



# System Requirements

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This chapter lists the tested and supported hardware and software specifications for Cisco Data Center Network Management (DCNM) server and client architecture. The application is in English locales only. This chapter contains the following section:

- [System Requirements, on page 1](#)

## System Requirements



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**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.

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This section describes the various system requirements for proper functioning of your Cisco DCNM, Release 11.4(1).



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**Note** 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.

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### 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:

- **SAN Deployments:**
  - Microsoft Windows 2016
  - Microsoft Windows 2012 R2
  - Red Hat Enterprise Linux Release 7.3, 7.4, 7.6, and 7.7

- Open Virtual Appliance (OVA) with an integrated CentOS Linux release 7.8
  - ISO Virtual Appliance (ISO) with an integrated CentOS Linux release 7.8
- **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:

- Oracle 11g Express (XE), Standard, and Enterprise Editions, and Oracle 11g Real Application Clusters (RAC)
- Oracle 12c Enterprise Edition (Conventional)—(Nonpluggable installation)




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**Note** From Cisco DCNM Release 11.3(1), Oracle 12c pluggable database version installation is not supported.

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- Oracle 12c RAC (nonpluggable installation)
- PostgreSQL 9.6.16 - For OVA/ISO deployments
- PostgreSQL 9.6.16 - For Linux/OVA/ISO deployments
- PostgreSQL 9.6.18 - For Windows deployments




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**Note** The database size increases according to the number of nodes and ports that the DCNM manages, with Performance Manager Collections enabled. You cannot restrict the database size. If you choose an Oracle database, we recommend that you use Oracle SE or Enterprise edition, instead of Oracle XE due to table space limitations.

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**Note** You are responsible for all the support that is associated with the Oracle databases, including maintenance, troubleshooting, and recovery. We recommend that you take regular backup of the database; either daily or weekly, to ensure that all the data is preserved.

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

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## 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 <sup>12</sup>
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

<sup>1</sup> Install the Cisco DCNM Compute node with 16 vCPUs, 64G RAM, and 500GB hard disk.

<sup>2</sup> 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 with appropriate specifications, despite Cisco is only testing on Cisco UCS.

## Supported Hypervisors

From Release 11.4(1), Cisco DCNM supports the running of the Cisco DCNM Server on the following hypervisors:

Hypervisor supported	Data Center Manager server application	Supported deployments
ESXi 7.0	vCenter 7.0 <b>Note</b> VMM visualization on vCenter 7.0 is not supported with Cisco DCNM 11.4(1).	All
ESXi 6.7 P01	vCenter 6.7 P01	All
ESXi 6.5	vCenter 6.5	All
ESXi 6.0	vCenter 6.0	All
RedHat 7.6 KVM with QEMU version 1.5.3	Virtual Machine Manager (comes with RHEL 7.6)	LAN Fabric
Hyper-V on Windows Server 2019	Hyper-V Manager (comes with Windows Server 2019)	LAN Fabric This is supported with Native HA mode, and not in Cluster mode.

### 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. The following table shows snapshot support for your deployment.

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 <sup>3</sup>

<sup>3</sup> Virtual Machine Manager import for compute visibility with vCenter 7.0 is not supported




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

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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.




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**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.

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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

 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 ×

<ul style="list-style-type: none"> <li>▼ dcnm1111           <ul style="list-style-type: none"> <li>VM Snapshot 12%252f12%252f2019, 11:56:07 AM</li> <li>▼ 11:31 Snapshot 12%252f12%252f2019, 3:04:31 PM               <ul style="list-style-type: none"> <li>VM Snapshot 12%252f16%252f2019, 6:55:02 ...</li> <li>You are here</li> </ul> </li> </ul> </li> </ul>	<table border="1"> <tr> <td>Name</td> <td>VM Snapshot 12%252f16%252f2019, 6:55:02 AM</td> </tr> <tr> <td>Created</td> <td>12/15/2019, 11:55:31 PM</td> </tr> <tr> <td>Disk usage</td> <td>510.03 MB</td> </tr> <tr> <td>Snapshot the virtual machine's memory</td> <td>No</td> </tr> <tr> <td>Quiesce guest file system</td> <td>No</td> </tr> </table>	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
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
SAN	Windows	CPU: 8 vCPUs RAM: 24 GB DISK: 500 GB	CPU: 16 vCPUs RAM: 32 GB DISK: 500 GB	Not Applicable	Not Applicable	Not Applicable
SAN	Linux (standalone or VM)	CPU: 8 vCPUs RAM: 24 GB DISK: 500 GB	CPU: 16 vCPUs RAM: 32 GB Disk: 500 GB	With SAN Insights: <ul style="list-style-type: none"> <li>• CPU: 32 vCPUs</li> <li>• RAM: 128 GB</li> <li>• DISK: 2 TB</li> </ul>	Not Applicable	Not Applicable
SAN	<ul style="list-style-type: none"> <li>• OVA standalone</li> <li>• ISO standalone</li> </ul>	CPU: 8 vCPUs RAM: 24 GB DISK: 500 GB	CPU: 16 vCPUs RAM: 32 GB DISK: 500 GB	CPU: 32vCPUs RAM: 128 GB DISK: 2 TB (with SAN Insights)	Not Applicable	Not Applicable
IP for Media (IPFM)	<ul style="list-style-type: none"> <li>• OVA</li> <li>• ISO</li> </ul>	CPU: 8 vCPUs RAM: 24 GB DISK: 500 GB	CPU: 16 vCPUs RAM: 32 GB DISK: 500 GB	Not Applicable	Not Applicable	Not Applicable
LAN Fabric	<ul style="list-style-type: none"> <li>• OVA</li> <li>• ISO</li> <li>• Hyper-V on Windows</li> </ul>	CPU: 8 vCPUs RAM: 24 GB DISK: 500 GB	CPU: 16 vCPUs RAM: 32 GB DISK: 500 GB	Not Applicable	CPU: 16 vCPUs RAM: 64 GB DISK: 500 GB	CPU: 32vCPUs RAM: 128GB DISK: 2TB for Network Insights Applications



**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.

Ensure that there is enough disk space to the root partition or mount another disk where the `/tmp` directory can be mounted during the installation or upgrade.

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.



- Note**
- From Release 11.3(1), Cisco DCNM Windows deployments does not support the SAN Insights feature.
  - Cisco SAN Insights feature is only supported with the Huge deployment.
  - You can use the SAN Insights feature on a medium-sized deployment with 2 TB disk space.
  - Every federation deployment consists of three large configuration nodes.
  - From Cisco DCNM Release 11.2(1), synchronize the Federation nodes from the Primary node only.

### Cisco DCNM LAN Fabric Deployment Without Network Insights (NI)



**Note** For information about various system requirements for proper functioning of Cisco DCNM LAN Fabric deployment, see [System Requirements](#).

Refer to *Network Insights User guide* for sizing information for Cisco DCNM LAN Deployment with Network Insights (NI).

To see the verified scale limits for Cisco DCNM 11.4(1) for managing LAN Fabric deployments, see [Verified Scale Limits for Cisco DCNM LAN Fabric Deployment](#).

**Table 1: Upto 80 Switches**

Node	CPU Deployment Mode	CPU	Memory	Storage	Network
DCNM	OVA/ISO	16 vCPUs	32G	500G HDD	3xNIC
Computes	NA	—	—	—	—

**Table 2: 81–350 Switches**

Node	CPU Deployment Mode	CPU	Memory	Storage	Network
DCNM	OVA/ISO	16 vCPUs	32G	500G HDD	3xNIC
Computes	OVA/ISO	16 vCPUs	64G	500G HDD	3xNIC

### Client Hardware Requirements

Cisco DCNM SAN desktop client and Cisco Device Manager support Microsoft Windows 10, Microsoft Windows 2012, Microsoft Windows 2016, and Red Hat Linux. The following table lists the minimum hardware requirements for these client systems.

Hardware	Minimum Requirements
RAM (free)	6 GB or more
CPU speed	3 GHz or faster
Disk space (free)	20 GB

Some Cisco DCNM features require a license. Before using the licensed features, you must install a Cisco DCNM license for each Nexus-managed or MDS-managed platform. For information about Licensing in DCNM, see [https://www.cisco.com/c/en/us/td/docs/switches/datacenter/sw/11\\_x/licensing/cisco\\_dcnm\\_licensing\\_guide\\_11\\_x.html](https://www.cisco.com/c/en/us/td/docs/switches/datacenter/sw/11_x/licensing/cisco_dcnm_licensing_guide_11_x.html).

### 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 3: 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 and Cisco DCNM-SAN Server 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.