Network Map

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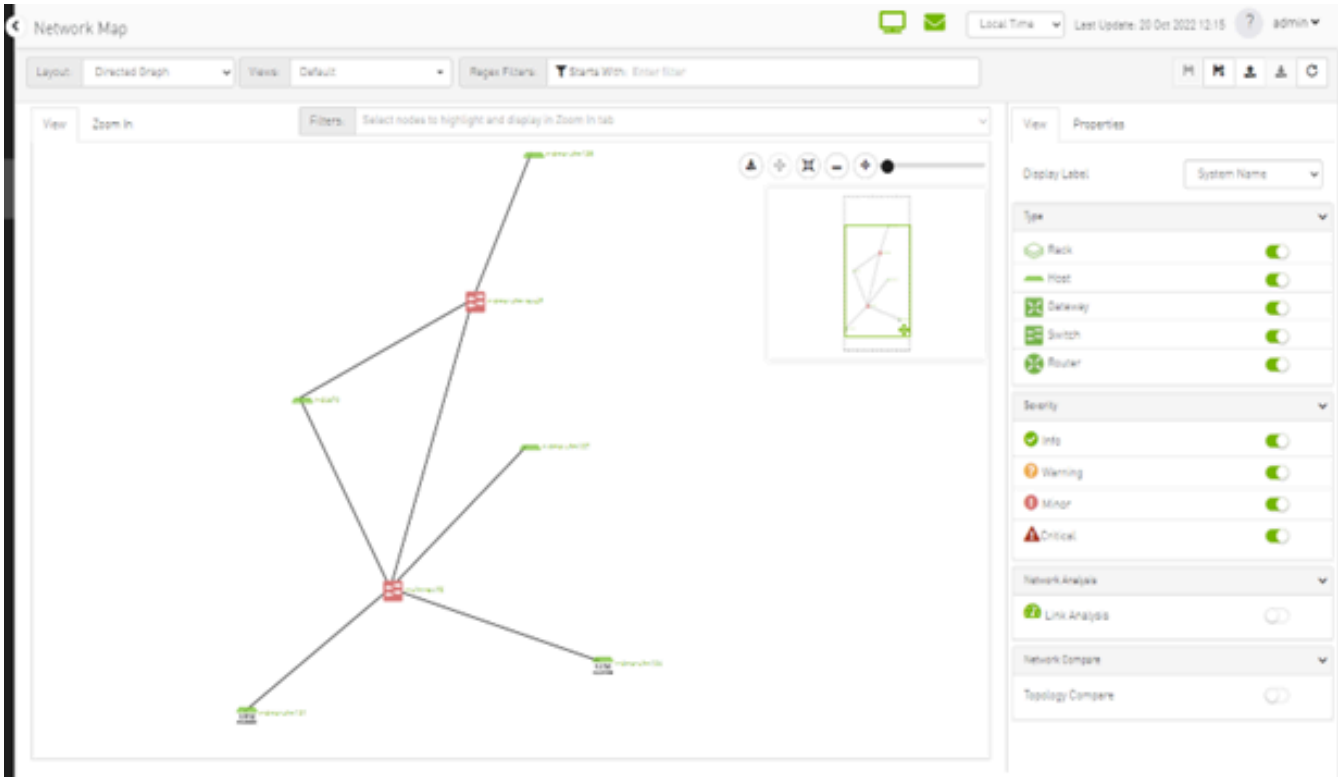
The Network Map window shows the fabric, its topology, elements and properties. UFM performs automatic fabric discovery and displays the fabric elements and their connectivity. In the Network Map window, you can see how the fabric and its elements are organized (e.g., switches and hosts).



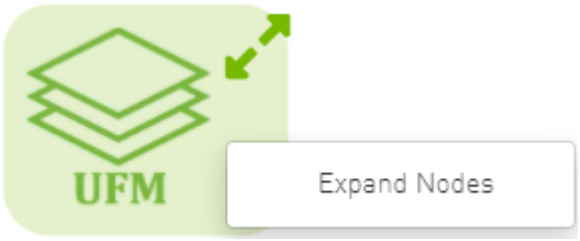
Network Map Components

Component	Icon	Description
Switches		Represents third party switches discovered/managed by UFM
Hosts		Represents the computer (host) connected to the discovered/managed switches
Routers		Represents third party routers discovered/managed by UFM
Gateways		Represents third party gateways discovered/managed by UFM
Links	—	Represents the connections between devices on the fabric
Racks		Represents all nodes (hosts) physically connected to a switch

Note

The level of severity of devices affects the color they are displayed in.
For further information, refer to table "Device Severity Levels".

- To zoom in/out of the map, scroll the mouse wheel up and down or using the slider on the right top corner
- To move around in the map, press and hold down the left key while you move sideways and up/down
- To see the hosts inside a rack, right-click the Rack icon and click "Expand Hosts"



Selecting Map Elements

Users are able to select elements from the Network Map. Right-clicking an element opens a context menu which allows users to perform actions on it.

It is possible to select multiple elements at once using any of the following methods:

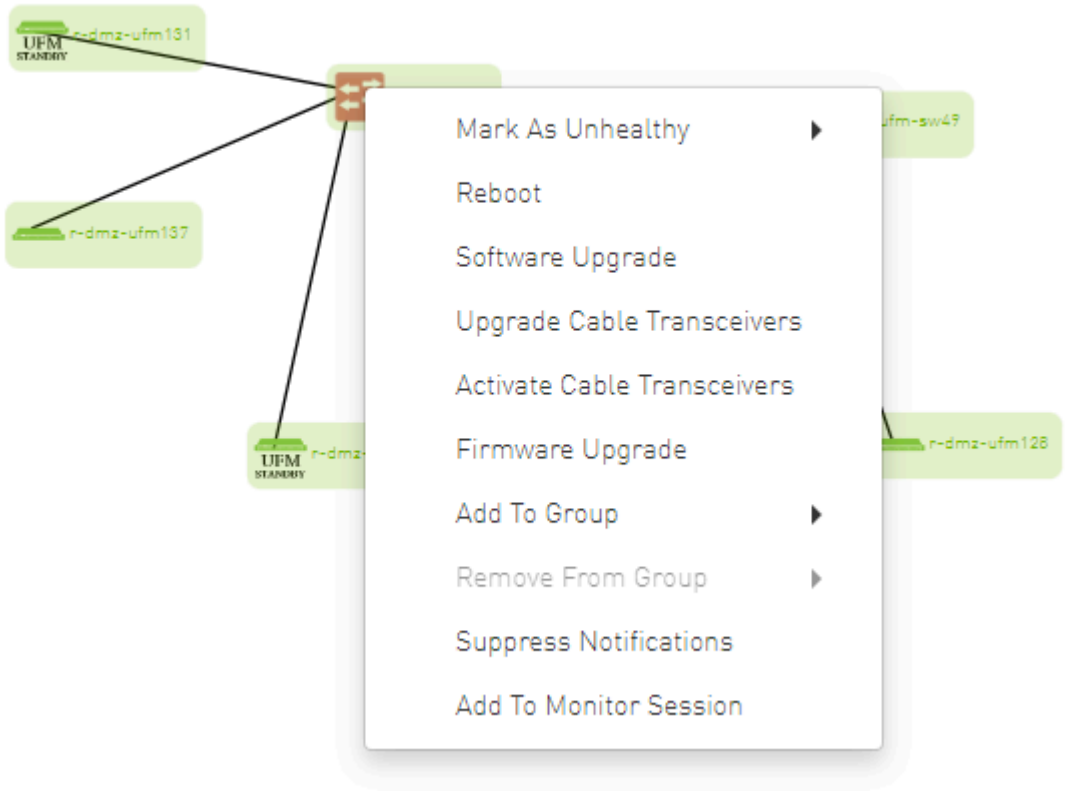
- By holding down Ctrl or Shift and dragging their mouse across the map.

Note

Please note that Ctrl starts new selection, while Shift adds to the current selection.

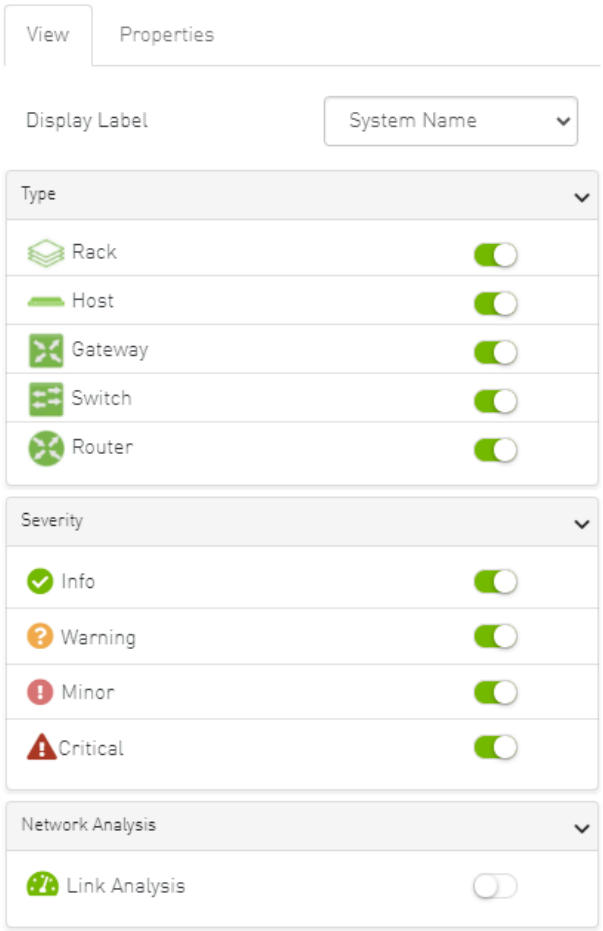
- By holding down Shift and clicking a new element on the map.

Multi-select makes it possible for users to perform actions on multiple devices with one right-click rather than repeating the same process per device.



Map Information and Settings

The right pane of the Network Map view enables you to control the view settings, as well as obtain further information on selected elements from the map.



The customized views created using the type and severity filters, selected fabric nodes, zoom level, and Expand/Collapse All Racks options can be saved for later access. These customized views can be saved and accessed using the bar available on top of the Network Map:

- "Save As" icon ( ) saves newly created customized views
- "Save" icon ( ) saves edits performed on existing views
- “Import” icon ( ) import map from local device. The file format should be txt
- “Export” icon ( ) export network as text file
- To reload/refresh the network map, use the refresh icon ( ).
- Drop down menu gives access to all previously saved views
- "Default" view is a predefined view where nodes are positioned randomly, all filters are enabled, and all racks are collapsed. Changes made to this view cannot be saved

unless under a new view name using the "Save As" icon.

- Saved views can be deleted using the "x" button.

You can select a node from the dropdown menu located above the Network Map view in order to highlight/display them in the "Zoom In" tab.

Map View Tab

The Network Map "View" tab displays the fabric containing all nodes (e.g. switches, racks including the hosts, etc).

If your fabric consists of more than 500 nodes, please note that:

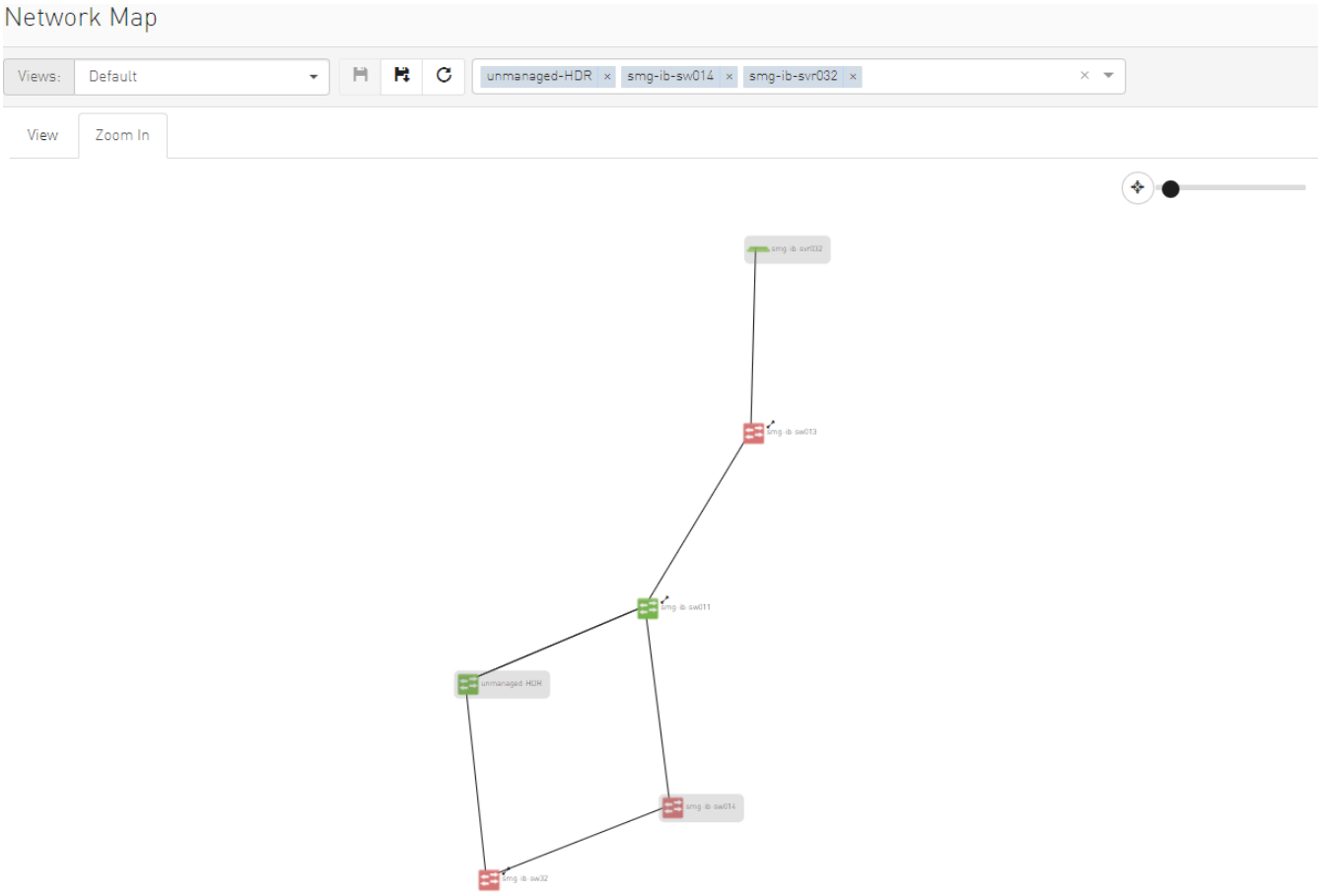
- The "View" tab will show only the switches in your fabric. Therefore, "Expand all racks" and "Rack filter" functions will be disabled.

- Link analysis will be disabled.

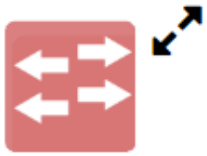
To have a better experience in this instance, you can switch to the "Zoom In" tab.

Map Zoom In Tab

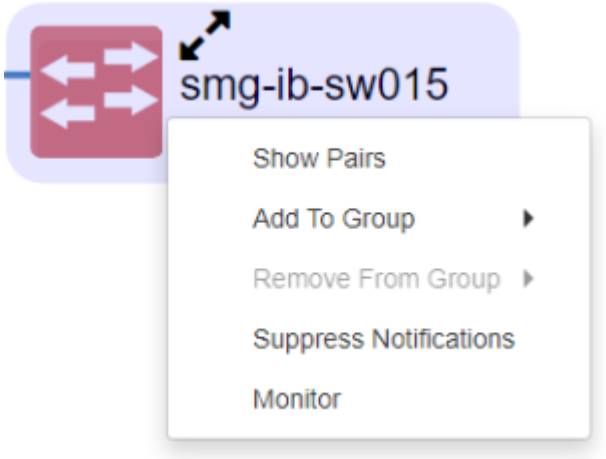
The Network Map "Zoom In" tab displays only the selected nodes from the dropdown menu above the map view and the nodes directly connected to the selected nodes.



If some switches still have hidden connected nodes, you will see the following icon:



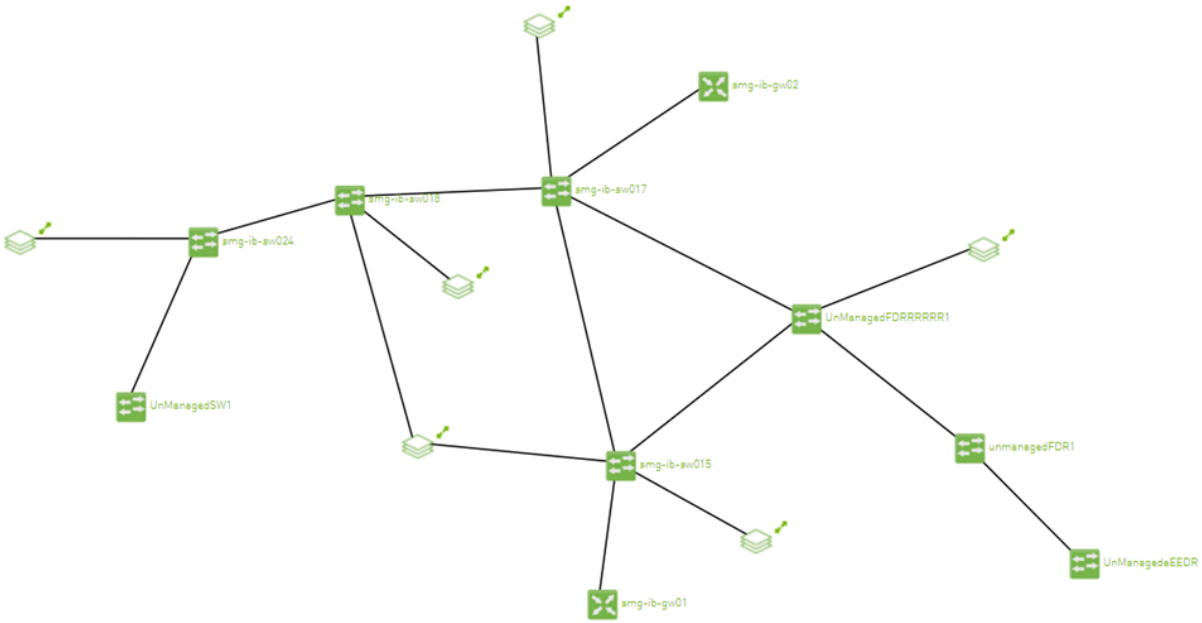
To reveal the hidden nodes connected to this switch, you can right-click it and select "Show Pairs" which adds this switch to the selected nodes list and shows the direct connected nodes to this switch.



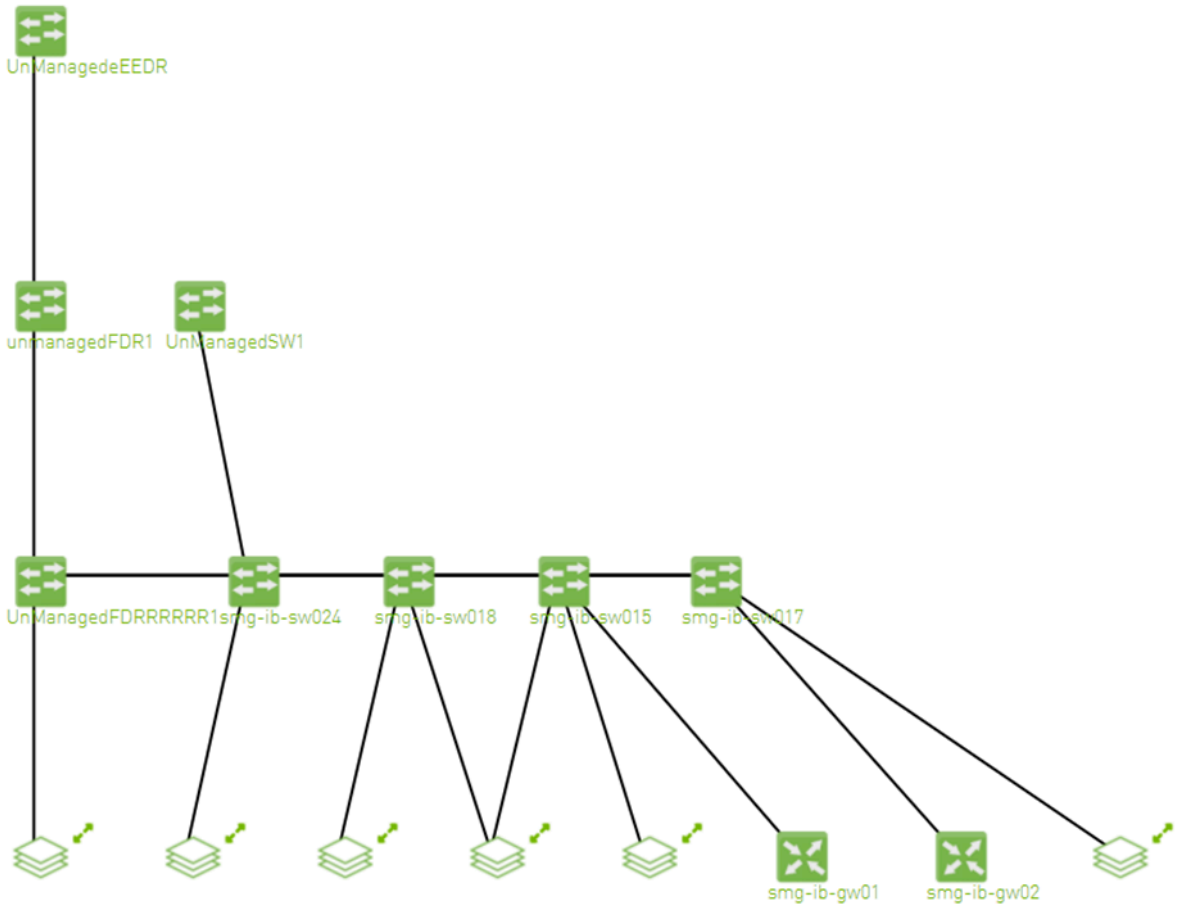
Map Layouts

Layout controls nodes positions in the map. UFM network map supports two types of layouts:

- Directed layout: the nodes are distributed depending on the connections between them so that the connected nodes will be near each other without conflict.



- Hierarchical layout: the nodes are distributed as layers; each layer will contain nodes that have the same level value.



You can switch between layouts from the dropdown menu located above the Network Map view.

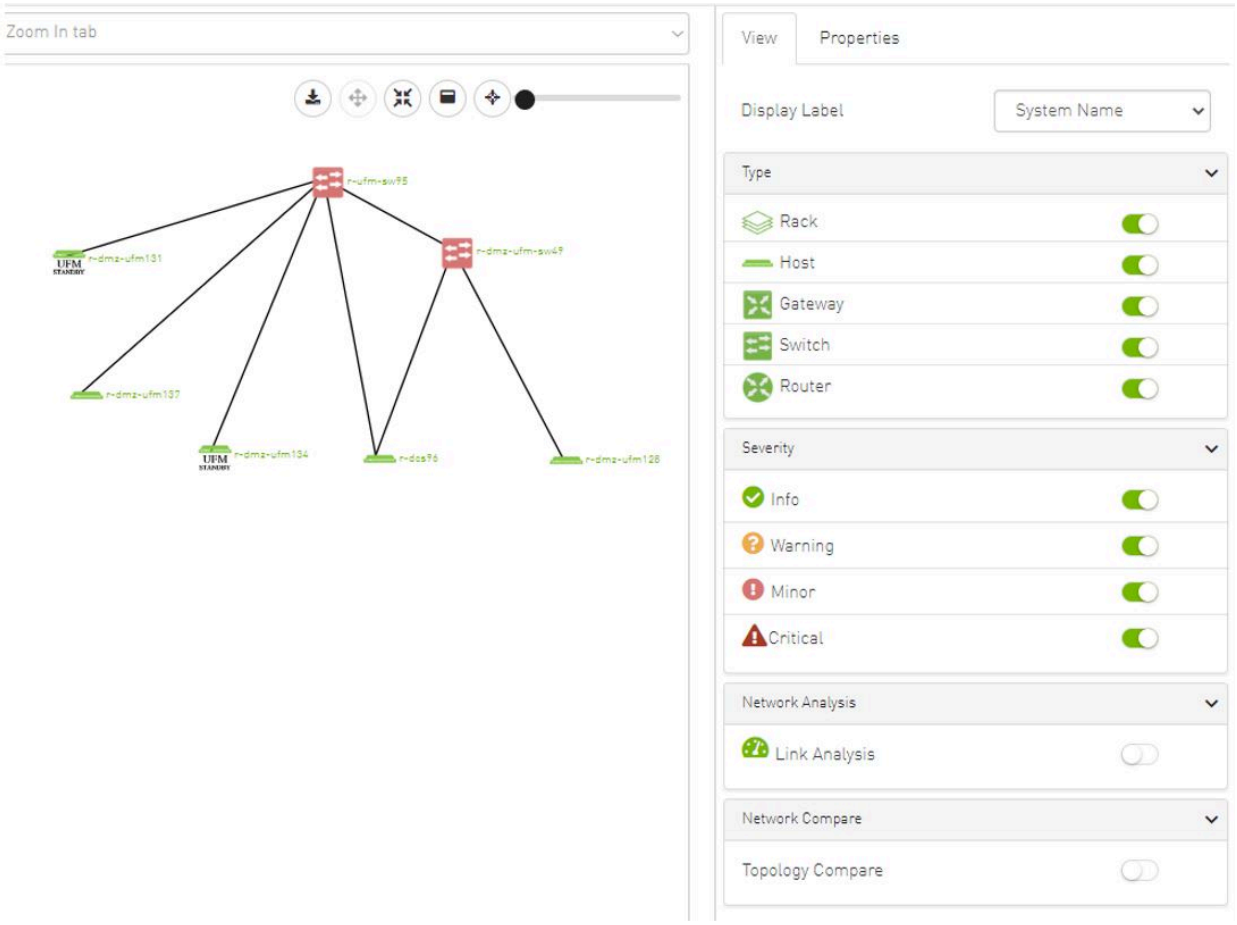
Information View Tab

- Enables searching for one or more elements in the map, by typing either their name or their GUID in the Search field. Note that the search mechanism is **not** case-sensitive.
- Enables displaying the elements either by their name, GUID, or IP.
- Enables viewing all hosts of all racks in the fabric using the "Expand All Racks" button.

  Expand All Racks

- Enables customizing the view of the map by filtering for certain elements to appear in the map using the Type (see table "Network Map Components") and Severity (see

table "Device Severity Levels") filters. Example:



Device Severity Levels

Component	Description
	Info
	Critical
	Minor
	Warning

Link Analysis

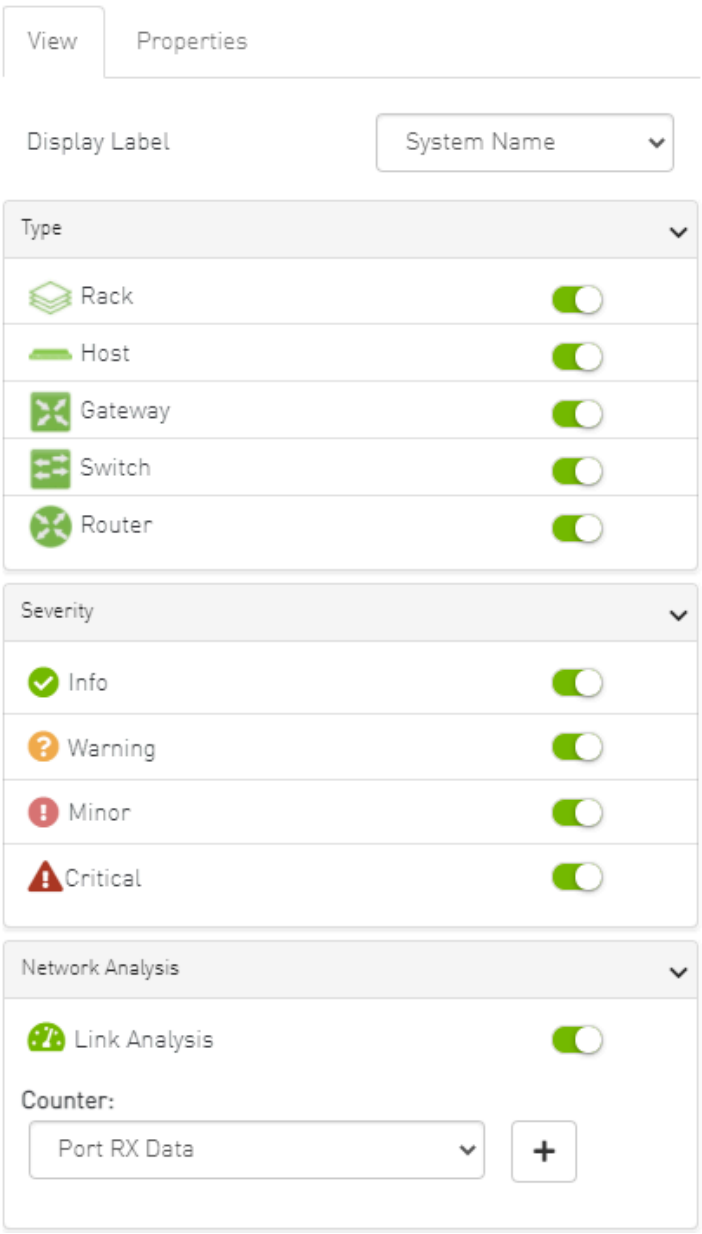
Link analysis allows the user to display the link analytics according to a selected static counter, and define the conditions on which the analysis is based. The links are colored according to the specified conditions. It is possible to define up to five conditions per counter.

The counter’s conditions are applied on four values:

- The source values of the selected counter
- The destination value of the selected counter
- The source value of the opposite of the selected counter
- The destination value of the opposite of the selected counter

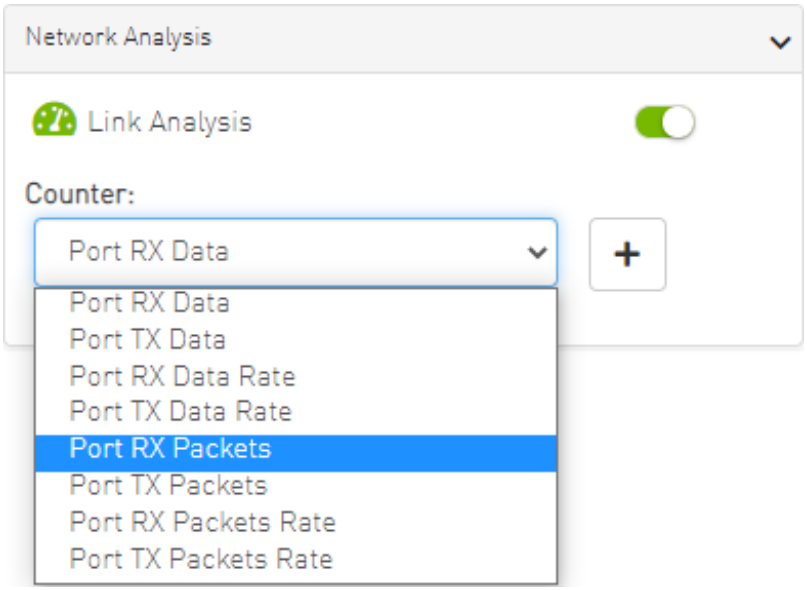
The worst matched value between these four is taken into consideration.

The "Network Analysis" section on the right side under the View tab contains a radio button to enable/disable the link analysis.

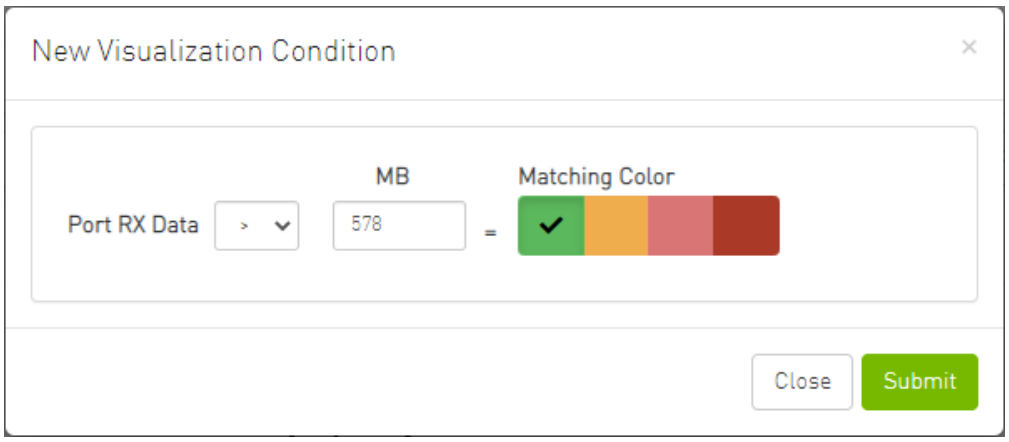


To define a condition:

1. Select the desired counter, and click the + button.



2. Select the appropriate operator, and define the desired threshold and color on the form that pops up. This color is applied on the link if the link monitoring value matches the respective condition.



> **Note**
>
> The colors are sorted from the lowest to the highest priority (i.e from left to right, green to red).

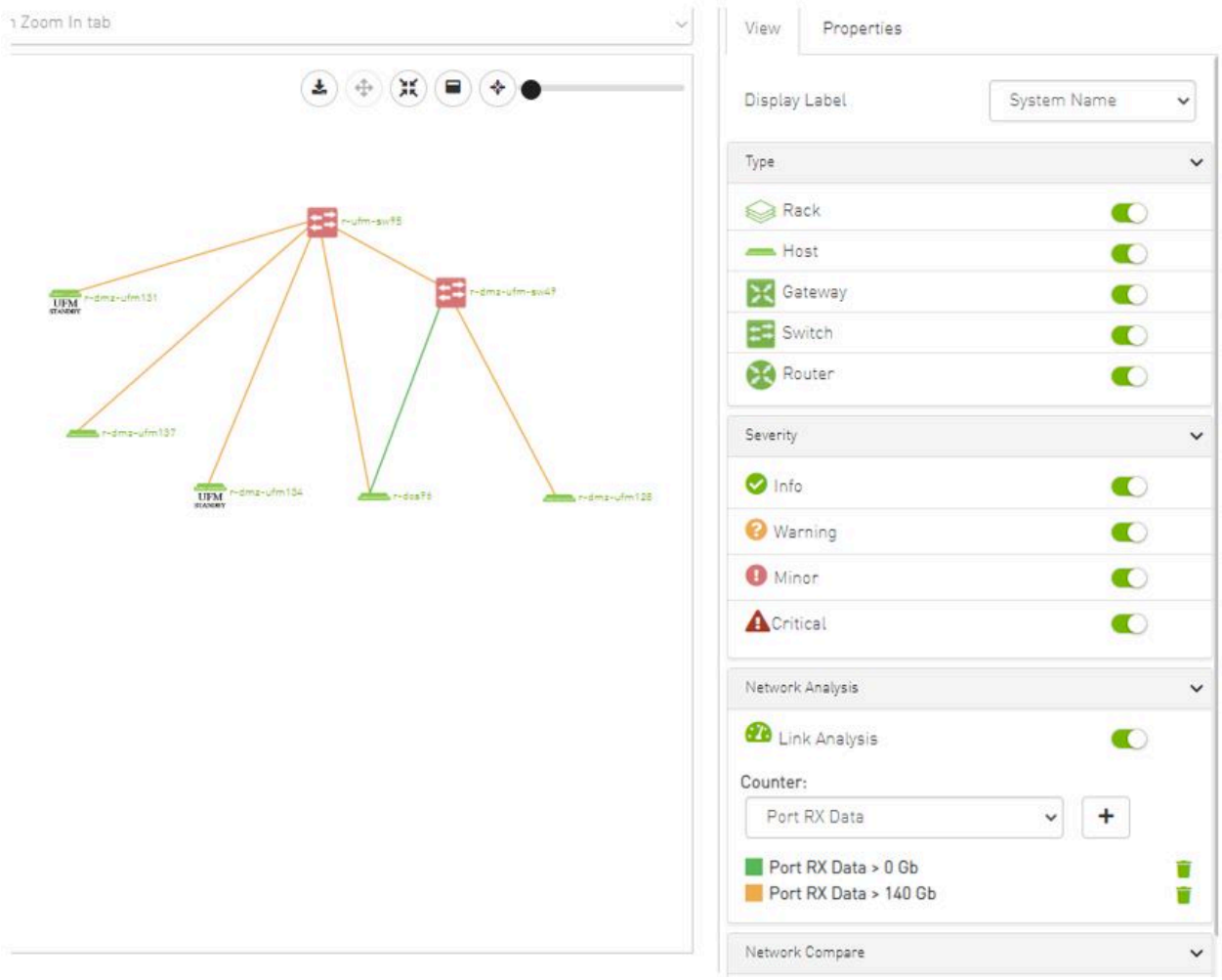
> **Note**

The counter's conditions are sorted based on the threshold values:

- Ascending if the operator is greater than (>)
- Descending if the operator is smaller than (<)

Last matched condition's color are taken into consideration in the link coloring.

3. Once the condition is set, the network map lights up the links that meet your condition.



Note

Note how the added conditions are listed in the Network Analysis section, if Link Analysis is enabled, and they are colored accordingly.

Link 1

Link/Port Properties

Property	Source	Destination
System GUID	0x248a070300ef19a0	0x7cfe900300292356
Port	23	HCA-1/1
MTU	4096	4096
Width	4X	4X
Speed	FDR	FDR
Port RX Data	20379.9 Gb	5.9 Gb
Port TX Data	18.05 Gb	98.75 Gb
Port RX Data Rate	0 Gb/s	0 Gb/s
Port TX Data Rate	0 Gb/s	0 Gb/s
Port RX Packets	25335204125 Packets	45788053 Packets
Port TX Packets	1172677890 Packets	44948657 Packets
Port RX Packets Rate	2.9 Packets/s	2.9 Packets/s
Port TX Packets Rate	2.9 Packets/s	2.9 Packets/s

Source Cable Info

Property	Value
Part Number	MC2207130-00A
Length	1 m
Serial Number	MT1618VS05669
Identifier	QSFP+
Technology	Copper cable- unequalized
Revision	A3

Destination Cable Info

Property	Value
Part Number	MC2207130-00A
Length	1 m
Serial Number	MT1618VS05669
Identifier	QSFP+
Technology	Copper cable- unequalized
Revision	A3

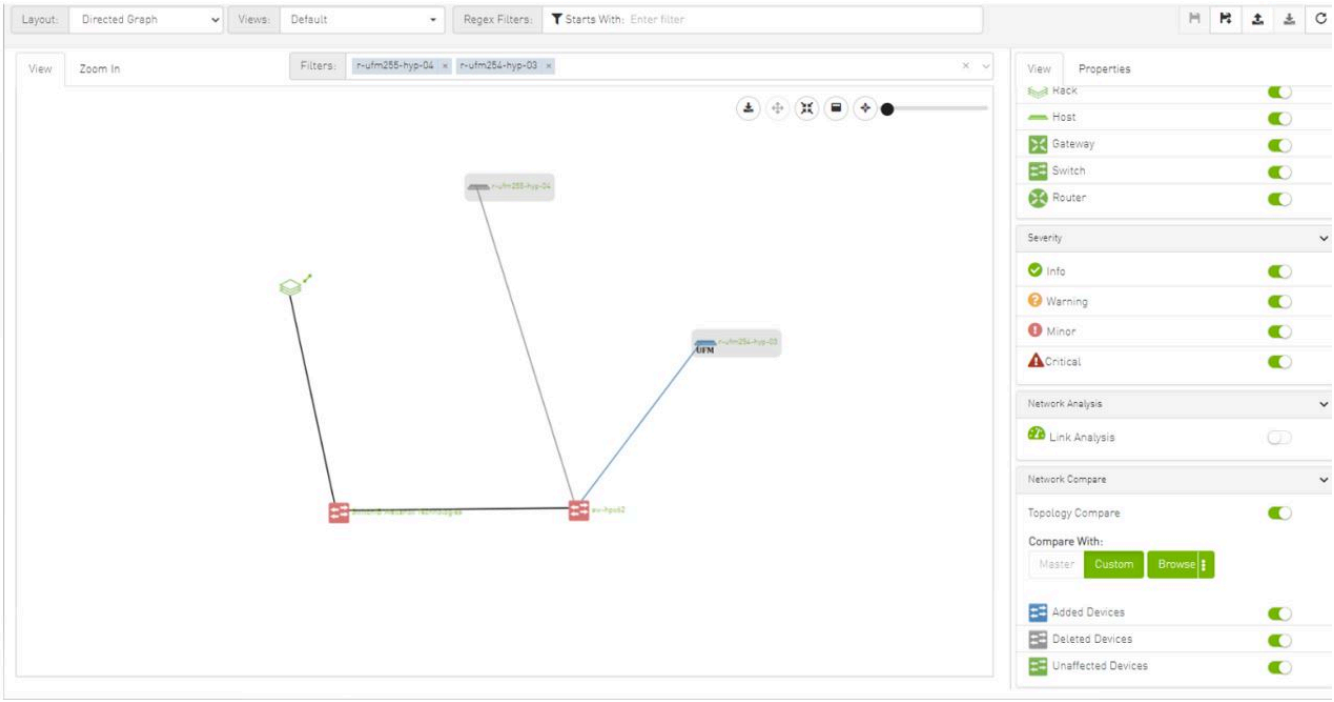
Note

Notice how the monitored counter is presented in boldface, and the background color is presented with the worst matched condition.

Please note that if the current layout and view are saved, the defined conditions are saved inside the view being saved.

Topology Compare

It is possible to enable the Topology Compare feature from the View tab in the right-hand pane. When the radio button is enabled, it is possible to compare the current topology with the master topology or with a custom topology whose .topo file you may upload.

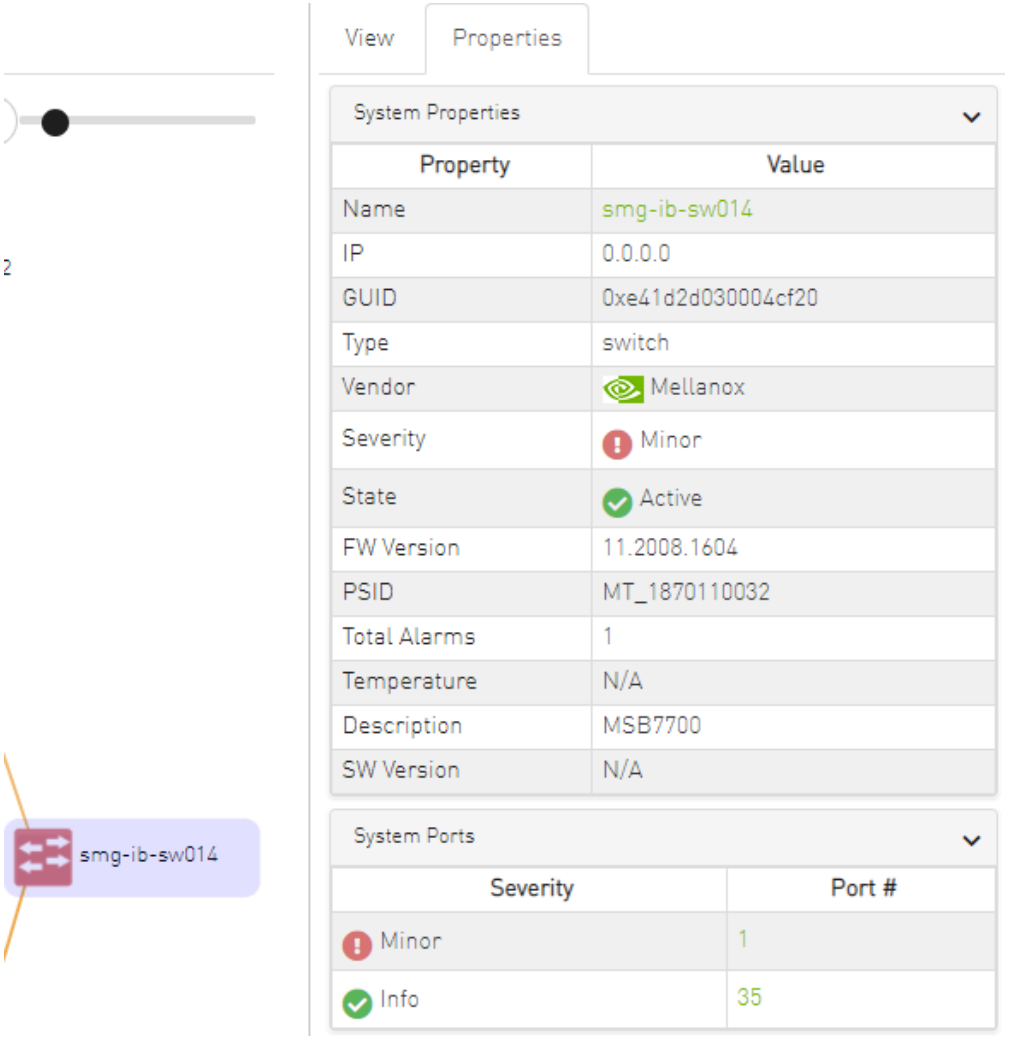


Topology compare key:

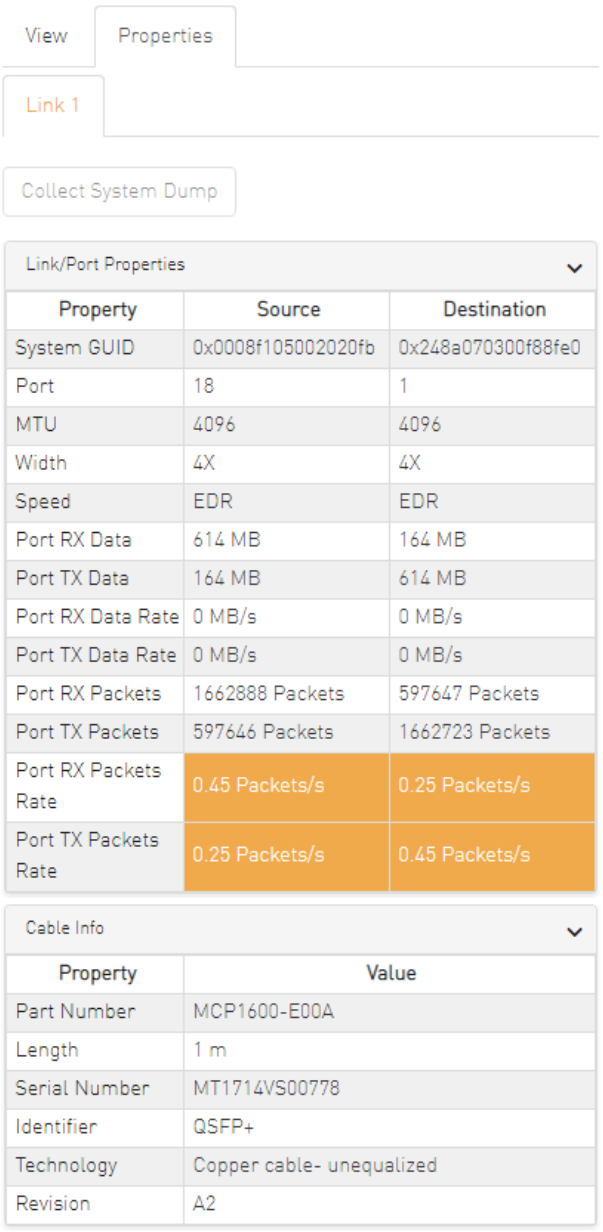
- A blue node signifies an added node
- A gray host signifies a deleted node
- A gray and black line signifies that some links were deleted and others were unchanged
- A gray and blue line signifies that some links were deleted, and others were added
- A gray, blue, and black line signifies that some links were deleted, some were added, and some were unchanged
- A blue and black line signifies that some links were added, and some were unchanged

Properties Tab

- Provides details on a specific system selected from the map, as shown in the following example:



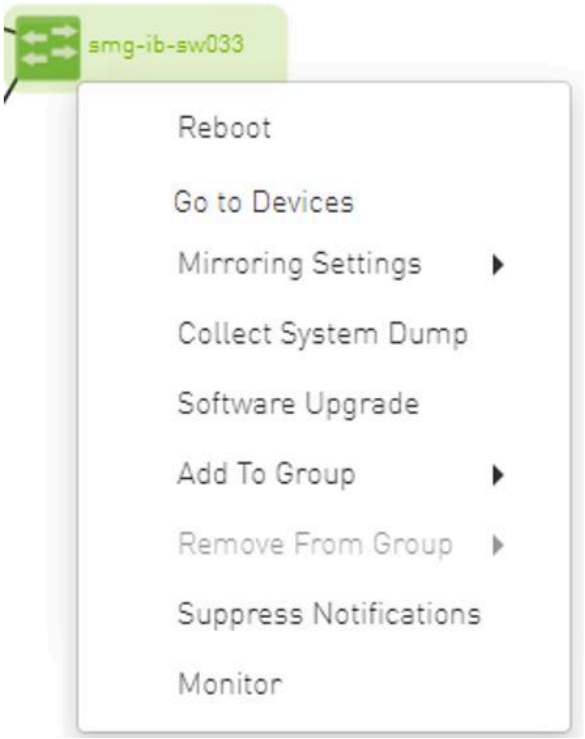
- Provides link/port properties and cable info on a specific link selected from the map, including destination and source ports, as shown in the following example:



Network Map Elements Actions

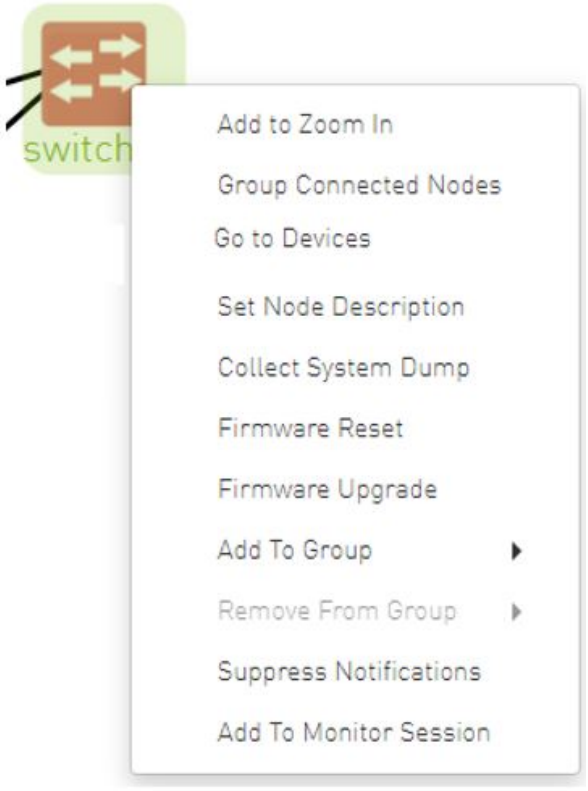
In the Network Map, a right-click on any of the elements enables performing a set of actions depending on the element type and its capabilities. See the list of available actions for each element type in the tables below.

Supported Actions for Internally Managed Switches



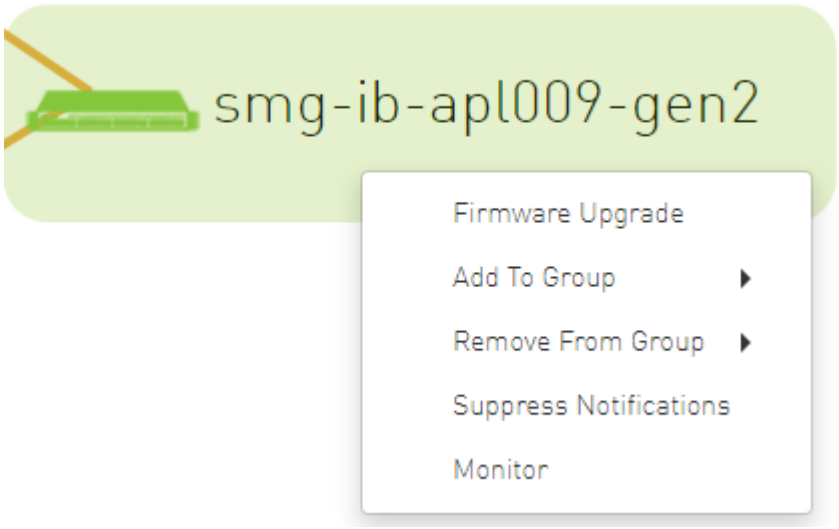
Element Type	Supported Actions	Description
Managed Switch	Reboot	Reboot the switch software
	Mirroring Settings	Set the mirroring configuration for the switch
	Collect System Dump	Collect system dump from the device
	Software Upgrade	Perform switch software upgrade
	Add to Group	Add switch to logical group
	Remove from Group	Remove switch from logical group
	Suppress Notification	Suppress all event notifications for the switch
	Monitor	Configure and activate switch monitoring
	Go to Devices	Go to devices page and select the device

Supported Actions for Externally Managed Switches



Element Type	Supported Actions	Description
Externally Managed Switch	Set Node Description	Sets description for specific node
	Firmware Reset	Perform switch firmware reset
	Firmware Upgrade	Perform switch firmware upgrade
	Add to Group	Add switch to logical group
	Remove from Group	Remove switch from logical group
	Suppress Notification	Suppress all event notifications for the switch
	Monitor	Configure and activate switch monitoring
	Go To Devices	Go to devices page and select the device

Supported Actions for Hosts



Element Type	Supported Actions	Description
Hosts	Firmware Upgrade	Perform switch firmware upgrade
	Add to Group	Add host to logical group
	Remove from Group	Remove host from logical group
	Suppress Notification	Suppress all event notifications for the host
	Monitor	Configure and activate host monitoring