Overview

Cisco Data Center Network Manager (DCNM) is a management system for Cisco NXOS-based Programmable Fabrics and Cisco NXOS-based Storage Fabrics. In addition to provisioning, monitoring, and troubleshooting the datacenter network infrastructure, the Cisco DCNM provides a comprehensive feature-set that meets the routing, switching, and storage administration needs of datacenters. 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

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. Performance Manager stores data into Elastic search time series database. API access to Elastic search is not supported.

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. Image signature can be verified by following the steps in 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 (.iso). The installer is a bundle of OS, DCNM and other applications needed for Dynamic Fabric Automation.

Deployment Options

The installer available for Cisco DCNM can be deployed in one of the below 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

The DCNM Virtual appliances, both OVA and ISO, can be deployed in High Availability mode to have resilience in case of application or OS failures.

Upgrading the Cisco DCNM

Before Cisco DCNM Release 11.0(1), DCNM OVA, and ISO supported SAN functionality. From Cisco DCNM 11.0(1), OVA, and ISO does not ship with SAN support.

For Cisco DCNM SAN Management, you can upgrade to Release 11.1(1) only from DCNM Release 10.4(1), 10.4(2), and 11.0(1).

For Cisco DCNM Classic LAN, LAN Fabric, and Media Controller Deployments, you can upgrade to Release 11.1(1) only from DCNM Release 10.4(2) and 11.0(1).

Note Upgrade support from Cisco DCNM Release 10.4(1) is only for Windows/Linux.

The following table summarizes the type of upgrade that you must follow to upgrade to Release 11.1(1) .

Table 1: Type of Upgrade

Current Release Number	Upgrade type to upgrade to Release 11.1(1)
11.0(1)	Inline Upgrade
10.4(2)	Upgrade using the DCNMUpgradeTool

The following table summarizes the upgrade options for Cisco DCNM Release 11.1(1) .

Table 2: Upgrade Paths

DCNM 10.4(2) Installation Option	DCNM 11.1(1) equivalent Deployment Option	Is SAN configured in 10.4(2)?	Is Bottom Up configured in 10.4(2)?	Is Top Down configured in 10.4(2)?	Can you Upgrade to DCNM 11.1(1)?
VXLAN	LAN Fabric	Not applicable	Not applicable	Not applicable	Yes
LAN, SAN, Auto-Config		Yes	Not relevant	Not relevant	No
		No	Yes	Not relevant	No
		No	No	Not relevant	Yes
LAN, SAN, Auto-Config	Classic LAN	Yes	Not relevant	Not relevant	No
		No	Yes	Not relevant	No
		No	No	Yes	No
		No	No	No	Yes
Not applicable	Media Controller	Not applicable	Not applicable	Not applicable	Old database cannot be migrated to 11.0(1) Release 11.0(1) can be upgraded to Release 11.1(1) using inline upgrade

System Requirements for Cisco DCNM, Release 11.1(1)

Server Requirements

Cisco DCNM, Release 11.1(1), supports the Cisco DCNM Server on these 64-bit operating systems:

- : **LAN Fabric and Classic LAN Deployments:**
  - Open Virtual Appliance (OVA) with an integrated CentOS Linux release 7.6.1810 (Core)

- ISO Virtual Appliance (ISO) with an integrated CentOS Linux release 7.6.1810 (Core)

Cisco DCNM Release 11.1(1) supports the following databases:

- PostgreSQL 9.4.5

Note Cisco DCNM 11.1(1) for LAN is not supported with an external database.

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

Note The Cisco DCNM database size is not limited, and increases according to the number of nodes and ports that the DCNM manages with Performance Manager Collections enabled. You cannot restrict the database size.

Cisco DCNM Release 11.1(1) supports the ISO installation on a bare-metal server (no hypervisor) on the following server platforms:[1]

Server	Product ID (PID)	Recommended minimum memory, drive capacity, and CPU count
Cisco UCS C240M4	UCSC-C240-M4S	24G / 500G 8-vCPU Cores with Cisco hardware RAID Controller [UCSC-MRAID12G-1GB/2 GB] for the RAID operation (small)
Cisco UCS C240M4	UCSC-C240-M4L	32G / 500G 16-vCPU Cores with Cisco hardware RAID Controller [UCSC-MRAID12G- GB/2 GB] for the RAID operation (large)
Cisco UCS C240 M5S	UCSC-C240-M5SX	24G / 500G 8-vCPU Cores with Cisco hardware RAID Controller [UCSC-SAS-M5] for the RAID operation (small)
Cisco UCS C220 M5L	UCSC-C220-M5L	32G / 500G 16-vCPU Cores with Cisco hardware RAID Controller [UCSC-SAS-M5] for the RAID operation (small)

[1] 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.

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

Cisco DCNM Release 11.1(1) supports the running of the Cisco DCNM Server on the following hypervisors:

Table 3: VMware Snapshot Support for DCNM LAN Fabric and DCNM LAN Classic Deployments

VMware vSphere Hypervisor (ESXi)	6.0	6.5	6.7	6.7 update 1
VMware vCenter Server	6.0	6.5	6.7	6.7 update 1

Note Only Warm and Cold VMware snapshot is supported

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

Server Resource Requirements

Table 4: Server Resource Requirements

Deployment	Deployment Type	Small (Lab or POC)	Large (Production)	Compute
IP for Media (IPFM)	• OVA • ISO	CPU: 8 vCPUs RAM: 24 GB DISK: 500 GB	CPU: 16 vCPUs RAM: 32 GB DISK: 500 GB	Not Applicable

Note

- Small deployment scenario for Classic LAN and SAN—Fewer than 50 switches
- Small deployment scenario for LAN Fabric—Fewer than 15 switches

Supported Web Browsers

Cisco DCNM supports the following web browsers:

- Google Chrome version 71.0.3578.80
- Mozilla Firefox Version 63.0.3 (32/64 bit)
- Microsoft Internet Explorer 11.0.96 update version 11.0.90

Other Supported Software

The following table lists the other software that is supported by Cisco DCNM, Release 11.1(1).

Table 5: Other Supported Software

Component	Features
Security	• ACS versions 4.0, 5.1, and 5.5 • 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
OVA/ISO Installers	CentOS 7.6/Linux Kernel 3.10.x