

Smart Network Application (SNA) Overlay View

Objective

The Smart Network Application (SNA) is a system that displays an overview of the network topology including detailed monitoring information for devices and traffic. SNA enables viewing and modifying of configurations globally on all supported devices in the network.

The Topology Map is the main view of the SNA application as it is a graphic representation of the network, including information on individual devices, and the connections between devices. The user can select different overlays for the topology view that affect the graphic representation of elements in the topology view based on varying criteria.

Overlays are layers of information that can be activated on the topology view to add more information or affect the way the topology is displayed. This can be accomplished, for example, by coloring topology elements in different colors depending on various criteria, or by changing the icons that are displayed on topology elements to show detailed data relevant to the selected overlay.

This article explains the available Overlay options that you can view from the SNA Topology.

Note: For more information about the Topology View of the SNA, click [here](#).

Applicable Devices

- Sx350 Series
- SG350X Series
- Sx550X Series

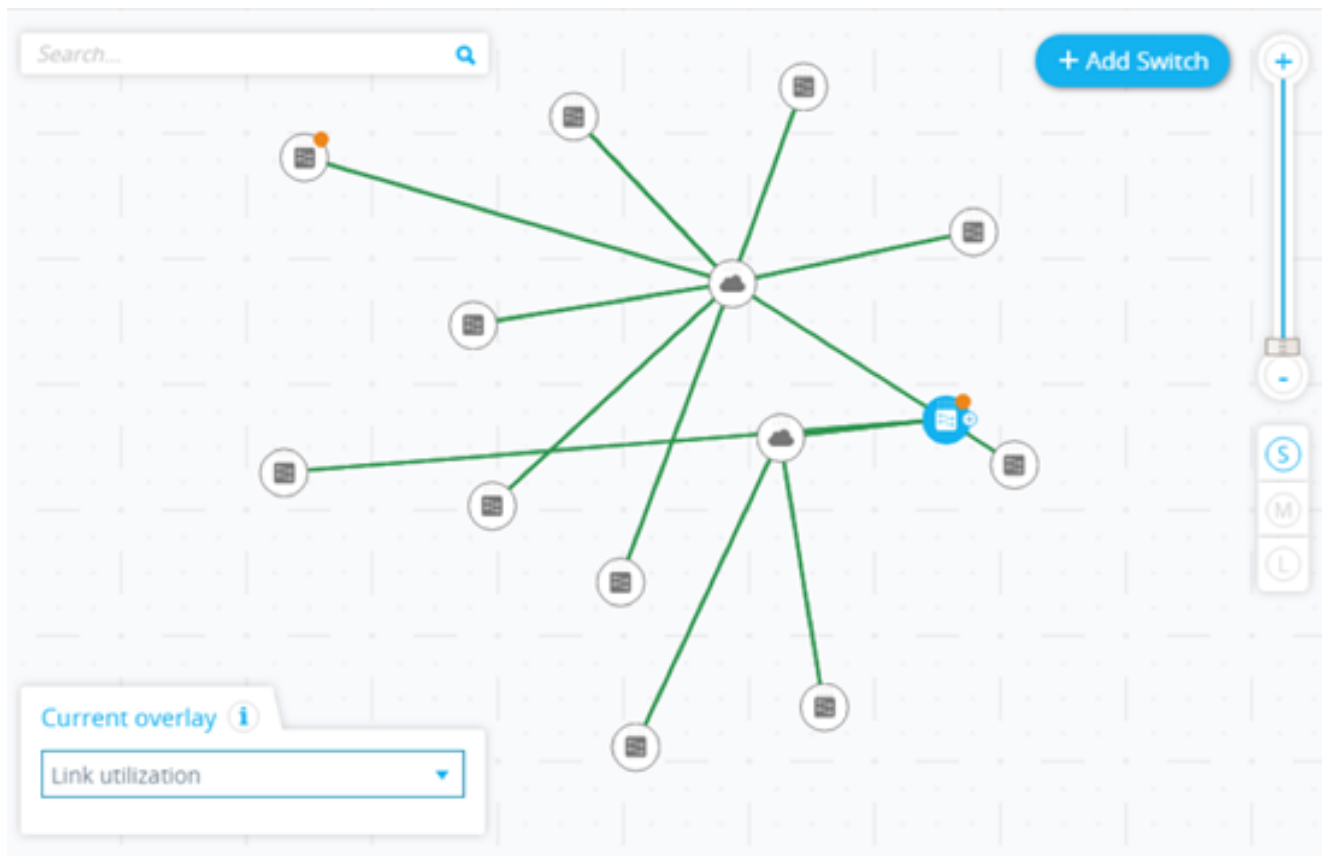
Note: Devices from the Sx250 Series can provide SNA information when they are connected to the network, but SNA cannot be launched from these devices.

Software Version

- 2.2.5.68

Overlay View

The Topology Map below shows an overlay of the SNA. In this image, the current overlay is Link utilization, which is the default overlay of the SNA.



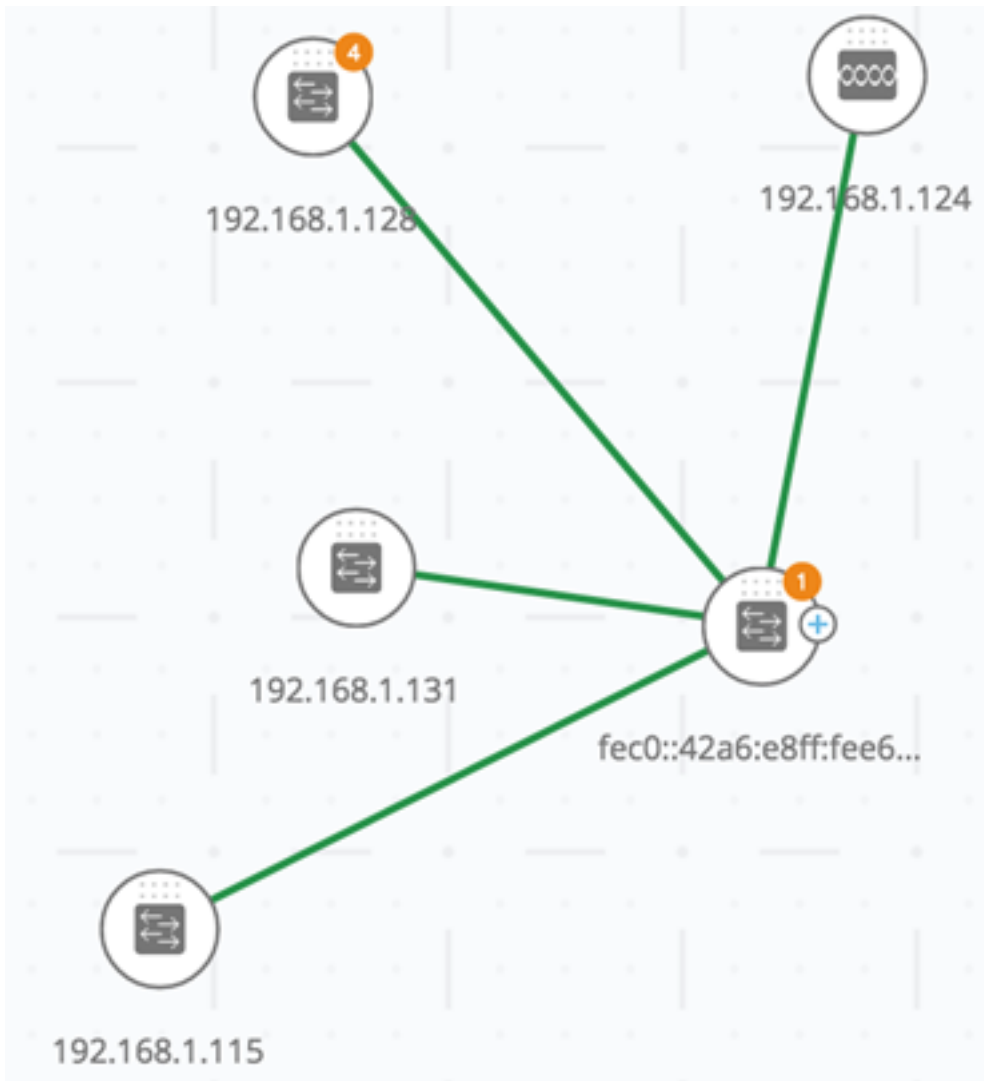
Only one overlay can be active at a time. Therefore, selecting an overlay deactivates any other active overlay. You can choose the overlay that you want to use from a list of available overlays below:

- VLAN Membership
- Spanning Tree
- ✓ Link utilization
- PoE

- [Link Utilization](#)
- [PoE Information](#)
- [VLAN Membership](#)
- [Spanning Tree](#)

[Link Utilization](#)

The Link Utilization overlay adds information to the Topology Map and Connection Explorer screens regarding the current utilization level for the last 15 seconds of the connections in the network. The connections and links are color-coded, according to the volume of traffic that flows in them in both directions.



By default, the following are the thresholds and their corresponding colors:

Legend

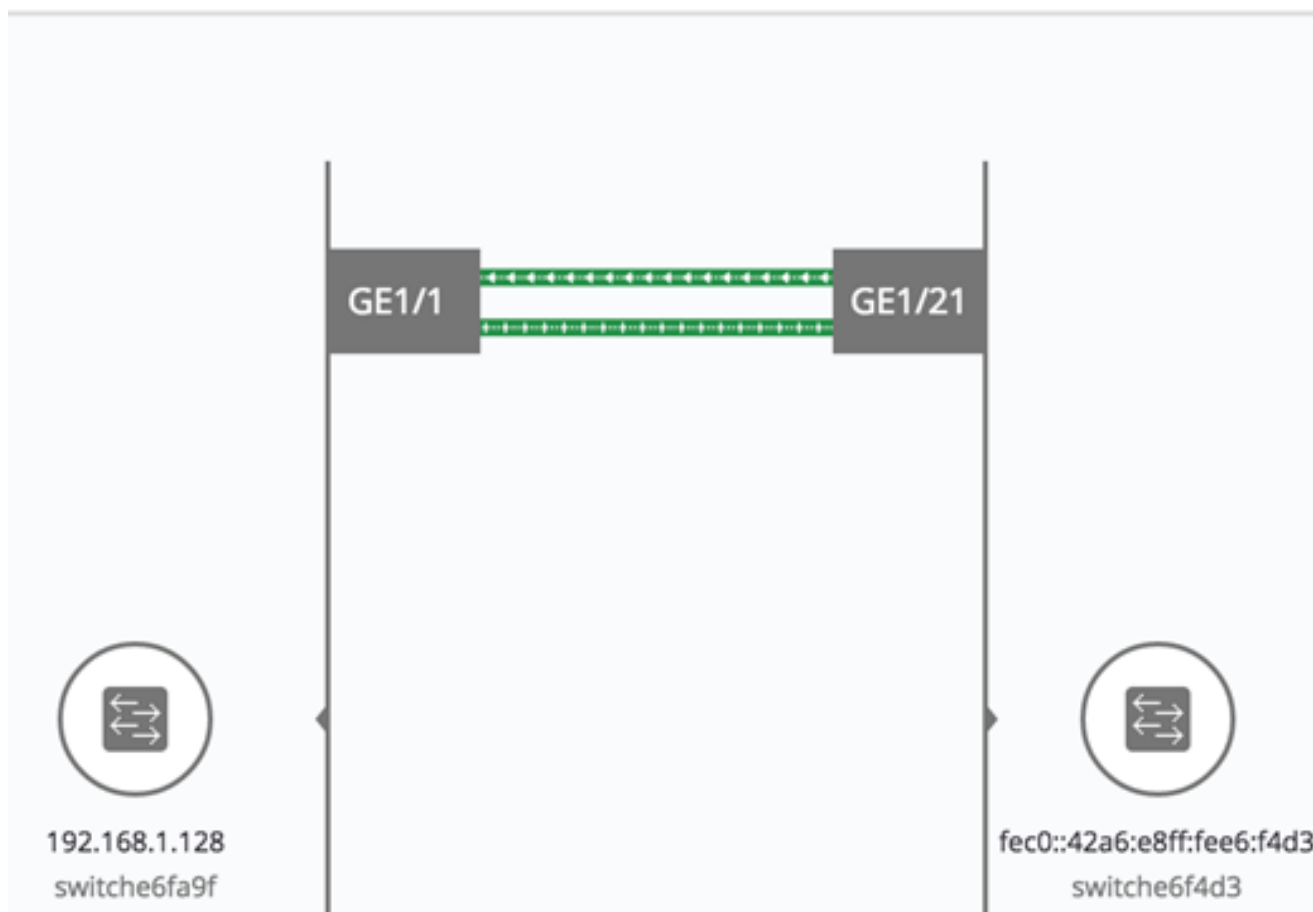


Connections

- 0% - 69% Utilization
- 70% - 89% Utilization
- 90% - 100% Utilization

- 0% to 69% — Normal
- 70% to 89% — Amber
- 90% to 100% — Red

Connections between devices in the topology view are colored according to the most heavily utilized individual link in the connection. When viewing the Connection Explorer, each link shows its own utilization in both directions.



The utilization for each direction of a link is calculated by checking the information from both sides, such as if the link is between SNA-capable devices and if it is using the higher value as the utilization.

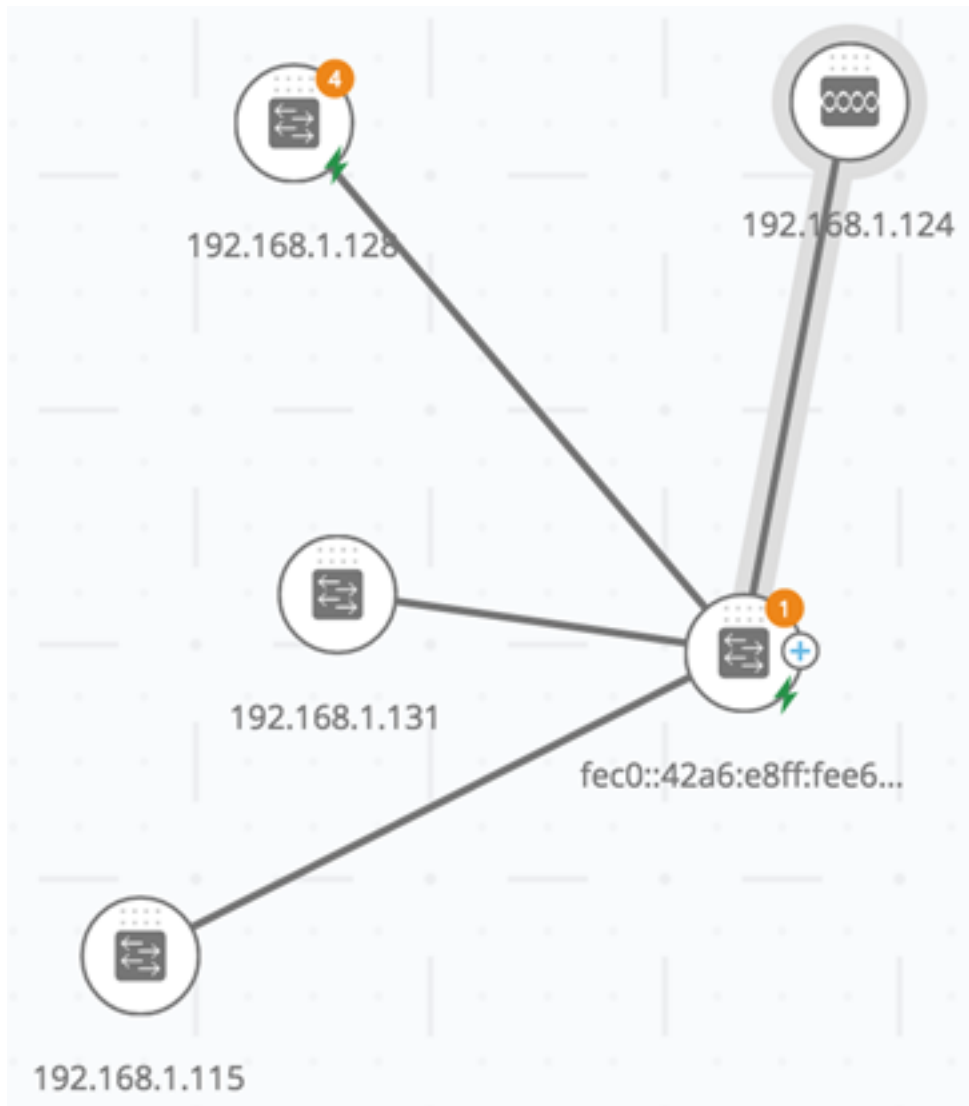
For example, if a link is between Port 1 of Device A and Port 2 of Device B, the calculation of one direction is a comparison between the Transmit (Tx) value of Port 1 and the Receive (Rx) value of Port B. The higher value determines the utilization of the link.

If only one side of the link is an SNA-capable device, the utilization of the link is determined by the information from the SNA-capable device only.

When determining the most heavily-utilized link for the aggregated display on the topology map, each direction of a link is considered a separate link. For example, if one direction of a link has a utilization of 5% and the other direction has a utilization of 92%, the aggregated connection in the topology map is red, as the highest utilization in the connection is 92%.

PoE Information

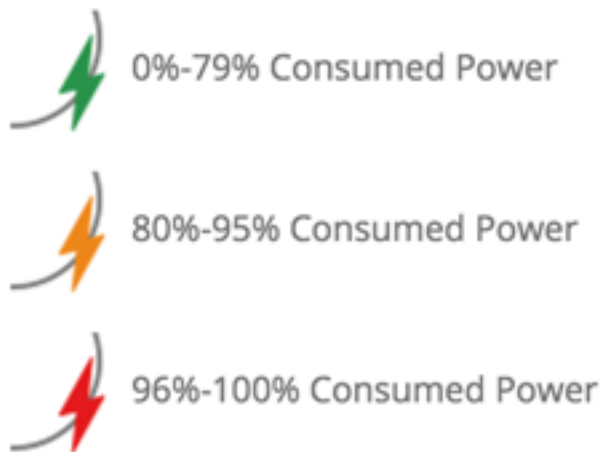
The Power over Ethernet (PoE) overlay displays the power supply and consumption status of the elements in the network. This overlay applies colors to links based on the amount of power provided by the link to power-supplying devices based on their remaining power. The overlay also highlights devices requesting power that are not receiving the power requested. The user can select the thresholds where these colors change for each type of data, and the specific colors used for each threshold reached.



An icon is added to power-supplying switches, and is colored according to the switches power budget consumption.

Legend

POE Supplier indicator



Devices



Connections

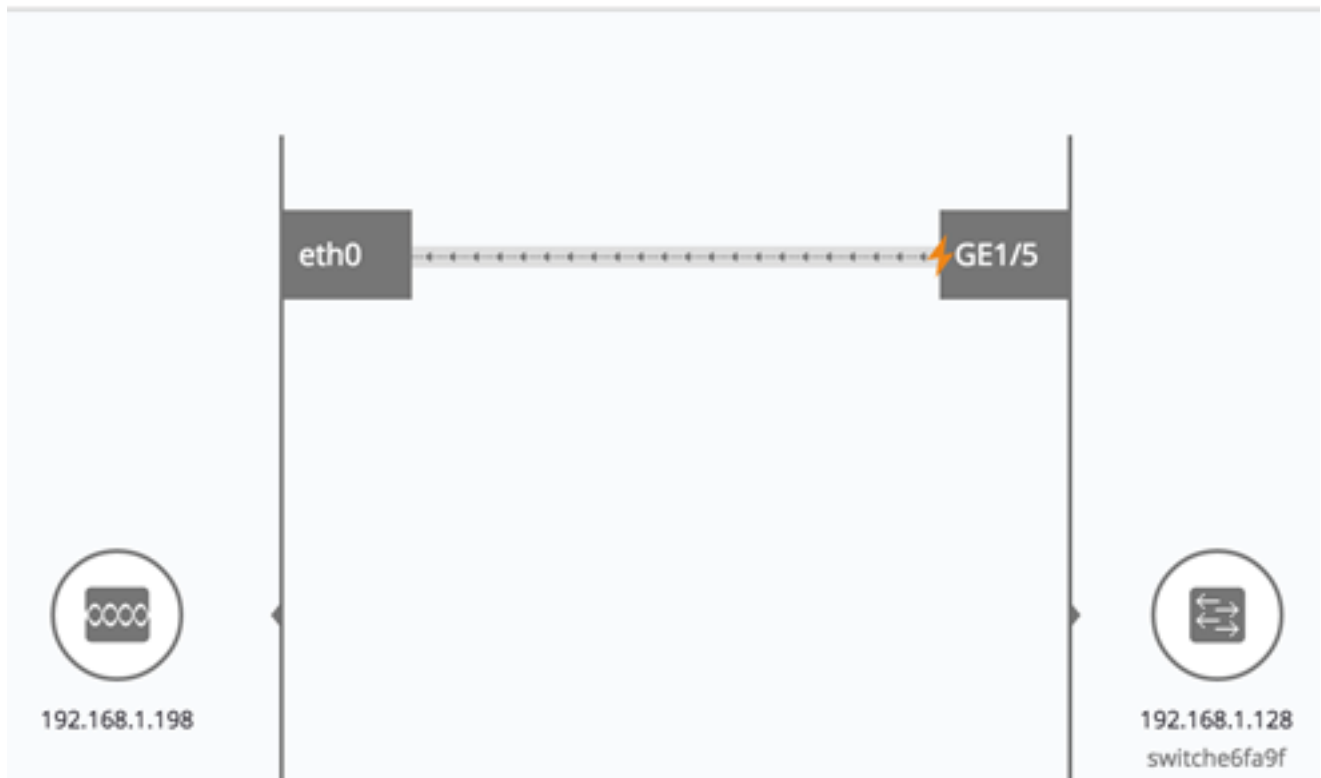


- Device supplying 0 to 80% of its power budget — Green (Normal)
- Device supplying 81% to 95% of its power budget — Amber
- Device supplying 96% to 100% of its power budget — Red

Devices receiving power over Ethernet are surrounded by a halo.

Connections containing at least one link over which power is supplied are highlighted in the topology map.

In the Connection Explorer, each link transferring power displays an indication of providing power, and the direction of the power flow. This indication is displayed per port, even if the link is in a Link Aggregation (LAG). It is possible that some links in a LAG provide power while others do not.

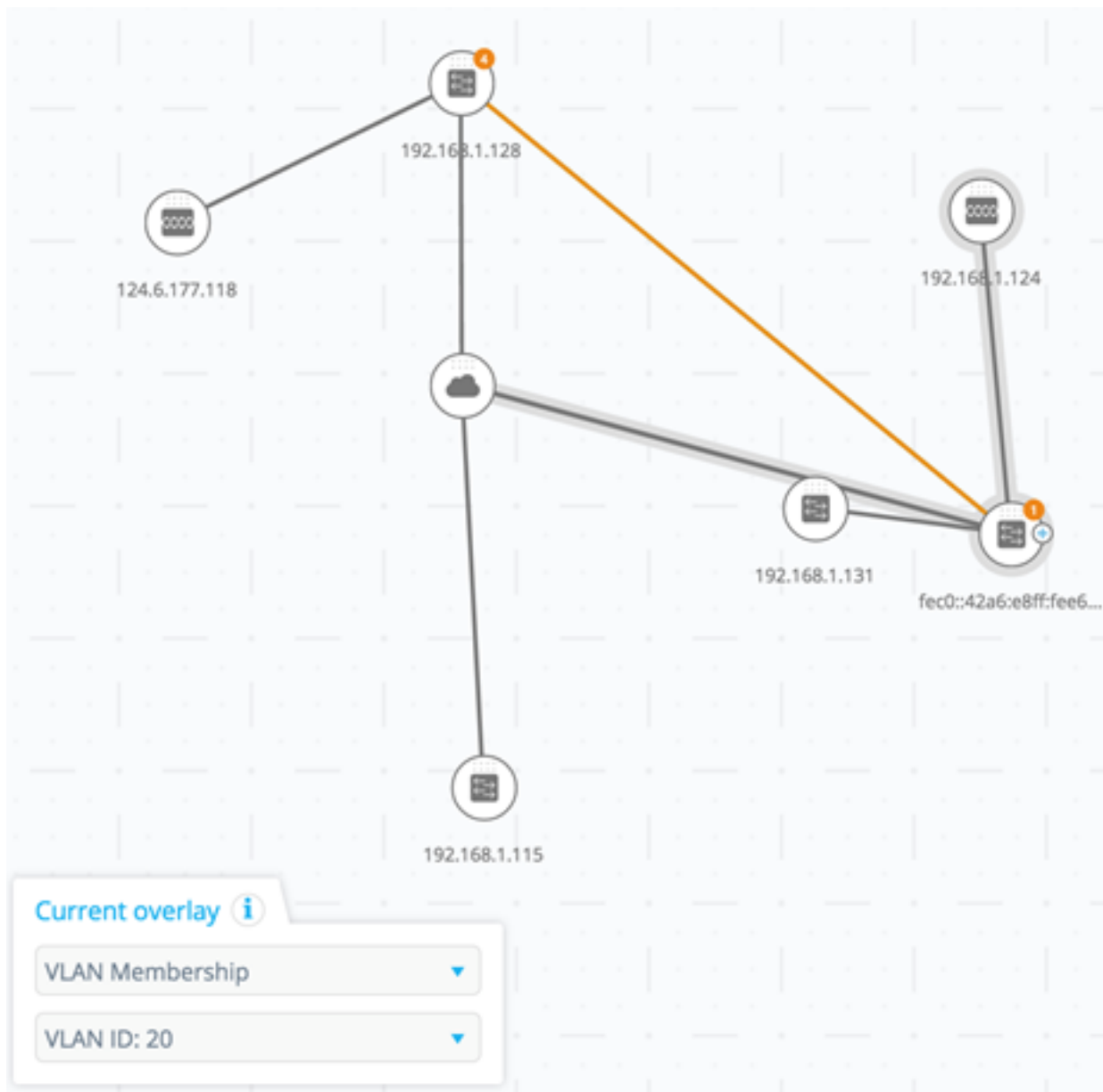


Note: In this example, the GE1/5 port consumes 80%-95% power.

VLAN Membership

Some overlays may have parameters associated with them, such as the VLAN Membership overlay. For example, when you select the VLAN Membership overlay, you must also select a corresponding Virtual Local Area Network (VLAN). This overlay enables viewing of the VLAN memberships of various ports and devices in the network. For example, in the image below, the amber lines show asymmetric connections, meaning where one end of the link is a member in the selected VLAN and the other end is not.

When activating the VLAN Membership overlay, a list of existing VLANs in the network is displayed and listed by VLAN ID. When you select a VLAN, node, which are members in this VLAN, are highlighted.



The links between devices are displayed in one of the following states:

- A link between SNA devices, where neither of the connected interfaces on either device is a member of the VLAN, is unmarked.
- A link between an SNA device and a non-SNA device, whose interface on the SNA device is not in the VLAN, is unmarked.
- A link between SNA devices where the connected interfaces in both devices are members of the VLAN is highlighted as a member of the VLAN.
- A link between an SNA device and a non-SNA device whose interface on the SNA device is a member of the VLAN is highlighted.
- An asymmetric link between SNA devices where one of the connected interfaces is a member of the VLAN and the other one is not is marked in amber.

The connection between aggregation of links (LAGs) between devices in the topology map is marked according to the following rules:

Legend

Devices



Connections

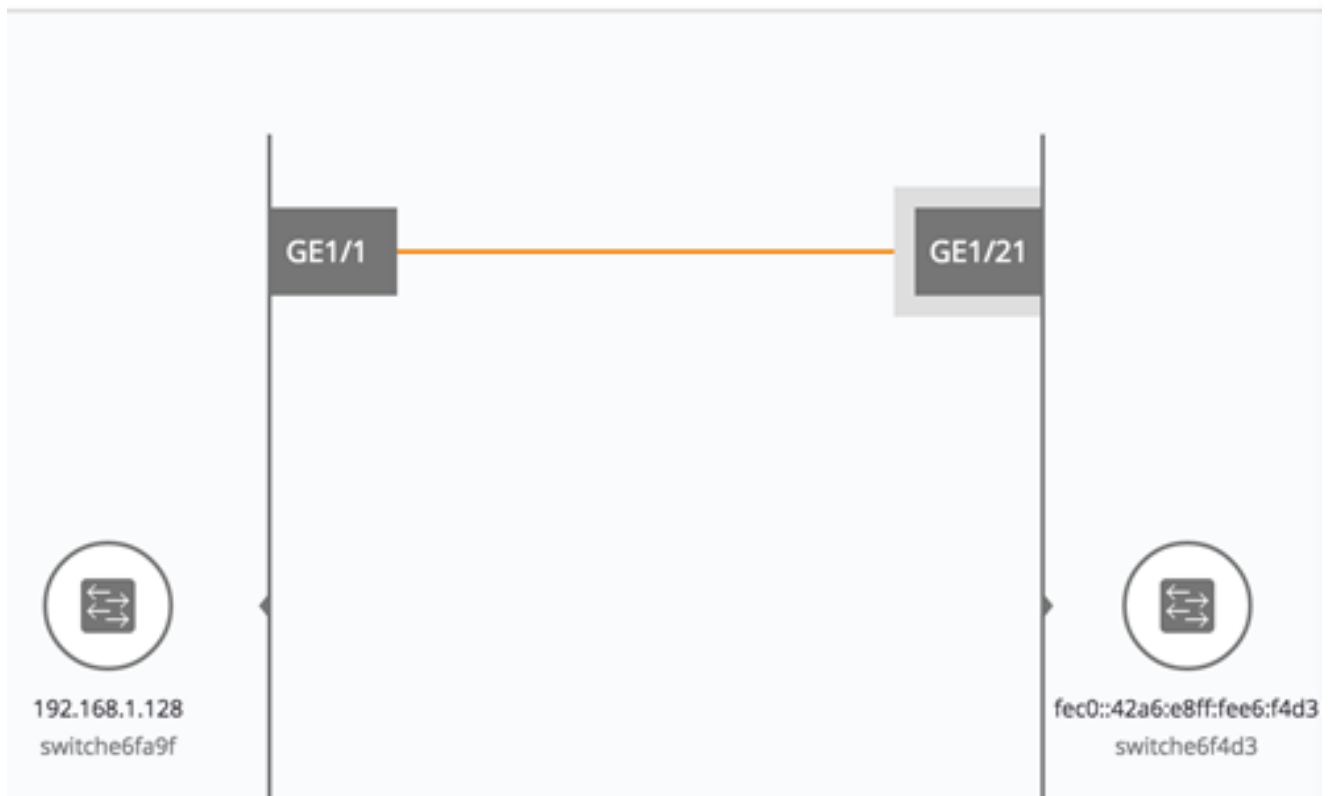


- If at least one link is highlighted, the connection is highlighted.
- If at least one link has an asymmetric connection, the connection is amber.

In the Connection Explorer, every link can be viewed individually. When a link has an asymmetric configuration, in addition to being colored amber, the Connection Explorer displays which side of the link is not a member of the VLAN.

Connection Explorer

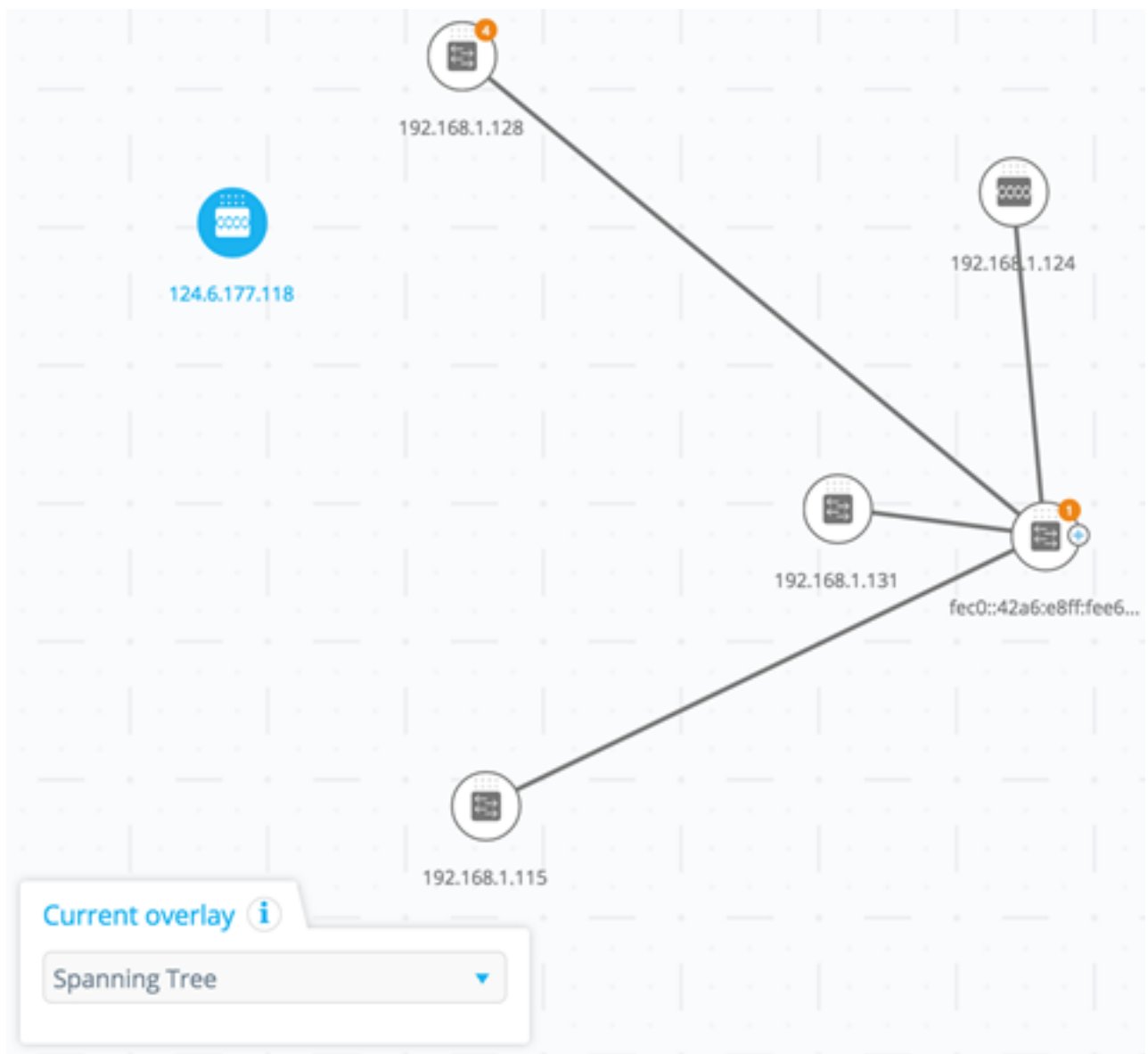
Select all



Note: In this example, the GE1/21 is a member of VLAN 20.

Spanning Tree

The Spanning Tree overlay displays the active topology of the network. When this overlay is activated, an indication is added to the spanning tree root device and all connections. This indication highlights the links that are blocked by the common spanning tree.



When viewing a Connection Explorer, all blocked links are highlighted.

Legend

Interfaces



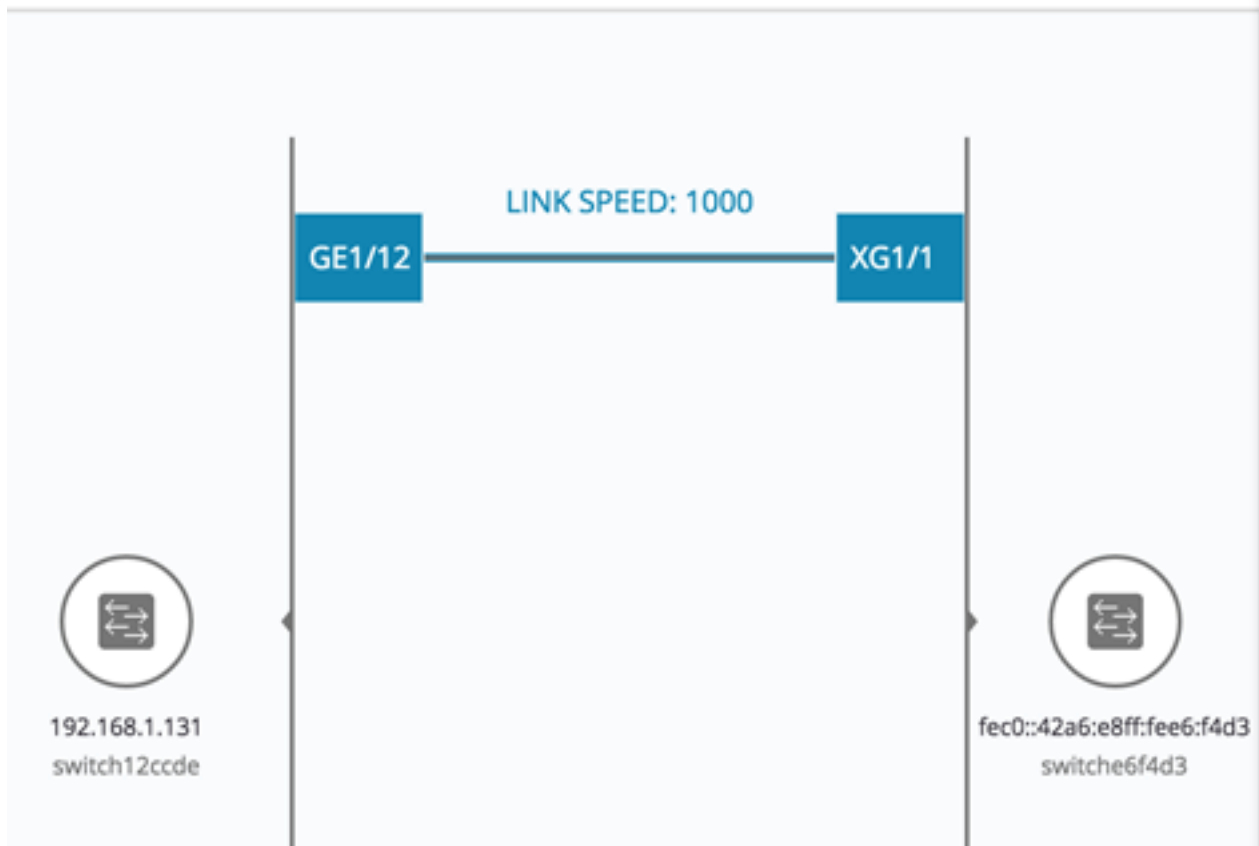
Links



When a link is blocked, the Connection Explorer specifies which end of the link is the blocked interface.

Connection Explorer

Select all



Note: In this example, there is no blocked interface.