Upgrade NCS 2000 nodes to the Cisco Optical Site Manager

Table 1: Feature History Table

Feature Name	Release Information	Feature Description
NCS 2000 Node upgrade	Cisco NCS 2000 Release 25.1.1	The NCS 2000 nodes are upgraded to R25.1.1 to transition NCS 2000 node management from CTC to Cisco Optical Site Manager. With this upgrade, you can manage the NCS 2000 nodes in the Node view of the Cisco Optical Site Manager application. The list of SSON releases that upgrade to R25.1.1 SSON are: • R11.1.1.4 • R11.1.2.3 • R11.1.3 • R11.1.3.1 • R11.1.3.2 The node upgrade is a non-traffic-affecting operation and must be performed in the following order: • Upgrade the NCS 2000 node from a 11.x release using CTC. • Install and configure the SVO line card. • Launch Cisco Optical Site Manager via SVO line card admin plane and onboard the NCS 2000 device hosting the SVO line card(s). • (Optional) Add other nodes, either NCS 2000 or NCS 1000 nodes, into the Cisco Optical Site Manager.

NCS 2000 node upgrade is a software upgrade procedure that

- transitions NCS 2000 node management from CTC to Cisco Optical Site Manager, and
- upgrades R11.1.1.4, R11.1.2.3, R11.1.3, R11.1.3.1, and R11.1.3.2 to R25.1.1.

This section contains these topics.

Prerequisites for adding the NCS 2000 nodes to Cisco Optical Site Manager

Pre-requisites for NCS 2000 Upgrade

This section provides the prerequisites to add the NCS 2000 nodes to Cisco Optical Site Manager. In CTC, perform the actions:

- Check the NCS 2000 is configured as multishelf.
- Check that Rack ID and Chassis IDs are configured as expected into the NCS 2000 node.
- Choose **Node View** > **Provisioning** > **Network** > **General** and then enable the **Enable SOCKS-proxy only** check box.

Note This configuration applies to all NCS 2000 nodes such as ROADM, OLA, and remote transponders.

- In addition to usual operation required for an NCS 2000 release upgrade, run the node diagnostic to get the snapshot before the NCS 2000 node upgrade.
- In case of the NCS 2000 Remote TXP, adjust the Rack IDs and Chassis IDs to avoid shelves overlapping with ROADM node.

  Choose **Node View** > **Provisioning** > **General** > **Rack Layout Config** and click **Edit**.

Note Set the Rack Number for the NCS 2000 remote transponder node that is different from the Rack Number of the NCS 2000 ROADM node to which you want to add the NCS 2000 remote transponder node.

Pre-requisites for Cisco Optical Site Manager

This section provides the prerequisites to add the NCS 2000 SVO line cards to Cisco Optical Site Manager.

- Install the new SVO line cards. Refer to SVO LC installation procedure for more information.
- Define the SVO line card high availability and its placement in the existing networks. In high availability configurations, upgrade the two NCS 2000 nodes hosting the SVO line card.
- Plan the Cisco Optical Site Manager nodes IP address according to SVO LC installation rules.

Upgrade NCS 2000 nodes hosting SVO line cards

Table 2: Feature History Table

Feature Name	Release Information	Feature Description
SSH upgrade	Cisco NCS 2000 Release 25.1.1	When you upgrade to R25.1.1, the SSH and SSL libraries upgrade to the latest revisions that provide better security, addressing vulnerabilities. New versions Cisco Optical Site Manager supports after upgrade (25.x) CISCOSSL: 1.1.1y.7.3.377 (6/6/2024) CISCOSSH: 1.14.55

Use this task to upgrade the NCS 2000 nodes that will install a fresh R25.1.1 SVO line cards from R11.x to R25.1.1.

Note If SVO line cards are present in the NCS 2000 nodes in the geo HA configuration, repeat this task on both NCS 2000 nodes.

Procedure

Step 1 Upgrade the NCS 2000 nodes to the R25.1.1.

a) Download and activate the NCS2K-S-package for R25.1.1.

For more information on the software activation, refer to *Cisco NCS 2000 Series Upgrade Guide*.

Note
While the NCS 2000 nodes upgrade to R25.1.1, both Active and Standby controller cards perform an additional boot during the upgrade.

b) Reopen CTC in the R25.1.1 node.

c) Delete the cache option on the login window as this is a major release upgrade.

Note
The CTC R25.1.1 will now have some panels disabled as some node management will be performed via the Cisco Optical Site Manager WebUI.

Step 2 In CTC, perform the following steps.

a) Enable the OSPF on LAN as follows.

This setting is required on the NCS 2000 node that is hosting the SVO line card irrespective of any HA configuration. The **LAN Port Area ID** value depends on your network.

1. In Tab View, go to **Provisioning** > **Network** > **OSPF**.

2. In the **OSPF on LAN** pane, enable the **OSPF active on LAN** check box.

b) Open the controller card in the node that is connected to the other NCS 2000 node.

The SVO line cards in GEO HA configuration use the UDC ports. So the UDC ports need to be properly enabled on the NCS 2000 node. The SVO line cards in GEO HA configuration are supported between two NCS 2000 adjacent nodes, both nodes need to enable UDC.

1. In Tab View, go to **Provisioning** > **UDC/VOIP**.
2. In the **UDC/VOIP** pane, select **UDC** for the available **Service Type**.

Step 3 Install the SVO line card in person. Refer the SVO line card installation for more information.

a) Plug-in the first SVO line card into the NCS 2000 node with proper cabling.
b) Install the second SVO line card in high availability configuration.

Note
For the geo HA configuration, install the SVO line cards in two different NCS 2000 nodes.

Two NCS 2000 nodes are upgraded with two SVO line card ready to configure the Cisco Optical Site Manager application.

The CTC view of the SVO line card will be a double slot line card with the name reported.

Step 4 Connect to Cisco Optical Site Manager Admin Plane WebUI. For more information, refer to Cisco Optical Site Manager Admin Plane .

Note
In the geo HA configuration, there are two SVO line cards. Each SVO instance has its own IP address. You can connect to one of the two instances for the initial Cisco Optical Site Manager application setup.

Step 5 Create a Cisco Optical Site Manager instance using the Admin Plane WebUI. For more information, refer to Cisco Optical Site Manager Instances..

Cisco Optical Site Manager application will run in a container environment via docker. Hence, this step will require settings used by the virtual environment.

Step 6 After you create the Cisco Optical Site Manager Admin Plane instance, log in to the Cisco Optical Site Manager WebUI. For more information, refer to Log into Cisco Optical Site Manager.

Note
Use the *Username* and *Password* that you configured in Step 5 for Cisco Optical Site Manager instance creation.

The Cisco Optical Site Manager WebUI opens in **Node Functional View**.

Step 7 Create Cisco Optical Site Manager Authentication Group for SVO line cards and NCS 2000 nodes.

The *Authentication Group* defines the username and password that the Cisco Optical Site Manager application will use to connect to the SVO line card, NCS 2000 node or remote device.

a) Choose **Devices** > **Authorization Group**.

1. For the SVO line card, Cisco Optical Site Manager creates the Authentication Group automatically. Edit the password field to enter the password of the added SVO line card.

Note

The SVO line card password is the password that you created during the SVO line card installation.

Note
SVO line card is considered as a separate device for the Cisco Optical Site Manager node although it is physically a line card plugged into the NCS 2000 node.

In the HA mode, both line cards are added to the *Authentication Group*.

2. For the NCS 2000 node, refer to Manage Authorization Groups.

Note
After creating the Authorization Group, Cisco Optical Site Manager manages only one NCS 2000 node.

After you create the Authorization group, all the SVO line cards, NCS 2000 nodes and remote nodes appear in a list.

Step 8 (Optional) Set the NTP Server for the Cisco Optical Site Manager WebUI.

Cisco Optical Site Manager requires its own NTP Server settings.

a) At the bottom left of the application, click settings icon and then click **NTP**.

You can either maintain the NTP settings on NCS 2000 device or remove them depending on your network choie.

If you decide to	then
maintain the NCS 2000 NTP settings	the Cisco Optical Site Manager node NTP setting affects only the Cisco Optical Site Manager application.
remove the NCS 2000 NTP settings	the Cisco Optical Site Manager application pushes the time information to the NCS 2000 node.

b) Click **Edit** to edit the NTP server settings.

Step 9 Onboard the NCS 2000 node to the Cisco Optical Site Manager WebUI. For more information, refer to

a) Choose **Devices** > **Devices** and click + icon to add device. For more information on adding a device, refer to *Add Devices*.

In Cisco Optical Site Manager application, a subtended network element, in this case NCS 2000, is referred as device.

The **Add Device** box opens.

b) Enter the device information as required.

Fields	Actions
Device Type	Select **ncs2000** from the drop-down list.
Device Flavor	**any-config** is the default option.
Device Name	Name of the device to add. This is the string to identify the device into the Cisco Optical Site Manager application.

Fields	Actions
First Active Chassis UID	As this is the first NCS2K node/device added to a Cisco Optical Site Manager-Node leave it blank (this imply starting Chassis UID from 0)
IP Address	IP address of the NCS2K node.
Auth Group	Select the one added in previous step containing the credential for the NCS2K node.

Note
Device Name and *Device Flavor* cannot be changed afterwards unless you delete and re-add the device.

c) Click **Add** to initiate the operation.

Device onboarding may take few minutes.

Step 10 Verify the NCS 2000 device **Sync Status** is *sync completed, alarm-synchronized*.

If **Sync Status** has a different message, refer to the troubleshooting upgrades.

The NCS 2000 node is upgraded to R25.1.1 and managed by its Cisco Optical Site Manager application accessible via Web UI. Cisco Optical Site Manager application represents the new view of the node as the Cisco Optical Site Manager node. The Cisco Optical Site Manager node is reachable via its IP address in the new DCN planned for the Cisco Optical Site Manager Management. Cisco Optical Site Manager node is ready to be imported into CONC.

What to do next

Upgrade the remaining NCS 2000 nodes in the network.

Upgrade the remaining NCS 2000 nodes

Table 3: Feature History Table

Feature Name	Release Information	Feature Description
SSH upgrade	Cisco NCS 2000 Release 25.1.1	When you upgrade to R25.1.1, the SSH and SSL libraries upgrade to the latest revisions that provide better security, addressing vulnerabilities. New versions Cisco Optical Site Manager supports after upgrade (25.x) CISCOSSL: 1.1.1y.7.3.377 (6/6/2024) CISCOSSH: 1.14.55

Use this task to upgrade the rest of the NCS 2000 nodes in the network that do not host the SVO line card.

Note The NCS 2000 nodes considered in this task do not have SVO line cards. But these nodes are connected to NCS 2000 nodes that have an operational SVO line card. Each SVO line card can monitor up to 15 Cisco Optical Site Manager nodes.

Procedure

Step 1 Upgrade the NCS 2000 nodes to the R25.1.1.

a) Download and activate the NCS2K-S-package for R25.1.1.

For more information on the software activation, refer to *Cisco NCS 2000 Series Upgrade Guide*.

Note
While the NCS 2000 nodes upgrade to R25.1.1, both Active and Standby controller cards perform an additional boot during the upgrade.

b) Reopen CTC in the R25.1.1 node.

c) Delete the cache option on the login window as this is a major release upgrade.

Note
The CTC R25.1.1 will now have some panels disabled as some node management will be performed via the Cisco Optical Site Manager WebUI.

Step 2 Connect to Cisco Optical Site Manager Admin Plane WebUI. For more information, refer to Cisco Optical Site Manager Admin Plane .

Step 3 Create a Cisco Optical Site Manager instance using the Admin Plane WebUI. For more information, refer to Cisco Optical Site Manager Instances..

Cisco Optical Site Manager application will run in a container environment via docker. Hence, this step will require settings used by the virtual environment.

Step 4 After you create the Cisco Optical Site Manager Admin Plane instance, connect to the Cisco Optical Site Manager WebUI. For more information, refer to Log into Cisco Optical Site Manager.

Note
Use the *Username* and *Password* that you configured during Cisco Optical Site Manager instance creation.

The Cisco Optical Site Manager WebUI opens in **Node Functional View**.

Step 5 Create Cisco Optical Site Manager Authentication Group for the NCS 2000 nodes.

The *Authentication Group* defines the username and password that the Cisco Optical Site Manager application will use to connect to the NCS 2000 node. For more information, refer to Manage Authorization Groups.

After you create the Authorization group NCS 2000 nodes appear in a list.

Step 6 Onboard the NCS 2000 node to the Cisco Optical Site Manager WebUI. Repeat the Step 8 to 10 in *Upgrade NCS 2000 nodes hosting SVO line cards*.

The NCS 2000 node is upgraded to R25.1.1 and managed by its Cisco Optical Site Manager application accessible via Web UI. Cisco Optical Site Manager application represents the new view of the node as the

Cisco Optical Site Manager node. The Cisco Optical Site Manager node is reachable via its IP address in the new DCN planned for the Cisco Optical Site Manager Management. Cisco Optical Site Manager node is ready to be imported into CONC.

Add an NCS 2000 remote TXP node to a Cisco Optical Site Manager node

Before you begin

Configure the rack number for the NCS 2000 Remote TXP node so that it does not overlap with rack number of its associated ROADM already added in CTC.

Procedure

Step 1 Upgrade the NCS 2000 transponder nodes to R25.1.1. Repeat Step 1 from *Upgrade NCS 2000 nodes hosting SVO line cards*.

Step 2 Log in to Cisco Optical Site Manager WebUI using the credentials of the required Cisco Optical Site Manager instance.

Step 3 Go to **Devices** > **Devices** > **Device Hardware Details** and verify the available UIDs in the Cisco Optical Site Manager WebUI.

Step 4 Add the remote transponder node to the Cisco Optical Site Manager node.

a) In the **Devices** tab, click + to add the devices.
The **Add Device** window opens.

b) Select **Device Type** as *ncs2000* and **Device Flavor** as *txp-only*.

c) Enter the **Device Name**, **First Active Chassis UID**, and **IP Address**.

Make sure the value of **First Active Chassis UID** is a not in use. The value must follow the sequence of free UIDs as the chassis UID for the remote transponder. If you enter an incorrect UID, wait for the device addition to complete. Then delete the device and repeat the steps.

d) Select the required **Auth Group** and then click **Add**.

Troubleshooting NCS 2000 Cisco Optical Site Manager node upgrade

NCS 2000 remote TXP nodes are overlapping in the Cisco Optical Site Manager UI

Issue

“Rack Number” of the remote TXP is overlapping with the rack number of an already present Cisco Optical Site Manager node.

When you add a remote TXP device to a Cisco Optical Site Manager node with an already existing Rack number, then the Cisco Optical Site Manager UIS fits the the chassis of the newly added NCS 2000 TXP node into an occupied rack.

Solution

1. Delete the device of remote TXP from the Cisco Optical Site Manager node.
2. Fix the 'Rack Number' via CTC.
3. Repeat the add-device operation.

Device Sync Status is *OUT-OF-SYNC*

Issue

Admin plane credentials is not added in the Authentication Group for the SVO controller.

Solution

1. Edit the Authentication Group for the SVO controller to add the Admin Plane credentials.

Device settings misconfigurations

Issue

The device name of the node is set incorrect. This parameter is used as key in the device yang models hence it cannot be edited after adding the device. The only way to properly adjust this setting is to delete the device.

Solution

1. Delete the device.
2. Add the device again with the correct device name.

Issue

The device flavor of the node is set incorrect. Incorrect device flavor may affect the device behavior in Cisco Optical Site Manager management.

Solution

1. Delete the device.
2. Add the device again with the correct device flavor.