Upgrading Cisco DCNM

This chapter provides information about upgrading Cisco DCNM, and contains the following section:

Upgrading Cisco DCNM

Before Cisco DCNM Release 11.0(1), DCNM OVA, and ISO supported SAN functionality. From Cisco DCNM Release 11.3(1), you can install Cisco DCNM for SAN Deployment on both OVA and ISO virtual appliances.

The following table summarizes the type of upgrade that you must follow to upgrade to Release 11.4(1).

Table 1: Type of Upgrade for LAN Fabric, and IP for Media (IPFM) deployments

Current Release Number	Upgrade type to upgrade to Release 11.4(1)
11.3(1)	Inline Upgrade
11.2(1)	Inline Upgrade
11.1(1)	Inline Upgrade

11.0(1)	11.0(1) → 11.2(1) → 11.4(1)
	11.0(1) → 11.1(1) → 11.4(1)
	→ represents an Inline Upgrade

Performance Manager Data Management before Upgrading to Release 11.4(1)

While you upgrade Cisco DCNM to Release 11.4(1), all the necessary software components are upgraded when you upgrade the Cisco DCNM. However, the Elasticsearch versions in the previous releases is not compatible with Elasticsearch version in Release 11.4(1), and therefore, the upgrade will not succeed without additional actions.

You can choose to discard the old performance manager (PM) data and continue to upgrade to DCNM Release 11.4(1). For instructions about how to drop performance manager data, see *Dropping Performance Manager Data*. If you choose to retain the old PM data while you upgrade to Release 11.4(1), we recommend that you contact Cisco TAC for further assistance.

Dropping Performance Manager Data

This section provides instructions about how to drop the performance manager data in from DCNM Release 11.3(1) or earlier, as a pre-requisite to upgrade to DCNM 11.4(1).

Note If you choose to conserve the Performance Manager data when you upgrade to Release 11.4(1), we recommend that you contact Cisco TAC for further assistance.

To drop the Performance Manager (PM) data, perform the following steps:

Before you begin

- Ensure that the DCNM appliance is operational. (for standalone upgrade)
- If you have a Federation setup, ensure that all the nodes in the DCNM Federation setup are operational. (for Federation setup)

Procedure

Step 1 Launch the SSH session and run the following command to view the PMDB indices.

Identify the PMDB indices in the performance manager database.

For example:

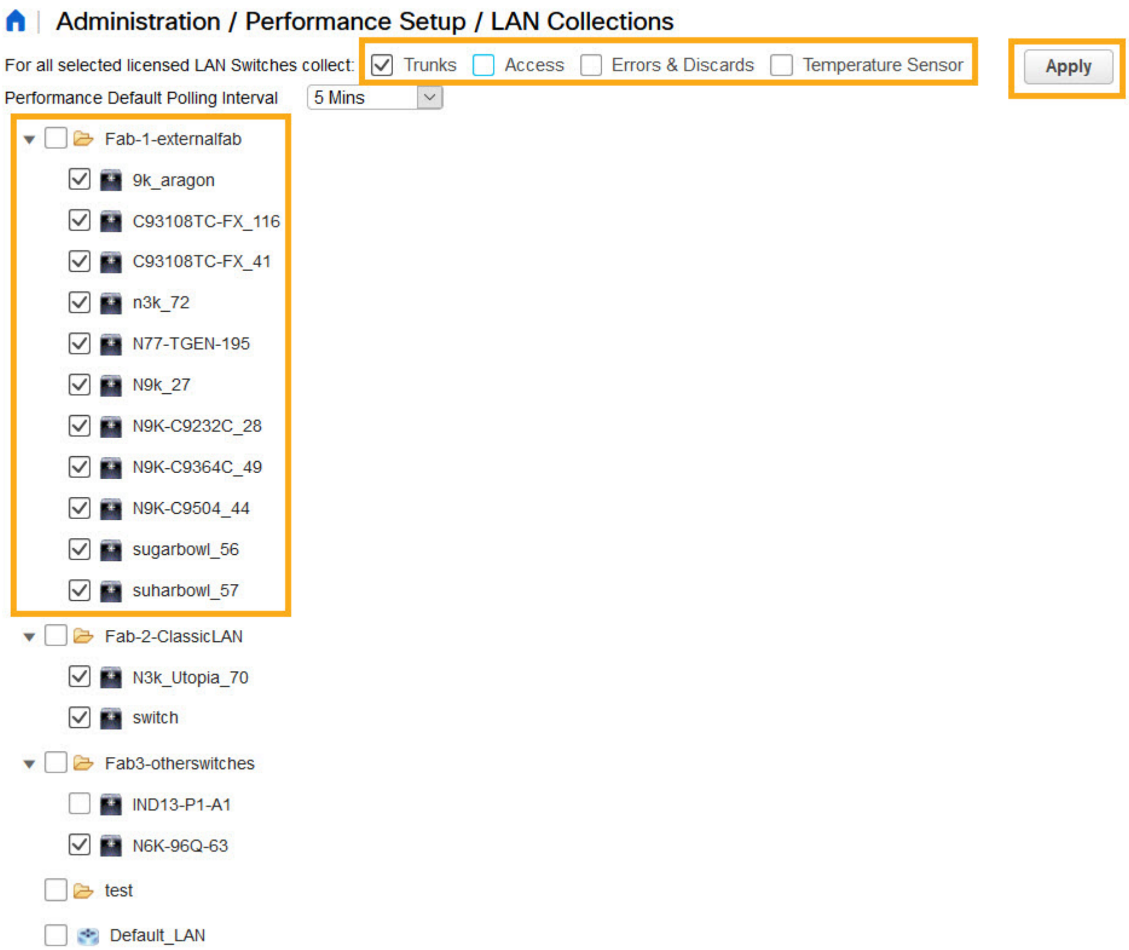
```
dcnm-root-11-3# curl http://127.0.0.1:33500/_cat/indices?pretty | grep pmdb

  % Total    % Received % Xferd  Average Speed    Time    Time     Time  Current
                                 Dload   Upload   Total   Spent    Left  Speed
100  2448  100  2448    0     0   4523      0 --:--:-- --:--:-- --:--:--  4524
green open pmdb_cpumemdata                       rb-CJf-NR0my8M3mO-7QkA 5 1  7286   0
1.4mb 760.2kb
green open pmdb_ethintfratedata                  P18gMKdPTkCODv0TomYAdw 5 1  9283   0
2.4mb   1.2mb
```

You will see indices prefixed with "pmdb_"

Step 2 On the Cisco DCNM Web UI, choose **Administration > Performance Setup > LAN Collections**.

Uncheck all the check boxes and click **Apply** to disable all switches and collections.



Administration / Performance Setup / LAN Collections

For all selected licensed LAN Switches collect: ☑ Trunks ☐ Access ☐ Errors & Discards ☐ Temperature Sensor

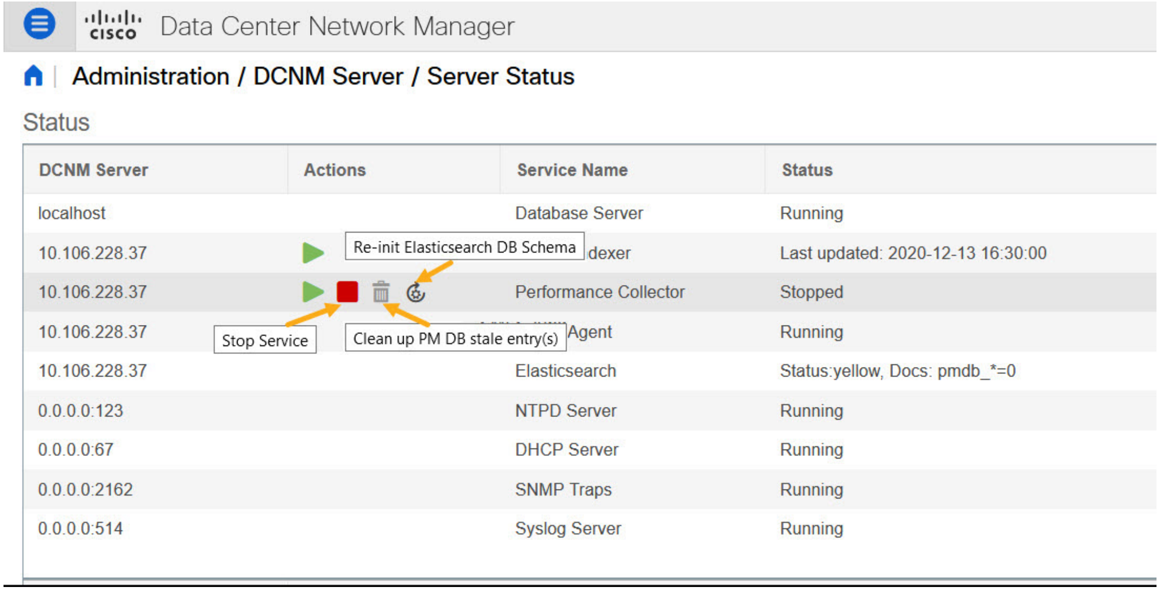
Apply

Performance Default Polling Interval: 5 Mins

- ☐ Fab-1-externalfab
  - ☑ 9k_aragon
  - ☑ C93108TC-FX_116
  - ☑ C93108TC-FX_41
  - ☑ n3k_72
  - ☑ N77-TGEN-195
  - ☑ N9k_27
  - ☑ N9K-C9232C_28
  - ☑ N9K-C9364C_49
  - ☑ N9K-C9504_44
  - ☑ sugarbowl_56
  - ☑ suharbowl_57
- ☐ Fab-2-ClassicLAN
  - ☑ N3k_Utopia_70
  - ☑ switch
- ☐ Fab3-otherswitches
  - ☐ IND13-P1-A1
  - ☑ N6K-96Q-63
- ☐ test
- ☐ Default_LAN

Step 3 Choose **Administration** > **DCNM Server** > **Server Status**.

Step 4 Against the **Performance Collector** service, click the stop icon in the Actions column to stop the data collection.


Data Center Network Manager
Administration / DCNM Server / Server Status
Status
Re-init Elasticsearch DB Schema
Stop Service
Clean up PM DB stale entry(s)

DCNM Server	Actions	Service Name	Status
localhost		Database Server	Running
10.106.228.37	▶	dexer	Last updated: 2020-12-13 16:30:00
10.106.228.37	▶ ■ 🗑 ↻	Performance Collector	Stopped
10.106.228.37		Agent	Running
10.106.228.37		Elasticsearch	Status:yellow, Docs: pmdb_*=0
0.0.0.0:123		NTPD Server	Running
0.0.0.0:67		DHCP Server	Running
0.0.0.0:2162		SNMP Traps	Running
0.0.0.0:514		Syslog Server	Running

Step 5 Click the delete icon to clean the Performance Manager database.

This action deletes the stale entries in the performance manager database.

Step 6 Click on the reinitialize icon to reindex the Elasticsearch database schema.

This operation cleans the performance manager data in the Elasticsearch database and restarts the performance manager. It may take a few minutes to complete.

Step 7 Click **Continue**.

The status of the Performance Collector service shows **Stopped**.

Step 8 Ensure that you've deleted all the PMDB entries using the following command:

- For upgrading from Release 11.1(1)

  curl https://127.0.0.1:33500/_cat/indices?pretty | grep pmdb
- For upgrading from Release 11.2(1)

  curl https://127.0.0.1:33500/_cat/indices?pretty | grep pmdb
- For upgrading from Release 11.3(1)

  curl http://127.0.0.1:33500/_cat/indices?pretty | grep pmdb

For example:

```
dcnm-root-11-3# curl http://127.0.0.1:33500/_cat/indices?pretty | grep pmdb

  % Total    % Received % Xferd  Average  Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100  2244  100  2244    0     0   3638      0 --:--:-- --:--:-- --:--:--  3636
```

Step 9 Proceed to upgrade the DCNM to Release 11.4(1).

Upgrading ISO or OVA through Inline Upgrade

Inline upgrade allows you to upgrade DCNM by imposing the new DCNM version to the existing DCNM. After the inline upgrade, ensure that you clear your browser cache before launching the DCNM application.

When you install Cisco DCNM, a self-signed certificate is installed, by default. However, after upgrading to the latest Cisco DCNM Release, you must restore the certificates.

Note Restoring certificates is a disruptive mechanism; it requires you to stop and restart applications. Restore the certificates only when the upgraded system is stable, that is, you must be able to login to Cisco DCNM Web UI.

To restore certificates after upgrade, see Restoring the certificates after an upgrade.

This section contains the procedure to upgrade the DCNM using the Inline Upgrade method.

Note For Classic LAN Deployment upgrade, the deployment is automatically converted to LAN Fabric deployment mode when you upgrade to DCNM Release 11.4(1).

Inline Upgrade for DCNM Virtual Appliance in Standalone Mode

Inline upgrade allows you to upgrade DCNM by imposing the new DCNM version to the existing DCNM. After the inline upgrade, ensure that you clear your browser cache before launching the DCNM application.

Perform the following task to upgrade the DCNM virtual appliance in standalone mode.

Procedure

Step 1 Log on to the Cisco DCNM appliance console.

Caution If the system requirements do not meet the minimum resource requirements, every time you log on to DCNM via the console or SSH, **SYSTEM RESOURCE ERROR** is displayed. Modify the system requirements logon to DCNM via Console/SSH.

- For OVA Installation: On the OVF template deployed for the host, right click and select **Settings > Launch Web Console**.
- For ISO Installation: Select the KVM console or UCS (Bare Metal) console.

Caution Do not perform an Inline Upgrade from an SSH Session. The session may timeout and result in an incomplete upgrade.

OR

Run the following command to create a screen session.

```
dcnm# screen
```

This creates a session which allows you to execute the commands. The commands continue to run even when the window is not visible or if you get disconnected.

Step 2 Take a backup of the application data using the **appmgr backup** command.

```
dcnm# appmgr backup
```

Copy the backup file to a safe location outside the DCNM server.

Step 3 Log on to the `/root/` directory, by using the **su** command.

```
dcnm# su
Enter password: <<enter-password>>
[root@dcnm]#
```

Note Ensure that you have access to the `/root/` folder before you mount the ISO to the directory.

Step 4 Unzip the `dcnm-va.11.4.1.iso.zip` file and upload the `DCNM 11.4(1) ISO` file to the `/root/` folder in the DCNM setup that you want to upgrade.

Step 5 Create folder that is named **iso** using the **mkdir /mnt/iso** command.

```
[root@dcnm]# mkdir /mnt/iso
```

Step 6 Mount the DCNM 11.4(1) ISO file on the standalone setup in the `/mnt/iso` folder.

mount -o loop *<DCNM 11.4(1) image>* **/mnt/iso**

```
[root@dcnm]# mount -o loop dcnm-va.11.4.1.iso /mnt/iso
```

Step 7 Navigate to **/mnt/iso/packaged-files/scripts/** and run the **./inline-upgrade.sh** script.

```
[root@dcnm]# cd /mnt/iso/packaged-files/scripts/
dcnm# ./inline-upgrade.sh
Do you want to continue and perform the inline upgrade to 11.4(1)? [y/n]: y
```

Note The prompt to enter a new sysadmin password appears while you're upgrading from Cisco DCNM Release 11.1(1) or Release 11.2(1) only.

Step 8 Provide the new sysadmin user password at the prompt:

Note The prompt to enter a new sysadmin password appears while you're upgrading from Cisco DCNM Release 11.1(1) or Release 11.2(1) only.

```
Enter the password for the new sysadmin user: <<sysadmin_password>>
Enter it again for verification: <<sysadmin_password>>
```

After the upgrade is complete, the appliance reboots. After reboot, the SSH \root access is disabled by default. Use **sysadmin** user.

Step 9 Ensure that the DCNM application is functional, by using the **appmgr status all** command.

```
[root@dcnm]# appmgr status all
```

Step 10 To verify that you have successfully installed the Cisco DCNM Release 11.4(1), use the **appmgr show version** command.

```
[root@dcnm]# appmgr show version

Cisco Data Center Network Manager
Version: 11.4(1)
Install mode: Media Controller
Standalone node. HA not enabled.
```

Step 11 Terminate the **screen** session, by using the **exit** command.

```
[root@dcnm]# exit
```

Step 12 Unmount the **dcnm-va-patch.11.4.1.iso** file from the DCNM setup.

Note You must terminate the screen session before unmounting the **.iso** file.

```
[root@dcnm]# umount /mnt/iso
```

What to do next

Log on to the DCNM Web UI with appropriate credentials.

Note In Release 11.3(1), the sysadmin and the root user's password are not identical. When you upgrade to 11.4(1), the sysadmin and root user passwords are preserved.

However, when you perform backup and restore on Cisco DCNM after upgrade, the sysadmin user inherits the password from the root user, and therefore both the users will have the same password. You can change the password for both the users after restore is complete.

Click **Settings** icon and choose **About DCNM**. You can view and verify the Installation type that you have deployed.

To reindex the performance manager data, use the **appmgr es-reindex pmdb** command.

You can choose to discard the old performance manager (PM) data. For instructions about how to drop performance manager data, see Dropping Performance Manager Data, on page 2.

To gracefully onboard Cisco DCNM Release 11.1(1), Release 11.2(1), Release 11.3(1) managed VXLAN BGP EVPN fabric(s) comprising Cisco Nexus 9000 switches post upgrade to Cisco DCNM Release 11.4(1), see Post DCNM 11.4(1) Upgrade for VXLAN BGP EVPN, External, and MSD Fabrics.

Inline Upgrade for DCNM Virtual Appliance in Native HA Mode

Inline upgrade allows you to upgrade DCNM by imposing the new DCNM version to the existing DCNM. After the inline upgrade, ensure that you clear your browser cache before launching the DCNM application.

Perform the following task to upgrade the DCNM virtual appliance in Native HA mode.

Before you begin

- Ensure that both the Cisco DCNM Active and Standby peers are up and running.
- Before upgrading Cisco DCNM in Clustered mode, stop the Network Insights - Resources (NIR) 2.x application. On the Cisco DCNM Web UI, choose **Applications** > **Catalog**. On the NIR app, click Stop icon to stop the application. Click Delete to remove the application from the Catalog.

Note Inline upgrade of Cisco DCNM in Clustered mode is supported from Release 11.2(1). Release 11.1(1) doesn’t support inline upgrade for DCNM in clustered mode.

- Check and ensure that the Active and Standby servers are operational, using the **appmgr show ha-role** command.

  Example:

  On the Active node:

  ```
  dcnm1# appmgr show ha-role
  Native HA enabled.
  Deployed role: Active
  Current role: Active
  ```

  On the Standby node:

  ```
  dcnm2# appmgr show ha-role
  Native HA enabled.
  Deployed role: Standby
  Current role: Standby
  ```

Procedure

Step 1 Unzip the `dcnm-va.11.4.1.iso.zip` file and upload the `DCNM 11.4(1) ISO` file to the `/root/` folder in both Active and Standby node of the DCNM setup that you want to upgrade.

Note For example, let us indicate Active and Standby appliances as **dcnm1** and **dcnm2** respectively.

Step 2 Log on to the Cisco DCNM appliance console.

Caution If the system requirements do not meet the minimum resource requirements, every time you log on to DCNM via the console or SSH, **SYSTEM RESOURCE ERROR** is displayed. Modify the system requirements logon to DCNM via Console/SSH.

- For OVA Installation: On the OVF template that is deployed for the host, right click and select **Settings > Launch Web Console**.
- For ISO Installation: Select the KVM console or UCS (Bare Metal) console.

Caution Do not perform an Inline Upgrade from an SSH Session. The session may timeout and result in an incomplete upgrade.

OR

Run the following command to create a screen session.

```
dcnm1# screen
dcnm2# screen
```

This creates a session which allows you to execute the commands. The commands continue to run even when the window is not visible or if you get disconnected.

Step 3 Take a backup of the application data using the **appmgr backup** command on both Active and Standby appliances.

```
dcnm1# appmgr backup
dcnm2# appmgr backup
```

Copy the backup file to a safe location outside the DCNM server.

Step 4 Log on to the **/root/** directory by using the **su** command.

```
dcnm1# su
Enter password: <<enter-password>>
[root@dcnm1]#
```

```
dcnm2# su
Enter password: <<enter-password>>
[root@dcnm2]#
```

Note Ensure that you have access to the /root/ folder before you mount the ISO to the directory.

Step 5 On the Active node, perform the inline upgrade.

a) Create a folder named **iso** using the **mkdir /mnt/iso** command.

```
[root@dcnm1]# mkdir /mnt/iso
```

b) Mount the DCNM 11.4(1) ISO file on the Active node in the `/mnt/iso` folder.

```
[root@dcnm1]# mount -o loop dcnm-va.11.4.1.iso /mnt/iso
```

c) Navigate to **/mnt/iso/packaged-files/scripts/** location and run the **./inline-upgrade.sh** script.

```
[root@dcnm1]# cd /mnt/iso/packaged-files/scripts/
dcnm1# ./inline-upgrade.sh
```

Note If some services are still running, you will receive a prompt that the services will be stopped. When prompted, press **y** to continue.

```
[root@dcnm1]# Do you want to continue and perform the inline upgrade to 11.4(1)? [y/n]:
 y
```

d) Provide the new sysadmin user password at the prompt:

Note The prompt to enter a new sysadmin password appears while you're upgrading from Cisco DCNM Release 11.1(1) or Release 11.2(1) only.

```
Enter the password for the new sysadmin user: <<sysadmin_password>>
Enter it again for verification: <<sysadmin_password>>
```

After the upgrade is complete, the appliance reboots. After reboot, the SSH \root access is disabled by default. Use **sysadmin** user.

e) Ensure the DCNM application is functional, by using the **appmgr status all** command.

```
[root@dcnm1]# appmgr status all
```

Note Ensure that all the services are up and running on the Cisco DCNM Active node before proceeding to upgrade Standby node.

f) Verify the role of the Active node, by using **appmgr show ha-role** command. Current role must show as Active.

```
[root@dcnm1]# appmgr show ha-role

Native HA enabled.
```

```
Deployed role: Active
Current role: Active
```

Warning We recommend that you do not continue to upgrade the Standby node, unless the Active node Current role is Active.

Step 6 On the Standby node, perform the inline upgrade.

a) Create folder named **iso** using the **mkdir /mnt/iso** command.

```
[root@dcnm2]# mkdir /mnt/iso
```

b) Mount the DCNM 11.4(1) ISO file on the Standby node in the `/mnt/iso` folder.

```
[root@dcnm2]# mount -o loop dcnm-va.11.4.1.iso /mnt/iso
```

c) Navigate to **/mnt/iso/packaged-files/scripts/** location and run the **./inline-upgrade.sh** script.

```
[root@dcnm2]# cd /mnt/iso/packaged-files/scripts/
dcnm2# ./inline-upgrade.sh --standby
```

Note If some services are still running, you will receive a prompt that the services will be stopped. When prompted, press y and continue.

```
[root@dcnm2]# Do you want to continue and perform the inline upgrade to 11.4(1)? [y/n]:
 y
```

d) Provide the new sysadmin user password at the prompt:

Note The prompt to enter a new sysadmin password appears while you’re upgrading from Cisco DCNM Release 11.1(1) or Release 11.2(1) only.

```
Enter the password for the new sysadmin user: <<sysadmin_password>>
Enter it again for verification: <<sysadmin_password>>
```

After the upgrade is complete, the appliance reboots. After reboot, the SSH \root access is disabled by default. Use **sysadmin** user.

After the upgrade is complete, the appliance reboots. Verify the role of the appliance, using the following command:

```
[root@dcnm2]# appmgr show ha-role
Native HA enabled.
Deployed role: Standby
Current role: Standby
```

Step 7 Terminate the **screen** session, by using the **exit** command.

```
[root@dcnm1]# exit
[root@dcnm2]# exit
```

Step 8 Unmount the **dcnm-va-patch.11.4.1.iso** file in both Active and Standby node of the DCNM setup.

Note You must terminate the screen session before unmounting the **.iso** file.

```
[root@dcnm1]# umount /mnt/iso
[root@dcnm2]# umount /mnt/iso
```

What to do next

Log on to the DCNM Web UI with appropriate credentials.

Note In Release 11.3(1), the sysadmin and the root user's password are not identical. When you upgrade to 11.4(1), the sysadmin and root user passwords are preserved.

However, when you perform backup and restore on Cisco DCNM after upgrade, the sysadmin user inherits the password from the root user, and therefore both the users will have the same password. You can change the password for both the users after restore is complete.

Click **Settings** icon and choose **About DCNM**. You can view and verify the Installation type that you have deployed.

You can choose to discard the old performance manager (PM) data. For instructions about how to drop performance manager data, see Dropping Performance Manager Data, on page 2.

Verify the role of both the appliances using the **appmgr show ha-role**

```
dcnm1# appmgr show ha-role
Native HA enabled.
Deployed role: Active
Current role: Active
```

```
dcnm2# appmgr show ha-role
Native HA enabled.
Deployed role: Standby
Current role: Standby
```

Verify the status of all applications using the **appmgr status all** command.