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Cisco Nexus 7000 Series NX-OS Interfaces Command Reference, Release 5.x

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CONTENTS

New and Changed Information IF-ix

Preface xiii

Audience xiii

Organization xiii

Document Conventions xiii

Related Documentation xiv

Obtaining Documentation and Submitting a Service Request xv

Cisco NX-OS Interfaces Commands IF-1

attach fex IF-2

bandwidth (interface) IF-3

beacon IF-5

bfd IF-6

bfd echo IF-8

bfd interval IF-10

bfd optimize subinterfaces IF-12

bfd per-link IF-13

bfd slow-timer IF-14

carrier-delay IF-16

channel-group IF-18

clear counters interface IF-22

clear l2protocol tunnel counters IF-24

clear lacp counters IF-25

clear vpc statistics IF-26

default interface IF-27

delay IF-29

delay restore IF-31

description IF-32

description (fex) IF-33

dual-active exclude interface-vlan IF-34

duplex IF-36

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encapsulation dot1Q **IF-38**
errdisable detect cause **IF-39**
errdisable recovery cause **IF-41**
errdisable recovery interval **IF-43**
feature bfd **IF-44**
feature interface-vlan **IF-45**
feature lacp **IF-46**
feature-set fex **IF-47**
feature tunnel **IF-48**
feature udld **IF-49**
feature vpc **IF-50**
fex **IF-51**
fex associate **IF-52**
flowcontrol **IF-53**
hsrp bfd **IF-55**
inherit port-profile **IF-56**
install feature-set fex **IF-58**
interface cmp-mgmt module **IF-59**
interface ethernet **IF-60**
interface loopback **IF-61**
interface mgmt **IF-62**
interface port-channel **IF-63**
interface tunnel **IF-65**
interface vlan **IF-66**
ip eigrp bfd **IF-67**
ip ospf bfd **IF-68**
ip pim bfd **IF-69**
ip pim bfd-instance **IF-70**
ip route static bfd **IF-71**
ipv6 eigrp bfd **IF-72**
isis bfd **IF-73**
fabricpath switch-id **IF-74**
l2protocol tunnel **IF-76**
l2protocol tunnel cos **IF-77**
l2protocol tunnel drop-threshold **IF-78**

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[l2protocol tunnel shutdown-threshold](#) IF-79

[lacp max-bundle](#) IF-80

[lacp min-links](#) IF-81

[lacp port-priority](#) IF-82

[lacp system-priority](#) IF-83

[link debounce](#) IF-84

[load-interval](#) IF-86

[max-ports](#) IF-88

[mdix auto](#) IF-89

[medium](#) IF-91

[mtu](#) IF-92

[peer-gateway](#) IF-94

[peer-keepalive destination](#) IF-95

[peer-switch](#) IF-99

[port-channel load-balance ethernet](#) IF-100

[port-profile](#) IF-102

[rate-mode dedicated](#) IF-105

[rate-mode shared](#) IF-107

[reload fex](#) IF-108

[reload restore](#) IF-109

[role priority](#) IF-110

[serial](#) IF-111

[show bfd neighbors](#) IF-112

[show environment fex](#) IF-117

[show fex](#) IF-120

[show fex detail](#) IF-122

[show fex transceiver](#) IF-124

[show fex version](#) IF-126

[show inventory fex](#) IF-127

[show logging level fex](#) IF-128

[show module fex](#) IF-129

[show tech fex all](#) IF-131

[show version fex](#) IF-133

[show interface](#) IF-134

[show interface brief](#) IF-137

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show interface capabilities	IF-139
show interface counters	IF-141
show interface counters errors	IF-144
show interface counters storm-control	IF-148
show interface counters trunk	IF-150
show interface debounce	IF-151
show interface description	IF-153
show interface ethernet	IF-155
show interface flowcontrol	IF-157
show interface mgmt	IF-159
show interface port-channel	IF-161
show interface port-channel counters	IF-165
show interface transceiver fex-fabric	IF-169
show interface status	IF-171
show interface switchport	IF-173
show interface transceiver	IF-176
show interface trunk	IF-178
show interface tunnel	IF-180
show ip dhcp snooping statistics	IF-181
show lacp counters	IF-182
show lacp interface	IF-184
show lacp neighbor	IF-186
show lacp port-channel	IF-188
show lacp system-identifier	IF-190
show port-channel capacity	IF-191
show port-channel compatibility-parameters	IF-192
show port-channel database	IF-195
show port-channel load-balance	IF-197
show port-channel rbh-distribution	IF-198
show port-channel summary	IF-199
show port-channel traffic	IF-201
show port-channel usage	IF-203
show port-profile	IF-204
show running-config fex	IF-207
show running-config interface	IF-209

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[show running-config interface mgmt](#) IF-212
[show running-config vpc](#) IF-213
[show sprom fex](#) IF-215
[show startup-config interface](#) IF-218
[show startup-config vpc](#) IF-220
[show system reset-reason fex](#) IF-221
[show tech-support fex](#) IF-222
[show udd](#) IF-224
[show vdc](#) IF-226
[show vpc brief](#) IF-228
[show vpc consistency-parameters](#) IF-231
[show vpc orphan-ports](#) IF-234
[show vpc peer-keepalive](#) IF-236
[show vpc role](#) IF-238
[show vpc statistics](#) IF-240
[shutdown](#) IF-242
[speed](#) IF-244
[state enabled](#) IF-246
[switchport](#) IF-247
[switchport access vlan](#) IF-249
[switchport dot1q ethertype](#) IF-251
[switchport host](#) IF-253
[switchport mode](#) IF-255
[switchport mode dot1q-tunnel](#) IF-257
[switchport mode fex-fabric](#) IF-258
[switchport trunk allowed vlan](#) IF-259
[switchport trunk native vlan](#) IF-261
[system default switchport](#) IF-263
[system jumbomtu](#) IF-264
[system-mac](#) IF-265
[system-priority](#) IF-267
[track](#) IF-268
[tunnel destination](#) IF-270
[tunnel mode](#) IF-271
[tunnel path-mtu-discovery](#) IF-272

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tunnel source **IF-274**
tunnel use-vrf **IF-275**
tunnel ttl **IF-276**
type **IF-277**
udld **IF-278**
udld aggressive **IF-280**
udld message-time **IF-282**
udld reset **IF-283**
vlan dot1q tag native **IF-284**
vpc **IF-286**
vpc domain **IF-288**
vpc peer-link **IF-290**



New and Changed Information

This chapter provides release-specific information for each new and changed feature in the *Cisco Nexus 7000 Series NX-OS Interfaces Command Reference, Release 5.x*. The latest version of this document is available at the following Cisco website:

http://www.cisco.com/en/US/docs/switches/datacenter/sw/5_x/nx-os/interfaces/command/reference/if_cmd_ref.html

To check for additional information about Cisco NX-OS Release 5.x, see the *Cisco Nexus 7000 Series NX-OS Release Notes, Release 5.x* available at the following Cisco website:

http://www.cisco.com/en/US/products/ps9402/prod_release_notes_list.html

The following table summarizes the new and changed features for the *Cisco Nexus 7000 Series NX-OS Interfaces Command Reference, Release 5.x*, and tells you where they are documented.

Table 1 **New and Changed Information for Release 5.x**

Feature	Change Description	Changed in Release	Where Documented
FEX enhancements	Added the show sprom fex command.	5.1(1)	“Cisco NX-OS Interfaces Commands”
	Added the show inventory fex command.	5.1(1)	“Cisco NX-OS Interfaces Commands”
	Added the show environment fex command.	5.1(1)	“Cisco NX-OS Interfaces Commands”
	Added the show module fex command.	5.1(1)	“Cisco NX-OS Interfaces Commands”
	Added the show fex command.	5.1(1)	“Cisco NX-OS Interfaces Commands”
	Added the show fex detail command.	5.1(1)	“Cisco NX-OS Interfaces Commands”
	Added the show fex transceiver command.	5.1(1)	“Cisco NX-OS Interfaces Commands”
	Added the show logging level fex command.	5.1(1)	“Cisco NX-OS Interfaces Commands”
	Added the show tech fex all command.	5.1(1)	“Cisco NX-OS Interfaces Commands”

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Table 1 **New and Changed Information for Release 5.x (continued)**

Feature	Change Description	Changed in Release	Where Documented
	Added the show system reset-reason fex command.	5.1(1)	"Cisco NX-OS Interfaces Commands"
	Added the show version fex command.	5.1(1)	"Cisco NX-OS Interfaces Commands"
	Added the show fex version command.	5.1(1)	"Cisco NX-OS Interfaces Commands"
	Added the show interface transceiver fex-fabric command.	5.1(1)	"Cisco NX-OS Interfaces Commands"
	Added the show tech-support fex command.	5.1(1)	"Cisco NX-OS Interfaces Commands"
	Added the feature-set fex command.	5.1(1)	"Cisco NX-OS Interfaces Commands"
	Added the install feature-set fex command.	5.1(1)	"Cisco NX-OS Interfaces Commands"
	Added the switchport mode fex-fabric command.	5.1(1)	"Cisco NX-OS Interfaces Commands"
	Added the description (fex) command.	5.1(1)	"Cisco NX-OS Interfaces Commands"
	Added the serial command.	5.1(1)	"Cisco NX-OS Interfaces Commands"
	Added the type command.	5.1(1)	"Cisco NX-OS Interfaces Commands"
vPC enhancements for DHCP Snooping	Added the command output (added two counters) to the show ip dhcp snooping statistics command.	5.1(1)	"Cisco NX-OS Interfaces Commands"
Port Channel mix max link support	Added the LACP max-bundle command.	5.1(1)	"Cisco NX-OS Interfaces Commands"
	Added the LACP min-links command.	5.1(1)	"Cisco NX-OS Interfaces Commands"
	Added the show vdc command.	5.1(1)	"Cisco NX-OS Interfaces Commands"
	Added a new port channel status 'M' to the show port-channel summary command output.	5.1(1)	"Cisco NX-OS Interfaces Commands"
	Changed the command output to show the port is suspended due to min-links for the show interface command.	5.1(1)	"Cisco NX-OS Interfaces Commands"
vPC enhancements for Fabricpath	Added the fabricpath switch-id command.	5.1(1)	"Cisco NX-OS Interfaces Commands"
Default interface	Added the default interface command.	5.1(1)	"Cisco NX-OS Interfaces Commands"

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Table 1 ***New and Changed Information for Release 5.x (continued)***

Feature	Change Description	Changed in Release	Where Documented
New commands	New commands were added for Bidirectional Forwarding Detection (BFD) support.	5.0(2)	“Cisco NX-OS Interfaces Commands”
	New commands were added for Q-in-Q VLAN tunnels.	5.0(2)	“Cisco NX-OS Interfaces Commands”
	New commands were added for vPC enhancements including peer switch.	5.0(2)	“Cisco NX-OS Interfaces Commands”

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Preface

This preface describes the audience, organization, and conventions of the *Cisco Nexus 7000 Series NX-OS Interfaces Command Reference, Release 5.x*. It also provides information on how to obtain related documentation.

This chapter includes the following sections:

- [Audience, page xiii](#)
- [Organization, page xiii](#)
- [Document Conventions, page xiii](#)
- [Related Documentation, page xiv](#)
- [Obtaining Documentation and Submitting a Service Request, page xv](#)

Audience

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

Organization

This reference is organized as follows:

Chapter and Title	Description
Cisco NX-OS Interfaces Commands	Describes the Cisco NX-OS interfaces commands.

Document Conventions

Command descriptions use these conventions:

Convention	Description
boldface font	Commands and keywords are in boldface.
<i>italic font</i>	Arguments for which you supply values are in italics.
[]	Elements in square brackets are optional.

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[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.
<i>italic screen font</i>	Arguments for which you supply values are in italic screen font.
< >	Nonprinting characters, such as passwords, are in angle brackets.
[]	Default responses to system prompts are in square brackets.
!, #	An exclamation point (!) or a pound sign (#) at the beginning of a line of code indicates a comment line.

This document uses the following conventions:



Note

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



Caution

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



Tip

Means *the following information will help you solve a problem*.

Related Documentation

[Cisco NX-OS](#) includes the following documents:

Release Notes

Cisco Nexus 7000 Series NX-OS Release Notes, Release 5.x

NX-OS Configuration Guides

Cisco Nexus 7000 Series NX-OS Getting Started with Virtual Device Contexts, Release 5.x

Cisco Nexus 7000 Series OTV Quick Start Guide

Cisco Nexus 7000 Series NX-OS Fundamentals Configuration Guide, Release 5.x

Cisco Nexus 7000 Series NX-OS Interfaces Configuration Guide, Release 5.x

Cisco Nexus 7000 Series NX-OS Layer 2 Switching Configuration Guide, Release 5.x

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Cisco Nexus 7000 Series NX-OS Quality of Service Configuration Guide, Release 5.x
Cisco Nexus 7000 Series NX-OS Unicast Routing Configuration Guide, Release 5.x
Cisco Nexus 7000 Series NX-OS Multicast Routing Configuration Guide, Release 5.x
Cisco Nexus 7000 Series NX-OS Security Configuration Guide, Release 5.x
Cisco Nexus 7000 Series NX-OS OTV Configuration Guide, Release 5.x
Cisco Nexus 7000 Series NX-OS Virtual Device Context Configuration Guide, Release 5.x
Cisco Nexus 7000 Series NX-OS FabricPath Configuration Guide, Release 5.x
Cisco Nexus 7000 Series NX-OS Software Upgrade and Downgrade Guide, Release 5.x
Cisco Nexus 7000 Series NX-OS Licensing Guide, Release 5.x
Cisco Nexus 7000 Series NX-OS High Availability and Redundancy Guide, Release 5.x
Cisco Nexus 7000 Series NX-OS System Management Configuration Guide, Release 5.x
Cisco NX-OS XML Management Interface User Guide, Release 5.x
Cisco NX-OS System Messages Reference
Cisco Nexus 7000 Series NX-OS MIB Quick Reference

NX-OS Command References

Cisco Nexus 7000 Series NX-OS Command Reference Master Index, Release 5.x
Cisco Nexus 7000 Series NX-OS Fundamentals Command Reference, Release 5.x
Cisco Nexus 7000 Series NX-OS Interfaces Command Reference, Release 5.x
Cisco Nexus 7000 Series NX-OS Layer 2 Switching Command Reference, Release 5.x
Cisco Nexus 7000 Series NX-OS Quality of Service Command Reference, Release 5.x
Cisco Nexus 7000 Series NX-OS Unicast Routing Command Reference, Release 5.x
Cisco Nexus 7000 Series NX-OS Multicast Routing Command Reference, Release 5.x
Cisco Nexus 7000 Series NX-OS Security Command Reference, Release 5.x
Cisco Nexus 7000 Series NX-OS OTV Command Reference, Release 5.x
Cisco Nexus 7000 Series NX-OS Virtual Device Context Command Reference, Release 5.x
Cisco Nexus 7000 Series NX-OS FabricPath Command Reference, Release 5.x
Cisco Nexus 7000 Series NX-OS System Management Command Reference, Release 5.x

Other Software Document

Cisco Nexus 7000 Series NX-OS Troubleshooting Guide, Release 5.x

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

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

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Cisco NX-OS Interfaces Commands

This chapter describes the Cisco NX-OS interfaces commands.

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attach fex

To access the command-line interface (CLI) of a connected Fabric Extender to run diagnostic commands, use the **attach fex** command.

attach fex *chassis-id*

Syntax Description	<i>chassis-id</i>	Fabric Extender chassis ID. The chassis ID range is from 100 to 199.
---------------------------	-------------------	--

Defaults	None
-----------------	------

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

Command History	Release	Modification
	5.1(1)	This command was introduced.

Usage Guidelines	Use the attach fex command to access the CLI on a connected Fabric Extender and perform diagnostic commands. We recommend that you use this command only by following the directions from Cisco technical support personnel.
-------------------------	---

Examples	This example shows how to access the command-line interface (CLI) of a connected Fabric Extender to run diagnostic commands:
-----------------	--

```
switch(config)# attach fex 101
Attaching to FEX 101 ...
To exit type 'exit', to abort type '$.'
Bad terminal type: "ansi". Will assume vt100.
fex-101#
```

Related Commands	Command	Description
	show fex	Displays all configured Fabric Extender chassis connected to the switch.

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bandwidth (interface)

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

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

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

Syntax Description		
	<i>kbps</i>	Intended bandwidth, in kilobits per second. Valid values are 1 to 10000000.
	inherit	(Optional) Specifies the inherited bandwidth such as how a subinterface inherits the bandwidth of its main interface.

Defaults	
	1000000 kbps

Command Modes	
	Interface configuration

Supported User Roles	
	network-admin vdc-admin

Command History	Release	Modification
	4.0	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.



Note

This is a routing parameter only. It does not affect the physical interface.

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.

This command does not require a license.

bandwidth (interface)

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Examples

This example shows how to configure all subinterfaces off this main interface to inherit the configured bandwidth:

```
switch(config-if)# bandwidth inherit 30000
```

Related Commands

Command	Description
show interface	Displays the interface configuration information.

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beacon

To enable the beacon mode for an interface, use the **beacon** command. To disable the beacon mode for an interface, use the **no** form of this command.

beacon

no beacon

Syntax Description This command has no arguments or keywords.

Defaults Disabled

Command Modes Interface configuration

SupportedUserRoles network-admin
vdc-admin

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines The beacon mode allows you to identify a physical port by flashing its link-state LED with a green light. To identify the physical port for an interface, you activate the beacon parameter for the interface. This command does not require a license.

Examples This example shows how to enable the beacon mode for the Ethernet port 3/1:

```
switch(config)# interface ethernet 3/1
switch(config-if)# beacon
switch(config-if)#
```

Related Commands	Command	Description
	show interface	Displays the interface status, which includes the beacon mode state.

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bfd

To enable Bidirectional Forwarding Detection (BFD) for a protocol, use the **bfd** command. To disable BFD for a protocol, use the **no** form of this command.

bfd

no bfd

Syntax Description This command has no arguments or keywords.

Defaults BFD is not enabled on the protocol.

Command Modes Router configuration
Neighbor configuration

Command History	Release	Modification
	5.0(2)	This command was introduced.

Usage Guidelines There are two methods to configure protocols to use BFD for failure detection. To enable BFD for all neighbors or interfaces of a protocol, enter the **bfd** command in router configuration mode for the Enhanced Interior Gateway Routing Protocol (EIGRP), Open Shortest Path First (OSPFv2), and Intermediate-System-to-Intermediate-System (IS-IS) or in neighbor configuration mode for the Border Gateway Protocol (BGP). If you do not want to enable BFD on all interfaces, see the interface-level BFD enable commands in the Related Commands section.

Examples This example shows how to enable BFD for all EIGRP neighbors:

```
switch# configure terminal
switch(config)# router eigrp Test1
switch(config-router)# bfd
```

This example shows how to enable BFD for all BGP neighbors:

```
switch# configure terminal
switch(config)# router bgp 1.1
switch(config-router)# neighbor 192.0.2.1 remote-as 1.0
switch(config-router-neighbor)# bfd
```

Related Commands	Command	Description
	hsrp bfd	Enables BFD on an HSRP interface.
	ip eigrp bfd	Enables BFD on an EIGRP interface.

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Command	Description
ip ospf bfd	Enables BFD on an OSPFv2 interface.
isis bfd	Enables BFD on an IS-IS interface.

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bfd echo

To enable Bidirectional Forwarding Detection (BFD) echo mode, use the **bfd echo** command. To disable BFD echo mode, use the **no** form of this command.

bfd echo

no bfd echo

Syntax Description This command has no arguments or keywords.

Defaults BFD echo mode is enabled by default.

Command Modes Interface configuration

Command History	Release	Modification
	5.0(2)	This command was introduced.

Usage Guidelines When echo mode is enabled, the required minimum receive interval value is taken from the BFD slow-timer setting.



Note

Before using BFD echo mode, you must disable the IP packet verification check for identical IP source and destination addresses by entering the **no hardware ip verify address identical** command in the default VDC.



Note

Before using BFD echo mode, you must disable the sending of Internet Control Message Protocol (ICMP) redirect messages by entering the **no ip redirects** command.

Use the **no bfd echo** command to stop sending echo packets and signify that the device is unwilling to forward echo packets that are received from BFD neighbors. The RequiredMinEchoRx BFD session parameter is set to zero when echo mode is disabled.

This command does not require a license.

Examples This example shows how to configure echo mode between BFD neighbors.

```
switch(config)# interface Ethernet 1/1
switch(config-if)# bfd echo
```

This example shows that the BFD session neighbor is up and using BFD echo mode. The relevant command output is shown in bold in the output.

```
switch# show bfd neighbors details
```


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```

OurAddr      NeighAddr      LD/RD  RH/RS      Holdown(mult)State  Int
172.16.1.2   172.16.1.1     1/6    Up          0 (3 ) Up           Fa0/1
Session state is UP and using echo function with 50 ms interval.
Local Diag: 0, Demand mode: 0, Poll bit: 0
MinTxInt: 1000000, MinRxInt: 1000000, Multiplier: 3
Received MinRxInt: 1000000, Received Multiplier: 3
Holdown (hits): 3000(0), Hello (hits): 1000(337)
Rx Count: 341, Rx Interval (ms) min/max/avg: 1/1008/882 last: 364 ms ago
Tx Count: 339, Tx Interval (ms) min/max/avg: 1/1016/886 last: 632 ms ago
Registered protocols: EIGRP
Uptime: 00:05:00
Last packet: Version: 1          - Diagnostic: 0
              State bit: Up      - Demand bit: 0
              Poll bit: 0        - Final bit: 0
              Multiplier: 3      - Length: 24
              My Discr.: 6       - Your Discr.: 1
              Min tx interval: 1000000 - Min rx interval: 1000000
              Min Echo interval: 50000

```

Related Commands	Command	Description
	feature bfd	Enables the BFD feature.
	bfd interval	Configures the BFD session parameters.
	bfd slow-timer	Configures the BFD RequiredminEchoRx interval.
	hardware ip verify address identical	Enables verifying that IP packets do not have the same address for IP source and IP destination fields.
	ip redirects	Enables the sending of ICMP redirect messages if the Cisco IOS software is forced to resend a packet through the same interface on which it was received.

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bfd interval

To configure the Bidirectional Forwarding Detection (BFD) session parameters, use the **bfd interval** command. To return to the default setting, use the **no** form of this command.

bfd interval *mintx* **min_rx** *msec* **multiplier** *value*

no bfd interval *mintx* **min_rx** *msec* **multiplier** *value*

Syntax Description		
	<i>mintx</i>	Rate at which BFD control packets will be sent to BFD neighbors. The configurable time period for the <i>milliseconds</i> argument is from 50 to 999 milliseconds.
	min_rx <i>msec</i>	Specifies the rate at which BFD control packets will be expected to be received from BFD neighbors. The configurable time period for the <i>msec</i> argument is from 50 to 999 milliseconds.
	multiplier <i>value</i>	Specifies the number of consecutive BFD control packets that must be missed from a BFD neighbor before BFD declares that the neighbor is unavailable and the BFD neighbor is informed of the failure. The configurable value range for the <i>value</i> argument is from 1 to 50.

Defaults	
	BFD interval: 50 milliseconds min_rx: 50 milliseconds multiplier: 3

Command Modes	
	Global configuration Interface configuration

Supported User Roles	
	network-admin vdc-admin

Command History	Release	Modification
	5.0(2)	This command was introduced.

Usage Guidelines BFD session parameters configured at the interface level take precedence over the globally configured BFD session parameters.

This command does not require a license.

Examples This example shows how to set the BFD session parameters for Ethernet interface 3/1:

```
switch# configure terminal
switch(config)# interface ethernet 3/1
switch(config-if)# bfd interval 50 min_rx 20 multiplier 3
```

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Related Commands

Command	Description
feature bfd	Enables the BFD feature.
show bfd neighbors	Displays information about BFD neighbors.

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bfd optimize subinterfaces

To optimize subinterfaces on a physical interface for Bidirectional Forwarding Detection (BFD), use the **bfd optimize subinterfaces** command. To return to the default setting, use the **no** form of this command.

bfd optimize subinterfaces

no bfd optimize subinterfaces

Syntax Description This command has no arguments or keywords.

Defaults Disabled

Command Modes Interface configuration

Command History	Release	Modification
	5.0(2)	This command was introduced.

Usage Guidelines You can optimize subinterfaces, because BFD creates sessions for all configured subinterfaces. BFD sets the subinterface with the lowest configured VLAN ID as the master subinterface and that subinterface uses the BFD session parameters of the parent interface. The remaining subinterfaces use the slow timer. If the master subinterface session detects an error, BFD marks all subinterfaces on that physical interface as down.

This command does not require a license.

Examples This example shows how to enable subinterface optimization:

```
switch(config)# interface Ethernet 1/1
switch(config-if)# bfd optimize subinterfaces
```

Related Commands	Command	Description
	feature bfd	Enables the BFD feature.

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bfd per-link

To enable Bidirectional Forwarding Detection (BFD) for all links in a port channel, use the **bfd per-link** command. To disable BFD for a port channel, use the **no** form of this command.

bfd per-link

no bfd per-link

Syntax Description This command has no arguments or keywords.

Defaults BFD is not enabled on the port channel.

Command Modes Port channel configuration

Command History	Release	Modification
	5.0(2)	This command was introduced.

Usage Guidelines Use the **bfd per-link** command to enable BFD on each link in a port channel. BFD creates a session for each link in the port channel and provides an aggregate result to client protocols. For example, if the BFD session for one link on a port channel is up, BFD informs client protocols such as OSPF that the port channel is up. The BFD session parameters are negotiated between the BFD peers in a three-way handshake.

Examples This example shows how to enable BFD for port channel 3:

```
switch# configure terminal
switch(config)# interface port-channel 3
switch(config-if)# bfd per-link
```

This example shows how to configure the BFD session parameters for a port channel:

```
switch# configure terminal
switch(config)# interface port-channel 3
switch(config-if)# bfd interval 50 min_rx 50 multiplier 3
```

Related Commands	Command	Description
	bfd echo	Enables BFD echo mode.
	feature bfd	Enables the BFD feature.
	bfd interval	Configures the BFD session parameters

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bfd slow-timer

To configure the Bidirectional Forwarding Detection (BFD) slow timer value, use the **bfd slow-timer** command. To return to the default setting, use the **no** form of this command.

bfd slow-timer *milliseconds*

no bfd slow-timer *milliseconds*

Syntax Description	<i>milliseconds</i>	BFD slow timer value, in milliseconds. The range is from 1000 to 30000.
--------------------	---------------------	---

Defaults	The default BFD slow timer value is 2000 milliseconds.
----------	--

Command Modes	Global configuration Interface configuration
---------------	---

Command History	Release	Modification
	5.0(2)	This command was introduced.

Usage Guidelines	Use the bfd slow-timer command to configure how fast a BFD session comes up. This value also sets the RequiredMinRx (or min_rx) value when echo mode is enabled.
------------------	---

This command does not require a license.

Examples	This example shows that the BFD slow timer value is configured to 14,000 milliseconds:
----------	--

```
switch(config)# bfd slow-timer 14000
```

This example shows that the BFD slow timer value of 14,000 milliseconds has been implemented. The values for the MinTxInt and MinRxInt will correspond to the configured value for the BFD slow timer. The relevant command output is shown in bold.

```
switch# show bfd neighbors details
```

```
OurAddr      NeighAddr    LD/RD  RH/RS  Holdown(mult)  State  Int
172.16.10.1  172.16.10.2  1/1    Up      0 (3 )         Up     Et2/0
Session state is UP and using echo function with 50 ms interval.
Local Diag: 0, Demand mode: 0, Poll bit: 0
MinTxInt: 14000, MinRxInt: 14000, Multiplier: 3
Received MinRxInt: 10000, Received Multiplier: 3
Holdown (hits): 3600(0), Hello (hits): 1200(418)
Rx Count: 422, Rx Interval (ms) min/max/avg: 1/1480/1087 last: 112 ms ago
Tx Count: 420, Tx Interval (ms) min/max/avg: 1/2088/1090 last: 872 ms ago
Registered protocols: OSPF
Uptime: 00:07:37
Last packet: Version: 1                - Diagnostic: 0
                State bit: Up          - Demand bit: 0
                Poll bit: 0            - Final bit: 0
```

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```
Multiplier: 3          - Length: 24
My Discr.: 1           - Your Discr.: 1
Min tx interval: 14000 - Min rx interval: 14000
Min Echo interval: 4000
```

Related Commands

Command	Description
bfd echo	Enables BFD echo mode.

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carrier-delay

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

```
carrier-delay {sec | {msec value}}
```

```
no carrier-delay
```

Syntax Description

<i>sec</i>	Seconds of delay. The range of values is from 0 to 60.
msec	Specifies milliseconds of delay.
<i>value</i>	Milliseconds of delay. The range of values is from 0 to 1000.

Defaults

The default is 2 seconds or 100 milliseconds.

Command Modes

Interface configuration mode

Supported User Roles

network-admin
vdc-admin

Command History

Release	Modification
4.0(3)	This command was introduced.

Usage Guidelines



Note

You must enable the VLAN interface feature, using the **feature interface-vlan** command, before you can use this command.

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 device is not aware that a link-down event occurred. A large carrier delay timer results in fewer link-up/link-down events being detected. When you set the carrier delay time to 0, the device detects each link-up/link-down event that occurs.



Note

The **carrier-delay** command is supported only on the VLAN interface mode; no other interface modes support this command.

In most environments, a lower carrier delay time is better than a higher one. The exact value that you choose depends on the nature of the link outages and how long you expect these linkages to last in your network. If your data links are subject to short outages (especially if those outages last less time than it takes for your IP routing to converge) you should set a long carrier delay value to prevent these short

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outages from causing unnecessary churn in your routing tables. However, if you outages tend to be longer, then you may want to set a shorter carrier delay time so that the outages are detected sooner, and the IP route convergence begins and ends sooner.

This command does not require a license.

Examples

This example shows how to set the carrier delay timer to 20 minutes for VLAN 6:

```
switch(config)# interface vlan 6
switch(config-if)# carrier-delay 20
switch(config-if)#
```

Related Commands

Command	Description
show interface vlan	Displays information about VLAN interfaces.

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channel-group

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

channel-group *number* [**force**] [**mode** { **active** | **on** | **passive** }]

no channel-group [*number*]

Syntax Description

<i>number</i>	Number of channel group. Maximum number of port channels that can be configured is 256 across all VDCs, and the range of values is from 1 to 4096.
force	(Optional) Forces the interface to join the channel group, although some parameters are not compatible. See Usage Guidelines below for information on the compatibility parameters and which ones can be forced.
mode	Specifies the port-channel mode of the interface.
active	Specifies that when you enable the Link Aggregation Control Protocol (LACP), this command enables LACP on the specified interface. Interface is in active negotiating state, in which the port initiates negotiations with other ports by sending LACP packets.
on	Specifies the default channel mode, and all port channels 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 device 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.

Defaults

None

Command Modes

Interface configuration mode

Supported User Roles

network-admin
vdc-admin

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Command History	Release	Modification
	4.0	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 device automatically removes the specified from its present channel group and adds that port to 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**. A port channel in the **on** channel mode is a pure port channel and can aggregate a maximum of eight ports. It does not run LACP.

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

All ports in one port channel must be in the same virtual device context (VDC). With LACP enabled, this requirement applies to the possible eight active ports and the possible eight standby ports. The port channels can originate in one VDC (with all ports in that channel in the same VDC) and partner with a port channel in another VDC (again, all ports in that channel must be in that VDC).

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

The compatibility check includes the following operational attributes:

- Network layer
- (Link) speed capability
- Speed configuration
- Duplex capability
- Duplex configuration
- Port mode
- Access VLAN
- Trunk native VLAN
- Tagged or untagged
- Allowed VLAN list
- MTU size
- SPAN—cannot be SPAN source or destination port
- Layer 3 ports cannot have subinterfaces.
- Storm control
- Flow control capability
- Flow control configuration

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

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You can only add interfaces configured with the channel mode set to **on** to static port channels, that is without a configured aggregation protocol. And you can only add interfaces configured with the channel mode as **active** or **passive** to port channels 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 port channel.

Alternatively, you can force ports with incompatible parameters to join the port channel as long the following parameters are the same:

- (Link) speed capability
- Speed configuration
- Duplex capability
- Duplex configuration
- Flow control capability
- Flow control configuration

When the interface joins a port channel, some of its individual parameters are removed and replaced with the values on the port channel, as follows:

- Bandwidth
- Delay
- Extended Authentication Protocol over UDP
- VRF
- IP address (v4 and v6)
- MAC address
- Spanning Tree Protocol
- NAC
- Service policy
- Quality of Service (QoS)
- ACLs

Also, many interface parameters remain unaffected with the interface joins or leaves a port channel, as follows:

- Beacon
- Description
- CDP
- LACP port priority
- Debounce
- UDLD
- MDIX
- Rate mode
- Shutdown
- SNMP trap

If subinterfaces are configured for the port-channel interface and a member port is removed from the port channel, the configuration of the port-channel subinterface is not propagated to the member ports.

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

You do not have to create a port-channel interface before you assign a physical interface to a channel group. A port-channel interface is created automatically when the channel group gets its first physical interface, if it is not already created.

You can create either a Layer 2 or a Layer 3 port channel by entering the **interface port-channel** command or when the channel group gets its first physical interface assignment. The port channels are not created at run time or dynamically.

This command does not require a license.



Note

The number of ports allowed in a port-channel (for ON mode) is different between M1 and F1 (D1) only VDCs. The number is 8 for M1 or M1-F1 VDCs and 16 for F1 ones.

Examples

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

```
switch(config-if)# channel-group 5 mode active
switch(config-if)#
```

Related Commands

Command	Description
show interface port-channel	Displays information about the traffic on the specified port-channel interface.
show port-channel summary	Displays information on the port channels.
show lacp	Displays LACP information.

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clear counters interface

To clear the interface counters, use the **clear counters interface** command.

```
clear counters interface { all | ethernet slot/port | loopback number | mgmt number | port-channel
channel-number | tunnel tunnel-number | vlan vlan-number }
```

Syntax Description		
all		Clears all interface counters
ethernet <i>slot/port</i>		Clears the Ethernet interface counter for the slot number and port number specified.
loopback <i>number</i>		Clears the loopback interface counter for the virtual interface number specified. The loopback range is from 0 to 1023.
mgmt <i>number</i>		Clears the management interface counter for the number specified. The number is 0.
port-channel <i>channel-number</i>		Clears the port-channel interface for the number specified. The range is from 1 to 4096.
tunnel <i>tunnel-number</i>		Clears the port-channel interface for the number specified. The range is from 0 to 65535.
vlan <i>vlan-number</i>		Clears the port-channel interface for the number specified. The range is from 1 to 4096.

Defaults None

Command Modes Any command mode

Supported User Roles network-admin
vdc-admin

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines This command does not require a license.

Examples This example shows how to clear and reset the counters on Ethernet port 5/5:

```
switch# clear counters interface ethernet 5/5
```

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Related Commands

Command	Description
show interface counters	Displays in and out counters for all interfaces in the system.

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clear l2protocol tunnel counters

To clear the Layer 2 protocol tunnel statistics counters, use the **clear l2protocol tunnel counters** command.

```
clear l2protocol tunnel counters [interface if-range]
```

Syntax Description	interface	Specifies the interface statistics to clear.
	<i>if-range</i>	Clears the statistics counters for the specified Ethernet interface or range of interfaces.

Defaults None

Command Modes Any command mode

Supported User Roles network-admin
vdc-admin

Command History	Release	Modification
	5.0(2)	This command was introduced.

Usage Guidelines If no interfaces are specified, the Layer 2 protocol tunnel statistics are cleared for all interfaces. This command does not require a license.

Examples This example shows how to clear the Layer 2 protocol tunnel statistics counters:

```
switch# clear l2protocol tunnel counters
```

Related Commands	Command	Description
	show l2protocol tunnel	Displays Layer 2 protocol tunnel information.

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clear lacp counters

To clear the statistics for all interfaces for Link Aggregation Control Protocol (LACP) groups, use the **clear lacp counters** command.

```
clear lacp counters [interface port-channel channel-number]
```

Syntax Description

interface port-channel	(Optional) Specifies the interface port channel.
<i>channel-number</i>	(Optional) LACP port-channel number. The range of values is from 1 to 4096.

Defaults

None

Command Modes

Any command mode

Supported User Roles

network-admin
vdc-admin

Command History

Release	Modification
4.0	This command was introduced.

Usage Guidelines

If you enter this command for a static port-channel group, without the aggregation protocol enabled, the device ignores the command.

If you do not specify a channel number, the LACP counters for all LACP port groups are cleared.

This command does not require a license.

Examples

This example shows how to clear all the LACP counters:

```
switch(config)# clear lacp counters
switch(config) #
```

This example shows how to clear all LACP counters for the LACP port-channel group 20:

```
switch(config)# clear lacp counters interface port-channel 20
switch(config)#
```

Related Commands

Command	Description
show lacp counters	Displays information about LACP statistics.

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clear vpc statistics

To clear virtual port-channel (vPC) statistics, use the **clear vpc statistics** command.

```
clear vpc statistics {all | peer-keepalive | peer-link | vpc number}
```

Syntax Description		
all		Clears all vPC statistics on the local vPC peer device.
peer-keepalive		Clears the vPC peer-keepalive statistics on the local vPC peer device.
peer-link		Clears statistics on the local vPC peer device.
vpc number		Clears vPC statistics on the specified vPC. The range is from 1 to 4096.

Defaults None

Command Modes Any command mode

Supported User Roles network-admin
vdc-admin

Command History	Release	Modification
	4.1(3)	This command was introduced.

Usage Guidelines

Use the **clear vpc statistics** command to clear the vPC statistics. If the feature is not enabled, this command is unavailable.

The **clear vpc statistics peer-link** and **clear vpc statistics vpc number** commands are redirected to the appropriate port channel and the **clear statistics port-channel channel-number** command.

This command does not require a license.

Examples This example shows how to clear the statistics for vPC 10:

```
switch(config)# clear vpc statistics vpc 10
switch(config) #
```

Related Commands	Command	Description
	show vpc statistics	Displays vPC statistical information on vPCs. If the feature is not enabled, the system displays an error when you enter this command.

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default interface

To create a checkpoint of the running configuration for rollback purposes, use the **default interface** command.

default interface *if* [**checkpoint** *name*]

Syntax Description	
<i>if</i>	Interface type and number in module/slot format.
checkpoint	(Optional) Creates a configuration rollback checkpoint.
<i>name</i>	(Optional) Checkpoint name. The maximum size is 80 alphanumeric.

Defaults None

Command Modes Interface configuration mode

Supported User Roles network-admin
vdc-admin

Command History	Release	Modification
	5.1(1)	This command was introduced.

Usage Guidelines This command does not require a license.

Use this command to return an interface to its default state. All the user configuration under the specified interface(s) will be wiped out upon the successful completion of the command. User can optionally create a checkpoint before wiping out the interface configuration, so that user can later choose rollback to the original configuration.



Caution

When using this command, you will delete the configuration of the specified interfaces unless you enter the checkpoint keyword. The optional checkpoint keyword allows you to create a checkpoint of the interface configuration so that you can later roll back to the original configuration.

Examples This example shows how to create a checkpoint of the running configuration for rollback purposes:

```
switch(config)# default interface ethernet 2/1 checkpoint test
.....Done
switch(config)#
```

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Related Commands	Command	Description
	show interface switchport	Displays the administrative and operational status of a switching (nonrouting) port.

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delay

To configure the interface throughput delay for Ethernet interfaces, use the **delay** command. To remove the configured throughput delay, use the **no** form of this command.

delay *value*

no delay

Syntax Description

<i>value</i>	Delay time in tens of microseconds. You can set an informational value range between 1 and 16777215 tens of microseconds.
--------------	---

Defaults

10 microseconds for all interfaces except loopback ports

5000 microseconds for loopback ports

Command Modes

Interface configuration mode

Supported User Roles

network-admin
vdc-admin

Command History

Release	Modification
4.0	This command was introduced.

Usage Guidelines

Beginning with Cisco NX-OS Release 4.2(1) for the Cisco Nexus 7000 Series devices, the default delay values are changed. Prior to this release, all the default delay value for all interfaces was 100 microseconds.



Note

After upgrading from an older release, when you enter the **show running** command on a VLAN interface, the display shows an additional configuration of `delay 100`. If you want to revert the delay value to the new default, enter the **no delay** command for that VLAN interface.

Specifying a value for the throughput delay provides a value for use by Layer 3 protocols; it does not change the actual throughput delay of an interface.

This command does not require a license.

Examples

This example shows how to configure the throughput-delay time to 100,000 microseconds for the slot 3 port 1 Ethernet interface:

```
switch(config)# interface ethernet 3/1
switch(config-if)# delay 10000
```

■ delay

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Related Commands

Command	Description
show interface	Displays information about the interface, which includes the delay parameter.

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delay restore

To delay the virtual port channel (vPC) from coming up on the restored vPC peer device after a reload when the peer adjacency is already established, and the VLAN interfaces are back up, use the **delay restore** command. To return to the default value, use the **no** form of this command.

delay restore [**interface-vlan**] *seconds*

no delay restore [**interface-vlan**] *seconds*

Syntax Description	interface-vlan	(Optional) Delay the VLAN interfaces on the restored vPC peer device from coming up.
	<i>seconds</i>	Number of seconds to delay bringing up the restored vPC peer device. The range is from 1 to 3600.

Defaults None

Command Modes vpc-domain command mode

Supported User Roles network-admin
vdc-admin

Command History	Release	Modification
	4.2(1)	This command was introduced.

Usage Guidelines Use the **delay restore** command to avoid upstream traffic from the access device to the core from being dropped when you restore the vPC peer devices. Sometimes, the restored vPCs may come up before the routing tables are converged, and you may see packet drops.

This command does not require a license.

Examples This example shows how to configure the delay reload:

```
switch# config t
switch(config)# vpc domain 5
switch(config-vpc-domain)# delay restore 40
```

Related Commands	Command	Description
	feature vpc	Enables vPC configuration on the device.

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description

To provide textual interface descriptions for the Ethernet and management interfaces, use the **description** command. To remove the description, use the **no** form of this command.

description *text*

Syntax Description	<i>text</i>	Description for the interface that you are configuring. The maximum range is 80 alphanumeric, case-sensitive characters.
--------------------	-------------	--

Defaults	None
----------	------

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

SupportedUserRoles	network-admin vdc-admin
--------------------	----------------------------

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines	You use the description command to provide textual interface descriptions. This command does not require a license.
------------------	---

Examples	This example shows how to add the description server1 to the Ethernet interface on slot 5, port 2: <pre>switch(config)# interface ethernet 5/1 switch(config-if)# description server1</pre>
----------	--

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

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description (fex)

To specify a description for a Fabric Extender, use the **description** command. To revert to the default description, use the **no** form of this command.

description *description*

no description

Syntax Description	<i>description</i>	Description of a Fabric Extender. The default is the string FEXxxxx where xxxx is the chassis ID. For example, if the chassis ID is 123, the default description is FEX0123. The maximum length is 20 alphanumeric characters.
---------------------------	--------------------	--

Defaults	None
-----------------	------

Command Modes	Fabric Extender configuration mode
----------------------	------------------------------------

Command History	Release	Modification
	5.1(1)	This command was introduced.

Usage Guidelines	This command does not require a license.
-------------------------	--

Examples This example shows how to specify a description for a Fabric Extender:

```
switch# configure terminal
switch(config)# fex 101
switch(config-fex)# description Rack16_FEX101
```

This example shows how to revert to the default description for a Fabric Extender:

```
switch# configure terminal
switch(config)# fex 101
switch(config-fex)# no description
```

Related Commands	Command	Description
	show fex	Displays all configured Fabric Extender chassis connected to the switch.

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dual-active exclude interface-vlan

To ensure that certain VLAN interfaces are not shut down on the virtual port-channel (vPC) secondary peer device when the vPC peer link fails for those VLANs carried on the vPC peer link but not on the vPC configuration itself, use the **dual-active exclude interface-vlan** command. To return to the default value, use the **no** form of this command.

dual-active exclude interface-vlan {*range*}

no dual-active exclude interface-vlan {*range*}

Syntax Description	<i>range</i>	Range of VLAN interfaces that you want to exclude from shutting down. The range is from 1 to 4094.
---------------------------	--------------	--

Defaults	None
-----------------	------

Command Modes	vpc-domain configuration mode
----------------------	-------------------------------

Supported User Roles	network-admin vdc-admin
-----------------------------	----------------------------

Command History	Release	Modification
	4.2(1)	This command was introduced.

Usage Guidelines	Use the dual-active exclude interface-vlan command to ensure that those VLAN interfaces on the vPC secondary peer device that are carried on the vPC peer link but not by the vPC configuration itself do not go down if the vPC peer link fails. The VLAN interfaces must have already been configured.
-------------------------	---



Note

We do not recommend configuring an interface-VLAN exclude for a VLAN carried on a vPC because this may cause packet losses on dual-active devices if the interface-VLAN still attracts Layer 3 traffic while the vPC primary device and the vPC peer link are down.

This command does not require a license.

Examples	This example shows how to configure the device to keep the VLAN interfaces up on the vPC peer devices if the peer link fails:
-----------------	---

```
switch# config t
switch(config)# vpc-domain 5
switch(config-vpc-domain)# dual-active exclude interface-vlan 10
```

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Related Commands

Command	Description
vpc-domain	Configures a vPC domain and enters the vpc-domain configuration mode.

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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.
	auto	Specifies the duplex mode as autonegotiate.

Defaults None

Command Modes Interface configuration mode

Supported User Roles network-admin
vdc-admin

Command History	Release	Modification
	4.0	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 7000 Series NX-OS Interfaces Configuration Guide, Release 5.x*, 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(config-if)# duplex full
```

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Related Commands

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

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encapsulation dot1Q

To enable IEEE 802.1Q encapsulation of traffic on a specified subinterface in a virtual LAN (VLAN), use the **encapsulation dot1q** command. To disable encapsulation, use the **no** form of this command.

encapsulation dot1Q *vlan-id*

no encapsulation dot1Q *vlan-id*

Syntax Description	<i>vlan-id</i>	VLAN to set when the interface is in access mode; valid values are from 1 to 4094, except for the VLANs reserved for internal switch use.
---------------------------	----------------	---

Defaults	No encapsulation
-----------------	------------------

Command Modes	Subinterface configuration mode
----------------------	---------------------------------

Supported User Roles	network-admin vdc-admin
-----------------------------	----------------------------

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines IEEE 802.1Q encapsulation is configurable on Ethernet interfaces. IEEE 802.1Q is a standard protocol for interconnecting multiple switches and routers and for defining VLAN topologies.

Use the **encapsulation dot1q** command in subinterface range configuration mode to apply a VLAN ID to the subinterface.

This command does not require a license.

Examples This example shows how to enable dot1Q encapsulation on a subinterface for VLAN 30:

```
switch(config-subif)# encapsulation dot1q 30
```

Related Commands	Command	Description
	show vlan dot1Q	Displays dot1Q encapsulation information for a VLAN.

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errdisable detect cause

To enable error-disabled (errdisable) detection for an application, use the **errdisable detect cause** command. To return to the default setting, use the **no** form of this command.

```
errdisable detect cause {acl-exception | all | link-flap | loopback}
```

```
no errdisable detect cause {acl-exception | all | link-flap | loopback}
```

Syntax Description

acl-exception	Enables error-disabled detection for access-list installation failures.
all	Enables error-disabled detection on all causes.
link-flap	Enables error-disabled disable detection on link-state flapping.
loopback	Enables error-disabled detection on loopback.

Defaults

Disabled

Command Modes

Global configuration mode

Supported User Roles

network-admin
vdc-admin

Command History

Release	Modification
4.0	This command was introduced.

Usage Guidelines

Use the **errdisable detect cause** command to enable error detection for an application.

A cause is defined as the reason why the error-disabled state occurred. When a cause is detected on an interface, the interface is placed in an error-disabled state. This error-disabled state is an operational state that is similar to the link-down state. You must enter the **shutdown** command and then the **no shutdown** command to recover an interface manually from the error-disabled state.

This command does not require a license.

Examples

This example shows how to enable error-disabled detection on all cases:

```
switch(config)# errdisable detect cause all
```

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Related Commands	Command	Description
	shutdown	Brings the port down administratively.
	no shutdown	Brings the port up administratively.
	show interface status err-disabled	Displays the interface error-disabled state.

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errdisable recovery cause

To enable the automatic recovery from the error-disabled (errdisable) state for an application, use the **errdisable recovery cause** command. To return to the default setting, use the **no** form of this command.

errdisable recovery cause { **all** | **bpduguard** | **link-flap** | **failed-port-state** | **psecure-violation** | **security-violation** | **storm-control** | **udld** | **vpc-peerlink** }

no errdisable recovery cause { **all** | **bpduguard** | **link-flap** | **psecure-violation** | **security-violation** | **storm-control** | **udld** | **vpc-peerlink** }

Syntax Description		
all	Enables automatic recovery from all causes.	
bpduguard	Enables automatic recovery from BPDU Guard error-disabled state.	
link-flap	Enables automatic recovery from link-state flapping.	
failed-port state	Enables timer automatic recovery from the STP set port state failure.	
psecure-violation	Enables timer automatic recovery from the psecure violation disable state.	
security-violation	Enables automatic recovery from the 802.1X violation disable state.	
storm-control	Enables automatic recovery from the storm control error-disabled state.	
udld	Enables automatic recovery from the UDLD error-disabled state.	
vpc-peerlink	Enables automatic recovery from an inconsistent vPC peer-link error-disabled state.	

Defaults Disabled

Command Modes Global configuration mode

SupportedUserRoles network-admin
vdc-admin

Command History	Release	Modification
	4.0	This command was introduced.
	4.1(3)	Added the vpc-peerlink parameter.

Usage Guidelines Use the **errdisable recovery cause** command to enable automatic recovery on the interface from the error-disabled state for an application. This command tries to bring the interface out of the error-disabled state and retry operation once all the causes have timed out. The interface automatically tries to come up again after 300 seconds. To change this interval, use the **errdisable recovery interval** command.

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This command does not require a license.

Examples

This example shows how to automatically recover from the error-disabled state for link flapping after you have enabled the recovery timer:

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

Related Commands

Command	Description
errdisable recovery interval	Enables the recovery timer.
show interface status err-disabled	Displays interface error-disabled state.

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errdisable recovery interval

To enable the recovery timer, use the **errdisable recovery interval** command.

errdisable recovery interval *interval*

Syntax Description	<i>interval</i>	Error detection for access-list installation failures. The range is from 30 to 65535.
---------------------------	-----------------	---

Defaults	300 seconds
-----------------	-------------

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

Supported User Roles	network-admin vdc-admin
-----------------------------	----------------------------

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines	Use the errdisable recovery interval command to configure the recovery timer. This command does not require a license.
-------------------------	--

Examples	This example shows how to configure the recovery timer: <pre>switch(config)# errdisable recovery interval 32</pre>
-----------------	--

Related Commands	Command	Description
	errdisable recovery cause	Enables the error-disabled recovery for an application.
	show interface status err-disabled	Displays the interface error-disabled state.

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feature bfd

To enable Bidirectional Forwarding Detection (BFD), use the **feature bfd** command. To return to the default setting, use the **no** form of this command.

feature bfd

no feature bfd

Syntax Description This command has no arguments or keywords.

Defaults Disabled

Command Modes Global configuration mode

SupportedUserRoles network-admin
vdc-admin

Command History	Release	Modification
	5.0(2)	This command was introduced.

Usage Guidelines You must use the **feature bfd** command to enable the BFD functionality.



Note

The device does not display any BFD commands until you enable the feature.

This command does not require a license.

Examples This example shows how to enable BFD functionality on the device:

```
switch# config t
switch(config)# feature bfd
switch(config)#
```

Related Commands	Command	Description
	show feature	Displays information about the features enabled on the device.

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feature interface-vlan

To enable the creation of VLAN interfaces (switched virtual interfaces [SVI]), use the **feature interface-vlan** command in global configuration mode. To disable the VLAN interface feature, use the **no** form of this command.

feature interface-vlan

no feature interface-vlan

Syntax Description This command has no arguments or keywords.

Defaults Disabled

Command Modes Global configuration mode

SupportedUserRoles network-admin
vdc-admin

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines You must use the **feature interface-vlan** command before you can create VLAN interfaces. This command does not require a license.

Examples This example shows how to enable the interface VLAN feature:

```
switch(config)# feature interface-vlan
```

Related Commands	Command	Description
	interface vlan	Creates a VLAN interface.

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feature lacp

To enable Link Aggregation Control Protocol (LACP) port channeling on the device, use the **feature lacp** command. To disable LACP on the device, use the **no** form of this command.

feature lacp

no feature lacp

Syntax Description This command has no arguments or keywords.

Defaults Disabled

Command Modes Global configuration mode

SupportedUserRoles network-admin
vdc-admin

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines

You must remove all the LACP configuration parameters from all port channels on the device before you can disable LACP. You cannot disable LACP while LACP configurations remain on the device.

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

When you enter the **no** form of this command, the system removes all the LACP configuration from the device.

This command does not require a license.

Examples This example shows how to enable LACP port channeling on the device:

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

Related Commands	Command	Description
	show lacp port-channel	Displays information on port channels with LACP enabled.

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feature-set fex

To enable the Fabric Extender (FEX) feature set, use the **feature-set fex** command.

feature-set fex

Syntax Description This command has no arguments or keywords.

Defaults None

Command Modes Global interface configuration mode

Command History	Release	Modification
	5.1(1)	This command was introduced.

Usage Guidelines None.

Examples This example shows how to enable a FEX feature set:

```
switch(config)# feature-set fex
switch(config)# show feature-set
Feature Set Name      ID      State
-----
fcoe                  1      uninstalled
fabricpath           2      uninstalled
fex                   3      enabled
switch(config)#
switch(config)#
```

Related Commands	Command	Description
	show fex	Displays all configured Fabric Extender chassis connected to the switch.

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feature tunnel

To enable the creation of tunnel interfaces, use the **feature tunnel** command in global configuration mode. To disable the tunnel interface feature, use the **no** form of this command.

feature tunnel

no feature tunnel

Syntax Description This command has no arguments or keywords.

Defaults Disabled

Command Modes Global configuration mode

SupportedUserRoles network-admin
vdc-admin

Release	Modification
4.0	This command was introduced.

Usage Guidelines You must use the **feature tunnel** command before you can create tunnel interfaces. This command requires the Enterprise license.

Examples This example shows how to enable the interface tunnel feature:

```
switch(config)# feature tunnel
```

Command	Description
interface tunnel	Creates a tunnel interface.

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feature uddl

To enable Unidirectional Link Detection (UDLD) globally on the device, use the **feature uddl** command. To disable UDLD globally on the device, use the **no** form of this command.

feature uddl

no feature uddl

Syntax Description This command has no arguments or keywords.

Defaults None

Command Modes Global configuration mode

SupportedUserRoles network-admin
vdc-admin

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines Use the **feature uddl** command to enable UDLD globally on the device. UDLD must be also enabled on the other linked interface and its device. After enabling the devices, it is possible to enable a UDLD *mode* for an interface.

Use the **no feature uddl** command to disable UDLD globally for Ethernet interfaces on the device.

This command does not require a license.

Examples This example shows how to enable the UDLD for a device:

```
switch# config t
switch(config)# feature uddl
```

This example shows how to disable UDLD for a device:

```
switch# config t
switch(config)# no feature uddl
```

Related Commands	Command	Description
	show uddl	Displays information about the UDLD configuration.

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feature vpc

To enable virtual port channels (vPCs), use the **feature vpc** command. To return to the default setting, use the **no** form of this command.

feature vpc

no feature vpc

Syntax Description This command has no arguments or keywords.

Defaults Disabled

Command Modes Global configuration mode

SupportedUserRoles network-admin
vdc-admin

Command History	Release	Modification
	4.1(3)	This command was introduced.

Usage Guidelines You must use the **feature vpc** command to enable the vPC functionality. You must enable vPCs before you can configure them.



Note

When you disable vPC, the device clears all the vPC configurations.

This command does not require a license.

Examples This example shows how to enable vPC functionality on the device:

```
switch(config)# feature vpc
```

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

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fex

To create a Fabric Extender and enter fabric extender configuration mode, use the **fex** command. To delete the Fabric Extender configuration, use the **no** form of this command.

fex *chassis-id*

no fex *chassis-id*

Syntax Description	<i>chassis-id</i>	Fabric Extender chassis ID. The chassis ID range is from 100 to 199.
Defaults	None	
Command Modes	Global configuration mode	
Command History	Release	Modification
	5.1(1)	This command was introduced.
Usage Guidelines	You must create and configure the Fabric Extender before you can connect and associate it to an interface on the parent switch. Once you associate the Fabric Extender to the switch, the configuration that you created is transferred over to the Fabric Extender and applied.	
Examples	<p>This example shows how to enter Fabric Extender configuration mode:</p> <pre>switch# configure terminal switch(config)# fex 101 switch(config-fex)#</pre> <p>This example shows how to delete the Fabric Extender configuration:</p> <pre>switch(config-fex)# no fex 101 switch(config)#</pre>	
Related Commands	Command	Description
	show fex	Displays all configured Fabric Extender chassis connected to the switch.

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fex associate

To associate a Fabric Extender to a fabric interface, use the **fex associate** command. To disassociate the Fabric Extender, use the **no** form of this command.

fex associate *chassis-id*

no fex associate *chassis-id*

Syntax Description	<i>chassis-id</i>	Fabric Extender chassis ID. The chassis ID range is from 100 to 199.
Defaults	None	
Command Modes	Interface configuration mode	
Command History	Release	Modification
	5.1(1)	This command was introduced.
Usage Guidelines	Before you can associate an interface on the parent switch to the Fabric Extender, you must first make the interface into a fabric interface by entering the switchport mode fex-fabric command.	
Examples	<p>This example shows how to associate the Fabric Extender to an Ethernet interface:</p> <pre>switch# configure terminal switch(config)# interface ethernet 1/40 switch(config-if)# switchport mode fex-fabric switch(config-if)# fex associate 101</pre> <p>This example shows how to associate the Fabric Extender to an EtherChannel interface:</p> <pre>switch# configure terminal switch(config)# interface port-channel 4 switch(config-if)# switchport mode fex-fabric switch(config-if)# fex associate 10</pre>	
Related Commands	Command	Description
	show fex	Displays all configured Fabric Extender chassis connected to the switch.
	switchport mode fex-fabric	Sets the interface to be an uplink port.

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flowcontrol

To enable or disable the ability of the Ethernet port to send and receive flow-control pause frames, use the **flowcontrol** command. To return to the default flow-control settings, use the **no** form of this command.

flowcontrol {send | receive} {desired | on | off}

no flowcontrol {send | receive}

Syntax Description	send	receive	desired	on	off
	Specifies the flow-control send setting for ports that run at 1000 Mbps or faster.	Specifies the flow-control receive setting for ports that run at any speed.	Specifies the remote port setting to desired for both send and receive, if the configuration of the remote port is unknown.	Specifies the remote port setting to on, if you want the local port to send flow-control pause frames.	Specifies the remote port's send and receive parameter settings to off, if you do not want to use flow control.

Defaults
1-Gb/s interfaces—Off for receive; desired for send
10-Gb/s interfaces—Cannot turn off for receive; off for send

Command Modes
Interface configuration mode

Supported User Roles
network-admin vdc-admin

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines Use the **flowcontrol** command to enable or disable the ability of the Ethernet port to send and receive flow-control pause frames.

Make sure that the remote port has the corresponding setting for the flow control that you need. If you want the local port to send flow-control pause frames, the remote port has a receive parameter set to on or desired. If you want the local port to receive flow-control frames, you must make sure that the remote port has a send parameter set to on or desired. If you do not want to use flow control, you can set the remote port's send and receive parameters to off.

For Ethernet ports that run at 1 Gbps or faster, you can enable or disable the port's ability to send and receive flow-control pause frames. For Ethernet ports that run slower than 1 Gbps, you can enable or disable only the port's ability to receive pause frames.

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When enabling flow control for the local port, you either fully enable the local port to send or receive frames regardless of the flow-control setting of the remote port, or you set the local port to use the desired setting used by the remote port. If you enable both the local and remote ports for flow control, or set the desired flow control of the other port, or set a combination of those two states, flow control is enabled for those ports.



Note For ports that run at 10 Gbps, you cannot use the desired state for the send or receive parameter.

To see how the different port flow-control states affect the link flow-control state, see [Table 1](#).

Table 1 Port Flow-Control Influences on Link Flow Control

Port Flow Control States		Link Flow Control State
Port Receiving Data (Sends Pause Frames)	Port Transmitting Data (Receives Pause Frames)	
Enabled	Enabled	Enabled
Enabled	Desired	Enabled
Enabled	Disabled	Disabled
Desired	Enabled	Enabled
Desired	Desired	Enabled
Desired	Disabled	Disabled
Disabled	Enabled	Disabled
Disabled	Desired	Disabled
Disabled	Disabled	Disabled

This command does not require a license.

Examples

This example shows how to set Ethernet port 3/1 to send flow-control pause frames:

```
switch# config t
switch(config)# interface ethernet 3/1
switch(config-if)# flowcontrol send on
```

Related Commands

Command	Description
show interface flowcontrol	Displays information about the interface flow control.
show interface	Displays information about the interface, which includes the flow-control parameter.

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hsrp bfd

To enable Bidirectional Forwarding Detection (BFD) on a Hot Standby Router Protocol (HSRP) interface, use the **hsrp bfd** command. To return to the default setting, use the **no** form of this command.

```
hsrp bfd
```

```
no hsrp bfd
```

Syntax Description This command has no keywords or arguments.

Defaults None

Command Modes Interface configuration mode

Command History	Release	Modification
	5.0(2)	This command was introduced.

Usage Guidelines Use the **hsrp bfd** command to enable BFD on an HSRP interface. This command does not require a license.

Examples This example shows how to enable BFD for an HSRP interface:

```
switch# configure terminal  
switch(config)# interface ethernet 2/1  
switch(config-if)# hsrp bfd
```

Related Commands	Command	Description
	feature bfd	Enables the BFD feature.

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inherit port-profile

To assign a port profile to an interface or range of interfaces and to inherit an additional port profile onto an existing port profile, use the **inherit port-profile** command. To remove an inherited port profile or to remove a port profile from specified interfaces, use the **no** form of this command.

inherit port-profile *name*

no inherit port-profile *name*

Syntax Description	<i>name</i>	Port profile that you want to assign to interfaces or to inherit onto the existing port profile.
---------------------------	-------------	--

Defaults	None
-----------------	------

Command Modes	Interface configuration Port-profile configuration
----------------------	---

SupportedUserRoles	network-admin vdc-admin
---------------------------	----------------------------

Command History	Release	Modification
	4.2(1)	This command was introduced.

Usage Guidelines	<p>Use the inherit port-profile command to do the following:</p> <ul style="list-style-type: none"> Assign the port profile to a specified interface or range of specified interfaces. You do this in the interface configuration mode. The maximum number of interfaces that can inherit a single profile is 512. Inherit configuration parameters from another port profile onto an existing port profile. You do this in the port-profile mode, using the name of the port profile that you want to inherit configurations into. Only port profiles of the same type can be inherited by another port profile. The device supports four levels of inheritance except for the switchport private-vlan mapping and the private-vlan mapping commands, which support only one inheritance level. The same port profile can be inherited by any number of port profiles. In a port-profile inheritance hierarchy, all the profiles must have the same switchport configuration.
-------------------------	---

See the **port-profile** command and the **state-enabled** command for information about creating, configuring, and enabling port profiles.

If you attempt to inherit a port profile to the wrong type of interface, the system returns an error.

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When you remove a port profile from a range of interfaces, the system undoes the configuration from the interfaces first and then removes the port-profile link itself. Also, when you remove a port profile, the system checks the interface configuration and either skips port-profiles commands that have been overridden by directly entered interface commands or returns the command to the default value.

You can also choose a subset of interfaces from which to remove a port profile from those interfaces to which you originally applied the profile. For example, if you configured a port profile and configured 10 interfaces to inherit that port profile, you can remove the port profile from just some of the specified 10 interfaces. The port profile continues to operate on the remaining interfaces to which it is applied.

You use the port-profile configuration mode to remove an inherited port profile from an original port profile.

This command does not require a license.

Examples

This example shows how to assign a specified port profile to a range of interfaces:

```
switch(config)# interface ethernet 2/1-10
switch(config-if)# port-profile test
```

This example shows how to inherit the configuration parameters from the port profile named switch onto the port profile named test:

```
switch(config)# test
switch(config-ppm)# inherit port-profile switch
```

Related Commands

Command	Description
<code>show port-profile</code>	Displays information about port profiles.

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install feature-set fex

To install a Fabric Extender (FEX) feature set, use the **install feature-set fex** command.

install feature-set fex

Syntax Description This command has no arguments or keywords.

Defaults None

Command Modes Global configuration mode

Command History	Release	Modification
	5.1(1)	This command was introduced.

Usage Guidelines This command does not require a license.

Examples This example shows how to install a FEX feature set:

```
switch(config)# install feature-set fex
switch(config)# show feature-set
Feature Set Name      ID      State
-----
fcoe                  1      uninstalled
fabricpath           2      uninstalled
fex                   3      installed
switch(config)#
```

Related Commands	Command	Description
	show fex	Displays all configured Fabric Extender chassis connected to the switch.

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interface cmp-mgmt module

To create a Connectivity Management Processor (CMP) management interface and enter interface configuration mode, use the **interface cmp-mgmt module** command.

interface cmp-mgmt module *number*

Syntax Description	<i>number</i>	Active or standby supervisor module number. Valid values are 9 or 10.
---------------------------	---------------	---

Defaults	None
-----------------	------

Command Modes	Global configuration Interface configuration
----------------------	---

SupportedUserRoles	network-admin vdc-admin
---------------------------	----------------------------

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines	Use the interface cmp-mgmt module command to create a CMP management interface. This command does not require a license.
-------------------------	--

Examples	This example shows how to create a CMP management interface:
-----------------	--

```
switch(config)# interface cmp-mgmt module 9  
switch(config-if-cmp)#
```

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interface ethernet

To configure an Ethernet interface and enter interface configuration mode, use the **interface ethernet** command.

interface ethernet *slot/port*

Syntax Description	<i>slot/port</i>	Slot number and port number for the Ethernet interface.
---------------------------	------------------	---

Defaults	None	
-----------------	------	--

Command Modes	Global configuration Interface configuration	
----------------------	---	--

SupportedUserRoles	network-admin vdc-admin	
---------------------------	----------------------------	--

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines	Use the interface ethernet command to enter the interface configuration mode for the specified interface or range of interfaces. This command does not require a license.
-------------------------	---

Examples	This example shows how to enter the interface command mode for the Ethernet interface on slot 2, port 1: switch(config)# interface ethernet 2/1 switch(config-if)#
-----------------	---

Related Commands	Command	Description
	show interface ethernet	Displays information about the Ethernet interface.

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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	<i>number</i>	Interface number; valid values are from 0 to 1023.
--------------------	---------------	--

Defaults	None
----------	------

Command Modes	Global configuration Interface configuration
---------------	---

Supported User Roles	network-admin vdc-admin
----------------------	----------------------------

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines	Use the interface loopback command to create or modify loopback interfaces. 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)#
```

Related Commands	Command	Description
	show interface loopback	Displays information about the traffic on the specified loopback interface.

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interface mgmt

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

interface mgmt *number*

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

Defaults	None
----------	------

Command Modes	Global configuration Interface configuration
---------------	---

SupportedUserRoles	network-admin vdc-admin
--------------------	----------------------------

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines	Use the interface mgmt command to configure the management interface and to enter the interface configuration mode. This command does not require a license.
------------------	--

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

```
switch(config)# interface mgmt
switch(config-if)#
```

Related Commands	Command	Description
	show interface mgmt0	Displays information about the traffic on the management interface.

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interface port-channel

To create a port-channel interface and enter interface configuration mode, use the **interface port-channel** command. To remove a logical port-channel interface or subinterface, use the **no** form of this command.

interface port-channel *channel-number*

no interface port-channel *channel-number*

Syntax Description	<i>channel-number</i> Channel number that is assigned to this port-channel logical interface. The range of valid values is from 1 to 4096.
---------------------------	--

Defaults	None
-----------------	------

Command Modes	Global configuration Interface configuration
----------------------	---

SupportedUserRoles	network-admin vdc-admin
---------------------------	----------------------------

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines

Use the **interface port-channel** command to create or delete port-channel groups and to enter the interface configuration mode for the port channel.

You can create port channels implicitly using the **attach fex** command or explicitly using the **feature-set fex** command.

A port can belong to only one channel group.

You can create subinterfaces on a Layer 3 port-channel interface. However, you cannot add a Layer 3 interface that has existing subinterfaces to a port channel.



Note

The Layer 3 port-channel interface is the routed interface.

The Link Aggregation Control Protocol (LACP) system ID is unique for each VDC, and channel-group numbers and names can be re-used in different VDCs.

When you use the **interface port-channel** command, follow these guidelines:

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

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- If you do not assign a static MAC address on the port-channel 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 port channel 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.

This command does not require a license.

Examples

This example shows how to create a port-channel group interface with channel-group number 50:

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

Related Commands

Command	Description
show interface port-channel	Displays information on traffic on the specified port-channel interface.
show port-channel summary	Displays information on the port channels.
show lacp	Displays LACP information.

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interface tunnel

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

interface tunnel *number*

no interface tunnel *number*

Syntax Description	<i>number</i>	Identifying interface number; valid values are from 0 to 4095.
--------------------	---------------	--

Defaults	None
----------	------

Command Modes	Global configuration Interface configuration
---------------	---

SupportedUserRoles	network-admin vdc-admin
--------------------	----------------------------

Command History	Release	Modification
	4.0	This command was introduced.
	5.0(1)	The maximum valid range of values was changed from 65535 to 4095.

Usage Guidelines	<p>Use the interface tunnel command to create or modify tunnel interfaces.</p> <p>Cisco NX-OS supports the GRE header defined in IETF RFC 2784. Cisco NX-OS does not support tunnel keys and other options from IETF RFC 1701.</p> <p>You can configure IP tunnels only in the default virtual device context (VDC).</p> <p>This command requires the Enterprise license.</p>
------------------	--

Examples	<p>This example shows how to create a tunnel interface:</p> <pre>switch(config)# interface tunnel 50 switch(config-if)#</pre>
----------	--

Related Commands	Command	Description
	tunnel source	Sets the source of the IP tunnel.
	tunnel destination	Sets the destination of the IP tunnel.
	show interface tunnel	Displays information about the traffic on the specified tunnel interface.

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interface vlan

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

interface vlan *vlan-id*

no interface vlan *vlan-id*

Syntax Description	<i>vlan-id</i>	VLAN to set when the interface is in access mode; valid values are from 1 to 4094, except for the VLANs reserved for the internal switch use.
---------------------------	----------------	---

Defaults	None
-----------------	------

Command Modes	Global configuration Interface configuration
----------------------	---

Supported User Roles	network-admin vdc-admin
-----------------------------	----------------------------

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines	Use the interface vlan command to create or modify VLAN interfaces. The VLAN interface is created the first time that you enter the interface vlan command for a particular VLAN. The <i>vlan-id</i> argument corresponds to the VLAN tag that is associated with the data frames on an Inter-Switch Link (ISL), the IEEE 802.1Q-encapsulated trunk, or the VLAN ID that is configured for an access port.
-------------------------	---

This command does not require a license.

Examples	This example shows how to create a VLAN interface for VLAN 50:
-----------------	--

```
switch(config)# interface vlan 50
switch(config-if)#
```

Related Commands	Command	Description
	feature interface-vlan	Enables the ability to create VLAN interfaces.
	show interface vlan	Displays information about the traffic on the specified VLAN interface.

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ip eigrp bfd

To enable Bidirectional Forwarding Detection (BFD) on an Enhanced Interior Gateway Routing Protocol (EIGRP) interface, use the **ip eigrp bfd** command. To return to the default setting, use the **no** form of this command.

```
ip eigrp instance-tag bfd
```

```
no ip eigrp instance-tag bfd
```

Syntax Description

<i>instance-tag</i>	EIGRP instance tag. The instance tag can be any case-sensitive alphanumeric string up to 20 characters.
---------------------	---

Defaults

None

Command Modes

Interface configuration mode

Command History

Release	Modification
5.0(2)	This command was introduced.

Usage Guidelines

Use the **ip eigrp bfd** command to enable BFD on an EIGRP interface. This command takes precedence over the **bfd** command in router configuration mode.

This command does not require a license.

Examples

This example shows how to enable BFD for an EIGRP interface:

```
switch# configure terminal
switch(config)# interface ethernet 2/1
switch(config-if)# ip eigrp Test1 bfd
```

Related Commands

Command	Description
bfd	Enables BFD on all EIGRP interfaces.
feature bfd	Enables the BFD feature.

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ip ospf bfd

To enable Bidirectional Forwarding Detection (BFD) on an Open Shortest Path First version 2 (OSPFv2) interface, use the **ip ospf bfd** command. To return to the default setting, use the **no** form of this command.

ip ospf bfd

no ip ospf bfd

Syntax Description This command has no keywords or arguments.

Defaults None

Command Modes Interface configuration mode

Command History

Release	Modification
5.0(2)	This command was introduced.

Usage Guidelines

Use the **ip ospf bfd** command to enable BFD on an OSPFv2 interface. This command takes precedence over the **bfd** command in router configuration mode.

This command does not require a license.

Examples

This example shows how to enable BFD for an OSPF interface:

```
switch# configure terminal
switch(config)# interface ethernet 2/1
switch(config-if)# ip ospf bfd
```

Related Commands

Command	Description
bfd	Enables BFD on all OSPFv2 interfaces.
feature bfd	Enables the BFD feature.

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ip pim bfd

To enable Bidirectional Forwarding Detection (BFD) for Protocol Independent Multicast (PIM), use the **ip pim bfd** command. To return to the default setting, use the **no** form of this command.

```
ip pim bfd
```

```
no ip pim bfd
```

Syntax Description This command has no keywords or arguments.

Defaults None

Command Modes Global configuration mode

Command History	Release	Modification
	5.0(2)	This command was introduced.

Usage Guidelines Use the **ip pim bfd** command to enable BFD for PIM.
This command does not require a license.

Examples This example shows how to enable BFD for PIM:

```
switch# configure terminal  
switch(config)# ip pim bfd
```

Related Commands	Command	Description
	feature bfd	Enables the BFD feature.

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ip pim bfd-instance

To enable Bidirectional Forwarding Detection (BFD) for Protocol Independent Multicast (PIM) on an interface, use the **ip pim bfd-instance** command. To return to the default setting, use the **no** form of this command.

ip pim bfd-instance [**disable**]

no ip pim bfd-instance [**disable**]

Syntax Description

disable	Disables BFD for PIM on this interface.
----------------	---

Defaults

None

Command Modes

Interface configuration mode

Command History

Release	Modification
5.0(2)	This command was introduced.

Usage Guidelines

Use the **ip pim bfd-instance** command to enable BFD for PIM on an interface. This configuration (with or without the **disable** keyword) overrides the BFD configuration for PIM at the global or VRF configuration level.

This command does not require a license.

Examples

This example shows how to disable BFD for PIM on interface ethernet 2/1 when BFD is enabled globally for PIM:

```
switch# configure terminal
switch(config)# ip pim bfd
switch(config)# interface ethernet 2/1
switch(config-if)# ip pim bfd-instance disable
```

Related Commands

Command	Description
feature bfd	Enables the BFD feature.

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ip route static bfd

To enable Bidirectional Forwarding Detection (BFD) on a static route, use the **ip route static bfd** command. To return to the default setting, use the **no** form of this command.

```
ip route static bfd interface {nh-address | nh-prefix}
```

```
no ip route static bfd interface {nh-address | nh-prefix}
```

Syntax Description		
<i>interface</i>		Interface that this static route resides on. Use the ? keyword to display the supported interfaces.
<i>nh-address</i>		Next-hop address for this static route, in dotted decimal notation.
<i>nh-prefix</i>		Next-hop prefix for this static route, in dotted decimal notation.

Defaults	
	None

Command Modes	
	Interface configuration mode

Command History	Release	Modification
	5.0(2)	This command was introduced.

Usage Guidelines	
	Use the ip route static bfd command to enable BFD on a static route. This command does not require a license.

Examples	
	This example shows how to enable BFD for a static route: <pre>switch# configure terminal switch(config)# interface ethernet 2/1 switch(config-if)# ip route static bfd ethernet 2/1 192.0.2.4</pre>

Related Commands	Command	Description
	feature bfd	Enables the BFD feature.

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ipv6 eigrp bfd

To enable Bidirectional Forwarding Detection (BFD) on an Enhanced Interior Gateway Routing Protocol (EIGRP) interface, use the **ipv6 eigrp bfd** command. To return to the default setting, use the **no** form of this command.

ipv6 eigrp *instance-tag* **bfd**

no ipv6 eigrp *instance-tag* **bfd**

Syntax Description

<i>instance-tag</i>	EIGRP instance tag. The instance tag can be any case-sensitive alphanumeric string up to 20 characters.
---------------------	---

Defaults

None

Command Modes

Interface configuration mode

Command History

Release	Modification
5.0(2)	This command was introduced.

Usage Guidelines

Use the **ipv6 eigrp bfd** command to enable BFD on an EIGRP interface. This command takes precedence over the **bfd** command in router configuration mode.

This command does not require a license.

Examples

This example shows how to enable BFD for an EIGRP interface:

```
switch# configure terminal
switch(config)# interface ethernet 2/1
switch(config-if)# ipv6 eigrp Test1 bfd
```

Related Commands

Command	Description
bfd	Enables BFD on all EIGRP interfaces.
feature bfd	Enables the BFD feature.

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isis bfd

To enable Bidirectional Forwarding Detection (BFD) on an Intermediate System-to-Intermediate System (IS-IS) interface, use the **isis bfd** command. To return to the default setting, use the **no** form of this command.

isis bfd

no isis bfd

Syntax Description This command has no keywords or arguments.

Defaults None

Command Modes Interface configuration mode

Command History	Release	Modification
	5.0(2)	This command was introduced.

Usage Guidelines Use the **isis bfd** command to enable BFD on an IS-IS interface. This command takes precedence over the **bfd** command in router configuration mode.

This command does not require a license.

Examples This example shows how to enable BFD for an IS-IS interface:

```
switch# configure terminal
switch(config)# interface ethernet 2/1
switch(config-if)# isis bfd
```

Related Commands	Command	Description
	bfd	Enables BFD on all IS-IS interfaces.
	feature bfd	Enables the BFD feature.

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fabricpath switch-id

To configure an emulated switch ID, use the **fabricpath switch-id** command. To return to the default setting, use the **no** form of this command.

fabricpath switch-id *switch-id*

no fabricpath switch-id *switch-id*

Syntax Description	<i>switch-id</i>	Emulated switch ID. The range is from 1 to 4095.
Defaults	None	
Command Modes	Interface configuration mode	
Supported User Roles	network-admin vdc-admin	
Command History	Release	Modification
	5.1(1)	This command was introduced.
Usage Guidelines	This command does not require a license.	

Examples

This example shows how to configure an emulated switch ID:

```
switch# config t
switch(config)# vpc domain 1
switch(config-vpc-domain)# fabricpath switch-id 4
Configuring fabricpath switch id will flap vPCs. Continue (yes/no)? [no] yes
Note:
-----:: Re-init of peer-link and vPCs started  ::-----
switch(config-vpc-domain)#
```

This example shows how to set the default ID value:

```
switch# config t
switch(config)# vpc domain 1
switch(config-vpc-domain)# no fabricpath switch-id 4
Deconfiguring fabricpath switch id will flap vPCs. Continue (yes/no)? [no] yes
Note:
-----:: Re-init of peer-link and vPCs started  ::-----
switch(config-vpc-domain)#
```

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Related Commands

Command	Description
show interface switchport	Displays the administrative and operational status of a switching (nonrouting) port.

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l2protocol tunnel

To enable Layer 2 protocol tunneling, use the **l2protocol tunnel** command. To disable protocol tunneling, use the **no** form of this command.

l2protocol tunnel [**cdp** | **stp** | **vtp**]

no l2protocol tunnel [**cdp** | **stp** | **vtp**]

Syntax Description

cdp	(Optional) Enables Cisco Discovery Protocol (CDP) tunneling.
stp	(Optional) Enables Spanning Tree Protocol (STP) tunneling.
vtp	(Optional) Enables VLAN Trunking Protocol (VTP) tunneling.

Defaults

Layer 2 protocol tunneling is disabled.

Command Modes

Interface configuration mode

Command History

Release	Modification
5.0(2)	This command was introduced.

Usage Guidelines

This command does not require a license.

Examples

This example shows how to enable Layer 2 protocol tunneling:

```
switch(config-if)# l2protocol tunnel cdp
```

Related Commands

Command	Description
show l2protocol tunnel	Displays Layer 2 protocol tunnel information.

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l2protocol tunnel cos

To specify a global Class of service (CoS) value on all Layer 2 protocol tunneling interfaces, use the **l2protocol tunnel cos** command. To reset the global CoS value to its default, use the **no** form of this command.

l2protocol tunnel cos *cos-value*

no l2protocol tunnel cos

Syntax Description	<i>cos-value</i>	CoS value. The range of values is from 0 to 7. The default value is 5.
--------------------	------------------	--

Defaults	CoS value is 5.
----------	-----------------

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

Command History	Release	Modification
	5.0(2)	This command was introduced.

Usage Guidelines	This command does not require a license.
------------------	--

Examples	This example shows how to specify a global CoS value on all Layer 2 protocol tunneling interfaces: <pre>switch(config)# l2protocol tunnel cos 7</pre>
----------	--

Related Commands	Command	Description
	show l2protocol tunnel	Displays Layer 2 protocol tunnel information.

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l2protocol tunnel drop-threshold

To specify the maximum number of packets that can be processed on an Layer 2 protocol tunneling interface before being dropped, use the **l2protocol tunnel drop-threshold** command. To reset the values to 0 and disable the drop threshold, use the **no** form of this command.

l2protocol tunnel drop-threshold [**cdp** | **stp** | **vtp**] *packets-per-sec*

no l2protocol tunnel drop-threshold [**cdp** | **stp** | **vtp**]

Syntax Description		
cdp	(Optional)	Specifies the number of CDP packets that can be processed on an interface.
stp	(Optional)	Specifies the number of STP packets that can be processed on an interface.
vtp	(Optional)	Specifies the number of VTP packets that can be processed on an interface.
<i>packets-per-sec</i>		Maximum number of packets that can be processed on an interface before being dropped. Valid values for the packets is from 1 to 4096.

Defaults The drop threshold is disabled.

Command Modes Interface configuration mode

Command History	Release	Modification
	5.0(2)	This command was introduced.

Usage Guidelines This command does not require a license.

Examples This example shows how to specify the maximum number of CDP packets that can be processed on an Layer 2 protocol tunneling interface before being dropped:

```
switch(config-if)# l2protocol tunnel drop-threshold cdp 1024
```

Related Commands	Command	Description
	show l2protocol tunnel	Displays Layer 2 protocol tunnel information.

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l2protocol tunnel shutdown-threshold

To specify the maximum number of packets that can be processed on an Layer 2 protocol tunneling interface, use the **l2protocol tunnel shutdown-threshold** command. To reset the values to 0 and disable the shutdown threshold the **no** form of this command

l2protocol tunnel shutdown-threshold [**cdp** | **stp** | **vtp**] *packets-per-sec*

no l2protocol tunnel shutdown-threshold [**cdp** | **stp** | **vtp**]

Syntax Description

cdp	(Optional) Specifies the number of Cisco Discovery Protocol (CDP) packets that can be processed on an interface.
stp	(Optional) Specifies the number of Spanning Tree Protocol (STP) packets that can be processed on an interface.
vtp	(Optional) Specifies the number of VLAN Trunking Protocol (VTP) packets that can be processed on an interface.
<i>packets-per-sec</i>	Maximum number of packets that can be processed on an interface. When the number of packets is exceeded, the port is put in error-disabled state. Valid values for the packets is from 1 to 4096.

Defaults

The shutdown threshold is disabled.

Command Modes

Interface configuration mode

Command History

Release	Modification
5.0(2)	This command was introduced.

Usage Guidelines

This command does not require a license.

When the number of packets is exceeded, the port is put in error-disabled state.

Examples

This example shows how to specify the maximum number of packets that can be processed on an Layer 2 protocol tunneling interface before the port is put in error-disabled state:

```
switch(config-if)# l2protocol tunnel shutdown-threshold 2048
```

Related Commands

Command	Description
show l2protocol tunnel	Displays Layer 2 protocol tunnel information.

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lacp max-bundle

To configure a port channel maximum bundle, use the **lacp max-bundle** command. To return to the default setting, use the **no** form of this command.

lacp max-bundle *max-bundle-number*

no lacp max-bundle *max-bundle-number*

Syntax Description

max-bundle-number Maximum bundle number. The range is from 1 to 16.

Command Default

The default for the port channel max-bundle is 16.

The allowed range is from 1 to 16.

Command Modes

Interface configuration mode

Supported User Roles

network-admin
vdc-admin

Command History

Release	Modification
5.1(1)	This command was introduced.

Usage Guidelines

This command does not require a License.



Note

Even if the default value is 16, the number of active members in a port channel is the minimum number of the maximum bundle configured and the maximum active members that are allowed in the port-channel.

Examples

This example shows how to configure port channel maximum bundles:

```
switch(config)# interface port-channel 1
switch(config-if)# lacp max-bundle 2
switch(config-if)#
```

Related Commands

Command	Description
interface	Enters the interface configuration mode, and configures the types and identities of interfaces.

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lACP min-links

To configure the minimum links for a port channel, use the **lACP min-links** command. To return to the default setting, use the **no** form of this command.

lACP min-links *number*

no lACP min-links *number*

Syntax Description	<i>number</i>	Minimum link number. The range is from 1 to 16.
--------------------	---------------	---

Defaults	The default for the port channel minimum link is 1. The allowed range is from 1 to 16.
----------	---

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

Supported User Roles	network-admin vdc-admin
----------------------	----------------------------

Command History	Release	Modification
	5.1(1)	This command was introduced.

Usage Guidelines	This command does not require a license.
------------------	--

Examples This example shows how to configure the minimum link for a port channel:

```
switch(config)# interface port-channel 1
switch(config-if)# lACP min-links 3
switch(config-if)#
```

Related Commands	Command	Description
	interface	Enters the interface configuration mode, and configures the types and identities of interfaces.

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lACP port-priority

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

lACP port-priority *priority*

no lACP port-priority

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

Defaults	32768
-----------------	-------

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

Supported User Roles	network-admin vdc-admin
-----------------------------	----------------------------

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines

Each port configured to use LACP has an LACP port priority. You can accept the default value of 32768 for the LACP port priority, or 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 or when you have more than eight ports configured for the channel group.

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

This command does not require a license.

Examples

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

```
switch(config-if)# lACP port-priority 2000
```

Related Commands	Command	Description
	show lACP	Displays LACP information.

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lACP system-priority

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

lACP system-priority *priority*

no lACP system-priority

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

Defaults	32768
-----------------	-------

Command Modes	Global configuration mode
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Supported User Roles	network-admin vdc-admin
-----------------------------	----------------------------

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines

Each device that runs LACP has an LACP system priority value. You can accept the default value of 32768 for this parameter, or 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. The system ID is unique for each virtual device context (VDC).

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

This command does not require a license.

Examples

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

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

Related Commands	Command	Description
	show lACP	Displays LACP information.
	show lACP system identifier	Displays information on the LACP system identifier.

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link debounce

To enable the debounce timer for Ethernet ports and specify a debounce time, 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 debounce timer for the time you want to specify. The range of time is from 0 to 5000 ms.
---------------------------	--

Defaults	Enabled 300 milliseconds
-----------------	-----------------------------

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

Supported User Roles	network-admin vdc-admin
-----------------------------	----------------------------

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines	<p>Use the link debounce command to enable the debounce timer for Ethernet ports and set it for a specified amount of time in milliseconds. The default debounce time applies when you enter the link debounce command with no arguments.</p> <p>The range of time is from 1 to 5000 ms. The debounce timer is disabled if you specify the time to 0 ms. This command does not require a license.</p>
-------------------------	---

Examples	<p>This example shows how to enable the debounce timer and set the debounce time to 1000 ms for the Ethernet port 3/1:</p>
-----------------	--

```
switch# config t
switch(config)# interface ethernet 3/1
switch(config-if)# link debounce time 1000
```

This example shows how to disable the debounce timer for the Ethernet port 3/1:

```
switch# config t
switch(config)# interface ethernet 3/1
switch(config-if)# no link debounce
```

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Related Commands	Command	Description
	show interface debounce	Displays the debounce time information about the interface.

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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	seconds
	1 2 3	Specifies the number of counters configured on the interface.
	<i>seconds</i>	Specifies the interval between sampling statistics on the interface. The range is from 60 to 300 seconds for VLAN network interfaces, and the range is from 30 to 300 seconds for Ethernet and port-channel interfaces.

Defaults
1—30 seconds; 60 seconds for VLAN network interface
2—300 seconds
3—not configured

Command Modes
Interface configuration mode

Supported User Roles
network-admin
vdc-admin

Command History	Release	Modification
	4.2(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
- VLAN network 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.

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Examples

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

```
switch# config t
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.

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max-ports

To assign a maximum possible number of interfaces that a port profile can inherit, use the **max-ports** command. To return to the default value, use the **no** form of this command.

max-ports *number*

no max-ports *number*

Syntax Description	<i>number</i>	Maximum number of interfaces that a port profile can inherit. The range is from 1 to 512 ports, and there is no default value.
---------------------------	---------------	--

Defaults	None
-----------------	------

Command Modes	Port-profile configuration mode
----------------------	---------------------------------

SupportedUserRoles	network-admin vdc-admin
---------------------------	----------------------------

Command History	Release	Modification
	4.2(1)	This command was introduced.

Usage Guidelines	<p>You must be in the port-profile configuration mode in order to issue this command.</p> <p>You must enable each specific port profile using the state-enabled command.</p> <p>This command does not require a license.</p>
-------------------------	---

Examples	<p>This example shows how to enter the port-profile configuration mode and to configure the maximum possible number of interfaces that a port profile can inherit:</p> <pre>switch(config)# port-profile type ethernet type test switch(config-ppm)# max-ports 500</pre>
-----------------	--

Related Commands	Command	Description
	state-enabled	Enables a specified port profile.
	show port-profile	Displays information about port profiles.

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mdix auto

To enable automatic medium-dependent independent crossover (MDIX) detection for the interface, use the **mdix auto** command. To turn automatic detection off, use the **no** form of this command.

mdix auto

no mdix

Syntax Description This command has no arguments or keywords.

Defaults Enabled

Command Modes Interface configuration mode

SupportedUserRoles network-admin
vdc-admin

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines Use the **mdix auto** command to enable automatic MDIX detection for the port. Use the **no mdix** command to disable MDIX detection for the port.

This command is only available on copper Ethernet ports. To detect the type of connection (crossover or straight) with another copper Ethernet port, enable the MDIX parameter for the local port. Before you begin, MDIX must be enabled on the remote port.

This command does not require a license.

Examples This example shows how to enable MDIX for Ethernet port 3/1:

```
switch# config t
switch(config)# interface ethernet 3/1
switch(config-if)# mdix auto
```

This example shows how to disable MDIX for Ethernet port 3/1:

```
switch# config t
switch(config)# interface ethernet 3/1
switch(config-if)# no mdix
```

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Related Commands	Command	Description
	show interface	Displays information about the interface, which includes the MDIX status.

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medium

To set the medium mode for an interface, use the **medium** command in interface configuration command. To remove the entry, use the **no** form of this command.

```
medium { broadcast | p2p }
```

```
no medium { broadcast | p2p }
```

Syntax Description	Command	Description
	broadcast	Configures the interface as a broadcast medium.
	p2p	Configures the interface as a point-to-point medium.

Defaults None

Command Modes Interface configuration mode

Supported User Roles network-admin
vdc-admin

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines The **medium** command is used to configure the interface as broadcast or point to point. This command does not require a license.

Examples This example shows how to configure the interface for point-to-point medium:

```
switch(config-if)# medium p2p
```

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mtu

To configure the maximum transmission unit (MTU) size for Layer 2 and Layer 3 Ethernet interfaces, use the **mtu** command. To return to the default value, use the **no** form of this command.

mtu *size*

no mtu

Syntax Description	<i>size</i>	For a Layer 2 interface, specify either the default MTU size (1500) in bytes or the system jumbo MTU size (9216, unless you have changed the default system jumbo size). For a Layer 3 interface, specify any even number between the range of 576 and 9216.
---------------------------	-------------	--

Defaults	1500 bytes
-----------------	------------

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

Supported User Roles	network-admin vdc-admin
-----------------------------	----------------------------

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines

Use the **mtu size** command to configure the MTU size for Layer 2 and Layer 3 Ethernet interfaces. For Layer 3 interfaces, you can configure the MTU to be between 576 and 9216 bytes (even values are required). For Layer 2 interfaces, you can configure the MTU to be either the system default MTU (1500 bytes) or the system jumbo MTU size (which has the default size of 9216 bytes).



Note

You can change the system jumbo MTU size, but if you change that value, you should also update the Layer 2 interfaces that use that value so that they use the new system jumbo MTU value. If you do not update the MTU value for Layer 2 interfaces, those interfaces will use the system default MTU (1500 bytes).

This command does not require a license.

Examples

This example shows how to configure the Layer 2 Ethernet port 3/1 with the default MTU size (1500):

```
switch# config t
switch(config)# interface ethernet 3/1
switch(config-if)# mtu 1500
```

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Related Commands

Command	Description
show interface	Displays information about the interface, which includes the MTU size.

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peer-gateway

To configure the device to send virtual port-channel (vPC) packets to the device's MAC address, use the **peer-gateway** command. To return to the default value, use the **no** form of this command.

peer-gateway

no peer-gateway

Syntax Description This command has no arguments or keywords.

Defaults None

Command Modes vpc-domain configuration mode

SupportedUserRoles network-admin
vdc-admin

Command History	Release	Modification
	4.2(1)	This command was introduced.

Usage Guidelines Use the **peer-gateway** command to have a vPC peer device act as the gateway even for packets that are destined to the vPC peer device's MAC address.

This command does not require a license.

Examples This example shows how to configure the device to use the switch gateway even for the packets that are destined the vPC:

```
switch# config t
switch(config)# vpc-domain 5
switch(config-vpc-domain)# peer-gateway
```

Related Commands	Command	Description
	vpc-domain	Configures a vPC domain and enters the vpc-domain configuration mode.

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peer-keepalive destination

To configure the virtual port-channel (vPC) peer-keepalive link and message between vPC peer devices, use the **peer-keepalive destination** command.

```
peer-keepalive destination ipaddress [hold-timeout secs][interval msecs { timeout
secs }[precedence {prec-value | network | internet | critical | flash-override | flash |
immediate | priority | routine } } | {tos {tos-value | max-reliability | max-throughput |
min-delay | min-monetary-cost | normal } } | tos-byte tos-byte-value][source
ipaddress][udp-port number][vrf {name | management | vpc-keepalive}]
```

Syntax Description

<i>ipaddress</i>	IP address of the remote vPC peer device. Note You must use an IPv4 address.
hold-timeout	(Optional) Specifies when the peer-keepalive link goes down, the secondary vPC peer device waits the hold-timeout interval. The range is from 3 to 10 seconds. During the hold-timeout, the vPC secondary device does not take any action based on any keepalive messages received. This is to prevent the system taking action when the keepalive might be received just temporarily, such as if a supervisor fails a few seconds after the peer link goes down.
<i>secs</i>	(Optional) Variable in seconds.
interval	Specifies the number of milliseconds that you want between sending keepalive messages to the remote vPC peer device. This variable configures the interval between sending peer-keepalive messages to the remote vPC peer device and the maximum period to wait to receive a keepalive message from the remote vPC peer device. The range is between 400 to 10,000 milliseconds.
<i>msecs</i>	(Optional) Specifies the variable in milliseconds.
timeout	(Optional) Specifies that the timeout timer starts at the end of the hold-timeout interval. During the timeout period, the secondary vPC peer device checks for vPC peer-keepalive hello messages from the primary vPC peer device. If the secondary vPC peer device receives a single hello message, that device disables all vPC interfaces on the secondary vPC peer device. The range is between 3 and 20 seconds. During the timeout, the vPC secondary device takes action to become the vPC primary device if no keepalive message is received by the end of the configured interval.

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precedence	(Optional) Specifies the precedence value for the peer-keepalive message. Valid values are as follows: <ul style="list-style-type: none"> • 0 to 7 • network (7) • internet (6) • critical (5) • flash-override (4) • flash (3) • immediate (2) • priority (1) • routine (0)
tos	(Optional) Specifies the precedence, or ToS value, for the peer-keepalive message. Valid values are as follows: <ul style="list-style-type: none"> • 0, 1, 2, 4, 8 • max-reliability (2) • max-throughput (4) • min-delay (8) • min-monetary-cost (1) • normal (0) <p>Note The only valid values are shown here.</p>
tos-byte	(Optional) Specifies the precedence, or 8-bit ToS value, for the peer-keepalive message. The higher the numerical value, indicates the higher throughput priority. The range is from 0 to 255.
source	(Optional) Specifies the IP address of the local vPC peer device. <p>Note Must be an IPv4 address.</p>
<i>number</i>	(Optional) Number of the UDP port to send and receive the vPC peer-keepalive messages. The range is from 1024 to 6500.
<i>name</i>	(Optional) Name of Virtual Routing and Forwarding (VRF) that you want to use for the vPC peer-keepalive link and messages.

Defaults

Peer-keepalive is disabled.
Hold-timeout is 3 seconds.
Interval is 1000 milliseconds.
Timeout is 5 seconds.
Precedence is default, with a level of 6 (internet).
UDP port is 3200.
VRF is management VRF.

Command Modes

vpc-domain configuration mode

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SupportedUserRoles network-admin
vdc-admin

Command History	Release	Modification
	4.1(3)	This command was introduced.

Usage Guidelines You must enable the vPC feature before you can configure the peer-keepalive parameters. The vPC keepalive messages notify the system if one of the vPC peer devices goes down.



Note You must configure the peer-keepalive messages on each of the vPC peer devices to enable the functionality.

Although the keepalive messages can transmit over any Layer 3 topology, we recommend that you create and configure a separate VRF with Layer 3 ports on each vPC peer device as the source and destination for the vPC keepalive messages. The default ports and VRF for the peer-alive link are the management ports and the management VRF. Do not use the peer link itself for the vPC peer-keepalive messages.



Note Ensure that both the source and destination IP addresses used for the peer-keepalive messages are unique in your network.

The vPC keepalive messages are IP/UDP messages.
This command accepts only IPv4 addresses.



Note You must configure the peer-keepalive messages on each of the vPC peer devices to enable the functionality.

The device assumes that its vPC peer device is down when the device does not receive any messages from the peer during the timeout period. We recommend that you configure the timeout value to be three times the interval value.

You can configure either the **precedence**, **tos**, or **tos-byte** value to ensure throughput for the vPC peer-keepalive message.



Note We recommend that you create a separate VRF and assign a Layer 3 port on each vPC peer device for the peer-keepalive link.

This command does not require a license.

Examples

This example shows how to configure the IP address of the remote vPC peer device for the fault-tolerant link:

```
switch(config-vpc-domain)# peer-keepalive destination 172.28.231.85
```

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Related Commands	Command	Description
	show running-config vpc all	Displays information on vPC peer-keepalive status. If the feature is not enabled, the system displays an error when you enter this command.
	show vpc peer-keepalive	Displays information on vPC peer-keepalive status. If the feature is not enabled, the system displays an error when you enter this command.

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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

Supported User Roles network-admin
vdc-admin

Command History	Release	Modification
	5.0(2)	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.

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port-channel load-balance ethernet

To set 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* [**module slot**]

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

Syntax Description

<i>method</i>	Load-balancing method. See the “Usage Guidelines” section for a list of valid values.
module slot	(Optional) Specifies the module slot number.

Defaults

Layer 2 packets—**src-dst-mac**
 Layer 3 packets—**src-dst-ip**

Command Modes

Global configuration mode

Supported User Roles

network-admin
 vdc-admin

Command History

Release	Modification
4.0	This command was introduced.

Usage Guidelines

When you do not specify a module, you are configuring load balancing for the entire device. When you use the **module** parameter, you are configuring load balancing for the specified modules

Valid *method* values are as follows:

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

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**Note**

You cannot configure load balancing using port channels per VDC. You must be in the default VDC to configure this feature; if you attempt to configure this feature from another VDC, the system returns an error.

Use the **module** argument to configure the module independently for port-channeling and load-balancing mode. When you do this, the remaining module use the current load-balancing method configured for the entire device, or the default method if you have not configured a method for the entire device. When you enter the **no** argument in conjunction with a **module** argument, the load-balancing method for the specified module takes the current load-balancing method that is in use for the entire device. If you configured a load-balancing method for the entire device, the specified module uses that configured method, rather than the default **src-dst-ip/src-dst-mac**. The per module configuration takes precedence over the load-balancing method configured for the entire device.

You can configure one load-balancing mode for the entire device, a different mode for specified modules, and yet another mode for other specified modules. The per module configuration takes precedence over the load balancing configuration for the entire device.

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

This command does not require a license.

Examples

This example shows how to set the load-balancing method for the entire device to use the source port:

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

Related Commands

Command	Description
show port-channel load-balance	Displays information on port-channel load balancing.

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port-profile

To create a port profile and enter the port-profile configuration mode or to enter into the port-profile configuration mode of a previously created port profile, use the **port-profile** command. To remove the port profile, use the **no** form of this command.

port-profile [**type** {**ethernet** | **interface-vlan** | **port-channel**}] *name*

no port-profile [**type** {**ethernet** | **interface-vlan** | **port-channel**}] *name*

Syntax Description

type	(Optional) Specifies the type of interfaces.
ethernet	Specifies Layer 2 or Layer 3 interfaces.
interface-vlan	Specifies VLAN network interfaces.
port-channel	Specifies port-channel interfaces.
<i>name</i>	Name of the port profile.

Defaults

None

Command Modes

Interface configuration
Port-profile configuration

Supported User Roles

network-admin
vdc-admin

Command History

Release	Modification
4.2(1)	This command was introduced.

Usage Guidelines

Use the **port-profile** command to group configuration commands and apply them to several interfaces simultaneously. All interfaces in the range must be the same type. The maximum number of interfaces that can inherit a single port profile is 512.

The port-profile name must be globally unique across types and networks.

Each port profile can be applied only to a specific type of interface; the choices are as follows:

- Ethernet
- VLAN network interface
- Port channel



Note

When you choose **ethernet** as the interface type, the port profile is in the default mode which is Layer 3. Enter the **switchport** command to change the port profile to Layer 2 mode.

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A subset of commands are available under the port-profile configuration mode, depending on which interface type you specify. Layer 3 and CTS commands are not supported by port profiles.

You can configure the following port-profile operations:

- Create port profiles
- Delete port profiles
- Add commands to and delete commands from port profiles
- Inherit port profiles at interfaces
- Enable and disable port profiles
- Inheritance between port profiles
- Configure maximum number of ports that a profile can inherit

You inherit the port profile when you attach the port profile to an interface or range of interfaces. The maximum number of interfaces that can inherit a single profile is 512. When you attach, or inherit, a port profile to an interface or range of interfaces, the system applies all the commands in that port profile to the interfaces.

Additionally, you can have one port profile inherit another port profile, which allows the initial port profile to assume all of the commands of the second, inherited, port profile that do not conflict with the initial port profile. Four levels of inheritance are supported except for the **switchport private-vlan mapping** and **private-vlan mapping** commands, which support only one level of inheritance. See the **inherit port-profile** command for information about inheriting an additional port profile and assigning port profiles to specified interfaces.

The system applies the commands inherited by the interface or range of interfaces according to the following guidelines:

- Commands that you enter under the interface mode take precedence over the port profile's commands if there is a conflict. However, the port profile retains that command in the port profile.
- The port profile's commands take precedence over default commands on the interface, unless it is explicitly overridden by the default command.
- When a range of interfaces inherits a second port profile, the commands of the initial port profile override those commands of the second port profile if there is a conflict.
- After you inherit a port profile onto an interface or range of interfaces, you can override individual configuration values by entering the new value at the interface configuration level. If you then remove the individual configuration values at the interface configuration level, the interface again uses the values in the port profile again.
- There are no default configurations associated with a port profile.

**Note**

You cannot use port profiles with Session Manager. See the *Cisco Nexus 7000 Series NX-OS System Management Configuration Guide, Release 5.x*, for information on Session Manager.

If you delete a specific configuration for a specified range of interfaces using the interface configuration mode, that configuration is also deleted from the port profile for that range of interfaces only. For example, if you have a channel group inside a port profile and you are in the interface configuration mode and you delete that port channel, the specified port channel is also deleted from the port profile as well.

Just as in the device, you can enter a configuration for an object in port profiles without that object being applied to interfaces yet. For example, you can configure a virtual routing and forward instance (VRF) without it being applied to the system. If you then delete that VRF and its configurations from the port profile, the system is unaffected.

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After you inherit a port profile on an interface or range of interfaces and you delete a specific configuration value, that port-profile configuration will not operate on the specified interfaces.

You must enable each specific port profile using the **state-enabled** command.

This command does not require a license.

Examples

This example shows how to configure, name a port profile, and enter the port-profile configuration mode:

```
switch(config)# port-profile type ethernet test
switch(config-ppm)#
```

Related Commands

Command	Description
state-enable	Enables a specified port profile.
show port-profile	Displays information about port profiles.

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rate-mode dedicated

To set the dedicated rate mode for the specified ports, use the **rate-mode dedicated** command.

rate-mode dedicated

no rate-mode

Syntax Description This command has no arguments or keywords.

Defaults Shared rate mode is the default.

Command Modes Interface configuration mode

Supported User Roles network-admin
vdc-admin

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines Use the **rate-mode dedicated** command to set the dedicated rate mode for the specified ports. On a 32-port 10-Gigabit Ethernet module, each set of four ports can handle 10 gigabits per second (Gb/s) of bandwidth. You can use the rate-mode parameter to dedicate that bandwidth to the first port in the set of four ports or share the bandwidth across all four ports.



Note When you dedicate the bandwidth to one port, you must first administratively shut down the ports in the group, change the rate mode to dedicated, and then bring the dedicated port administratively up.

[Table 2](#) identifies the ports that are grouped together to share each 10 Gb/s of bandwidth and which port in the group can be dedicated to utilize the entire bandwidth.

Table 2 *Dedicated and Shared Ports*

Ports Groups that Can Share Bandwidth	Ports that Can be Dedicated to Each 10-Gigabit Ethernet of Bandwidth
1, 3, 5, 7	1
2, 4, 6, 8	2
9, 11, 13, 15	9

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Table 2 **Dedicated and Shared Ports**

Ports Groups that Can Share Bandwidth	Ports that Can be Dedicated to Each 10-Gigabit Ethernet of Bandwidth
10, 12, 14, 16	10
17, 19, 21, 23	17
18, 20, 22, 24	18
25, 27, 29, 31	25
26, 28, 30, 32	26



Note

All ports in each port group must be part of the same virtual device context (VDC). For more information on VDCs, see the *Cisco Nexus 7000 Series NX-OS Virtual Device Context Configuration Guide, Release 5.x*.

When you enter the **rate-mode dedicated** command, the full bandwidth of 10 Gb is dedicated to one port. When you dedicate the bandwidth, all subsequent commands for the port are for dedicated mode. This command does not require a license.

Examples

This example shows how to configure the dedicated rate mode for Ethernet ports 4/17, 4/19, 4/21, and 4/23:

```
switch# config t
switch(config)# interface ethernet 4/17, ethernet 4/19, ethernet 4/21, ethernet 4/23
switch(config-if)# shutdown
switch(config-if)# interface ethernet 4/17
switch(config-if)# rate-mode dedicated
switch(config-if)# no shutdown
```

Related Commands

Command	Description
show interface	Displays interface information, which includes the current rate mode dedicated.

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rate-mode shared

To set the shared rate mode for the specified ports, use the **rate-mode shared** command.

rate-mode shared

Syntax Description This command has no arguments or keywords.

Defaults Shared rate mode is the default.

Command Modes Interface configuration mode

SupportedUserRoles network-admin
vdc-admin

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines Use the **rate-mode shared** command to set the shared rate mode for the specified ports. This is the default rate mode for the module.

That is, use the **rate-mode shared** command to specify that each 10 Gb of bandwidth on a 32-port 10 GE Ethernet module is shared by ports in the same port group.

If the port group is in dedicated rate mode, you must first administratively shut down the ports in the group, change the rate mode to shared, and then bring the ports administratively up.

This command does not require a license.

Examples This example shows how to configure the shared rate mode for Ethernet ports 4/17, 4/19, 4/21, and 4/23:

```
switch# config t
switch(config)# interface ethernet 4/17, ethernet 4/19, ethernet 4/21, ethernet 4/23
switch(config-if)# shutdown
switch(config-if)# interface ethernet 4/17
switch(config-if)# rate-mode shared
switch(config-if)# no shutdown
```

Related Commands	Command	Description
	show interface	Displays interface information, which includes the current rate mode shared.

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reload fex

To reload a Fabric Extender, use the **reload fex** command.

reload fex *chassis-id* **all**

Syntax Description	<i>chassis-id</i>	Fabric Extender chassis ID. The chassis ID range is from 100 to 199.
	all	Reloads all FEX modules.

Defaults	None
----------	------

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

Command History	Release	Modification
	5.1(1)	This command was introduced.

Usage Guidelines	This command does not require a license.
------------------	--

Examples	This example shows how to reload all FEX modules:
----------	---

```
switch(config)# reload fex all
WARNING: This command will reboot all FEX modules
Do you want to continue? (y/n) [n] y
qadc3-ind30(config)# 2010 Sep  6 13:13:24 qadc3-ind30 %CALLHOME-2-EVENT: FEX_OFF
LINE
2010 Sep  6 13:13:25 qadc3-ind30 %FEX-2-NOHMS_ENV_FEX_OFFLINE: FEX-101 Off-line
(Serial Number JAF1407AANJ)
switch(config)#
```

This example shows how to reload a specific FEX:

```
switch(config)# reload fex 101
WARNING: This command will reboot FEX module 101
Do you want to continue? (y/n) [n] y
qadc3-ind30(config)# 2010 Sep  6 13:11:36 qadc3-ind30 %CALLHOME-2-EVENT: FEX_OFF
LINE
2010 Sep  6 13:11:37 qadc3-ind30 %VNTAG_MGR-2-VNTAG_SEQ_ERROR: Failed to send me
ssage to FEX slot(33) Chassis (101) - Error Connection timed out. Ignore if FEX
is going offline
2010 Sep  6 13:11:38 qadc3-ind30 %FEX-2-NOHMS_ENV_FEX_OFFLINE: FEX-101 Off-line
(Serial Number JAF1407AANJ)
switch(config)#
```

Related Commands	Command	Description
	show fex	Displays all configured Fabric Extender chassis connected to the switch.

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reload restore

To configure a virtual port channel (vPC) device to assume its peer is not functional and to bring up the vPC, use the **reload restore** command. To reset the vPC to the standard behavior, use the **no** form of this command.

reload restore [*delay time-out*]

no reload restore

Syntax Description	delay time-out	(Optional) Sets the time-out that the vPC device will wait. The default delay is 240 seconds. The range is from 240 to 3600 seconds.
--------------------	----------------	--

Defaults	Delay of 240 seconds
----------	----------------------

Command Modes	vPC domain configuration mode
---------------	-------------------------------

Supported User Roles	network-admin vdc-admin
----------------------	----------------------------

Command History	Release	Modification
	5.0(2)	This command was introduced.

Usage Guidelines	This command does not require a license.
------------------	--

Examples This example shows how to configure a vPC device to assume its peer is not functional and to bring up the vPC:

```
switch(config)# vpc domain 5
switch(config-vpc-domain)# reload restore
Warning:
  Enables restoring of vPCs in a peer-detached state after reload, will wait for 240
  seconds (by default) to determine if peer is un-reachable
```

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

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role priority

To override the default selection of virtual port-channel (vPC) primary and secondary devices when you create a vPC domain, use the **role priority** command. To return to the default vPC system priority, use the **no** form of this command.

role priority *priority*

no role priority

Syntax Description	<i>priority</i>	Role priority. The range is from 1 to 65636.
--------------------	-----------------	--

Defaults	32667
----------	-------

Command Modes	vpc-domain command mode.
---------------	--------------------------

SupportedUserRoles	network-admin vdc-admin
--------------------	----------------------------

Command History	Release	Modification
	4.1(3)	This command was introduced.

Usage Guidelines	<p>You must enable the vPC feature before you can create a vPC system priority</p> <p>By default, the system elects a primary and secondary vPC peer device after you configure the vPC domain and both sides of the vPC peer link. However, you may want the system to elect a specific vPC peer device as the primary device for the vPC. Then, you would manually configure the role value for the vPC peer device that you want as primary to be lower than that of the other vPC peer device.</p> <p>This command does not require a license.</p>
------------------	--

Examples	This example shows how to create a vPC role priority:
----------	---

```
switch# config t
switch(config)# vpc domain 5
switch(config-vpc-domain)# role priority 2000
```

Related Commands	Command	Description
	show vpc role	Displays the role for this device for the vPC domain as primary or secondary.

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serial

To assign a serial number to a Fabric Extender (FEX), use the **serial** command. To remove the serial number, use the **no** form of this command.

serial *serial-string*

no serial

Syntax Description	<i>serial-string</i>	Serial number string for the Fabric Extender. The string is alphanumeric, case sensitive, and has a maximum length of 20 characters.
--------------------	----------------------	--

Defaults	None
----------	------

Command Modes	Fabric Extender configuration mode
---------------	------------------------------------

Command History	Release	Modification
	5.1(1)	This command was introduced.

Usage Guidelines	The serial number string that you define must match the serial number of the Fabric Extender. If you configure a serial number and then you use the fex associate command to associate the corresponding chassis ID to the switch, the association succeeds only if the Fabric Extender reports a matching serial number string.
------------------	---

Examples	This example shows how to specify a serial number for a Fabric Extender:
----------	--

```
switch# configure terminal
switch(config)# fex 101
switch(config-fex)# serial Rack16_FEX101
```

This example shows how to remove a serial number from a Fabric Extender:

```
switch# configure terminal
switch(config)# fex 101
switch(config-fex)# no serial
```

Related Commands	Command	Description
	fex	Creates a Fabric Extender and enters fabric extender configuration mode.
show fex	Displays all configured Fabric Extender chassis connected to the switch.	

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show bfd neighbors

To display information about Bidirectional Forwarding Detection (BFD) neighbors, use the **show bfd neighbors** command.

```
show bfd neighbors [application name | {dest-ip | src-ip} ipaddr interface int-if] [vrf vrf-name]
[details]
```

Syntax Description		
application <i>name</i>	(Optional) Displays BFD information for the named protocol that BFD is enabled on.	
dest-ip <i>ipaddr</i>	(Optional) Displays BFD information for the destination IP address. The IP address is in dotted decimal notation for IPv4 and in A:B::C:D format for IPv6.	
src-ip <i>ipaddr</i>	(Optional) Displays BFD information for the source IP address. The IP address is in dotted decimal notation for IPv4 and in A:B::C:D format for IPv6.	
interface <i>int-if</i>	(Optional) Displays BFD information for the interface. Use the ? keyword to display a list of supported interfaces.	
vrf <i>vrf-name</i>	(Optional) Displays BFD information for the virtual routing and forwarding (VRF) instance.	
details	(Optional) Displays detailed BFD information.	

Defaults None

Command Modes Any

Command History	Release	Modification
	5.0(2)	This command was introduced.

Usage Guidelines Use the **show bfd neighbors** command to display information about BFD sessions. If you use the applications keyword, the application name is one of the following:

- bfd_app
- bgp
- eigrp
- hsrp
- isis
- ospf
- pim
- static

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This command does not require a license.

Examples

This example shows how to display the output from the **show bfd neighbors** command:

```
switch# show bfd neighbors
```

```
OurAddr  NeighAddr  LD/RD                               RH/RS  Holdown(mult)  State  Int
10.0.0.2  10.0.0.1  1124073474/1107296257             Up      582(3)         Up     Po10
```

This example shows how to display the output from the **show bfd neighbors application details** command for BFD:

```
switch# show bfd neighbors application bfd_app details
```

```
OurAddr  NeighAddr  LD/RD                               RH/RS  Holdown(mult)  State  Int
1.1.1.2  1.1.1.1  1090519041/1107296257             Up      137(3)         Up     Eth4/37
```

```
Session state is Up and not using echo function
Local Diag: 0, Demand mode: 0, Poll bit: 0
MinTxInt: 50000 us, MinRxInt: 50000 us, Multiplier: 3
Received MinRxInt: 50000 us, Received Multiplier: 3
Holdown (hits): 150 ms (2), Hello (hits): 50 ms (1232223)
Rx Count: 1267540, Rx Interval (ms) min/max/avg: 0/1789/44 last: 12 ms ago
Tx Count: 1232223, Tx Interval (ms) min/max/avg: 41/41/41 last: 13 ms ago
Registered protocols:  bfd_app
Uptime:  0day 15hour 5minute 8second 430ms
Last packet: Version: 1           - Diagnostic: 0
              State bit: Up       - Demand bit: 0
              Poll bit: 0         - Final bit: 0
              Multiplier: 3       - Length: 24
              My Discr.: 1107296257 - Your Discr.: 1090519041
              Min tx interval: 50000 - Min rx interval: 50000
              Min Echo interval: 0
```

Table 3 describes the significant fields shown in the display.

Table 3 *show bfd neighbors Field Descriptions*

Field	Description
OurAddr	IP address of the interface for which the show bfd neighbors command was entered.
NeighAddr	IPv4 or IPv6 address of the BFD adjacency or neighbor.
LD/RD	Local discriminator and remote discriminator being used for the session.
RH	Remote Heard—Indicates that the remote BFD neighbor has been heard.
Holdown(mult)	Detect timer multiplier that is used for this session.
State	State of the interface—Up or Down.
Int	Interface type and slot/port.
Session state is UP and not using echo function	BFD is up and not running in echo mode.

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Table 3 show bfd neighbors Field Descriptions (continued)

Field	Description
RX Count	Number of BFD control packets that have been received from the BFD neighbor.
TX Count	Number of BFD control packets that have been sent by the BFD neighbor.
TX Interval	Interval, in milliseconds, between sent BFD packets.
Registered protocols	Routing protocols that have been registered with BFD.
Last packet: Version:	BFD version detected and run between the BFD neighbors.
Diagnostic	<p>Diagnostic code specifying the local system's reason for the last transition of the session from Up to some other state.</p> <p>State values are as follows:</p> <ul style="list-style-type: none"> • 0—No Diagnostic • 1—Control Detection Time Expired • 2—Echo Function Failed • 3—Neighbor Signaled Session Down • 4—Forwarding Plane Reset • 5—Path Down • 6—Concentrated Path Down • 7—Administratively Down
Demand bit	Demand Mode bit. If set, the transmitting system wants to operate in demand mode. BFD has two modes—asynchronous and demand. The Cisco implementation of BFD supports only asynchronous mode.
Poll bit	Poll bit. If the Poll bit is set, the transmitting system is requesting verification of connectivity or of a parameter change.
Final bit	Final bit. If the Final bit is set, the transmitting system is responding to a received BFD control packet that had a Poll (P) bit set.
Multiplier	<p>Detect time multiplier. The negotiated transmit interval, multiplied by the detect time multiplier, determines the detection time for the transmitting system in BFD asynchronous mode.</p> <p>The detect time multiplier is similar to the hello multiplier in Intermediate System-to-Intermediate System (IS-IS), which is used to determine the hold timer: (hello interval) * (hello multiplier) = hold timer. If a hello packet is not received within the hold-timer interval, a failure has occurred.</p> <p>Similarly, for BFD: (transmit interval) * (detect multiplier) = detect timer. If a BFD control packet is not received from the remote system within the detect-timer interval, a failure has occurred.</p>
Length	Length of the BFD control packet, in bytes.
My Discr.	My Discriminator. Unique, nonzero discriminator value generated by the transmitting system used to demultiplex multiple BFD sessions between the same pair of systems.

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Table 3 *show bfd neighbors Field Descriptions (continued)*

Field	Description
RX Count	Number of BFD control packets that have been received from the BFD neighbor.
TX Count	Number of BFD control packets that have been sent by the BFD neighbor.
TX Interval	Interval, in milliseconds, between sent BFD packets.
Registered protocols	Routing protocols that have been registered with BFD.
Last packet: Version:	BFD version detected and run between the BFD neighbors.
Diagnostic	<p>Diagnostic code specifying the local system's reason for the last transition of the session from Up to some other state.</p> <p>State values are as follows:</p> <ul style="list-style-type: none"> • 0—No Diagnostic • 1—Control Detection Time Expired • 2—Echo Function Failed • 3—Neighbor Signaled Session Down • 4—Forwarding Plane Reset • 5—Path Down • 6—Concentrated Path Down • 7—Administratively Down
Demand bit	Demand Mode bit. If set, the transmitting system wants to operate in demand mode. BFD has two modes—asynchronous and demand. The Cisco implementation of BFD supports only asynchronous mode.
Poll bit	Poll bit. If the Poll bit is set, the transmitting system is requesting verification of connectivity or of a parameter change.
Final bit	Final bit. If the Final bit is set, the transmitting system is responding to a received BFD control packet that had a Poll (P) bit set.
Multiplier	<p>Detect time multiplier. The negotiated transmit interval, multiplied by the detect time multiplier, determines the detection time for the transmitting system in BFD asynchronous mode.</p> <p>The detect time multiplier is similar to the hello multiplier in Intermediate System-to-Intermediate System (IS-IS), which is used to determine the hold timer: (hello interval) * (hello multiplier) = hold timer. If a hello packet is not received within the hold-timer interval, a failure has occurred.</p> <p>Similarly, for BFD: (transmit interval) * (detect multiplier) = detect timer. If a BFD control packet is not received from the remote system within the detect-timer interval, a failure has occurred.</p>
Length	Length of the BFD control packet, in bytes.
My Discr.	My Discriminator. Unique, nonzero discriminator value generated by the transmitting system used to demultiplex multiple BFD sessions between the same pair of systems.

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Table 3 ***show bfd neighbors Field Descriptions (continued)***

Field	Description
Your Discr.	Your Discriminator. The discriminator received from the corresponding remote system. This field reflects the received value of My Discriminator, or is zero if that value is unknown.
Min tx interval	Minimum transmission interval, in microseconds, that the local system wants to use when sending BFD control packets.
Min rx interval	Minimum receipt interval, in microseconds, between received BFD control packets that the system can support.
Min Echo interval	Minimum interval, in microseconds, between received BFD control packets that the system can support. If the value is zero, the transmitting system does not support the receipt of BFD echo packets.

Related Commands

Command	Description
bfd echo	Enables BFD echo mode.

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show environment fex

To display Fabric Extender (FEX) environment information, use the **show environment fex** command.

show environment fex {*all chassis-id*} [**fan** | **power** | **temperature**]

Syntax Description	all	Displays information for all Fabric Extender chassis.
	<i>chassis-id</i>	Fabric Extender chassis ID. The chassis ID range is from 100 to 199.
	fan	(Optional) Displays fan information.
	power	(Optional) Displays power capacity and power distribution information.
	temperature	(Optional) Displays temperature sensor information.

Defaults None

Command Modes EXEC mode

Command History	Release	Modification
	5.1(1)	This command was introduced.

Usage Guidelines This command does not require a license.

Examples This example shows how to display the environmental sensor status for a Fabric Extender:

```
switch# show environment fex 101
```

```
Fan Fex : 101:
```

```
-----
Fan           Model           Hw           Status
-----
Chassis      N2K-C2248-FAN      --           ok
PS-1         N2200-PAC-400W     --           ok
PS-2         --                 --           absent
```

```
Temperature Fex 101:
```

```
-----
Module  Sensor           MajorThresh  MinorThres  CurTemp  Status
        (Celsius)      (Celsius)   (Celsius)
-----
1       Outlet-1         57           45          33       ok
1       Die-1           95           85          45       ok
```

```
Power Supply Fex 101:
```

```
Voltage: 12 Volts
```

```
-----
PS  Model           Power       Power       Status
```

```
show environment fex
```

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```

                                     (Watts)    (Amp)
-----
1  N2200-PAC-400W                    396.00    33.00    ok
2  -----                            --        --        --

Mod Model                               Power      Power      Power      Power      Status
      Requested Requested  Allocated Allocated
      (Watts)   (Amp)     (Watts)   (Amp)
-----
1  N2K-C2248TP-1GE                   63.60     5.30     63.60     5.30     powered-up

Power Usage Summary:
-----
Power Supply redundancy mode:                redundant

Total Power Capacity                          396.00 W

Power reserved for Supervisor(s)              63.60 W
Power currently used by Modules                0.00 W

-----
Total Power Available                          332.40 W
-----

switch#
```

This example shows how to display fan information:

```

switch# show environment fex 101 fan

Fan Fex : 101:
-----
Fan          Model                Hw          Status
-----
Chassis      N2K-C2248-FAN                  --        ok
PS-1         N2200-PAC-400W                 --        ok
PS-2         --                              --        absent

switch#
```

This example shows how to display power capacity and power distribution information:

```

switch# show environment fex 101 power
Power Supply Fex 101:
-----
Voltage: 12 Volts
-----
PS  Model                               Power      Power      Status
      Requested Requested  Allocated
      (Watts)   (Amp)     (Watts)
-----
1  -----                            --        --        --
2  -----                            --        --        --

Mod Model                               Power      Power      Power      Power      Status
      Requested Requested  Allocated Allocated
      (Watts)   (Amp)     (Watts)   (Amp)
-----
1  -----                            0.00     0.00     0.00     0.00     powered-up

Power Usage Summary:
-----
Power Supply redundancy mode:                redundant

Total Power Capacity                          0.00 W
```

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```

Power reserved for Supervisor(s)           0.00 W
Power currently used by Modules            0.00 W

-----
Total Power Available                       0.00 W
-----

switch#

```

This example shows how to display temperature sensor information:

```

switch# show environment fex 101 temperature
Temperature Fex 101:
-----
Module   Sensor      MajorThresh  MinorThres  CurTemp     Status
         (Celsius)   (Celsius)   (Celsius)
-----
1        Outlet-1    60           50          41          ok
1        Inlet-1     50           40          32          ok
switch#

```

Related Commands

Command	Description
show fex	Displays all configured Fabric Extender chassis connected to the switch.

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show fex

To display information about a specific or all attached chassis, use the **show fex** command.

show fex [**chassis-id** [**detail**]]

Syntax Description	
<i>chassis-id</i>	(Optional) Fabric Extender chassis ID. The chassis ID range is from 100 to 199.
detail	(Optional) Displays a detailed listing

Defaults None

Command Modes EXEC mode

Command History	Release	Modification
	5.1(1)	This command was introduced.

Usage Guidelines This command does not require a license.

Examples This example shows how to display information about all attached Fabric Extender chassis:

```
switch# show fex
  FEX          FEX          FEX          FEX
Number  Description      State           Model          Serial
-----
101     FEX0101             Online         N2K-C2248TP-1GE  JAF1407AANJ
102     FEX0102             Online         N2K-C2248TP-1GE  JAF1407AAQN
switch#
```

This example shows how to display information about a specific Fabric Extender chassis:

```
switch# show fex 101
FEX: 101 Description: FEX0101 state: Online
  FEX version: 5.1(1) [Switch version: 5.1(1)]
  FEX Interim version: 5.1(0.159.6)
  Switch Interim version: 5.1(0.236)
Extender Model: N2K-C2248TP-1GE, Extender Serial: JAF1407AANJ
Part No: 73-12748-04
pinning-mode: static Max-links: 1
Fabric port for control traffic: Po101
Fabric interface state:
  Po101 - Interface Up. State: Active
  Eth9/1 - Interface Up. State: Active
  Eth10/1 - Interface Up. State: Active
switch#
```


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This example shows how to display the detailed information about all attached Fabric Extender chassis:

```
switch# show fex detail
FEX: 101 Description: FEX0101 state: Online
  FEX version: 5.1(1) [Switch version: 5.1(1)]
  FEX Interim version: 5.1(0.159.6)
  Switch Interim version: 5.1(0.236)
  Extender Model: N2K-C2248TP-1GE, Extender Serial: JAF1407AANJ
  Part No: 73-12748-04
  Card Id: 99, Mac Addr: 00:05:9b:70:dd:42, Num Macs: 64
  Module Sw Gen: 12594 [Switch Sw Gen: 21]
pinning-mode: static Max-links: 1
Fabric port for control traffic: Po101
Fabric interface state:
  Po101 - Interface Up. State: Active
  Eth9/1 - Interface Up. State: Active
  Eth10/1 - Interface Up. State: Active
Fex Port      State Fabric Port Primary Fabric
  Eth101/1/1  Down  Po101      Po101
  Eth101/1/2  Down  Po101      Po101
  Eth101/1/3  Down  Po101      Po101
  Eth101/1/4  Down  Po101      Po101
  Eth101/1/5  Down  Po101      Po101
  Eth101/1/6  Down  Po101      Po101
  Eth101/1/7  Down  Po101      Po101
  Eth101/1/8  Down  Po101      Po101
  Eth101/1/9  Down  Po101      Po101
  Eth101/1/10 Down  Po101      Po101
  Eth101/1/11 Down  Po101      Po101
--More--
switch#
```

Related Commands

Command	Description
fex	Creates a Fabric Extender and enters fabric extender configuration mode.

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show fex detail

To display detailed information about a specific Fabric Extender (FEX) or all attached chassis, use the **show fex detail** command.

show fex detail

Syntax Description This command has no arguments or keywords.

Defaults None

Command Modes EXEC mode

Command History	Release	Modification
	5.1(1)	This command was introduced.

Usage Guidelines This command does not require a license.

Examples This example shows how to display detailed information about a specific Fabric Extender or all attached chassis:

```
switch# show fex detail
FEX: 101 Description: FEX0101 state: Online
  FEX version: 5.1(1) [Switch version: 5.1(1)]
  FEX Interim version: 5.1(0.159.6)
  Switch Interim version: 5.1(0.236)
  Extender Model: N2K-C2248TP-1GE, Extender Serial: JAF1407AANJ
  Part No: 73-12748-04
  Card Id: 99, Mac Addr: 00:05:9b:70:dd:42, Num Macs: 64
  Module Sw Gen: 12594 [Switch Sw Gen: 21]
pinning-mode: static Max-links: 1
Fabric port for control traffic: Po101
Fabric interface state:
  Po101 - Interface Up. State: Active
  Eth9/1 - Interface Up. State: Active
  Eth10/1 - Interface Up. State: Active
Fex Port      State Fabric Port Primary Fabric
  Eth101/1/1  Down   Po101      Po101
  Eth101/1/2  Down   Po101      Po101
  Eth101/1/3  Down   Po101      Po101
  Eth101/1/4  Down   Po101      Po101
  Eth101/1/5  Down   Po101      Po101
  Eth101/1/6  Down   Po101      Po101
  Eth101/1/7  Down   Po101      Po101
  Eth101/1/8  Down   Po101      Po101
  Eth101/1/9  Down   Po101      Po101
  Eth101/1/10 Down   Po101      Po101
  Eth101/1/11 Down   Po101      Po101
```

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```
--More--  
switch#
```

Related Commands

Command	Description
show fex	Displays all configured Fabric Extender chassis connected to the switch.
fex	Creates a Fabric Extender and enters fabric extender configuration mode.

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show fex transceiver

To display information about the transceiver that connects a Fabric Extender (FEX) to the Cisco Nexus 7000 Series switch, use the **show fex transceiver** command.

show fex *chassis-id* **transceiver** [**calibration** | **detail**]

Syntax Description		
	<i>chassis-id</i>	Fabric Extender chassis ID. The chassis ID range is from 100 to 199.
	calibration	(Optional) Displays detailed calibration information about the transceiver.
	detail	(Optional) Displays detailed information about the transceiver.

Defaults None

Command Modes EXEC mode

Command History	Release	Modification
	5.1(1)	This command was introduced.

Usage Guidelines This command does not require a license.

Examples This example shows how to display information about the transceiver that connects a Fabric Extender to the Cisco Nexus 7000 Series switch:

```
switch# show fex 101 transceiver
```

```
Fex Uplink: 1
Fabric Port: --
    sfp information is not available
```

```
Fex Uplink: 2
Fabric Port: Ethernet10/1
    sfp is present
    name is CISCO-FINISAR
    part number is FTLX8570D3BCL-C1
    revision is A
    serial number is FNS141629V3
    nominal bitrate is 10300 Mbits/sec
    Link length supported for 50/125mm fiber is 0 m(s)
    Link length supported for 62.5/125mm fiber is 0 m(s)
    cisco id is --
    cisco extended id number is 4
```

```
Fex Uplink: 3
Fabric Port: Ethernet9/1
    sfp is present
```

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```
name is CISCO-FINISAR
part number is FTLX8570D3BCL-C1
revision is A
serial number is FNS141700UE
nominal bitrate is 10300 Mbits/sec
Link length supported for 50/125mm fiber is 0 m(s)
Link length supported for 62.5/125mm fiber is 0 m(s)
cisco id is --
cisco extended id number is 4
```

```
Fex Uplink: 4
Fabric Port: --
    sfp information is not available
```

```
switch#
```

Related Commands

Command	Description
show fex	Displays all configured Fabric Extender chassis connected to the switch.

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show fex version

To display the software version information about a Fabric Extender (FEX), use the **show fex version** command.

show fex chassis-id version

Syntax Description	<i>chassis-ID</i>	Fabric Extender chassis ID. The chassis ID range is from 100 to 199.
--------------------	-------------------	--

Defaults	None
----------	------

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

Command History	Release	Modification
	5.1(1)	This command was introduced.

Usage Guidelines	This command does not require a license.
------------------	--

Examples This example shows how to display the software version of a Fabric Extender:

```
switch# show fex 101 version
Software
  Bootloader version:      0.2
  System boot mode:       primary
  System image version:    5.1(1) [build 5.1(0.159.6)]

Hardware
  Module:                  Fabric Extender 48x1GE + 4x10G Module
  CPU:                     Motorola, e300c4
  Serial number:           JAF1407AANJ
  Bootflash:               locked

Kernel uptime is 1 day(s), 1 hour(s), 47 minutes(s), 4 second(s)

Last reset at Mon Sep  6 07:43:23 2010
  Reason: Reset Requested by CLI command reload
  Service: Reload requested by supervisor
switch#
```

Related Commands	Command	Description
	show fex	Displays all configured Fabric Extender chassis connected to the switch.

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show inventory fex

To display the system inventory of a Fabric Extender (FEX), such as the name, description, and volume ID, use the **show inventory fex** command

show inventory fex *chassis-id*

Syntax Description	<i>chassis-id</i>	Fabric Extender chassis ID. The chassis ID range is from 100 to 199.
--------------------	-------------------	--

Defaults	None
----------	------

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

Command History	Release	Modification
	5.1(1)	This command was introduced.

Usage Guidelines	This command does not require a license.
------------------	--

Examples This example shows how to display the system inventory of a specific Fabric Extender chassis:

```
switch# show inventory fex 101
PID: N2K-C2248TP-1GE      , VID: V00 , SN: JAF1407AANJ

NAME: "FEX 101 Module 1", DESCR: "Fabric Extender Module: 32x10G BaseT, 8x10G BaseT Supervisor"
PID: N2K-C2248TP-1GE      , VID: V00 , SN: SSI14061500

NAME: "FEX 101 Fan 1", DESCR: "Fabric Extender Fan module"
PID: N2K-C2332-FAN        , VID: N/A , SN: N/A

NAME: "FEX 101 Power Supply 1", DESCR: "Fabric Extender AC power supply"
PID: N2200-PAC-400W       , VID: V00 , SN: LIT14030HK9
switch#
```

Related Commands	Command	Description
	show fex	Displays all configured Fabric Extender chassis connected to the switch.

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show logging level fex

To display the Fabric Extender (FEX) logging configuration, use the **show logging level fex** command.

show logging level fex

Syntax Description This command has no arguments or keywords.

Defaults None

Command Modes EXEC mode

Command History	Release	Modification
	5.1(1)	This command was introduced.

Usage Guidelines This command does not require a license.

Examples This example shows how to display the FEX logging configuration:

```
switch# show logging level fex
Facility          Default Severity      Current Session Severity
-----          -
fex                5                      5

0 (emergencies)   1 (alerts)            2 (critical)
3 (errors)        4 (warnings)         5 (notifications)
6 (information)   7 (debugging)
```

switch#

Related Commands	Command	Description
	show fex	Displays all configured Fabric Extender chassis connected to the switch.

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show module fex

To display the Fabric Extender (FEX) module information, use the **show module fex** command.

show module fex [*all chassis-id*]

Syntax Description	all	Displays information about all Fabric Extender modules.
	<i>chassis-id</i>	Fabric Extender chassis ID. The chassis ID range is from 100 to 199.

Defaults None

Command Modes EXEC mode

Command History	Release	Modification
	5.1(1)	This command was introduced.

Usage Guidelines This command does not require a license.

Examples This example shows how to display the module information for the Fabric Extender:

```
switch# show module fex all
FEX Mod Ports Card Type                               Model                Status.
-----
101  1  48   Fabric Extender 48x1GE + 4x10G M  N2K-C2248TP-1GE     ok

FEX Mod Sw          Hw          World-Wide-Name(s) (WWN)
-----
101  1  5.1(1)         3.4         --

FEX Mod  MAC-Address(es)                               Serial-Num
-----
101  1  0005.9b70.dd40 to 0005.9b70.dd6f  JAF1407AANJ

FEX Mod Ports Card Type                               Model                Status.
-----
102  1  48   Fabric Extender 48x1GE + 4x10G M  N2K-C2248TP-1GE     ok

FEX Mod Sw          Hw          World-Wide-Name(s) (WWN)
-----
102  1  5.1(1)         3.4         --

FEX Mod  MAC-Address(es)                               Serial-Num
-----
102  1  68ef.bd61.ce00 to 68ef.bd61.ce2f  JAF1407AAQN
switch#
```

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This example shows how to display FEX module information:

```
switch# show module fex

FEX Mod Ports Card Type                               Model                               Status.
-----
101  1  48    Fabric Extender 48x1GE + 4x10G M   N2K-C2248TP-1GE   ok

FEX Mod Sw                Hw      World-Wide-Name(s) (WWN)
-----
101  1  5.1(1)                3.4     --

FEX Mod  MAC-Address(es)                               Serial-Num
-----
101  1  0005.9b70.dd40 to 0005.9b70.dd6f   JAF1407AANJ

FEX Mod Ports Card Type                               Model                               Status.
-----
102  1  48    Fabric Extender 48x1GE + 4x10G M   N2K-C2248TP-1GE   ok

FEX Mod Sw                Hw      World-Wide-Name(s) (WWN)
-----
102  1  5.1(1)                3.4     --

FEX Mod  MAC-Address(es)                               Serial-Num
-----
102  1  68ef.bd61.ce00 to 68ef.bd61.ce2f   JAF1407AAQN
switch#
```

This example shows how to display the module information for a specific Fabric Extender:

```
switch# show module fex 101

FEX Mod Ports Card Type                               Model                               Status.
-----
101  1  48    Fabric Extender 48x1GE + 4x10G M   N2K-C2248TP-1GE   ok

FEX Mod Sw                Hw      World-Wide-Name(s) (WWN)
-----
101  1  5.1(1)                3.4     --

FEX Mod  MAC-Address(es)                               Serial-Num
-----
101  1  0005.9b70.dd40 to 0005.9b70.dd6f   JAF1407AANJ
switch#
```

Related Commands

Command	Description
show fex	Displays all configured Fabric Extender chassis connected to the switch.

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show tech fex all

To gather detailed information for all Fabric Extender (FEX) troubleshooting information, use the **show tech fex all** command.

show tech fex all

Syntax Description This command has no arguments or keywords.

Defaults None

Command Modes EXEC mode

Command History	Release	Modification
	5.1(1)	This command was introduced.

Usage Guidelines This command does not require a license.

Examples This example shows how to display detailed FEX information:

```
switch# show tech fex all
02/25/2008 03:38:18.22739: *****
02/25/2008 03:38:18.23019: Satctrl Built at Thu Aug 5 19:12:00 PDT 2010 on rami
neni-lnx in directory /ws/mhau-sjc/deewhy_june_2/build by mhau
02/25/2008 03:38:18.23040: Version: 2102/25/2008 03:38:18.23055: *****
*****
02/25/2008 03:38:18.34242: satellite_init: initializing modules
02/25/2008 03:38:18.34466: satctrl_get_cardid: Platform card ID 99
02/25/2008 03:38:18.34771: Platform info: cardid=99, num_slots=1
02/25/2008 03:38:18.461803: satctrl_get_cardid: Platform card ID 99
02/25/2008 03:38:18.461849: satellite_init: swcardid=99
02/25/2008 03:38:18.461995: get fru: chas ser:SSI14061500 chas model:N2K-C2248TP
-1GE chas part: 68-3601-04
02/25/2008 03:38:18.462022: get fru: mod ser:JAF1407AANJ mod model:N2K-C2248TP-1
GE mod part: 73-12748-04
02/25/2008 03:38:18.462046: satellite_init: initializing inband
02/25/2008 03:38:18.475965: satellite_init: inband initialized
02/25/2008 03:38:18.476153: satellite_module_cfg_init: initializing modue (0)
02/25/2008 03:38:18.477439: satctrl_module_fsm_init: Fsm initialized for fabric
module no (0, 0)
02/25/2008 03:38:18.477533: satctrl_module_fsm_init: Fsm initialized for fabric
module no (1, 0)
02/25/2008 03:38:18.477855: satellite_init: done initializing satctrl module
02/25/2008 03:38:18.477897: satctrl_set_mts_addr: dummy_addr: 0xff02
02/25/2008 03:38:18.478139: My addr is changed to 0xff
--More--
```

■ show tech fex all

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Related Commands

Command	Description
show fex	Displays all configured Fabric Extender chassis connected to the switch.

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show version fex

To display the software version information about a Fabric Extender (FEX), use the **show version fex** command.

show version fex *chassis-ID*

Syntax Description	<i>chassis-ID</i>	Fabric Extender chassis ID. The chassis ID range is from 100 to 199.
--------------------	-------------------	--

Defaults	None
----------	------

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

Command History	Release	Modification
	5.1(1)	This command was introduced.

Usage Guidelines	This command does not require a license.
------------------	--

Examples This example shows how to display the software version of a Fabric Extender:

```
switch# show version fex 100
Software
  Bootloader version:      0.2
  System boot mode:       primary
  System image version:    5.1(1) [build 5.1(0.159.6)]

Hardware
  Module:                  Fabric Extender 48x1GE + 4x10G Module
  CPU:                     Motorola, e300c4
  Serial number:           JAF1407AANJ
  Bootflash:               locked

Kernel uptime is 1 day(s), 1 hour(s), 12 minutes(s), 13 second(s)

Last reset at Mon Sep  6 07:43:23 2010
  Reason: Reset Requested by CLI command reload
  Service: Reload requested by supervisor
switch#
```

Related Commands	Command	Description
	show fex	Displays all configured Fabric Extender chassis connected to the switch.

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show interface

To display the interface status and information, use the **show interface** command.

show interface

Syntax Description This command has some keywords. For more details, see the Usage Guidelines for this command.

Defaults None

Command Modes Any command mode

SupportedUserRoles network-admin
vdc-admin

Command History	Release	Modification
	5.1(1)	changed the command output to show the port is suspended due to min-links.
	4.0	This command was introduced.

Usage Guidelines Use the **show interface** command to display the interface status and information. To display **show interface** commands with valid keywords, see the following commands in this document:

- **show interface brief**—Show brief information of interface
- **show interface capabilities**—Show interface capabilities information
- **show interface counters**—Show interface counters
- **show interface counters detailed**—Show only non-zero counters
- **show interface counters errors**—Show interface error counters
- **show interface counters module**—Show interface counters on a specified module
- **show interface counters snmp**—Show SNMP MIB values
- **show interface counters storm-control**—Show interface storm-control counters
- **show interface counters trunk**—Show interface trunk counters
- **show interface debounce**—Show interface debounce time information
- **show interface description**—Show interface description
- **show interface ethernet**—Show Ethernet interface information
- **show interface flowcontrol**—Show interface flow control information
- **show interface mgmt**—Show management interface
- **show interface port-channel**—Show port-channel interface

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- **show interface port-channel counters**—Show interface port-channel counters
- **show interface status**—Show interface line status
- **show interface switchport**—Show interface switchport information
- **show interface transceiver**—Show interface transceiver information
- **show interface trunk**—Show interface trunk information

This command does not require a license.

Examples

This example shows how to display the interface status and information:

```
switch(config-if)# show interface e1/5
Ethernet4/27 is down (suspended (min-links))
  Hardware: GigabitEthernet, address: 0019.076c.1a78 (bia 0019.076c.1a78)
  Internet Address is 172.28.231.193/23
  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
  Auto-Negotiation is turned on
  1 minute input rate 26608 bits/sec, 10 packets/sec
  1 minute output rate 2272 bits/sec, 0 packets/sec
  Rx
    473804 input packets 51412 unicast packets 124811 multicast packets
    297581 broadcast packets 148270388 bytes
  Tx
    51994 output packets 50387 unicast packets 1460 multicast packets
    147 broadcast packets 8330595 bytes

Ethernet2/1 is down (Administratively down)
  Hardware: 10/100/1000 Ethernet, address: 0018.bad8.3ffd (bia 0019.076c.4dac)
  MTU 1500 bytes, BW 1000000 Kbit, DLY 10 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA
  auto-duplex, auto-speed
  Beacon is turned off
  Auto-Negotiation is turned on
  Input flow-control is off, output flow-control is off
  Auto-mdix is turned on
  Switchport monitor is off
  Last clearing of "show interface" counters never
  1 minute input rate 0 bits/sec, 0 packets/sec
  1 minute output rate 0 bits/sec, 0 packets/sec
  L3 in Switched:
    ucast: 0 pkts, 0 bytes - mcast: 0 pkts, 0 bytes
  L3 out Switched:
    ucast: 0 pkts, 0 bytes - mcast: 0 pkts, 0 bytes
  Rx
    0 input packets 0 unicast packets 0 multicast packets
    0 broadcast packets 0 jumbo packets 0 storm suppression packets
    0 bytes
  Tx
    0 output packets 0 multicast packets
    0 broadcast packets 0 jumbo packets
    0 bytes
    0 input error 0 short frame 0 watchdog
    0 no buffer 0 runt 0 CRC 0 ecc
    0 overrun 0 underrun 0 ignored 0 bad etype drop
    0 bad proto drop 0 if down drop 0 input with dribble
    0 input discard
```

■ show interface

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```
0 output error 0 collision 0 deferred
0 late collision 0 lost carrier 0 no carrier
0 babble
0 Rx pause 0 Tx pause
0 interface resets

...<additional lines truncated>
```

Related Commands

Command	Description
interface	Enters the interface configuration mode, and configures the types and identities of interfaces.

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show interface brief

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

```
show interface [ethernet slot/port | port-channel channel-number]
```

Syntax Description	Parameter	Description
	ethernet	(Optional) Specifies the slot and port of the Ethernet interface that you want to display.
	<i>slot/port</i>	(Optional) Slot number and port number for the Ethernet interface.
	port-channel	(Optional) Specifies the port-channel number of the port-channel interface that you want to display.
	<i>channel-number</i>	(Optional) Channel number.

Defaults None

Command Modes Any command mode

Supported User Roles network-admin
vdc-admin

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines If you do not specify an interface, this command displays information about all Layer 2 interfaces. Use the **show interface brief** command to display brief information about the interface.

This command does not require a license.

Examples This example shows how to display brief information about the interface:

```
switch# show interface brief
```

```
-----
Port    VRF      Status IP Address                               Speed  MTU
-----
mgmt0   --       up     172.28.231.193                           1000   1500

-----
Ethernet VLAN  Type Mode  Status Reason                               Speed  Port
Interface                                     Ch #
-----
Eth2/1   --    eth  routed down  Administratively down  auto(D) --
Eth2/2   --    eth  routed down  Administratively down  auto(D) --
Eth2/3   --    eth  routed down  Administratively down  auto(D) --
```

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```

Eth2/4      1      eth pvlan down      Administratively down      auto(D) --
Eth2/5      --     eth routed down      Administratively down      auto(D) --
Eth2/6      1      eth access down      Link not connected         auto(D) --
Eth2/7      1      eth access up        none                       1000(D) --
Eth2/8      --     eth routed down      Administratively down      auto(D) --
Eth2/9      1      eth access up        none                       1000(D) --
Eth2/10     1      eth access down      Link not connected         auto(D) --
Eth2/11     --     eth routed down      Administratively down      auto(D) --
Eth2/12     --     eth routed down      Administratively down      auto(D) --
Eth2/13     --     eth routed down      Administratively down      auto(D) --
Eth2/14     --     eth routed down      Administratively down      auto(D) --
Eth2/15     --     eth routed down      Administratively down      auto(D) --
Eth2/16     --     eth routed down      Administratively down      auto(D) --
Eth2/17     --     eth routed down      Administratively down      auto(D) --
Eth2/18     --     eth routed down      Administratively down      auto(D) --
Eth2/19     --     eth routed down      Administratively down      auto(D) --
Eth2/20     --     eth routed down      Administratively down      auto(D) --
Eth2/21     --     eth routed down      Administratively down      auto(D) --
Eth2/22     --     eth routed down      Administratively down      auto(D) --
Eth2/23     --     eth routed down      Administratively down      auto(D) --
Eth2/24     --     eth routed down      Administratively down      auto(D) --
Eth2/25     --     eth routed down      Administratively down      auto(D) --
Eth2/26     --     eth routed down      Administratively down      auto(D) --
Eth2/27     --     eth routed down      Administratively down      auto(D) --
Eth2/28     --     eth routed down      Administratively down      auto(D) --
Eth2/29     --     eth routed down      Administratively down      auto(D) --
Eth2/30     --     eth routed down      Administratively down      auto(D) --
Eth2/31     --     eth routed down      Administratively down      auto(D) --
Eth2/32     --     eth routed down      Administratively down      auto(D) --
Eth2/33     --     eth routed down      Administratively down      auto(D) --
Eth2/34     --     eth routed down      Administratively down      auto(D) --
Eth2/35     --     eth routed down      Administratively down      auto(D) --
Eth2/36     --     eth routed down      Administratively down      auto(D) --
Eth2/37     --     eth routed down      Administratively down      auto(D) --
Eth2/38     --     eth routed down      Administratively down      auto(D) --
Eth2/39     --     eth routed down      Administratively down      auto(D) --
Eth2/40     --     eth routed down      Administratively down      auto(D) --
Eth2/41     --     eth routed down      Administratively down      auto(D) --
Eth2/42     --     eth routed down      Administratively down      auto(D) --
Eth2/43     --     eth routed down      Administratively down      auto(D) --
Eth2/44     --     eth routed down      Administratively down      auto(D) --
Eth2/45     --     eth routed down      Administratively down      auto(D) --
Eth2/46     --     eth routed down      Administratively down      auto(D) --
Eth2/47     --     eth routed down      Administratively down      auto(D) --
Eth2/48     --     eth routed down      Administratively down      auto(D) --

```

```

-----
Interface      Secondary VLAN(Type)      Status      Reason
-----
Vlan1          --                        down        none

```

Related Commands

Command	Description
interface	Enters the interface configuration mode, and configures the types and identities of interfaces.

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show interface capabilities

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

show interface [*ethernet slot/port* | **port-channel** *channel-number*] **capabilities**

Syntax Description	Parameter	Description
	ethernet	(Optional) Specifies the slot and port of the Ethernet interface that you want to display.
	<i>slot/port</i>	(Optional) Slot number and port number for the Ethernet interface.
	port-channel	(Optional) Specifies the port-channel number of the port-channel interface that you want to display.
	<i>channel-number</i>	(Optional) Channel number.

Defaults None

Command Modes Any command mode

Supported User Roles network-admin
vdc-admin

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines Use the **show interface capabilities** command to display information about the capabilities of the interface such as the speed, duplex, and rate mode. If you do not specify an interface, this command displays information about all Layer 2 interfaces.

This command does not require a license.

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

```
switch# show interface ethernet 2/7 capabilities
Ethernet2/7
  Model:                COPPER
  Type:                 1000BaseT
  Speed:                10,100,1000,auto
  Duplex:               half/full/auto
  Trunk encap. type:    802.1Q
  Channel:              yes
  Broadcast suppression: percentage(0-100)
  Flowcontrol:          rx-(off/on/desired),tx-(off/on/desired)
  Rate mode:            dedicated
  QoS scheduling:       rx-(2q4t),tx-(1p3q4t)
  CoS rewrite:         yes
```

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```
ToS rewrite:          yes
SPAN:                 yes
UDLD:                 yes
Link Debounce:       yes
Link Debounce Time:  yes
MDIX:                 yes
Port Group Members:  none
```

Related Commands

Command	Description
interface	Enters the interface configuration mode, and configures the types and identities of interfaces.

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show interface counters

To display in and out counters for all interfaces in the system, use the **show interface counters** command.

show interface [**ethernet** *slot/port* | **port-channel** *channel-number*] **counters**

Syntax Description		
ethernet	(Optional) Specifies the slot and port of the Ethernet interface that you want to display.	
<i>slot/port</i>	(Optional) Slot number and port number for the Ethernet interface.	
port-channel	(Optional) Specifies the port-channel number of the port-channel interface that you want to display.	
<i>channel-number</i>	(Optional) Channel number.	

Defaults None

Command Modes Any command mode

Supported User Roles network-admin
vdc-admin

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines Use the **show interface counters** command to display in and out counters for all or a specific interface. If you do not specify an interface, this command displays information about all Layer 2 interfaces. This command does not require a license.

Examples This example shows how to display the in and out counters for all interfaces:

```
switch# show interface counters
```

```
-----
Port                InOctets      InUcastPkts   InMcastPkts   InBcastPkts
-----
mgmt0                137046816     46882         115497         267729
Eth2/1                0              0              0              0
Eth2/2                0              0              0              0
Eth2/3                0              0              0              0
Eth2/4                0              0              0              0
Eth2/5                0              0              0              0
Eth2/6                0              0              0              0
Eth2/7                295061        0              1348           0
-----
```

```
show interface counters
```

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```

Eth2/8          0          0          0          0
Eth2/9          4174381      0          53303      0
Eth2/10         0          0          0          0
Eth2/11         0          0          0          0
Eth2/12         0          0          0          0
Eth2/13         0          0          0          0
Eth2/14         0          0          0          0
Eth2/15         0          0          0          0
Eth2/16         0          0          0          0
Eth2/17         0          0          0          0
Eth2/18         0          0          0          0
Eth2/19         0          0          0          0
Eth2/20         0          0          0          0
Eth2/21         0          0          0          0
Eth2/22         0          0          0          0
Eth2/23         0          0          0          0
Eth2/24         0          0          0          0
Eth2/25         0          0          0          0
Eth2/26         0          0          0          0
Eth2/27         0          0          0          0
Eth2/28         0          0          0          0
Eth2/29         0          0          0          0
Eth2/30         0          0          0          0
Eth2/31         0          0          0          0
Eth2/32         0          0          0          0
Eth2/33         0          0          0          0
Eth2/34         0          0          0          0
Eth2/35         0          0          0          0
Eth2/36         0          0          0          0
Eth2/37         0          0          0          0
Eth2/38         0          0          0          0
Eth2/39         0          0          0          0
Eth2/40         0          0          0          0
Eth2/41         0          0          0          0
Eth2/42         0          0          0          0
Eth2/43         0          0          0          0
Eth2/44         0          0          0          0
Eth2/45         0          0          0          0
Eth2/46         0          0          0          0
Eth2/47         0          0          0          0
Eth2/48         0          0          0          0
Vlan1           0          0          0          0

```

```

-----
Port              OutOctets      OutUcastPkts    OutMcastPkts    OutBcastPkts
-----
mgmt0             7555343        45951           1352            136
Eth2/1            0              0               0               0
Eth2/2            0              0               0               0
Eth2/3            0              0               0               0
Eth2/4            0              0               0               0
Eth2/5            0              0               0               0
Eth2/6            0              0               0               0
Eth2/7            4174381        0               53303           0
Eth2/8            0              0               0               0
Eth2/9            295061         0               1348            0
Eth2/10           0              0               0               0
Eth2/11           0              0               0               0
Eth2/12           0              0               0               0
Eth2/13           0              0               0               0
Eth2/14           0              0               0               0
Eth2/15           0              0               0               0
Eth2/16           0              0               0               0
Eth2/17           0              0               0               0

```

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Eth2/18	0	0	0	0
Eth2/19	0	0	0	0
Eth2/20	0	0	0	0
Eth2/21	0	0	0	0
Eth2/22	0	0	0	0
Eth2/23	0	0	0	0
Eth2/24	0	0	0	0
Eth2/25	0	0	0	0
Eth2/26	0	0	0	0
Eth2/27	0	0	0	0
Eth2/28	0	0	0	0
Eth2/29	0	0	0	0
Eth2/30	0	0	0	0
Eth2/31	0	0	0	0
Eth2/32	0	0	0	0
Eth2/33	0	0	0	0
Eth2/34	0	0	0	0
Eth2/35	0	0	0	0
Eth2/36	0	0	0	0
Eth2/37	0	0	0	0
Eth2/38	0	0	0	0
Eth2/39	0	0	0	0
Eth2/40	0	0	0	0
Eth2/41	0	0	0	0
Eth2/42	0	0	0	0
Eth2/43	0	0	0	0
Eth2/44	0	0	0	0
Eth2/45	0	0	0	0
Eth2/46	0	0	0	0
Eth2/47	0	0	0	0
Eth2/48	0	0	0	0
Vlan1	0	0	0	--

Related Commands

Command	Description
clear counters interface	Clears the counters for the specified interfaces.

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show interface counters errors

To display interface error counters, use the **show interface counters errors**.

show interface [**ethernet** *slot/port* | **port-channel** *channel-number*] **counter errors**

Syntax Description		
ethernet	(Optional) Specifies the slot and port of the Ethernet interface that you want to display.	
<i>slot/port</i>	(Optional) Slot number and port number for the Ethernet interface.	
port-channel	(Optional) Specifies the port-channel number of the port-channel interface that you want to display.	
<i>channel-number</i>	(Optional) Channel number.	

Command Default None

Command Modes Any command mode

Supported User Roles network-admin
vdc-admin

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines Use the **show interface counters errors** command to display interface error counters. If you do not specify an interface, this command displays information about all Layer 2 interfaces.

This command does not require a license.

Examples This example shows how to display the interface error counters:

```
switch# show interface counters errors
```

```
-----
Port          Align-Err    FCS-Err     Xmit-Err     Rcv-Err     UnderSize  OutDiscards
-----
mgmt0         --          --          --          --          --          --
Eth2/1        0           0           0           0           0           0
Eth2/2        0           0           0           0           0           0
Eth2/3        0           0           0           0           0           0
Eth2/4        0           0           0           0           0           0
Eth2/5        0           0           0           0           0           0
Eth2/6        0           0           0           0           0           0
Eth2/7        0           0           0           0           0           0
Eth2/8        0           0           0           0           0           0
-----
```


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Eth2/9	0	0	0	0	0	0
Eth2/10	0	0	0	0	0	0
Eth2/11	0	0	0	0	0	0
Eth2/12	0	0	0	0	0	0
Eth2/13	0	0	0	0	0	0
Eth2/14	0	0	0	0	0	0
Eth2/15	0	0	0	0	0	0
Eth2/16	0	0	0	0	0	0
Eth2/17	0	0	0	0	0	0
Eth2/18	0	0	0	0	0	0
Eth2/19	0	0	0	0	0	0
Eth2/20	0	0	0	0	0	0
Eth2/21	0	0	0	0	0	0
Eth2/22	0	0	0	0	0	0
Eth2/23	0	0	0	0	0	0
Eth2/24	0	0	0	0	0	0
Eth2/25	0	0	0	0	0	0
Eth2/26	0	0	0	0	0	0
Eth2/27	0	0	0	0	0	0
Eth2/28	0	0	0	0	0	0
Eth2/29	0	0	0	0	0	0
Eth2/30	0	0	0	0	0	0
Eth2/31	0	0	0	0	0	0
Eth2/32	0	0	0	0	0	0
Eth2/33	0	0	0	0	0	0
Eth2/34	0	0	0	0	0	0
Eth2/35	0	0	0	0	0	0
Eth2/36	0	0	0	0	0	0
Eth2/37	0	0	0	0	0	0
Eth2/38	0	0	0	0	0	0
Eth2/39	0	0	0	0	0	0
Eth2/40	0	0	0	0	0	0
Eth2/41	0	0	0	0	0	0
Eth2/42	0	0	0	0	0	0
Eth2/43	0	0	0	0	0	0
Eth2/44	0	0	0	0	0	0
Eth2/45	0	0	0	0	0	0
Eth2/46	0	0	0	0	0	0
Eth2/47	0	0	0	0	0	0
Eth2/48	0	0	0	0	0	0

Port	Single-Col	Multi-Col	Late-Col	Exces-Col	Carri-Sen	Runts
mgmt0	--	--	--	--	--	--
Eth2/1	0	0	0	0	0	0
Eth2/2	0	0	0	0	0	0
Eth2/3	0	0	0	0	0	0
Eth2/4	0	0	0	0	0	0
Eth2/5	0	0	0	0	0	0
Eth2/6	0	0	0	0	0	0
Eth2/7	0	0	0	0	0	0
Eth2/8	0	0	0	0	0	0
Eth2/9	0	0	0	0	0	0
Eth2/10	0	0	0	0	0	0
Eth2/11	0	0	0	0	0	0
Eth2/12	0	0	0	0	0	0
Eth2/13	0	0	0	0	0	0
Eth2/14	0	0	0	0	0	0
Eth2/15	0	0	0	0	0	0
Eth2/16	0	0	0	0	0	0
Eth2/17	0	0	0	0	0	0
Eth2/18	0	0	0	0	0	0
Eth2/19	0	0	0	0	0	0

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Eth2/20	0	0	0	0	0	0
Eth2/21	0	0	0	0	0	0
Eth2/22	0	0	0	0	0	0
Eth2/23	0	0	0	0	0	0
Eth2/24	0	0	0	0	0	0
Eth2/25	0	0	0	0	0	0
Eth2/26	0	0	0	0	0	0
Eth2/27	0	0	0	0	0	0
Eth2/28	0	0	0	0	0	0
Eth2/29	0	0	0	0	0	0
Eth2/30	0	0	0	0	0	0
Eth2/31	0	0	0	0	0	0
Eth2/32	0	0	0	0	0	0
Eth2/33	0	0	0	0	0	0
Eth2/34	0	0	0	0	0	0
Eth2/35	0	0	0	0	0	0
Eth2/36	0	0	0	0	0	0
Eth2/37	0	0	0	0	0	0
Eth2/38	0	0	0	0	0	0
Eth2/39	0	0	0	0	0	0
Eth2/40	0	0	0	0	0	0
Eth2/41	0	0	0	0	0	0
Eth2/42	0	0	0	0	0	0
Eth2/43	0	0	0	0	0	0
Eth2/44	0	0	0	0	0	0
Eth2/45	0	0	0	0	0	0
Eth2/46	0	0	0	0	0	0
Eth2/47	0	0	0	0	0	0
Eth2/48	0	0	0	0	0	0

Port	Giants	SQETest-Err	Deferred-Tx	IntMacTx-Er	IntMacRx-Er	Symbol-Err
mgmt0	--	--	--	--	--	--
Eth2/1	0	--	0	0	0	0
Eth2/2	0	--	0	0	0	0
Eth2/3	0	--	0	0	0	0
Eth2/4	0	--	0	0	0	0
Eth2/5	0	--	0	0	0	0
Eth2/6	0	--	0	0	0	0
Eth2/7	0	--	0	0	0	0
Eth2/8	0	--	0	0	0	0
Eth2/9	0	--	0	0	0	0
Eth2/10	0	--	0	0	0	0
Eth2/11	0	--	0	0	0	0
Eth2/12	0	--	0	0	0	0
Eth2/13	0	--	0	0	0	0
Eth2/14	0	--	0	0	0	0
Eth2/15	0	--	0	0	0	0
Eth2/16	0	--	0	0	0	0
Eth2/17	0	--	0	0	0	0
Eth2/18	0	--	0	0	0	0
Eth2/19	0	--	0	0	0	0
Eth2/20	0	--	0	0	0	0
Eth2/21	0	--	0	0	0	0
Eth2/22	0	--	0	0	0	0
Eth2/23	0	--	0	0	0	0
Eth2/24	0	--	0	0	0	0
Eth2/25	0	--	0	0	0	0
Eth2/26	0	--	0	0	0	0
Eth2/27	0	--	0	0	0	0
Eth2/28	0	--	0	0	0	0
Eth2/29	0	--	0	0	0	0
Eth2/30	0	--	0	0	0	0

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Eth2/31	0	--	0	0	0	0
Eth2/32	0	--	0	0	0	0
Eth2/33	0	--	0	0	0	0
Eth2/34	0	--	0	0	0	0
Eth2/35	0	--	0	0	0	0
Eth2/36	0	--	0	0	0	0
Eth2/37	0	--	0	0	0	0
Eth2/38	0	--	0	0	0	0
Eth2/39	0	--	0	0	0	0
Eth2/40	0	--	0	0	0	0
Eth2/41	0	--	0	0	0	0
Eth2/42	0	--	0	0	0	0
Eth2/43	0	--	0	0	0	0
Eth2/44	0	--	0	0	0	0
Eth2/45	0	--	0	0	0	0
Eth2/46	0	--	0	0	0	0
Eth2/47	0	--	0	0	0	0
Eth2/48	0	--	0	0	0	0

Related Commands

Command	Description
clear counters interface	Clears the counters for the specified interfaces.

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show interface counters storm-control

To display interface storm control discard counters, use the **show interface counters storm-control**.

show interface [**ethernet** *slot/port* | **port-channel** *channel-number*] **counters storm-control**

Syntax	Description
ethernet	(Optional) Specifies the slot and port of the Ethernet interface that you want to display.
<i>slot/port</i>	(Optional) Slot number and port number for the Ethernet interface.
port-channel	(Optional) Specifies the port-channel number of the port-channel interface that you want to display.
<i>channel-number</i>	(Optional) Channel number.

Defaults None

Command Modes Any command mode

Supported User Roles network-admin
vdc-admin

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines Use the **show interface counters storm-control** command to display interface storm control discard counters. If you do not specify an interface, this command displays information about all Layer 2 interfaces.

This command does not require a license.

Examples This example shows how to display the interface storm control discard counters:

```
switch# show interface counters storm-control
```

```
-----
Port          UcastSupp %    McastSupp %    BcastSupp %    TotalSuppDiscards
-----
Eth2/1        100.00         100.00         100.00         0
Eth2/2        100.00         100.00         100.00         0
Eth2/3        100.00         100.00         100.00         0
Eth2/4        100.00         100.00         100.00         0
Eth2/5        100.00         100.00         100.00         0
Eth2/6        100.00         100.00         100.00         0
Eth2/7        100.00         100.00         100.00         0
Eth2/8        100.00         100.00         100.00         0
-----
```

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Eth2/9	100.00	100.00	100.00	0
Eth2/10	100.00	100.00	100.00	0
Eth2/11	100.00	100.00	100.00	0
Eth2/12	100.00	100.00	100.00	0
Eth2/13	100.00	100.00	100.00	0
Eth2/14	100.00	100.00	100.00	0
Eth2/15	100.00	100.00	100.00	0
Eth2/16	100.00	100.00	100.00	0
Eth2/17	100.00	100.00	100.00	0
Eth2/18	100.00	100.00	100.00	0
Eth2/19	100.00	100.00	100.00	0
Eth2/20	100.00	100.00	100.00	0
Eth2/21	100.00	100.00	100.00	0
Eth2/22	100.00	100.00	100.00	0
Eth2/23	100.00	100.00	100.00	0
Eth2/24	100.00	100.00	100.00	0
Eth2/25	100.00	100.00	100.00	0
Eth2/26	100.00	100.00	100.00	0
Eth2/27	100.00	100.00	100.00	0
Eth2/28	100.00	100.00	100.00	0
Eth2/29	100.00	100.00	100.00	0
Eth2/30	100.00	100.00	100.00	0
Eth2/31	100.00	100.00	100.00	0
Eth2/32	100.00	100.00	100.00	0
Eth2/33	100.00	100.00	100.00	0
Eth2/34	100.00	100.00	100.00	0
Eth2/35	100.00	100.00	100.00	0
Eth2/36	100.00	100.00	100.00	0
Eth2/37	100.00	100.00	100.00	0
Eth2/38	100.00	100.00	100.00	0
Eth2/39	100.00	100.00	100.00	0
Eth2/40	100.00	100.00	100.00	0
Eth2/41	100.00	100.00	100.00	0
Eth2/42	100.00	100.00	100.00	0
Eth2/43	100.00	100.00	100.00	0
Eth2/44	100.00	100.00	100.00	0
Eth2/45	100.00	100.00	100.00	0
Eth2/46	100.00	100.00	100.00	0
Eth2/47	100.00	100.00	100.00	0
Eth2/48	100.00	100.00	100.00	0

Related Commands

Command	Description
clear counters interface	Clears the counters for the specified interfaces.

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show interface counters trunk

To display the counters for Layer 2 switch port trunk interfaces, use the **show interface counters trunk** command.

```
show interface {ethernet slot/port} counters trunk
```

Syntax Description	ethernet	(Optional) Specifies the slot and port of the Ethernet interface that you want to display.
	slot/port	(Optional) Slot number and port number for the Ethernet interface.

Defaults	None
----------	------

Command Modes	Any command mode
---------------	------------------

Supported User Roles	network-admin vdc-admin
----------------------	----------------------------

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines	The device supports only IEEE 802.1Q encapsulation. This command also displays the counters for trunk port channels. This command does not require a license.
------------------	--

Examples	This example shows how to display the counters for a trunk interface. This display shows the frames transmitted and received through the trunk interface, as well as the number of frames with the wrong trunk encapsulation:
----------	---

```
switch# show interface ethernet 2/9 counters trunk
```

```
-----
Port           TrunkFramesTx  TrunkFramesRx  WrongEncap
-----
Ethernet2/9           0              0              0
```

Related Commands	Command	Description
	clear counters interface	Clears the counters for the specified interfaces.

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show interface debounce

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

show interface [**ethernet** *slot/port* | **port-channel** *channel-number*] **debounce**

Syntax Description		
ethernet	(Optional)	Specifies the slot and port of the Ethernet interface that you want to display.
<i>slot/port</i>	(Optional)	Slot number and port number for the Ethernet interface.
port-channel	(Optional)	Specifies the port-channel number of the port-channel interface that you want to display.
<i>channel-number</i>	(Optional)	Channel number.

Command Default None

Command Modes Any command mode

Supported User Roles network-admin
vdc-admin

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines Use the **show interface debounce** command to display debounce time information about the interface. If you do not specify an interface, this command displays information about all Layer 2 interfaces. This command does not require a license.

Examples This example shows how to display debounce time information about the interface:

```
switch# show interface debounce
```

```
-----
Port           Debounce time  Value(ms)
-----
Eth2/1         enable         100
Eth2/2         enable         100
Eth2/3         enable         100
Eth2/4         enable         100
Eth2/5         enable         100
Eth2/6         enable         100
Eth2/7         enable         100
Eth2/8         enable         100
```

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Eth2/9	enable	100
Eth2/10	enable	100
Eth2/11	enable	100
Eth2/12	enable	100
Eth2/13	enable	100
Eth2/14	enable	100
Eth2/15	enable	100
Eth2/16	enable	100
Eth2/17	enable	100
Eth2/18	enable	100
Eth2/19	enable	100
Eth2/20	enable	100
Eth2/21	enable	100
Eth2/22	enable	100
Eth2/23	enable	100
Eth2/24	enable	100
Eth2/25	enable	100
Eth2/26	enable	100
Eth2/27	enable	100
Eth2/28	enable	100
Eth2/29	enable	100
Eth2/30	enable	100
Eth2/31	enable	100
Eth2/32	enable	100
Eth2/33	enable	100
Eth2/34	enable	100
Eth2/35	enable	100
Eth2/36	enable	100
Eth2/37	enable	100
Eth2/38	enable	100
Eth2/39	enable	100
Eth2/40	enable	100
Eth2/41	enable	100
Eth2/42	enable	100
Eth2/43	enable	100
Eth2/44	enable	100
Eth2/45	enable	100
Eth2/46	enable	100
Eth2/47	enable	100
Eth2/48	enable	100

Related Commands

Command	Description
link debounce time	Enables the debounce timer for Ethernet ports.

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show interface description

To display a description about the interface, use the **show interface description** command.

show interface description

Syntax Description This command has no arguments or keywords.

Defaults None

Command Modes Any command mode

SupportedUserRoles network-admin
vdc-admin

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines Use the **show interface description** command to display the interface description. This command does not require a license.

Examples This example shows how to display a description of the interface:

```
switch# show interface description

-----
Interface           Description
-----
mgmt0                --

-----
Port      Type   Speed  Description
-----
Eth2/1    eth    1000   --
Eth2/2    eth    1000   --
Eth2/3    eth    1000   --
Eth2/4    eth    1000   --
Eth2/5    eth    1000   --
Eth2/6    eth    1000   --
Eth2/7    eth    1000   server2
Eth2/8    eth    1000   --
Eth2/9    eth    1000   --
Eth2/10   eth    1000   ethernet slot 2 port 10
Eth2/11   eth    1000   --
Eth2/12   eth    1000   --
Eth2/13   eth    1000   --
```

■ show interface description

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```

Eth2/14      eth      1000    --
Eth2/15      eth      1000    --
Eth2/16      eth      1000    --
Eth2/17      eth      1000    --
Eth2/18      eth      1000    --
Eth2/19      eth      1000    --
Eth2/20      eth      1000    --
Eth2/21      eth      1000    --
Eth2/22      eth      1000    --
Eth2/23      eth      1000    --
Eth2/24      eth      1000    --
Eth2/25      eth      1000    --
Eth2/26      eth      1000    --
Eth2/27      eth      1000    --
Eth2/28      eth      1000    --
Eth2/29      eth      1000    --
Eth2/30      eth      1000    --
Eth2/31      eth      1000    --
Eth2/32      eth      1000    --
Eth2/33      eth      1000    --

```

...<additional lines truncated>

Related Commands

Command	Description
description	Provides textual interface descriptions for interfaces.

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show interface ethernet

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

show interface ethernet *slot/port*

Syntax Description	<i>slot/port</i>	Slot number and port number for the Ethernet interface.
Defaults	None	
Command Modes	Any command mode	
Supported User Roles	network-admin vdc-admin	
Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines Use the **show interface ethernet** command to display information about the Ethernet interface. This command does not require a license.

Examples This example shows how to display information about the Ethernet interface:

```
switch# show interface ethernet 2/5
Ethernet2/5 is down (Administratively down)
  Hardware: 10/100/1000 Ethernet, address: 0018.bad8.3ffd (bia 0019.076c.4db0)
  MTU 1500 bytes, BW 1000000 Kbit, DLY 10 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA
  auto-duplex, auto-speed
  Beacon is turned off
  Auto-Negotiation is turned on
  Input flow-control is off, output flow-control is off
  Auto-mdix is turned on
  Switchport monitor is off
  Last clearing of "show interface" counters never
  1 minute input rate 0 bits/sec, 0 packets/sec
  1 minute output rate 0 bits/sec, 0 packets/sec
  L3 in Switched:
    ucast: 0 pkts, 0 bytes - mcast: 0 pkts, 0 bytes
  L3 out Switched:
    ucast: 0 pkts, 0 bytes - mcast: 0 pkts, 0 bytes
  Rx
    0 input packets 0 unicast packets 0 multicast packets
    0 broadcast packets 0 jumbo packets 0 storm suppression packets
```

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```

0 bytes
Tx
0 output packets 0 multicast packets
0 broadcast packets 0 jumbo packets
0 bytes
0 input error 0 short frame 0 watchdog
0 no buffer 0 runt 0 CRC 0 ecc
0 overrun 0 underrun 0 ignored 0 bad etype drop
0 bad proto drop 0 if down drop 0 input with dribble
0 input discard
0 output error 0 collision 0 deferred
0 late collision 0 lost carrier 0 no carrier
0 babble
0 Rx pause 0 Tx pause
0 interface resets

```

Related Commands

Command	Description
interface	Enters the interface configuration mode, and configures the types and identities of interfaces.

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show interface flowcontrol

To display the flow-control configuration for all or a specified interface, use the **show interface flowcontrol** command.

show interface [**ethernet** *slot/port* | **port-channel** *channel-number*] **flowcontrol**

Syntax Description		
ethernet <i>slot/port</i>	(Optional) Specifies the slot and port of the Ethernet interface that you want to display.	
port-channel <i>channel-number</i>	(Optional) Specifies the port-channel number of the port-channel interface that you want to display.	

Defaults None

Command Modes Any command mode

Supported User Roles network-admin 2
vdc-admin

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines Use the **show interface flowcontrol** command to display information about the interface flow control. If you do not specify an interface, this command displays information about all Layer 2 interfaces. This command does not require a license.

Examples This example shows how to display the interface flow-control information:

```
switch# show interface flowcontrol
```

```
-----
Port          Send FlowControl  Receive FlowControl  RxPause TxPause
             admin    oper      admin    oper
-----
Eth2/1       off     off       off     off       0       0
Eth2/2       off     off       off     off       0       0
Eth2/3       off     off       off     off       0       0
Eth2/4       off     off       off     off       0       0
Eth2/5       off     off       off     off       0       0
Eth2/6       off     off       off     off       0       0
Eth2/7       off     off       off     off       0       0
Eth2/8       off     off       off     off       0       0
Eth2/9       off     off       off     off       0       0
Eth2/10      off     off       off     off       0       0
-----
```

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```

Eth2/11    off    off    off    off    0    0
Eth2/12    off    off    off    off    0    0
Eth2/13    off    off    off    off    0    0
Eth2/14    off    off    off    off    0    0
Eth2/15    off    off    off    off    0    0
Eth2/16    off    off    off    off    0    0
Eth2/17    off    off    off    off    0    0
Eth2/18    off    off    off    off    0    0
Eth2/19    off    off    off    off    0    0
Eth2/20    off    off    off    off    0    0
Eth2/21    off    off    off    off    0    0
Eth2/22    off    off    off    off    0    0
Eth2/23    off    off    off    off    0    0
Eth2/24    off    off    off    off    0    0
Eth2/25    off    off    off    off    0    0
Eth2/26    off    off    off    off    0    0
Eth2/27    off    off    off    off    0    0
Eth2/28    off    off    off    off    0    0
Eth2/29    off    off    off    off    0    0
Eth2/30    off    off    off    off    0    0
Eth2/31    off    off    off    off    0    0
Eth2/32    off    off    off    off    0    0
Eth2/33    off    off    off    off    0    0
Eth2/34    off    off    off    off    0    0
Eth2/35    off    off    off    off    0    0
Eth2/36    off    off    off    off    0    0
Eth2/37    off    off    off    off    0    0
Eth2/38    off    off    off    off    0    0
Eth2/39    off    off    off    off    0    0
Eth2/40    off    off    off    off    0    0
Eth2/41    off    off    off    off    0    0
Eth2/42    off    off    off    off    0    0
Eth2/43    off    off    off    off    0    0
Eth2/44    off    off    off    off    0    0
Eth2/45    off    off    off    off    0    0
Eth2/46    off    off    off    off    0    0
Eth2/47    off    off    off    off    0    0
Eth2/48    off    off    off    off    0    0

```

Related Commands

Command	Description
flowcontrol	Enables or disables the ability of the Ethernet port to send and receive flow-control pause frames.

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show interface mgmt

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

```
show interface mgmt number [brief | counters [detailed [all] | errors [snmp]] | description |
status]
```

Syntax	Description
<i>number</i>	Information about the management interface number. The valid value is 0.
brief	(Optional) Displays brief information about the management interface.
counters	(Optional) Displays the counters for the management interface.
detailed	(Optional) Displays detailed information about the counters for the management interface.
errors	(Optional) Displays the errors for the management interface.
snmp	(Optional) Displays the SNMP errors for the management interface.
description	(Optional) Displays the description of the management interface.
status	(Optional) Displays the status of the management interface.

Defaults None

Command Modes Any command mode

Supported User Roles network-admin
vdc-admin

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines Use the **show interface mgmt *number*** command to display information about the management interface. This command does not require a license.

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

```
switch# show interface mgmt0
mgmt0 is up
  Hardware: GigabitEthernet, address: 0019.076c.1a78 (bia 0019.076c.1a78)
  Internet Address is 172.28.231.193/23
  MTU 1500 bytes, BW 1000000 Kbit, DLY 10 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA
```

■ show interface mgmt

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```

full-duplex, 1000 Mb/s
Auto-Negotiation is turned on
1 minute input rate 6446522 bits/sec, 78642 packets/sec
1 minute output rate 1965455 bits/sec, 20644 packets/sec
Rx
  78681 input packets 15607 unicast packets 20178 multicast packets
  42896 broadcast packets 24189392 bytes
Tx
  20647 output packets 20377 unicast packets 246 multicast packets
  24 broadcast packets 7370904 bytes

```

Related Commands

Command	Description
interface	Enters the interface configuration mode, and configures the types and identities of interfaces.

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show interface port-channel

To display descriptive information about port channels, use the **show interface port-channel** command.

```
show interface port-channel channel-number [brief | description | flowcontrol | status |
switchport | trunk]
```

Syntax Description	
<i>channel-number</i>	Number of the port-channel group. Valid values are from 1 to 4096.
brief	(Optional) Specifies the summary information for specified port channels.
description	(Optional) Specifies the description of specified port channels.
flowcontrol	(Optional) Specifies information about the flow-control status control for specified port channels and the statistics on received and transmitted flow-control pause packets.
status	(Optional) Specifies information about the status for specified port channels.
switchport	(Optional) Specifies information for specified Layer 2 port channels including access and trunk modes.
trunk	(Optional) Specifies information for specified Layer 2 port channels on the trunk mode.

Defaults None

Command Modes Any command mode

Supported User Roles network-admin
vdc-admin

Command History	Release	Modification
	4.0	This command was introduced.
	4.2(1)	Display of configured static MAC address for Layer 3 port channels added.

Usage Guidelines To display more statistics for the specified port channels, use the **show interface port-channel counters** command.

This command does not require a license.

Examples This example shows how to display information for a specific port channel. This example displays statistical information gathered on the port channel at 1-minute intervals:

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```
switch(config)# show interface port-channel 50
port-channel150 is down (No operational members)
  Hardware is Port-Channel, address is 0000.0000.0000 (bia 0000.0000.0000)
  MTU 1500 bytes, BW 100000 Kbit, DLY 10 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA
  Port mode is access
  auto-duplex, auto-speed
  Beacon is turned off
  Input flow-control is off, output flow-control is off
  Switchport monitor is off
  Members in this channel: Eth2/10
  Last clearing of "show interface" counters 2d71.2uh
  1 minute input rate 0 bytes/sec, 0 packets/sec
  1 minute output rate 0 bytes/sec, 0 packets/sec
Rx
  0 input packets 0 unicast packets 0 multicast packets
  0 broadcast packets 0 jumbo packets 0 storm suppression packets
  0 bytes
Tx
  0 output packets 0 multicast packets
  0 broadcast packets 0 jumbo packets
  0 bytes
  0 input error 0 short frame 0 watchdog
  0 no buffer 0 runt 0 CRC 0 ecc
  0 overrun 0 underrun 0 ignored 0 bad etype drop
  0 bad proto drop 0 if down drop 0 input with dribble
  0 input discard
  0 output error 0 collision 0 deferred
  0 late collision 0 lost carrier 0 no carrier
  0 babble
  0 Rx pause 0 Tx pause 0 reset
```

This example shows how to display a brief description for a specific port channel, including the mode for the port channel, the status, speed, and protocol:

```
switch# show interface port-channel 5 brief

-----
Port-channel VLAN  Type Mode   Status Reason                Speed Protocol
Interface
-----
                eth  access down    No operational members  auto(D)  lacp
-----
```

This example shows how to display the description for a specific port channel:

```
switch# show interface port-channel 5 description

-----
Interface          Description
-----
port-channel15    test
-----
```

This example shows how to display the flow-control information for a specific port channel:

```
switch# show interface port-channel 50 flowcontrol

-----
Port      Send FlowControl  Receive FlowControl  RxPause TxPause
         admin   oper    admin   oper
-----
Po50     off    off     off     off      0      0
-----
```

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The **oper** display for the `show interface port-channel flowcontrol` command shows as on if one member of the port channel is set to on for flow control; then all the of the members and the entire port channel is set to on for flow control.

This example shows how to display the status of a specific port channel:

```
switch# show interface port-channel 5 status
```

```
-----
Port          Name          Status  Vlan    Duplex  Speed  Type
-----
              test          down    1       auto    auto   --
-----
```

This example shows how to display information for a specific Layer 2 port channel:

```
switch# show interface port-channel 50 switchport
```

```
Name: port-channel50
Switchport: Enabled
Switchport Monitor: Not enabled
Operational Mode: trunk
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: none
Operational private-vlan: none
```

This command displays information for Layer 2 port channels in both the access and trunk modes.

When you use this command for a routed port channel, the device returns the following message:

```
Name: port-channel20
Switchport: Disabled
```

This example shows how to display information for a specific Layer 2 port channel that is in trunk mode:

```
switch# show interface port-channel 5 trunk
```

```
switch# show interface port-channel 50 trunk
port-channel50 is down (No operational members)
  Hardware is Ethernet, address is 0000.0000.0000
  MTU 1500 bytes, BW 100000 Kbit, DLY 10 usec
  Port mode is access
  Speed is auto-speed
  Duplex mode is auto
  Beacon is turned off
  Receive flow-control is off, Send flow-control is off
  Rate mode is dedicated
Members in this channel: Eth2/10
Native Vlan: 1
Allowed Vlans: 1-3967,4048-4093
```

This command displays information for only Layer 2 port channels in the trunk modes; you cannot display information about Layer 2 port channels in the access mode with this command.

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Related Commands	Command	Description
	show interface port-channel counters	Displays the statistics for channel groups.
	show port-channel summary	Displays summary information for all channel groups.

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show interface port-channel counters

To display information about port-channel statistics, use the **show interface port-channel counters** command.

```
show interface port-channel channel-number counters [brief | detailed [all | snmp] | errors
[snmp] | trunk]
```

Syntax Description	
<i>channel-number</i>	Number of the port-channel group. Valid values are from 1 to 4096.
brief	(Optional) Specifies the rate MB/s and total frames for specified port channels.
detailed	(Optional) Specifies the nonzero counters for specified port channels.
all	(Optional) Specifies the counters for specified port channels.
snmp	(Optional) Specifies the SNMP MIB values for specified port channels.
errors	(Optional) Specifies the interface error counters for specified port channels.
trunk	(Optional) Specifies the interface trunk counters for specified port channels.

Defaults None

Command Modes Any command mode

Supported User Roles network-admin
vdc-admin

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines This command displays statistics for all port channels including LACP-enabled port channels and those port channels that are not associated with an aggregation protocol.

This command does not require a license.

Examples This example shows how to display the counters for a specific port channel. This example display shows the transmitted and received unicast and multicast packets:

```
switch# show interface port-channel 2 counters

Port                InOctets   InUcastPkts   InMcastPkts   InBcastPkts
```

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```
Po2                6007                1                31                1

Port              OutOctets  OutUcastPkts  OutMcastPkts  OutBcastPkts
Po2                4428         1              25             1
```

This example shows how to display the brief counters for a specific port channel. This display shows the transmitted and received rate and total frames:

```
switch# show interface port-channel 20 counters brief
```

```
-----
Interface                Input (rate is 1 min avg)  Output (rate is 1 min avg)
-----
Rate      Total          Rate      Total
MB/s      Frames          MB/s      Frames
-----
port-channel20          0          0          0          0
```

This example shows how to display all the detailed counters for a specific port channel:

```
switch# show interface port-channel 20 counters detailed all
```

```
port-channel20
 64 bit counters:
 0.                rxHCTotalPkts = 0
 1.                txHCTotalPkts = 0
 2.                rxHCUnicastPkts = 0
 3.                txHCUnicastPkts = 0
 4.                rxHCMulticastPkts = 0
 5.                txHCMulticastPkts = 0
 6.                rxHCBroadcastPkts = 0
 7.                txHCBroadcastPkts = 0
 8.                rxHCOctets = 0
 9.                txHCOctets = 0
10.                rxTxHCPkts64Octets = 0
11.                rxTxHCpkts65to127Octets = 0
12.                rxTxHCpkts128to255Octets = 0
13.                rxTxHCpkts256to511Octets = 0
14.                rxTxHCpkts512to1023Octets = 0
15.                rxTxHCpkts1024to1518Octets = 0
16.                rxTxHCpkts1519to1548Octets = 0
17.                rxHCTrunkFrames = 0
18.                txHCTrunkFrames = 0
19.                rxHCDropEvents = 0
```

```
All Port Counters:
```

```
 0.                InPackets = 0
 1.                InOctets = 0
 2.                InUcastPkts = 0
 3.                InMcastPkts = 0
 4.                InBcastPkts = 0
 5.                InJumboPkts = 0
 6.                StormSuppressPkts = 0
 7.                OutPackets = 0
 8.                OutOctets = 0
 9.                OutUcastPkts = 0
10.                OutMcastPkts = 0
11.                OutBcastPkts = 0
12.                OutJumboPkts = 0
13.                rxHCPkts64Octets = 0
14.                rxHCPkts65to127Octets = 0
15.                rxHCPkts128to255Octets = 0
16.                rxHCPkts256to511Octets = 0
17.                rxHCpkts512to1023Octets = 0
18.                rxHCpkts1024to1518Octets = 0
```

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```
19.          rxHCPkts1519to1548Octets = 0
20.          txHCPkts640Octets = 0
21.          txHCPkts65to1270Octets = 0
22.          txHCPkts128to2550Octets = 0
23.          txHCPkts256to5110Octets = 0
24.          txHCPkts512to10230Octets = 0
25.          txHCPkts1024to15180Octets = 0
26.          txHCPkts1519to15480Octets = 0
27.          ShortFrames = 0
28.          Collisions = 0
29.          SingleCol = 0
30.          MultiCol = 0
31.          LateCol = 0
32.          ExcessiveCol = 0
33.          LostCarrier = 0
34.          NoCarrier = 0
35.          Runts = 0
36.          Giants = 0
37.          InErrors = 0
38.          OutErrors = 0
39.          InputDiscards = 0
40.          BadEtypeDrops = 0
41.          IfDownDrops = 0
42.          InUnknownProtos = 0
43.          txCRC = 0
44.          rxCRC = 0
45.          Symbol = 0
46.          txDropped = 0
47.          TrunkFramesTx = 0
48.          TrunkFramesRx = 0
49.          WrongEncap = 0
50.          Babbles = 0
51.          Watchdogs = 0
52.          ECC = 0
53.          Overruns = 0
54.          Underruns = 0
55.          Dribbles = 0
56.          Deferred = 0
57.          Jabbers = 0
58.          NoBuffer = 0
59.          Ignored = 0
60.          bpduOutLost = 0
61.          cos0OutLost = 0
62.          cos1OutLost = 0
63.          cos2OutLost = 0
64.          cos3OutLost = 0
65.          cos4OutLost = 0
66.          cos5OutLost = 0
67.          cos6OutLost = 0
68.          cos7OutLost = 0
69.          RxPause = 0
70.          TxPause = 0
71.          Resets = 0
72.          SQETest = 0
73.          InLayer3Routed = 0
74.          InLayer3RoutedOctets = 0
75.          OutLayer3Routed = 0
76.          OutLayer3RoutedOctets = 0
77.          OutLayer3Unicast = 0
78.          OutLayer3UnicastOctets = 0
79.          OutLayer3Multicast = 0
80.          OutLayer3MulticastOctets = 0
81.          InLayer3Unicast = 0
82.          InLayer3UnicastOctets = 0
```

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```

83.             InLayer3Multicast = 0
84.     InLayer3MulticastOctets = 0
85.             InLayer3AverageOctets = 0
86.             InLayer3AveragePackets = 0
87.             OutLayer3AverageOctets = 0
88.             OutLayer3AveragePackets = 0

```

This example shows how to display the error counters for a specific port channel:

```
switch# show interface port-channel 5 counters errors
```

```

-----
Port          Align-Err    FCS-Err    Xmit-Err    Rcv-Err    UnderSize  OutDiscards
-----
Po5           0           0          0           0           0           0
-----
Port          Single-Col  Multi-Col   Late-Col    Exces-Col   Carri-Sen   Runts
-----
Po5           0           0           0           0           0           0
-----
Port          Giants     SQETest-Err Deferred-Tx IntMacTx-Er IntMacRx-Er Symbol-Err
-----
              0           --          0           0           0           0

```

This example shows how to display information about the trunk interfaces for a specific port channel:

```
switch# show interface port-channel 5 counters trunk
```

```

-----
Port          TrunkFramesTx  TrunkFramesRx  WrongEncap
-----
port-channel15  0              0              0

```

Related Commands

Command	Description
clear counters	Clears the statistics for all interfaces that belong to a specific channel group.

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show interface transceiver fex-fabric

To display Fabric Extender (FEX) interface transceiver information, use the **show interface transceiver fex-fabric** command.

show interface transceiver fex-fabric {calibrations | details}

Syntax Description	calibrations	Displays interface transceiver calibration information.
	details	Displays interface transceiver detail information.

Defaults None

Command Modes EXEC mode

Command History	Release	Modification
	5.1(1)	This command was introduced.

Usage Guidelines This command does not require a license.

Examples This example shows how to display interface transceiver calibration information:

```
switch# show interface transceiver fex-fabric calibrations
Ethernet9/1
  sfp is present
  name is CISCO-FINISAR
  part number is FTLX8570D3BCL-C1
  revision is A
  serial number is FNS141700UE
  nominal bitrate is 10300 Mbits/sec
  Link length supported for 50/125mm fiber is 0 m(s)
  Link length supported for 62.5/125mm fiber is 0 m(s)
  cisco id is --
  cisco extended id number is 4
  Calibration info not available
Ethernet9/2
  sfp is present
  name is CISCO-FINISAR
  part number is FTLX8570D3BCL-C1
  revision is A
  serial number is FNS141700V2
  nominal bitrate is 10300 Mbits/sec
  Link length supported for 50/125mm fiber is 0 m(s)
  Link length supported for 62.5/125mm fiber is 0 m(s)
--More--
switch#
```

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This example shows how to display interface transceiver detail information:

```
switch# show interface transceiver fex-fabric details
Ethernet9/1
  sfp is present
  name is CISCO-FINISAR
  part number is FTLX8570D3BCL-C1
  revision is A
  serial number is FNS141700UE
  nominal bitrate is 10300 Mbits/sec
  Link length supported for 50/125mm fiber is 0 m(s)
  Link length supported for 62.5/125mm fiber is 0 m(s)
  cisco id is --
  cisco extended id number is 4

  Calibration info not available

Ethernet9/2
  sfp is present
  name is CISCO-FINISAR
  part number is FTLX8570D3BCL-C1
  revision is A
  serial number is FNS141700V2
  nominal bitrate is 10300 Mbits/sec
  Link length supported for 50/125mm fiber is 0 m(s)
  Link length supported for 62.5/125mm fiber is 0 m(s)
  cisco id is --
--More--
switch#
```

Related Commands

Command	Description
show fex	Displays all configured Fabric Extender chassis connected to the switch.

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show interface status

To display the interface line status, use the **show interface status** command.

show interface status [**down** | **err-disabled** | **err-vlans** | **inactive** | **module** *number* | **up**]

Syntax Description	
down	(Optional) Displays the interface down state.
err-disabled	(Optional) Displays the interface error-disabled state.
err-vlans	(Optional) Displays the VLANs with errors.
inactive	(Optional) Displays the interface inactive state.
module <i>number</i>	(Optional) Limits display to interfaces on module number that you want to display.
up	(Optional) Displays the interface up state.

Defaults None

Command Modes Any command mode

Supported User Roles network-admin
vdc-admin

Command History	Release	Modification
	4.0	This command was introduced.
	4.1(2)	The err-vlans parameter was added.

Usage Guidelines Use the **show interface status** to display the interface line status.
This command does not require a license.

Examples This example shows how to display the interface status for a specific module:

```
switch# show interface status module 2
```

```
-----
Port          Name           Status  Vlan    Duplex  Speed  Type
-----
Eth2/1        --             down    routed  auto    auto   1000BaseT
Eth2/2        --             down    routed  auto    auto   1000BaseT
Eth2/3        --             down    routed  auto    auto   1000BaseT
Eth2/4        --             down    1       auto    auto   1000BaseT
Eth2/5        --             down    routed  auto    auto   1000BaseT
Eth2/6        --             down    1       auto    auto   1000BaseT
Eth2/7        server2        up      1       full    1000   1000BaseT
-----
```

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```

Eth2/8          --          down    routed    auto    auto    1000BaseT
Eth2/9          --          up      1         full    1000    1000BaseT
Eth2/10         ethernet slot 2 po down    1         auto    auto    1000BaseT
Eth2/11         --          down    routed    auto    auto    1000BaseT
Eth2/12         --          down    routed    auto    auto    1000BaseT
Eth2/13         --          down    routed    auto    auto    1000BaseT
Eth2/14         --          down    routed    auto    auto    1000BaseT
Eth2/15         --          down    routed    auto    auto    1000BaseT
Eth2/16         --          down    routed    auto    auto    1000BaseT
Eth2/17         --          down    routed    auto    auto    1000BaseT
Eth2/18         --          down    routed    auto    auto    1000BaseT
Eth2/19         --          down    routed    auto    auto    1000BaseT
Eth2/20         --          down    routed    auto    auto    1000BaseT
Eth2/21         --          down    routed    auto    auto    1000BaseT
Eth2/22         --          down    routed    auto    auto    1000BaseT
Eth2/23         --          down    routed    auto    auto    1000BaseT
Eth2/24         --          down    routed    auto    auto    1000BaseT
Eth2/25         --          down    routed    auto    auto    1000BaseT
Eth2/26         --          down    routed    auto    auto    1000BaseT
Eth2/27         --          down    routed    auto    auto    1000BaseT
Eth2/28         --          down    routed    auto    auto    1000BaseT
Eth2/29         --          down    routed    auto    auto    1000BaseT
Eth2/30         --          down    routed    auto    auto    1000BaseT
Eth2/31         --          down    routed    auto    auto    1000BaseT
Eth2/32         --          down    routed    auto    auto    1000BaseT
Eth2/33         --          down    routed    auto    auto    1000BaseT
Eth2/34         --          down    routed    auto    auto    1000BaseT
Eth2/35         --          down    routed    auto    auto    1000BaseT
Eth2/36         --          down    routed    auto    auto    1000BaseT
Eth2/37         --          down    routed    auto    auto    1000BaseT
Eth2/38         --          down    routed    auto    auto    1000BaseT
Eth2/39         --          down    routed    auto    auto    1000BaseT
Eth2/40         --          down    routed    auto    auto    1000BaseT
Eth2/41         --          down    routed    auto    auto    1000BaseT
Eth2/42         --          down    routed    auto    auto    1000BaseT
Eth2/43         --          down    routed    auto    auto    1000BaseT
Eth2/44         --          down    routed    auto    auto    1000BaseT
Eth2/45         --          down    routed    auto    auto    1000BaseT
Eth2/46         --          down    routed    auto    auto    1000BaseT
Eth2/47         --          down    routed    auto    auto    1000BaseT
Eth2/48         --          down    routed    auto    auto    1000BaseT

```

Related Commands

Command	Description
interface	Enters the interface configuration mode, and configures the types and identities of interfaces.

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show interface switchport

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

show interface [*ethernet type/slot* | **port-channel** *channel-number*] **switchport**

Syntax Description		
ethernet <i>type/slot</i>	(Optional) Type and number of the interface that you want to display.	
port-channel <i>channel-number</i>	(Optional) Specifies the port-channel number of the port-channel interface that you want to display.	

Defaults None

Command Modes Any command mode

SupportedUserRoles network-admin
vdc-admin

Command History	Release	Modification
	4.0	This command was introduced.
	4.2(1)	Information about private VLAN promiscuous trunk ports was added.

Usage Guidelines If you do not specify an interface, this command displays information about all Layer 2 interfaces, including access, trunk, and port-channel interfaces and all private VLAN ports.

Use the **show interface counters** command to display statistics for the specified Layer 2 interface.

This command does not require a license.

Examples This example shows how to display information for all Layer 2 interfaces:

```
switch# show interface switchport
Name: Ethernet2/5
Switchport: Enabled
Switchport Monitor: Not enabled
Operational Mode: access
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
```

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```
Administrative private-vlan trunk encapsulation: dot1q
Administrative private-vlan trunk normal VLANs: none
Administrative private-vlan trunk private VLANs: none
Operational private-vlan: none
```

```
Name: Ethernet2/9
Switchport: Enabled
Switchport Monitor: Not enabled
Operational Mode: trunk
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: none
Operational private-vlan: none
```

```
Name: port-channel5
Switchport: Enabled
Switchport Monitor: Not enabled
Operational Mode: access
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: none
Operational private-vlan: none
```

Beginning with Cisco NX-OS Release 4.2(1), you can display information on private VLAN promiscuous trunk ports on Cisco Nexus 7000 Series devices. This example shows how to display information for those interfaces:

```
switch# show interface switchport
Name: Ethernet7/4
Switchport: Enabled
Administrative Mode: private-vlan trunk promiscuous
Operational Mode: down
Administrative Trunking Encapsulation: negotiate
Negotiation of Trunking: on
Access Mode VLAN: 1 (default)
Trunking Native Mode VLAN: 1 (default)
Administrative Native VLAN tagging: enabled
Voice VLAN: none
Administrative private-vlan host-association: none
Administrative private-vlan mapping: none
Administrative private-vlan secondary mapping: none
Administrative private-vlan trunk Native VLAN tagging: enabled
Administrative private-vlan trunk encapsulation: dot1q
Administrative private-vlan trunk normal VLANs: 1, 4, 3000-4000
Administrative private-vlan trunk private VLAN mappings:
    2 (VLAN0002)  3 (VLAN0003)          4 (VLAN0004)  5 (VLAN0005)
    10 (VLAN0010) 20 (VLAN0020)          30 (VLAN0030) 40 (Inactive)
Operational private-vlan: none
```

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Related Commands	Command	Description
	switchport mode	Sets the specified interfaces as either Layer 2 access or trunk interfaces.

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show interface transceiver

To display information about all the transceiver interfaces, use the **show interface transceiver** command.

show interface transceiver [**calibrations** | **details**]

Syntax Description	
calibrations	(Optional) Displays calibration information for transceivers.
detail	(Optional) Displays detailed information for transceivers.

Defaults None

Command Modes Any command mode

SupportedUserRoles network-admin
vdc-admin

Command History	Release	Modification
	4.1(2)	This command was introduced.
	4.1(2)	This command was introduced.

Usage Guidelines This command does not require a license.

Examples This example shows how to display calibration information for transceiver interfaces:

```
switch(config)# show interface transceiver calibrations
```

```
Ethernet9/25
  sfp is present
  name is CISCO-EXCELIGHT
  part number is SPP5101LR-C1
  revision is A
  serial number is ECL121601PB
  nominal bitrate is 10300 Mbits/sec
  Link length supported for 9/125um fiber is 10 km(s)
  cisco id is --
  cisco extended id number is 4
```

```

                                SFP External Calibrations Information
-----
                                Slope  Offset      Rx4/Rx3/Rx2/Rx1/Rx0
-----
Temperature                    0      0

```


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```

Voltage          0      0
Current          0      0
Tx Power        0      0
Rx Power                               0.0000/0.0000/0.0000/0.0000/0.0000

```

This example shows how to display detailed information for transceiver interfaces:

```
switch(config)# show interface transceiver detailed
```

```

Ethernet10/9
  sfp is present
  name is CISCO
  part number is SPP5101SR-C1
  revision is A
  serial number is ECL1120017J
  nominal bitrate is 10300 Mbits/sec
  Link length supported for 50/125um fiber is 82 m(s)
  Link length supported for 62.5/125um fiber is 26 m(s)
  cisco id is --
  cisco extended id number is 4

```

SFP Detail Diagnostics Information (external calibration)

		Alarms		Warnings	
		High	Low	High	Low
Temperature	25.54 C	75.00 C	-5.00 C	70.00 C	0.00 C
Voltage	3.22 V	3.63 V	2.97 V	3.46 V	3.13 V
Current	4.49 mA	10.00 mA	0.00 mA	9.00 mA	0.00 mA
Tx Power	-3.50 dBm	2.99 dBm	-11.30 dBm	-1.00 dBm	-7.30 dBm
Rx Power	-2.92 dBm	2.99 dBm	-13.97 dBm	-1.00 dBm	-9.91 dBm
Transmit Fault Count = 0					

Related Commands

Command	Description
show interface	Displays information about the specified interfaces.

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show interface trunk

To display information about all the trunk interfaces, use the **show interface trunk** command.

```
show interface [ethernet slot/port | port-channel channel-number] trunk [module number | vlan
vlan-id]
```

Syntax Description		
ethernet <i>slot/port</i>	(Optional)	Type and number of the interface that you want to display.
port-channel <i>channel-number</i>	(Optional)	Specifies the port-channel number of the port-channel interface that you want to display.
module <i>number</i>	(Optional)	Specifies the module number.
vlan <i>vlan-id</i>	(Optional)	Specifies the VLAN number.

Defaults None

Command Modes Any command mode

Supported User Roles network-admin
vdc-admin

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines

If you do not specify an interface, a module number, or a VLAN number, the system displays information for all trunk interfaces.

This command displays information about all Layer 2 trunk interfaces and trunk port-channel interfaces. Use the **show interface counters** command to display statistics for the specified Layer 2 interface. This command does not require a license.

Examples This example shows how to display information for all Layer 2 trunk interfaces:

```
switch(config)# show interface trunk
```

```
-----
Port      Native  Status      Port
         Vlan                Channel
-----
Eth2/9    1       trunking    --
Eth2/10   1       trnk-bndl   Po50
Po50      1       not-trunking --
```

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```
-----  
Port          Vlans Allowed on Trunk  
-----
```

```
Eth2/9        1-3967,4048-4093  
Eth2/10       1-3967,4048-4093  
Po50          1-3967,4048-4093
```

```
-----  
Port          STP Forwarding  
-----
```

```
Eth2/9        none  
Eth2/10       none  
Po50          none
```

Related Commands

Command	Description
switchport mode trunk	Sets the specified interfaces as Layer 2 trunk interfaces.

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show interface tunnel

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

show interface tunnel *number*

Syntax Description	<i>number</i>	Number of the tunnel interface that you want to display information for.
--------------------	---------------	--

Defaults	None
----------	------

Command Modes	Any command mode
---------------	------------------

Supported User Roles	network-admin vdc-admin
----------------------	----------------------------

Command History	Release	Modification
	4.1(2)	This command was introduced.
	4.2(1)	Display of configured static MAC address added.

Usage Guidelines	This command does not require a license.
------------------	--

Examples	This example shows how to display information on tunnel interfaces:
----------	---

```
switch(config)# show interface tunnel 5

Tunnel5 is down (Administratively down)
  MTU 1476 bytes, BW 9 Kbit
  Transport protocol is in VRF "default"
  Tunnel protocol/transport GRE/IP
  Last clearing of "show interface" counters never
  Tx
  0 packets output, 1 minute output rate 0 packets/sec
  Rx
  0 packets input, 1 minute input rate 0 packets/sec
```

Related Commands	Command	Description
	show interface	Displays information about the specified interfaces.

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show ip dhcp snooping statistics

To display statistics related to the Dynamic Host Configuration Protocol (DHCP), use the **show ip dhcp snooping statistics** command.

show ip dhcp snooping statistics

Syntax Description This command has no arguments or keywords.

Defaults None

Command Modes EXEC mode

Command History	Release	Modification
	5.1(1)	Added the command output (added two counters)
	4.0	This command was introduced.

Usage Guidelines To enable this feature use the **feature dhcp** command.

Examples This example shows how to display statistics related to DHCP:

```
switch# show ip dhcp snooping statistics
Packets processed 0
Packets received through cfsoe 0
Packets forwarded 0
Packets forwarded on cfsoe 0
Total packets dropped 0
Packets dropped from untrusted ports 0
Packets dropped due to MAC address check failure 0
Packets dropped due to Option 82 insertion failure 0
Packets dropped due to o/p intf unknown 0
Packets dropped which were unknown 0
Packets dropped due to dhcp relay not enabled 0
Packets dropped due to no binding entry 0
Packets dropped due to interface error/no interface 0
Packets dropped due to max hops exceeded 0
switch#
```

Related Commands	Command	Description
	show ip dhcp snooping statistics	Display statistics related to the Dynamic Host Configuration Protocol.

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show lacp counters

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

```
show lacp counters [interface port-channel channel-number]
```

Syntax Description

interface port-channel	(Optional) Specifies the interface port channel.
<i>channel-number</i>	(Optional) Number of the LACP channel group. Valid values are from 1 to 4096.

Defaults

None

Command Modes

Any command mode

Supported User Roles

network-admin
vdc-admin

Command History

Release	Modification
4.0	This command was introduced.

Usage Guidelines

If you do not specify the *channel-number*, all channel groups are displayed.
This command does not require a license.

Examples

This example shows how to display the LACP statistics for a specific channel group:

```
switch# show lacp counters interface port-channel 1
```

LACPDU Port	Marker Sent	Marker Recv	Response Sent	Response Recv	LACPDU Sent	LACPDU Recv	Pkts Err

port-channel1							
Ethernet1/1	554	536	0	0	0	0	0
Ethernet1/2	527	514	0	0	0	0	0
Ethernet1/3	535	520	0	0	0	0	0
Ethernet1/4	515	502	0	0	0	0	0
Ethernet1/5	518	505	0	0	0	0	0
Ethernet1/6	540	529	0	0	0	0	0
Ethernet1/7	541	530	0	0	0	0	0
Ethernet1/8	547	532	0	0	0	0	0
Ethernet1/9	544	532	0	0	0	0	0
Ethernet1/10	513	501	0	0	0	0	0
Ethernet1/11	497	485	0	0	0	0	0
Ethernet1/12	493	486	0	0	0	0	0

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Ethernet1/13	492	485	0	0	0	0	0
Ethernet1/14	482	481	0	0	0	0	0
Ethernet1/15	481	476	0	0	0	0	0
Ethernet1/16	482	477	0	0	0	0	0

Related Commands

Command	Description
clear lacp counters	Clears the statistics for all LACP interfaces or those interfaces that belong to a specific LACP channel group.

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show lacp interface

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

show lacp interface ethernet *slot/port*

Syntax Description	<i>slot/port</i>	Slot number and port number for the interface you want to display.
--------------------	------------------	--

Defaults	None
----------	------

Command Modes	Any command mode
---------------	------------------

SupportedUserRoles	network-admin vdc-admin
--------------------	----------------------------

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines	The LACP_Activity field displays whether the link is configured in the active or passive port-channel mode.
------------------	---

The Port Identifier field displays the port priority as part of the information. The part of the information in this field is the port number. The following example shows how to identify the port priority and the port number:

```
Port Identifier=0x8000,0x101
```

The port priority value is 0x8000, and the port number value is 0x101 in this example.

This command does not require a license.

Examples	This example shows how to display the LACP statistics for a specific channel group:
----------	---

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

switch(config-if-range)# show lacp interface eth1/1
Interface Ethernet1/1 is up
  Channel group is 1 port channel is Po1
  PDUs sent: 556
  PDUs rcvd: 538
  Markers sent: 0
  Markers rcvd: 0
  Marker response sent: 0
  Marker response rcvd: 0
  Unknown packets rcvd: 0
```


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```

Illegal packets rcvd: 0
Lag Id: [ [(8000, 0-11-11-22-22-74, 0, 8000, 101), (8000, 0-11-11-22-22-75, 0, 8
000, 401)] ]
Operational as aggregated link since Wed Jun 11 20:37:59 2008

Local Port: Eth1/1   MAC Address= 0-11-11-22-22-74
System Identifier=0x8000,0-11-11-22-22-74
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=
Actor Oper State=
Neighbor: 4/1
MAC Address= 0-11-11-22-22-75
System Identifier=0x8000,0-11-11-22-22-75
Port Identifier=0x8000,0x401
Operational key=0
LACP_Activity=active
LACP_Timeout=Long Timeout (30s)
Synchronization=IN_SYNC
Collecting=true
Distributing=true
Partner Admin State=
Partner Oper State=

```

Related Commands

Command	Description
show port-channel summary	Displays information about all port-channel groups.

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show lacp neighbor

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

```
show lacp neighbor [interface port-channel channel-number]
```

Syntax Description	interface	(Optional) Specifies the interface port channel.
	port-channel	
	<i>channel-number</i>	(Optional) Port-channel number for the LACP neighbor that you want to display. The range of values is from 1 to 4096.

Defaults	None
-----------------	------

Command Modes	Any command mode
----------------------	------------------

SupportedUserRoles	network-admin vdc-admin
---------------------------	----------------------------

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines	If you do not specify the <i>channel-number</i> , all channel groups are displayed. This command does not require a license.
-------------------------	---

Examples	This example shows how to display the information about the LACP neighbors for a specific port channel:
-----------------	---

```
switch# show lacp neighbor interface port-channel 1
Flags: S - Device is sending Slow LACPDUs F - Device is sending Fast LACPDUs
       A - Device is in Active mode       P - Device is in Passive mode
port-channell1 neighbors
Partner's information
      Partner                Partner                Partner
Port   System ID            Port Number         Age                Flags
Eth1/1 32768,0-11-11-22-22-750x401 44817              SA
      LACP Partner          Partner                Partner
      Port Priority          Oper Key              Port State
      32768                  0x0                   0x3d
Partner's information
      Partner                Partner                Partner
```

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Port	System ID	Port Number	Age	Flags
Eth1/2	32768,0-11-11-22-22-750x402		44817	SA
	LACP Partner	Partner		Partner
	Port Priority	Oper Key		Port State
	32768	0x0		0x3d

Related Commands

Command	Description
show port-channel summary	Displays information about all port-channel groups.

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show lacp port-channel

To display information about Link Aggregation Control Protocol (LACP) port channels, use the **show lacp port-channel** command.

```
show lacp port-channel [interface port-channel channel-number]
```

Syntax Description	
interface	(Optional) Specifies the interface port channel.
port-channel	
<i>channel-number</i>	(Optional) Port-channel number for the LACP neighbor that you want to display. The range of values is from 1 to 4096.

Defaults	None
----------	------

Command Modes	Any command mode
---------------	------------------

Supported User Roles	network-admin vdc-admin
----------------------	----------------------------

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines	If you do not specify the <i>channel-number</i> , all channel groups are displayed. This command does not require a license.
------------------	---

Examples	This example shows how to display the information about LACP port channels:
----------	---

```
switch# show lacp port-channel

port-channel1
  Local System Identifier=0x8000,0-11-11-22-22-74
  Admin key=0x0
  Operational key=0x0
  Partner System Identifier=0x8000,0-11-11-22-22-75
  Operational key=0x0
  Max delay=0
  Aggregate or individual=1
port-channel2
  Local System Identifier=0x8000,0-11-11-22-22-74
  Admin key=0x1
  Operational key=0x1
  Partner System Identifier=0x8000,0-11-11-22-22-75
  Operational key=0x1
  Max delay=0
```

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Aggregate or individual=1

Related Commands

Command	Description
show port-channel summary	Displays information about all port-channel groups.

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show lacp system-identifier

To display the Link Aggregation Control Protocol (LACP) system identifier for the device, use the **show lacp system-identifier** command.

show lacp system-identifier

Syntax Description This command has no arguments or keywords.

Defaults None

Command Modes Any command mode

SupportedUserRoles network-admin
vdc-admin

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines The LACP system ID is the combination of the configurable LACP system priority value and the MAC address.

Each system that runs LACP has an LACP system priority value. You can accept the default value of 32768 for this parameter, or 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 uses the system priority during negotiation with other devices. A higher system priority value means a lower priority.

The system ID is different for each virtual device context (VDC).

This command does not require a license.

Examples This example shows how to display the information about the LACP port channel for a specific port channel:

```
switch> show lacp system-identifier
8000,AC-12-34-56-78-90
```

Related Commands	Command	Description
	lacp system-priority	Sets the system priority for LACP.

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show port-channel capacity

To display the number of port channels currently used and the number of port channels that are still available on the device, use the **show port-channel capacity** command.

show port-channel capacity

Syntax Description This command has no arguments or keywords.

Defaults None

Command Modes Any command mode.

SupportedUserRoles network-admin
vdc-admin

Command History	Release	Modification
	4.1(2)	This command was introduced.

Usage Guidelines There are a total of 768 port channels and virtual port channels (vPCs) available on each device. This command does not require a license.

Examples This example shows how to display the number of used and available port channels on the device:

```
switch (config) # show port-channel capacity
Port-channel resources
  768 total    103 used    665 free    13% used
```

Related Commands	Command	Description
	show port-channel summary	Displays information about port channels.

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show port-channel compatibility-parameters

To display the parameters that must be the same among the member ports in order to join a port channel, use the **show port-channel compatibility parameters** command.

show port-channel compatibility-parameters

Syntax Description This command has no arguments or keywords.

Defaults None

Command Modes Any command mode

Supported User Roles network-admin
vdc-admin

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines When you add an interface to a channel group, the software checks certain interface attributes to ensure that the interface is compatible with the channel group. For example, you cannot add a Layer 3 interface to a Layer 2 channel group. The software also checks a number of operational attributes for an interface before allowing that interface to participate in the port-channel aggregation.

This command displays the list of compatibility checks that the system uses.

Using the **channel-group** command, you can force ports with incompatible parameters to join the port channel as long as the following parameters are the same:

- (Link) speed capability
- Speed configuration
- Duplex capability
- Duplex configuration
- Flow-control capability
- Flow-control configuration



Note See the **channel-group** command for information about forcing ports to join a port channel.

This command does not require a license.

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Examples

This example shows how to display the list of compatibility checks that the system makes before an interface to a channel group:

```
switch# show port-channel compatibility-parameters
* port mode
```

Members must have the same port mode configured, either E or AUTO. If they are configured in AUTO port mode, they have to negotiate E 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.

```
* 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.

```
* sub interfaces
```

Members must not have sub-interfaces.

```
* Duplex Mode
```

Members must have same Duplex Mode configured.

```
* Ethernet Layer
```

Members must have same Ethernet Layer (switchport/no-switchport) configured.

```
* Span Port
```

Members cannot be SPAN ports.

```
* Storm Control
```

Members must have same storm-control configured.

```
* Flow Control
```

Members must have same flowctrl configured.

```
* Capabilities
```

Members must have common capabilities.

```
* port
```

Members port VLAN info.

```
* port
```

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Members port does not exist.

* switching port

Members must be switching port, Layer 2.

* port access VLAN

Members must have the same port access VLAN.

* port native VLAN

Members must have the same port native VLAN.

* port allowed VLAN list

Members must have the same port allowed VLAN list.

Related Commands

Command	Description
channel-group	Adds or removes interfaces to port-channel groups and assigns the port-channel mode to the interface.

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show port-channel database

To display information about the current running of the port channels, use the **show port-channel database** command.

show port-channel database [**interface port-channel** *channel-number*]

Syntax Description	
interface port-channel	(Optional) Specifies the interface port channel.
<i>channel-number</i>	(Optional) Port-channel number for the LACP neighbor that you want to display. The range of values is from 1 to 4096.

Defaults None

Command Modes Any command mode

Supported User Roles network-admin
vdc-admin

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines If you do not specify the *channel-number*, all channel groups are displayed. This command displays Link Aggregation Control Protocol (LACP)-enabled ports channels and port channels without an associated aggregation protocol.

This command does not require a license.

Examples This example shows how to display information about the current running of all port channels:

```
switch# show port-channel database
port-channel5
  Administrative channel mode is active
  Operational channel mode is active
  Last membership update is successful
  1 ports in total, 0 ports up
  Age of the port-channel is 1d:16h:18m:50s
  Time since last bundle is 1d:16h:18m:56s
  Last bundled member is
  Ports:   Ethernet2/5           [down]

port-channel20
  Administrative channel mode is active
  Operational channel mode is active
```

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```
Last membership update is successful
1 ports in total, 0 ports up
Age of the port-channel is 1d:16h:18m:50s
Time since last bundle is 1d:16h:18m:56s
Last bundled member is
Ports:   Ethernet2/20           [down]
```

This example shows how to display information about the current running of a specific port channel:

```
switch# show port-channel database interface port-channel 20
port-channel20
Administrative channel mode is active
Operational channel mode is active
Last membership update is successful
1 ports in total, 0 ports up
Age of the port-channel is 1d:16h:23m:14s
Time since last bundle is 1d:16h:23m:20s
Last bundled member is
Ports:   Ethernet2/20           [down]
```

Related Commands

Command	Description
show port-channel summary	Displays a summary of information about all port channels.

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show port-channel load-balance

To display information about load-balancing using port channels, use the **show port-channel load-balance** command.

show port-channel load-balance [**forwarding-path interface port-channel** *channel-number*]

Syntax Description	
forwarding-path interface port-channel	(Optional) Identifies the port in the port channel that forwards the packet.
<i>channel-number</i>	Port-channel number for the load-balancing forwarding path that you want to display. The range of values is from 1 to 4096.

Defaults None

Command Modes Any command mode

Supported User Roles network-admin
vdc-admin

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines This command does not require a license.

Examples This example shows how to display information about the current port-channel load balancing for the system:

```
switch# show port-channel load-balance
```

```
Port Channel Load-Balancing Configuration:
System: source-dest-ip-vlan
```

```
Port Channel Load-Balancing Addresses Used Per-Protocol:
Non-IP: source-dest-mac
IP: source-dest-ip-vlan
```

Related Commands	Command	Description
	port-channel load-balance ethernet	Configures load balancing using port channels.

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show port-channel rbh-distribution

To display information about the Result Bundle Hash (RBH) for port channels, use the **show port-channel rbh-distribution** command.

```
show port-channel rbh-distribution [interface port-channel channel-number]
```

Syntax Description	interface	(Optional) Specifies the interface port channel.
	port-channel	
	<i>channel-number</i>	(Optional) Port-channel number for the LACP neighbor that you want to display. The range of values is from 1 to 4096.

Defaults	None
-----------------	------

Command Modes	Any command mode
----------------------	------------------

Supported User Roles	network-admin vdc-admin
-----------------------------	----------------------------

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines	The RBH value ranges from 0 to 7 and is shared among port members in a port channel. This command does not require a license.
-------------------------	--

Examples	This example shows how to display RBH distribution for a specific port channel:
-----------------	---

```
switch# show port-channel rbh-distribution interface port-channel 4
```

ChanId	Member port	RBH values	Num of buckets
4	Eth3/13	4,5,6,7	4
4	Eth3/14	0,1,2,3	4

Related Commands	Command	Description
	port-channel summary	Displays summary information about port channels.

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show port-channel summary

To display summary information about the port channels, use the **show port-channel summary** command.

show port-channel summary

Syntax Description This command has no arguments or keywords.

Defaults None

Command Modes Any command mode

SupportedUserRoles network-admin
vdc-admin

Command History	Release	Modification
	5.1(1)	Added a new port channel status 'M' to the command output.
	4.0	This command was introduced.

Usage Guidelines If the Link Aggregation Control Protocol (LACP) is not enabled, the output shows **NONE** in the Protocol column of the display.

A channel-group interface can be in the following operational states:

- Down—The interface is down because it is administratively shut down or some other reason not related to port channels.
- Individual—The interface is part of a port channel but unable to aggregate into a port channel because of protocol exchange problems.
 - This interface continues to forward traffic as an individual link.
 - STP is aware of this interface.
- Suspended—The operational parameters of the interface are not compatible with the port channel. This interface is not forwarding traffic, although the physical MAC link state is still up.
- Switched—The interface is switched.
- Up (port channel)—The port channel is up.
- Up in port channel (members)—The port member of the port channel is up.
- Hot standby (LACP only)—The interface is eligible to join the port group if one of the interfaces currently participating in the LACP channel goes down.
 - This interface does not forward data traffic, only protocol data units (PDUs).

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- This interface does not run STP.
- Module-removed—The module has been removed.
- Routed—The interface is routed.

This command does not require a license.

Examples

This example shows how to display summary information for the port channels:

```
switch(config-if)# 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)
        M - Not in use. Min-links not met
```

Group	Port-Channel	Type	Protocol	Member Ports
2	Po2 (SU)	Edge	LACP	Eth4/9 (D) Eth4/10 (D) Eth4/11 (P) Eth4/12 (P)
3	Po3 (SU)	Edge	LACP	Eth4/27 (P) Eth4/28 (P) Eth4/29 (P) Eth4/30 (P)
10	Po10 (SU)	Edge	LACP	Eth4/1 (P) Eth4/2 (P) Eth4/3 (P) Eth4/4 (P) Eth4/13 (P) Eth4/14 (P) Eth4/15 (P) Eth4/16 (P) Eth4/17 (P) Eth4/18 (P) Eth4/19 (P) Eth4/20 (P) Eth4/21 (P) Eth4/22 (P) Eth4/23 (P) Eth4/24 (P)

Related Commands

Command	Description
show port-channel usage	Displays the port-channel numbers used and available.
show port-channel traffic	Displays transmitted and received unicast, multicast, and broadcast percentages for the port channels.

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show port-channel traffic

To display traffic statistics for port channels, use the **show port-channel traffic** command.

show port-channel traffic [**interface port-channel** *channel-number*]

Syntax Description	
interface port-channel	(Optional) Specifies the interface port channel.
<i>channel-number</i>	(Optional) Port-channel number for the LACP neighbor that you want to display. The range of values is from 1 to 4096.

Defaults None

Command Modes Any command mode

Supported User Roles network-admin
vdc-admin

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines This command displays the percentage of transmitted and received unicast, multicast, and broadcast traffic about the port channel.

If you do not specify the *channel-number*, information for all port channels is displayed.

This command does not require a license.

Examples This example shows how to display the traffic statistics for all port channels:

```
switch(config)# show port-channel traffic
ChanId      Port  Rx-Ucst Tx-Ucst Rx-Mcst Tx-Mcst Rx-Bcst Tx-Bcst
-----
      5   Eth2/5   0.0%   0.0%   0.0%   0.0%   0.0%   0.0%
-----
     20   Eth2/20   0.0%   0.0%   0.0%   0.0%   0.0%   0.0%
```

This example shows how to display the traffic statistics for a specific port channel:

```
switch(config)# show port-channel traffic interface port-channel 5
ChanId      Port  Rx-Ucst Tx-Ucst Rx-Mcst Tx-Mcst Rx-Bcst Tx-Bcst
-----
      5   Eth2/5   0.0%   0.0%   0.0%   0.0%   0.0%   0.0%
```

show port-channel traffic

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Related Commands

Command	Description
port-channel summary	Displays summary information about port channels.

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show port-channel usage

To display the port-channel numbers used and available, use the **show port-channel usage** command.

show port-channel usage

Syntax Description This command has no arguments or keywords.

Defaults None

Command Modes Any command mode

SupportedUserRoles network-admin
vdc-admin

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines This command displays port-channel numbers used and available in the virtual device context (VDC) that you are monitoring.

The number of port-channel numbers available across all VDCs for the entire system is from 1 to 4096.

This command does not require a license.

Examples This example shows how to display the usage for all port channels:

```
switch# show port-channel usage
Totally 2 port-channel numbers used
=====
Used : 5 , 20
Unused: 1 - 4 , 6 - 19 , 21 - 4096
```

Related Commands	Command	Description
	port-channel summary	Displays summary information about port channels.

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show port-profile

To display information about port profiles, use the **show port-profile** command.

```
show port-profile [brief | expand-interface [name name] | name name | usage]
```

Syntax Description	Parameter	Description
	brief	(Optional) Displays brief information about the port profiles.
	expand-interface	(Optional) Displays the configured attributes at an interface per port profile. An optional name can be specified to show the expanded interface output for that specific port profile.
	name <i>name</i>	(Optional) Displays information for the specified port profile.
	usage	(Optional) Displays a list of interfaces to which each profile is attached.

Defaults None

Command Modes Any command mode

Supported User Roles network-admin
vdc-admin

Command History	Release	Modification
	4.2(1)	This command was introduced.

Usage Guidelines Use the **show port-profile** command to display information about the configured port profiles on the device. It displays all configured port profiles.

Port profiles are not aware of default values, so the default value configuration appears in the port profiles. For example, MTU 1500 is a default value and does not appear in the running-config display of an interface. However, because port profiles are unaware of default values, MTU 1500 appears in the port-profile display.

This command does not require a license.

Examples This example shows how to display information about port profiles:

```
switch(config)# show port-profile
try1
  type: Ethernet
  description:
  status: enabled
  max-ports: 512
  inherit:
```

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```

config attributes:
  channel-group 5
evaluated config attributes:
  channel-group 5
assigned interfaces:
  Ethernet1/1

```

```

try2
type: Ethernet
description:
status: disabled
max-ports: 512
inherit:
config attributes:
evaluated config attributes:
assigned interfaces:

```

This example shows how to display brief port profile information:

```

switch(config)# show port-profile brief
-----
Port          Profile  Conf   Eval   Assigned  Child
Profile       State   Items  Items  Intfs     Profs
-----
try1          1       1      1      1         0
try2          0       0      0      0         0

```

This example shows how to display expanded port profile interface information:

```

switch(config)# show port-profile expand-interface
try1
Ethernet1/1
  channel-group 5

try2

```

This example shows how to display specific port profile information:

```

switch(config)# show port-profile name try1
try1
type: Ethernet
description:
status: enabled
max-ports: 512
inherit:
config attributes:
  channel-group 5
evaluated config attributes:
  channel-group 5
assigned interfaces:
  Ethernet1/1

```

```

switch(config)# show port-profile usage
try1
Ethernet1/1

```

This example shows how to display port profiles and values that you have entered in interface configuration mode using the **show running-config** command:

```

switch(config)# show running-config interface ethernet 8/5
interface ethernet8/5
inherit try1
mtu 3000

```

show port-profile

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Related Commands	Command	Description
	port-profile	Configures, names, and allows you to enter port-profile configuration mode.
	inherit port-profile	Assigns port profile to specified interfaces and allows one port profile to inherit configuration parameters from another port profile.

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show running-config fex

To display the Fabric Extender (FEX) running configuration, use the **show running-config fex** command.

show running-config fex

Syntax Description This command has no arguments or keywords.

Defaults None

Command Modes Global configuration mode

Command History	Release	Modification
	5.1(1)	This command was introduced.

Usage Guidelines This command does not require a license.

Examples This example shows how to display detailed FEX information:

```
switch# show running-config fex

!Command: show running-config fex
!Time: Tue Sep  7 09:22:40 2010

version 5.1(1)
fex 101
  pinning max-links 1
  description "FEX0101"
fex 102
  pinning max-links 1
  description "FEX0102"

interface port-channel101
  switchport mode fex-fabric
  fex associate 101

interface port-channel102
  switchport mode fex-fabric
  fex associate 102

interface Ethernet9/1
  switchport mode fex-fabric
  fex associate 101

interface Ethernet9/2
  switchport mode fex-fabric
  fex associate 102
```

show running-config fex***Send document comments to nexus7k-docfeedback@cisco.com***

```
interface Ethernet10/1
  switchport mode fex-fabric
  fex associate 101

interface Ethernet10/2
  switchport mode fex-fabric
  fex associate 102
switch#
```

Related Commands

Command	Description
show fex	Displays all configured Fabric Extender chassis connected to the switch.

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show running-config interface

To display the running configuration for a specific interface, use the **show running-config interface** command.

```
show running-config interface [all | {ethernet {slot/port} [all]} | expand-port-profile |
{loopback {number} [all]} | {mgmt0 [all]} | {port-channel {channel-number}
[membership]} | {tunnel {number} [all]} | {vlan {vlan-id} [all]}
```

Syntax Description		
all	(Optional) Displays the configuration with defaults.	
ethernet <i>slot/port</i>	Displays the number of the module and port number.	
expand-port-profile	Displays port profiles.	
loopback <i>number</i>	Displays the number of the loopback interface. The range of values is from 1 to 4096.	
port-channel <i>channel-number</i>	Displays the number of the port-channel group. The range of values is from 0 to 1023.	
membership	(Optional) Specifies the membership of the specified port channel.	
tunnel <i>number</i>	Displays the number of the tunnel interface. The range of values is from 0 to 65535.	
vlan <i>vlan-id</i>	Displays the number of the VLAN. The range of values is from 1 to 4096.	

Defaults None

Command Modes Any command mode

Supported User Roles network-admin
vdc-admin

Command History	Release	Modification
	4.0	This command was introduced.
	4.2(1)	The expand-port-profile parameter was introduced.

Usage Guidelines This command does not require a license.

Examples This example shows how to display information about the running configuration for a specific Ethernet interface:

```
switch(config)# show running-config interface ethernet 2/7
version 4.0(3)
```

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```
interface Ethernet2/7
  description Ethernet port 3 on module 1
  mtu 8000
  delay 20
  udld enable
  no shutdown
```

This example shows how to display information about the running configuration for a specific range of Ethernet interfaces:

```
switch(config)# show running-config interface ethernet 2/7 - 9
version 4.0(3)
```

```
interface Ethernet2/7
  description Ethernet port 3 on module 1
  mtu 8000
  delay 20
  udld enable
  no shutdown
```

```
interface Ethernet2/8
  no shutdown
```

```
interface Ethernet2/9
  no shutdown
```

This example shows how to display information about the running configuration for a specific loopback interface:

```
switch(config)# interface loopback 345
switch(config-if)# show running-config interface loopback 345
version 4.0(3)
interface loopback345
```

This example shows how to display the running configuration for a specific port channel:

```
switch(config)# show running-config interface port-channel 10
version 4.0(1)
```

```
interface port-channel10
  switchport
  switchport mode trunk
```

This example shows how to display information about the running configuration for VLAN interface 50:

```
switch(config)# show running-config interface vlan 50
version 4.0(3)
```

```
interface Vlan50
```

Related Commands

Command	Description
interface	Enters the interface configuration mode, and configures the types and identities of interfaces.
interface vlan	Creates a VLAN interface and enters interface configuration mode.
show interface ethernet	Displays information about the Ethernet interface.

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Command	Description
show port-channel summary	Displays a summary of port-channel information.
show running-config	Displays the running configuration on the device.

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show running-config interface mgmt

To display the running configuration for a specific management interface, use the **show running-config interface mgmt** command.

```
show running-config interface mgmt {number}
```

Syntax Description	<i>number</i>	Management interface number that you want to display. The range is from 0 to 0.
Defaults	None	
Command Modes	Any command mode	
Supported User Roles	network-admin vdc-admin	
Command History	Release	Modification
	4.0	This command was introduced.
Usage Guidelines	<p>Use the show running-config interface mgmt command to display the running configuration for a management interface.</p> <p>This command does not require a license.</p>	
Examples	<p>This example shows how to display information about the running configuration for management interface 0:</p> <pre>switch# show running-config interface mgmt 0 version 4.0(3) interface mgmt0 ip address 172.28.231.193/23</pre>	
Related Commands	Command	Description
	show interface mgmt	Displays the management interface information.

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show running-config vpc

To display the running configuration information for virtual port channels (vPCs), use the **show running-config vpc** command.

show running-config vpc [all]

Syntax Description	all	(Optional) Displays the running configuration for all vPCs.
--------------------	-----	---

Defaults	None
----------	------

Command Modes	Any command mode.
---------------	-------------------

Supported User Roles	network-admin vdc-admin
----------------------	----------------------------

Command History	Release	Modification
	4.1(3)	This command was introduced.

Usage Guidelines	This command does not require a license.
------------------	--

Examples This example shows how to display the running configuration for a vPC:

```
switch (config)# show running-config vpc
version 4.1(2)
feature vpc
vpc domain 2
  role priority 1
  system-priority 32667
  peer-keepalive destination 10.10.76.52 source 10.10.76.51 udp-port 3200 vrf ma
  engagement interval 1000 timeout 5

interface port-channel10
  vpc 20

interface port-channel101
  vpc 101

interface port-channel200
  vpc peer-link

interface port-channel201
  vpc 201
```

show running-config vpc

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Related Commands	Command	Description
	show vpc brief	Displays information about vPCs. If the feature is not enabled, this command returns an error.

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show sprom fex

To display information about the Fabric Extender Serial (FEX) PROM (SPROM), use the **show sprom fex** command.

```
show sprom fex {all | chassis-ID {all | backplane | powersupply module-number}}
```

Syntax Description		
	<i>chassis-ID</i>	Fabric Extender chassis ID. The chassis ID range is from 100 to 199.
	all	Displays all SPROM content for a specific Fabric Extender.
	backplane	Displays the backplane SPROM content for a specific Fabric Extender.
	powersupply	Displays the power supply SPROM content for a specific Fabric Extender.
	<i>module-number</i>	Power supply module number for a specific Fabric Extender. The range is from 1 to 2.

Defaults None

Command Modes EXEC mode

Command History	Release	Modification
	5.1(1)	This command was introduced.

Usage Guidelines This command does not require a license.

Examples This example shows how to display all SPROM content for a specific Fabric Extender:

```
switch# show sprom fex 101 all
DISPLAY FEX 101 SUP sprom contents
Common block:
Block Signature : 0xabab
Block Version   : 3
Block Length    : 160
Block Checksum  : 0x1853
EEPROM Size     : 65535
Block Count     : 3
FRU Major Type  : 0x6002
FRU Minor Type  : 0x0
OEM String      : Cisco Systems, Inc.
Product Number  : N2K-C2248TP-1GE
Serial Number   : JAF1407AANJ
Part Number     : 73-12748-04
Part Revision   : 05
Mfg Deviation   : 0
H/W Version     : 3.4
Mfg Bits        : 0
Engineer Use    : 0
snmpOID        : 9.12.3.1.9.78.3.0
```

```
show sprom fex
```

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```
Power Consump      : 1666
RMA Code           : 0-0-0-0
CLEI Code          : COMJ200ARA
VID                : V00
Supervisor Module specific block:
Block Signature    : 0x6002
Block Version      : 2
Block Length       : 103
Block Checksum     : 0x27b8
Feature Bits       : 0x0
HW Changes Bits    : 0x2
Card Index         : 11016
MAC Addresses      : 00-00-00-00-00-00
--More--
switch#
```

This command shows how to display the power supply SPROM contents for a specific Fabric Extender:

```
switch# show sprom fex 104 powersupply 1
DISPLAY FEX 101 power-supply 1 sprom contents:
Common block:
Block Signature    : 0xabab
Block Version      : 3
Block Length       : 160
Block Checksum     : 0x173a
EEPROM Size        : 65535
Block Count        : 2
FRU Major Type     : 0xab01
FRU Minor Type     : 0x0
OEM String         : Cisco Systems, Inc.
Product Number     : N2200-PAC-400W
Serial Number      : LIT14030HK9
Part Number        : 341-0375-03
Part Revision      : 01
Mfg Deviation      :
H/W Version        : 1.0
Mfg Bits           : 0
Engineer Use       : 0
snmpOID            : 9.12.3.1.6.273.0.0
Power Consump      : 0
RMA Code           : 0-0-0-0
CLEI Code          : COUPAE2BAA
--More--
```

This command shows how to display the backplane SPROM content for a specific Fabric Extender:

```
switch# show sprom fex 101 backplane
DISPLAY FEX 101 SUP sprom contents
Common block:
Block Signature    : 0xabab
Block Version      : 3
Block Length       : 160
Block Checksum     : 0x1853
EEPROM Size        : 65535
Block Count        : 3
FRU Major Type     : 0x6002
FRU Minor Type     : 0x0
OEM String         : Cisco Systems, Inc.
Product Number     : N2K-C2248TP-1GE
Serial Number      : JAF1407AANJ
Part Number        : 73-12748-04
Part Revision      : 05
Mfg Deviation      : 0
H/W Version        : 3.4
```


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```
Mfg Bits           : 0
Engineer Use       : 0
snmpOID            : 9.12.3.1.9.78.3.0
Power Consump     : 1666
RMA Code           : 0-0-0-0
CLEI Code          : COMJ200ARA
VID                : V00
Supervisor Module specific block:
--More--
```

Related Commands

Command	Description
show fex	Displays all configured Fabric Extender chassis connected to the switch.

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show startup-config interface

To display interface configuration information in the startup configuration, use the **show startup-config interface** command.

```
show startup-config interface [ethernet slot/port | expand-port-profile | loopback number |
mgmt | port-channel {channel-number} [membership] | tunnel number | {vlan vlan-id}]
```

Syntax	Description
ethernet <i>slot/port</i>	(Optional) Displays the number of the module and port number.
expand-port-profile	(Optional) Displays the port profiles.
loopback <i>number</i>	(Optional) Displays the number of the loopback interface. The range of values is from 1 to 4096.
port-channel <i>channel-number</i>	(Optional) Displays the number of the port-channel group. The range of values is from 0 to 1023.
membership	(Optional) Displays the membership of the specified port channel.
tunnel <i>number</i>	(Optional) Displays the number of the tunnel interface. The range of values is from 0 to 65535.
vlan <i>vlan-id</i>	(Optional) Displays the number of the VLAN. The range of values is from 1 to 4096.

Defaults None

Command Modes Any command mode

Supported User Roles network-admin
vdc-admin

Command History	Release	Modification
	4.1(2)	This command was introduced.
	4.2(1)	The expand-port-profile parameter was introduced.

Usage Guidelines This command does not require a license.

Examples This example shows how to display the information in the startup configuration for the interface Ethernet 7/1:

```
switch(config)# show startup-config interface ethernet 7/1
version 4.1(2)

interface Ethernet7/1
ip pim sparse-mode
```

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Related Commands	Command	Description
	show interface	Displays information about the specified interface.

■ `show startup-config vpc`

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show startup-config vpc

To display virtual port-channel (vPC) configuration information in the startup configuration, use the `show startup-config vpc` command.

```
show startup-config vpc [all]
```

Syntax Description	all	(Optional) Displays the startup-configuration information for all vPCs.
--------------------	-----	---

Defaults	None
----------	------

Command Modes	Any command mode
---------------	------------------

Supported User Roles	network-admin vdc-admin
----------------------	----------------------------

Command History	Release	Modification
	4.1(3)	This command was introduced.

Usage Guidelines	This command does not require a license.
------------------	--

Examples	This example shows how to display the vPC information in the startup configuration:
----------	---

```
switch(config)# show startup-config vpc
version 4.1(2)
feature vpc
vpc domain 1

interface port-channel10
 vpc peer-link

interface port-channel20
 vpc 100
```

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

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show system reset-reason fex

To display the reason for the last reset of the Fabric Extender (FEX), use the **show system reset-reason fex** command.

show system reset-reason fex *chassis-ID*

Syntax Description	<i>chassis-ID</i>	Fabric Extender chassis ID. The chassis ID range is from 100 to 199.
---------------------------	-------------------	--

Defaults	None
-----------------	------

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

Command History	Release	Modification
	5.1(1)	This command was introduced.

Usage Guidelines	This command does not require a license.
-------------------------	--

Examples This example shows how to display the last reset reason for a specific Fabric Extender:

```
switch# show system reset-reason fex 101
----- reset reason for FEX 101 ---
1) At 550180 usecs after Mon Sep  6 07:43:23 2010
   Reset Reason: Reset Requested by CLI command reload (9)
   Service (Additional Info): Reload requested by supervisor
   Image Version: 5.1(0.159.6)
2) At 269728 usecs after Mon Sep  6 07:41:36 2010
   Reset Reason: Reset Requested by CLI command reload (9)
   Service (Additional Info): Reload requested by supervisor
   Image Version: 5.1(0.159.6)
3) At 868270 usecs after Sun Feb 24 22:07:28 2008
   Reset Reason: Reset Requested by CLI command reload (9)
   Service (Additional Info): Reload requested by supervisor
   Image Version: 5.1(0.159.6)
4) At 204499 usecs after Sun Feb 24 20:38:20 2008
   Reset Reason: Reset Requested by CLI command reload (9)
   Service (Additional Info): Reload requested by supervisor
   Image Version: 5.1(0.159.6)
switch#
```

Related Commands	Command	Description
	show fex	Displays all configured Fabric Extender chassis connected to the switch.

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show tech-support fex

To display detailed troubleshooting information for a Fabric Extender (FEX), use the **show tech-support fex** command.

show tech-support fex all *chassis-ID*

Syntax Description	all	Specifies detailed information for all FEX.
	<i>chassis-ID</i>	Fabric Extender chassis ID. The chassis ID range is from 100 to 199.

Defaults None

Command Modes EXEC mode

Command History	Release	Modification
	5.1(1)	This command was introduced.

Usage Guidelines This command does not require a license.

Examples This example shows how to display detailed troubleshooting information for a FEX:

```
switch# show tech-support fex 101
09/06/2010 07:44:12.26863: Satctrl Built at Thu Aug  5 19:12:00 PDT 2010 on rami
neni-lnx in directory /ws/mhau-sjc/deewhy_june_2/build by mhau
09/06/2010 07:44:12.26883: Version: 2109/06/2010 07:44:12.26898: *****
*****
09/06/2010 07:44:12.38241: satellite_init: initializing modules
09/06/2010 07:44:12.38466: satctrl_get_cardid: Platform card ID 99
09/06/2010 07:44:12.38772: Platform info: cardid=99, num_slots=1
09/06/2010 07:44:12.463410: satctrl_get_cardid: Platform card ID 99
09/06/2010 07:44:12.463455: satellite_init: swcardid=99
09/06/2010 07:44:12.463598: get fru: chas ser:SSI14061500 chas model:N2K-C2248TP
-1GE chas part: 68-3601-04
09/06/2010 07:44:12.463625: get fru: mod ser:JAF1407AANJ mod model:N2K-C2248TP-1
GE mod part: 73-12748-04
09/06/2010 07:44:12.463649: satellite_init: initializing inband
09/06/2010 07:44:12.477534: satellite_init: inband initialized
09/06/2010 07:44:12.477723: satellite_module_cfg_init: initializing modue (0)
09/06/2010 07:44:12.478987: satctrl_module_fsm_init: Fsm initialized for fabric
module no (0, 0)
09/06/2010 07:44:12.479080: satctrl_module_fsm_init: Fsm initialized for fabric
module no (1, 0)
09/06/2010 07:44:12.479423: satellite_init: done initializing satctrl module
09/06/2010 07:44:12.479466: satctrl_set_mts_addr: dummy_addr: 0xff02
09/06/2010 07:44:12.479709: My addr is changed to 0xff
--More--
```

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This example shows how to display all troubleshooting information for all FEX:

```
switch# show tech-support fex all
09/06/2010 07:44:12.26583: *****
09/06/2010 07:44:12.26863: Satctrl Built at Thu Aug  5 19:12:00 PDT 2010 on rami
neni-lnx in directory /ws/mhau-sjc/deewhy_june_2/build by mhau
09/06/2010 07:44:12.26883: Version: 2109/06/2010 07:44:12.26898: *****
*****
09/06/2010 07:44:12.38241: satellite_init: initializing modules
09/06/2010 07:44:12.38466: satctrl_get_cardid: Platform card ID 99
09/06/2010 07:44:12.38772: Platform info: cardid=99, num_slots=1
09/06/2010 07:44:12.463410: satctrl_get_cardid: Platform card ID 99
09/06/2010 07:44:12.463455: satellite_init: swcardid=99
09/06/2010 07:44:12.463598: get fru: chas ser:SSI14061500 chas model:N2K-C2248TP
-1GE chas part: 68-3601-04
09/06/2010 07:44:12.463625: get fru: mod ser:JAF1407AANJ mod model:N2K-C2248TP-1
GE mod part: 73-12748-04
09/06/2010 07:44:12.463649: satellite_init: initializing inband
09/06/2010 07:44:12.477534: satellite_init: inband initialized
09/06/2010 07:44:12.477723: satellite_module_cfg_init: initializing modue (0)
09/06/2010 07:44:12.478987: satctrl_module_fsm_init: Fsm initialized for fabric
module no (0, 0)
09/06/2010 07:44:12.479080: satctrl_module_fsm_init: Fsm initialized for fabric
module no (1, 0)
09/06/2010 07:44:12.479423: satellite_init: done initializing satctrl module
09/06/2010 07:44:12.479466: satctrl_set_mts_addr: dummy_addr: 0xff02
09/06/2010 07:44:12.479709: My addr is changed to 0xff
--More--
```

Related Commands

Command	Description
<code>show fex</code>	Displays all configured Fabric Extender chassis connected to the switch.

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show udld

To display information about the Unidirectional Link Detection (UDLD) configuration, use the **show udld** command.

```
show udld [ethernet slot/port | global | neighbors]
```

Syntax Description	ethernet slot/port	(Optional) Displays the Ethernet slot and port number you want to display.
	global	(Optional) Displays the UDLD global status and configuration on all interfaces.
	neighbors	(Optional) Displays the UDLD neighbor interfaces.

Defaults	None
----------	------

Command Modes	Any command mode
---------------	------------------

SupportedUserRoles	network-admin vdc-admin
--------------------	----------------------------

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines	Use the show udld command to display information about the UDLD configuration for an interface. UDLD must be enabled on the device before you can display this command; enter the feature udld command to enable UDLD globally on the device.
------------------	---

This command does not require a license.

Examples	This example shows how to display information about the UDLD configuration for Ethernet port 2/7:
----------	---

```
switch# show udld ethernet 2/7

Interface Ethernet2/7
-----
Port enable administrative configuration setting: disabled
Port enable operational state: disabled
Current bidirectional state: unknown
Current operational state: udld-init - Multiple neighbor not detected
Message interval: 7
Timeout interval: 5
```


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Related Commands	Command	Description
	uddl	Configures the ports to use a UDLD mode.
	feature uddl	Enables UDLD globally on device.

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show vdc

To display virtual device contexts (VDCs), use the **show vdc** command.

show vdc

Syntax Description This command has no arguments or keywords.

Defaults None

Command Modes Any command mode

SupportedUserRoles network-admin
vdc-admin

Command History	Release	Modification
	5.1(1)	This command was introduced.

Usage Guidelines This command does not require a license.

Examples This example shows how to display VDCs:

```
switch# show vdc
vdc_id  vdc_name                state      mac
-----  -----                -
1       switch                    active    00:22:55:79:a4:c1
M1 F1
2       1                            active    00:22:55:79:a4:c2
M1 F1
3       2                            active    00:22:55:79:a4:c3
M1 F1
4       fred                          active    00:22:55:79:a4:c4
M1 F1
switch#
```

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Related Commands

Command	Description
show lacp	Displays LACP information.

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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
---------------	------------------

Supported User Roles	network-admin vdc-admin
----------------------	----------------------------

Command History	Release	Modification
	4.1(3)	This command was introduced.
4.2(1)	Added the vPCs keyword.	

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 peer-link formed or the failure to form.

This command is not available if you have not enabled the vPC feature. See **feature vpc** for information on enabling vPCs.

Beginning with Cisco Release 4.2(1), 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. See the *Cisco Nexus 7000 Series NX-OS Interfaces Configuration Guide, Release 5.x*, for information on this feature.

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
```

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```

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, which is available beginning in Cisco NX-OS Release 4.2(1):

```
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

```

show vpc brief

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```
-----  
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.

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show vpc consistency-parameters

To display the consistency of parameters that must be compatible across the virtual port-channel (vPC) interfaces, use the **show vpc consistency-parameters** command.

```
show vpc consistency-parameters {global | interface port-channel channel-number | vpc
                                number}}
```

Syntax Description		
global	(Optional) Displays the configuration of all Type 1 global parameters on both sides of the vPC peer link.	
interface port-channel	(Optional) Displays the configuration of all Type 1 interface parameters on both sides of the vPC peer link.	
<i>channel-number</i>	(Optional) Channel number.	
vpc number	(Optional) Displays the configuration of all Type 1 interface parameters on both sides of the vPC peer link for the specified vPC.	

Defaults None

Command Modes Any command mode.

Supported User Roles network-admin
vdc-admin

Command History	Release	Modification
	4.1(3)	This command was introduced.
	4.2(1)	Added the display of local suspended VLANs. Note The command does not display the vPC peer device's suspended VLANs.
	4.2(1)	Added the <i>vpc</i> argument.

Usage Guidelines The **show vpc consistency-parameters** command displays the configuration of all the vPC Type 1 parameters on both sides of the vPC peer link.



Note

All the Type 1 configurations must be identical on both sides of the vPC peer link, or the link will not come up.

The vPC Type 1 configuration parameters are as follows:

- Port-channel mode: on, off, or active
- Link speed per channel

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- Duplex mode per channel
- Trunk mode per channel
 - Native VLAN
 - VLANs allowed on trunk
 - Tagging of native VLAN traffic
- Spanning Tree Protocol (STP) mode
- STP region configuration for Multiple Spanning Tree
- Enable/disable state the same per VLAN
- STP global settings
 - Bridge Assurance setting
 - Port type setting—We recommend that you set all vPC peer link ports as network ports.
 - Loop Guard settings
- STP interface settings:
 - Port type setting
 - Loop Guard
 - Root Guard
- Maximum transmission unit (MTU)
- Allowed VLAN bit set

This command is not available if you have not enabled the vPC feature. See **feature vpc** for information on enabling vPCs.

This command does not require a license.

Examples

This example shows how to display the vPC consistency parameters for the specified port channel:

```
switch (config)# show vpc consistency-parameters global
```

Legend:

Type 1 : vPC will be suspended in case of mismatch

Name	Type	Local Value	Peer Value
STP Mode	1	Rapid-PVST	Rapid-PVST
STP Disabled	1	None	None
STP MST	1	" "	" "
Region Name			
STP MST	1	0	0
Region			
Revision			
STP MST	1		
Region			
Instance to			
VLAN Mapping			
STP Loopguard	1	Disabled	Disabled
STP Bridge	1	Enabled	Enabled
Assurance			
STP Port Type	1	Normal	Normal
Allowed VLAN	-	1-100	1-100
Local suspended	-	1-50	-

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VLANs

This example shows how to display the vPC consistency parameters for the specified port channel:

```
switch (config)# show vpc consistency-parameters interface port-channel 20
```

Legend:

Type 1 : vPC will be suspended in case of mismatch

Name	Type	Local Value	Peer Value
STP Port Type	1	Default	Default
STP Port Guard mode	1	None	None
Speed	1	on	on
Duplex	1	10 Gb/s	10 Gb/s
Port Mode	1	full	full
Native Vlan	1	trunk	trunk
MTU	1	1	1
Allowed VLAN bitset	1	1500	1500
	-	1-100	1-100

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.
show port channel summary	Displays information about port channels.

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show vpc orphan-ports

To display ports that are not part of the virtual port channel (vPC) but have common VLANs, use the **show vpc orphan-ports** command.

show vpc orphan-ports

Syntax Description This command has no arguments or keywords.

Defaults None

Command Modes Any command mode.

SupportedUserRoles network-admin
vdc-admin

Command History	Release	Modification
	4.2(1)	This command was introduced.

Usage Guidelines The **show vpc orphan-ports** command displays those ports that are not part of the vPC but that share common VLANs with ports that are part of the vPC.

This command is not available if you have not enabled the vPC feature. See **feature vpc** for information on enabling vPCs.

This command does not require a license.

Examples This example shows how to display vPC orphan ports:

```
switch(config)# show vpc orphan ports
```

Note:

```
-----:Going through port database. Please be patient.:-----
```

VLAN	Orphan Ports
1	Po600
2	Po600
3	Po600
4	Po600
5	Po600
6	Po600
7	Po600
8	Po600
9	Po600
10	Po600

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```
11          Po600
12          Po600
13          Po600
14          Po600
15          Po600
```

Related Commands

Command	Description
feature vpc	Enables vPCs on the device.
show vpc brief	Displays brief information about vPCs.

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show vpc peer-keepalive

To display the destination IP for the virtual port-channel (vPC) peer keepalive message and the status of the messages, use the **show vpc peer-keepalive** command.

show vpc peer-keepalive

Syntax Description This command has no arguments or keywords.

Defaults None

Command Modes Any command mode

Supported User Roles network-admin
vdc-admin

Command History	Release	Modification
	4.1(3)	This command was introduced.

Usage Guidelines The **show vpc peer-keepalive** command displays the destination IP of the peer keepalive message for the vPC. The command also displays the send and receive status as well as the last update from the peer in seconds and milliseconds



Note

We recommend that you create a separate VRF on the peer devices to send and receive the vPC peer keepalive messages. Do not use the peer link itself to send the vPC peer-keepalive messages.

This command is not available if you have not enabled the vPC feature. See **feature vpc** for information on enabling vPCs.

This command does not require a license.

Examples This example shows how to display information about the peer-keepalive message:

```
n7k-2 (config-vpc-domain)# show vpc peer-keepalive

vPC keep-alive status           : peer is alive
--Send status                   : Success
--Last send at                  : 2008.05.17 18:23:53 986 ms
--Sent on interface             : Eth7/16
--Receive status                : Success
--Last receive at               : 2008.05.17 18:23:54 99 ms
--Received on interface        : Eth7/16
--Last update from peer        : (0) seconds, (486) msec
```

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```
vPC Keep-alive parameters
--Destination           : 172.23.145.213
--Keepalive interval   : 1000 msec
--Keepalive timeout    : 5 seconds
--Keepalive hold timeout : 3 seconds
--Keepalive vrf        : pkal
--Keepalive udp port   : 3200
--Keepalive tos        : 192
```

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.

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show vpc role

To display information about the virtual port-channel (vPC) role of the peer device, use the **show vpc role** command.

show vpc role

Syntax Description This command has no arguments or keywords.

Defaults None

Command Modes Any command mode

SupportedUserRoles network-admin
vdc-admin

Command History	Release	Modification
	4.1(3)	This command was introduced.

Usage Guidelines The **show vpc role** command displays the following information about the vPC status:

- Status of peer adjacency
- vPC role of the VDC that you are working on
- vPC MAC address
- vPC system priority
- MAC address of the device that you are working on
- System priority for the device that you are working on

This command is not available if you have not enabled the vPC feature. See **feature vpc** for information on enabling vPCs.

This command does not require a license.

Examples This example shows how to display the vPC role information of the device that you are working on:

```
switch (config)# show vpc role
```

```
Primary:
```

```
vPC Role status
```

```
-----
vPC role                : primary
Dual Active Detection Status : 0
```

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```
vPC system-mac           : 00:23:04:ee:be:01
vPC system-priority      : 32667
vPC local system-mac     : 00:22:55:79:ea:c1
vPC local role-priority  : 32667
```

Secondary:

vPC Role status

```
-----
vPC role                 : secondary
Dual Active Detection Status : 0
vPC system-mac           : 00:23:04:ee:be:01
vPC system-priority      : 32667
vPC local system-mac     : 00:22:55:79:de:41
vPC local role-priority  : 32667
```

When you reload the primary vPC peer device, the secondary vPC peer device assumes the role of primary device. The following example shows how the vPC role displays then on the new primary device:

```
switch (config)# show vpc role
```

vPC Role status

```
-----
vPC role                 : secondary, operational primary
Dual Active Detection Status : 0
vPC system-mac           : 00:23:04:ee:be:64
vPC system-priority      : 32667
vPC local system-mac     : 00:22:55:79:de:41
vPC local role-priority  : 32667
```

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.
show port channel summary	Displays information about port channels.

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show vpc statistics

To display virtual port-channel (vPC) statistics, use the **show vpc statistics** command.

```
show vpc statistics {peer-keepalive | peer-link | vpc number}
```

Syntax Description	Parameter	Description
	peer-keepalive	Displays statistics about the peer-keepalive message.
	peer-link	Displays statistics about the peer link.
	vpc number	Displays statistics about the specified vPC. The range is from 1 to 4096.

Defaults None

Command Modes Any command mode

Supported User Roles network-admin
vdc-admin

Command History	Release	Modification
	4.1(3)	This command was introduced.

Usage Guidelines

The **peer-link** parameter displays the same information as the **show interface port-channel channel number** command for the vPC peer-link port channel.

The **vpc number** parameter displays the same information as the **show interface port-channel channel number** command for the specified vPC port channel.

This command is not available if you have not enabled the vPC feature. See **feature vpc** for information on enabling vPCs.

This command does not require a license.

Examples This example shows how to display statistics about the peer-keepalive message:

```
switch# show vpc statistics peer-keepalive

vPC keep-alive status          : peer is alive

VPC keep-alive statistics
-----
peer-keepalive tx count:      1036
peer-keepalive rx count:      1028
average interval for peer rx: 995
Count of peer state changes:  1
```


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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.
	show port channel summary	Displays information about port channels.

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shutdown

To bring the port administratively down, use the **shutdown** command. To bring the port administratively up, use the **no shutdown** command.

shutdown [**force**]

no shutdown [**force**]

Syntax Description

force	(Optional) Forces the interface state to change. When you shut down a management interface, a warning question is displayed regarding active Telnet sessions. You can bypass the question with the force option. The force option is also useful when you run an automated configuration playback. The force option is only available for Ethernet interfaces or the management port.
--------------	---

Defaults

None

Command Modes

Interface configuration mode

Supported User Roles

network-admin
vdc-admin

Command History

Release	Modification
4.0	This command was introduced.

Usage Guidelines

Use the **shutdown** command to bring the port administratively down. Use the **no shutdown** command to bring the port administratively up.

This command does not require a license.

Examples

This example shows how to bring the port administratively down:

```
switch(config-if)# shutdown
```

This example shows how to bring the port administratively up:

```
switch(config-if)# no shutdown
```

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Related Commands

Command	Description
interface ethernet	Configures the types and identities of Ethernet interfaces.

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speed

To set the speed for Ethernet ports or management interfaces or set the port to autonegotiate its speed with other ports on the link, use the **speed** command.

```
speed {10 | 100 | 1000 | 10000 | auto [10 [100 [1000]]]}
```

Syntax Description	10	Sets the speed at 10 Mbps.
	100	Sets the speed at 100 Mbps.
	1000	Sets the speed at 1 Gbps.
	10000	Sets the speed at 10 Gbps.
	auto	Sets the interface to autonegotiation.

Defaults None

Command Modes Interface configuration mode

Supported User Roles network-admin
vdc-admin

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines Before you begin, make sure that the remote port has a speed setting that supports your changes for the local port. If you want to set the local port to use a specific speed, you must set the remote port for the same speed or set the local port to autonegotiate the speed.

The interface speed and duplex mode are interrelated, so you should configure both of their parameters at the same time.

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. If you specify a speed of 1000 Mbps (1 Gbps) or faster, full duplex is automatically used. For more details about configuring this command, see the *Cisco NX-OS Interfaces Configuration Guide*.

This command does not require a license.

Examples This example shows how to set the speed of Ethernet port 1 on the 48-port 10/100/1000 module in slot 3 to 1000 Mbps and full-duplex mode:

```
switch# config t
```

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```
switch(config)# interface ethernet 3/1  
switch(config-if)# speed 1000  
switch(config-if)# duplex full
```

Related Commands

Command	Description
duplex	Specifies the duplex mode as full, half, or autonegotiate.
show interface	Displays the interface status, which includes the speed parameters.

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state enabled

To enable the specified port profile, use the **state enabled** command. To return to the default value, use the **no** form of this command.

state enabled

no state enabled

Syntax Description This command has no keywords or arguments.

Defaults Disabled

Command Modes Port-profile configuration mode

SupportedUserRoles network-admin
vdc-admin

Command History	Release	Modification
	4.2(1)	This command was introduced.

Usage Guidelines Use the **state enabled** command to enable the specified port profile. See the **port-profile** command for information about the port-profile feature.

To apply the port-profile configurations to the interfaces, you must enable the specific port profile. You can configure and inherit a port profile onto a range of interfaces prior to enabling the port profile; you would then enable that port profile for the configurations to take effect on the specified interfaces. The maximum number of interfaces that can inherit a single profile is 512.

If you inherit one or more port profiles onto an original port profile, only the last inherited port profile must be enabled; the system assumes that the underlying port profiles are enabled.

This command does not require a license.

Examples This example shows how to enable the port-profile feature:

```
switch(config)# port-profile type ethernet test
switch(config-ppm)# state enabled
```

Related Commands	Command	Description
	show port-profile	Displays information about the port profiles.

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switchport

To set the interface as a Layer 2 switching port, use the **switchport** command. To return the interface to the default Layer 3 routed interface status and cause all Layer 2 configuration to be erased, use the **no** form of this command.

switchport

no switchport

Syntax Description This command has no keywords or arguments.

Defaults Interfaces are Layer 3 by default.

Command Modes Interface configuration mode

SupportedUserRoles network-admin
vdc-admin

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines You must enter the **switchport** command without any keywords to configure the LAN interface as a Layer 2 interface before you can enter additional **switchport** commands with keywords. This action is required only if you have not entered the **switchport** command for the interface.

The default switchport mode is the access mode. Use the **switchport mode** command to do the following:

- Set the interface to the Layer 2 access mode
- Return the interface to the Layer 2 trunk mode
- Use the interface with private VLANs.

Enter the **no switchport** command to shut down the port and then reenabling it. This action may generate messages on the device to which the port is connected.

When you use the **no switchport** command, all the Layer 2 configuration is deleted from that interface, and the interface will have the default VLAN configuration.

The port will go down and reinitialize when you change the interface mode.

This command does not require a license.

Send document comments to nexus7k-docfeedback@cisco.com**Examples**

This example shows how to cause a port interface to stop operating as a Cisco routed port and convert to a Layer 2 switched interface:

```
switch(config-if)# switchport
```

Related Commands

Command	Description
show interface switchport	Displays the administrative and operational status of a switching (nonrouting) port.

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switchport access vlan

To set the access VLAN when the interface is in access mode, use the **switchport access vlan** command. To reset the access-mode VLAN to the appropriate default VLAN for the device, use the **no** form of this command.

switchport access vlan *vlan-id*

no switchport access vlan

Syntax Description	<i>vlan-id</i>	VLAN to set when the interface is in access mode; valid values are from 1 to 4094, except for the VLANs reserved for internal switch use.
Defaults	VLAN1	
Command Modes	Interface configuration mode	
Supported User Roles	network-admin vdc-admin	
Command History	Release	Modification
	4.0	This command was introduced.
Usage Guidelines	<p>You must enter the switchport command without any keywords to configure the LAN interface as a Layer 2 interface before you can enter the switchport access vlan command. This action is required only if you have not entered the switchport command for the interface.</p> <p>Enter the no switchport access vlan command to shut down the port and then reenab it. This action may generate messages on the device to which the port is connected.</p> <p>Use the no form of the switchport access vlan command to reset the access-mode VLAN to the appropriate default VLAN for the device.</p> <p>This command does not require a license.</p>	
Examples	<p>This example shows how to cause a port interface that has already been configured as a switched interface to operate as an access port in VLAN 2 instead of the platform's default VLAN in the interface-configuration mode:</p> <pre>switch(config-if)# switchport access vlan 2</pre>	

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Related Commands	Command	Description
	show interface switchport	Displays the administrative and operational status of a switching (nonrouting) port.

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switchport dot1q ethertype

To set the EtherType used for Q-in-Q encapsulation on an interface, use the **switchport dot1q ethertype** command. To reset the EtherType to its default value, Use the **no** form of this command.

switchport dot1q ethertype *ethertype*

no switchport dot1q ethertype [*ethertype*]

Syntax Description

<i>ethertype</i>	Value to set for the EtherType. Valid values are from 0x600 to 0xffff. <ul style="list-style-type: none"> 0x8100 is the default EtherType for 802.1q frames 0x88A8 is the EtherType for 802.1ad double tagged frames 0x9100 is the EtherType for QinQ frames
------------------	---

Defaults

0x8100 is the default EtherType for 802.1q frames

Command Modes

Interface configuration mode

Supported User Roles

network-admin
vdc-admin

Command History

Release	Modification
5.0(2)	This command was introduced.

Usage Guidelines

You must enter the **switchport** command without any keywords to configure the Ethernet interface as a Layer 2 interface before you can enter the **switchport mode** command. This action is required only if you have not entered the **switchport** command for the interface.

You must set the EtherType only on the egress trunk interface that carries double tagged frames (the trunk interface that connects the service providers). If you change the EtherType on one side of the trunk, you must set the same value on the other end of the trunk (symmetrical configuration).



Caution

The EtherType value you set will affect all the tagged packets going out on the interface (not just Q-in-Q packets).

This command does not require a license.

Examples

This example shows how to create a 802.1Q tunnel on an interface:

```
switch(config-if)# switchport dot1q ethertype 0x9100
```

■ switchport dot1q ethertype

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Related Commands

Command	Description
show interface switchport	Displays information about all the switch port interface.

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switchport host

To configure a port that is not connected to any other devices as a Layer 2 access port with optimized packet forwarding, use the **switchport host** command. To disable a port that is not connected to any other devices as a Layer 2 access, use the **no** form of this command.

switchport host

no switchport host

Syntax Description This command has no keywords or arguments.

Defaults Interfaces are Layer 3 by default.

Command Modes Interface configuration mode

SupportedUserRoles network-admin
vdc-admin

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines You must enter the **switchport** command without any keywords to configure the LAN interface as a Layer 2 interface before you can enter the **switchport host** command. This action is required only if you have not entered the **switchport** command for the interface.

Entering the **switchport host** command on an interface:

- Makes the Layer 2 interface an access port.
- Makes the Layer 2 interface an STP edge port, which decreases the time that it takes to start up packet forwarding.
- Disables port channeling on this interface.

You should enter the **switchport host** command only on ports that are connected to a single host. When you use this command with an interface connected to other than a single host, the device returns an error message.

To optimize the port configuration, entering the **switchport host** command sets the switch port mode to access and disables channel grouping. Only an end station can accept this configuration.

This command toggles the port if it is in the UP state.

This command does not require a license.

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Examples

This example shows how to optimize an access port configuration for a host connection:

```
switch(config-if)# switchport host
```

Related Commands

Command	Description
show interface switchport	Displays the administrative and operational status of a switching (nonrouting) port.

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switchport mode

To set the Layer 2 interface type, use the **switchport mode** command. To return the interface to the Layer 2 access mode, use the **no** form of this command.

switchport mode {access | trunk}

no switchport mode

Syntax Description

access	Specifies the interface as a nontrunking, nontagged single-VLAN Layer 2 interface. An access port carry traffic in one VLAN only.
trunk	Specifies the trunking VLAN interface in Layer 2. A trunk port can carry traffic in one or more VLANs (based on the trunk allowed VLAN list configuration) on the same physical link.

Defaults

access ports

Command Modes

Interface configuration mode

Supported User Roles

network-admin
vdc-admin

Command History

Release	Modification
4.0	This command was introduced.

Usage Guidelines

You must enter the **switchport** command without any keywords to configure the LAN interface as a Layer 2 interface before you can enter the **switchport mode** command. This action is required only if you have not entered the **switchport** command for the interface.

If you enter **access** mode, the interface goes into nontrunking mode; if you enter **trunk** mode, the interface goes into trunking mode.

To correctly deliver the traffic on a trunk port with several VLANs, the switch uses the IEEE 802.1Q encapsulation, or tagging, method. If an access port receives a packet with an 802.1Q tag in the header, that port drops the packet without learning its MAC source address.



Note

A port can function as either an access port, a trunk port, or a private VLAN port; a port cannot function as all three simultaneously.

The port will go down and reinitialize when you change the interface mode.

This command does not require a license.

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Examples

This example shows how to set the interface to trunking mode:

```
switch(config-if)# switchport mode trunk
```

Related Commands

Command	Description
show interface switchport	Displays the administrative and operational status of a switching (nonrouting) port.

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switchport mode dot1q-tunnel

To create a 802.1Q tunnel on an interface, use the **switchport mode dot1q-tunnel** command. To disable the 802.1Q tunnel on the interface, use the **no** form of this command.

switchport mode dot1q-tunnel

no switchport mode dot1q-tunnel

Syntax Description This command has no arguments or keywords.

Defaults No 802.1Q tunnel

Command Modes Interface configuration mode

Supported User Roles network-admin
vdc-admin

Command History	Release	Modification
	5.0(2)	This command was introduced.

Usage Guidelines You must enter the **switchport** command without any keywords to configure the Ethernet interface as a Layer 2 interface before you can enter the **switchport mode** command. This action is required only if you have not entered the **switchport** command for the interface.

The port will go down and reinitialize (port flap) when the interface mode is changed. BPDU filtering is enabled and CDP is disabled on tunnel interfaces.

This command does not require a license.

Examples This example shows how to create a 802.1Q tunnel on an interface:

```
switch(config-if)# switchport mode dot1q-tunnel
```

Related Commands	Command	Description

Send document comments to nexus7k-docfeedback@cisco.com

switchport mode fex-fabric

To set the interface type to be an uplink port for a Fabric Extender, use the **switchport mode fex-fabric** command. To return to the default setting, use the **no** form of this command.

switchport mode fex-fabric

no switchport mode fex-fabric

Syntax Description This command has no arguments or keywords.

Defaults None

Command Modes Interface configuration mode

Command History	Release	Modification
	5.1(1)	This command was introduced.

Usage Guidelines This command does not require a license.

Examples This example shows how to set an Ethernet interface to be an uplink port for a Fabric Extender:

```
switch# configure terminal
switch(config)# interface ethernet 1/40
switch(config-if)# switchport mode fex-fabric
```

This example shows how to set an EtherChannel interface to be an uplink port for a Fabric Extender:

```
switch# configure terminal
switch(config)# interface port-channel 4
switch(config-if)# switchport mode fex-fabric
```

Related Commands	Command	Description
	fex associate	Associates a Fabric Extender to an Ethernet or EtherChannel interface.
	show fex	Displays all configured Fabric Extender chassis connected to the switch.

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switchport trunk allowed vlan

To set the list of allowed VLANs on the trunking interface, use the **switchport trunk allowed vlan** command. To allow *all* VLANs on the trunking interface, use the **no** form of this command.

switchport trunk allowed vlan {*vlan-list* | **add** *vlan-list* | **all** | **except** *vlan-list* | **none** | **remove** *vlan-list*}

no switchport trunk allowed vlan

Syntax Description	<i>vlan-list</i>	Allowed VLANs that transmit through this interface in tagged format when in trunking mode; the range of valid values is from 1 to 4094.
add		Adds the defined list of VLANs to those currently set instead of replacing the list.
all		Allows all appropriate VLANs to transmit through this interface in tagged format when in trunking mode.
except		Allows all VLANs to transmit through this interface in tagged format when in trunking mode except the specified values.
none		Blocks all VLANs transmitting through this interface in tagged format when in trunking mode.
remove		Removes the defined list of VLANs from those currently set instead of replacing the list.

Defaults All VLANs

Command Modes Interface configuration mode

SupportedUserRoles network-admin
vdc-admin

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines You must enter the **switchport** command without any keywords to configure the LAN interface as a Layer 2 interface before you can enter the **switchport trunk allowed vlan** command. This action is required only if you have not entered the **switchport** command for the interface.

You can enter the **switchport trunk allowed vlan** command on interfaces where the Switched Port Analyzer (SPAN) destination port is either a trunk or an access port.

If you remove VLAN 1 from a trunk, the trunk interface continues to send and receive management traffic in VLAN 1.

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This command does not require a license.

Examples

This example shows how to add a series of consecutive VLANs to the list of allowed VLANs on a trunking port:

```
switch(config-if)# switchport trunk allowed vlan add 40-50
```

Related Commands

Command	Description
show interface switchport	Displays the administrative and operational status of a switching (nonrouting) port.

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switchport trunk native vlan

To change the native VLAN ID when the interface is in trunking mode, use the **switchport trunk native vlan** command. To return the native VLAN ID to VLAN 1, use the **no** form of this command.

switchport trunk native vlan *vlan-id*

no switchport trunk native vlan

Syntax Description	<i>vlan-id</i>	Native VLAN for the trunk in 802.1Q trunking mode. The range of valid values is from 1 to 4094, except the internally reserved VLANs 3968 to 4047 and 4094.
---------------------------	----------------	---

Defaults	VLAN1
-----------------	-------

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

Supported User Roles	network-admin vdc-admin
-----------------------------	----------------------------

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines	You must enter the switchport command without any keywords to configure the LAN interface as a Layer 2 interface before you can enter the switchport trunk native vlan command. This action is required only if you have not entered the switchport command for the interface.
-------------------------	---



Note See the **vlandot1q tag native** command for more information about configuring the native VLAN for 802.1Q trunk ports.

Use the **no** form of the **native vlan** command to reset the native mode VLAN to the default VLAN1 for the device.

This command does not require a license.

Examples	This example shows how to configure the native VLAN for an interface in trunk mode: <pre>switch(config-if)# switchport trunk native vlan 5</pre>
-----------------	---

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Related Commands	Command	Description
	show interface switchport	Displays the administrative and operational status of a switching (nonrouting) port.

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system default switchport

To change the default interface mode for the system from Layer 3 routing to Layer 2 switching, use the **system default switchport** command. To return the system to Layer 3 routing default interface mode, use the **no** form of this command.

```
system default switchport [shutdown]
```

```
no system default switchport [shutdown]
```

Syntax Description	shutdown (Optional) Configures the administrative state as down.				
Defaults	None				
Command Modes	Global configuration mode				
Supported User Roles	network-admin vdc-admin				
Command History	<table border="1"> <thead> <tr> <th>Release</th> <th>Modification</th> </tr> </thead> <tbody> <tr> <td>4.0</td> <td>This command was introduced.</td> </tr> </tbody> </table>	Release	Modification	4.0	This command was introduced.
Release	Modification				
4.0	This command was introduced.				
Usage Guidelines	The system default switchport command makes all the interfaces Layer 2 access ports. This command does not require a license.				
Examples	This example shows how to configure the system so that all the interfaces are in Layer 2 access mode: <pre>switch(config-if)# system default switchport</pre>				
Related Commands	<table border="1"> <thead> <tr> <th>Command</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>show interface switchport</td> <td>Displays the administrative and operational status of a switching (nonrouting) port.</td> </tr> </tbody> </table>	Command	Description	show interface switchport	Displays the administrative and operational status of a switching (nonrouting) port.
Command	Description				
show interface switchport	Displays the administrative and operational status of a switching (nonrouting) port.				

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system jumbomtu

To configure the system jumbo maximum transmission unit (MTU) size for Layer 2 interfaces, use the **system jumbomtu** command.

system jumbomtu *size*

Syntax Description	<i>size</i>
	Even number between the values of 1500 and 9216.

Defaults The system jumbo MTU default size is 9216 bytes and the interface default MTU is 1500 bytes.

Command Modes Global configuration mode

SupportedUserRoles network-admin
vdc-admin

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines Use the **system jumbomtu** command to specify the MTU size for Layer 2 interfaces. The range of configurable values are 1500 to 9216 bytes.

The physical level uses an unchangeable bandwidth of 1 GB.

This command does not require a license.

Examples This example shows how to configure the system jumbo MTU as 8000 bytes and how to change the MTU specification for an interface that was configured with the previous jumbo MTU size:

```
switch# config t
switch(config)# system jumbomtu 8000
switch(config)# show running-config
switch(config)# interface ethernet 2/2
switch(config-if)# switchport
switch(config-if)# mtu 4608
```

Related Commands	Command	Description
	show running-config	Displays the current operating configuration, which includes the system jumbo MTU size.

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system-mac

To overwrite the MAC address that the device creates for the virtual port-channel (vPC) domain when you create a vPC domain, use the **system-mac** command. To return to the default vPC system MAC address, use the **no** form of this command.

system-mac *mac-address*

no system-mac

Syntax Description	<i>mac-address</i>	MAC address that you want for the vPC domain using the format xxxx.xxxx.xxxx.
--------------------	--------------------	--

Defaults	None
----------	------

Defaults	vpc-domain command mode.
----------	--------------------------

Supported User Roles	network-admin vdc-admin
----------------------	----------------------------

Command History	Release	Modification
	4.1(3)	This command was introduced.

Usage Guidelines	You must enable the vPC feature before you can create a vPC system MAC address. Use the system-mac command to overwrite the MAC address created by the system once you create a vPC domain. By default, the system creates a MAC address for the vPC when you create a vPC domain based on the domain ID. Cisco reserved a range of MAC addresses from the IEEE for this purpose and these addresses will be used to complete the last 10 bits of the vPC domain MAC address. The range of default MAC addresses is as follows:
------------------	---

- Number of reserved MAC addresses—1024
- Starting—002304eebe00
- Ending—002304eec1ff

This command does not require a license.

Examples	This example shows how to create a vPC system MAC address:
----------	--

```
switch# config t
switch(config)# vpc domain 5
switch(config-vpc-domain)# system-mac 22cd.34ab.ca32
```

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Related Commands

Command	Description
show vpc role	Displays the system MAC address for the vPC domain.

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system-priority

To overwrite the system priority that the device creates for the virtual port-channel (vPC) domain when you create a vPC domain, use the **system-priority** command. To return to the default vPC system priority, use the **no** form of this command.

system-priority *priority*

no system-priority *priority*

Syntax Description	<i>priority</i>	System priority. The range is from 1 to 65535.
---------------------------	-----------------	--

Defaults	32667
-----------------	-------

Command Modes	vpc-domain command mode.
----------------------	--------------------------

Supported User Roles	network-admin vdc-admin
-----------------------------	----------------------------

Command History	Release	Modification
	4.1(3)	This command was introduced.

Usage Guidelines	You must enable the vPC feature before you can create a vPC system priority.
-------------------------	--



Note

We recommend that you manually configure the vPC system priority when you are running LACP to ensure that the vPC peer devices are the primary devices on LACP.

This command does not require a license.

Examples	This example shows how to create a vPC system priority:
-----------------	---

```
switch# config t
switch(config)# vpc domain 5
switch(config-vpc-domain)# system-priority 4000
```

Related Commands	Command	Description
	show vpc role	Displays the system priority for the vPC domain.

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track

To configure the system to monitor the track-list object that contains all the virtual port-channel (vPC) links to the core and to the vPC peer link when you are using only a single module for all links, use the **track** command. To return to the default, use the **no** form of this command.

```
track track-object-id
```

```
no track track-object-id
```

Syntax Description	<i>track-object-id</i>	Track-list object that you already configured.
Defaults	No tracking	
Command Modes	vpc configuration mode	
Supported User Roles	network-admin vdc-admin	
Command History	Release	Modification
	4.2(1)	This command was introduced.

Usage Guidelines

Beginning with Release 4.2, if you must configure all the vPC peer links and core-facing interfaces on a single N7K-M132XP-12 module, you should configure a track object and a track list that is associated with the Layer 3 link to the core and on all vPC peer links on both vPC peer devices. You can use this configuration to avoid dropping traffic if that particular module goes down because when all the tracked objects on the track list go down, the system does the following:

- Stops the vPC primary peer device sending peer-keepalive messages which forces the vPC secondary peer device to take over.
- Brings down all the downstream vPCs on that vPC peer device, which forces all the traffic to be rerouted in the access switch toward the other vPC peer device.

Once you configure this feature and if the module fails, the system automatically suspends all the vPC links on the primary vPC peer device and stops the peer-keepalive messages. This action forces the vPC secondary device to take over the primary role and all the vPC traffic to go to this new vPC primary device until the system stabilizes.

Create a track list that contains all the links to the core and all the vPC peer links as its object. Enable tracking for the specified vPC domain for this track list. Apply this same configuration to the other vPC peer device. See the *Cisco Nexus 7000 Series NX-OS Unicast Routing Configuration Guide, Release 5.x*, for information about configuring object tracking and track lists.

This command does not require a license.

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Examples

This example shows how to put the previously configured track-list object into the vPC domain on the vPC peer device:

```
switch# config t  
switch(config)# vpc domain 5  
switch(config-vpc-domain)# track object 5
```

Related Commands

Command	Description
show vpc brief	Displays information on a vPC tracked object.
feature vpc	Enables vPCs on the device.

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tunnel destination

To configure the destination endpoint for a tunnel, use the **tunnel destination** command in interface configuration mode. To remove the tunnel destination, use the **no** form of this command.

tunnel destination {*ip-address* | *host-name*}

no tunnel destination {*ip-address* | *host-name*}

Syntax Description		
	<i>ip-address</i>	IP address for the tunnel destination.
	<i>host-name</i>	Hostname for the tunnel destination.

Defaults None

Command Modes Interface configuration mode

Supported User Roles network-admin
vdc-admin

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines Use the **tunnel destination** command to configure the destination address for an IP tunnel. You should not have two tunnels using the same encapsulation mode with the same source and destination address. This command requires the Enterprise license.

Examples This example shows how to configure the tunnel destination:

```
switch(config-if)# tunnel destination 192.0.2.120
```

Related Commands	Command	Description
	tunnel source	Sets the source of the IP tunnel.
	interface tunnel	Creates the IP tunnel.
	show interface tunnel	Displays information about the traffic about the specified tunnel interface.

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tunnel mode

To configure the tunnel encapsulation mode for a tunnel, use the **tunnel mode** command in interface configuration mode. To restore the default value, use the **no** form of this command.

```
tunnel mode gre {ip | ipv6}
```

```
no tunnel mode gre {ip | ipv6}
```

Syntax Description	ip	Configures this tunnel encapsulation mode as IPv4.
	ip v6	Configures this tunnel encapsulation mode as IPv6.
Defaults	None	
Command Modes	Interface configuration mode	
Supported User Roles	network-admin vdc-admin	
Command History	Release	Modification
	4.0	This command was introduced.
Usage Guidelines	Use the tunnel mode command to configure the tunnel encapsulation mode for a tunnel. This command requires the Enterprise license.	
Examples	This example shows how to configure the tunnel mode: switch(config-if)# tunnel mode gre ip	
Related Commands	Command	Description
	tunnel destination	Sets the destination of the IP tunnel.
	interface tunnel	Creates the IP tunnel.
	show interface tunnel	Displays information about the traffic about the specified tunnel interface.

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tunnel path-mtu-discovery

To enable Path MTU Discovery (PMTUD) on a tunnel interface, use the **tunnel path-mtu-discovery** command in interface configuration mode. To disable PMTUD on a tunnel interface, use the **no** form of this command.

tunnel path-mtu-discovery [**age-timer** {*aging-mins* | **infinite**} | **min-mtu** *mtu-bytes*]

no tunnel path-mtu-discovery [**age-timer** {*aging-mins* | **infinite**} | **min-mtu** *mtu-bytes*]

Syntax Description

age-timer	(Optional) Sets a timer to run for a specified interval, in minutes, after which the tunnel interface resets the maximum transmission unit (MTU) of the path to the default tunnel MTU minus 24 bytes for GRE tunnels or minus 20 bytes for IP-in-IP tunnels.
<i>aging-mins</i>	Number of minutes. The range is from 10 to 30. The default is 10.
infinite	Disables the age timer.
min-mtu <i>mtu-bytes</i>	(Optional) Specifies the minimum Path MTU across GRE tunnels. The range is from 92 to 65535 bytes. The default is 92.

Defaults

Disabled

Command Modes

Interface configuration mode

Supported User Roles

network-admin
vdc-admin

Command History

Release	Modification
4.0	This command was introduced.

Usage Guidelines

When PMTUD (RFC 1191) is enabled on a tunnel interface, the router performs PMTUD processing for the tunnel IP packets. The router always performs PMTUD processing on the original data IP packets that enter the tunnel. When PMTUD is enabled, no packet fragmentation occurs on the encapsulated packets that travel through the tunnel. Without packet fragmentation, there is a better throughput of TCP connections. PMTUD maximizes the use of available bandwidth in the network between the endpoints of a tunnel interface.

After PMTUD is enabled, the Don't Fragment (DF) bit of the IP packet header that is forwarded into the tunnel is copied to the IP header of the external IP packets. The external IP packet is the encapsulating IP packet. Adding the DF bit allows the PMTUD mechanism to work on the tunnel path of the tunnel. The tunnel endpoint listens for Internet Control Message Protocol (ICMP) unreachable too-big messages and modifies the IP MTU of the tunnel interface, if required.

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When the aging timer is configured, the tunnel code resets the tunnel MTU after the aging timer expires. After the tunnel MTU is reset, a set of full-size packets with the DF bit set is required to trigger the tunnel PMTUD and lower the tunnel MTU. At least two packets are dropped each time that the tunnel MTU changes.

When PMTUD is disabled, the DF bit of an external (encapsulated) IP packet is set to zero even if the encapsulated packet has a DF bit set to one.

The **min-mtu** keyword sets a low limit through the MTU that can be learned through the PMTUD process. Any ICMP signal received that specifies an MTU less than the minimum MTU configured will be ignored. You can use this feature to prevent a denial- of-service attack from any node that can send an ICMP message to the router that specifies a very small MTU.



Note

PMTUD on a tunnel interface requires that the tunnel endpoint is able to receive ICMP messages generated by routers in the path of the tunnel. You should check that ICMP messages can be received before you use PMTUD over firewall connections.

This command requires the Enterprise license.

Examples

This example shows how to configure PMTUD:

```
switch(config-if)# tunnel path-mtu-discovery
```

Related Commands

Command	Description
tunnel destination	Sets the destination of the IP tunnel.
interface tunnel	Creates the IP tunnel.
show interface tunnel	Displays information about the traffic about the specified tunnel interface.

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tunnel source

To configure the source endpoint for a tunnel, use the **tunnel source** command in interface configuration mode. To remove the tunnel source, use the **no** form of this command.

tunnel source { *ip-address* | *interface-type number* }

no tunnel source [*ip-address* | *interface-type number*]

Syntax Description	<i>ip-address</i>	IP address for the tunnel source.
	<i>interface-type number</i>	Interface for the tunnel source.

Defaults None

Command Modes Interface configuration command

Supported User Roles network-admin
vdc-admin

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines

Use the **tunnel source** command to configure the source address for an IP tunnel.

You should not have two tunnels using the same encapsulation mode with the same source and destination address.

This command requires the Enterprise license.

Examples

This example shows how to set the tunnel source:

```
switch(config-if)# tunnel source 192.0.2.120
```

Related Commands	Command	Description
	tunnel destination	Sets the destination of the IP tunnel.
	interface tunnel	Creates the IP tunnel.
	show interface tunnel	Displays information about the traffic about the specified tunnel interface.

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tunnel use-vrf

To specify which VRF to use to look up a tunnel destination IP address, use the **tunnel use-vrf** command in interface configuration mode. To return to the default, use the **no** form of this command.

tunnel use-vrf *vrf-name*

no tunnel use-vrf *vrf-name*

Syntax Description	<i>vrf-name</i>	Name of the VRF in which to look up the tunnel destination IP address.
Defaults	Default VRF	
Command Modes	Interface configuration command	
SupportedUserRoles	network-admin vdc-admin	
Command History	Release	Modification
	4.2(1)	This command was introduced.
Usage Guidelines	<p>You should have the tunnel interface and tunnel destination IP address in the same VRF. In other words, you should have the same value for the <i>vrf-name</i> parameter in both the vrf member and tunnel use-vrf commands.</p> <p>This command requires the Enterprise license.</p>	
Examples	<p>This example shows how to specify the VRF in which to look up the tunnel destination IP address:</p> <pre>switch(config-if)# tunnel use-vrf blue</pre>	
Related Commands	Command	Description
	show interface tunnel	Displays information about the traffic about the specified tunnel interface.
	show vrf interface tunnel	Displays information about the VRF tunnel interface.

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tunnel ttl

To configure the time-to-live value for a tunnel, use the **tunnel ttl** command in interface configuration mode. To restore the default value, use the **no** form of this command.

tunnel ttl *value*

no tunnel ttl [*value*]

Syntax Description	<i>value</i>	Time-to-live value for the tunnel. The range is from 1 to 255.
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Defaults	None
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Command Modes	Interface configuration command
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SupportedUserRoles	network-admin vdc-admin
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Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines	Use the tunnel ttl command to configure the time-to-live value for an IP tunnel. This command requires the Enterprise license.
-------------------------	---

Examples	This example shows how to configure the time-to-live value for a tunnel interface: <pre>switch(config-if)# tunnel ttl 30</pre>
-----------------	--

Related Commands	Command	Description
	tunnel destination	Sets the destination of the IP tunnel.
	interface tunnel	Creates the IP tunnel.
	show interface tunnel	Displays information about the traffic about the specified tunnel interface.

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type

To set the Fabric Extender (FEX) card type to a specific card, use the **type** command. To revert to the default FEX card, use the **no** form of this command

type *fex-card-type*

no type

Syntax Description	<i>fex-card-type</i>	Fabric Extender card type. The following Fabric Extender card types are supported: <ul style="list-style-type: none"> • N2148T Fabric Extender 48x1G 4x10G Module • N2248T Fabric Extender 48x1G 4x10G Module
Defaults	None	
Command Modes	Fabric Extender configuration mode	
Command History	Release	Modification
	5.1(1)	This command was introduced.
Usage Guidelines	This command does not require a license.	
Examples	This example shows how to configure the Fabric Extender card: <pre>switch(config)# fex 100 switch(config-fex)# type N2148T switch(config-fex)#</pre>	
Related Commands	Command	Description
	fex	Creates a Fabric Extender and enters fabric extender configuration mode.
	show fex	Displays all configured Fabric Extender chassis connected to the switch.

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udld

To configure the interfaces to use a Unidirectional Link Detection (UDLD) mode, use the **udld** command.

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

Syntax Description	disable	enable
	Disables the UDLD mode for fiber interfaces.	Enables the normal UDLD mode for non-fiber interfaces.

Defaults

By default, UDLD is disabled for the 48-port, 10/100/1000 Ethernet module ports.
By default, UDLD is enabled for the 32-port, 10 gigabit Ethernet module ports.

Command Modes Interface configuration mode

SupportedUserRoles network-admin
vdc-admin

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines

Before you can enable a UDLD mode for specified interfaces, you must make sure that UDLD is already enabled globally on the device. Use the **feature udld** command to enable UDLD globally.

Use the **udld** command to enable or disable UDLD separately on specified interfaces. This enables UDLD in normal mode. Enter the **udld aggressive** command to enable the aggressive mode on UDLD-enabled interfaces.

This command does not require a license.

Examples This example shows how to enable the normal UDLD mode for Ethernet port 3/1:

```
switch# config t
switch(config)# feature udld
switch(config)# interface ethernet 3/1
switch(config-if)# udld enable
```

This example shows how to disable UDLD for Ethernet port 3/1:

```
switch# config t
switch(config)# interface ethernet 3/1
switch(config-if-range)# udld disable
```

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Related Commands	Command	Description
	feature udd	Enables UDLD globally on the device.
	show udd	Displays information about the UDLD configuration.

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udd aggressive

To configure the interfaces for aggressive Unidirectional Link Detection (UDLD) mode, use the **udd aggressive** command.

udd aggressive

Syntax Description This command has no arguments or keywords.

Defaults None

Command Modes Interface configuration
Global configuration

SupportedUserRoles network-admin
vdc-admin

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines Before you can enable the aggressive UDLD mode for an interface, you must make sure that UDLD is already enabled globally on the device and on the specified interfaces.

Use the **udd aggressive** command to configure the ports to use a UDLD mode:

- To enable fiber interfaces for the aggressive mode, enter the **udd aggressive** command in the global command mode and all the fiber interfaces will be in aggressive UDLD mode,
- To enable the copper interfaces for the aggressive, you must enter the **udd aggressive** command in the interface mode, specifying each interface you want in aggressive UDLD mode.

To use the aggressive UDLD mode, you must configure the interfaces on both ends of the link for the aggressive UDLD mode.

This command does not require a license.

Examples This example shows how to enable fiber interfaces for the aggressive UDLD mode:

```
switch# config t
switch(config)# udd aggressive
```

This example shows how to enable the aggressive UDLD mode for the copper Ethernet interface 3/1:

```
switch# config t
switch(config)# interface ethernet 3/1
switch(config-if)# udd aggressive
```


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Related Commands	Command	Description
	feature udld	Enables UDLD globally for the device.
	show udld	Displays information about the UDLD configuration.

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udd message-time

To set the Unidirectional Link Detection (UDLD) message interval timer, use the **udd message-time** command.

udd message-time *seconds*

Syntax Description	<i>seconds</i>	Number of seconds that you want between sending UDLD messages. The range is from 7 to 90 seconds.
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Defaults	15 seconds
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Command Modes	Global configuration mode
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SupportedUserRoles	network-admin vdc-admin
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Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines	<p>Before you can set the UDLD message timer, you must make sure that UDLD is already enabled globally on the device. Use the feature udd command to globally enable UDLD.</p> <p>This command does not require a license.</p>
-------------------------	---

Examples	This example shows how to configure UDLD interval to 30 seconds:
-----------------	--

```
switch# config t
switch(config)# udd message-time 30
```

Related Commands	Command	Description
	feature udd	Enables UDLD globally for the device.
	show udd	Displays information about the UDLD configuration.

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udld reset

To reset the interfaces that Unidirectional Link Detection (UDLD) has shut down and return them to the UP condition, use the **udld reset** command.

udld reset

Syntax Description This command has no arguments or keywords.

Defaults None

Command Modes Global configuration mode

SupportedUserRoles network-admin
vdc-admin

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines This command does not require a license.

Examples This example shows how to reset those interfaces that UDLD has shut down:

```
switch# config t
switch(config)# udld reset
```

Related Commands	Command	Description
	feature udld	Enables UDLD globally for the device.
	show udld	Displays information about the UDLD configuration.

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vlan dot1q tag native

To enable dot1q (IEEE 802.1Q) tagging for the native VLAN in a trunk, use the **vlan dot1q tag native** command. To return to the default where no packets are tagged in the native VLAN in a trunk, use the **no** form of this command.

vlan dot1q tag native

no vlan dot1q tag native

Syntax Description This command has no arguments or keywords.

Defaults Disabled

Command Modes Global configuration mode

Supported User Roles network-admin
vdc-admin

Command History	Release	Modification
	4.0	This command was introduced.

Usage Guidelines Typically, you configure 802.1Q trunks with a native VLAN ID, which strips tagging from all packets on that VLAN and allows all untagged traffic and control traffic to transit the switch. Packets that enter the switch with 802.1Q tags that match the native VLAN ID value are similarly stripped of tagging. If you choose to maintain the tagging on the native VLAN and drop untagged traffic, enter the **vlan dot1q tag native** command.

Use the **vlan dot1q tag native** command to configure the switch to tag the traffic received on the native VLAN and to admit only 802.1Q-tagged frame, dropping any untagged traffic, including untagged traffic in the native VLAN. Control traffic continues to be accepted untagged on the native VLAN on a trunked port, even when the **vlan dot1q tag native** command is enabled.

Use this command to enable the tagging behavior on all native VLANs on all trunked ports on the switch.



Note

If you enable 802.1Q tagging on one switch and disable it on another switch, all traffic is dropped; you must identically configure 802.1Q tagging on each switch.

This command does not require a license.

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Examples

This example shows how to enable dot1q tagging for all VLANs on all trunk ports on the switch:

```
switch(config)# vlan dot1q tag native
```

Related Commands

Command	Description
show vlan dot1q tag native	Displays native VLAN-tagging information.

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vpc

To move other port channels into the virtual port channel (vPC), use the **vpc** command. To remove a port channel from the vPC, use the **no** form of this command.

vpc *number*

no vpc *number*

Syntax Description	<i>number</i>	Number for the vPC. The range of numbers is from 1 to 4096.
---------------------------	---------------	---

Defaults	None
-----------------	------

Command Modes	Interface command mode
----------------------	------------------------

Supported User Roles	network-admin vdc-admin
-----------------------------	----------------------------

Command History	Release	Modification
	4.1(3)	This command was introduced.

Usage Guidelines

You must enable the vPC feature before you can create a vPC.

Once you have created the vPC domain ID and the vPC peer link, you create port channels to attach the downstream device to each vPC peer device. That is, you create one port channel from the downstream device to the primary vPC peer device and you create another port channel from the downstream device to the secondary peer device. Finally, working on each vPC peer device, you assign a vPC number to the port channel that connects to the downstream device. You will experience minimal traffic disruption when you are creating vPCs.



Note The vPC number that you assign to the port channel connecting to the downstream device from the vPC peer device *must* be identical on *both* vPC peer devices.

This command does not require a license.

Examples

This example shows how to move a port channel into the vPC:

```
switch# config t
switch (config)# interface port-channel 10
switch (config-if)# vpc 100
```

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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.

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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	<i>domain-id</i>	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 VDC.
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Defaults	None
-----------------	------

Command Modes	Any command mode
----------------------	------------------

SupportedUserRoles	network-admin vdc-admin
---------------------------	----------------------------

Command History	Release	Modification
	4.1(3)	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. In Cisco NX-OS Release 4.1(3), you can have only one vPC per VDC. Once you create a vPC domain, the system automatically creates a vPC system MAC 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)#
```


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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.

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vpc peer-link

To create a virtual port-channel (vPC) peer link, use the **vpc peer-link** command. To remove a vPC peer link, use the **no** form of this command.

vpc peer-link

no vpc peer-link

Syntax Description This command has no arguments or keywords

Defaults None

Command Modes Interface command mode

SupportedUserRoles network-admin
vdc-admin

Command History	Release	Modification
	4.1(3)	This command was introduced.

Usage Guidelines You must enable the vPC feature before you can create a vPC peer link.

You configure a port channel using 10-Gigabit Ethernet ports on the N7K-M132XP-12 module. We recommend that you use the 10-Gigabit Ethernet ports for the channel in dedicated mode and configure at least two of these ports on two different modules into the port channel for redundancy.

Use the **vpc peer-link** command to make that port channel a vPC peer link. The system returns an error message if you attempt to configure a 1-Gigabit Ethernet interface as a vPC peer link.

After you configure the vPC peer device and the vPC peer link is established, the system creates a new MAC address for the vPC and decides which vPC device is the primary device and which is the secondary.

This command does not require a license.

Examples This example shows how to create a vPC peer link:

```
switch# config t
switch(config)# interface port-channel 20
switch(config-if)# vpc peer-link
switch(config-vpc-domain)#
```

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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.

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