Ethernet Interface Commands

This module provides command line interface (CLI) commands for configuring Ethernet interfaces on the Cisco 8000 Series Routers.

To use commands of this module, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using any command, contact your AAA administrator for assistance.

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carrier-delay

To delay the processing of hardware link down or up 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

- The carrier-delay up timer has a default value of 200 ms. There is a delay of 200 ms before the upper layer protocols are notified when a physical link goes up.
- The carrier-delay down timer does not have a default value. The upper layer protocols are notified as quickly as possible when a physical link goes down.

Command Modes

Interface configuration

Command History

Release	Modification
Release 7.0.12	This command was introduced.
Release 24.2.11	A default value of 200 ms was introduced for the carrier-delay up timer.

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 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 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

Task ID	Operations
interface	read, write

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
```

clear lldp

To reset Link Layer Discovery Protocol (LLDP) traffic counters or LLDP neighbor information, use the **clear lldp** command in XR EXEC mode.

clear lldp {**counters** | **table**}

Syntax Description

counters	Specifies that LLDP traffic counters are cleared.
table	Specifies that LLDP information in the neighbor table is cleared.

Command Default

LLDP traffic counters are not reset, and LLDP neighbor information is not cleared.

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 7.0.12	This command was introduced.

Usage Guidelines

To reset counters from the **show lldp traffic** command, use the **clear lldp counters** command. To clear neighbor information displayed by the **show lldp neighbors** command, use the **clear lldp table** command.

Task ID

Task ID	Operation
ethernet-services	read, write

The following example shows how to clear the LLDP counters and display LLDP traffic. The output from the **show lldp traffic** command shows that all the traffic counters have been reset to zero.

```
RP/0/RP0/CPU0:router# clear lldp counters
RP/0/RP0/CPU0:router# show lldp traffic
LLDP traffic statistics:
        Total frames out: 0
        Total entries aged: 0
        Total frames in: 0
        Total frames received in error: 0
        Total frames discarded: 0
        Total TLVs discarded: 0
        Total TLVs unrecognized: 0
```

The following example shows how to clear the LLDP table. The output of the **show lldp neighbors** command shows that all information has been deleted from the table.

```
RP/0/RP0/CPU0:router# clear lldp table
RP/0/RP0/CPU0:router# show lldp neighbors
Capability codes:
    (R) Router, (B) Bridge, (T) Telephone, (C) DOCSIS Cable Device
    (W) WLAN Access Point, (P) Repeater, (S) Station, (O) Other

Device ID           Local Intf     Hold-time  Capability      Port ID
```

In the `config` mode:

```
RP/0/RP0/CPU0:ios(config)#int hun 0/1/0/0
RP/0/RP0/CPU0:ios(config-if)#clear lldp ?
destination  Configure LLDP Destination MAC on the interface
enable       Enable LLDP TX and RX on an interface
receive      Disable LLDP RX on an interface
transmit     Disable LLDP TX on an interface
```

interface (Ethernet)

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

interface {**TenGigE | TwentyFiveGigE | FortyGigE | HundredGigE | FourHundredGigE**} *interface-path-id*
no interface {**TenGigE | TwentyFiveGigE | FortyGigE | HundredGigE | FourHundredGigE**} *interface-path-id*

Syntax Description

TenGigE	Specifies or creates a Ten Gigabit Ethernet (10 Gbps) interface.
TwentyFiveGigE	Specifies or creates a Twentyfive Gigabit Ethernet (25 Gbps) interface
FortyGigE	Specifies or creates a Forty Gigabit Ethernet (40 Gbps) interface
HundredGigE	Specifies or creates a Hundred Gigabit Ethernet (100 Gbps) interface.
FourHundredGigE	Specifies or creates a Four hundred Gigabit Ethernet (400 Gbps) interface.
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

Release	Modification
Release 7.0.12	This command was introduced.

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.

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:

- **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)#
```

l2transport (Ethernet)

To enable Layer 2 transport port mode on an Ethernet interface and enter Layer 2 transport configuration mode, use the **l2transport** command in interface or subinterface configuration mode for an Ethernet interface.

l2transport

This command has no keywords or arguments.

Command Default

None

Command Modes

Interface configuration

Sub-interface configuration

Command History

Release	Modification
Release 7.2.12	This command was introduced.

Usage Guidelines

The l2transport command and these configuration items are mutually exclusive:

- IPv4 address and L3 feature configuration
- IPv4 enable and L3 feature configuration
- Bundle-enabling configuration
- L3 sub-interfaces

Note

- After an interface or connection is set to Layer 2 switched, commands such as **ipv4 address** are not usable. If you configure routing commands on the interface, **l2transport** is rejected.
- The **l2transport** command is mutually exclusive with any Layer 3 interface configuration.

Note Not all options in the command are supported. For instance, translate command can translate VLAN value, not Ethertype.

Task ID

Task ID	Operations
l2vpn	read, write

Examples

The following example shows how to enable Layer 2 transport port mode on an Ethernet interface and enter Layer 2 transport configuration mode:

```
Router# configure
Router(config)# interface hundredGigE 0/0/0/24
Router(config-if)# l2transport
Router(config-if-l2)#
```

Note Ensure that the **l2transport** command is applied on the same line as the **interface** command for the Ethernet sub-interface.

The following example shows how to use the l2transport command on an Ethernet sub-interface:

```
Router# configure
Router(config)# interface hundredGigE 0/0/0/24.10 l2transport
Router(config-subif)# encapsulation dot1q 10
```

To disable Layer 2 transport port mode on an Ethernet interface, use the **no** form of this command in the global configuration mode.

```
Router# configure
Router(config)# interface hundredGigE 0/0/0/24
Router(config-if)# l2transport
Router(config-if-l2)# exit
Router(config)# no interface hundredGigE 0/0/0/24
```

Examples

The following example shows how to configure an interface or connection as Layer 2 switched under several different modes:

Ethernet Port Mode:

```
Router# configure
Router(config)# interface hundredGigE 0/0/0/10
Router(config-if)# l2transport
```

Ethernet VLAN Mode:

```
Router# configure
Router(config)# interface hundredGigE 0/0/0/0.1 l2transport
Router(config-if)# encapsulation dot1q 10
```

Ethernet VLAN Mode (QinQ):

```
Router# configure
Router(config)# interface hundredGigE 0/0/0/0.1 l2transport
Router(config-if)# encapsulation dot1q 10 second-dot1q 11
```

Note Ensure that the **l2transport** command is applied on the same line as the **interface** command for the Ethernet subinterface.

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

Syntax Description

This command has no keywords or arguments.

Command Default

LLDP is disabled.

Command Modes

XR Config mode

Command History

Release	Modification
Release 7.0.12	This command was introduced.

Usage Guidelines

When you enable LLDP globally using the **lldp** command, LLDP is not enabled on subinterfaces or bundle subinterfaces by default. This is to prevent the LLDP process from consuming high CPU cycles. In order to enable LLDP on subinterfaces and bundle subinterfaces as well, the **lldp subinterfaces enable** command is introduced.

Note 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

Task ID	Operation
ethernet-services	read, write

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:

lldp (interface)

To enter LLDP configuration mode, use the **lldp (interface)** command.

lldp

Syntax Description

This command has no keywords or arguments.

Command Default

None

Command Modes

Interface configuration (config-if)

Command History

Release	Modification
Release 7.0.12	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
ethernet-services	read, write
interface	read, write

This example shows how to enter LLDP configuration mode from Ethernet interface configuration mode:

```
RP/0/RP0/CPU0:router(config)# interface HundredGigabitEthernet 0/1/0/0
RP/0/RP0/CPU0:router(config-if)# lldp
RP/0/RP0/CPU0:router(config-lldp)#
```

Related Commands

Command	Description
show lldp interface, on page 53	Displays LLDP configuration and status information on an interface.
lldp, on page 11	Enables LLDP globally for both transmit and receive operation on the system.

lldp holdtime

To specify the length of time that information from a Link Layer Discovery Protocol (LLDP) packet should be held by the receiving device before aging and removing it, use the **lldp holdtime** command in XR Config mode. To return to the default, use the **no** form of this command.

lldp holdtime *seconds*

Syntax Description

seconds	Number from 0 to 65535 that specifies the amount of time (in seconds) to hold the packet information. The default is 120.

Command Default

The packet hold time is 120 seconds (2 minutes).

Command Modes

XR Config mode

Command History

Release	Modification
Release 7.0.12	This command was introduced.

Usage Guidelines

Task ID

Task ID	Operation
ethernet-services	read, write

This example shows how to change the default hold time to 1 minute:

```
RP/0/RP0/CPU0:router(config)# lldp holdtime 60
```

lldp reinit

To specify the length of time to delay initialization of the Link Layer Discovery Protocol (LLDP) on an interface, use the **lldp reinit** command in XR Config mode. To return to the default, use the **no** form of this command.

lldp reinit *seconds*

Syntax Description

seconds	Number from 2 to 5 that specifies the length of time (in seconds) that LLDP should delay initialization. The default is 2.

Command Default

Initialization of LLDP is delayed for 2 seconds on an interface.

Command Modes

XR Config mode

Command History

Release	Modification
Release 7.0.12	This command was introduced.

Usage Guidelines

Task ID

Task ID	Operation
ethernet-services	read, write

The following example shows how to change the default initialization delay from 2 to 4 seconds:

```
RP/0/RP0/CPU0:router(config)# lldp reinit 4
```

Related Commands

Command	Description
lldp, on page 11	Enables LLDP globally for both transmit and receive operation on the system.

lldp timer

To specify the Link Layer Discovery Protocol (LLDP) packet rate, use the **lldp timer** command in XR Config mode. To return to the default, use the **no** form of this command.

lldp timer *seconds*

Syntax Description

seconds	Number from 5 to 65534 that specifies the rate (in seconds) at which to send LLDP packets. The default is 30.

Command Default

LLDP packets are sent every 30 seconds.

Command Modes

XR Config mode

Command History

Release	Modification
Release 7.0.12	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
ethernet-services	read, write

The following example shows how to change the default LLDP packet rate from 30 seconds to 1 minute:

```
RP/0/RP0/CPU0:router(config)# lldp timer 60
```

Related Commands

Command	Description
lldp, on page 11	Enables LLDP globally for both transmit and receive operation on the system.

lldp tlv-select disable

To disable transmission of the selected Type Length Value (TLV) in Link Layer Discovery Protocol (LLDP) packets, use the **lld tlv-select disable** command in XR Config mode. To return to the default, use the **no** form of this command.

lldp tlv-select *tlv-name* **disable**

Syntax Description

tlv-name	Name of the TLV to be suppressed from LLDP packets. The *tlv-name* can be one of the following LLDP TLV types: • **management-address** • **port-description** • **system-capabilities** • **system-description** • **system-name**

Command Default

All TLVs are sent in LLDP packets.

Command Modes

XR Config mode

Command History

Release	Modification
Release 7.0.12	This command was introduced.

Usage Guidelines

Certain TLVs are classified as mandatory in LLDP packets, such as the Chassis ID, Port ID, and Time to Live (TTL) TLVs. These TLVs must be present in every LLDP packet. You can use the **lldp tlv-select disable** command to suppress transmission of certain other optional TLVs in LLDP packets.

Task ID

Task ID	Operation
ethernet-services	read, write

The following example shows how to disable transmission of the System Capabilities TLV from LLDP packets:

```
RP/0/RP0/CPU0:router(config)# lldp tlv-select system-capabilities disable
```

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**}

Syntax Description

external	All IPv4 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 external cable.

Command Default

Loopback mode is disabled.

Command Modes

Interface configuration

Command History

Release	Modification
Release 7.0.12	This command was introduced.

Usage Guidelines

Line loopback mode is supported only on Cisco 8000 series line cards and fixed-port routers based on Q100 and Q200 silicon.

The **loopback** command is available for all Ethernet interface types.

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.

Task ID

Task ID	Operations
interface	read, write

Examples

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

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

packet-gap non-standard

To change the packet interval for traffic on an interface for improved interoperability with Cisco 8000 Series Routers, use the **packet-gap non-standard** command in interface configuration mode. To use the standard packet interval as defined by the IEEE 802.ae specification, use the **no** form of this command.

packet-gap non-standard

Syntax Description

This command has no keywords or arguments.

Command Default

The interface uses the standard packet interval as defined by the IEEE 802.ae specification.

Command Modes

Interface configuration

Command History

Release	Modification
Release 7.0.12	This command was introduced.

Task ID

Task ID	Operations
interface	read, write

Examples

This example shows how to change the packet interval for traffic on an interface from standard to nonstandard:

```
RP/0/RP0/CPU0:router(config)# interface TenGigE 0/3/0/0
RP/0/RP0/CPU0:router(config-if)# packet-gap non-standard
```

port-mode

To configure the Ethernet, Fibre Channel (FC), Optical Transport Network (OTN), Synchronous Digital Hierarchy (SDH), or Synchronous optical networking (SONET) port mode, use the **port-mode** command in optics controller configuration mode.

port-mode *controller-type* **framing cem-packetize rate** *rate-options*

Syntax Description

controller-type	Specifies the port mode type. The supported port mode options are: • Ethernet • FC • otn • SDH • Sonet
framing	Specifies the port mode framing type.
cem-packetize	Configures the circuit emulation option.
rate *rate-options*	Specifies port mode rate options. The following *rate-options* are available for each of the selected port mode type:

Port mode type	Rate options
Ethernet	1GE and 10GE
FC	FC1, FC2, FC4, FC8, FC16, and FC32
otn	otu2 and otu2e
SDH	STM16 and STM64
Sonet	OC48 and OC192

Command Default

None

Command Modes

Optics controller

Command History

Release	Modification
Release 7.11.1	This command was introduced on Cisco 8011-2X2XP4L PLE Service Endpoint Router.

Usage Guidelines

To change the port-mode type, you must remove the existing port mode configuration by executing the **no port-mode** command. You can then configure the required port mode.

Examples

This example shows how to configure the Ethernet port mode and enable 10GbE rate.

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# controller optics 0/0/0/0
RP/0/RP0/CPU0:router(config-Optics)# port-mode Ethernet framing cem-packetize rate 10GE
RP/0/RP0/CPU0:router(config-Optics)# exit
```

Examples

This example shows how to change the Ethernet port mode to Fibre Channel port mode and enable FC-16 rate.

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# controller optics 0/0/0/1
RP/0/RP0/CPU0:router(config-Optics)# no port-mode Ethernet framing cem-packetize rate 10GE
RP/0/RP0/CPU0:router(config-Optics)# port-mode FC framing cem-packetize rate FC16
RP/0/RP0/CPU0:router(config-Optics)# exit
```

Note You can apply the port mode configuration only on ports 0 and 1. For FC-32 (under fiber channel), the configuration is supported only on the port 0/0/0/0. If you have configured under the port 0/0/0/1, then you can't use the port to configure with the other port mode.

After executing the **port-mode** command, it creates two controllers on the router: controller-type as given in the command and cem controller.

```
RP/0/RP0/CPU0:router#show controller tengigectrlr 0/0/0/0
Fri Oct 13 03:27:46.333 UTC
Operational data for interface TenGigECtrlr0/0/0/0:

State:
    Administrative state: enabled
    Operational state: Up
    LED state: Red Flashing
    PRBS:
      Status: Not Running
      Mode: None
      Pattern: None
      Direction: Not configured
      Error-inject: None
      Framing: Not Configured
      User-pattern: 0x0

Phy:
    Media type: Not known
    Alarms:
        Current:
            Local Fault
        Previous:
            Local Fault

Autonegotiation disabled.

Operational values:
    Speed: 10Gbps
    Duplex: Full Duplex
```

```
    Flowcontrol: None
    Loopback: Internal
    Inter-packet gap: standard (12)
    BER monitoring:
        Not supported


RP/0/RP0/CPU0:router#show controller sixteenGigFibreChanCtrlr 0/0/0/1
Fri Oct 13 03:41:02.690 UTC

Operational data for Fibre Channel controller SixteenGigFibreChanCtrlr0/0/0/1

State:
        Admin State           : Up
        Operational state     : Down
        LED state             : Red Flashing
        Secondary admin state : Normal
        Laser Squelch         : Disabled
        TTS                   : Disabled

Performance Monitoring is enabled

Operational values:
        Speed                    : 16 Gbps
        Loopback                 : None
        BER monitoring:
                Signal Degrade   : 1e-0
                Signal Fail      : 1e-0
        Hold-off Time            : 0 ms
        Forward Error Correction : Disabled

Alarms :
        Current :
                Remote Fault
                NOS
        Previous :
                Remote Fault
                PCS Error
                NOS
```

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.

show controllers {**TenGigE | TwentyFiveGigE | FortyGigE | HundredGigE | FourHundredGigE**} *interface-path-id* [**all** | **bert** | **control** | **internal** | **mac** | **phy** | **regs** | **stats** | **xgxs**]

Syntax Description

{**TenGigE**| **TwentyFiveGigE**|**FortyGigE**|**HundredGigE**|**FourHundredGigE**}	Specifies the type of Ethernet interface whose status and configuration information you want to display. Enter TenGigE or HundredGigE.
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.
regs	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

Release	Modification
Release 7.0.12	This command was introduced.

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.

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:

- **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

Task ID	Operations
cisco-support	read **Note** Required in addition to the interface (read) task ID to use the **control** keyword only.
dwdm	read
interface	read
sonet-sdh	read

Examples The following example shows sample output from the base form of the **show controllers TenGigE all** command:

```
RP/0/RP0/CPU0:router#
Operational data for interface TenGigE0/0/0/4:

State:
    Administrative state: disabled
    Operational state: Down (Reason: The optics for the port are not present)
    LED state: Yellow On

Media:
    Media type: Initializing, true state or type not yet known
    No optics present

MAC address information:
    Operational address: 001d.353b.975e
    Burnt-in address: 001d.353b.975e
    No unicast addresses in filter
    No multicast addresses in filter

Autonegotiation disabled.

Operational values:
    Speed: 10Gbps
    Duplex: Full Duplex
    Flowcontrol: None
    Loopback: None (or external)
    MTU: 1526
    MRU: 1526
    Inter-packet gap: standard (12)

BERT status for TenGigE0/0/0/4:
BERT State                      :       DISABLED
Test Pattern                    :       None test pattern
Time Remaining                  :       0
Time Interval                   :       0
Statistics for interface TenGigE0/0/0/4 (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 unknown 802.1Q   = 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 TenGigE0/0/0/4:

Port number: 2
Bay number: 0
Interface handle: 0x100000c0

Config:
    Auto-negotiation: Configuration not supported (Off)
    Carrier delay (up): Not configured
    Carrier delay (down): Not configured
    Speed: Configuration not supported (10Gbps)
    Duplex: Configuration not supported (Full Duplex)
    Flow Control: Not configured (None)
    IPG: Not configured (standard (12))
    Loopback: Not configured (None)
    MTU: Not configured
    Soft Bandwidth: Not configured

Driver constraints:
    Min MTU: 64 bytes
    Max MTU: 9216 bytes
    Max speed: 10Gbps
    Interface type: TenGigE
    Management interface: No
    Promiscuous mode: Yes
    Allowed config mask: 0x27b

Cached driver state:
```

```
    MTU: 1522 bytes
    Burnt-in MAC address: 001d.353b.975e

Bundle settings:
    Aggregated: No
    Bundle MTU: 1514 bytes
    Bundle MAC address: 001d.353b.975e

Port FSM state:
    Port is disabled, due to an admin down condition.
Complete FSM state:
    Admin down
    Bundle admin up
    Client admin up
    Client admin tx not disabled
    Port disabled
    Port tx disabled
    Hardware link down
IDB interface state information:
    IDB bundle admin up
    IDB client admin up
    IDB client tx admin up
    IDB error disable not set

0 Unicast MAC Addresses:

0 Multicast MAC Addresses:

0 Unicast Bundle MAC Addresses:

0 Multicast Bundle MAC Addresses:


Current Data
NP(01) Version      : 0003
Structure Version   : 2582
XAUI Interface      : B
MAC addr            : 00.1d.35.3b.97.5e
 RX enabled         : False
 TX enabled         : True
 Obey Pause Frames  : False
 TX Pause Frames    : False
 Pause Re-TX Period : 3000000
 Min Frame Len      : 60
 Max Frame Len      : 1526
 Ignore Errors      : False
 Add CRC            : True
 Strip CRC          : True
 Ignore CRC Errors  : False
 DMA Add CRC        : False
 DMA Strip CRC      : False
 Ignore Length Error: True
 Pad Short Frames   : True
 Min TX IFG         : 12
 Min RX IFG         : 4
 IFG Rate Control   : False
 Hi Gig Mode        : False
 Discard Ctrl Frames: True
 Enable Stats Update: True
 RX Stats Int Mask  : 0x00000000
 TX Stats Int Mask  : 0x00000000

Port Number       : 2
Port Type         : 10GE
```

```
Transport mode    : LAN
BIA MAC addr      : 001d.353b.975e
Oper. MAC addr    : 001d.353b.975e
Port Available    : true
Status polling is : enabled
Status events are : enabled
I/F Handle        : 0x100000c0
Cfg Link Enabled  : disabled
H/W Tx Enable     : yes
MTU               : 1526
H/W Speed         : 10 Gbps
H/W Duplex        : Full
H/W Loopback Type : None
H/W FlowCtrl type : None
H/W AutoNeg Enable: Off
H/W Link Defects  : interface is admin down
Link Up           : no
Link Led Status   : Shutdown
Symbol errors     : 0
Serdes version    : 14.42
Input good underflow          : 0
Input ucast underflow         : 0
Output ucast underflow        : 0
Input unknown opcode underflow: 0
Pluggable Present   : no
Pluggable Type      : Unknown pluggable optics
Pluggable Compl.    : Not Checked
Pluggable Type Supp.:  Not Checked
Pluggable PID Supp. :  Not Checked
Pluggable Scan Flg: false



XFP #2 is not present


Serdes Registers and info port: 2
  EDC Status    : 000000050 - EDC Aquiring
  Rx detected   : No
  Block lock    : No
  Tx aligned    : Yes



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#
Management information for interface TenGigE0/0/0/2:

Port number: 2
Bay number: 0
Interface handle: 0x100000c0

Config:
    Auto-negotiation: Configuration not supported (Off)
    Carrier delay (up): Not configured
    Carrier delay (down): Not configured
    Speed: Configuration not supported (10Gbps)
    Duplex: Configuration not supported (Full Duplex)
    Flow Control: Not configured (None)
    IPG: Not configured (standard (12))
    Loopback: Not configured (None)
    MTU: Not configured
    Soft Bandwidth: Not configured

Driver constraints:
    Min MTU: 64 bytes
    Max MTU: 9216 bytes
    Max speed: 10Gbps
    Interface type: TenGigE
    Management interface: No
    Promiscuous mode: Yes
    Allowed config mask: 0x27b

Cached driver state:
    MTU: 1522 bytes
    Burnt-in MAC address: 001d.353b.975e

Bundle settings:
    Aggregated: No
    Bundle MTU: 1514 bytes
    Bundle MAC address: 001d.353b.975e

Port FSM state:
    Port is disabled, due to an admin down condition.
Complete FSM state:
    Admin down
    Bundle admin up
    Client admin up
    Client admin tx not disabled
    Port disabled
    Port tx disabled
    Hardware link down
IDB interface state information:
    IDB bundle admin up
    IDB client admin up
```

```
    IDB client tx admin up
    IDB error disable not set

0 Unicast MAC Addresses:

0 Multicast MAC Addresses:

0 Unicast Bundle MAC Addresses:

0 Multicast Bundle MAC Addresses:
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
 MASK_T           (#1045): 00000000
 COMP             (#1046): 00100d24
 MAC_CONFIG       (#1047): ffffffff
 INTERRUPT_C      (#1048): 00000000
```

The following example shows sample output from the **show controllers hundredGigE stats** command:

```
RP/0/RP0/CPU0:router#

Statistics for interface TenGigE0/0/0/0 (cached values):

Ingress:
    Input total bytes           = 9614339316
    Input good bytes            = 9614339316

    Input total packets         = 106713557
    Input 802.1Q frames         = 0
    Input pause frames          = 0
    Input pkts 64 bytes         = 103907216
    Input pkts 65-127 bytes     = 2494185
    Input pkts 128-255 bytes    = 3410
    Input pkts 256-511 bytes    = 3406
    Input pkts 512-1023 bytes   = 2
    Input pkts 1024-1518 bytes  = 0
    Input pkts 1519-Max bytes   = 305338

    Input good pkts             = 106713557
```

```
    Input unicast pkts          = 105627141
    Input multicast pkts        = 1086414
    Input broadcast pkts        = 2

    Input drop overrun          = 0
    Input drop abort            = 0
    Input drop unknown 802.1Q   = 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             = 305338
    Input MIB jabber            = 0
    Input MIB CRC               = 0

Egress:
    Output total bytes          = 15202682421
    Output good bytes           = 15202682421

    Output total packets        = 107534855
    Output 802.1Q frames        = 0
    Output pause frames         = 0
    Output pkts 64 bytes        = 103862713
    Output pkts 65-127 bytes    = 2448054
    Output pkts 128-255 bytes   = 308716
    Output pkts 256-511 bytes   = 6
    Output pkts 512-1023 bytes  = 13
    Output pkts 1024-1518 bytes = 0
    Output pkts 1519-Max bytes  = 915353

    Output good pkts            = 107534855
    Output unicast pkts         = 105321133
    Output multicast pkts       = 1298368
    Output broadcast pkts       = 1

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

    Output error other          = 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
```

show controllers np descriptions location

To view a complete list of NP traps descriptions, use the **show controllers np descriptions** command in EXEC mode.

show controllers np descriptions [**location** *node-id*]

Syntax Description

location	(Optional) Specifies a fully-qualified line card location.
node-id	The *node-id* argument is entered in the *rack/slot/module* notation.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
Release 7.3.4	This command was introduced.

Usage Guidelines

Use the **show controllers np descriptions location** *node-id* command to view a complete list of NP traps descriptions.

Following example shows you the NP traps descriptions and their locations.

```
RP/0/RP0/CPU0:ios#show controllers np ?
  descriptions  descriptions of all the traps(cisco-support)
RP/0/RP0/CPU0:ios#show controllers np descriptions ?
  location  Location of the traps(cisco-support)
RP/0/RP0/CPU0:ios#show controllers np descriptions location ?
  0/1/CPU0    Fully qualified location specification
  0/2/CPU0    Fully qualified location specification
  0/3/CPU0    Fully qualified location specification
  0/RP0/CPU0  Fully qualified location specification
  0/RP1/CPU0  Fully qualified location specification
  WORD        Fully qualified location specification
  all         Display all nodes(cisco-support)
RP/0/RP0/CPU0:ios#show controllers np descriptions location
```

show controllers npu resource

To display the current status and configured thresholds in a hardware module configuration, use `show controllers npu resource` command in XR EXEC mode.

show controllers npu resource { **all** | **centralem** | **egressacltcam** | **egressipv4unifiedacltcam** | **egressipv6unifiedacltcam** | **egressl3dlp** | **egresslargeencap** | **egresssmallencap** | **ingressacltcam** | **ingressipv4qosacltcam** | **ingressipv4unifieddefaultacltcam** | **ingressipv4unifiednondefaultacltcam** | **ingressipv6qosacltcam** | **ingressipv6unifieddefaultacltcam** | **ingressipv6unifiednondefaultacltcam** | **ipv6compressedsips** | **l2serviceport** | **l3acport** | **lpmtcam** | **lptsmeters** | **mcemdb** | **myipv4tbl** | **nativefecentry** | **oglpts** | **protectiongroup** | **sipidxtbl** | **stage1lbgroup** | **stage1lbmember** | **stage2lbgroup** | **stage2lbmember** | **stage2protectionmonitor** | **tunneltermination** | **v4lpts** | **v6lpts** }

Syntax Description

all	Displays all the hardware resources.
centralem	Displays the central exact match table used for exact match routes, MPLS route label, multicast.
egressacltcam	Displays the TCAM utilization for the ACL features for the outgoing traffic.
egressipv4unifiedacltcam (egressacltcam)	Display the egress ipv4 unified acl tcam table, that is used for TCAM-based ACL matching on egress, QoS, security zones, NAT-T, and virtualization.
egressipv6unifiedacltcam (egressacltcam)	Displays the TCAM table used for exact match routes and unified ACLs for IPv6 egress traffic on the network device.
egressl3dlp	Displays Information about egress L3 Data-Link Layer Processing (DLP) resource on a particular NPU.
egresslargeencap	Displays the egress large encapsulation table.
egresssmallencap	Displays the egress small encapsulation table.
ingressacltcam	Displays the TCAM utilization for the ACL features for the incoming traffic.
ingressipv4qosacltcam (ingressacltcam)	Display the ingress IPv4 QoS ACL TCAM table.
ingressipv4unifieddefaultacltcam (ingressacltcam)	Displays the ingressacltcam for the show table.
ingressipv4unifiednondefaultacltcam (ingressacltcam)	Displays the utilization of the ingress IPv4 unified non-default ACL TCAM resources for the specified NPU or for all NPUs.
ingressipv6qosacltcam (ingressacltcam)	Displays the ingress ACL TCAM table used for IPv6 QoS ACLs.
ingressipv6unifieddefaultacltcam (ingressacltcam)	Display the contents of the TCAM table used for IPv6 unified default ACL on ingress interfaces on the router.

ingressipv6unifiednondefaultacltcam (ingressacltcam)	Displays the TCAM configuration for non-default IPv6 ACLs and provides details on the number of TCAM entries, rows, and active ACEs.
ipv6compressedsips	Displays the multicast IPv6 source addresses.
l2serviceport	Displays the L2 forwarding interface.
l3acport	Displays the L3 forwarding interface.
lpmtcam	Displays the longest prefix match.
lptsmeters	Displays the QoS metering table for control path.
mcemdb	Displays multicast replication and route statistics.
myipv4tbl	Displays the ARP route and loopback.
nativefecentry	Displays the Default Route created in VRF.
oglpts	Displays the OGLPTS entries for BGP sessions.
protectiongroup	Displays the protection group for FRR, TILFA, TE-FRR.
sipidxtbl	Displays the IP Index table.
stage1lbgroup	Displays the recursive ecmp group to next hop resolution.
stage1lbmember	Displays the recursive ecmp member to next hop resolution.
stage2protectionmonitor	Displays the stage2 protection monitor table used for fast reroute protection.
tunneltermination	Displays the tunnel termination database 0 for SIP, DIP lookup.
v4lpts	Displays the IPv4 control Path.
v6lpts	Displays the IPv6 control Path

Command Default

No default behavior or values

Command Modes

XR EXEC mode

Command History

Release	Modification
7.0.12	This command was introduced.
7.3.2	The **ingressacltcam** and **egressacltcam** options were introduced.

Usage Guidelines

None

Example

This example shows sample output of `show controllers npu resources all location 0/RP0/CPU0` command:

```
RP/0/RP0/CPU0:ios#show controllers npu resources all location 0/RP0/CPU0
Wed Oct 13 16:27:26.218 UTC
HW Resource Information
    Name                            : counter_bank
    Asic Type                       : Q100

NPU-0
OOR Summary
        Estimated Max Entries       : 108
        Red Threshold               : 95 %
        Yellow Threshold            : 80 %
        OOR State                   : Green

Current Hardware Usage
    Name: counter_bank
        Estimated Max Entries       : 108
        Total In-Use                : 60
        OOR State                   : Green

HW Resource Information
    Name                            : l3_ac_port
    Asic Type                       : Q100

NPU-0
OOR Summary
        Red Threshold               : 95 %
        Yellow Threshold            : 80 %


OFA Table Information
(May not match HW usage)
        l3if                        : 37

Current Hardware Usage
    Name: l3_ac_port

       Name: slice_pair_0
           Estimated Max Entries       : 4294967295
           Total In-Use                : 13       (0 %)
           OOR State                   : Green

       Name: slice_pair_1
           Estimated Max Entries       : 4294967295
           Total In-Use                : 10       (0 %)
           OOR State                   : Green

       Name: slice_pair_2
           Estimated Max Entries       : 4294967295
           Total In-Use                : 12       (0 %)
           OOR State                   : Green

HW Resource Information
    Name                            : native_fec_entry
    Asic Type                       : Q100

NPU-0
OOR Summary
        Estimated Max Entries       : 4294967295
```

```
        Red Threshold              : 95 %
        Yellow Threshold           : 80 %
        OOR State                  : Green


OFA Table Information
(May not match HW usage)
        exceptionnh                : 12

Current Hardware Usage
    Name: native_fec_entry
        Estimated Max Entries      : 4294967295
        Total In-Use               : 13       (0 %)
        OOR State                  : Green

HW Resource Information
    Name                           : stage1_lb_group
    Asic Type                      : Q100

NPU-0
OOR Summary
        Estimated Max Entries      : 8192
        Red Threshold              : 95 %
        Yellow Threshold           : 80 %
        OOR State                  : Green

OFA Table Information
(May not match HW usage)
        nhgroup                    : 0

Current Hardware Usage
    Name: stage1_lb_group
        Estimated Max Entries      : 8192
        Total In-Use               : 0        (0 %)
        OOR State                  : Green

HW Resource Information
    Name                           : stage1_lb_member
    Asic Type                      : Q100

NPU-0
OOR Summary
        Estimated Max Entries      : 4294967295
        Red Threshold              : 95 %
        Yellow Threshold           : 80 %
        OOR State                  : Green

OFA Table Information
(May not match HW usage)
        nhgroup                    : 0

Current Hardware Usage
    Name: stage1_lb_member
        Estimated Max Entries      : 4294967295
        Total In-Use               : 0        (0 %)
        OOR State                  : Green



HW Resource Information
    Name                           : stage2_lb_group
    Asic Type                      : Q100

NPU-0
```

```
OOR Summary
        Estimated Max Entries       : 8192
        Red Threshold               : 95 %
        Yellow Threshold            : 80 %
        OOR State                   : Green

OFA Table Information
(May not match HW usage)
        nhgroup                     : 18

Current Hardware Usage
    Name: stage2_lb_group
        Estimated Max Entries       : 8192
        Total In-Use                : 3        (0 %)
        OOR State                   : Green

HW Resource Information
    Name                            : stage2_lb_member
    Asic Type                       : Q100

NPU-0
OOR Summary
        Estimated Max Entries       : 4294967295
        Red Threshold               : 95 %
        Yellow Threshold            : 80 %
        OOR State                   : Green

OFA Table Information
(May not match HW usage)
        nhgroup                     : 18

Current Hardware Usage
    Name: stage2_lb_member
        Estimated Max Entries       : 4294967295
        Total In-Use                : 3        (0 %)
        OOR State                   : Green


<Output truncated>
```

Example for the egressacltcam option

This example shows sample output of `sshow controllers npu resources egressacltcam location 0/RP0/CPU0` command:

```
RP/0/RP1/CPU0:router#show controllers npu resources egressacltcam location 0/RP0/CPU0
Thu Aug 12 18:34:46.471 UTC
HW Resource Information
    Name                            : egress_acl_tcam
    Asic Type                       : Q100

NPU-0
OOR Summary
        Red Threshold               : 95 %
        Yellow Threshold            : 80 %


Current Hardware Usage
    Name: egress_acl_tcam
```

```
Name: narrow

    Name: slice_0
        Estimated Max Entries       : 32768
        Total In-Use                : 0        (0 %)

    Name: slice_1
        Estimated Max Entries       : 32768
        Total In-Use                : 0        (0 %)

    Name: slice_2
        Estimated Max Entries       : 32768
        Total In-Use                : 0        (0 %)

    Name: slice_3
        Estimated Max Entries       : 32768
        Total In-Use                : 0        (0 %)

    Name: slice_4
        Estimated Max Entries       : 32768
        Total In-Use                : 0        (0 %)

    Name: slice_5
        Estimated Max Entries       : 32768
        Total In-Use                : 0        (0 %)

Name: wide

    Name: slice_0
        Estimated Max Entries       : 32768
        Total In-Use                : 0        (0 %)

    Name: slice_1
        Estimated Max Entries       : 32768
        Total In-Use                : 0        (0 %)

    Name: slice_2
        Estimated Max Entries       : 32768
        Total In-Use                : 0        (0 %)

    Name: slice_3
        Estimated Max Entries       : 32768
        Total In-Use                : 0        (0 %)

    Name: slice_4
        Estimated Max Entries       : 32768
        Total In-Use                : 0        (0 %)

    Name: slice_5
        Estimated Max Entries       : 32768
        Total In-Use                : 0        (0 %)
```

Example for the protection group

This example shows sample output of `show controllers npu resources protection group location 0/RP0/CPU0` command:

```
RP/0/RP0/CPU0:router#show controllers npu resources protection group location 0/3/CPU0
Tue Mar 14 19:55:56.739 UTC
HW Resource Information
    Name                            : protection_group
    Asic Type                       : Q200
```

```
  NPU-0
  OOR Summary
        Estimated Max Entries       : 4096
        Red Threshold               : 95 %
        Yellow Threshold            : 80 %
        OOR State                   : Red

Current Hardware Usage
    Name: : protection_group
        Estimated Max Entries       : 4096
        Total In-Use                : 4062(99 %)
        OOR State                   : Red

  NPU-1
  OOR Summary
        Estimated Max Entries       : 4096
        Red Threshold               : 95 %
        Yellow Threshold            : 80 %
        OOR State                   : Red

Current Hardware Usage
    Name: : protection_group
        Estimated Max Entries       : 4096
        Total In-Use                : 4062(99 %)
        OOR State                   : Red
```

Example for the protection group

Note Use the "debugshell" command for the protection group resource to obtain the accurate information.

This example shows sample output of `show controllers npu debugshell 0 "script resource_usage PROTECTION_GROUP" location 0/3/cpu0` command:

```
RP/0/RP0/CPU0:router#show controllers npu debugshell 0 "script resource_usage
PROTECTION_GROUP" location 0/3/cpu0
Tue Mar 14 19:55:37.309 UTC

Node ID: 0/3/CPU0
Executing User File: /pkg/bin/resource_usage.py
Get resource usage for npu_id: 12, Dev id: 12, Resource: PROTECTION_GROUP
+-----------------+------------+----------+------------+-------------+-------+-----------------------+
| Resource        | Granularity | Location | Max Entries | Used Entries | State | Thresholds
 % High/Low |
+-----------------+------------+----------+------------+-------------+-------+-----------------------+
| PROTECTION_GROUP | Device     |   -      | 4096       | 4082        | Red  |   80.0/79.0,
 95.0/94.0, |
+-----------------+------------+----------+------------+-------------+-------+-----------------------+
```

Example for NPU Hash Rotation

Note Use the "debugshell" command for the NPU hash rotation value programmed in hardware for all NPUs of a given LC node and for a specific LC node of a specific NPU.

The debugshell command shows the hash rotate value as one number higher than the user configures, with the maximum configurable value of 35 rolling back to zero.

This example shows sample output of **show controllers npu debugshell <npu_id> 'script device_hash_rotate_info get_val_all_npu' location <LC_node>** command:

```
Router# show controllers npu debugshell 0 'script device_hash_rotate_info get_val_all_npu'
 location 0/0/CPU0
Tue Aug 20 04:48:01.128 UTC

Node ID: 0/0/CPU0
Executing User File: /pkg/bin/device_hash_rotate_info.py
Hash Rotate Value and seed value in HW for NPU: 0
================================================
Load_Balancing_node_id:  29
ECMP seed value: 0xffff
SPA seed value: 0xffff

Hash Rotate Value and seed value in HW for NPU: 1
================================================
Load_Balancing_node_id:  0
ECMP seed value: 0xffff
SPA seed value: 0xffff

Hash Rotate Value and seed value in HW for NPU: 2
================================================
Load_Balancing_node_id:  7
ECMP seed value: 0xffff
SPA seed value: 0xffff
```

This example shows sample output of **show controllers npu debugshell <npu_id> 'script device_hash_rotate_info get_val' location <LC_node>** command:

```
Router# show controllers npu debugshell 0 "script device_hash_rotate_info get_val" location
 0/0/CPU0
Tue Aug 20 04:47:26.740 UTC

Node ID: 0/0/CPU0
Executing User File: /pkg/bin/device_hash_rotate_info.py
Hash Rotate Value and seed value in HW for NPU: 0
================================================
Load_Balancing_node_id:  29
ECMP seed value: 0xffff
SPA seed value: 0xffff
Router# end
```

show interface

To display the L2 interface MTU on the main interface, use `show interface` command in Global Configuration mode.

show interface { *interface* } { *location* }

Syntax Description

interface	Displays the interface on which you have configured L2 interface MTU.
location *node id*	Displays information about all interfaces on the specified node. The node-id argument is entered in the rack/slot/module notation.

Command Default

No default behavior or values

Command Modes

Global Configuration mode

Command History

Release	Modification
7.5.2	This command was introduced.

Usage Guidelines

None

Example

This example shows sample output of `show interface` command:

```
RP/0/RP0/CPU0:sf_f2#show int HundredGigE 0/0/0/20
Fri Mar  4 19:06:31.210 UTC
HundredGigE0/0/0/20 is administratively down, line protocol is administratively down
  Interface state transitions: 0
  Hardware is HundredGigE, address is 9077.ee50.eaa0 (bia 9077.ee50.eaa0)
  Internet address is Unknown
  MTU 1514 bytes, BW 100000000 Kbit (Max: 100000000 Kbit)
     reliability 255/255, txload 0/255, rxload 0/255
```

show interfaces counters rates bundle

To display the traffic rates and bandwidth for all bundle interfaces, use `show interfaces counters rates bundle` command.

show interfaces counters rates bundle

Syntax Description

interfaces	Displays all interfaces.
counters	Counter information for interfaces.
rates	Rate information for interfaces.
bundle	Rate information for bundle interfaces.

Command History

Release	Modification
Release 24.4.1	This command was introduced.

Example

This example shows sample output of `show interfaces counters rates bundle` command:

```
Router#show interfaces counters rates bundle
Wed Aug 14 19:54:04.842 EDT
InterfaceName                Intval     InMbps     InBW%     InKpps     OutMbps    OutBW%
OutKpps
Bundle-Ether111                0:03    38454.9     40.0%     8064.8         0.0      0.0%
     0.0
Bundle-Ether112                0:03        0.0      0.0%        0.0         0.0      0.0%
     0.0
Bundle-Ether1201               0:03        0.0      0.0%        0.0      9741.6      3.4%
  2002.2
Bundle-Ether1202               0:03        0.0      0.0%        0.0      9703.0      5.0%
  1995.4
Bundle-Ether1203               0:03        0.0      0.0%        0.0      9841.9      5.1%
  2023.0
Bundle-Ether1204               0:03        0.0      0.0%        0.0     10011.3     10.4%
  2058.5
Bundle-Ether1205               0:03        0.0      0.0%        0.0         0.0      0.0%
     0.0
Bundle-Ether1206               0:03        0.0      0.0%        0.0         0.0      0.0%
     0.0
Bundle-Ether1207               0:03        0.0      0.0%        0.0         0.0      0.0%
     0.0
Bundle-Ether1208               0:03        0.0      0.0%        0.0         0.0      0.0%
     0.0
Bundle-Ether1209               0:03        0.0      0.0%        0.0         0.0      0.0%
     0.0
Bundle-Ether1210               0:03        0.0      0.0%        0.0         0.0      0.0%
     0.0
Bundle-Ether1301               0:03    38698.3     13.4%     8062.7         0.0      0.0%
     0.0
Bundle-Ether1302               0:03        0.0      0.0%        0.0         0.0      0.0%
     0.0
```

```
Bundle-Ether1303              0:03        0.0      0.0%        0.0      38741.7     28.8%
  8070.8
```

Table 1: Output Description

InterfaceName	The name or identifier of the interface
Intval	The interval over which the rates are calculated, displayed in minutes:seconds.
InMbps	The input rate measured in megabits per second (Mbps).
InBW%	The input bandwidth utilization as a percentage (%).
InKpps	The input rate measured in thousands of packets per second (Kpps).
OutMbps	The output rate measured in megabits per second (Mbps).
OutBW%	The output bandwidth utilization as a percentage (%).
OutKpps	The output rate measured in thousands of packets per second (Kpps).

The statistics for each bundle interface is calculated for the time interval of 3 s. Hence, the input and output rate (in Mbps and Kpps) is the real-time statistics.

Note The displayed traffic rate represents the real-time link utilization for a given time interval. This interval is system-determined and may vary depending on system processing load. During events such as routing updates, the time interval may increase.

show interfaces counters rates physical

To display the traffic rates and bandwidth for all the physical interfaces, use `show interfaces counters rates physical` command.

show interfaces counters rates physical

Syntax Description

interfaces	Displays all the physical interfaces.
counters	Counter information for interfaces.
rates	Rate information for interfaces.
physical	Rate information for physical interfaces.

Command History

Release	Modification
7.5.4	This command was introduced.

Example

This example shows sample output of `show interfaces counters rates physical` command:

```
Router#show interfaces counters rates physical

    InterfaceName           Intvl   InMbps   InBW%  InKpps  OutMbps  OutBW%   OutKpps
    GigabitEthernet0/2/0/0  0:05     0.0     0.0%    0.0       0.0     0.0%       0.0
    GigabitEthernet0/2/0/1  0:05     0.0     0.0%    0.0       0.0     0.0%       0.0
    GigabitEthernet0/2/0/2  0:05     0.0     0.0%    0.0       0.0     0.0%       0.0
    GigabitEthernet0/2/0/3  0:05   235.0    22.0%   23.5      87.0     9.5%       7.2
    GigabitEthernet0/3/0/0  0:05    88.0     9.3%    7.0     100.0    10.0%      10.5
    GigabitEthernet0/3/0/1  0:05     0.0     0.0%    0.0       0.0     0.0%       0.0
```

The statistics for each physical interface is calculated for the time interval of 5 sec. Hence, the input and output rate (in Mbps and Kpps) is the real-time statistics.

Note The traffic rate displayed is the real-time link utilization of the time interval. The time interval is determined by the system and may vary based on the system processing load. The time interval increases during events where the system is handling, for example, performing routing updates.

show lldp

To display the global Link Layer Discovery Protocol (LLDP) operational characteristics on the system, use the **show lldp** command in XR EXEC mode.

show lldp

Syntax Description

This command has no keywords or arguments.

Command Default

None

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 7.0.12	This command was introduced.

Usage Guidelines

The **show lldp** command displays the LLDP operational characteristics when LLDP is enabled globally on the system using the **lldp** command. The settings for the following commands are displayed:

- **lldp timer**
- **lldp holdtime**
- **lldp reinit**

Task ID

Task ID	Operation
ethernet-services	read

Example 1

The following example shows the default LLDP operational characteristics when LLDP is enabled globally on the system:

```
RP/0/RP0/CPU0:router# show lldp
Wed Apr 13 06:16:45.510 DST
Global LLDP information:
        Status: ACTIVE
        LLDP advertisements are sent every 30 seconds
        LLDP hold time advertised is 120 seconds
        LLDP interface reinitialisation delay is 2 seconds
```

Example 2

The following example shows the output when LLDP is not enabled globally on the system:

```
RP/0/RP0/CPU0:router# show lldp
Wed Apr 13 06:42:48.221 DST
% LLDP is not enabled
```

Related Commands

Command	Description
lldp timer, on page 15	Specifies the LLDP packet rate.
lldp holdtime, on page 13	Specifies the length of time that information from an LLDP packet should be held by the receiving device before aging and removing it.
lldp reinit, on page 14	Specifies the length of time to delay initialization of LLDP on an interface.

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

*****	Displays detailed information about all LLDP neighbors.
name	Name of a specific LLDP neighbor for which detailed information is displayed.

Syntax Description This command has no keywords or arguments.

Command Modes XR EXEC mode

Command History

Release	Modification
Release 7.0.12	This command was introduced.

Usage Guidelines No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
ethernet-services	read

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: HundredGigabitEthernet0/0/0/8
Chassis id: 0026.9815.c3e6
Port id: Gi0/0/0/8
Port Description: HundredGigabitEthernet0/0/0/8
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: HundredGigabitEthernet0/0/0/8
Chassis id: 0026.9815.c3e6
Port id: Gi0/0/0/8.1
Port Description: HundredGigabitEthernet0/0/0/8.1
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
```

show lldp errors

To display Link Layer Discovery Protocol (LLDP) error and overflow statistics, use the **show lldp errors** command in XR EXEC mode.

show lldp errors [**location** *location*]

Syntax Description

location	*location*	(Optional) Displays information about LLDP neighbors for the specified location. The *location* argument is entered in the *rack/slot/module* notation.

Command Default

Totals of LLDP error and overflow statistics for the system are displayed.

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 7.0.12	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
ethernet-services	read

The following example shows sample output for the **show lldp errors** command:

```
RP/0/RP0/CPU0:router# show lldp errors
Wed Apr 13 06:17:08.321 DST

LLDP errors/overflows:
        Total memory allocation failures: 0
        Total encapsulation failures: 0
        Total input queue overflows: 0
        Total table overflows: 0
```

Related Commands

Command	Description
lldp, on page 11	Enables LLDP globally for both transmit and receive operation on the system.

show lldp interface

To display Link Layer Discovery Protocol (LLDP) configuration and status information on an interface, use the **show lldp interface** command in XR EXEC mode.

show lldp interface [*type interface-path-id* | **location** *location*]

Syntax Description

type	(Optional) Interface type. For more information, use the question mark (?) online help function.
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.
location *location*	(Optional) Displays information about LLDP neighbors for the specified location. The *location* argument is entered in the *rack/slot/module* notation.

Command Default

LLDP configuration and status information for all interfaces is displayed.

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 7.0.12	This command was introduced.

Usage Guidelines

When LLDP is enabled globally on the system, all supported interfaces are automatically enabled for both LLDP receive and transmit operations. You can individually disable interfaces for either LLDP receive or transmit operations using the **receive disable** command or **transmit disable** command in LLDP configuration mode under the interface.

Task ID

Task ID	Operation
ethernet-services	read

The following example shows sample output for the **show lldp interface** command for the Gigabit Ethernet interface at 0/1/0/7:

```
RP/0/RP0/CPU0:router# show lldp interface hundredgigabitethernet 0/1/0/7
Wed Apr 13 13:22:30.501 DST


HundredGigabitEthernet0/1/0/7:
        Tx: enabled
        Rx: enabled
        Tx state: IDLE
        Rx state: WAIT FOR FRAME
```

Table 2: show lldp interface Field Descriptions

Field	Description
Tx:	Configuration status of the interface to transmit LLDP advertisements.
Rx:	Configuration status of the interface to receive LLDP advertisements.
Tx state:	Status of the LLDP transmit process on the interface.
Rx state:	Status of the LLDP receive process on the interface.

Related Commands

Command	Description
lldp, on page 11	Enables LLDP globally for both transmit and receive operation on the system.
lldp (interface), on page 12	Enters LLDP configuration mode.

show lldp neighbors

To display information about Link Layer Discovery Protocol (LLDP) neighbors, use the **show lldp neighbors** command in XR EXEC mode.

show lldp neighbors [*type interface-path-id* | **location** *location*] [**detail**]

Syntax Description

type	(Optional) Interface type. For more information, use the question mark (?) online help function.
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.
location *location*	(Optional) Displays information about LLDP neighbors for the specified location. The *location* argument is entered in the *rack/slot/module* notation.
detail	(Optional) Displays all available information about LLDP neighbors.

Command Default

Basic device information for LLDP neighbors is displayed.

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 7.0.11	This command was introduced.

Usage Guidelines

To clear the neighbor information displayed by the **show lldp neighbors** command, use the **clear lldp table** command.

Task ID

Task ID	Operation
ethernet-services	read

The following example show sample output for the **show lldp neighbors** command:

```
RP/0/RP0/CPU0:router# show lldp neighbors
Capability codes:
    (R) Router, (B) Bridge, (T) Telephone, (C) DOCSIS Cable Device
    (W) WLAN Access Point, (P) Repeater, (S) Station, (O) Other

Device ID           Local Intf     Hold-time  Capability      Port ID
R1                  Et1/0          150        R               Et1/0

Total entries displayed: 1
```

Table 3: show lldp neighbors Field Descriptions

Field	Description
Device ID	Name of the neighbor device. **Note** If the device ID has more than 20 characters, the ID will be truncated to 20 characters in command output because of display constraints.
Local Intf	Local interface through which this neighbor is connected.
Hold-time	Amount of time (in seconds) that the local device will hold the LLDP advertisement from a sending device before discarding it.
Capability	The device type of the neighbor, whose values correspond to the characters and definition displayed in the "Capability codes" section.
Port ID	Interface and port number of the neighboring device.

The following example shows sample output for the **show lldp neighbors detail** command:

```
RP/0/RP0/CPU0:router# show lldp neighbors detail
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: HundredGigabitEthernet0/0/0/8
Chassis id: 0026.9815.c3e6
Port id: Gi0/0/0/8
Port Description: HundredGigabitEthernet0/0/0/8
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: HundredGigabitEthernet0/0/0/8
Chassis id: 0026.9815.c3e6
Port id: Gi0/0/0/8.1
Port Description: HundredGigabitEthernet0/0/0/8.1
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
```

show lldp traffic

To display statistics for Link Layer Discovery Protocol (LLDP) traffic, use the **show lldp traffic** command in XR EXEC mode.

show lldp traffic [**location** *location*]

Syntax Description

location	*location*	(Optional) Displays LLDP statistics for traffic at the specified location. The *location* argument is entered in the *rack/slot/module* notation.

Command Default

Totals of LLDP statistics for the system are displayed.

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 7.0.12	This command was introduced.

Usage Guidelines

To reset the counters displayed by the **show lldp traffic** command, use the **clear lldp counters** command.

Task ID

Task ID	Operation
ethernet-services	read

The following example shows sample output for statistics for all LLDP traffic on the system:

```
RP/0/RP0/CPU0:router# show lldp traffic
LLDP traffic statistics:
    Total frames out: 277
    Total entries aged: 0
    Total frames in: 328
    Total frames received in error: 0
    Total frames discarded: 0
    Total TLVs discarded: 0
    Total TLVs unrecognized: 0
```

Table 4: show lldp traffic Field Descriptions

Field	Description
Total frames out:	Number of LLDP advertisements sent from the device.
Total entries aged:	Number of LLDP neighbor entries removed due to expiration of the hold time.
Total frames in:	Number of LLDP advertisements received by the device.
Total frames received in error:	Number of times the LLDP advertisements contained errors of any type.

Field	Description
Total frames discarded:	Number of times the LLDP process discarded an incoming advertisement.
Total TLVs discarded:	Number of times the LLDP process discarded a Type Length Value (TLV) from an LLDP frame.
Total TLVs unrecognized:	Number of TLVs that could not be processed because the content of the TLV was not recognized by the device or the contents of the TLV were incorrectly specified.

interface range

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

interface *{type, specified-range}*

Syntax Description

type	Defines an interface type that is supported in IOS XR.
specified-range	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.

Command Default

None

Command Modes

Global Interface Configuration

Command History

Release	Modification
Release 7.0.12	This command was introduced.

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

Task ID	Operation
interface	read, write

This example shows how to configure HundredGigabitEthernet interface type for a specifiied range:

```
RP/0/RP0/CPU0:router(config)# int HundredGigabitEthernet 0/0/0/0,2-4
RP/0/RP0/CPU0:router(config-if-range)# description Test interface range
RP/0/RP0/CPU0:router(config-if-range)# show configuration
```

Thu Jan 11 06:46:43.502 PST

Building configuration...

interface HundredGigabitEthernet0/0/0/0

description Test Interface range

!

interface HundredGigabitEthernet0/0/0/2

description Test Interface range

!

interface HundredGigabitEthernet0/0/0/3

description Test Interface range

```
!
interface HundredGigabitEthernet0/0/0/4
description Test Interface range
!
```

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

```
RP/0/RP0/CPU0:router(config)# interface tengig 0/0/0/16/0-3
```