



Understanding Remote Node Management Using OSC

The remote node management feature in NCS 1010 allows you to remotely manage an ILA node that is not connected to a management network through an OLT gateway node over Optical Supervisory Channel (OSC) interface. The OLT node is connected to a management network and manages ILA node remotely. If the OLT node link is down, the ILA node cannot be accessible.

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Prerequisites

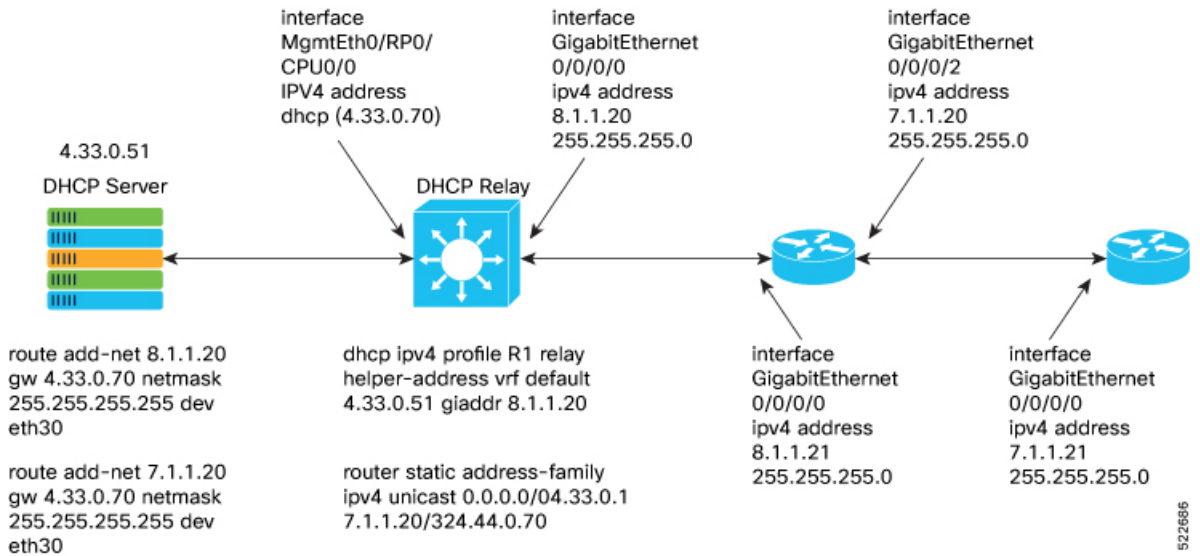
The remote node management for ILA node works only if the following conditions are met:

- The DSCP relay configuration for OLT node must be present. See [DHCP Relay Configuration for OLT Node, on page 1](#)
- The loopback address and IP address must be present for OSC interface. See [Loopback IP address for OSC Interface, on page 3](#)
- The OSPF neighbor discovery must be successful between OLT and ILA nodes. See [OSPF Neighbor Discovery, on page 3](#)

DHCP Relay Configuration for OLT Node

The OLT node must be configured with the DHCP management connection to manage the ILA node remotely over OSC interface.

Figure 1: DHCP Relay Configuration for OLT Node



Following is the sample DHCP relay configuration for the OLT gateway node:

```
RP/0/RP0/CPU0:P2B_DT_02#sh running-config int mgmtEth 0/RP0/CPU0/2
Thu Jun  9 06:37:59.071 UTC
interface MgmtEth0/RP0/CPU0/2
!
  ipv4 address 192.168.1.1 255.255.255.252
!

RP/0/RP0/CPU0:P2B_DT_02#

RP/0/RP0/CPU0:P2C_DT_02#

RP/0/RP0/CPU0:P2B_DT_02#sh running-config dhcp ipv4
Thu Jun  9 06:28:51.879 UTC
dhcp ipv4
  profile R1 relay
    helper-address vrf default 10.4.33.51 giaddr 10.8.1.20
  !
  interface GigabitEthernet0/0/0/0 relay profile R1
  !
```

In the above sample CLI,

- **10.4.33.51** is the DHCP server IP address
- **10.8.1.20** is the OSC interface IP address that going to ILA node from OLT node
- **0/0/0/0** is the interface number
- **R1** is the profile

Sample command for DHCP server:

```
3) Config on dhcp server:
route add -net <OLT-OSCip> gw <OLT-MGMTip> netmask 255.255.255.255 dev eth3

route add -net 10.8.1.20 gw 10.4.33.70 netmask 255.255.255.255 dev eth3
route add -net 10.7.1.20 gw 10.4.33.70 netmask 255.255.255.255 dev eth3
Config on OLT:
dhcp ipv4 profile R1 relay helper-address vrf default 10.4.33.51 giaddr 10.8.1.20
```

```

router static
address-family ipv4 unicast
  0.0.0.0/0 10.4.33.1
  10.7.1.20/32 10.4.44.70
interface MgmtEth0/RP0/CPU0/0
ipv4 address dhcp
interface GigabitEthernet0/0/0/0
ipv4 address 10.8.1.20 255.255.255.0

```

Loopback IP address for OSC Interface

The loopback IP address must be mapped for the OSC interface.



Note The loopback IP address is essential as it acts as a router ID for the OSPF configuration. Many communication protocols such as: SSH, GRPC and optical applications, and remote login need the router ID for OSPF configuration. .

Following is the sample of loopback and IP address for OSC interface:

```

RP/0/RP0/CPU0:P2B_DT_02#sh running-config interface loopback 0
Thu Jun  9 06:29:00.447 UTC
interface Loopback0
  ipv4 address 10.3.3.20 255.255.255.255
!
```

OSPF Neighbor Discovery

The OSPF neighbor discovery indicates the successful connection between OLT and ILA node.

Following is the sample CLI:

```

RP/0/RP0/CPU0:P2C_DT_02#sh ospf neighbor
Tue Jul 26 07:31:29.532 UTC
* Indicates MADJ interface
# Indicates Neighbor awaiting BFD session up
Neighbors for OSPF 1
Neighbor ID      Pri   State           Dead Time   Address           Interface
10.3.3.20        1    FULL/ -         00:00:35    10.8.1.20         GigabitEthernet0/0/0/0
Neighbor is up for 00:00:42

Total neighbor count: 1
RP/0/RP0/CPU0:P2C_DT_02#

```

In the above CLI,

- **198.51.100.1** is the neighbor IP address
- **10.8.1.21** is the OSC interface IP address

Configure ILA Node

The following is a sample command for ILA node configuration:

```
interface GigabitEthernet0/0/0/0
ipv4 address 10.8.1.21 255.255.255.0
!
interface GigabitEthernet0/0/0/2
ipv4 address 10.7.1.21 255.255.255.0

router ospf 1
distribute link-state
network point-to-point
redistribute connected
area 0
    interface Loopback0
    !
    interface GigabitEthernet0/0/0/0
    !
    interface GigabitEthernet0/0/0/2
```

Configure OLT Node

The following is a sample command to configure the OLT node with loopback ip:

Configure

```
interface Loopback0
ipv4 address 10.3.3.21 255.255.255.255
!
interface GigabitEthernet0/0/0/0
ipv4 address 10.7.1.20 255.255.255.0
router ospf 1
distribute link-state
network point-to-point
area 0
    interface Loopback0
    !
    interface GigabitEthernet0/0/0/0
```

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