Visualizing the Topology

Visualization Overview

The visualization phase allows you to see how the nodes interact in terms of routing protocol connectivity, autonomous system (AS) numbers, Open Shortest Path First (OSPF) area, and so on. Before entering the visualization phase, you must have designed the topology and built the node configurations.

Note Visualization is only available where node configurations are generated using parameters defined in AutoNetkit.

The AutoNetkit visualization runs in a browser window, either within the Cisco Modeling Labs client or in a separate browser window. Ensure that you use a compatible browser, as described in the *Cisco Modeling Labs Installation Guides* for the version of Cisco Modeling Labs that you are using.

The following figure shows an overview of the visualization phase as it appears in a browser window.

Figure 1: Visualization Overview

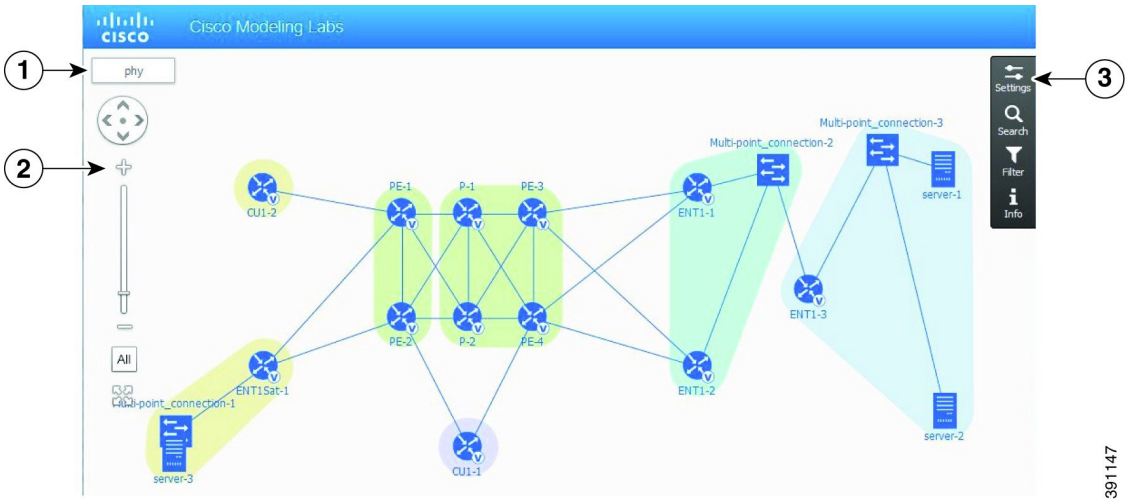
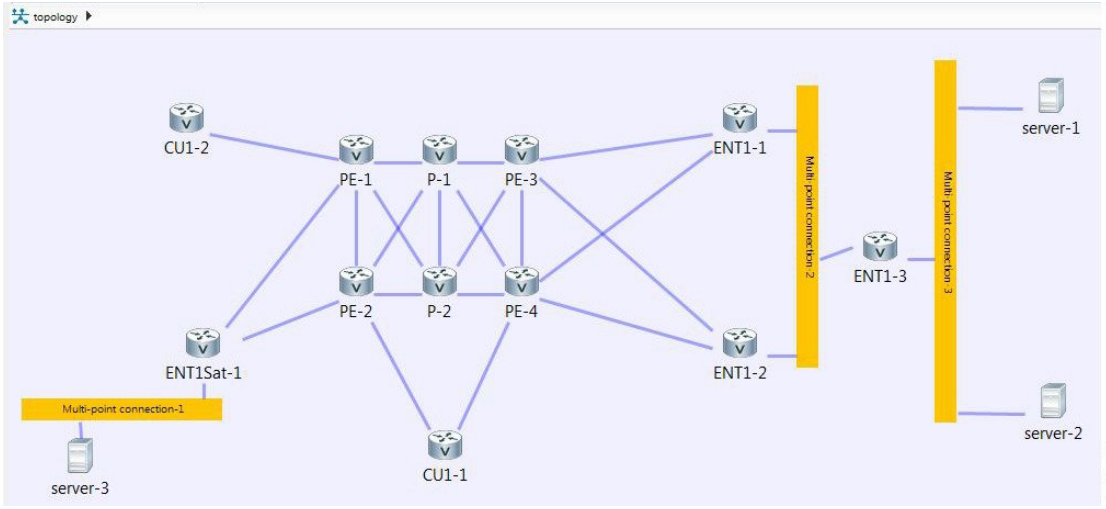


Table 1: Visualization Overview

Identifier	Description
1	Layers view selection. The layers shown correspond to the values selected when generating the configuration. For example, if IGP is chosen as OSPF, an OSPF layer will be shown. If MPLS is not used in the configuration, no MPLS layer will be shown.
2	Pan and zoom controls. Use the controls to pan the topology, zoom in and out on the topology, adjust the display so that all the nodes are shown, and switch to a full-screen view.
3	Settings, search, and filter controls. Use the settings control to change the appearance of the display. Use the search and filter controls to highlight specific nodes and connections.

The following figure shows how the visualization compares to the topology design.

Figure 2: Topology Design



During the visualization phase, you perform the tasks described in the following sections.

Enabling AutoNetkit Visualization (for Windows Users)

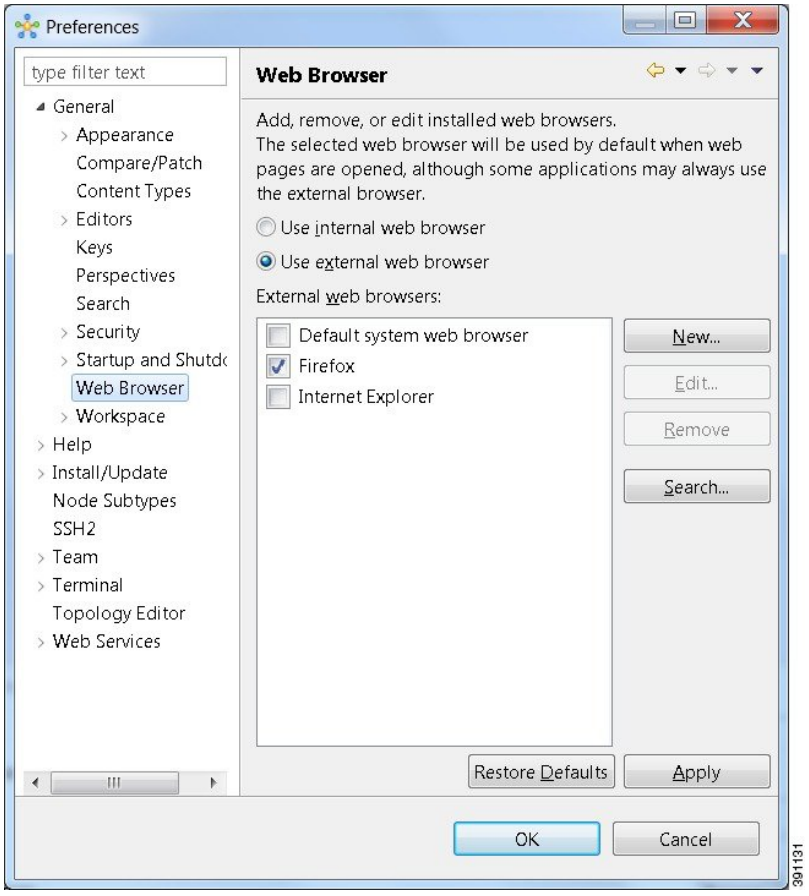
To enable visualization for the Cisco Modeling Labs client on Windows, complete the tasks described in this section.

Before You Begin

- Ensure that you have access to the Cisco Modeling Labs client.

Step 1 From the Cisco Modeling Labs client toolbar, choose **File** > **Preferences** > **General** > **Web Browser**.
The Web Browser Preferences dialog box appears.

Figure 3: Web Browser Preferences



Step 2 Click the **Use external web browser** radio button.

Note On Windows, only Mozilla Firefox, Google Chrome, or Apple Safari are supported as default web browsers. Internet Explorer is not supported for AutoNetkit Visualization.

Step 3 In the **External web browsers** pane, check the **Firefox** check box.

Step 4 Click **Apply** and **OK**.

Step 5 Choose **Preferences** > **Web Services** > **AutoNetkit Visualization**.

Step 6 Under **Open AutoNetkit Visualization**, select the **Always** option.

Step 7 Click **Apply** and **OK**.

If the Firefox executable cannot be found, you will need to edit the path to find it (*firefox.exe*).

a) To do this, in the **External web browsers** pane (Step 3), select **Firefox** and click **Edit**.

b) Click **Browse** to navigate to the corresponding location and choose the Firefox executable.

c) Click **OK** to save the changes.

Opening AutoNetkit Visualization

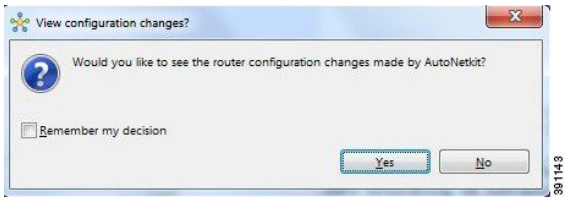
Before You Begin

Complete the task of building nodes and interfaces.

Step 1 Generate a configuration for the topology.
Click **Update Router Configurations** from the toolbar. Alternatively, from the menu bar, choose **Run** > **Update Router Configurations**.

Step 2 View the configuration changes.
AutoNetkit displays a notification after it generates the configuration.

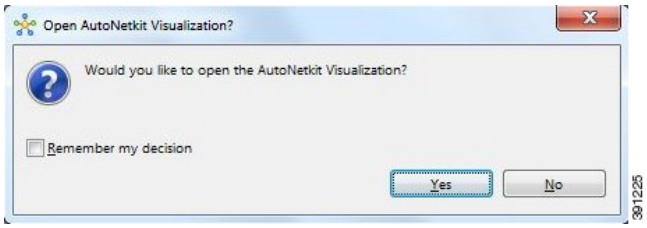
Figure 4: View Configuration Change Notification



- Click **No** to skip this step.
- Click **Yes** to open a comparison view of the configuration changes.

Step 3 Display the AutoNetkit Visualization view of the topology.
When you close the comparison view, a notification prompts you whether or not to open the AutoNetkit Visualization.

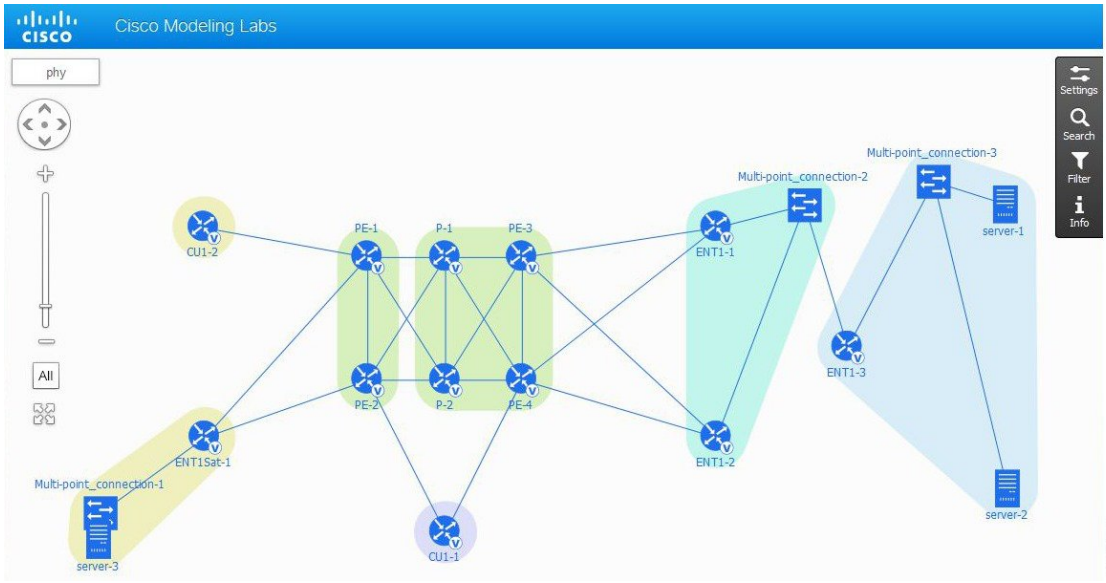
Figure 5: Open AutoNetkit Visualization



- Click **No** to skip this step.
- Click **Yes** to display the visualization.
  The AutoNetkit Visualization opens in a browser window.

Note Choose **File** > **Preferences** > **Web Services** > **AutoNetkit Visualization** to control the prompts for visualization.

Figure 6: AutoNetkit Visualization Window



What to Do Next

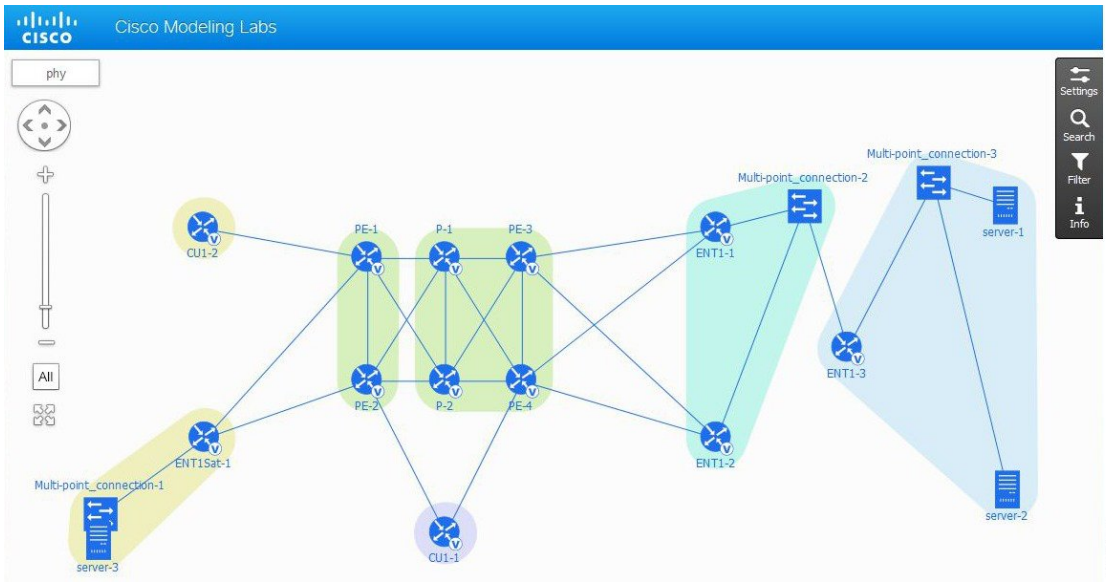
Explore the features in AutoNetkit Visualization.

Using Layers

Step 1 Verify if visualization is open in a browser window.

The initial layer that is displayed in the browser window is the physical model of the topology, as shown in the following figure. The physical model shows the nodes and interface connections between the nodes. It is similar to the Cisco Modeling Labs topology view.

Figure 7: Physical Layer View

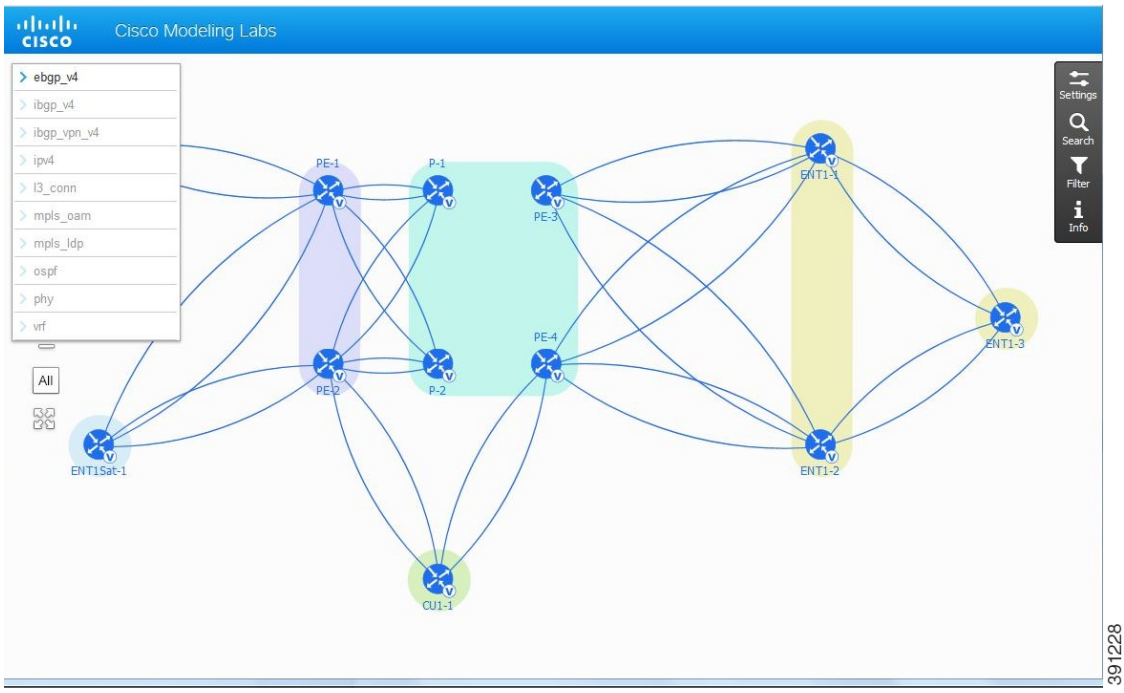


Note The options change depending on the router protocols configured. For example, if IPv6 is configured, you will also see **ebgp_v6**

Step 2 To select another view, place the cursor over the **Layers** view selection in the browser window. See Visualization Overview, on page 1 for information on the **Layers** view selection.

When you place the cursor over the layers view, several choices appear. For example, selecting **ebgp_v4** will show the IPv4 eBGP topology. This is constructed based on the AS property and node connections created in the **Topology Editor**, as shown in the following figure.

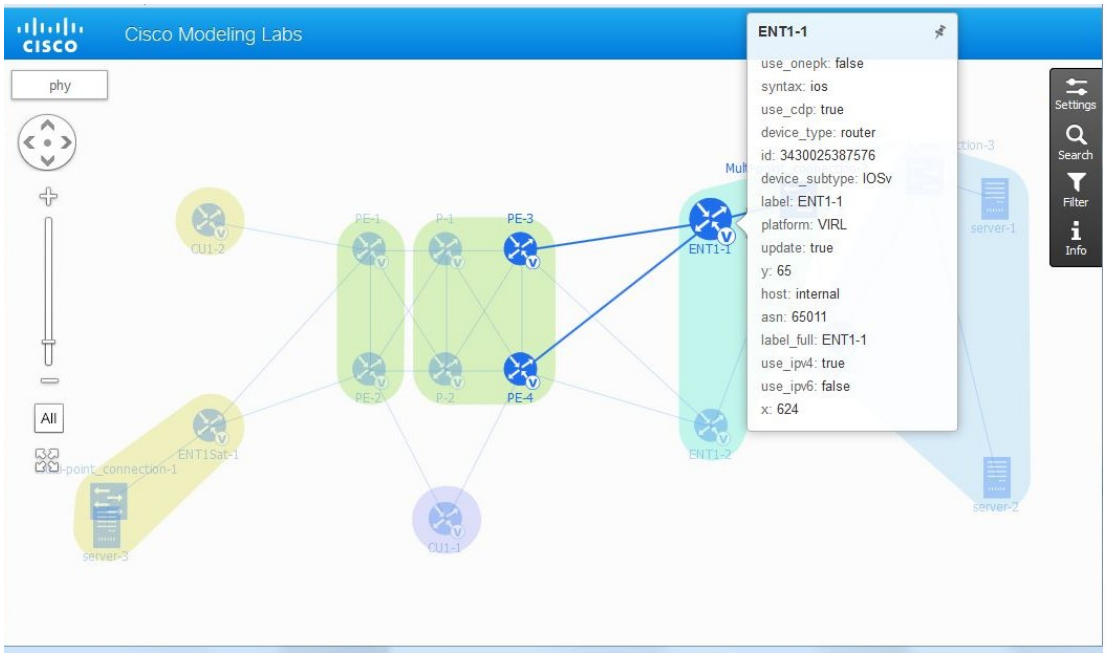
Figure 8: ebgp_v4 Layers View



Step 3 Place the cursor over one of the nodes.
This action displays a pop-up view of information about that node. The type of information displayed depends on the selected layer and node configuration.

Note You can also hover over the connections to see connection details.

Figure 9: Node Pop-Up Information



Step 4 Continue selecting layer views and observe how the protocol-centric view changes. In a complex topology, you can use the **Layers** views to verify that the protocols, nodes, and connections meet the design requirements.

What to Do Next

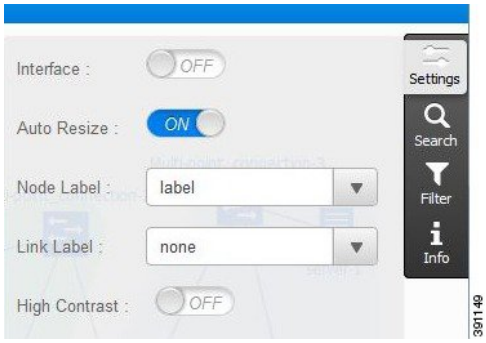
- (Optional) Change settings, use the Search feature, or use the Filter feature.
- (Optional) Return to the design and build phases to modify the topology and generate new configurations and AutoNetkit Visualizations.
- (Optional) Run the topology simulation when you are satisfied with your configuration.

Changing the Settings

Step 1 In the AutoNetkit Visualization browser window, click **Settings**.

The Settings window opens, as shown in the following figure.

Figure 10: AutoNetkit Visualization Settings Window



The following table lists the main settings.

Table 2: Main Settings

Setting	Description
Interface	Select **ON** to display the interface connection points. The default value is **OFF**.
Auto Resize	Select **OFF** to not resize the visualization automatically. The default value is **ON**.
Node Label	Select a value from the drop-down list. The default value is **label**, which is the node name. This node name is configured in Cisco Modeling Labs for each node.
Link Label	Select a value from the drop-down list. The default value is **none**.
High Contrast	Select **ON** to change the visualization display to a high-contract color scheme. The default value is **OFF**.

Step 2 Observe the changes in the display when you select different settings.

Step 3 To close the **Settings** view, click the Settings tab.

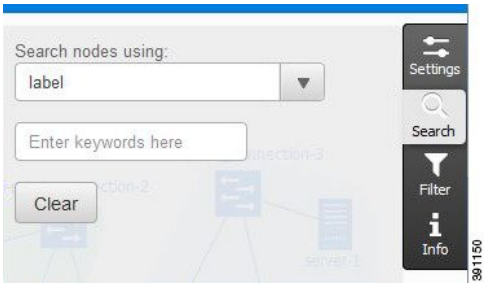
What to Do Next

- (Optional) Change settings, use the Search feature, or use the Filter feature.
- (Optional) Return to the design and build phases to modify the topology and generate new configurations and AutoNetkit Visualizations.
- (Optional) Run the topology simulation.

Using Search

Step 1 In the AutoNetkit Visualization browser window, click **Search**.
The **Search** window opens.

Figure 11: AutoNetkit Visualization Search Window



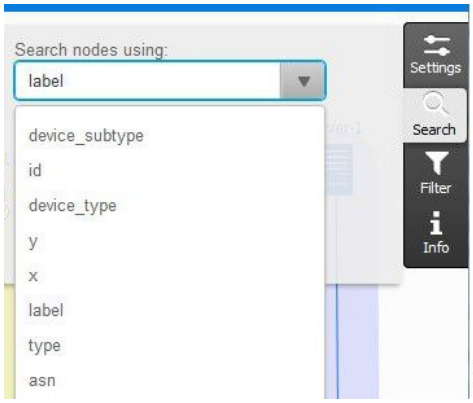
The **Search** window contains the main options that are listed in the following table.

Table 3: Search Window Main Options

Option	Description
Search nodes using	Selects a search attribute from the drop-down list. The default value is **label**.
Enter keywords here	Identifies keywords based on the attribute selected in the **Search nodes using** drop-down list. Keywords are case-sensitive. Wildcard selections are not supported. For example, searching **asn** with the keyword **65*** does not modify the display, even if ASN values of 65000 and 65001 exist in the topology configuration. Partial matches are not supported for numeric node values. Partial matches are supported in alphanumeric fields. For example, selecting **label** and entering the keyword **P** matches all the node labels that begin with a capital P or have a capital P anywhere in the label.
Clear	Clears the keywords.

The following figure shows the values you can select from the **Search nodes using** drop-down list.

Figure 12: Search Window Drop-Down List



Step 2 Observe the visualization and how the different items are highlighted when they match the combination of **Search nodes using** and **keywords** that you enter.

Step 3 To close the **Search** window, click the **Search** tab.

What to Do Next

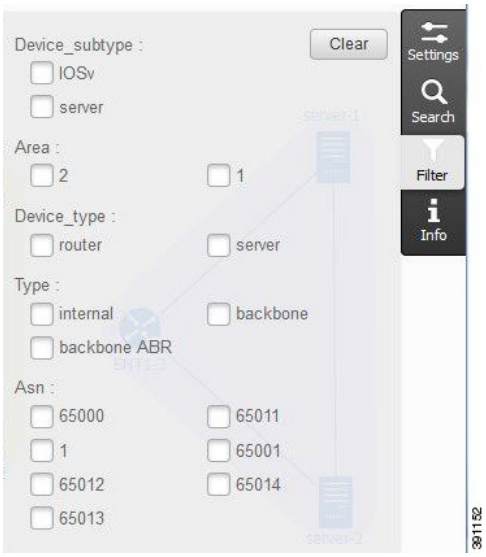
- (Optional) Change settings, use the Search feature, or use the Filter feature.
- (Optional) Return to the design and build phases to modify the topology and generate new configurations and AutoNetkit Visualizations.
- (Optional) Run the topology simulation.

Using Filters

Step 1 In the AutoNetkit Visualization browser window, click **Filter**.

The **Search** window opens.

Figure 13: AutoNetkit Visualization Filter Window



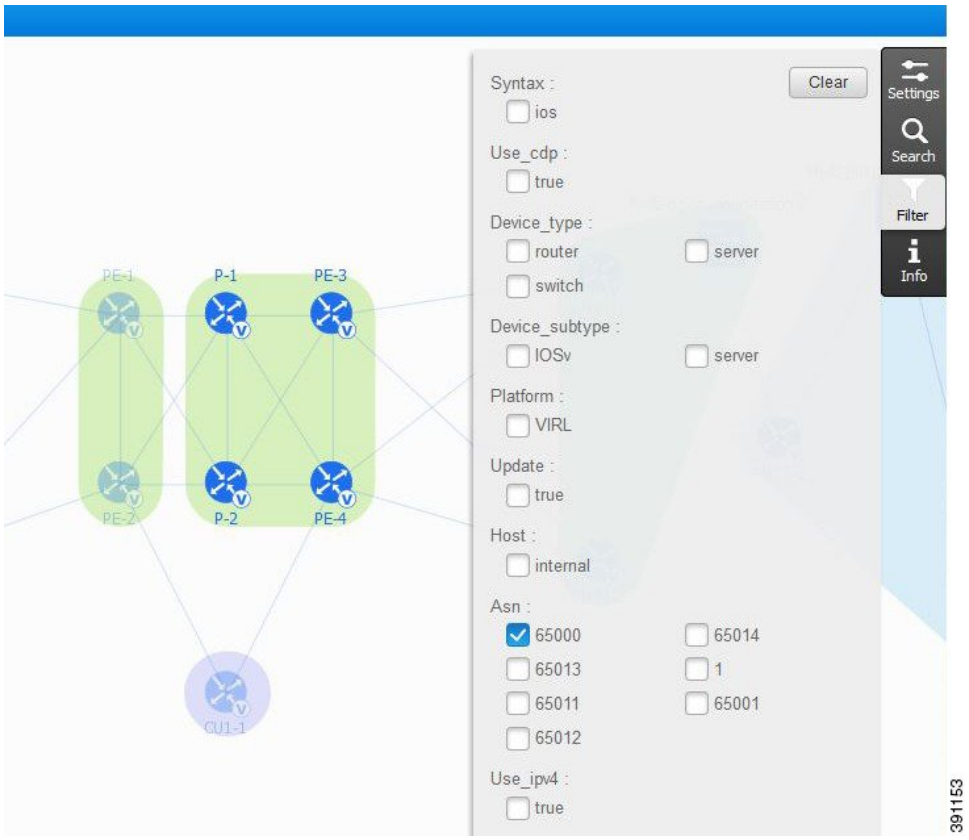
The **Filter** window contains the main options that are listed in the following table.

Table 4: Filter Window Main Options

Option	Description
Clear	Clears all the checked selections.
Selections	The selections that are available for filtering depend on the topology configuration. Values that do not exist in the topology configuration do not appear in the selection window. **Note** You can further drill down or expand your search using the parameters **OR** within a keyword and **AND** between keywords.

For example, if your configuration contains multiple AS values, you can filter the display to show only AS values that match 65000.

Figure 14: Filter AS Value 65000



Step 2 To close the Filter window, click the **Filter** tab.

What to Do Next

- (Optional) Change settings, use the Search feature, or use the Filter feature.
- (Optional) Return to the design and build phases to modify the topology and generate new configurations and AutoNetkit Visualizations.
- (Optional) Run the topology simulation.