Set Up and Monitor Your Network View

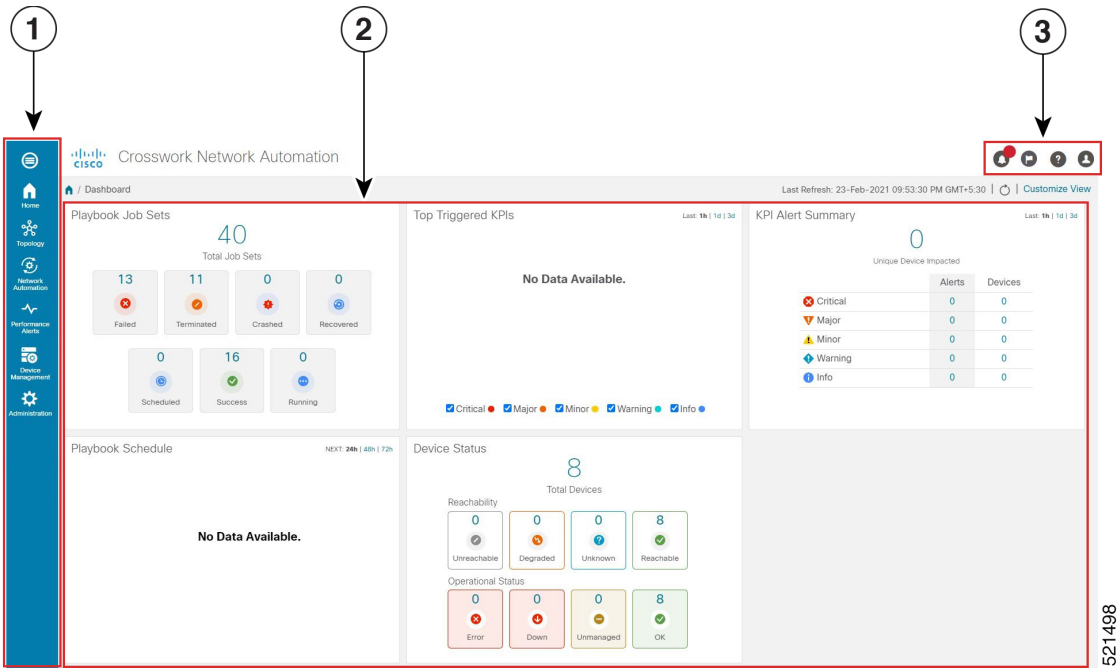
Familiarize yourself with the UI and set up your network view. This section contains the following topics:

- Get a Quick View in the Dashboard, on page 1
- View Devices and Links on the Topology Map, on page 3
- Use Device Groups to Filter Your Topology View, on page 8
- Customize Map Display Settings, on page 13
- Save Topology Views for Easy Access, on page 13

Get a Quick View in the Dashboard

The Home page displays a customizable collection of dashlets which provide an at-a-glance operational summary of the network being managed, including reachability and operational status of devices. The Dashboard is made of a series of dashlets, and each dashlet represents different types of data belonging to the same category.

Figure 1: Crosswork Home page



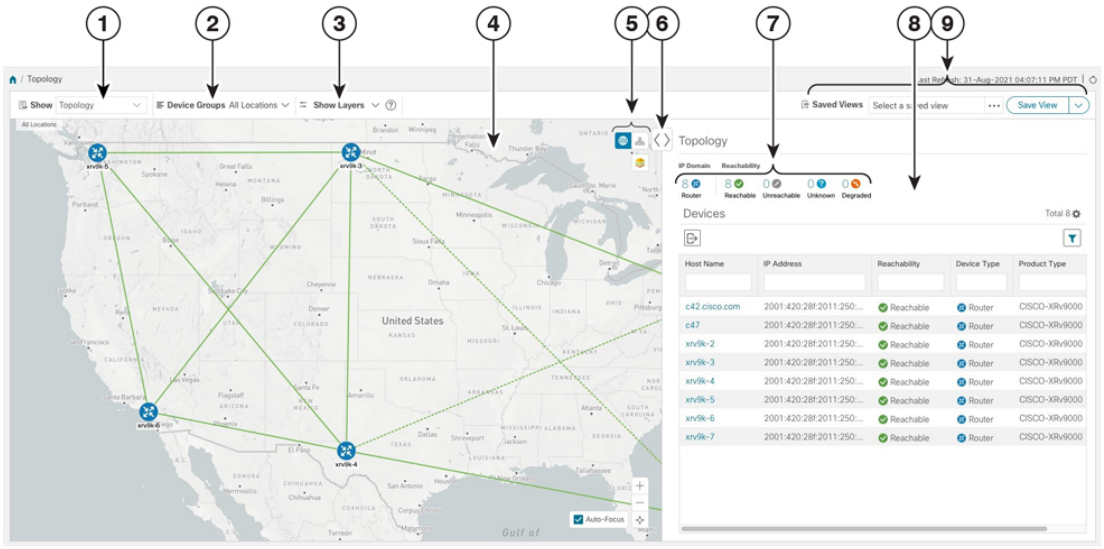
Callout No.	Description
1	**Main Menu**: The main menu allows you to navigate to installed Cisco Crosswork applications and device management and administrative tasks. Menu options may look slightly different depending on what Cisco Crosswork applications are installed.
2	**Dashlets**: Information varies depending on what Cisco Crosswork applications are installed. • To drill down for more information within a dashlet, click on a value. A window appears displaying only the filtered data you clicked on. • To add or change the layout of dashlets, click **Customize View**. Move the dashlets to your desired layout and click **Save**.
3	Settings icons: The **Alerts** icon notifies you of any current error conditions related to the system operations which require attention, and provides a link to detailed information about those conditions. The **Events** icon notifies you of new events related to system operation, and also provides access to the history of all system events. The **About** icon displays the current version of the Cisco Crosswork product. The **User Account** icon lets you view your username, change your password, and log out.

View Devices and Links on the Topology Map

To view the network topology map, from the main menu choose **Topology**.

For more information, see View Device and Link Details, on page 5.

Figure 2: Cisco Crosswork UI and Topology Map



Callout No.	Description
1	**Topology Map View**: From the **Show** drop-down list, click the option that displays the data that you would like to see on the map. If **Topology** is selected, devices and links in the network are displayed.
2	**Device Groups**: From the drop-down list, click the group of devices you want displayed on the map. All other device groups will be hidden.
3	**Show Hide**: From the drop-down list, click the network layers you want displayed on the map. All devices and links that belong to the selected layers are then displayed. By default, all layers are displayed.

Callout No.	Description
4	**Topology Map**: The network topology can be displayed on a logical map or a geographical map, where the devices and links are shown in their geographic context. From the map, you can drill down to get detailed information about devices and links. **Devices:** • To view a device configuration summary, hover the mouse cursor over the device icon. A pop up window displaying the host name, state, node ID, and device type appears. • To view device details, click on the device icon. • If devices are in close physical proximity, the geographical map shows them as a cluster. The number in a blue circle () indicates the number of devices in the cluster. Displaying devices in this manner helps prevent overlap and clutter on the map. **Links:** • A solid line indicates a *single link* between two devices. If there is more than one link between two devices, or between a device and a cluster of devices, the line is shown dashed instead. A dashed line indicates an *aggregated* link that represents more than one link, or the use of multiple protocols (for example, IPv4 and IPv6) on the same physical link. • A and Z indicates headend and endpoint, respectively. • To view link information details, click on the link. **Note** Although aggregated, dual stack links show as one single line.
5	 : The logical map shows devices and their links, positioned according to an automatic layout algorithm, ignoring their geographical location. You can change the layout algorithm.  : The geographical map shows single devices, device clusters, links, and tunnels, superimposed on a map of the world. Each device location on the map reflects the device's GPS coordinates (longitude and latitude) as defined in the device inventory.  : The Display Preferences window allows you to change display settings for devices, links, and utilization..
6	**Expand/Collapse/Hide Side Panel**: Expand or collapse the contents of the side panel. Close the side panel to get a larger view of the topology map.

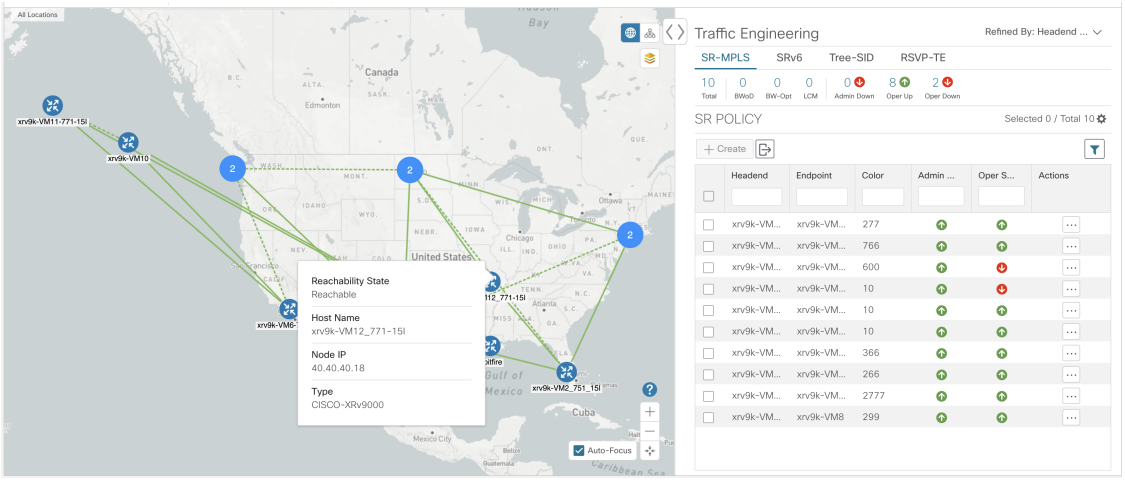
Callout No.	Description
7	The **Mini Dashboard** provides a summary of the IP Domain and device reachability status. If filters are applied, the **Mini Dashboard** is updated to reflect what is displayed in the Devices table. **Note** If the Alarm Status feature is enabled, you will also see Alarm information here. To view the Alarm Status, you must install the Common EMS Services application and configure host information for Syslog and SNMP traps on the devices you want to view alarms for. For more information, see the *Cisco Crosswork Infrastructure and Applications Installation Guide* and the *Cisco Crosswork Infrastructure and Applications Administration Guide*. The Alarm Status feature is available for select licensing packages.
8	The content of this window changes depending on what **Show** is set to for the Topology Map and if you have selected to view more information on a device or link.
9	**Saved Custom Map Views**: Lets you create a named custom view using the settings and layout for your current map, settings of the tables saved in the saved views, or display a custom view you have created previously.

View Device and Link Details

This example shows how you can view device and link details using the topology map.

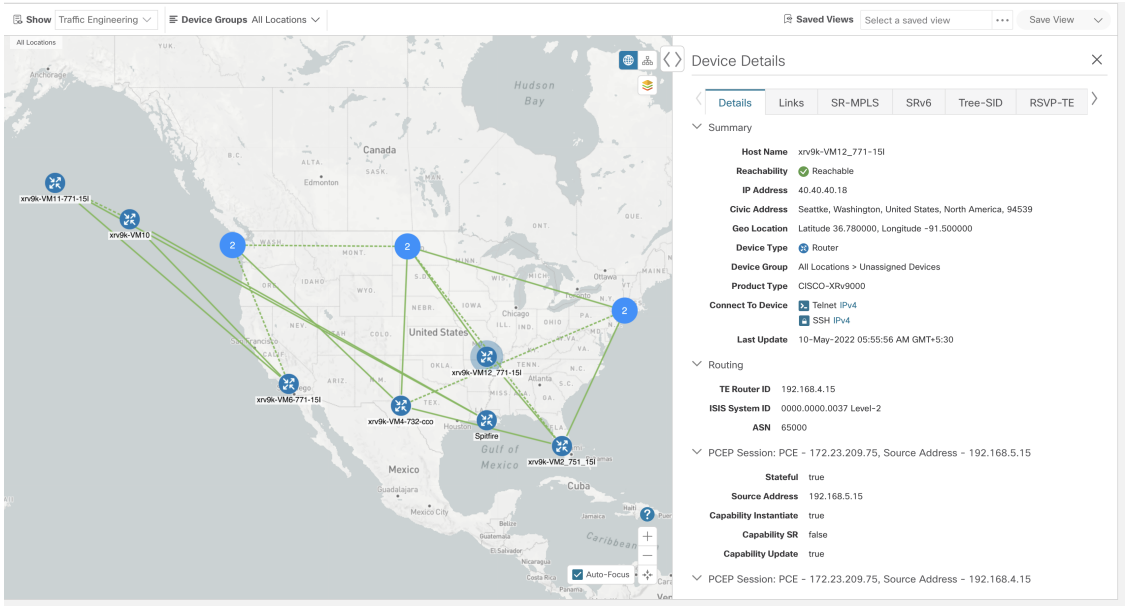
Step 1 From the main menu choose **Topology**.

Step 2 To quickly view the host name, reachability state, IP address and type of device, hover the mouse over the device icon.



Step 3 To view more device details, click on the device icon.

a) The following examples show the Device details from the Topology map.



Note If the Alarm Status feature is enabled, you will also see Alarm information here. To view the Alarm Status, you must install the Common EMS Services application and configure host information for Syslog and SNMP traps on the devices you want to view alarms for. For more information, see the *Cisco Crosswork Infrastructure and Applications Installation Guide* and the *Cisco Crosswork Infrastructure and Applications Administration Guide*. The Alarm Status feature is available for select licensing packages.

In a multiple IGP setup, you can also view all the IGP, IS-IS, and OSPF processes in the Routing details. See the following examples:

Figure 3: Multiple IGP: OSPF Processes

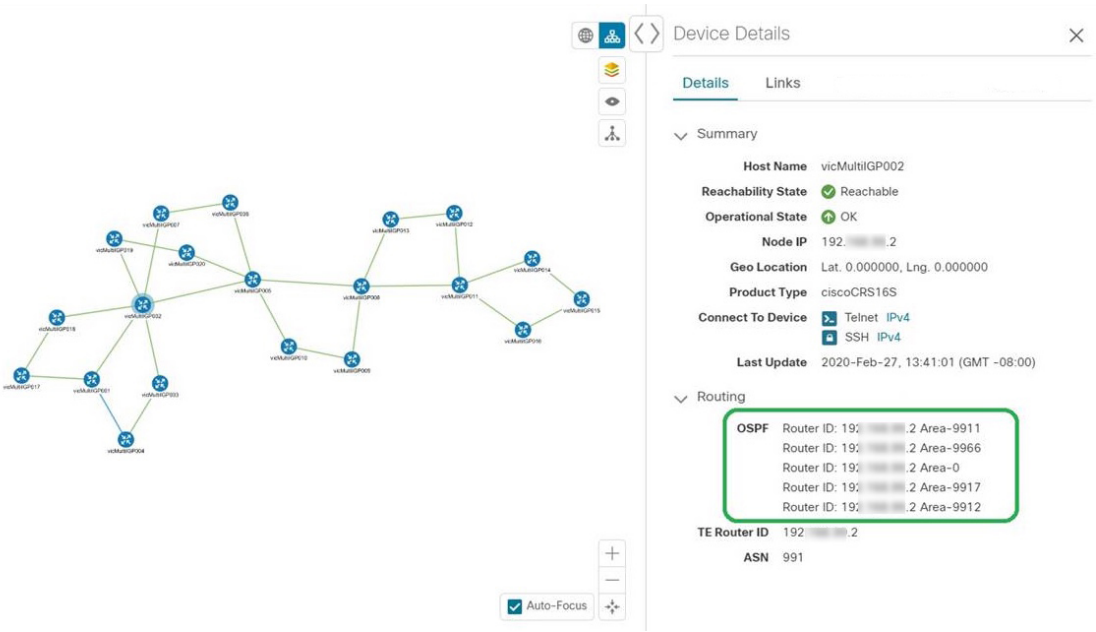


Figure 4: Multiple IGP: ISIS Processes

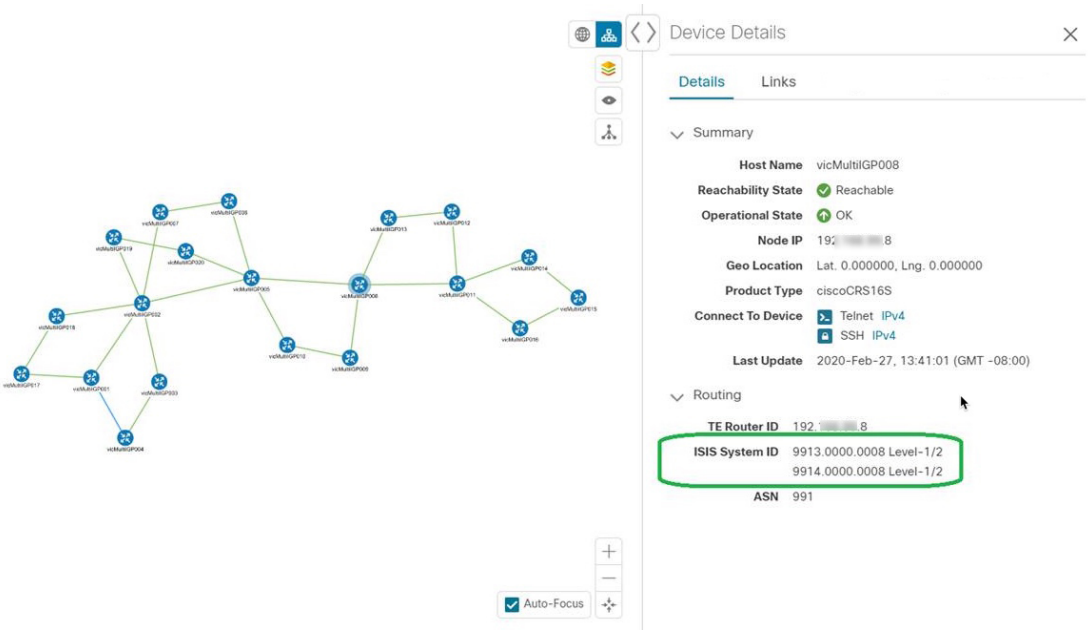
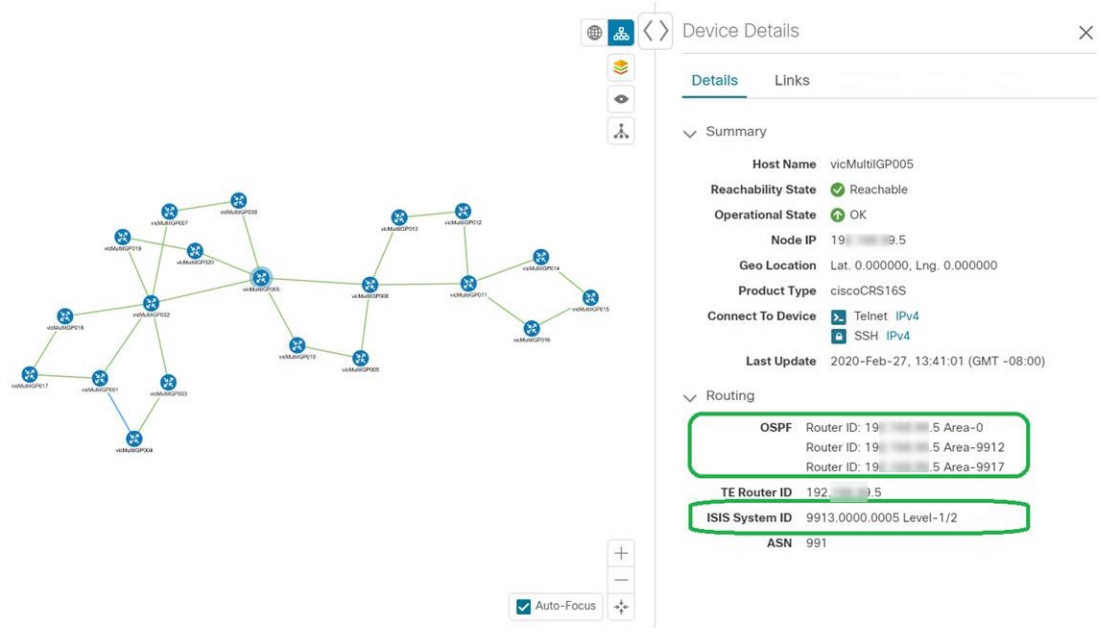
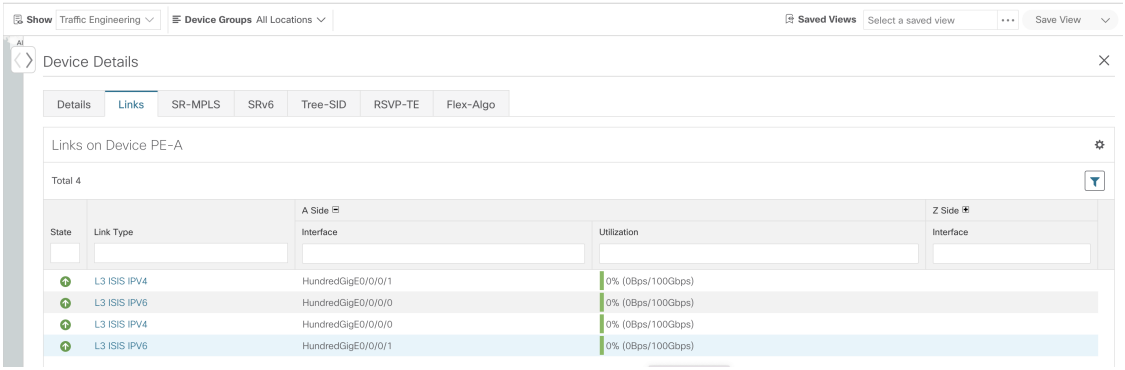


Figure 5: Multiple IGP: OSPF and ISIS Processes



Step 4 To view links on the device, click the **Links** tab and expand the right panel to see all the link details.



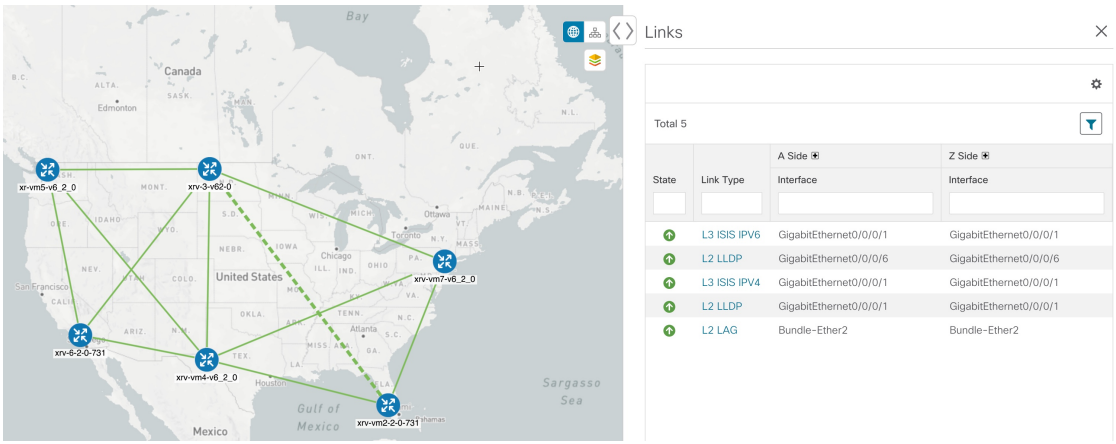
Step 5 To view the utilization, expand **A side**or **Z side**.

The utilization shown on ipv4 and ipv6 links represents the aggregate traffic on the interface or sub-interface, not specific to each address family.The utilization shown on sub-interface links represents the bandwidth utilization on the main interface of the sub-interface's traffic.

Step 6 Collapse the side panel and close the **Device Details** window.

Step 7 Click on a dashed line. A dashed line indicates an aggregated link that represents more than one link.

Note Dual stack links (although aggregate) are shown as one single line.



Use Device Groups to Filter Your Topology View

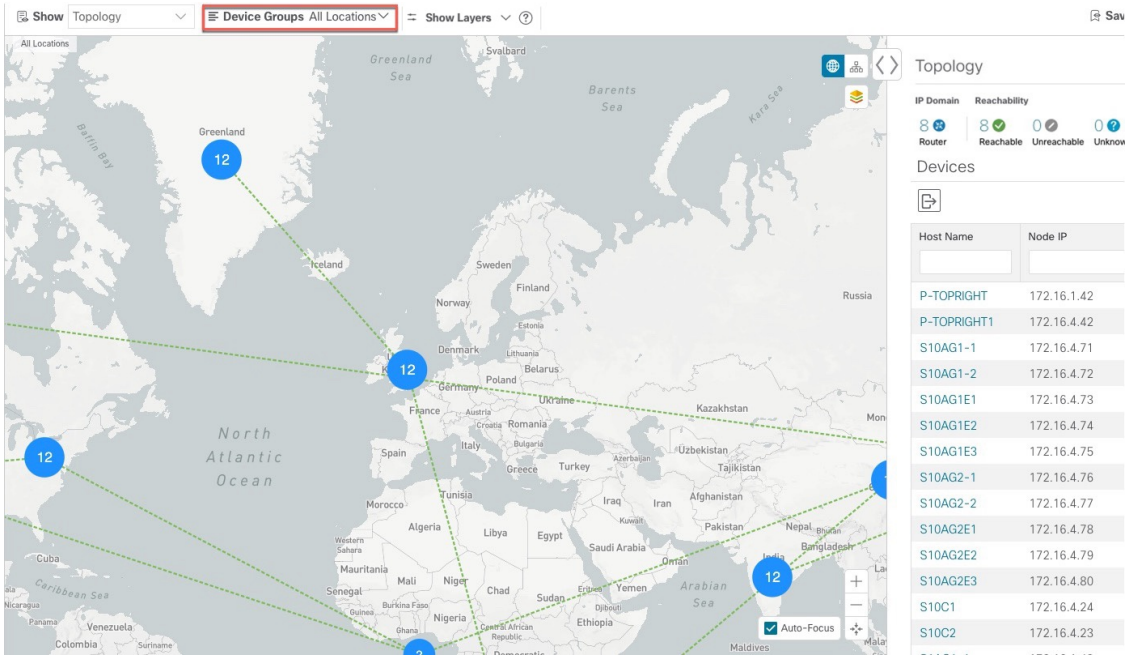
To help you identify, find, and group devices for a variety of purposes, you can create Device Groups. The Device Group window (**Device Management** > **Groups**) displays all devices and the device groups to which they belong. By default, all devices initially appear in the **Unassigned Devices** group.

To demonstrate the grouping and filtering functions, we have built an environment with devices distributed globally. You can sub-group the devices based on regions. For this example, we have a sub-group called **US West**.

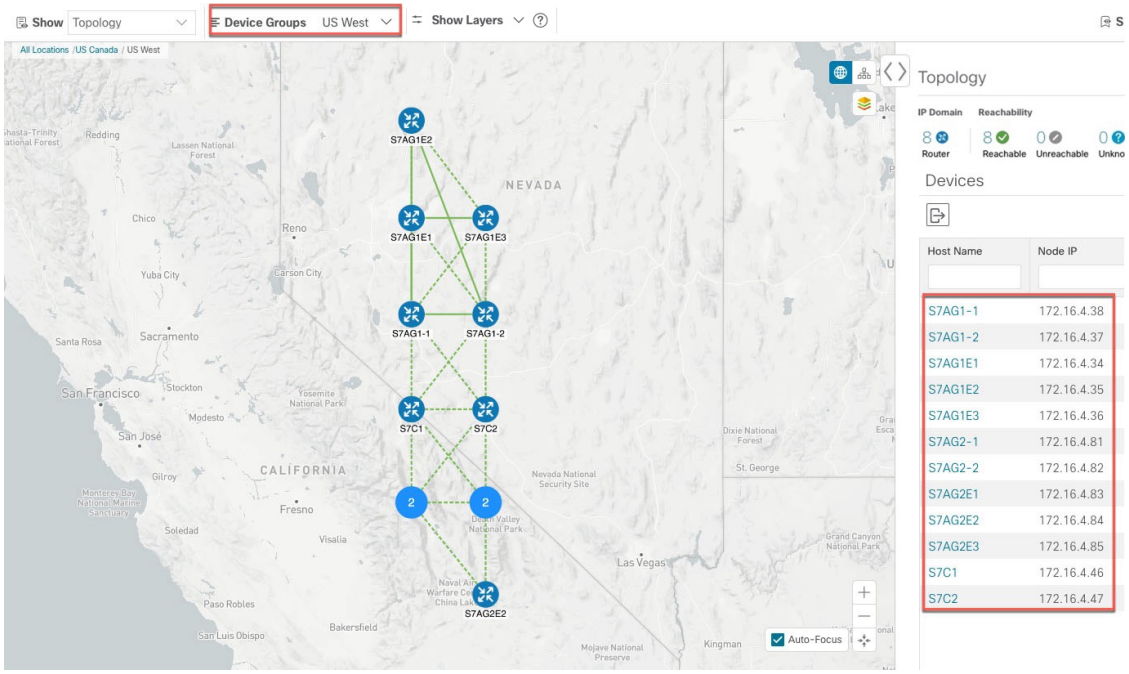
Step 1 View devices on the geographical map:

a) From the main menu, choose **Topology**.

Note Devices without a geo-location appear in the **Devices** table only. To display these devices on the map, provide their geographical coordinates in the **Geo Location** column.



b) From the **Device Group** drop-down list, select a group (US West). Only the devices in that group and related links are displayed on the geographical map. The Devices table has also been filtered to list only those devices in the group.

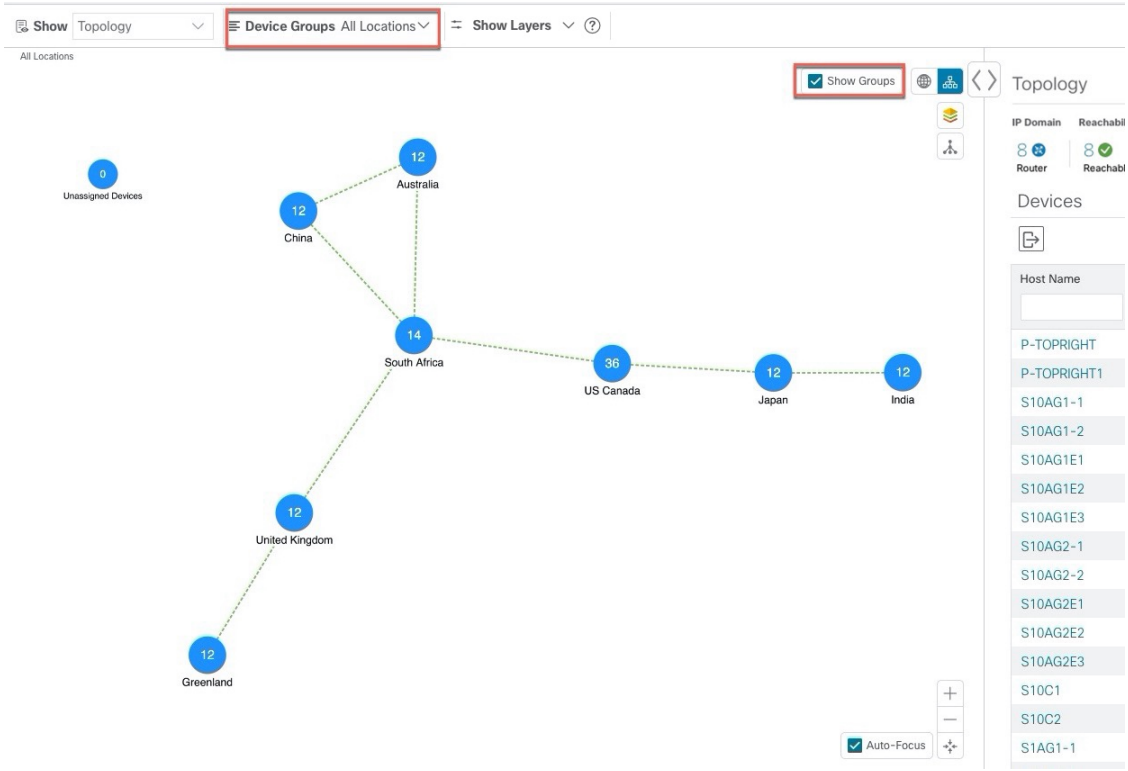


Step 2 View devices on the logical map:

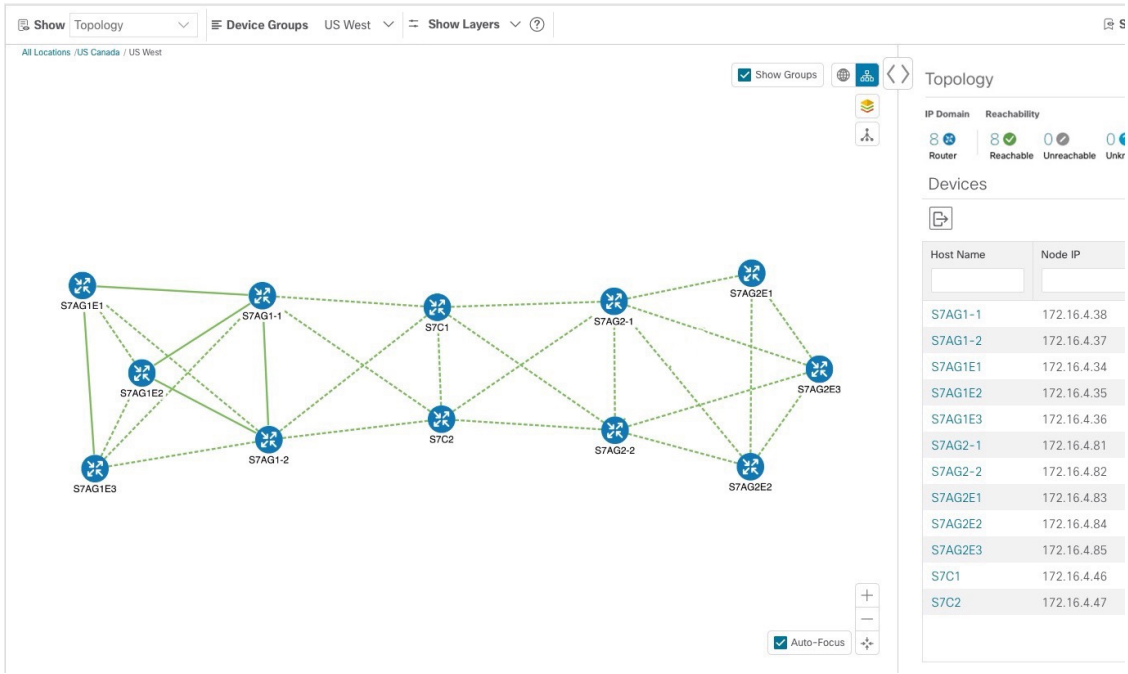
a) From the main menu, choose **Topology**.

b) Click .

c) From the **Device Group** drop-down list, select **All Locations** and check **Show Groups** if it is not already checked. You can see all device groups in this view. Device groups can be seen in this way only within the logical map.

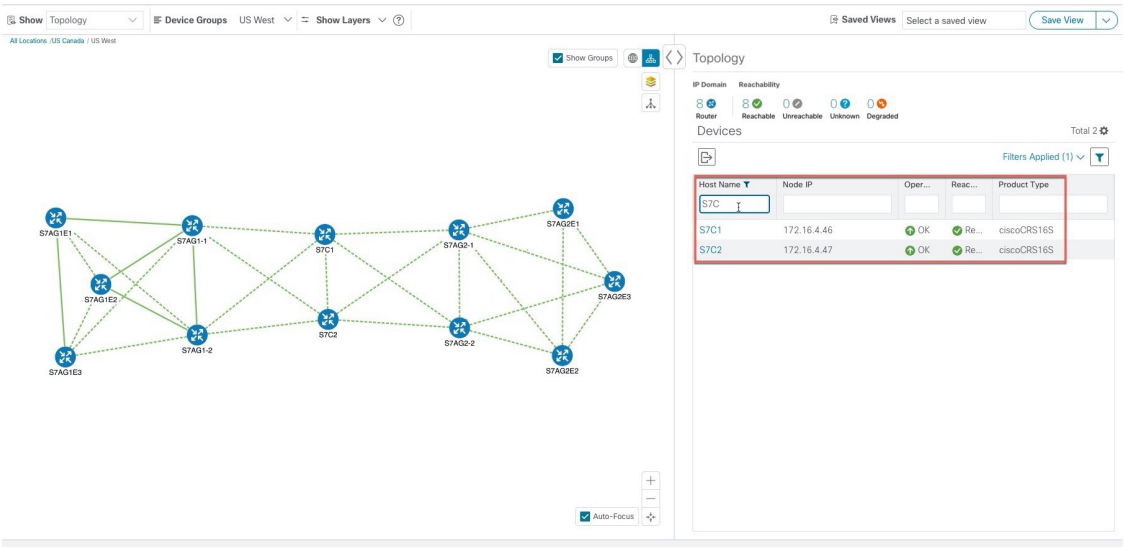


d) From the **Device Group** drop-down list, select a group (US West). Devices that belong to this group are shown in the topology map and the **Devices** table.



e) Filter devices in the Device table by entering the partial host name or IP address in the text box (for example, **S7C** is entered in the **Host Name** text box for the current configuration). The Device table displays only devices that match the filtering criteria. However, filtering the Device table does not filter the devices visually on the topology map. To visually filter devices on the geographical or logical maps is to use device groups.

Note You can also double click on the device in the list to recenter the selected device on the geographical or logical maps.



Create and Modify Device Groups

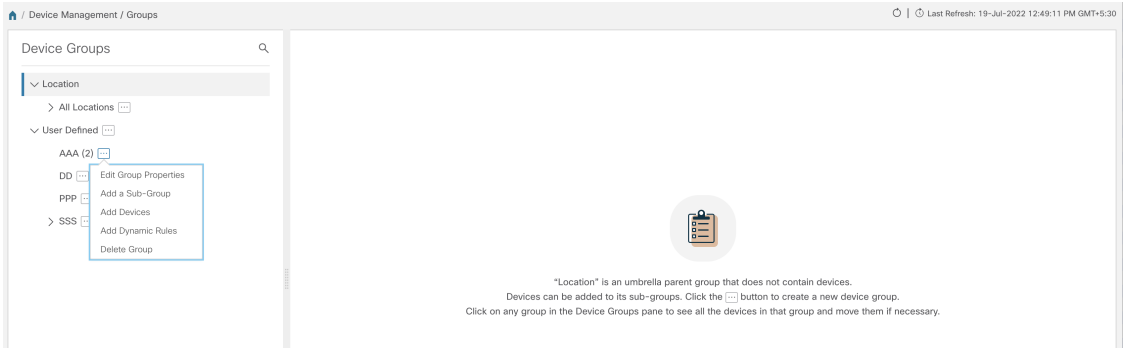
Device groups and assignment of devices to the groups can be done either manually (as described in this section) or automatically (as described in the next section).

Step 1 From the main menu choose **Device Management** > **Groups**.

Step 2 To add a new sub-group, click … next to **All Locations**.
A new sub-group gets added under **All Locations**.

Step 3 To add a device to a group, from the right-pane, under **Unassigned Devices**, select a device and then from the **Move to Group**drop-down, select the appropriate group.

Step 4 To edit, delete, or add a sub-group under an existing group, from the Device Groups tree, click … next to a group.



Step 5 Choose to add, delete, or edit (rename or move) a group. If you delete a group, all devices that belong to that group are moved to the Unassigned Devices group. Also, deleting a group deletes all the sub-groups under it.

Note Devices can belong to only one device group.

Step 6 Click **Save**.

Enable Dynamic Device Grouping

You can create a rule to dynamically create device groups and automatically add unassigned devices to these groups using a Regular Expression (regex) on the device hostname. Any newly added or discovered devices that match the rule will be placed in the appropriate group.

Note Dynamic rules do not apply to devices that already belong to groups. You must move them to Unassigned Devices if you want them to be considered by the rule.

Before you begin

While you can follow examples given in the Dynamic Groups dialog, it is helpful to be familiar with Regular Expressions.

Step 1 From the main menu choose **Device Management** > **Groups**.

Step 2 Click next to **All Locations > Manage Dynamic Grouping Rule**.

Step 3 Click **Show more details and examples** to help you fill out the required Host Name and Group Name fields.

Step 4 If there are any existing devices in the Unassigned Devices group, click **Test Rule** to view a sampling of what type of group names will be created.

Step 5 Turn the **Enable Rule** toggle ON to enable the rule. After the rule is enabled, the system checks for unassigned devices every minute and will assign them to the appropriate group based on the rule.

Step 6 Click **Save**.

Step 7 Groups that are created this way initially appear under Unassigned Groups (created when a rule is enabled for the first time). Move newly created groups to the desired group hierarchy.

Step 8 To move newly created Unassigned groups to the correct group, do the following:

a) Click  next to All Locations and click **Add a Sub-Group**.
b) Enter the New Group details and click **Create**.
c) Click on the unassigned devices from the left pane.
d) From the right pane, select the devices you want to move and click **Move to Group** to move to an appropriate group.

Customize Map Display Settings

You can configure visual settings on the topology map based on your needs and preferences. You can do the following:

- Customize the Display of Links and Devices, on page 13

Customize the Display of Links and Devices

To set device and link map display preferences, choose **Topology** and click  on the topology map.

- Click **Links** to show aggregated links and how links should be colored so that you can easily see their state and utilization status. By default, aggregated links will be differentiated from single links on the map and links will be colored based on link utilization thresholds. Administrators can change the utilization thresholds and their corresponding colors.
- Click **Devices** to show the device state and how the devices should be labeled. By default, the device state is shown on the map and the host name is used to label devices.

Save Topology Views for Easy Access

When you rearrange the devices and links on a map, your changes are not normally saved. To easily access a useful map layout, you can save it as a named custom view and quickly retrieve it, without having to rearrange the map each time. This is especially useful when managing large networks with many devices.

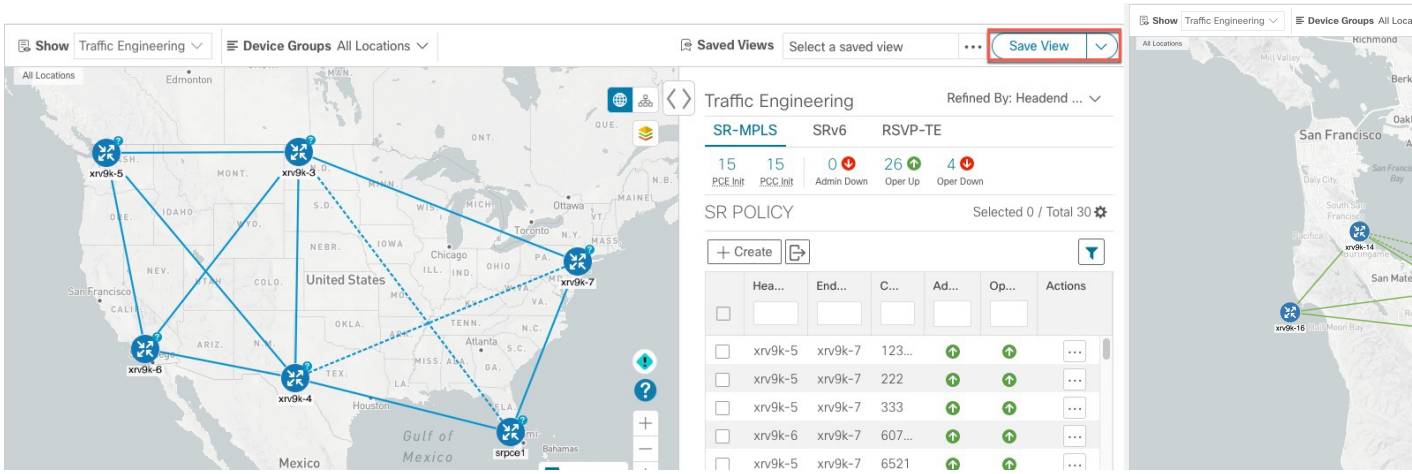
When you save a custom view, the following settings will be saved:

- Whether it is a geographical or logical map.
- Device positions in the logical map layout.
- Device and link display settings

Note All custom views can be seen by all users. However, only users with the admin role or users that created the custom view can modify the view.

Step 1 Customize the current map view until it contains only the information you want and until the layout meets your needs.

Step 2 When you have the view the way you want it, click **Save View**.



Step 3 Enter a unique name for the new custom view and click **Save**. You can later modify the view (click **Select a saved view**) and choose to edit the topology, rename, or delete the view.