N/W Port            Fiber
Gi2/0/49      1            Stack Port         Stack Port          Fiber
Gi2/0/50      NA           N/W Port           N/W Port            Fiber
Gi2/0/51      2            Stack Port         Stack Port          Fiber
Gi2/0/52      NA           N/W Port           N/W Port            Fiber
Gi3/0/49      NA           N/W Port           N/W Port            Fiber
Gi3/0/50      1            Stack Port         Stack Port          Fiber
Gi3/0/51      NA           N/W Port           N/W Port            Fiber
Gi3/0/52      2            Stack Port         Stack Port          Fiber
Gi4/0/9       1            Stack Port         Stack Port          Fiber
Gi4/0/10      2            Stack Port         Stack Port          Fiber
Gi5/0/9       1            Stack Port         Stack Port          Fiber
Gi5/0/10      2            Stack Port         Stack Port          Fiber
Gi6/0/17      1            Stack Port         Stack Port          Fiber
Gi6/0/18      2            Stack Port         Stack Port          Fiber
Gi7/0/17      1            Stack Port         Stack Port          Fiber
Gi7/0/18      2            Stack Port         Stack Port          Fiber
Gi8/0/9       1            Stack Port         Stack Port          Fiber
Gi8/0/10      2            Stack Port         Stack Port          Fiber
```

The following is sample output from the **show switch hstack-ports** showing the status of the Single IP Management port for a 10G switch:

```
Device#show switch hstack-ports
Horizontal stack port status :
Te Ports   Stack Port   Operational Status   Next Reload Status   Media Type
--------- ------------ -------------------- -------------------- -------------
Te1/0/1       1            Stack Port         Stack Port          Fiber
Te1/0/2       NA           N/W Port           N/W Port            Fiber
Te1/0/3       NA           N/W Port           N/W Port            Fiber
```

```
Te1/0/4       2           Stack Port         Stack Port          Fiber
Te2/0/1       1           Stack Port         Stack Port          Fiber
Te2/0/2       2           Stack Port         Stack Port          Fiber
Te2/0/3       NA          N/W Port           N/W Port            Fiber
Te2/0/4       NA          N/W Port           N/W Port            Fiber
Te3/0/1       NA          N/W Port           N/W Port            Fiber
Te3/0/2       1           Stack Port         Stack Port          Fiber
Te3/0/3       NA          N/W Port           N/W Port            Fiber
Te3/0/4       2           Stack Port         Stack Port          Fiber
Te4/0/1       NA          N/W Port           N/W Port            Fiber
Te4/0/2       1           Stack Port         Stack Port          Fiber
Te4/0/3       NA          N/W Port           N/W Port            Fiber
Te4/0/4       2           Stack Port         Stack Port          Fiber
Te6/0/1       NA          N/W Port           N/W Port            Fiber
Te6/0/2       1           Stack Port         Stack Port          Fiber
Te6/0/3       2           Stack Port         Stack Port          Fiber
Te6/0/4       NA          N/W Port           N/W Port            Fiber
Te7/0/1       1           Stack Port         Stack Port          Fiber
Te7/0/2       NA          N/W Port           N/W Port            Fiber
Te7/0/3       2           Stack Port         Stack Port          Fiber
Te7/0/4       NA          N/W Port           N/W Port            Fiber
```

Table 1 describes the significant fields shown in the display.

Table 1: show switch hstack-port Field Descriptions

Field	Description
Te Ports	Displays all the available 10-G ports, including MultiGigabit ports.
Stack Port	Indicates if Port 1 or Port 2 is a group port.
Operational Status	Displays the current status of the10-G port. It indicates if the port is a network port or a group port.
Next Reload Status	Displays the status of the 10-G port for the next reload. It indicates whether the port will be a network port or a group port.
Media Type	Displays the type of media used in the group port, copper for MultiGigabit port and fiber for SFP+ port.

show switch

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

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

Syntax Description

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

Command Default

None

Command Modes

User EXEC

Privileged EXEC

Command History

Release	Modification
Cisco IOS Release 15.2(7)E1	This command was introduced.

Usage Guidelines

This command displays these states:

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

  Group members not participating in a group primary election remain in the waiting state until the group primary is elected and ready.

- Initializing—A switch has determined whether it has group primary status. If it is not the group primary, it is receiving its system- and interface-level configuration from the group primary and loading it.
- Ready—The member has completed loading the system- and interface-level configurations and can forward traffic.
- Primary Re-Init—The state immediately after a primary reelection and a different member is elected primary. The new primary is reinitializing its configuration. This state applies only to the new primary.
- Ver Mismatch—A switch in version mismatch mode. Version-mismatch mode is when a switch joining the group has a different group protocol minor version number than the primary.
- SDM Mismatch—A switch in Switch Database Management (SDM) mismatch mode. SDM mismatch is when a member does not support the SDM template running on the primary.

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

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

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

A typical state transition for a group 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 group. The **show running-config** and the **show startup-config** privileged EXEC commands do not provide this information.

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

Examples

This example shows how to display summary group information:

```
Device# show switch
Switch/Stack Mac Address : d4a0.2a37.4800
                                           H/W   Current
Switch#  Role   Mac Address     Priority Version  State
-----------------------------------------------------------
 1       Member 0cd9.9624.f980     7      4       Ready
*2       Master d4a0.2a37.4800     1      4       Ready
 6       Member 0003.e31a.1e00     2      4       Ready
```

This example shows how to display detailed group information:

```
Device# show switch detail
Switch/Stack Mac Address : d4a0.2a37.4800
                                           H/W   Current
Switch#  Role   Mac Address     Priority Version  State
-----------------------------------------------------------
 1       Member 0cd9.9624.f980     7      4       Ready
*2       Master d4a0.2a37.4800     8      4       Ready
 6       Member 0003.e31a.1e00     2      0       Ready



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

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

```
Device# 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 group:

```
Device# show switch neighbors
  Switch #    Port A       Port B
```

```
  --------    ------       ------
      6        None          8
      8         6           None
```

This example shows how to display group-port information:

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

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

Command Default

Persistent MAC address is disabled. The MAC address of the group is always that of the first group primary.

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

Command Modes

Global configuration

Command History

Release	Modification
Cisco IOS Release 15.2(7)E	This command was introduced.

Usage Guidelines

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

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

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

- If you enter the command with no value, the default delay is 4 minutes.
- If you enter **0**, the group continues to use the current group MAC address until you enter the **no stack-mac persistent timer** command.
- If you enter a time delay of 1 to 60 minutes, the group MAC address of the previous group primary is used until the configured time period expires or until you enter the **no stack-mac persistent timer** command.

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

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

If the whole group reloads, when it comes back up, the MAC address of the group primary is the group MAC address.

Examples

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

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

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

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

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

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

- **show running-config**—If enabled, **stack-mac persistent timer** and the time in minutes appears in the output.
- **show switch**—If enabled, **Mac persistency wait time** and the number of minutes appears in the output.

switch stack port

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

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

Syntax Description

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

Command Default

The group port is enabled.

Command Modes

Privileged EXEC

Command History

Release	Modification
Cisco IOS Release 15.2(7)E1	This command was introduced.

Usage Guidelines

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

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

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

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

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

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

switch priority

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

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

Syntax Description

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

Command Default

The default priority value is 1.

Command Modes

Global configuration

Command History

Release	Modification
Cisco IOS Release 15.2(7)E	This command was introduced.

Usage Guidelines

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

Examples

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

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

switch provision

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

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

Syntax Description

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

Command Default

The switch is not provisioned.

Command Modes

Global configuration

Command History

Release	Modification
Cisco IOS Release 15.2(7)E1	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 group 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 group. You can change the stack member number of a provisioned switch that is physically present in the switch group 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 group, the switch group applies the default configuration to the provisioned switch and adds it to the group. The switch group displays a message when it applies the default configuration.

Provisioned information appears in the running configuration of the switch group. 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 group.

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 group member number of 2 for the switch group. The **show running-config** command output shows the interfaces associated with the provisioned switch.

```
Device(config)# switch 2 provision C1000-xxxx
Device(config)# end
```

```
Device# 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 group.

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

```
Device(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.

switch renumber

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

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

Syntax Description

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

Command Default

The default group member number is 1.

Command Modes

Global configuration

Command History

Release	Modification
Cisco IOS Release 15.2(7)E1	This command was introduced.

Usage Guidelines

If another group member is already using the member number that you just specified, the group primary assigns the lowest available number when you reload the group member.

Note If you change the number of a group member, and no configuration is associated with the new group member number, that group 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 group member and to apply this configuration change.

Examples

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

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