CHAPTER 5

# Working with Topology Maps

The Cisco ANA Monitoring Perspective provides views that allow you to perform operations on a group of network elements. The topology map displays the status of the network elements and the connectivity between them. The topology map is used as a general dashboard to view the network elements, their status, the relationships between them, and the alarms that are raised on them.

You can create multiple topology maps to represent specific network views. Views can cover specific network segments, customer networks, or any other mix of network elements desired. Once the maps have been created, they are available for all connecting Cisco ANA clients.

The Cisco ANA Topology module allows you to:

- View network inventory and multilayer connectivity.
- Troubleshoot, monitor, and manage NEs.
- Model and view topology maps.
- Maintain up-to-date topological information of the network element connections and routes.
- Add business attachments.

Cisco ANA provides functionality for displaying and managing the topology maps by providing:

- Multiple concurrent maps per user.
- Easily customizable hierarchy of nested submaps and NE aggregations with easy navigation up and down the hierarchy.
- Dual views of the network in a hierarchical tree, as well as in topological maps, including all network connections.
- NEs and links using color cues and graphic symbols to indicate status and alarms.

The tasks that you can perform using Topology are described in these sections:

# Understanding the Topology User Interface

*Reviewers: Topology screen shots will be updated once the new icons are in the build (blue check mark for normal, and so forth).*

***Figure 5-1 Topology User Interface***

| | | | |
|---|---|---|---|
| **1** | Network Domain drawer. | **2** | Topology file menu. |
| **3** | Map filename. The asterisk (*) in the filename indicates that the map is not saved. | **4** | Aggregate node shown as a thumbnail. |
| **5** | Map workspace. | **6** | Topology local toolbar. |

| | | | |
|---|---|---|---|
| **7** | Monitoring perspective. | **8** | Aggregate node shown as an icon. |
| **9** | Topology views: Overview and Outline. | **10** | Topology views: Link, Active Tickets, and Network Elements. |
| **11** | View selection icon. | | |

**Related Topics**

- Roles Required for Managing Maps
- Understanding Static and Dynamic Links
- Managing Maps
- Managing the Network Elements in a Map

# Roles Required for Managing Maps

Table 5-1 lists the roles that are required for managing maps. For more information on roles, see Creating and Managing Users, Passwords, and Scopes, page 14-32.

*Table 5-1 Roles Required for Managing Maps*

| Task | Role Required |
|---|---|
| Creating a map | Configurator, Administrator |
| Creating static links | Configurator, Administrator |
| Opening a topology map | Viewer, Network Operator, Configurator, Administrator |
| Adding a network element to an existing map | Configurator, Administrator |
| Finding the network elements in a map | Viewer, Network Operator, Configurator, Administrator |
| Renaming a map | Configurator, Administrator |
| Deleting a network element from a map | Configurator, Administrator |
| Deleting a static link from a map | Configurator, Administrator |
| Deleting a map | Configurator, Administrator |
| Aggregating the network elements in a map | Configurator, Administrator |
| Renaming an aggregation node | Configurator, Administrator |
| Disaggregating the network elements in a map | Configurator, Administrator |
| Selecting a map layout | Network Operator, Configurator, Administrator |
| Filtering topology links | Configurator, Administrator |
| Viewing network element properties | Viewer, Network Operator, Configurator, Administrator |
| Viewing topology link properties | Viewer, Network Operator, Configurator, Administrator |

*Table 5-1 Roles Required for Managing Maps (continued)*

| Task | Role Required |
|---|---|
| Finding a ticket source | Viewer, Network Operator, Configurator, Administrator |
| Finding a link source | Viewer, Network Operator, Configurator, Administrator |

**Related Topics**

- Understanding Static and Dynamic Links
- Managing Maps
- Managing the Network Elements in a Map

# Understanding Static and Dynamic Links

The Cisco ANA Topology module enables you to manage the links between network elements and to add a new static link between them.

A dynamic link is a link that is detected by Cisco ANA and connected automatically. A static link is a link that you can manually create.

When adding a new link the state of the link reflects its current state. For example, if the operation status of a port is down, the link is colored red.

For information on creating static and dynamic links, see:

- Creating Static Links, page 5-6
- Creating a Map, page 5-5

# Managing Maps

These topics describe how to manage maps:

- Creating a Map, page 5-5
- Creating Static Links, page 5-6
- Opening a Topology Map, page 5-7
- Adding a Network Element to an Existing Map, page 5-9
- Finding the Network Elements in a Map, page 5-10
- Renaming a Map, page 5-11
- Saving a Map, page 5-11
- Deleting a Network Element from a Map, page 5-12
- Deleting a Static Link from a Map, page 5-13
- Deleting a Map, page 5-13

## Creating a Map

You must create a new map, or open a map that was previously saved, to display the network. The Cisco ANA Topology module supports the creation of multiple topology maps to represent specific network views. The topology maps provide a graphic display of Alarm severity, network element management state, and VNE state. See Network Element and Map Decorators, page G-2 to understand the network element icons that are displayed in the map.

You can create a new map, and then add the network elements to the map. You cannot define the same name for two or more maps.

To create a map:

**Step 1** In the Monitoring perspective, click the Task tab and select the **Topology** drawer.

**Step 2** Click **New Network Domain**. The Network Domain Name workspace is displayed.

**Step 3** Enter a name for the map.

You can use alphanumeric values. The minimum map name length is 1 character and the maximum is 65 characters. The only special characters you can enter are an underscore (_) and dollar symbol ($).

**Step 4** Select the required network elements using the Network Element Selector and click **Next**. (You can create a map without selecting any network elements. You can add the network elements after creating a map.)

You can add a maximum of 999 network elements to a map.

The list of network elements that you have selected is displayed in the Summary workspace.

**Step 5** Click **Finish**.

See Opening a Topology Map, page 5-7 for information on opening maps.

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**Related Topics**

- Roles Required for Managing Maps
- Understanding Static and Dynamic Links
- Opening a Topology Map
- Selecting a Map Layout
- Understanding Overview and Outline Views
- Managing Maps
- Managing the Network Elements in a Map
- Icon Reference

# Creating Static Links

When dynamic links are not visible in your topology map, you can create static links. You can create a static link between network elements by selecting the two end ports of the network elements. You can create a static link between two managed network elements. To create a static topological link, you have to select the exact location of the two end ports (at both ends of the link).

The new link is validated after the two ports are selected but before the link is added. The Cisco ANA Topology module validates the following:

- The similarity of the connector port types (for example, RJ45 on both sides).
- The Layer 2 technology type.
- The physical layer.
- The operation status of both ports.
- Whether one of the ports is part of another link.

To create a new static link:

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**Step 1** In the Monitoring perspective, click the Object tab and select an existing map. The map appears in the workspace.

**Step 2** Choose **Topology > Topology Map Management > New Static Link**. The Select A-Side and Z-Side Device workspace is displayed.

**Step 3** Select a network element in A-Side and Z-Side and click **Next**. The Select the Port in A-Side and Z-Side Device workspace is displayed.

**Step 4** Select a port in the A-side and Z-side and click **Next**. The Summary workspace is displayed with the network element and port details for A-side and Z-side.

**Step 5** Click **Finish**.

See Viewing Network Element Properties, page 5-22 and Viewing Topology Link Properties, page 5-23 for details on the element and link properties.

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**Related Topics**

- Roles Required for Managing Maps
- Creating a Map
- Opening a Topology Map
- Managing Maps
- Managing the Network Elements in a Map
- Icon Reference

# Opening a Topology Map

You can open a map that was previously saved. When you open the map, the network information is automatically refreshed. For example, if a network element was up the last time that the map was saved and closed, and then the network element is moved to maintenance state, the next time you open the map, the management status of the network element is updated accordingly and the network element is displayed in the maintenance state.

*Figure 5-2 Static and Dynamic Links*

| | | | |
|---|---|---|---|
| **1** | Outline view. See Understanding Overview and Outline Views, page 5-20 for more information on Outline view. | **2** | Map workspace. |
| **3** | Link view. | **4** | Detection Type column displays whether the link is dynamic link or static link. |

To open a topology map:

**Step 1** In the Monitoring perspective, click the Object tab.

The list of maps that are accessible to you is displayed in the Network Domain drawer.

**Step 2** Click a map. The map is displayed in the workspace.

If you have added a business tag to a network element, the business tag name is displayed instead of the network element name in the topology map. See Defining Business Tags, page 6-1 to create business tags.

The following color codes are used to display the map links:

- Green—Indicates the links are active. The links can be physical, data, or network links.
- Red—Indicates the links are down. You can review the Link view to troubleshoot the link.
- Blue—Indicates that the link has been selected.

If there are multiple links (for example, physical and Ethernet links) between network elements, these links are represented in a single line. The A and Z ends of the links are displayed in the topology maps. The details of these links are available in the Link view. See Viewing Topology Link Properties from the Link View, page 5-25 for details on links.

After discovering the network, if the interfaces are disconnected, the physical link is still visible between these interfaces. However, the alarm for Link Down connection is logged.

The topology map shows a different icon (a lock) for the network elements that are not within the scope of the user. See Creating and Managing Users, Passwords, and Scopes, page 14-32 for information on user access control.

To understand network elements representation, see Icon Reference, page G-1.

**Related Topics**

- Roles Required for Managing Maps
- Creating a Map
- Selecting a Map Layout
- Understanding Overview and Outline Views
- Managing Maps
- Managing the Network Elements in a Map
- Icon Reference

# Adding a Network Element to an Existing Map

To add a network element:

**Step 1** In the Monitoring perspective, click the Task tab and select the **Topology** drawer.

**Step 2** Click **Add Element to Network Domain**. The Select Network Domain workspace appears.

**Step 3** Select a map and click **Next**.

**Step 4** Select a network element from the Select Elements to Be Added workspace and click **Next**.

You can add a maximum of 999 network elements to a map.

The list of network elements that you have selected is displayed in the Summary workspace.

**Step 5** Click **Finish**.

**Related Topics**

- Roles Required for Managing Maps
- Creating a Map
- Opening a Topology Map
- Selecting a Map Layout
- Understanding Overview and Outline Views
- Managing Maps

# Finding the Network Elements in a Map

You can find the network elements based on the name or IP address that you entered in the Cisco ANA database.

To find a network element in a map:

**Step 1** In the Monitoring perspective, click the Object tab.

**Step 2** Select a map.

**Step 3** Choose **Topology > Topology Map Management > Find in Topology Map** from the menu. The Enter the Name of the Device dialog box appears.

You can enter either a complete or a partial NE name or IP address.

**Step 4** Enter the network element name and click **OK**.

The network element name that you have entered is highlighted in the map workspace. If your search criteria match more than one NE, you have to click **OK** multiple times to see all the NEs.

If the NE is inside an aggregate, the aggregate is expanded and the NE is highlighted.

**Related Topics**

- Roles Required for Managing Maps
- Creating a Map
- Opening a Topology Map
- Selecting a Map Layout
- Managing Maps
- Understanding Overview and Outline Views
- Managing the Network Elements in a Map
- Icon Reference

# Renaming a Map

A map name change affects all users of the map. The new name is displayed in the Network Domain drawer.

To rename a map:

**Step 1** In the Monitoring perspective, click the Object tab.

**Step 2** Select a map and right-click.

**Step 3** Select **Rename Network Domain**. The Rename Network Domain dialog box appears.

**Step 4** Enter the new name and click **OK**.

The new name is displayed in the Network Domain drawer.

**Related Topics**

- Roles Required for Managing Maps
- Creating a Map
- Opening a Topology Map
- Managing Maps
- Managing the Network Elements in a Map
- Icon Reference

# Saving a Map

You can save map layouts and change existing map layouts.

The following changes to the workspace are only saved when the Save option is selected:

- Addition or deletion of a network element.
- Addition or deletion of a link.
- Aggregation or disaggregation of elements.
- Renaming an aggregation.
- The location of the network elements on a map.
- The layout.
- Thumbnails.
- The size of the network elements.

The maps can then be opened later as required.

To save changes to a map, do one of the following:

- Go to **File > Save**. The map that is active in the map workspace is saved. (You can also use the short-cut key, CTL+S.)
- Go to **File > Save All**. All of the maps that are opened in the map workspace are saved.

**Related Topics**

- Roles Required for Managing Maps
- Creating a Map
- Opening a Topology Map
- Adding a Network Element to an Existing Map
- Selecting a Map Layout
- Managing Maps
- Understanding Overview and Outline Views
- Managing the Network Elements in a Map
- Icon Reference

# Deleting a Network Element from a Map

To delete a network element:

**Step 1** In the Monitoring perspective, click the Task tab and select the **Topology** drawer.

**Step 2** Click **Delete Element from Network Domain**. The Select Network Domain workspace appears.

**Step 3** Select a map and click **Next**.

**Step 4** Select a network element from the Select Elements to Be Deleted workspace and click **Next**.

The list of deleted network elements that you have selected is displayed in the Summary workspace.

**Step 5** Click **Finish**.

**Related Topics**

- Roles Required for Managing Maps

- Creating a Map
- Opening a Topology Map
- Adding a Network Element to an Existing Map
- Managing Maps
- Managing the Network Elements in a Map
- Icon Reference

# Deleting a Static Link from a Map

To delete a static link:

**Step 1** In the Monitoring perspective, click the Object tab.

The list of maps that are accessible to you is displayed in the Network Domain drawer.

**Step 2** Click the map. The map is displayed in the workspace.

**Step 3** Choose **Window > Show View > Links** to enable the Link view.

**Step 4** Select the link in the map workspace.

The link properties are displayed in the Link view.

**Step 5** Select the static link and right-click.

**Step 6** Select **Delete Static Link**.

The static link is deleted from the map workspace and also from the Link view.

**Related Topics**

- Roles Required for Managing Maps
- Creating a Map
- Opening a Topology Map
- Adding a Network Element to an Existing Map
- Creating Static Links
- Managing Maps
- Managing the Network Elements in a Map
- Icon Reference

# Deleting a Map

To delete a map:

**Step 1** In the Monitoring perspective, click the Object tab.

**Step 2** Select a map and right-click.

**Step 3** Select **Delete Network Domain**.

The map is deleted from the Network Domain drawer.

**Related Topics**

- Roles Required for Managing Maps
- Creating a Map
- Opening a Topology Map
- Managing Maps
- Managing the Network Elements in a Map
- Icon Reference

# Managing the Network Elements in a Map

These topics describe how to manage the network elements within a map:



## Aggregating the Network Elements in a Map

To aggregate the network elements in a map:

**Step 1** In the Monitoring perspective, click the Object tab.

**Step 2** Select a map. The network elements of the selected map are displayed in the map workspace.

**Step 3** Select the required network elements in the map workspace using <Ctrl> or the selection tool.

**Step 4** Choose **Topology > Topology Map Management > New Aggregation** from the menu. The New Aggregation dialog box appears.

**Step 5** Enter the name for the aggregation and click **OK**.

The aggregated node is displayed in the map workspace. Aggregated nodes are displayed as a single entity with the Aggregation icon. The aggregation node is appended with the alarm severity.

For example, the aggregation name SampleAggregation, appended with the alarm severity, results in the name SampleAggregation [5M+]. This indicates that the aggregation has five major severity alarms. The plus sign indicates that there are additional alarms of less severity associated with this aggregation.

See Network Element and Map Decorators, page G-2 for information on alarm severity icons.

**Related Topics**

- Roles Required for Managing Maps
- Creating a Map
- Opening a Topology Map
- Adding a Network Element to an Existing Map
- Saving a Map
- Selecting a Map Layout
- Managing Maps
- Understanding Overview and Outline Views
- Managing the Network Elements in a Map
- Icon Reference

# Renaming an Aggregation Node

To rename an aggregation node:

**Step 1** In the Monitoring perspective, click the Object tab.

**Step 2** Select a map. The network elements of the selected map are displayed in the map workspace.

**Step 3** Select the required aggregation node.

**Step 4** Select **Topology > Topology Map Management > Rename Aggregation** from the menu. The Rename Aggregate dialog box appears.

**Step 5** Enter the name for the aggregation and click **OK**.

The renamed aggregated node is displayed in the map workspace.

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**Related Topics**

- Roles Required for Managing Maps
- Creating a Map
- Saving a Map
- Managing Maps
- Selecting a Map Layout
- Managing the Network Elements in a Map
- Understanding Overview and Outline Views
- Icon Reference

# Disaggregating the Network Elements in a Map

To disaggregate an aggregation node:

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**Step 1** In the Monitoring perspective, click the Object tab.

**Step 2** Select a map. The network elements of the selected map are displayed in the map workspace.

**Step 3** Select the required aggregation node.

**Step 4** Choose **Topology > Topology Map Management > Disaggregate** from the menu. A confirmation dialog box appears.

**Step 5** Click **OK**. The disaggregated network elements are displayed in the map workspace.

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**Related Topics**

- Roles Required for Managing Maps
- Creating a Map
- Saving a Map
- Managing Maps
- Aggregating the Network Elements in a Map
- Understanding Overview and Outline Views
- Selecting a Map Layout
- Managing the Network Elements in a Map
- Icon Reference

# Selecting a Map Layout

A map contains network element names, icons, and decorators. You can select different map layouts and different map views of the network elements using the selection tools in the map workspace.

For information on network element decorators, see Network Element Icons, page G-1.

*Table 5-2 Topology Map Tool Buttons*

| Icon | Tooltip | Description |
|---|---|---|
|  | Layout | Defines the way in which the map is displayed in the map workspace; for example, Circular, Tree, Hierarchical, or Symmetric. |
|  | Zoom Selection | Activates the zoom selection mode, which enables you to select an area in the map workspace to be enlarged by clicking and dragging to view the selected area.<br>Use this tool when there are many network elements in the map and you want to view a particular network element name and decorators clearly. |
|  | Zoom In | Zooms in on the topology map.<br>This tool increases the visibility of the network element names and decorators in the map. The size cannot be increased beyond a certain scale. Cisco ANA supports graphical zoom and not textual zoom. |
|  | Zoom Out | Zooms out of the topology map.<br>This tool decreases the visibility of the network element names and decorators in the map. The size cannot be decreased beyond a certain scale. Cisco ANA supports graphical zoom and not textual zoom. |
|  | Normal Selection | Activates the normal selection mode. |
|  | Pan | Activates the Pan mode, which enables you to move around in the map workspace by clicking and dragging.<br>To deselect the Pan icon, click the Normal Selection icon. |
|  | Fit In Window | Fits the entire subnetwork or map in the map workspace. |
|  | Resize | Enables you to resize the NE in the map workspace. By default, the NE size is medium.<br>• Small—Reduces the size to 50% from the standard size.<br>• Medium—Displays the standard size.<br>• Large—Increases the size to 200% from the standard size. |
|  | New Aggregation | Enables you to aggregate network elements.<br>See Aggregating the Network Elements in a Map, page 5-14 for more details. |

*Table 5-2 Topology Map Tool Buttons (continued)*

| Icon | Tooltip | Description |
|---|---|---|
|  | Disaggregate | Enables you to disaggregate an aggregate node.<br>See Disaggregating the Network Elements in a Map, page 5-16 for more details. |
|  | Show Aggregation as Thumbnail | Enables you to look into an aggregation node in the map, including all of the aggregated elements. Thumbnails can also be nested. This is activated only if you select an aggregation node.<br>This tool displays the child map (aggregated node) in the context of the parent map. You can display the child map as the main display map by double-clicking anywhere inside the thumbnail bounding box region.<br>You can double-click anywhere in the map workspace to navigate to the parent map. You can also use the Go to Parent icon to navigate to the parent map. |
|  | Topology Map Filter | Enables you to filter the links.<br>See Filtering Topology Links, page 5-18 for more details. |
|  | Go to Parent | Enables you to navigate to the parent of the map. This is activated only if you have opened the child map (aggregated node) as the main display map.<br>Use this tool when you have multiple levels of aggregation and you want to navigate to the parent of the aggregation. |
|  | Go to Root | Enables you to navigate to the root of the map. This is activated only if you have opened the child map (aggregated node) as the main display map.<br>Use this tool when you have multiple levels of aggregation and you want to navigate to the root of the aggregation in a single click. |
|  | Find in Topology Map | Enables you to find the network elements in a topology map.<br>See Finding the Network Elements in a Map, page 5-10 for more details. |

**Related Topics**

- Roles Required for Managing Maps
- Managing Maps
- Managing the Network Elements in a Map
- Understanding Overview and Outline Views
- Icon Reference

# Filtering Topology Links

The links filter enables you to filter the links displayed in the map workspace.

To filter the topology links:

**Step 1** In the Monitoring perspective, click the Object tab.

**Step 2** Select a map. The network elements of the selected map are displayed in the map workspace.

**Step 3** Choose **Topology Map Filter** from the icons menu. The Map Options dialog box appears.

**Step 4** Select a map option from the drop-down list:

- All—Displays physical, data-link, and network layer links.
- Physical Layer—Displays physical layer and Ethernet links.
- Data-Link Layer—Displays PPP links.
- Network Layer—Displays MPLS and IP links.

**Step 5** Click **OK**.

The appropriate links are displayed in the map workspace. See Viewing Topology Link Properties, page 5-23 for more information on link properties.

### Related Topics

- Roles Required for Managing Maps
- Managing Maps
- Managing the Network Elements in a Map
- Selecting a Map Layout
- Understanding Overview and Outline Views
- Icon Reference

# Understanding Overview and Outline Views

When you open a topology map, the Overview and the Outline views are displayed automatically. See Figure 5-1Topology User Interface, page 5-2.

***Figure 5-3 Topology Overview View***

| | | | |
|---|---|---|---|
| **1** | Overview view. Select the blue outline to zoom in on the map. | **2** | Map workspace. The selected area in the Overview view is *zoomed in* in the workspace. |

The *Overview* view shows a scaled down version of the map that is displayed in the map workspace. The selected area in the Overview view is *zoomed in* on the map workspace. This feature is useful in navigating large maps.

*Figure 5-4 Topology Outline View*

| | | | |
|---|---|---|---|
| **1** | Outline view lists the network elements in the map. | **2** | Select in Map option is used to find a network element in the map. |

The *Outline* view shows all the network elements that are part of the selected map. The map name represents the node for all the network elements available in the map. From this view, you can:

- View the severity of the tickets. The map name and the network element are appended with the alarm severity.

  For example (see Figure 5-4):

  - The map name ANATopo, appended with the alarm severity, results in the name ANATopo [2M+]. This indicates the total number of highest severity alarms for this map. [2M+] indicates that there are two major severity alarms in the map. The plus sign indicates that there are additional alarms of less severity associated with this map.
  - The network element name 192.168.10.10, appended with the alarm severity, results in the name 192.168.10.10 [2M+]. This indicates that the network element has two major severity alarms. The plus sign indicates that there are additional alarms of less severity associated with this network element.

  See Network Element and Map Decorators, page G-2 for information on alarm severity icons.

- Find a network element in the map by right-clicking and selecting **Select in Map**. The selected network element is highlighted in the map workspace.

- View the network element property by clicking the NE. The network element property is opened in the Properties view. To enable the Properties view, choose **Window > Show View > Properties**.

  See Viewing Network Element Properties, page 3-4 for information on NE properties.
- View the network element properties in the Inventory perspective by clicking the NE.

  See Viewing the Network Element Inventory, page 3-3 for information on NE properties and inventory.

# Viewing Network Element Properties

The Network Elements view displays network element properties in the selected map. You can launch the following applications from this view:

- Launch Soft Property Builder. See Customizing Network Element Information Using Soft Property Builder, page A-1.
- Command Builder. See Managing and Deploying Configuration Changes, page 8-1.
- Set Network Element Management State. See Viewing Network Element Management States and Inventory, page 3-1.
- Network Element Image Management. See Managing Software Images, page 9-1.
- Business tag. See Defining Business Tags, page 6-1.
- Config Archive. See Archiving and Managing Configuration Files, page 7-1.

To view the network element properties in a map:

**Step 1** In the Monitoring perspective, click the Object tab.

The list of maps that are accessible to you is displayed in the Network Domain drawer.

**Step 2** Click the map. The map is displayed in the workspace.

**Step 3** Choose **Window > Show View > Network Elements** to enable the Network Elements view.

All the network elements that are available in the map are displayed in the Network Element view:

| Property | Description |
|---|---|
| Device Name | Element name provided by you while adding a VNE in Cisco ANA. |
| IP Address | Management IP address of the element. |
| System Name | System name taken from MIB II (RFC 1213). |
| Communication State | Displays whether the VNE can reach the network element it represents; the communication state can cause a change in the investigation state. There are two Communication states: reachable and unreachable.<br>See VNE States (Investigation and Communication States), page 2-17 for more information. |
| Investigation State | Displays the level of network element discovery that has been performed, or is being performed, by the VNE. The Investigation states are Unknown, Initializing, Modeling in progress, Normal, Preparing for maintenance, Maintenance, Sync in progress, Shutting down, Incomplete, and Unsupported.<br>See VNE States (Investigation and Communication States), page 2-17 for more information. |
| Category | Element category (Unknown, DSLAM, Switch, Router, and so on). |
| Element Type | Element type mapped by the registry based on the SNMP system OID. |
| Vendor | Vendor identity (Null, Alcatel, Cisco, Redback Networks, ECI Telecom, and so on). |
| Up Since | Time at which this network element became activated. |
| Location | Location taken from MIB II (RFC 1213). |

### Related Topics

- Roles Required for Managing Maps
- Managing Maps
- Managing the Network Elements in a Map
- Viewing Physical Inventory Properties
- Viewing Logical Inventory Properties
- Icon Reference

# Viewing Topology Link Properties

You can view the topology link properties in two ways:

- Viewing Topology Link Properties from the Map Workspace, page 5-23
- Viewing Topology Link Properties from the Link View, page 5-25

### Viewing Topology Link Properties from the Map Workspace

To view the topology link properties:

**Step 1** Select a link in the map workspace.

**Step 2** Right-click and choose **Properties**.

The Properties context menu is enabled only if there is a single link between NEs. If there are multiple links between NEs (for example, physical and Ethernet links) the Properties context menu is not enabled. The A and Z ends of the links are displayed in the topology maps. These links details are also available in the Link view. See Viewing Topology Link Properties from the Link View, page 5-25 for details on links.

The Link properties are displayed in the workspace:

| Property | Description |
|---|---|
| A End-Point | Displays the source of the topology link between network elements. |
| Z End-Point | Displays the destination of the topology link between network elements. |
| Link Type | Displays the link type: Physical layer, Ethernet, PPP, MPLS, or IP. |
| Detection Type | Displays whether the link is dynamic link or static link. |
| BiDirectional | Displays whether the link is a bidirectional link. The values can be either True or False. |

### Viewing Topology Link Properties from the Link View

To view the topology link properties:

**Step 1** In the Monitoring perspective, click the Object tab.

The list of maps that are accessible to you is displayed in the Network Domain drawer.

**Step 2** Click the map. The map is displayed in the workspace.

**Step 3** Go to **Window > Show View > Links** to enable the Link view.

All the links that are available in the map are displayed in the Link view:

| Property | Description |
|---|---|
| Severity | Displays a severity icon, which is colored according to the severity of the alarm on the link. This indicates the impact of the alarm on the network.<br>• Red: Critical<br>• Orange: Major<br>• Yellow: Minor<br>• Sky Blue: Warning<br>• Green: Cleared, normal or OK<br>• Dark Blue: Information<br>• White: Indeterminate<br>See Tracking Faults, page 12-1 for more details on alarms. |
| A End-Point | Displays the source of the topology link between network elements. |
| Z End-Point | Displays the destination of the topology link between network elements. |
| Link Type | Displays the link type: Physical layer, Ethernet, PPP, MPLS, or IP. |
| Detection Type | Displays whether the link is dynamic link or static link. |
| BiDirectional | Displays whether the link is a bidirectional link. The values can be either True or False. |

**Related Topics**

- Roles Required for Managing Maps
- Managing Maps
- Managing the Network Elements in a Map
- Icon Reference

# Finding a Ticket Source

You can find the source of a ticket displayed in the Active Tickets view. See Tracking Faults, page 12-1 for more details on alarms.

**Step 1** Go to **Window > Show View > Active Tickets** to enable the Active Tickets view.

**Step 2** In the Monitoring perspective, click the Object tab.

**Step 3** Select a map. All the tickets that are applicable to the selected map are displayed in the Active Tickets view.

**Step 4** Select a ticket in the Active Tickets view.

**Step 5** Right-click and choose **Find Source**. The source of the ticket is highlighted in the map workspace.

### Related Topics

- Roles Required for Managing Maps
- Managing Maps
- Managing the Network Elements in a Map
- Icon Reference

# Finding a Link Source

To find a link source:

**Step 1** Go to **Window > Show View > Links** to enable the Link view.

**Step 2** In the Monitoring perspective, click the Object tab.

**Step 3** Select a map. All the links that are applicable to the selected map are displayed in the Links view.

**Step 4** Select a link in the Links view.

**Step 5** Right-click and choose **Find Link Source**. The source of the ticket is highlighted in the map workspace.

### Related Topics

- Roles Required for Managing Maps
- Managing Maps
- Managing the Network Elements in a Map
- Selecting a Map Layout
- Icon Reference