Ethernet Interface Commands

**Note**

All commands applicable for the Cisco NCS 5500 Series Router are also supported on the Cisco NCS 540 Series Router that is introduced from Cisco IOS XR Release 6.3.2. References to earlier releases in Command History tables apply to only the Cisco NCS 5500 Series Router.

**Note**

- Starting with Cisco IOS XR Release 6.6.25, all commands applicable for the Cisco NCS 5500 Series Router are also supported on the Cisco NCS 560 Series Routers.
- Starting with Cisco IOS XR Release 6.3.2, all commands applicable for the Cisco NCS 5500 Series Router are also supported on the Cisco NCS 540 Series Router.
- References to releases before Cisco IOS XR Release 6.3.2 apply to only the Cisco NCS 5500 Series Router.
- Cisco IOS XR Software Release 7.0.1 specific updates are not applicable for the following variants of Cisco NCS 540 Series Routers:
  - N540-28Z4C-SYS-A
  - N540-28Z4C-SYS-D
  - N540X-16Z4G8Q2C-A
  - N540X-16Z4G8Q2C-D
  - N540-12Z20G-SYS-A
  - N540-12Z20G-SYS-D
  - N540X-12Z16G-SYS-A
  - N540X-12Z16G-SYS-D

This module provides command line interface (CLI) commands for configuring Ethernet interfaces on the Cisco NCS 5500 Series Router.
For detailed information about Ethernet interfaces concepts, configuration tasks, and examples, refer to the Interface and Hardware Component Configuration Guide for Cisco NCS 5500 Series Routers Interface and Hardware Component Configuration Guide for Cisco NCS 540 Series Routers Interface and Hardware Component Configuration Guide for Cisco NCS 560 Series Routers

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• interface (Ethernet), on page 5
• interface range, on page 7
• loopback (Ethernet), on page 9
• lldp, on page 10
• negotiation auto, on page 11
• priority flow control, on page 12
• speed (Network Interface), on page 13
• show controllers (Ethernet), on page 15
• show lldp entry, on page 23
To delay the processing of hardware link down notifications, use the `carrier-delay` command in interface configuration mode.

```
carrier-delay {down milliseconds [up milliseconds] | up milliseconds [down milliseconds]}
```

**Syntax Description**
- `down milliseconds`: Length of time, in milliseconds, to delay the processing of hardware link down notifications. Range is from 0 through 2147483647.
- `up milliseconds`: Length of time, in milliseconds, to delay the processing of hardware link up notifications. Range is from 0 through 2147483647.

**Command Default**
No carrier-delay is used, and the upper layer protocols are notified as quickly as possible when a physical link goes down.

**Command Modes**
Interface configuration

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.0</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**
When you delay the processing of hardware link down notifications, the higher layer routing protocols are unaware of a link until that link is stable.

If the `carrier-delay down milliseconds` command is configured on a physical link that fails and cannot be recovered, link down detection is increased, and it may take longer for the routing protocols to re-route traffic around the failed link.

In the case of very small interface state flaps, running the `carrier-delay down milliseconds` command prevents the routing protocols from experiencing a route flap.

Although the Cisco NCS 5500540 Series Router accepts a value between 0 to 2147483647 milliseconds, the minimum value that is configured to the interface is 10 milliseconds, so as to avoid overloading the linecard control stack. We recommend that if your Cisco NCS 5500540 Series Router has a value below 10 milliseconds, reconfigure the value to a minimum of 10 milliseconds, and if required assign a higher value.

**Note**
Enter the `show interface` command to see the current state of the carrier-delay operation for an interface. No carrier-delay information is displayed if carrier-delay has not been configured on an interface.

**Task ID**

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>interface</td>
<td>read, write</td>
</tr>
</tbody>
</table>
Examples

This example shows how to delay the processing of hardware link down notifications:

```
RP/0/RP0/CPU0:router(config-if)# carrier-delay down 10
```

The following example shows how to delay the processing of hardware link up and down notifications:

```
RP/0/RP0/CPU0:router(config-if)# carrier-delay up 100 down 100
```
interface (Ethernet)

To specify or create an Ethernet interface and enter interface configuration mode, use the `interface (Ethernet)` command in XR Config mode.

**Cisco NCS 5500 Series Routers**

```plaintext
interface {TenGigE | HundredGigE} interface-path-id
no interface {TenGigE | HundredGigE} interface-path-id
```

**Cisco NCS 540 Series Routers, Cisco NCS 560 Series Routers**

```plaintext
interface {GigE | TenGigE | TwentyfiveGigE | FortyGigE | HundredGigE} interface-path-id
no interface {GigE | TenGigE | TwentyfiveGigE | FortyGigE | HundredGigE} interface-path-id
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GigE</td>
<td>(Cisco NCS 540, Cisco NCS 560) Specifies or creates a One Gigabit Ethernet (1 Gbps) interface.</td>
</tr>
<tr>
<td>TenGigE</td>
<td>Specifies or creates a Ten Gigabit Ethernet (10 Gbps) interface.</td>
</tr>
<tr>
<td>TwentyfiveGigE</td>
<td>(Cisco NCS 540, Cisco NCS 560)) Specifies or creates a Twenty five Gigabit Ethernet (25 Gbps) interface.</td>
</tr>
<tr>
<td>FortyGigE</td>
<td>(Cisco NCS 540, Cisco NCS 560)) Specifies or creates a Forty Gigabit Ethernet (40 Gbps) interface.</td>
</tr>
<tr>
<td>HundredGigE</td>
<td>Specifies or creates a Hundred Gigabit Ethernet (100 Gbps) interface.</td>
</tr>
</tbody>
</table>

**interface-path-id**

Physical interface.

**Note**

Use the `show interfaces` command to see a list of all interfaces currently configured on the router.

For more information about the syntax for the router, use the question mark (?) online help function.

**Command Default**

None

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.0</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

To specify a physical interface, the notation for the `interface-path-id` is `rack/slot/module/port`. The slash between values is required as part of the notation. An explanation of each component of the naming notation is as follows:

- **rack**: Chassis number of the rack.
- **slot**: Physical slot number of the line card.
- **module**: Module number. Always 0.
• *port*: Physical port number of the interface.

**Cisco NCS 540 Series Routers, Ciso NCS 560 Routers**

The *interface-path-id* is *rack/slot/module/port*. The slash between values is required as part of the notation. The supported *interface-path-id* ranges are:

- *GigE* — 0/0/0/0 - 0/0/0/31
- *TenGigE* — 0/0/0/0 - 0/0/0/31
- *TwentyFiveGigE* — 0/0/0/24 - 0/0/0/31
- *FortyGigE* — 0/0/1/0 - 0/0/1/1
- *HundredGigE* — 0/0/1/0 - 0/0/1/1

This example shows how to enter interface configuration mode for a HundredGigE Ethernet interface:

```
RP/0/RP0/CPU0:router(config)# interface HundredGigE 0/4/0/0
RP/0/RP0/CPU0:router(config-if)#
```
interface range

To configure multiple interfaces of the same type in the specified range with a single XML interface configuration element, use the interface type, specified-range command in interface configuration mode.

```
interface {type, specified-range}
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>Defines an interface type that is supported in IOS XR.</td>
</tr>
<tr>
<td>specified-range</td>
<td>Defines a range for the interface that will be configured. You can either use ',' or '-' to specify the range within system limits. For example, 2-4.</td>
</tr>
</tbody>
</table>

**Command Default**

None

**Command Modes**

Interface Configuration

Global Interface Configuration

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.1</td>
<td>XML support was introduced.</td>
</tr>
<tr>
<td>6.1.2</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command needs memory allocation for the specified interface range. Refer to system limits specifications prior to specifying the range in the command.

**Task ID**

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>interface</td>
<td>read, write</td>
</tr>
</tbody>
</table>

This example shows how to configure GigabitEthernet interface type for a specified range:

```
RP/0/RP0/CPU0# int GigabitEthernet 0/0/0,2-4
RP/0/RP0/CPU0# description Test interface range
RP/0/RP0/CPU0# show configuration
Thu Jan 11 06:46:43.502 PST
Building configuration...
interface GigabitEthernet0/0/0
description Test Interface range
!
interface GigabitEthernet0/0/2
description Test Interface range
```
interface GigabitEthernet0/0/0/3
description Test Interface range
!
interface GigabitEthernet0/0/0/4
description Test Interface range
!
**loopback (Ethernet)**

To configure an Ethernet controller for loopback mode, use the `loopback` command in interface configuration mode. To disable loopback, use the `no` form of this command.

```
loopback  {external | internal | line}
no  loopback
```

**Syntax Description**

- **external**: All self-ping packets are sent out of the interface and looped back externally before being received on the ingress path.
- **internal**: All packets are looped back internally within the router before reaching an external cable.
- **line**: Incoming network packets are looped back through the same interface.

**Command Default**

Loopback mode is disabled.

**Command Modes**

Interface configuration

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
</table>
| 6.0     | This command was introduced.

**Usage Guidelines**

The `loopback` command is available for all Ethernet interface types (Gigabit Ethernet, 10-Gigabit Ethernet). Two loopback operation modes are supported for diagnostic purposes: internal and line. In the terminal (internal) loopback, the sent signal is looped back to the receiver. In the facility (line) loopback, the signal received from the far end is looped back and sent on the line. The two loopback modes cannot be active at the same time. In normal operation mode, neither of the two loopback modes is enabled.

**Tip**

Use the `loopback external` command when an external loopback connector is attached to the interface.

**Examples**

In the following example, all packets are looped back to the HundredGigE controller:

```
RP/0/RP0/CPU0:router(config)# interface HundredGigE 0/3/0/0
RP/0/RP0/CPU0:router(config-if)# loopback internal
```
**lldp**

To enable the Link Layer Discovery Protocol (LLDP) globally for both transmit and receive operation on the system, use the `lldp` command in XR Config mode. To disable LLDP, use the `no` form of this command.

```
  lldp
  no lldp
```

**Syntax Description**

This command has no keywords or arguments.

**Command Default**

LLDP is disabled.

**Command Modes**

XR Config mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.2</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

When you use this command, you must remember that as the scale of interfaces (with subinterfaces and bundle subinterfaces) becomes higher, it might cause the LLDP process to hog the CPU.

**Task ID**

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>ethernet-services</td>
<td>read, write</td>
</tr>
</tbody>
</table>

This example shows how to enable LLDP globally on the router:

```
RP/0/RP0/CPU0:router(config)# lldp
```

This example shows how to enable LLDP on subinterfaces:

```
RP/0/RP0/CPU0:router(config)# lldp subinterfaces enable
```
negotiation auto

To enable link autonegotiation on Gigabit Ethernet interfaces, use the `negotiation auto` command in interface configuration mode. To disable link autonegotiation, use the `no` form of this command.

```
negotiation auto
no negotiation auto
```

**Syntax Description**

This command has no keywords or arguments.

**Command Default**

Link autonegotiation is disabled.

**Command Modes**

Interface configuration

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.0</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

The `negotiation auto` command is available on Gigabit Ethernet interfaces only.

**Task ID**

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>interface</td>
<td>read, write</td>
</tr>
</tbody>
</table>

**Examples**

This example shows how to enable link autonegotiation on an interface:

```
RP/0/RP0/CPU0:router(config)# interface HundredGigE 0/2/0/0
RP/0/RP0/CPU0:router(config-if)# negotiation auto
```

This example shows how to disable link autonegotiation on an interface:

```
RP/0/RP0/CPU0:router(config)# interface HundredGigE 0/2/0/0
RP/0/RP0/CPU0:router(config-if)# no negotiation auto
```
priority flow control

To enable priority-flow-control feature on the selected Ethernet interface, use the `priority-flow-control on` command. To disable, use the `no` form of the command.

```
priority flow control on
no priority flow control on
```

**Command Default**
PFC is disabled.

**Command Modes**
Interface configuration

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.6.3</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**
None

**Task ID**

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>interface</td>
<td>read, write</td>
</tr>
</tbody>
</table>

In this example, priority flow control is enabled on a HundredGigE interface 0/0/0/0:

```
RP/0/RP0/CPU0:router(config)#configure
RP/0/RP0/CPU0:router(config)#interface HundredGigE0/0/0/0
RP/0/RP0/CPU0:router(config)#priority-flow-control on
```
speed (Network Interface)

To configure the speed for a network (NPU) interface, enter the `speed` command in interface configuration mode. To return the system to autonegotiate speed, use the `no` form of the `speed` command.

```
speed {10 | 100 | 1000}
no speed
```

**Syntax Description**
- **10** (Cisco NCS 540) Configures the interface to transmit at 10 Mbps.
- **100** Configures the interface to transmit at 100 Mbps.
- **1000** Configures the interface to transmit at 1000 Mbps (1 Gbps).

**Command Default**
Interface is autonegotiated and speed is set to 1000Mbps.

**Command Modes**
Interface configuration

**Command History**

```
<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.2</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>
```

**Usage Guidelines**
This command is supported only on 1G interfaces with a 1000Base-T module (GLC-TE) inserted.
The command supports only full duplex mode.

This table describes the performance of the system for different combinations of the negotiation and speed modes. The specified `negotiation` command configured with the specified `speed` command produces the resulting system action.

**Table 1: Relationship Between negotiation and speed Commands**

<table>
<thead>
<tr>
<th>Negotiation Command</th>
<th>speed Command</th>
<th>Resulting System Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>auto negotiation</td>
<td>speed 10</td>
<td>Autonegotiates for full duplex mode and speed is forced to 10 Mbps.</td>
</tr>
<tr>
<td>auto negotiation</td>
<td>speed 100</td>
<td>Autonegotiates for full duplex mode and speed is forced to 100 Mbps.</td>
</tr>
<tr>
<td>auto negotiation</td>
<td>speed 1000</td>
<td>Autonegotiates for full duplex mode and speed is forced to 1000 Mbps.</td>
</tr>
<tr>
<td>auto negotiation</td>
<td>no speed</td>
<td>Autonegotiates.</td>
</tr>
</tbody>
</table>

no negotiation    | no speed      | Autonegotiates for full duplex mode and speed is 1000 Mbps. |
### Task ID

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>interface</td>
<td>read, write</td>
</tr>
</tbody>
</table>

### Examples

This example shows how to configure the network interface to transmit at 1G:

```
RP/0/RP0/CPU0:router(config)# interface GigabitEthernet 0/0/0/31
RP/0/RP0/CPU0:router(config-if)# speed 1000
```
show controllers (Ethernet)

To display status and configuration information about the Ethernet interfaces on a specific node, use the `show controllers` command in XR EXEC mode.

Cisco NCS 5500 Series Routers

```
show controllers {TenGigE | HundredGigE} interface-path-id [{all | bert | control | internal | mac | phy | reg | stats | xgxs}]
```

Cisco NCS 540 Series Routers

```
show controllers {GigE | TenGigE | TwentyFiveGigE | FortyGige | HundredGigE} interface-path-id [{all | bert | control | internal | mac | phy | reg | stats | xgxs}]
```

### Syntax Description

- **{GigE | TenGigE | TwentyFiveGigE | FortyGige | HundredGigE}**
  - Specifies the type of Ethernet interface whose status and configuration information you want to display. Enter TenGigE or HundredGigE.
  - (Cisco NCS 540) Specifies the interface on the router.

- **interface-path-id**
  - Physical interface or virtual interface.

  **Note**
  - Use the `show interfaces` command to see a list of all interfaces currently configured on the router.

  For more information about the syntax for the router, use the question mark (?) online help function.

- **all**
  - Displays detailed information for the specified interface.

- **bert**
  - Displays BERT status information for the interface.

- **control**
  - Displays configuration and control information for the interface.

- **internal**
  - Displays internal information for the interface.

- **mac**
  - Displays mac information for the interface.

- **phy**
  - Displays physical information for the interface.

- **reg**
  - Displays registers information for the interface.

- **stats**
  - Displays statistical information for the interface.

- **xgxs**
  - Displays information about the 10 Gigabit Ethernet Extended Sublayer (XGXS).

### Command Default

No default behavior or values

### Command Modes

XR EXEC mode
### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.0</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

### Usage Guidelines

For the `interface-path-id` argument, use the following guidelines:

- If specifying a physical interface, the naming notation is `rack/slot/module/port`. The slash between values is required as part of the notation. An explanation of each component of the naming notation is as follows:
  - **rack**: Chassis number of the rack.
  - **slot**: Physical slot number of the line card.
  - **module**: Module number. Always 0.
  - **port**: Physical port number of the interface.

- If specifying a virtual interface, the number range varies, depending on interface type.

When there is a mismatch in port speeds between peer routers, no state difference is visible in the `show controller optics` command. However, during such a mismatch, the traffic route is not functional.

### Cisco NCS 540 Series Routes

The `interface-path-id` is `rack/slot/module/port`. The slash between values is required as part of the notation. The supported `interface-path-id` ranges are:

- **GigE** — 0/0/0/0 - 0/0/0/31
- **TenGigE** — 0/0/0/0 - 0/0/0/31
- **TwentyFiveGigE** — 0/0/0/24 - 0/0/0/31
- **FortyGigE** — 0/0/1/0 - 0/0/1/1
- **HundredGigE** — 0/0/1/0 - 0/0/1/1

### Task ID

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>cisco-support</td>
<td>read</td>
</tr>
</tbody>
</table>

**Note**  
Required in addition to the interface (read) task ID to use the `control` keyword only.

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>dwdm</td>
<td>read</td>
</tr>
<tr>
<td>interface</td>
<td>read</td>
</tr>
<tr>
<td>sonet-sdh</td>
<td>read</td>
</tr>
</tbody>
</table>

### Examples

The following example shows sample output from the base form of the `show controllers hundredGigE all` command:
show controllers hundredGigE 0/2/0/0 all

Operational data for interface HundredGigE0/2/0/0:
State:
   Administrative state: disabled
   Operational state: Down (Reason: State undefined)

Phy:
   Media type: IEEE 802.3/802.3ae clause 30.2.5
   No optics present

MAC address information:
   Burnt-in address: 0000.0000.0000

Autonegotiation disabled.

Operational values:
   Speed: Unknown
   Duplex: Unknown
   Flowcontrol: None
   LoopBack: None (or external)
   MTU: 0
   MRU: 0

Statistics for interface HundredGigE0/2/0/0 (cached values):

Ingress:
   Input total bytes = 0
   Input good bytes = 0
   Input total packets = 0
   Input 802.1Q frames = 0
   Input pause frames = 0
   Input pkts 64 bytes = 0
   Input pkts 65-127 bytes = 0
   Input pkts 128-255 bytes = 0
   Input pkts 256-511 bytes = 0
   Input pkts 512-1023 bytes = 0
   Input pkts 1024-1518 bytes = 0
   Input pkts 1519-Max bytes = 0
   Input good pkts = 0
   Input unicast pkts = 0
   Input multicast pkts = 0
   Input broadcast pkts = 0
   Input drop overrun = 0
   Input drop abort = 0
   Input drop invalid VLAN = 0
   Input drop invalid DMAC = 0
   Input drop invalid encap = 0
   Input drop other = 0
   Input error giant = 0
   Input error runt = 0
   Input error jabbers = 0
   Input error fragments = 0
   Input error CRC = 0
   Input error collisions = 0
   Input error symbol = 0
   Input error other = 0
   Input MIB giant = 0
Input MIB jabber = 0
Input MIB CRC = 0

Egress:
Output total bytes = 0
Output good bytes = 0
Output total packets = 0
Output 802.1Q frames = 0
Output pause frames = 0
Output pkts 64 bytes = 0
Output pkts 65–127 bytes = 0
Output pkts 128–255 bytes = 0
Output pkts 256–511 bytes = 0
Output pkts 512–1023 bytes = 0
Output pkts 1024–1518 bytes = 0
Output pkts 1519–Max bytes = 0
Output good pkts = 0
Output unicast pkts = 0
Output multicast pkts = 0
Output broadcast pkts = 0
Output drop underrun = 0
Output drop abort = 0
Output drop other = 0
Output error other = 0

Management information for interface HundredGigE0/2/0/0:
Bay number: 96
Port number: 0
Interface handle: 0x1000130

Config:
Auto-negotiation: Configuration not supported (Off)
Carrier delay (up): Not configured
Carrier delay (down): Not configured
Speed: Configuration not supported (100Gbps)
Duplex: Configuration not supported (Full Duplex)
Flow Control: Configuration not supported (None)
Forward Error Correction: Not configured
IPG: Configuration not supported (standard (12))
Loopback: Not configured (None)
MTU: Not configured
Bandwidth: Not configured
BER-SD Threshold: Configuration not supported
BER-SD Report: Configuration not supported
BER-SF Threshold: Configuration not supported
BER-SF Report: Configuration not supported
BER-SF Signal Remote Failure: Configuration not supported

Driver constraints:
Min MTU: 64 bytes
Max MTU: 9216 bytes
Max speed: 100Gbps
Interface type: HundredGigE
Management interface: No
Promiscuous mode: Yes
Default carrier delay up (auto-neg on): 0 ms
Default carrier delay down (auto-neg on): 0 ms
Default carrier delay up (auto-neg off): 0 ms
Default carrier delay down (auto-neg off): 0 ms
Default carrier delay down (tx enable): 0 ms
Allowed config mask: 0x1243

Cached driver state:
  MTU: 1514 bytes
  Burnt-in MAC address: 089f.40ec.b120

Operational carrier delay:
  Carrier delay (up): 0 ms
  Carrier delay (down): 0 ms

Not a member of a bundle interface.

Port FSM state:
  Port is enabled, link is up

Complete FSM state:
  Admin down
  Client admin down
  Client admin tx not disabled
  Port enabled
  Port tx enabled
  Hardware link up

IDB interface state information:
  IDB client admin down
  IDB client tx admin up
  IDB error disable not set

0 Unicast MAC Addresses:
0 Multicast MAC Addresses:

The following example shows sample output from the `show controllers hundredGigE control` command:

RP/0/RP0/CPU0:router# show controllers hundredGigE 0/2/0/0 control

Management information for interface HundredGigE0/2/0/0:

Bay number: 96
Port number: 0
Interface handle: 0x1000130

Config:
  Auto-negotiation: Configuration not supported (Off)
  Carrier delay (up): Not configured
  Carrier delay (down): Not configured
  Speed: Configuration not supported (100Gbps)
  Duplex: Configuration not supported (Full Duplex)
  Flow Control: Configuration not supported (None)
  Forward Error Correction: Not configured
  IPG: Configuration not supported (standard (12))
  Loopback: Not configured (None)
  MTU: Not configured
  Bandwidth: Not configured
  BER-SD Threshold: Configuration not supported
  BER-SD Report: Configuration not supported
  BER-SF Threshold: Configuration not supported
  BER-SF Report: Configuration not supported
  BER-SF Signal Remote Failure: Configuration not supported

Driver constraints:
  Min MTU: 64 bytes
Max MTU: 9216 bytes
Max speed: 100Gbps
Interface type: HundredGigE
Management interface: No
Promiscuous mode: Yes
Default carrier delay up (auto-neg on): 0 ms
Default carrier delay down (auto-neg on): 0 ms
Default carrier delay up (auto-neg off): 0 ms
Default carrier delay down (auto-neg off): 0 ms
Default carrier delay down (tx enable): 0 ms
Allowed config mask: 0x1243

Cached driver state:
  MTU: 1514 bytes
  Burnt-in MAC address: 089f.40ec.b120

Operational carrier delay:
  Carrier delay (up): 0 ms
  Carrier delay (down): 0 ms

Not a member of a bundle interface.

Port FSM state:
  Port is enabled, link is up

Complete FSM state:
  Admin down
  Client admin down
  Client admin tx not disabled
  Port enabled
  Port tx enabled
  Hardware link up

IDB interface state information:
  IDB client admin down
  IDB client tx admin up
  IDB error disable not set

0 Unicast MAC Addresses:
0 Multicast MAC Addresses:

The following example shows sample output from the `show controllers TenGigE regs` command:

```
RP/0/RP0/CPU0:router# show controllers tenGigE 0/0/0/1 regs

MAC Registers for port: 1
GE MAC CFG (#0954): 704c5e5a
GPCS Config (#0147): 00000f08
GPCS Status (#0236): 000000ca
GSERDES Status (#0237): 0007fe09

RP/0/RP0/CPU0:router# show controllers tenGigE 0/0/0/4 regs

MAC Registers for port: 0
CONFIG1 (#1034): 03100a1a
CONFIG2 (#1035): 040c2398
CONTROL (#1036): 00000000
ADDRESS_LOW (#1037): 53ffa780
ADDRESS_HIGH (#1038): 0000001b
MII_MGMT_CONFIG (#1039): 00000007
MII_MGMT_CMD (#1040): 00000000
MII_MGMT_ADDRESS (#1041): 00000000
MII_MGMT_DATA (#1042): 40000000
STAT_CONFIG (#1043): 00000007
MASK_R (#1044): 00000000
```
The following example shows sample output from the `show controllers hundredGigE stats` command:

```
RP/0/RP0/CPU0:router#  show controllers hundredGigE 0/2/0/0 stats
```

Statistics for interface HundredGigE0/2/0/0 (cached values):

**Ingress:**
- Input total bytes = 0
- Input good bytes = 0
- Input total packets = 0
- Input 802.1Q frames = 0
- Input pause frames = 0
- Input pkts 64 bytes = 0
- Input pkts 65-127 bytes = 0
- Input pkts 128-255 bytes = 0
- Input pkts 256-511 bytes = 0
- Input pkts 512-1023 bytes = 0
- Input pkts 1024-1518 bytes = 0
- Input pkts 1519-Max bytes = 0
- Input good pkts = 0
- Input unicast pkts = 0
- Input multicast pkts = 0
- Input broadcast pkts = 0
- Input drop overrun = 0
- Input drop abort = 0
- Input drop invalid VLAN = 0
- Input drop invalid DMAC = 0
- Input drop invalid encap = 0
- Input drop other = 0
- Input error giant = 0
- Input error runt = 0
- Input error jabbers = 0
- Input error fragments = 0
- Input error CRC = 0
- Input error collisions = 0
- Input error symbol = 0
- Input error other = 0
- Input MIB giant = 0
- Input MIB jabber = 0
- Input MIB CRC = 0

**Egress:**
- Output total bytes = 0
- Output good bytes = 0
- Output total packets = 0
- Output 802.1Q frames = 0
- Output pause frames = 0
- Output pkts 64 bytes = 0
- Output pkts 65-127 bytes = 0
- Output pkts 128-255 bytes = 0
show controllers (Ethernet)

Output pkts 256-511 bytes  =  0
Output pkts 512-1023 bytes =  0
Output pkts 1024-1518 bytes =  0
Output pkts 1519-Max bytes =  0

Output good pkts       =  0
Output unicast pkts    =  0
Output multicast pkts  =  0
Output broadcast pkts  =  0

Output drop underrun  =  0
Output drop abort     =  0
Output drop other     =  0

Output error other    =  0
show lldp entry

To display detailed information about LLDP neighbors, use the `show lldp entry` command in XR EXEC mode.

```
show lldp entry {name}
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>*</td>
<td>Displays detailed information about all LLDP neighbors.</td>
</tr>
<tr>
<td>name</td>
<td>Name of a specific LLDP neighbor for which detailed information is displayed.</td>
</tr>
</tbody>
</table>

This command has no keywords or arguments.

**Command History**

- **Release 6.3.2**
  - This command was introduced.

**Usage Guidelines**

No specific guidelines impact the use of this command.

**Task ID**

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>ethernet-services</td>
<td>read</td>
</tr>
</tbody>
</table>

The following example shows sample output for all LLDP neighbor table entries on the system:

```
RP/0/RP0/CPU0:router# show lldp entry *
Wed Apr 13 10:29:40.342 UTC
Capability codes:
  (R) Router, (B) Bridge, (T) Telephone, (C) DOCSIS Cable Device
  (W) WLAN Access Point, (P) Repeater, (S) Station, (O) Other

------------------------------------------------
Local Interface: GigabitEthernet0/0/0/8
Chassis id: 0026.9815.c3e6
Port id: Gi0/0/0/8
Port Description: GigabitEthernet0/0/0/8
System Name: asr9k-5

System Description:
Cisco IOS XR Software, Version 4.1.0.32I[Default]
Copyright (c) 2011 by Cisco Systems, Inc.

  Time remaining: 102 seconds
  Hold Time: 120 seconds
  System Capabilities: R
  Enabled Capabilities: R
  Management Addresses:
    IPv4 address: 10.5.173.110

------------------------------------------------
```

```
Local Interface: GigabitEthernet0/0/0/8
```
Chassis id: 0026.9815.c3e6
Port id: Gi0/0/0/8.1
Port Description: GigabitEthernet0/0/0/8.1
System Name: asr9k-5

System Description:
Cisco IOS XR Software, Version 4.1.0.32I[Default]
Copyright (c) 2011 by Cisco Systems, Inc.

Time remaining: 96 seconds
Hold Time: 120 seconds
System Capabilities: R
Enabled Capabilities: R
Management Addresses:
IPv4 address: 10.5.173.110

Total entries displayed: 2