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.

collection will backup files on Elastic Search which aids in better scalability and API access.

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.

Upgrade Paths

Prior to Cisco DCNM Release 11.0(1), DCNM OVA and ISO supported SAN functionality. Beginning with Cisco DCNM 11.0(1), OVA and ISO does not ship with SAN support. You can upgrade to Release 11.0(1) only from DCNM Release 10.4(2).

System Requirements for Cisco DCNM, Release 11.0(1)

Server Requirements

Cisco DCNM, Release 11.0(1), supports the Cisco DCNM Server on these 64 bit operating systems:

- **LAN Fabric, Classic LAN, and IP For Media (IPFM) Deployments:**
    - Open Virtual Appliance (OVA) with integrated Operating System

• ISO Virtual Appliance (ISO) with integrated Operating System

Cisco DCNM Release 11.0(1) supports the following databases:

• PostgreSQL 9.4.5

Note Cisco DCNM 11.0(1) for LAN is not supported with an external database.

Note The ISO/OVA installation only supports the embedded PostreSQL 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 11.0(1) supports ISO installation on a bare-metal server (no hypervisor) on the following server platform:

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 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 RAID operation (large)
Cisco UCS C240 M5S	UCSC-C240-M5SX	24G / 500G 8-vCPU Cores with Cisco hardware RAID Controller [UCSC-SAS-M5] for RAID operation (small)
Cisco UCS C220 M5L	UCSC-C220-M5L	24G / 500G 32G / 500G 16-vCPU Cores with Cisco hardware RAID Controller [UCSC-SAS-M5] for RAID operation (small)

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

Cisco DCNM Release 11.0(1) supports the running of the Cisco DCNM Server on the following hypervisors:

- VMware ESXi 5.5
- VMware ESXi 6.0
- VMware ESXi 6.5
- VMware ESXi 6.7
- VMware ESXi 6.7 U1
- VMware vCenter 6.0
- VMware vCenter 6.5
- VMware vCenter 6.7
- VMware vCenter 6.7 U1

Note
- vCenter server is mandatory to deploy the Cisco DCNM OVA Installer.
- When you log into the VMware vSphere Web Client, the Adobe Shockwave Flash crashes with the latest Google Chrome 62.0.3202.62 (64 bit), Mozilla Firefox 56.0.1 (64 bit), and Internet Explorer 8.0.7601.17514. Hence you cannot install Cisco DCNM on VMware ESX using VMware vSphere Web Client. This is a known issue with Adobe Shockwave Flash version 27.0.0.159. For more information, see https://kb.vmware.com/s/article/2151945.

Server Resource Requirements

Table 1: Server Resource Requirements

Deployment	Deployment Type	Small (Lab or POC)	Large (Production)
LAN Fabric, Classic LAN, IP For Media (IPFM)	OVA	CPU: 8 vCPUs RAM: 24 GB RAM DISK: 500 GB	CPU: 16 vCPUs RAM: 32 GB DISK: 500 GB
LAN Fabric, Classic LAN, IP For Media (IPFM)	ISO	CPU: 8 vCPUs RAM: 24 GB DISK: 500 GB	CPU: 16 vCPUs RAM: 32 GB DISK: 500 GB

Note Small deployment scenario for Classic LAN and SAN—Fewer than 50 switches

Small deployment scenario for LAN Fabric—Fewer than 15 switches

The SAN Insights feature is not supported on small deployment.

The Cisco DCNM Release 11.0(1) does not support OVA/ISO for SAN.

Supported Web Browsers

Cisco DCNM supports the following web browsers:

- Mozilla Firefox Version 61.0 (64/32 bit)

- Microsoft Internet Explorer 11.0.9600.19035CO update Version: 11.0.65(KB4230450)

- Google Chrome version 67.0.3396.99 (Official Build)

Other Supported Software

The following table lists the other software that are supported by Cisco DCNM, Release 11.0(1).

Table 2: Other Supported Software

Component	Minimum Requirements
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
DHCP Server	- Cisco Network Registrar 8.2
OVA/ISO Installers	CentOS 7.4 / Linux Kernel 3.10.x

Clearing Browser Cache

While upgrading, Cisco DCNM allows you to use the same IP Addresses for Release 11.0(1) that were used for Release 10.4(2). To optimize loading times, DCNM 11 stores scripts and other assets in a browser's offline storage. Therefore, you must clear the browser cache before you launch the Cisco DCNM 11.0(1) Web UI using the Management Network IP address.

Cisco DCNM supports the following web browsers:

- Mozilla Firefox

- Microsoft Internet Explorer

- Google Chrome version

Based on your browser, you can perform the following task to clear the browser cache.

Mozilla Firefox

To clear cache on the Mozilla Firefox browser, perform the following task:

1. From the History menu, select **Clear Recent History**.

   If the menu bar is hidden, press **Alt** to make it visible.

2. From the **Time range to clear:** drop-down list, select the desired range. To clear your entire cache, select all options.

3. Click the down arrow next to Details to choose which elements of the history to clear. To clear the entire cache, select all items.

   Click **Clear Now**.

4. Restart browser.

Google Chrome

To clear cache on the Google Chrome browser, perform the following task:

1. In the browser bar, enter **chrome://settings/clearBrowserData**, and press **Enter**.

2. On the Advanced tab, select the following:

   - Cookies and other site data

   - Cached images and files

3. From the **Time range** drop-down list, you can choose the period of time for which you want to clear cached information. To clear your entire cache, select **All time**.

4. Click **Clear Data**.

5. Restart browser.

Internet Explorer

To clear cache on the Internet Explorer browser, perform the following task:

1. Select **Tools > Safety > Delete browsing history...**.

   If the menu bar is hidden, press **Alt** to make it visible.

2. Deselect **Preserve Favorites website data**, and select **Cookies or Cookies and website data**.

3. Click **Delete**. You will see a confirmation at the bottom of the window when the process is complete.

4. Restart browser.