



Managing Applications After DCNM Deployment

This chapter describes how to verify and manage all of the applications that provide DC3 (Programmable Fabric) central point of management functions after the DCNM is deployed.

Table 1: Cisco DCNM Applications

Category	Application	Username	Password	Protocol Implemented
Network Management	Data Center Network Manager	admin	User choice ¹	Network Management

¹ User choice refers to the administration password entered by the user during the deployment.

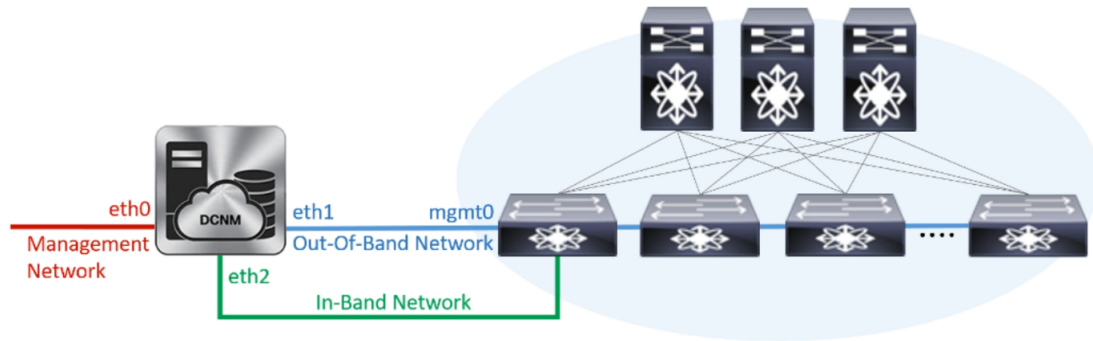
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Configuring Enhanced-Fabric-Inband Interface (eth2) Post DCNM Installation

During the DCNM installation, you can configure the In-Band Management interface. You must associate this network with the port group that corresponds to a fabric in-band connection. The In-Band Network provides reachability to the devices via the front-panel ports.

Figure 1: Cisco DCNM Management Network Interfaces



Note You cannot use Endpoint Locator and Telemetry features if the eth2 interface is not configured.

To configure the eth2 interface for the in-band management network, use the **appmgr setup inband** command.

The following example shows a sample output for the **appmgr setup inband** command for a Cisco DCNM Standalone Appliance.

```
[root@dcnm]# appmgr setup inband
Configuring Interface for InBand Connectivity...
Please enter the information as prompted:
InBand Physical IP [e.g. 2.2.2.69]: 2.0.0.250
InBand Network Mask [e.g. 255.255.255.0]: 255.0.0.0
InBand Gateway [e.g. 2.2.2.1]: 2.0.0.1
Validating Inputs ...

You have entered these values..
PIP=2.0.0.250
NETMASK=255.0.0.0
GATEWAY=2.0.0.1

Press 'y' to continue configuration, 'n' to discontinue [y] y
{"ResponseType":0,"Response":"Refreshed"}
{"ResponseType":0,"Response":{"AfwServerEnabled":true,"AfwServerReady":true,"InbandSubnet":"2.0.0.0/8",
"InbandGateway":"2.0.0.1","OutbandSubnet":"0.0.0.0/8","OutbandGateway":"0.0.0.0","UnclusteredMode":true}}

Done.
[root@dcnm]#
```

The following example shows a sample output for the **appmgr setup inband** command for a Cisco DCNM Native HA Appliance.

On Cisco DCNM Primary appliance:

```
[root@dcnm-primary]# appmgr setup inband
Configuring Interface for InBand Connectivity...
Please enter the information as prompted:
InBand Physical IP [e.g. 2.2.2.69]: 2.0.0.244
InBand Network Mask [e.g. 255.255.255.0]: 255.0.0.0
InBand Gateway [e.g. 2.2.2.1]: 2.0.0.1
InBand Virtual IP for HA setup [e.g. 2.2.2.60]: 2.0.0.243
InBand Virtual Network Mask [mandatory for HA setup] [e.g. 255.255.255.0]: 255.0.0.0
```

```

Peer Inband IP [mandatory for HA setup] [e.g. 2.2.2.59]: 2.0.0.244
Validating Inputs ...

You have entered these values..
PIP=2.0.0.244
NETMASK=255.0.0.0
GATEWAY=2.0.0.1
VIP=2.0.0.243
VIP_NETMASK=255.0.0.0
PEER_ETH2=2.0.0.244

Press 'y' to continue configuration, 'n' to discontinue [y] y

Done.
[root@dcnm-primary]#

On Cisco DCNM Secondary appliance:

[root@dcnm-secondary]#
Configuring Interface for InBand Connectivity...
Please enter the information as prompted:
InBand Physical IP [e.g. 2.2.2.69]: 2.0.0.245
InBand Network Mask [e.g. 255.255.255.0]: 255.0.0.0
InBand Gateway [e.g. 2.2.2.1]: 2.0.0.1
InBand Virtual IP for HA setup [e.g. 2.2.2.60]: 2.0.0.243
InBand Virtual Network Mask [mandatory for HA setup] [e.g. 255.255.255.0]: 255.0.0.0
Peer Inband IP [mandatory for HA setup] [e.g. 2.2.2.59]: 2.0.0.244
Validating Inputs ...

You have entered these values..
PIP=2.0.0.245
NETMASK=255.0.0.0
GATEWAY=2.0.0.1
VIP=2.0.0.243
VIP_NETMASK=255.0.0.0
PEER_ETH2=2.0.0.244

Press 'y' to continue configuration, 'n' to discontinue [y] y
HA Role is Active {"ResponseType":0,"Response":"Refreshed"}
Done.

[root@dcnm-secondary]#

```

Application Details

This section describes the details of all the applications within the functions they provide in Cisco DCNM. The functions are as follows:

Device Power On Auto Provisioning

Power On Auto Provisioning (POAP) occurs when a switch boots without any startup configuration. It is accomplished by two components that were installed:

- DHCP Server

The DHCP server parcels out IP addresses to switches in the fabric and points to the location of the POAP database, which provides the Python script and associates the devices with images and configurations.

During the Cisco DCNM installation, you define the IP Address for the inside fabric management address or OOB management network and the subnets associated with the Cisco Programmable Fabric management.



Note You should always configure DHCP through Cisco DCNM web UI by choosing: **Configure > POAP > DHCP Scopes**. Editing the `/etc/dhcp/dhcp.conf` file from an SSH terminal might lead to unexpected behavior.

- Repositories

The TFTP server hosts boot scripts that are used for POAP.

The SCP server downloads the database files, configuration files, and the software images.

Backup and Restore Cisco DCNM and Application Data

You can take a backup of Cisco DCNM application data for analytics and troubleshooting.

Perform the following task to take a backup of Cisco DCNM and Application data.

Procedure

- Step 1** Logon to the Cisco DCNM appliance using SSH.
- 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 and shut down the DCNM Appliance.
- Step 3** Right click on the installed VM and select **Power > Power Off**.
- Step 4** Deploy the new DCNM appliance.
- Step 5** After the VM is powered on, click on **Console** tab.
A message indicating that the DCNM appliance is configuring appears on the screen.
Copy and paste the URL to the browser to continue with restore process.
- Step 6** On the DCNM Web Installer UI, click **Get Started**.
- Step 7** On the Cisco DCNM Installer screen, select **Fresh Installation with backup file for upgrade or restore** radio button.
Select the backup file that was generated in Step [Step 2, on page 4](#).
Continue to deploy the DCNM.
- Step 8** On the Summary tab, review the configuration details.
Click **Previous** to go to the previous tabs and modify the configuration. Click **Start Installation** complete Cisco DCNM Virtual Appliance Installation for the chosen deployment mode.

A progress bar appears showing the completed percentage, description of the operation, and the elapsed time during the installation.

After the progress bar shows 100%, click **Continue**.

- Step 9** Logon to the appliance using SSH. Restore the data on the DCNM appliance using the following command:
appmgr restore /root/backup.tar.gz
- Step 10** Click **y** to proceed to restore the backup data.
Do you want to proceed? [y/n] **y**
- Step 11** After the data is restored, check the status using the **appmr status all** command.
-

Backup and Restore Cisco DCNM and Application Data on Native HA setup

Perform the following task to take perform backup and restore of data in a Native HA setup.

Before you begin

Ensure that the Active node is operating and functional.

Procedure

- Step 1** Check if the Active node is operational. Otherwise, trigger a failover.
- Step 2** Logon to the Cisco DCNM appliance using SSH.
- 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 of both active and standby appliances to a safe location and shut down the DCNM Appliance.
- Step 4** Right click on the installed VM and select **Power > Power Off**.
- Step 5** Deploy the new DCNM appliance in Native HA mode.
- Step 6** For both the Active and Standby appliances, after the VM is powered on, click on **Console** tab.
A message indicating that the DCNM appliance is configuring appears on the screen.
Copy and paste the URL to the browser to continue with restore process.
- Step 7** On the DCNM Web Installer UI, click **Get Started**.
- Step 8** On the Cisco DCNM Installer screen, select **Fresh Installation with backup file for upgrade or restore** radio button.
Select the backup file that was generated in Step [Step 3, on page 5](#).
The values for parameters are read from the backup file, and auto-populated. Modify the values, if required.

Continue to deploy the DCNM.

Step 9 On the Summary tab, review the configuration details.

Click **Previous** to go to the previous tabs and modify the configuration. Click **Start Installation** complete Cisco DCNM Virtual Appliance Installation for the chosen deployment mode.

A progress bar appears showing the completed percentage, description of the operation, and the elapsed time during the installation.

After the progress bar shows 100%, click **Continue**.

Step 10 On the Active node, logon to the appliance using SSH. Restore the data on the DCNM appliance using the following command:

```
appmgr restore /root/backup.tar.gz
```

Example:

```
dcnm1 # appmgr restore /root/backup.tar.gz
```

Step 11 On the Standby node, logon to the appliance using SSH. Restore the data on the DCNM appliance using the following command:

```
appmgr restore /root/backup.tar.gz
```

Example:

```
dcnm2 # appmgr restore /root/backup.tar.gz
```

Step 12 After the data is restored, check the status using the **appmgr status all** command.

Managing Applications

You can manage the applications for Cisco Programmable Fabric in the Cisco DCNM through commands in an SSH terminal.

Enter the **appmgr** command from the SSH terminal by using the following credentials:

- Username: **root**
- Password: **Administrative password provided during deployment**



Note For your reference, context sensitive help is available for the **appmgr** command. Use the **appmgr** command to display help.

Use the **appmgr tech_support** command to produce a dump of the log files. You can then provide this information to the TAC team for troubleshooting and analysis of your setup.



Note This section does not describe commands for Network Services using Cisco Prime Network Services Controller.

This section includes the following:

Verifying the Application Status after Deployment

After you deploy the OVA/ISO file, you can determine the status of the applications that were deployed in the file. You can use the **appmgr status** command in an SSH session to perform this procedure.



Note Context-sensitive help is available for the **appmgr status** command. Use the **appmgr status ?** command to display help.

Procedure

- Step 1** Open up an SSH session:
- Enter the **ssh root DCNM network IP address** command.
 - Enter the administrative password to login.

- Step 2** Check the status of the applications by entering this command:
appmgr status all

Example:

The following sample if taken from Cisco DCNM for Media Controller Deployment.

```
dcnm# appmgr status all
```

```
DCNM v11 will only use HTTPS. Insecure access via HTTP is disabled.
Please use the url https://<DCNM-IP-ADDRESS> or https://<HOSTNAME> to launch the DCNM UI.
```

DCNM Status

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
27724	root	20	0	12.2g	3.9g	49328	S	0.0	16.6	60:24.10	java

Elasticsearch Status

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
2861	elastic+	20	0	6858536	346396	16484	S	6.2	1.4	11:03.40	java

Telemetry Manager Status

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
2964	root	20	0	796984	5060	3416	S	0.0	0.0	1:06.11	telemetry-mgr.b

PMN Telemetry Status

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
3779	root	20	0	10.6g	233640	16236	S	0.0	1.0	0:06.82	java

TFTP Status

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
30377	root	20	0	27164	1072	820	S	0.0	0.0	0:00.00	xinetd

DHCP Status

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
30416	dhcpd	20	0	105616	5656	3448	S	0.0	0.0	0:25.32	dhcpd

AMQP Status

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
32157	rabbitmq	20	0	5996960	78564	4272	S	0.0	0.3	9:30.39	beam.smp

Stopping, Starting, and Resetting Applications

Use the following CLI commands for stopping, starting, and resetting applications:

- To stop an application, use the **appmgr stop application** command.

```
# appmgr stop dhcp
Shutting down dhcpd:      [ OK ]
```

- To start an application, use the **appmgr start application** command.

```
# appmgr start amqp
Starting vsftpd for amqp:  [ OK ]
```

- To restart an application use the **appmgr restart application** command.

```
# appmgr restart tftp
Restarting TFTP...
Stopping xinetd:         [ OK ]
Starting xinetd:         [ OK ]
```



Note From Cisco DCNM Release 7.1.x, when you stop an application by using the **appmgr stop *app_name*** command, the application will not start during successive reboots.

For example, if DHCP is stopped by using the **appmgr stop dhcp** command, and the OS is rebooted, the DHCP application will still be down after the OS is up and running.

To start again, use the command **appmgr start dhcp**. The DHCP application will be started after reboots also. This is to ensure that when an environment uses an application that is not packaged as part of the virtual appliance (like CPNR instead of DHCP), the application locally packaged with the virtual appliance will not interfere with its function after any OS reboots.



Note When a DCNM appliance (ISO/OVA) is deployed, the Cisco SMIS component will not get started by default. However, this component can be managed using the appmgr CLI: **appmgr start/stop dcnm-smis**
appmgr start/stop dcnm will start or stop only the DCNM web component.