



CHAPTER 4

Working with Prime Network Vision Maps

The topological map is the main tool used by Cisco Prime Network Vision (Prime Network Vision) to display the links and relationships between the network elements and aggregations. The following topics describe how to work with the topological maps displayed in the content pane of the Prime Network Vision window:

- [User Roles Required for Working with Prime Network Vision Maps, page 4-2](#)
- [Using Chinese Characters, page 4-5](#)
- [Opening and Closing Maps, page 4-5](#)
- [Creating a New Map, page 4-8](#)
- [Working with Elements in a Map, page 4-9](#)
- [Managing Maps, page 4-16](#)
- [Finding Items in a Map, page 4-26](#)
- [Working with Aggregations, page 4-28](#)
- [Working with Overlays, page 4-33](#)
- [Filtering Links in a Map, page 4-38](#)
- [Opening the CPU Usage Graph, page 4-40](#)
- [Communicating with Devices Using Ping and Telnet, page 4-41](#)

You can also perform the following functions from the map and list views if they are configured for your client:

- Launch external applications or tools, such as an SSH client.
- Launch available activation and configuration scripts. This can include the commands documented in Commands part of the [Cisco Prime Network 3.9 Reference Guide](#), and those you create using Command Builder. These scripts can be launched against multiple network elements at the same time.

For more information on these functions, see the [Cisco Prime Network 3.9 Customization User Guide](#).

User Roles Required for Working with Prime Network Vision Maps

This topic identifies the roles that are required to work with Prime Network Vision maps. Prime Network determines whether you are authorized to perform a task as follows:

- For GUI-based tasks (tasks that do not affect elements), authorization is based on the default permission that is assigned to your user account.
- For element-based tasks (tasks that do affect elements), authorization is based on the default permission that is assigned to your account. That is, whether the element is in one of your assigned scopes and whether you meet the minimum security level for that scope.

For more information on user authorization, see the [Cisco Prime Network 3.9 Administrator Guide](#).

The following tables identify the tasks that you can perform:

- [Table 4-1](#) identifies the tasks that you can perform if a selected element **is not in** one of your assigned scopes.
- [Table 4-2](#) identifies the tasks that you can perform if a selected element **is in** one of your assigned scopes.

By default, users with the Administrator role have access to all managed elements. To change the Administrator user scope, see the topic on device scopes in the [Cisco Prime Network 3.9 Administrator Guide](#).

Table 4-1 Default Permission/Security Level Required for Working with Prime Network Vision Maps - Element Not in User's Scope

Task	Viewer	Operator	OperatorPlus	Configurator	Administrator
Map-Related Tasks					
Apply a background image	—	—	—	X	X
Create maps	—	—	X	X	X
Define a map layout	X	X	X	X	X
Delete maps	—	—	X	X	X
Open maps	X	X	X	X	X
Preview and print maps	X	X	X	X	X
Rename maps	—	—	X	X	X
Save as a new map	—	—	X	X	X
Save as an image	X	X	X	X	X
Save map appearance	—	—	X	X	X
Select viewing options	X	X	X	X	X
Use Overview window	X	X	X	X	X
View maps	X	X	X	X	X

Table 4-1 *Default Permission/Security Level Required for Working with Prime Network Vision Maps - Element Not in User's Scope (continued)*

Task	Viewer	Operator	OperatorPlus	Configurator	Administrator
Element-Related Tasks					
Add elements to a map	—	—	X	X	X
Remove elements from a map	—	—	X	X	X
Resize elements in a map	X	X	X	X	X
Aggregation-Related Tasks					
Group and ungroup aggregations	—	—	X	X	X
Rename aggregations	X	X	X	X	X
View aggregation thumbnails	X	X	X	X	X
Finding Items in Maps					
Find affected elements	—	—	—	—	X
Find an element or service	X	X	X	X	X
Find and select a link in a map ¹	X	X	X	X	X
Link-Related Task					
Filter links	X	X	X	X	X
Overlay-Related Tasks					
Apply an overlay	X	X	X	X	X
Hide or view an overlay	X	X	X	X	X
Remove an overlay	X	X	X	X	X
Other Tasks					
Open the CPU Usage Graph	—	—	—	—	X
Use Ping and Telnet to communicate with elements	—	—	—	—	X

1. This applies to links within the selected context, and not links identified as network links.

Table 4-2 *Default Permission/Security Level Required for Working with Prime Network Vision Maps - Element in User's Scope*

Task	Viewer	Operator	OperatorPlus	Configurator	Administrator
Map-Related Tasks					
Apply a background image	—	—	—	X	X
Create maps	—	—	X	X	X
Define a map layout	X	X	X	X	X
Delete maps	—	—	X	X	X
Open maps	X	X	X	X	X
Preview and print maps	X	X	X	X	X
Rename maps	—	—	X	X	X
Save as a new map	—	—	X	X	X
Save as an image	X	X	X	X	X
Save map appearance	—	—	X	X	X
Select viewing options	X	X	X	X	X
Use Overview window	X	X	X	X	X
View maps	X	X	X	X	X
Element-Related Tasks					
Add elements to a map	—	—	X	X	X
Remove elements from a map	—	—	X	X	X
Resize elements in a map	X	X	X	X	X
Aggregation-Related Tasks					
Group and ungroup aggregations	—	—	X	X	X
Rename aggregations	X	X	X	X	X
View aggregation thumbnails	X	X	X	X	X
Finding Items in Maps					
Find affected elements	X	X	X	X	X
Find an element or service	X	X	X	X	X
Find and select a link in a map ¹	X	X	X	X	X

Table 4-2 *Default Permission/Security Level Required for Working with Prime Network Vision Maps - Element in User's Scope (continued)*

Task	Viewer	Operator	OperatorPlus	Configurator	Administrator
Link-Related Task					
Filter links	X	X	X	X	X
Overlay-Related Tasks					
Apply an overlay	X	X	X	X	X
Hide or view an overlay	X	X	X	X	X
Remove an overlay	X	X	X	X	X
Other Tasks					
Open the CPU Usage Graph	—	—	X	X	X
Use Ping and Telnet to communicate with devices	—	—	—	X	X

1. This applies to links within the selected context, and not links identified as network links.

Using Chinese Characters

Prime Network Vision supports Chinese characters in map and aggregation names, enabling you to name or rename maps or aggregations using Chinese characters. For information on setting up Prime Network to use Chinese characters, see the [Cisco Prime Network 3.9 Installation Guide](#).

Opening and Closing Maps

Prime Network Vision provides two methods for opening maps:

- You can open previously viewed maps (if you left the maps open when you last exited Prime Network Vision). See [Opening Previously Viewed Maps, page 4-6](#).
- You can list all existing maps and choose the ones you want to open. See [Opening a Map from the Open Map Dialog Box, page 4-6](#).

For information on how to close a map, see [Closing a Map, page 4-8](#).

When you open a map, the network information is automatically refreshed. For example, if a device was up the last time that the map was saved and closed, and then the device is moved to maintenance, the next time you open the map the management status of the device is updated accordingly and the device displays a maintenance status.

Opening Previously Viewed Maps

When you launch Prime Network Vision, it lists the maps you recently viewed but did not close when you exited the client session. This list of recently viewed maps prevents you from having to view the complete list of available maps, which can be lengthy.


Note

This list is not available to first-time users or users who closed their maps before closing the application.

To open a map that you viewed previously but did not close when you last logged out:

-
- Step 1** Launch Prime Network Vision as described in [Launching Prime Network Vision, page 2-2](#). The Prime Network Vision window opens, and the Last Open Maps dialog box is displayed.
 - Step 2** Check the check boxes for the maps you want to open, and uncheck the check boxes for the maps you do not want to open.
 - Step 3** Click **OK**.
-

Opening a Map from the Open Map Dialog Box

You can open any map that is displayed in the Open Map dialog box, even if you have never accessed it before.

To open a map using the Open Map dialog box:









-
- Step 1** Display the Open Map dialog box by doing one of the following:
 - Click **Open Map** in the main toolbar.
 - Choose **File > Open**.

The Open Map dialog box lists the existing maps, and indicates which maps are currently open in your view.

The Find field enables you to search for a map containing the string that you enter. For more information, see [Finding Text in a Table, page 2-51](#).

You can use the tools described in [Table 4-3](#) to manage maps in the Open Map dialog box.

Table 4-3 Open Map Dialog Box Options

Tool	Name	Description
	Export to CSV	Exports the information displayed in the table. For more information, see Exporting Tables to a File, page 2-55 .
	Delete Map	Deletes the selected map from the Open Map dialog box, the Prime Network Vision window, and the database. If a map that is opened is deleted, the map closes. For more information, see Deleting a Map from the Prime Network Vision Database, page 4-25 .
	Rename Map	Renames the selected map in the Open Map dialog box and Prime Network Vision window. For more information, see Renaming a Map, page 4-20 .
	Sort Table Values	Sorts the information displayed in the table. For more information, see Sorting a Table, page 2-51 .
	Filter	Defines a filter for the information displayed in the table. For more information, see Filtering Table Contents, page 2-53 . Note When a filter is applied, the Clear Filter button is activated.
	Clear Filter	Clears the existing filter.
	Show All Rows	Displays all table rows that meet the current filtering criteria.
	Show Only Selected Rows	Displays only the rows that you select. For more information, see Viewing Selected Rows, page 2-54 .

Step 2 Select the maps you want to open using one of the following methods. You can select multiple maps by pressing **Ctrl** while you select individual maps.

- Select the maps in which you are interested, and then click **Open**.
- Right-click the required maps and choose **Open**.
- Double-click the required maps.



Note

By default, you can view and work on a maximum of five maps at any given time (per client instance) in the Prime Network Vision window. To change this default setting, contact your Cisco account representative. To create a new map or select a new map, close the required number of maps.

Closing a Map

When you close a map, Prime Network Vision saves basic map information whether or not you manually save the map. This default information includes device and link additions, device and link removals, aggregations, and disaggregations. However, you must use the Save Map option if you want to retain the following information in the database:


- The location of the devices on the map
- Thumbnails
- The size of the devices

To close a map:

Step 1 (Optional) To save more than the default map information, use one of the following methods:

- Click **Save Map Appearance** in the main toolbar.
- Choose **File > Save Map** from the main menu.

Step 2 Do one of the following:

- Choose **File > Close**.
- Click  in the upper right corner of the content pane.

If changes have been made to the map, an information message is displayed.

Step 3 Click **Yes**. The map is saved and closed. An empty Prime Network Vision window is displayed, or the map that was last opened is displayed.

Creating a New Map

Prime Network Vision enables you to create multiple network maps to represent specific network views. Maps can cover specific network segments, customer networks, or any other mix of network elements required. When you create a map, it is available to other users if they have sufficient access and security privileges.

Network maps provide a graphic display of active faults and alarms, and serve as access points for activating services.



Note

You cannot specify the same name for two or more maps.

To create a new map:

-
- Step 1** Do one of the following:
- Click **New Map** in the main toolbar.
 - Choose **File > New Map** in the main menu.
- The Create Map dialog box is displayed.
- The Advanced button enables you to filter the links displayed in the map pane. For more information, see [Filtering Links in a Map, page 4-38](#).
- Step 2** Enter a name for the new map and click **OK**.
- A new empty map is displayed in the navigation pane and map pane.
- Step 3** Add elements to your new map as described in [Adding Elements to a Map, page 4-9](#).
-

For information on removing elements from a map, see [Removing Elements from a Map, page 4-15](#).

Working with Elements in a Map

The following topics describe how to work with elements in a map:

- [Adding Elements to a Map, page 4-9](#)
- [Resizing Map Elements, page 4-14](#)
- [Removing Elements from a Map, page 4-15](#)

Adding Elements to a Map

When you add an element to a map, the map is automatically saved in the Prime Network Vision database.



Note

Based on the security level and access permissions assigned, this option might not be available to all users.

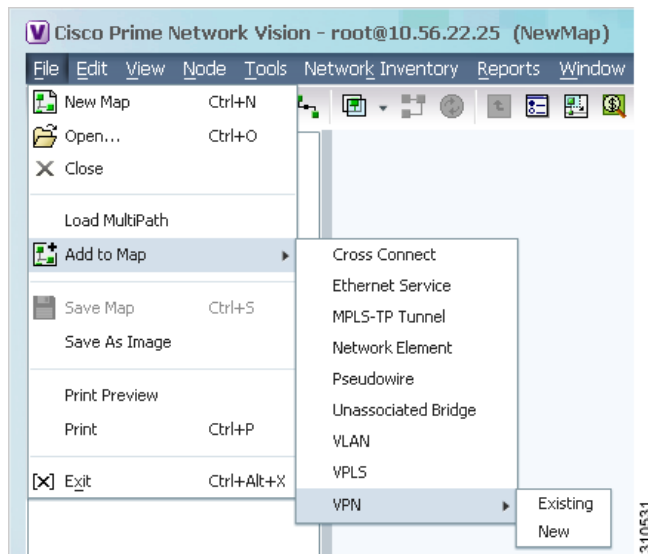
To add an element to a map:

-
- Step 1** Do one of the following:
- Click **Add to Map** in the main toolbar, and choose the required element.
 - Choose **File > Add to Map > element**.

You can add the following types of elements to maps, as shown in [Figure 4-1](#):

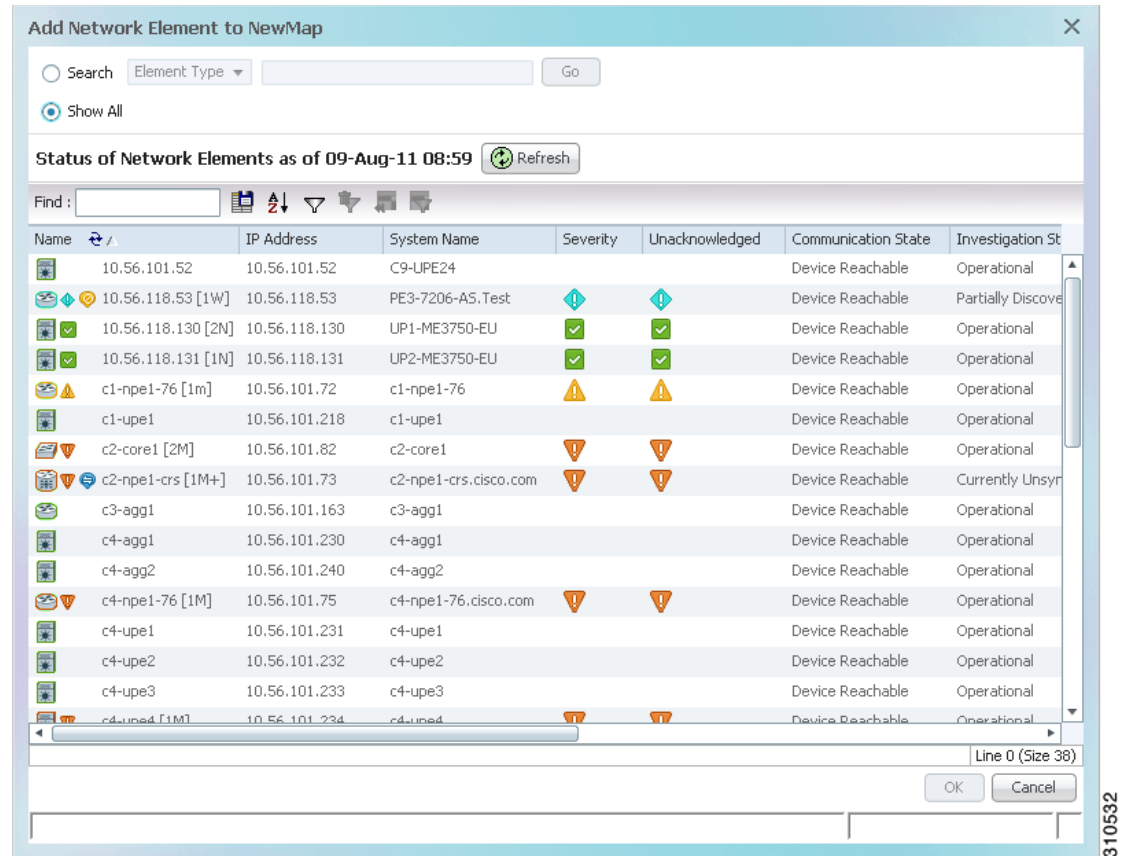
- EFP cross-connects
- Ethernet services
- MPLS-TP tunnels
- Network elements
- Pseudowires
- Unassociated bridges
- VLANs
- VPLS instances
- Existing or new VPNs

Figure 4-1 Available Elements to Add to Maps



If you choose to add a new VPN, the Create VPN dialog box is displayed. For information on creating a VPN, see [Creating a VPN, page 17-21](#)

In all other instances, the Add *element* to map dialog box is displayed, as shown in [Figure 4-2](#).

Figure 4-2 Add Element Dialog Box

Step 2 In the Add *element* dialog box, do one of the following:



Note If the element you want to add is outside of your scope, it is not displayed if you enter a search string. Choose **Show All** to view all available elements, both in and out of your scope.

- To view elements that meet specific criteria:
 - a. In the Search field, choose a search category. [Table 4-4](#) identifies the search categories available for each element type.

Table 4-4 Network Elements to Add to Maps

Name	Available Search Criteria
Cross-Connect	Name
Ethernet Service	<ul style="list-style-type: none"> • EVC Terminating EFPs • Name • System Name
MPLS-TP Tunnel	<ul style="list-style-type: none"> • Description • Name • System Name

Table 4-4 Network Elements to Add to Maps (continued)

Name	Available Search Criteria
Network Element	<ul style="list-style-type: none"> • Element Category • Element Type • IP Address • Name • System Name • Vendor
Pseudowire	<ul style="list-style-type: none"> • Description • Is Multisegment Pseudowire • Name • Pseudowire Role • Pseudowire Type • System Name
Unassociated Bridge	Name
VLAN	<ul style="list-style-type: none"> • EFD Name • EFD System Name • ID • Name • System Name
VPLS	<ul style="list-style-type: none"> • Name • System Defined Name • VPN ID
VPN > Existing	<ul style="list-style-type: none"> • Description • Name

b. Enter a search string to narrow the display to a range of elements or to a specific element.

c. Click **Go**.

For example, if you add a network element, choose IP Address, and enter **254**, the network elements with IP addresses containing the string 254 are displayed. If you choose Vendor and enter **cisco**, only Cisco network elements are displayed.

- To view all available elements, choose **Show All**.

The following conditions apply when working with large numbers of elements:

- If the number of elements to be displayed is large, it can take a while for all elements to appear.
- If the retrieval time for displaying all elements is expected to take a significant amount of time, the Show All button is disabled and the following message is displayed:

The Show All option is disabled because the retrieval time is expected to be excessive.
Please define a search that is as specific as possible to minimize the data retrieval time.

As recommended, use the Search option to specify search criteria and thereby limit the number of elements displayed.

The number of elements that can be displayed in the Add *element* dialog box is configured in the registry.

**Note**

Changes to the registry should only be carried out with the support of Cisco. For details, contact your Cisco account representative.

The available elements are displayed in the Add *element* dialog box in table format. The dialog box also displays the date and time at which the list was generated. To update the list, click **Refresh**.

If a network element is not included in your scope, it is displayed with the locked device icon.

For information about sorting and filtering the table contents, see [Working with Prime Network Tables, page 2-49](#).

Step 3 In the Add *element* dialog box, select the elements that you want to add. You can select and add multiple elements by pressing **Ctrl** while selecting individual network elements or by pressing **Ctrl + Shift** to select a group of elements.

Step 4 Click **OK**.

If you select more than 25 business elements (such as VLANs or VPLS instances) to add, a message is displayed, stating that the action can take a while to complete and asking if you want to continue. Click **OK** to continue or **Cancel** to change your selection.

The elements are displayed in the navigation pane and content area. In addition, any associated tickets are displayed in the ticket pane.

The network element information is saved with the map in the Prime Network Vision database.

Resizing Map Elements

Prime Network Vision can display network element icons in four sizes. The size that is used when you add elements to a map depends on the number of elements in the map, the map layout, and the size of the content pane.

Icons at the top level of a map have a solid gray border when selected whereas element icons within an aggregation thumbnail have a dashed gray border when they are selected. However, if you double-click the thumbnail frame so that the aggregation fills the map pane and then select an element in the aggregation, the selected element displays a solid gray border.

You can resize element icons in the following ways:

- [Using Your Mouse, page 4-14](#)
- [Using the Resize Option, page 4-14](#)

Using Your Mouse

To resize a single icon in a map using your mouse:

-
- Step 1** Click the icon you want to resize.
- The icon displays a gray border to indicate that it is selected.
- Step 2** Position your mouse cursor on the gray border and click and drag the border until the icon is the required size.
-

Using the Resize Option



Note The Resize option is enabled only when element icons are selected. Links cannot be resized.

To resize icons with the Resize option:



-
- Step 1** In the map, select the icons you want to resize.
- Step 2** Do one of the following:
- Choose **Edit > Resize** from the main menu.
 - Right-click the required icons in the map, and choose **Resize**.
- Step 3** In the Resize Nodes dialog box, set the size of the selected icons in one of the following ways:
- In the By Percentage field, choose the required percentage for resizing the icons from the drop-down list. The available values are 10, 20, 50, 150, and 200.
 - In the By Size Category field, choose the required size from the drop-down list. The available sizes are Tiny, Normal, Large, and Huge. To see examples of these sizes, see [Table 2-3](#).
- Step 4** Click **OK**. The selected icons are resized.
-

For more information about the information that is displayed in the element icons, see [Information Available in Element Icons, page 3-3](#).

Using Zoom

Prime Network Vision enables you zoom in or out of maps so that you can use the viewing level that meets your needs. Zooming differs from resizing in that zooming does not change the size of the icon itself.

You can zoom in or out on a map by using either of the following methods:

- Position your mouse cursor in the map pane and use your mouse scroll wheel, as follows:
 - Roll the wheel forward to zoom in on the map.
 - Roll the wheel backward to zoom out on the map.
- Click **Zoom Selection Mode** in the  and zoom in and out, as follows:
 - To zoom in, press and hold the mouse button while selecting the area that you want to view in greater detail. Prime Network Vision zooms in on the selected area and centers it in the map pane.
 - To zoom out, click **Normal Selection Mode** in the  and do either of the following:
 - Position your mouse cursor in the map pane and use the mouse scroll wheel to zoom out.
 - Click **Fit in Window** to view the entire map in the map pane.

Removing Elements from a Map

When you delete an element or aggregation from a map, it is removed from the map in the database, but the elements are still managed by Prime Network Vision.



Note

Based on the security level and access permissions assigned, this option might not be available to all users.

To remove a network element or aggregation from a map:

-
- | | |
|---------------|--|
| Step 1 | In the navigation pane or map, select the element or aggregation that you want to delete. |
| Step 2 | Right-click to display the right-click menu and choose Remove from Map . The selected element or aggregation is removed from the map. |
-

The element is removed from the map in the database, but is still managed by Prime Network Vision and can be added again.

Managing Maps






The following topics describe how to manage maps in Prime Network Vision:

- [Selecting Map Viewing Options, page 4-16](#)
- [Defining a Map Layout, page 4-17](#)
- [Applying a Background Image, page 4-17](#)
- [Using the Overview Window, page 4-19](#)
- [Renaming a Map, page 4-20](#)
- [Saving Maps, page 4-20](#)
- [Previewing and Printing a Map, page 4-23](#)
- [Deleting a Map from the Prime Network Vision Database, page 4-25](#)

Selecting Map Viewing Options

[Table 4-5](#) describes the tools that you can use to view and manipulate maps in the Prime Network Vision map pane.

Table 4-5 *Prime Network Vision Map Viewing Options*

Button	Name	Function
	Layout Map	Defines the way in which the map is displayed in the map pane of the Prime Network Vision window: Circular, hierarchical, orthogonal, or symmetric.
	Fit in Window	Fits an entire aggregation or map in the map pane.
	Normal Selection Mode	Activates the normal selection mode.
	Zoom Selection Mode	Activates the zoom selection mode, which enables you to select an area in the map pane to enlarge by clicking and dragging the zoom mode cursor.
	Pan Mode	Activates the pan mode, which enables you to move around in the map pane by clicking and dragging the pan mode cursor.

To select a tool, do one of the following:

- From the View menu, choose the required selection tool.
- In the toolbar, click the required tool icon.

Defining a Map Layout

Prime Network Vision enables you to select the way in which the network object topology is displayed with the following options: Circular, hierarchical, orthogonal, or symmetric.

Select the map layout by using either of the following methods:

- In the toolbar, click the **Layout Map drop-down button**, and choose one of the options.
- Choose **View > Layout** from the main menu and select one of the layout options.

When you choose a map layout, the elements align accordingly, using animation by default. Related characteristics, such as the speed of the animation and whether an expanded node causes sibling nodes to move aside, are also configured by settings in the registry.

**Note**

Changes to the registry should only be carried out with the support of Cisco. For details, contact your Cisco account representative.

By default, Prime Network Vision uses the circular layout for maps. If you click **Layout Map** in the main toolbar, Prime Network Vision displays the map according to the option last selected.

Applying a Background Image

Prime Network Vision allows you to apply a background image to the map view. You can also choose the same background image or different images for other subordinate windows, such as detailed views of aggregations, VLANs, and VPNs.

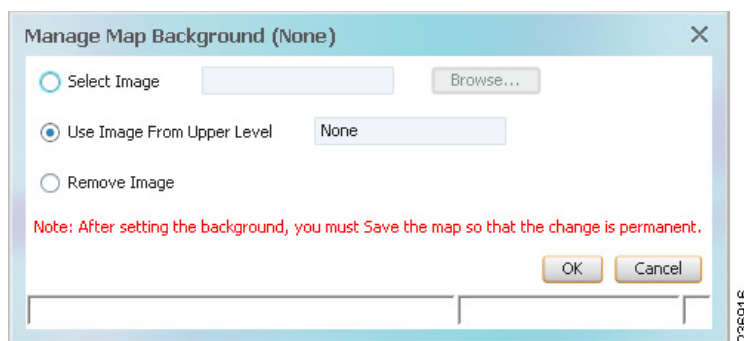
The supported file formats are GIF, JPG/JPEG, and PNG.

**Note**

Background images are not supported in thumbnail views.

To apply a background image to a map:

- Step 1** Navigate to the required map in Prime Network Vision. The map can reside at the top level or in a subordinate window.
- Step 2** Right-click the map background and choose **Set Map Background**.
The Manage Map Background dialog box is displayed, as shown in [Figure 4-3](#).

Figure 4-3 *Manage Map Background Dialog Box*

Step 3 Enter the required information as described in [Table 4-6](#).

Table 4-6 *Manage Map Background Options*

Field	Description
Select Image	Applies the selected image to the current map background: <ol style="list-style-type: none"> 1. Choose Select Image. 2. Click Browse. 3. In the Open dialog box, select the desired image and click OK. The name of the selected image is displayed in the Manage Map Background dialog box. 4. Click OK. The selected image is displayed as the map background.
Use Image From Upper Level	Indicates whether the selected subordinate map should use the same image as the parent map or a different image: <ul style="list-style-type: none"> • To use the same image that is used by the parent map, choose Use Image from Upper Level. The name of the image used by the parent map is displayed by default. • To use a different image than that used by the parent map, choose Select Image and complete the steps described for that option.
Remove Image	Removes the current image from the map background. To remove an image from the current map, click Remove Image .

Step 4 Click **OK**. The current map background is updated as specified.

Step 5 To retain the background image for subsequent logins, do one of the following:

- Click **Save** in the toolbar.
- Choose **File > Save**.

Using the Overview Window

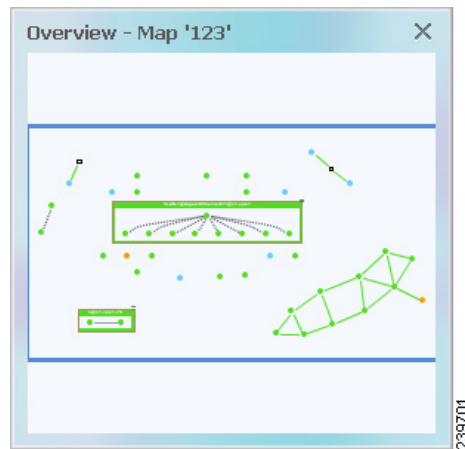
The Prime Network Vision Overview window enables you to display the entire network map or any part of the map that you require in the map pane. The Overview window also enables you to see all the changes and alarms taking place in the network.

To open the network Overview window do either of the following:

- Click **Overview** in the main toolbar.
- Choose **View > Overview** from the main menu.

Figure 4-4 shows an example of the Overview window.

Figure 4-4 Overview Window



The Overview window can contain the following components:

- Dot—Indicates an element. The dot color indicates the severity of an associated alarm.
- Line—Indicates a link. The line color indicates the severity of an associated alarm.
- Blue rectangle—Indicates the selection area. The area within the rectangle is displayed in the map pane. Handles on the corners enable you to resize the selection area.
- Pan mode cursor—Displayed within the selection area. Use this cursor to move the selection area, and thereby view different elements in the map pane.
- Zoom mode cursor—Displayed outside the selection area. Use this cursor to define a new selection area or to zoom in on an existing selection area.

Click the upper right corner to close the Overview window.

Renaming a Map

Prime Network Vision enables you to rename a map that is displayed in the Prime Network Vision window. The name change affects all users of the map and the new name is displayed in the Prime Network Vision window of all users.

To rename a map:

-
- | | |
|---------------|--|
| Step 1 | Do one of the following: <ul style="list-style-type: none">• Click Open Map in the main toolbar.• Choose File > Open from the main menu. |
| Step 2 | In the Open Map dialog box, select the map that you want to rename. |
| Step 3 | Click Rename Map in the toolbar. |
| Step 4 | Enter the new map name. |
| Step 5 | Click OK . The selected map is renamed in the Open Map dialog box, in the Prime Network Vision window, and in the database. |
| Step 6 | Click Cancel to close the Open Map dialog box. |
-

Saving Maps

Prime Network Vision provides three options for saving maps:

- To save more map information than Prime Network Vision saves by default, see [Saving a Map with Information, page 4-20](#).
- To save a copy of a map so that you can use it as a template for another map, see [Saving a Map as a New Map, page 4-21](#).
- To save a map as an image, see [Saving a Map as an Image, page 4-21](#).

Saving a Map with Information

By default, Prime Network Vision saves basic map information whether or not you manually save the map. This default information includes element additions and removals, link additions and removals, aggregations, and disaggregations. However, you must use the Save Map option if you want to retain the following information in the database:

- Device location on the map
- Thumbnails
- Icon size

To save these changes, do one of the following:

- Click **Save Map Appearance** in the main toolbar.
- Choose **File > Save Map**.

Saving a Map as a New Map

You can save a copy of an entire map or parts of a map (such as specific elements and aggregations) while leaving the original map intact.

To save a map or part of a map as a new map:

-
- Step 1** Make sure that the map that you want to save is displayed in the Prime Network Vision content pane.
 - Step 2** Select the required map, elements, or aggregations in the navigation tree or the map.
 - Step 3** Right-click in the navigation pane or one of the selected items in the map pane, and choose **Save as New Map**.
 - Step 4** In the Create Map dialog box, enter a new name for the map.
 - Step 5** Click **OK**. The new map is created.
-

For information about opening the new map, see [Opening a Map from the Open Map Dialog Box](#), page 4-6.

Saving a Map as an Image

To save a map as an image:

-
- Step 1** Display the required map in Prime Network Vision.
 - Step 2** Choose **File > Save As Image** from the main menu.
 - Step 3** In the Save as Image dialog box, define the image characteristics as described in [Table 4-7](#).

Figure 4-5 *Save as Image Dialog Box*

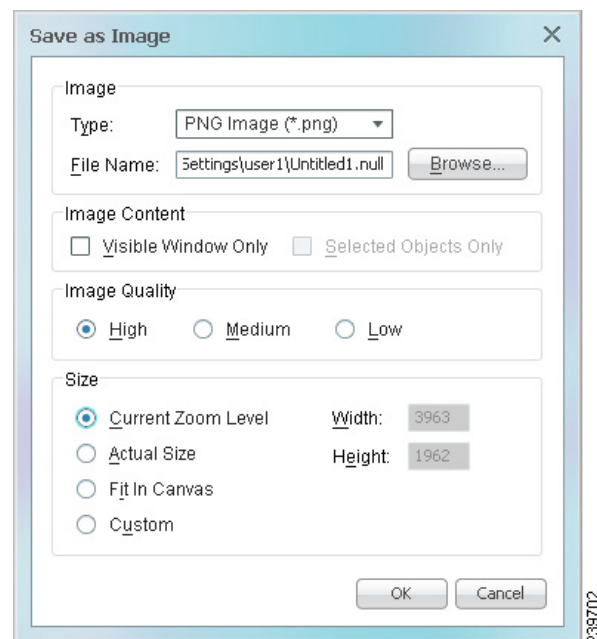


Table 4-7 **Save as Image Dialog Box Options**

Attribute	Description
Image	<p>Specify the image type and filename:</p> <ul style="list-style-type: none"> • Type—In the drop-down list, select one of the following file types: <ul style="list-style-type: none"> – GIF Image (*.gif) – JPEG Image (*.jpg) – PDF Document (*.pdf) – Portable Network Graphics (*.png) – Scalable Vector Graphics (*.svg) • File Name—Browse to the required location and enter a filename for the image.
Image Content	<p>Check the appropriate check box for the content to be included in the image:</p> <ul style="list-style-type: none"> • Visible Window Only—Saves the currently selected map as an image, even if the content area displays the list view or the links view. The option is enabled only if Current Zoom Level is selected for the Size attribute. • Selected Objects Only—Saves the selected network objects as an image. This option is enabled only if network objects are selected in the content pane.
Image Quality	<p>Select the required image quality level:</p> <ul style="list-style-type: none"> • High • Medium • Low
Size	<p>Specify the required zoom level for the image:</p> <ul style="list-style-type: none"> • Current Zoom Level—Saves the image at the currently selected zoom level. Selecting this option enables the Visible Window Only check box. • Actual Size—Saves the image at the actual size. • Fit in Canvas—Saves the image so that it fits in the canvas. • Custom—Saves the image at an enlarged or reduced size. Selecting this option enables the Width and Height options, so that you can enter the required size in pixels.

Step 4 Click **OK**. The map is saved as an image in the directory you specified.

Previewing and Printing a Map

To print a map, choose **File > Print**. If you would like to preview a map before printing it, or define the print setup for a map, see the following topics:

- [Previewing a Map Before Printing It, page 4-23](#)
- [Defining the Print Setup for a Map, page 4-23](#)






Previewing a Map Before Printing It

Using Prime Network Vision, you can preview a map before printing it.

To preview a map:

-
- Step 1** In Prime Network Vision, display the map that you want to print.
- Step 2** From the main menu, choose **File > Print Preview**. The Print Preview window is displayed with the active map.

The following buttons are displayed in the Print Preview window:

Button	Name	Description
	Print Setup	Opens the Printer Setup dialog box so you can specify your print settings.
	Print	Opens the Print dialog box so you can print the displayed network or map to the required printer.
	Zoom In	Zooms in on the network or map.
	Zoom Out	Zooms out of the network or map.
	Fit	Displays the entire network or map in the Print Preview window.

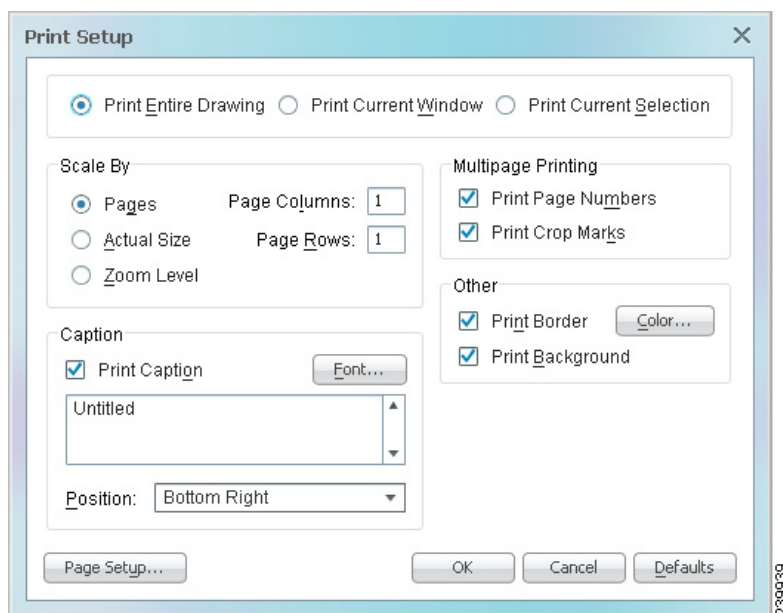
- Step 3** Click **Print**. The required map is printed to the selected printer.
-

Defining the Print Setup for a Map

Prime Network Vision enables you to define the print setup of a map before it is printed.

To define the print setup:

-
- Step 1** From the main menu, choose **File > Print Preview** to open the Print Preview dialog box.
- Step 2** Click **Print Setup**. The Print Setup dialog box is displayed.

Figure 4-6 *Print Setup Dialog Box*

Step 3 Define the print setup, using the information in [Table 4-8](#).

Table 4-8 *Print Setup Dialog Box Options*

Option	Description
Print Selection	
Print Entire Drawing	Prints the currently displayed map, including aggregations.
Print Current Window	Prints the currently displayed map, excluding aggregations.
Print Current Selection	Prints the area selected in the currently displayed map.
Scale By	
Pages	Prints the currently displayed map according to the numbers specified in the Page Columns and Page Rows fields.
Actual Size	Prints the currently displayed map at the actual size.
Zoom Level	Prints the currently displayed map according to the selected zoom level.
Caption	
Print Caption	Adds the specified caption to the printed map.
Font	Specifies the font to use for the caption.
Caption	Prints the text entered in this field as the caption.
Position	Defines the position of the caption in the printed map.

Table 4-8 *Print Setup Dialog Box Options (continued)*

Option	Description
Multipage Printing	
Print Page Numbers	Prints the map with page numbers.
Print Crop Marks	Prints the map with crop marks.
Other	
Print Border	Prints a border around the printed map.
Color	Displays the Choose Color dialog box so you can select the border color.
Print Background	Prints the background of the currently displayed map.
Page Setup	
Page Setup	Offers standard printer options, such as printing in portrait or landscape mode and setting margin widths.

Step 4 Click **OK** to save your settings, or **Default** to restore the default settings.

The Print Preview dialog box is refreshed with the current settings.

Step 5 If you are satisfied with your settings, click **Print**. Otherwise, click **Print Setup** and revise your settings.

Deleting a Map from the Prime Network Vision Database

Prime Network Vision enables you to delete a map from all the views in the Prime Network Vision window.

If another client is using a map that you are deleting, Prime Network Vision displays a message to those clients advising them that the map is being closed and deleted from the database.

To delete a map from Prime Network Vision and the Prime Network Vision database:

Step 1 Open the Open Map dialog box in one of the following ways:

- Click **Open Map** in the main toolbar.
- Choose **File > Open** from the File menu.

Step 2 In the Open Map dialog box, complete the following steps:

- a. Select the map you want to delete.
- b. In the toolbar, click **Delete Map**. A confirmation message is displayed.
- c. Click **Yes**. The selected map is deleted from the Open Map dialog box, the Prime Network Vision window, and the database. If the map is open when you click **Yes**, a message is displayed, stating that the map will be closed.
- d. Click **OK** to acknowledge that the map can be closed.
- e. Click **Cancel** to close the Open Map dialog box.

Finding Items in a Map

The following topics describe how to find network elements, services, links, or elements affected by a ticket in Prime Network Vision maps:

- [Finding a Network Element or Service, page 4-26](#)
- [Finding and Selecting Links in Maps, page 4-27](#)
- [Finding Elements Affected by a Ticket, page 4-27](#)

Finding a Network Element or Service

Prime Network Vision enables you to find an element or service (such as a VPN or VLAN) in the map by entering the element or service name, the device IP address, or any part of the name or IP address.

To find an element or service in a map:

Step 1 Do one of the following:

- Click **Find** in the main toolbar.
- Choose **Edit > Find in Map** from the main menu.

Step 2 In the Find in Map dialog box, enter the device name or the IP address.



Note You can enter a partial name (case insensitive) or IP address. For example, entering **xy** finds elements or services with names containing the string xy, such as Axy, Xy, xY, or xyZ.

The Search all map levels check box enables you to search for an element, name, or IP address at all levels of the map. When disabled, this option searches for the element or service, but excludes aggregations from the search. This option is disabled by default.

Step 3 Check or uncheck the Search all map levels check box, as required.

Step 4 Click **OK**. An element or service matching the search criteria is selected in the map.

Step 5 Continue searching using the following methods:

- To view the next element or service that matches the search criteria, click **Find Next** in the or press **F3**.
 - To view the previous element or service that matches the search criteria, click **Find Previous** in the or press **Shift + F3**.
-

Finding and Selecting Links in Maps

Prime Network Vision enables you to find a specific link and select it in a map. If more than one edge device contains the same link in the same map or context, all related edge devices are selected in the map.

To find and select a link:

-
- Step 1** In the Links view, right-click the required link and choose **Select Link in Map**.
The link is highlighted in the map pane.
- Step 2** If two or more lines represent the same link (such as a VRF link), the Select Link Context dialog box is displayed. Select the required link context from the drop-down list and click **OK**. The link is highlighted in the map pane.
- Step 3** Click in the map background to remove the highlight from the selected link.
-

For more information about links in Prime Network Vision, see [Chapter 5, “Working with Links.”](#)

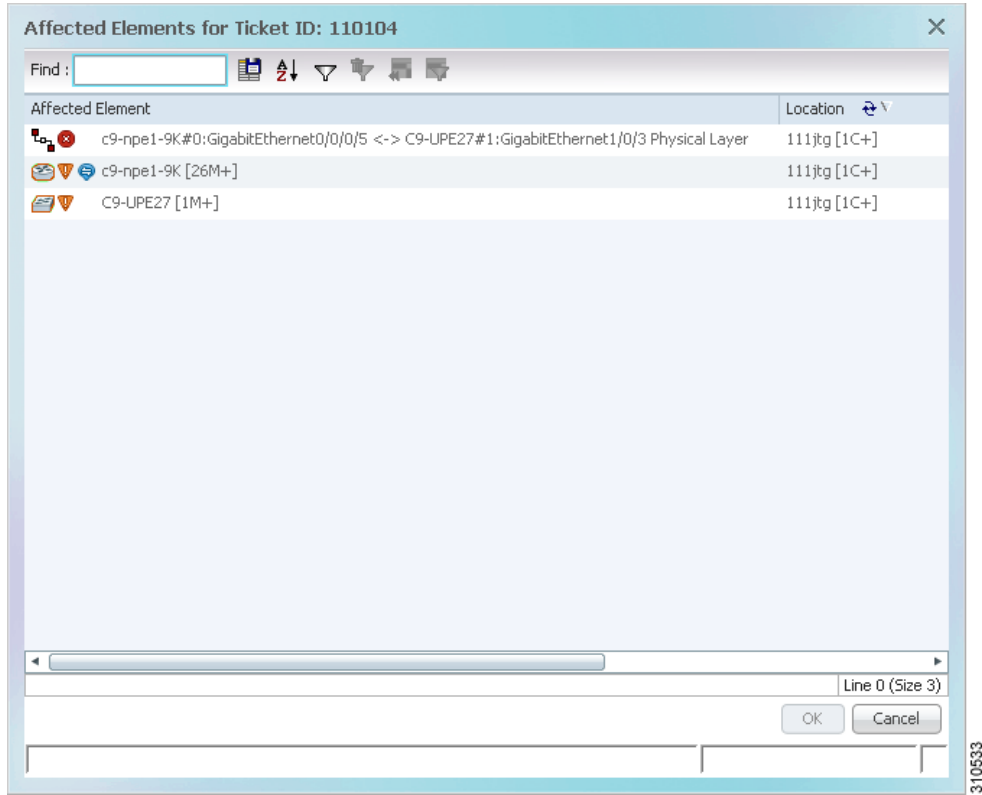
Finding Elements Affected by a Ticket

Prime Network Vision enables you to find the elements that might be affected by a ticket displayed in the ticket pane.

To find elements affected by a ticket:

-
- Step 1** In the ticket pane, right-click the required ticket and choose **Find Affected Elements**. Depending on the number of affected elements, the information is displayed in one of the following ways:
- If only one element is affected, the affected element is selected in the navigation pane and the content area.
 - If a link is affected, the affected link is selected in the links view.
 - If two or more elements are affected, the affected elements are displayed in the Affected Elements window as shown in [Figure 4-7](#).

Figure 4-7 Affected Elements Window



- Step 2** In the Affected Elements window, select the required element, then click **OK**. The selected element is selected in the Prime Network Vision map or links view.
- Step 3** Click in the navigation pane or the map pane to remove the highlight from the selected device or link.

Working with Aggregations

Prime Network Vision enables you to group network elements and display them as an aggregation. Aggregations can contain network elements, services, other aggregations, and so forth.



Note

You cannot aggregate service entities that exist within a service. For example, you cannot aggregate VRFs that exist within a VLAN.

For more information on working with aggregations, see the following topics:

- [Grouping Network Elements into Aggregations, page 4-29](#)
- [Adding Elements to an Existing Aggregation, page 4-30](#)
- [Viewing an Aggregation Thumbnail, page 4-30](#)
- [Ungrouping Aggregations, page 4-33](#)
- [Renaming Aggregations, page 4-32](#)

Grouping Network Elements into Aggregations

To aggregate network elements:

-
- Step 1** Select the network elements using one of the following methods:
- Select a single item in the map pane or navigation tree.
 - Select multiple items in the map pane or navigation tree while pressing **Ctrl**.
- Step 2** Aggregate the network elements using one of the following methods:
- In the menu bar, choose **Node > Aggregate**.
 - Right-click the navigation pane and choose **Aggregate**.
 - In the map pane, right-click one of the selected items and choose **Aggregate**.
- Step 3** In the Aggregation dialog box, enter a unique name for the aggregation and click **OK**. The aggregation is displayed in the navigation pane and the map pane. Aggregations are displayed as a single entity with the Aggregation icon and a plus sign, as in the following examples:



The aggregation icon changes color according to the alarm severity. For more information about severity colors, see [Alarm Indicators, page 2-17](#).

Adding Elements to an Existing Aggregation

You can add elements to an existing aggregation at any time. When adding elements to an aggregation, keep in mind that certain restrictions exist. For example, you cannot add an EVC to a VLAN.

To add elements to an existing aggregation:

-
- Step 1** Select the existing aggregation in the map pane.
 - Step 2** Navigate to the required aggregation thumbnail in either of the following ways:
 - Click the plus sign in the upper right corner of the aggregation icon.
 - Right-click the aggregation, and choose **Show Thumbnail**.
 - Step 3** When the required aggregation thumbnail is open, double-click the thumbnail frame to view the aggregation at the map level.
 - Step 4** Click **Add to Map** to add the required element to the aggregation.
 - Step 5** To return to the map, do one of the following:
 - Double-click the map background.
 - Right-click the cursor in the map background, and choose **Go to Root**.
 - Click **Go to Parent** in the toolbar. Depending on the number of nested aggregations, you might need to do this more than once.
-

Viewing an Aggregation Thumbnail

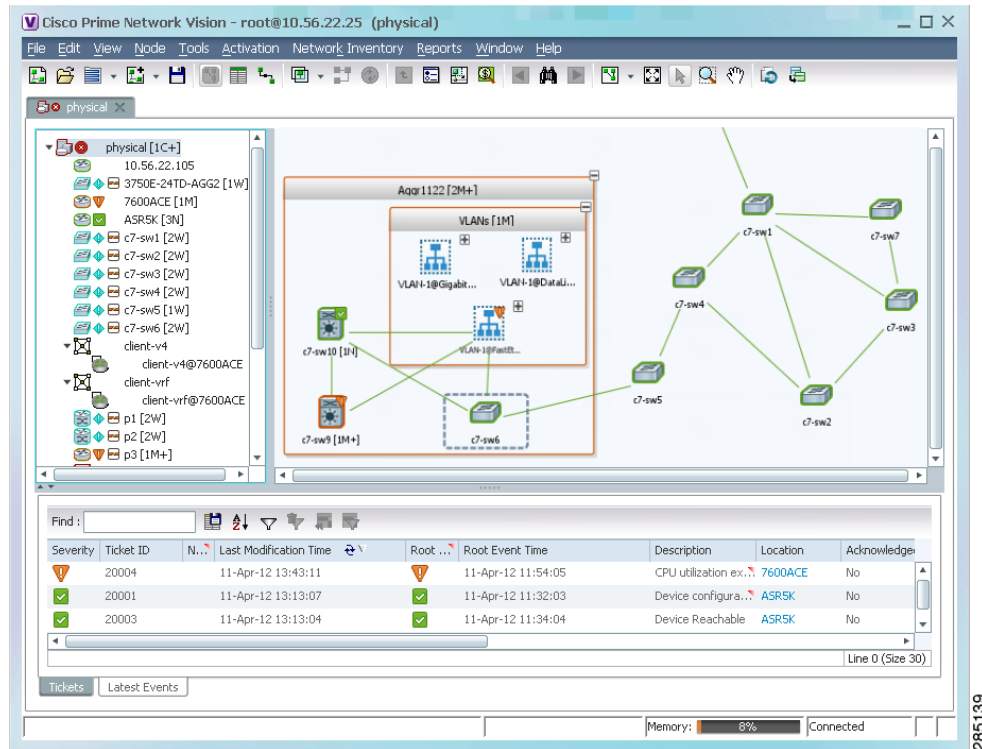
You can view a thumbnail of a selected aggregation in the map pane, including all aggregated elements and any nested aggregations.

To display an aggregation thumbnail:

-
- Step 1** Open the thumbnail in either of the following ways:
 - Click the plus sign in the upper right corner of the aggregation icon.
 - Right-click an aggregation, and choose **Show Thumbnail**.

The thumbnail is displayed in the map pane as shown in [Figure 4-8](#).

Figure 4-8 Aggregation Thumbnail



When a thumbnail is opened, neighboring nodes are moved aside by default to allow room for the thumbnail to expand. Similarly, when a thumbnail is closed, the neighboring nodes usually return to their original locations. This behavior of the neighboring nodes when a thumbnail is opened and closed is configured in the registry, and can be disabled, if required.



Note Changes to the registry should only be carried out with the support of Cisco. For details, contact your Cisco account representative.

A dashed gray border around an icon indicates that the element resides within a thumbnail and not at the current map level.

Table 4-9 describes the options available when working with aggregation thumbnails.

Table 4-9 **Aggregation Thumbnail Options**

If you want to...	Do this...
Rearrange the icons in the thumbnail	Click and drag the required icons to arrange them as needed.
Resize an icon	Select the icon to be resized, and then either click and drag the gray border or right-click a selected icon and choose Resize . The right-click Resize option allows you to resize multiple selected icons at the same time.
Resize the thumbnail frame	Click and drag one or more icons. If you drag an icon beyond the thumbnail frame, Prime Network Vision adjusts the thumbnail size automatically.
View a nested aggregation	Click the nested aggregation plus sign.
View only the aggregation in the map pane	Double-click the thumbnail frame.
View the next higher level in the map pane	Double-click the current map background.
Zoom in or out in the thumbnail	Position your mouse cursor in the map and use the mouse scroll wheel to zoom in or out.

Step 2 To close the aggregation thumbnail, do either of the following:

- Click the minus sign in the upper right corner of the thumbnail frame.
- Right-click the thumbnail frame and choose **Show As Aggregation**.

Renaming Aggregations

You can rename aggregations that are displayed in Prime Network Vision. The name change affects all users of the map, and the new name is displayed in the Prime Network Vision window of all users.

To rename an aggregation:

Step 1 Select the aggregation that you want to rename in the navigation tree or the map.

Step 2 Right-click the aggregation icon and choose **Rename**.

Step 3 In the Rename Node dialog box, enter a new name for the aggregation and click **OK**. The selected aggregation is renamed in the navigation tree, map pane, and database.

Ungrouping Aggregations

Aggregations can be ungrouped. If the aggregation that you ungroup contains nested aggregations, the nested aggregations move up one level, and the original aggregation is removed.

If an element in the aggregation that you ungroup also exists at the parent level, the element is represented only once after the aggregation is ungrouped. As a result, no elements are represented twice at the same level.

To ungroup an aggregation:

-
- Step 1** Select the required aggregation in Prime Network Vision.
- Step 2** Ungroup the node in one of the following ways:
- Select the aggregation in the map pane, and choose **Node > Disaggregate**.
 - Right-click the aggregation in the navigation tree or map pane, and choose **Disaggregate**.
 - If the aggregation is shown in the thumbnail view, right-click the thumbnail frame and choose **Disaggregate**.
- If the aggregation contains elements that already exist at the parent level, a confirmation message is displayed, stating that any duplicate elements will be removed.
- Step 3** Confirm the disaggregation.
- The node is disaggregated. Any aggregations in the selected node move up one level, and the original aggregation is removed.
-

For more information about resizing aggregation icons, see [Resizing Map Elements, page 4-14](#).

Working with Overlays

Prime Network Vision enables you to apply overlays to a map and thus isolate the parts of a network that are being used by a specific service.

The following topics discuss the overlay options in more detail:

- [Applying an Overlay, page 4-34](#)
- [Hiding or Viewing an Overlay, page 4-37](#)
- [Removing an Overlay, page 4-37](#)

Applying an Overlay

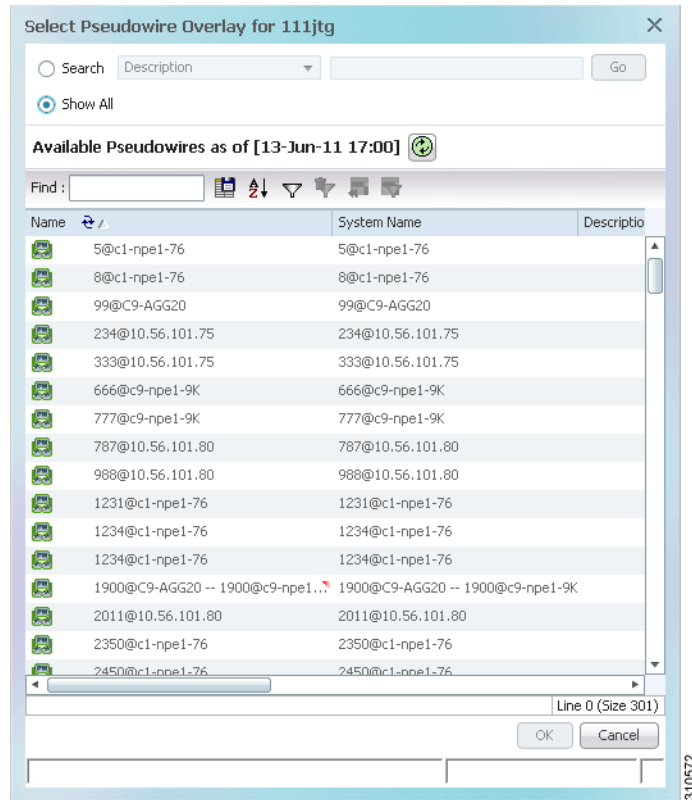
To apply an overlay:

- Step 1** In Prime Network Vision, choose the map in which you want to apply an overlay.
- Step 2** From the toolbar, choose **Choose Overlay Type** > *overlay-type* where *overlay-type* is one of the following options:

Overlay Option	Description
Ethernet Service	Applies an Ethernet service overlay to the map.
MPLS-TP Tunnel	Applies an MPLS-TP tunnel overlay to the map.
Network Clock	Applies a network clock overlay to the map.
None	Removes any existing overlays on the map.
Pseudowire	Applies a pseudowire overlay to the map.
VLAN	Applies a VLAN overlay to the map.
VPLS	Applies a VPLS instance overlay to the map.
VPN	Applies a VPN overlay to the map.

With the exception of the None option, a dialog box is displayed that allows you to select the specific overlay to apply.

Figure 4-9 shows an example of the Select Pseudowire Overlay dialog box.

Figure 4-9 Select Overlay Dialog Box

Each overlay type allows you to search for specific overlays. [Table 4-10](#) identifies the search fields available for each overlay type.

Table 4-10 Overlay Type Search Fields

Overlay Type	Search Fields
Ethernet Service	<ul style="list-style-type: none"> EVC Terminating EFPs Name System Name
MPLS-TP Tunnel	<ul style="list-style-type: none"> Description Name System Name
Network Clock	<ul style="list-style-type: none"> Name
Pseudowire	<ul style="list-style-type: none"> Description Is Multisegment Pseudowire Name Pseudowire Role Pseudowire Type System Name

Table 4-10 **Overlay Type Search Fields (continued)**

Overlay Type	Search Fields
VLAN	<ul style="list-style-type: none">• EFD Name• EFD System Name• ID• Name• System Name
VPLS	<ul style="list-style-type: none">• Name• System Defined Name• VPN ID
VPN	<ul style="list-style-type: none">• Description• Name

Step 3 In the Select Overlay dialog box, do either of the following:

- To search for specific overlays:
 - a. Choose **Search**.
 - b. In the Search field, choose a search category.
 - c. Enter a search string to narrow the display to a range of overlays or to a specific overlay. [Table 4-10](#) identifies the search categories available for each type of overlay.
 - d. Click **Go**.

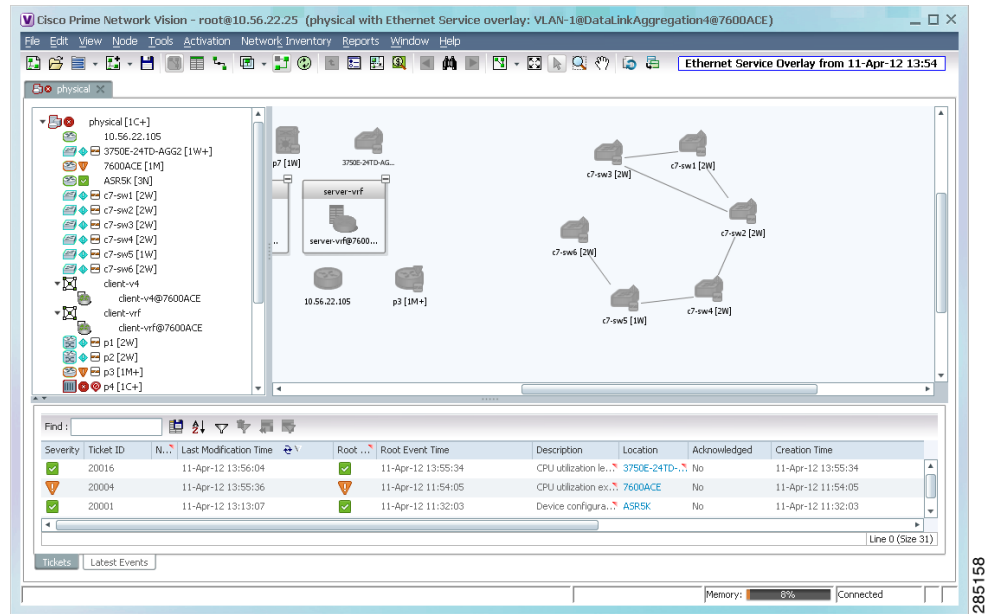
Search strings are case-insensitive. If you choose Name and enter **NET**, the overlays that contain “net” in their names are displayed. If you choose System Name and enter **System123**, only the overlay with the system named System123 is displayed.

- To view all available overlays, choose **Show All**.

The available overlays that meet the specified search criteria are displayed in the Select Overlay dialog box in table format. The dialog box also displays the date and time at which the list was generated. To update the list, click **Refresh**.

Step 4 Select the overlay that you want to apply to the map.

The elements and links that are used by the overlay are displayed in the map, and the overlay name and date are displayed in the toolbar, as shown in [Figure 4-10](#).

Figure 4-10 **Overlay Example****Note**

The overlay is a snapshot taken at a specific point in time and does not reflect changes that occur in the service. As a result, the information in an overlay can become stale. To update the overlay, click **Refresh Overlay** in the toolbar.

Hiding or Viewing an Overlay

When an overlay is applied to a map, the Show Overlay/Hide Overlay button becomes active in the toolbar.

To hide and view the overlay, click **Hide Overlay/Show Overlay** in the toolbar. The button toggles depending on whether the overlay is currently displayed or hidden.

Removing an Overlay

To remove an overlay, choose **Choose Overlay Type > None**. The overlay is removed from the map.

Filtering Links in a Map

The links filter enables you to filter the links displayed in the map view and the links view.

You can quickly select the types of links to be filtered by selecting from a predefined set of link types in the list, or by manually configuring a customized set of link types.

To filter links, do either of the following:

- Create a new map, select a filter, and then add the devices to the map. This filter is applied to the new map and only the required link types are visible in the map view and the links view. For more information, see [Filtering Links During Map Creation, page 4-38](#).
- Create a map and add the devices with all links enabled and visible in the map view and links view. You can then filter (display or hide) the different types of links as required. For more information, see [Filtering Links in an Existing Map, page 4-40](#).

The links filter applies to all aspects of Prime Network Vision: the map view, links view, ticket pane, severity calculation, and other items, such as memory consumption and thresholds. Prime Network Vision holds only the links that are relevant to the filter and synchronizes the links with the gateway according to that filter.

For more information about links in Prime Network Vision, see [Chapter 5, “Working with Links.”](#)

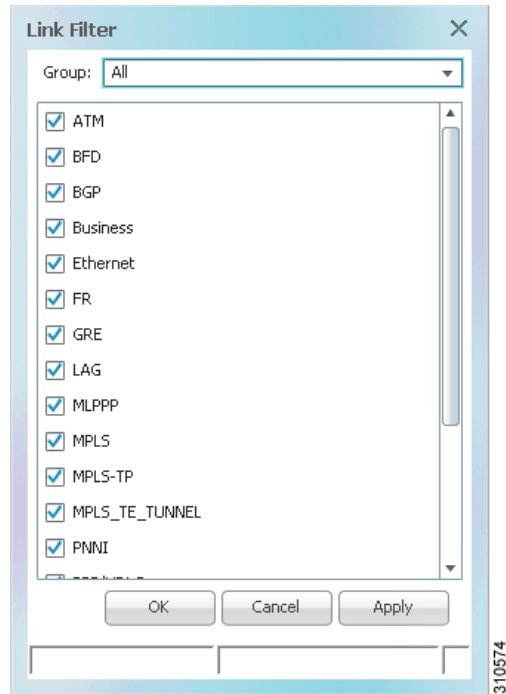
Filtering Links During Map Creation

To filter links while creating a map:

-
- Step 1** Open the Create Map dialog box using one of the following methods:
- Click **New Map** in the main toolbar.
 - Choose **File > New Map** from the main menu.

The Create Map dialog box is displayed. For more information, see [Creating a New Map, page 4-8](#).

- Step 2** Click **Advanced**. The Link Filter dialog box is displayed.

Figure 4-11 Link Filter Dialog Box

The Link Filter dialog box displays a list of all the types of links that you can filter in the map view and links view.



Note By default all link types are selected in the Link Filter dialog box. That is, all links are displayed in the map view and links view.

- Step 3** Select the required option from the Group drop-down list:
- **All**—All the links are displayed in the map view and links view.
 - **Custom**—Only the links defined for the customized filter are displayed in the map view and links view.
 - **Data Link**—The data link layer class of links (ATM and Frame Relay) is displayed in the map view and links view.
 - **None**—None of the links are displayed in the map view and links view.
 - **Physical**—Only the physical links are displayed in the map view and links view.
 - **VPN**—Only VPN-related links (GRE, Pseudowire, VPN, and VPN IPv6) are displayed in the map view and links view.



Note You can customize the Group drop-down list options by selecting an option and adding or removing the required link types. The next time the Link Filter dialog box is opened, the Custom option is displayed with the specified link types.

- Step 4** Check the check boxes for the links that you want to display in the map view and links view. Uncheck the check boxes for the links you do not want to display in the map view and links view.
- Step 5** Click **Apply** to apply the defined link filter settings and continue with more selections.

- Step 6** Click **OK** when you have completed your selections.
- Step 7** In the Create Map dialog box, enter a name for the new map and click **OK**. An empty new map is displayed in the navigation pane and content area, and the Link Filter Applied button is displayed in the to indicate that the links have been filtered.
- Step 8** Add the required elements to the map. For more information, see [Creating a New Map, page 4-8](#).
The links are displayed in the map view and links view according to your selections.
-

Filtering Links in an Existing Map

You can also create a map, add elements with all links enabled and visible in the map view and links view, and then filter (display or hide) the different types of links as required.

To filter links in an existing map:

- Step 1** Click **Link Filter** in the main toolbar.
- Step 2** In the Link Filter dialog box, uncheck the check boxes for the links that you do not want to display in the map view and links view.
- Step 3** Click **Apply** to apply the defined link filter settings and continue with more selections.
- Step 4** Click **OK** when you have completed your selections.
- The links are displayed in the map view and links view according to the defined filter, and the Link Filter Applied button is displayed in the to indicate that the links are filtered.
-

Opening the CPU Usage Graph

Prime Network Vision enables you to display memory and CPU usage information for a device or network element, including its history.

To open the CPU usage graph:

- Step 1** Right-click a network element in the navigation tree and choose **Tools > CPU Usage**.
The CPU Usage dialog box displays the following information:
- CPU Usage—The CPU usage rate as a percentage.
 - CPU Usage History—The CPU usage rate history is graphically displayed.
 - Memory Usage—The memory usage rate as a percentage.
 - Memory Usage History—The memory usage rate history is graphically displayed.
- Step 2** If desired, click **Save to CSV File** to export the displayed data. For more information, see [Exporting Tables to a File, page 2-55](#).
- Step 3** Click the upper right corner to close the CPU Usage dialog box.
-

Communicating with Devices Using Ping and Telnet

Prime Network Vision enables you to communicate with devices in the following ways:

- [Pinging a Device, page 4-41](#)
- [Telnetting a Device, page 4-41](#)

Pinging a Device

Prime Network Vision enables you to ping a device to verify that the device is responding.

The ping is performed from the client to the device, and not from the Prime Network Vision unit hosting the VNE to the device.

To ping a device, right-click a device in the navigation tree or map, and choose **Tools > Ping**.

The results are displayed in a new window.

Telnetting a Device

Prime Network Vision enables you to communicate with a device using the Telnet window.

The Telnet session is performed from the client to the device, and not from the Prime Network Vision unit hosting the VNE to the device.



Note

If you are using a Windows 7 system, you must enable the Windows Telnet Client before you can use the Prime Network Telnet option.

- For Windows 7 32-bit systems, enable the Windows Telnet Client to use the Prime Network Telnet option.

- For Windows 7 64-bit systems, a solution is available on the Cisco Developer Network at http://developer.cisco.com/web/prime-network/forums/-/message_boards/view_message/2780108/maximized?p_p_auth=jmRaG4QY.

To telnet a device:

- Step 1** Right-click a device in the navigation tree or map, and choose **Tools > Telnet**. A terminal window opens.
- Step 2** Log in and use the Telnet window as needed.

