



# **Cisco Nexus 6000 Series NX-OS Interfaces Command Reference**

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## Preface

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This preface describes the audience, organization, and conventions of the *Cisco Nexus 6000 Series NX-OS Interfaces Command Reference*. It also provides information on how to obtain related documentation.

This preface includes the following sections:

- [Audience, page v](#)
- [Document Conventions, page v](#)
- [Related Documentation, page vi](#)
- [Obtaining Documentation and Submitting a Service Request, page vii](#)

## Audience

This publication is for experienced users who configure and maintain Cisco NX-OS devices.

## Document Conventions

Command descriptions use these conventions:

Convention	Description
boldface font	Commands and keywords are in boldface.
italic font	Arguments for which you supply values are in italics.
[ ]	Elements in square brackets are optional.
{ x   y   z }	Alternative keywords are grouped in braces and separated by vertical bars.
[ x   y   z ]	Optional alternative keywords are grouped in brackets and separated by vertical bars.
string	A nonquoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.

Screen examples use these conventions:

<code>screen font</code>	Terminal sessions and information that the switch displays are in screen font.
<b>boldface screen font</b>	Information you must enter is in boldface screen font.
<i>italic screen font</i>	Arguments for which you supply values are in italic screen font.
< >	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.

This document uses the following conventions:



#### Note

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



#### Caution

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

## Related Documentation

Documentation for the Cisco Nexus 6000 Series Switch is available at the following URL:

[http://www.cisco.com/en/US/products/ps12806/tsd\\_products\\_support\\_series\\_home.html](http://www.cisco.com/en/US/products/ps12806/tsd_products_support_series_home.html)

The documentation set is divided into the following categories:

### Release Notes

The release notes are available at the following URL:

[http://www.cisco.com/en/US/products/ps12806/prod\\_release\\_notes\\_list.html](http://www.cisco.com/en/US/products/ps12806/prod_release_notes_list.html)

### Installation and Upgrade Guides

The installation and upgrade guides are available at the following URL:

[http://www.cisco.com/en/US/products/ps12806/prod\\_installation\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps12806/prod_installation_guides_list.html)

### Command References

The command references are available at the following URL:

[http://www.cisco.com/en/US/products/ps12806/prod\\_command\\_reference\\_list.html](http://www.cisco.com/en/US/products/ps12806/prod_command_reference_list.html)

### Technical References

The technical references are available at the following URL:

[http://www.cisco.com/en/US/products/ps12806/prod\\_technical\\_reference\\_list.html](http://www.cisco.com/en/US/products/ps12806/prod_technical_reference_list.html)



### Configuration Guides

The configuration guides are available at the following URL:

[http://www.cisco.com/en/US/products/ps12806/products\\_installation\\_and\\_configuration\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps12806/products_installation_and_configuration_guides_list.html)

### Error and System Messages

The system message reference guide is available at the following URL:

[http://www.cisco.com/en/US/products/ps12806/products\\_system\\_message\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps12806/products_system_message_guides_list.html)

## Documentation Feedback

To provide technical feedback on this document, or to report an error or omission, please send your comments to [nexus6k-docfeedback@cisco.com](mailto:nexus6k-docfeedback@cisco.com). We appreciate your feedback.

## 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:

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>

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## B Commands

---

This chapter describes the Cisco NX-OS interface commands that begin with B.

# bandwidth (interface)

To set the inherited and received bandwidth values for an interface, use the **bandwidth** command. To restore the default values, use the **no** form of this command.

**bandwidth** {*kbps* | **inherit** [*kbps*]}

**no bandwidth** {*kbps* | **inherit** [*kbps*]}

<b>Syntax Description</b>	<i>kbps</i>	Informational bandwidth in kilobits per second. Valid values are from 1 to 10000000.
	<b>inherit</b>	(Optional) Specifies that the bandwidth be inherited from the parent interface.

<b>Command Default</b>	1000000 kbps
------------------------	--------------

<b>Command Modes</b>	Interface configuration mode Subinterface configuration mode
----------------------	-----------------------------------------------------------------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	6.0(2)N1(1)	This command was introduced.

<b>Usage Guidelines</b>	The <b>bandwidth</b> command sets an informational parameter to communicate only the current bandwidth to the higher-level protocols; you cannot adjust the actual bandwidth of an interface using this command.
	The <b>bandwidth inherit</b> command controls how a subinterface inherits the bandwidth of its main interface.
	The <b>no bandwidth inherit</b> command enables all subinterfaces to inherit the default bandwidth of the main interface, regardless of the configured bandwidth. If a bandwidth is not configured on a subinterface, and you use the <b>bandwidth inherit</b> command, all subinterfaces will inherit the current bandwidth of the main interface. If you configure a new bandwidth on the main interface, all subinterfaces will use this new value.
	If you do not configure a bandwidth on the subinterface and you configure the bandwidth inherit command on the main interface, the subinterfaces will inherit the specified bandwidth.
	In all cases, if an interface has an explicit bandwidth setting configured, then that interface will use that setting, regardless of whether the bandwidth inheritance setting is in effect.

<b>Examples</b>	This example shows how to configure the badwidth for a Layer 2 interface:
-----------------	---------------------------------------------------------------------------

```
switch(config)# interface ethernet 1/5
switch(config-if)# bandwidth 1000
switch(config-if)#
```

This example shows how to configure subinterfaces to inherit the bandwidth from the parent routed interface:

```
switch(config)# interface ethernet 1/5
switch(config-if)# no switchport
switch(config-if)# bandwidth inherit 30000
switch(config-if)# interface ethernet 1/1.1
switch(config-subif)#
```

**Related Commands**

Command	Description
<b>show interface</b>	Displays the interface configuration information.

# beacon (interface)

To turn on the beacon LED for a port of an interface, use the **beacon** command. To turn off the beacon LED for the interface, use the **no** form of this command.

**beacon**

**no beacon**

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

**Command Default** None

**Command Modes** Interface configuration mode

Command History	Release	Modification
	6.0(2)N1(1)	This command was introduced.

**Usage Guidelines** Use the **beacon** command to toggle the port LED of an interface to easily identify each time a beacon is sent to check for pending packets on the interface.

**Examples** This example shows how to turn on the locator beacon LED for a specific interface:

```
switch(config)# interface ethernet 2/1
switch(config-if)# beacon
```

This example shows how to turn off the locator beacon LED for a specific interface:

```
switch(config)# interface ethernet 2/1
switch(config-if)# no beacon
```

Related Commands	Command	Description
	<b>show interface</b>	Displays configuration information for an interface.



# C Commands

---

This chapter describes the Cisco NX-OS interface commands that begin with C.

# carrier-delay

To set the carrier delay on a serial interface, use the **carrier-delay** command. To return to the default carrier delay value, use the **no** form of this command.

```
carrier-delay {delay-seconds | msec milliseconds}

no carrier-delay
```

Syntax Description	<i>delay-seconds</i>	Time, in seconds, to wait for the system to change states. Enter an integer in the range 0 to 60.
	<b>msec</b>	Specifies the delay time in milliseconds.
	<i>milliseconds</i>	Time, in milliseconds, to wait for the system to change states. Enter an integer in the range 0 to 1000.

Command Default	None
-----------------	------

Command Modes	Interface configuration mode
---------------	------------------------------

Command History	Release	Modification
	6.0(2)N1(1)	This command was introduced.

**Usage Guidelines**

You can use this command on a VLAN interface.

If a link goes down and comes back up before the carrier delay timer expires, the down state is effectively filtered, and the rest of the software on the switch is not aware that a link-down event occurred. Therefore, a large carrier delay timer results in fewer link-up/link-down events being detected. Setting the carrier delay time to 0 means that every link-up/link-down event is detected.

This command does not require a license.

**Examples**

This example shows how to change the carrier delay to 10 seconds:

```
switch# configure terminal
switch(config)# interface vlan 5
switch(config-if)# carrier-delay 10
switch(config-if)#
```

This example shows how to revert to the default carrier delay value:

```
switch# configure terminal
switch(config)# interface vlan 5
switch(config-if)# no carrier-delay
switch(config-if)#
```



**Related Commands**

Command	Description
<b>show running-config interface</b>	Displays the running configuration information for an interface.

# cdp

To enable the Cisco Discovery Protocol (CDP) and configure CDP attributes, use the **cdp** command. To disable CDP or reset CDP attributes, use the **no** form of this command.

**cdp** {**advertise** {**v1** | **v2**} | **enable** | **format device-id** {**mac-address** | **serial-number** | **system-name**} | **holdtime** *seconds* | **timer** *seconds*}

**no cdp** {**advertise** | **enable** | **format device-id** {**mac-address** | **serial-number** | **system-name**} | **holdtime** *seconds* | **timer** *seconds*}

## Syntax Description

<b>advertise</b> { <b>v1</b>   <b>v2</b> }	Configures the version to use to send CDP advertisements. Version-2 is the default state.
<b>enable</b>	Enables CDP for all Ethernet interfaces.
<b>format device-id</b>	Configures the format of the CDP device ID.
<b>mac-address</b>	Uses the MAC address as the CDP device ID.
<b>serial-number</b>	Uses the serial number as the CDP device ID.
<b>system-name</b>	Uses the system name, which can be expressed as a fully qualified domain name, as the CDP device ID. This is the default.
<b>holdtime</b> <i>seconds</i>	Specifies the amount of time a receiver should hold CDP information before discarding it. The range is from 10 to 255 seconds; the default is 180 seconds.
<b>timer</b> <i>seconds</i>	Sets the transmission frequency of CDP updates in seconds. The range is from 5 to 254; the default is 60 seconds.

## Command Default

None

## Command Modes

Global configuration mode

## Command History

Release	Modification
6.0(2)N1(1)	This command was introduced.

## Examples

This example shows how to enable CDP on all Ethernet interfaces:

```
switch# configure terminal
switch(config)# cdp enable
```

This example shows how to configure the MAC address as the CDP device ID:

```
switch# configure terminal
switch(config)# cdp format device-id mac-address
```

This example shows how to disable CDP on all Ethernet interfaces:

```
switch# configure terminal
switch(config)# no cdp enable
```

Related Commands	Command	Description
	show cdp	Displays Cisco Discovery Protocol (CDP) information.

# cdp enable

To enable the Cisco Discovery Protocol (CDP) on an interface, use the **cdp enable** command. To disable CDP on the interface, use the **no** form of this command.

**cdp enable**

**no cdp enable**

---

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

---

**Command Default** None

---

**Command Modes** Interface configuration mode  
Virtual Ethernet interface configuration mode

---

Command History	Release	Modification
	6.0(2)N1(1)	This command was introduced.

---



---

**Usage Guidelines** You can use this command on the following interfaces:

- Ethernet interface
- Management interface
- Virtual Ethernet interface

---

**Examples** This example shows how to enable CDP on an Ethernet interface:

```
switch# configure terminal
switch(config)# interface ethernet 1/1
switch(config-if)# cdp enable
```

This example shows how to enable CDP on a specific virtual Ethernet interface:

```
switch# configure terminal
switch(config)# interface vethernet 1
switch(config-if)# cdp enable
```

This example shows how to disable CDP on a specific virtual Ethernet interface:

```
switch# configure terminal
switch(config)# interface vethernet 1
switch(config-if)# no cdp enable
```

**Related Commands**

Command	Description
<b>show cdp</b>	Displays Cisco Discovery Protocol (CDP) information.
<b>show interface</b>	Displays the interface configuration information.

# channel-group (Ethernet)

To assign and configure a physical interface to an EtherChannel, use the **channel-group** command. To remove the channel group configuration from the interface, use the **no** form of this command.

```
channel-group number [force] [mode {active | on | passive}]  
  
no channel-group [number]
```

Syntax Description

<i>number</i>	Number of channel group. The <i>number</i> range is from 1 to 4096. Cisco NX-OS creates the EtherChannel associated with this channel group if the EtherChannel does not already exist.
<b>force</b>	(Optional) Specifies that the LAN port be forcefully added to the channel group.
<b>mode</b>	(Optional) Specifies the EtherChannel mode of the interface.
<b>active</b>	Specifies that when you enable the Link Aggregation Control Protocol (LACP), this command enables LACP on the specified interface. The interface is in an active negotiating state, in which the port initiates negotiations with other ports by sending LACP packets.
<b>on</b>	<p>This is the default channel mode. Specifies that all EtherChannels that are not running LACP remain in this mode. If you attempt to change the channel mode to active or passive before enabling LACP, the switch returns an error message.</p> <p>After you enable LACP globally, by using the <b>feature lacp</b> command, you enable LACP on each channel by configuring the channel mode as either active or passive. An interface in this mode does not initiate or respond to LACP packets. When an LACP attempts to negotiate with an interface in the on state, it does not receive any LACP packets and becomes an individual link with that interface; it does not join the channel group.</p> <p>The default mode is <b>on</b>.</p>
<b>passive</b>	Specifies that when you enable LACP, this command enables LACP only if an LACP device is detected. The interface is in a passive negotiation state, in which the port responds to LACP packets that it receives but does not initiate LACP negotiation.

Command Default

None

Command Modes

Interface configuration mode

Command History

Release	Modification
6.0(2)N1(1)	This command was introduced.

### Usage Guidelines

Use this command to create a channel group that includes the interface that you are working on and to add or remove specific interfaces from the channel group. Use this command to move a port from one channel group to another. You enter the channel group that you want the port to move to; the switch automatically removes the specified port from its present channel group and adds it to the specified channel group.

Use the **force** keyword to force the addition of the interface into the specified channel group.

After you enable LACP globally, by using the **feature lacp** command, you enable LACP on each channel by configuring the channel mode as either **active** or **passive**. An EtherChannel in the **on** channel mode is a pure EtherChannel and can aggregate a maximum of eight ports. The EtherChannel does not run LACP.

You cannot change the mode for an existing EtherChannel or any of its interfaces if that EtherChannel is not running LACP; the channel mode remains as **on**. The system returns an error message if you attempt to change the mode.

Use the **no** form of this command to remove the physical interface from the EtherChannel. When you delete the last physical interface from an EtherChannel, the EtherChannel remains. To delete the EtherChannel completely, use the **no** form of the **interface port-channel** command.

The compatibility check includes the following operational attributes:

- Port mode
- Access VLAN
- Trunk native VLAN
- Tagged or untagged
- Allowed VLAN list
- Switched Port Analyzer (SPAN) (cannot be SPAN source or destination port)
- Storm control

Use the **show port-channel compatibility-parameters** command to see the full list of compatibility checks that Cisco NX-OS uses.

You can only add interfaces configured with the channel mode set to **on** for static EtherChannels, that is, without a configured aggregation protocol. You can only add interfaces configured with the channel mode as **active** or **passive** to EtherChannels that are running LACP.

You can configure these attributes on an individual member port. If you configure a member port with an incompatible attribute, Cisco NX-OS suspends that port in the EtherChannel.

When the interface joins an EtherChannel, some of its individual parameters are overridden with the values on the EtherChannel, as follows:

- MAC address
- Spanning Tree Protocol (STP)
- Service policy
- Quality of service (QoS)
- Access control lists (ACLs)

Interface parameters, such as the following, remain unaffected when the interface joins or leaves a EtherChannel:

- Description
- Cisco Discovery Protocol (CDP)

- LACP port priority
- Debounce
- Rate mode
- Shutdown
- SNMP trap

If interfaces are configured for the EtherChannel interface and a member port is removed from the EtherChannel, the configuration of the EtherChannel interface is not propagated to the member ports.

Any configuration changes that you make in any of the compatibility parameters to the EtherChannel interface are propagated to all interfaces within the same channel group as the EtherChannel (for example, configuration changes are also propagated to the physical interfaces that are not part of the EtherChannel but are part of the channel group).

### Examples

This example shows how to add an interface to LACP channel group 5 in active mode:

```
switch(config)# interface ethernet 1/1
switch(config-if)# channel-group 5 mode active
switch(config-if)#
```

This example shows how to forcefully add an interface to the channel group 5:

```
switch(config)# interface ethernet 1/1
switch(config-if)# channel-group 5 force
switch(config-if)#
```

### Related Commands

Command	Description
<b>show interface port-channel</b>	Displays information about the traffic on the specified EtherChannel interface.
<b>show lacp</b>	Displays LACP information.
<b>show port-channel summary</b>	Displays information on the EtherChannels.



# clear lacp counters

To clear the Link Aggregation Control Protocol (LACP) counters, use the **clear lacp counters** command.

**clear lacp counters** [**interface port-channel** *channel-num*]

<b>Syntax Description</b>	<b>interface</b>	(Optional) Clears the LACP counters of a specific interface.
	<b>port-channel</b> <i>channel-num</i>	(Optional) Specifies a port channel interface. The range is from 1 to 4096.

<b>Command Default</b>	None
------------------------	------

<b>Command Modes</b>	EXEC mode
----------------------	-----------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	6.0(2)N1(1)	This command was introduced.

<b>Usage Guidelines</b>	This command does not require a license.
-------------------------	------------------------------------------

<b>Examples</b>	This example shows how to clear all LACP counters:  switch# <b>clear lacp counters</b>
	This example shows how to clear the LACP on a port channel:  switch# <b>clear lacp counters interface port-channel 100</b>

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>show lacp</b>	Displays LACP information.

# clear mac access-list counters

To clear statistical information from the access list, use the **clear mac access-list counters** command.

**clear mac access-list counters** [*name*]

<b>Syntax Description</b>	<i>name</i>	(Optional) Name of a specific counter to clear. The name can be a maximum of 64 characters.
---------------------------	-------------	---------------------------------------------------------------------------------------------

<b>Command Default</b>	None
------------------------	------

<b>Command Modes</b>	EXEC mode
----------------------	-----------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	6.0(2)N1(1)	This command was introduced.

**Examples** This example shows how to clear statistical information from the access list:

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

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>show mac access-lists</b>	Displays the information about the MAC address table.



## D Commands

---

This chapter describes the Cisco NX-OS interface commands that begin with D.

# delay (interface)

To set a delay value for an interface, use the **delay** command. To restore the default delay value, use the **no** form of this command.

**delay** *tens-of-microseconds*

**no delay**

<b>Syntax Description</b>	<i>tens-of-microseconds</i> Throughput delay in tens of microseconds. The range is from 1 to 16,777,215.	
<b>Command Default</b>	10 microseconds	
<b>Command Modes</b>	Interface configuration mode Subinterface configuration mode	
<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	6.0(2)N1(1)	This command was introduced.
<b>Examples</b>	<p>This example shows how to set a delay of 30,000 microseconds on an interface:</p> <pre>switch(config)# <b>interface ethernet 1/1</b> switch(config-if)# <b>delay 30000</b> switch(config-if)#</pre> <p>This example shows how to set a delay of 1000 microseconds on a subinterface:</p> <pre>switch(config)# <b>interface ethernet 1/1.1</b> switch(config-subif)# <b>delay 1000</b> switch(config-subif)#</pre>	
<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>interface ethernet (Layer 3)</b>	Configures an Ethernet routed interface.
	<b>show interface</b>	Displays the interface configuration information.

# description (interface)

To add a description to an interface configuration, use the **description** command. To remove the description, use the **no** form of this command.

**description** *description*

**no description**

<b>Syntax Description</b>	<i>description</i>	String description of the interface configuration. This string is limited to 80 characters.
---------------------------	--------------------	---------------------------------------------------------------------------------------------

<b>Command Default</b>	No description is added.
------------------------	--------------------------

<b>Command Modes</b>	Interface configuration mode Subinterface configuration mode Virtual Ethernet interface configuration
----------------------	-------------------------------------------------------------------------------------------------------------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	6.0(2)N1(1)	This command was introduced.

<b>Usage Guidelines</b>	The <b>description</b> command is meant to provide a reminder in the configuration to describe what certain interfaces are used for. The description appears in the output of the following commands such as <b>show interface</b> and <b>show running-config</b> .
-------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

You can use this command on the following interfaces:

- Ethernet interface
- Management interface
- Subinterfaces
- Virtual Ethernet interface

<b>Examples</b>	This example shows how to add a description for an interface:
-----------------	---------------------------------------------------------------

```
switch# configure terminal
switch(config)# interface ethernet 1/1
switch(config-if)# description "10G Server Link"
switch(config-if)#
```

This example shows how to add a description for a virtual Ethernet interface:

```
switch# configure terminal
switch(config)# interface vethernet 1
switch(config-if)# description "Virtual interface"
switch(config-if)#
```

■ description (interface)

Related Commands	Command	Description
	<b>show interface ethernet</b>	Displays the interface configuration information.
	<b>show interface vethernet</b>	Displays the virtual Ethernet interface configuration information.
	<b>show running-config</b>	Displays the contents of the currently running configuration file.

# duplex

To specify the duplex mode as full, half, or autonegotiate, use the **duplex** command. To return the system to default mode, use the **no** form of this command.

**duplex** {full | half | auto}

**no duplex** {full | half | auto}

Syntax Description	<b>full</b>	Specifies the duplex mode as full.
	<b>half</b>	Specifies the duplex mode as half.
	<b>Note</b> This keyword is not supported on a management interface.	
	<b>auto</b>	Specifies the duplex mode as autonegotiate.

Command Default	None
-----------------	------

Command Modes	Interface configuration mode
---------------	------------------------------

Command History	Release	Modification
	6.0(2)N1(1)	This command was introduced.

**Usage Guidelines**

The interface speed that you specify can affect the duplex mode used for an interface, so you should set the speed before setting the duplex mode. If you set the speed for autonegotiation, the duplex mode is automatically set to be autonegotiated. If you specify 10- or 100-Mbps speed, the port is automatically configured to use half-duplex mode, but you can specify full-duplex mode instead. Gigabit Ethernet is full duplex only. You cannot change the duplex mode on Gigabit Ethernet ports or on a 10/100/1000-Mbps port that is set for Gigabit Ethernet.

See the *Cisco Nexus 5000 Series NX-OS Layer 2 Switching Configuration Guide* for more information on interface speed and duplex settings.

This command does not require a license.

**Examples**

This example shows how to specify the duplex mode for full duplex:

```
switch# configure terminal
switch(config)# interface ethernet 1/5
switch(config-if)# duplex full
switch(config-if)#
```

## ■ duplex

Related Commands	Command	Description
	show interface	Displays information about the interface, which includes the duplex parameter.





# E Commands

---

This chapter describes the Cisco NX-OS interface commands that begin with E.

# errdisable detect cause

To enable error-disable (err-disabled) detection in an application, use the **errdisable detect cause** command. To disable error disable detection, use the **no** form of this command.

**errdisable detect cause {all | link-flap | loopback}**

**no errdisable detect cause {all | link-flap | loopback}**

## Syntax Description

<b>all</b>	Enables error detection on all cases.
<b>link-flap</b>	Enables error disable detection on linkstate-flapping.
<b>loopback</b>	Enables error disable detection on loopback.

## Command Default

Enabled

## Command Modes

Global configuration mode

## Command History

Release	Modification
6.0(2)N1(1)	This command was introduced.

## Usage Guidelines

When error disable detection is enabled and a cause is detected on an interface, the interface is placed in an err-disabled state, which is an operational state that is similar to the link-down state.

## Examples

This example shows how to enable the err-disabled detection on linkstate-flapping:

```
switch(config)# errdisable detect cause link-flap
switch(config)#
```

## Related Commands

Command	Description
<b>errdisable recovery</b>	Configures recovery from the err-disabled state.
<b>show interface status err-disabled</b>	Displays the interface error disabled state.

# errdisable recovery cause

To configure the application to bring the interface out of the error-disabled (err-disabled) state and retry coming up, use the **errdisable recovery cause** command. To revert to the defaults, use the **no** form of this command.

```
errdisable recovery cause { all | bpduguard | failed-port-state | link-flap-recovery |  
                           pause-rate-limit | udld }
```

```
no errdisable recovery cause { all | bpduguard | failed-port-state | link-flap-recovery |  
                             pause-rate-limit | udld }
```

Syntax Description	<b>all</b>	Enables a timer to recover from all causes.
	<b>bpduguard</b>	Enables a timer to recover from bridge protocol data unit (BPDU) Guard error disable state.
	<b>failed-port-state</b>	Enables a timer to recover from a Spanning Tree Protocol (STP) set port state failure.
	<b>link-flap</b>	Enables a timer to recover from linkstate flapping.
	<b>pause-rate-limit</b>	Enables a timer to recover from the pause rate limit error disabled state.
	<b>udld</b>	Enables a timer to recover from the Unidirectional Link Detection (UDLD) error disabled state.

Command Default	None
-----------------	------

Command Modes	Global configuration mode
---------------	---------------------------

Command History	Release	Modification
	6.0(2)N1(1)	This command was introduced.

Usage Guidelines	When error disable recovery is enabled, the interface automatically recovers from the err-disabled state, and the device retries bringing the interface up.
------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------

Examples	This example shows how to enable error disable recovery from linkstate-flapping:
----------	----------------------------------------------------------------------------------

```
switch(config)# errdisable recovery cause link-flap  
switch(config)#
```

Related Commands	Command	Description
	<b>errdisable detect cause</b>	Enables the error disabled (err-disabled) detection.
	<b>show interface status</b>	Displays the interface error disabled state.
	<b>err-disabled</b>	

# errdisable recovery interval

To configure the recovery time interval to bring the interface out of the error-disabled (err-disabled) state, use the **errdisable recovery interval** command. To revert to the defaults, use the **no** form of this command.

**errdisable recovery interval** *time*

**no errdisable recovery interval**

<b>Syntax Description</b>	<i>time</i> Error disable recovery time interval. The range is from 30 to 65535 seconds.							
<b>Command Default</b>	Disabled							
<b>Command Modes</b>	Global configuration mode							
<b>Command History</b>	<table><tr><th>Release</th><th>Modification</th></tr><tr><td>6.0(2)N1(1)</td><td>This command was introduced.</td></tr></table>	Release	Modification	6.0(2)N1(1)	This command was introduced.			
Release	Modification							
6.0(2)N1(1)	This command was introduced.							
<b>Usage Guidelines</b>	<p>When error disable recovery is enabled, the interface automatically recovers from the err-disabled state, and the device retries bringing the interface up.</p> <p>The device waits 300 seconds to retry.</p>							
<b>Examples</b>	<p>This example shows how to enable error disable recovery time interval to 100 seconds:</p> <pre>switch(config)# <b>errdisable recovery interval 100</b> switch(config)#</pre>							
<b>Related Commands</b>	<table><tr><th>Command</th><th>Description</th></tr><tr><td><b>errdisable recovery cause</b></td><td>Enables an error disabled recovery on an interface.</td></tr><tr><td><b>show interface status err-disabled</b></td><td>Displays the interface error disabled state.</td></tr></table>	Command	Description	<b>errdisable recovery cause</b>	Enables an error disabled recovery on an interface.	<b>show interface status err-disabled</b>	Displays the interface error disabled state.	
Command	Description							
<b>errdisable recovery cause</b>	Enables an error disabled recovery on an interface.							
<b>show interface status err-disabled</b>	Displays the interface error disabled state.							

■ `errdisable recovery interval`



# F Commands

---

This chapter describes the Cisco NX-OS interface commands that begin with F.

# fabric-mode

To select the fabric mode, use the **fabric-mode** command.

**fabric-mode { 10g | 40g }**

Syntax Description	10g-optimized	Sets the fabric mode to 10G.
	40g-optimized	Sets the fabric mode to 40G.

Command Default	40G
-----------------	-----

Command Modes	Global configuration mode
---------------	---------------------------

Command History	Release	Modification
	6.0(2)N1(1)	This command was introduced.

Usage Guidelines	None
------------------	------

Examples	<p>This example shows how to set the fabric mode to 10G:</p> <pre>switch# <b>configure terminal</b> switch(config)# <b>fabric-mode 10g</b></pre> <p>This example shows how to set the fabric mode to 40G:</p> <pre>switch# <b>configure terminal</b> switch(config)# <b>fabric-mode 40g</b></pre>

Related Commands	Command	Description



# feature lacp

To enable the Link Aggregation Control Protocol (LACP), which bundles a number of physical ports together to form a single logical channel, use the **feature lacp** command. To disable LACP on the switch, use the **no** form of this command.

**feature lacp**

**no feature lacp**

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

**Command Default** LACP is disabled.

**Command Modes** Global configuration mode

Command History	Release	Modification
	6.0(2)N1(1)	This command was introduced.

**Usage Guidelines** You must remove all the LACP configuration parameters from all EtherChannels on the switch before you can disable LACP.

Even after you enable LACP globally, you do not have to run LACP on all EtherChannels on the switch. You enable LACP on each channel mode using the **channel-group mode** command.

**Examples** This example shows how to enable LACP EtherChannels on the switch:

```
switch(config)# feature lacp
```

Related Commands	Command	Description
	<b>show lacp</b>	Displays information on LACP.
	<b>show feature</b>	Displays whether or not LACP is enabled on the switch.

# feature lldp

The Link Layer Discovery Protocol (LLDP), which is a neighbor discovery protocol that is used for network devices to advertise information about themselves to other devices on the network, is enabled on the switch by default.

<b>Command Default</b>	Enabled
------------------------	---------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	6.0(2)N1(1)	This command was introduced.

**Usage Guidelines**

You cannot enable or disable LLDP on a Cisco Nexus device. LLDP is enabled on the switch by default. However, the **feature lldp** command shows as part of the running configuration on the switch, as shown below:

```
switch# show running-config

!Command: show running-config
!Time: Wed Jan 29 12:36:03 2013

version 6.0(2)N1(1)
feature telnet
feature lldp

username admin password 5 $1$d81kfqc8$4VfRuOoZTKvCtTq8VAKbq/ role network-admin
no password strength-check
ip domain-lookup
hostname switch
class-map type qos class-fcoe
class-map type qos match-all c1
  match cos 1
<--Output truncated-->
switch#
```

The Cisco Discovery Protocol (CDP) is a device discovery protocol that runs over Layer 2 (the data link layer) on all Cisco-manufactured devices (routers, bridges, access servers, and switches). CDP allows network management applications to automatically discover and learn about other Cisco devices connected to the network.

To support non-Cisco devices and to allow for interoperability between other devices, the switch supports the Link Layer Discovery Protocol (LLDP). LLDP is a neighbor discovery protocol that is used for network devices to advertise information about themselves to other devices on the network. This protocol runs over the data-link layer, which allows two systems running different network layer protocols to learn about each other.

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	lldp	Configures the global LLDP options on the switch.

Command	Description
<b>lldp (Interface)</b>	Configures the LLDP feature on an interface.
<b>show feature</b>	Displays that LLDP is enabled on the switch.

# feature port-security

To enable port security on Layer 2 interfaces, use the **feature port-security** command. To disable port security, use the **no** form of this command.

**feature port-security**

**no feature port-security**

<b>Syntax Description</b>	This command has no arguments or keywords.
---------------------------	--------------------------------------------

<b>Command Default</b>	Disabled
------------------------	----------

<b>Command Modes</b>	Global configuration mode
----------------------	---------------------------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	6.0(2)N1(1)	This command was introduced.

<b>Usage Guidelines</b>	Use the port security feature to secure a port by limiting and identifying the MAC addresses of the switches that are allowed to access the port.
-------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------

You can enable port security on a virtual port channel (vPC) port only if the following occurs:

- Port security is enabled on both the vPC peers
- Port security is enabled on the vPC port on both the vPC peers.

This command does not require a license.

<b>Examples</b>	This example shows how to enable port security on the switch:
-----------------	---------------------------------------------------------------

```
switch# configure terminal
switch(config)# feature port-security
switch(config)#
```

This example shows how to disable port security on the switch:

```
switch# configure terminal
switch(config)# no feature port-security
switch(config)#
```

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>show feature</b>	Displays the features that are enabled or disabled on the switch.

Command	Description
<b>show port-security</b>	Displays the port security configuration information.
<b>switchport port-security</b>	Configures the switchport parameters to establish port security.

# feature uddl

To enable the Cisco-proprietary Unidirectional Link Detection (UDLD) protocol, which allows ports that are connected through fiber optics or copper Ethernet cables to monitor the physical configuration of the cables and detect when a unidirectional link exists, use the **feature uddl** command. To disable UDLD on the switch, use the **no** form of this command.

**feature uddl**

**no feature uddl**

<b>Syntax Description</b>	This command has no arguments or keywords.
---------------------------	--------------------------------------------

<b>Command Default</b>	UDLD is disabled.
------------------------	-------------------

<b>Command Modes</b>	Global configuration mode
----------------------	---------------------------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	6.0(2)N1(1)	This command was introduced.

<b>Examples</b>	<p>This example shows how to enable UDLD on the switch:</p> <pre>switch(config)# <b>feature uddl</b></pre>
-----------------	------------------------------------------------------------------------------------------------------------

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>show uddl</b>	Displays the administrative and operational UDLD status.
	<b>show feature</b>	Displays whether or not UDLD is enabled on the switch.



# H Commands

---

This chapter describes the Cisco NX-OS interface commands that begin with H.

# hardware multicast hw-hash

To use hardware hashing for multicast traffic on an EtherChannel interface, use the **hardware multicast hw-hash** command. To restore the defaults, use the **no** form of this command.

**hardware multicast hw-hash**

**no hardware multicast hw-hash**

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

**Command Default** The software selection method is used for multicast traffic.

**Command Modes** Interface configuration mode

Release	Modification
6.0(2)N1(1)	This command was introduced.

**Usage Guidelines** By default, ingress multicast traffic on any port in the switch selects a particular EtherChannel member to egress the traffic. To reduce potential issues with the bandwidth and to provide effective load balancing of the ingress multicast traffic, hardware hashing is used for multicast traffic.



**Note** Hardware hashing is not available on a Cisco Nexus 2000 Series Fabric Extender HIF port (downlink port).

**Examples** This example shows how to set the hardware hashing for multicast traffic on an EtherChannel interface:

```
switch(config)# interface port-channel 21
switch(config-if)# hardware multicast hw-hash
switch(config-if)#
```

This example shows how to restore the default software selection method for multicast traffic on an EtherChannel interface:

```
switch(config)# interface port-channel 21
switch(config-if)# hardware multicast hw-hash
switch(config-if)# no hardware multicast hw-hash
switch(config-if)#
```

Command	Description
<b>show interface port-channel</b>	Displays the status of the EtherChannel interface configuration.



# high-performance host-netio (virtual Ethernet interface)

To turn on high performance on the host, use the **high-performance host-netio** command. To disable high performance, use the **no** form of this command.

**high-performance host-netio**

**no high-performance host-netio**

<b>Syntax Description</b>	This command has no arguments or keywords.
---------------------------	--------------------------------------------

<b>Command Default</b>	Disabled
------------------------	----------

<b>Command Modes</b>	Virtual Ethernet interface configuration mode
----------------------	-----------------------------------------------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	6.0(2)N1(1)	This command was introduced.

<b>Usage Guidelines</b>	This command does not require a license.
-------------------------	------------------------------------------

<b>Examples</b>	This example shows how to enable high performance on the host:
-----------------	----------------------------------------------------------------

```
switch# configure terminal
switch(config)# interface vethernet 1
switch(config-if)# high-performance host-netio
switch(config-if)#
```

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>show interface vethernet</b>	Displays virtual Ethernet interface configuration information.
	<b>show running-config interface</b>	Displays the running configuration information for an interface.

■ high-performance host-netio (virtual Ethernet interface)



# I Commands

---

This chapter describes the Cisco NX-OS interface commands that begin with I.

# interface breakout

To configure the Linecard Expansion Module (LEM) in 10G mode, use the **interface breakout** command. To configure the Linecard Expansion Module (LEM) in 40G mode, use the **no** form of this command.

**interface breakout slot *slot-number* port *port-range* map 10g-4x**

**no interface breakout slot *slot-number* port *port-range* map 10g-4x**

<b>Syntax Description</b>	<i>slot-number</i>	The range is from 1 to 8.
	<i>port-range</i>	The range is from 1 to 12.

**Command Default** 40G mode

**Command Modes** Global configuration mode

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	6.0(2)N1(1)	This command was introduced.

**Usage Guidelines** You can use this command to configure a LEM in 10G mode and 40G mode.

## Examples

This example shows how to configure a LEM in 40G mode:

```
switch# configure terminal
switch(config)# interface breakout slot 1 port 1-12 map 10g-4x
```

This example shows how to configure a LEM in 10G mode:

```
switch# configure terminal
switch(config)# no interface breakout slot 1 port 1-12 map 10g-4x
```

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>show interface capabilities</b>	Displays detailed information about the capabilities of an interface.

# interface ethernet

To enter interface configuration mode for an Ethernet IEEE 802.3 interface, use the **interface ethernet** command.

**interface ethernet** [*chassis\_ID*]/ *slot*[/*QSFP-module*]/*port*

<b>Syntax Description</b>	<i>chassis_ID</i>	(Optional) Fabric Extender chassis ID. The chassis ID is from 100 to 199. <b>Note</b> This argument is not optional when addressing the host interfaces of a Cisco Nexus 2000 Series Fabric Extender.
	<i>slot</i>	Slots from 1 to 8. The following list defines the slots available: <ul style="list-style-type: none"> <li>Slots 1 to 4 are fixed Linecard Expansion Modules (LEMs).</li> <li>Slots 5 to 8 are hot-swappable LEMs.</li> </ul>
	<i>QSFP-module</i>	(Optional) The Linecard Expansion Module that has been set to 10G mode. The <i>QSFP-module</i> number is from 1 to 12.
	<i>port</i>	Port number within a particular slot. The <i>port</i> number is from 1 to 128.

**Command Default** None

**Command Modes** Global configuration mode

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	6.0(2)N1(1)	This command was introduced.

## Examples

This example shows how to enter configuration mode for Ethernet interface 1/4:

```
switch(config)# interface ethernet 1/4
switch(config-if)#
```

This example shows how to enter configuration mode for a host interface on a Fabric Extender:

```
switch(config)# interface ethernet 101/1/1
switch(config-if)#
```

This example shows how to enter configuration mode for LEM 1/2/1:

```
switch(config)# interface ethernet 1/2/1
switch(config-if)#
```

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>interface vethernet</b>	Configures a virtual Ethernet interface.
	<b>show fex</b>	Displays all configured Fabric Extender chassis connected to the switch.

Command	Description
<b>show interface ethernet</b>	Displays various parameters of an Ethernet IEEE 802.3 interface.
<b>speed</b>	Sets the speed on the interface.
<b>vtp (interface)</b>	Enables VLAN Trunking Protocol (VTP) on an interface.

# interface ethernet (Layer 3)

To configure a Layer 3 Ethernet IEEE 802.3 routed interface, use the **interface ethernet** command.

**interface ethernet** [*chassis\_ID*] { *slot*/[*QSFP-module*]/*port*[.*subintf-port-no*]}

<b>Syntax Description</b>	<i>chassis_ID</i>	(Optional) Fabric Extender chassis ID. The chassis ID is from 100 to 199. <b>Note</b> This argument is not optional when addressing the host interfaces of a Cisco Nexus 2000 Series Fabric Extender.
	<i>slot</i>	Slots from 1 to 8. The following list defines the slots available: <ul style="list-style-type: none"> <li>• Slots 1 to 4 are fixed Linecard Expansion Modules (LEMs).</li> <li>• Slots 5 to 8 are hot-swappable LEMs.</li> </ul>
	QSFP-module	(Optional) Linecard Expansion Module (LEM) that has been set to 10G mode.
	<i>port</i>	Port number within a particular slot. The port number is from 1 to 128.
	.	(Optional) Subinterface separator.
	<i>subintf-port-no</i>	(Optional) Port number for the subinterface. The range is from 1 to 48.

**Command Default** None

**Command Modes** Global configuration mode  
Interface configuration mode

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	6.0(2)N1(1)	This command was introduced.

**Usage Guidelines** You must use the **no switchport** command in the interface configuration mode to configure the interface as a Layer 3 routed interface. When you configure the interface as a Layer 3 interface, all Layer 2-specific configurations on this interface are deleted.

Use the **switchport** command to convert a Layer 3 interface into a Layer 2 interface. When you configure the interface as a Layer 2 interface, all Layer 3-specific configurations on this interface are deleted.

**Examples** This example shows how to enter configuration mode for Layer 3 Ethernet interface 1/5:

```
switch(config)# interface ethernet 1/5
switch(config-if)# no switchport
switch(config-if)# ip address 10.1.1.1/24
switch(config-if)#
```

This example shows how to configure a Layer 3 subinterface for Ethernet interface 1/5 in the global configuration mode:

```
switch(config)# interface ethernet 1/5.2
switch(config-if)# no switchport
switch(config-subif)# ip address 10.1.1.1/24
switch(config-subif)#
```

This example shows how to configure a Layer 3 subinterface in interface configuration mode:

```
switch(config)# interface ethernet 1/5
switch(config-if)# no switchport
switch(config-if)# interface ethernet 1/5.1
switch(config-subif)# ip address 10.1.1.1/24
switch(config-subif)#
```

This example shows how to convert a Layer 3 interface to a Layer 2 interface:

```
switch(config)# interface ethernet 1/5
switch(config-if)# no switchport
switch(config-if)# ip address 10.1.1.1/24
switch(config-if)# switchport
switch(config-if)#
```

#### Related Commands

Command	Description
<b>bandwidth</b>	Sets the bandwidth parameters for an interface.
<b>delay</b>	Configures the interface throughput delay value.
<b>encapsulation</b>	Sets the encapsulation type for an interface.
<b>ip address</b>	Sets a primary or secondary IP address for an interface.
<b>inherit</b>	Assigns a port profile to an interface.
<b>interface vethernet</b>	Configures a virtual Ethernet interface.
<b>no switchport</b>	Configures an interface as a Layer 3 interface.
<b>service-policy</b>	Configures a service policy for an interface.
<b>show fex</b>	Displays all configured Fabric Extender chassis connected to the switch.
<b>show interface ethernet</b>	Displays various parameters of an Ethernet IEEE 802.3 interface.



# interface loopback

To create a loopback interface and enter interface configuration mode, use the **interface loopback** command. To remove a loopback interface, use the **no** form of this command.

**interface loopback** *number*

**no interface loopback** *number*

<b>Syntax Description</b>	<i>number</i>	Interface number. The range is from 0 to 1023.
---------------------------	---------------	------------------------------------------------

<b>Command Default</b>	None
------------------------	------

<b>Command Modes</b>	Global configuration mode
----------------------	---------------------------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	6.0(2)N1(1)	This command was introduced.

<b>Usage Guidelines</b>	Use the <b>interface loopback</b> command to create or modify loopback interfaces.
	From the loopback interface configuration mode, the following parameters are available: <ul style="list-style-type: none"><li>• <b>description</b>—Provides a description of the purpose of the interface.</li><li>• <b>ip</b>—Configures IP features, such as the IP address for the interface, Address Resolution Protocol (ARP) attributes, load balancing, Unicast Reverse Path Forwarding (RPF) or IP Source Guard.</li><li>• <b>logging</b>—Configures logging of events.</li><li>• <b>shutdown</b>—Shuts down traffic on the interface.</li></ul>

<b>Examples</b>	This example shows how to create a loopback interface:
-----------------	--------------------------------------------------------

```
switch(config)# interface loopback 50
switch(config-if)# ip address 10.1.1.1/24
switch(config-if)#
```

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>show interface loopback</b>	Displays information about the traffic on the specified loopback interface.

# interface mgmt

To enter the management interface configuration mode, use the **interface mgmt** command.

**interface mgmt** *mgmt-intf-num*

<b>Syntax Description</b>	<i>mgmt-intf-num</i>	Management interface number. The interface number is 0.
---------------------------	----------------------	---------------------------------------------------------

<b>Command Default</b>	None
------------------------	------

<b>Command Modes</b>	Global configuration mode
----------------------	---------------------------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	6.0(2)N1(1)	This command was introduced.

<b>Examples</b>	<p>This example shows how to enter the management interface configuration mode:</p> <pre>switch# <b>configure terminal</b> switch(config)# <b>interface mgmt 0</b> switch(config-if)#</pre>
-----------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>show interface mgmt</b>	Displays information about the management interface.
	<b>cdp enable</b>	Enables the Cisco Discovery Protocol (CDP) on an interface.
	<b>description (interface)</b>	Adds a description to an interface configuration.
	<b>duplex</b>	Configures the duplex mode for an interface.
	<b>lldp (interface)</b>	Enables the reception or transmission of Link Layer Discovery Protocol (LLDP) packets on an interface.
	<b>rate-limit cpu direction</b>	Configures the packet per second (PPS) rate limit for an interface.
	<b>snmp trap link-status</b>	Enables Simple Network Management Protocol (SNMP) link trap generation on an interface.
	<b>speed</b>	Configures the transmit and receive speed for an interface.
	<b>vrf member</b>	Adds an interface to a virtual routing and forwarding (VRF) instance.

# interface port-channel

To create an EtherChannel interface and enter interface configuration mode, use the **interface port-channel** command. To remove an EtherChannel interface, use the **no** form of this command.

**interface port-channel** *channel-number* [*.subintf-channel-no*]

**no interface port-channel** *channel-number* [*.subintf-channel-no*]

<b>Syntax Description</b>	<i>channel-number</i>	Channel number that is assigned to this EtherChannel logical interface. The range is from 1 to 4096.
	.	(Optional) Subinterface separator.
		<b>Note</b> Applies to Layer 3 interfaces.
	<i>subintf-channel-no</i>	(Optional) Port number of the EtherChannel subinterface. The range is from 1 to 4093.
		<b>Note</b> Applies to Layer 3 interfaces.

<b>Command Default</b>	None
------------------------	------

<b>Command Modes</b>	Global configuration mode Interface configuration mode
----------------------	-----------------------------------------------------------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	6.0(2)N1(1)	This command was introduced.

<b>Usage Guidelines</b>	A port can belong to only one channel group.
	<p>When you use the <b>interface port-channel</b> command for Layer 2 interfaces, follow these guidelines:</p> <ul style="list-style-type: none"> <li>• If you are using CDP, you must configure it only on the physical interface and not on the EtherChannel interface.</li> <li>• If you do not assign a static MAC address on the EtherChannel interface, a MAC address is automatically assigned. If you assign a static MAC address and then later remove it, the MAC address is automatically assigned.</li> <li>• The MAC address of the EtherChannel is the address of the first operational port added to the channel group. If this first-added port is removed from the channel, the MAC address comes from the next operational port added, if there is one.</li> </ul> <p>You must use the <b>no switchport</b> command in the interface configuration mode to configure the EtherChannel interface as a Layer 3 interface. When you configure the interface as a Layer 3 interface, all Layer 2-specific configurations on this interface are deleted.</p> <p>Use the <b>switchport</b> command to convert a Layer 3 EtherChannel interface into a Layer 2 interface. When you configure the interface as a Layer 2 interface, all Layer 3-specific configurations on this interface are deleted.</p>

You can configure one or more subinterfaces on a port channel made from routed interfaces.

### Examples

This example shows how to create an EtherChannel group interface with channel-group number 50:

```
switch(config)# interface port-channel 50
switch(config-if)#
```

This example shows how to create a Layer 3 EtherChannel group interface with channel-group number 10:

```
switch(config)# interface port-channel 10
switch(config-if)# no switchport
switch(config-if)# ip address 192.0.2.1/24
switch(config-if)#
```

This example shows how to configure a Layer 3 EtherChannel subinterface with channel-group number 1 in interface configuration mode:

```
switch(config)# interface port-channel 10
switch(config-if)# no switchport
switch(config-if)# interface port-channel 10.1
switch(config-subif)# ip address 192.0.2.2/24
switch(config-subif)#
```

This example shows how to configure a Layer 3 EtherChannel subinterface with channel-group number 20.1 in global configuration mode:

```
switch(config)# interface port-channel 20.1
switch(config-subif)# ip address 192.0.2.3/24
switch(config-subif)#
```

### Related Commands

Command	Description
<b>encapsulation</b>	(Layer 3 interfaces) Sets the encapsulation type for an interface.
<b>ip address</b>	(Layer 3 interfaces) Sets a primary or secondary IP address for an interface.
<b>no switchport</b>	(Layer 3 interfaces) Configures an interface as a Layer 3 interface.
<b>show interface</b>	Displays configuration information about interfaces.
<b>show lacp</b>	Displays LACP information.
<b>show port-channel summary</b>	Displays information about the EtherChannels.
<b>vtp (interface)</b>	Enables VLAN Trunking Protocol (VTP) on an interface.



# L Commands

---

This chapter describes the Cisco NX-OS interface commands that begin with L.

# lacp graceful-convergence

To configure port channel Link Aggregation Control Protocol (LACP) graceful convergence, use the **lacp graceful-convergence** command. To disable graceful convergence on a port channel interface, use the **no** form of this command.

**lacp graceful-convergence**

**no lacp graceful-convergence**

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

**Command Default** Enabled

**Command Modes** Interface configuration mode

## Command History

Release	Modification
6.0(2)N1(1)	This command was introduced.

## Usage Guidelines

You can use this command only on a port channel interface that is in an administratively down state. You cannot configure (or disable) LACP graceful convergence on a port channel that is in an administratively up state. If you do so, you will see the following error message:

ERROR: Cannot set/reset lacp graceful-convergence for port-channel10 that is admin up



### Note

To avoid port suspension, we recommend that you disable graceful convergence on LACP ports on a peer switch that is not running Cisco NX-OS.

This command does not require a license.

## Examples

This example shows how to enable LACP graceful convergence on a port channel:

```
switch# configure terminal
switch(config)# interface port-channel 100
switch(config-if)# shutdown
switch(config-if)# lacp graceful-convergence
switch(config-if)#
```

This example shows how to disable LACP graceful convergence on a port channel:

```
switch# configure terminal
switch(config)# interface port-channel 100
switch(config-if)# no lacp graceful-convergence
switch(config-if)#
```

**Related Commands**

Command	Description
<b>show lACP</b>	Displays LACP information.
<b>show running-config</b>	Displays the running system configuration.

# lacp port-priority

To set the priority for the physical interfaces for the Link Aggregation Control Protocol (LACP), use the **lacp port-priority** command. To return the port priority to the default value, use the **no** form of this command.

**lacp port-priority** *priority*

**no lacp port-priority**

## Syntax Description

<i>priority</i>	Priority for the physical interfaces. The range of valid numbers is from 1 to 65535.
-----------------	--------------------------------------------------------------------------------------

## Command Default

System priority value is 32768.

## Command Modes

Interface configuration mode

## Command History

Release	Modification
6.0(2)N1(1)	This command was introduced.

## Usage Guidelines

Each port configured to use LACP has an LACP port priority. You can configure a value between 1 and 65535. LACP uses the port priority in combination with the port number to form the port identifier. The port priority is used with the port number to form the port identifier. The port priority is used to decide which ports should be put into standby mode when there is a hardware limitation that prevents all compatible ports from aggregating.



### Note

When setting the priority, note that a *higher* number means a *lower* priority.

## Examples

This example shows how to set the LACP port priority for the interface to 2000:

```
switch# configure terminal
switch(config)# interface ethernet 1/5
switch(config-if)# lacp port-priority 2000
switch(config-if)#
```

## Related Commands

Command	Description
<b>show lacp</b>	Displays LACP information.



# lacp rate fast

To configure the rate at which control packets are sent by the Link Aggregation Control Protocol (LACP), use the **lacp rate fast** command. To restore the rate to 30 seconds, use the **no** form of this command or the **lacp rate normal** command.

**lacp rate fast**

**no lacp rate**

**no lacp rate fast**

**lacp rate normal**

<b>Syntax Description</b>	This command has no arguments or keywords.
---------------------------	--------------------------------------------

<b>Command Default</b>	1 second
------------------------	----------

<b>Command Modes</b>	Interface configuration mode
----------------------	------------------------------

<b>Command History</b>	Release	Modification
	6.0(2)N1(1)	This command was introduced.

<b>Usage Guidelines</b>	You must enable LACP before using this command.
	You can configure the LACP rate fast feature on the LACP ports of a Cisco Nexus device or a Cisco Nexus Fabric Extender that is connected to a Cisco Nexus device.
	The LACP rate fast feature is used to set the rate (once every second) at which the LACP control packets are sent to an LACP-supported interface. The normal rate at which LACP packets are sent is 30 seconds.

<b>Examples</b>	This example shows how to configure the LACP fast rate feature on a specified Ethernet interface:
-----------------	---------------------------------------------------------------------------------------------------

```
switch(config)# interface ethernet 1/1
switch(config-if)# lacp rate fast
```

This example shows how to remove the LACP fast rate configuration from a specified Ethernet interface:
--------------------------------------------------------------------------------------------------------

```
switch(config)# interface ethernet 1/1
switch(config-if)# no lacp rate fast
```

<b>Related Commands</b>	Command	Description
	<b>feature lacp</b>	Enables or disables LACP on the switch.

Command	Description
<b>interface ethernet</b>	Enters Ethernet interface configuration mode.
<b>show lacp</b>	Displays the LACP configuration information.

# lacp suspend-individual

To enable Link Aggregation Control Protocol (LACP) port suspension on a port channel, use the **lacp suspend-individual** command. To disable port suspension on a port channel interface, use the **no** form of this command.

**lacp suspend-individual**

**no lacp suspend-individual**

<b>Syntax Description</b>	This command has no arguments or keywords.
---------------------------	--------------------------------------------

<b>Command Default</b>	Disabled
------------------------	----------

<b>Command Modes</b>	Interface configuration mode
----------------------	------------------------------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	6.0(2)N1(1)	This command was introduced.

<b>Usage Guidelines</b>	LACP sets a port to the suspended state if it does not receive an LACP bridge protocol data unit (BPDU) from the peer ports in a port channel. This can cause some servers to fail to boot up as they require LACP to logically bring up the port.
-------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

This command does not require a license.

<b>Examples</b>	This example shows how to enable LACP port suspension on a port channel:
-----------------	--------------------------------------------------------------------------

```
switch# configure terminal
switch(config)# interface port-channel 100
switch(config-if)# shutdown
switch(config-if)# lacp suspend-individual
switch(config-if)#
```

This example shows how to disable LACP port suspension on a port channel:

```
switch# configure terminal
switch(config)# interface port-channel 100
switch(config-if)# shutdown
switch(config-if)# no lacp suspend-individual
switch(config-if)#
```

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>show lacp</b>	Displays LACP information.
	<b>show running-config</b>	Displays the running system configuration.

# lacp system-priority

To set the system priority of the switch for the Link Aggregation Control Protocol (LACP), use the **lacp system-priority** command. To return the system priority to the default value, use the **no** form of this command.

**lacp system-priority** *priority*

**no lacp system-priority**

## Syntax Description

<i>priority</i>	Priority for the physical interfaces. The range of valid numbers is from 1 to 65535.
-----------------	--------------------------------------------------------------------------------------

## Command Default

System priority value is 32768.

## Command Modes

Global configuration mode

## Command History

Release	Modification
6.0(2)N1(1)	This command was introduced.

## Usage Guidelines

Each device that runs LACP has an LACP system priority value. You can configure a value between 1 and 65535. LACP uses the system priority with the MAC address to form the system ID and also during negotiation with other systems.

When setting the priority, note that a *higher* number means a *lower* priority.

## Examples

This example shows how to set the LACP system priority for the device to 2500:

```
switch(config)# lacp system-priority 2500
```

## Related Commands

Command	Description
<b>show lacp</b>	Displays LACP information.

# link debounce

To enable the debounce timer on an interface, use the **link debounce** command. To disable the timer, use the **no** form of this command.

**link debounce** [*time milliseconds*]

**no link debounce**

<b>Syntax Description</b>	<b>time milliseconds</b> (Optional) Specifies the extended debounce timer. The range is from 0 to 5000 milliseconds. A value of 0 milliseconds disables the debounce time.
---------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------

<b>Command Default</b>	None
------------------------	------

<b>Command Modes</b>	Interface configuration mode
----------------------	------------------------------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	6.0(2)N1(1)	This command was introduced.

<b>Usage Guidelines</b>	The port debounce time is the amount of time that an interface waits to notify the supervisor of a link going down. During this time, the interface waits to see if the link comes back up. The wait period is a time when traffic is stopped.
-------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

**Caution**

When you enable the debounce timer, link up and link down detections are delayed, resulting in a loss of traffic during the debounce period. This situation might affect the convergence of some protocols.

<b>Examples</b>	This example shows how to enable the debounce timer and set the debounce time to 1000 milliseconds for an Ethernet interface:
-----------------	-------------------------------------------------------------------------------------------------------------------------------

```
switch# configure terminal
switch(config)# interface ethernet 1/1
switch(config-if)# link debounce time 1000
```

This example shows how to disable the debounce timer for an Ethernet interface:

```
switch(config-if)# no link debounce
```

Related Commands	Command	Description
	<b>show interface ethernet</b>	Displays the interface configuration information.
	<b>show interface debounce</b>	Displays the debounce time information for all interfaces.

# load-interval

To change the sampling interval for statistics collections on interfaces, use the **load-interval** command. To return to the default sampling interval, use the **no** form of this command.

**load-interval** [counter {1 | 2 | 3}] *seconds*

**no load-interval** [counter {1 | 2 | 3}] [*seconds*]

Syntax Description	1   2   3	Specifies the number of counters configured on the interface.
	<i>seconds</i>	Specifies the interval between sampling statistics on the interface. The range is from 30 to 300 seconds for Ethernet and port-channel interfaces.

Command Default	1—30 seconds
	2—300 seconds
	3—not configured

Command Modes	Interface configuration mode
---------------	------------------------------

Command History	Release	Modification
	6.0(2)N1(1)	This command was introduced.

Usage Guidelines	Use the <b>load-interval</b> command to obtain bit-rate and packet-rate statistics for three different durations. You can set the statistics collection intervals on the following types of interfaces:
	<ul style="list-style-type: none"><li>Ethernet interfaces</li><li>Port-channel interfaces</li></ul>

You cannot use this command on the management interface or subinterfaces.

This command sets the sampling interval for such statistics as packet rate and bit rate on the specified interface.

This command does not require a license.

Examples	This example shows how to set the three sample intervals for the Ethernet port 3/1:
----------	-------------------------------------------------------------------------------------

```
switch# configure terminal
switch(config)# interface ethernet 3/1
switch(config-if)# load-interval counter 1 60
switch(config-if)# load-interval counter 2 135
switch(config-if)# load-interval counter 3 225
```

**Related Commands**

Command	Description
show interface	Displays information about the interface.





# M Commands

---

This chapter describes the Cisco NX-OS interface commands that begin with M.

# management

To configure a switch virtual interface (SVI) that should be used for in-band management, use the **management** command. To remove the in-band management access to a VLAN interface IP address, use the **no** form of this command.

**management**

**no management**

<b>Syntax Description</b>	This command has no arguments or keywords.
---------------------------	--------------------------------------------

<b>Command Default</b>	None
------------------------	------

<b>Command Modes</b>	Interface configuration mode Switch profile configuration mode
----------------------	-------------------------------------------------------------------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	6.0(2)N1(1)	This command was introduced.

<b>Usage Guidelines</b>	You can use this command on a VLAN interface.
-------------------------	-----------------------------------------------

<b>Examples</b>	This example shows how to configure a VLAN interface to allow in-band management access:
-----------------	------------------------------------------------------------------------------------------

```
switch# configure terminal
switch(config)# interface vlan 5
switch(config-if)# management
switch(config-if)#
```

This example shows how to remove the in-band management access to a VLAN interface:

```
switch# configure terminal
switch(config)# interface vlan 5
switch(config-if)# no management
switch(config-if)#
```

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>show running-config interface</b>	Displays the running configuration information for an interface.



# N Commands

---

This chapter describes the Cisco NX-OS interface commands that begin with N.

# no switchport

To configure the interface as a Layer 3 Ethernet interface, use the **no switchport** command.

## no switchport

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

**Command Default** None

**Command Modes** Interface configuration mode

Command History	Release	Modification
	6.0(2)N1(1)	This command was introduced.

**Usage Guidelines** You can configure any Ethernet port as a routed interface. When you configure an interface as a Layer 3 interface, any configuration specific to Layer 2 on this interface is deleted.

If you want to configure a Layer 3 interface for Layer 2, enter the **switchport** command. Then, if you change a Layer 2 interface to a routed interface, enter the **no switchport** command.

**Examples** This example shows how to enable an interface as a Layer 3 routed interface:

```
switch(config)# interface ethernet 1/5
switch(config-if)# no switchport
switch(config-if)#
```

This example shows how to configure a Layer 3 interface as a Layer 2 interface:

```
switch(config)# interface ethernet 1/5
switch(config-if)# switchport
switch(config-if)#
```

Related Commands	Command	Description
	<b>copy running-config startup-config</b>	Saves the running configuration to the startup configuration file.
	<b>interface ethernet (Layer 3)</b>	Configures an Ethernet routed interface or subinterface.
	<b>interface loopback</b>	Configures a loopback interface.
	<b>interface port-channel</b>	Configures an EtherChannel interface or subinterface.
	<b>ip address</b>	Sets a primary or secondary IP address for an interface.
	<b>show interfaces</b>	Displays interface information.



■ no switchport



# P Commands

---

This chapter describes the Cisco NX-OS interface commands that begin with P.

# peer-switch

To enable the virtual port channel (vPC) switch pair to appear as a single Spanning Tree Protocol (STP) root in the Layer 2 topology, use the **peer-switch** command. To disable the peer switch vPC topology, use the **no** form of this command.

**peer-switch**

**no peer-switch**

<b>Syntax Description</b>	This command has no arguments or keywords.
---------------------------	--------------------------------------------

<b>Defaults</b>	Peer switch Layer 2 topology is disabled.
-----------------	-------------------------------------------

<b>Command Modes</b>	vPC domain configuration mode
----------------------	-------------------------------

<b>Supported User Roles</b>	network-admin
-----------------------------	---------------

Command History	Release	Modification
	6.0(2)N1(1)	This command was introduced.

<b>Usage Guidelines</b>	This command does not require a license.
-------------------------	------------------------------------------

<b>Examples</b>	<p>This example shows how to enable the vPC switch pair to appear as a single STP root in the Layer 2 topology:</p> <pre>switch(config)# vpc domain 5 switch(config-vpc-domain)# peer-switch 2013 Jan 30 14:44:44 switch %STP-2-VPC_PEERSWITCH_CONFIG_ENABLED: vPC peer-switch configuration is enabled. Please make sure to configure spanning tree "bridge" priority as per recommended guidelines to make vPC peer-switch operational.</pre>
-----------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Related Commands	Command	Description
	vpc domain	Creates a virtual port-channel (vPC) domain.



# port

To configure a unified port on a Cisco Nexus 5548UP switch or Cisco Nexus 5596UP switch, use the **port** command. To remove the unified port, use the **no** form of this command.

**port** *port-number* **type** {**ethernet** | **fc**}

**no port** *port-number* **type** {**ethernet** | **fc**}

Syntax Description	<i>port-number</i>	Port number. The range is from 1 to 199.
	<b>type</b>	Specifies the type of port to configure on a slot in a chassis.
	<b>ethernet</b>	Specifies an Ethernet port.
	<b>fc</b>	Specifies a Fibre Channel (FC) port.

Command Default	None
-----------------	------

Command Modes	Slot configuration mode
---------------	-------------------------

Command History	Release	Modification
	6.0(2)N1(1)	This command was introduced.

Usage Guidelines	Unified ports allow you to configure ports as Ethernet, native Fibre Channel or Fibre Channel over Ethernet (FCoE) ports. By default, the ports are Ethernet ports but you can change the port mode to Fibre Channel on the following unified ports:
------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

- Any port on the Cisco Nexus 5548UP switch or the Cisco Nexus 5596UP switch.
- The ports on the Cisco N55-M16UP expansion module that is installed in a Cisco Nexus 5548P switch.

You must configure Ethernet ports and FC ports in a specified order:

- FC ports must be configured from the last port of the module.
- Ethernet ports must be configured from the first port of the module.

If the order is not followed, the following errors are displayed:

```
ERROR: Ethernet range starts from first port of the module
ERROR: FC range should end on last port of the module
```

On a Cisco Nexus 5548UP switch, the 32 ports of the main slot (slot1) are unified ports. The Ethernet ports start from port 1/1 to port 1/32. The FC ports start from port 1/32 backwards to port 1/1.

Examples	This example shows how to configure a unified port on a Cisco Nexus 5548UP switch or Cisco Nexus 5596UP switch:
----------	-----------------------------------------------------------------------------------------------------------------

```
switch# configure terminal
```

```

switch(config)# slot 1
switch(config-slot)# port 32 type fc
switch(config-slot)# copy running-config startup-config
switch(config-slot)# reload

```

This example shows how to configure a unified port on a Cisco N55-M16UP expansion module:

```

switch# configure terminal
switch(config)# slot 2
switch(config-slot)# port 32 type fc
switch(config-slot)# copy running-config startup-config
switch(config-slot)# reload

```

This example shows how to configure 20 ports as Ethernet ports and 12 as FC ports:

```

switch# configure terminal
switch(config)# slot 1
switch(config-slot)# port 21-32 type fc
switch(config-slot)# copy running-config startup-config
switch(config-slot)# reload

```

#### Related Commands

Command	Description
<b>slot</b>	Enables preprovisioning of features or interfaces of a module on a slot in a chassis.
<b>reload</b>	Reloads the switch and all attached Fabric Extender chassis or a specific Fabric Extender.

# port-channel load-balance ethernet

To configure the load-balancing method among the interfaces in the channel-group bundle, use the **port-channel load-balance ethernet** command. To return the system priority to the default value, use the **no** form of this command.

**port-channel load-balance ethernet** *method*

**no port-channel load-balance ethernet** [*method*]

## Syntax Description

<i>method</i>	Load-balancing method. See the “Usage Guidelines” section for a list of valid values.
---------------	---------------------------------------------------------------------------------------

## Command Default

Loads distribution on the source and destination MAC address.  
The default hash polynomial is CRC8a.

## Command Modes

Global configuration mode

## Command History

Release	Modification
6.0(2)N1(1)	This command was introduced.

## Usage Guidelines

The valid load-balancing *method* values are as follows:

- **destination-ip**—Loads distribution on the destination IP address.
- **destination-mac**—Loads distribution on the destination MAC address.
- **destination-port**—Loads distribution on the destination port.
- **source-destination-ip**—Loads distribution on the source and destination IP address.
- **source-destination-mac**—Loads distribution on the source and destination MAC address.
- **source-destination-port**—Loads distribution on the source and destination port.
- **source-ip**—Loads distribution on the source IP address.
- **source-mac**—Loads distribution on the source MAC address.
- **source-port**—Loads distribution on the source port.

Use the option that provides the balance criteria with the greatest variety in your configuration. For example, if the traffic on an EtherChannel is going only to a single MAC address and you use the destination MAC address as the basis of EtherChannel load balancing, the EtherChannel always chooses the same link in that EtherChannel; using source addresses or IP addresses might result in better load balancing.

## Examples

This example shows how to set the load-balancing method to use the source IP:

```
switch(config)# port-channel load-balance ethernet source-ip
```

Related Commands	Command	Description
	<b>show port-channel load-balance</b>	Displays information on EtherChannel load balancing.



# R Commands

---

This chapter describes the Cisco NX-OS interface commands that begin with R.

# rate-limit cpu direction

To set the packet per second (PPS) rate limit for an interface, use the **rate-limit cpu direction** command. To revert to the default value, use the **no** form of this command.

**rate-limit cpu direction { both | input | output } pps *pps\_value* action log**

**no rate-limit cpu direction { both | input | output } pps *pps\_value* action log**

## Syntax Description

<b>both</b>	Sets the maximum input and output packet rate.
<b>input</b>	Sets the maximum input packet rate.
<b>output</b>	Sets the maximum output packet rate.
<b>pps</b> <i>pps_value</i>	Specifies the packets per second. The range is from 0 to 100,000.
<b>action</b>	Specifies the action is logged.
<b>log</b>	Writes a syslog message if the PPS value matches or exceeds the specified rate limit.

## Command Default

None

## Command Modes

Interface configuration mode

## Command History

Release	Modification
6.0(2)N1(1)	This command was introduced.

## Usage Guidelines

This command does not require a license.

## Examples

This example shows how to set the maximum input packet rate to 3 for an interface and enable the logging of syslog messages:

```
switch# configure terminal
switch(config)# interface ethernet 1/5
switch(config-if)# rate-limit cpu direction input pps 3 action log
switch(config-if)#
```

## Related Commands

Command	Description
<b>show running-config</b>	Displays the running system configuration information.

**Related Commands**

Command	Description
<b>remote ip address</b>	Configures the IPv4 address for a remote machine.
<b>remote port</b>	Configures the TCP port for a remote machine.
<b>remote vrf</b>	Configures the virtual routing and forwarding (VRF) instance for a remote machine.
<b>show svs connections</b>	Displays SVS connection information.
<b>svs connection</b>	Enables an SVS connection.







# S Commands

---

This chapter describes the Cisco NX-OS interface commands that begin with S.

# shutdown

To shut down the local traffic on an interface, use the **shutdown** command. To return the interface to its default operational state, use the **no** form of this command.

**shutdown**

**no shutdown**

<b>Syntax Description</b>	This command has no arguments or keywords.
---------------------------	--------------------------------------------

<b>Command Default</b>	Not shut down
------------------------	---------------

<b>Command Modes</b>	Interface configuration mode Subinterface configuration mode Virtual Ethernet interface configuration mode
----------------------	------------------------------------------------------------------------------------------------------------------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	6.0(2)N1(1)	This command was introduced.

<b>Usage Guidelines</b>	You can use this command on the following interfaces:
-------------------------	-------------------------------------------------------

- Layer 2 interface (Ethernet interface, EtherChannel interface, subinterface)
- Layer 3 interface



<b>Note</b>	Use the <b>no switchport</b> command to configure an interface as a Layer 3 interface.
-------------	----------------------------------------------------------------------------------------

- Layer 3 subinterface
- Management interface
- Virtual Ethernet interface

<b>Examples</b>	This example shows how to shut down, or disable, a Layer 2 interface:
-----------------	-----------------------------------------------------------------------

```
switch(config)# interface ethernet 1/10
switch(config-if)# shutdown
switch(config-if)#
```

This example shows how to shut down a Layer 3 Ethernet subinterface:

```
switch(config)# interface ethernet 1/5.1
switch(config-subif)# shutdown
switch(config-subif)#
```

This example shows how to shut down a virtual Ethernet interface:

```
switch(config)# interface vethernet 10  
switch(config-if)# shutdown  
switch(config-if)#
```

**Related Commands**

Command	Description
<b>no switchport</b>	Converts an interface to a Layer 3 routed interface.
<b>show interface ethernet</b>	Displays the Ethernet interface configuration information.
<b>show interface port-channel</b>	Displays information on traffic about the specified EtherChannel interface.
<b>show interface vethernet</b>	Displays the virtual Ethernet interface configuration information.

# speed (interface)

To configure the transmit and receive speed for an interface, use the **speed** command. To reset to the default speed, use the **no** form of this command.

**speed** { **10** | **100** | **1000** | **10000** | **auto** }

**no speed**

<b>Syntax Description</b>	<b>10</b>	Sets the interface speed to 10 Mbps.
	<b>100</b>	Sets the interface speed to 100 Mbps.
		This speed is not supported on a management interface or the CU-96 CEM card.
	<b>1000</b>	Sets the interface speed to 1 Gbps.
	<b>10000</b>	Sets the interface speed to 10 Gbps. This is the default speed.
		This speed is not supported on a management interface.
	<b>auto</b>	Specifies that the speed of the interface is auto negotiated.

**Command Default** The default speed is 10000 (10-Gigabit).

**Command Modes** Interface configuration mode

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	6.0(2)N1(1)	This command was introduced.

**Usage Guidelines** The first 8 ports of a Cisco Nexus 5010 switch and the first 16 ports of a Cisco Nexus 5020 switch are switchable 1-Gigabit and 10-Gigabit ports. The default interface speed is 10-Gigabit. To configure these ports for 1-Gigabit Ethernet, insert a 1-Gigabit Ethernet SFP transceiver into the applicable port and then set its speed with the speed command.

The first 32 ports of a Cisco Nexus 5596T switch are switchable 1-Gigabit and 10-Gigabit ports. You can also configure them to auto-negotiate to either 1-Gigabit or 10-Gigabit. The last ports 33-48 are SFP+ ports and do not support auto negotiation.

**Examples** This example shows how to set the speed for a 1-Gigabit Ethernet port:

```
switch# configure terminal
switch(config)# interface ethernet 2/1
switch(config-if)# speed 1000
```

This example shows how to set the an interface port to automatically negotiate the speed:

```
switch# configure terminal
switch(config)# interface ethernet 1/5
```

```
switch(config-if)# speed auto  
switch(config-if)#
```

**Related Commands**

Command	Description
<b>show interface</b>	Displays the interface configuration information.

# system default switchport shutdown

To configure all Layer 2 switchports to be Layer 3 routed ports, use the **system default switchport shutdown** command. To reset to the default of all Layer 2 switchports, use the **no** form of this command.

**system default switchport shutdown**

**no system default switchport shutdown**

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

**Command Default** The default is all ports configured as Layer 2 switchports.

**Command Modes** Global configuration mode

Release	Modification
6.0(2)N1(1)	This command was introduced.

**Examples** This example shows how to set all ports as Layer 3 routed ports:

```
switch# configure terminal
switch(config)# system default switchport shutdown
switch(config)#
```

This example shows how to reset all ports back to Layer 2 switchports:

```
switch# configure terminal
switch(config)# system default switchport shutdown
switch(config)#
```

Command	Description
<b>show interface</b>	Displays the interface configuration information.



# Show Commands

---

This chapter describes the Cisco NX-OS interface commands.

# show cdp all

To display the interfaces in the Cisco Discovery Protocol (CDP) database, use the **show cdp all** command.

**show cdp all**

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

**Command Default**    None

**Command Modes**    EXEC mode

Command History	Release	Modification
	6.0(2)N1(1)	This command was introduced.

**Examples**    This example shows how to display the interfaces in the CDP database:

```
switch# show cdp all
mgmt0 is up
  CDP enabled on interface
  Refresh time is 60 seconds
  Hold time is 180 seconds
Ethernet1/1 is down
  CDP enabled on interface
  Refresh time is 60 seconds
  Hold time is 180 seconds
Ethernet1/2 is down
  CDP enabled on interface
  Refresh time is 60 seconds
  Hold time is 180 seconds
Ethernet1/3 is down
  CDP enabled on interface
  Refresh time is 60 seconds
  Hold time is 180 seconds
Ethernet1/4 is down
  CDP enabled on interface
  Refresh time is 60 seconds
  Hold time is 180 seconds
Ethernet1/5 is down
  CDP enabled on interface
  Refresh time is 60 seconds
  Hold time is 180 seconds
Ethernet1/6 is down
  CDP enabled on interface
  Refresh time is 60 seconds
  Hold time is 180 seconds
<--Output truncated-->
switch#
```



**Related Commands**

Command	Description
cdp	Enables CDP on the switch.

# show cdp entry

To display the interfaces in the Cisco Discovery Protocol (CDP) database, use the **show cdp entry** command.

**show cdp entry** {all | name *device-name*}

## Syntax Description

<b>all</b>	Displays all interfaces in the CDP database.
<b>name</b> <i>device-name</i>	Displays a specific CDP entry that matches a name. The device name can be a maximum of 256 alphanumeric characters.

## Command Default

None

## Command Modes

EXEC mode

## Command History

Release	Modification
6.0(2)N1(1)	This command was introduced.

## Examples

This example shows how to display all the entries in the CDP database:

```
switch# show cdp entry all
-----
Device ID:sw-sw70

Interface address(es):
  IPv4 Address: 10.193.88.70
Platform: WS-C3560E-48T, Capabilities: Switch IGMP Filtering
Interface: mgmt0, Port ID (outgoing port): GigabitEthernet0/30
Holdtime: 142 sec

Version:
Cisco IOS Software, C3560E Software (C3560E-UNIVERSALK9-M), Version 12.2(50)SE2,
  RELEASE SOFTWARE (fc2)
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Compiled Fri 15-May-09 22:11 by nachen

Advertisement Version: 2

Native VLAN: 88
Duplex: full
Mgmt address(es):
  IPv4 Address: 10.193.88.70
-----
Device ID:switch(FOC16333ZER)
System Name: switch

Interface address(es):
  IPv4 Address: 10.193.88.192
Platform: N6K-C6004-96Q, Capabilities: Switch IGMP Filtering Supports-STP-Disput
e
```

```
Interface: Ethernet1/4, Port ID (outgoing port): Ethernet1/12
Holdtime: 178 sec

Version:
Cisco Nexus Operating System (NX-OS) Software, Version 6.0(2u)N1(1u)

Advertisement Version: 2

Native VLAN: 1
Duplex: full

MTU: 1500
Physical Location: snmplocation
Mgmt address(es):
    IPv4 Address: 10.193.88.192
-----
Device ID:switch(FOC16333ZER)
System Name: switch

Interface address(es):
    IPv4 Address: 10.193.88.192
Platform: N6K-C6004-96Q, Capabilities: Switch IGMP Filtering Supports-STP-Disput
e
Interface: Ethernet1/6, Port ID (outgoing port): Ethernet1/10
Holdtime: 126 sec

Version:
Cisco Nexus Operating System (NX-OS) Software, Version 6.0(2u)N1(1u)

Advertisement Version: 2

Native VLAN: 1
Duplex: full

MTU: 1500
Physical Location: snmplocation
Mgmt address(es):
    IPv4 Address: 10.193.88.192
-----
Device ID:switch(FOC16333ZER)
System Name: switch

Interface address(es):
    IPv4 Address: 10.193.88.192
Platform: N6K-C6004-96Q, Capabilities: Switch IGMP Filtering Supports-STP-Disput
e
Interface: Ethernet1/10, Port ID (outgoing port): Ethernet1/6
Holdtime: 126 sec

Version:
Cisco Nexus Operating System (NX-OS) Software, Version 6.0(2u)N1(1u)

Advertisement Version: 2

Native VLAN: 1
Duplex: full

MTU: 1500
Physical Location: snmplocation
Mgmt address(es):
    IPv4 Address: 10.193.88.192
-----
Device ID:switch(FOC16333ZER)
System Name: switch
```

## ■ show cdp entry

```

Interface address(es):
  IPv4 Address: 10.193.88.192
Platform: N6K-C6004-96Q, Capabilities: Switch IGMP Filtering Supports-STP-Disput
e
Interface: Ethernet1/12, Port ID (outgoing port): Ethernet1/4
Holdtime: 178 sec

Version:
Cisco Nexus Operating System (NX-OS) Software, Version 6.0(2u)N1(1u)

Advertisement Version: 2

Native VLAN: 1
Duplex: full

MTU: 1500
Physical Location: snmplocation
Mgmt address(es):
  IPv4 Address: 10.193.88.192
switch#

```

This example shows how to display a specific entry from the CDP database:

```

switch# show cdp entry name swor95(SSI13110AAS)
-----
Device ID:swor95(SSI13110AAS)
System Name:swor95
Interface address(es):
  IPv4 Address: 192.168.0.95
Platform: N5K-C5010P-BF, Capabilities: Switch IGMP Filtering Supports-STP-Dispute
Interface: Ethernet1/29, Port ID (outgoing port): Ethernet1/19
Holdtime: 173 sec

Version:
Cisco Nexus Operating System (NX-OS) Software, Version 6.0(2)N1(1)

Advertisement Version: 2
Native VLAN: 1
Duplex: full
Physical Location: snmplocation
Mgmt address(es):
  IPv4 Address: 192.168.0.95

switch#

```

## Related Commands

Command	Description
<b>cdp</b>	Enables CDP on the switch.

# show cdp global

To display the Cisco Discovery Protocol (CDP) global parameters, use the **show cdp global** command.

## show cdp global

<b>Syntax Description</b>	This command has no arguments or keywords.
---------------------------	--------------------------------------------

<b>Command Default</b>	None
------------------------	------

<b>Command Modes</b>	EXEC mode
----------------------	-----------

Command History	Release	Modification
	6.0(2)N1(1)	This command was introduced.

<b>Examples</b>	This example shows how to display the CDP global parameters:
-----------------	--------------------------------------------------------------

```
switch# show cdp global
Global CDP information:
  CDP enabled globally
  Refresh time is 60 seconds
  Hold time is 180 seconds
  CDPv2 advertisements is enabled
  DeviceID TLV in System-Name(Default) Format
switch#
```

Related Commands	Command	Description
	cdp	Enables CDP on the switch.

# show cdp interface

To display the Cisco Discovery Protocol (CDP) parameters for an interface, use the **show cdp interface** command.

**show cdp interface** {**ethernet** *slot*[/*QSFP-module*]/*port* | **mgmt** *mgmt-num*}

Syntax Description		
<b>ethernet</b>		Specifies an Ethernet interface.
<i>slot</i>		The slot number is from 1 to 255.
<i>QSFP-module</i>		(Optional) Quad Small Form-Factor Pluggable (QSFP) transceiver module. The range is from 1 to 199.
<i>port</i>		The port number is from 1 to 128.
<b>mgmt</b> <i>mgmt-num</i>		Specifies a management interface. The management interface number is 0.

<b>Command Default</b>	None
------------------------	------

<b>Command Modes</b>	EXEC mode
----------------------	-----------

Command History	Release	Modification
	6.0(2)N1(1)	This command was introduced.

**Examples** This example shows how to display the CDP parameters for an Ethernet interface:

```
switch# show cdp interface ethernet 1/30
Ethernet1/30 is down
  CDP enabled on interface
  Refresh time is 60 seconds
  Hold time is 180 seconds
switch#
```

This example shows how to display the CDP parameters for a management interface:

```
switch# show cdp interface mgmt 0
mgmt0 is up
  CDP enabled on interface
  Refresh time is 60 seconds
  Hold time is 180 seconds
switch#
```

Related Commands	Command	Description
	<b>cdp</b>	Enables CDP on the switch.

# show cdp neighbors

To display the Cisco Discovery Protocol (CDP) neighbors, use the **show cdp neighbors** command.

**show cdp neighbors** [**interface** {**ethernet** *slot*[/*QSFP-module*]/*port* | **mgmt** *mgmt-num*}] [**detail**]

Syntax Description		
<b>interface</b>	(Optional) Displays CDP neighbor information for an Ethernet or management interface.	
<b>ethernet</b>	Displays CDP neighbor information for an Ethernet interface.	
<i>slot</i>	The slot number is from 1 to 255.	
<i>QSFP-module</i>	(Optional) Quad Small Form-Factor Pluggable (QSFP) transceiver module. The range is from 1 to 199.	
<i>port</i>	The port number is from 1 to 128.	
<b>mgmt</b> <i>mgmt-num</i>	Displays CDP neighbor information for a management interface. The management interface number is 0.	
<b>detail</b>	(Optional) Displays the detailed information about CDP neighbors.	

**Command Default** None

**Command Modes** EXEC mode

Command History	Release	Modification
	6.0(2)N1(1)	This command was introduced.

## Examples

This example shows how to display all CDP neighbors:

```
switch# show cdp neighbors
```

```
Capability Codes: R - Router, T - Trans-Bridge, B - Source-Route-Bridge
                  S - Switch, H - Host, I - IGMP, r - Repeater,
                  V - VoIP-Phone, D - Remotely-Managed-Device,
                  s - Supports-STP-Dispute
```

Device-ID	Local Intrfce	Hldtme	Capability	Platform	Port ID
sw-sw70	mgmt0	179	S I	WS-C3560E-48T	Gig0/30
switch(FOC16333ZER)	Eth1/4	155	S I s	N6K-C6004-96Q	Eth1/12
switch(FOC16333ZER)	Eth1/6	162	S I s	N6K-C6004-96Q	Eth1/10
switch(FOC16333ZER)	Eth1/10	162	S I s	N6K-C6004-96Q	Eth1/6
switch(FOC16333ZER)	Eth1/12	155	S I s	N6K-C6004-96Q	Eth1/4

This example shows how to display the CDP neighbors for a specific Ethernet interface:

```
switch# show cdp neighbors interface ethernet 1/29
```

## ■ show cdp neighbors

Capability Codes: R - Router, T - Trans-Bridge, B - Source-Route-Bridge  
 S - Switch, H - Host, I - IGMP, r - Repeater,  
 V - VoIP-Phone, D - Remotely-Managed-Device,  
 s - Supports-STP-Dispute, M - Two-port Mac Relay

Device ID	Local Intrfce	Hldtme	Capability	Platform	Port ID
swor95(SSII3110AAS)	Eth1/29	146	S I s	N5K-C5010P-BF	Eth1/19

switch#

This example shows how to display the detailed information of the CDP neighbors for a specific Ethernet interface:

```
switch# show cdp neighbors interface ethernet 1/29 detail
```

```
-----
Device ID:swor95(SSII3110AAS)
System Name:swor95
Interface address(es):
  IPv4 Address: 192.168.0.95
Platform: N5K-C5010P-BF, Capabilities: Switch IGMP Filtering Supports-STP-Disput
e
Interface: Ethernet1/29, Port ID (outgoing port): Ethernet1/19
Holdtime: 141 sec
```

Version:

Cisco Nexus Operating System (NX-OS) Software, Version 6.0(2)N1(1)

Advertisement Version: 2

Native VLAN: 1

Duplex: full

Physical Location: snmplocation

Mgmt address(es):

IPv4 Address: 192.168.0.95

switch#

This example shows how to display the CDP neighbors for the management interface:

```
switch# show cdp neighbors interface mgmt 0
```

Capability Codes: R - Router, T - Trans-Bridge, B - Source-Route-Bridge  
 S - Switch, H - Host, I - IGMP, r - Repeater,  
 V - VoIP-Phone, D - Remotely-Managed-Device,  
 s - Supports-STP-Dispute

Device-ID	Local Intrfce	Hldtme	Capability	Platform	Port ID
sw-sw70	mgmt0	159	S I	WS-C3560E-48T	Gig0/30

switch#

This example shows how to display the detailed information of the CDP neighbors for the management interface:

```
switch# show cdp neighbors interface mgmt 0 detail
```

```
-----
Device ID:sw-sw70
System Name:
Interface address(es):
  IPv4 Address: 10.193.88.70
Platform: cisco WS-C3560E-48TD, Capabilities: Switch IGMP Filtering
Interface: mgmt0, Port ID (outgoing port): GigabitEthernet0/30
Holdtime: 152 sec
```

Version:



```
Cisco IOS Software, C3560E Software (C3560E-UNIVERSALK9-M), Version 12.2(50)SE2,
  RELEASE SOFTWARE (fc2)
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Compiled Fri 15-May-09 22:11 by nachen
```

```
Advertisement Version: 2
Native VLAN: 88
VTP Management Domain:
Duplex: full
Mgmt address(es):
  IPv4 Address: 10.193.88.70
```

```
switch#
```

This example shows how to display the detailed information of all CDP neighbors:

```
switch# show cdp neighbors detail
-----
Device ID:sw-sw70
VTP Management Domain Name:

Interface address(es):
  IPv4 Address: 10.193.88.70
Platform: WS-C3560E-48T, Capabilities: Switch IGMP Filtering
Interface: mgmt0, Port ID (outgoing port): GigabitEthernet0/30
Holdtime: 127 sec

Version:
Cisco IOS Software, C3560E Software (C3560E-UNIVERSALK9-M), Version 12.2(50)SE2,
  RELEASE SOFTWARE (fc2)
Copyright (c) 1986-2009 by Cisco Systems, Inc.
Compiled Fri 15-May-09 22:11 by nachen

Advertisement Version: 2

Native VLAN: 88
Duplex: full
Mgmt address(es):
  IPv4 Address: 10.193.88.70
-----
Device ID:switch(FOC16333ZER)
System Name: switch

Interface address(es):
  IPv4 Address: 10.193.88.192
Platform: N6K-C6004-96Q, Capabilities: Switch IGMP Filtering Supports-STP-Disput
e
Interface: Ethernet1/4, Port ID (outgoing port): Ethernet1/12
Holdtime: 163 sec

Version:
Cisco Nexus Operating System (NX-OS) Software, Version 6.0(2)N1(1)

Advertisement Version: 2

Native VLAN: 1
Duplex: full

MTU: 1500
Physical Location: snmplocation
Mgmt address(es):
  IPv4 Address: 10.193.88.192
-----
Device ID:switch(FOC16333ZER)
```

```

System Name: switch

Interface address(es):
  IPv4 Address: 10.193.88.192
Platform: N6K-C6004-96Q, Capabilities: Switch IGMP Filtering Supports-STP-Disput
e
Interface: Ethernet1/6, Port ID (outgoing port): Ethernet1/10
Holdtime: 170 sec

Version:
Cisco Nexus Operating System (NX-OS) Software, Version 6.0(2)N1(1)

Advertisement Version: 2

Native VLAN: 1
Duplex: full

MTU: 1500
Physical Location: snmplocation
Mgmt address(es):
  IPv4 Address: 10.193.88.192
-----
Device ID:switch(FOC16333ZER)
System Name: switch

Interface address(es):
  IPv4 Address: 10.193.88.192
Platform: N6K-C6004-96Q, Capabilities: Switch IGMP Filtering Supports-STP-Disput
e
Interface: Ethernet1/10, Port ID (outgoing port): Ethernet1/6
Holdtime: 170 sec

Version:
Cisco Nexus Operating System (NX-OS) Software, Version 6.0(2)N1(1)

Advertisement Version: 2

Native VLAN: 1
Duplex: full

MTU: 1500
Physical Location: snmplocation
Mgmt address(es):
  IPv4 Address: 10.193.88.192
-----
Device ID:switch(FOC16333ZER)
System Name: switch

Interface address(es):
  IPv4 Address: 10.193.88.192
Platform: N6K-C6004-96Q, Capabilities: Switch IGMP Filtering Supports-STP-Disput
e
Interface: Ethernet1/12, Port ID (outgoing port): Ethernet1/4
Holdtime: 163 sec

Version:
Cisco Nexus Operating System (NX-OS) Software, Version 6.0(2)N1(1)

Advertisement Version: 2

Native VLAN: 1
Duplex: full

MTU: 1500

```

```
Physical Location: snmplocation
Mgmt address(es):
    IPv4 Address: 10.193.88.192
switch#
```

**Related Commands**

Command	Description
<b>cdp</b>	Enables CDP on the switch.

# show cdp traffic

To display the Cisco Discovery Protocol (CDP) traffic statistics, use the **show cdp traffic** command.

**show cdp traffic interface** { *ethernet slot* [*QSFP-module*] *port* | **mgmt** *mgmt-num* }

Syntax Description		
<b>interface</b>		Displays CDP traffic statistics for an Ethernet or management interface.
<b>ethernet</b>		Displays CDP traffic statistics for an Ethernet interface.
<i>slot</i>		The slot number is from 1 to 255.
<i>QSFP-module</i>		(Optional) Quad Small Form-Factor Pluggable (QSFP) transceiver module. The range is from 1 to 199.
<i>port</i>		The port number is from 1 to 128.
<b>mgmt</b> <i>mgmt-num</i>		Displays CDP traffic statistics for a management interface. The management interface number is 0.

**Command Default** None

**Command Modes** EXEC mode

Command History	Release	Modification
	6.0(2)N1(1)	This command was introduced.

## Examples

This example shows how to display the CDP traffic statistics for an Ethernet interface:

```
switch# show cdp traffic interface ethernet 1/29
```

```
-----  
Traffic statistics for Ethernet1/29
```

```
Input Statistics:
```

```
  Total Packets: 3203  
  Valid CDP Packets: 3203  
    CDP v1 Packets: 0  
    CDP v2 Packets: 3203  
  Invalid CDP Packets: 0  
    Unsupported Version: 0  
    Checksum Errors: 0  
    Malformed Packets: 0
```

```
Output Statistics:
```

```
  Total Packets: 3203  
    CDP v1 Packets: 0  
    CDP v2 Packets: 3203  
  Send Errors: 0
```

```
switch#
```

This example shows how to display CDP traffic statistics for a management interface:

```
switch# show cdp traffic interface mgmt 0
```

```
-----
Traffic statistics for mgmt0
Input Statistics:
  Total Packets: 3201
  Valid CDP Packets: 3201
    CDP v1 Packets: 0
    CDP v2 Packets: 3201
  Invalid CDP Packets: 0
    Unsupported Version: 0
    Checksum Errors: 0
    Malformed Packets: 0

Output Statistics:
  Total Packets: 3201
    CDP v1 Packets: 0
    CDP v2 Packets: 3201
  Send Errors: 0

switch#
```

**Related Commands**

Command	Description
<b>cdp</b>	Enables CDP on the switch.

# show interface brief

To display a brief summary of the interface configuration information, use the **show interface brief** command.

## show interface brief

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

**Command Default** None

**Command Modes** EXEC mode

Command History	Release	Modification
	6.0(2)N1(1)	This command was introduced.

**Examples** This example shows how to display a brief summary of the configuration information for specified interfaces:

```
switch# show interface brief
```

```
-----
Ethernet      VLAN    Type Mode   Status Reason                Speed    Port
Interface                                           Ch  #
-----
Eth1/1        1       eth  access down   SFP not inserted      40G(D)  --
Eth1/2        1       eth  access down   SFP not inserted      40G(D)  --
Eth1/3        1       eth  access down   SFP not inserted      40G(D)  --
Eth1/4        1       eth  access up     none                   40G(D)  --
Eth1/5        1       eth  access down   SFP not inserted      40G(D)  --
Eth1/6        1       eth  access up     none                   40G(D)  --
Eth1/7        1       eth  access down   SFP not inserted      40G(D)  --
Eth1/8        1       eth  access down   SFP not inserted      40G(D)  --
Eth1/9        1       eth  access down   SFP not inserted      40G(D)  --
Eth1/10       1       eth  access up     none                   40G(D)  --
Eth1/11       1       eth  access down   SFP not inserted      40G(D)  --
Eth1/12       1       eth  access up     none                   40G(D)  --
Eth5/1/1      1       eth  access up     none                   10G(D)  --
Eth5/1/2      1       eth  access down   Link not connected     10G(D)  --
Eth5/1/3      1       eth  access down   Link not connected     10G(D)  --
Eth5/1/4      1       eth  access down   Link not connected     10G(D)  --
Eth5/2/1      1       eth  access down   SFP not inserted      10G(D)  --
Eth5/2/2      1       eth  access down   SFP not inserted      10G(D)  --
Eth5/2/3      1       eth  access down   SFP not inserted      10G(D)  --
Eth5/2/4      1       eth  access down   SFP not inserted      10G(D)  --
Eth5/3/1      1       eth  access down   SFP not inserted      10G(D)  --
Eth5/3/2      1       eth  access down   SFP not inserted      10G(D)  --
Eth5/3/3      1       eth  access down   SFP not inserted      10G(D)  --
Eth5/3/4      1       eth  access down   SFP not inserted      10G(D)  --
Eth5/4/1      1       eth  access down   SFP not inserted      10G(D)  --
```

```

Eth5/4/2      1      eth  access down  SFP not inserted  10G(D)  --
Eth5/4/3      1      eth  access down  SFP not inserted  10G(D)  --
Eth5/4/4      1      eth  access down  SFP not inserted  10G(D)  --
Eth5/5/1      1      eth  access down  SFP not inserted  10G(D)  --
Eth5/5/2      1      eth  access down  SFP not inserted  10G(D)  --
Eth5/5/3      1      eth  access down  SFP not inserted  10G(D)  --
Eth5/5/4      1      eth  access down  SFP not inserted  10G(D)  --
Eth5/6/1      1      eth  access down  SFP not inserted  10G(D)  --
Eth5/6/2      1      eth  access down  SFP not inserted  10G(D)  --
Eth5/6/3      1      eth  access down  SFP not inserted  10G(D)  --
Eth5/6/4      1      eth  access down  SFP not inserted  10G(D)  --
Eth5/7/1      1      eth  access down  SFP not inserted  10G(D)  --
Eth5/7/2      1      eth  access down  SFP not inserted  10G(D)  --
Eth5/7/3      1      eth  access down  SFP not inserted  10G(D)  --
Eth5/7/4      1      eth  access down  SFP not inserted  10G(D)  --
Eth5/8/1      1      eth  access down  SFP not inserted  10G(D)  --
Eth5/8/2      1      eth  access down  SFP not inserted  10G(D)  --
Eth5/8/3      1      eth  access down  SFP not inserted  10G(D)  --
Eth5/8/4      1      eth  access down  SFP not inserted  10G(D)  --
Eth5/9/1      1      eth  access down  SFP not inserted  10G(D)  --
Eth5/9/2      1      eth  access down  SFP not inserted  10G(D)  --
Eth5/9/3      1      eth  access down  SFP not inserted  10G(D)  --
Eth5/9/4      1      eth  access down  SFP not inserted  10G(D)  --
Eth5/10/1     1      eth  access down  SFP not inserted  10G(D)  --
Eth5/10/2     1      eth  access down  SFP not inserted  10G(D)  --
Eth5/10/3     1      eth  access down  SFP not inserted  10G(D)  --
Eth5/10/4     1      eth  access down  SFP not inserted  10G(D)  --
Eth5/11/1     1      eth  access down  SFP not inserted  10G(D)  --
Eth5/11/2     1      eth  access down  SFP not inserted  10G(D)  --
Eth5/11/3     1      eth  access down  SFP not inserted  10G(D)  --
Eth5/11/4     1      eth  access down  SFP not inserted  10G(D)  --
Eth5/12/1     1      eth  access down  SFP not inserted  10G(D)  --
Eth5/12/2     1      eth  access down  SFP not inserted  10G(D)  --
Eth5/12/3     1      eth  access down  SFP not inserted  10G(D)  --
Eth5/12/4     1      eth  access down  SFP not inserted  10G(D)  --
Eth6/1        1      eth  access down  SFP not inserted  40G(D)  --
Eth6/2        1      eth  access down  SFP not inserted  40G(D)  --
Eth6/3        1      eth  access down  SFP not inserted  40G(D)  --
Eth6/4        1      eth  access down  SFP not inserted  40G(D)  --
Eth6/5        1      eth  access down  SFP not inserted  40G(D)  --
Eth6/6        1      eth  access down  SFP not inserted  40G(D)  --
Eth6/7        1      eth  access down  SFP not inserted  40G(D)  --
Eth6/8        1      eth  access down  SFP not inserted  40G(D)  --
Eth6/9        1      eth  access down  SFP not inserted  40G(D)  --
Eth6/10       1      eth  access down  SFP not inserted  40G(D)  --
Eth6/11       1      eth  access down  SFP not inserted  40G(D)  --
Eth6/12       1      eth  access down  SFP not inserted  40G(D)  --
Eth8/1        1      eth  access down  SFP not inserted  40G(D)  --
Eth8/2        1      eth  access down  SFP not inserted  40G(D)  --
Eth8/3        1      eth  access down  SFP not inserted  40G(D)  --
Eth8/4        1      eth  access down  Link not connected 40G(D)  --
Eth8/5        1      eth  access down  SFP not inserted  40G(D)  --
Eth8/6        1      eth  access down  SFP not inserted  40G(D)  --
Eth8/7        1      eth  access down  SFP not inserted  40G(D)  --
Eth8/8        1      eth  access down  SFP not inserted  40G(D)  --
Eth8/9        1      eth  access down  SFP not inserted  40G(D)  --
Eth8/10       1      eth  access down  SFP not inserted  40G(D)  --
Eth8/11       1      eth  access down  SFP not inserted  40G(D)  --
Eth8/12       1      eth  access down  SFP not inserted  40G(D)  --

-----
Port    VRF      Status IP Address      Speed    MTU
-----
mgmt0   --      up      10.193.88.192   1000     1500

```

## ■ show interface brief

```
switch#
```

```
switch#
```

This example shows how to display a brief summary of the configuration information for several interfaces, including routed interfaces:

```
switch# show interface brief
```

```
-----
Ethernet      VLAN   Type Mode   Status Reason                               Speed   Port
Interface                                           Ch #
-----
Eth1/1         1     eth  access down  Link not connected          10G(D) --
Eth1/2         1     eth  trunk  up    none                        10G(D) --
Eth1/3         1     eth  access down  SFP not inserted           10G(D) --
Eth1/4         1     eth  access down  SFP not inserted           10G(D) --
Eth1/5         --     eth  routed up    none                        10G(D) --
Eth1/5.2       --     eth  routed down  Configuration Incomplete   10G(D) --
Eth1/6         1     eth  access up    none                        10G(D) --
Eth1/7         1     eth  access up    none                        10G(D) --
Eth1/8         1     eth  trunk  up    none                        10G(D) 100
Eth1/9         1     eth  access up    none                        10G(D) --
Eth1/10        1     eth  access down  Link not connected          10G(D) --
Eth1/11        1     eth  access down  SFP not inserted           10G(D) --
Eth1/12        1     eth  access down  SFP not inserted           10G(D) --
Eth1/13        1     eth  access down  SFP not inserted           10G(D) --
Eth1/14        1     eth  access down  SFP not inserted           10G(D) --
Eth1/15        1     eth  access down  SFP not inserted           10G(D) --
Eth1/16        1     eth  access down  SFP not inserted           10G(D) --
Eth1/17        1     eth  access up    none                        10G(D) --
Eth1/18        1     eth  access up    none                        10G(D) --
Eth1/19        1     eth  fabric up    none                        10G(D) --
Eth1/20        1     eth  access down  Link not connected          10G(D) --
Eth1/21        1     eth  access up    none                        10G(D) --
Eth1/22        1     eth  access down  Link not connected          10G(D) --
Eth1/23        1     eth  access down  SFP not inserted           10G(D) --
Eth1/24        1     eth  access down  SFP not inserted           10G(D) --
Eth1/25        1     eth  access down  Link not connected          10G(D) --
Eth1/26        1     eth  access down  SFP not inserted           10G(D) --
Eth1/27        1     eth  access down  SFP not inserted           10G(D) --
Eth1/28        1     eth  access down  SFP not inserted           10G(D) --
Eth1/29        1     eth  access down  Link not connected          10G(D) --
Eth1/30        1     eth  access down  SFP not inserted           10G(D) --
Eth1/31        1     eth  access down  SFP not inserted           10G(D) --
Eth1/32        1     eth  access up    none                        10G(D) --

-----
Port-channel  VLAN   Type Mode   Status Reason                               Speed   Protocol
Interface                                          
-----
Po100         1     eth  trunk  up    none                        a-10G(D) none

-----
Port   VRF      Status IP Address                               Speed   MTU
-----
mgmt0  --       up    172.29.231.33                           1000    1500

-----
Interface  Secondary VLAN(Type)                               Status Reason
-----
Vlan1     --                               up    --
Vlan100   --                               up    --
```



Ethernet Interface	VLAN	Type	Mode	Status	Reason	Speed	Port Ch #
Eth100/1/1	1	eth	access	up	none	10G(D)	--
Eth100/1/2	1	eth	access	down	Link not connected	auto(D)	--
Eth100/1/3	1	eth	access	up	none	10G(D)	--
Eth100/1/4	1	eth	access	down	Link not connected	auto(D)	--
Eth100/1/5	1	eth	access	down	Link not connected	auto(D)	--
Eth100/1/6	1	eth	access	down	Link not connected	auto(D)	--
Eth100/1/7	1	eth	access	down	Link not connected	auto(D)	--
Eth100/1/8	1	eth	access	down	Link not connected	auto(D)	--
Eth100/1/9	1	eth	access	down	Link not connected	auto(D)	--
Eth100/1/10	1	eth	access	up	none	10G(D)	--
Eth100/1/11	1	eth	access	down	Link not connected	auto(D)	--
Eth100/1/12	1	eth	access	down	Link not connected	auto(D)	--
Eth100/1/13	1	eth	access	down	Link not connected	auto(D)	--
Eth100/1/14	1	eth	access	down	Link not connected	auto(D)	--
Eth100/1/15	1	eth	access	up	none	10G(D)	--
Eth100/1/16	1	eth	access	down	Link not connected	auto(D)	--

  

Interface	Status	Description
Lo10	up	--
switch#		

Note the following in the above display:

- Ethernet 1/5 is a Layer 3-ready interface. The following fields in the display help identify an interface as a configured Layer 3 interface:
  - Mode—routed
  - Status—up
  - Reason—none
- Ethernet 1/5.2 is a Layer 3 subinterface; however, the interface is not ready for Layer 3 configuration (Status—down).
- Interface Lo10 is a Layer 3 loopback interface.

This example shows how to display a brief summary of interfaces configured as FabricPath interfaces:

```
switch# show interface brief
```

Ethernet Interface	VLAN	Type	Mode	Status	Reason	Speed	Port Ch#
Eth1/1	1	eth	access	down	SFP not inserted	1000(D)	--
Eth1/2	--	eth	routed	down	SFP not inserted	1000(D)	--
Eth1/3	1	eth	access	down	SFP not inserted	10G(D)	--
Eth1/4	1	eth	access	down	SFP not inserted	10G(D)	--
Eth1/5	1	eth	f-path	down	SFP not inserted	10G(D)	--
Eth1/6	1	eth	access	down	Link not connected	10G(D)	--
Eth1/7	1	eth	fabric	down	Link not connected	10G(D)	--
Eth1/8	1	eth	access	down	SFP not inserted	10G(D)	--
Eth1/9	1	eth	access	down	SFP not inserted	10G(D)	--
Eth1/10	1	eth	access	down	SFP not inserted	10G(D)	--
Eth1/11	1	eth	access	down	SFP not inserted	10G(D)	--
Eth1/12	1	eth	access	down	SFP not inserted	10G(D)	--
Eth1/13	1	eth	access	down	SFP not inserted	10G(D)	--
Eth1/14	1	eth	access	down	SFP not inserted	10G(D)	--

## ■ show interface brief

```

Eth1/15      1      eth  pvlan  up      none      1000 (D)  --
Eth1/16      1      eth  access down  SFP not inserted  10G (D)  --
Eth1/17      1      eth  access down  SFP not inserted  10G (D)  --
switch#

```

In the above display, Ethernet 1/5 has the mode shown as “f-path” which indicates that it has been configured as a FabricPath port.

## Related Commands

Command	Description
<b>interface ethernet</b>	Configures an Ethernet IEEE 802.3 interface.

# show interface capabilities

To display detailed information about the capabilities of an interface, use the **show interface capabilities** command.

**show interface ethernet slot/[QSFP-module/]port capabilities**

Syntax Description	ethernet	Specifies an Ethernet interface slot number and port number.
	slot	The slot number is from 1 to 255.
	QSFP-module	(Optional) Quad Small Form-Factor Pluggable (QSFP) transceiver module. The range is from 1 to 199.
	port	The port number is from 1 to 128.

**Command Default** None

**Command Modes** EXEC mode

Command History	Release	Modification
	6.0(2)N1(1)	This command was introduced.

**Usage Guidelines** You can use the **show interface capabilities** command only for physical interfaces.

If the interface and transceiver speed is mismatched, the SFP validation failed message appears when you enter the **show interface ethernet slot/[QSFP-module/]port** command. For example, if you insert a 1-Gigabit SFP transceiver into a port without configuring the **speed 1000** command, you see this error. By default, all ports are 10-Gigabit ports.

**Examples** This example shows how to display the interface capabilities for a specific interface:

```
switch# show interface ethernet 1/1 capabilities
Ethernet1/1
  Model: N6K-C6004-M12Q-FIX
  Type (SFP capable): unknown
  Speed: 40000
  Duplex: full
  Trunk encap. type: 802.1Q
  Channel: yes
  Broadcast suppression: no
  Flowcontrol: rx- (off/on) , tx- (off/on)
  Rate mode: none
  QoS scheduling: rx- (6q1t) , tx- (1p6q0t)
  CoS rewrite: no
  ToS rewrite: no
  SPAN: yes
  UDLD: yes
  MDIX: no
```

**show interface capabilities**

```
Link Debounce:      yes
Link Debounce Time: yes
Pvlan Trunk capable: yes
TDR capable:        no
FabricPath capable: yes
Port mode:           Switched
FEX Fabric:          yes

switch#
```

**Related Commands**

Command	Description
<b>interface ethernet</b>	Configures an Ethernet IEEE 802.3 interface.

# show interface debounce

To display the debounce time information for all interfaces, use the **show interface debounce** command.

## show interface debounce

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

**Command Default** None

**Command Modes** EXEC mode

Command History	Release	Modification
	6.0(2)N1(1)	This command was introduced.

**Examples** This example shows how to display the debounce status of all interfaces:

```
switch# show interface debounce
```

```
-----
Port           Debounce time  Value(ms)
-----
Eth1/1         enable        100
Eth1/2         enable        100
Eth1/3         enable        100
Eth1/4         enable        100
Eth1/5         enable        100
Eth1/6         enable        100
Eth1/7         enable        100
Eth1/8         enable        100
Eth1/9         enable        100
Eth1/10        enable        100
Eth1/11        enable        100
Eth1/12        enable        100
Eth5/1/1       enable        100
Eth5/1/2       enable        100
Eth5/1/3       enable        100
Eth5/1/4       enable        100
Eth5/2/1       enable        100
Eth5/2/2       enable        100
Eth5/2/3       enable        100
Eth5/2/4       enable        100
Eth5/3/1       enable        100
Eth5/3/2       enable        100
Eth5/3/3       enable        100
Eth5/3/4       enable        100
Eth5/4/1       enable        100
Eth5/4/2       enable        100
Eth5/4/3       enable        100
Eth5/4/4       enable        100
Eth5/5/1       enable        100
```

## ■ show interface debounce

```

Eth5/5/2      enable      100
Eth5/5/3      enable      100
Eth5/5/4      enable      100
Eth5/6/1      enable      100
Eth5/6/2      enable      100
Eth5/6/3      enable      100
Eth5/6/4      enable      100
Eth5/7/1      enable      100
Eth5/7/2      enable      100
Eth5/7/3      enable      100
Eth5/7/4      enable      100
Eth5/8/1      enable      100
Eth5/8/2      enable      100
Eth5/8/3      enable      100
Eth5/8/4      enable      100
Eth5/9/1      enable      100
Eth5/9/2      enable      100
Eth5/9/3      enable      100
Eth5/9/4      enable      100
Eth5/10/1     enable      100
Eth5/10/2     enable      100
Eth5/10/3     enable      100
Eth5/10/4     enable      100
Eth5/11/1     enable      100
Eth5/11/2     enable      100
Eth5/11/3     enable      100
Eth5/11/4     enable      100
Eth5/12/1     enable      100
Eth5/12/2     enable      100
Eth5/12/3     enable      100
Eth5/12/4     enable      100
Eth6/1        enable      100
Eth6/2        enable      100
Eth6/3        enable      100
Eth6/4        enable      100
Eth6/5        enable      100
Eth6/6        enable      100
Eth6/7        enable      100
Eth6/8        enable      100
Eth6/9        enable      100
Eth6/10       enable      100
Eth6/11       enable      100
Eth6/12       enable      100
Eth8/1        enable      100
Eth8/2        enable      100
Eth8/3        enable      100
Eth8/4        enable      100
Eth8/5        enable      100
Eth8/6        enable      100
Eth8/7        enable      100
Eth8/8        enable      100
Eth8/9        enable      100
Eth8/10       enable      100
Eth8/11       enable      100
Eth8/12       enable      100
switch#

```

## Related Commands

Command	Description
<b>link debounce</b>	Enables the debounce timer on an interface.

# show interface ethernet

To display information about the interface configuration, use the **show interface ethernet** command.

**show interface ethernet** *slot* [*QSFP-module*]/*port* [*..subintf-port-no*] [**brief** | **counters** | **description** | **status** | **switchport**]

Syntax Description	
<i>slot</i>	The slot number is from 1 to 255.
<i>QSFP-module</i>	(Optional) Quad Small Form-Factor Pluggable (QSFP) transceiver module. The range is from 1 to 199.
<i>port</i>	The port number is from 1 to 128.
.	(Optional) Specifies the subinterface separator.
	<b>Note</b> This keyword applies to Layer 3 interfaces.
<i>subintf-port-no</i>	(Optional) Port number for the subinterface. The range is from 1 to 48.
	<b>Note</b> This argument applies to Layer 3 interfaces.
<b>brief</b>	(Optional) Displays brief information about the interfaces.
<b>counters</b>	(Optional) Displays information about the counters configured on an interface.
<b>description</b>	(Optional) Displays the description of an interface configuration.
<b>status</b>	(Optional) Displays the operational state of the interface.
<b>switchport</b>	(Optional) Displays the switchport information of an interface.

**Command Default** Displays all information for the interface.

**Command Modes** EXEC mode

Command History	Release	Modification
	6.0(2)N1(1)	This command was introduced.

**Usage Guidelines** If the interface and transceiver speed is mismatched, the SFP validation failed message appears when you enter the **show interface ethernet** *slot* [*QSFP-module*]/*port* command. For example, if you insert a 1-Gigabit SFP transceiver into a port without configuring the **speed 1000** command, you will get this error.

By default, all ports on a Cisco Nexus device are 40-Gigabit ports.

**Examples** This example shows how to display the detailed configuration of the specified interface:

```
switch# show interface ethernet 1/1
Ethernet1/1 is up
Dedicated Interface
```

```

Hardware: 40000 Ethernet, address: c84c.753d.5b78 (bia c84c.753d.5b78)
MTU 1500 bytes, BW 40000000 Kbit, DLY 10 usec
reliability 255/255, txload 1/255, rxload 1/255
Encapsulation ARPA
Port mode is access
auto-duplex, 40 Gb/s
Beacon is turned off
Input flow-control is off, output flow-control is off
Switchport monitor is off
EtherType is 0x8100
Last link flapped never
Last clearing of "show interface" counters never
0 interface resets
30 seconds input rate 0 bits/sec, 0 packets/sec
30 seconds output rate 0 bits/sec, 0 packets/sec
Load-Interval #2: 5 minute (300 seconds)
  input rate 0 bps, 0 pps; output rate 0 bps, 0 pps
RX
  0 unicast packets  0 multicast packets  0 broadcast packets
  0 input packets  0 bytes
  0 jumbo packets  0 storm suppression bytes
  0 runts  0 giants  0 CRC  0 no buffer
  0 input error  0 short frame  0 overrun  0 underrun  0 ignored
  0 watchdog  0 bad etype drop  0 bad proto drop  0 if down drop
  0 input with dribble  0 input discard
  0 Rx pause
TX
  0 unicast packets  0 multicast packets  0 broadcast packets
  0 output packets  0 bytes
  0 jumbo packets
  0 output errors  0 collision  0 deferred  0 late collision
  0 lost carrier  0 no carrier  0 babble  0 output discard
  0 Tx pause

```

switch#

This example shows how to display the counters configured on a specified interface:

switch# **show interface ethernet 1/1 counters**

```

-----
Port                               InOctets                               InUcastPkts
-----
Eth1/1                             0                                       0

-----
Port                               InMcastPkts                            InBcastPkts
-----
Eth1/1                             0                                       0

-----
Port                               OutOctets                               OutUcastPkts
-----
Eth1/1                             0                                       0

-----
Port                               OutMcastPkts                           OutBcastPkts
-----
Eth1/1                             0                                       0
switch#

```

This example shows how to display the detailed configuration information of a specified subinterface:

switch# **show interface ethernet 1/5.2**



```

Ethernet1/5.2 is up
  Hardware: 1000/10000 Ethernet, address: 0005.73a6.1dbc (bia 0005.73a6.1d6c)
  Description: Eth 1/5.2 subinterfaces
  Internet Address is 192.0.0.3/24
  MTU 1500 bytes, BW 1500 Kbit, DLY 2000 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation 802.1Q Virtual LAN, Vlan ID 100
  EtherType is 0x8100

```

```
switch#
```

This example shows how to display the brief configuration information of a specified subinterface:

```
switch# show interface ethernet 1/5.2 brief
```

```

-----
Ethernet      VLAN    Type Mode   Status Reason                Speed    Port
Interface                                           Ch #
-----
Eth1/5.2      100     eth  routed up      none                10G(D)  --
switch#

```

This example shows how to display the purpose of a specified subinterface:

```
switch# show interface ethernet 1/5.2 description
```

```

-----
Port          Type    Speed  Description
-----
Eth1/5.2      eth     10G    Eth 1/5.2 subinterfaces
switch#

```

This example shows how to display the switchport information for a specific interface:

```

switch# show interface ethernet 1/2 switchport
Name: Ethernet1/2
  Switchport: Enabled
  Switchport Monitor: Not enabled
  Operational Mode: trunk
  Access Mode VLAN: 1 (default)
  Trunking Native Mode VLAN: 1 (default)
  Trunking VLANs Enabled: 1,300-800
  Pruning VLANs Enabled: 2-1001
  Administrative private-vlan primary host-association: none
  Administrative private-vlan secondary host-association: none
  Administrative private-vlan primary mapping: none
  Administrative private-vlan secondary mapping: none
  Administrative private-vlan trunk native VLAN: none
  Administrative private-vlan trunk encapsulation: dot1q
  Administrative private-vlan trunk normal VLANs: none
  Administrative private-vlan trunk private VLANs: none
  Operational private-vlan: none
  Unknown unicast blocked: disabled
  Unknown multicast blocked: disabled
  Monitor destination rate-limit: 1G

```

```
switch#
```

**Related Commands**

Command	Description
<b>interface ethernet</b>	Configures an Ethernet IEEE 802.3 interface.
<b>interface ethernet (Layer 3)</b>	Configures a Layer 3 Ethernet IEEE 802.3 interface.
<b>switchport mode vntag</b>	Configures an Ethernet interface as a VNTag port.
<b>switchport monitor rate-limit</b>	Configures the rate limit for traffic on an interface.

# show interface loopback

To display information about the loopback interface, use the **show interface loopback** command.

**show interface loopback** *lo-number* [**brief** | **description**]

<b>Syntax Description</b>	<i>lo-number</i>	Loopback interface number. The range is from 0 to 1023.
	<b>brief</b>	(Optional) Displays a brief summary of the loopback interface information.
	<b>description</b>	(Optional) Displays the description provided for the loopback interface.

<b>Command Default</b>	None
------------------------	------

<b>Command Modes</b>	EXEC mode
----------------------	-----------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	6.0(2)N1(1)	This command was introduced.

**Examples** This example shows how to display the configuration information for a specific loopback interface:

```
switch# show interface loopback 10
loopback10 is up
  Hardware: Loopback
  MTU 1500 bytes, BW 8000000 Kbit, DLY 5000 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation LOOPBACK
    0 packets input 0 bytes
    0 multicast frames 0 compressed
    0 input errors 0 frame 0 overrun 0 fifo
    0 packets output 0 bytes 0 underruns
    0 output errors 0 collisions 0 fifo

switch#
```

Table 1 describes the significant fields shown in the display.

**Table 1** *show interface loopback* Field Description

Field	Description
Loopback is ...	Whether the interface hardware is currently active (whether carrier detect is present), is currently inactive (down), or has been taken down by an administrator (administratively down).
Hardware	Hardware is Loopback.
MTU	Maximum transmission unit (MTU) of the interface.
BW	Bandwidth (BW) of the interface in kilobits per second.
DLY	Delay (DLY) of the interface in microseconds.

**Table 1** *show interface loopback Field Description (continued)*

Field	Description
reliability	Reliability of the interface as a fraction of 255 (255/255 is 100 percent reliability), calculated as an exponential average over 5 minutes.
txload	Load on the interface for transmitting packets as a fraction of 255 (255/255 is completely saturated), calculated as an exponential average over 5 minutes.
rxload	Load on the interface for receiving packets as a fraction of 255 (255/255 is completely saturated), calculated as an exponential average over 5 minutes.
Encapsulation	Encapsulation method assigned to the interface.
LOOPBACK	Indicates whether loopback is set.
packets input	Total number of error-free packets received by the system.
bytes	Total number of bytes, including data and MAC encapsulation, in the error-free packets received by the system.
multicast frames	Total number of multicast frames enabled on the interface.
compressed	Total number of multicast frames compressed on the interface.
input errors	Sum of all errors that prevented the receipt of datagrams on the interface being examined. This might not equal the sum of the enumerated output errors, because some datagrams might have more than one error and others might have errors that do not fall into any of the specifically tabulated categories.
frame	Number of packets received incorrectly having a CRC error and a noninteger number of octets. On a serial line, this number is usually the result of noise or other transmission problems.
overrun	Number of times that the serial receiver hardware was unable to hand received data to a hardware buffer because the input rate exceeded the receiver's ability to handle the data.
fifo	Number of First In, First Out (FIFO) errors in the receive direction.
packets output	Total number of messages transmitted by the system.
bytes	Total number of bytes, including data and MAC encapsulation, transmitted by the system.
underruns	Number of times that the far-end transmitter has been running faster than the near-end router's receiver can handle. This situation might never happen (be reported) on some interfaces.
output errors	Sum of all errors that prevented the final transmission of datagrams out of the interface being examined. This might equal the sum of the enumerated output errors, as some datagrams might have more than one error, and others might have errors that do not fall into any of the specifically tabulated categories.
collisions	Loopback interface does not have collisions.
fifo	Number of First In, First Out (FIFO) errors in the transmit direction.

This example shows how to display brief information about a specific loopback interface:

```
switch# show interface loopback 10 brief
```

```
-----  
Interface      Status      Description  
-----  
loopback10    up          --  
switch#
```

**Related Commands**

Command	Description
<b>interface loopback</b>	Configures a loopback interface.

# show interface mac-address

To display the information about the MAC address, use the **show interface mac-address** command.

**show interface** [*type slot*[/*QSFP-module*]/*port* \ *portchannel-no*] **mac-address**

<b>Syntax Description</b>	<i>type</i>	(Optional) Interface for which MAC addresses should be displayed. The <i>type</i> can be either Ethernet or EtherChannel.
	<i>slot</i>	The slot number is from 1 to 255.
	<i>QSFP-module</i>	(Optional) Quad Small Form-Factor Pluggable (QSFP) transceiver module. The range is from 1 to 199.
	<i>port</i>	The port number is from 1 to 128.
	<i>portchannel-no</i>	EtherChannel number. The EtherChannel number is from 1 to 4096.

<b>Command Default</b>	None
------------------------	------

<b>Command Modes</b>	EXEC mode
----------------------	-----------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	6.0(2)N1(1)	This command was introduced.

<b>Usage Guidelines</b>	If you do not specify an interface, the system displays all the MAC addresses.
-------------------------	--------------------------------------------------------------------------------

<b>Examples</b>	This example shows how to display the information about MAC addresses for the entire switch:
-----------------	----------------------------------------------------------------------------------------------

```
switch# show interface mac-address
```

Interface	Mac-Address	Burn-in Mac-Address
Ethernet1/1	c84c.753d.5b74	c84c.753d.5b78
Ethernet1/2	c84c.753d.5b74	c84c.753d.5b79
Ethernet1/3	c84c.753d.5b74	c84c.753d.5b7a
Ethernet1/4	c84c.753d.5b74	c84c.753d.5b7b
Ethernet1/5	c84c.753d.5b74	c84c.753d.5b7c
Ethernet1/6	c84c.753d.5b74	c84c.753d.5b7d
Ethernet1/7	c84c.753d.5b74	c84c.753d.5b7e
Ethernet1/8	c84c.753d.5b74	c84c.753d.5b7f
Ethernet1/9	c84c.753d.5b74	c84c.753d.5b80
Ethernet1/10	c84c.753d.5b74	c84c.753d.5b81
Ethernet1/11	c84c.753d.5b74	c84c.753d.5b82
Ethernet1/12	c84c.753d.5b74	c84c.753d.5b83
Ethernet5/1/1	c84c.753d.5b74	a44c.11e7.ea20
Ethernet5/1/2	c84c.753d.5b74	a44c.11e7.ea21
Ethernet5/1/3	c84c.753d.5b74	a44c.11e7.ea22
Ethernet5/1/4	c84c.753d.5b74	a44c.11e7.ea23

Ethernet5/2/1	c84c.753d.5b74	a44c.11e7.ea24
Ethernet5/2/2	c84c.753d.5b74	a44c.11e7.ea25
Ethernet5/2/3	c84c.753d.5b74	a44c.11e7.ea26
Ethernet5/2/4	c84c.753d.5b74	a44c.11e7.ea27
Ethernet5/3/1	c84c.753d.5b74	a44c.11e7.ea28
Ethernet5/3/2	c84c.753d.5b74	a44c.11e7.ea29
Ethernet5/3/3	c84c.753d.5b74	a44c.11e7.ea2a
Ethernet5/3/4	c84c.753d.5b74	a44c.11e7.ea2b
Ethernet5/4/1	c84c.753d.5b74	a44c.11e7.ea2c
Ethernet5/4/2	c84c.753d.5b74	a44c.11e7.ea2d
Ethernet5/4/3	c84c.753d.5b74	a44c.11e7.ea2e
Ethernet5/4/4	c84c.753d.5b74	a44c.11e7.ea2f
Ethernet5/5/1	c84c.753d.5b74	a44c.11e7.ea30
Ethernet5/5/2	c84c.753d.5b74	a44c.11e7.ea31
Ethernet5/5/3	c84c.753d.5b74	a44c.11e7.ea32
Ethernet5/5/4	c84c.753d.5b74	a44c.11e7.ea33
Ethernet5/6/1	c84c.753d.5b74	a44c.11e7.ea34
Ethernet5/6/2	c84c.753d.5b74	a44c.11e7.ea35
Ethernet5/6/3	c84c.753d.5b74	a44c.11e7.ea36
Ethernet5/6/4	c84c.753d.5b74	a44c.11e7.ea37
Ethernet5/7/1	c84c.753d.5b74	a44c.11e7.ea38
Ethernet5/7/2	c84c.753d.5b74	a44c.11e7.ea39
Ethernet5/7/3	c84c.753d.5b74	a44c.11e7.ea3a
Ethernet5/7/4	c84c.753d.5b74	a44c.11e7.ea3b
Ethernet5/8/1	c84c.753d.5b74	a44c.11e7.ea3c
Ethernet5/8/2	c84c.753d.5b74	a44c.11e7.ea3d
Ethernet5/8/3	c84c.753d.5b74	a44c.11e7.ea3e
Ethernet5/8/4	c84c.753d.5b74	a44c.11e7.ea3f
Ethernet5/9/1	c84c.753d.5b74	a44c.11e7.ea40
Ethernet5/9/2	c84c.753d.5b74	a44c.11e7.ea41
Ethernet5/9/3	c84c.753d.5b74	a44c.11e7.ea42
Ethernet5/9/4	c84c.753d.5b74	a44c.11e7.ea43
Ethernet5/10/1	c84c.753d.5b74	a44c.11e7.ea44
Ethernet5/10/2	c84c.753d.5b74	a44c.11e7.ea45
Ethernet5/10/3	c84c.753d.5b74	a44c.11e7.ea46
Ethernet5/10/4	c84c.753d.5b74	a44c.11e7.ea47
Ethernet5/11/1	c84c.753d.5b74	a44c.11e7.ea48
Ethernet5/11/2	c84c.753d.5b74	a44c.11e7.ea49
Ethernet5/11/3	c84c.753d.5b74	a44c.11e7.ea4a
Ethernet5/11/4	c84c.753d.5b74	a44c.11e7.ea4b
Ethernet5/12/1	c84c.753d.5b74	a44c.11e7.ea4c
Ethernet5/12/2	c84c.753d.5b74	a44c.11e7.ea4d
Ethernet5/12/3	c84c.753d.5b74	a44c.11e7.ea4e
Ethernet5/12/4	c84c.753d.5b74	a44c.11e7.ea4f
Ethernet6/1	c84c.753d.5b74	a44c.11e7.e9f0
Ethernet6/2	c84c.753d.5b74	a44c.11e7.e9f1
Ethernet6/3	c84c.753d.5b74	a44c.11e7.e9f2
Ethernet6/4	c84c.753d.5b74	a44c.11e7.e9f3
Ethernet6/5	c84c.753d.5b74	a44c.11e7.e9f4
Ethernet6/6	c84c.753d.5b74	a44c.11e7.e9f5
Ethernet6/7	c84c.753d.5b74	a44c.11e7.e9f6
Ethernet6/8	c84c.753d.5b74	a44c.11e7.e9f7
Ethernet6/9	c84c.753d.5b74	a44c.11e7.e9f8
Ethernet6/10	c84c.753d.5b74	a44c.11e7.e9f9
Ethernet6/11	c84c.753d.5b74	a44c.11e7.e9fa
Ethernet6/12	c84c.753d.5b74	a44c.11e7.e9fb
Ethernet8/1	c84c.753d.5b74	c84c.753d.5c38
Ethernet8/2	c84c.753d.5b74	c84c.753d.5c39
Ethernet8/3	c84c.753d.5b74	c84c.753d.5c3a
Ethernet8/4	c84c.753d.5b74	c84c.753d.5c3b
Ethernet8/5	c84c.753d.5b74	c84c.753d.5c3c
Ethernet8/6	c84c.753d.5b74	c84c.753d.5c3d
Ethernet8/7	c84c.753d.5b74	c84c.753d.5c3e
Ethernet8/8	c84c.753d.5b74	c84c.753d.5c3f

## show interface mac-address

```

Ethernet8/9          c84c.753d.5b74  c84c.753d.5c40
Ethernet8/10         c84c.753d.5b74  c84c.753d.5c41
Ethernet8/11         c84c.753d.5b74  c84c.753d.5c42
Ethernet8/12         c84c.753d.5b74  c84c.753d.5c43
mgmt0                c84c.753d.5b39  c84c.753d.5b39
switch#

```

This example shows how to display the MAC address information for a specific port channel:

```
switch# show interface port-channel 5 mac-address
```

```

-----
Interface          Mac-Address      Burn-in Mac-Address
-----
port-channel15     0005.9b78.6e7c  0005.9b78.6e7c
switch#

```

### Related Commands

Command	Description
<b>mac address-table static</b>	Adds static entries to the MAC address table or configures a static MAC address with IGMP snooping disabled for that address.
<b>show mac address-table</b>	Displays information about the MAC address table.



# show interface mgmt

To display the configuration information for a management interface, use the **show interface mgmt** command.

**show interface mgmt** *intf-num* [**brief** | **capabilities** | **counters** [**detailed** [**all**] | **errors** [**snmp**]] | **description** | **status**]

Syntax Description	
<i>intf-num</i>	Management interface number. The value is 0.
<b>brief</b>	(Optional) Displays a summary of the configuration information for the management interface.
<b>capabilities</b>	(Optional) Displays the interface capabilities information.
<b>counters</b>	(Optional) Displays information about the management interface counters.
<b>detailed</b>	(Optional) Displays detailed information of only the nonzero interface counters.
<b>all</b>	(Optional) Displays all nonzero interface counters.
<b>errors</b>	(Optional) Displays the interface error counters, such as receive or transmit error counters.
<b>snmp</b>	(Optional) Displays the Simple Network Management Protocol (SNMP) MIB values for the nonzero interface counters.
<b>description</b>	(Optional) Displays the interface description.
<b>status</b>	(Optional) Displays the interface line status.

<b>Command Default</b>	None
------------------------	------

<b>Command Modes</b>	EXEC mode
----------------------	-----------

Command History	Release	Modification
	6.0(2)N1(1)	This command was introduced.

**Examples** This example shows how to display the configuration information of the management interface:

```
switch# show interface mgmt 0
mgmt0 is up
  Hardware: GigabitEthernet, address: 0005.9b74.a6c1 (bia 0005.9b74.a6c1)
  Internet Address is 10.193.51.174/21
  MTU 1500 bytes, BW 1000000 Kbit, DLY 10 usec
  reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA
  full-duplex, 1000 Mb/s
  EtherType is 0x0000
  1 minute input rate 11336 bits/sec, 9 packets/sec
  1 minute output rate 2248 bits/sec, 3 packets/sec
  Rx
    22722587 input packets 7487592 unicast packets 7082728 multicast packets
```

## ■ show interface mgmt

```

      8152267 broadcast packets 3375124199 bytes
Tx
      7618171 output packets 7283211 unicast packets 334751 multicast packets
      209 broadcast packets 1056259251 bytes

```

```
switch#
```

This example shows how to display the summary configuration information of the management interface:

```
switch# show interface mgmt 0 brief
```

```

-----
Port    VRF      Status IP Address          Speed    MTU
-----
mgmt0   --      up    10.193.88.192      1000    1500
switch#

```

**Related Commands**

Command	Description
<b>interface mgmt</b>	Configures a management interface.

# show interface port-channel

To display the information about an EtherChannel interface configuration, use the **show interface port-channel** command.

**show interface port-channel** *number* [*.subinterface-number*] [**brief** | **counters** | **description** | **status**]

<b>Syntax Description</b>	<i>number</i>	EtherChannel number. The range is from 1 to 4096.
	<i>.subinterface-number</i>	(Optional) Port-channel subinterface configuration. Use the EtherChannel number followed by a dot (.) indicator and the subinterface number. The format is:  <i>portchannel-number.subinterface-number</i>
	<b>brief</b>	(Optional) Displays a summary of the configuration information for the management interface.
	<b>counters</b>	(Optional) Displays information about the counters configured on the EtherChannel interface.
	<b>description</b>	(Optional) Displays the description of the EtherChannel interface configuration.
	<b>status</b>	(Optional) Displays the operational state of the EtherChannel interface.
<b>Command Default</b>	None	
<b>Command Modes</b>	EXEC mode	
<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	6.0(2)N1(1)	This command was introduced.

## Examples

This example shows how to display the configuration information of a specified EtherChannel interface:

```
switch# show interface port-channel 21
port-channel21 is up
  Hardware: Port-Channel, address: 000d.ece7.df72 (bia 000d.ece7.df72)
  MTU 1500 bytes, BW 10000000 Kbit, DLY 10 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA
  Port mode is trunk
  full-duplex, 10 Gb/s
  Beacon is turned off
  Input flow-control is on, output flow-control is on
  Switchport monitor is off
  Members in this channel: Eth2/3
  Last clearing of "show interface" counters never
  30 seconds input rate 0 bits/sec, 0 packets/sec
  30 seconds output rate 352 bits/sec, 0 packets/sec
  Load-Interval #2: 5 minute (300 seconds)
```

## show interface port-channel

```

    input rate 0 bps, 0 pps; output rate 368 bps, 0 pps
RX
  0 unicast packets  0 multicast packets  0 broadcast packets
  0 input packets  0 bytes
  0 jumbo packets  0 storm suppression packets
  0 runts  0 giants  0 CRC  0 no buffer
  0 input error  0 short frame  0 overrun  0 underrun  0 ignored
  0 watchdog  0 bad etype drop  0 bad proto drop  0 if down drop
  0 input with dribble  0 input discard
  0 Rx pause
TX
  0 unicast packets  15813 multicast packets  9 broadcast packets
  15822 output packets  1615917 bytes
  0 jumbo packets
  0 output errors  0 collision  0 deferred  0 late collision
  0 lost carrier  0 no carrier  0 babble
  0 Tx pause
  1 interface resets

switch#
```

### Related Commands

Command	Description
<b>interface port-channel</b>	Configures an EtherChannel interface.

# show interface status err-disabled

To display the error-disabled state of interfaces, use the **show interface status err-disabled** command.

## show interface status err-disabled

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

**Command Default** None

**Command Modes** EXEC mode

Command History	Release	Modification
	6.0(2)N1(1)	This command was introduced.

**Examples** This example shows how to display the error-disabled state of interfaces:

```
switch# show interface status err-disabled
```

```
-----
Port          Name              Status    Reason
-----
Eth114/1/27   --                down      BPDUGuard errDisable
Eth114/1/28   --                down      BPDUGuard errDisable
Eth114/1/29   --                down      BPDUGuard errDisable
Eth114/1/30   --                down      BPDUGuard errDisable
Eth114/1/31   --                down      BPDUGuard errDisable
Eth114/1/32   --                down      BPDUGuard errDisable
Eth114/1/33   --                down      BPDUGuard errDisable
Eth114/1/34   --                down      BPDUGuard errDisable
Eth114/1/35   --                down      BPDUGuard errDisable
Eth114/1/36   --                down      BPDUGuard errDisable
Eth114/1/39   --                down      BPDUGuard errDisable
Eth114/1/40   --                down      BPDUGuard errDisable
Eth114/1/41   --                down      BPDUGuard errDisable
Eth114/1/42   --                down      BPDUGuard errDisable
Eth114/1/43   --                down      BPDUGuard errDisable
Eth114/1/44   --                down      BPDUGuard errDisable
Eth114/1/45   --                down      BPDUGuard errDisable
Eth114/1/46   --                down      BPDUGuard errDisable
Eth114/1/47   --                down      BPDUGuard errDisable
--More--
switch#
```

**Related Commands**

Command	Description
<b>errdisable detect cause</b>	Enables the error-disabled (err-disabled) detection.
<b>errdisable recovery cause</b>	Enables error-disabled recovery on an interface.

# show interface switchport

To display information about all the switch port interfaces, use the **show interface switchport** command.

## show interface switchport

<b>Syntax Description</b>	This command has no arguments or keywords.
---------------------------	--------------------------------------------

<b>Command Default</b>	None
------------------------	------

<b>Command Modes</b>	EXEC mode
----------------------	-----------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	6.0(2)N1(1)	This command was introduced.

<b>Usage Guidelines</b>	You can configure the rate limit on the following Cisco Nexus 5000 Series switches using the <b>switchport monitor rate-limit 1G</b> command:
-------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------

- Cisco Nexus 5010 Series
- Cisco Nexus 5020 Series

<b>Examples</b>	This example shows how to display information for all Ethernet interfaces:
-----------------	----------------------------------------------------------------------------

```
switch# show interface switchport
Name: Ethernet1/1
  Switchport: Enabled
  Switchport Monitor: Not enabled
  Operational Mode: fex-fabric
  Access Mode VLAN: 1 (default)
  Trunking Native Mode VLAN: 1 (default)
  Trunking VLANs Enabled: 1-3967,4048-4093
  Administrative private-vlan primary host-association: none
  Administrative private-vlan secondary host-association: none
  Administrative private-vlan primary mapping: none
  Administrative private-vlan secondary mapping: none
  Administrative private-vlan trunk native VLAN: none
  Administrative private-vlan trunk encapsulation: dot1q
  Administrative private-vlan trunk normal VLANs: none
  Administrative private-vlan trunk private VLANs:
  Operational private-vlan: none
  Unknown unicast blocked: disabled
  Unknown multicast blocked: disabled

Name: Ethernet1/2
  Switchport: Enabled
  Switchport Monitor: Not enabled
  Operational Mode: fex-fabric
```

## ■ show interface switchport

```

Access Mode VLAN: 1 (default)
Trunking Native Mode VLAN: 1 (default)
Trunking VLANs Enabled: 1-3967,4048-4093
Administrative private-vlan primary host-association: none
--More--
switch#

```

This example shows how to display information for all Ethernet interfaces:

```

switch# show interface switchport
Name: Ethernet1/1
  Switchport: Enabled
  Switchport Monitor: Not enabled
  Operational Mode: fex-fabric
  Access Mode VLAN: 1 (default)
  Trunking Native Mode VLAN: 1 (default)
  Trunking VLANs Enabled: 1,300-795,900,1002-1005
  Pruning VLANs Enabled: 2-1001
  Administrative private-vlan primary host-association: none
  Administrative private-vlan secondary host-association: none
  Administrative private-vlan primary mapping: none
  Administrative private-vlan secondary mapping: none
  Administrative private-vlan trunk native VLAN: none
  Administrative private-vlan trunk encapsulation: dot1q
  Administrative private-vlan trunk normal VLANs: none
  Administrative private-vlan trunk private VLANs: none
  Operational private-vlan: none
  Unknown unicast blocked: disabled
  Unknown multicast blocked: disabled

Name: Ethernet1/2
  Switchport: Enabled
  Switchport Monitor: Not enabled
  Operational Mode: vntag
  Access Mode VLAN: 1 (default)
  Trunking Native Mode VLAN: 1 (default)
  Trunking VLANs Enabled: 1,300-795
  Pruning VLANs Enabled: 2-1001
  Administrative private-vlan primary host-association: none
  Administrative private-vlan secondary host-association: none
  Administrative private-vlan primary mapping: none
  Administrative private-vlan secondary mapping: none
  Administrative private-vlan trunk native VLAN: none
  Administrative private-vlan trunk encapsulation: dot1q
  Administrative private-vlan trunk normal VLANs: none
  Administrative private-vlan trunk private VLANs: none
  Operational private-vlan: none
  Unknown unicast blocked: disabled
  Unknown multicast blocked: disabled

Name: Ethernet1/3
  Switchport: Enabled
  Switchport Monitor: Not enabled
  Operational Mode: trunk
  Access Mode VLAN: 700 (VLAN0700)
  Trunking Native Mode VLAN: 1 (default)
  Trunking VLANs Enabled: 1,300-795
<--snip-->
:
:
Name: port-channel4000
  Switchport: Enabled
  Switchport Monitor: Not enabled
  Operational Mode: access

```



```

Access Mode VLAN: 1 (default)
Trunking Native Mode VLAN: 1 (default)
Trunking VLANs Enabled: 1,300-795,900,1002-1005
Pruning VLANs Enabled: 2-1001
Administrative private-vlan primary host-association: none
Administrative private-vlan secondary host-association: none
Administrative private-vlan primary mapping: none
Administrative private-vlan secondary mapping: none
Administrative private-vlan trunk native VLAN: none
Administrative private-vlan trunk encapsulation: dot1q
Administrative private-vlan trunk normal VLANs: none
Administrative private-vlan trunk private VLANs: none
Operational private-vlan: none
Unknown unicast blocked: disabled
Unknown multicast blocked: disabled

Name: Ethernet101/1/1
Switchport: Enabled
Switchport Monitor: Not enabled
Operational Mode: access
Access Mode VLAN: 1 (default)
Trunking Native Mode VLAN: 1 (default)
Trunking VLANs Enabled: 1,300-795,900,1002-1005
Pruning VLANs Enabled: 2-1001
Administrative private-vlan primary host-association: none
<--Output truncated-->
switch#

```

This example shows how to display the rate limit status for Ethernet interface 1/2:

```

switch# show interface switchport
BEND-2(config-if)# show interface switchport
Name: Ethernet1/1
Switchport: Enabled
Switchport Monitor: Not enabled
Operational Mode: fex-fabric
Access Mode VLAN: 1 (default)
Trunking Native Mode VLAN: 1 (default)
Trunking VLANs Enabled: 1,300-800,900
Pruning VLANs Enabled: 2-1001
Administrative private-vlan primary host-association: none
Administrative private-vlan secondary host-association: none
Administrative private-vlan primary mapping: none
Administrative private-vlan secondary mapping: none
Administrative private-vlan trunk native VLAN: none
Administrative private-vlan trunk encapsulation: dot1q
Administrative private-vlan trunk normal VLANs: none
Administrative private-vlan trunk private VLANs: none
Operational private-vlan: none
Unknown unicast blocked: disabled
Unknown multicast blocked: disabled

Name: Ethernet1/2
Switchport: Enabled
Switchport Monitor: Not enabled
Operational Mode: trunk
Access Mode VLAN: 1 (default)
Trunking Native Mode VLAN: 1 (default)
Trunking VLANs Enabled: 1,300-800
Pruning VLANs Enabled: 2-1001
Administrative private-vlan primary host-association: none
Administrative private-vlan secondary host-association: none
Administrative private-vlan primary mapping: none
Administrative private-vlan secondary mapping: none

```

## show interface switchport

```

Administrative private-vlan trunk native VLAN: none
Administrative private-vlan trunk encapsulation: dot1q
Administrative private-vlan trunk normal VLANs: none
Administrative private-vlan trunk private VLANs: none
Operational private-vlan: none
Unknown unicast blocked: disabled
Unknown multicast blocked: disabled
Monitor destination rate-limit: 1G

Name: Ethernet1/3
Switchport: Enabled
Switchport Monitor: Not enabled
Operational Mode: trunk
Access Mode VLAN: 700 (VLAN0700)
Trunking Native Mode VLAN: 1 (default)
<--Output truncated-->
switch #

```

In the above display, the significant field for Ethernet interface 1/2 is highlighted.

This example shows how to display the voice VLAN information for an Ethernet interface:

```

switch# show interface ethernet 1/28 switchport
Name: Ethernet1/28
Switchport: Enabled
Switchport Monitor: Not enabled
Operational Mode: access
Access Mode VLAN: 3000 (VLAN3000)
Trunking Native Mode VLAN: 1 (default)
Trunking VLANs Enabled: 1,200,300-302,500,2001-2248,3000-3001,4049,4090
Pruning VLANs Enabled: 2-1001
Voice VLAN: 3
Extended Trust State : not trusted [COS = 0]
Administrative private-vlan primary host-association: none
Administrative private-vlan secondary host-association: none
Administrative private-vlan primary mapping: none
Administrative private-vlan secondary mapping: none
Administrative private-vlan trunk native VLAN: none
Administrative private-vlan trunk encapsulation: dot1q
Administrative private-vlan trunk normal VLANs: none
Administrative private-vlan trunk private VLANs: none
Operational private-vlan: none
Unknown unicast blocked: disabled
Unknown multicast blocked: disabled

switch#

```

### Related Commands

Command	Description
<b>switchport access vlan</b>	Sets the access VLAN when the interface is in access mode.
<b>switchport monitor rate-limit</b>	Configures the rate limit for traffic on an interface.

# show interface switchport backup

To display information about all the switch port Flex Links interfaces, use the **show interface switchport backup** command.

**show interface switchport backup [detail]**

<b>Syntax Description</b>	<b>detail</b> (Optional) Displays detailed information for backup interfaces.				
<b>Command Default</b>	None				
<b>Command Modes</b>	EXEC mode				
<b>Command History</b>	<table> <tr> <th>Release</th><th>Modification</th></tr> <tr> <td>6.0(2)N1(1)</td><td>This command was introduced.</td></tr> </table>	Release	Modification	6.0(2)N1(1)	This command was introduced.
Release	Modification				
6.0(2)N1(1)	This command was introduced.				

## Examples

This example shows how to display information for all Flex Links:

```
switch# show interface switchport backup
```

Switch Backup Interface Pairs:

Active Interface	Backup Interface	State
Ethernet1/2	Ethernet1/1	Active Down/Backup Down
Ethernet1/20	Ethernet1/21	Active Down/Backup Down
port-channel300	port-channel301	Active Up/Backup Down
port-channel500	port-channel501	Active Down/Backup Down
port-channel502	port-channel503	Active Down/Backup Down
port-channel504	Ethernet2/1	Active Down/Backup Down

This example shows how to display the detailed information for all Flex Links:

```
switch# show interface switchport backup detail
```

Switch Backup Interface Pairs:

Active Interface	Backup Interface	State
Ethernet1/2	Ethernet1/1	Active Down/Backup Down
Preemption Mode : off		
Multicast Fast Convergence : Off		
Bandwidth : 1000000 Kbit (Ethernet1/2), 10000000 Kbit (Ethernet1/1)		
Ethernet1/20	Ethernet1/21	Active Down/Backup Down
Preemption Mode : off		
Multicast Fast Convergence : Off		
Bandwidth : 10000000 Kbit (Ethernet1/20), 10000000 Kbit (Ethernet1/21)		

## show interface switchport backup

```

port-channel300      port-channel301      Active Up/Backup Down
    Preemption Mode   : forced
    Preemption Delay  : 35 seconds (default)
    Multicast Fast Convergence : On
    Bandwidth : 20000000 Kbit (port-channel300), 10000000 Kbit (port-channel
301)

port-channel500      port-channel501      Active Down/Backup Down
    Preemption Mode   : off
    Multicast Fast Convergence : On
    Bandwidth : 100000 Kbit (port-channel500), 100000 Kbit (port-channel501)

port-channel502      port-channel503      Active Down/Backup Down
    Preemption Mode   : off
    Multicast Fast Convergence : Off
    Bandwidth : 100000 Kbit (port-channel502), 100000 Kbit (port-channel503)

port-channel504      Ethernet2/1          Active Down/Backup Down
    Preemption Mode   : off
    Multicast Fast Convergence : Off
    Bandwidth : 100000 Kbit (port-channel504), 0 Kbit (Ethernet2/1)
switch#

```

Table 2 describes the significant fields displayed in the output.

**Table 2** *show interface switchport backup Field Descriptions*

Field	Description
Active Interface	Layer 2 interface being configured.
Backup Interface	Layer 2 interface to act as a backup link to the interface being configured.
State	Flex Links status.
Preemption Mode	Preemption scheme for a backup interface pair.
Preemption Delay	Preemption delay configured for a backup interface pair.
Multicast Fast Convergence	Fast convergence configured on the backup interface.
Bandwidth	Bandwidth configured on the backup interface.

### Related Commands

Command	Description
<b>switchport backup interface</b>	Configures Flex Links.
<b>show running-config backup</b>	Displays the running configuration information for backup interfaces.
<b>show running-config flexlink</b>	Displays the running configuration information for Flex Links.

# show interface transceiver

To display the information about the transceivers connected to a specific interface, use the **show interface transceiver** command.

**show interface ethernet slot/[QSFP-module/]port transceiver [details]**

Syntax Description	<b>ethernet</b>	Displays information about an Ethernet interface slot number and port number.
	<i>slot</i>	The slot number is from 1 to 255.
	<i>QSFP-module</i>	(Optional) Quad Small Form-Factor Pluggable (QSFP) transceiver module. The range is from 1 to 199.
	<i>port</i>	The port number is from 1 to 128.
	<b>details</b>	(Optional) Displays detailed information about the transceivers on an interface.

Command Default	None
-----------------	------

Command Modes	EXEC mode
---------------	-----------

Command History	Release	Modification
	6.0(2)N1(1)	This command was introduced.

Usage Guidelines	You can use the <b>show interface transceiver</b> command only for physical interfaces.
------------------	-----------------------------------------------------------------------------------------

Examples	This example shows how to display the transceivers connected to a specified Ethernet interface:
----------	-------------------------------------------------------------------------------------------------

```
switch# show interface ethernet 1/1 transceiver
Ethernet1/1
  transceiver is present
  type is SFP-H10GB-CU1M
  name is CISCO-MOLEX
  part number is 74752-9044
  revision is 07
  serial number is MOC14081360
  nominal bitrate is 10300 MBit/sec
  Link length supported for copper is 1 m
  cisco id is --
  cisco extended id number is 4

switch#
```

Related Commands	Command	Description
	interface ethernet	Configures an Ethernet IEEE 802.3 interface.
	show interface capabilities	Displays detailed information about the capabilities of an interface.

# show lacp

To display Link Aggregation Control Protocol (LACP) information, use the **show lacp** command.

**show lacp** { **counters** | **interface ethernet** *slot* [*QSFP-module*] *port* | **neighbor** [**interface** *port-channel number*] | **port-channel** [**interface port-channel** *number*] | **system-identifier** }

Syntax Description		
<b>counters</b>		Displays information about the LACP traffic statistics.
<b>interface ethernet</b>		Displays LACP information for a specific Ethernet interface.
<i>slot</i>		The slot number is from 1 to 255.
<i>QSFP-module</i>		(Optional) Quad Small Form-Factor Pluggable (QSFP) transceiver module. The range is from 1 to 199.
<i>port</i>		The port number is from 1 to 128.
<b>neighbor</b>		Displays information about the LACP neighbor.
<b>interface port-channel</b> <i>number</i>		(Optional) Displays information about a specific EtherChannel. The EtherChannel number is from 1 to 4096.
<b>port-channel</b>		Displays information about all EtherChannels.
<b>system-identifier</b>		Displays the LACP system identification. It is a combination of the port priority and the MAC address of the device.

**Command Default** None

**Command Modes** EXEC mode

Command History	Release	Modification
	6.0(2)N1(1)	This command was introduced.

**Usage Guidelines** Use the **show lacp** command to troubleshoot problems related to LACP in a network.

**Examples** This example shows how to display the LACP system identification:

```
switch# show lacp system-identifier
32768,0-5-9b-78-6e-7c
switch#
```

This example shows how to display the LACP information for a specific interface:

```
switch# show lacp interface ethernet 1/1
Interface Ethernet1/1 is up
Channel group is 1 port channel is Po1
PDUs sent: 1684
PDUs rcvd: 1651
Markers sent: 0
Markers rcvd: 0
```

## ■ show lacp

```

Marker response sent: 0
Marker response rcvd: 0
Unknown packets rcvd: 0
Illegal packets rcvd: 0
Lag Id: [ [(8000, 0-5-9b-78-6e-7c, 0, 8000, 101), (8000, 0-d-ec-c9-c8-3c, 0, 800
0, 101)] ]
Operational as aggregated link since Wed Apr 21 00:37:27 2010

Local Port: Eth1/1   MAC Address= 0-5-9b-78-6e-7c
  System Identifier=0x8000,0-5-9b-78-6e-7c
  Port Identifier=0x8000,0x101
  Operational key=0
  LACP_Activity=active
  LACP_Timeout=Long Timeout (30s)
  Synchronization=IN_SYNC
  Collecting=true
  Distributing=true
  Partner information refresh timeout=Long Timeout (90s)
Actor Admin State=(Ac-1:To-1:Ag-1:Sy-0:Co-0:Di-0:De-0:Ex-0)
Actor Oper State=(Ac-1:To-0:Ag-1:Sy-1:Co-1:Di-1:De-0:Ex-0)
Neighbor: 1/1
  MAC Address= 0-d-ec-c9-c8-3c
  System Identifier=0x8000,0-d-ec-c9-c8-3c
  Port Identifier=0x8000,0x101
  Operational key=0
  LACP_Activity=active
  LACP_Timeout=Long Timeout (30s)
  Synchronization=IN_SYNC
  Collecting=true
  Distributing=true
Partner Admin State=(Ac-0:To-1:Ag-0:Sy-0:Co-0:Di-0:De-0:Ex-0)
Partner Oper State=(Ac-1:To-0:Ag-1:Sy-1:Co-1:Di-1:De-0:Ex-0)
switch#

```

## Related Commands

Command	Description
<b>clear lacp counters</b>	Clears LACP counters.
<b>lacp port-priority</b>	Sets the priority for the physical interfaces for the LACP.
<b>lacp system-priority</b>	Sets the system priority of the switch for the LACP.



# show port-channel capacity

To display the total number of EtherChannel interfaces and the number of free or used EtherChannel interfaces, use the **show port-channel capacity** command.

## show port-channel capacity

<b>Syntax Description</b>	This command has no arguments or keywords.
---------------------------	--------------------------------------------

<b>Command Default</b>	None
------------------------	------

<b>Command Modes</b>	EXEC mode
----------------------	-----------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	6.0(2)N1(1)	This command was introduced.

<b>Examples</b>	This example shows how to display the EtherChannel capacity:
-----------------	--------------------------------------------------------------

<pre>switch# show port-channel capacity Port-channel resources     768 total    29 used    739 free    3% used switch#</pre>
------------------------------------------------------------------------------------------------------------------------------

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>port-channel load-balance ethernet</b>	Configures the load-balancing algorithm for EtherChannels.
	<b>show tech-support port-channel</b>	Displays Cisco Technical Support information about EtherChannels.

# show port-channel compatibility-parameters

To display the parameters that must be the same among the member ports in order to join an EtherChannel interface, use the **show port-channel compatibility-parameters** command.

## show port-channel compatibility-parameters

<b>Syntax Description</b>	This command has no arguments or keywords.
---------------------------	--------------------------------------------

<b>Command Default</b>	None
------------------------	------

<b>Command Modes</b>	EXEC mode
----------------------	-----------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	6.0(2)N1(1)	This command was introduced.

<b>Examples</b>	This example shows how to display the EtherChannel interface parameters:
-----------------	--------------------------------------------------------------------------

```
switch# show port-channel compatibility-parameters
* port mode
```

Members must have the same port mode configured.

```
* port mode
```

Members must have the same port mode configured, either E,F or AUTO. If they are configured in AUTO port mode, they have to negotiate E or F mode when they come up. If a member negotiates a different mode, it will be suspended.

```
* speed
```

Members must have the same speed configured. If they are configured in AUTO speed, they have to negotiate the same speed when they come up. If a member negotiates a different speed, it will be suspended.

```
* MTU
```

Members have to have the same MTU configured. This only applies to ethernet port-channel.

```
* shut lan
```

Members have to have the same shut lan configured. This only applies to ethernet port-channel.

```
* MEDIUM
```

Members have to have the same medium type configured. This only applies to ethernet port-channel.

\* Span mode

Members must have the same span mode.

\* load interval

Member must have same load interval configured.

--More--

<---output truncated--->

switch#

#### Related Commands

Command	Description
<b>port-channel load-balance ethernet</b>	Configures the load-balancing algorithm for EtherChannels.
<b>show tech-support port-channel</b>	Displays Cisco Technical Support information about EtherChannels.

# show port-channel database

To display the aggregation state for one or more EtherChannel interfaces, use the **show port-channel database** command.

**show port-channel database** [**interface port-channel** *number* [*.subinterface-number*]]

Syntax Description	<b>interface</b>	(Optional) Displays information for an EtherChannel interface.
	<b>port-channel</b> <i>number</i>	Displays aggregation information for a specific EtherChannel interface. The <i>number</i> range is from 1 to 4096.
	<i>.subinterface-number</i>	(Optional) Subinterface number. Use the EtherChannel number followed by a dot (.) indicator and the subinterface number. The format is <i>portchannel-number.subinterface-number</i> .

Command Default	None
-----------------	------

Command Modes	EXEC mode
---------------	-----------

Command History	<b>Release</b>	<b>Modification</b>
	6.0(2)N1(1)	This command was introduced.

**Examples** This example shows how to display the aggregation state of all EtherChannel interfaces:

```
switch# show port-channel database
port-channel19
  Last membership update is successful
  4 ports in total, 4 ports up
  First operational port is Ethernet199/1/24
  Age of the port-channel is 0d:09h:11m:30s
  Time since last bundle is 0d:09h:12m:20s
  Last bundled member is
  Ports:   Ethernet199/1/24   [active ] [up] *
           Ethernet199/1/28   [active ] [up]
           Ethernet199/1/30   [active ] [up]
           Ethernet199/1/31   [active ] [up]

port-channel21
  Last membership update is successful
  1 ports in total, 1 ports up
  First operational port is Ethernet2/3
  Age of the port-channel is 0d:09h:11m:30s
  Time since last bundle is 0d:09h:12m:20s
  Last bundled member is
  Ports:   Ethernet2/3       [on] [up] *

port-channel50
  Last membership update is successful
--More--
<---output truncated--->
```

```
switch#
```

This example shows how to display the aggregation state for a specific EtherChannel interface:

```
switch# show port-channel database interface port-channel 21
port-channel21
  Last membership update is successful
  1 ports in total, 1 ports up
  First operational port is Ethernet2/3
  Age of the port-channel is 0d:09h:13m:14s
  Time since last bundle is 0d:09h:14m:04s
  Last bundled member is
  Ports:  Ethernet2/3      [on] [up] *
```

```
switch#
```

**Related Commands**

Command	Description
<b>port-channel load-balance ethernet</b>	Configures the load-balancing algorithm for EtherChannels.
<b>show tech-support port-channel</b>	Displays Cisco Technical Support information about EtherChannels.

# show port-channel load-balance

To display information about EtherChannel load balancing, use the **show port-channel load-balance** command.

**show port-channel load-balance** [**forwarding-path** **interface** **port-channel** *number* {**.** | **vlan** *vlan\_ID*} [**dst-ip** *ipv4-addr*] [**dst-ipv6** *ipv6-addr*] [**dst-mac** *dst-mac-addr*] [**l4-dst-port** *dst-port*] [**l4-src-port** *src-port*] [**src-ip** *ipv4-addr*] [**src-ipv6** *ipv6-addr*] [**src-mac** *src-mac-addr*]]

Syntax Description	
<b>forwarding-path</b>	(Optional) Identifies the port in the EtherChannel interface that forwards the packet.
<b>interface port-channel</b>	
<i>number</i>	EtherChannel number for the load-balancing forwarding path that you want to display. The range is from 1 to 4096.
<b>.</b>	(Optional) Subinterface number separator. Use the EtherChannel number followed by a dot (.) indicator and the subinterface number. The format is <i>portchannel-number.subinterface-number</i> .
<b>vlan</b>	(Optional) Identifies the VLAN for hardware hashing.
<i>vlan_ID</i>	VLAN ID. The range is from 1 to 3967 and 4048 to 4093.
<b>dst-ip</b>	(Optional) Displays the load distribution on the destination IP address.
<i>ipv4-addr</i>	IPv4 address to specify a source or destination IP address. The format is <i>A.B.C.D</i> .
<b>dst-ipv6</b>	(Optional) Displays the load distribution on the destination IPv6 address.
<i>ipv6-addr</i>	IPv6 address to specify a source or destination IP address. The format is <i>A:B::C:D</i> .
<b>dst-mac</b>	(Optional) Displays the load distribution on the destination MAC address.
<i>dst-mac-addr</i>	Destination MAC address. The format is <i>AAAA:BBBB:CCCC</i> .
<b>l4-dst-port</b>	(Optional) Displays the load distribution on the destination port.
<i>dst-port</i>	Destination port number. The range is from 0 to 65535.
<b>l4-src-port</b>	(Optional) Displays the load distribution on the source port.
<i>src-port</i>	Source port number. The range is from 0 to 65535.
<b>src-ip</b>	(Optional) Displays the load distribution on the source IP address.
<b>src-ipv6</b>	(Optional) Displays the load distribution on the source IPv6 address.
<b>src-mac</b>	(Optional) Displays the load distribution on the source MAC address.
<i>src-mac-addr</i>	Source MAC address. The format is <i>AA:BB:CC:DD:EE:FF</i> .

**Command Default** None

**Command Modes** EXEC mode

**Command History**

Release	Modification
6.0(2)N1(1)	This command was introduced.

**Usage Guidelines**

You must use the **vlan** keyword to determine the use of hardware hashing.

When you do not use hardware hashing, the output displays all parameters used to determine the outgoing port ID. Missing parameters are shown as zero values in the output.

If you do not use hardware hashing, the outgoing port ID is determined by using control-plane selection. Hardware hashing is not used in the following scenarios:

- The specified VLAN contains an unknown unicast destination MAC address.
- The specified VLAN contains a known or an unknown multicast destination MAC or destination IP address.
- The specified VLAN contains a broadcast MAC address.
- The EtherChannel has only one active member.
- The destination MAC address is unknown when the load distribution is configured on the source IP address (src-ip), source port (l4-src-port), or source MAC address (src-mac).
- If multichassis EtherChannel trunk (MCT) is enabled and the traffic flows from a virtual port channel (vPC) peer link, the output displays “Outgoing port id (vPC peer-link traffic).”

To get accurate results, you must do the following:

- (For unicast frames) Provide the destination MAC address (dst-mac) and the VLAN for hardware hashing (vlan). When the destination MAC address is not provided, hardware hashing is assumed.
- (For multicast frames) For IP multicast, provide either the destination IP address (dst-ip) or destination MAC address (dst-mac) with the VLAN for hardware hashing (vlan). For non-IP multicast, provide the destination MAC address with the VLAN for hardware hashing.
- (For broadcast frames) Provide the destination MAC address (dst-mac) and the VLAN for hardware hashing (vlan).

**Examples**

This example shows how to display the port channel load-balancing information:

```
switch# show port-channel load-balance
Port Channel Load-Balancing Configuration:
System: source-dest-ip

Port Channel Load-Balancing Addresses Used Per-Protocol:
Non-IP: source-dest-mac
IP: source-dest-ip source-dest-mac

switch#
```

[Table 3](#) describes the fields shown in the display.

**Table 3** *show port-channel load-balance Field Descriptions*

Field	Description
System	Load-balancing method configured on the switch.
Non-IP	Field that will be used to calculate the hash value for non-IP traffic.
IP	Fields used for IPv4 and IPv6 traffic.

This example shows how to display the port channel load-balancing information when hardware hashing is not used:

```
switch# show port-channel load-balance forwarding-path interface port-channel 5 vlan 3
dst-ip 192.0.2.37
Missing params will be substituted by 0's.
Load-balance Algorithm on FEX: source-dest-ip
crc8_hash: Not Used      Outgoing port id: Ethernet133/1/3
Param(s) used to calculate load-balance (Unknown unicast, multicast and broadcast
packets):
    dst-mac:  0000.0000.0000
    vlan id:  3
switch#
```

This example shows how to display the port channel load-balancing information when hardware hashing is not used to determine the outgoing port ID:

```
switch# show port-channel load-balance forwarding-path interface port-channel 10 vlan 1
dst-ip 192.0.2.25 src-ip 192.0.2.10 dst-mac ffff.ffff.ffff src-mac aa:bb:cc:dd:ee:ff
14-src-port 0 14-dst-port 1
Missing params will be substituted by 0's.
Load-balance Algorithm on switch: source-dest-port
crc8_hash: Not Used      Outgoing port id: Ethernet1/1
Param(s) used to calculate load-balance (Unknown unicast, multicast and broadcast
packets):
    dst-mac:  ffff.ffff.ffff
    vlan id:  1
switch#
```

This example shows how to display the port channel load-balancing information when MCT is enabled and traffic flows from a vPC peer link:

```
switch# show port-channel load-balance forwarding-path interface port-channel 10 vlan 1
dst-ip 192.0.2.25 src-ip 192.0.2.10 dst-mac ffff.ffff.ffff src-mac aa:bb:cc:dd:ee:ff
14-src-port 0 14-dst-port 1
Missing params will be substituted by 0's.
Load-balance Algorithm on switch: source-dest-port
crc8_hash: Not Used      Outgoing port id (non vPC peer-link traffic): ethernet1/2
crc8_hash: Not Used      Outgoing port id (vPC peer-link traffic): Ethernet1/1
Param(s) used to calculate load-balance (Unknown unicast, multicast and broadcast
packets):
    dst-mac:  ffff.ffff.ffff
    vlan id:  1
switch#
```

This example shows how to display the port channel load-balancing information when hardware hashing is used to determine the outgoing port ID:

```
switch# show port-channel load-balance forwarding-path interface port-channel 10 vlan 1
dst-ip 192.0.2.25 src-ip 192.0.2.10 src-mac aa:bb:cc:dd:ee:ff 14-src-port 0 14-dst-port 1
```



```
Missing params will be substituted by 0's.
Load-balance Algorithm on switch: source-dest-port
crc8_hash: 204   Outgoing port id: Ethernet1/1
Param(s) used to calculate load-balance:
    dst-port: 1
    src-port: 0
    dst-ip:   192.0.2.25
    src-ip:   192.0.2.10
    dst-mac:  0000.0000.0000
    src-mac:  aabb.ccdd.eeff

switch#
```

**Related Commands**

Command	Description
<b>port-channel load-balance ethernet</b>	Configures the load-balancing method among the interfaces in the channel-group bundle.

# show port-channel summary

To display summary information about EtherChannels, use the **show port-channel summary** command.

## show port-channel summary

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

**Command Default** None

**Command Modes** Global configuration mode  
EXEC mode

Command History	Release	Modification
	6.0(2)N1(1)	This command was introduced.

**Usage Guidelines** Before you use this command, you must configure an EtherChannel group using the **interface port-channel** command.

**Examples** This example shows how to display summary information about EtherChannels:

```
switch# show port-channel summary
Flags:  D - Down          P - Up in port-channel (members)
        I - Individual    H - Hot-standby (LACP only)
        s - Suspended     r - Module-removed
        S - Switched      R - Routed
        U - Up (port-channel)

-----
Group  Port-      Type      Protocol  Member Ports
Channel
-----
1      Po1 (SU)     Eth       LACP      Eth1/1 (P)  Eth1/2 (P)  Eth1/3 (P)
                                         Eth1/4 (P)  Eth1/21 (P) Eth1/22 (P)
                                         Eth1/23 (P) Eth1/24 (P) Eth1/25 (P)
                                         Eth1/26 (P) Eth1/27 (P) Eth1/28 (P)
                                         Eth1/29 (P) Eth1/30 (P) Eth1/31 (P)
                                         Eth1/32 (P)
3      Po3 (SU)     Eth       NONE      Eth1/9 (P)  Eth1/10 (P) Eth1/13 (P)
                                         Eth1/14 (P) Eth1/40 (P)
5      Po5 (SU)     Eth       NONE      Eth3/5 (P)  Eth3/6 (P)
6      Po6 (SU)     Eth       NONE      Eth1/5 (P)  Eth1/6 (P)  Eth1/7 (P)
                                         Eth1/8 (P)
12     Po12 (SU)    Eth       NONE      Eth3/3 (P)  Eth3/4 (P)
15     Po15 (SD)    Eth       NONE      --
20     Po20 (SU)    Eth       NONE      Eth1/17 (P) Eth1/18 (P) Eth1/19 (D)
                                         Eth1/20 (P)
24     Po24 (SU)    Eth       LACP      Eth105/1/27 (P) Eth105/1/28 (P) Eth105/1/29
(P)
```

```

(P)
25    Po25 (SU)    Eth    LACP    Eth105/1/23 (P)  Eth105/1/24 (P)  Eth105/1/25
(P)
33    Po33 (SD)    Eth    NONE    Eth105/1/26 (P)
41    Po41 (SD)    Eth    NONE    --
44    Po44 (SD)    Eth    NONE    --
48    Po48 (SD)    Eth    NONE    --
100   Po100 (SD)   Eth    NONE    --
101   Po101 (SD)   Eth    NONE    --
102   Po102 (SU)   Eth    LACP    Eth102/1/2 (P)
103   Po103 (SU)   Eth    LACP    Eth102/1/3 (P)
104   Po104 (SU)   Eth    LACP    Eth102/1/4 (P)
105   Po105 (SU)   Eth    LACP    Eth102/1/5 (P)
106   Po106 (SU)   Eth    LACP    Eth102/1/6 (P)
107   Po107 (SU)   Eth    LACP    Eth102/1/7 (P)
108   Po108 (SU)   Eth    LACP    Eth102/1/8 (P)
109   Po109 (SU)   Eth    LACP    Eth102/1/9 (P)
110   Po110 (SU)   Eth    LACP    Eth102/1/10 (P)
111   Po111 (SU)   Eth    LACP    Eth102/1/11 (P)
<---output truncated--->
switch#

```

## Related Commands

Command	Description
<b>channel-group (Ethernet)</b>	Assigns and configures a physical interface to an EtherChannel.
<b>interface port-channel</b>	Creates an EtherChannel interface and enters interface configuration mode.

# show port-channel traffic

To display the traffic statistics for EtherChannels, use the **show port-channel traffic** command.

**show port-channel traffic** [**interface port-channel** *number* [*.subinterface-number*]]

## Syntax Description

<b>interface port-channel</b> <i>number</i>	(Optional) Displays traffic statistics for a specified interface. The range is from 1 to 4096.
<i>.subinterface-number</i>	(Optional) Subinterface number. Use the EtherChannel number followed by a dot (.) indicator and the subinterface number. The format is <i>portchannel-number.subinterface-number</i> .

## Command Default

None

## Command Modes

EXEC mode

## Command History

Release	Modification
6.0(2)N1(1)	This command was introduced.

## Examples

This example shows how to display the traffic statistics for all EtherChannels:

```
switch# show port-channel traffic
ChanId      Port  Rx-Ucst Tx-Ucst  Rx-Mcst Tx-Mcst  Rx-Bcst Tx-Bcst
-----
    10    Eth1/7    0.0%   0.0%    0.0%    0.0%    0.0%    0.0%
    10    Eth1/8    0.0%   0.0%    0.0%    0.0%    0.0%    0.0%
    10    Eth1/9    0.0%   0.0%    0.0%    0.0%    0.0%    0.0%
    10   Eth1/10    0.0%   0.0%    0.0%    0.0%    0.0%    0.0%
-----
   4000   Eth1/1    0.0%   0.0%   99.64%  99.81%    0.0%    0.0%
   4000   Eth1/2    0.0%   0.0%    0.06%   0.06%    0.0%    0.0%
   4000   Eth1/3    0.0%   0.0%    0.23%   0.06%    0.0%    0.0%
   4000   Eth1/4    0.0%   0.0%    0.06%   0.06%    0.0%    0.0%
switch#
```

This example shows how to display the traffic statistics for a specific EtherChannel:

```
switch# show port-channel traffic interface port-channel 10
ChanId      Port  Rx-Ucst Tx-Ucst  Rx-Mcst Tx-Mcst  Rx-Bcst Tx-Bcst
-----
    10    Eth1/7    0.0%   0.0%    0.0%    0.0%    0.0%    0.0%
    10    Eth1/8    0.0%   0.0%    0.0%    0.0%    0.0%    0.0%
    10    Eth1/9    0.0%   0.0%    0.0%    0.0%    0.0%    0.0%
    10   Eth1/10    0.0%   0.0%    0.0%    0.0%    0.0%    0.0%
switch#
```

Related Commands	Command	Description
	<b>port-channel load-balance ethernet</b>	Configures the load-balancing algorithm for EtherChannels.
	<b>show tech-support port-channel</b>	Displays Cisco Technical Support information about EtherChannels.

# show port-channel usage

To display the range of used and unused EtherChannel numbers, use the **show port-channel usage** command.

**show port-channel usage**

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

EXEC mode

Command History	Release	Modification
	6.0(2)N1(1)	This command was introduced.

Examples

This example shows how to display the EtherChannel usage information:

```
switch# show port-channel usage
Total 29 port-channel numbers used
=====
Used   :   19 ,  21 ,  50 , 100 , 150 , 170 - 171 , 198 - 199 , 256
         301 , 400 - 401 , 1032 - 1033 , 1111 , 1504 , 1511 , 1514 , 1516 - 1520
         1532 , 1548 , 1723 , 1905 , 1912
Unused:   1 - 18 ,  20 ,  22 - 49 ,  51 - 99 , 101 - 149 , 151 - 169
         172 - 197 , 200 - 255 , 257 - 300 , 302 - 399 , 402 - 1031
         1034 - 1110 , 1112 - 1503 , 1505 - 1510 , 1512 - 1513 , 1515 , 1521 - 1531
         1533 - 1547 , 1549 - 1722 , 1724 - 1904 , 1906 - 1911 , 1913 - 4096
         (some numbers may be in use by SAN port channels)

switch#
```

Related Commands	Command	Description
	port-channel load-balance ethernet	Configures the load-balancing algorithm for EtherChannels.
	show tech-support port-channel	Displays Cisco Technical Support information about EtherChannels.

# show port-security

To display the port security configuration on an interface, use the **show port-security** command.

```
show port-security [address [interface {ethernet slot[/QSFP-module]/port | port-channel
channel-num}] | interface {ethernet slot[/QSFP-module]/port | port-channel channel-num} |
state]
```

Syntax Description	
<b>address</b>	(Optional) Displays the secure MAC address of a port.
<b>interface</b>	(Optional) Displays the secure address for an interface.
<b>ethernet</b>	(Optional) Displays the secure address for an Ethernet interface.
<i>slot</i>	The slot number is from 1 to 255.
<i>QSFP-module</i>	(Optional) Quad Small Form-Factor Pluggable (QSFP) transceiver module. The range is from 1 to 199.
<i>port</i>	The port number is from 1 to 128.
<b>port-channel</b> <i>channel-num</i>	(Optional) Displays the secure address for an EtherChannel interface. The <i>channel-num</i> is from 1 to 4096.
<b>state</b>	(Optional) Displays whether a port is secure.

**Command Default** None

**Command Modes** EXEC mode

Command History	Release	Modification
	6.0(2)N1(1)	This command was introduced.

**Usage Guidelines** This command does not require a license.

**Examples** This example shows how to display the port security configuration on an interface:

```
switch# show port-security
```

```
Total Secured Mac Addresses in System (excluding one mac per port)      : 0
Max Addresses limit in System (excluding one mac per port) : 8192
```

```
-----
Secure Port  MaxSecureAddr  CurrentAddr  SecurityViolation  Security Action
              (Count)        (Count)          (Count)
-----
Ethernet1/5      10             0              0              Shutdown
=====
switch#
```

Related Commands	Command	Description
	<b>clear port-security dynamic</b>	Clears the dynamically secured addresses on a port.
	<b>show running-config port-security</b>	Displays the port security configuration information.
	<b>switchport port-security</b>	Configures the switchport parameters to establish port security.



# show resource

To display the number of resources currently available in the system, use the **show resource** command.

**show resource** [*resource*]

<b>Syntax Description</b>	<i>resource</i> (Optional) Resource name, which can be one of the following: <ul style="list-style-type: none"> <li>• <b>port-channel</b>—Displays the number of EtherChannels available in the system.</li> <li>• <b>vlan</b>—Displays the number of VLANs available in the system.</li> <li>• <b>vrf</b>—Displays the number of virtual routing and forwarding (VRF) instances available in the system.</li> </ul>
---------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

<b>Command Default</b>	None
------------------------	------

<b>Command Modes</b>	EXEC mode
----------------------	-----------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	6.0(2)N1(1)	This command was introduced.

**Examples** This example shows how to display the resources available in the system:

```
switch# show resource
```

Resource	Min	Max	Used	Unused	Avail
-----	----	----	-----	-----	-----
vlan	16	4094	509	0	3
monitor-session	0	2	0	0	2
vrf	2	1000	2	0	998
port-channel	0	768	2	0	766
u4route-mem	32	32	1	31	31
u6route-mem	16	16	1	15	15
m4route-mem	58	58	0	58	58
m6route-mem	8	8	0	8	8
bundle-map	0	16	2	0	14

```
switch#
```

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>show interface port-channel</b>	Displays information about EtherChannels.

# show running-config

To display the contents of the currently running configuration file, use the **show running-config** command.

**show running-config [all]**

<b>Syntax Description</b>	<b>all</b> (Optional) Displays the full operating information including default settings.
---------------------------	-------------------------------------------------------------------------------------------

<b>Command Default</b>	None
------------------------	------

<b>Command Modes</b>	EXEC mode
----------------------	-----------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	6.0(2)N1(1)	This command was introduced.

<b>Examples</b>	This example shows how to display information about the running configuration:  switch# <b>show running-config</b>
	This example shows how to display detailed information about the running configuration:  switch# <b>show running-config all</b>

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>show startup-config</b>	Displays the contents of the startup configuration file.

# show running-config backup

To display the running configuration for backup interfaces, use the **show running-config backup** command.

**show running-config backup [all]**

<b>Syntax Description</b>	<b>all</b>	(Optional) Displays backup interface information including default settings.
<b>Command Default</b>	None	
<b>Command Modes</b>	EXEC mode	
<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	6.0(2)N1(1)	This command was introduced.

## Examples

This example shows how to display the running configuration for backup interfaces:

```
switch# show running-config backup

!Command: show running-config backup
!Time: Sun Jan  4 06:27:36 2009

version 5.0(3)N2(1)
feature flexlink

logging level Flexlink 5

interface port-channel300
  switchport backup interface port-channel301 preemption mode forced
  switchport backup interface port-channel301 multicast fast-convergence

interface port-channel500
  switchport backup interface port-channel501 preemption delay 36
  switchport backup interface port-channel501 multicast fast-convergence

interface port-channel502
  switchport backup interface port-channel503

interface port-channel504
  switchport backup interface Ethernet2/1

interface Ethernet1/2
  switchport backup interface Ethernet1/1

interface Ethernet1/20
  switchport backup interface Ethernet1/21

interface Ethernet2/2
```

```
switchport backup interface port-channel507 preemption mode forced
switch#
```

This example shows how to display the detailed running configuration for backup interfaces:

```
switch# show running-config backup all

!Command: show running-config backup all
!Time: Sun Jan  4 06:28:04 2009

version 5.0(3)N2(1)
feature flexlink

logging level Flexlink 5

interface port-channel300
  switchport backup interface port-channel301 preemption mode forced
  switchport backup interface port-channel301 preemption delay 35
  switchport backup interface port-channel301 multicast fast-convergence

interface port-channel500
  switchport backup interface port-channel501 preemption mode off
  switchport backup interface port-channel501 preemption delay 36
  switchport backup interface port-channel501 multicast fast-convergence

interface port-channel502
  switchport backup interface port-channel503 preemption mode off
  switchport backup interface port-channel503 preemption delay 35

interface port-channel504
  switchport backup interface Ethernet2/1 preemption mode off
  switchport backup interface Ethernet2/1 preemption delay 35

interface Ethernet1/2
  switchport backup interface Ethernet1/1 preemption mode off
  switchport backup interface Ethernet1/1 preemption delay 35

interface Ethernet1/20
  switchport backup interface Ethernet1/21 preemption mode off
  switchport backup interface Ethernet1/21 preemption delay 35

interface Ethernet2/2
  switchport backup interface port-channel507 preemption mode forced
  switchport backup interface port-channel507 preemption delay 35

switch#
```

## Related Commands

Command	Description
<b>show running-config flexlink</b>	Displays the Flex Links running configuration.
<b>show startup-config backup</b>	Displays the startup configuration for backup interfaces.
<b>show startup-config flexlink</b>	Displays the startup configuration for Flex Links.

Command	Description
<b>show tech-support backup</b>	Displays troubleshooting information for backup interfaces.
<b>show tech-support flexlink</b>	Displays troubleshooting information for Flex Links.

# show running-config interface

To display the running configuration for a specific port channel, use the **show running-config interface** command.

**show running-config interface** [{**ethernet** *slot*[/*QSFP-module*]/*port* | **fc** *slot*/*port* | **loopback** *number* | **mgmt** *0* | **port-channel** *channel-number* [**membership**] | **vethernet** *veth-id* | **vlan** *vlan-id*}] [**all** | **expand-port-profile**]

Syntax Description		
<b>ethernet</b>	(Optional) Displays the Ethernet interface slot number and port number.	
<i>slot</i>	The slot number is from 1 to 255.	
<i>QSFP-module</i>	(Optional) Quad Small Form-Factor Pluggable (QSFP) transceiver module. The range is from 1 to 199.	
<i>port</i>	The port number is from 1 to 128.	
<b>fc</b> <i>slot</i> / <i>port</i>	(Optional) Displays the configuration information of the Fibre Channel interface. The slot number is from 1 to 2 and the port number is from 1 to 48.	
<b>loopback</b> <i>number</i>	(Optional) Displays the number of the loopback interface. The range of values is from 1 to 4096.	
<b>mgmt</b> <i>0</i>	(Optional) Displays the configuration information of the management interface.	
<b>port-channel</b> <i>channel-number</i>	(Optional) Displays the number of the port-channel group. The range of values is from 0 to 1023.	
<b>membership</b>	Displays the membership of the specified port channel.	
<b>vethernet</b> <i>veth-id</i>	(Optional) Displays the configuration information of the virtual Ethernet interface. The range is from 1 to 1048575.	
<b>vlan</b> <i>vlan-id</i>	(Optional) Displays the configuration information of the VLAN. The range of values is from 1 to 4096.	
<b>all</b>	(Optional) Displays configured and default information.	
<b>expand-port-profile</b>	(Optional) Displays the configuration information of port profiles.	

**Command Default** None

**Command Modes** Any command mode

Command History	Release	Modification
	6.0(2)N1(1)	This command was introduced.

**Examples** This example shows how to display the running configuration for port channel 10:

```
switch(config)# show running-config interface port-channel 10
version 4.0(1)
```

```
interface port-channel10
  switchport
  switchport mode trunk
```

```
switch(config)#
```

This example shows how to display the running configuration for a virtual Ethernet interface:

```
switch# show running-config interface vethernet 10
```

```
!Command: show running-config interface Vethernet10
!Time: Fri Jan  2 01:40:37 2009
```

```
version 5.1(3)N1(1)
```

```
interface Vethernet10
  inherit port-profile ppVEth
  untagged cos 3
  switchport access vlan 101
  bind interface Ethernet1/5 channel 10
```

```
switch#
```

This example shows how to display the running configuration for VLAN 5 that has been configured as an SVI to be used for in-band management:

```
switch# show running-config interface vlan 5
```

```
!Command: show running-config interface Vlan5
!Time: Mon Apr  4 07:46:35 2005
```

```
version 5.1(3)N1(1)
```

```
interface Vlan5
  management
```

```
switch#
```

#### Related Commands

Command	Description
<b>show startup-config</b>	Displays the running configuration on the device.

# show startup-config

To display the contents of the currently running configuration file, use the **show startup-config** command.

## show startup-config

<b>Syntax Description</b>	This command has no arguments or keywords.
---------------------------	--------------------------------------------

<b>Command Default</b>	None
------------------------	------

<b>Command Modes</b>	EXEC mode
----------------------	-----------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	6.0(2)N1(1)	This command was introduced.

<b>Examples</b>	<p>This example shows how to display information from the startup configuration file:</p> <pre>switch# show startup-config</pre>
-----------------	----------------------------------------------------------------------------------------------------------------------------------

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>show running-config</b>	Displays the contents of the currently running configuration file.



# show startup-config backup

To display the startup configuration for backup interfaces, use the **show startup-config backup** command.

**show startup-config backup [all]**

<b>Syntax Description</b>	<b>all</b>	(Optional) Displays backup interface information including default settings.
<b>Command Default</b>	None	
<b>Command Modes</b>	EXEC mode	
<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	6.0(2)N1(1)	This command was introduced.

## Examples

This example shows how to display the startup configuration for backup interfaces:

```
switch# show startup-config backup

!Command: show startup-config backup
!Time: Sun Jan  4 06:28:43 2009
!Startup config saved at: Thu Jan  1 03:40:28 2009

version 5.0(3)N2(1)
feature flexlink

logging level Flexlink 5

interface port-channel300
  switchport backup interface port-channel301 preemption mode forced

interface port-channel500
  switchport backup interface port-channel501 preemption delay 36
  switchport backup interface port-channel501 multicast fast-convergence

interface port-channel502
  switchport backup interface port-channel503

interface port-channel504
  switchport backup interface Ethernet2/1

interface Ethernet1/2
  switchport backup interface Ethernet1/1

interface Ethernet1/20
  switchport backup interface Ethernet1/21

interface Ethernet2/2
```

## ■ show startup-config backup

```
switchport backup interface port-channel507 preemption mode forced

switch#
```

This example shows how to display the detailed startup configuration for backup interfaces:

```
switch# show startup-config backup all

!Command: show startup-config backup all
!Time: Sun Jan  4 06:29:17 2009
!Startup config saved at: Thu Jan  1 03:40:28 2009

version 5.0(3)N2(1)
feature flexlink

logging level Flexlink 5

interface port-channel300
  switchport backup interface port-channel301 preemption mode forced
  switchport backup interface port-channel301 preemption delay 35

interface port-channel500
  switchport backup interface port-channel501 preemption mode off
  switchport backup interface port-channel501 preemption delay 36
  switchport backup interface port-channel501 multicast fast-convergence

interface port-channel502
  switchport backup interface port-channel503 preemption mode off
  switchport backup interface port-channel503 preemption delay 35

interface port-channel504
  switchport backup interface Ethernet2/1 preemption mode off
  switchport backup interface Ethernet2/1 preemption delay 35

interface Ethernet1/2
  switchport backup interface Ethernet1/1 preemption mode off
  switchport backup interface Ethernet1/1 preemption delay 35

interface Ethernet1/20
  switchport backup interface Ethernet1/21 preemption mode off
  switchport backup interface Ethernet1/21 preemption delay 35

interface Ethernet2/2
  switchport backup interface port-channel507 preemption mode forced
  switchport backup interface port-channel507 preemption delay 35

switch#
```

## Related Commands

Command	Description
<b>copy running-config startup-config</b>	Copies the running configuration information to the startup configuration file.
<b>show running-config backup</b>	Displays the running configuration information for backup interfaces.
<b>show running-config flexlink</b>	Displays Flex Links running configuration information.

Command	Description
<b>show tech-support backup</b>	Displays troubleshooting information for backup interfaces.
<b>show tech-support flexlink</b>	Displays troubleshooting information for Flex Links.

show tech-support

To display troubleshooting information about backup interfaces or Flex Links, use the **show tech-support** command.

```
show tech-support {backup | flexlink}
```

Syntax Description	<b>backup</b>	Displays troubleshooting information about backup interfaces.
	<b>flexlink</b>	Displays troubleshooting information about Flex Links.

Command Default	None
-----------------	------

Command Modes	EXEC mode
---------------	-----------

Command History	<b>Release</b>	<b>Modification</b>
	6.0(2)N1(1)	This command was introduced.

**Examples** This example shows how to display the troubleshooting information about backup interfaces:

```
switch# show tech-support backup
`show interface switchport backup detail`
```

```
Switch Backup Interface Pairs:

Active Interface      Backup Interface      State
-----
Ethernet1/2          Ethernet1/1            Active Down/Backup Down
    Preemption Mode   : off
    Multicast Fast Convergence : Off
    Bandwidth : 1000000 Kbit (Ethernet1/2), 10000000 Kbit (Ethernet1/1)

Ethernet1/20          Ethernet1/21           Active Down/Backup Down
    Preemption Mode   : off
    Multicast Fast Convergence : Off
    Bandwidth : 10000000 Kbit (Ethernet1/20), 10000000 Kbit (Ethernet1/21)

port-channel300        port-channel301        Active Up/Backup Down
    Preemption Mode   : forced
    Preemption Delay : 35 seconds (default)
    Multicast Fast Convergence : On
    Bandwidth : 20000000 Kbit (port-channel300), 10000000 Kbit (port-channel
301)

port-channel500        port-channel501        Active Down/Backup Down
    Preemption Mode   : off
    Multicast Fast Convergence : On
    Bandwidth : 100000 Kbit (port-channel500), 100000 Kbit (port-channel501)

port-channel502        port-channel503        Active Down/Backup Down
```

```

Preemption Mode : off
Multicast Fast Convergence : Off
Bandwidth : 100000 Kbit (port-channel502), 100000 Kbit (port-channel503)

port-channel504      Ethernet2/1      Active Down/Backup Down
Preemption Mode : off
Multicast Fast Convergence : Off
Bandwidth : 100000 Kbit (port-channel504), 0 Kbit (Ethernet2/1)
`show platform backup internal trace`
FLEXLINK Trace Dump in FIFO order
=====
Trace Buffer Size: 5 MB; Num of times buffer wrapped 0; Max Rec-Size 156; Rec_id
for next Msg 6219
=====

::0::[Thu Jan  1 00:01:21 2009 594649 usecs] flexlink_db_initialize: timer libra
ry initialization successful

::1::[Thu Jan  1 00:01:21 2009 594702 usecs] flexlink_db_initialize: starting VD
C 1

::2::[Thu Jan  1 00:01:21 2009 594752 usecs] flexlink_initialize: flexlink_db_in
italize done

::3::[Thu Jan  1 00:01:21 2009 594946 usecs] flexlink_mts_queue_initialize: mts
bind for flexlink_q_mts(7) successful

::4::[Thu Jan  1 00:01:21 2009 595015 usecs] flexlink_mts_queue_initialize: regi
stered MTS_OPC_SDWRAP_DEBUG_DUMP(1530) with flexlink_q_mts

::5::[Thu Jan  1 00:01:21 2009 595064 usecs] flexlink_mts_queue_initialize: regi
stered MTS_OPC_SYSLOG_FACILITY_OPR(185) with flexlink_q_mts

::6::[Thu Jan  1 00:01:21 2009 595113 usecs] flexlink_mts_queue_initialize: regi
stered MTS_OPC_SYSMGR_CFG_ACTION(1360) with flexlink_q_mts

::7::[Thu Jan  1 00:01:21 2009 595161 usecs] flexlink_mts_queue_initialize: regi
stered MTS_OPC_SYSMGR_CFG_SAVED(1361) with flexlink_q_mts

::8::[Thu Jan  1 00:01:21 2009 595209 usecs] flexlink_mts_queue_initialize: regi
stered MTS_OPC_VSH_CMD_TLV(7679) with flexlink_q_mts

::9::[Thu Jan  1 00:01:21 2009 595257 usecs] flexlink_mts_queue_initialize: regi
stered MTS_OPC_VSH_CMD_TLV_SYNC(7682) with flexlink_q_mts

::10::[Thu Jan  1 00:01:21 2009 595304 usecs] flexlink_mts_queue_initialize: reg
istered MTS_OPC_FM_SRV_ENABLE_FEATURE(8925) with flexlink_q_mts

::11::[Thu Jan  1 00:01:21 2009 595351 usecs] flexlink_mts_queue_initialize: reg
istered MTS_OPC_FM_SRV_DISABLE_FEATURE(8926) with flexlink_q_mts

::12::[Thu Jan  1 00:01:21 2009 595400 usecs] flexlink_mts_queue_initialize: reg
istered MTS_OPC_IM_IF_CREATED(62467) with flexlink_q_mts

::13::[Thu Jan  1 00:01:21 2009 595448 usecs] flexlink_mts_queue_initialize: reg
istered MTS_OPC_IM_IF_REMOVED(62468) with flexlink_q_mts

::14::[Thu Jan  1 00:01:21 2009 595495 usecs] flexlink_mts_queue_initialize: reg
<--Output truncated-->
switch#

```

This example shows how to display the troubleshooting information for Flex Links:

```
switch# show tech-support flexlink
```

```
`show interface switchport backup detail`
```

Switch Backup Interface Pairs:

Active Interface	Backup Interface	State
Ethernet1/2	Ethernet1/1	Active Down/Backup Down
Preemption Mode : off Multicast Fast Convergence : Off Bandwidth : 1000000 Kbit (Ethernet1/2), 10000000 Kbit (Ethernet1/1)		
Ethernet1/20	Ethernet1/21	Active Down/Backup Down
Preemption Mode : off Multicast Fast Convergence : Off Bandwidth : 10000000 Kbit (Ethernet1/20), 10000000 Kbit (Ethernet1/21)		
port-channel300	port-channel301	Active Up/Backup Down
Preemption Mode : forced Preemption Delay : 35 seconds (default) Multicast Fast Convergence : On Bandwidth : 20000000 Kbit (port-channel300), 10000000 Kbit (port-channel301)		
port-channel500	port-channel501	Active Down/Backup Down
Preemption Mode : off Multicast Fast Convergence : On Bandwidth : 100000 Kbit (port-channel500), 100000 Kbit (port-channel501)		
port-channel502	port-channel503	Active Down/Backup Down
Preemption Mode : off Multicast Fast Convergence : Off Bandwidth : 100000 Kbit (port-channel502), 100000 Kbit (port-channel503)		
port-channel504	Ethernet2/1	Active Down/Backup Down
Preemption Mode : off Multicast Fast Convergence : Off Bandwidth : 100000 Kbit (port-channel504), 0 Kbit (Ethernet2/1)		

```
`show platform backup internal trace`
```

FLEXLINK Trace Dump in FIFO order

=====

Trace Buffer Size: 5 MB; Num of times buffer wrapped 0; Max Rec-Size 156; Rec\_id for next Msg 6225

=====

```
::0::[Thu Jan 1 00:01:21 2009 594649 usecs] flexlink_db_initialize: timer library initialization successful
```

```
::1::[Thu Jan 1 00:01:21 2009 594702 usecs] flexlink_db_initialize: starting VDC 1
```

```
::2::[Thu Jan 1 00:01:21 2009 594752 usecs] flexlink_initialize: flexlink_db_initialize done
```

```
::3::[Thu Jan 1 00:01:21 2009 594946 usecs] flexlink_mts_queue_initialize: mts bind for flexlink_q_mts(7) successful
```

```
::4::[Thu Jan 1 00:01:21 2009 595015 usecs] flexlink_mts_queue_initialize: registered MTS_OPC_SDWRAP_DEBUG_DUMP(1530) with flexlink_q_mts
```

```
::5::[Thu Jan 1 00:01:21 2009 595064 usecs] flexlink_mts_queue_initialize: registered MTS_OPC_SYSLOG_FACILITY_OPR(185) with flexlink_q_mts
```

```
::6::[Thu Jan 1 00:01:21 2009 595113 usecs] flexlink_mts_queue_initialize: regi
```

```

stered MTS_OPC_SYSMGR_CFG_ACTION(1360) with flexlink_q_mts

::7::[Thu Jan 1 00:01:21 2009 595161 usecs] flexlink_mts_queue_initialize: regi
stered MTS_OPC_SYSMGR_CFG_SAVED(1361) with flexlink_q_mts

::8::[Thu Jan 1 00:01:21 2009 595209 usecs] flexlink_mts_queue_initialize: regi
stered MTS_OPC_VSH_CMD_TLV(7679) with flexlink_q_mts

::9::[Thu Jan 1 00:01:21 2009 595257 usecs] flexlink_mts_queue_initialize: regi
stered MTS_OPC_VSH_CMD_TLV_SYNC(7682) with flexlink_q_mts

::10::[Thu Jan 1 00:01:21 2009 595304 usecs] flexlink_mts_queue_initialize: reg
istered MTS_OPC_FM_SRV_ENABLE_FEATURE(8925) with flexlink_q_mts

::11::[Thu Jan 1 00:01:21 2009 595351 usecs] flexlink_mts_queue_initialize: reg
istered MTS_OPC_FM_SRV_DISABLE_FEATURE(8926) with flexlink_q_mts

::12::[Thu Jan 1 00:01:21 2009 595400 usecs] flexlink_mts_queue_initialize: reg
istered MTS_OPC_IM_IF_CREATED(62467) with flexlink_q_mts
<--Output truncated-->
switch#

```

#### Related Commands

Command	Description
<b>show running-config backup</b>	Displays the running configuration information for backup interfaces.
<b>show running-config flexlink</b>	Displays Flex Links running configuration information.

# show tech-support port-channel

To display troubleshooting information about EtherChannel interfaces, use the **show tech-support port-channel** command.

**show tech-support port-channel**

<b>Syntax Description</b>	This command has no arguments and keywords.
---------------------------	---------------------------------------------

<b>Command Default</b>	None
------------------------	------

<b>Command Modes</b>	EXEC mode
----------------------	-----------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	6.0(2)N1(1)	This command was introduced.

<b>Usage Guidelines</b>	The output from the <b>show tech-support port-channel</b> command is very long. To better manage this output, you can redirect the output to a file.
-------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------

<b>Examples</b>	This example shows how to display Cisco technical support information for EtherChannel interfaces:
-----------------	----------------------------------------------------------------------------------------------------

```
switch# show tech-support port-channel
`show port-channel internal event-history all`
Low Priority Pending queue: len(0), max len(2) [Wed Jan 30 04:05:04 2013]
High Priority Pending queue: len(0), max len(32) [Wed Jan 30 04:05:04 2013]
PCM Control Block info:
pcm_max_channels      : 4096
pcm_max_channel_in_use : 1912
pc count              : 29
hif-pc count          : 20
Max PC Cnt            : 768
=====
PORT CHANNELS:

port-channel19
channel      : 19
bundle      : 65535
ifindex      : 0x16000012
admin mode   : active
oper mode    : active
fop ifindex  : 0x1fc605c0
nports      : 4
active       : 4
pre cfg      : 0
l1l1         : 0
lif          : 0
iod          : 43
global id    : 1
```



```
flag          : 0
--More--
<---output truncated--->
switch#
```

**Related Commands**

Command	Description
<b>port-channel load-balance ethernet</b>	Configures the load-balancing method among the interfaces in the channel-group bundle.
<b>show port-channel load-balance</b>	Displays information on EtherChannel load balancing.

# show udld

To display the Unidirectional Link Detection (UDLD) information for a switch, use the **show udld** command.

**show udld** [**ethernet** *slot*[/*QSFP-module*]/*port* | **global** | **neighbors**]

<b>Syntax Description</b>	<b>ethernet</b>	(Optional) Displays UDLD information for an Ethernet IEEE 802.3z interface.
	<i>slot</i>	The slot number is from 1 to 255.
	<i>QSFP-module</i>	(Optional) Quad Small Form-Factor Pluggable (QSFP) transceiver module. The range is from 1 to 199.
	<i>port</i>	The port number is from 1 to 128.
	<b>global</b>	(Optional) Displays the UDLD global status and configuration information for all interfaces.
	<b>neighbors</b>	(Optional) Displays information about UDLD neighbor interfaces.

**Command Default** None

**Command Modes** EXEC mode

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	6.0(2)N1(1)	This command was introduced.

**Examples** This example shows how to display UDLD information for all interfaces:

```
switch# show udld

Interface Ethernet1/1
-----
Port enable administrative configuration setting: device-default
Port enable operational state: enabled
Current bidirectional state: bidirectional
Current operational state: advertisement - Single neighbor detected
Message interval: 15
Timeout interval: 5

      Entry 1
      -----
      Expiration time: 41
      Cache Device index: 1
      Current neighbor state: bidirectional
      Device ID: FLC12280095
      Port ID: Ethernet1/1
      Neighbor echo 1 devices: SSI130205RT
      Neighbor echo 1 port: Ethernet1/1
```

```

Message interval: 15
Timeout interval: 5
CDP Device name: N5Kswitch-2(FLC12280095)

```

```

Interface Ethernet1/2
-----
Port enable administrative configuration setting: device-default
Port enable operational state: enabled
Current bidirectional state: bidirectional
Current operational state: advertisement - Single neighbor detected
Message interval: 15
Timeout interval: 5

Entry 1
-----
--More--
switch#

```

This example shows how to display the UDLD information for a specified interface:

```

switch# show udld ethernet 1/1

Interface Ethernet1/1
-----
Port enable administrative configuration setting: device-default
Port enable operational state: enabled
Current bidirectional state: bidirectional
Current operational state: advertisement - Single neighbor detected
Message interval: 15
Timeout interval: 5

Entry 1
-----
Expiration time: 41
Cache Device index: 1
Current neighbor state: bidirectional
Device ID: FLC12280095
Port ID: Ethernet1/1
Neighbor echo 1 devices: SSI130205RT
Neighbor echo 1 port: Ethernet1/1

Message interval: 15
Timeout interval: 5
CDP Device name: N5Kswitch-2(FLC12280095)

switch#

```

This example shows how to display the UDLD global status and configuration for all interfaces:

```

switch# show udld global

UDLD global configuration mode: enabled
UDLD global message interval: 15
switch#

```

This example shows how to display the UDLD neighbor interfaces:

```

switch# show udld neighbors

```

Port	Device Name	Device ID	Port ID	Neighbor State
Ethernet1/1	FLC12280095	1	Ethernet1/1	bidirectional
Ethernet1/2	FLC12280095	1	Ethernet1/2	bidirectional
Ethernet1/3	FLC12280095	1	Ethernet1/3	bidirectional
Ethernet1/4	FLC12280095	1	Ethernet1/4	bidirectional

```
show udd
```

```

Ethernet1/7      JAF1346000H    1      Ethernet1/7      bidirectional
Ethernet1/8      JAF1346000H    1      Ethernet1/8      bidirectional
Ethernet1/9      JAF1346000C    1      Ethernet1/9      bidirectional
Ethernet1/10     JAF1346000C    1      Ethernet1/10     bidirectional

```

```
switch#
```

#### Related Commands

Command	Description
<b>udd (configuration mode)</b>	Configures the UDD protocol on the switch.
<b>udd (Ethernet)</b>	Configures the UDD protocol on an Ethernet interface.

# show vpc brief

To display brief information about the virtual port channels (vPCs), use the **show vpc brief** command.

**show vpc brief** [*vpc number*]

<b>Syntax Description</b>	<b>vpc number</b>	(Optional) Displays brief information about the specified vPC. The range is from 1 to 4096.
<b>Defaults</b>	None	
<b>Command Modes</b>	Any command mode	
<b>Supported User Roles</b>	network-admin	
<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	6.0(2)N1(1)	This command was introduced.

**Usage Guidelines**

The **show vpc brief** command displays the vPC domain ID, the peer-link status, the keepalive message status, whether the configuration consistency is successful, and whether the peer link formed or failed to form.

This command is not available if you have not enabled the vPC feature. See the **feature vpc** command for information on enabling vPCs.

You can display the track object, if you have configured a tracked object for running vPCs on a single module under the vpc-domain configuration mode.

**Examples**

This example shows how to display brief information about the vPCs:

```
switch(config)# show vpc brief
```

Legend:

(\*) - local vpc is down, forwarding via vPC peer-link

```
vPC domain id           : 10
Peer status             : peer adjacency formed ok
vPC keep-alive status   : peer is alive
Configuration consistency status: success
vPC role                 : primary
Number of vPC configured : 1
```

vPC Peer-link status

```
-----
id   Port   Status Active vlans
--   --
```

```
1    Po10    up      1-100
```

```
vPC status
```

```
-----
id   Port   Status Consistency Reason                Active vlans
--   -
20   Po20   up      success    success                    1-100
-----
```

This example also shows how to display brief information about the vPCs. In this example, the port channel failed the consistency check, and the device displays the reason for the failure:

```
switch(config)# show vpc brief
```

```
Legend:
```

```
(*) - local vpc is down, forwarding via vPC peer-link
```

```
vPC domain id           : 10
Peer status             : peer adjacency formed ok
vPC keep-alive status   : peer is alive
Configuration consistency status: failed
Configuration consistency reason: vPC type-1 configuration incompatible - STP interface
port type inconsistent
vPC role                : secondary
Number of vPC configured : 1
```

```
vPC Peer-link status
```

```
-----
id   Port   Status Active vlans
--   -
1    Po10   up      1-100
-----
```

```
vPC status
```

```
-----
id   Port   Status Consistency Reason                Active vlans
--   -
20   Po20   up      failed    vPC type-1 configuration -
                                     incompatible - STP
                                     interface port type
                                     inconsistent
-----
```

This example shows how to display information about the tracked objects in the vPCs:

```
switch(config)# show vpc brief
```

```
Legend:
```

```
(*) - local vpc is down, forwarding via vPC peer-link
```

```
vPC domain id           : 1
Peer status             : peer adjacency formed ok
vPC keep-alive status   : peer is alive
Configuration consistency status: success
vPC role                : secondary
Number of vPC configured : 3
Track object            : 12
```

```
vPC Peer-link status
```

```
-----
id   Port   Status Active vlans
--   -
1    Po10   up      1-100
-----
```

Related Commands	Command	Description
	<b>feature vpc</b>	Enables vPCs on the device.
	<b>show port channel summary</b>	Displays information about port channels.







# U Commands

---

This chapter describes the Cisco NX-OS interface commands that begin with U.

## udd (Ethernet)

To enable and configure the Unidirectional Link Detection (UDLD) protocol on an Ethernet interface, use the **udd** command. To disable UDLD, use the **no** form of this command.

**udd** { **aggressive** | **disable** | **enable** }

**no udd** { **aggressive** | **disable** | **enable** }

### Syntax Description

<b>aggressive</b>	Enables UDLD in aggressive mode on the interface.
<b>disable</b>	Disables UDLD on the interface.
<b>enable</b>	Enables UDLD in normal mode on the interface.

### Command Default

None

### Command Modes

Interface configuration mode

### Command History

Release	Modification
6.0(2)N1(1)	This command was introduced.

### Usage Guidelines

You can configure normal or aggressive UDLD modes for an Ethernet interface. Before you can enable a UDLD mode for an interface, you must make sure that UDLD is enabled on the switch. UDLD must also be enabled on the other linked interface and its device.

To use the normal UDLD mode on a link, you must configure one of the ports for normal mode and configure the port on the other end for the normal or aggressive mode. To use the aggressive UDLD mode, you must configure both ends of the link for aggressive mode.

### Examples

This example shows how to enable the normal UDLD mode for an Ethernet port:

```
switch# configure terminal
switch(config)# interface ethernet 1/1
switch(config-if)# udd enable
```

This example shows how to enable the aggressive UDLD mode for an Ethernet port:

```
switch(config-if)# udd aggressive
```

This example shows how to disable UDLD for an Ethernet port:

```
switch(config-if)# udd disable
```

Related Commands	Command	Description
	show udld	Displays the administrative and operational UDLD status.





# V Commands

---

This chapter describes the Cisco NX-OS interface commands that begin with V.

# vpc domain

To create a virtual port-channel (vPC) domain, use the **vpc domain** command. To remove a vPC domain, use the **no** form of this command.

```
vpc domain domain-id

no vpc domain domain-id
```

Syntax Description	domain-id	Domain ID for the vPC. The range of numbers is from 1 to 1000. You must use unique vPC IDs for each vPC within a single virtual device context (VDC).
--------------------	-----------	-------------------------------------------------------------------------------------------------------------------------------------------------------

Defaults	None
----------	------

Command Modes	Any command mode
---------------	------------------

SupportedUserRoles	network-admin
--------------------	---------------

Command History	Release	Modification
	6.0(2)N1(1)	This command was introduced.

**Usage Guidelines**

You must enable the vPC feature before you can create a vPC domain.

You put all vPC interfaces, including the vPC peer link, on both of the vPC peer devices into the identical vPC domain. You must have unique vPC domain numbers within each VDC. Once you create a vPC domain, the system automatically creates a vPC system MAC address that is unique to that vPC.

You also use this command to enter the vpc-domain command mode in order to configure vPC parameters.

This command does not require a license.

**Examples**

This example shows how to create a vPC domain:

```
switch# configure terminal
switch(config)# vpc domain 5
switch(config-vpc-domain)#
```

This example shows how to enter the vpc-domain command mode to configure an existing vPC domain:

```
switch# configure terminal
switch(config)# vpc domain 5
switch(config-vpc-domain)#
```

**Related Commands**

Command	Description
<b>show vpc brief</b>	Displays information about vPCs. If the feature is not enabled, the system displays an error when you enter this command.

