Cisco Nexus 5500 Series NX-OS Interfaces Command Reference

Cisco NX-OS Releases 6.x

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Cisco Nexus 5500 Series NX-OS Interfaces Command Reference

CONTENTS

New and Changed Information

This chapter provides release-specific information for each new and changed feature in the *Cisco Nexus 5500 Series NX-OS Interfaces Command Reference*. The latest version of this document is available at the following Cisco website:

http://www.cisco.com/en/US/products/ps9670/prod_command_reference_list.html

To check for additional information about this Cisco NX-OS Release, see the *Cisco Nexus 5500 Series NX-OS Release Notes, Release 6.0* available at the following Cisco website:

http://www.cisco.com/en/US/products/ps9670/prod_release_notes_list.html

New and Changed Information for Cisco NX-OS Releases

This section includes the following topics:

- New and Changed Information for Cisco NX-OS Release 6.0(2)N1(2), page v

New and Changed Information for Cisco NX-OS Release 6.0(2)N1(2)

This table summarizes the new and changed features for Cisco NX-OS Release 6.0(2)N1(1) and tells you where they are documented.

Table 1 New and Changed Information for Release 6.0(2)N1(1)

Feature	Description	Where Documented
4x10G Generic Expansion Module (GEM)	4-port QSFP+ Generic Expansion Module (GEM)	• Chapter , “I Commands” • Chapter , “Show Commands”

Preface

This preface describes the audience, organization, and conventions of the *Cisco Nexus 5500 Series NX-OS Interfaces Command Reference*. It also provides information on how to obtain related documentation.

This preface includes the following sections:

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:

`screen font`	Terminal sessions and information that the switch displays are in screen font.
`boldface screen font`	Information you must enter is in boldface screen font.
`italic screen font`	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 Cisco Nexus 5000 Series Switches and Cisco Nexus 2000 Series Fabric Extenders is available at the following URL:

http://www.cisco.com/en/US/products/ps9670/tsd_products_support_series_home.html

The documentation set includes the following types of documents:

- Licensing Information Guide
- Release Notes
- Installation and Upgrade Guides
- Configuration Guides
- Configuration Examples and TechNotes
- Programming Guides
- Operations Guides
- Error and System Message Guides
- Field Notices
- Security Advisories, Responses and Notices
- Troubleshooting Guide
- Command References
- MIB Reference Guide

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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

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

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*]}

Syntax Description

kbps	Informational bandwidth in kilobits per second. Valid values are from 1 to 10000000.
inherit	(Optional) Specifies that the bandwidth be inherited from the parent interface.

Command Default

1000000 kbps

Command Modes

Interface configuration mode
Subinterface configuration mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

The **bandwidth** 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 **bandwidth inherit** command controls how a subinterface inherits the bandwidth of its main interface.

The **no bandwidth inherit** 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 **bandwidth inherit** 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.

Examples

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
show interface	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
5.2(1)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
show interface	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

delay-seconds	Time, in seconds, to wait for the system to change states. Enter an integer in the range 0 to 60.
msec	Specifies the delay time in milliseconds.
milliseconds	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
5.2(1)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
show running-config interface	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

advertise {**v1** | **v2**}	Configures the version to use to send CDP advertisements. Version-2 is the default state.
enable	Enables CDP for all Ethernet interfaces.
format device-id	Configures the format of the CDP device ID.
mac-address	Uses the MAC address as the CDP device ID.
serial-number	Uses the serial number as the CDP device ID.
system-name	Uses the system name, which can be expressed as a fully qualified domain name, as the CDP device ID. This is the default.
holdtime *seconds*	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.
timer *seconds*	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
5.2(1)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
5.2(1)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
show cdp	Displays Cisco Discovery Protocol (CDP) information.
show interface	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

number	Number of channel group. The *number* range is from 1 to 4096. Cisco NX-OS creates the EtherChannel associated with this channel group if the EtherChannel does not already exist.
force	(Optional) Specifies that the LAN port be forcefully added to the channel group.
mode	(Optional) Specifies the EtherChannel mode of the interface.
active	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.
on	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. 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 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. The default mode is **on**.
passive	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
5.2(1)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
show interface port-channel	Displays information about the traffic on the specified EtherChannel interface.
show lacp	Displays LACP information.
show port-channel summary	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*]

Syntax Description

interface	(Optional) Clears the LACP counters of a specific interface.
port-channel *channel-num*	(Optional) Specifies a port channel interface. The range is from 1 to 4096.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to clear all LACP counters:

```
switch# clear lacp counters
```

This example shows how to clear the LACP on a port channel:

```
switch# clear lacp counters interface port-channel 100
```

Related Commands

Command	Description
show lacp	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*]

Syntax Description

name	(Optional) Name of a specific counter to clear. The name can be a maximum of 64 characters.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
5.2(1)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
```

Related Commands

Command	Description
show mac access-lists	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

Syntax Description

tens-of-microseconds	Throughput delay in tens of microseconds. The range is from 1 to 16,777,215.

Command Default

10 microseconds

Command Modes

Interface configuration mode
Subinterface configuration mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Examples

This example shows how to set a delay of 30,000 microseconds on an interface:

```
switch(config)# interface ethernet 1/1
switch(config-if)# delay 30000
switch(config-if)#
```

This example shows how to set a delay of 1000 microseconds on a subinterface:

```
switch(config)# interface ethernet 1/1.1
switch(config-subif)# delay 1000
switch(config-subif)#
```

Related Commands

Command	Description
interface ethernet (Layer 3)	Configures an Ethernet routed interface.
show interface	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

Syntax Description

description	String description of the interface configuration. This string is limited to 80 characters.

Command Default

No description is added.

Command Modes

Interface configuration mode
Subinterface configuration mode
Virtual Ethernet interface configuration

Command History

Release	**Modification**
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

The **description** 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 **show interface** and **show running-config**.

You can use this command on the following interfaces:

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

Examples

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)#
```

Related Commands

Command	Description
show interface ethernet	Displays the interface configuration information.
show interface vethernet	Displays the virtual Ethernet interface configuration information.
show running-config	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

full	Specifies the duplex mode as full.
half	Specifies the duplex mode as half. **Note** This keyword is not supported on a management interface.
auto	Specifies the duplex mode as autonegotiate.

Command Default

None

Command Modes

Interface configuration mode

Command History

Release	Modification
5.2(1)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 5500Series 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)#
```

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

all	Enables error detection on all cases.
link-flap	Enables error disable detection on linkstate-flapping.
loopback	Enables error disable detection on loopback.

Command Default

Enabled

Command Modes

Global configuration mode

Command History

Release	Modification
5.2(1)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
errdisable recovery	Configures recovery from the err-disabled state.
show interface status err-disabled	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

all	Enables a timer to recover from all causes.
bpduguard	Enables a timer to recover from bridge protocol data unit (BPDU) Guard error disable state.
failed-port-state	Enables a timer to recover from a Spanning Tree Protocol (STP) set port state failure.
link-flap	Enables a timer to recover from linkstate flapping.
pause-rate-limit	Enables a timer to recover from the pause rate limit error disabled state.
udld	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
5.2(1)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
errdisable detect cause	Enables the error disabled (err-disabled) detection.
show interface status err-disabled	Displays the interface error disabled state.

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

Syntax Description

time	Error disable recovery time interval. The range is from 30 to 65535 seconds.

Command Default

Disabled

Command Modes

Global configuration mode

Command History

Release	Modification
5.2(1)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.

The device waits 300 seconds to retry.

Examples

This example shows how to enable error disable recovery time interval to 100 seconds:

```
switch(config)# errdisable recovery interval 100
switch(config)#
```

Related Commands

Command	Description
errdisable recovery cause	Enables an error disabled recovery on an interface.
show interface status err-disabled	Displays the interface error disabled state.

F Commands

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

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
5.2(1)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
show lacp	Displays information on LACP.
show feature	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.

Command Default

Enabled

Command History

Release	Modification
5.2(1)N1(1)	This feature was introduced.

Usage Guidelines

You cannot enable or disable LLDP on a Cisco Nexus 5000 Series switch. 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: Tue Feb 10 12:36:03 2009

version 5.0(3)N1(1)
feature telnet
feature lldp

username admin password 5 $1$d8lkfqC8$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.

Related Commands

Command	Description
lldp	Configures the global LLDP options on the switch.
lldp (Interface)	Configures the LLDP feature on an interface.
show feature	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

Syntax Description

This command has no arguments or keywords.

Command Default

Disabled

Command Modes

Global configuration mode

Command History

Release	Modification
5.1(3)N1(1)	This command was introduced.

Usage Guidelines

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.

Examples

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)#
```

Related Commands

Command	Description
show feature	Displays the features that are enabled or disabled on the switch.

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

feature udld

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 udld** command. To disable UDLD on the switch, use the **no** form of this command.

feature udld

no feature udld

Syntax Description

This command has no arguments or keywords.

Command Default

UDLD is disabled.

Command Modes

Global configuration mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Examples

This example shows how to enable UDLD on the switch:

```
switch(config)# feature udld
```

Related Commands

Command	Description
show udld	Displays the administrative and operational UDLD status.
show feature	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

Command History

Release	Modification
5.2(1)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)#
```

Related Commands

Command	Description
show interface port-channel	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

Syntax Description

This command has no arguments or keywords.

Command Default

Disabled

Command Modes

Virtual Ethernet interface configuration mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

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)#
```

Related Commands

Command	Description
show interface vethernet	Displays virtual Ethernet interface configuration information.
show running-config interface	Displays the running configuration information for an interface.

I Commands

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

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*

Syntax Description

chassis_ID	(Optional) Specifies the Fabric Extender chassis ID. The chassis ID is from 100 to 199. **Note** This argument is not optional when addressing the host interfaces of a Cisco Nexus 2000 Series Fabric Extender.
slot	Slot from 1 to 3. The following list defines the slots available: • Slot 1 includes all the fixed ports. A Fabric Extender only has one slot. • Slot 2 includes the ports on the upper expansion module (if populated). • Slot 3 includes the ports on the lower expansion module (if populated).
QSFP-module	(Optional) The QSFP+ port on the Generic Expansion Module (GEM). The port numbers are from 1 to 4.
port	• Port number within a particular slot. The port number is from 1 to 128. • (Optional) The 10G port of the QSFP+ port. The port numbers are from 1 to 4.

Command Default

None

Command Modes

Global configuration mode

Command History

Release	Modification
6.0(2)N1(2)	Support for the QSFP+ GEM.
5.2(1)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)#
```

Related Commands

Command	Description
interface vethernet	Configures a virtual Ethernet interface.
show fex	Displays all configured Fabric Extender chassis connected to the switch.
show interface ethernet	Displays various parameters of an Ethernet IEEE 802.3 interface.
speed	Sets the speed on the interface.
vtp (interface)	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*]

Syntax Description

chassis_ID	(Optional) Specifies the Fabric Extender chassis ID. The chassis ID is from 100 to 199. **Note** This argument is not optional when addressing the host interfaces of a Cisco Nexus 2000 Series Fabric Extender.
slot	Slot from 1 to 3. The following list defines the slots available: • Slot 1 includes all the fixed ports. A Fabric Extender only has one slot. • Slot 2 includes the ports on the upper expansion module (if populated). • Slot 3 includes the ports on the lower expansion module (if populated).
QSFP-module	(Optional) The QSFP+ port on the Generic Expansion Module (GEM). The port numbers are from 1 to 4.
port	Port number within a particular slot. The port number is from 1 to 128.
.	(Optional) Specifies the subinterface separator.
subintf-port-no	(Optional) Port number for the subinterface. The range is from 1 to 48.

Command Default

None

Command Modes

Global configuration mode
Interface configuration mode

Command History

Release	Modification
6.0(2)N1(2)	Support for the QSFP+ GEM.
5.2(1)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 a 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
bandwidth	Sets the bandwidth parameters for an interface.
delay	Configures the interface throughput delay value.
encapsulation	Sets the encapsulation type for an interface.
ip address	Sets a primary or secondary IP address for an interface.
inherit	Assigns a port profile to an interface.
interface vethernet	Configures a virtual Ethernet interface.
no switchport	Configures an interface as a Layer 3 interface.
service-policy	Configures a service policy for an interface.
show fex	Displays all configured Fabric Extender chassis connected to the switch.
show interface ethernet	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*

Syntax Description

number	Interface number; valid values are from 0 to 1023.

Command Default

None

Command Modes

Global configuration mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

Use the **interface loopback** command to create or modify loopback interfaces.

From the loopback interface configuration mode, the following parameters are available:

- **description**—Provides a description of the purpose of the interface.
- **ip**—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.
- **logging**—Configure logging of events.
- **shutdown**—Shut down traffic on the interface.

This command does not require a license.

Examples

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)#
```

Related Commands

Command	Description
show interface loopback	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*

Syntax Description

mgmt-intf-num	Management interface number. The interface number is 0.

Command Default

None

Command Modes

Global configuration mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Examples

This example shows how to enter the management interface configuration mode:

```
switch# configure terminal
switch(config)# interface mgmt 0
switch(config-if)#
```

Related Commands

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

Syntax Description

channel-number	Channel number that is assigned to this EtherChannel logical interface. The range is from 1 to 4096.
.	(Optional) Specifies the subinterface separator. **Note** Applies to Layer 3 interfaces.
subintf-channel-no	(Optional) Port number of the EtherChannel subinterface. The range is from 1 to 4093. **Note** Applies to Layer 3 interfaces.

Command Default

None

Command Modes

Global configuration mode
Interface configuration mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

A port can belong to only one channel group.

When you use the **interface port-channel** command for Layer 2 interfaces, follow these guidelines:

- If you are using CDP, you must configure it only on the physical interface and not on the EtherChannel interface.
- 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.
- 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.

You must use the **no switchport** 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.

Use the **switchport** 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.

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
encapsulation	(Layer 3 interfaces) Sets the encapsulation type for an interface.
ip address	(Layer 3 interfaces) Sets a primary or secondary IP address for an interface.
no switchport	(Layer 3 interfaces) Configures an interface as a Layer 3 interface.
show interface	Displays configuration information about interfaces.
show lacp	Displays LACP information.
show port-channel summary	Displays information on the EtherChannels.
vtp (interface)	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
5.2(1)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 chanel 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
show lacp	Displays LACP information.
show running-config	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

priority	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
5.2(1)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
show lacp	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

Syntax Description

This command has no arguments or keywords.

Command Default

1 second

Command Modes

Interface configuration mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

You must enable LACP before using this command.

You can configure the LACP rate fast feature on the LACP ports of a Cisco Nexus 5000 Series switch or a Cisco Nexus 2000 Series Fabric Extender that is connected to a Cisco Nexus 5000 Series switch.

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.

Examples

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
```

Related Commands

Command	Description
feature lacp	Enables or disables LACP on the switch.

Command	Description
interface ethernet	Enters Ethernet interface configuration mode.
show lacp	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

Syntax Description

This command has no arguments or keywords.

Command Default

Disabled

Command Modes

Interface configuration mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

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.

Examples

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)#
```

Related Commands

Command	Description
show lacp	Displays LACP information.
show running-config	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

priority	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
5.2(1)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
show lacp	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

Syntax Description

time *milliseconds*	(Optional) Specifies the extended debounce timer. The range is from 0 to 5000 milliseconds. A value of 0 milliseconds disables the debounce time.

Command Default

None

Command Modes

Interface configuration mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

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.

Examples

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
show interface ethernet	Displays the interface configuration information.
show interface debounce	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.
seconds	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
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

Use the **load-interval** 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:

- Ethernet interfaces
- Port-channel interfaces

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

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

Interface configuration mode
Switch profile configuration mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

You can use this command on a VLAN interface.

Examples

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)#
```

Related Commands

Command	Description
show running-config interface	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
5.2(1)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
copy running-config startup-config	Saves the running configuration to the startup configuration file.
interface ethernet (Layer 3)	Configures an Ethernet routed interface or subinterface.
inteface loopback	Configures a loopback interface.
interface port-channel	Configures an EtherChannel interface or subinterface.
ip address	Sets a primary or secondary IP address for an interface.
show interfaces	Displays interface information.

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

Syntax Description

This command has no arguments or keywords.

Defaults

Peer switch Layer 2 topology is disabled.

Command Modes

vPC domain configuration mode

SupportedUserRoles

network-admin

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to enable the vPC switch pair to appear as a single STP root in the Layer 2 topology:

```
switch(config)# vpc domain 5
switch(config-vpc-domain)# peer-switch
2010 Apr 28 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.
```

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

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

Command Default

None

Command Modes

Slot configuration mode

Command History

Release	Modification
5.2(1)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
slot	Enables preprovisioning of features or interfaces of a module on a slot in a chassis.
reload	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* [*hash-polynomial*]

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

Syntax Description

method	Load-balancing method. See the "Usage Guidelines" section for a list of valid values.
hash-polynomial	(Optional) Hash polynomial that is used to determine the egress port selected for a port channel. See the "Usage Guidelines" section for a list of valid values. **Note** This is applicable only on a Cisco Nexus 5548 switch and a Cisco Nexus 5596 switch.

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
5.2(1)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.

Beginning with Cisco NX-OS Release 5.0(3)N2(1), the Cisco Nexus 5548 switch and Cisco Nexus 5596 switch support 8 hash polynomials that can be used for compression on the hash-parameters (software-configurable selection of source and destination MAC addresses, source and destination IP addresses, and source and destination TCP and UDP ports). Depending on variations in the load-balancing method for egress traffic flows from a port channel, different polynomials could provide different load distribution results.

The valid load-balancing *hash-polynomial* values are as follows:

- **CRC8a**—Hash polynomial CRC8a.
- **CRC8b**—Hash polynomial CRC8b.
- **CRC8c**—Hash polynomial CRC8c.
- **CRC8d**—Hash polynomial CRC8d.
- **CRC8e**—Hash polynomial CRC8e.
- **CRC8f**—Hash polynomial CRC8f.
- **CRC8g**—Hash polynomial CRC8g.
- **CRC8h**—Hash polynomial CRC8h.

Note The hash polynomial that you choose affects both the multicast and unicast traffic egressing from all the local port channels. The hash polynomial does not affect the port channels whose member ports are on a Cisco Nexus 2148T Fabric Extender, Cisco Nexus 2232P Fabric Extender, or Cisco Nexus 2248T Fabric Extender.

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
```

This example shows how to set the load-balancing method to use the source IP and the CRC8c polynomial to hash a flow to obtain a numerical value that can be used to choose the egress physical interface on a Cisco Nexus 5548 switch:

```
switch(config)# port-channel load-balance ethernet source-ip CRC8c
```

Related Commands

Command	Description
show port-channel load-balance	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 ot 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

both	Sets the maximum input and output packet rate.
input	Sets the maximum input packet rate.
output	Sets the maximum output packet rate.
pps *pps_value*	Specifies the packets per second. The range is from 0 to 100,000.
action	Specifies the action is logged.
log	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
5.2(1)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
show running-config	Displays the running system configuration information.

Related Commands

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

Syntax Description

This command has no arguments or keywords.

Command Default

Not shut down

Command Modes

Interface configuration mode
Subinterface configuration mode
Virtual Ethernet interface configuration mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

You can use this command on the following interfaces:

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

Note Use the **no switchport** command to configure an interface as a Layer 3 interface.

- Layer 3 subinterface
- Management interface
- Virtual Ethernet interface

Examples

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
no switchport	Converts an interface to a Layer 3 routed interface.
show interface ethernet	Displays the Ethernet interface configuration information.
show interface port-channel	Displays information on traffic about the specified EtherChannel interface.
show interface vethernet	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

Syntax Description

10	Sets the interface speed to 10 Mbps. This speed is not supported on Cisco Nexus 5500 Series switches.
100	Sets the interface speed to 100 Mbps. This speed is not supported on a management interface, Cisco Nexus 5500 Series switches, or the CU-96 CEM card.
1000	Sets the interface speed to 1 Gbps. For the Cisco Nexus 5596T switch, the base board ports support 1 Gbps.
10000	Sets the interface speed to 10 Gbps. This is the default speed. This speed is not supported on a management interface. For the Cisco Nexus 5596T switch, the base board ports support 10 Gbps.
auto	Specifies that the speed of the interface is auto negotiated. For the Cisco Nexus 5596T switch, you can choose auto negotiation on the 10GBase-T ports.

Command Default

The default speed is 10000 (10-Gigabit).

Command Modes

Interface configuration mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

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
show interface	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 swithports, 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

Command History

Release	Modification
5.2(1)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)#
```

Related Commands

Command	Description
show interface	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
5.0(3)N2(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

all	Displays all interfaces in the CDP database.
name *device-name*	Displays a specific CDP entry matching a name. The device name can be a maximum of 256 alphanumeric characters.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
5.0(3)N2(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:savbu-qa-dist-120
System Name:
Interface address(es):
    IPv4 Address: 192.168.0.82
Platform: cisco WS-C3750E-24TD, Capabilities: Switch IGMP Filtering
Interface: mgmt0, Port ID (outgoing port): GigabitEthernet1/0/13
Holdtime: 179 sec

Version:
Cisco IOS Software, C3750E Software (C3750E-UNIVERSAL-M), Version 12.2(35)SE5, RELEASE
SOFTWARE (fc1)
Copyright (c) 1986-2007 by Cisco Systems, Inc.
Compiled Thu 19-Jul-07 16:17 by nachen

Advertisement Version: 2
Native VLAN: 16
VTP Management Domain:
Duplex: full
Mgmt address(es):
    IPv4 Address: 192.168.0.82

----------------------------------------
Device ID:swor96(SSI13110AAQ)
System Name:swor96
Interface address(es):
    IPv4 Address: 192.168.0.1
Platform: N5K-C5010P-BF, Capabilities: Switch IGMP Filtering Supports-STP-Dispute
Interface: Ethernet1/17, Port ID (outgoing port): Ethernet1/19
```

```
Holdtime: 167 sec

Version:
Cisco Nexus Operating System (NX-OS) Software, Version 5.0(3)N2(1)

Advertisement Version: 2
Native VLAN: 1
Duplex: full
Physical Location: snmplocation
Mgmt address(es):
    IPv4 Address: 192.168.0.96

----------------------------------------
Device ID:swor96(SSI13110AAQ)
System Name:swor96
Interface address(es):
    IPv4 Address: 192.168.0.1
Platform: N5K-C5010P-BF, Capabilities: Switch IGMP Filtering Supports-STP-Dispute
Interface: Ethernet1/18, Port ID (outgoing port): Ethernet1/20
Holdtime: 167 sec

Version:
Cisco Nexus Operating System (NX-OS) Software, Version 5.0(3)N2(1)

Advertisement Version: 2
Native VLAN: 1
Duplex: full
Physical Location: snmplocation
Mgmt address(es):
    IPv4 Address: 192.168.0.96

----------------------------------------
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 5.0(3)N2(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 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 5.0(3)N2(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
cdp	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

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
5.0(3)N2(1)	This command was introduced.

Examples

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

ethernet *slot*/*port*	Specifies an Ethernet interface. The slot number is from 1 to 255 and the port number is from 1 to 128.
QSFP-module	(Optional) The QSFP+ port on the Generic Expansion Module (GEM). The port numbers are from 1 to 4.
mgmt *mgmt-num*	Specifies a management interface. The management interface number is 0.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
6.0(2)N1(2)	Support for the QSFP+ GEM.
5.0(3)N2(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
cdp	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

interface	(Optional) Displays CDP neighbor information for an interface, Ethernet or management.
ethernet *slot*/*port*	(Optional) Displays CDP neighbor information for an Ethernet interface. The slot number is from 1 to 255 and the port number is from 1 to 128
QSFP-module	(Optional) The QSFP+ port on the Generic Expansion Module (GEM). The port numbers are from 1 to 4.
mgmt *mgmt-num*	(Optional) Displays CDP neighbor information for a management interface. The management interface number is 0.
detail	(Optional) Displays the detailed information about CDP neighbors.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
6.0(2)N1(2)	Support for the QSFP+ GEM.
5.0(3)N2(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, M - Two-port Mac Relay


Device ID              Local Intrfce   Hldtme  Capability  Platform      Port ID
savbu-qa-dist-120      mgmt0           177     S I         WS-C3750E-24T Gig1/0/13
swor96(SSI13110AAQ)    Eth1/17         165     S I s       N5K-C5010P-BF Eth1/19

swor96(SSI13110AAQ)    Eth1/18         165     S I s       N5K-C5010P-BF Eth1/20

swor95(SSI13110AAS)    Eth1/29         171     S I s       N5K-C5010P-BF Eth1/19

switch#
```

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

```
switch# show cdp neighbors interface ethernet 1/29
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(SSI13110AAS)    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(SSI13110AAS)
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 5.0(3)N2(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, M - Two-port Mac Relay


Device ID              Local Intrfce   Hldtme  Capability  Platform      Port ID
savbu-qa-dist-120      mgmt0           126     S I         WS-C3750E-24T Gig1/0/13

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:savbu-qa-dist-120
System Name:
Interface address(es):
    IPv4 Address: 192.168.0.82
Platform: cisco WS-C3750E-24TD, Capabilities: Switch IGMP Filtering
Interface: mgmt0, Port ID (outgoing port): GigabitEthernet1/0/13
Holdtime: 179 sec

Version:
```

```
Cisco IOS Software, C3750E Software (C3750E-UNIVERSAL-M), Version 12.2(35)SE5, R
ELEASE SOFTWARE (fc1)
Copyright (c) 1986-2007 by Cisco Systems, Inc.
Compiled Thu 19-Jul-07 16:17 by nachen

Advertisement Version: 2
Native VLAN: 16
VTP Management Domain:
Duplex: full
Mgmt address(es):
    IPv4 Address: 192.168.0.82

switch#
```

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

```
switch# show cdp neighbors detail
----------------------------------------
Device ID:savbu-qa-dist-120
System Name:
Interface address(es):
    IPv4 Address: 192.168.0.82
Platform: cisco WS-C3750E-24TD, Capabilities: Switch IGMP Filtering
Interface: mgmt0, Port ID (outgoing port): GigabitEthernet1/0/13
Holdtime: 128 sec

Version:
Cisco IOS Software, C3750E Software (C3750E-UNIVERSAL-M), Version 12.2(35)SE5, R
ELEASE SOFTWARE (fc1)
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Compiled Thu 19-Jul-07 16:17 by nachen

Advertisement Version: 2
Native VLAN: 16
VTP Management Domain:
Duplex: full
Mgmt address(es):
    IPv4 Address: 192.168.0.82

----------------------------------------
Device ID:swor96(SSI13110AAQ)
System Name:swor96
Interface address(es):
    IPv4 Address: 192.168.0.1
Platform: N5K-C5010P-BF, Capabilities: Switch IGMP Filtering Supports-STP-Disput
e
Interface: Ethernet1/17, Port ID (outgoing port): Ethernet1/19
Holdtime: 175 sec

Version:
Cisco Nexus Operating System (NX-OS) Software, Version 5.0(3)N2(1)

Advertisement Version: 2
Native VLAN: 1
Duplex: full
Physical Location: snmplocation
Mgmt address(es):
    IPv4 Address: 192.168.0.96

----------------------------------------
Device ID:swor96(SSI13110AAQ)
System Name:swor96
Interface address(es):
    IPv4 Address: 192.168.0.1
```

```
Platform: N5K-C5010P-BF, Capabilities: Switch IGMP Filtering Supports-STP-Disput
e
Interface: Ethernet1/18, Port ID (outgoing port): Ethernet1/20
Holdtime: 175 sec

Version:
Cisco Nexus Operating System (NX-OS) Software, Version 5.0(3)N2(1)

Advertisement Version: 2
Native VLAN: 1
Duplex: full
Physical Location: snmplocation
Mgmt address(es):
    IPv4 Address: 192.168.0.96

----------------------------------------
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-Disput
e
Interface: Ethernet1/29, Port ID (outgoing port): Ethernet1/19
Holdtime: 121 sec

Version:
Cisco Nexus Operating System (NX-OS) Software, Version 5.0(3)N2(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
cdp	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

interface	Displays CDP traffic statistics for an interface, Ethernet or management.
ethernet *slot*/*port*	Displays CDP traffic statistics for an Ethernet interface. The slot number is from 1 to 255 and the port number is from 1 to 128.
QSFP-module	(Optional) The QSFP+ port on the Generic Expansion Module (GEM). The port numbers are from 1 to 4.
mgmt *mgmt-num*	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(2)	Support for the QSFP+ GEM.
5.0(3)N2(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
cdp	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
5.2(1)N1(1)	This command was introduced.

Examples

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

```
switch# show interface brief

--------------------------------------------------------------------------------
Ethernet      VLAN   Type Mode   Status  Reason                   Speed     Port
Interface                                                                   Ch #
--------------------------------------------------------------------------------
Eth1/1        1      eth  trunk  up      none                       10G(D) 4000
Eth1/2        1      eth  trunk  up      none                       10G(D) 4000
Eth1/3        1      eth  trunk  up      none                       10G(D) 4000
Eth1/4        1      eth  trunk  up      none                       10G(D) 4000
Eth1/5        1      eth  access down    SFP not inserted           10G(D) --
Eth1/6        1      eth  access down    SFP not inserted           10G(D) --
Eth1/7        1      eth  trunk  up      none                       10G(D) 10
Eth1/8        1      eth  trunk  up      none                       10G(D) 10
Eth1/9        1      eth  trunk  up      none                       10G(D) 10
Eth1/10       1      eth  trunk  up      none                       10G(D) 10
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 down    SFP not inserted           10G(D) --
Eth1/18       1      eth  access down    SFP not inserted           10G(D) --
Eth1/19       1      eth  access down    SFP not inserted           10G(D) --
Eth1/20       1      eth  access down    SFP not inserted           10G(D) --
Eth1/21       1      eth  access down    SFP not inserted           10G(D) --
Eth1/22       1      eth  access down    SFP not inserted           10G(D) --
Eth1/23       1      eth  access down    Link not connected         10G(D) --
Eth1/24       1      eth  access down    Link not connected         10G(D) --
Eth1/25       1      eth  access down    SFP not inserted           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    SFP not inserted           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 down    SFP not inserted           10G(D) --
Eth1/33       1      eth  access down    SFP not inserted           10G(D) --
Eth1/34       1      eth  access down    SFP not inserted           10G(D) --
Eth1/35       1      eth  access down    SFP not inserted           10G(D) --
Eth1/36       1      eth  access down    SFP not inserted           10G(D) --
Eth1/37       1      eth  access down    SFP not inserted           10G(D) --
Eth1/38       1      eth  access down    SFP not inserted           10G(D) --
Eth1/39       1      eth  access down    SFP not inserted           10G(D) --
Eth1/40       1      eth  trunk  up      none                       10G(D) --
Eth2/1        1      eth  access down    SFP not inserted           10G(D) --
Eth2/2        1      eth  access up      none                       10G(D) --
Eth2/3        1      eth  access down    SFP not inserted           10G(D) --
Eth2/4        1      eth  access up      none                       10G(D) --
Eth2/5        1      eth  access up      none                       10G(D) --
Eth2/6        1      eth  access down    SFP not inserted           10G(D) --

--------------------------------------------------------------------------------
Port-channel VLAN  Type Mode   Status  Reason                   Speed   Protocol
Interface
--------------------------------------------------------------------------------
Po10          1     eth  trunk  up      none                       a-10G(D)  lacp
Po4000        1     eth  trunk  up      none                       a-10G(D)  lacp

--------------------------------------------------------------------------------
Port   VRF          Status IP Address                              Speed    MTU
--------------------------------------------------------------------------------
mgmt0  --           up     192.168.10.37                           100      1500

-------------------------------------------------------------------------------
Interface Secondary VLAN(Type)                    Status Reason
-------------------------------------------------------------------------------
Vlan1     --                                      down   Administratively down

switch#
```

This example shows how to display the summary configuration information of 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      VLAN   Type Mode   Status  Reason                   Speed     Port
Interface                                                                   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 on a switch that runs Cisco Nexus 5500 Release 5.1(3)N1(1):

```
switch# show interface brief
--------------------------------------------------------------------------------
Ethernet      VLAN    Type Mode   Status  Reason                   Speed     Port
Interface                                                                    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) --
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” indicating that it has been configured as a FabricPath port.

Related Commands

Command	Description
interface ethernet	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 *slot*/*port*	Specifies an Ethernet interface slot number and port number. The *slot* number is from 1 to 255, and the *port* number is from 1 to 128.
QSFP-module	(Optional) The QSFP+ port on the Generic Expansion Module (GEM). The port numbers are from 1 to 4.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
6.0(2)N1(2)	Support for the QSFP+ GEM.
5.2(1)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 is displayed 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 are 10 Gigabits.

Examples

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

```
switch# show interface ethernet 1/1 capabilities
Ethernet1/1
  Model:                 N5K-C5020P-BF-XL-SU
  Type (SFP capable):    SFP-H10GB-CU1M
  Speed:                 1000,10000
  Duplex:                full
  Trunk encap. type:     802.1Q
  Channel:               yes
  Broadcast suppression: percentage(0-100)
  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
  Link Debounce:         yes
  Link Debounce Time:    yes
  MDIX:                  no
  Pvlan Trunk capable:   yes
  TDR capable:           no
  Port mode:             Switched
  FEX Fabric:            yes

switch#
```

Related Commands

Command	Description
interface ethernet	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
5.2(1)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
Eth1/13       enable              100
Eth1/14       enable              100
Eth1/15       enable              100
Eth1/16       enable              100
Eth1/17       enable              100
Eth1/18       enable              100
Eth1/19       enable              100
Eth1/20       enable              100
Eth1/21       enable              100
Eth1/22       enable              100
Eth1/23       enable              100
Eth1/24       enable              100
Eth1/25       enable              100
Eth1/26       enable              100
Eth1/27       enable              100
Eth1/28       enable              100
Eth1/29       enable              100
```

```
Eth1/30       enable              100
Eth1/31       enable              100
Eth1/32       enable              100
--More--
switch#
```

Related Commands

Command	Description
link debounce	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

slot/*port*	Ethernet interface slot number and port number. The *slot* number is from 1 to 255, and the *port* number is from 1 to 128.
QSFP-module	(Optional) The QSFP+ port on the Generic Expansion Module (GEM). The port numbers are from 1 to 4.
.	(Optional) Specifies the subinterface separator. **Note** This keyword applies to Layer 3 interfaces.
subintf-port-no	(Optional) Port number for the subinterface. The range is from 1 to 48. **Note** This argument applies to Layer 3 interfaces.
brief	(Optional) Displays brief information about the interfaces.
counters	(Optional) Displays information about the counters configured on an interface.
description	(Optional) Displays the description of an interface configuration.
status	(Optional) Displays the operational state of the interface.
switchport	(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(2)	Support for the QSFP+ GEM.
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

If the interface and transceiver speed is mismatched, the SFP validation failed message is displayed 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 5000 Series switch are 10 Gigabits.

Examples

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

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

```
  Hardware: 1000/10000 Ethernet, address: 000d.ece7.df48 (bia 000d.ece7.df48)
  MTU 1500 bytes, BW 10000000 Kbit, DLY 10 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA
  Port mode is fex-fabric
  full-duplex, 10 Gb/s, media type is 1/10g
  Beacon is turned off
  Input flow-control is off, output flow-control is off
  Rate mode is dedicated
  Switchport monitor is off
  Last link flapped 09:03:57
  Last clearing of "show interface" counters never
  30 seconds input rate 2376 bits/sec, 0 packets/sec
  30 seconds output rate 1584 bits/sec, 0 packets/sec
  Load-Interval #2: 5 minute (300 seconds)
    input rate 1.58 Kbps, 0 pps; output rate 792 bps, 0 pps
  RX
    0 unicast packets  10440 multicast packets  0 broadcast packets
    10440 input packets  11108120 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  20241 multicast packets  105 broadcast packets
    20346 output packets  7633280 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#
```

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

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

--------------------------------------------------------------------------------
Port                InOctets       InUcastPkts      InMcastPkts      InBcastPkts
--------------------------------------------------------------------------------
Eth1/1              17193136                 0            16159                0
--------------------------------------------------------------------------------
Port               OutOctets      OutUcastPkts     OutMcastPkts     OutBcastPkts
--------------------------------------------------------------------------------
Eth1/1          11576758                 0            28326              106
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#
```

In the above display, the Monitor destination rate-limit field displays the rate limit configured on a switchport interface on a Cisco Nexus 5010 Series switch.

Note You can configure the monitor destination rate-limit only on a Cisco Nexus 5010 Series switch or Cisco Nexus 5020 Series switch.

Related Commands

Command	Description
interface ethernet	Configures an Ethernet IEEE 802.3 interface.
interface ethernet (Layer 3)	Configures a Layer 3 Ethernet IEEE 802.3 interface.

Command	Description
switchport mode vntag	Configures an Ethernet interface as a VNTag port.
switchport monitor rate-limit	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**]

Syntax Description

lo-number	Loopback interface number. The range is from 0 to 1023.
brief	(Optional) Displays a brief summary of the loopback interface information.
description	(Optional) Displays the description provided for the loopback interface.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
5.0(3)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 ...	Indicates 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 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 may not balance with the sum of the enumerated output errors, because some datagrams may have more than one error and others may 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 is usually the result of noise or other transmission problems.
overrun	Number of times 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 may 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. Note that this may not balance with the sum of the enumerated output errors, as some datagrams may have more than one error, and others may 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 the brief information for a specific loopback interface:

```
switch# show interface loopback 10 brief

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

Related Commands

Command	Description
interface loopback	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**

Syntax Description

type	(Optional) Interface for which MAC addresses should be displayed. The *type* can be either Ethernet or EtherChannel.
slot/*port*	Ethernet interface port number and slot number. The slot number is from 1 to 255, and the port number is from 1 to 128.
QSFP-module	(Optional) The QSFP+ port on the Generic Expansion Module (GEM). The port numbers are from 1 to 4.
portchannel-no	EtherChannel number. The EtherChannel number is from 1 to 4096.

Command Default

None

Command Modes

EXEC mode

Command History

Release	**Modification**
6.0(2)N1(2)	Support for the QSFP+ GEM.
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

If you do not specify an interface, the system displays all the MAC addresses.

Examples

This example shows how to display the information on MAC addresses for the entire switch:

```
switch# show interface mac-address

---------------------------------------------------------------------------
Interface                 Mac-Address     Burn-in Mac-Address
---------------------------------------------------------------------------
Ethernet1/1               0005.9b78.6e7c  0005.9b78.6e48
Ethernet1/2               0005.9b78.6e7c  0005.9b78.6e49
Ethernet1/3               0005.9b78.6e7c  0005.9b78.6e4a
Ethernet1/4               0005.9b78.6e7c  0005.9b78.6e4b
Ethernet1/5               0005.9b78.6e7c  0005.9b78.6e4c
Ethernet1/6               0005.9b78.6e7c  0005.9b78.6e4d
Ethernet1/7               0005.9b78.6e7c  0005.9b78.6e4e
Ethernet1/8               0005.9b78.6e7c  0005.9b78.6e4f
Ethernet1/9               0005.9b78.6e7c  0005.9b78.6e50
Ethernet1/10              0005.9b78.6e7c  0005.9b78.6e51
Ethernet1/11              0005.9b78.6e7c  0005.9b78.6e52
Ethernet1/12              0005.9b78.6e7c  0005.9b78.6e53
Ethernet1/13              0005.9b78.6e7c  0005.9b78.6e54
Ethernet1/14              0005.9b78.6e7c  0005.9b78.6e55
Ethernet1/15              0005.9b78.6e7c  0005.9b78.6e56
```

```
Ethernet1/16            0005.9b78.6e7c  0005.9b78.6e57
Ethernet1/17            0005.9b78.6e7c  0005.9b78.6e58
Ethernet1/18            0005.9b78.6e7c  0005.9b78.6e59
Ethernet1/19            0005.9b78.6e7c  0005.9b78.6e5a
Ethernet1/20            0005.9b78.6e7c  0005.9b78.6e5b
Ethernet1/21            0005.9b78.6e7c  0005.9b78.6e5c
Ethernet1/22            0005.9b78.6e7c  0005.9b78.6e5d
--More--
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-channel5           0005.9b78.6e7c  0005.9b78.6e7c
switch#
```

Related Commands

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

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

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
5.2(1)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
    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
```

Related Commands

Command	Description
interface mgmt	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**]

Syntax Description

number	EtherChannel number. The range is from 1 to 4096.
.*subinterface-number*	(Optional) Port-channel subinterface configuration. Use the EtherChannel number followed by a dot (.) indicator and the subinterface number. The format is: *portchannel-number***.***subinterface-number*
counters	(Optional) Displays information about the counters configured on the EtherChannel interface.
description	(Optional) Displays the description of the EtherChannel interface configuration.
status	(Optional) Displays the operational state of the EtherChannel interface.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
5.2(1)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)
    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
interface port-channel	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
5.2(1)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
errdisable detect cause	Enables the error disabled (err-disabled) detection.
errdisable recovery cause	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

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

You can configure the rate limit on the following Cisco Nexus 5000 Series switches using the **switchport monitor rate-limit 1G** command:

- Cisco Nexus 5010 Series
- Cisco Nexus 5020 Series

This command does not require a license.

Examples

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
  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 on a switch that runs Cisco NX-OS Release 5.0(3)N1(1):

```
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
  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 on a switch that runs Cisco NX-OS Release 5.0(3)N2(1):

```
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
switchport access vlan	Sets the access VLAN when the interface is in access mode.
switchport monitor rate-limit	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**]

Syntax Description

detail	(Optional) Displays detailed information for backup interfaces.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
5.0(3)N2(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
switch#
```

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)
```

```
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
switchport backup interface	Configures Flex Links.
show running-config backup	Displays the running configuration information for backup interfaces.
show running-config flexlink	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

ethernet *slot*/*port*	Displays information about an Ethernet interface slot number and port number. The *slot* number is from 1 to 255, and the *port* number is from 1 to 128.
QSFP-module	(Optional) The QSFP+ port on the Generic Expansion Module (GEM). The port numbers are from 1 to 4.
details	(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(2)	Support for the QSFP+ GEM.
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

You can use the **show interface transceiver** 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

counters	Displays information about the LACP traffic statistics.
interface ethernet *slot*/*port*	Displays LACP information for a specific Ethernet interface. The *slot* number is from 1 to 255, and the *port* number is from 1 to 128.
QSFP-module	(Optional) The QSFP+ port on the Generic Expansion Module (GEM). The port numbers are from 1 to 4.
neighbor	Displays information about the LACP neighbor.
port-channel	Displays information about all EtherChannels.
interface port-channel *number*	(Optional) Displays information about a specific EtherChannel. The EtherChannel number is from 1 to 4096.
system-identifier	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(2)	Support for the QSFP+ GEM.
5.2(1)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
  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
clear lacp counters	Clears LACP counters.
lacp port-priority	Sets the priority for the physical interfaces for the LACP.
lacp system-priority	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

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Examples

This example shows how to display the EtherChannel capacity:

```
switch# show port-channel capacity
Port-channel resources
    768 total    29 used    739 free    3% used
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-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

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Examples

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
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-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

interface	(Optional) Displays information for an EtherChannel interface.
port-channel *number*	(Optional) Displays aggregation information for a specific EtherChannel interface. The *number* range is from 1 to 4096.
.subinterface-number	(Optional) Subinterface number. Use the EtherChannel number followed by a dot (.) indicator and the subinterface number. The format is *portchannel-number***.***subinterface-number*.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
5.2(1)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
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-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

forwarding-path interface port-channel	(Optional) Identifies the port in the EtherChannel interface that forwards the packet.
number	EtherChannel number for the load-balancing forwarding path that you want to display. The range is from 1 to 4096.
.	(Optional) Subinterface number separator. Use the EtherChannel number followed by a dot (.) indicator and the subinterface number. The format is *portchannel-number.subinterface-number.*
vlan	(Optional) Identifies the VLAN for hardware hashing.
vlan_ID	VLAN ID. The range is from 1 to 3967 and 4048 to 4093.
dst-ip	(Optional) Displays the load distribution on the destination IP address.
ipv4-addr	IPv4 address to specify a source or destination IP address. The format is *A.B.C.D*.
dst-ipv6	(Optional) Displays the load distribution on the destination IPv6 address.
ipv6-addr	IPv6 address to specify a source or destination IP address. The format is *A*:*B*::*C*:*D*.
dst-mac	(Optional) Displays the load distribution on the destination MAC address.
dst-mac-addr	Destination MAC address. The format is *AAAA*:*BBBB*:*CCCC*.
l4-dst-port	(Optional) Displays the load distribution on the destination port.
dst-port	Destination port number. The range is from 0 to 65535.
l4-src-port	(Optional) Displays the load distribution on the source port.
src-port	Source port number. The range is from 0 to 65535.
src-ip	(Optional) Displays the load distribution on the source IP address.
src-ipv6	(Optional) Displays the load distribution on the source IPv6 address.
src-mac	(Optional) Displays the load distribution on the source MAC address.
src-mac-addr	source MAC address. The format is *AA*:*BB*:*CC*:*DD*:*EE*:*FF*.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
5.2(1)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	The load-balancing method configured on the switch.
Non-IP	The field that will be used to calculate the hash value for non-IP traffic.
IP	The fileds 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 192.168.2.37
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 broadcas
t 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 192.168.2.25 src-ip 192.168.2.10 dst-mac ffff.ffff.ffff src-mac aa:bb:cc:dd:ee:ff
l4-src-port 0 l4-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 192.168.2.25 src-ip 192.168.2.10 dst-mac ffff.ffff.ffff src-mac aa:bb:cc:dd:ee:ff
l4-src-port 0 l4-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 192.168.2.25 src-ip 192.168.2.10 src-mac aa:bb:cc:dd:ee:ff l4-src-port 0
l4-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:   192.168.2.25
        src-ip:   192.168.2.10
        dst-mac:  0000.0000.0000
       src-mac:  aabb.ccdd.eeff

switch#
```

Related Commands

Command	Description
port-channel load-balance ethernet	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
5.2(1)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)
```

```
                                    Eth105/1/30(P)  Eth105/1/31(P)  Eth105/1/32
(P)
25     Po25(SU)     Eth      LACP      Eth105/1/23(P)  Eth105/1/24(P)  Eth105/1/25
(P)
                                    Eth105/1/26(P)
33     Po33(SD)     Eth      NONE      --
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
channel-group (Ethernet)	Assigns and configures a physical interface to an EtherChannel.
interface port-channel	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

interface	(Optional) Displays traffic statistics for a specified interface.
port-channel *number*	(Optional) Displays information for a specified EtherChannel. The range is from 1 to 4096.
.subinterface-number	(Optional) Subinterface number. Use the EtherChannel number followed by a dot (.) indicator and the subinterface number. The format is *portchannel-number***.***subinterface-number*.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
5.2(1)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
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-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
5.2(1)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

address	(Optional) Displays the secure MAC address of a port.
interface	(Optional) Displays the secure address for an interface.
ethernet *slot*/*port*	(Optional) Displays the secure address for an Ethernet interface. The slot number is from 1 to 255 and the port number is from 1 to 128.
QSFP-module	(Optional) The QSFP+ port on the Generic Expansion Module (GEM). The port numbers are from 1 to 4.
port-channel *channel-num*	(Optional) Displays the secure address for an EtherChannel interface. The channel number is from 1 to 4096.
state	(Optional) Displays whether a port is secure.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
6.0(2)N1(2)	Support for the QSFP+ GEM.
5.1(3)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
clear port-security dynamic	Clears the dynamically secured addresses on a port.
show running-config port-security	Displays the port security configuration information.
switchport port-security	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*]

Syntax Description

resource	Resource name, which can be one of the following: • **port-channel**—Displays the number of EtherChannels available in the system. • **vlan**—Displays the number of VLANs available in the system. • **vrf**—Displays the number of virtual routing and forwardings (VRFs) available in the system.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
5.2(1)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#
```

Related Commands

Command	Description
show interface port-channel	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**]

Syntax Description

all	(Optional) Displays the full operating information including default settings.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Examples

This example shows how to display information on the running configuration:

```
switch# show running-config
```

This example shows how to display detailed information on the running configuration:

```
switch# show running-config all
```

Related Commands

Command	Description
show startup-config	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**]

Syntax Description

all	(Optional) Displays backup interface information including default settings.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
5.0(3)N2(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
show running-config flexlink	Displays the Flex Links running configuration.
show startup-config backup	Displays the startup configuration for backup interfaces.
show startup-config flexlink	Displays the startup configuration for Flex Links.

Command	Description
show tech-support backup	Displays troubleshooting information for backup interfaces.
show tech-support flexlink	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*/[*QSFP-module*/]*port* | **loopback** *number* | **mgmt** *0* | **port-channel** *channel-number* [**membership**] | **vethernet** *veth-id*| **vlan** *vlan-id*}] [**all** | **expand-port-profile**]

Syntax Description

ethernet *slot/port*	(Optional) Displays the Ethernet interface slot number and port number. The slot number is from 1 to 255 and the port number is from 1 to 128.
fc *slot/port*	(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.
QSFP-module	(Optional) The QSFP+ port on the Generic Expansion Module (GEM). The port numbers are from 1 to 4.
loopback *number*	(Optional) Displays the number of the loopback interface. The range of values is from 1 to 4096.
mgmt *0*	(Optional) Displays the configuration information of the management interface.
port-channel *channel-number*	(Optional) Displays the number of the port-channel group. The range of values is from 0 to 1023.
membership	Displays the membership of the specified port channel.
vethernet *veth-id*	(Optional) Displays the configuration information of the virtual Ethernet interface. The range is from 1 to 1048575.
vlan *vlan-id*	(Optional) Displays the configuration information of the VLAN. The range of values is from 1 to 4096.
all	(Optional) Displays configured and default information.
expand-port-profile	(Optional) Displays the configuration information of port profiles.

Command Default

None

Command Modes

Any command mode

Command History

Release	Modification
6.0(2)N1(2)	Support for the QSFP+ GEM.
5.2(1)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 5.0(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
show startup-config	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

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Examples

This example shows how to display information from the startup configuration file:

```
switch# show startup-config
```

Related Commands

Command	Description
show running-config	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**]

Syntax Description

all	(Optional) Displays backup interface information including default settings.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
5.0(3)N2(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
```

```
  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
copy running-config startup-config	Copies the running configuration information to the startup configuration file.
show running-config backup	Displays the running configuration information for backup interfaces.
show running-config flexlink	Displays Flex Links running configuration information.

Command	Description
show tech-support backup	Displays troubleshooting information for backup interfaces.
show tech-support flexlink	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

backup	Displays troubleshooting information about backup interfaces.
flexlink	Displays troubleshooting information about Flex Links.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
5.0(3)N2(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
itialize 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-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 6225
=======================================================================

::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
itialize 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
<--Output truncated-->
switch#
```

Related Commands

Command	Description
show running-config backup	Displays the running configuration information for backup interfaces.
show running-config flexlink	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

Syntax Description

This command has no arguments and keywords.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
5.2(1)N1(1)	This command was introduced.

Usage Guidelines

The output from the **show tech-support port-channel** command is very long. To better manage this output, you can redirect the output to a file.

Examples

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) [Thu Jul  8 04:05:04 2010]
High Priority Pending queue: len(0), max len(32) [Thu Jul  8 04:05:04 2010]
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
ltl:          : 0
lif:          : 0
iod:          : 43
global id     : 1
```

```
flag          : 0
--More--
<---output truncated--->
switch#
```

Related Commands

Command	Description
port-channel load-balance ethernet	Configures the load-balancing method among the interfaces in the channel-group bundle.
show port-channel load-balance	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**]

Syntax Description

ethernet *slot/port*	Displays UDLD information for an Ethernet IEEE 802.3z interface. The *slot* number is from 1 to 255, and the *port* number is from 1 to 128.
QSFP-module	(Optional) The QSFP+ port on the Generic Expansion Module (GEM). The port numbers are from 1 to 4.
global	Displays the UDLD global status and configuration information on all interfaces.
neighbors	Displays information about UDLD neighbor interfaces.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
6.0(2)N1(2)	Support for the QSFP+ GEM.
5.2(1)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 on 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
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
udld (configuration mode)	Configures the UDLD protocol on the switch.
udld (Ethernet)	Configures the UDLD 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*]

Syntax Description

vpc *number*	(Optional) Displays the brief information for the specified vPC. The range is from 1 to 4096.

Defaults

None

Command Modes

Any command mode

SupportedUserRoles

network-admin

Command History

Release	Modification
5.2(1)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.

This command does not require a license.

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
feature vpc	Enables vPCs on the device.
show port channel summary	Displays information about port channels.

U Commands

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

udld (Ethernet)

To enable and configure the Unidirectional Link Detection (UDLD) protocol on an Ethernet interface, use the **udld** command. To disable UDLD, use the **no** form of this command.

udld {**aggressive** | **disable** | **enable**}

no udld {**aggressive** | **disable** | **enable**}

Syntax Description

aggressive	Enables UDLD in aggressive mode on the interface.
disable	Disables UDLD on the interface.
enable	Enables UDLD in normal mode on the interface.

Command Default

None

Command Modes

Interface configuration mode

Command History

Release	Modification
5.2(1)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)# udld enable
```

This example shows how to enable the aggressive UDLD mode for an Ethernet port:

```
switch(config-if)# udld aggressive
```

This example shows how to disable UDLD for an Ethernet port:

```
switch(config-if)# udld 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
5.2(1)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# config t
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# config t
switch(config)# vpc domain 5
switch(config-vpc-domain)#
```

Related Commands

Command	Description
show vpc brief	Displays information about vPCs. If the feature is not enabled, the system displays an error when you enter this command.