



Views

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Chapter



1

Introduction to Classic Maps (Views)

Overview

A **View** is a graphical representation of a group of devices. The **[Views]** tab (Maps > Classic Views) allows you to view, edit, and create maps and relationships between devices and virtual infrastructure. In SL1, views are organized by device group, organization, device category, component maps, Layer-2 topology, CDP topology, LLDP topology, Layer-3 topology, or Virtual Infrastructure (VMware and virtual machines). You can also create your own maps with your most important devices, and add images, text, links, and shapes to customize your maps.

Use the following menu options to navigate the SL1 user interface:

- To view a pop-out list of menu options, click the menu icon (.
- To view a page containing all of the menu options, click the Advanced menu icon (.

This chapter includes the following topics:

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Overview of Device Relationships

SL1 automatically defines parent and child relationships for certain devices. Users can also manually define some types of relationships. Devices can have the following types of relationships:

- Layer-2 devices and their clients. Layer-2 relationships are automatically discovered by SL1 and can be created in the **Subnet Map (L2)** page (Views > Topology Maps > Layer-2).
- Layer-3 devices and layer-2 devices. Layer-3 relationships are automatically discovered by SL1 and can be created in the **Layer 3 Map** page (Views > Topology Maps > Layer-3).
- Network devices that use CDP (Cisco Discovery Protocol) and devices that are specified as neighbors in the CDP tables. CDP relationships are automatically discovered by SL1 and can be created in the **Subnet Map (CDP)** page (Views > Topology Maps > CDP).
- Network devices that use LLDP (Link Layer Discovery Protocol) and devices that are specified as neighbors in the LLDP tables. LLDP relationships are automatically discovered by SL1 and can be created in the **Views > Topology Maps > LLDP** page (Views > Topology Maps > LLDP).
- Component devices and their parent devices using Dynamic Application data. For example, virtual machines and their hypervisors.
- Device relationships between root devices, parent devices, and component devices (Component Mapping).
- Device relationships created using Dynamic Application data. For example, the Dynamic Applications in the VMware vSphere and NetApp PowerPacks are configured to create relationships between VMware Datastore component devices and their associated NetApp Volume component devices.
- Generic parent-child relationships, sometimes referred to as Event Correlation relationships or Ad-Hoc relationships, can be manually created. These relationships can be created in the **Device Children** page for the parent device.

NOTE: SL1 also automatically discovers relationships between VMWare hypervisors and VMWare virtual machines using SNMP data, but *only for legacy versions VMWare ESX 3.5 and VMWare ESX 4.x*.

All device relationships are displayed as child and parent relationships. For example:

- A layer-2 switch is a parent device and a firewall attached to the switch is a child device.
- A layer-3 router is a parent device and a layer-2 switch attached to the router is a child device.
- A VMware ESX server is a parent device and a Linux VM on that server is a child device.

Views that Display Device Relationships

The following pages under the **[Views]** tab display device relationship information. Relationships are displayed in a map only if both the parent device and the child device are displayed in the map:



- **Organizational Maps** display all types of relationships.
- **Component Maps** display component relationships and relationships created using Dynamic Application data.
- **Layer-2 Maps** display Layer-2 relationships.
- **Layer-3 Maps** display Layer-3 relationships.
- **CDP Maps** display CDP relationships.
- **LLDP Maps** display LLDP relationships.
- **Customized Maps** display all types of relationships.
- **Virtual Topology Maps** display legacy VMware relationships collected using SNMP.

Buttons, Tools, Icons, and Customization

Overview

In SL1, device maps show the relationships between devices in a network. Although SL1 includes maps of different types of device relationships (for example, devices grouped by organization, devices grouped by layer-2 topology, devices grouped by CDP topology, devices groups by LLDP topology), each map uses a similar set of buttons, tools, and icons. Before reading about the different types of maps, it is helpful to understand the functions of the map pages.

Use the following menu options to navigate the SL1 user interface:

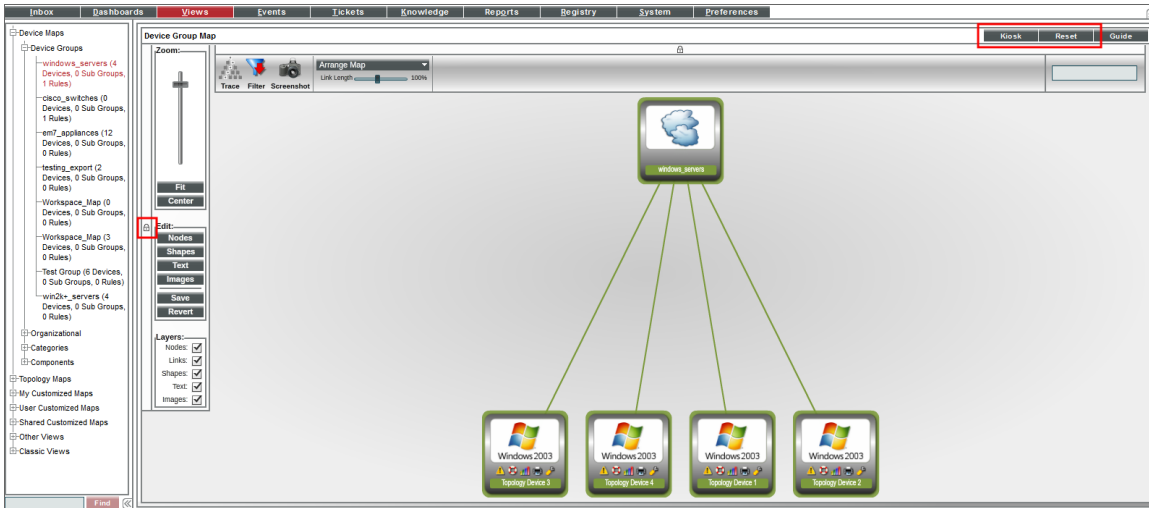
- To view a pop-out list of menu options, click the menu icon ()
- To view a page containing all of the menu options, click the Advanced menu icon ().

This chapter includes the following topics:

<i>Buttons, Tools, and Icons</i>	9
<i>Customizing the Display of a Map</i>	11
<i>Arranging the Map</i>	12
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<i>Nodes</i>	20
<i>Shapes</i>	22
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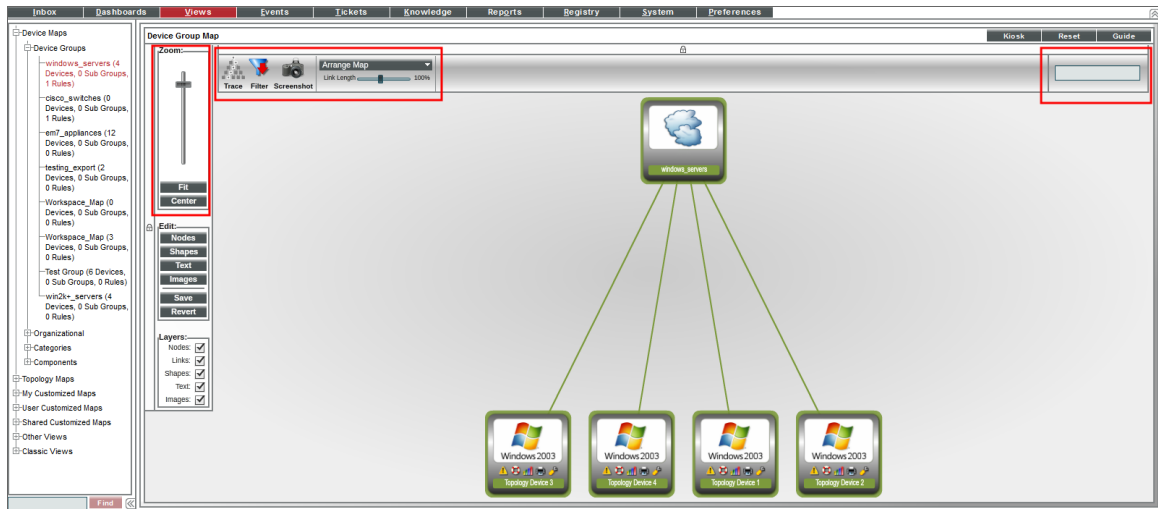
Buttons, Tools, and Icons

Each device map, topology map, and virtual infrastructure map displays buttons, tools, and icons that are displayed in the left of the map page. The buttons, tools, and icons in the Views pages are:



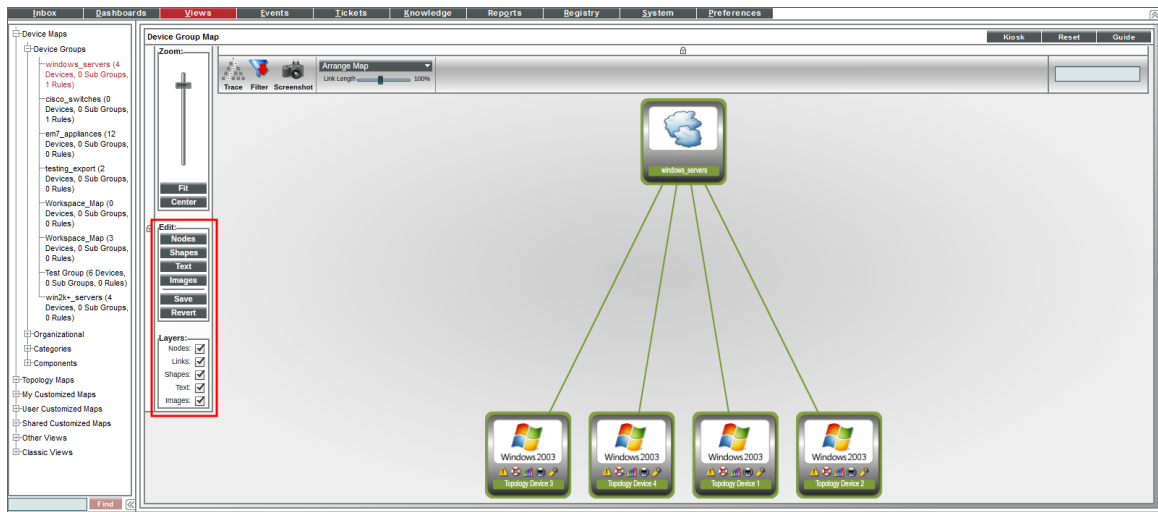
- **Reset**. Resets the default display. Any unsaved changes are removed.
- **Kiosk**. Spawns a new page, where the map appears in full-screen. This display model is helpful in NOC environments.
- **Lock Icon**. Toggles on and off the display of the menu at the left of the pane and the menu at the top of the pane. When the lock icon appears in white, the menu is "locked" and will continue to be displayed in the pane. When the lock icon appears in gray, the menu is displayed only when you are working in the menu. To make the hidden menu appear again, mouse over the border where the menu resides.

- **Trace + fields.** Displays one or two fields in the upper right of the page that allow you to search for and highlight one or two devices in the device group/organization/category/component, depending on the Device Map selected.



- **Filter icon.** Toggles on and off the display of the *Node Filters* checkboxes. These checkboxes allow you to filter the nodes included in a map based on whether a device or connection is managed or unmanaged in SL1, whether the node is part of a device group, the status of the device (healthy, notice, minor, major, critical), or the device category assigned to the device.
- **Arrange Map.** Specifies the format style for the map. Choices are: *Tree*, *Radical Tree*, *Grid*, and *Random*.
- **Link Length Slider.** Slider bar that allows you to dynamically adjust the length of all links in the *Radial* view or *Tree* view of a map.
- **Take Screenshot.** Saves the current display as a .png file to the local computer.
- **Zoom bar.** Magnifies and contracts the map.
- **Fit.** Adjusts the zoom to fit the entire map within the pane.

- **Center.** Centers the map in the middle of the pane without changing the zoom.



- **Edit: Nodes.** Displays a menu at the top of the pane that allows you to edit the display of nodes in the map.
- **Edit: Shapes.** Displays a menu at the top of the pane that allows you to add hand-drawn shapes on the map. The menu allows you to select shapes, drag-and-drop points, line thickness, fills, transparency, and colors. You can also delete shapes that were previously added to the map.
- **Edit: Text.** Displays a menu at the top of the pane that allows you to add text to the map and format the text. You can also delete text that was previously added to the map.
- **Edit: Images.** Displays a menu at the top of the pane that allows you to import and format an image. You can include the image in the map or use the image as the background of the map. You can also delete an image that was previously added to the map.
- **Edit: Save.** Saves changes to the map.
- **Edit: Revert.** Ignores all changes and returns to the last saved version of the map.
- **Layers: Nodes.** Toggles the display of devices in the map.
- **Layers: Links.** Toggles the display of links in the map.
- **Layers: Shapes.** Toggles the display of hand-drawn shapes in the map.
- **Layers: Text.** Toggles the display of manually entered text in the map.
- **Layers: Images.** Toggles the display of imported images in the map.

These buttons, tools, and icons can be used to customize device and topology maps, as well as help you create your own maps. The next section will provide more detail on how to use these buttons, tools and icons.

Customizing the Display of a Map

You can customize maps to more easily manage your devices and display only the maps that best fit your needs.

You can edit and customize device maps, as well as Layer-2 maps, CDP maps, LLDP maps, and Layer-3 maps. You can also create your own customized map.

There are three ways to customize a map:

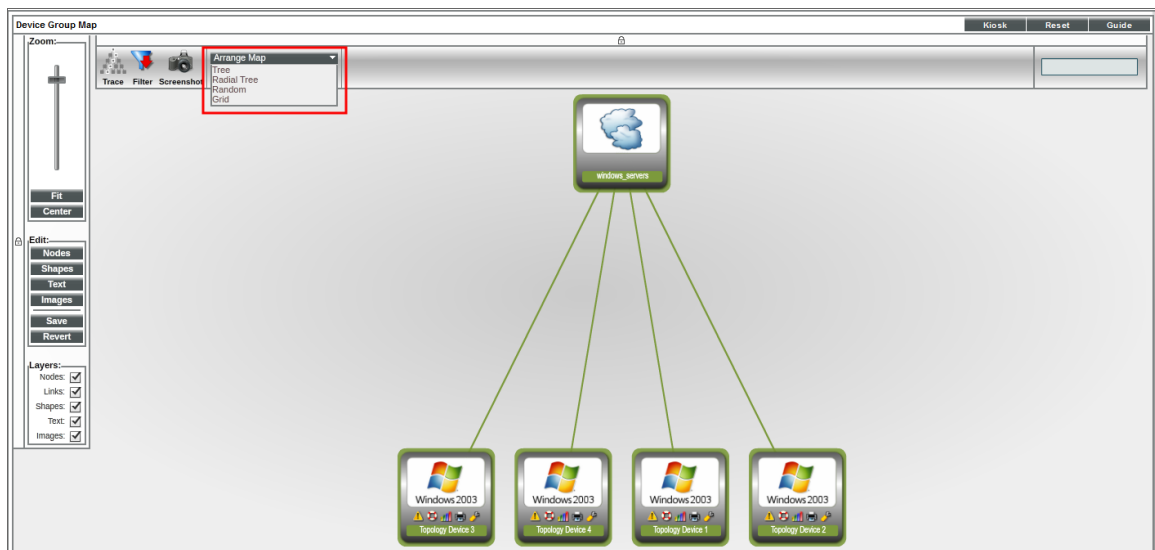
- The options in the **Arrange Map** drop-down menu.
- In the map page, you can edit the layout of nodes by selecting the **Edit: [Nodes]** button and using the drag-and-drop editing features.
- Using the Zoom, Edit and Layers tools to the left of the pane.

NOTE: You can also customize Layer-2 maps, CDP maps, LLDP maps and Layer 3-maps by creating, editing and deleting links. To learn more about links, see [Topology Maps](#).

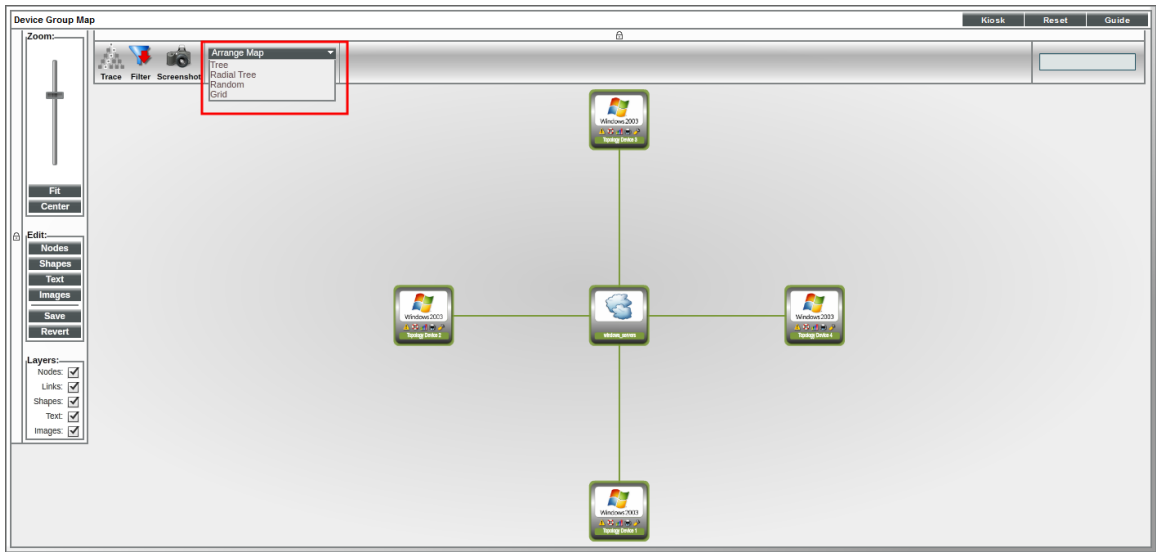
Arranging the Map

The **Arrange Map** drop-down menu allows you to specify the layout for the map. Your choices are:

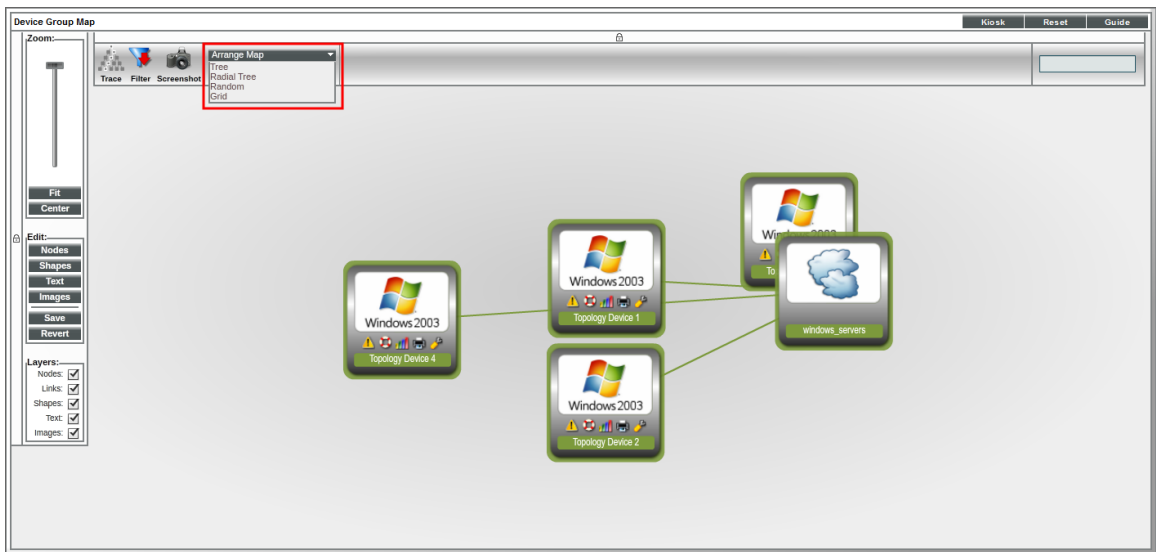
- **Tree.** Arranges devices in a tree structure, with the root as the top-level network device (usually a switch or router).



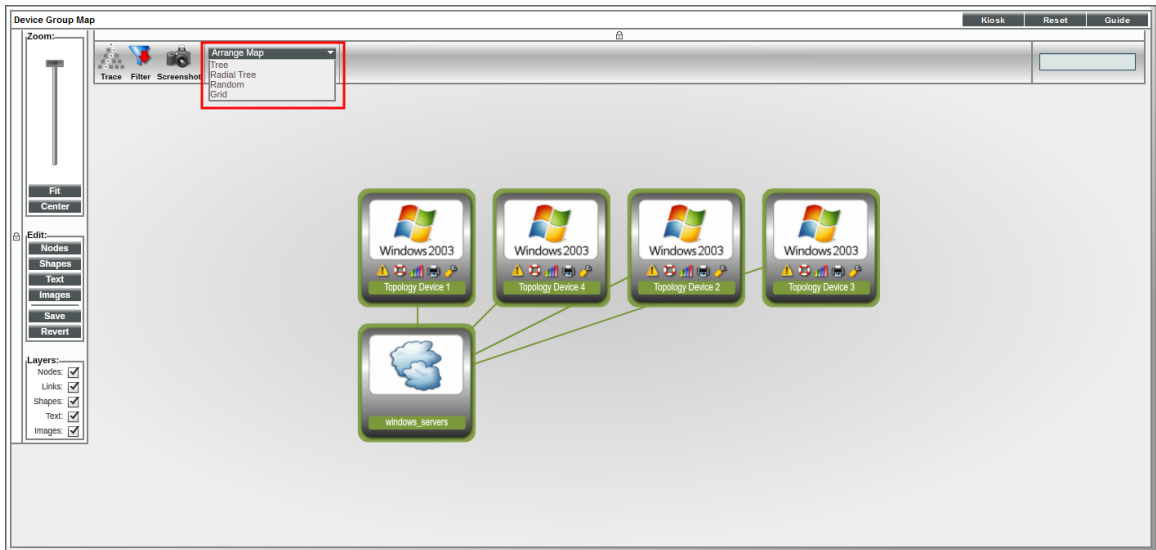
- **Radial Tree**. Arranges devices in a circle around the top-level network device (usually a switch or router).



- **Random**. Arranges devices in a random pattern.



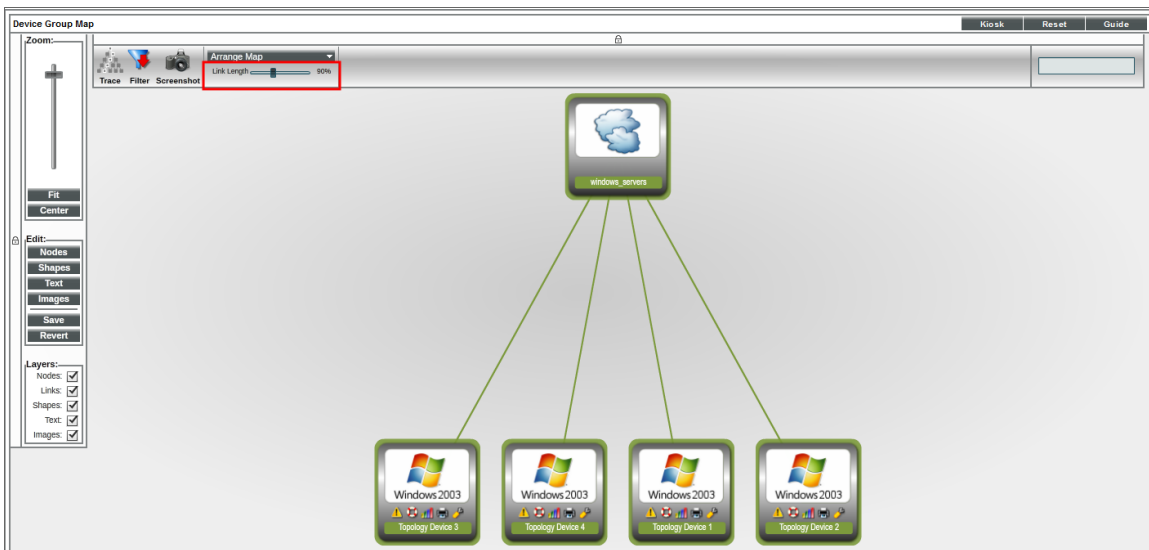
- **Grid**. Arranges devices in rows and columns. The top-level network device (usually a switch or router) appears in the upper left.



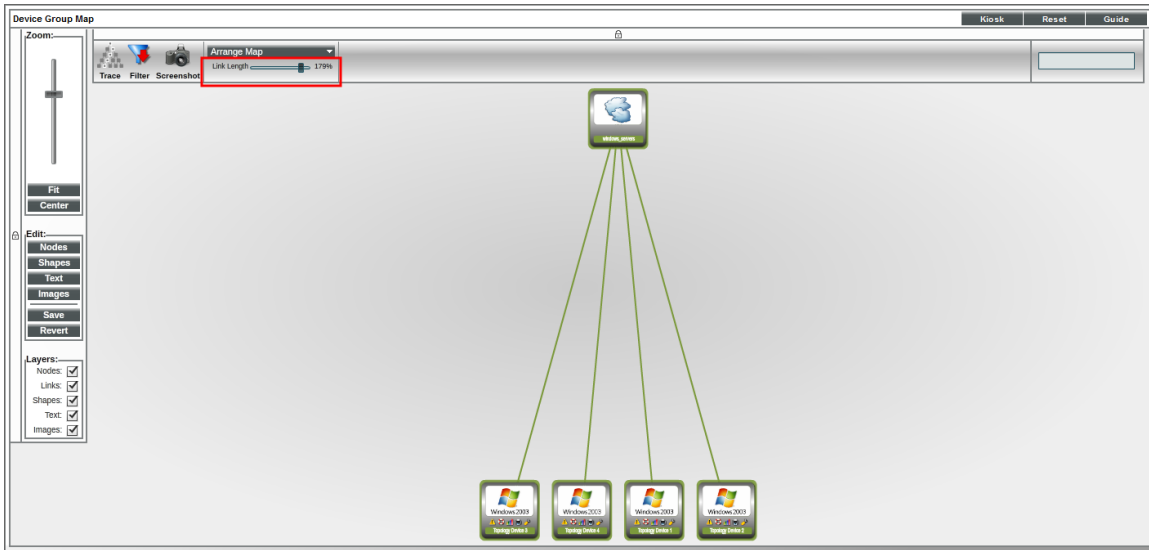
Link Length

If you arrange a map in the Tree view or Radial view, you can use the Link Length slider to dynamically change the length of all links in the map.

Sliding the slider to the left decreases the link length.:



Sliding the slider to the right increases the link length:



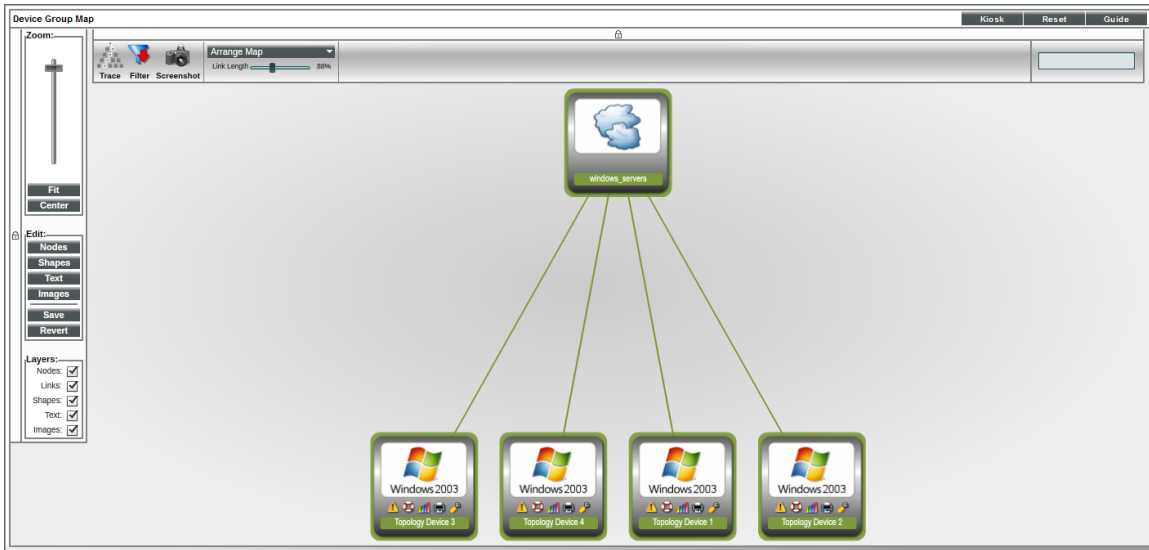
Drag-and-Drop Editing

Each device in the maps page is an individual node that can be placed in different areas of the map while retaining its link to other devices. You can drag-and-drop nodes to reposition them on the map to make viewing and managing devices easier. You can use drag-and-drop editing in the following ways:

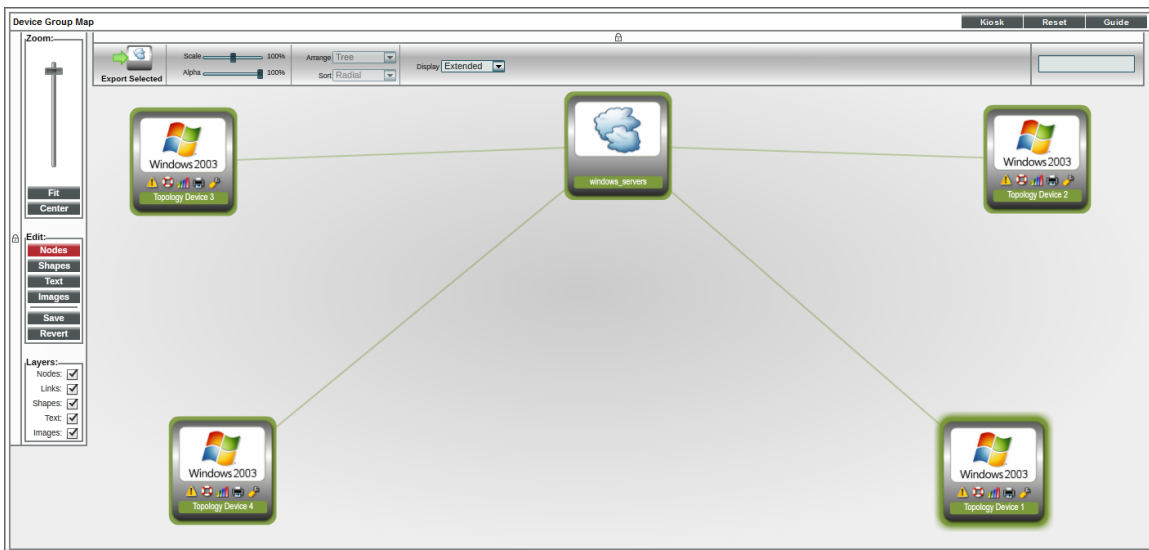
- You can move the entire map around the pane by clicking in any spot in the background, holding down the left mouse key and dragging the mouse. The map will be dragged around by the spot you initially clicked on.
- You can use your mouse to select and move nodes within a map. To edit and move nodes around the map, first enter Nodes mode by selecting the **Edit: [Nodes]** button. In Nodes mode:
 - To select a node, left-mouse click on it.
 - To select multiple nodes, hold down the **<Shift>** key and left-mouse click on each node.
 - To select a node and all nodes that are relatives of that node, double click on a node. The relatives of a node include all nodes that connect the node to the root node of the map (e.g. the parent of the node, the parent of the parent, etc) and all subordinate nodes (e.g. the children of the node, the children of the children, etc).
 - To select a node and all subordinate nodes, hold down the **<Shift>** key and double click on a node.
 - To select and box multiple adjacent nodes, hold down the **<Shift>** key, hold down the left mouse key, place the cursor on a spot on the background of the map, and drag the mouse to outline nodes in a box. You can then move these nodes around the screen as a group.
 - To reposition the nodes on the map, hold down the left mouse button and drag the node to its new position. Release the mouse button to "drop" the nodes.
 - To save the new node positions, select the **Edit: [Save]** button.

- To toggle on and off drag-and-drop editing, select the **Edit: [Nodes]** button.
- To return the nodes to their previous positions, select the **[Revert]** button.

For example, SL1 might map a device group in a tree view in the following format:



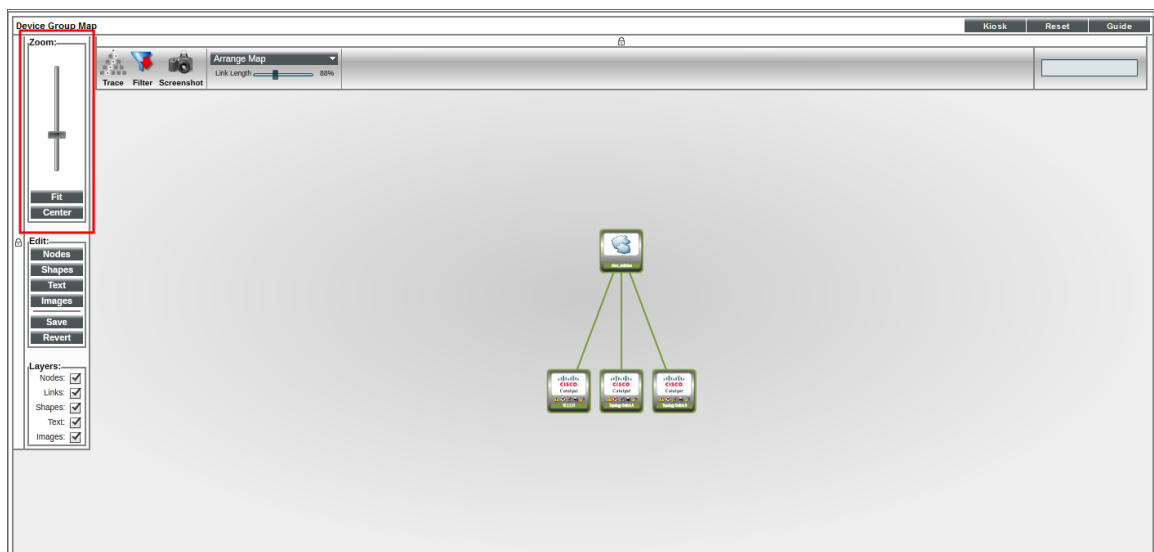
Using the **Edit:[Nodes]** button, you can rearrange the devices to look similar to the following format:



Zoom Buttons

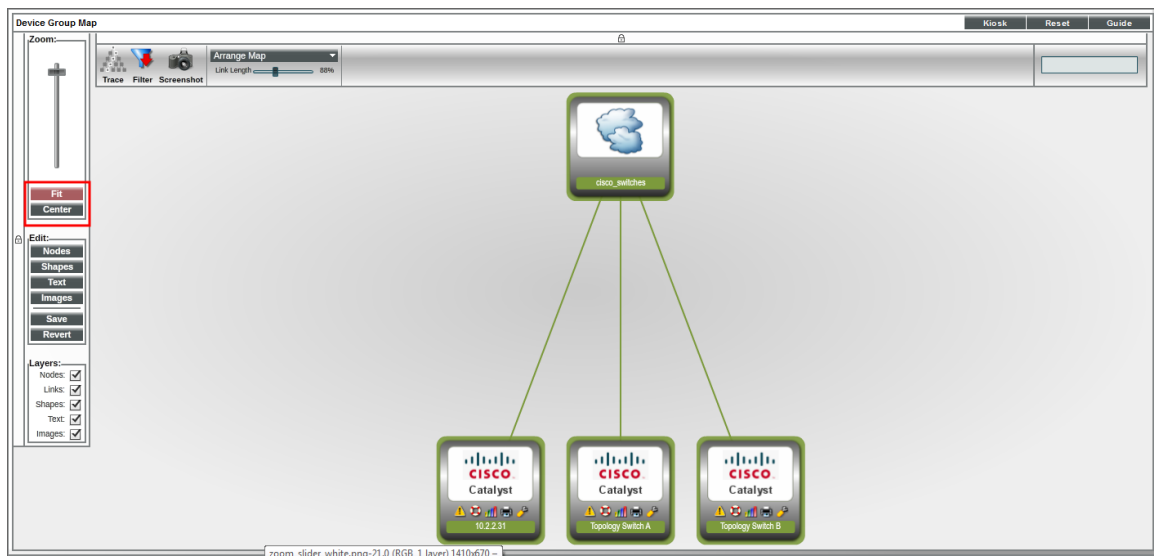
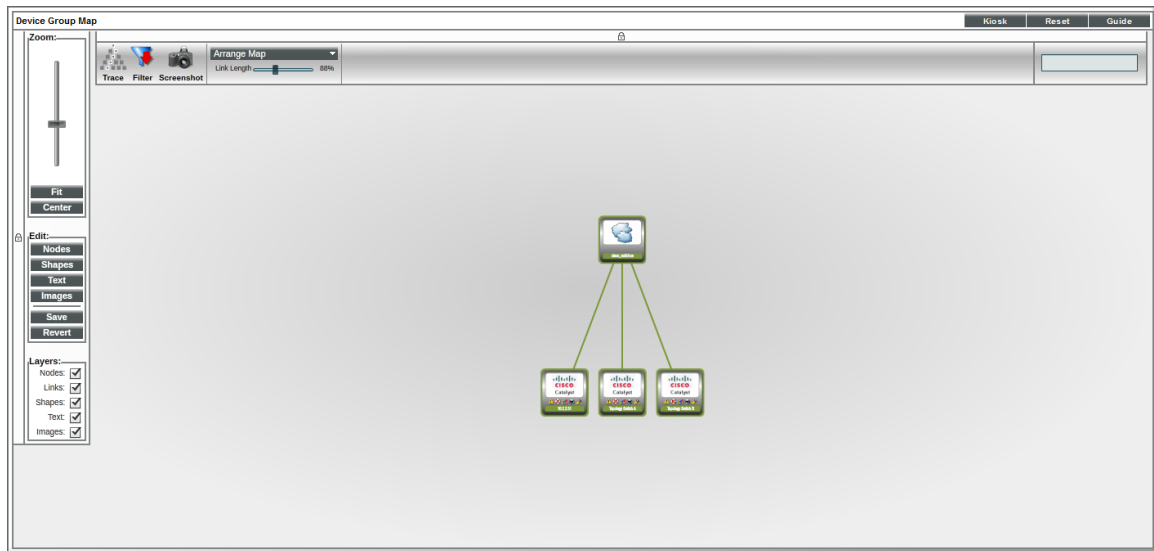
The zoom slider allows you to zoom in (expand) and zoom out (contract) on the currently displayed map. Moving the slider up increases the size of the map; moving the slider down decreases the size of the map. The zoom slider's behavior changes under the following conditions:

1. If nothing in the map is selected, SL1 zooms from the center of the pane.
2. If a device is selected, SL1 center zooms on the selected device.
3. If a group of devices are selected, SL1 center zooms on the selected group.

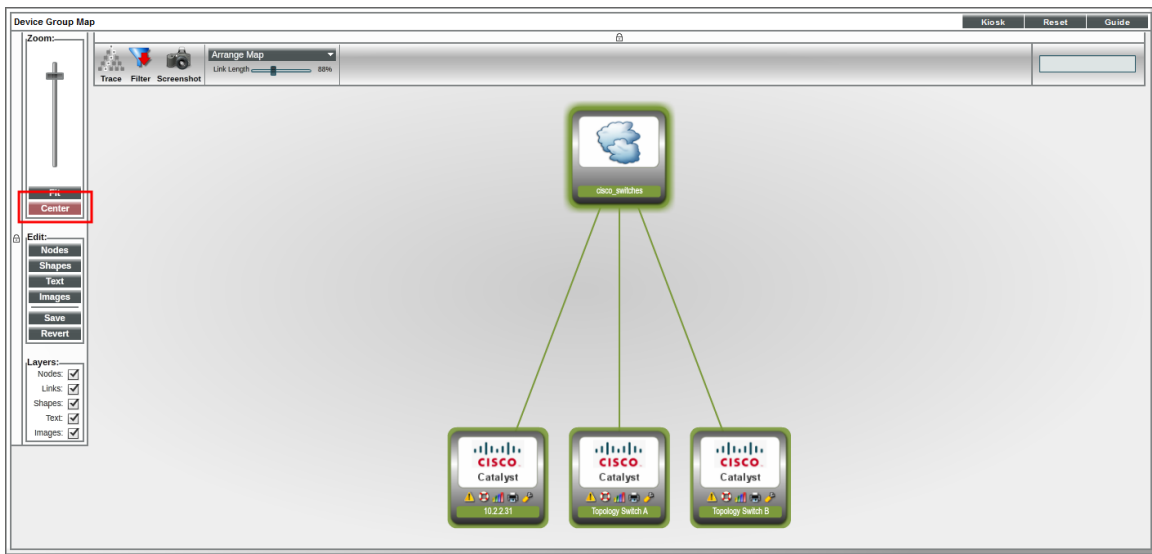
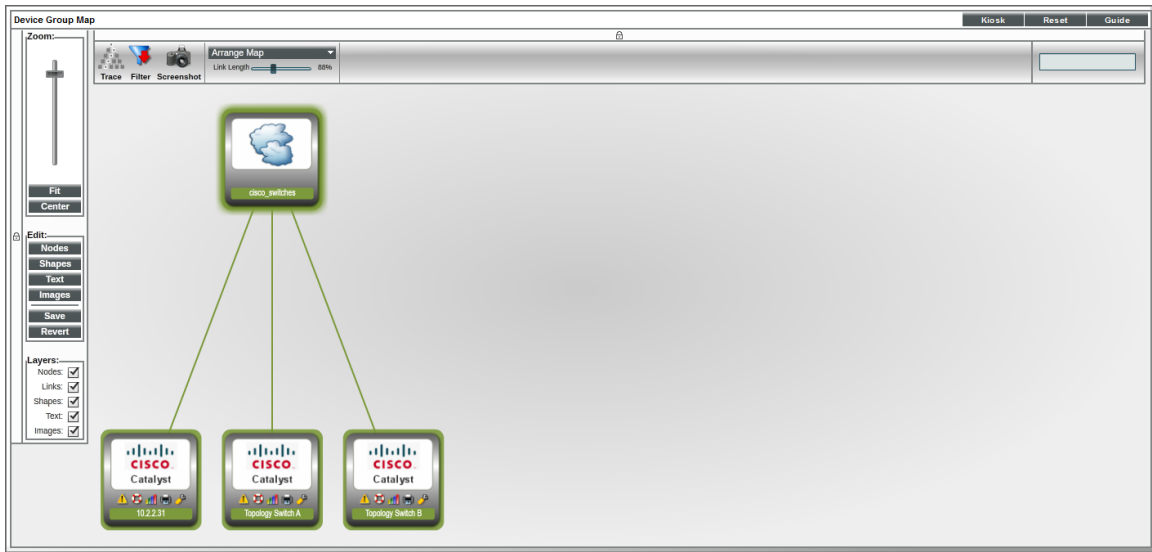


The following buttons appear under the Zoom slider:

- **[Fit]**. Adjusts the zoom to fit the entire map within the pane.



- **[Center]**. Centers the map in the middle of the pane. Does not change the zoom.



Edit Buttons

The Edit buttons toggle on and off menus in the top of the pane. These menus allow you to edit the currently displayed map.

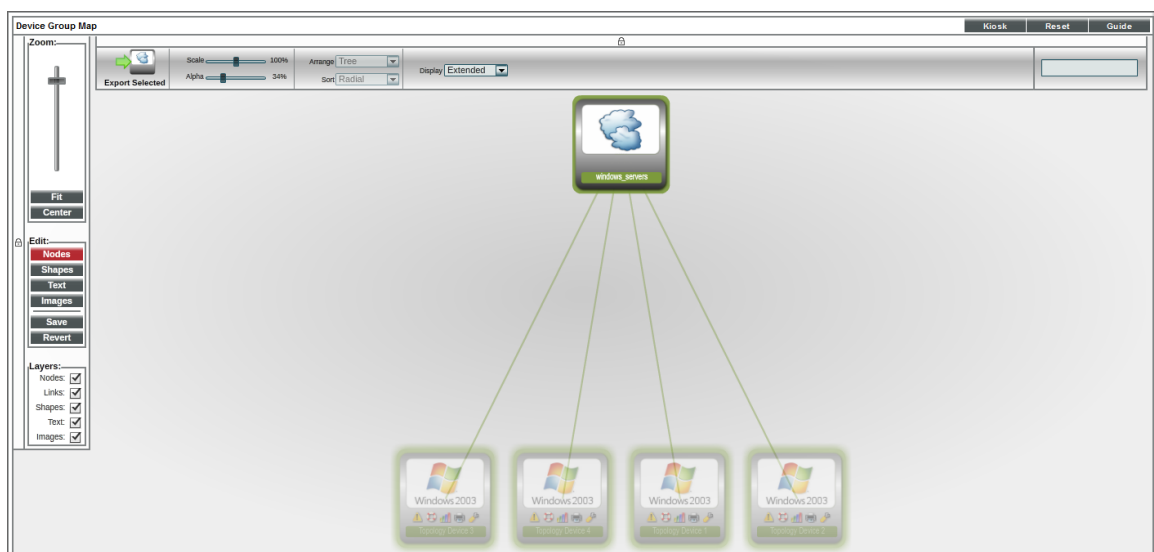
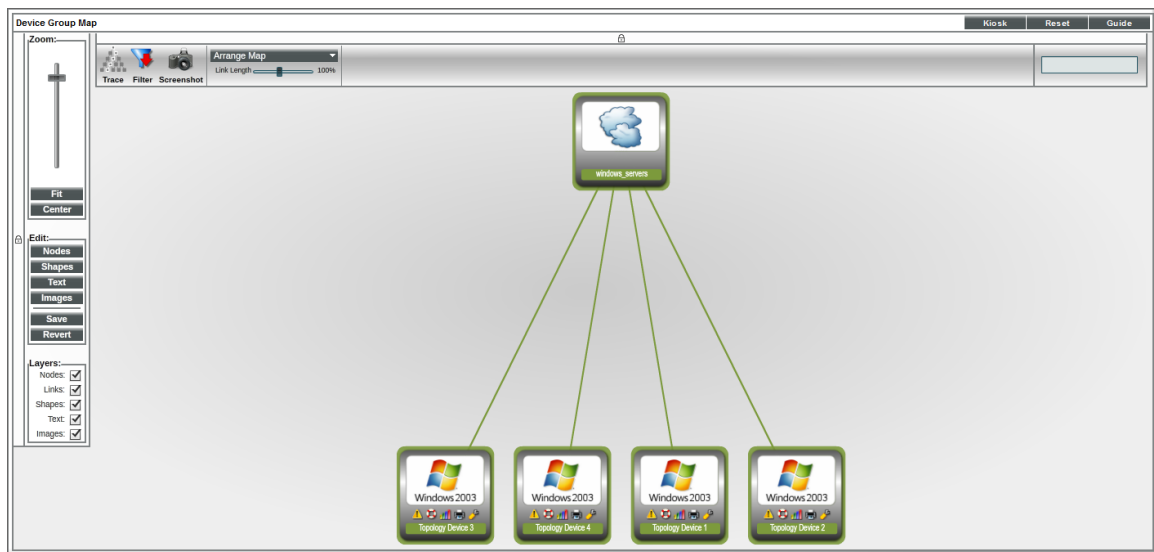
- The **[Save]** button saves changes to the map.
- The **[Revert]** button ignores changes to the map and returns to the last saved version.

Nodes

Along with enabling drag-and-drop editing, the **[Nodes]** button also toggles the display of the Nodes menu at the top of the pane.

The Nodes menu includes the following:

- **Export Selected.** Creates a new device group containing the selected devices, which allows you to quickly create a Customized Map. When selected, a small dialog box appears, asking you to enter the name for the new device group. Enter a name and select the **[OK]** button.
- **Scale.** For the selected icons, increases or decreases size.
- **Alpha.** For the selected icons, mixes background color with node color; much like increasing or decreasing opacity/transparency.



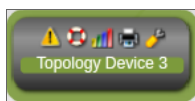
- **Arrange.** Reflects the settings you chose in the **Arrange Map** field. You cannot edit this layout in the Nodes menu.
- **Sort.** Reflects the settings you chose in the **Arrange Map** field. You cannot edit this layout in the Nodes menu.
- **Display.** Specifies how device icons will appear in the map. If you select a single icon, the settings in this field affect only the selected icon. If you don't select an icon, the settings in this field affect all device icons in the map. Your choices are:
 - *Extended.* The device icon displays the icon associated with the device class, the name of the device category, the device name, and additional icons that allow you to view events on the device (⚠), create a ticket about the device (🛠), view the **Device Summary** page (📊), print a report about the device (🖨), or view the **Device Properties** page (🔧).



- *Simple.* The device icon displays the icon associated with the device class, the name of the device category, and the device name.



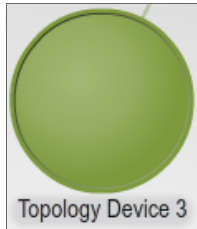
- *Compact.* The device icon displays the device name, and additional icons that allow you to view events on the device (⚠), create a ticket about the device (🛠), view the **Device Summary** page (📊), print a report about the device (🖨), or view the **Device Properties** (🔧) page.



- *Category*. The device icon displays the device name and the icon associated with the device category for the device. The device icon also includes additional icons that allow you to view events on the device, create a ticket about the device, view the **Device Summary** page, print a report about the device, or view the **Device Properties** page.



- *Bullet*. The device icon displays the device name and a circle that is color-coded based on the device state.



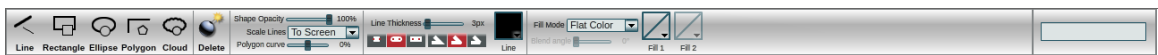
Shapes

The **[Shapes]** button toggles the display of the Shapes menu at the top of the pane. The Shapes menu allows you to add manually-drawn shapes to a map.

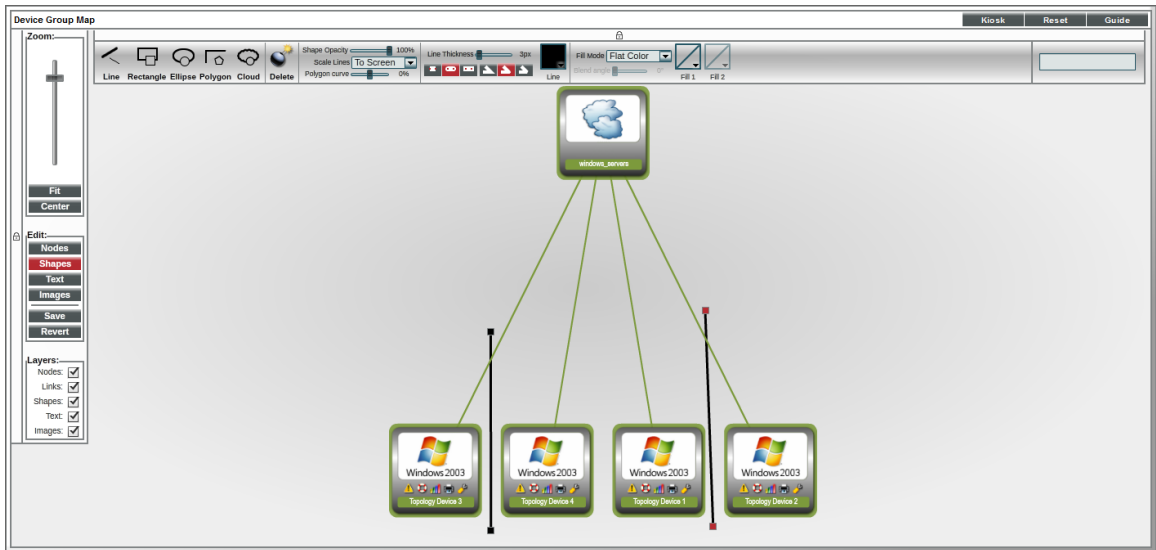
When you place a shape or line on the map, SL1 automatically puts the shape or line behind the node icons and links on the map.

NOTE: Shapes zoom and pan (move) with the map.

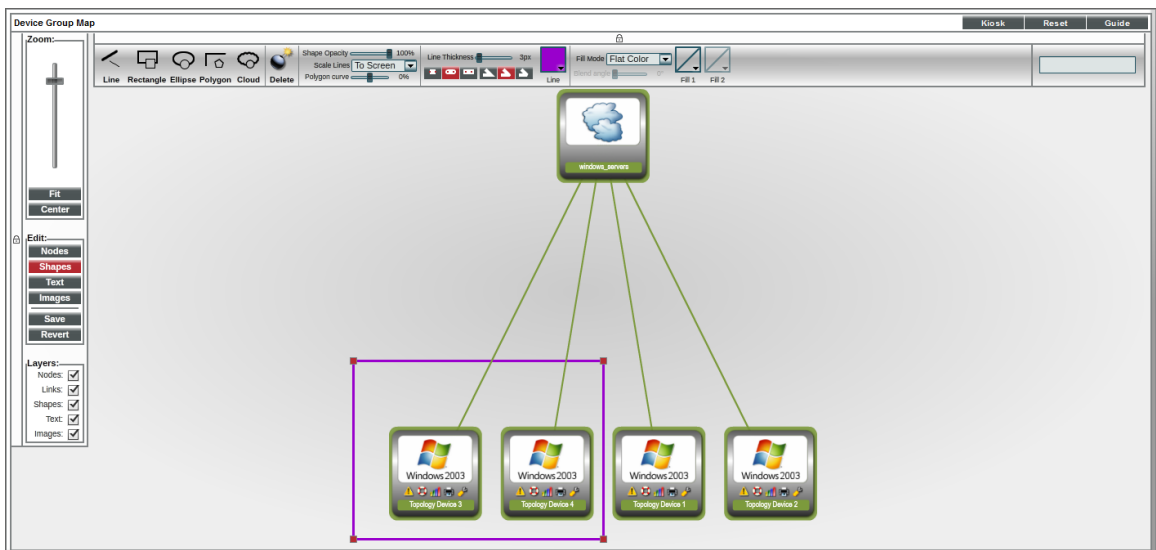
The Shapes menu includes the following:



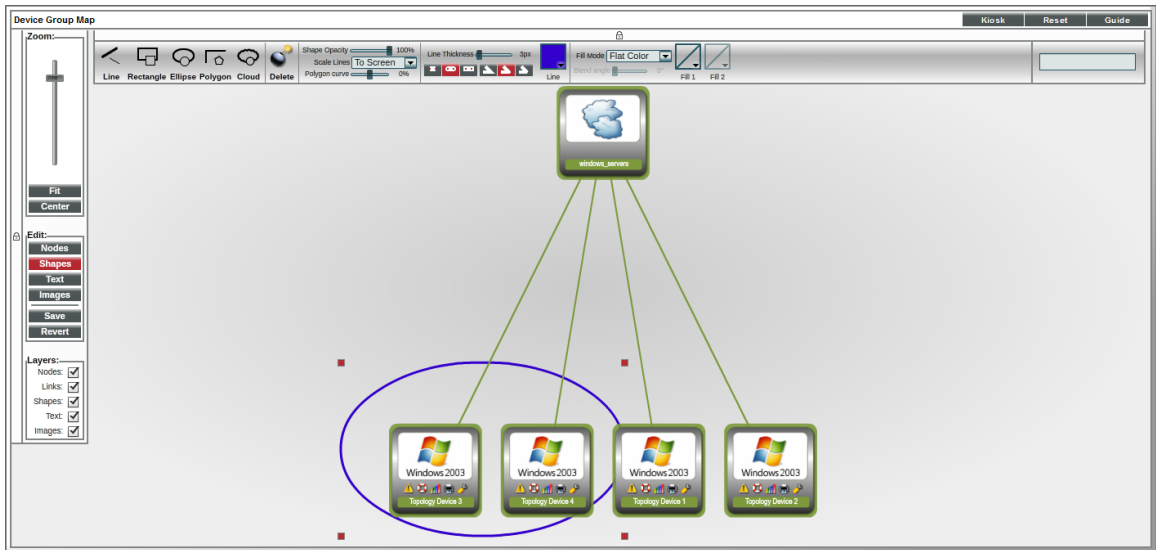
- **Line**. Select this icon to draw a line. Click with the left-mouse button to place the end of the line, and then hold down the left-mouse button and drag to draw the line.



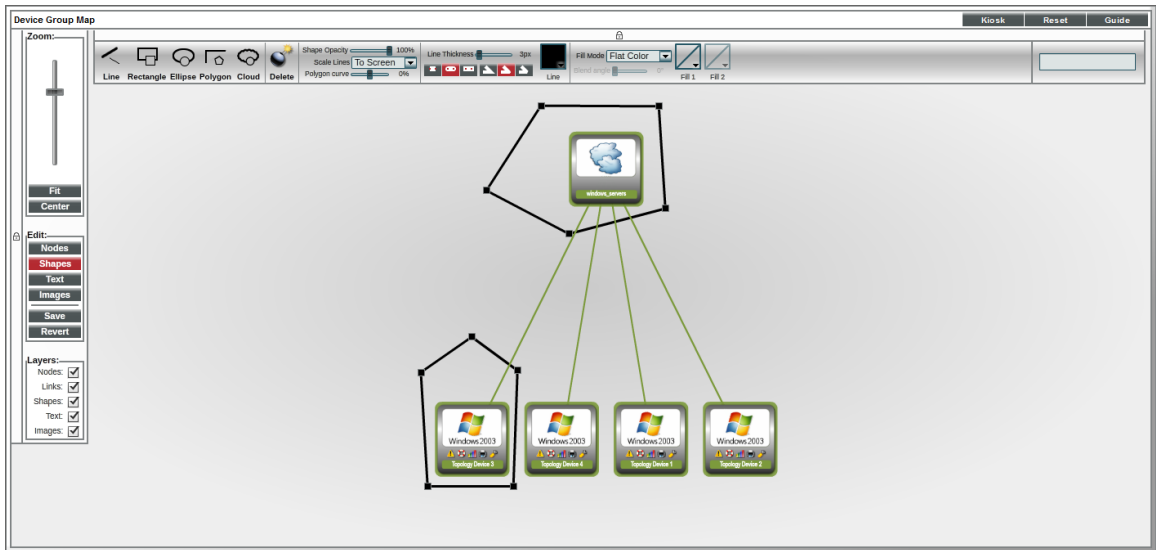
- **Rectangle**. Select this icon to draw a rectangle. Click with the left-mouse button to place a corner, and then hold down the left-mouse button and drag to draw the rectangle.



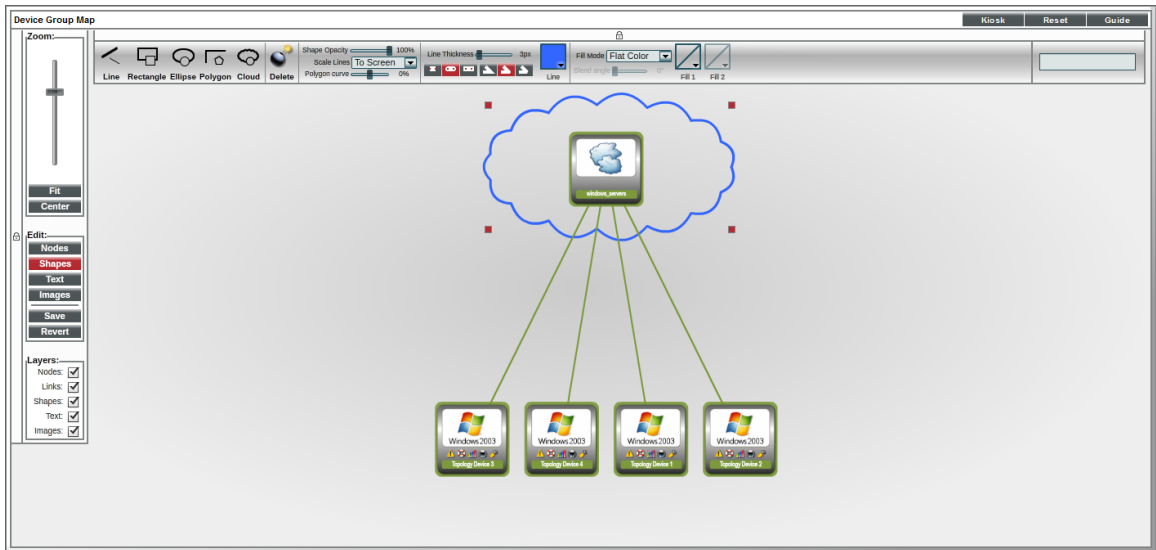
- **Ellipse**. Select this icon to draw an ellipse. Click with the left-mouse button to place a corner, and then hold down the left-mouse button and drag to draw the ellipse.



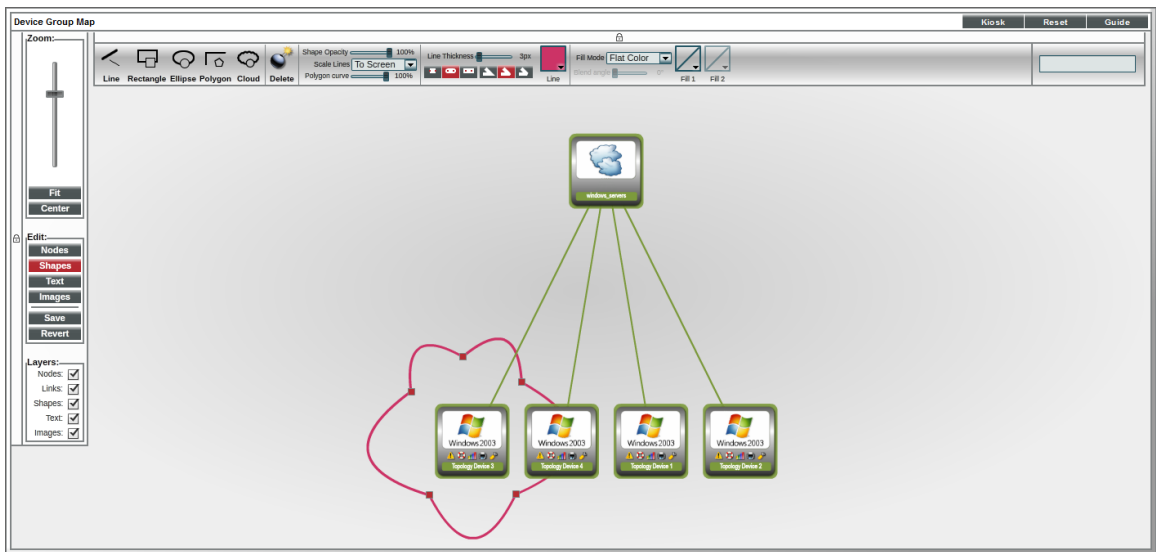
- **Polygon**. Select this icon to draw a polygon. Click with the left-mouse button to place the first corner of the polygon, and then click with the left-mouse button to place the second corner. A line is drawn between the first and second corners. Continue adding corners by clicking with the left mouse button. To complete the polygon, click with the left-mouse button on the first corner.



- **Cloud**. Select this icon to draw a cloud. Click with the left mouse button to place the center of the cloud, and then hold down the left-mouse button to draw to increase or decrease the size and dimensions of the cloud.

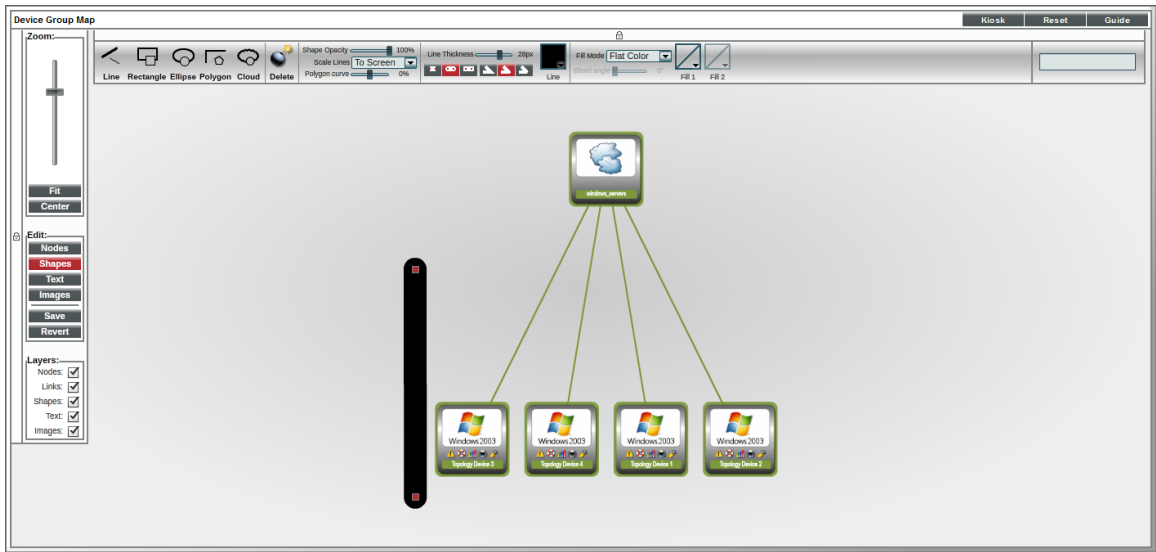


- **Polygon curve**. Increases or decrease the curve of each connecting line in a polygon.

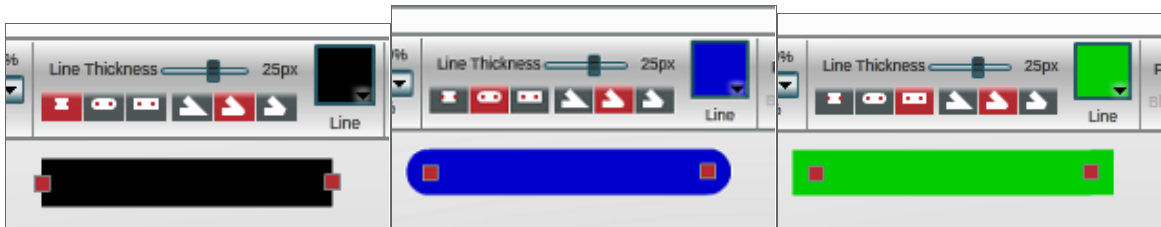


- **Delete**. Deletes the selected shape.
- **Shape Opacity**. Increases or decreases the shape's transparency/opacity.
- **Scale Lines**. When zooming in and out, specifies whether lines should increase and decrease relative to the map or relative to the pane.

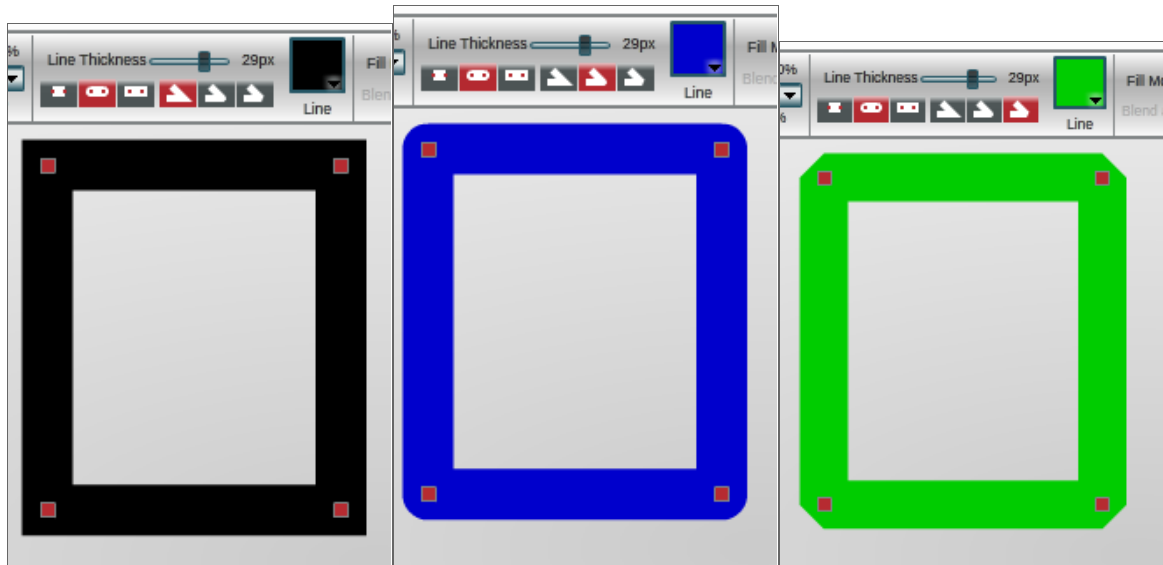
- **Line Thickness.** Increases and decreases the shape's line thickness.



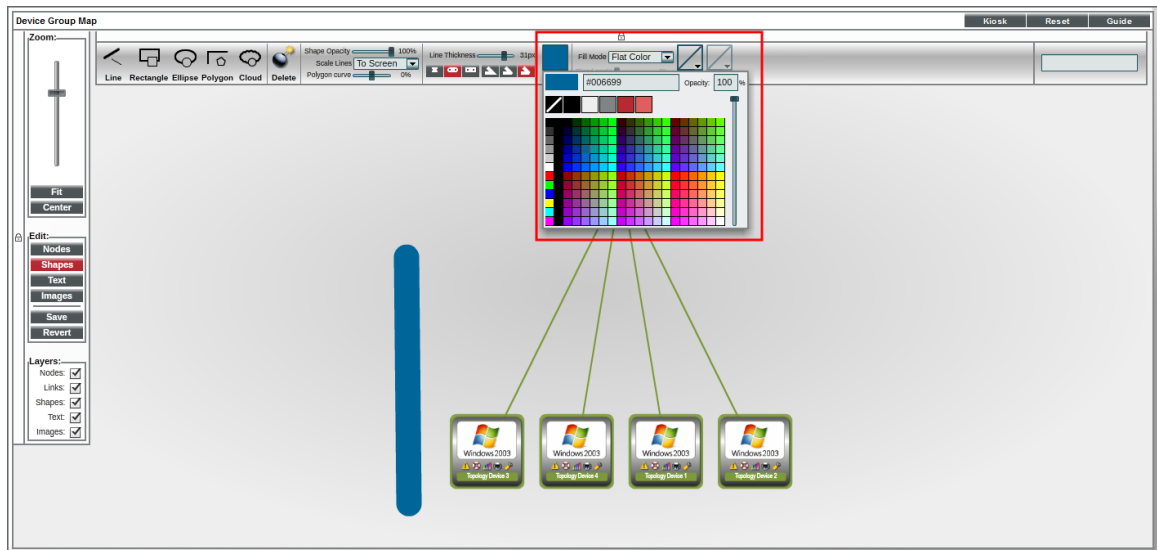
- **Drag Handle icons.** For lines, these three icons affect the selected line. You can use the icons to determine if the ends of the line will be squared with drag handles on border, if the ends will be rounded with drag handles within the line, or if the ends will be squared with drag handles within the line.



- **Corner icons.** For shapes, these three icons affect the shape of the corners. You can use the icons to determine if corners will be right-angles, rounded, or snipped.

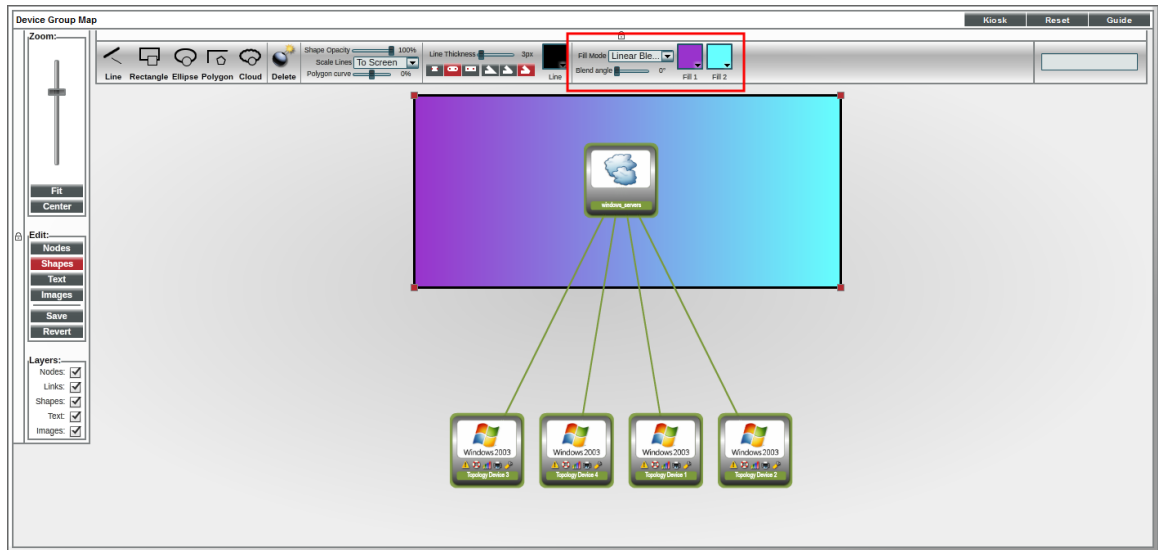


- **Line.** Allows you to select a color for the line. For shapes, allows you to select a color for the border lines.



- **Fill Mode.** Specifies how you want to fill shapes. Choices are:
 - *Flat Color.* Shape is filled with a single color, specified in **Fill 1**.
 - *Linear Blend.* Shape is filled with a blend of two colors, **Fill 1** and **Fill 2**. You can specify the angle of the blend in the **Blend Angle** field.
 - *Radial Blend.* Shape is filled with a blend of two colors. **Fill 1** fills the center. **Fill 2** fills the edges.

- **Blend Angle.** If you selected *Linear Blend* in the **Fill Mode** field, specifies the angle where the blending occurs.
- **Fill 1.** Allows you to select the first color to use as a fill.
- **Fill 2.** Allows you to select the second color to use as a fill.



- **To select a shape,** left-mouse click on one of its lines (but not the handles). The shape will glow when selected and the handles will turn red.
- **To change the size or shape of a shape,** left-mouse click on its handles (dots in each corner or at each end), hold down the left-mouse button, and drag.
- **To move a shape,** left-mouse click on a line (but not the handles), hold down the left-mouse button, and drag.

Text

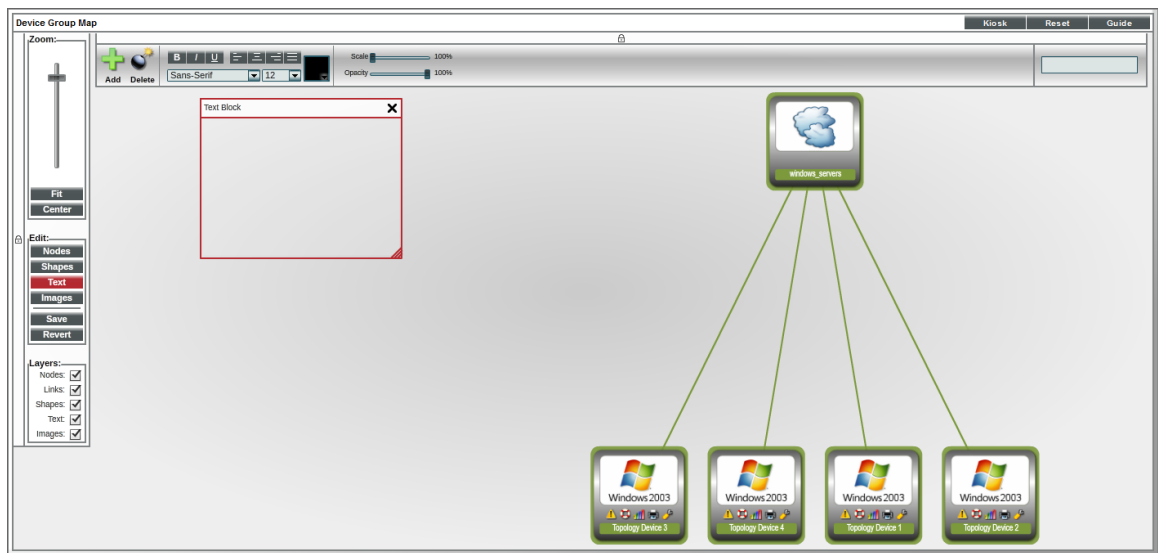
The **[Text]** button toggles the display of the Text menu at the top of the pane. The Text menu allows you to add text to a map.

When you place text in a map, SL1 automatically puts the text in front of or over the node icons and links on the map.

NOTE: Text zooms and pans (moves) with the map.

The Text menu includes the following:

- **Add**. Adds a text box, where you can enter text. You can enter text in the bottom pane of the text box.

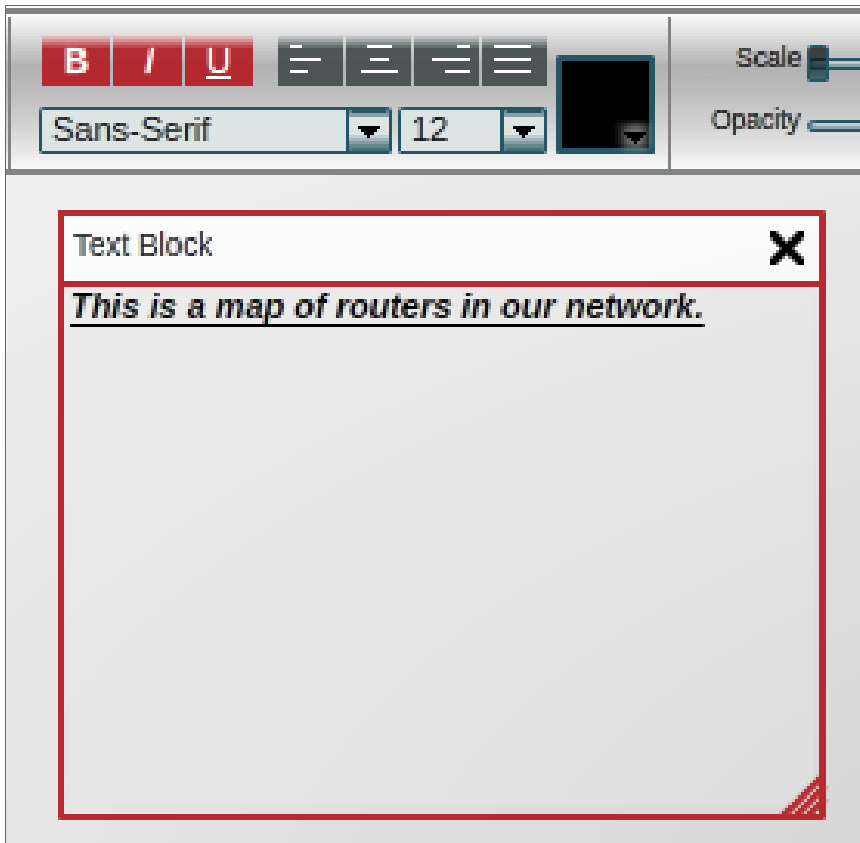


- **To select a text box**, left-mouse click in the pane labeled "Text Block".
- **To position the text box**, left-mouse click in the pane labeled "Text Block", hold down the mouse button, and drag the text box.
- **To resize the text box**, left-mouse click on the lower-right corner, hold down the mouse button, and drag.
- **To close the text box without saving**, left-mouse click on the "x" in the upper right.

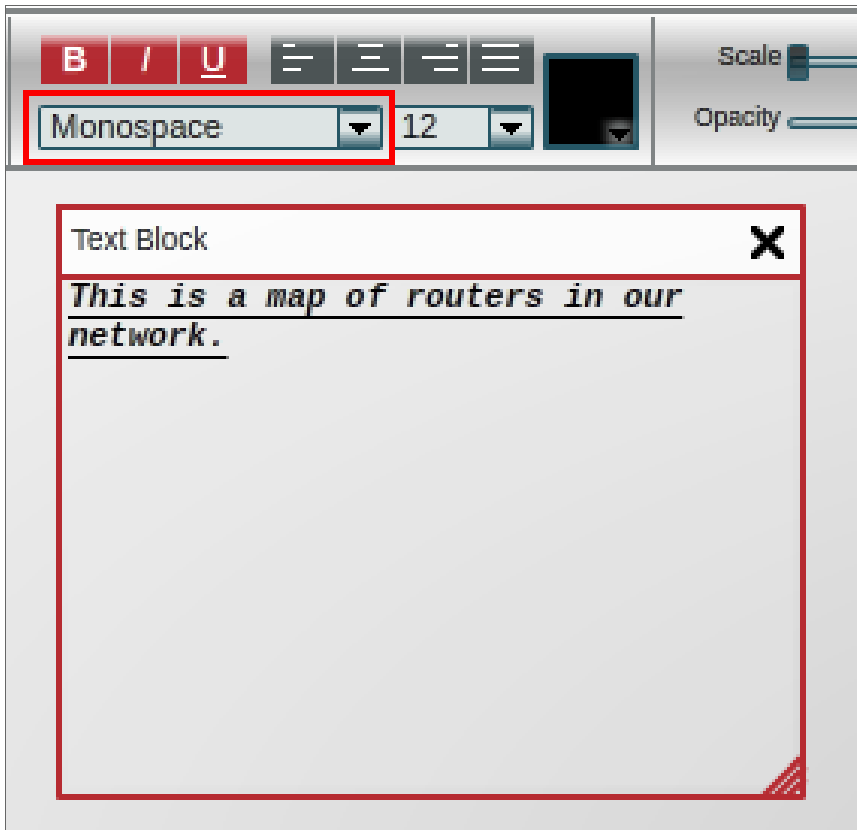
NOTE: The Text Block box always appears around the text when in Text mode.

- **Delete**. Deletes the text box from the map.

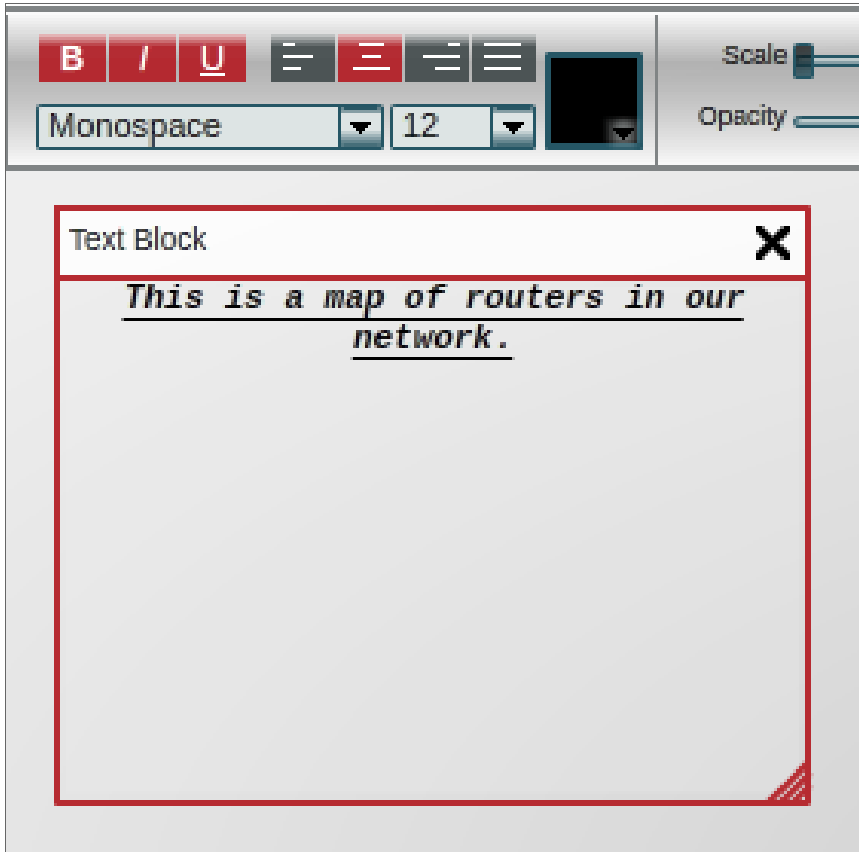
- **B/I/U**. You can toggle on and off text style (bold, italic, or underline) using these buttons. The selected text and all subsequent text will use the selected style (bold, italic, or underline) until the button is toggled again. When a style is active, the button is red. When a style has been toggled off, the button is black.



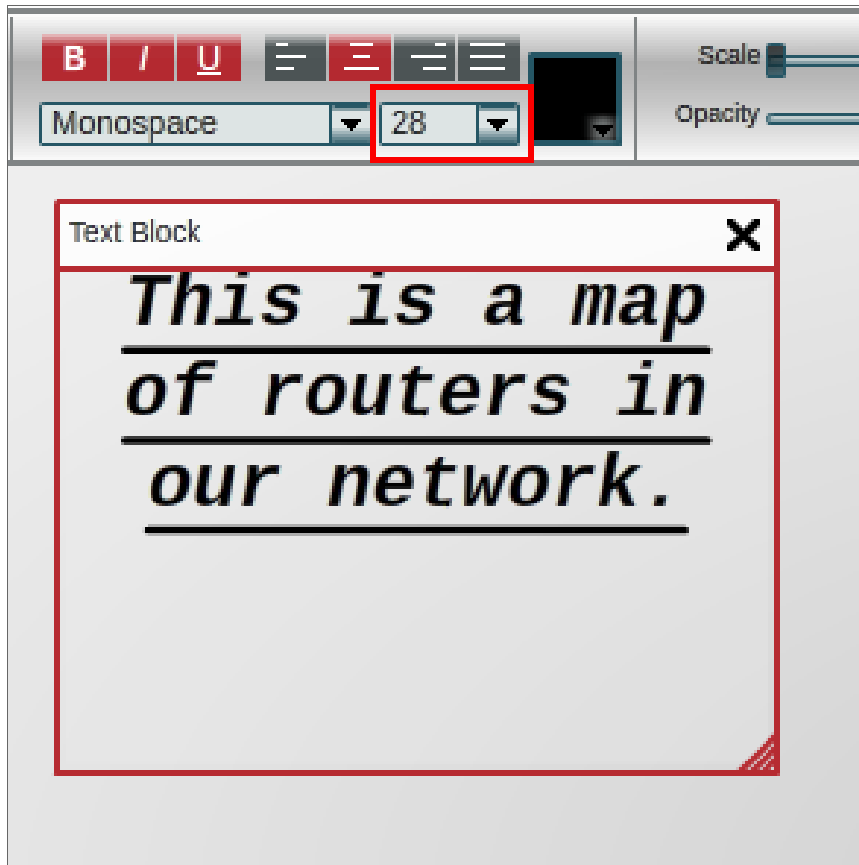
- **Sans Serif/Serif/Monospace**. The selected text and all subsequent text will use the selected font.



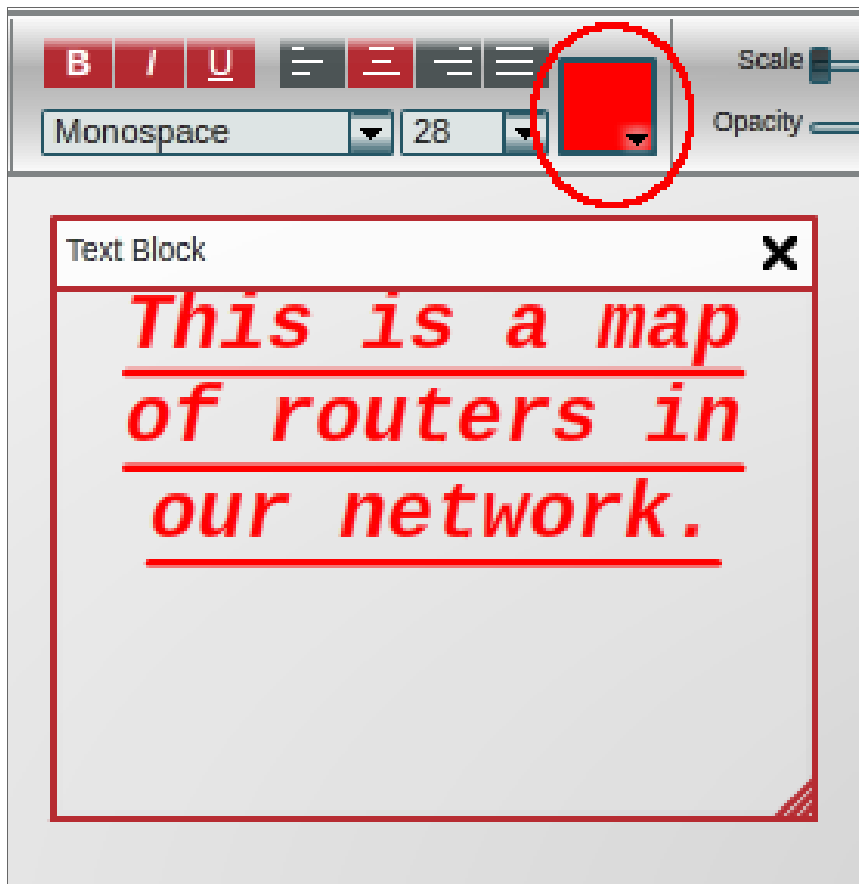
- **Justify (left/centered/right/justified)**. You can toggle on and off text justification for all text in a paragraph or line of text. The selected text and all subsequent text will use the selected justification until the justification is toggled again. When a justification is active, its button is red. When a justification has been toggled off, its button is black.



- **Font Size.** The selected text and all subsequent text will use the selected font size from the drop-down list.

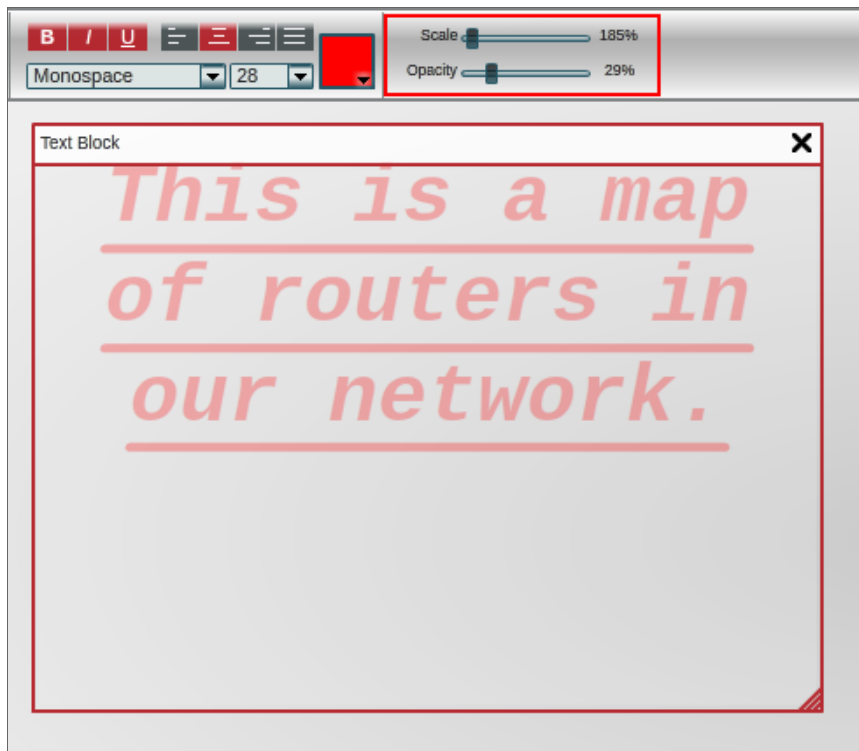


- **Color.** The selected text and all subsequent text will use the selected color.



- **Scale.** Increases or decreases the size of the text box and the text in the text box.

- **Opacity.** Increases and decreases the transparency/opacity of the text.



Images

The **[Images]** button toggles the display of the Images menu at the top of the pane. The Images menu allows you to add an imported image to a map.

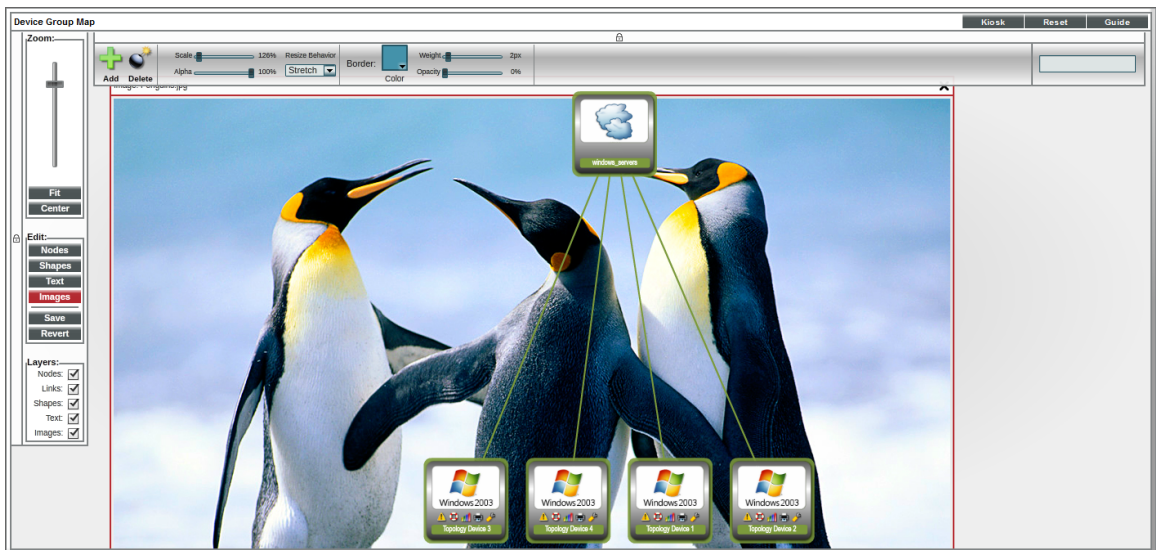
When you place an image in the map, SL1 automatically puts the image behind the node icons and links on the map.

NOTE: Images zoom and pan (move) with the map.

NOTE: ScienceLogic recommends you upload images to SL1 when possible. Images inserted by supplying a URL will stretch when resized, regardless of the behavior specified in the **Resize Behavior** field.

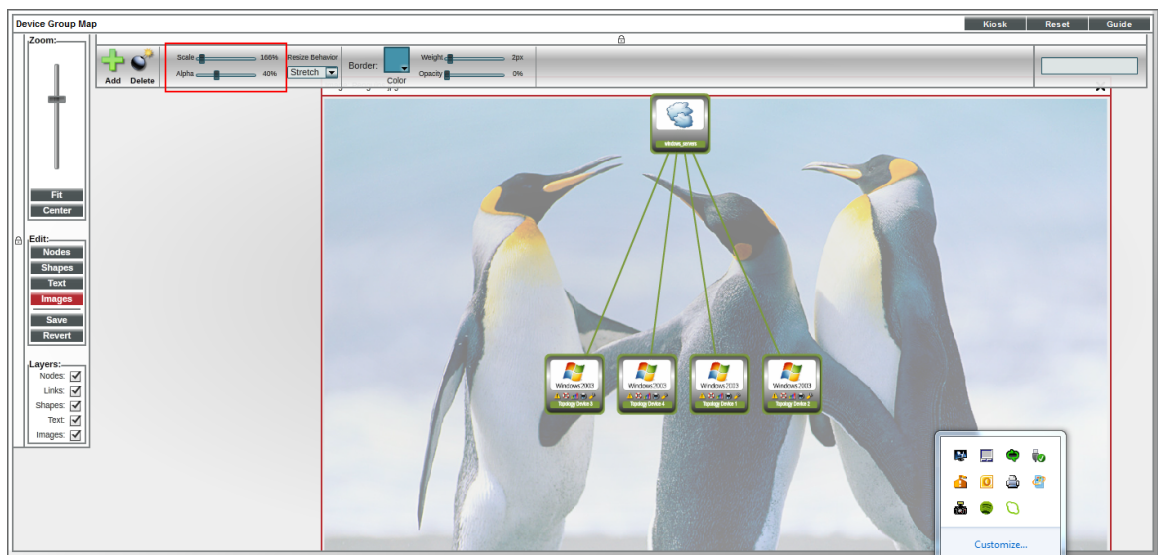
The Images menu includes the following options:

- **Add**. Displays the **Image Selection** modal page. In this page you can manually enter the URL of an image to use, browse your local computer to locate an image to upload, or select from images already loaded onto the SL1 system.



When the image is added to the map, the image is surrounded by an image box:

- **To select an image**, left-mouse click in the pane labeled with the image name.
 - **To position the image box**, left-mouse click in the pane labeled with the image name, hold down the mouse button, and drag the text box.
 - **To resize the image box**, left-mouse click on the lower-right corner, hold down the mouse button, and drag.
 - **To close the image box without saving**, left-mouse click on the "x" in the upper right.
- **Delete**. Deletes the selected image.
 - **Scale**. Increases or decreases the size of the image box and the image.
 - **Alpha**. Increases or decreases the transparency/opacity of an image.



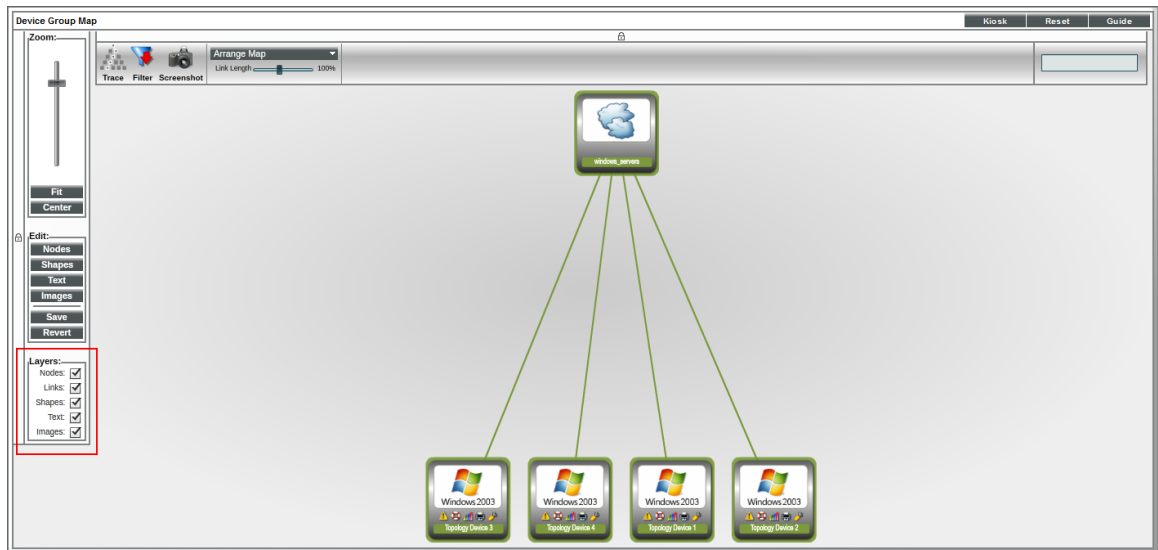
- **Resize Behavior**. Specifies whether resizing the image will stretch the image or tile the image.
- **Border Color**. Select a border color for the image.
- **Border Weight**. Increases or decreases the line weight of the border.
- **Border Opacity**. Increases or decreases the transparency/opacity of the border.

Layers

The Layers checkboxes allow you to select the items to include in the currently displayed map. By default, all the checkboxes are selected, meaning that all items will appear in the map. You can select or unselect one or more of the checkboxes.

To save your selections in the Layers checkboxes, select the Edit: **[Save]** button.

- **Nodes**. Toggles the display of devices in the map.
- **Links**. Toggles the display of links in the map.
- **Shapes**. Toggles the display of hand-drawn shapes in the map (drawn with Edit: **[Shapes]**).
- **Text**. Toggles the display of manually entered text in the map.
- **Images**. Toggles the display of imported images in the map.



Chapter



3

Device Maps

Overview

Device maps allow you to view devices by organization, device group, category, and component devices. This makes it easy to visualize and manage devices. You can view and customize these maps, including adding images and text, and can move individual or multiple devices to display the map for your needs. However, you cannot add or delete devices from the device maps. To add or remove devices from the device maps, you must change the organization for a device, change the device group for a device, change the device category for a device, or delete or discover a component device.

Use the following menu options to navigate the SL1 user interface:

- To view a pop-out list of menu options, click the menu icon (.
- To view a page containing all of the menu options, click the Advanced menu icon (.

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Device Group Maps

A device group is a user defined group of devices. Device groups make it easy to configure and manage multiple devices. You can define and edit the configuration of device groups using templates. SL1 will automatically update each view in the **Device Group Map** page (Views > Device Maps > Device Groups) as new devices are added to device groups, and as new device groups are defined. SL1 also updates each view with the latest status and event information.

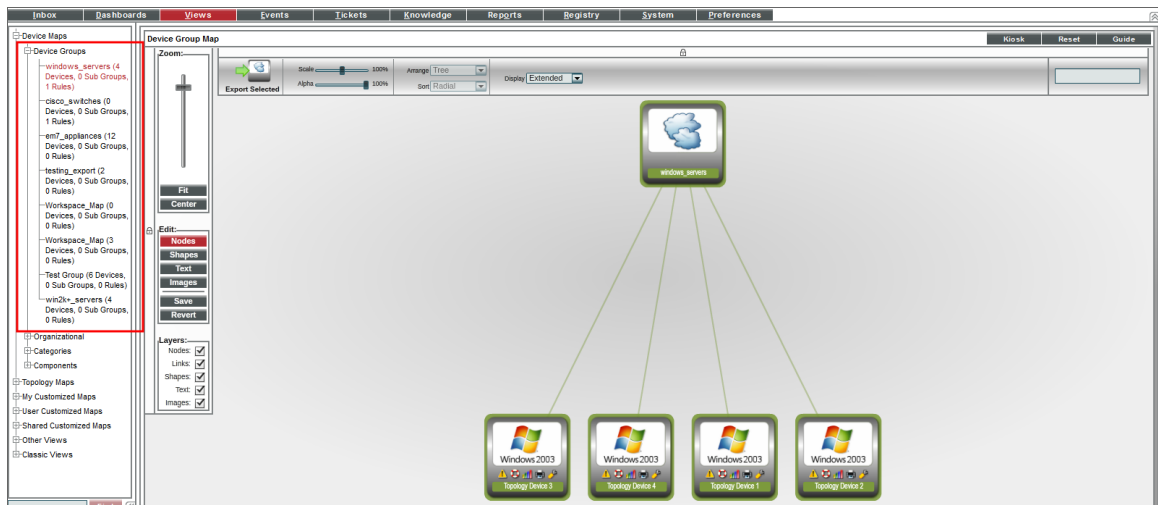
The **Device Group Map** page allows you to view the member devices in each device group and also view the relationships between device groups and their sub-groups.

The **Device Group Map** page contains buttons, tools, and icons to help view and manage the maps. To learn more about buttons, tools, and icons in device maps, see the section on [Buttons, Tools, Icons and Customization](#).

Viewing a Device Group Map

You can view a device group map from the **Device Group Map** page. To view an device group map:

1. Go to the **[Views]** tab and then go to the left NavBar.
2. Expand the links for Device Maps > Device Groups, and then select a device group. The **Device Group Map** page appears and displays a map of the organization and its member devices:




- The blank field in the upper right allows you to find one or more devices in the map. You can enter a string, and SL1 will highlight only the devices that have a device name that matches the string.
- Each device group and each member device appears as an icon.
- Each view contains a parent device group, represented by an icon with a cloud image. All devices and sub-groups radiate from this device group.

- Each member device is connected to its device group with a line. The color of the line specifies the device's current state. The state reflects the event of the highest severity for the device.
- When the view appears, you can view and reposition the components. The view can be edited and rearranged using drag-and-drop features. Devices and sub-groups can be repositioned for easier reading, if necessary.
- Mousing over a device displays its name, IP address, device type, and device category.
- Mousing over a device group displays its name.
- To toggle between the view of the parent device group and the view of a sub-group, you can select a view from the drop-down menu in the upper right.


Filtering Nodes in a Device Group Map

You can use the Filter tool to filter the nodes that are included in the current map.

Selecting the Filter icon () toggles on and off the display of the Node Filters checkboxes.

These checkboxes allow you to filter the nodes included in a map based on whether a device or connection is managed or unmanaged in SL1, whether the node is part of a device group, the status of the device (healthy, notice, minor, major, critical), or the device category assigned to the device.

To use the Filter tool:

1. Go to Views > Device Maps > Device Groups and select the map you want to view.
2. After the map is displayed, select the Filter tool () in the upper left.
3. SL1 displays a pane with the Node Filters checkboxes.
 - **Select a checkbox to include the devices in the map.**
 - **Unselect a checkbox to remove the devices from the map.**

4. You can select or unselect one or more of the following filters:

- **Managed Devices.** If selected, the map will include devices that are managed by SL1. Managed devices are those that have been discovered with discovery.
- **Unknown Connections.** If selected, the map will include connections that are "unknown" to SL1. This means that SL1 has detected a connection but cannot provide details on all or one end of the connection.
- **Device Groups.** If selected, the map will include device groups.
- **Unmanaged Devices.** If selected, the map will include devices that are not managed by SL1. This means that SL1 has detected a device but has not performed discovery on that device.
- **Healthy.** If selected, the map will include devices with a status of "healthy". This means that the most severe event associated with the device has a severity of "healthy".
- **Notice.** If selected, the map will include devices with a status of "notice". This means that the most severe event associated with the device has a severity of "notice".
- **Minor.** If selected, the map will include devices with a status of "minor". This means that the most severe event associated with the device has a severity of "minor".
- **Major.** If selected, the map will include devices with a status of "major". This means that the most severe event associated with the device has a severity of "major".
- **Critical.** If selected, the map will include devices with a status of "critical". This means that the most severe event associated with the device has a severity of "critical".
- **Unknown.** If selected, the map will include devices with a status of "unknown". This means that SL1 cannot determine the most severe event associated with the device.
- **List of Device Categories.** The pane includes a checkbox for each device category associated with the current map. For each selected device category, the map will include devices with that device category.

Customizing the Display of a Device Group Map

You can customize the display of a device group map. To learn how to customize a device group map, see the section on [Buttons, Tools, Icons and Customization](#).

Organizational Maps

The **Organizational Map** page allows you to view devices by organization. This makes it easy to visualize and manage devices in organizations. If devices in the organization include relationships created by Dynamic Applications, these relationships are displayed in the map. If devices in this organization include CDP, LLDP, layer-2, or layer-3 relationships, they are included in the map.

All elements, policies, events, tickets, and users in SL1 are associated with an organization. An organization is a group for managing elements and user accounts. You can define organizations by geographic area, departments, types of devices, or any structure that works best for your needs. The minimum characteristics of an organization consist of:

- A unique name
- Users who are members of the organization
- Elements, such as devices, associated with the organization

SL1 automatically updates the Organizational Maps as new devices are added to organizations and as new organizations are defined. SL1 also updates each map with the latest status and event information.

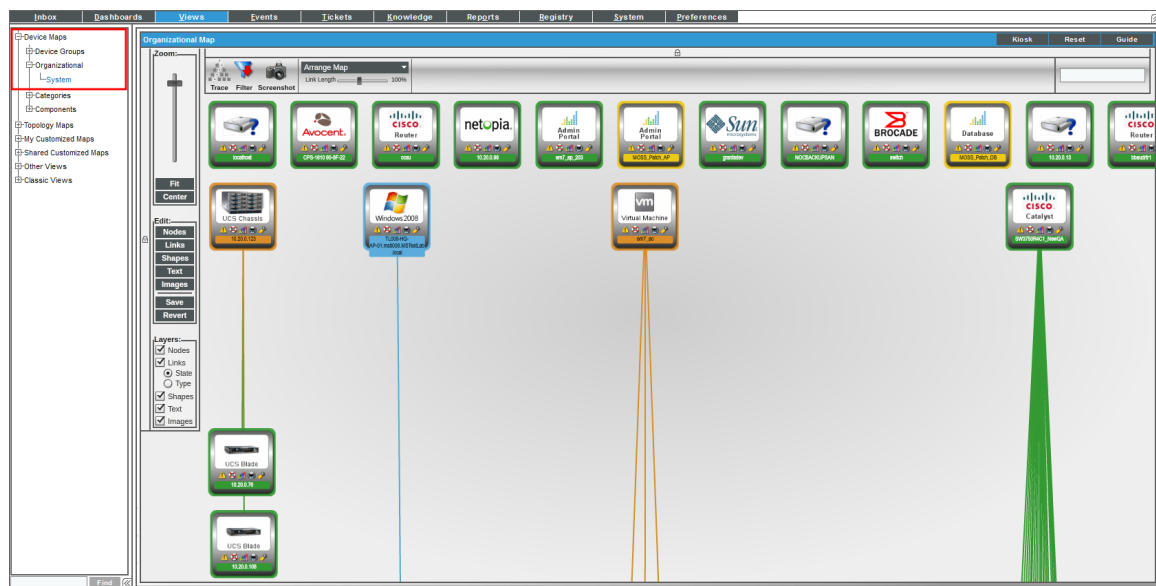
To select an Organizational Map, go to the **[Views]** tab and then go to the left NavBar. Expand the links for Device Maps > Organizational and then select an organization. The **Organizational Map** page appears and displays a map of the selected organization and its devices.

The **Organizational Map** page contains buttons, tools, and icons to help view and manage the maps. To learn more about buttons, tools, and icons in device maps, see the section on [Buttons, Tools, Icons and Customization](#).

Viewing an Organizational Map

You can view an organizational map from the **Organizational Map** page. To view an organizational map:


1. Go to the **[Views]** tab and then go to the left NavBar.
2. Expand the links for Device Maps > Organizational, and then select an organization. The **Organizational Map** page appears and displays a map of the organization and its member devices:



- The blank field in the upper right allows you to find one or more devices in the map. You can enter a string, and SL1 will highlight only the devices that have a device name that matches the string.
 - Each member device appears as an icon in the map.
 - The Organizational Map page for an organization also displays the relationships between devices in the organization. This includes:
 - Layer-2 devices and their clients
 - Layer-3 devices and layer-2 devices
 - Component devices and their parents, e.g. virtual machines and their hypervisors
 - Network devices that use CDP (Cisco Discovery Protocol) and devices that are specified as neighbors in the CDP tables
 - Network devices that use LLDP (Link Layer Discovery Protocol) and devices that are specified as neighbors in the CDP tables
 - Device relationships created with Dynamic Applications
 - Manually created parent-child relationships that affect event correlation
3. When the map appears, you can view and reposition the components. The map can be edited and rearranged using drag-and-drop features. Devices can be repositioned for easier reading, if necessary.
 4. Mousing over a device displays its name, IP address, device type, and device category.


Filtering Nodes in an Organizational Map

You can use the Filter tool to filter the nodes that are included in the current map.

Selecting the Filter icon () toggles on and off the display of the Node Filters checkboxes.

These checkboxes allow you to filter the nodes included in a map based on whether a device or connection is managed or unmanaged in SL1, whether the node is part of a device group, the status of the device (healthy, notice, minor, major, critical), or the device category assigned to the device.

To use the Filter tool:

1. Go to the Views > Device Maps > Organizational and select the map you want to view.
2. After the map is displayed, select the Filter tool () in the upper left.
3. SL1 displays a pane with the Node Filters checkboxes.
 - **Select a checkbox to include the devices in the map.**
 - **Unselect a checkbox to remove the devices from the map.**
4. You can select or unselect one or more of the following filters:
 - **Managed Devices.** If selected, the map will include devices that are managed by SL1. Managed devices are those that have been discovered with discovery.

- **Unknown Connections.** If selected, the map will include connections that are "unknown" to SL1. This means that SL1 has detected a connection but cannot provide details on all or one end of the connection.
- **Device Groups.** If selected, the map will include device groups.
- **Unmanaged Devices.** If selected, the map will include devices that are not managed by SL1. This means that SL1 has detected a device but has not performed discovery on that device.
- **Unconnected Nodes.** If selected, the map will include devices that are not connected to core devices. The device group defines the core devices. Those devices that are statically assigned to the device group are core devices. For dynamic rules in a device group, the seed devices (those devices that match the specified criteria for the group) are core devices.
- **Healthy.** If selected, the map will include devices with a status of "healthy". This means that the most severe event associated with the device has a severity of "healthy".
- **Notice.** If selected, the map will include devices with a status of "notice". This means that the most severe event associated with the device has a severity of "notice".
- **Minor.** If selected, the map will include devices with a status of "minor". This means that the most severe event associated with the device has a severity of "minor".
- **Major.** If selected, the map will include devices with a status of "major". This means that the most severe event associated with the device has a severity of "major".
- **Critical.** If selected, the map will include devices with a status of "critical". This means that the most severe event associated with the device has a severity of "critical".
- **Unknown.** If selected, the map will include devices with a status of "unknown". This means that SL1 cannot determine the most severe event associated with the device.
- **List of Device Categories.** The pane includes a checkbox for each device category associated with the current map. For each selected device category, the map will include devices with that device category.
- **Component Mapping.** If selected, the map will include devices with links that represent relationships created by dynamic applications.
- **List of Virtual Relationships.** List of all virtual relationships in the map. If selected, the map will include devices with links that represent relationships created by applications like VMware or Azure.

Customizing the Display of an Organizational Map

You can customize the display of an organizational map. To learn how to customize an organizational map, see the section on [Buttons, Tools, Icons and Customization](#).

Editing a Link

If SL1 discovers inaccurate information about a link, you can manually edit the link's properties. You can also edit a link that was manually created.

To edit a link in a Customized Map:

1. Go to Views > My Customized Maps. Select the Customized Map you want to edit.
2. When the Customized Map appears in the pane, select the Edit: **[Links]** button.

3. Select the link you want to edit.
4. Select the **Edit Link** icon in the **Link** menu (at the top of the pane).
5. When the **Link Editor** modal page appears, you can edit the values in each field.
6. To save your changes, select the Edit: **[Save]** button.
7. The manually edited link will be saved in SL1. SL1 will not overwrite the edited link.

Device Category Maps

The **Device Category Map** page allows you to view devices by device category. This makes it easy to visualize and manage devices.

A device category is a logical categorization of devices by primary function. SL1 uses device categories to group related devices in reports and views.

Device categories are paired with device classes to organize and describe discovered devices. Device class usually describes the manufacturer. Device category describes the function of the hardware. For example, a device might have a device class of "Microsoft Windows 2000 Server" and a device category of "servers".

To select a Device Category map, go to the **[Views]** tab and then go to the left NavBar. Expand the links for Device Maps > Categories and then select a device category. The **Device Category Map** page appears and displays a map of the selected device category and its devices.

The **Device Category Map** page includes buttons, tools, and icons to help view and manage the maps. To learn more about buttons, tools, and icons in device maps, see the section on [Buttons, Tools, Icons and Customization](#).

Viewing a Device Category Map

You can view a device category map from the **Device Category Map** page. To view a device category map:

1. Go to the **[Views]** tab and then go to the left NavBar.

- Expand the links for Device Maps > Categories and then select a device category. The **Device Category Map** page appears and displays a map of the device category and its member devices:



- The blank field in the upper right allows you to find one or more devices in the map. You can enter a string, and SL1 will highlight only the devices that have a device name that matches the string.
- Each member device appears as an icon in the map.
- When the map appears, you can view and reposition the components. The map can be edited and re-arranged using drag-and-drop features. Devices can be repositioned for easier reading, if necessary.
- Mousing over a device displays its name, IP address, device type, and device category.


Filtering Nodes in a Device Category Map

You can use the Filter tool to filter the nodes that are included in the current map.

Selecting the Filter icon () toggles on and off the display of the Node Filters checkboxes.

These checkboxes allow you to filter the nodes included in a map based on whether a device or connection is managed or unmanaged in SL1, whether the node is part of a device group, the status of the device (healthy, notice, minor, major, critical), or the device category assigned to the device.

To use the Filter tool:

- Go to Views > Device Maps > Categories and select the map you want to view.
- After the map is displayed, select the Filter tool () in the upper left.
- SL1 displays a pane with the Node Filters checkboxes.
 - Select a checkbox to include the devices in the map.**
 - Unselect a checkbox to remove the devices from the map.**

4. You can select or unselect one or more of the following filters:

- **Managed Devices.** If selected, the map will include devices that are managed by SL1. Managed devices are those that have been discovered with discovery.
- **Unknown Connections.** If selected, the map will include connections that are "unknown" to SL1. This means that SL1 has detected a connection but cannot provide details on all or one end of the connection.
- **Device Groups.** If selected, the map will include device groups.
- **Unmanaged Devices.** If selected, the map will include devices that are not managed by SL1. This means that SL1 has detected a device but has not performed discovery on that device.
- **Healthy.** If selected, the map will include devices with a status of "healthy". This means that the most severe event associated with the device has a severity of "healthy".
- **Notice.** If selected, the map will include devices with a status of "notice". This means that the most severe event associated with the device has a severity of "notice".
- **Minor.** If selected, the map will include devices with a status of "minor". This means that the most severe event associated with the device has a severity of "minor".
- **Major.** If selected, the map will include devices with a status of "major". This means that the most severe event associated with the device has a severity of "major".
- **Critical.** If selected, the map will include devices with a status of "critical". This means that the most severe event associated with the device has a severity of "critical".
- **Unknown.** If selected, the map will include devices with a status of "unknown". This means that SL1 cannot determine the most severe event associated with the device.
- **List of Device Categories.** The pane includes a checkbox for each device category associated with the current map. For each selected device category, the map will include devices with that device category.

Customizing the Display of a Device Category Map

You can customize a device category map. To learn how to customize a device category map, see the section on [Buttons, Tools, Icons and Customization](#).

Component Maps

The **Component Map** page allows you to view devices by root node and also view the relationships between root nodes, parent components, and child components. This map makes it easy to visualize and manage root nodes and their components.

NOTE: User accounts of type "user" can view only root nodes and device components that belong to their organization(s).

SL1 uses Dynamic Applications to retrieve data from a management device and discover each entity managed by that management device. SL1 then uses that retrieved data to create a device for each managed entity. In some cases, the managed entities are nested.

- In SL1, a managed entity is called a **component device**. A component device is an entity that runs under the control of a physical management device.
- In SL1, the **root device** is the physical device that manages one or more component devices.
- In SL1, a **parent device** is a device that has associated entities modeled as component devices. A parent device can be either a root device or another component device.

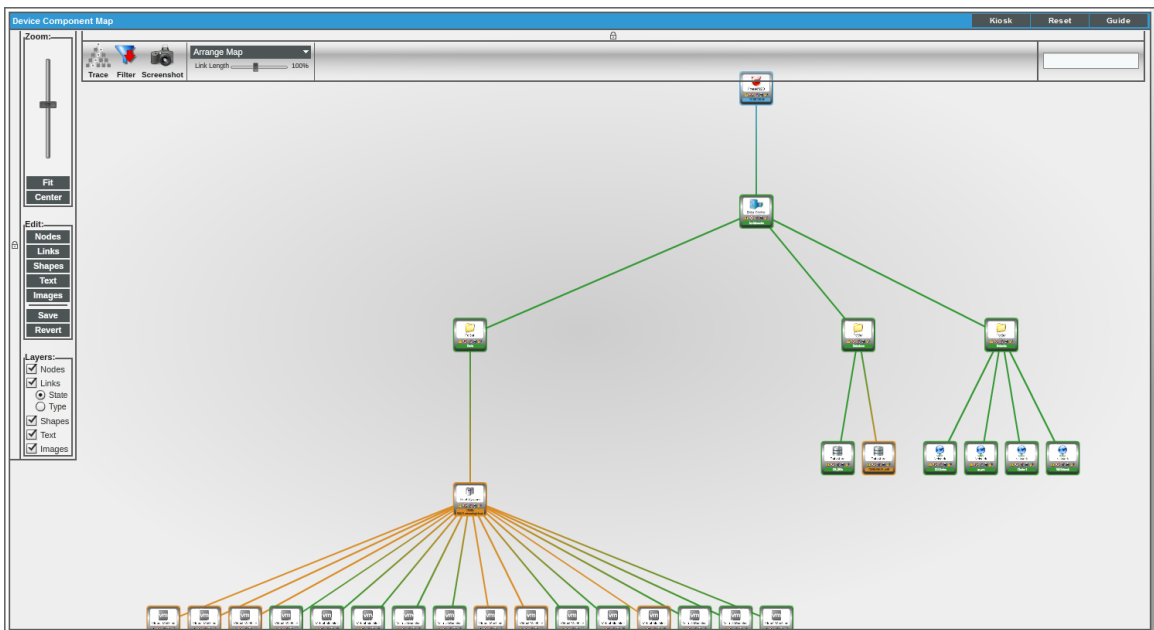
For example, in a Cisco UCS system, SL1 might discover a physical server that hosts the UCS manager. SL1 might discover a chassis as a component device. The chassis is a child device to the physical server; the physical server is the root device. SL1 might also discover a blade as a component device that is part of the chassis. The blade is a child device to the chassis. The chassis is the parent device.

SL1 automatically updates the Component Map as new component devices are discovered. SL1 also updates each map with the latest status and event information.

Viewing a Component Map

You can view a component map from the **Component Map** page. To view a Component Map:

1. Go to the **[Views]** tab and then go to the left NavBar.
2. Expand the links for Device Maps > Components and then select a root node. The **Device Component Map** page appears and displays the map of the root node and its component devices:




- The blank field in the upper right allows you to find one or more devices in the map. You can enter a string, and SL1 will highlight only the devices that have a device name that matches the string.

- Each root node and component device appears as an icon.
- Each map contains a root node. All parent and child devices radiate from this root node.
- Each component device is connected to its parent with a line. The color of the line specifies the device's current state. The state reflects the event of the highest severity for the device.
- When the map appears, you can view and reposition the icons. The view can be edited and rearranged using drag-and-drop features. Root devices and components can be repositioned for easier reading, if necessary.
- Mousing over a device displays its name, IP address (for physical devices), device type, and device category.

NOTE: For a user of type *User*, you can view only root nodes and device components that belong to your organization(s).


Filtering Nodes in a Component Map

You can use the Filter tool  to filter the nodes that are included in the current map.

Selecting the Filter icon () toggles on and off the display of the Node Filters checkboxes.

These checkboxes allow you to filter the nodes included in a map based on whether a device or connection is managed or unmanaged in SL1, whether the node is part of a device group, the status of the device (healthy, notice, minor, major, critical), or the device category assigned to the device.

To use the Filter tool:

1. Go to Views > Device Maps > Components and select the map you want to view.
2. After the map is displayed, select the Filter tool () in the upper left.
3. SL1 displays a pane with the Node Filters checkboxes.
 - **Select a checkbox to include the devices in the map.**
 - **Unselect a checkbox to remove the devices from the map.**

4. You can select or unselect one or more of the following filters:

- **Managed Devices.** If selected, the map will include devices that are managed by SL1. Managed devices are those that have been discovered with discovery.
- **Unknown Connections.** If selected, the map will include connections that are "unknown" to SL1. This means that SL1 has detected a connection but cannot provide details on all or one end of the connection.
- **Device Groups.** If selected, the map will include device groups.
- **Unmanaged Devices.** If selected, the map will include devices that are not managed by SL1. This means that SL1 has detected a device but has not performed discovery on that device.
- **Healthy.** If selected, the map will include devices with a status of "healthy". This means that the most severe event associated with the device has a severity of "healthy".
- **Notice.** If selected, the map will include devices with a status of "notice". This means that the most severe event associated with the device has a severity of "notice".
- **Minor.** If selected, the map will include devices with a status of "minor". This means that the most severe event associated with the device has a severity of "minor".
- **Major.** If selected, the map will include devices with a status of "major". This means that the most severe event associated with the device has a severity of "major".
- **Critical.** If selected, the map will include devices with a status of "critical". This means that the most severe event associated with the device has a severity of "critical".
- **Unknown.** If selected, the map will include devices with a status of "unknown". This means that SL1 cannot determine the most severe event associated with the device.
- **List of Device Categories.** The pane includes a checkbox for each device category associated with the current map. For each selected device category, the map will include devices with that device category.

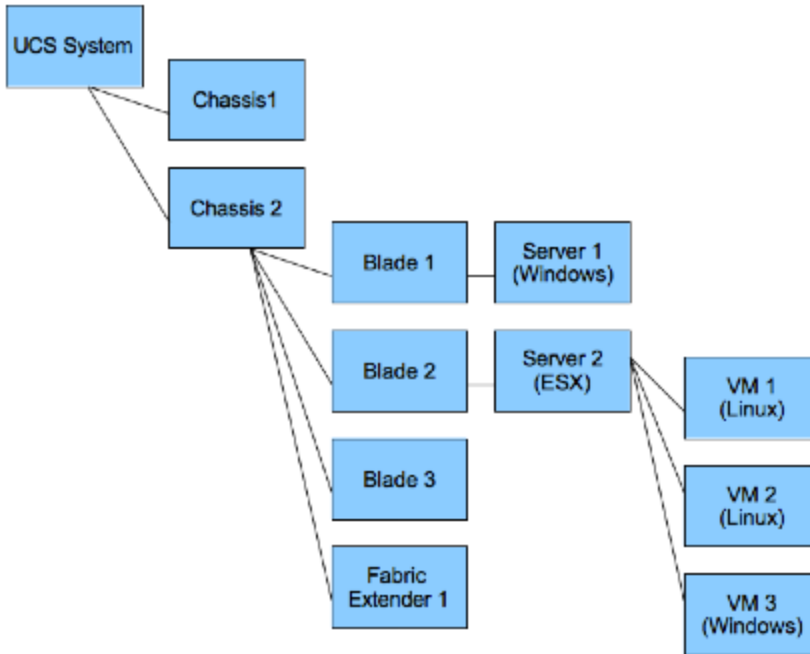
Customizing the Display of a Component Map

You can customize a component map. To learn how to customize a component map, see the section on [Buttons, Tools, Icons and Customization](#).

Adding Devices from Another Component Tree to the Component Map

You can add a device from another component tree to the map of the current component device.

For example, suppose you have a UCS system. Suppose you are running an ESX server and VMs on one of the blades of the UCS system:



You can add the device where the ESX server resides to the map of the UCS system. To do this:

1. Go to the **Component Map** page (Views > Device Maps > Components).
2. Expand the list of maps. Find the component map to which you want to add a device.
3. Select the **[Nodes]** button. Select the **Add Dev** icon (in the upper left).
4. In the **Device Browser** modal page, select the root node you want to add to the component map. Select the **[Add To Map]** button.

NOTE: When you complete these steps, the SL1 system will automatically add all the child devices for the newly added node to the map.

5. Select the **[Links]** button. Click on the parent device and then click on the newly added child device.
6. The link you created is an **Event Correlation Override** link. If you want to manually define a parent device and child device for two devices that do not share a Layer-2 link, a Layer-3 link, a CDP link, an LLDP link, or a VMware relationship, you can create an **Event Correlation Override** link between the devices. Additionally, you can then define an event hierarchy for these devices.
7. Select the **[Save]** button.
8. Select the **[Reset]** button to view the changes to the map.

Chapter

4

Topology Maps



Overview

During discovery, SL1 automatically discovers all networks and subnets in your infrastructure. SL1 then creates graphical representations of these discovered networks and subnets to create topology maps. SL1 creates four types of topology maps:

- Layer-2 Maps
- CDP Maps
- LLDP Maps
- Layer-3 Maps

This chapter will describe each type of map, and how to view and edit each topology map.

Use the following menu options to navigate the SL1 user interface:

- To view a pop-out list of menu options, click the menu icon ().
- To view a page containing all of the menu options, click the Advanced menu icon (.

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Layer-2 Maps

The **Layer-2 Maps** page displays a network map, where you can view details and relationships in any layer-2 network that has been discovered by SL1.

Layer-2 networks are unrouted subnets, where devices are identified by MAC addresses (as opposed to routed networks, where devices are identified by IP address). Layer-2 links communicate over the Data Link Layer and use Ethernet and MAC addresses to communicate with devices in the same LAN or WAN.

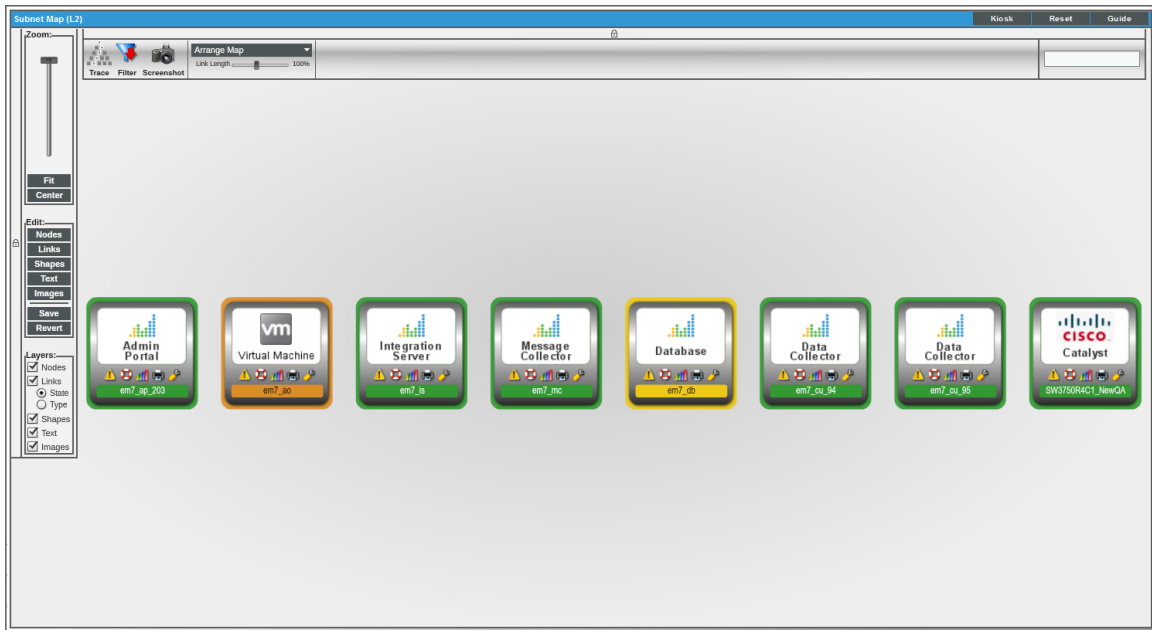
A layer-2 network map can include:

- Devices of each device category defined in SL1.
- Unknown devices are represented with cloud icons and labeled as "unknown".
- Links between devices.
- Links between networks (created with switches or routers).
- Unknown connections are represented with cloud icons and labeled as "unknown".
- SL1 automatically updates the map as new devices are discovered. SL1 also updates the map with the latest status and event information.

Viewing a Layer-2 Map

To view a layer-2 map:

1. Go to the **[Views]** tab and then go to the left NavBar.
2. Expand the links for Topology Maps > Layer-2 and then select a network.
3. Depending on the network you select, the layer-2 map will display the following information:



- The blank field in the upper right allows you to find one or more devices in the map. You can enter a string, and SL1 will highlight only the devices that have a device name that matches the string.
- Each device appears as an icon in the map. If a device on a map appears with a question mark icon (?), this means that SL1 has not discovered this device but can detect that the device is linked to a device that SL1 has discovered.

NOTE: If your account is of type "user", you can view only devices that belong to the same organization(s) as your user account.

- Each network device is connected to its parent device with a line. The color of the line specifies the current state of the connection at each end. The state reflects the event of the highest severity for the network connection. For example, a link line that is red on the child end and yellow on the parent end indicates that the interface has a critical event on the child end and a minor event on the parent end.

NOTE: If all or part of a link is white, this means that SL1 could not determine the interface state or device state for that end of the link.

- If you see a cloud icon, this means that SL1 has discovered a connection between two devices but requires confirmation of the link. This occurs when there is an undiscovered device connected between two discovered devices.
- Each device icon has a color outline. The color of the outline specifies the current state of the device. The state reflects the event of the highest severity for the device.

- When the map appears, you can view and reposition the components. The map can be edited and rearranged using drag-and-drop features. Devices and links can be repositioned for easier reading, if necessary. For details, see the section on [Buttons, Tools, Icons and Customization](#).
- Mousing over a device displays its name, IP address, device type, and device category.
- Mousing over a link displays as much of the following information as SL1 can retrieve about both the parent and child interface: MAC address, vendor, interface name, interface alias, and IP address.
- If the nodes in the map are using Extended display (**Edit: [Nodes]**), you can click on an icon to view events on the device (🚨), create a ticket about the device (🎫), view the **Device Summary** page (📊), print a report about the device (🖨️), or view the **Device Properties** page (🔧).



Filtering Nodes in a Layer-2 Map

You can use the Filter tool to filter the nodes that are included in the current map.

Selecting the Filter icon (🔍) toggles on and off the display of the Node Filters checkboxes.

These checkboxes allow you to filter the nodes included in a map based on whether a device or connection is managed or unmanaged in SL1, whether the node is part of a device group, the status of the device (healthy, notice, minor, major, critical), or the device category assigned to the device.

NOTE: By default, each filter is already selected except for **Unmanaged Devices**. By default, all devices and connections except unmanaged devices will be included in the map. This means that by default, unmanaged devices will not appear in the map until you select the **Unmanaged Devices** checkbox.

To use the Filter tool:

1. Go to Views > Topology Maps > Layer-2 and select the map you want to view.
2. After the map is displayed, select the Filter tool (🔍) in the upper left.
3. SL1 displays a pane with the Node Filters checkboxes.
 - **Select a checkbox to include the devices in the map.**
 - **Unselect a checkbox to remove the devices from the map.**

4. You can select or unselect one or more of the following filters:

- **Managed Devices.** If selected, the map will include devices that are managed by SL1. Managed devices are those that have been discovered with discovery.
- **Unknown Connections.** If selected, the map will include connections that are "unknown" to SL1. This means that SL1 has detected a connection but cannot provide details on all or one end of the connection.
- **Device Groups.** If selected, the map will include device groups.
- **Unmanaged Devices.** If selected, the map will include devices that are not managed by SL1. This means that SL1 has detected a device but has not performed discovery on that device.
- **Healthy.** If selected, the map will include devices with a status of "healthy". This means that the most severe event associated with the device has a severity of "healthy".
- **Notice.** If selected, the map will include devices with a status of "notice". This means that the most severe event associated with the device has a severity of "notice".
- **Minor.** If selected, the map will include devices with a status of "minor". This means that the most severe event associated with the device has a severity of "minor".
- **Major.** If selected, the map will include devices with a status of "major". This means that the most severe event associated with the device has a severity of "major".
- **Critical.** If selected, the map will include devices with a status of "critical". This means that the most severe event associated with the device has a severity of "critical".
- **Unknown.** If selected, the map will include devices with a status of "unknown". This means that SL1 cannot determine the most severe event associated with the device.
- **List of Device Categories.** The pane includes a checkbox for each device category associated with the current map. For each selected device category, the map will include devices with that device category.

Confirming or Deleting an Unconfirmed Link

If SL1 discovers a connection between an undiscovered device connected between two or more discovered devices, it will create an unconfirmed link, represented by a cloud icon. You can confirm or delete this link. If you confirm the link, SL1 will not override it, and the link will be displayed in all maps featuring the devices.

The two most common causes of an unknown connection are:

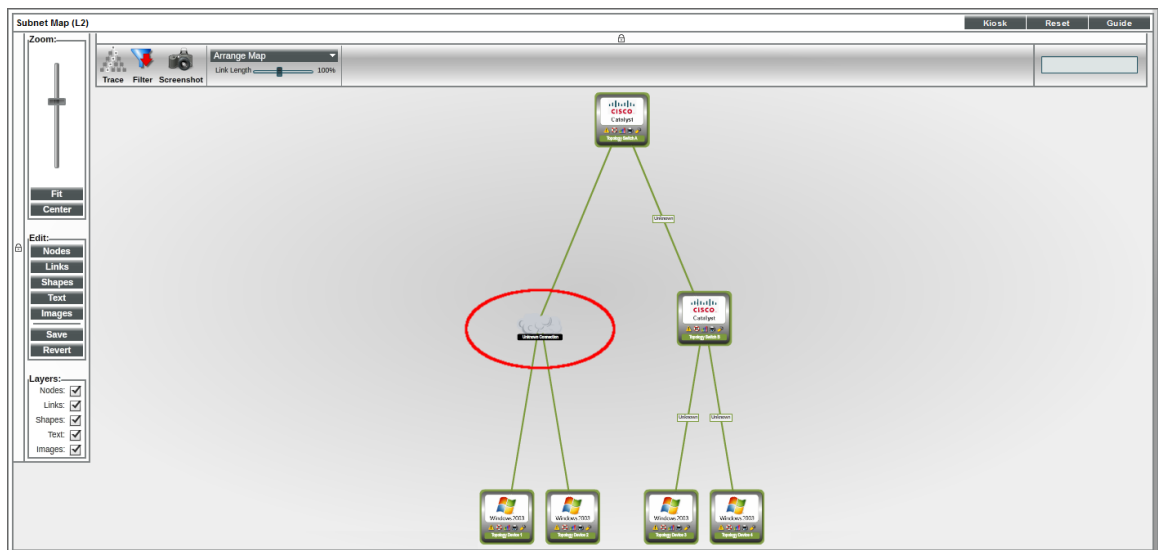
- An interface associated with the ambiguous port on the network switch or bridge is connected to another network switch or bridge that is not discovered in SL1.
- The network switch or bridge is reporting incorrect information. The network switch or bridge detects multiple devices associated with a single port and interface. One of those devices is connected to the interface associated with that port; the other devices reported for the ambiguous port are actually connected to a different interface on the network switch or bridge.

Perform the following steps to determine the cause of the unknown connection:

1. Open the Layer-2 topology map that displays the unknown connection.
2. Select the link that connects the two devices with the "Unknown Connection" cloud.
3. Hover over the link that connects the network switch or bridge to the "Unknown Connection" cloud. The **Link Details** pop-up window will appear. The **Link Details** pop-up window displays information about the parent interface (the interface on the network switch or bridge associated with the ambiguous port).
4. Based on your knowledge of the network and the tools you have available to you, determine what is connected to that interface.
5. If the interface is connected to a network switch or bridge that is not discovered in SL1, discover that network switch or bridge.
6. If the interface is connected to one of the possible connections identified by SL1, confirm that connection.

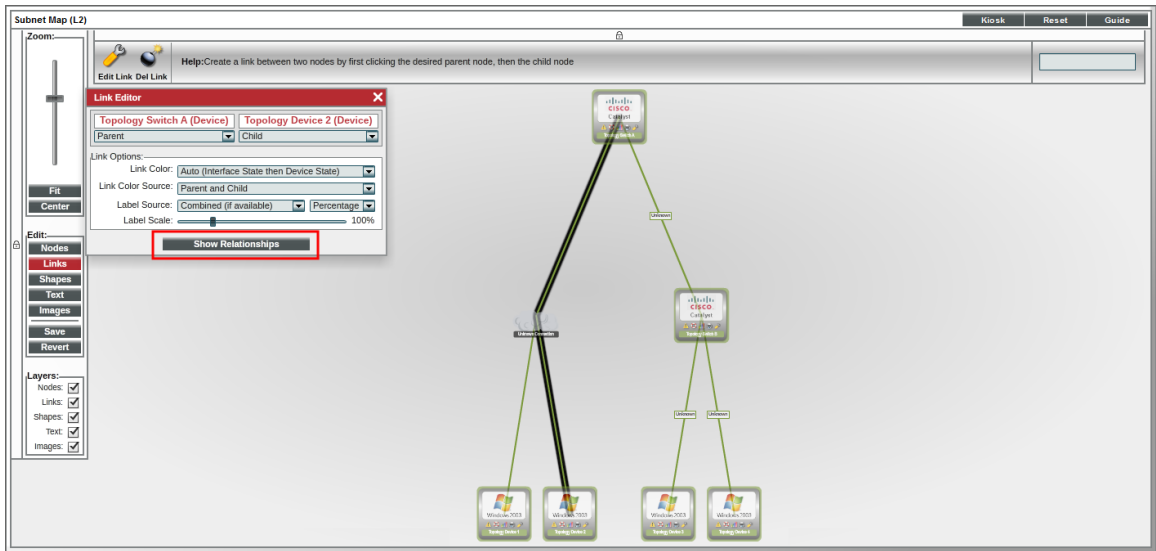
To confirm an unconfirmed link:

1. Go to the **Topology Maps** pages (Views > Topology maps).
2. If the map you are viewing contains an unconfirmed link, it will be represented by a cloud icon:

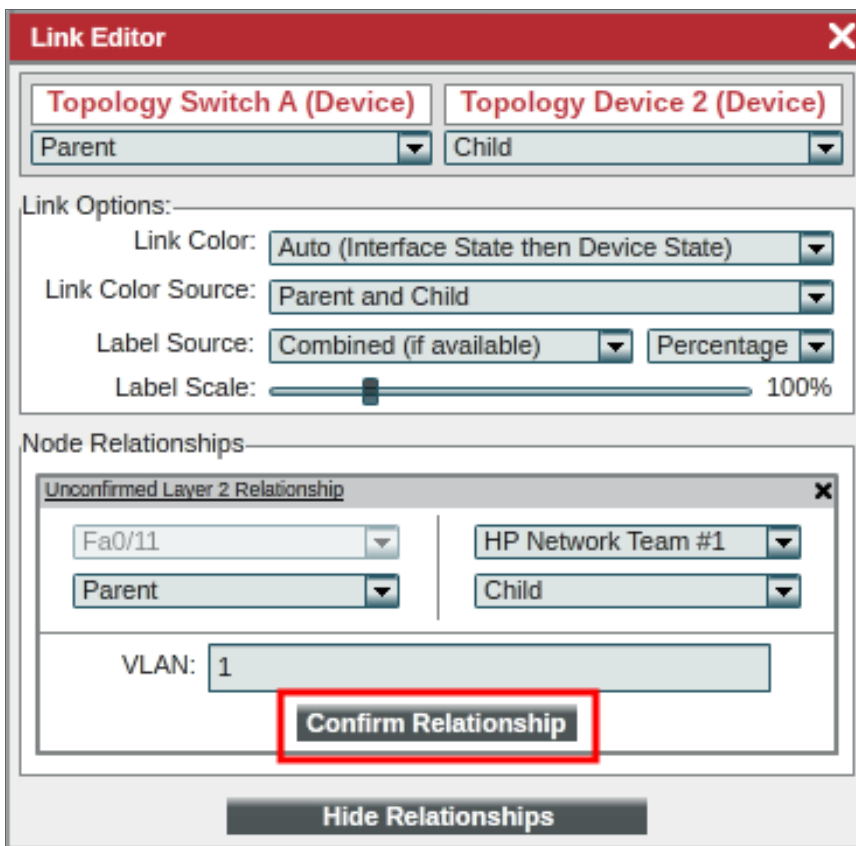


The cloud icon will be connected to one parent device and multiple child devices. SL1 has determined that for each cloud icon, there exists one parent-child relationship, but cannot fully determine which child device link is correct. The links between the cloud icon and the child devices represent all possible connections for the link. You must determine which of the possible connections is correct

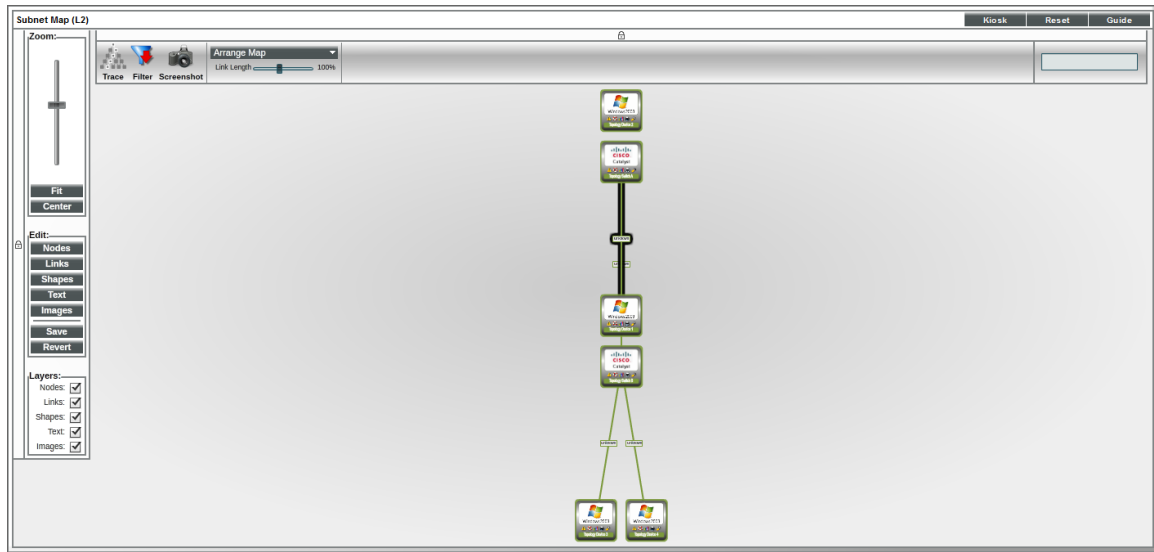
3. Select the **[Edit:Links]**, and then double click the path between the known and unknown device you want to confirm.
4. The **Link Editor** modal page appears. Select *Show Relationships*.



5. In the **Node Relationships** pane, select *Confirm Relationship*.



- The link will be confirmed, and the other possible links will automatically be deleted.



If the "unknown connection" cloud connected a switch or bridge to multiple devices and you confirmed that one of the connections was correct, the possible connections to the other devices will be removed. To create new connections for those other devices, perform the following steps:

1. Select the **[Edit: Links]** button.
2. Select the first device (typically a switch or bridge) and then the connected device.
3. A link is created between the two devices and the **Link Editor** modal page appears.
4. When the **Link Editor** modal page appears, select the **[Show Relationship]** button. In the expanded view, you can select the interface on the parent device and the interface on the child device for this topology record.
5. Select the **[Save]** button to save the new topology record.

You can also manually delete an unconfirmed link. To delete an unconfirmed link:

1. Go to the **Topology Maps** pages (Views > Topology maps).
2. If the map you are viewing contains an unconfirmed link, it will be represented by a cloud icon.
3. Select the **[Edit:Links]**, and click the path between the parent device and all possible child devices.
4. Select **[Del Link]** in the upper left of the page.
5. The links will be deleted, and will not be overwritten.

Creating, Editing and Deleting a Link

In a Layer-2 Map, you can create links between two devices, edit links between two devices, and delete links between two devices. You can also confirm a relationship between two devices.

In a Layer-2 Map, you can create only layer-2 links.

Creating a Link

If SL1 does not discover a layer-2 link, you can manually create the link in the appropriate layer-2 map. The manually created link will be saved in SL1. SL1 will not overwrite the new link.

To create a layer-2 link:

1. Go to Views > Topology Maps > Layer-2 and select a map.
2. Select the **Edit: [Links]** button.
3. Find the device icon for the parent device. Click on it.
4. Find the device icon for the child device. Click on it.
5. SL1 creates a link between the two icons.
6. When the **Link Editor** page appears, you can edit the values in the following fields:

The screenshot shows the 'Link Editor' dialog box. At the top, there are two text boxes for device names: 'Topology Switch B (Device)' and 'Topology Device 3 (Device)'. Below these are two dropdown menus for 'Parent' and 'Child'. The 'Link Options' section contains: 'Link Color' dropdown set to 'Auto (Interface State then Device State)', 'Link Color Source' dropdown set to 'Parent and Child', 'Label Source' dropdown set to 'Parent Outbound Utilization' and a secondary dropdown set to 'Percentage', and a 'Label Scale' slider set to 100%. A 'Show Relationships' button is at the bottom.

- **Device**. Displays the name of the device at one end of the link. You can specify whether this device is a parent, sibling, or child (as compared to the other end of the link). A sibling relationship affects only the display of the map when the default arrangement options are used; the two devices will be on the same horizontal plane in the tree view or the same distance from the center point in the radial tree view.
- **Device**. Displays the name of the device at the other end of the link. You can specify whether this device is a parent, sibling, or child (as compared to the other end of the link).
- **Link Color**. Specifies how SL1 should color-code the link. The link can use either interface state or device state. Interface state reflects the event with the highest severity that is aligned with the interface. Device state means the event with the highest severity that is aligned with the device. Choices are:
 - *Auto (Interface State then Device State)*. This is the default setting. If possible, SL1 will first use the interface state to color-code the link. If SL1 cannot determine the interface state, SL1 will use the device state to color-code the link. If you select *Parent and Child* in the **Link Color Source** field, each end of the link can have a different color.

- *Interface State*. SL1 will first use the interface state to color-code the link. If you select *Parent and Child* in the **Link Color Source** field, each end of the link can have a different color.
- *Device State*. SL1 will use the device state to color-code the link. If you select *Parent and Child* in the **Link Color Source** field, each end of the link can have a different color.

NOTE: If all or part of a link are white, this means that SL1 could not determine the interface state or device state for that end of the link.

- **Link Color Source**. Specifies whether SL1 will display the status of both interfaces or only one interface when displaying link status. Choices are:
 - *Parent and Child*. This is the default setting. Half the link will display the parent status and half the link will display the child status.
 - *Parent Node Only*. The link will be color-coded to display only the parent status.
 - *Child Node Only*. The link will be color-coded to display only the child status.
- **Label Source**. Specifies whether or not to include a label with the link and if so, the information to use in the label. Choices are:
 - *Disabled*. This is the default setting. SL1 will not include a label with this link.
 - *Auto (based on relationships)*. Based on what information is available, SL1 will automatically select the label source that provides the most information.
 - *Parent Interface Utilization*. Specifies the label will display the utilization of the percent interface.
 - *Child Interface Utilization*. Specifies the label will display the utilization of the child interface.
 - *Combined Link Utilization*. Specifies the label will display the combined utilization of the percent and child interfaces.
- **Label Scale**. Allows you to set the size of the text box and text of the label in relation to the size of the link. You can use the slider to choose scale between 50% to 300%.

- If you select **[Show Relationships]**, you can define Layer-2 Relationships. Layer-2 relationships appear only in Customized Maps pages and Layer-2 maps pages. Layer-2 links use the Data Link Layer and allow devices in a WAN or LAN to communicate with one another. Layer-2 links use Ethernet and MAC addresses to communicate with devices in the same LAN or WAN. Layer-2 links are unrouted. For Layer-2 relationships, you can define the following:

The screenshot shows a 'Node Relationships' dialog box. Inside, there is a 'Layer 2 Relationship' sub-dialog. It contains two columns of dropdown menus. The left column has 'Fa0/10' and 'Parent'. The right column has 'HP Network Team #1' and 'Child'. Below these is a text field labeled 'VLAN:' with the value '1'. At the bottom is a 'Hide Relationships' button.

- Interface*. Displays the name of the interface at one end of the link. You can select a different interface on the device. You can then specify this device is a parent, sibling, or child (as compared to the other end of the link). Editing the parent/sibling/child setting in this field also changes the setting in the **Device** field.
 - Interface*. Displays the name of the interface at one end of the link. You can select a different interface on the device. You can then specify this device is a parent, sibling, or child (as compared to the other end of the link). Editing the parent/sibling/child setting in this field also changes the setting in the **Device** field.
 - VLAN*. Displays the VLAN created by the link.
- To save the new link, select the **Edit: [Save]** button.
 - The manually created link will be saved in SL1. SL1 will not overwrite the new link.

Editing a Link

If SL1 discovers inaccurate information about a link, you can manually edit the link's properties in the appropriate layer-2 map. The manually edited link will be saved in SL1. SL1 will not overwrite the changes to the link.

To edit a layer-2 link:

- Go to Views > Topology Maps > Layer-2 and select a map.
- Select the **Edit: [Links]** button.
- Select the link you want to edit.
- Select the **Edit Link** icon in the Link menu (at the top of the pane).
- When the **Link Editor** page appears, you can edit the values in each field.

6. To save your changes, select the **Edit: [Save]** button.
7. The changes to the link will be saved in SL1. SL1 will not overwrite the edited link.

Deleting a Link

If SL1 discovers an incorrect layer-2 link, you can delete the link. You can also delete links that were created manually. When you delete a link from a layer-2 map, the change will be saved in SL1. The link will no longer be used for event correlation and will not appear in any maps or the device relationships page. SL1 will not re-add the link.

To delete a link:

1. Go to Views > Topology Maps > Layer-2.
2. Select the **Edit: [Links]** button.
3. Select the link you want to delete.
4. Select the **Delete Link** icon in the Link menu (at the top of the pane).
5. To save your changes, select the **Edit: [Save]** button.
6. The deleted relationship will be saved in SL1. SL1 will not overwrite the deleted relationship.

Customizing the Display of a Layer-2 Map

For details and examples on how to customize a Layer-2 Map, see [Buttons, Tools, Icons and Customization](#).

Event Correlation and Precedence

For details on parent and child devices, event correlation and precedence, see the section on [Event Correlation and Precedence](#).

CDP Maps

Cisco Discovery Protocol (CDP) allows discovery of Cisco hardware and allows Cisco hardware within the same LAN or WAN to share information about each other. This information includes the MAC address and IP address, the operating system, and information about the network interface. CDP is a Layer-2 protocol that uses the Data Link Layer and is unrouted. CDP can also run on legacy Hewlett Packard Hardware.

NOTE: For SL1 to create CDP maps, you must first enable the **Enable CDP Topology** checkbox in the **Behavior Settings** page. This checkbox tells SL1 to discover CDP relationships where possible.

If you enable **Use CDP Topology**, SL1 automatically discovers all CDP relationships in your infrastructure. SL1 then creates graphical representations of those discovered networks and subnets. These graphical representations are called Topology Views. The Views > Topology Maps pages allow you to view details and relationships in any network that has been discovered by SL1.

The **Subnet Map (CDP)** page displays a network map, where you can view details and relationships in any CDP network that has been discovered by SL1.

CDP maps show layer-2, unrouted subnets, where devices are identified by MAC addresses (as opposed to routed networks, where devices are identified by IP address).

A CDP map can include:

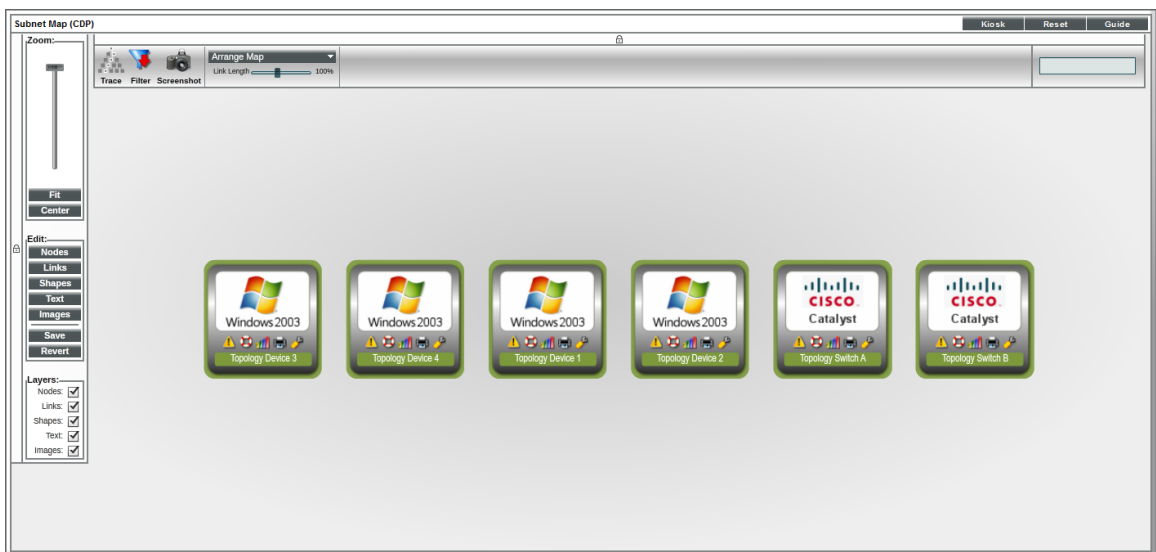
- Devices of each device category defined in SL1.
- Links between devices.
- Links between networks (created with switches or routers).
- SL1 automatically updates the map as new devices are discovered. SL1 also updates the map with the latest status and event information.

NOTE: Because CDP provides very accurate discovery details, links and relationships in CDP Maps take precedence over links and relationships in Layer-2 Maps.

Viewing a CDP Map

You can view a CDP map from the **Subnet Map (CDP)** page (Views > Topology Maps > CDP). To view a CDP map:

1. Go to the **[Views]** tab and then go to the left NavBar.
2. Expand the links for Topology Maps > CDP and then select a network. The **Subnet Map (CDP)** page appears and displays a map of the selected network.
3. Depending on the network you select, the CDP map will display the following information:








- The blank field in the upper right allows you to find one or more devices in the map. You can enter a string, and SL1 will highlight only the devices that have a device name that matches the string.
- Each device appears as an icon in the map.

NOTE: If your account is of type "user", you can view only devices that belong to the same organization(s) as your user account.

- Each network device is connected to its parent device with a line. The color of the line specifies the current state of the connection at each end. The state reflects the event of the highest severity for the network connection. For example, a link line that is red on the child end and yellow on the parent end indicates that the interface has a critical event on the child end and a minor event on the parent end.

NOTE: If all or part of a link are white, this means that SL1 could not determine the interface state or device state for that end of the link.

- Each device icon has a color outline. The color of the outline specifies the current state of the device. The state reflects the event of the highest severity for the device.
- When the map appears, you can view and reposition the components. The map can be edited and re-arranged using drag-and-drop features. Devices and links can be repositioned for easier reading, if necessary. For details, see [Buttons, Tools, Icons and Customization](#).
- Mousing over a device displays its name, IP address, device type, and device category.
- Mousing over a link displays as much of the following information as SL1 can retrieve about both the parent and child interface: the MAC address, vendor, interface name, interface alias, and IP address.
- If the nodes in the map are using Extended display (Edit: Nodes), you can click on an icon to view events on the device () , create a ticket about the device () , view the **Device Summary** page () , print a report about the device () , or view the **Device Properties** page () .

Filtering the Nodes in a CDP Map

You can filter the nodes in a CDP map. This feature works the same as Layer-2 map. To learn more about filtering nodes in a CDP map, see the section [Filtering Nodes in a Layer-2 map](#).

Creating, Editing, Confirming and Deleting a Link

You can confirm or delete unconfirmed links in a CDP map. To learn more about confirming or deleting links in a CDP map, see the section on [Confirming or Deleting an Unconfirmed Link](#).

You can create links between nodes in a CDP map. The **Link Editor** pane is the same as described for Layer-2 maps. To learn more about the **Link Editor** pane, see the section on [Creating, Editing, and Deleting a Link](#).

If you select **[Show Relationships]** for a CDP link, you can view CDP relationships. CDP relationships appear only in Customized Maps pages and CDP maps pages. Cisco Discovery Protocol (CDP) allows discovery of Cisco hardware and allows Cisco hardware within the same LAN or WAN to share information about each other. This information includes the MAC address and IP address, the operating system, and information about the network interface. CDP uses is a Layer-2 protocol that uses the Data Link Layer and is unrouted. CDP can also run on legacy Hewlett Packard Hardware. For CDP relationships, you can define the following:



- *Interface*. Displays the name of the interface at one end of the link. You can select a different interface on the device. You can then specify this device is a parent, sibling, or child (as compared to the other end of the link). Editing the parent/sibling/child setting in this field also changes the setting in the **Device** field.
- *Interface*. Displays the name of the interface at one end of the link. You can select a different interface on the device. You can then specify this device is a parent, sibling, or child (as compared to the other end of the link). Editing the parent/sibling/child setting in this field also changes the setting in the **Device** field.
- *VLAN*. Displays the VLAN created by the link.

For more information on how edit and delete links in a CDP map, see the section on [Creating, Editing, and Deleting a Link](#).

Customizing the Display of a CDP Map

For details and examples on how to customize a CDP map, see [Buttons, Tools, Icons and Customization](#).

Event Correlation and Precedence

For details on parent and child devices, event correlation and precedence, see the section on [Event Correlation and Precedence](#).

LLDP Maps

Link Layer Discovery Protocol (LLDP) allows discovery of Cisco hardware and allows Cisco hardware within the same LAN or WAN to share information about each other. This information includes the MAC address and IP address, the operating system, and information about the network interface. LLDP is a layer-2 protocol that uses the Data Link Layer and is unrouted.

NOTE: For SL1 to create LLDP maps, you must first select the **Enable LLDP Topology** checkbox in the **Behavior Settings** page. This checkbox tells SL1 to discover LLDP relationships where possible.

If you enable **Enable LLDP Topology**, SL1 automatically discovers all LLDP relationships in your infrastructure. SL1 then creates graphical representations of those discovered networks and subnets. These graphical representations are called Topology Views. The Views > Topology Maps pages allow you to view details and relationships in any network that has been discovered by SL1.

The **Subnet Map (LLDP)** page displays a network map, where you can view details and relationships in any LLDP network that has been discovered by SL1.

LLDP maps show layer-2, unrouted subnets, where devices are identified by MAC addresses (as opposed to routed networks, where devices are identified by IP address).

A LLDP map can include:

- Devices of each device category defined in SL1.
- Links between devices.
- Links between networks (created with switches or routers).
- SL1 automatically updates the map as new devices are discovered. SL1 also updates the map with the latest status and event information.

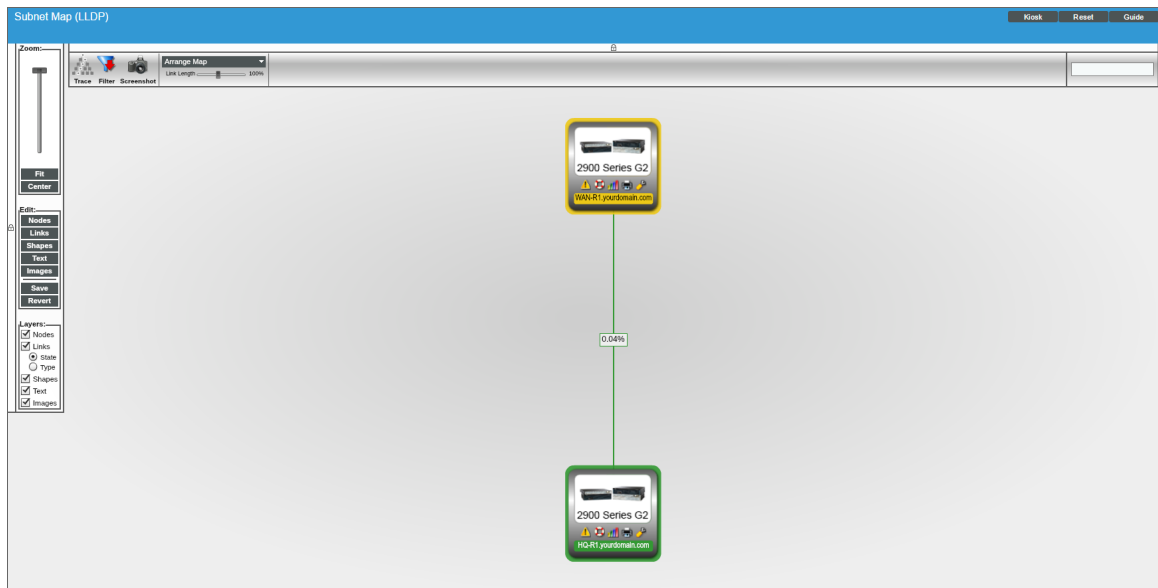
NOTE: Because LLDP provides very accurate discovery details, links and relationships in LLDP Maps take precedence over links and relationships in layer-2 Maps.

Viewing an LLDP Map

You can view an LLDP map from the **Subnet Map (LLDP)** page (Views > Topology Maps > LLDP). To view an LLDP map:

1. Go to the **[Views]** tab and then go to the left NavBar.
2. Expand the links for Topology Maps > LLDP and then select a network. The **Subnet Map (LLDP)** page appears and displays a map of the selected network.

- Depending on the network you select, the LLDP map will display the following information:



- The blank field in the upper right allows you to find one or more devices in the map. You can enter a string, and SL1 will highlight only the devices that have a device name that matches the string.
- Each device appears as an icon in the map.

NOTE: If your account is of type "user", you can view only devices that belong to the same organization(s) as your user account.

- Each network device is connected to its parent device with a line. The color of the line specifies the current state of the connection at each end. The state reflects the event of the highest severity for the network connection. For example, a link line that is red on the child end and yellow on the parent end indicates that the interface has a critical event on the child end and a minor event on the parent end.

NOTE: If all or part of a link are white, this means that SL1 could not determine the interface state or device state for that end of the link.

- Each device icon has a color outline. The color of the outline specifies the current state of the device. The state reflects the event of the highest severity for the device.
- When the map appears, you can view and reposition the components. The map can be edited and re-arranged using drag-and-drop features. Devices and links can be repositioned for easier reading, if necessary. For details, see [Buttons, Tools, Icons and Customization](#).
- Mousing over a device displays its name, IP address, device type, and device category.
- Mousing over a link displays as much of the following information as SL1 can retrieve about both the parent and child interface: the MAC address, vendor, interface name, interface alias, and IP address.

- If the nodes in the map are using Extended display (Edit: Nodes), you can click on an icon to view events on the device (⚠️), create a ticket about the device (🎫), view the **Device Summary** page (📊), print a report about the device (🖨️), or view the **Device Properties** page (🔧).

Filtering the Nodes in a LLDP Map

You can filter the nodes in a LLDP map. This feature works the same as Layer-2 map. To learn more about filtering nodes in a LLDP map, see the section [Filtering Nodes in a Layer-2 map](#).

Creating, Editing, Confirming and Deleting a Link

You can confirm or delete unconfirmed links in a LLDP map. To learn more about confirming or deleting links in a LLDP map, see the section on [Confirming or Deleting an Unconfirmed Link](#).

You can create links between nodes in a LLDP map. The **Link Editor** pane is the same as described for Layer-2 maps. To learn more about the **Link Editor** pane, see the section on [Creating, Editing, and Deleting a Link](#).

If you select **[Show Relationships]** for a LLDP link, you can view LLDP relationships. LLDP relationships appear only in Customized Maps pages and LLDP maps pages. Link Layer Discovery Protocol (LLDP) allows discovery of hardware and allows hardware within the same LAN or WAN to share information about each other. This information includes the MAC address and IP address, the operating system, and information about the network interface. LLDP uses is a Layer-2 protocol that uses the Data Link Layer and is unrouted. For LLDP relationships, you can define the following:

- *Interface*. Displays the name of the interface at one end of the link. You can select a different interface on the device. You can then specify this device is a parent, sibling, or child (as compared to the other end of the link). Editing the parent/sibling/child setting in this field also changes the setting in the **Device** field.
- *Interface*. Displays the name of the interface at one end of the link. You can select a different interface on the device. You can then specify this device is a parent, sibling, or child (as compared to the other end of the link). Editing the parent/sibling/child setting in this field also changes the setting in the **Device** field.
- *VLAN*. Displays the VLAN created by the link.

For more information on how edit and delete links in a LLDP map, see the section on [Creating, Editing, and Deleting a Link](#).

Customizing the Display of a LLDP Map

For details and examples on how to customize a LLDP map, see [Buttons, Tools, Icons and Customization](#).

Event Correlation and Precedence

For details on parent and child devices, event correlation and precedence, see the section on [Event Correlation and Precedence](#).

Layer-3 Maps

The **Layer-3 Maps** page displays a network map, where you can view details and relationships between Data Collectors and layer-3 routers and switches, and between the layer-3 routers and switches that have been discovered by SL1.

SL1 creates Layer-3 maps by running traceroute from a Data Collector to all devices that have layer-3 collection enabled in the device class.

Layer-3 networks are routed subnets, where devices are identified by IP address (as opposed to unrouted networks, where devices are identified by MAC address). Layer-3 links communicate over the Network Layer and allow devices from different subnets or networks to communicate. Layer-3 links use IP addresses to identify devices and their networks and therefore are routed and can pass messages through routers.

A layer-3 network map can include:

- Data Collectors, switches, and routers.
- Links between devices.
- Links between networks (created with switches or routers).
- SL1 automatically updates the map as new devices are discovered. SL1 also updates the map with the latest status and event information.

Viewing a Layer-3 Map

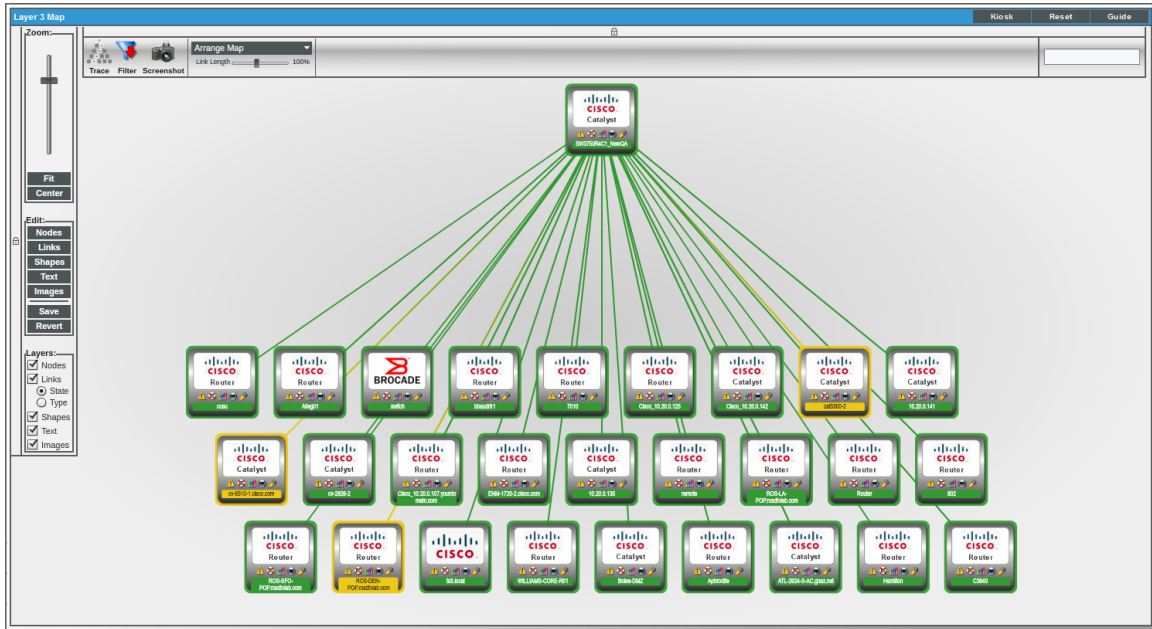
You can view a layer-3 Map from the **Layer 3 Map** page (Views > Topology Maps > Layer-3). To view a layer-3 map:

1. Go to the **[Views]** tab and then go to the left NavBar.
2. Expand the links for Topology Maps > Layer-3 and then select a network. The **Layer 3 Map** page appears and displays a map of the selected network.

NOTE: If your environment includes only a single layer-3 network, the NavBar will not list any networks under Layer-3. When you navigate to Layer-3 in the NavBar, SL1 will automatically load the map of your single layer-3 network.

3. Depending on the layer-3 map you select, the map will display the following:

NOTE: In order to have devices appear in Layer-3 maps, you must edit the device class and select the L3 Topology checkbox in the **Device Class Editor** page (System > Customize > Device Classes).



- The blank field in the upper right allows you to find one or more devices in the map. You can enter a string, and SL1 will highlight only the devices that have a device name that matches the string.
- Each device appears as an icon in the map.
- Each network device is connected to its parent device with a line. The color of the line specifies the current state of the connection at each end. The state reflects the event of the highest severity for the network connection. For example, a link line that is red on the child end and yellow on the parent end indicates that the interface has a critical event on the child end and a minor event on the parent end.

NOTE: If all or part of a link is white, this means that SL1 could not determine the interface state or device state for that end of the link.

- Each device icon has a color outline. The color of the outline specifies the current state of the device. The state reflects the event of the highest severity for the device.
- When the map appears, you can view and reposition the components. The map can be edited and re-arranged using drag-and-drop features. Devices and links can be repositioned for easier reading, if necessary. For details, see [Buttons, Tools, Icons and Customization](#).
- Mousing over a device displays its name, IP address, device type, and device category.

- Mousing over a link displays as much of the following information as SL1 can retrieve about both the parent and child interface: the MAC address, vendor, interface name, interface alias, and IP address.
- If the nodes in the map are using Extended display (**Edit: [Nodes]**), you can click on an icon to view events on the device (🚨), create a ticket about the device (🎫), view the **Device Summary** page (📊), print a report about the device (🖨️), or view the **Device Properties** page (🔧).

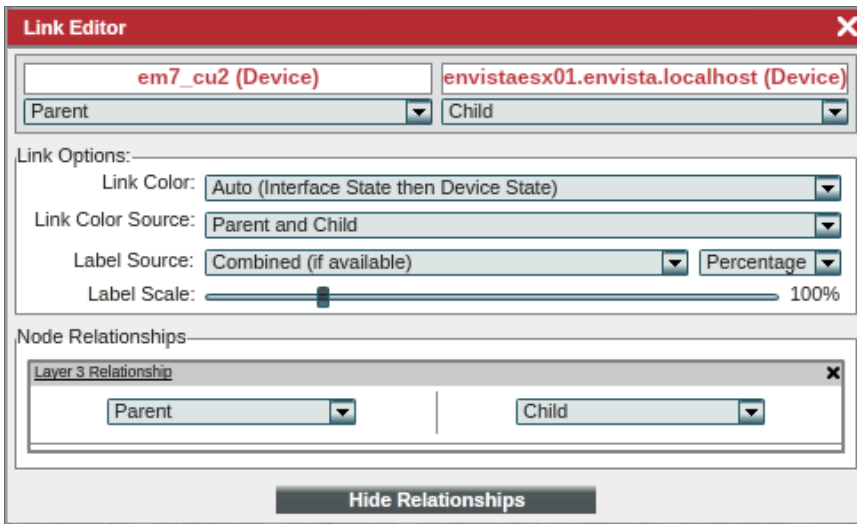
You can filter the nodes in a Layer-3 map. This feature works the same as Layer-2 map. To learn more about filtering nodes in a Layer-3 map, see the section [Filtering Nodes in a Layer-2 map](#).

Creating, Editing, Confirming and Deleting a Link

You can confirm or deleted unconfirmed links in a Layer-3 map. To learn more about confirming or deleting links in a Layer-3 map, see the section on [Confirming of Deleting an Unconfirmed Link](#).

You can create links between nodes in a Layer-3 map. The **Link Editor** pane is the same as described for Layer-2 maps. To learn more about the **Link Editor** pane, see the section on [Creating, Editing, and Deleting a Link](#).

If you select **[Show Relationships]** for a Layer-3 link, you can view Layer-3 relationships. Layer 3 Relationships appears only in the My Customized Maps pages and Layer-3 Maps pages. Layer-3 links use the Network Layer and allow devices from different subnets or networks to communicate. Layer-3 links use IP addresses and therefore are routed and can pass messages through routers. For Layer 3 Relationships, you can define the following:



- *Device*. Displays the name of the device at one end of the link. You can specify whether this device is a parent, sibling, or child (as compared to the other end of the link). Editing the parent/sibling/child setting in this field also changes the setting in the **Device** field.
- *Device*. Displays the name of the device at the other end of the link. You can specify whether this device is a parent, sibling, or child (as compared to the other end of the link). Editing the parent/sibling/child setting in this field also changes the setting in the **Device** field.

For more information on how to edit and delete links in a Layer-3 map, see the section on [Creating, Editing, and Deleting a Link](#).

Customizing the Display of a Layer-3 Map

For details and examples on how to customize a layer-3 map, see [Buttons, Tools, Icons and Customization](#).

Event Correlation and Precedence

For details on parent and child devices, event correlation and precedence, see the section on [Event Correlation and Precedence](#).

Chapter



5

Customized Maps

Overview

This chapter covers the use of customized maps, which you can create to view the devices and links that are most important to you.

Use the following menu options to navigate the SL1 user interface:

- To view a pop-out list of menu options, click the menu icon ()
- To view a page containing all of the menu options, click the Advanced menu icon ()

This chapter includes the following topics:

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<i>Creating and Populating the Device Group</i>	79
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About Customized Maps

A customized map allows you to view the devices and links that are most important to you.

When you create a customized map, you are also creating a new device group (which appears in the **Device Groups** page). You can add devices and other sub-device groups to the new map, just as you would to a standard device group.

If SL1 has information about the relationships between the devices in a customized map, SL1 automatically includes the appropriate links in the customized map. Customized maps display every type of relationship data, which includes:

- Layer-2 devices and their clients
- Layer-3 devices and layer-2 devices
- Component devices and their parents, e.g. virtual machines and their hypervisors
- Network devices that use CDP (Cisco Discovery Protocol) and devices that are specified as neighbors in the CDP tables
- Network devices that use LLDP (Link Layer Discovery Protocol) and devices that are specified as neighbors in the LLDP tables
- Device relationships created with Dynamic Applications
- Manually created parent-child relationships that affect event correlation

Customized maps appear in the following sections in the left NavBar:

- **Views > My Customized Maps.** Personalized maps that you create.
- **Views > User Customized Maps.** If you are a user of type "administrator", you can navigate to the maps in this section to view and edit all customized maps in SL1, even if the device group associated with the map was defined with the field **Shared (visible to all users)** set to *no*.
- **Views > Shared Customized Maps.** If a customized map or device group is defined as "shared", you can view the maps in this section. The maps in **Shared Customized Maps** require the same Access Hooks and Access Keys as device groups. Depending upon the Access Keys assigned to your account, you might be able to edit **Shared Customized Maps** created by other users. To learn more about Access Hooks and Access Keys, see the manual **Access Permissions**.

NOTE: If you create a device group from the **Device Groups** page and set the **Visibility** field to include *Maps/Views*, the device group will appear as a map in the **Custom Device Group Map** page (Views > My Customized Maps). If you set the **Shared** field to *yes*, the device group will appear for view by other users as a map in the **Shared Customized Maps** page (Views > Shared Customized Maps).

Each customized map is automatically populated with topology links (including CDP, LLDP, layer-2, or layer-3 relationships, or relationships created by Dynamic Applications) that SL1 has discovered between the devices in the map. You can create new links between devices, edit links between devices, and delete links.

When you create a link in a Customized Map, it is initially created only on the view for that map. You can optionally convert a view-only link to a CDP, LLDP, layer-2, layer-3, or Event Correlation relationship. When you convert a view-only link, the relationship is saved by SL1 for use in the other topology maps and event correlation.

When you delete a link in a Customized Map, the change is made only in that map. The link will still exist in SL1, and will appear in the other topology maps and will be used in event correlation.

When you edit a view-only relationship, the change is made only in that map. When you edit a CDP, LLDP, Layer-2, Layer-3, or Event Correlation relationship, the changes are applied throughout SL1.

Creating and Populating the Device Group

When you initially create a customized map and add devices and device groups to the customized map, you are actually defining a device group; however, you are using the maps interface instead of the **Device Groups** page to do so.

NOTE: You can also create a device group from the **Device Groups** page. If you select *Maps* in the **Visibility** field, the device group will appear as a map in the **Custom Device Group Map** page (Views > My Customized Maps). If you set the **Shared** field to yes, the device group will appear as a map in the **Shared Customized Maps** page (Views > Shared Customized Maps).

NOTE: By default, device groups created in the **Custom Device Group Map** page include only *Maps/Views* under **Visibility** and have **Shared** set to *no*. However, you can change these default settings by editing the device group from the **Device Groups** page.

To create a new customized map:

1. Go to the **Custom Device Group Map** page (Views > My Customized Maps > New Group/Map).
2. In the map pane, select the **Edit:[Nodes]** button to add devices and optionally device groups to your customized map.
3. **To add a device to the Customized Map**, in the Nodes menu at the top of the pane, select the **Add Dev** icon. When the **Device Browser** modal appears, search for the device(s) you want to add to the customized map. Select the checkbox for one or more devices you want to add to the customized map.
4. **To add a device group to the Customized Map**, in the Nodes menu at the top of the pane, select the **Add Group** icon. When the **Device Browser** modal page appears, search for the device group(s) you want to add to the customized map. Select the checkbox for one or more device groups you want to include in the customized map.
5. **To delete a device from the Customized Map**, select the device's icon, select the **Edit:[Nodes]** button to make the Nodes menu appear at the top of the pane, and then select the **Delete** icon (🗑️).

6. **To delete a device group from the Customized Map**, select the device group's icon, select the **Edit:[Nodes]** button to make the Nodes menu appear at the top of the pane, and then select the **Delete** icon (🗑️).

NOTE: If a device group includes a dynamic rule, SL1 will examine the rule and automatically add devices that match the rule's criteria to the device group. If you delete a device that SL1 has automatically added to the device group, the device will reappear the next time you view the device group map. For details on device groups and dynamic rules, see the manual **Device Groups and Device Templates**.

7. If SL1 detects layer-2, layer-3, CDP, LLDP, VMware, or Component Mapping relationships between the devices, SL1 automatically includes the appropriate links in the customized map.
8. After you add devices and device groups to the map, you can manually create links and edit existing links.
9. Clicking on an icon for a device group displays the customized map for that device group.
10. When you select the **Edit:[Save]** button, SL1 prompts you to provide a name for the new customized map.

Creating, Editing, and Deleting Links

In a customized map, you can create links between two devices, edit links between two devices, and delete links between two devices. You can also confirm a relationship between two devices.

In a customized map, you can create the following types of links:

- **Visual Relationship (this map only).** Visual Relationships appear only in the **My Customized Maps** section. In **My Customized Maps**, if SL1 has not already discovered another type of relationship between two devices, each manually created link initially has this type of relationship. For Visual Relationships, you can optionally convert the relationship to other types of relationships.
- **CDP Relationship.** CDP relationships appear only in the **My Customized Maps** section and CDP maps pages. Cisco Discovery Protocol (CDP) allows discovery of Cisco hardware and allows Cisco hardware within the same LAN or WAN to share information about each other. This information includes the MAC address and IP address, the operating system, and information about the network interface. CDP uses a layer-2 protocol that uses the Data Link Layer and is unrouted. CDP can also run on legacy Hewlett Packard Hardware.
- **LLDP Relationship.** LLDP relationships appear only in the **My Customized Maps** section and LLDP maps pages. Link Layer Discovery Protocol (LLDP) allows discovery of hardware and allows hardware within the same LAN or WAN to share information about each other. This information includes the MAC address and IP address, the operating system, and information about the network interface. LLDP uses a layer-2 protocol that uses the Data Link Layer and is unrouted.
- **Event Correlation Override.** Event Correlation relationships appear only in the **My Customized Maps** section. If you want to manually define a parent device and child device for two devices that do not share a layer-2 link, layer-3 link, a CDP link or a VMware relationship, you can create an **Event Correlation Override** link between the devices.

- **Layer 2 Relationship.** layer-2 relationships appear only in the **My Customized Maps** section and **Layer-2 Maps** pages. layer-2 links use the Data Link Layer and allow devices in a WAN or LAN to communicate with one another. layer-2 links use Ethernet and MAC addresses to communicate with devices in the same LAN or WAN. layer-2 links are unrouted.
- **Layer 3 Relationship.** Layer -3 Relationships appear only in the **My Customized Maps** section and **Layer 3 Map** page. layer-3 links use the Network Layer and allow devices from different subnets or networks to communicate. layer-3 links use IP addresses and therefore are routed and can pass messages through routers.

SL1 uses CDP, LLDP, Event Correlation, layer-2, and layer-3 relationships for event correlation. For details on event correlation, see the section on [Event Correlation and Precedence](#). When you add devices to a customized map, SL1 automatically adds all links that it has discovered.

- If SL1 does not discover a link, you can manually create the link in a customized map. For CDP, LLDP, layer-2, and layer-3 links, the newly created links will also appear in the appropriate maps. The manually created link will be saved in SL1. SL1 will not overwrite the new link. Manually created links have precedence over automatically discovered links in layer-2, CDP, and layer-3 maps.
- If SL1 discovers a link but the link information is incorrect, you can manually edit the link in a Customized Map. For CDP, LLDP, layer-2, and layer-3 links, the edited information will also appear in the appropriate maps. The edited link will be saved in SL1. SL1 will not overwrite your changes to the link. Edited links have precedence over automatically discovered links in layer-2, CDP, LLDP, and layer-3 maps.

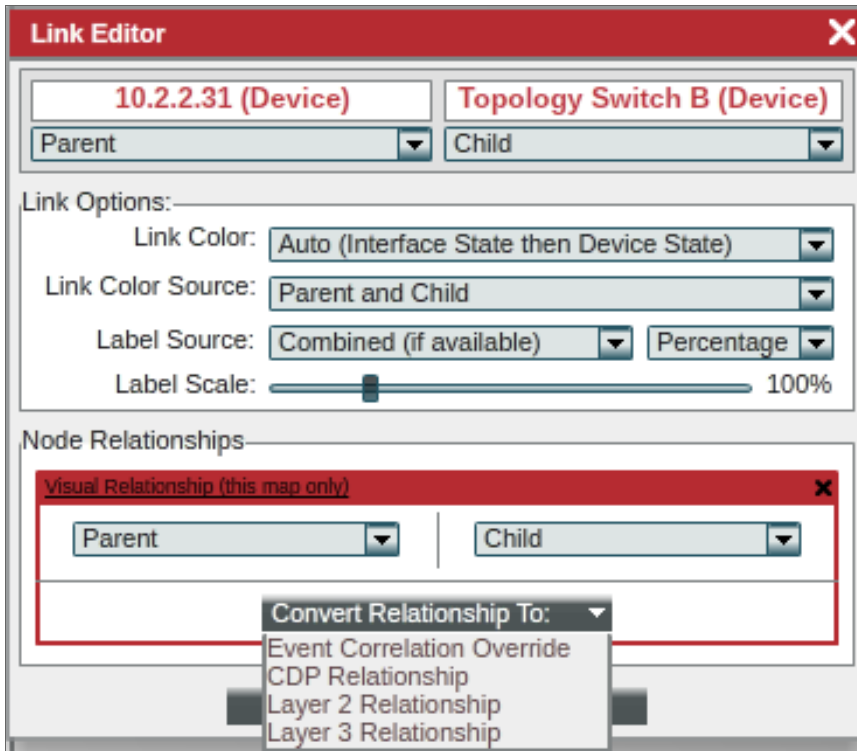
Creating a Link in a Customized Map

If SL1 does not discover a link, you can manually create the link in a Customized Map. You can also create Visual Relationship links and Event Correlation links.

To create a link in a Customized Map:

1. Go to Views > My Customized Maps. Select the Customized Map you want to edit.
2. When the Customized Map appears in the pane, select the **Edit: [Links]** button.
3. Find the device icon for the parent device. Click on it.
4. Find the device icon for the child device. Click on it.
5. SL1 creates a link between the two icons.

6. When the **Link Editor** modal page appears, you can edit the values in each field. For more information on the **Link Editor** modal page, see [Topology Maps](#). By default, links created in a Customized Map are a visual relationship, which are shown only on the view for the current map and are not used in event correlation. You have the following options in the **Node Relationships** pane:



- **Visual Relationship (this map only)**. Visual Relationships appear only in the Customized Maps page. In My Customized Maps, if SL1 has not already discovered another type of relationship between two devices, each manually created link initially has this type of relationship. For Visual Relationships, you can define the following:
 - **Device**. Displays the name of the device at one end of the link. You can specify whether this device is a parent, sibling, or child (as compared to the other end of the link). Editing the parent/sibling/child setting in this field also changes the setting in the **Device** field.
 - **Device**. Displays the name of the device at the other end of the link. You can specify whether this device is a parent, sibling, or child (as compared to the other end of the link). Editing the parent/sibling/child setting in this field also changes the setting in the **Device** field.
 - **[Convert Relationship to]**. For relationships that are initially defined as Visual Relationships, SL1 allows you to convert these relationships to *Event Correlation*, *CDP*, *Layer 2* or *Layer 3*.

- **Event Correlation Override.** Event Correlation relationships appear only in the Customized Maps page. If you want to manually define a parent device and child device for two devices that do not share a layer-2 link, layer-3 link, a CDP link, an LLDP link, or a VMware relationship, you can create an **Event Correlation Override** link between the devices. Additionally, you can then define an event hierarchy for these devices. For Event Correlation Override relationships, you can define the following:
 - *Device.* Displays the name of the device at one end of the link. You can specify whether this device is a parent, sibling, or child (as compared to the other end of the link). Editing the parent/sibling/child setting in this field also changes the setting in the **Device** field.
 - *Device.* Displays the name of the device at the other end of the link. You can specify whether this device is a parent, sibling, or child (as compared to the other end of the link). Editing the parent/sibling/child setting in this field also changes the setting in the **Device** field.
- **CDP Relationship.** CDP relationships appear only in Customized Maps pages and CDP maps pages. Cisco Discovery Protocol (CDP) allows discovery of Cisco hardware and allows Cisco hardware within the same LAN or WAN to share information about each other. This information includes the MAC address and IP address, the operating system, and information about the network interface. CDP uses is a layer-2 protocol that uses the Data Link Layer and is unrouted. CDP can also run on legacy Hewlett Packard Hardware. For CDP relationships, you can define the following:
 - *Interface.* Displays the name of the interface at one end of the link. You can select a different interface on the device. You can then specify this device is a parent, sibling, or child (as compared to the other end of the link). Editing the parent/sibling/child setting in this field also changes the setting in the **Device** field.
 - *Interface.* Displays the name of the interface at one end of the link. You can select a different interface on the device. You can then specify this device is a parent, sibling, or child (as compared to the other end of the link). Editing the parent/sibling/child setting in this field also changes the setting in the **Device** field.
 - *VLAN.* Displays the VLAN created by the link.
- **LLDP Relationship.** LLDP relationships appear only in Customized Maps pages and LLDP maps pages. Link Layer Discovery Protocol (LLDP) allows discovery of hardware and allowshardware within the same LAN or WAN to share information about each other. This information includes the MAC address and IP address, the operating system, and information about the network interface. LLDP uses is a layer-2 protocol that uses the Data Link Layer and is unrouted. For LLDP relationships, you can define the following:
 - *Interface.* Displays the name of the interface at one end of the link. You can select a different interface on the device. You can then specify this device is a parent, sibling, or child (as compared to the other end of the link). Editing the parent/sibling/child setting in this field also changes the setting in the **Device** field.
 - *Interface.* Displays the name of the interface at one end of the link. You can select a different interface on the device. You can then specify this device is a parent, sibling, or child (as compared to the other end of the link). Editing the parent/sibling/child setting in this field also changes the setting in the **Device** field.
 - *VLAN.* Displays the VLAN created by the link.

- **Layer 2 Relationship.** Layer-2 relationships appear only in Customized Maps pages and layer-2 maps pages. Layer-2 links use the Data Link Layer and allow devices in a WAN or LAN to communicate with one another. Layer-2 links use Ethernet and MAC addresses to communicate with devices in the same LAN or WAN. Layer-2 links are unrouted. For layer-2 relationships, you can define the following:
 - *Interface.* Displays the name of the interface at one end of the link. You can select a different interface on the device. You can then specify this device is a parent, sibling, or child (as compared to the other end of the link). Editing the parent/sibling/child setting in this field also changes the setting in the **Device** field.
 - *Interface.* Displays the name of the interface at one end of the link. You can select a different interface on the device. You can then specify this device is a parent, sibling, or child (as compared to the other end of the link). Editing the parent/sibling/child setting in this field also changes the setting in the **Device** field.
 - *VLAN.* Displays the VLAN created by the link.
- **Layer 3 Relationship.** Layer 3 Relationships appears only in the My Customized Maps pages and layer-3 Maps pages. Layer-3 links use the Network Layer and allow devices from different subnets or networks to communicate. Layer-3 links use IP addresses and therefore are routed and can pass messages through routers. For Layer 3 Relationships, you can define the following:
 - *Device.* Displays the name of the device at one end of the link. You can specify whether this device is a parent, sibling, or child (as compared to the other end of the link). Editing the parent/sibling/child setting in this field also changes the setting in the **Device** field.
 - *Device.* Displays the name of the device at the other end of the link. You can specify whether this device is a parent, sibling, or child (as compared to the other end of the link). Editing the parent/sibling/child setting in this field also changes the setting in the **Device** field.

Editing a Link in a Customized Map

If SL1 discovers inaccurate information about a link, you can manually edit the link's properties. You can also edit a link that was manually created.

To edit a link in a Customized Map:

1. Go to Views > My Customized Maps. Select the Customized Map you want to edit.
2. When the Customized Map appears in the pane, select the Edit: **[Links]** button.
3. Select the link you want to edit.
4. Select the **Edit Link** icon in the Link menu (at the top of the pane).
5. When the **Link Editor** modal page appears, you can edit the values in each field.
6. To save your changes, select the Edit: **[Save]** button.
7. The manually edited link will be saved in SL1. SL1 will not overwrite the edited link.

Deleting a Link in a Customized Map

If SL1 discovers a link that you do not want to appear in a Customized Map, you can delete the link. You can also delete links that were created manually.

NOTE: When you delete a layer-2 link, layer-3 link, CDP link, or LLDP link from a Customized Map, the link is not removed from the Layer-2 Map, Layer-3 map, CDP Map, or LLDP Map. The link is removed only from the display of the Customized Map.

To delete a link from a Customized Map:

1. Go to Views > My Customized Maps. Select the Customized Map you want to edit.
2. When the Customized Map appears in the pane, select the Edit: **[Links]** button.
3. Select the link you want to delete.
4. Select the **Del Link** icon in the Link menu (at the top of the pane).
5. To save your changes, select the Edit: **[Save]** button.
6. The deleted link will no longer appear in this Customized Map.

Viewing and Filtering Customized Maps

To view a Customized Map, go to the **Views** tab. Go to the left NavBar. Expand the links for **My Customized Maps**, **User Customized Maps**, or **Shared Customized Maps**. Select a device group to view. The **Customized Map** page appears and displays a map of the device group. Customized maps display:

- The blank field in the upper right allows you to find one or more devices in the map. You can enter a string, and SL1 will highlight only the devices that have a device name that matches the string. Each device appears as an icon in the map.
- Each network device is connected to its parent device with a line. The color of the line specifies the current state of the connection at each end. The state reflects the event of the highest severity for the network connection. For example, a link line that is red on the child end and yellow on the parent end can indicate that the child device has a critical event and the parent device has a minor event.

NOTE: If all or part of a link are white, this means that SL1 could not determine the interface state or device state for that end of the link.

- Each device icon has a color outline. The color of the outline specifies the current state of the device. The state reflects the event of the highest severity for the device.
- When the map appears, you can view and reposition the components. The map can be edited and re-arranged using drag-and-drop features. Devices and links can be repositioned for easier reading, if necessary.

- Mousing over a device displays its name, IP address, device type, and device category.
- Mousing over a link displays as much of the following information as SL1 can retrieve about both the parent and child interface: the MAC address, vendor, interface name, interface alias, and IP address.
- If the nodes in the map are using Extended display (**Edit: Nodes**), you can click on an icon to view events on the device (🚨), create a ticket about the device (🔑), view the **Device Summary** page (📊), print a report about the device (🖨️), or view the **Device Properties** page (🔧).

Filtering the Nodes in a Customized Map

You can use the Filter tool to filter the nodes that are included in the current map.

Selecting the Filter icon (🔍) toggles on and off the display of the Node Filters checkboxes.

These checkboxes allow you to filter the nodes included in a map based on whether a device or connection is managed or unmanaged in SL1, whether the node is part of a device group, the status of the device (healthy, notice, minor, major, critical), or the device category assigned to the device.

To use the Filter tool:

1. Go to Custom Device Group Map or Views > User Customized Maps or Views > Shared Customized Maps. Select the map you want to view.
2. After the map is displayed, select the Filter tool (🔍) in the upper left.
3. SL1 displays a pane with the Node Filters checkboxes.
 - **Select a checkbox to include the devices in the map.**
 - **Unselect a checkbox to remove the devices from the map.**
4. You can select or unselect one or more of the following filters:
 - **Managed Devices.** If selected, the map will include devices that are managed by SL1. Managed devices are those that have been discovered with discovery.
 - **Unknown Connections.** If selected, the map will include connections that are "unknown" to SL1. This means that SL1 has detected a connection but cannot provide details on all or one end of the connection.
 - **Device Groups.** If selected, the map will include device groups.
 - **Unmanaged Devices.** If selected, the map will include devices that are not managed by SL1. This means that SL1 has detected a device but has not performed discovery on that device.
 - **Unconnected Nodes.** If selected, the map will include devices that are not connected to core devices. The device group defines the core devices. Those devices that are statically assigned to the device group are core devices. For dynamic rules in a device group, the seed devices (those devices that match the specified criteria for the group) are core devices.
 - **Healthy.** If selected, the map will include devices with a status of "healthy". This means that the most severe event associated with the device has a severity of "healthy".

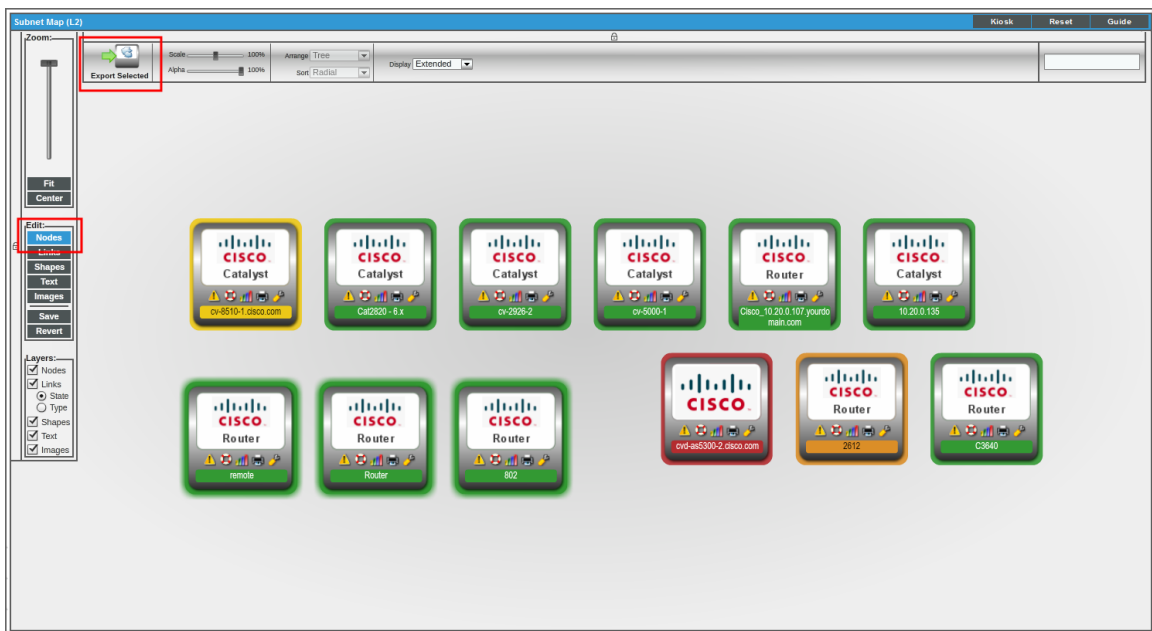
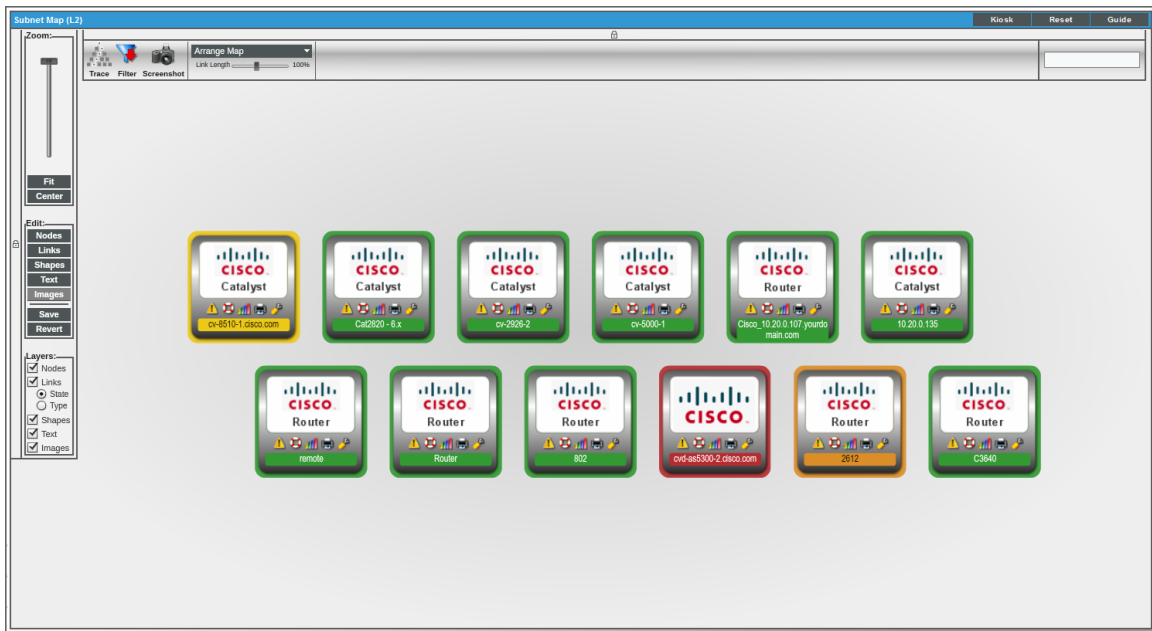
- **Notice.** If selected, the map will include devices with a status of "notice". This means that the most severe event associated with the device has a severity of "notice".
- **Minor.** If selected, the map will include devices with a status of "minor". This means that the most severe event associated with the device has a severity of "minor".
- **Major.** If selected, the map will include devices with a status of "major". This means that the most severe event associated with the device has a severity of "major".
- **Critical.** If selected, the map will include devices with a status of "critical". This means that the most severe event associated with the device has a severity of "critical".
- **Unknown.** If selected, the map will include devices with a status of "unknown". This means that SL 1 cannot determine the most severe event associated with the device.
- **List of Device Categories.** The pane includes a checkbox for each device category associated with the current map. For each selected device category, the map will include devices with that device category.
- **Component Mapping.** If selected, the map will include devices with links that represent relationships created by dynamic applications.
- **List of Virtual Relationships.** List of all virtual relationships in the map. If selected, the map will include devices with links that represent relationships created by applications like VMware or Azure.

Example: Creating a Custom Map

In this example we will create a custom map from devices in a layer-2 map. In this instance, we want to take devices from the map, add other devices with links, and arrange them to show where they are located in a workspace.

1. Go to the **Subnet Map (L2)** page (Views > Topology Maps > Layer-2).

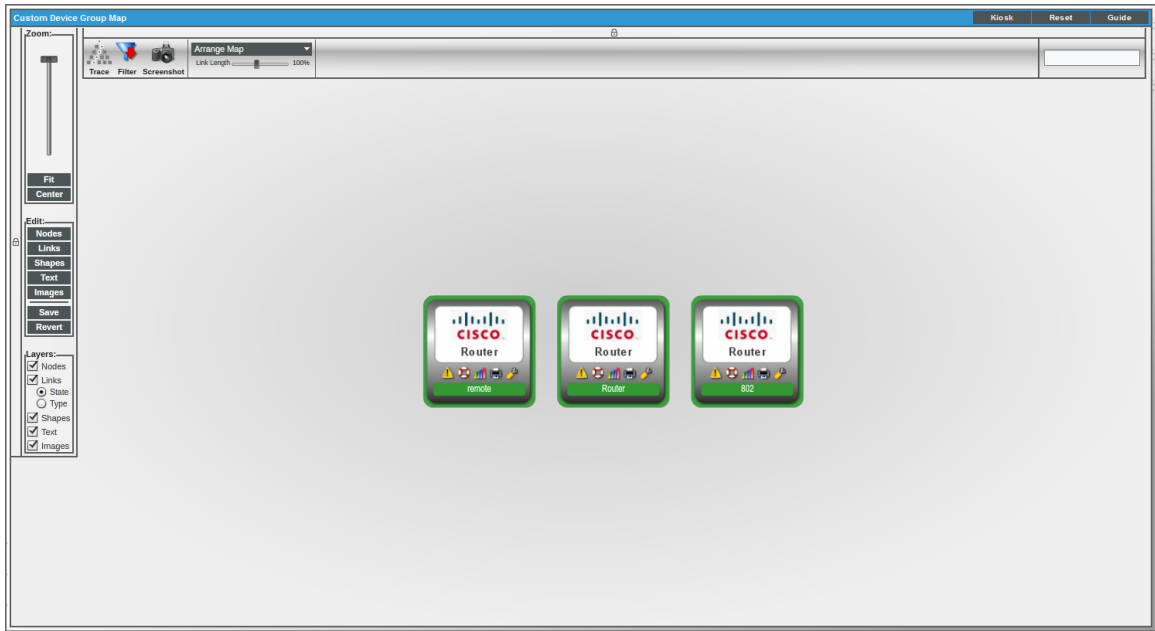
- In this example, we chose a layer-2 map consisting of 12 devices. We want three of those devices. To select the three devices, select the **Edit: Nodes** button, and select the three devices while holding down the **<Shift>** key. After highlighting the devices, select the **[Export: Selected]** button.



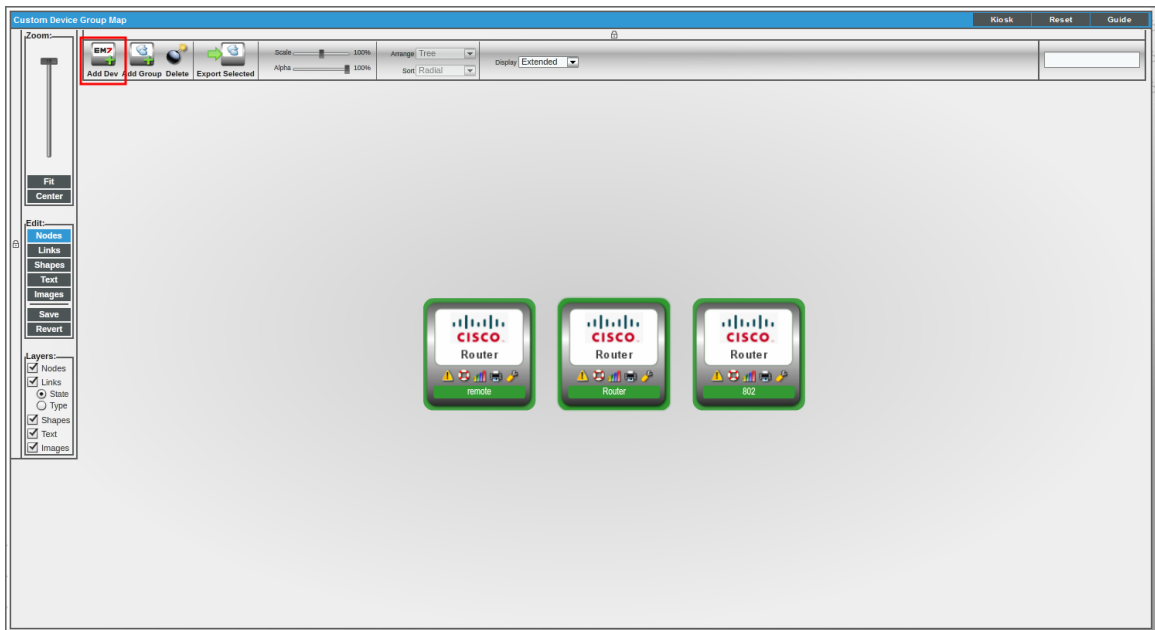
- You will be prompted to name the exported device group. We named our exported device group "Workspace_Map". The exported map "Workspace_Map" will now be saved under **My Customized Maps**.

We can now edit our customized map in the **Custom Device Group Map** page. From the **Custom Device Group Map** page we can add more devices or device groups, add links between devices, and add pictures, shapes, and text, among other options. In this example, we want to add more devices and map them in our workspace. To do so:

1. Select **My Customized Maps**. Find the exported map, "Workspace_Map", and select it. The three devices we selected appear.



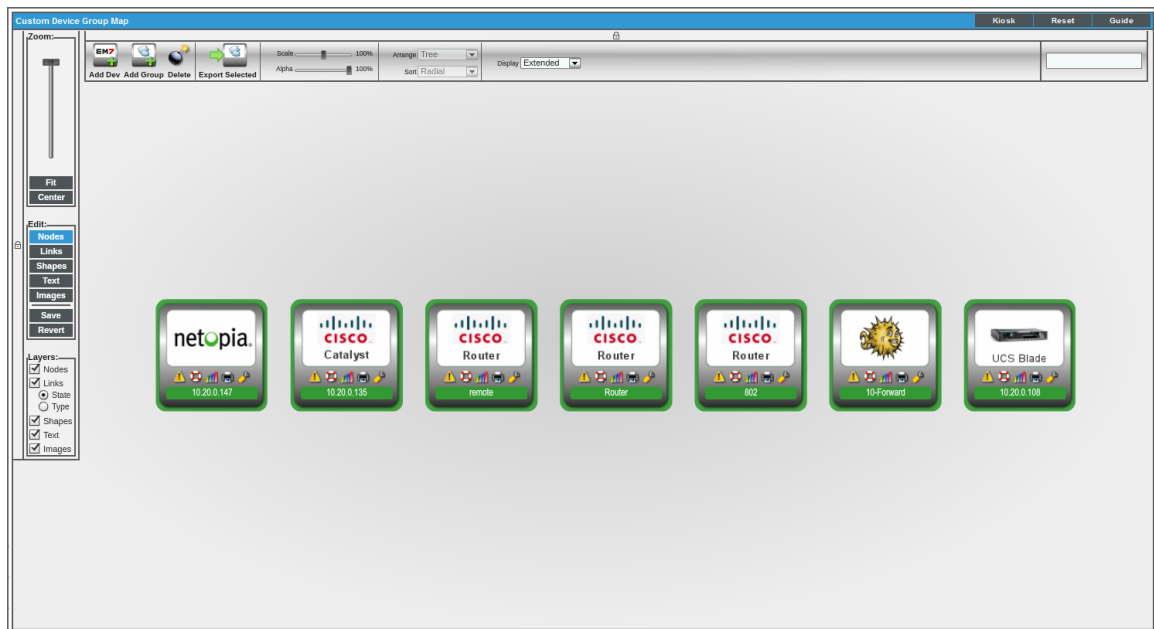
2. To add devices to the map, select the **Edit: [Nodes]** button. At the top of the page select the **[Add Dev]** button.



- The **Device Browser** page appears, where you can select individual devices to the map. To select a device, click its checkbox. In this example, we selected four devices to add to our map.

	Device Name	IP Address	Device Category	Device Class Sub-class	DID	Organization	
1.	10-Forward	10.20.0.195	Servers	NET-SNMP FreeBSD	53	System	<input checked="" type="checkbox"/>
2.	10.20.0.108	10.20.0.108	RackUnit	Cisco Systems UCS Blade	72	System	<input checked="" type="checkbox"/>
3.	10.20.0.123	10.20.0.123	Chassis	Cisco Systems UCS Chassis	1011	System	<input checked="" type="checkbox"/>
4.	10.20.0.13	10.20.0.13	Unknown	Generic SNMP	105	System	<input type="checkbox"/>
5.	10.20.0.135	10.20.0.135	Switches	Cisco Systems Catalyst 3500	281	System	<input checked="" type="checkbox"/>
6.	10.20.0.141	10.20.0.141	Switches	Cisco Systems Catalyst WS-	116	System	<input type="checkbox"/>
7.	10.20.0.146	10.20.0.146	Broadban	Netopia Netopia 3346 v8.2r1	2	System	<input type="checkbox"/>
8.	10.20.0.147	10.20.0.147	Broadban	Netopia Netopia 3381 v8.0.10	174	System	<input checked="" type="checkbox"/>
9.	10.20.0.148	10.20.0.148	Broadban	Netopia Netopia (R3100, R45	162	System	<input type="checkbox"/>
10.	10.20.0.149	10.20.0.149	Broadban	Netopia R7200-T	160	System	<input type="checkbox"/>
11.	10.20.0.151	10.20.0.151	Unknown	Generic SNMP	138	System	<input type="checkbox"/>
12.	10.20.0.160	10.20.0.160	Unknown	Generic SNMP	163	System	<input type="checkbox"/>
13.	10.20.0.163	10.20.0.163	Unknown	Generic SNMP	164	System	<input type="checkbox"/>
14.	10.20.0.167	10.20.0.167	Unknown	Netopia OEM	161	System	<input type="checkbox"/>
15.	10.20.0.175	10.20.0.175	Unknown	Generic SNMP	43	System	<input type="checkbox"/>
16.	10.20.0.176	10.20.0.176	Unknown	Konica Corporation OEM	40	System	<input type="checkbox"/>
17.	10.20.0.190	10.20.0.190	Unknown	Generic SNMP	54	System	<input type="checkbox"/>

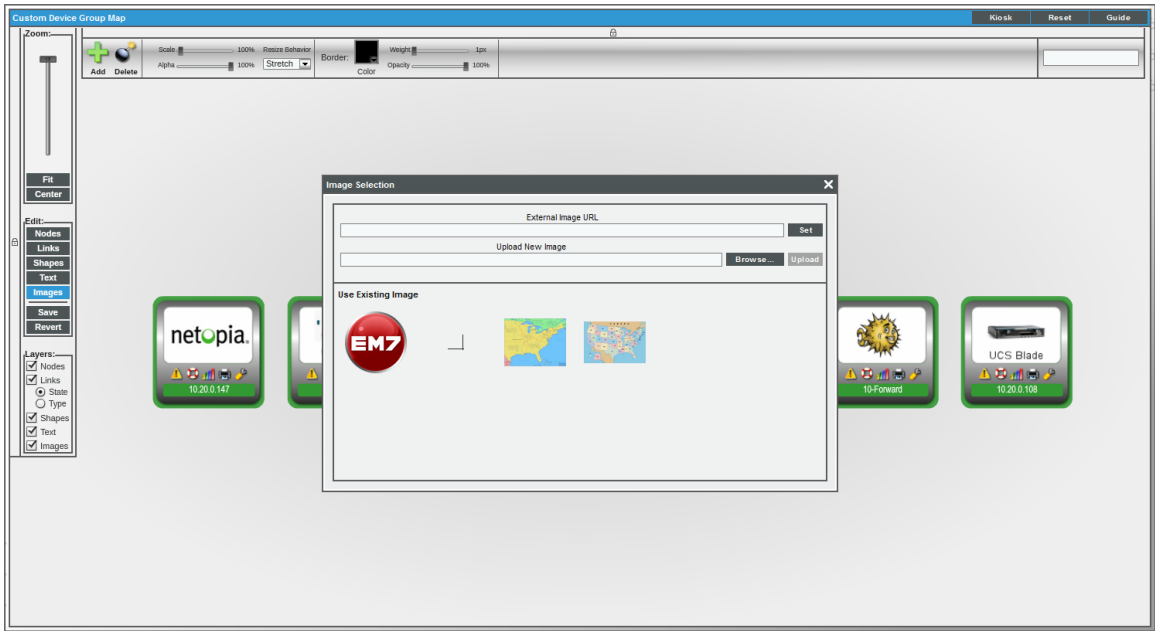
- The devices now appear in our map, "Workspace_Map".



Before adding links to our map, we want to add an image of a map. To add the image:

1. Select the **Edit:Images** button. To select an image, select the **[Add]** button at the top of the page. If the image you want to add is not currently available, you can manually enter the URL of an image to use, browse your local computer to locate an image to upload, or select from images already loaded onto the SL 1 system.

NOTE: ScienceLogic recommends you upload images to SL 1. When you insert an image by supplying a URL, this image will stretch when resized, regardless of the behavior specified in the **Resize Behavior** field.



- To add the image to the map, click the image. The map is now displayed behind the devices.



- We now want to move the devices. To select individual devices, select the **Edit: [Nodes]** button. While holding down the left mouse button, click and drag the devices to the desired locations.



4. Now that all devices are in the correct locations, we want to create links between them. To create links between devices, select the **Edit: Links** button. Select the device you want to be the parent device, and then select the device you want to be the child device. A link will be drawn between the devices. You can also create a link that is a "visual relationship" only. If SL 1 has not already discovered another type of relationship between two devices, each manually created link initially has this type of relationship. For Visual Relationships, you can define the following:

- *Device*. Displays the name of the device at one end of the link. You can specify whether this device is a parent, sibling, or child (as compared to the other end of the link). Editing the parent/sibling/child setting in this field also changes the setting in the **Device** field.
- *Device*. Displays the name of the device at the other end of the link. You can specify whether this device is a parent, sibling, or child (as compared to the other end of the link). Editing the parent/sibling/child setting in this field also changes the setting in the **Device** field.
- **[Convert Relationship to]**. For relationships that are initially defined as Visual Relationships, SL 1 allows you to convert these relationships to Event Correlation, CDP, LLDP, layer 2 or layer 3.



We now have our devices located on a map, and have created links between the devices. Finally, we want to add text to the map. To add text to the map:

1. In the "Workspace_Map", select the Edit:**[Text]** button. Select the **[Add]** button at the top of the page. A text block will be added to the map.



2. To move the text block, left click the pane titled **Text Block** and drag the block. To add text to the text block, click inside the block with your cursor and type a message.



Event Correlation and Precedence



Overview

SL1 allows you to create parent-and-child relationships and define event correlations. SL1 will create parent and child devices automatically when:

- SL1 discovers Layer-2, CDP, Layer-3, and legacy VMware topology.
- SL1 performs collection for Dynamic Applications that create component devices or device relationships.

You can also create parent and child links manually. Once parent and child devices have been created, you can define suppressing and suppressible events.

Use the following menu options to navigate the SL1 user interface:

- To view a pop-out list of menu options, click the menu icon (.
- To view a page containing all of the menu options, click the Advanced menu icon (.

This chapter includes the following topics:

Event Correlation	97
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Event Correlation

In SL1, event correlation means the ability to build parent-child relationships between events. When events are correlated, only the parent event is displayed in the **Event Console** page ([**Events**] tab). The child events are rolled up under the parent event and are not displayed in the **Event Console** page. For the parent event, the count column will be incremented to indicate the number of correlated child events.

You can define parent-and-child relationships for devices and for the events associated with those devices. When **suppressing** and **suppressible** events are defined, selected events on the child device (or children devices) will be rolled-up under the parent device's events in the **Event Console**.

For example:

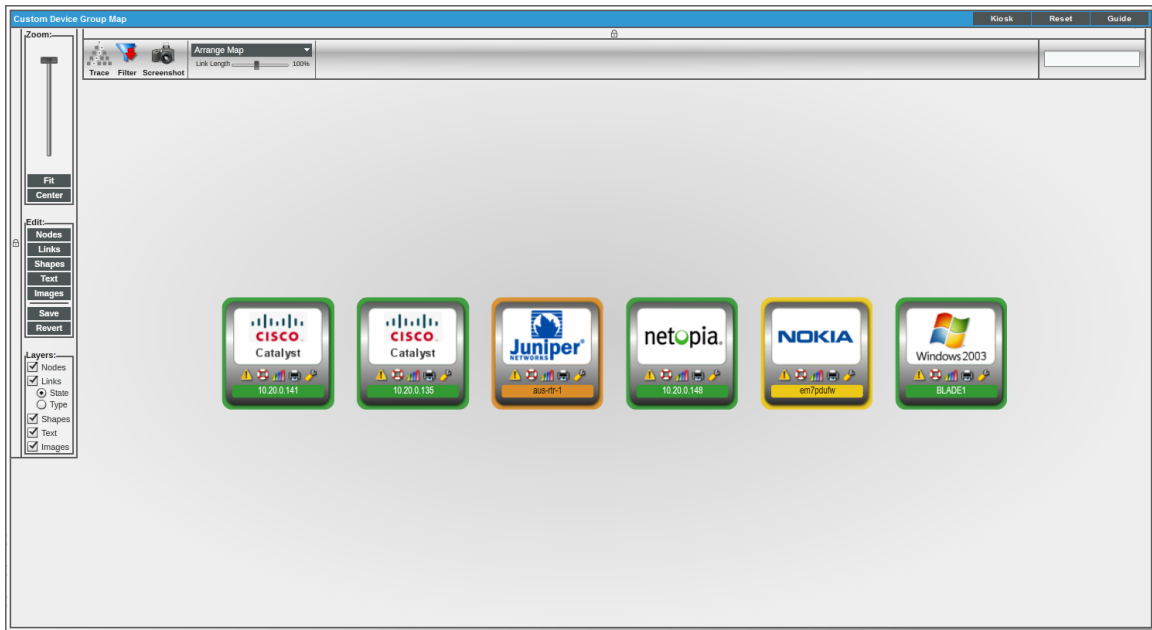
- Suppose you have a device named "cat-5505". Suppose this device is a switch. Suppose we define this switch as a parent device.
- Suppose we have a device named "server001". Suppose this device is a server that is attached to the switch. Suppose we define this server as a child device to "cat-5505".
- Suppose we define the event "Poller: Interface operationally down" as a suppressing event.
- Suppose we define the event "Poller: Device not available via SNMP or ICMP" as a suppressible event.
- If the interface goes down on the switch "cat-5505", SL1 will not be able to communicate with the server, "server001", attached to the switch.
- So if the event "Poller: Interface operationally down" occurs on "cat-5505", the event "Poller: Device not available via SNMP or ICMP" will be suppressed on "server001". In the **Event Monitor** page, only the event "Poller: Interface operationally down" on the device "cat-5505" will appear.

To define event correlation, you must define parent and child devices, and define a hierarchy between events. In Topology maps, SL1 can automatically define parent and child devices. For example, if SL1 discovers a switch and its clients, SL1 automatically defines the switch as the parent device and its clients as the children devices.

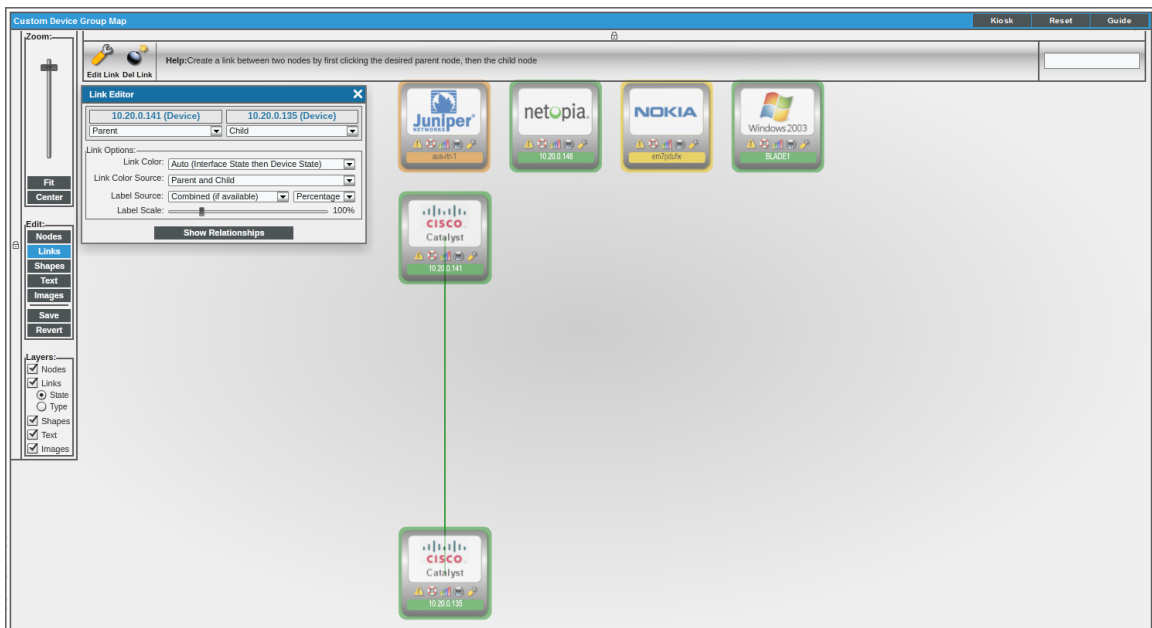
You can also manually define parent and child devices when you create Layer-2 links, Layer-3 links, CDP links, LLDP links, or Event Correlation Override links.

To manually define parent and child links in Customized maps:

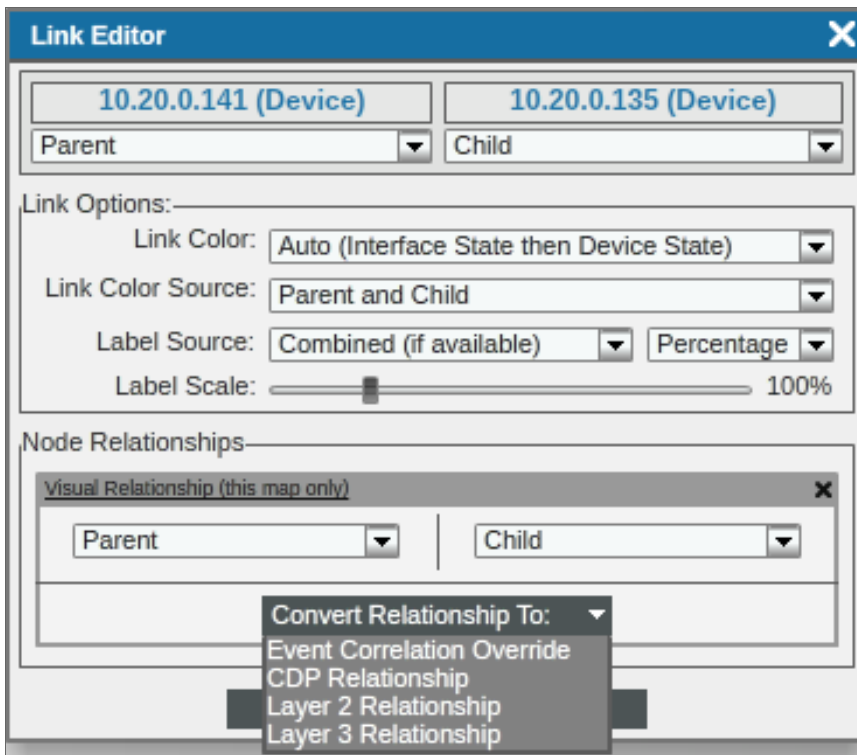
1. Go to Views > My Customized Maps and select a customized map you want to view. In this example we will use a customized map that does not have links defined.
2. In this example, we have six devices.



3. To create a parent-child link between two devices, select the **[Edit:] [Links]** button. Create a link for two devices by clicking first on the device you want to be a parent, and then click the device you want to be the child. In this example, we will create an Event Correlation Link.
4. A link is created, and the **Link Editor** appears.



5. The **Link Editor** allows you to perform the following actions:



- **Device**. Displays the name of the device at one end of the link. You can specify whether this device is a parent, sibling, or child (as compared to the other end of the link). A sibling relationship affects only the display of the map when the default arrangement options are used; the two devices will be on the same horizontal plane in the tree view or the same distance from the center point in the radial tree view.
- **Device**. Displays the name of the device at the other end of the link. You can specify whether this device is a parent, sibling, or child (as compared to the other end of the link).

- **Link Color.** Specifies how SL1 should color-code the link. The link can use either interface state or device state. Interface state reflects the event with the highest severity that is aligned with the interface. Device state means the event with the highest severity that is aligned with the device. Choices are:
 - *Auto (Interface State then Device State).* This is the default setting. If possible, SL1 will first use the interface state to color-code the link. If SL1 cannot determine the interface state, SL1 will use the device state to color-code the link. If you select *Parent and Child* in the **Link Color Source** field, each end of the link can have a different color.
 - *Interface State.* SL1 will first use the interface state to color-code the link. If you select *Parent and Child* in the **Link Color Source** field, each end of the link can have a different color.
 - *Device State.* SL1 will use the device state to color-code the link. If you select *Parent and Child* in the **Link Color Source** field, each end of the link can have a different color.

NOTE: If all or part of a link are white, this means that SL1 could not determine the interface state or device state for that end of the link.

- **Link Color Source.** Specifies whether SL1 will display the status of both interfaces or only one interface when displaying link status. Choices are:
 - *Parent and Child.* This is the default setting. Half the link will display the parent status and half the link will display the child status.
 - *Parent Node Only.* The link will be color-coded to display only the parent status.
 - *Child Node Only.* The link will be color-coded to display only the child status.
- **Label Source.** Specifies whether or not to include a label with the link and if so, the information to use in the label. Choices are:
 - *Disabled.* This is the default setting. SL1 will not include a label with this link.
 - *Auto (based on relationships).* Based on what information is available, SL1 will automatically select the label source that provides the most information.
 - *Parent Interface Utilization.* Specifies the label will display the utilization of the percent interface.
 - *Child Interface Utilization.* Specifies the label will display the utilization of the child interface.
 - *Combined Link Utilization.* Specifies the label will display the combined utilization of the percent and child interfaces.
- **Label Scale.** Allows you to set the size of the text box and text of the label in relation to the size of the link. You can use the slider to choose scale between 50 % to 300%.
- **[Show Relationships].** Displays the **Node Relationships** pane, where you can define and edit the link.

6. In the **Node Relationships** pane, select **[Convert Relationship To]**. Select *Event Correlation Override*. You have the following options:

- *Device*. Displays the name of the device at one end of the link. You can specify whether this device is a parent, sibling, or child (as compared to the other end of the link). Editing the parent/sibling/child setting in this field also changes the setting in the **Device** field.
- *Device*. Displays the name of the device at the other end of the link. You can specify whether this device is a parent, sibling, or child (as compared to the other end of the link). Editing the parent/sibling/child setting in this field also changes the setting in the **Device** field.

After parent and child relationships have been established, you can define a hierarchy between events—that is, define parent events (called suppressing events) and child events (called suppressible events). For details on defining a hierarchy between events, see the manual **Events**.

Precedence

In some instances you might have multiple parent-child links between two devices. SL1 displays only one of the relationships. SL1 gives precedence to showing these relationships in the following order:

- Manually defined event correlation links
- Layer-3 links
- CDP links
- Layer-2 links

Additionally, any manually created, edited, or deleted layer-3, CDP, and layer-2 links take precedence over the information discovered by SL1. The changes are propagated to discovery and event correlation.

Chapter



7

Virtual Infrastructure

Overview

SL1 includes support for legacy VMWare ESX servers that report virtual machine relationships via SNMP. SL1 can automatically discover the relationships between legacy ESX servers and virtual machines (called VM Guest OSs). SL1 automatically maps the relationships between ESX Servers and their client virtual machines.

Use the following menu options to navigate the SL1 user interface:

- To view a pop-out list of menu options, click the menu icon ().
- To view a page containing all of the menu options, click the Advanced menu icon ().

This chapter includes the following topics:

<i>Virtual Topology Maps</i>	103
<i>Filtering Nodes in a Virtual Topology Map</i>	105
<i>Customizing the Display of a Virtual Topology Map</i>	107

Virtual Topology Maps

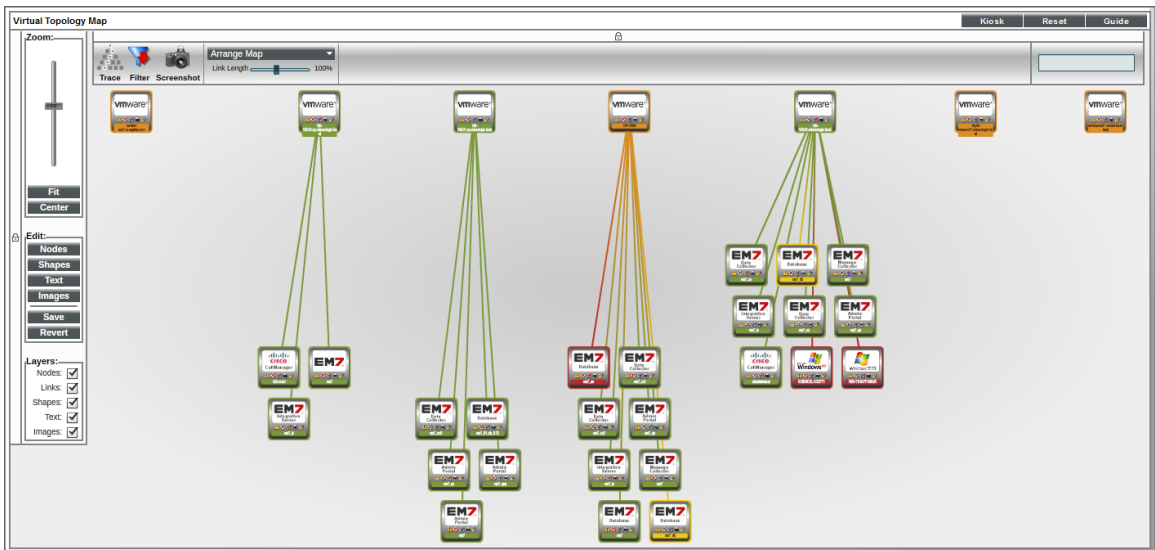
SL1 can automatically discover and monitor VMware ESX servers. SL1 can also automatically discover each client virtual machine (called VM Guest OSs). SL1 automatically maps the relationships between ESX Servers and their client virtual machines.

The **Virtual Topology Map** page allows you to view information about a VMware ESX Server and their related virtual machines. SL1 automatically updates the map as new ESX servers and virtual machines are discovered. SL1 also updates the map with the latest status and event information.

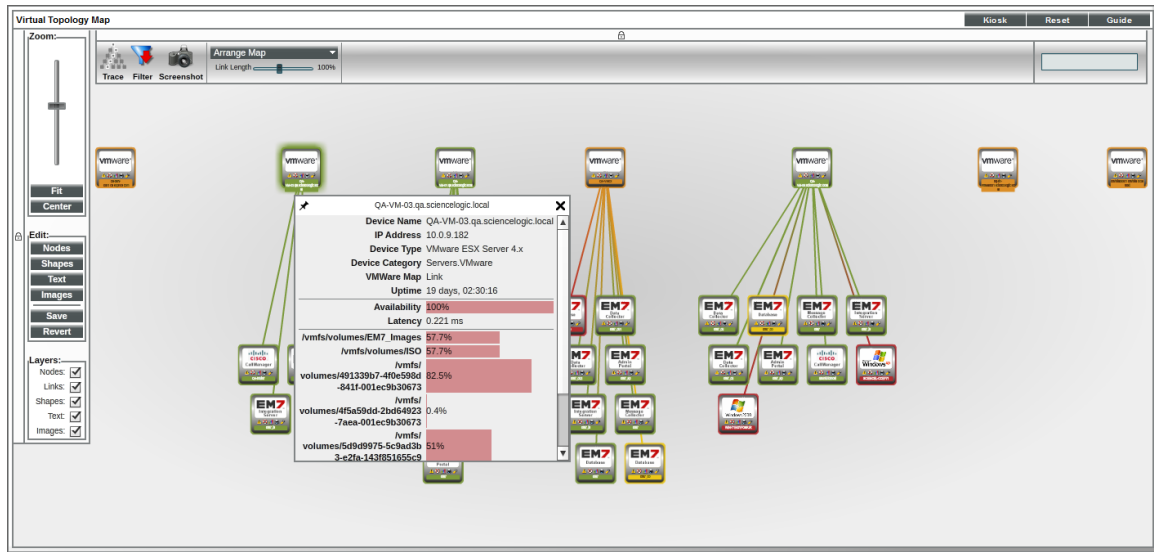
You can view the virtual topology map from the **Virtual Topology Map** page. To view the virtual topology map:

1. Go to the **Virtual Topology Map** page (Views > Other Views > Virtual Infrastructure). The virtual topology map displays:
 - Each VMWare ESX Server is represented by an icon.
 - Each "virtual machine" associated with the VMWare ESX Server is also displayed, each with its own icon.
 - The blank field in the upper right allows you to find one or more devices in the map. You can enter a string, and SL1 will highlight only the devices that have a device name that matches the string.

NOTE: In some instances, SL1 will display a virtual machine in a map, yet the virtual machine has a question mark icon. This means that SL1 can see that the virtual machine exists based on information collected from the ESX server, but the virtual machine is not discovered as a device in SL1.



2. Mousing over a VMware ESX server or virtual machine displays the following information:



- **Device Name.** Name of the device in SL1.
- **IP Address.** IP address of the device.
- **Device Type.** Device class for the server.
- **Device Category.** Device category for the server.
- **Uptime.** Uptime of the server.
- **Availability.** Percent availability of the server.
- **Latency.** Latency of the sever.
- **CPU Usage.** CPU usage for the server.
- **Memory Usage.** Memory usage for the server.
- **Swap Usage.** Swap usage for the server.
- **Disk partitions and usage.** Displays each disk partition on the server and its current percent usage.
- **Recent Events.** The most recent events associated with the server.

Filtering Nodes in a Virtual Topology Map


You can use the Filter tool to filter the nodes that are included in the Virtual Topology map.

Selecting the Filter icon () toggles on and off the display of the Node Filters checkboxes.

These checkboxes allow you to filter the nodes included in a map based on whether a device or connection is managed or unmanaged in SL1, whether the node is part of a device group, the status of the device (healthy, notice, minor, major, critical), or the device category assigned to the device.

NOTE: By default, each filter is already selected except for **Unmanaged Devices**. By default, all devices and connections except unmanaged devices will be included in the map. This means that by default, unmanaged devices will not appear in the map until you select the **Unmanaged Devices** checkbox.

To use the Filter tool:

1. Go to Views > Other Views > Virtual Infrastructure.
2. After the map is displayed, select the Filter tool () in the upper left.
3. SL1 displays a pane with the Node Filters checkboxes.
 - **Select a checkbox to include the devices in the map.**
 - **Unselect a checkbox to remove the devices from the map.**
4. You can select or unselect one or more of the following filters:
 - **Managed Devices.** If selected, the map will include devices that are managed by SL1. Managed devices are those that have been discovered with discovery.
 - **Unknown Connections.** If selected, the map will include connections that are "unknown" to SL1. This means that SL1 has detected a connection but cannot provide details on all or one end of the connection.
 - **Device Groups.** If selected, the map will include device groups.
 - **Unmanaged Devices.** If selected, the map will include devices that are not managed by SL1. This means that SL1 has detected a device but has not performed discovery on that device.
 - **Healthy.** If selected, the map will include devices with a status of "healthy". This means that the most severe event associated with the device has a severity of "healthy".
 - **Notice.** If selected, the map will include devices with a status of "notice". This means that the most severe event associated with the device has a severity of "notice".
 - **Minor.** If selected, the map will include devices with a status of "minor". This means that the most severe event associated with the device has a severity of "minor".
 - **Major.** If selected, the map will include devices with a status of "major". This means that the most severe event associated with the device has a severity of "major".
 - **Critical.** If selected, the map will include devices with a status of "critical". This means that the most severe event associated with the device has a severity of "critical".
 - **Unknown.** If selected, the map will include devices with a status of "unknown". This means that SL1 cannot determine the most severe event associated with the device.
 - **List of Device Categories.** The pane includes a checkbox for each device category associated with the current map. For each selected device category, the map will include devices with that device category.

Customizing the Display of a Virtual Topology Map

You can customize the display of a virtual topology map, including adding shapes, text, and images. To learn more about customizing the display of a map, see [Buttons, Tools, Icons and Customization](#).

Chapter



8

Classic Views

Overview

Classic Views allow you to view devices by device group, device organizations, and device categories. Unlike Device Maps, which show relationships between devices, Classic Views allow you to view device status and events associated with each device in a simplified, sortable grouping. Devices are grouped by the severity of event. An event is a message that is triggered when a specific condition is met. Events are color-coded, and can be one of the following: Healthy (green), Notice (blue), Minor (yellow), Major (orange), or Critical (red).

Use the following menu options to navigate the SL1 user interface:

- To view a pop-out list of menu options, click the menu icon (.
- To view a page containing all of the menu options, click the Advanced menu icon (.

This chapter includes the following topics:

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<i>Viewing Classic Views</i>	109
<i>The Actions Menu</i>	111
<i>Searching and Sorting a Classic View</i>	111

Types of Classic Views

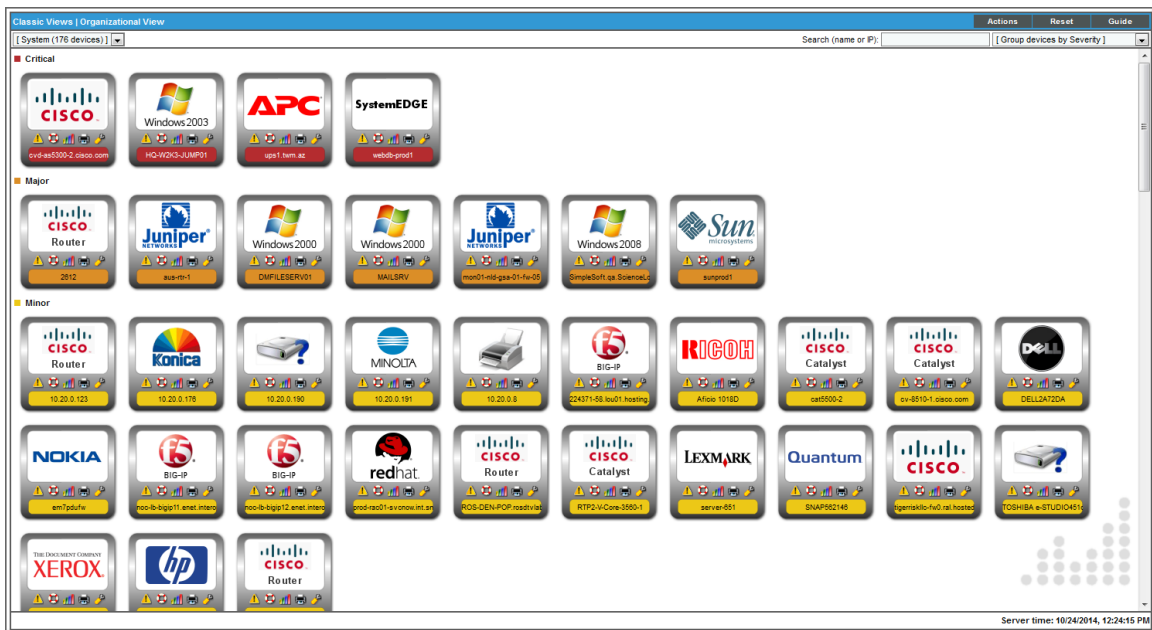
Classic Views are similar to Device Maps in that they show devices by device groups, devices by organization, and devices by category. Unlike Device Maps, Classic Views show only the status of a device and the most recent event associated with a device. Classic Views show you the following views:

- **Device Group.** A device group is a user-defined group of devices. Device groups make it easy to configure and manage multiple devices. SL1 automatically updates the Device Group View as new devices are added to device groups and as new device groups are defined. SL1 also updates this view every five seconds with the latest status and event information.
- **Organizational View.** All devices, policies, events, tickets, and users in SL1 are associated with an organization. An organization is a group for managing elements and user accounts. An organization can be defined by geographic area, departments, types of devices, or any structure that works best for your needs. The minimum characteristics of an organization are:
 - A unique name
 - Users who are members of the organization
 - Elements, such as devices, associated with the organization
- **Device Categories.** A device category is a logical categorization of devices by primary function. SL1 uses device categories to group related devices in reports and views. Device categories are paired with device classes to organize and describe discovered devices. Device class usually describes the manufacturer. Device category describes the function of the hardware. For example, a device might have a device class of "Microsoft Windows 2000 Server" and a device category of "servers". You can view device category maps in the **Device Category Map** page (Views > Device Maps > Categories).

Viewing Classic Views

You can view a classic view from the **Classic Views** section (Views > Classic Views). To view a classic view:

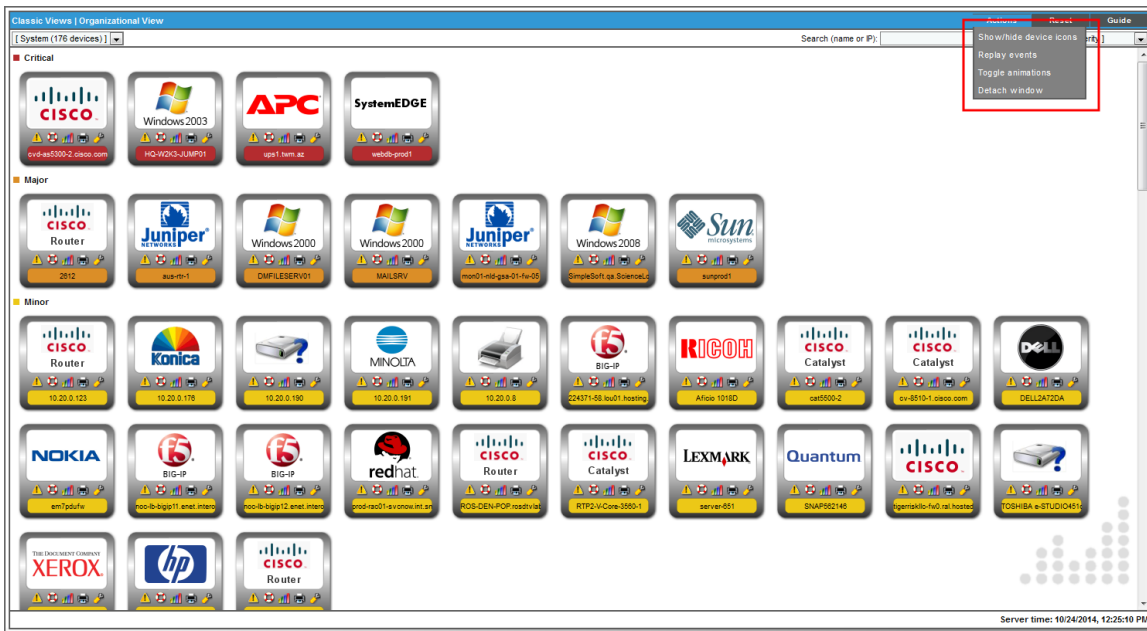
1. Go to the **Classic Views** section (Views > Classic Views).
2. Select a device group/organization/category from the drop-down list in the upper left of the page. You can also search and sort a device group/organization/category. Sorting and searching views are discussed later in this section. Each classic view will be displayed with the following parameters:



- Each device in the device group appears as an icon.
 - Each icon is color coded, to represent the most severe event that is currently active for the device.
 - Events that have occurred in the last minute create a border around the device icon and cause the border to flash once per second.
 - Events that have occurred in the last five minutes create a border around the device icon and cause the border of the device icon to flash slowly.
 - Events that occurred prior to the last five minutes do not create a border around the device icon. However, the device icon is still color-coded to reflect the device's event with the highest severity.
 - If a device does not have an event associated with it, the event icon does not have a border. However, the device icon is still color-coded to reflect the device's status (usually green for "healthy").
 - Initially, the page displays the last five minutes of device events over a time span of a few seconds. You might see the color of each icon change, and you might see the frequency at which the border flashes change. In the lower right corner, you will see the timestamp quickly cycle through the last five minutes.
 - The view automatically refreshes every five seconds. In the lower right corner, you will see the timestamp update. Based on the updated information, the device icons might move and/or the border around the device icons might change.
3. Each device has the following icons you can select: View events on a device (🚨); create a ticket about the device (🎫); view the **Device Summary** page (📊); print a report about the device (🖨️); or view the **Device Properties** page (🔧).

The Actions Menu

The **[Actions]** menu allows you to customize how the page appears. The following entries appear in the **[Actions]** menu:

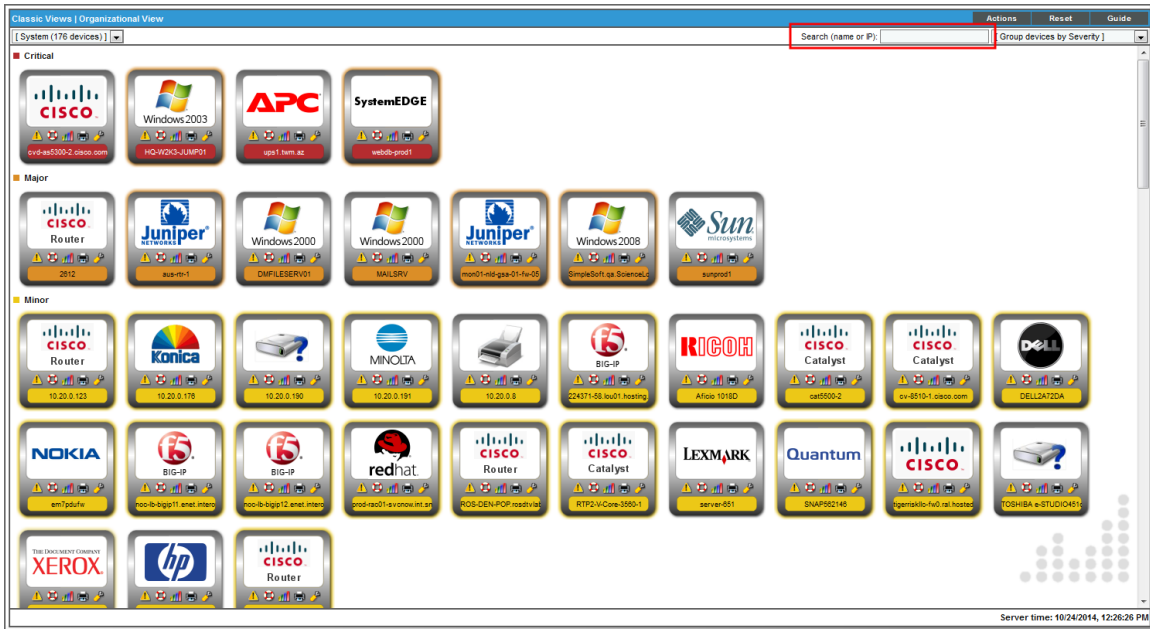


- **Show/hide device icons.** Toggles on and off the display of the large, device-class icon and the condensed device icon.
- **Replay events.** Graphically displays the last five minutes of event activity in a few seconds. You might see the color of each icon change, and you might see the frequency at which the border flashes change. In the lower right corner, you will see the timestamp quickly cycle through the last five minutes.
- **Toggle animations.** Toggles on and off the flashing borders that indicate event age.
- **Detach window.** Opens a new window with the Device Group/Organizational/Device Category View displayed.

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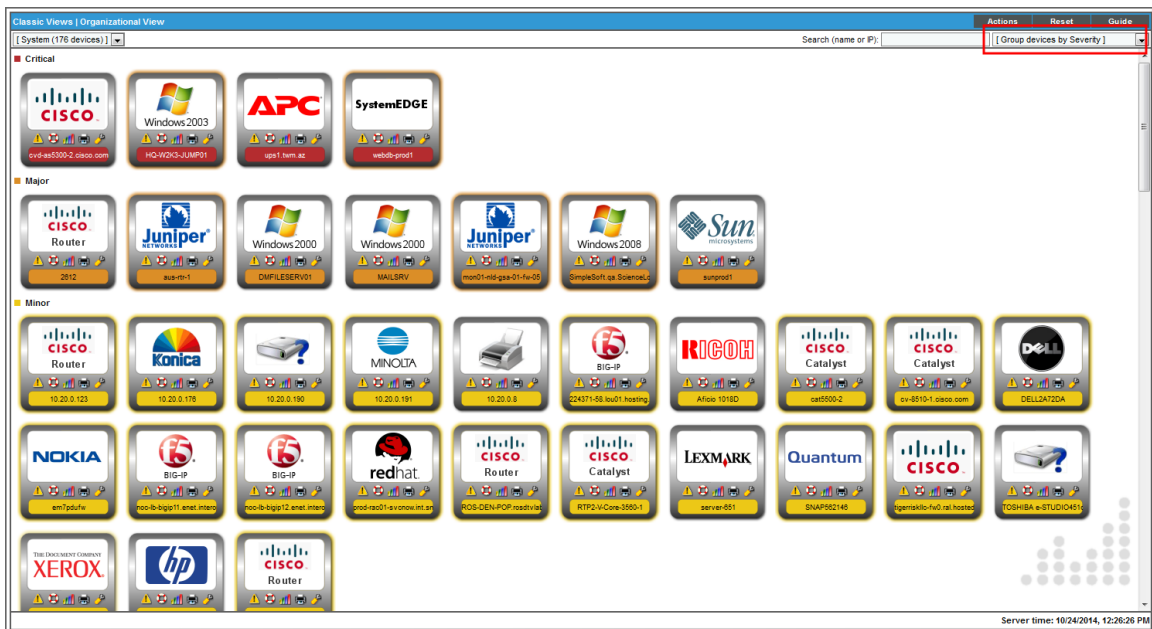
The **Classic Views** section include a search field in the upper right that allows you to search the currently displayed devices for a device name or a device IP.

This field is a find-while-you-type filter. As you type, the page is filtered to match the text in the **Search** field.

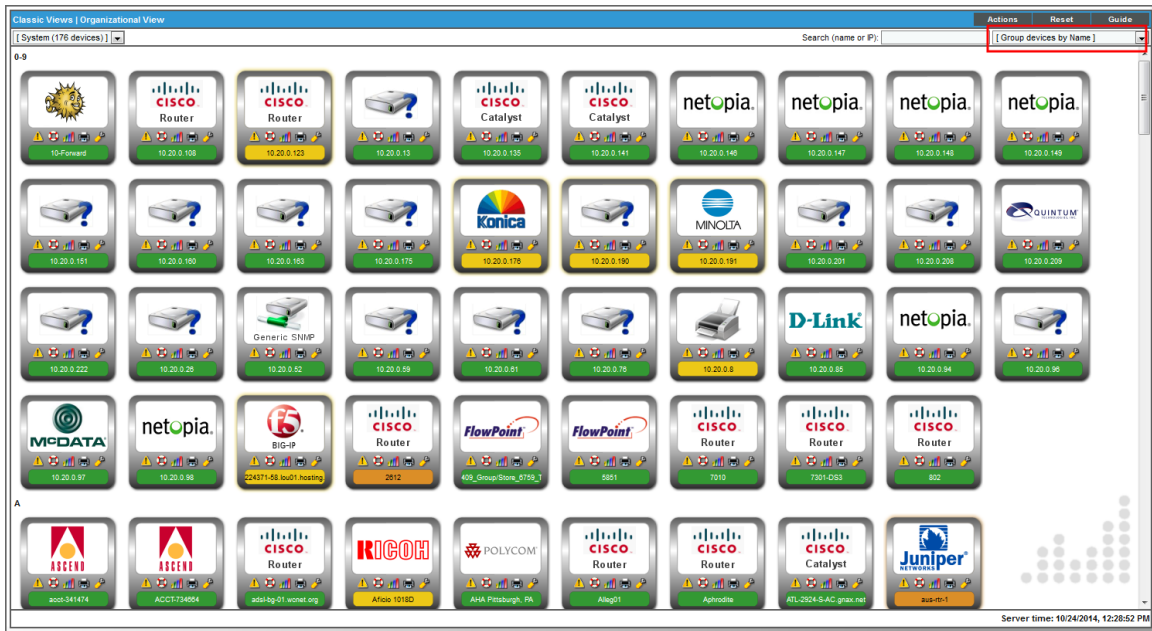


The **Classic Views** pages also include a **Group devices by** field in the upper right that allows you to sort the list of devices. You can sort by:

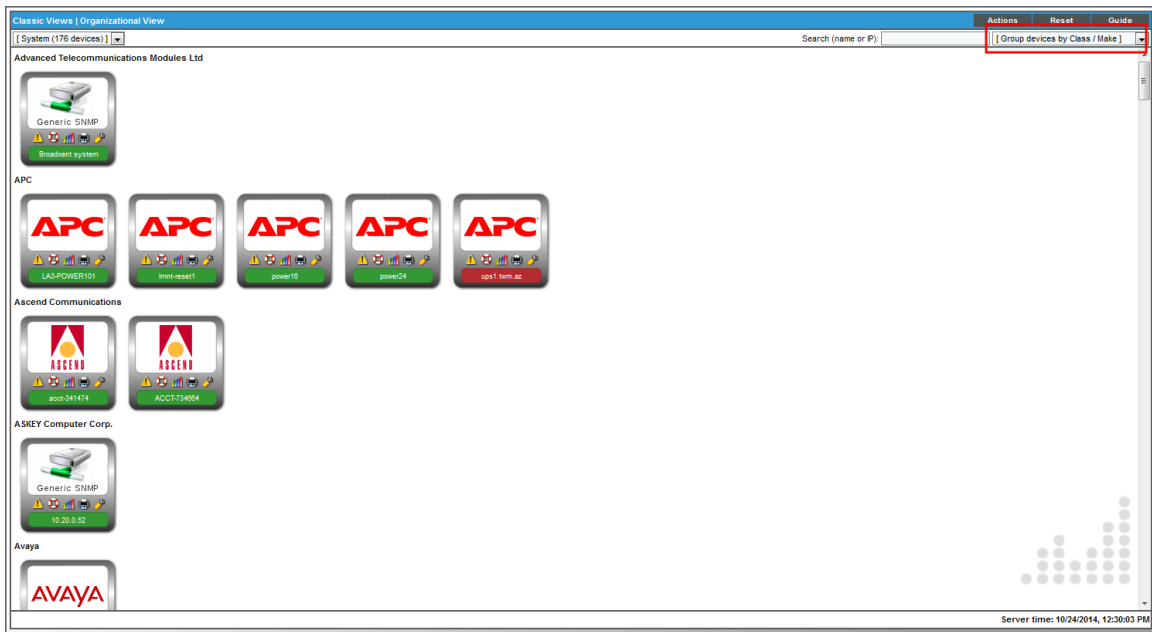
- **Group devices by Severity.** Groups devices by the severity of the device status, with highest severity first. Within each severity, orders by device name, in ascending alphabetical order.



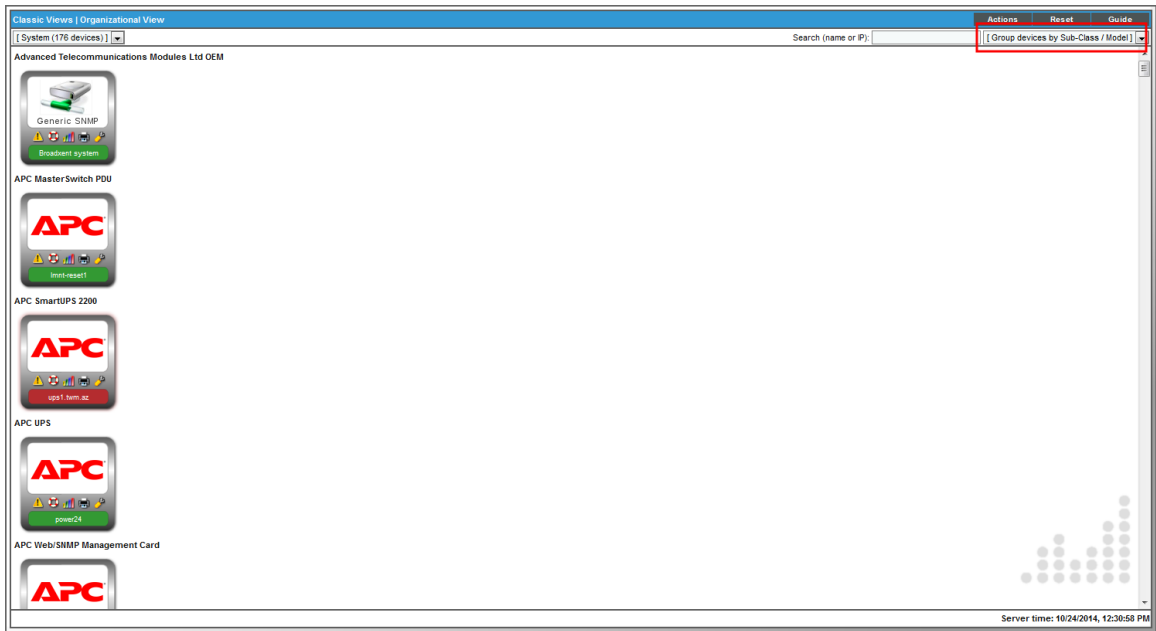
- **Group devices by Name.** Groups devices by name, in ascending alphabetical order.



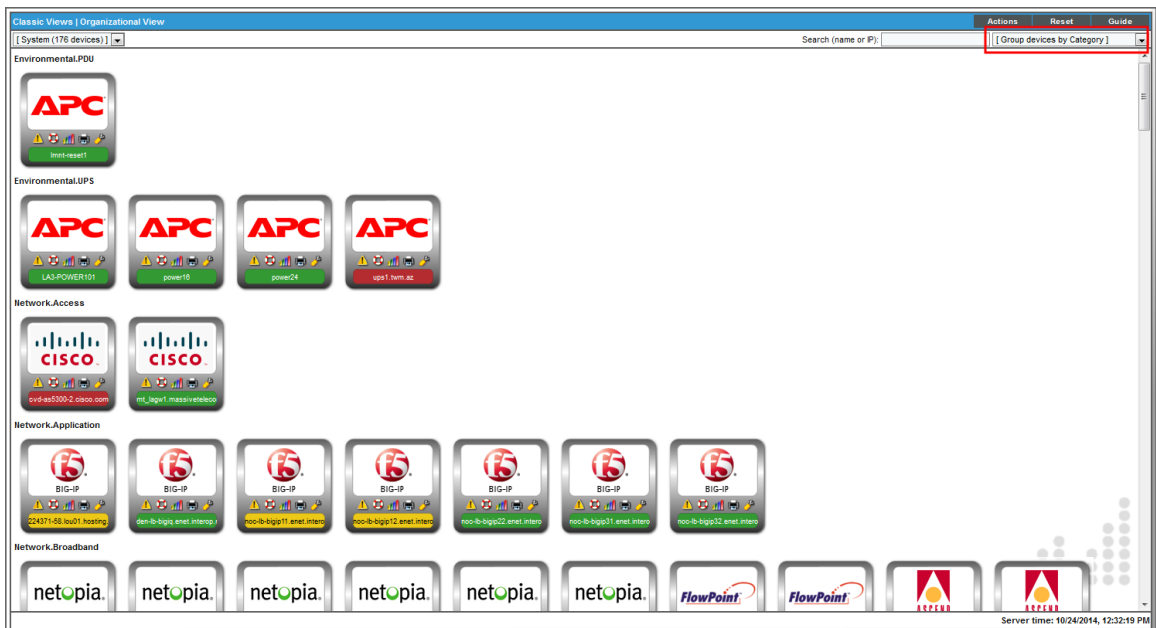
- **Group devices by Class/Make.** Groups devices by manufacturer, in ascending alphabetical order. Within each manufacturer, orders by device name, in ascending alphabetical order.



- **Group devices by Sub-Class/Model.** Groups devices by manufacturer and model, in ascending alphabetical order. Within each sub-class/model, orders by device name, in ascending alphabetical order.



- **Group devices by Category.** Groups devices by device category, in ascending alphabetical order. Within each device category, orders by device name, in ascending alphabetical order.



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