



Advanced Configuration and Modification of the Management Ethernet Interface on Cisco IOS XR Software

This module describes the configuration of Management Ethernet interfaces on the Cisco XR 12000 Series Router.

Before you can use Telnet to access the router through the LAN IP address, you must set up a Management Ethernet interface and enable Telnet servers, as described in the *Configuring General Router Features* module of the *Cisco IOS XR Getting Started Guide*. This module describes how to modify the default configuration of the Management Ethernet interface after it has been configured, as described in *Cisco IOS XR Getting Started Guide*.



Note

Forwarding between physical layer interface modules (PLIM) ports and Management Ethernet interface ports is disabled by default. To enable forwarding between PLIM ports and Management Ethernet interface ports, use the **rp mgmtethernet forwarding** command.



Note

Although the Management Ethernet interfaces on the system are present by default, the user must configure these interfaces to use them for accessing the router, using protocols and applications such as Simple Network Management Protocol (SNMP), Common Object Request Broker Architecture (CORBA), HTTP, extensible markup language (XML), TFTP, Telnet, and command-line interface (CLI).

Feature History for Configuring Management Ethernet Interfaces

Release	Modification
Release 3.2	This feature was first supported on the Cisco XR 12000 Series Router.
Release 3.3.0	Manual configuration of the Management Ethernet interface is the only option. The initial prompts that originally walked the user through Management Ethernet interface configuration upon software installation were removed.
Release 3.4.0	No modification.
Release 3.5.0	No modification.
Release 3.6.0	No modification.
Release 3.7.0	No modification.

Release 3.8.0	No modification.
Release 3.9.0	No modification.

Contents

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Prerequisites for Configuring Management Ethernet Interfaces

You must be in a user group associated with a task group that includes the proper task IDs. The command reference guides include the task IDs required for each command. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Before performing the Management Ethernet interface configuration procedures that are described in this module, be sure that the following tasks and conditions are met:

- You have performed the initial configuration of the Management Ethernet interface, as described in the *Configuring General Router Features* module of *Cisco IOS XR Getting Started Guide*.
- To use the **show running-config** command, you must be in a user group associated with a task group that includes the proper task IDs for configuration management commands. The Task ID for the **show running-config** command is listed in *Cisco IOS XR System Management Command Reference*.
- You know how to apply the generalized interface name specification *rack/slot/module/port*.

For further information on interface naming conventions, refer to *Cisco IOS XR Getting Started Guide*.



Note

Note that, for transparent switchover, both active and standby Management Ethernet interfaces are expected to be physically connected to the same LAN or switch.

Information About Configuring Management Ethernet Interfaces

To configure Management Ethernet interfaces, you must understand the following concept:

- [Default Interface Settings, page 247](#)

Default Interface Settings

[Table 9](#) describes the default Management Ethernet interface settings that can be changed by manual configuration. Default settings are not displayed in the **show running-config** command output.

Table 9 Management Ethernet Interface Default Settings

Parameter	Default Value	Configuration File Entry
Speed in Mbps	Speed is autonegotiated.	speed [10 100 1000] To return the system to autonegotiate speed, use the no speed [10 100 1000] command.
Duplex mode	Duplex mode is autonegotiated.	duplex {full half} To return the system to autonegotiated duplex operation, use the no duplex {full half} command, as appropriate.
MAC address	MAC address is read from the hardware burned-in address (BIA).	mac-address <i>address</i> To return the device to its default MAC address, use the no mac-address <i>address</i> command.

How to Perform Advanced Management Ethernet Interface Configuration

This section contains the following procedures:

- [Configuring a Management Ethernet Interface, page 247](#) (required)
- [Configuring the Duplex Mode for a Management Ethernet Interface, page 249](#) (optional)
- [Configuring the Speed for a Management Ethernet Interface, page 251](#) (optional)
- [Modifying the MAC Address for a Management Ethernet Interface, page 252](#) (optional)
- [Verifying Management Ethernet Interface Configuration, page 253](#) (optional)

Configuring a Management Ethernet Interface

Perform this task to configure a Management Ethernet interface. This procedure provides the minimal configuration required for the Management Ethernet interface.

**Note**

You do not need to perform this task if you have already set up the Management Ethernet interface to enable telnet servers, as described in the *Configuring General Router Features* module of the *Cisco IOS XR Getting Started Guide*.

SUMMARY STEPS

1. **configure**
2. **interface MgmtEth** *interface-path-id*
3. **ipv4 address** *ip-address mask*
4. **mtu** *bytes*
5. **no shutdown**
6. **end**
or
commit
7. **show interfaces MgmtEth** *interface-path-id*

DETAILED STEPS

	Command or Action	Purpose
Step 1	configure Example: RP/0/RP0/CPU0:router# configure terminal	Enters global configuration mode.
Step 2	interface MgmtEth <i>interface-path-id</i> Example: RP/0/RP0/CPU0:router(config)# interface MgmtEth 0/RP0/CPU0/0	Enters interface configuration mode and specifies the Ethernet interface name and notation <i>rack/slot/module/port</i> . The example indicates port 0 on the RP card that is installed in slot 0.
Step 3	ipv4 address <i>ip-address mask</i> Example: RP/0/RP0/CPU0:router(config-if)# ipv4 address 172.18.189.38 255.255.255.224	Assigns an IP address and subnet mask to the interface. <ul style="list-style-type: none"> • Replace <i>ip-address</i> with the primary IPv4 address for the interface. • Replace <i>mask</i> with the mask for the associated IP subnet. The network mask can be specified in either of two ways: <ul style="list-style-type: none"> – The network mask can be a four-part dotted decimal address. For example, 255.0.0.0 indicates that each bit equal to 1 means that the corresponding address bit belongs to the network address. – The network mask can be indicated as a slash (/) and number. For example, /8 indicates that the first 8 bits of the mask are ones, and the corresponding bits of the address are network address.

	Command or Action	Purpose
Step 4	<p><code>mtu bytes</code></p> <p>Example: RP/0/RP0/CPU0:router(config-if)# mtu 1448</p>	<p>(Optional) Sets the maximum transmission unit (MTU) byte value for the interface. The default is 1514.</p> <ul style="list-style-type: none"> The default is 1514 bytes. The range for the Management Ethernet interface Interface mtu values is 64 to 1514 bytes.
Step 5	<p><code>no shutdown</code></p> <p>Example: RP/0/RP0/CPU0:router(config-if)# no shutdown</p>	<p>Removes the shutdown configuration, which removes the forced administrative down on the interface, enabling it to move to an up or down state.</p>
Step 6	<p><code>end</code> OR <code>commit</code></p> <p>Example: RP/0/RP0/CPU0:router(config-if)# end OR RP/0/RP0/CPU0:router(config-if)# commit</p>	<p>Saves configuration changes.</p> <ul style="list-style-type: none"> When you issue the end command, the system prompts you to commit changes: Uncommitted changes found, commit them before exiting (yes/no/cancel)? [cancel]: <ul style="list-style-type: none"> Entering yes saves configuration changes to the running configuration file, exits the configuration session, and returns the router to EXEC mode. Entering no exits the configuration session and returns the router to EXEC mode without committing the configuration changes. Entering cancel leaves the router in the current configuration session without exiting or committing the configuration changes. Use the commit command to save the configuration changes to the running configuration file and remain within the configuration session.
Step 7	<p><code>show interfaces MgmtEth interface-path-id</code></p> <p>Example: RP/0/RP0/CPU0:router# show interfaces MgmtEth 0/RP0/CPU0/0</p>	<p>(Optional) Displays statistics for interfaces on the router.</p>

Configuring the Duplex Mode for a Management Ethernet Interface

Perform this task to configure the duplex mode of the Management Ethernet interfaces for the RPs.

SUMMARY STEPS

1. **configure**
2. **interface MgmtEth interface-path-id**

3. **duplex** [full | half]
4. **end**
or
commit

DETAILED STEPS

	Command or Action	Purpose
Step 1	configure Example: RP/0/RP0/CPU0:router# configure	Enters global configuration mode.
Step 2	interface MgmtEth <i>interface-path-id</i> Example: RP/0/RP0/CPU0:router(config)# interface MgmtEth 0/RP0/CPU0/0	Enters interface configuration mode and specifies the Management Ethernet interface name and instance.
Step 3	duplex [full half] Example: RP/0/RP0/CPU0:router(config-if)# duplex full	Configures the interface duplex mode. Valid options are full or half . Note To return the system to autonegotiated duplex operation, use the no duplex command.
Step 4	end or commit Example: RP/0/RP0/CPU0:router(config-if)# end or RP/0/RP0/CPU0:router(config-if)# commit	Saves configuration changes. <ul style="list-style-type: none"> • When you issue the end command, the system prompts you to commit changes: Uncommitted changes found, commit them before exiting(yes/no/cancel)? [cancel]: <ul style="list-style-type: none"> – Entering yes saves configuration changes to the running configuration file, exits the configuration session, and returns the router to EXEC mode. – Entering no exits the configuration session and returns the router to EXEC mode without committing the configuration changes. – Entering cancel leaves the router in the current configuration session without exiting or committing the configuration changes. • Use the commit command to save the configuration changes to the running configuration file and remain within the configuration session.

Configuring the Speed for a Management Ethernet Interface

Perform this task to configure the speed of the Management Ethernet interfaces for the RPs.

SUMMARY STEPS

1. **configure**
2. **interface MgmtEth** *interface-path-id*
3. **speed** {10 | 100 | 1000}
4. **end**
or
commit

DETAILED STEPS

	Command or Action	Purpose
Step 1	configure Example: RP/0/RP0/CPU0:router# configure	Enters global configuration mode.
Step 2	interface MgmtEth <i>interface-path-id</i> Example: RP/0/RP0/CPU0:router(config)# interface MgmtEth 0/RP0/CPU0/0	Enters interface configuration mode and specifies the Management Ethernet interface name and instance.

	Command or Action	Purpose
Step 3	<p><code>speed {10 100 1000}</code></p> <p>Example: RP/0/RP0/CPU0:router(config-if)# speed 100</p>	<p>Configures the interface speed parameter.</p> <p>Valid speed options are 10, 100 or 1000 Mbps.</p> <p>Note The default Management Ethernet interface speed is autonegotiated.</p> <p>Note To return the system to the default autonegotiated speed, use the no speed command.</p>
Step 4	<p><code>end</code> or <code>commit</code></p> <p>Example: RP/0/RP0/CPU0:router(config-if)# end or RP/0/RP0/CPU0:router(config-if)# commit</p>	<p>Saves configuration changes.</p> <ul style="list-style-type: none"> When you issue the end command, the system prompts you to commit changes: <pre>Uncommitted changes found, commit them before exiting(yes/no/cancel)? [cancel]:</pre> <ul style="list-style-type: none"> Entering yes saves configuration changes to the running configuration file, exits the configuration session, and returns the router to EXEC mode. Entering no exits the configuration session and returns the router to EXEC mode without committing the configuration changes. Entering cancel leaves the router in the current configuration session without exiting or committing the configuration changes. Use the commit command to save the configuration changes to the running configuration file and remain within the configuration session.

Modifying the MAC Address for a Management Ethernet Interface

Perform this task to configure the MAC layer address of the Management Ethernet interfaces for the RPs.

SUMMARY STEPS

- configure**
- interface MgmtEth** *interface-path-id*
- mac-address** *address*
- end**
or
commit

DETAILED STEPS

	Command or Action	Purpose
Step 1	<p>configure</p> <p>Example: RP/0/RP0/CPU0:router# configure</p>	Enters global configuration mode.
Step 2	<p>interface MgmtEth interface-path-id</p> <p>Example: RP/0/RP0/CPU0:router(config)# interface MgmtEth 0/RP0/CPU0/0</p>	Enters interface configuration mode and specifies the Management Ethernet interface name and instance.
Step 3	<p>mac-address address</p> <p>Example: RP/0/RP0/CPU0:router(config-if)# mac-address 0001.2468.ABCD</p>	<p>Configures the MAC layer address of the Management Ethernet interface.</p> <p>Note To return the device to its default MAC address, use the no mac-address address command.</p>
Step 4	<p>end OR commit</p> <p>Example: RP/0/RP0/CPU0:router(config-if)# end OR RP/0/RP0/CPU0:router(config-if)# commit</p>	<p>Saves configuration changes.</p> <ul style="list-style-type: none"> When you issue the end command, the system prompts you to commit changes: Uncommitted changes found, commit them before exiting (yes/no/cancel)? [cancel]: <ul style="list-style-type: none"> Entering yes saves configuration changes to the running configuration file, exits the configuration session, and returns the router to EXEC mode. Entering no exits the configuration session and returns the router to EXEC mode without committing the configuration changes. Entering cancel leaves the router in the current configuration session without exiting or committing the configuration changes. Use the commit command to save the configuration changes to the running configuration file and remain within the configuration session.

Verifying Management Ethernet Interface Configuration

Perform this task to verify configuration modifications on the Management Ethernet interfaces for the RPs.

SUMMARY STEPS

1. **show interfaces MgmtEth interface-path-id**
2. **show running-config**

Step 1	<pre>show interfaces MgmtEth interface-path-id</pre> <p>Example: RP/0/RP0/CPU0:router# show interfaces MgmtEth 0/RP0/CPU0/0 </p>	Displays the Management Ethernet interface configuration.
Step 2	<pre>show running-config interface MgmtEth interface-path-id</pre> <p>Example: RP/0/RP0/CPU0:router# show running-config interface MgmtEth 0/RP0/CPU0/0 </p>	Displays the running configuration.

Configuration Examples for Management Ethernet Interfaces

This section provides the following configuration examples:

- [Configuring a Management Ethernet Interface: Example, page 254](#)

Configuring a Management Ethernet Interface: Example

This example displays advanced configuration and verification of the Management Ethernet interface on the RP:

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# interface MgmtEth 0/RP0/CPU0/0
RP/0/RP0/CPU0:router(config)# ipv4 address 172.29.52.70 255.255.255.0
RP/0/RP0/CPU0:router(config-if)# speed 100
RP/0/RP0/CPU0:router(config-if)# duplex full
RP/0/RP0/CPU0:router(config-if)# no shutdown
RP/0/RP0/CPU0:router(config-if)# commit
RP/0/RP0/CPU0:Mar 26 01:09:28.685 :ifmgr[190]:%LINK-3-UPDOWN :Interface
MgmtEth0/RP0/CPU0/0, changed state to Up
RP/0/RP0/CPU0:router(config-if)# end

RP/0/RP0/CPU0:router# show interfaces MgmtEth 0/RP0/CPU0/0

MMgmtEth0/RP0/CPU0/0 is up, line protocol is up
  Hardware is Management Ethernet, address is 0011.93ef.e8ea (bia 0011.93ef.e8ea
)
  Description: Connected to Lab LAN
  Internet address is 172.29.52.70/24
  MTU 1514 bytes, BW 100000 Kbit
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set,
  ARP type ARPA, ARP timeout 04:00:00
  Last clearing of "show interface" counters never
  5 minute input rate 3000 bits/sec, 7 packets/sec
  5 minute output rate 0 bits/sec, 1 packets/sec
    30445 packets input, 1839328 bytes, 64 total input drops
      0 drops for unrecognized upper-level protocol
    Received 23564 broadcast packets, 0 multicast packets
      0 runts, 0 giants, 0 throttles, 0 parity
    57 input errors, 40 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
    171672 packets output, 8029024 bytes, 0 total output drops
    Output 16 broadcast packets, 0 multicast packets
```

```

0 output errors, 0 underruns, 0 applique, 0 resets
0 output buffer failures, 0 output buffers swapped out
1 carrier transitions

```

```
RP/0/RP0/CPU0:router# show running-config interface MgmtEth 0/RP0/CPU0/0
```

```

interface MgmtEth0/RP0/CPU0/0
description Connected to Lab LAN
ipv4 address 172.29.52.70 255.255.255.0
!

```

Additional References

The following sections provide references related to Management Ethernet interface configuration.

Related Documents

Related Topic	Document Title
Cisco IOS XR master command reference	<i>Cisco IOS XR Master Commands List</i>
Cisco IOS XR interface configuration commands	<i>Cisco IOS XR Interface and Hardware Component Command Reference</i>
Initial system bootup and configuration information for a router using the Cisco IOS XR software.	<i>Cisco IOS XR Getting Started Guide</i>
Information about user groups and task IDs	<i>Cisco IOS XR Interface and Hardware Component Command Reference</i>
Information about configuring interfaces and other components on the Cisco CRS-1 Router from a remote Craft Works Interface (CWI) client management application	<i>Cisco Craft Works Interface Configuration Guide</i>

Standards

Standards	Title
No new or modified standards are supported by this feature, and support for existing standards has not been modified by the feature.	—

MIBs

MIBs	MIBs Link
There are no applicable MIBs for this module.	To locate and download MIBs for selected platforms using Cisco IOS XR Software, use the Cisco MIB Locator found at the following URL: http://cisco.com/public/sw-center/netmgmt/cmtk/mibs.shtml

RFCs

RFCs	Title
No new or modified RFCs are supported by this feature, and support for existing RFCs has not been modified by this feature.	—

Technical Assistance

Description	Link
The Cisco Technical Support website contains thousands of pages of searchable technical content, including links to products, technologies, solutions, technical tips, and tools. Registered Cisco.com users can log in from this page to access even more content.	http://www.cisco.com/techsupport