Remote console connection workflow

Use this reference to review remote console connection.

The following information supports remote console connection:

- Use this reference to review remote console connection behavior and related topics for Cisco NCS 1010.

Remote console connection support for Cisco NCS 1010

Use this reference to review remote console connection.

You can access the remote nodes only when you enable the RCOM interface on all the nodes. The RCOM interface remains shut by default. Remote console enables you to access the remote nodes and configure them.

- Benefits of remote console connections

  Remote console connections help

  - to access the remote nodes information even if intermediate nodes are in headless mode, and
  - to troubleshoot the remote nodes that don't have physical console connection.

- Limitations of remote console connections

  Remote console connection cannot be established if

  - the peer MAC addresses are missing,
  - hostname has changed, or
  - RCOM interface is in Shutdown state on each node

Table 1: Feature History

Feature Name	Release Information	Feature Description
Remote Console Connection	Cisco IOS XR Release 24.4.15	The Remote Console Connection enables you to connect to remote OLT and ILA nodes within the network using the OSC GigabitEthernet interface. This functionality allows you to access detailed information about the remote nodes through the near-end nodes by enabling the RCOM interface that is disabled by default. It provides essential access for gathering information and troubleshooting the remote nodes, even when intermediate nodes are in headless mode or lack a physical console connection. Establish connetion to the remote nodes through their hostname or MAC address. The commands that enable remote connection are: • **remote-connect hostname <hostname>** • **remote-connect mac <mac-address>** • **show remote-connect neighbours**

Find the MAC address of all the nodes

Use this task to find the MAC address of all the nodes.

Note This procedure considers that you are establishing console connection to a remote ILA node in a 3-node OLT-ILA-OLT topology. The output changes for different topologies.

Before you begin

Enable LLDP in all nodes in the network. See Link Layer Discovery Protocol Support on Management Interface.

Follow these steps to find the MAC address of all the nodes.

Procedure

Step 1 Unshut the RCOM interface in all the nodes to prepare for remote console connection.

Example:

For security reasons, console access to the remote nodes are disabled by default. To access the remote node's console, enable the RCOM management interface.

```
RP/0/RP0/CPU0:ios(config)#interface MgmtEth 0/RP0/RCOM0/0
RP/0/RP0/CPU0:ios(config-if)#no shutdown
```

```
RP/0/RP0/CPU0:ios(config-if)#commit
Wed Sep  4 11:40:14.864 IST
```

Note
Unshutting the RCOM interface enables only the LLDP receive operations to receive remote node details.

Step 2 Run **end** to exit the RCOM interface.

Example:

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

Step 3 Run **show ipv4 interface brief** to verify the RCOM interface status.

Example:

The output, displaying the node's IPv4 interface details, highlights the *UP* status of the node's RCOM interface.

```
RP/0/RP0/CPU0:ios#show ipv4 interface brief
Wed Sep  4 11:40:23.460 IST

Interface                      IP-Address      Status          Protocol Vrf-Name
Loopback0                      10.1.1.2        Up              Up       default
GigabitEthernet0/0/0/0         10.1.1.2        Up              Up       default
GigabitEthernet0/0/0/2         10.1.1.2        Up              Up       default
MgmtEth0/RP0/CPU0/0            4.34.2.200      Up              Up       default
PTP0/RP0/CPU0/0                unassigned      Shutdown        Down     default
MgmtEth0/RP0/CPU0/1            unassigned      Shutdown        Down     default
PTP0/RP0/CPU0/1                unassigned      Shutdown        Down     default
MgmtEth0/RP0/CPU0/2            10.127.126.174  Shutdown        Down     default
MgmtEth0/RP0/RCOM0/0           unassigned      Up              Up       default
```

Step 4 Run **show lldp neighbors** or **show lldp neighbors details** to find the MAC addresses of all the nodes in the topology.

Note
You can find the details of only the nodes that are connected to the OLT node through OSC gigabit ethernet interface.

Example:

The **show lldp neighbors** output, displaying the neighbors details of the near-end OLT node, highlights the hostname of its neighbor nodes.

```
RP/0/RP0/CPU0:ios#show lldp neighbors
Thu Mar 20 16:19:15.151 IST
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
R4              GigabitEthernet0/0/0/0      120        R               GigabitEthernet0/0/0/0
R5              GigabitEthernet0/0/0/2      120        R               GigabitEthernet0/0/0/0

Total entries displayed: 2
```

Example:

The **show lldp neighbors details** output displays the system name and its peer MAC address in detail.

```
RP/0/RP0/CPU0:ios#show lldp neighbors details
Thu Mar 20 16:19:17.010 IST
Capability codes:
        (R) Router, (B) Bridge, (T) Telephone, (C) DOCSIS Cable Device
        (W) WLAN Access Point, (P) Repeater, (S) Station, (O) Other
```

```
------------------------------------------------
Local Interface: GigabitEthernet0/0/0/0
Chassis id: cced.4dda.9ebe
Port id: GigabitEthernet0/0/0/0
Port Description - not advertised
System Name: R4

System Description:
24.4.15.18I, NCS1010

Time remaining: 108 seconds
Hold Time: 120 seconds
Age: 264651 seconds
System Capabilities: R
Enabled Capabilities: R
Management Addresses:
  IPv4 address: 10.1.1.1

Peer MAC Address: cc:ed:4d:da:9e:c2


------------------------------------------------
Local Interface: GigabitEthernet0/0/0/2
Chassis id: 689e.0bb8.7122
Port id: GigabitEthernet0/0/0/0
Port Description - not advertised
System Name: R5

System Description:
24.4.15.18I, NCS1010

Time remaining: 92 seconds
Hold Time: 120 seconds
Age: 290600 seconds
System Capabilities: R
Enabled Capabilities: R
Management Addresses:
  IPv4 address: 10.1.1.3

Peer MAC Address: 68:9e:0b:b8:71:26


Total entries displayed: 2
```

Connect to a remote node

Use this task to connect to a remote node.

Follow the steps to establish a connection to a remote node through the near-end OLT node.

Before you begin

LLDP must be enabled in all nodes in the network. See Link Layer Discovery Protocol Support on Management Interface.

RCOM interface must be in *UP* status.

Follow these steps to connect to a remote node.

Procedure

Step 1 Run **remote-connect** with **mac** or **hostname** of the remote node to establish connection to it.

Example:

If you have the hostname of the destination node, use `remote-connect hostname <hostname>`.

```
RP/0/RP0/CPU0:ios#remote-connect hostname R5
```

In this example, *R5* is the hostname of the remote node.

Example:

If you have the MAC address of the destination node, use `remote-connect mac <mac-address>`.

```
RP/0/RP0/CPU0:ios#remote-connect mac 98:a2:c0:34:3f:f3
```

In this example, *98:a2:c0:34:3f:f3* is the MAC address of the remote node.

Step 2 Run **show remote-connect neighbours** to verify the connections between the remote nodes and the OLT node.

Example:

The output highlights RCOM interface, hostname, and mac-address of the remote nodes that are connected to the OLT node.

```
RP/0/RP0/CPU0:ios#show remote-connect neighbours
Fri Oct 25 12:08:08.905 IST
Remote console neighbour details
Records : 2

Interface               ChassisId       Mac                 Hostname
MgmtEth0/RP0/RCOM0/0    FCxxxxxxx58     f8:39:18:3e:79:1b   R5
MgmtEth0/RP0/RCOM0/0    FCxxxxxxxWY     68:9e:0b:b8:71:1e   R4
```

Step 3 (Optional) Run the **remote-connect timeout** command to set the timeout value for a remote connection session.

Example:

If you want to set a timeout value, use `remote-connect hostname <hostname> timeout <1-60>`.

```
RP/0/RP0/CPU0:ios#remote-connect hostname PROD2 timeout 3
```

In this example, the timeout value is set to *3 minutes*.

Note
The default timeout value is 15 minutes. The timeout range is 1 to 60 minutes.

Step 4 (Optional) Run the **remote-connect verbose** command to collect logs for the remote connection between the near-end and far-end node.

Example:

```
RP/0/RP0/CPU0:ios#remote-connect mac 98:a2:c0:34:3f:f3 verbose
Wed Mar 19 15:15:59.436 IST
Verbose log enabled, log stored at : /var/log/remote_console/rcon.log ...
Welcome to Remote Console! Press Ctrl-Z to end session
Timeout set as : 15 min
```

In this example, **verbose** is enabled for the *98:a2:c0:34:3f:f3* mac-aaddress.