



## 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.

This section contains the following sections:

- [Introduction, on page 1](#)
- [Installation Options, on page 2](#)
- [Deployment Options, on page 2](#)
- [Upgrading Cisco DCNM, on page 2](#)
- [System Requirements, on page 3](#)

## 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.



---

**Note** We recommend that you deploy Cisco DCNM in Native HA Mode.

---

## 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.

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)<br>11.0(1) → 11.1(1) → 11.4(1)<br>→ represents an Inline Upgrade |

## 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 11.4(1).

### Java Requirements

The Cisco DCNM Server is distributed with JRE 11.0.6 into the following directory:

```
DCNM_root_directory/java/jdk11
```

### Server Requirements

Cisco DCNM, Release 11.4(1), supports the Cisco DCNM Server on these 64-bit operating systems:

- **IP for Media, and LAN Fabric Deployments:**
  - Open Virtual Appliance (OVA) with an integrated CentOS Linux release 7.8
  - ISO Virtual Appliance (ISO) with an integrated CentOS Linux release 7.8

### Database Requirements

Cisco DCNM Release 11.4(1) supports the following databases:

- PostgreSQL 9.6.16 - For OVA/ISO deployments



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

## Hypervisors

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 |
|--------------------|------------------|---|
| 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                                       |




---

**Note** Cisco DCNM can work on an alternative computing hardware with appropriate specifications, despite Cisco is only testing on Cisco UCS.

---

## VMware Snapshot Support for Cisco DCNM

|                                  |     |     |     |         |          |
|----------------------------------|-----|-----|-----|---------|----------|
| VMware vSphere Hypervisor (ESXi) | 6.0 | 6.5 | 6.7 | 6.7 P01 | 7.0      |
| VMware vCenter Server            | 6.0 | 6.5 | 6.7 | 6.7 P01 | For DCNM |




---

**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**.

## Server Resource (CPU/Memory) Requirements



**Note** If you install Cisco DCNM on a virtual machine, you must reserve resources equal to the server resource requirements to ensure a baseline with the physical machines.

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

Allocate sufficient disk space to the root partition to complete DCNM installation and for stable continuous operation of the DCNM applications. Refer to the applications' User guides for disk space requirements. You can mount another disk where the `/tmp` directory can be mounted during the installation or upgrade. You can also add additional disk space and 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 83.0.4103.97
- Mozilla Firefox Version 77.0.1 (64-bit)
- Microsoft Edge Version 83.0.478.45

### Other Supported Software

The following table lists the other software that is supported by Cisco DCNM, Release 11.4(1).

**Table 2: Other Supported Software**

| Component          | Features  |
|--------------------|---|
| Security           | <ul style="list-style-type: none"><li>• ACS versions 4.0, 5.1, 5.5, and 5.8</li><li>• ISE version 2.6</li><li>• Telnet Disabled: SSH Version 1, SSH Version 2, Global Enforce SNMP Privacy Encryption.</li><li>• Web Client Encryption: HTTPS with TLS 1, 1.1 and 1.2</li><li>• TLS 1.3</li></ul> |
| OVA/ISO Installers | CentOS 7.8/Linux Kernel 3.10.x  |

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

