



## CHAPTER 5

# Configuring Ethernet Interfaces

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This section describes the configuration of the Ethernet interfaces on the Cisco Nexus 5000 Series switches. It includes the following sections:

- [Information About Ethernet Interfaces, page 5-1](#)
- [Configuring Ethernet Interfaces, page 5-2](#)
- [Additional Ethernet Configuration, page 5-3](#)
- [Displaying Interface Information, page 5-5](#)

## Information About Ethernet Interfaces

The Ethernet ports can operate as standard Ethernet interfaces connected to servers or to a LAN.

The Ethernet interfaces also support Fibre Channel over Ethernet (FCoE). FCoE allows the physical Ethernet link to carry both Ethernet and Fibre Channel traffic. For additional information, see [Chapter 28, “Configuring FCoE”](#) and [Chapter 29, “Configuring Virtual Interfaces.”](#)

On the Cisco Nexus 5000 Series switch, the Ethernet interfaces are enabled by default.

This section includes the following topics:

- [About the Interface Command, page 5-1](#)
- [About the Debounce Timer Parameters, page 5-2](#)
- [About MTU Configuration, page 5-2](#)

## About the Interface Command

You can enable the various capabilities of the Ethernet interfaces on a per-interface basis using the **interface** command. When you enter the **interface** command, you specify the following information:

- Interface type—All physical Ethernet interfaces use the **ethernet** keyword.
- Slot number
  - Slot 1 includes all the fixed ports.
  - Slot 2 includes the ports on the upper expansion module (if populated).
  - Slot 3 includes the ports on the lower expansion module (if populated),
- Port number

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- Port number within the group.

## About the Debounce Timer Parameters

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

You can enable the debounce timer for each interface and specify the delay time in milliseconds.



### Caution

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

## About MTU Configuration

A per-physical Ethernet interface maximum transmission unit (MTU) is not supported. Instead, MTU is set according to the QoS classes. You modify MTU by setting Policy and Class maps. See [Chapter 30, “Configuring QoS”](#) for more details.

When you show the interface settings, an MTU of 1500 is displayed for physical Ethernet interfaces and a receive data field size of 2112 is displayed for Fibre Channel interfaces.

## Configuring Ethernet Interfaces

This section shows how to configure Ethernet interfaces. It includes the following topics:

- [Configuring the CDP Parameter, page 5-2](#)
- [Configuring the Debounce Timer, page 5-3](#)

## Configuring the CDP Parameter

You can enable or disable the Cisco Discovery Protocol (CDP) for Ethernet interfaces. This protocol works only when you have it enabled on both interfaces on the same link.

To enable or disable CDP for an interface, perform this task:

	Command	Purpose
Step 1	switch# <b>configure terminal</b>	Enters configuration mode.
Step 2	switch(config)# <b>interface</b> <i>type slot/port</i>	Enters interface configuration mode for the specified interface.
Step 3	switch(config-if)# <b>cdp</b> { <b>enable</b>   <b>disable</b> }	Enables or disables CDP for the interface. To work correctly, this parameter must be enabled for both interfaces on the same link.

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The following example shows how to enable CDP for an Ethernet port:

```
switch# configure terminal
switch(config)# interface ethernet 1/4
switch(config-if)# cdp enable
```

This command can only be applied to a physical Ethernet interface.

## Configuring the Debounce Timer

You can enable the debounce timer for Ethernet ports by specifying a debounce time (in milliseconds) or disable the timer by specifying a debounce time of 0.

You can show the debounce times for all of the Ethernet ports by using the **show interface debounce** command.

To enable or disable the debounce timer, perform this task:

	Command	Purpose
Step 1	switch# <b>configure terminal</b>	Enters configuration mode.
Step 2	switch(config)# <b>interface</b> <i>type slot/port</i>	Enters interface configuration mode for the specified interface.
Step 3	switch(config-if)# <b>link debounce time</b> <i>milliseconds</i>	Enables the debounce timer for the amount of time (1 to 5000 milliseconds) specified.  Disables the debounce timer if you specify 0 milliseconds.

This example shows how to enable the debounce timer and set the debounce time to 1000 milliseconds for an Ethernet interface:

```
switch# configure terminal
switch(config)# interface ethernet 1/4
switch(config-if)# link debounce time 1000
```

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

```
switch# configure terminal
switch(config)# interface ethernet 1/4
switch(config-if)# link debounce time 0
```

This command can only be applied to a physical Ethernet interface.

## Additional Ethernet Configuration

This section covers basic Ethernet configuration parameters that can be applied to a physical Ethernet port or a virtual Ethernet interface. This section includes the following topics:

- [Configuring the Description Parameter, page 5-4](#)
- [Disabling and Restarting Ethernet Interfaces, page 5-4](#)

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## Configuring the Description Parameter

To provide textual interface descriptions for the Ethernet ports, perform this task:

	Command	Purpose
Step 1	switch# <b>configure terminal</b>	Enters configuration mode.
Step 2	switch(config)# <b>interface</b> <i>type slot/port</i>	Enters interface configuration mode for the specified interface.
Step 3	switch(config-if)# <b>description</b> <i>test</i>	Specifies the description for the interface.

This example shows how to set the interface description to Server 3 Interface.

```
switch# configure terminal
switch(config)# interface ethernet 1/3
switch(config-if)# description Server 3 Interface
```

You can also apply this command to a virtual Ethernet interface, as shown in the following example:

```
switch# configure terminal
switch(config)# interface vethernet 4/1
switch(config-if)# description Virtual Ethernet Interface
```

For additional information about virtual interfaces, see [Chapter 28, “Configuring FCoE”](#) and [Chapter 29, “Configuring Virtual Interfaces.”](#)

## Disabling and Restarting Ethernet Interfaces

You can shut down and restart an Ethernet interface. This action disables all of the interface functions and marks the interface as being down on all monitoring displays. This information is communicated to other network servers through all dynamic routing protocols. When shut down, the interface is not included in any routing updates.

To disable an interface, perform this task:

	Command	Purpose
Step 1	switch# <b>configure terminal</b>	Enters configuration mode.
Step 2	switch(config)# <b>interface</b> <i>type slot/port</i>	Enters interface configuration mode for the specified interface.
Step 3	switch(config-if)# <b>shutdown</b>	Disables the interface.

The following example shows how to disable an Ethernet port:

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

To restart an interface, perform this task:

	Command	Purpose
	switch(config-if)# <b>no shutdown</b>	Restarts the interface.

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The following example shows how to disable then restart a virtual Ethernet interface:

```
switch# configure terminal
switch(config)# interface vethernet 1/1
switch(config-if)# shutdown
switch(config-if)# no shutdown
```

## Displaying Interface Information

To view configuration information about the defined interfaces, perform one of these tasks:

Command	Purpose
switch# <b>show interface</b> <i>type slot/port</i>	Displays the detailed configuration of the specified interface.
switch# <b>show interface</b> <i>type slot/port capabilities</i>	Displays detailed information about the capabilities of the specified interface. This option is only available for physical interfaces
switch# <b>show interface</b> <i>type slot/port transceiver</i>	Displays detailed information about the transceiver connected to the specified interface. This option is only available for physical interfaces.
switch# <b>show interface brief</b>	Displays the status of all interfaces.
switch# <b>show interface debounce</b>	Displays the debounce status of all interfaces.
switch# <b>show interface flowcontrol</b>	Displays the detailed listing of the flow control settings on all interfaces.

The **show interface** command is invoked from EXEC mode and displays the interface configurations. Without any arguments, this command displays the information for all the configured interfaces in the switch.

The following example shows how to display the physical Ethernet interface:

```
switch# show interface ethernet 1/4
Ethernet1/4 is up
  Hardware is 10000 Ethernet, address is 000d.ec8f.cb0b (bia 000d.ec8f.cb0b)
  MTU 1500 bytes, BW 10000000 Kbit, DLY 10 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA
  Port mode is access
  full-duplex, 10000 Mb/s
  Input flow-control is off, output flow-control is off
  5 minute input rate 0 bytes/sec, 0 packets/sec
  5 minute output rate 25 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
  688 Output Packets 688 Multicast Packets
  0 Broadcast Packets 0 Jumbo Packets
  47769 Bytes
  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 Collision
  0 Late collision 0 Lost carrier 0 No carrier
```

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```

0 Babble
0 Rx pause 0 Tx pause 0 Reset

```

The following example shows how to display the physical Ethernet capabilities:

```

switch# show interface ethernet 1/3 capabilities
Ethernet1/3
  Model:                sfp+
  Type:                 10g
  Speed:                10000
  Duplex:               full
  Trunk encap. type:    802.1Q
  Channel:              no
  Broadcast suppression: percentage(0-100)
  Flowcontrol:          rx-off/on/desired,tx-(off/on/desired)
  CoS rewrite:         no
  ToS rewrite:         no
  SPAN:                 yes
  UDL:                  no
  Link Debounce:       yes
  Link Debounce Time:  yes

```

The following example shows how to display the physical Ethernet transceiver:

```

switch# show interface ethernet 1/3 transceiver
Ethernet1/3
  sfp is present
  name is CISCO-AVAGO
  part number is SFBR-7700SDZ   B4 R
  revision is B4 R
  serial number is AGD1134229V   070823
  nominal bitrate is 0 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

```

The following example shows how to display a brief interface status (some of the output has been removed for brevity):

```

switch# show interface brief
-----
Interface  Vsan   Admin  Admin  Status      SFP   Oper  Oper  Port
          Mode   Mode   Trunk                                     Mode  Speed  Channel
          Mode                                     (Gbps)
-----
fc3/1      1       auto   on     isolated    swl   --    --    --
fc3/2      1       auto   on     down        swl   --    --    --
fc3/3      3       auto   on     up          swl   E     2     --
fc3/4      3       auto   on     sfpAbsent  --    --    --    --
-----
Interface                Status      IP Address      Speed  MTU  Port
                          Channel
-----
Ethernet1/1              sfpIsAbsen --              --    1500 --
Ethernet1/2              sfpIsAbsen --              --    1500 --
Ethernet1/3              up         --              10000 1500 --
...
Ethernet1/35             up         --              10000 1500 --
...
Ethernet1/40             sfpIsAbsen --              --    1500 --

```

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```

-----
Interface                Status      IP Address      Speed    MTU
-----
mgmt0                    up         172.16.24.47   100     1500
-----

Interface                Status      IP Address      Speed    MTU    Port
                               Channel
-----
vethernet1/1            up         --              10000   1500   --
-----

Interface  Vsan    Admin  Admin  Status      SFP    Oper  Oper  Port
          Mode   Mode   Trunk  Mode          Mode   Mode  Speed Channel
                               (Gbps)
-----
vfc1/1    1       F      --     init        --     --   --     --
-----

```

The following example shows how to display the link debounce status (some of the output has been removed for brevity):

```
switch# show interface debounce
```

```

-----
Port          Debounce time  Value(ms)
-----
...
Eth1/1        enable         100
Eth1/2        enable         100
Eth1/3        enable         100
...
-----

```

The following example shows how to display the CDP neighbors:

```
switch# show cdp neighbors
```

```

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

```

```

Device ID          Local Intrfce  Hldtme  Capability  Platform      Port ID
-----
d5-switch-9.qa.    Eth1/40       148     R S I      WS-C6506-E     Ten4/2
dist-row-d         mgmt0         147     R S I      WS-C3560G-48T Gig0/34
-----

```

## Default Physical Ethernet Settings

The following table lists the default settings for all physical Ethernet interfaces:

Parameter	Default Setting
Debounce	Enable, 100 milliseconds
Duplex	Auto (full-duplex)
Encapsulation	ARPA
MTU <sup>1</sup>	1500 bytes

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Parameter	Default Setting
Port Mode	Access
Speed	Auto (10000)

1. MTU cannot be changed per-physical Ethernet interface. You modify MTU by selecting maps of QoS classes. See [Chapter 30, “Configuring QoS,”](#) for additional information.