



Overview

Cisco Data Center Network Manager (DCNM) is a management system for Cisco NXOS-based storage fabrics. In addition to provisioning, monitoring, and troubleshooting the data center network infrastructure, the Cisco DCNM provides a comprehensive feature-set that meets the routing, switching, and storage administration needs of data centers. It streamlines the provisioning for the Programmable Fabric and monitors the SAN components.

Cisco DCNM provides a high level of visibility and control through a single web-based management console for Cisco Nexus Series Switches, Cisco MDS, and Cisco Unified Computing System (UCS) products. Cisco DCNM also includes Cisco DCNM-SAN client and Device Manager functionality.

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Introduction

Cisco DCNM provides an alternative to the command-line interface (CLI) for switch configuration commands.

Cisco DCNM includes these management applications:

Cisco DCNM Web UI

Cisco DCNM Web UI allows operators to monitor and obtain reports for Cisco MDS and Nexus events, performance, and inventory from a remote location using a web browser. Licensing and discovery are part of the Cisco DCNM Web UI.

Performance Manager

Performance Manager presents detailed traffic analysis by capturing data with SNMP. This data is compiled into various graphs and charts that can be viewed on the Cisco DCNM Web UI.

Installation Options

Cisco DCNM software images are packaged with the Cisco DCNM installer, signature certificate, and signature verification script. Unzip the desired Cisco DCNM installer image ZIP file to a directory. Verify the image signature by following the steps in the README file. The installer from this package installs the Cisco DCNM software.

DCNM Open Virtual Appliance (OVA) Installer

This installer is available as an Open Virtual Appliance file (.ova). The installer contains a pre-installed OS, DCNM, and other applications needed for programmable fabric.

DCNM ISO Virtual Appliance (ISO) Installer

This installer is available as an ISO image file (.iso). The installer is a bundle of OS, DCNM, and other applications needed for dynamic fabric automation.



Note If you are installing Cisco DCNM on SE, install the DCNM ISO Virtual Appliance (.iso) installer.

Deployment Options

You can deploy the Cisco DCNM installer in one of the following modes:

Standalone Server

All types of installers are packaged along with PostgreSQL database. The default installation steps for the respective installers result in this mode of deployment.

High Availability for Virtual Appliances

You can deploy the DCNM Virtual appliances, both OVA and ISO, in High Availability mode to have resilience in case of application or OS failures.

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. However, there is not upgrade path for SAN OVA\ISO.

From Release 11.3(1), Cisco DCNM OVA and ISO is supported for SAN functionality.

The following table summarizes the type of upgrade that you must follow to upgrade to Release 11.3(1).

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

Current Release Number	Upgrade type to upgrade to Release 11.3(1)
11.2(1)	Inline Upgrade
11.1(1)	Inline Upgrade
11.0(1)	11.0(1) → 11.1(1) → 11.3(1) <ol style="list-style-type: none"> 1. Upgrade to 11.1(1) using Inline Upgrade 2. Upgrade from 11.1(1) to 11.3(1) using Inline Upgrade
10.4(2) 1	10.4(2) → 11.1(1) → 11.3(1) <ol style="list-style-type: none"> 1. Upgrade to 11.1(1) using the DCNMUpgradeTool 2. Upgrade from 11.1(1) to 11.3(1) using Inline Upgrade

¹ (This upgrade path is not supported for Cisco DCNM Media Controller deployments)

System Requirements



Note We recommend that you do not upgrade any underlying third-party software separately. All the necessary software components will be updated during the inline upgrade procedure. Upgrading the components outside of DCNM upgrade will cause performance issues.

This section describes the various system requirements for proper functioning of your Cisco DCNM, Release 11.3(1).

Java Requirements

The Cisco DCNM Server is distributed with JRE 11.0.2 into the following directory:

```
DCNM_root_directory/java/jdk11
```

Server Requirements

Cisco DCNM, Release 11.3(1), supports the Cisco DCNM Server on these 64-bit operating systems:

- **IP for Media, LAN Fabric, and Classic LAN Deployments:**
 - Open Virtual Appliance (OVA) with an integrated CentOS Linux release 7.6
 - ISO Virtual Appliance (ISO) with an integrated CentOS Linux release 7.6

Cisco DCNM Release 11.3(1) supports the following databases:

- PostgreSQL 9.4.5



Note The ISO/OVA installation only supports the embedded PostgreSQL database.

From Release 11.2(1), Cisco DCNM supports the ISO installation on a bare-metal server (no hypervisor) on the following server platforms:

Server	Product ID (PID)	Recommended minimum memory, drive capacity, and CPU count ²
Cisco UCS C240M4	UCSC-C240-M4S	32G / 500G 16 vCPUs
Cisco UCS C240M4	UCSC-C240-M4L	32G / 500G 16 vCPUs
Cisco UCS C240 M5S	UCSC-C240-M5SX	32G / 500G 16 vCPUs
Cisco UCS C220 M5L	UCSC-C220-M5L	32G / 500G 16 vCPUs

² Install the Cisco DCNM Compute node with 16vCPUs, 64G RAM, and 500GB hard disk. Ensure that you do not install the Compute node on 32G RAM server.

If you are deploying Network Insights applications on the Cisco DCNM Compute cluster, refer to the app-specific Release Notes for additional CPU/memory requirements for the Computes.



Note Cisco DCNM can work on an alternative computing hardware as well, despite Cisco is only testing on Cisco UCS.

VMware Snapshot Support for Cisco DCNM

Snapshots capture the entire state of the virtual machine at the time you take the snapshot. You can take a snapshot when a virtual machine is powered on, powered off.



Note vCenter server is mandatory to deploy the Cisco DCNM OVA Installer.

To take a snapshot on the VM, perform the following steps:

1. Right-click the virtual machine the inventory and select **Snapshots > Take Snapshot**.
2. In the Take Snapshot dialog box, enter a **Name** and description for the snapshot.
3. Click **OK** to save the snapshot.

The following snapshots are available for VMs.

- When VM is powered off.
- When VM is powered on, and active.



Note Cisco DCNM supports snapshots when VM is either powered on or powered off. DCNM doesn't support snapshots when the Virtual Machine memory option is selected.

Note that the Snapshot the Virtual Machine's memory check box must not be selected, as shown in the following figure. However, it is grayed out when the VM is powered off.

Take Snapshot | dcnm-va.11.X.1

Name: VM Snapshot taken powered on 12/8/2019,

Description: [Empty text area]

Snapshot the virtual machine's memory

Quiesce guest file system (Needs VMware Tools installed)

CANCEL OK

You can restore VM to the state in a Snapshot.

Manage Snapshots | dcnm1111

- dcnm1111
 - VM Snapshot 12%252f12%252f2019, 11:56:07 AM
 - 1131 Snapshot 12%252f12%252f2019, 3:04:31 PM
 - VM Snapshot 12%252f16%252f2019, 6:55:02 ...
 - You are here

Name	VM Snapshot 12%252f16%252f2019, 6:55:02 AM
Created	12/15/2019, 11:55:31 PM
Disk usage	510.03 MB
Snapshot the virtual machine's memory	No
Quiesce guest file system	No

DELETE ALL DELETE REVERT TO EDIT DONE

Right-click on the Virtual Machine and select **Manage Snapshot**. Select the snapshot to restore, and click **Done**.

Table 2: Snapshot Support for Classic LAN, LAN Fabric, Media Controller, and SAN OVA Deployments

VMware vSphere Hypervisor (ESXi)	6.0	6.5	6.7	6.7 P01
VMware vCenter Server	6.0	6.5	6.7	6.7 P01

Server Resource Requirements

Deployment	Deployment Type	Small (Lab or POC)	Large (Production)	Huge (Production)	Compute
IP for Media (IPFM)	<ul style="list-style-type: none"> • OVA • ISO 	CPU: 8 vCPUs RAM: 24 GB DISK: 500 GB	CPU: 16 vCPUs RAM: 32 GB DISK: 500 GB	CPU: 32vCPUs RAM: 128 GB DISK: 500 GB	Not Applicable



Note For Huge and Compute deployments, you can add extra disk. The size of the disk can range from a minimum of 32GB to a maximum of 1.5TB.

You can add additional disk space to your DCNM set up. Logon to DCNM server using SSH. Extend the disk file system using **appmgr system scan-disks-and-extend-fs** command.

Supported Web Browsers

Cisco DCNM supports the following web browsers:

- Google Chrome Version 79.0.3945.79
- Mozilla Firefox Version 71.0 (32/64 bit)
- Microsoft Internet Explorer Version 11.706 update version 11.0.120

Other Supported Software

The following table lists the other software that is supported by Cisco DCNM, Release 11.3(1).

Table 3: Other Supported Software

Component	Features
Security	<ul style="list-style-type: none"> • ACS versions 4.0, 5.1, 5.5, and 5.8 • ISE version 2.6 • Telnet Disabled: SSH Version 1, SSH Version 2, Global Enforce SNMP Privacy Encryption. • Web Client Encryption: HTTPS with TLS 1, 1.1 and 1.2 • TLS 1.3

Component	Features
OVA\ISO Installers	CentOS 7.6/Linux Kernel 3.10.x

Also, Cisco DCNM supports call-home events, fabric change events, and events that are forwarded by traps and email.

Qualified Security Certifications

Security Certifications	Date run on DCNM 11.4(1)
Nessus	6/29/2020
Appscan	6/29/2020
Qualsys	6/29/2020

