



Inventory

This chapter contains the following topics:

- [Viewing Inventory Information, on page 1](#)
- [Discovery, on page 23](#)

Viewing Inventory Information

Beginning with Cisco DCNM release 6.x, you can view the inventory and the performance for both SAN and LAN switches by using the global Scope pane. You can select LAN, SAN, or both to view the inventory information. You can also export and print the inventory information.

You can either Print this information or export to Microsoft Excel.



Note You can use the **Print** icon to print the information that is displayed or you can also use the **Export** icon to export the information that is displayed to a Microsoft Excel spreadsheet. You can also choose the column that you want to display.

The Inventory menu includes the following submenus:

Viewing Inventory Information for Switches

To view the inventory information for switches from the Cisco DCNM Web UI, perform the following steps:

Procedure

- Step 1** Choose **Inventory > View > Switches**.
- The **Switches** window with a list of all the switches for a selected Scope is displayed.
- Step 2** You can also view the following information.
- **Group** column displays the switch group to which the switch belongs.
 - In the **Device Name** column, select a switch to display the Switch Dashboard.

- **IP Address** column displays the IP address of the switch.
- **WWN/Chassis ID** displays the Worldwide Name (WWN) if available or chassis ID.
- **Health** displays the health situation of the switch.

Note To refresh and recalculate the latest health data for all the switches on Cisco DCNM, click the **Recalculate Health** button above the switches table.
- **Mode** column displays the current mode of the switch. The switch can be in **Normal**, **Maintenance**, or **Migration** mode.
- **Status** column displays the status of the switch.
- **# Ports** column displays the number of ports.
- **Model** column displays the model name of the switch.
- **Serial No.** column displays the serial number of the switch.
- **Release** column displays the switch version.
- **Up Time** column displays the time period for which the switch is active.

Cisco Data Center Network Manager

SCOPE: Data Center

Monitor / Inventory / Switches

Switches

Recalculate Health

Total 14

| Group | Device Name | IP Address | WWN/Chassis Id | Health | Mode | Status | # Ports | Model | Serial No. | Release | Up Time | |
|-------|-------------|-------------|----------------|-------------|------|--------|---------|-------|---------------|--------------|---------|--------------------|
| 1 | epl-ex-site | epl-leaf1 | 192.168.126... | FDO22471NHP | 68% | Normal | ok | 54 | N9K-C93180... | FDO22471N... | 9.2(1) | 38 days, 22:10:42 |
| 2 | epl-ex-site | epl-leaf2 | 192.168.126... | FDO22470E60 | 68% | Normal | ok | 54 | N9K-C93180... | FDO22470E60 | 9.2(1) | 37 days, 22:19:27 |
| 3 | ext1 | epl-spine1 | 192.168.126... | FDO22461K4U | 99% | Normal | ok | 54 | N9K-C93180... | FDO22461K4U | 9.3(3) | 83 days, 21:39:22 |
| 4 | ext2 | epl-spine2 | 192.168.126... | FDO22471B4U | 98% | Normal | ok | 54 | N9K-C93180... | FDO22471B4U | 9.3(2) | 128 days, 02:20:51 |
| 5 | shyam-fx2 | ipv6-bg | 192.168.126... | FDO231003B3 | 97% | Normal | ok | 60 | N9K-C93240... | FDO231003B3 | 9.3(2) | 130 days, 03:05:10 |
| 6 | shyam-fx2 | ipv6-leaf1 | 192.168.126... | FDO23070AC0 | 68% | Normal | ok | 60 | N9K-C93240... | FDO23070AC0 | 9.3(2) | 6 days, 19:40:16 |
| 7 | shyam-fx2 | ipv6-leaf2 | 192.168.126... | FDO22502KUA | 68% | Normal | ok | 60 | N9K-C93240... | FDO22502KUA | 9.3(2) | 6 days, 19:41:05 |
| 8 | shyam-fx2 | ipv6-leaf3 | 192.168.126... | FDO2310037V | 98% | Normal | ok | 60 | N9K-C93240... | FDO2310037V | 9.3(2) | 8 days, 19:34:54 |
| 9 | shyam-fx2 | ipv6-spine | 192.168.126... | FDO231003AG | 97% | Normal | ok | 60 | N9K-C93240... | FDO231003AG | 9.3(2) | 130 days, 03:09:21 |
| 10 | terry-fx2 | terry-bg | 192.168.126... | FDO230711SA | 98% | Normal | ok | 60 | N9K-C93240... | FDO230711SA | 9.3(3) | 83 days, 23:51:45 |
| 11 | terry-fx2 | terry-leaf1 | 192.168.126... | FDO231003D3 | 67% | Normal | ok | 60 | N9K-C93240... | FDO231003D3 | 9.3(3) | 161 days, 03:18:16 |
| 12 | terry-fx2 | terry-leaf2 | 192.168.126... | FDO231003F3 | 68% | Normal | ok | 60 | N9K-C93240... | FDO231003F3 | 9.3(3) | 161 days, 03:30:47 |
| 13 | terry-fx2 | terry-leaf3 | 192.168.126... | FDO231003F7 | 97% | Normal | ok | 60 | N9K-C93240... | FDO231003F7 | 9.3(3) | 84 days, 00:01:53 |
| 14 | terry-fx2 | terry-spine | 192.168.126... | FDO22381UC4 | 98% | Normal | ok | 60 | N9K-C93240... | FDO22381UC4 | 9.3(3) | 161 days, 03:29:33 |

Step 3

Click **Health** to access the Health score window for a device. The Health score window includes health score calculation and health trend. The Overview tab displays the overall health score. All the modules, switch ports and alarms are taken into consideration while calculating the health score. Hover over the graph under Health Trend for detailed information on specific dates. Hover over the info icon next to Alarms to display the number of Critical, Major, Minor, and Warning alarms that have been generated.

N9k-C9316d-gx



Overview Modules Switch Ports Alarms

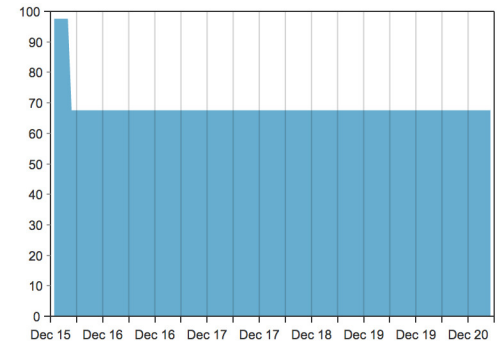
Health score: 68%



Here's how we computed the score:

| Component | Percent | Weight | Percent Contribution |
|-----------------------|---------|--------|----------------------|
| Modules | 92.86% | 0.2 | 18.57% |
| Switch ports | 100.00% | 0.2 | 20.00% |
| Alarms 1 | 50.00% | 0.6 | 30.00% |
| <i>total</i> | | | 68% |

Health Trend



Click the **Modules** tab to display information about the various modules in the device. This tab displays information such as Name, Model name, Serial number, Status, Type, Slot, Hardware revision and Software revision.

N9k-C9316d-gx



Overview Modules Switch Ports Alarms

| Name | Model Name | Serial Number | Status | Type | Slot | H/W R... | S/W Revision |
|-------------------|-----------------|---------------|-------------|-------------|------|----------|-------------------|
| N9K-C9316D-GX | N9K-C9316D-GX | FDO231212UL | n/a | chassis | | V00 | |
| Module-1 16x40... | N9K-C9316D-GX | FDO231212UL | ok | module | 1 | V00 | 9.3(3)ID19(0.504) |
| Fan Module-1 | NXA-FAN-35CF... | | ok | fan | | V01 | |
| Fan Module-2 | NXA-FAN-35CF... | | ok | fan | | V01 | |
| Fan Module-3 | NXA-FAN-35CF... | | ok | fan | | V01 | |
| Fan Module-4 | NXA-FAN-35CF... | | ok | fan | | V01 | |
| Fan Module-5 | NXA-FAN-35CF... | | ok | fan | | V01 | |
| Fan Module-6 | NXA-FAN-35CF... | | ok | fan | | V01 | |
| PowerSupply-1 | NXA-PAC-1100... | ART2244FBT5 | offEnvPower | powerSupply | | V01 | |
| PowerSupply-2 | NXA-PAC-1100... | ART2244FBSZ | ok | powerSupply | | V01 | |

Click the **Switch Ports** tab to display information about the device ports. This tab displays information such as Name, Description, Status, Speed, and the device to which a port is connected .

N9k-C9316d-gx



| | Name | Description | Status | Speed | Connected To |
|----|-------------|-------------|-------------------|-------|--------------------------------|
| 1 | mgmt0 | | ok | 1Gb | |
| 2 | Ethernet1/1 | | ok | 40Gb | N9k_tucher (Ethernet1/99) |
| 3 | Ethernet1/2 | | ok | 40Gb | N9k_3408s_179 (Ethernet1/1) |
| 4 | Ethernet1/3 | | ok | 40Gb | N9k_c9316d-gx_10 (Ethernet1/3) |
| 5 | Ethernet1/4 | | XCVR not inserted | 400Gb | |
| 6 | Ethernet1/5 | | XCVR not inserted | 400Gb | |
| 7 | Ethernet1/6 | | XCVR not inserted | 400Gb | |
| 8 | Ethernet1/7 | | XCVR not inserted | 400Gb | |
| 9 | Ethernet1/8 | | XCVR not inserted | 400Gb | |
| 10 | Ethernet1/9 | | XCVR not inserted | 400Gb | |

Click the **Alarms** tab to display information about the alarms that have been generated. This tab displays information such as alarm Severity, Message, Category, and the Policy that has been activated due to which the alarm is generated.

N9k-C9316d-gx



| Severity | Message | Category | Policy |
|----------|---------------------------|----------|--|
| CRITICAL | 10.106.228.90(N9k-C931... | CRITICAL | Config-Compliance: G1: Device Level Status Alarm |

In the **Health** column, the switch health is calculated by the capacity manager based on the following parameters:

- Total number of modules
- Total number of modules impacted by the warning
- Total number of switch ports
- Total number of switch ports impacted by the warning

- Total number of critical severity alarms
- Total number of warning severity alarms
- Total number of major severity alarms
- Total number of minor severity alarms

Step 4 The value in the **Health** column is calculated based on the following:

- Percentage of modules impacted by warnings (Contributes 20% of the total health).
- Percentage of ports impacted by warnings (Contributes 20% of the total health).
- Percentage of alarms (Contributes 60% of the total health). The critical alarms contribute the highest value to this percentage followed by major alarms, minor alarms and warning alarms.

You may also have your own health calculation formula by implementing the common interface class: `com.cisco.dcbu.sm.common.rif.HealthCalculatorRif`.

The default Java class is defined as: `health.calculator=com.cisco.dcbu.sm.common.util.HealthCalculatorAlarms`.

- Capacity Manager calculates health only for the license switches. If the health column does not display a value, the switch either does not have a license or it has missed the capacity manager daily cycle.
- If the switch is unlicensed, click **Unlicensed** in the DCNM License column. The **Administration > License** window appears which allows you to assign a license to the user.
- The capacity manager runs two hours after the DCNM server starts. So, if you discover a device after two hours of the DCNM start time, the health will be calculated 24 hours after this DCNM start time

Starting from Cisco DCNM 11.3(1) Release, you can view information about switch health along with the switch summary by clicking on a switch in the **Topology** window or by choosing **Control>Fabrics>Fabric Builder**, selecting a fabric and clicking on a switch in the **Fabric Builder** window.

Viewing System Information

The switch dashboard displays the details of the selected switch.

Procedure

Step 1 From the Cisco DCNM home page, choose **Inventory > View > Switches**.

An inventory of all the switches that are discovered by Cisco DCNM Web UI is displayed.

Step 2 Click a switch in the **Device Name** column.

The **Switch** dashboard that corresponds to that switch is displayed along with the following information:

Step 3 Click the **System Information** tab. This tab displays detailed system information such as group name, health, module, time when system is up, serial number, the version number, contact, location, DCNM license, status, system log sending status, CPU and memory utilization, and VTEP IP address are displayed. Click **Health** to access the Health score screen, which includes health score calculation and health trend. The popup contains Overview, Modules, Switch Ports, and Events tabs.

- (Optional) Click **SSH** to access the switch through Secure Shell (SSH).
 - (Optional) Click **Device Manager** to view a graphical representation of a Cisco MDS 9000 Family switch chassis, a Cisco Nexus 5000 Series switch chassis, a Cisco Nexus 7000 Series switch chassis, or a Cisco Nexus 9000 Series switch chassis including the installed switching modules, the supervisor modules, the status of each port within each module, the power supplies, and the fan assemblies.
 - (Optional) Click **HTTP** to access the switch through Hypertext Transfer Protocol (HTTP) for that switch.
 - (Optional) Click **Accounting** to go to the Viewing Accounting Information window pertaining to this switch.
 - (Optional) Click **Backup** to go to the Viewing a Configuration window.
 - (Optional) Click **Events** to go to the [Viewing Events Registration](#) window.
 - (Optional) Click **Show Commands** to display the device show commands. The Device Show Commands page helps you to view commands and execute them.
 - (Optional) Click **Copy Running Config to Startup Config** to copy the running configuration to the startup configuration.
-

Interfaces

Adding Interfaces

To add the interfaces from the Cisco DCNM Web UI, perform the following steps:

Procedure

- Step 1** Choose **Inventory > View > Switches**.
- You see the **Switches** window displaying a list of all the switches for a selected **Scope**.
- Step 2** In the **Device Name** column, select a switch to display **Switch Dashboard**.
- Step 3** Click the **Interfaces** tab.
- Step 4** Click **Add** to add a logical interface. The **Add Interface** window appears. If you want to add a sub-interface, you select an interface and click **Add**.
- Step 5** In the **Type** field, choose the type of the interface. For example, VLAN, loopback, NVE.
- Step 6** In the **Number** field, specify the interface number.
- Step 7** Select the **Admin State ON** check box to specify whether the interface is shut down or not.
-

Editing Interfaces

To edit the interfaces from the Cisco DCNM Web UI, perform the following steps:

Procedure

- Step 1** Choose **Inventory > View > Switches**.
You see the Switches window displaying a list of all the switches for a selected Scope.
- Step 2** In the **Device Name** column, select a switch to display **Switch Dashboard**.
- Step 3** Click the **Interfaces** tab.
- Step 4** Click **Edit** to edit an interface. The variables that are shown in the **Edit Configuration** window are based on the template and its policy.
- The **Admin State ON** check box in the **Edit Configuration** window indicates whether the interface is shut down or not.
 - The **Clear Config** before the deployment check box helps you to set a port to its default configuration. When there is a set of configurations already available on the port and these configurations conflict with the configurations that want to place on the port, you may need to clear the configurations before the deployment.
 - In the **Preview** window, the left pane shows the configurations that the template generated based on your input, whereas the right pane shows the configurations that are currently available on the switch.
-

Deleting Interfaces

To delete the interfaces from the Cisco DCNM Web UI, perform the following steps:

Procedure

- Step 1** Choose **Inventory > View > Switches**.
You see the **Switches** window displaying a list of all the switches for a selected **Scope**.
- Step 2** In the **Device Name** column, select a switch to display **Switch Dashboard**.
- Step 3** Click the **Interfaces** tab.
- Step 4** Click **Delete** to add a logical interface.
-

Shutting Down and Bring Up Interfaces

To shut down and bring up the interfaces from the Cisco DCNM Web UI, perform the following steps:

Procedure

- Step 1** Choose **Inventory > View > Switches**.
The **Switches** window is displayed with a list of all the switches for a selected **Scope**.
- Step 2** In the **Device Name** column, select a switch to display **Switch Dashboard**.
- Step 3** Click the **Interfaces** tab.

Step 4 Click **Shutdown** to disable an interface. For example, you may want to isolate a host from the network or a host that is not active in the network.

To enable an interface, Click **No Shutdown** button.

Displaying Interface Show Commands

To display interface show commands from the Cisco DCNM Web UI, perform the following steps:

Procedure

Step 1 Choose **Inventory > View > Switches**.

You see the **Switches** window displaying a list of all the switches for a selected **Scope**.

Step 2 In the **Device Name** column, select a switch to display **Switch Dashboard**.

Step 3 Click the **Interfaces** tab.

Step 4 Click **Show** to display the interface show commands.

The **Interface Show Commands** window helps you to view commands and execute them.

Rediscovering Interfaces

To rediscover interfaces from the Cisco DCNM Web UI, perform the following steps:

Procedure

Step 1 Choose **Inventory > View > Switches**.

The **Switches** window is displayed showing a list of all the switches for a selected **Scope**.

Step 2 In the **Device Name** column, select a switch to display **Switch Dashboard**.

Step 3 Click the **Interfaces** tab.

Step 4 Click **Rediscover** to rediscover the selected interfaces. For example, after you edit or enable an interface, you can rediscover the interface.

Viewing Interface History

To view the interface history from the Cisco DCNM Web UI, perform the following steps:

Procedure

Step 1 Choose **Inventory > View > Switches**.

You see the Switches window displaying a list of all the switches for a selected Scope.

Step 2 In the **Device Name** column, select a switch to display **Switch Dashboard**.

- Step 3** Click the **Interfaces** tab.
- Step 4** Click **Interface History** to display the interface history details such as **Policy Name**, **Time of Execution**, and so on.

VLAN

You create a VLAN by assigning a number to it; you can delete VLANs and move them from the active operational state to the suspended operational state.

To configure VLANs, choose **Inventory > View > Switches**, and then click a switch in the **Device Name** column.

The following table describes the buttons that appear on this page.

Table 1: VLAN Tab

| Field | Description |
|------------------|---|
| Clear Selections | Allows you to unselect all the VLANs that you selected. |
| Add | Allows you to create Classical Ethernet or Fabric Path VLANs. |
| Edit | Allows you to edit a VLAN. |
| Delete | Allows you to delete a VLAN. |
| No Shutdown | Allows you to enable a VLAN. |
| Shutdown | Allows you to disable a VLAN. |
| Show | Allows you to display the VLAN show commands. |

This section contains the following:

Adding a VLAN

To add a VLAN from the Cisco DCNM Web UI, perform the following steps:

Procedure

- Step 1** Choose **Inventory > View > Switches**.
- You see the **Switches** window displaying a list of all the switches for a selected **Scope**.
- Step 2** In the **Device Name** column, select a switch to display the **Switch Dashboard**.
- Step 3** Click the **VLAN** tab.
- Step 4** Click **Add** to create Classical Ethernet or Fabric Path VLANs. In the **Add VLAN** window, specify the following fields:
- In the **Vlan Id** field, enter the VLAN ID.

- b) In the **Mode** field, specify whether you are adding Classical Ethernet or Fabric Path VLAN.
 - c) Select the **Admin State ON** check box to specify whether the VLAN is shut down or not.
-

Editing a VLAN

To edit a VLAN from the Cisco DCNM Web UI, perform the following steps:

Procedure

- Step 1** Choose **Inventory > View > Switches**.
The **Switches** window is displayed with a list of all the switches for a selected **Scope**.
 - Step 2** In the **Device Name** column, select a switch to display the **Switch Dashboard**.
 - Step 3** Select one or more VLANs, and then click the **Edit**.
-

Deleting a VLAN

To delete a VLAN from the Cisco DCNM Web UI, perform the following steps:

Procedure

- Step 1** Choose **Inventory > View > Switches**.
You see the **Switches** window displaying a list of all the switches for a selected **Scope**.
 - Step 2** In the **Device Name** column, select a switch to display the **Switch Dashboard**.
 - Step 3** Click **VLAN** tab.
 - Step 4** Select the VLAN that you want to delete, and then click **Delete**.
-

Shutting Down a VLAN

To shut down a VLAN from the Cisco DCNM Web UI, perform the following steps:

Procedure

- Step 1** Choose **Inventory > View > Switches**.
You see the **Switches** window displaying a list of all the switches for a selected **Scope**.
- Step 2** In the **Device Name** column, select a switch to display **Switch Dashboard**.
- Step 3** Click the **VLAN** tab.
- Step 4** Click **Shutdown** to disable a VLAN.

To enable a VLAN, click **No Shutdown** button. For example, if you want to start traffic flow on a VLAN you can enable it.

Displaying VLAN Show Commands

To display VLAN show commands from the Cisco DCNM Web UI, perform the following steps:

Procedure

- Step 1** Choose **Inventory > View > Switches**.
- The **Switches** window is displayed, showing a list of all the switches for a selected **Scope**.
- Step 2** In the **Device Name** column, select a switch to display **Switch Dashboard**.
- Step 3** Click the **VLAN** tab.
- Step 4** Click **Show** to display the VLAN show commands. Based on the VLAN selection, you can show the VLAN commands. **Interface Show Commands** window displays the commands and allows you to execute them.
-

FEX

The Fabric Extender feature allows you to manage a Cisco Nexus 2000 Series Fabric Extender and its association with the Cisco NX-OS switch that it is attached to. A Fabric Extender is connected to the switch through physical Ethernet interfaces or a Port Channel. By default, the switch does not allow the attached Fabric Extender to connect until it has been assigned a chassis ID and is associated with the connected interface. You can configure a Fabric Extender host interface port as a routed or Layer 3 port. However, no routing protocols can be tied to this routed interface.



Note FEX feature is available on LAN devices only. Therefore, you will see FEX on Cisco DCNM **Inventory Switches**. FEX is also not supported on Cisco Nexus 1000V devices.



Note 4x10G breakout for FEX connectivity is not supported on Cisco Nexus 9500 Switches.



Note The Fabric Extender may connect to the switch through several separate physical Ethernet interfaces or at most one port channel interface.

This section describes how to manage Fabric Extender (FEX) on Cisco Nexus Switches through Cisco DCNM. You can create and manage FEX from Cisco DCNM **Inventory > Switches**.



Note FEX tab is visible only if you choose a LAN device.

The following table describes the fields that appear on this page.

Table 2: FEX Operations

| Field | Description |
|-------------|---|
| Add | Click to add a new FEX to a Cisco Nexus Switch. |
| Edit | Select any active FEX radio button and click Edit to edit the FEX configuration. You can create an edit template and use it for editing FEX. Select template type as POLICY and sub type as FEX. |
| Delete | Select the FEX radio button, and click Delete icon to delete the FEX associated with the switch. |
| Show | Allows you to view various configuration details for the selected FEX ID. You can select the following from the drop-down list. <ul style="list-style-type: none"> • show_diagnostic • show_fex • show_fex_detail • show_fex_fabric • show_fex_inventory • show_fex_module <p>The variables for respective show commands are displayed in the Variables area. Review the Variables and click Execute. The output appears in the Output area.</p> <p>You can create a show template for FEX. Select template type as SHOW and sub type as FEX.</p> |
| FEX History | Allows you to view the history of the FEX configuration tasks for a particular FEX. You can review the Event Type, Policy Name, Status, Time of Execution, User Name for the selected FEX. |

Table 3: FEX Field and Description

| Field | Description |
|-----------------|--|
| Fex Id | Uniquely identifies a Fabric Extender that is connected to a Cisco NX-OS device. |
| Fex Description | Description that is configured for the Fabric Extender. |

| Field | Description |
|--------------|--|
| Fex Version | Specifies the version of the FEX that is associated with the switch. |
| Pinning | An integer value that denotes the maximum pinning uplinks of the Fabric Extender that is active at a time. |
| State | Specifies the status of the FEX as associated with the Cisco Nexus Switch. |
| Model | Specifies the model of the FEX. |
| Serial No. | Specifies the configured serial number. Note If this configured serial number and the serial number of the Fabric Extender are not the same, the Fabric Extender will not be active. |
| Port Channel | Specifies the port channel number to which the FEX is physically connected to the Switch. |
| Ethernet | Refers to the physical interfaces to which the FEX is connected. |
| vPC ID | Specifies the vPC ID configured for FEX. |

This chapter includes the following sections:

Add FEX

To add single-home FEX from the Cisco DCNM Web UI, perform the following steps:

Before you begin

You can add a Fabric Extender (FEX) to the Cisco Nexus Switches through the Cisco DCNM Web Client. If the FEX is physically connected to the switch, FEX will become online after it is added. If the FEX is not physically connected to the switch, the configuration is deployed to the switch, which in turn enables FEX when connected.



Note You can create only single homed FEX through **Inventory > Switches > FEX > Add FEX**. To create a dual-homed FEX, use the vPC wizard through **Configure > Deploy > vPC**.

Ensure that you have successfully discovered LAN devices and configured LAN credentials before you configure FEX.

Procedure

-
- Step 1** Choose **Inventory > Switches > FEX**.
The **FEX** window is displayed.
- Step 2** Click the **Add FEX** icon.

- Step 3** In the General tab, in the **PORTCHANNEL** field, enter the interface port channel number which is connected to the FEX.
- Step 4** In the **INT_RANGE** field, enter the interface range within which the FEX is connected to the switch.
- Note** Do not enter the interface range, if the interfaces are already a part of port channel.
- Step 5** In the **FEX_ID** field, enter the ID for FEX that is connected to a Cisco NX-OS device.
The identifier must be an integer value between 100 to 199.
- Step 6** Click **Add**.
The configured Single-home FEX appears in the list of FEXs associated to the device.
-

Edit FEX

To edit and deploy FEX from the Cisco DCNM Web UI, perform the following steps:

Procedure

- Step 1** Choose **Inventory > Switches > FEX**.
The **FEX** window is displayed.
- Step 2** Select the FEX radio button that you must edit. Click **Edit FEX** icon.
- Step 3** In the Edit Configuration window, from the Policy drop-down list, select **Edit_FEX** to edit the FEX configuration.
- Step 4** Edit the **pinning** and **FEX_DESC** fields, as required.
- Note** If you initially configured port 33 on the parent switch as your only fabric interface, all 48 host interfaces are pinned to this port. If you provision another port, for example 35, then you must perform this procedure to redistribute the host interfaces. All host interfaces are brought down and host interfaces 1 to 24 are pinned to fabric interface 33 and host interfaces 25 to 48 are pinned to fabric interface 35.
- Step 5** Click **Preview**.
You can view the generated configuration for the selected FEX ID. The following is a configuration example for FEX ID 101.
- ```
fex 101
pinning max-links 1
description test
```
- Step 6** After you review the configuration summary on the Preview window, on the Edit Configuration screen, click **Deploy** to deploy the FEX for the switch.
- 

## VDCs

This section describes how to manage Virtual Device Contexts (VDCs) on Cisco Nexus 7000 Switches through Cisco DCNM.

Users with the network administrator (network-admin) role can create Virtual Device Contexts (VDCs). VDC resource templates limit the amount of physical device resources available to the VDC. The Cisco NX-OS software provides a default resource template, or you can create resource templates.

You can create and manage VDCs from Cisco DCNM **Inventory > Switches > VDCs**. As Cisco DCNM supports DCNM on Cisco Nexus 7000 Series only, click an active Cisco Nexus 7000 Switch. After you create a VDC, you can change the interface allocation, VDC resource limits, and the high availability (HA) policies.

The following table describes the fields that appear on this page.

**Table 4: VDC Operations**

| Field      | Description                                                                                                                                                                                                                                                                                                                                                 |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Add        | Click to add a new VDC.                                                                                                                                                                                                                                                                                                                                     |
| Edit       | Select any active VDC radio button and click Edit to edit the VDC configuration.                                                                                                                                                                                                                                                                            |
| Delete     | Allows you to delete the VDC. Select any active VDC radio button and click Delete to remove the VDC associated with the device.                                                                                                                                                                                                                             |
| Resume     | Allows you to resume a suspended VDC.                                                                                                                                                                                                                                                                                                                       |
| Suspend    | <p>Allows you to suspend an active non-default VDC.</p> <p>Save the VDC running configuration to the startup configuration before suspending the VDC. Otherwise, you will lose the changes to the running configuration.</p> <p><b>Note</b> You cannot suspend the default VDC.</p> <p><b>Caution</b> Suspending a VDC disrupts all traffic on the VDC.</p> |
| Rediscover | Allows you to resume a non-default VDC from the suspended state. The VDC resumes with the configuration that is saved in the startup configuration.                                                                                                                                                                                                         |
| Show       | <p>Allows you to view the Interfaces and Resources that are allocated to the selected VDC.</p> <p>In the Interface tab, you can view the mode, admin-status, and operational status for each interface associated with the VDC.</p> <p>In the Resource tab, you can view the allocation of resources and current usage of these resources.</p>              |

**Table 5: Vdc Table Field and Description**

| Field | Description                          |
|-------|--------------------------------------|
| Name  | Displays the unique name for the VDC |

| Field                                                                                                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Type                                                                                                       | Species the type of VDC. The two types of VDCs are: <ul style="list-style-type: none"> <li>• Ethernet</li> <li>• Storage</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Status                                                                                                     | Specifies the status of the VDC.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Resource Limit-Module Type                                                                                 | Displays the allocated resource limit and module type.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| HA-Policy <ul style="list-style-type: none"> <li>• Single Supervisor</li> <li>• Dual Supervisor</li> </ul> | <p>Specifies the action that the Cisco NX-OS software takes when an unrecoverable VDC fault occurs.</p> <p>You can specify the HA policies for single supervisor module and dual supervisor module configurations when you create the VDC. The HA policy options are as follows:</p> <p><b>Single supervisor module configuration:</b></p> <ul style="list-style-type: none"> <li>• Bringdown—Puts the VDC in the failed state. To recover from the failed state, you must reload the physical device.</li> <li>• Reload—Reloads the supervisor module.</li> <li>• Restart—Takes down the VDC processes and interfaces and restarts it using the startup configuration.</li> </ul> <p><b>Dual supervisor module configuration:</b></p> <ul style="list-style-type: none"> <li>• Bringdown—Puts the VDC in the failed state. To recover from the failed state, you must reload the physical device.</li> <li>• Restart—Takes down the VDC processes and interfaces and restarts it using the startup configuration.</li> <li>• Switchover—Initiates a supervisor module switchover.</li> </ul> <p>The default HA policies for a non-default VDC that you create is restart for a single supervisor module configuration and switchover for a dual supervisor module configuration. The default HA policy for the default VDC is reload for a single supervisor module configuration and switchover for a dual supervisor module configuration.</p> |
| Mac Address                                                                                                | Specifies the default VDC management MAC address.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |



| Field                                                                                                        | Description                                                                                              |
|--------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| Management Interface <ul style="list-style-type: none"> <li>• IP Address Prefix</li> <li>• Status</li> </ul> | Species the IP Address of the VDC Management interface. The status shows if the interface if up or down. |
| SSH                                                                                                          | Specifies the SSH status                                                                                 |



**Note** If you change the VDC hostname of a neighbor device after initial configuration, the link to the old VDC hostname is not replaced with the new hostname automatically. As a workaround, we recommend manually deleting the link to the old VDC hostname.

This chapter includes the following sections:

## Add VDCs

To add VDC from the Cisco DCNM Web UI, perform the following steps:

### Before you begin

Ensure that you have discovered the physical device using a username that has the network-admin role.

Obtain an IPv4 or IPv6 address for the management interface (mgmt 0) if you want to use out-of-band management for the VDC.

Create a storage VDC to run FCoE. The storage VDC cannot be the default VDC and you can have one storage VDC on the device.

### Procedure

- 
- Step 1** Choose **Inventory > Switches > VDC**.  
The **VDC** window is displayed.
- Step 2** Click the **Add VDC** icon.
- Step 3** From the drop-down list, select the VDC type.  
You can configure the VDC in two modes.
- [Configuring Ethernet VDCs](#)
  - [Configuring Storage VDCs](#)
- The default VDC type is Ethernet.
- Step 4** Click **OK**.
-

## Configuring Ethernet VDCs

To configure VDC in Ethernet mode from the Cisco DCNM Web UI, perform the following steps:

### Procedure

- 
- Step 1** In the General Parameter tab, specify the **VDC Name**, **Single supervisor HA-policy**, **Dual supervisor HA-policy**, and **Resource Limit - Module Type**.
- Step 2** In the Allocate Interface tab, select the network interfaces (dedicated interfaces membership) to be allocated to the VDC.  
Click **Next**.
- Step 3** In the Allocate Resource tab, specify the resource limits for the VDC.  
Select the radio button and choose **Select a Template from existing Templates** or **Create a New Resource Template**. VDC resource templates describe the minimum and maximum resources that the VDC can use. If you do not specify a VDC resource template when you create a VDC, the Cisco NX-OS software uses the default template, vdc-default.

- If you choose Select a Template from existing Templates, from the **Template Name** drop-down list, you can select **None**, **global-default**, or **vdc-default**.

The template resource limits are detailed in the following below:

**Table 6: Template Resource Limits**

| Resource                                    | Minimum | Maximum                            |
|---------------------------------------------|---------|------------------------------------|
| Global Default VDC Template Resource Limits |         |                                    |
| Anycast Bundled                             |         |                                    |
| IPv6 multicast route memory                 | 8       | 8<br>Route memory is in megabytes. |
| IPv4 multicast route memory                 | 48      | 48                                 |
| IPv6 unicast route memory                   | 32      | 32                                 |
| IPv4 unicast route memory                   |         |                                    |
| VDC Default Template Resource Limits        |         |                                    |
| Monitor session extended                    |         |                                    |
| Monitor session mx exception                |         |                                    |
| Monitor SRC INBAND                          |         |                                    |
| Port Channels                               |         |                                    |
| Monitor DST ERSPAN                          |         |                                    |
| SPAN Sessions                               |         |                                    |

| Resource                    | Minimum | Maximum |
|-----------------------------|---------|---------|
| VLAN                        |         |         |
| Anycast Bundled             |         |         |
| IPv6 multicast route memory |         |         |
| IPv4 multicast route memory |         |         |
| IPv6 unicast route memory   |         |         |
| IPv4 unicast route memory   |         |         |
| VRF                         |         |         |

- If you choose Create New Resource Template, enter a unique **Template Name**. In the Resource Limits area, enter the minimum and maximum limits, as required for the resources.

You can edit individual resource limits for a single VDC through the Cisco DCNM **Web Client > Inventory > Switches > VDC**.

Click **Next**.

- Step 4** In the Authenticate tab, you can allow the Admin to configure the password and also authenticate users using AAA Server Groups.

In the Admin User Area:

- Check the **Enable Password Strength Check** checkbox, if necessary.
- In the **Password** field, enter the admin user password.
- In the **Confirm Password** field, reenter the admin user password.
- In the **Expiry Date** field, click the down arrow and choose an expiry date for the admin user from the Expiry Date dialog box. You can also select **Never** radio button not to expire the password.

In the AAA Server Groups area:

- In the **Group Name** field, enter an AAA server group name.
- In the **Servers** field, enter one or more host server IPv4 or IPv6 addresses or names, which are separated by commas.
- In the **Type** field, choose the type of server group from the drop-down list.

Click **Next**.

- Step 5** In the Management Ip tab, enter IPv4 or IPv6 Address information.

Click **Next**.

- Step 6** In the Summary tab, review the VDC configuration.

Click **Previous** to edit any parameters.

Click **Deploy** to configure VDC on the device.

- Step 7** In the Deploy tab, the status of the VDC deployment is displayed.
- A confirmation message appears. Click **Know More** to view the commands that are executed to deploy the VDC.
- Click **Finish** to close the VDC configuration wizard and revert to view the list of VDCs configured on the device.
- 

### Configuring Storage VDCs

To configure VDCs in storage mode from the Cisco DCNM Web UI, perform the following steps:

#### Before you begin

Create a separate storage VDC when you run FCoE on the device. Only one of the VDCs can be a storage VDC, and the default VDC cannot be configured as a storage VDC.

You can configure shared interfaces that carry both Ethernet and Fibre Channel traffic. In this specific case, the same interface belongs to more than one VDC. The shared interface is allocated to both an Ethernet and a storage VDC.

#### Procedure

---

- Step 1** In the General Parameter tab, specify the VDC Name, **Single supervisor HA-policy**, **Dual supervisor HA-policy**, and **Resource Limit - Module Type**.
- Step 2** In the Allocate FCoE Vlan tab, select the available **Ethernet Vdc** from the drop-down list.
- The existing Ethernet VLANs range is displayed. Select **None** not to choose any available Ethernet VDCs.
- You can allocate specified FCoE VLANs to the storage VDC and specified interfaces.
- Click **Next**.
- Step 3** In the Allocate Interface tab, add the dedicated and shared interfaces to the FCoE VDC.
- Note** The dedicated interface carries only FCoE traffic and the shared interface carries both the Ethernet and the FCoE traffic.
- You can configure shared interfaces that carry both Ethernet and Fibre Channel traffic. In this specific case, the same interface belongs to more than one VDC. FCoE VLAN and shared interface can be allocated from same Ethernet VDC.
- Click **Next**.
- Step 4** In the Authenticate tab, you can allow the Admin to configure the password and also authenticate users using AAA Server Groups.
- In the Admin User Area:
- Check the **Enable Password Strength Check** checkbox, if necessary.
  - In the **Password** field, enter the admin user password.
  - In the **Confirm Password** field, reenter the admin user password.

- In the **Expiry Date** field, click the down arrow and choose an expiry date for the admin user from the Expiry Date dialog box. You can also select **Never** radio button not to expire the password.

In the AAA Server Groups area:

- In the **Group Name** field, enter an AAA server group name.
- In the **Servers** field, enter one or more host server IPv4 or IPv6 addresses or names, which are separated by commas.
- In the **Type** field, choose the type of server group from the drop-down list.

Click **Next**.

**Step 5** In the Management Ip tab, enter IPv4 or IPv6 Address information.

Click **Next**.

**Step 6** In the Summary tab, review the VDC configuration.

Click **Previous** to edit any parameters.

Click **Deploy** to configure VDC on the device.

**Step 7** In the Deploy tab, the status of the VDC deployment is displayed.

A confirmation message appears. Click **Know More** to view the commands that are executed to deploy the VDC.

Click **Finish** to close the VDC configuration wizard and revert to view the list of VDCs configured on the device.

---

## Edit VDC

To edit VDC from the Cisco DCNM Web UI, perform the following steps:

### Procedure

---

**Step 1** Choose **Inventory > Switches > VDC**.

The **VDC** window is displayed.

**Step 2** Select the VDC radio button that you must edit. Click the **Edit** VDC icon.

**Step 3** Modify the parameters as required.

**Step 4** After you review the configuration summary on the Summary tab, click **Deploy** the VDC with the new configuration.

---

## Viewing Inventory Information for Modules

To view the inventory information for modules from the Cisco DCNM Web UI, perform the following steps:

### Procedure

---

**Step 1** Choose **Inventory > View > Modules**.

The **Modules** window is displayed with a list of all the switches and its details for a selected Scope.

**Step 2** You can view the following information.

- **Group** column displays the group name of the module.
  - **Switch** column displays the switch name on which the module is discovered.
  - **Name** displays the module name.
  - **ModelName** displays the model name.
  - **SerialNum** column displays the serial number.
  - **2nd SerialNum** column displays the second serial number.
  - **Type** column displays the type of the module.
  - **Slot** column displays the slot number.
  - **Hardware Revision** column displays the hardware version of the module.
  - **Software Revision** column displays the software version of the module.
  - **Asset ID** column displays the asset id of the module.
  - **OperStatus** column displays the operation status of the module.
  - **IO FPGA** column displays the IO field programmable gate arrays (FPGA) version.
  - **MI FPGA** column displays the MI field programmable gate arrays (FPGA) version.
- 

## Viewing Inventory Information for Licenses

To view the inventory information for licenses from the Cisco DCNM Web UI, perform the following steps:

### Procedure

---

**Step 1** Choose **Inventory > View > Licenses**.

The **Licenses** window is displayed based on the selected Scope.

**Step 2** You can view the following information.

- **Group** column displays the group name of switches.
- **Switch** column displays the switch name on which the feature is enabled.
- **Feature** displays the installed feature.

- **Status** displays the usage status of the license.
- **Type** column displays the type of the license.
- **Warnings** column displays the warning message.

---

## Discovery

Starting from Cisco DCNM release 10.x, Cisco DCNM Web Client allows the **admin** to associate **user** to one or more device scope or group. That means you can only access and configure the associated group or scope devices based on Role Based Access Control (RBAC). Though you might not have the access to other users' associated devices, you can still see all the discovered devices under the **Inventory > Discovery** tab.

From the left menu bar, go to **Administration > Management Users**. You can create users and associate groups, manage remote authentication, and see all the connected clients. For more information about RBAC, navigate to [Management Users](#).

## Adding, Editing, Re-Discovering, Purging and Removing LAN, LAN Tasks and Switch

Cisco DCNM Web Client reports information that is obtained by the Cisco DCNM-LAN devices.



---

**Tip** If the discovered Device is not in the scope of the current user the check box for the LAN Device in the LAN table grays out.

---

This section contains the following:

### Adding LAN Switches

To add LAN switches from the Cisco DCNM Web UI, perform the following steps.

For any switch to be successfully imported into DCNM, the user defined on the switch via local or remote AAA, and used for import into DCNM should have the following permissions:

- SSH access to the switch
- Ability to perform SNMPv3 queries
- Ability to run **show** commands

#### Procedure

---

- Step 1** Choose **Inventory > Discovery > LAN Switches**.  
You see the list of LAN devices in the **Switch** column.
- Step 2** Click the **Add** icon to add LAN.

You see the **Add LAN Devices** dialog box.

**Step 3** Select **Hops from seed Switch** or **Switch List**. The fields vary depending on your selection.

**Step 4** Enter the **Seed Switch** IP address for the fabric.

For LAN Switches Discovery, DCNM allow both IPv4 and IPv6 address for the Seed Switch.

**Step 5** The options vary depending on the discovery type selected. For example, if you check **Use SNMPv3/SSH**, varied fields are displayed.

**Step 6** Click the drop-down list and choose **Auth-Privacy** security level.

**Step 7** Enter the **Community**, or user credentials.

**Step 8** Select the LAN group from the LAN groups candidates which is in the scope of the current user.

**Note** Select DCNM server and click **Add** to add LAN switches.

**Step 9** Click **Next** to begin the shallow discovery.

**Step 10** In the **LAN Discovery** window, you can select all switches by using the checkbox next to the switch name column or select individual switches. Click Previous to go back and edit the parameters.

**Note**

- In the Status column, if the switch status is **timeout** or **Cannot be contacted**, these switches cannot be added. Only the switches that are reachable and not managed yet are available to select. The checkbox is disabled for the switches that are not available
- When you add or discover LAN devices in DCNM, java is used as a part of the discovery process. If firewall blocks the process then it uses TCP connection port 7 as a discovery process. Ensure that the **cdp.discoverPingDisable** server property is set to **true**. Choose **Web UI > Administration > DCNM Server > Server Properties** to set the server property.

**Step 11** Select a switch and click **Add** to add a switch to the switch group.

If one or more seed switches is not reachable, it is shown as “unknown” on the shallow Discovery window.

## Editing LAN Devices

To edit LAN devices from the Cisco DCNM Web UI, perform the following steps:

### Procedure

**Step 1** Choose **Inventory > Discovery > LAN Switches**.

**Step 2** Select the check box next to the LAN that you want to edit and click **Edit** icon.

You see the **Edit LAN** dialog box.

**Step 3** Enter the **Username** and **Password**.

**Note** Select **Credential** or **Management State** to change the Credential or Management state. If **Credential** is selected, you can change the SNMP version and Auth-Privacy if v3, username or password. If **Management State** is selected, you can change the status to managed or unmanaged.



- Step 4** Select the LAN status as **Managed** or **Unmanaged**.
  - Step 5** Click **Apply** to save the changes.
- 

## Removing LAN Devices from Cisco DCNM

You can remove a LAN switch from Cisco DCNM.

### Procedure

---

- Step 1** Choose **Inventory > Discovery > LAN Switches**.
  - Step 2** Select the check box next to the LAN that you want to remove and click **Delete** to remove the switches and all their data.
  - Step 3** Click **Yes** to review the LAN device.
- 

## Rediscover LAN Task

### Procedure

---

- Step 1** Choose **Inventory > Discovery > LAN Switches**.
  - Step 2** Click **Rediscover LAN**.
  - Step 3** Click **Yes** in the pop-up window to rediscover the LAN.
-

