



Single IP Management Configuration Guide, Cisco IOS Release 15.2(7)Ex (Catalyst 1000 Switches)

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Configuring Single IP Management

Restrictions for Single IP Management

The following restrictions apply to the Single IP Management feature:

- Not supported on downlink Gigabit ports.
- Not supported on Fast Ethernet stock keeping units (SKUs).
- Supported only on Small Form-factor Pluggable (SFP) uplink ports of all SKUs.
- 1-G switches can be grouped only with 1-G switches, and 10-G switches only with 10-G switches.

You cannot use 1-G SFPs in 10-G switches for single IP management.

Information About Single IP Management

Single IP Management

The Cisco Catalyst 1000 Series Switches that support 1-G and 10-G SFP and SFP+ uplink ports can be a part of single IP management. You can use SFP and SFP+ ports with optical cables to connect boxes placed at different locations to form a group, where the compact boxes are placed in different floors or buildings. You can form half-ring or full-ring topologies based on your requirements. The remaining uplink ports will continue to work as network ports.

When you convert a network port to a single IP-managed port, it continues to work as a network port without any impact to the current running configuration, until the next reload of the device. All the current configurations on that particular network port are lost after the reload.

When you convert a single IP-managed port back to a network port, it comes up as a network port with the default configuration only after a reload.



Note While uplink ports work as single IP-managed ports, these uplink interfaces (for example, 10 Gigabit Ethernet 1/0/1 interface) are not listed in the output of any **show** command or available under any configuration command. These will be available only after the reload of the device after the ports are converted back to network ports.

Table 1: Cisco Catalyst 1000 Series 1-G Switches Supporting Single IP Management

Product ID	Access Port	Uplink	Power over Ethernet (PoE) or Data	Power supply unit (PSU)
C1000-8T-2G-L	8	2-1 G	Data	Internal
C1000-8T-E-2G-L	8	2-1 G	Data	External
C1000-8P-2G-L	8	2-1 G	POE-67W	Internal

Product ID	Access Port	Uplink	Power over Ethernet (PoE) or Data	Power supply unit (PSU)
C1000-8P-E-2G-L	8	2-1 G	POE-67W	External
C1000-8FP-2G-L	8	2-1 G	POE-120W	Internal
C1000-8FP-E-2G-L	8	2-1 G	POE-120W	External
C1000-16T-2G-L	16	2-1 G	Data	Internal
C1000-16T-E-2G-L	16	2-1 G	Data	External
C1000-16P-2G-L	16	2-1 G	POE-120W	Internal
C1000-16P-E-2G-L	16	2-1 G	POE-120W	External
C1000-16FP-2G-L	16	2-1 G	POE-240W	Internal
C1000-24T-4G-L	24	4-1 G	Data	Internal
C1000-24P-4G-L	24	4-1G	POE-195W	Internal
C1000-24FP-4G-L	24	4-1 G	POE-370W	Internal
C1000-48T-4G-L	48	4-1 G	Data	Internal
C1000-48P-4G-L	48	4-1 G	POE-370W	Internal
C1000-48FP-4G-L	48	4-1 G	POE-740W	Internal

Table 2: Cisco Catalyst 1000 Series 10-G Switches Supporting Single IP Management

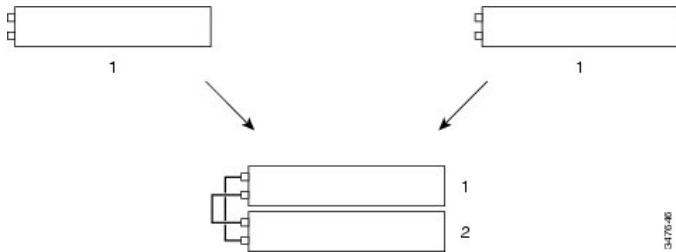
Product ID	Access Port	Uplink	PoE or Data	PSU
C1000-24T-4X-L	24	4-10 G	Data	Internal
C1000-24P-4X-L	24	4-10 G	POE-195W	Internal
C1000-24FP-4X-L	24	4-10 G	POE-370W	Internal
C1000-48T-4X-L	48	4-10 G	Data	Internal
C1000-48P-4X-L	48	4-10 G	POE-370W	Internal
C1000-48FP-4X-L	48	4-10 G	POE-740W	Internal

Group Membership

Up to eight members can be connected as a group through single IP-managed ports. A group always has one active switch, with other devices acting as member switches.

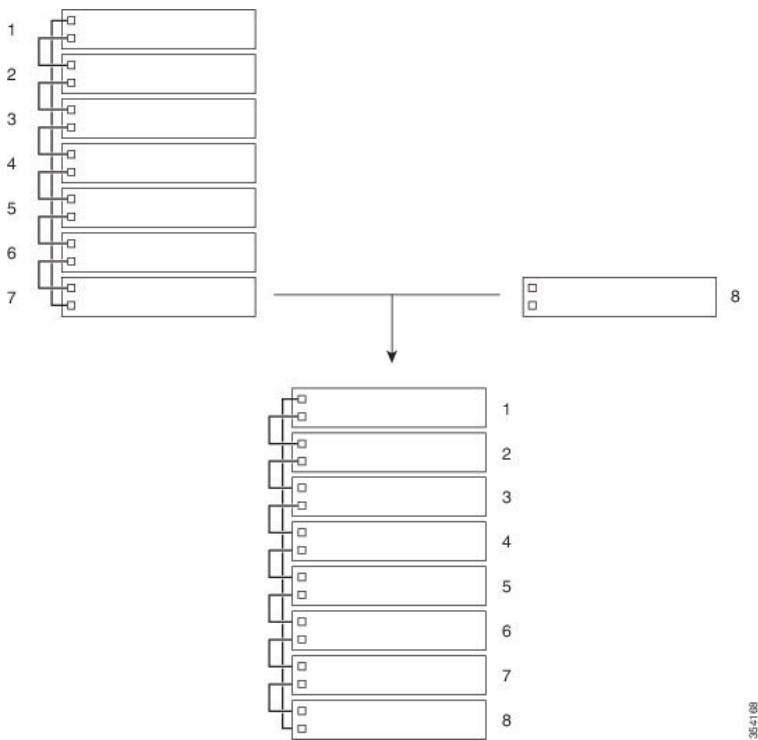
You can have a group with only one active switch and one member switch too. The maximum number in the group is eight. You can connect standalone devices to an existing group to increase the membership.

Figure 1: Creating a Group from Two Standalone Devices



We recommend that you use half-ring topology for two-member stacks. Full-ring topology is generally used for three or more member stacks to provide redundancy when an intermediate switch goes down and loses connection with other members of the single IP managed group.

Figure 2: Adding a Standalone Device to a Group



Persistent MAC Address

A group's MAC address is determined by the MAC address of the active switch. When an active switch is removed from the group, and a new active switch takes over, the default behavior is for the MAC address of the new active switch to immediately become the new MAC router address. However, you can enable the Persistent MAC Address feature to allow a time delay before the group MAC address changes.

During this time period, if the previous active switch rejoins the group, the group continues to use the previous active switch's MAC address as the group MAC address, even if the device is now a member switch, and not an active switch. If the previous active switch does not rejoin the group during this period, the group takes the MAC address of the new active switch as the group MAC address. You can also configure MAC persistency, so that the group never switches to the MAC address of the new active switch. If the entire group reloads, it uses the MAC address of the active switch as the group MAC address.



Caution When you configure the **stack-mac persistent timer** command to configure the Persistent MAC Address feature, a warning message appears on the console. Use this feature with caution. Using the old device MAC address elsewhere in the same domain can result in lost traffic.

The following guidelines are applicable to the **stack-mac persistent timer** command:

- You can configure a time period from 0 to 60 minutes as the persistent timer.
- If you enter the **stack-mac persistent timer** command with no value, the default delay is 4 minutes. We recommend that you always enter a value. If the command is entered without a value, the time delay appears in the running configuration file with an explicit timer value of 4 minutes.
- If you enter **0** as the persistent timer, the group MAC address of the previous active switch is used until you configure the **no stack-mac persistent timer** command, which immediately changes the group MAC address to that of the current active switch. If you do not configure the **no stack-mac persistent timer** command, the group MAC address never changes.
- If you enter a time delay of 1 to 60 minutes, the group MAC address of the previous active switch is used until the configured time period expires, or until you configure the **no stack-mac persistent timer** command.

Group Numbering Convention

The group member number (1 to 8) identifies each member in a group. This number also determines the interface-level configuration that a member uses. You can display the number by using the **show switch** command.

A new, out-of-the-box device (one that has not joined a group, or has not been manually assigned a number) ships with a default member number of 1. When it joins a group, its default number changes to the lowest available number in the corresponding group.

Members in the same group cannot have the same number. Every member, including a standalone device, retains its number until the number is manually changed, or the number is already being used by another member.

The following guidelines are applicable when configure a group-member number:

- If you manually change the number by using the **switch current-stack-member-number renumber new-stack-member-number** command, the new number comes into effect after that member is reset (or after you configure the **reload slot stack-member-number** command), and only if that number is not already assigned to any member. You can also change the number by using the `SWITCH_NUMBER` environment variable.

If the same number is used by another member, the device selects the lowest available number in the group.

If you manually change the number of a member, and no interface-level configuration is associated with that new number, that member is reset to its default configuration.

You cannot use the **switch current-stack-member-number renumber new-stack-member-number** command on a provisioned device. The command is rejected.

- If you move a member to a different group, the member retains its number only if that number is not used by another member. If it is used, the device selects the lowest available number in the group.
- If you merge groups, the device that joins the group of a new active switch selects the lowest available number in the group.



Note If you connect a single IP-managed port to a normal network port on the other end, transmission and reception of packets are disabled within 30 seconds if no Stacking Discovery Protocol (SDP) packets are received from the other end. The port will not go down, but transmission and reception are disabled, and the following log message is displayed on the console.

```
%STACKMGR-4-HSTACK_LINK_CONFIG: Verify peer stack port setting for hstack StackPort-1  
switch 5 (hostname-switchnumber)
```

After a peer end network port is converted to a single IP-managed port, transmission and reception on this port is enabled.

Priority Values

A higher priority value for a member increases the probability of it being elected as the active switch and retaining its number. The priority values are from 1 to 15; 1 being the lowest and 15 the highest. The default priority value is 1. You can display the member priority value by using the **show switch** command.

To change the priority value for a member, use the **switch stack-member-number priority new priority-value** command.

The new priority value takes effect immediately, but does not affect the current active switch. The new priority value helps determine which member is elected as the new active switch when the current active switch or group is reset.

Election of Group Active Switch

A group's active switch is elected or reelected based on one of the following factors and in the order listed below:

1. The device that is currently the active switch.
2. The device with the highest member priority value.



Note We recommend that you assign the highest priority value to the device that you prefer to be the active switch. This ensures that the device is reelected as active switch if a reelection occurs.

3. The device with the lowest MAC address.

Group Configuration Files

The saved and running configuration files for a group are available with the active switch. All the member switches periodically receive synchronized copies of the configuration files from the active switch. If the active switch becomes unavailable, any member switch that assumes the role of active switch will have the latest configuration files.

The configuration files record the following settings:

- System-level (global) configuration settings such as IP, Simple Network Management Protocol (SNMP), Spanning Tree Protocol (STP), and VLAN, which apply to all member switches.
- Interface-specific configuration settings of all member switches.



Note The interface-specific settings of the active switch are saved if the active switch is replaced without saving the running configuration.

A new, out-of-box device that joins a group uses the system-level settings of that group. If a device is moved to a different group before it is powered on, that device loses its saved configuration file, and uses the system-level configuration of the new group. If the device is powered on as a standalone device before it joins the new group, the group reloads. When the group reloads, the new device may become the active switch, or retain its configuration, and overwrite the configuration files of the other member switches.

The interface-specific configuration of each member switch is associated with a member number. Member switches retain their number unless they are manually changed, or the number is used by another member in the same group. If a number changes, the new number comes into effect after the corresponding member is reset.

- If an interface-specific configuration does not exist for a number, the member switch uses its default interface-specific configuration.
- If an interface-specific configuration exists for a number, the member switch uses the interface-specific configuration associated with that number.

If you replace a failed member with an identical model, the replacement member automatically uses the same interface-specific configuration as the failed device. You do not have to reconfigure the interface settings. Note that the replacement device (referred to as the provisioned device) must have the same member number as the failed device.

Back up and restore the configuration the same way you would for a standalone device configuration.

Protocol Version

Each software image includes a *group protocol version*. The protocol version has a *major* version number and a *minor* version number, for example 1.4, where 1 is the major version number and 4 is the minor version number. Both version numbers determine the level of compatibility among the member switches. You can display the protocol version by using the **show platform stack manager all** command.

Devices with the same Cisco IOS software version have the same protocol version. Such devices are fully compatible, and all the features function properly across the group. A device with the same Cisco IOS software version as the active switch can immediately join the group.

If an incompatibility exists, the fully functional member switches generate a system message that describes the cause of the incompatibility on the specific member switches. The active switch sends the message to all the member switches.

Member Management

A group and the corresponding member interfaces are managed through the master. You can use the CLI, SNMP, and supported network management applications to manage the group. You cannot manage members on an individual basis. You can also use the GUI to manage members.

Configuration Scenarios

Table 3: Single IP Management Configuration Scenarios

Scenario		Result
Active switch election specifically determined by the existing active switch.	Connect two powered-on groups.	Only one of the two active switches becomes the new active switch.

Scenario		Result
Active switch election specifically determined by the member switch priority value.	<ol style="list-style-type: none"> 1. Connect two devices. 2. Use the switch stack-member-number priority new-priority-number command to set the member switch with a higher member priority value. 3. Restart both member switches at the same time. 	The member switch with the higher priority value is elected active switch.
Active switch election specifically determined by the configuration file.	<p>Assuming that both member switches have the same priority value:</p> <ol style="list-style-type: none"> 1. Make sure that one member switch has a default configuration, and the other member switch has a saved (nondefault) configuration file. 2. Restart both member switches at the same time. 	The member switch with the saved configuration file is elected the active switch.
Active switch election specifically determined by the cryptographic software image.	<p>Assuming that all member switches have the same priority value:</p> <ol style="list-style-type: none"> 1. Make sure that one member switch has the cryptographic image installed, and that the other member switch has the noncryptographic image installed. 2. Restart both member switches at the same time. 	The member switch with the cryptographic image is elected active switch.
Active switch election specifically determined by the MAC address.	Assuming that both member switches have the same priority value, configuration file, feature set and license level, restart both member switches at the same time.	The member switch with the lower MAC address is elected active switch.
Member-number conflict.	<p>Assuming that one member switch has a higher priority value than the other member switch:</p> <ol style="list-style-type: none"> 1. Ensure that both members have the same number. If necessary, use the switch current-stack-member-number renumber new-stack-member-number command. 2. Restart both member switches at the same time. 	The member switch with the higher priority value retains its member number. The other member switch has a new member number.
New member switch added.	<ol style="list-style-type: none"> 1. Power off the new device. 2. Connect the new device to a powered-on group. 3. Power on the new device. 	The active switch is retained. The new device is added to the group.
Active switch failure.	Remove (or power off) the active switch.	One of the remaining member switches becomes the new active switch. All the other member switches in the group remain as member switches and do not reboot.

Scenario		Result
Add more than eight member switches.	<ol style="list-style-type: none"> 1. Connect nine devices. 2. Power on all the devices. 	Two devices become active switches. One active switch has eight member switches. The other active switch remains as a standalone device.

How to Configure Single IP Management

The following sections provide information about the various tasks to configure single IP management.

Configuring a Network Port as a Single IP-Managed Port

You can configure both the network ports as single IP-managed ports, or configure one port as a single IP-managed port and retain the other as a network port.

Procedure

	Command or Action	Purpose
Step 1	enable Example: <pre>Device> enable</pre>	Enables privileged EXEC mode. <ul style="list-style-type: none"> • Enter your password if prompted.
Step 2	configure terminal Example: <pre>Device# configure terminal</pre>	Enters global configuration mode.
Step 3	switch <i>switch-number</i> hstack-port <i>stack-port-number</i> <i>stack-port</i> Example: <pre>Device(config)# switch 1 hstack-port 1 TenGigabitEthernet 1/0/1 Device(config)# switch 1 hstack-port 1 GigabitEthernet 1/0/9</pre>	Configures a network port into as a single IP-managed port.
Step 4	end Example: <pre>Device(config)# end</pre>	Exits global configuration mode and returns to privileged EXEC mode.

	Command or Action	Purpose
Step 5	copy running-config startup-config Example: Device# copy running-config startup-config	Saves your entries in the configuration file.
Step 6	reload Example: Device# reload	Reloads the configuration.
Step 7	show switch hstack-ports Example: Device# show switch hstack-ports	Displays the single IP-managed ports.

What to do next

To convert a single IP-managed port into a network port, run the **no switch** *switch-number* **hstack-port** *stack-port* command:

```
Device(config)# no switch 1 hstack-port 1 GigabitEthernet 1/0/9
Device# copy running-config startup-config
Device# reload
```



Note When you configure the **write erase** and then the **reload** commands, the device in a group is not converted to standalone. Manual conversion is required.

Enabling the Persistent MAC Address Feature

Follow these steps to enable persistent MAC address.

Procedure

	Command or Action	Purpose
Step 1	enable Example: Device> enable	Enables privileged EXEC mode. <ul style="list-style-type: none"> • Enter your password if prompted.
Step 2	configure terminal Example:	Enters global configuration mode.

	Command or Action	Purpose
	Device# configure terminal	
Step 3	stack-mac persistent timer [0 <i>time-value</i>] Example: Device(config)# stack-mac persistent timer 7	Enables a time delay after the active switch is changed, and before the group MAC address changes to that of the new active switch. <ul style="list-style-type: none"> • If the previous active switch rejoins the group during this period, the group uses that MAC address as the group MAC address. Note If you enter the no stack-mac persistent timer command after a new active switch takes over, the group moves to using the current active switch MAC address before the timer expires.
Step 4	end Example: Device(config)# end	Exits global configuration mode and returns to privileged EXEC mode.

Assigning a Group Member Number

This task is available only from the active switch.

Procedure

	Command or Action	Purpose
Step 1	enable Example: Device> enable	Enables privileged EXEC mode. <ul style="list-style-type: none"> • Enter your password if prompted.
Step 2	configure terminal Example: Device# configure terminal	Enters global configuration mode.
Step 3	switch <i>current-stack-member-number</i> renumber <i>new-stack-member-number</i> Example: Device(config)# switch 3 renumber 4	Specifies the current number and the new number for the member. The range is from 1 to 8. <ul style="list-style-type: none"> • You can display the current number for a member by using the show switch command.

	Command or Action	Purpose
Step 4	end Example: Device(config) # end	Exits global configuration mode and returns to privileged EXEC mode.
Step 5	reload slot <i>current-stack-member-number</i> Example: Device# reload slot 3	Reloads the member.
Step 6	show switch Example: Device# show switch	Displays information about the member.

Setting the Priority Value

This task is available only from the active switch.

Procedure

	Command or Action	Purpose
Step 1	enable Example: Device> enable	Enables privileged EXEC mode. <ul style="list-style-type: none"> • Enter your password if prompted.
Step 2	configure terminal Example: Device# configure terminal	Enters global configuration mode.
Step 3	switch <i>stack-member-number</i> priority <i>new-priority-number</i> Example: Device(config) # switch 3 priority 2	Specifies the number and the new priority for the member switch. The priority value range is from 1 to 15. <ul style="list-style-type: none"> • The new priority value takes effect immediately, but does not affect the current active switch. The new priority value helps determine which member switch is elected as the new active switch when the current active switch or group is reset.
Step 4	end Example: Device(config) # end	Exits global configuration mode and returns to privileged EXEC mode.

	Command or Action	Purpose
Step 5	show switch <i>stack-member-number</i> Example: Device# show switch 5	Verifies the priority value of the member switch.

Provisioning a New Member

This task is available only from the active switch.

Procedure

	Command or Action	Purpose
Step 1	enable Example: Device> enable	Enables privileged EXEC mode. <ul style="list-style-type: none"> • Enter your password if prompted.
Step 2	show switch Example: Device# show switch	Displays summary information about the group.
Step 3	configure terminal Example: Device# configure terminal	Enters global configuration mode.
Step 4	switch <i>stack-member-number</i> provision <i>type</i> Example: Device(config)# switch 3 provision C1000-xxxx	Specifies the member number for the preconfigured device. By default, no devices are provisioned. <ul style="list-style-type: none"> • For the <i>stack-member-number</i> argument, the range is from 1 to 8. Specify a member number that is not already used in the group. • For the <i>type</i> argument, enter the model number of a supported device that is listed in the CLI help.
Step 5	end Example: Device(config)# end	Exits global configuration mode and returns to privileged EXEC mode.

Removing Information About a Provisioned Device

This task is available only from the active switch.

Procedure

	Command or Action	Purpose
Step 1	enable Example: Device> enable	Enables privileged EXEC mode. <ul style="list-style-type: none">• Enter your password if prompted.
Step 2	configure terminal Example: Device# configure terminal	Enters global configuration mode.
Step 3	no switch <i>stack-member-number</i> provision Example: Device(config)# no switch 3 provision	Removes the provisioning information for the specified member switch.
Step 4	end Example: Device(config)# end	Exits global configuration mode and returns to privileged EXEC mode.

Example

This subsection provides details of a sample scenario. A provisioned device is being removed from a group having the following configuration:

- This group has four members.
- Member 1 is the active switch.
- Member 3 is a provisioned device.

To avoid receiving an error message, do the following:

- Remove the power from member 3.
- Disconnect the cables between member 3 and the devices to which it is connected to.
- Reconnect the cables between the remaining members.
- Configure the **no switch** *stack-member-number* **provision** command.

Configuration Examples for Single IP Management

Example: Enabling the Persistent MAC Address Feature

The following example shows how to configure the persistent MAC address feature for a 7-minute time delay, and to verify the configuration:

```
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# show switch

Switch/Stack Mac Address : 0016.4727.a900
Mac persistency wait time: 7 mins

Switch#  Role    Mac Address      Priority  H/W   Current
-----  -
*1       Master 0016.4727.a900    1        P2B   Ready
```

Example: Provisioning a New Member

The following example shows how to provision a device with a member number of 2. The **show running-config** command output shows the interfaces associated with the provisioned device:

```
Device(config)# switch 2 provision switch_PID
Device(config)# end
Device# show running-config | include switch 2

switch 2 provision switch_PID
```

Example: Configuring a Network Port into a Single IP-Managed Port

The following example shows how to convert a network port on a 1-G device:

```
Device> enable
Device# configure terminal
Device(config)# switch 1 hstack-port 1 GigabitEthernet 1/0/9
Do you want to continue?[confirm]
New port setting will be effective after next reload

Device(config)# switch 1 hstack-port 2 GigabitEthernet 1/0/10
Do you want to continue?[confirm]
New port setting will be effective after next reload
```

The following sample output from the **show switch hstack-ports** command shows the status of ports before reloading:

```
Device# show switch hstack-ports
```

```
Horizontal stack port status :
Gi Ports   Stack Port   Operational Status   Next Reload Status   Media Type
-----
Gi1/0/9    1              N/W Port             Stack Port            Fiber
Gi1/0/10   2              N/W Port             Stack Port            Fiber
```

The following sample output from the **show switch hstack-ports** command shows the status of the ports after a reload:

```
Device# show switch hstack-ports
```

```
Horizontal stack port status :
Gi Ports   Stack Port   Operational Status   Next Reload Status   Media Type
-----
Gi1/0/9    1              Stack Port           Stack Port            Fiber
Gi1/0/10   2              Stack Port           Stack Port            Fiber
```

The following example shows how to convert a network port to a single IP-managed port on a 10-G device:

```
Device> enable
Device#configure terminal
Device(config)# switch 1 hstack-port 1 TenGigabitEthernet 1/0/1
Do you want to continue?[confirm]
New port setting will be effective after next reload
```

```
Device(config)# switch 1 hstack-port 2 TenGigabitEthernet 1/0/2
Do you want to continue?[confirm]
New port setting will be effective after next reload
```

The following sample output from the **show switch hstack-ports** command shows the status of ports before a reload:

```
Device# show switch hstack-ports
```

```
Horizontal stack port status :
Te Ports   Stack Port   Operational Status   Next Reload Status   Media Type
-----
Te1/0/1    1              N/W Port             Stack Port            Fiber
Te1/0/2    2              N/W Port             Stack Port            Fiber
Te1/0/3    NA            N/W Port             N/W Port              Fiber
Te1/0/4    NA            N/W Port             N/W Port              Fiber
```

The following sample output from the **show switch hstack-ports** command shows the status of ports after a reload:

```
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    2              Stack Port           Stack Port            Fiber
Te1/0/3    NA            N/W Port             N/W Port              Fiber
Te1/0/4    NA            N/W Port             N/W Port              Fiber
```

The following example shows how to convert a single IP-managed port back to a network port.

```
Device> enable
Device#configure terminal
Device(config)#no switch 1 hstack-port 1
```


Do you want to continue?[confirm]
New port setting will be effective after next reload

The following sample output from the **show switch hstack-ports** command shows the status of ports before a reload on a 10-G device:

Device# **show switch hstack-ports**

Horizontal stack port status :

Te Ports	Stack Port	Operational Status	Next Reload Status	Media Type
Tel/0/1	1	Stack Port	N/W Port	Fiber
Tel/0/2	2	Stack Port	Stack Port	Fiber
Tel/0/3	NA	N/W Port	N/W Port	Fiber
Tel/0/4	NA	N/W Port	N/W Port	Fiber

The following sample output from the **show switch hstack-ports** command shows the status of a port on a 10-G device:

Device# **show switch hstack-ports**

Horizontal stack port status :

Te Ports	Stack Port	Operational Status	Next Reload Status	Media Type
Tel/0/1	1	N/W Port	N/W Port	Fiber
Tel/0/2	2	Stack Port	Stack Port	Fiber
Tel/0/3	NA	N/W Port	N/W Port	Fiber
Tel/0/4	NA	N/W Port	N/W Port	Fiber

The following sample output from the **show switch hstack-ports** command shows the status of single IP-managed ports for a 1-G group:

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 sample output from the **show switch hstack-ports** command shows the status of single IP-managed ports for a 10-G group:

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

Additional References

Related Documents

Related Topic	Document Title
Commands	Command Reference, Cisco IOS Release 15.2(7)E1 (Catalyst 1000 Switches)

Technical Assistance

Description	Link
<p>The Cisco Support website provides extensive online resources, including documentation and tools for troubleshooting and resolving technical issues with Cisco products and technologies.</p> <p>To receive security and technical information about your products, you can subscribe to various services, such as the Product Alert Tool (accessed from Field Notices), the Cisco Technical Services Newsletter, and Really Simple Syndication (RSS) Feeds.</p> <p>Access to most tools on the Cisco Support website requires a Cisco.com user ID and password.</p>	http://www.cisco.com/support

Feature Information for Single IP Management

The following table provides release information about the feature or features described in this module. This table lists only the software release that introduced support for a given feature in a given software release train. Unless noted otherwise, subsequent releases of that software release train also support that feature.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to www.cisco.com/go/cfn. An account on Cisco.com is not required.

Table 4: Feature Information for Single IP Management

Feature Name	Releases	Feature Information
Single IP Management	Cisco IOS Release 15.2(7)E1	The Cisco Catalyst 1000 Series Switches that support 1-G and 10-G SFP and SFP+ uplink ports can be part of single IP management. You can use SFP and SFP+ ports with optical cables to connect boxes placed at different locations to form a group, where the compact boxes are placed in different floors or buildings.

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