



CHAPTER 8

Working with Topology

This chapter describes how to use the Topology feature in Cisco Data Center Network Manager (DCNM).

This chapter includes the following sections:

- [Information About Topology, page 8-1](#)
- [Licensing Requirements for Topology, page 8-8](#)
- [Prerequisites for Topology, page 8-9](#)
- [Guidelines and Limitations, page 8-9](#)
- [Using the Topology Feature, page 8-9](#)
- [Related Documents, page 8-30](#)
- [Feature History for Topology, page 8-31](#)

Information About Topology

The Topology feature provides you with a topology map of supported Cisco NX-OS devices. The topology map also shows switches that run Cisco IOS software, such as the Catalyst 6500 series switches. For Nexus 7000 Series devices, the map shows details about virtual device contexts (VDCs).

When Cisco Data Center Network Manager (DCNM) receives new information, the Cisco DCNM client updates the map dynamically. By default, updates occur once a minute. You can see changes occur to the status of links and devices, such as links going down or VDC creation, deletion, or modification.

Because the map is always current, you can use it to troubleshoot ongoing network management issues.

You can modify and save the layout of device icons. The map also provides you quick access to configuring features for a managed device.

This section includes the following topics:

- [Map Views, page 8-2](#)
- [Layouts, page 8-5](#)
- [vPC Support, page 8-6](#)
- [Fabric Manager Support, page 8-6](#)
- [FabricPath Support, page 8-6](#)
- [Device Groups, page 8-7](#)
- [Network Servers, page 8-7](#)

Send document comments to nexus7k-docfeedback@cisco.com

Map Views

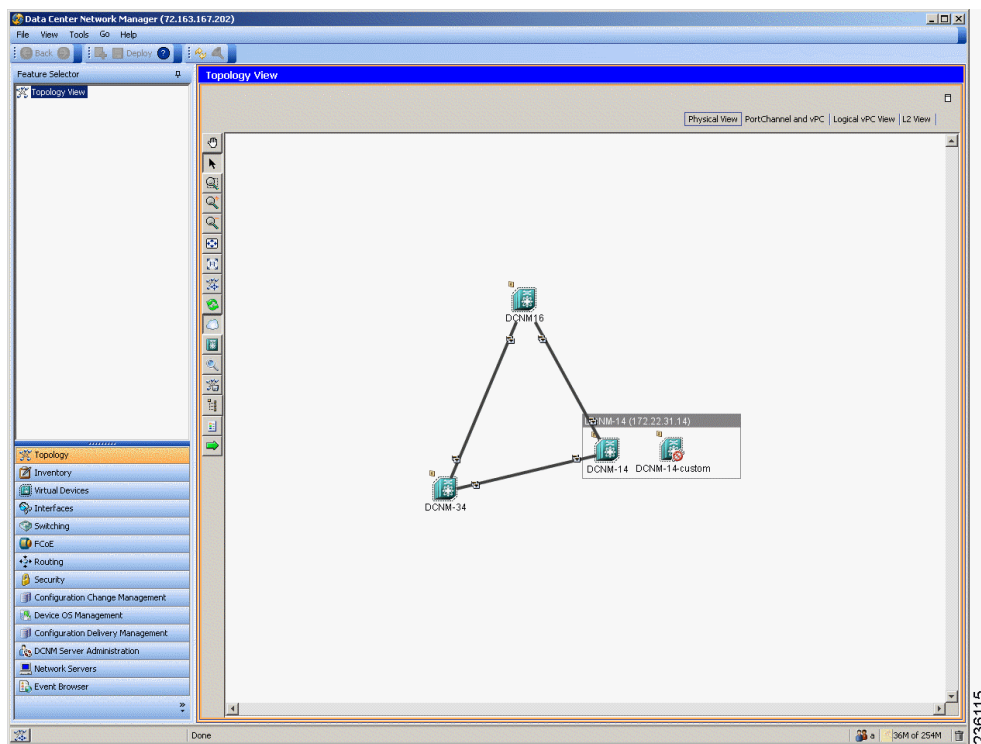
The topology map includes four views of your topology as described in the following topics:

- [Physical View](#), page 8-2
- [PortChannel and vPC](#), page 8-3
- [Logical vPC View](#), page 8-4
- [L2 View](#), page 8-5

Physical View

The Physical View (see [Figure 8-1](#)) shows the physical connections between discovered devices. This is the default topology view.

Figure 8-1 Physical View of the Topology Map

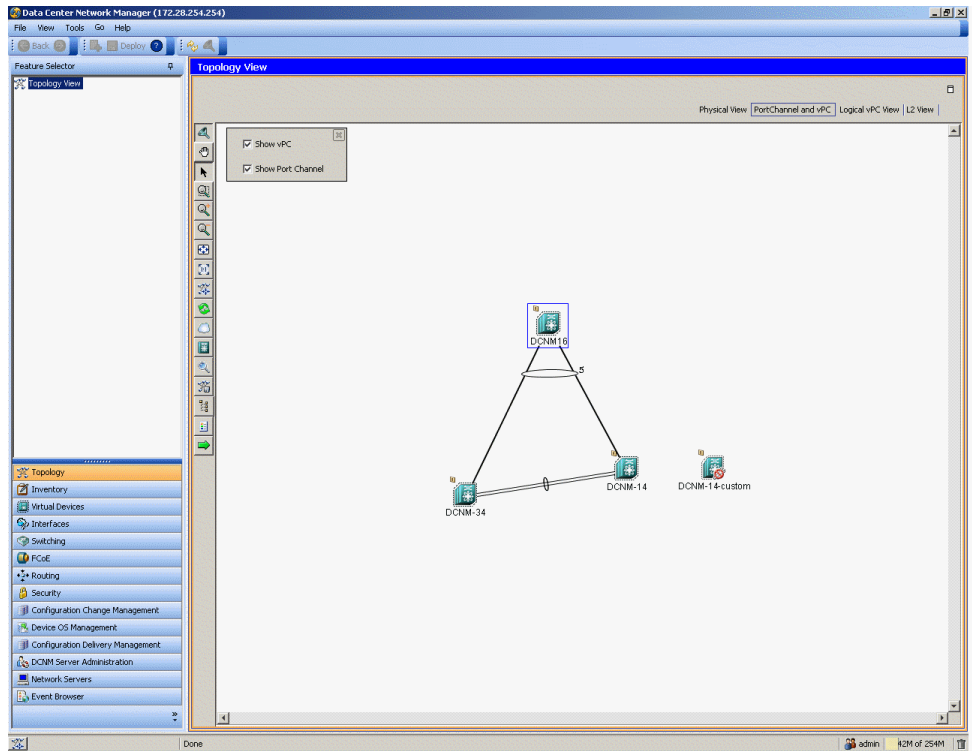


[Send document comments to nexus7k-docfeedback@cisco.com](mailto:nexus7k-docfeedback@cisco.com)

PortChannel and vPC

The PortChannel and vPC view (see [Figure 8-2](#)) shows all physical connections and all logical connections among discovered devices, including port channel links, virtual port channel (vPC) links, and vPC peer links. Physical links appear in gray in this view.

Figure 8-2 PortChannel and vPC View of the Topology Map

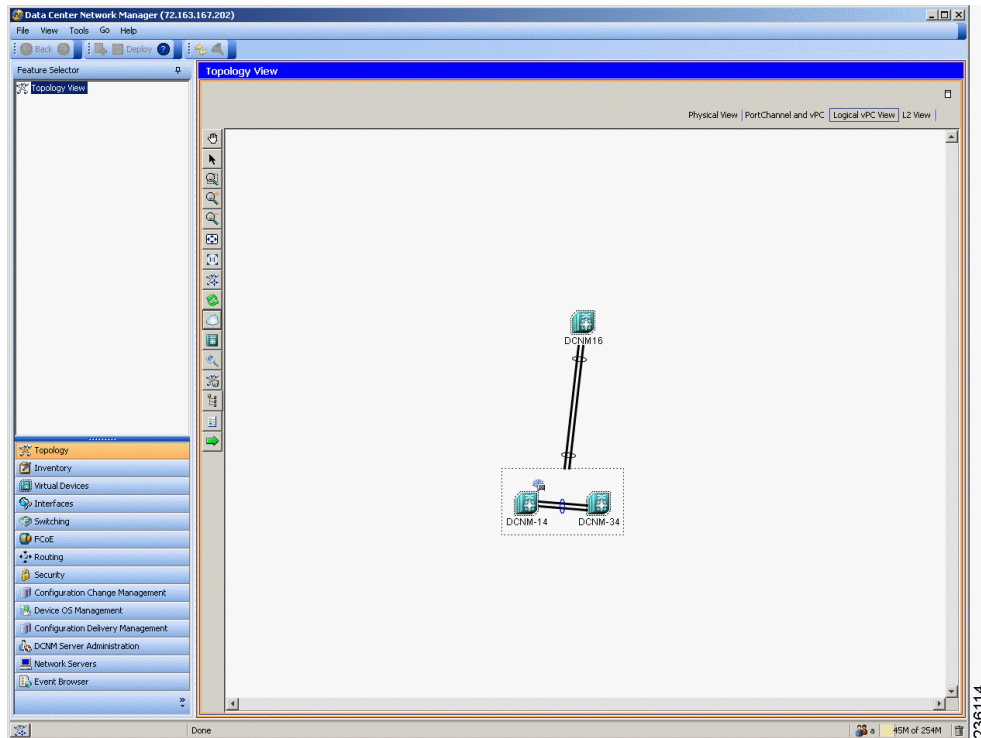


Send document comments to nexus7k-docfeedback@cisco.com

Logical vPC View

The Logical vPC View (see [Figure 8-3](#)) shows vPC links and vPC peer links among discovered devices, without showing the physical connections.

Figure 8-3 Logical vPC View of the Topology Map

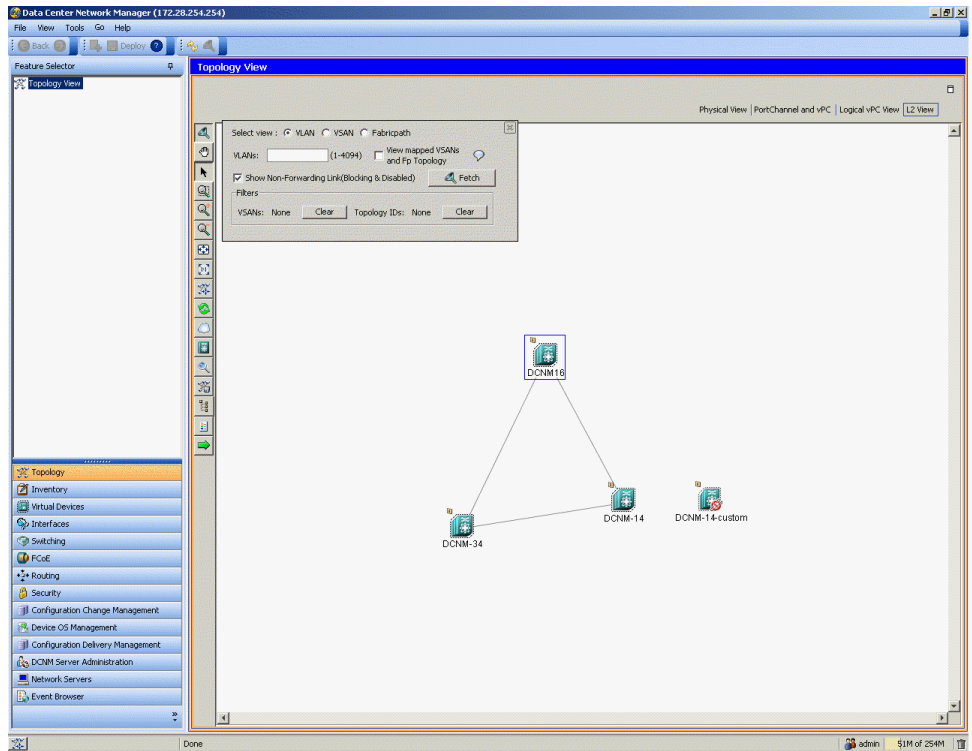


Send document comments to nexus7k-docfeedback@cisco.com

L2 View

The L2 view (see [Figure 8-4](#)) shows VLANs configured among discovered devices. Beginning with Cisco DCNM Release 5.1, the VSAN Overlay is a part of the L2 view. The VSAN Overlay feature enables you to view the Fibre Channel (FC) and Fibre Channel over Ethernet (FCoE) links that are active for a given VSAN or a range of VSANs. It also provides a visual representation of forwarding and non-forwarding links between Cisco Nexus devices in a data center network for configured VLANs.

Figure 8-4 L2 View of the Topology Map



Layouts

The topology map enables you to move devices to where you want them. You can save the layout so that the next time you use the topology map, devices are where you placed them. The Cisco DCNM client saves topology layouts as local user data on the computer that runs the Cisco DCNM client. When you are using the Cisco DCNM client, you do not have access to topology layouts that you saved on other computers or that you saved while logged in to the computer under a different username.

In addition to saved layouts, when you are using the Physical View, you can load one of the following layouts:

- **Spring**—Devices appear in locations determined by weighting the connections, which often produces a layout with minimal or no crossed connections.
- **Tree**—Devices appear in a tree unless connections create loops among the devices, in which case devices appear in a spanning tree, that is, a grid in which most of the connections follow the grid layout.

[Send document comments to nexus7k-docfeedback@cisco.com](mailto:nexus7k-docfeedback@cisco.com)

vPC Support

The topology map provides the following additional vPC-specific features:

- vPC creation—You can launch the vPC Creation Wizard from the PortChannel and vPC view. See the [“Launching the vPC Wizard” section on page 8-28](#).
- Quick access to the vPC feature—You can access the configuration for a specific vPC from the PortChannel and vPC view or the Logical vPC View. See the [“Managing a vPC” section on page 8-28](#).
- vPC configuration inconsistency—You can see vPC links and vPC peer links that have configuration inconsistencies. You can open the Resolve Configuration Consistency dialog box from the topology map. See the [“Finding and Resolving vPC Configuration Inconsistencies” section on page 8-29](#).

Fabric Manager Support

The Cisco DCNM topology map supports Cisco Fabric Manager by providing the features described in the following topics:

- [Common Topology, page 8-6](#)
- [Access to Fabric Manager Features, page 8-6](#)

Common Topology

The topology map can show storage area network (SAN) connections and devices in addition to Ethernet LAN connections and device. You can use the Cisco DCNM topology map to view your entire data center network.

Access to Fabric Manager Features

When a SAN device, such as a Cisco MDS 9000 Family Multilayer Switch, appears in the topology map in the Cisco DCNM client, you can use the topology map to launch the Cisco Fabric Manager client and configure the SAN device.

The Cisco Fabric Manager cross launch feature is only supported by the DCNM Client when the Cisco Fabric Manager is installed in Server mode. Cross launch is not supported by the DCNM Client when the Cisco Fabric Manager is installed in Standalone mode. In addition, cross launch is not supported when the DCNM Client is in standalone mode.

For information about installing the DCNM Client in standalone mode, see [Chapter 2, “Installing and Launching the Cisco DCNM Client.”](#)

For information about installing Cisco Fabric Manager and Cisco DCNM on the same server system, see the *Cisco DCNM Installation and Licensing Guide, Release 5.x*.

FabricPath Support

FabricPath support for L2MP capable devices, running the L2MP-ISIS protocol, is available in the L2 View of the Topology drawer. The L2 View contains a dialog box that allows you to select the type of graph to display. When you select the Fabricpath view in the dialog box, you can display the following types of graphs:

Send document comments to nexus7k-docfeedback@cisco.com

- **Multi-destination**
A multi-destination or broadcast graph represents broadcast traffic and unknown unicast traffic in the topology.
- **Reachability**
L2MP-ISIS automatically computes the switch ID reachability for each node in the network.
- **Unicast**
A unicast graph displays equal cost routes between nodes in a network.
- **Multicast**
A multicast graph displays the multicast traffic from a specified device to all hosts that are listening to a particular IGMP group.

In addition, the FabricPath Topology Wizard can be launched from the L2 View. The FabricPath Topology Wizard allows you to do many operations, such as add to the FabricPath topology, display inventory, and display end devices.

**Note**

The FabricPath Topology Wizard is not supported in Cisco NX-OS Release 5.1(1).

To launch the wizard, you need to select more than one device and right-click to display a context menu that lists the available operations. You can select multiple devices by holding down the shift key and clicking on the appropriate devices displayed on the graph. Alternatively, you may hold down the left mouse key and drag over the appropriate devices.

Device Groups

Device groups allow you to simplify the visualization of interconnections between groups of devices in the topology map. You can categorize devices into device groups that you define, which allows you to focus on a limited number of devices when you view the topology.

You can manage device groups using the topology map, which allows you to create groups, delete groups, and move devices among groups; however, the Device Groups feature is especially useful for assigning multiple devices to groups easily.

For more information about device groups, see [Chapter 10, “Configuring Device Groups.”](#)

Network Servers

The topology map can show network servers. You can use the Network Servers feature to associate host bus adapters (HBAs) and Ethernet network adapters that Cisco DCNM discovered with the Link Layer Discovery Protocol (LLDP) to network servers.

For more information, see [Chapter 9, “Configuring Network Servers.”](#)

Send document comments to nexus7k-docfeedback@cisco.com

Licensing Requirements for Topology

The following table shows the licensing requirements for this feature:

Product	License Requirement
Cisco DCNM	The Topology feature requires no license; however, the Logical vPC View of the topology map requires a LAN Enterprise license. Any feature not included in a license package is bundled with the Cisco DCNM and is provided at no charge to you. For information about obtaining and installing a Cisco DCNM LAN Enterprise license, see the <i>Cisco DCNM Installation and Licensing Guide, Release 5.x</i> .

Send document comments to nexus7k-docfeedback@cisco.com

Prerequisites for Topology

Topology has the following prerequisites:

- The topology map shows only devices that Cisco DCNM has discovered.
- For full support on the topology map, discovered devices should have the applicable discovery protocols enabled, both globally and on active interfaces. For more information about the discovery protocols used by Cisco DCNM, see [Chapter 5, “Administering Device Discovery.”](#)

Guidelines and Limitations

Topology has the following configuration guidelines and limitations:

- While the Topology feature is an unlicensed feature, you must have a LAN Enterprise license to manage the nondefault VDCs of Cisco Nexus 7000 Series switches that appear in the topology.
- The Topology feature displays changes to the topology periodically as determined by the polling frequency for accounting and system logs. By default, the polling frequency is one minute. For more information, see the [“Information About Auto-Synchronization with Devices”](#) section on page 12-1.

Using the Topology Feature

This section includes the following topics:

- [Opening the Topology Map, page 8-10](#)
- [Understanding Device Icons and Links, page 8-11](#)
- [Using the Viewing Tools, page 8-12](#)
- [Showing, Hiding, and Using the Details Pane, page 8-13](#)
- [Moving Devices in the Topology Map, page 8-14](#)
- [Loading a Layout, page 8-15](#)
- [Reloading the Previously Saved Layout, page 8-16](#)
- [Showing a Virtual or Physical Chassis, page 8-16](#)
- [Showing or Hiding Network Servers, page 8-17](#)
- [Managing a Network Server, page 8-17](#)
- [Showing or Hiding Device Groups, page 8-18](#)
- [Expanding or Collapsing Device Groups, page 8-18](#)
- [Creating a Device Group, page 8-19](#)
- [Moving a Device Between Device Groups, page 8-19](#)
- [Removing a Device from a Device Group, page 8-20](#)
- [Copy Run to Start, page 8-21](#)
- [Deleting a Device Group, page 8-22](#)
- [Exporting the Topology as a JPG Image, page 8-22](#)
- [Accessing Cisco DCNM Features from the Topology Map, page 8-23](#)

Send document comments to nexus7k-docfeedback@cisco.com

- [Accessing Cisco Fabric Manager Features from the Topology Map](#), page 8-24
- [Accessing Cisco FabricPath Features from the Topology Map](#), page 8-25
- [Launching the vPC Wizard](#), page 8-28
- [Managing a vPC](#), page 8-28
- [Finding and Resolving vPC Configuration Inconsistencies](#), page 8-29
- [Accessing Remotely Connected CNAs from the Topology Map](#), page 8-29
- [Using VSAN Overlay](#), page 8-30

Opening the Topology Map

You can open the topology map to view the topology of discovered devices.



Note

Before discovery, if you are working with FabricPath, you must use the Command Line Interface (CLI) to accomplish the following:

- Install the Enhanced Layer 2 license on the device. See the *Cisco Nexus 7000 Series NX-OS Licensing Guide, Release 5.x* for complete information on installing this license.
- Install the FabricPath feature set on the device. See the *Cisco Configuring Feature Set for FabricPath Guide* for complete information on installing the feature set.
- Configure the FabricPath feature set so that it can be enabled in a custom VDC. See the *Cisco Configuring Feature Set for FabricPath Guide* for complete information on configuring the feature set.

DETAILED STEPS

- Step 1** From the Feature Selector pane, choose **Topology > Topology View**.
The topology map appears in the Contents pane. Buttons for each of the available topology views appear above the topology map.
- Step 2** (Optional) If you want to change topology views, click the topology view name.
The topology map shows the view of the topology that you selected.
- Step 3** (Optional) If you want to use a view-specific option, see the following table:

View Feature	Available In View	How to Use
Show/Hide all VDCs	<ul style="list-style-type: none"> • Physical View 	<p>Right-click in the map and choose Show All VDCs or Hide All VDCs.</p> <p>When you view all VDCs, Cisco Nexus 7000 Series devices appear as gray boxes that contain device icons for each VDC configured on the Cisco Nexus 7000 Series device.</p>
Show/Hide End Devices	<ul style="list-style-type: none"> • Physical View • L2 View 	<p>Right-click in the map and choose Show End Devices or Hide End Devices.</p>


Send document comments to nexus7k-docfeedback@cisco.com

View Feature	Available In View	How to Use
Filter VLANs	<ul style="list-style-type: none"> L2 View 	<ol style="list-style-type: none"> If the VLANs box does not appear on the map, click the Filter icon on the topology toolbar. Enter a list of VLAN IDs. You can specify a single VLAN ID, a range of VLAN IDs, or comma-separated IDs and ranges. Click Filter.
Show/Hide non-forwarding links	<ul style="list-style-type: none"> L2 View 	<ol style="list-style-type: none"> On the map, find the VLANs box. Check or uncheck the Show Non-Forwarding Link (Blocking & Disabled) as needed.
Show/Hide vPCs or port channels	<ul style="list-style-type: none"> PortChannel and vPC 	<ol style="list-style-type: none"> On the map, find the gray box that contains the Show vPC check box and the Show Port Channel check box. You may need to scroll the map or zoom out to find the gray box. Check or uncheck the check boxes as needed.

Understanding Device Icons and Links

To understand the device icons and links shown in the topology map, you can open the legend. The legend presents information about the device icons and links shown in the currently selected topology view.

DETAILED STEPS























-
- Step 1** From the Feature Selector pane, choose **Topology > Topology View**.
- The topology map appears in the Contents pane. Buttons for each of the available topology views appear above the topology map.
- Step 2** (Optional) If you want to change topology views, click the topology view name.
- The topology map shows the view of the topology that you selected. The topology toolbar appears on the left side of the topology map.
- Step 3** From the topology tool bar, click the  icon.
- The Legend dialog box displays information about the device icons and links that may appear in the currently selected topology view.
-

Send document comments to nexus7k-docfeedback@cisco.com




Using the Viewing Tools

You can use the pan, select, zoom, and search tools to view the topology map.

The following table describes the viewing tools that are available in the topology toolbar, which is on the left side of the topology map.

Viewing Tool Icon and Name	How to Use
 Pan	Moves, or pans, the map. <ol style="list-style-type: none"> 1. Click the  icon. 2. Click anywhere on the topology map, and hold down the mouse button. 3. Drag the map in any direction. 4. Release the mouse button.
 Select	Allows you to select a device, link, or port icon. <ol style="list-style-type: none"> 1. Click the  icon. 2. Click the device, link, or port icon that you want to work with. A balloon displays information about the icon that you clicked.
 Zoom in Rect	Zooms to a specific portion of the map. <ol style="list-style-type: none"> 1. Click the  icon. 2. Click on the map and drag a rectangle over the area that you want to see, and release the mouse button.
 Zoom In	Zooms in. Click the  icon.
 Zoom Out	Zooms out. Click the  icon.
 Fit to View	Fits the entire topology of discovered devices within the topology map. Click the  icon.
 Reset Zoom	Resets the zoom to the default magnification. Click the  icon.
 Load Layout	Loads a layout.
 Reload Layout	Loads the most recently saved layout. See the “Reloading the Previously Saved Layout” section on page 8-16 .
 Show Device Groups	Shows or hides device groups. See the “Showing or Hiding Device Groups” section on page 8-18 .
 Search	Allows you to use the device search tool, so that you can search for a device by its name. <ol style="list-style-type: none"> 1. To show the Search tool on the map, click the  icon. 2. In the Device box, enter all or some of the name of the device that you want to search for, and then click the  icon. 3. To hide the Search tool, click the  icon again. <p>Tip You can move the Search tool on the topology map by clicking and dragging it when you have the Select tool enabled.</p>
 Save Layout	Saves changes that you have made to the device icon layout. See the “Moving Devices in the Topology Map” section on page 8-14 .

Send document comments to nexus7k-docfeedback@cisco.com

Viewing Tool Icon and Name	How to Use
 Hide/Show Details	Shows and hides the details pane. See the “ Showing, Hiding, and Using the Details Pane ” section on page 8-13.
 Legend	Opens the Legend dialog box. See the “ Understanding Device Icons and Links ” section on page 8-11.
 Export as JPG	Saves the topology map as a JPG image file. See the “ Exporting the Topology as a JPG Image ” section on page 8-22.

Showing, Hiding, and Using the Details Pane

You can show or hide the Details pane within the topology map. When you are showing the Details pane, you can use the sections within the Details pane to learn about the devices and connections in the topology.


DETAILED STEPS

Step 1 From the Feature Selector pane, choose **Topology > Topology View**.

The topology map appears in the Contents pane. The topology toolbar appears on the left side of the topology map.




Tip To see the names of topology toolbar icons, move the mouse pointer to the icon and wait briefly for the name of the icon to appear.

Step 2 To show or hide details, click the  icon.

When you choose to show details, the Details pane appears between the topology toolbar and the topology map.



Tip Ensure that the Select tool is selected. To select the Select tool, click the  icon.

Step 3 To use the sections within the Details pane, see the following table:

Section	Available In	How to Use
VDC View	<ul style="list-style-type: none"> Physical View L2 View 	Explore the VDC View tree to see which Nexus 7000 Series devices contain VDCs. To see details about a device, click on it and see the Properties section.
vPC	<ul style="list-style-type: none"> Port Channel and vPC Logical vPC 	Explore the vPC tree to see a categorized listing of all logical connections in the topology map. To see details about a vPC, vPC peer link, or a port channel, click on it and see the Properties section.

Send document comments to nexus7k-docfeedback@cisco.com

Section	Available In	How to Use
Overview	<ul style="list-style-type: none"> All views 	<p>Tip To view the Overview section, you may need to click the Overview tab in the Properties section. The Overview and Properties sections share the same section title bar.</p> <p>The Overview section shows a thumbnail view of the whole topology. A blue rectangle indicates the portion of the topology that is currently shown in the map.</p> <ul style="list-style-type: none"> To change which portion of the topology is shown in the map, in the overview, click where you want the map to show. To zoom in or out, click a corner of the blue rectangle and drag it until the map is enlarged or shrunk as you want.
Properties	<ul style="list-style-type: none"> All views 	<p>Tip To view the Properties section, you may need to click the Properties tab in the Overview section. The Overview and Properties sections share the same section title bar.</p> <ol style="list-style-type: none"> Do one of the following: <ul style="list-style-type: none"> In the VDC View section, click on a physical or virtual device. In the vPC section, click on a logical connection. In the topology map, click on a device, link, or port. In the Properties section, view the properties of the object that you selected.

Moving Devices in the Topology Map

You can move device icons that are shown in the topology map. The position of devices is shared by all the topology views, that is, if you move a device and then change to another topology view, the device remains where you moved it to.

You can also save the layout, which you can reload later if you make additional changes and want to revert to your last save.

For more information, see the [“Reloading the Previously Saved Layout”](#) section on page 8-16.

The saved layout becomes the default layout that you see in the topology map when you start the Cisco DCNM client.

Send document comments to nexus7k-docfeedback@cisco.com

**Note**

The Cisco DCNM client saves topology layouts as local user data on the computer that runs the Cisco DCNM client. When you are using the Cisco DCNM client, you do not have access to topology layouts that you saved on other computers or that you saved while logged in to the computer under a different username.


DETAILED STEPS

Step 1 From the Feature Selector pane, choose **Topology > Topology View**.

The topology map appears in the Contents pane. The topology toolbar appears on the left side of the topology map.

**Note**


To see the names of topology toolbar icons, move the mouse pointer to the icon and wait briefly for the name of the icon to appear.

Step 2 From the topology toolbar, choose the  icon.

Step 3 Find and move device icons as needed. To move an icon, click on the device icon, hold down the mouse button, drag the icon to the new location, and release the mouse button.

You can zoom and pan as needed to find icons.




For more information, see the [“Using the Viewing Tools” section on page 8-12](#).

Step 4 (Optional) If you want to save the changes to the device icon layout, click the  icon.

Loading a Layout

When you are using the Physical View, you can choose to load a layout. The position of devices is shared by all the topology views. This behavior allows you to use any of the layouts in all views by loading the layout in the Physical View and then choosing another view.

**Note**

If you are using a different view than the Physical View, the  icon on the topology toolbar acts the same as the  icon. For information about using the  icon, see the [“Reloading the Previously Saved Layout” section on page 8-16](#).

BEFORE YOU BEGIN

Determine which physical devices, if any, that you want to specify as core switches. When you load a layout other than a saved layout, core switches appear at the top of the topology map, and devices that are one CDP hop from the core switches appear just below them.

DETAILED STEPS


Step 1 From the Feature Selector pane, choose **Topology > Topology View**.

The topology map appears in the Contents pane. The topology toolbar appears on the left side of the topology map.

Send document comments to nexus7k-docfeedback@cisco.com



Note To see the names of topology toolbar icons, move the mouse pointer to the icon and wait briefly for the name of the icon to appear.

- Step 2** (Optional) For each physical device that you want to appear at the top of the layout, right-click on the device icon and choose **Make as Core Switch**.
- Step 3** From the topology toolbar, click the  icon.
The Layout drop-down list appears.
- Step 4** From the **Layout** drop-down list, select the layout that you want to load.
The Physical View of the topology map changes to the layout that you selected. Any devices that you specified as core switches appear at the top of the map, with devices that are one CDP hop away from the core switches appearing just below them.

Reloading the Previously Saved Layout

You can load the most recently saved layout. This feature allows you to undo changes to device placement that you have made since you last saved the layout.




Note The Cisco DCNM client saves topology layouts as local user data on the computer that runs the Cisco DCNM client. When you are using the Cisco DCNM client, you do not have access to topology layouts that you saved on other computers or that you saved while logged in to the computer under a different username.

DETAILED STEPS

- Step 1** From the Feature Selector pane, choose **Topology > Topology View**.
The topology map appears in the Contents pane. The topology toolbar appears on the left side of the topology map.



Note To see the names of topology toolbar icons, move the mouse pointer to the icon and wait briefly for the name of the icon to appear.

- Step 2** From the topology toolbar, choose the  icon.
The topology map changes to the most recent layout that you saved.

Showing a Virtual or Physical Chassis

For a Cisco Nexus 1000V Series device, you can specify whether the topology map shows the virtual chassis or the physical chassis of the device. By default, the topology map shows the virtual chassis.

Send document comments to nexus7k-docfeedback@cisco.com

DETAILED STEPS

-
- Step 1** From the Feature Selector pane, choose **Topology > Topology View**.
- The topology map appears in the Contents pane. The topology toolbar appears on the left side of the topology map.
- Step 2** Find the Cisco Nexus 1000V Series device icon.
- The topology map displays either the virtual chassis or the physical chassis.
- Step 3** Right-click on the device icon and choose the applicable option:
- **Show Virtual Chassis**
 - **Show Physical Chassis**
-

Showing or Hiding Network Servers

You can show or hide the network servers that are connected to a specific device. By default, the topology map hides network servers.

DETAILED STEPS

-
- Step 1** From the Feature Selector pane, choose **Topology > Topology View**.
- The topology map appears in the Contents pane. The topology toolbar appears on the left side of the topology map.
- Step 2** Find the device that is connected to network servers that you want to show or hide.
- Step 3** Right-click on the device and choose one of the following:
- To show connected network servers, choose **Show End Devices**.
 - To hide connected network servers, choose **Hide End Devices**.
-

Managing a Network Server

You can use the topology map to access the Network Servers feature for a network server that appears on the map.

BEFORE YOU BEGIN

The network server must be showing in the topology map.

DETAILED STEPS

-
- Step 1** From the Feature Selector pane, choose **Topology > Topology View**.
- The topology map appears in the Contents pane. The topology toolbar appears on the left side of the topology map.

Send document comments to nexus7k-docfeedback@cisco.com



Note To see the names of topology toolbar icons, move the mouse pointer to the icon and wait briefly for the name of the icon to appear.

Step 2 Find the network server that you want to manage with the Network Servers feature.



Tip If the network server does not appear on the map, right-click a device that it is connected to and choose **Show End Devices**.

Step 3 Right-click on the server and choose **Manage Server**.

The Cisco DCNM client opens to the Network Servers feature. If the server that you chose represents a managed server or an Ethernet adapter on a discovered server, the client opens to the Servers contents pane. If the server that you chose represents a host bus adapter (HBA) that is not correlated or bound to a server, the client opens to the Static Server-Adapter Mapping contents pane.

Showing or Hiding Device Groups

You can show or hide device groups. When device groups are hidden, the topology map shows all discovered devices and connections. When your device groups are shown, you can expand and collapse device groups individually or all at once.


DETAILED STEPS


Step 1 From the Feature Selector pane, choose **Topology > Topology View**.

The topology map appears in the Contents pane. The topology toolbar appears on the left side of the topology map.



Note To see the names of topology toolbar icons, move the mouse pointer to the icon and wait briefly for the name of the icon to appear.

The  icon on the topology toolbar controls whether device groups appear on the topology map. When the icon appears to be pushed in, the topology map shows device groups. When the icon does not appear to be pushed in, the topology map hides device groups.

Step 2 Click the  icon to change between hiding and showing device groups, as needed.

Expanding or Collapsing Device Groups

You can expand and collapse individual device groups or all device groups.

DETAILED STEPS


Step 1 From the Feature Selector pane, choose **Topology > Topology View**.

Send document comments to nexus7k-docfeedback@cisco.com

The topology map appears in the Contents pane. The topology toolbar appears on the left side of the topology map.



Note To see the names of topology toolbar icons, move the mouse pointer to the icon and wait briefly for the name of the icon to appear.

Step 2 If device groups do not appear on the topology map, from the topology toolbar, click the  icon.

Step 3 Do one of the following:

- If you want to expand a single device group, right-click on the device group icon and choose **Expand Device Group**.
- If you want to expand all device groups, right-click on a blank area of the map and choose **Expand all Device Groups**.
- If you want to collapse a single device group, right-click on the title of the device group and choose **Collapse Device Group**.
- If you want to collapse all device groups, right-click on a blank area of the map and choose **Collapse all Device Groups**.

Creating a Device Group

You can create a custom device group on the topology map.

DETAILED STEPS

Step 1 From the Feature Selector pane, choose **Topology > Topology View**.

The topology map appears in the Contents pane. The topology toolbar appears on the left side of the map.



Note To see the names of topology toolbar icons, move the mouse pointer to the icon and wait briefly for the name of the icon to appear.

Step 2 Right-click on a blank area of the map and choose **New Device Group**.

A dialog box appears, with a field for specifying a name for the new device group.

Step 3 Type a name for the device group and click **OK**.

The new device group appears on the topology map.

Moving a Device Between Device Groups

You can move devices from one device group to another device group on the topology map.

Send document comments to nexus7k-docfeedback@cisco.com


Note

If a device group is empty after you move a device out of the group, Cisco DCNM deletes the device group.


DETAILED STEPS

Step 1 From the Feature Selector pane, choose **Topology > Topology View**.

The topology map appears in the Contents pane. The topology toolbar appears on the left side of the topology map.


Note

To see the names of topology toolbar icons, move the mouse pointer to the icon and wait briefly for the name of the icon to appear.

Step 2 If device groups do not appear on the topology map, from the topology toolbar, click the  icon.

Step 3 Find the device group that you want to move the device out of.

Step 4 If the device group is collapsed, double-click the device group to expand it.

Step 5 Right-click on the device that you want to move out of the group and choose **Cut**.

Step 6 Find the device group that you want to move the device into.


Tip

You do not need to expand the device group before moving the device into the group.

Step 7 Right-click the device group and choose **Paste**.


Tip

If the device group is expanded, you must click on the title of the device group.

A warning dialog box confirms that you want to move the device group.

Step 8 Click **Yes**.

Cisco DCNM adds the device to the second device group and removes it from the first device group. If the first device group is empty after moving the device, Cisco DCNM deletes the first device group.

Removing a Device from a Device Group

You can remove devices from a custom device group. All devices that you remove from a custom group are added to the default device group.

Send document comments to nexus7k-docfeedback@cisco.com


DETAILED STEPS

Step 1 From the Feature Selector pane, choose **Topology > Topology View**.

The topology map appears in the Contents pane. The topology toolbar appears on the left side of the topology map.



Note To see the names of topology toolbar icons, move the mouse pointer to the icon and wait briefly for the name of the icon to appear.

Step 2 If device groups do not appear on the topology map, from the topology toolbar, click the  icon.

Step 3 Find the device group that you want to remove a device from.

Step 4 If the device group is collapsed, double-click the device group to expand it.

Step 5 Right-click on the device that you want to remove from the group and choose **Remove from Group**.
If you are removing the only device from the group, a warning dialog box confirms that you want to remove the device group.

Step 6 If the warning appears, click **Yes**.

Cisco DCNM removes the device from the custom device group and adds the device to the default device group.

Copy Run to Start

In the Physical View, you can copy the running-configuration to the startup configuration on one or more selected devices.

DETAILED STEPS

Step 1 From the Feature Selector pane, choose **Topology > Topology View**.

The topology map appears in the Contents pane. The topology toolbar appears on the left side of the topology map.



Note To see the names of topology toolbar icons, move the mouse pointer to the icon and wait briefly for the name of the icon to appear.

Step 2 If device groups do not appear on the topology map, from the topology toolbar, click the  icon.

Step 3 Above the topology map, select **Physical View**.

Step 4 Select the devices that you want to copy the running configuration from.

Step 5 If the device group is collapsed, double-click the device group to expand it.

Step 6 Right-click the device that you want to copy the running configuration from.

- If you want to copy the running configuration to the startup configuration, choose **Copy Run to Start**.

Cisco DCNM copies the running configuration to the startup configuration.

Send document comments to nexus7k-docfeedback@cisco.com

- If you want to copy the running configuration to a file in the bootflash directory, choose **Copy Run to File in Bootflash**. In the dialog that appears, enter the name of the file to copy to and click **OK** to complete the operation.

Cisco DCNM copies the running configuration to the specified file.

Deleting a Device Group

You can delete a custom device group from the topology map.

Devices that belong to a custom device group that you delete automatically become members of the default device group.


DETAILED STEPS

-
- Step 1** From the Feature Selector pane, choose **Topology > Topology View**.

The topology map appears in the Contents pane. The topology toolbar appears on the left side of the topology map.



Note To see the names of topology toolbar icons, move the mouse pointer to the icon and wait briefly for the name of the icon to appear.

- Step 2** If device groups do not appear on the topology map, from the topology toolbar, click the  icon.

- Step 3** Find the device group that you want to delete.

- Step 4** Right-click on the device group and choose **Delete Group**.

Cisco DCNM removes the device group from the topology map. The devices that were in the deleted device group are now members of the default device group.



Note If there are no custom device groups after you delete the device group, the topology map automatically hides devices groups because all devices are in the default device group.

Exporting the Topology as a JPG Image

You can export, or save, a JPG image of the topology map. You can export either the entire topology map or only the visible portion of the topology map.

DETAILED STEPS


-
- Step 1** From the Feature Selector pane, choose **Topology > Topology View**.

The topology map appears in the Contents pane. The topology toolbar appears on the left side of the topology map.

Send document comments to nexus7k-docfeedback@cisco.com



Note To see the names of topology toolbar icons, move the mouse pointer to the icon and wait briefly for the name of the icon to appear.

- Step 2** View the portion of the topology map that you want to save.
For more information, see the [“Using the Viewing Tools”](#) section on page 8-12.
- Step 3** Arrange the device icons as desired.
For more information, see the [“Moving Devices in the Topology Map”](#) section on page 8-14.
- Step 4** From the topology toolbar, click the  icon.
A dialog box prompts you to choose whether you want to export the entire topology map or only the visible portion of the map.
- Step 5** Do one of the following:
- To export the entire topology map as a JPG image, click **Yes**.
 - To export only the visible portion of the topology map, click **No**.
- Step 6** Specify the location and filename of the JPG image and click **Save**.
The JPG image of the visible portion of the topology map is saved.
-

Accessing Cisco DCNM Features from the Topology Map

You can use the topology map to access other Cisco DCNM features for managed devices. From the topology map, you can access features that are found in the following Feature Selector drawers:

- Inventory
- Virtual Devices
- Interfaces
- Routing
- Switching
- Security

You can also use the topology map to access the Device Discovery feature.

DETAILED STEPS

-
- Step 1** From the Feature Selector pane, choose **Topology > Topology View**.
The topology map appears in the Contents pane. The topology toolbar appears on the left side of the topology map.



Note To see the names of topology toolbar icons, move the mouse pointer to the icon and wait briefly for the name of the icon to appear.

- Step 2** If you want to access a Cisco DCNM feature for a specific managed device, do the following:
- a. Find the device in the topology map.

Send document comments to nexus7k-docfeedback@cisco.com

- b. Right-click the device and choose the feature that you want to configure.

The feature that you selected appears in the Contents pane. The device that you selected on the topology map is selected in the Summary table for the feature.

- Step 3** If you want to access the Device Discovery feature, right-click a blank area on the map and choose **Discover Devices**.

The Device Discovery feature appears in the Contents pane.

Accessing Cisco Fabric Manager Features from the Topology Map

You can use the topology map to access features in the Cisco Fabric Manager client for a managed SAN device. If Cisco Fabric Manager has not discovered the device, accessing the Cisco Fabric Manager client through the topology map will cause Cisco Fabric Manager to discover the SAN device.

The Cisco Fabric Manager features that you can access include the following:

- Zones, zone sets, and zone set membership
- Port channel interfaces
- Fibre Channel physical and logical interfaces
- Fibre Channel over IP tunnels
- Events



Note

The Cisco Fabric Manager cross launch feature is only supported by the DCNM Client when the Cisco Fabric Manager is installed in Server mode. Cross launch is not supported by the DCNM Client when the Cisco Fabric Manager is installed in Standalone mode. In addition, cross launch is not supported when the DCNM Client is in standalone mode.

BEFORE YOU BEGIN

The Cisco Fabric Manager client must be installed on the computer that is running the Cisco DCNM client.

DETAILED STEPS

- Step 1** From the Feature Selector pane, choose **Topology > Topology View**.

The topology map appears in the Contents pane. The topology toolbar appears on the left side of the topology map.



Note

To see the names of topology toolbar icons, move the mouse pointer to the icon and wait briefly for the name of the icon to appear.

- Step 2** Find the SAN device in the topology map.

- Step 3** Right-click the device and choose the feature that you want to configure.

Send document comments to nexus7k-docfeedback@cisco.com

The Cisco Fabric Manager client opens to the feature that you selected.

Accessing Cisco FabricPath Features from the Topology Map

You can use the topology map to access features of the Cisco FabricPath.

The Cisco FabricPath features that you can access include:

- [Multi-destination, page 8-25](#)
- [Device Reachability, page 8-25](#)
- [Unicast, page 8-26](#)
- [Multicast, page 8-27](#)

Multi-destination

A multi-destination or broadcast graph represents broadcast traffic and unknown unicast traffic in the topology. You can view the multi-destination information for a specific topology.

DETAILED STEPS

Step 1 From the Feature Selector pane, choose **Topology > Topology View**.

The topology map appears in the Contents pane. The topology toolbar appears on the left side of the topology map.



Note To see the names of topology toolbar icons, move the mouse pointer to the icon and wait briefly for the name of the icon to appear.

Step 2 Above the map, click **L2 View**.

The dialog box appears in the content pane.

Step 3 In the dialog box, choose the **Fabricpath** view.

Step 4 Enter the Topology ID and click **Fetch**. The graph that is displayed is filtered based upon the Topology ID.

Step 5 Check **Select type of graph** to enable the selection for the Multi-destination graph.

Step 6 Check the **Multi-destination** option.

Step 7 From the Anchor drop-down list, choose a device. The selected device is the entry point for the graph.

Step 8 From the Graph ID drop-down list, choose an ID. The Graph ID is a forwarding tag for the graph.

Step 9 Click **Fetch** to view the graph.

Device Reachability

L2MP-ISIS automatically computes the switch ID reachability for each node in the network. You can view the reachability information for a specific topology.

Send document comments to nexus7k-docfeedback@cisco.com**DETAILED STEPS**

Step 1 From the Feature Selector pane, choose **Topology > Topology View**.

The topology map appears in the Contents pane. The topology toolbar appears on the left side of the topology map.



Note To see the names of topology toolbar icons, move the mouse pointer to the icon and wait briefly for the name of the icon to appear.

Step 2 Above the map, click **L2 View**.

The dialog box appears in the content pane.

Step 3 In the dialog box, select the **Fabricpath** view.

Step 4 Enter the Topology ID. The graph that is displayed is filtered based upon the Topology ID.

Step 5 Check **Select type of graph** to enable the selection for the Reachability graph.

Step 6 Check the **Reachability** option.

Step 7 From the Anchor drop-down list, select a device. The selected device is the entry point for the graph.

Step 8 Click **Fetch** to view the graph.



Note Devices in the graph that appear as red colored icons indicate that the device is not reachable for the selected topology.

Unicast

A unicast graph displays equal cost routes between nodes in a network. You can view the unicast information for a specific topology.

DETAILED STEPS

Step 1 From the Feature Selector pane, choose **Topology > Topology View**.

The topology map appears in the Contents pane. The topology toolbar appears on the left side of the topology map.



Note To see the names of topology toolbar icons, move the mouse pointer to the icon and wait briefly for the name of the icon to appear.

Step 2 Above the map, click **L2 View**.

The dialog box appears in the content pane.

Step 3 In the dialog box, select the **Fabricpath** view.

Step 4 Enter the Topology ID. The graph that is displayed is filtered based upon the Topology ID.

Step 5 Check **Select type of graph** to enable the selection for the Unicast graph.

Send document comments to nexus7k-docfeedback@cisco.com

- Step 6** Check the **Unicast** option.
- Step 7** From the Anchor drop-down list, select a device. The selected device is the entry point for the graph.
- Step 8** From the Destination drop-down list, select a device. The selected device is the destination for the graph.
- Step 9** Click **Fetch** to view the graph.




Note If the resulting graph does not trace the path from the source to the destination, then one of the following may be the cause:

- Islands in the L2MP cloud.
- Cisco DCNM might not manage intermediate devices.

Multicast

A multicast graph displays the multicast traffic from a specified device to all hosts that are listening to a particular IGMP group. You can view the multicast information for a specific topology.

DETAILED STEPS

- Step 1** From the Feature Selector pane, choose **Topology > Topology View**.
- The topology map appears in the Contents pane. The topology toolbar appears on the left side of the topology map.
-  **Note** To see the names of topology toolbar icons, move the mouse pointer to the icon and wait briefly for the name of the icon to appear.
- Step 2** Above the map, click **L2 View**.
- The dialog box appears in the content pane.
- Step 3** In the dialog box, select the **Fabricpath** view.
- Step 4** Enter the Topology ID. The graph that is displayed is filtered based upon the Topology ID.
- Step 5** Check **Select type of graph** to enable the selection for the Multicast graph.
- Step 6** Check the **Multicast** option.
- Step 7** From the Anchor drop-down list, select a device. The selected device is the entry point for the graph.
- Step 8** From the Graph ID drop-down list, select an ID. The Graph ID is a forwarding tag for the graph.
- Step 9** In the Source field, enter the multicast originating device. The multicast originating device is specified as an IP address or as "*" (wildcard).
- Step 10** In the IGMP field, enter the IGMP group address.

Send document comments to nexus7k-docfeedback@cisco.com

- Step 11** In the VLAN field, enter multicast associated VLAN information.
- Step 12** Click **Fetch** to view the graph.
-


Launching the vPC Wizard

From the topology map, you can launch the vPC wizard to create a vPC.

BEFORE YOU BEGIN

Determine which two devices you want to use as the vPC peer switches.

DETAILED STEPS

-
- Step 1** From the Feature Selector pane, choose **Topology > Topology View**.
The topology map appears in the Contents pane.
- Step 2** Above the map, click **PortChannel and vPC**.
The map shows the PortChannel and vPC view of the topology.
- Step 3** From the topology toolbar, choose the  icon.
- Step 4** Click one device that you want to use as a vPC peer switch.
- Step 5** Press and hold the **Shift** key.
- Step 6** Click the device that you want to use as a vPC peer switch.
- Step 7** Right-click either device and choose **Launch vPC Wizard**.
The vPC Creation Wizard dialog box appears.
- For more information about using this wizard, see the *Cisco DCNM Interfaces Configuration Guide, Release 5.x*.
-

Managing a vPC

From the topology map, you can access the vPC feature for a specific vPC link.

DETAILED STEPS

-
- Step 1** From the Feature Selector pane, choose **Topology > Topology View**.
The topology map appears in the Contents pane.
- Step 2** Above the map, click one of the following views:
- **PortChannel and vPC**
 - **Logical vPC View**
- Step 3** Find the vPC link for the vPC that you want to manage.
- Step 4** Use the step that applies to the view that you selected:

Send document comments to nexus7k-docfeedback@cisco.com

- PortChannel and vPC—Right-click the ellipse on the vPC link and choose **Manage vPC**.
- Logical vPC View—Right-click the vPC link and choose **Manage vPC**.

The vPC feature appears. The vPC that you want to manage is selected in the summary table.

For more information about the vPC feature, see the *Cisco DCNM Interfaces Configuration Guide, Release 5.x*.

Finding and Resolving vPC Configuration Inconsistencies

You can use the topology map to find vPCs that have configuration inconsistencies and open the Resolve Configuration Inconsistency dialog box.

DETAILED STEPS

Step 1 From the Feature Selector pane, choose **Topology > Topology View**.

The topology map appears in the Contents pane.

Step 2 Above the map, click one of the following views:

- **PortChannel and vPC**
- **Logical vPC View**

Step 3 Find the vPC for which you want to resolve configuration inconsistencies.

If a vPC link has configuration inconsistencies, a red ellipse appears over the link. If you use the PortChannel and vPC view, vPC peer links with configuration inconsistencies also show a red ellipse.

Step 4 (Optional) If you want to resolve configuration inconsistencies now, do one of the following:

- To resolve configuration inconsistencies for the vPC link *and* the vPC peer link, right-click the red ellipse on the vPC link and choose **Launch Configuration Consistency**.
- To resolve configuration inconsistencies for the vPC peer link only, right-click the red ellipse on the vPC link and choose **Launch Configuration Consistency**.

The Resolve Configuration Inconsistency dialog box opens.

For more information about using the Resolve Configuration Inconsistencies dialog box, see the *Cisco DCNM Interfaces Configuration Guide, Release 5.x*.

Accessing Remotely Connected CNAs from the Topology Map

You can use the topology map to access servers connected to Cisco Nexus 4000 Series switches.

DETAILED STEPS

Step 1 From the Feature Selector pane, choose **Topology > Topology View**.

The topology map appears in the Contents pane. The topology toolbar appears on the left side of the topology map.

Send document comments to nexus7k-docfeedback@cisco.com

Step 2 Right-click on the switch and then choose **Show End Devices**.

The contents pane displays all the servers that are connected to the switch. It displays only the pWWN of the servers because the IP address is not available as a part of the enode information in FIP snooping.

Using VSAN Overlay

To access the VSAN Overlay feature from the topology map, follow these steps:

Step 1 From the Feature Selector pane, choose **Topology > Topology View**.

The topology map appears in the Contents pane.

Step 2 Above the map, click **L2 View**.

The dialog box appears in the content pane.

Step 3 In the dialog box, click **VSAN**.

Step 4 Enter the range to search (valid values are between 1 and 4094).

Step 5 Check **View mapped VLANs** to view the VLANs.

Step 6 Click **Fetch**.

Related Documents

For additional information related to the topology map, see the following sections:

Related Topic	Document Title
VDCs	<i>Cisco DCNM Virtual Device Context Configuration Guide, Release 5.x</i>
vPCs	<i>Cisco DCNM Interfaces Configuration Guide, Release 5.x</i>
Configuring LLDP on managed devices	<i>Cisco DCNM System Management Configuration Guide, Release 5.x</i>
Device discovery	Chapter 5, “Administering Device Discovery”
Device groups	Chapter 10, “Configuring Device Groups”
Network servers	Chapter 9, “Configuring Network Servers”

Send document comments to nexus7k-docfeedback@cisco.com

Feature History for Topology

Table 8-1 lists the release history for this feature.

Table 8-1 *Feature History for Topology*

Feature Name	Releases	Feature Information
Common topology	5.0(2)	Support for SAN devices and connections was added.
Network servers	5.0(2)	Support for showing network servers was added.
Fabric Manager support	5.0(2)	Support for launching the Cisco Fabric Manager client was added.
Device groups	5.0(2)	Support for device groups was added.
VSAN Overlay	5.1(0)	Support for VSAN overlay was added as a part of the L2 view.
Discovery of servers connected to Cisco Nexus 5000 series switches via CNAs	5.1(0)	Support for discovering servers that are either directly connected to Cisco Nexus 5000 Series switches or CNAs.
FabricPath support	5.1(0)	Support for FabricPath was added.

Send document comments to nexus7k-docfeedback@cisco.com