Configuring Management Ethernet Interface

This module describes the configuration of Management Ethernet interfaces.

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.

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

Note In a High Availability setup, when an active RP interface is shut the ping to gateway fails, though standby RP or virtual RP is up and running. RSP4 does not support inject packets from a standby RP management interface.

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Information About Configuring Management Ethernet Interfaces

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

Prerequisites for Configuring Management Ethernet Interfaces

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

- You have performed the initial configuration of the Management Ethernet interface.
- You know how to apply the generalized interface name specification *rack/slot/module/port*.

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

Restrictions on Cisco NCS 540 Series Routers

The restrictions are applicable on the following routers.

- N540-28Z4C-SYS-A
- N540-28Z4C-SYS-D
- N540X-16Z4G8Q2C-A
- N540X-16Z4G8Q2C-D
- N540-12Z20G-SYS-A
- N540-12Z20G-SYS-D
- N540X-12Z16G-SYS-A
- N540X-12Z16G-SYS-D

- Virtual IPv6 addressing is not supported on the management interface.

How to Perform Advanced Management Ethernet Interface Configuration

This section contains the following procedures:

IPv6 Stateless Address Auto Configuration on Management Interface

Perform this task to enable IPv6 stateless auto configuration on Management interface.

Procedure

Step 1 **configure**

Example:

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

Enters global configuration mode.

Step 2 **interface MgmtEth** *interface-path-id*

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 *rack*/*slot*/*module*/*port*.

The example indicates port 0 on the RP card that is installed in slot 0.

Step 3 **ipv6 address autoconfig**

Example:

```
RP/0/RP0/CPU0:router(config-if)# ipv6 address autoconfig
```

Enable IPv6 stateless address auto configuration on the management port.

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.

- When you issue the **end** command, the system prompts you to commit changes:

```
Uncommitted changes found, commit them before exiting(yes/no/cancel)?
[cancel]:
```

- 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 5 **show ipv6 interfaces** *interface-path-id*

Example:

```
RP/0/RP0/CPU0:router# show ipv6 interfaces gigabitEthernet 0/0/0/0
```

(Optional) Displays statistics for interfaces on the router.

Example

This example displays :

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# interface MgmtEth 0/RP0/CPU0/0
RP/0/RP0/CPU0:router(config-if)# ipv6 address autoconfig
RP/0/RP0/CPU0:router(config-if)# commit
RP/0/RP0/CPU0:router# show ipv6 interfaces gigabitEthernet 0/0/0/0

Fri Nov  4 16:48:14.372 IST
GigabitEthernet0/2/0/0 is Up, ipv6 protocol is Up, Vrfid is default (0x60000000)
  IPv6 is enabled, link-local address is fe80::d1:1eff:fe2b:baf
  Global unicast address(es):
    5::d1:1eff:fe2b:baf [AUTO CONFIGURED], subnet is 5::/64  <<<<<<  auto configured address

  Joined group address(es): ff02::1:ff2b:baf ff02::2 ff02::1
  MTU is 1514 (1500 is available to IPv6)
  ICMP redirects are disabled
  ICMP unreachables are enabled
  ND DAD is enabled, number of DAD attempts 1
  ND reachable time is 0 milliseconds
  ND cache entry limit is 1000000000
  ND advertised retransmit interval is 0 milliseconds
  Hosts use stateless autoconfig for addresses.
  Outgoing access list is not set
  Inbound  common access list is not set, access list is not set
  Table Id is 0xe0800000
  Complete protocol adjacency: 0
  Complete glean adjacency: 0
  Incomplete protocol adjacency: 0
  Incomplete glean adjacency: 0
  Dropped protocol request: 0
  Dropped glean request: 0
```

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.

Procedure

Step 1 **configure**

Example:

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

Enters global configuration mode.

Step 2 **interface MgmtEth** *interface-path-id*

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 *rack*/*slot*/*module*/*port*.

The example indicates port 0 on the RP card that is installed in slot 0.

Step 3 **ipv4 address** *ip-address mask*

Example:

```
RP/0/RP0/CPU0:router(config-if)# ipv4 address 1.76.18.150/16 (or)
ipv4 address 1.76.18.150 255.255.0.0
```

Assigns an IP address and subnet mask to the interface.

- Replace *ip-address* with the primary IPv4 address for the interface.
- Replace *mask* with the mask for the associated IP subnet. The network mask can be specified in either of two ways:
- The network mask can be a four-part dotted decimal address. For example, 255.255.0.0 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, /16 indicates that the first 16 bits of the mask are ones, and the corresponding bits of the address are network address.

Step 4 **no ipv6 address autoconfig**

Example:

```
RP/0/RP0/CPU0:router(config-if)# no ipv6 address autoconfig
```

(Optional) Disables IPv6 address on the interface.

Step 5 **mtu** *bytes*

Example:

```
RP/0/RP0/CPU0:router(config-if)# mtu 1488
```

(Optional) Sets the maximum transmission unit (MTU) byte value for the interface. The default is 1514.

- The default is 1514 bytes.
- The range for the Management Ethernet interface Interface **mtu** values is 64 to 1514 bytes.

Step 6 **no shutdown**

Example:

```
RP/0/RP0/CPU0:router(config-if)# no shutdown
```

Removes the shutdown configuration, which removes the forced administrative down on the interface, enabling it to move to an up or down state.

Step 7 **end** or **commit**

Example:

```
RP/0/RP0/CPU0:router(config-if)# end
```

or

```
RP/0/RP0/CPU0:router(config-if)# commit
```

Saves configuration changes.

- When you issue the **end** command, the system prompts you to commit changes:

```
Uncommitted changes found, commit them before exiting(yes/no/cancel)?
[cancel]:
```

- 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 8 **show interfaces MgmtEth** *interface-path-id*

Example:

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

(Optional) Displays statistics for interfaces on the router.

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-if)# ipv4 address 1.76.18.150/16
RP/0/RP0/CPU0:router(config-if)# no ipv6 address autoconfig
RP/0/RP0/CPU0:router(config-if)# no shutdown
RP/0/RP0/CPU0:router(config-if)# commit
RP/0/RP0/CPU0:router: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

MgmtEth0/RP0/CPU0/0 is up, line protocol is up
  Interface state transitions: 3
  Hardware is Management Ethernet, address is 1005.cad8.4354 (bia 1005.cad8.4354)
  Internet address is 1.76.18.150/16
```

```
  MTU 1488 bytes, BW 1000000 Kbit (Max: 1000000 Kbit)
     reliability 255/255, txload 0/255, rxload 0/255
  Encapsulation ARPA,
  Full-duplex, 1000Mb/s, 1000BASE-T, link type is autonegotiation
  loopback not set,
  Last link flapped 00:00:59
  ARP type ARPA, ARP timeout 04:00:00
  Last input 00:00:00, output 00:00:02
  Last clearing of "show interface" counters never
  5 minute input rate 4000 bits/sec, 3 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     21826 packets input, 4987886 bytes, 0 total input drops
     0 drops for unrecognized upper-level protocol
     Received 12450 broadcast packets, 8800 multicast packets
              0 runs, 0 giants, 0 throttles, 0 parity
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
     1192 packets output, 217483 bytes, 0 total output drops
     Output 0 broadcast packets, 0 multicast packets
     0 output errors, 0 underruns, 0 applique, 0 resets
     0 output buffer failures, 0 output buffers swapped out
     3 carrier transitions

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

interface MgmtEth0/RP0/CPU0/0
 mtu 1488
 ipv4 address 1.76.18.150/16
 ipv6 address 2002::14c:125a/64
 ipv6 enable
!
```

The following example displays VRF configuration and verification of the Management Ethernet interface on the RP with source address:

```
RP/0/RP0/CPU0:router# show run interface MgmtEth 0/RP0/CPU0/0
interface MgmtEth0/RP0/CPU0/0
 vrf httpupload
 ipv4 address 10.8.67.20 255.255.0.0
 ipv6 address 2001:10:8:67::20/48
!

RP/0/RP0/CPU0:router# show run http
Wed Jan 30 14:58:53.458 UTC
http client vrf httpupload
http client source-interface ipv4 MgmtEth0/RP0/CPU0/0

RP/0/RP0/CPU0:router# show run vrf
Wed Jan 30 14:59:00.014 UTC
vrf httpupload
!
```

Verifying Management Ethernet Interface Configuration

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

Procedure

Step 1 **show interfaces MgmtEth** *interface-path-id*

Example:

```
RP/0/RP0/CPU0:router# show interfaces MgmtEth 0/RP0/CPU0/0
MgmtEth0/RP0/CPU0/0 is up, line protocol is up
  Interface state transitions: 3
  Hardware is Management Ethernet, address is 4ce1.767c.3b00 (bia 4ce1.767c.3b00)
  Internet address is 1.76.18.150/16
  MTU 1488 bytes, BW 1000000 Kbit (Max: 1000000 Kbit)
     reliability 255/255, txload 0/255, rxload 0/255
  Encapsulation ARPA,
  Full-duplex, 1000Mb/s, 1000BASE-T, link type is autonegotiation
  loopback not set,
  Last link flapped 11w5d
  ARP type ARPA, ARP timeout 04:00:00
  Last input 00:00:00, output 02:26:34
  Last clearing of "show interface" counters never
  5 minute input rate 12000 bits/sec, 11 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     12703775975 packets input, 3169461581071 bytes, 0 total input drops
     0 drops for unrecognized upper-level protocol
     Received 12696055435 broadcast packets, 3869832 multicast packets
              0 runts, 0 giants, 0 throttles, 0 parity
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
     15836861 packets output, 6225384076 bytes, 0 total output drops
     Output 0 broadcast packets, 4 multicast packets
     0 output errors, 0 underruns, 0 applique, 0 resets
     0 output buffer failures, 0 output buffers swapped out
     3 carrier transitions
```

Displays the Management Ethernet interface configuration.

Step 2 **show running-config interface MgmtEth** *interface-path-id*

Example:

```
RP/0/RP0/CPU0:router# show running-config interface MgmtEth 0/RP0/CPU0/0
interface MgmtEth0/RP0/CPU0/0
 mtu 1488
 vrf mgmt
 ipv4 address 1.76.18.150 255.255.0.0
!
RP/0/RP0/CPU0: router#
```

Displays the running configuration.