

A Quick Guide to Topology Mapping

November 2020

EtherScope™ nXG features an advanced discovery engine feeding the analyzer's Discovery App. Additionally, a 'snapshot' of a discovery can be uploaded to Link-Live for offline Analysis, and now Topology Mapping. This guide briefly describes how to make the most of discovery and the resulting topology mapping.

EtherScope Setup

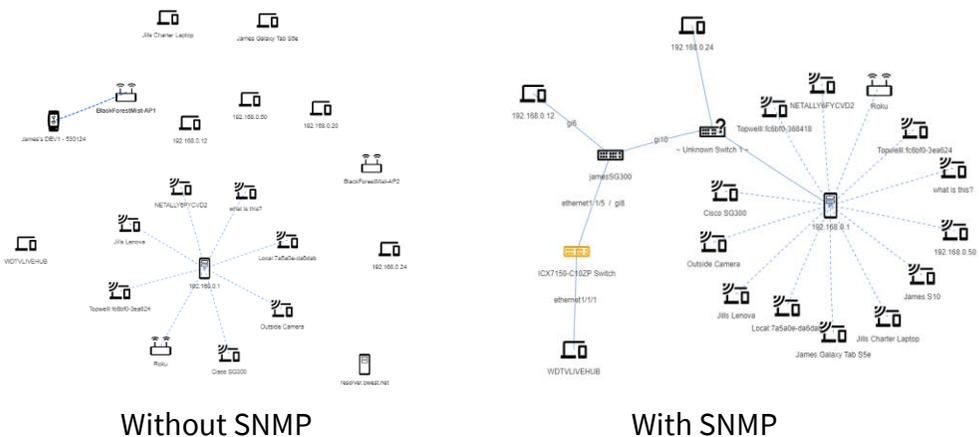
By default, the EtherScope will discover out up to 4 independent network connections:

- Wired Test Port (top RJ45)
- Wi-Fi Test Port (4x4 radio)
- Wired Management (left RJ45)
- Wi-Fi Management (Android 1x1 Radio).

It will automatically discover the subnet it is connected to on all the linked ports. The subnets on each port are either determined from DHCP or from a static IP address assignment. Additional subnets, if desired, can be added in the Discovery Settings...Extended Ranges.

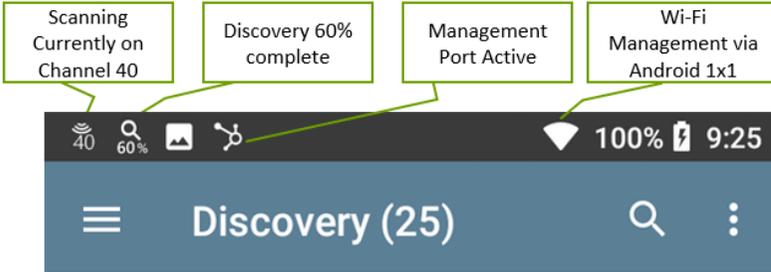


For infrastructure network topology mapping, the most important enabler is a valid SNMP read community string. This allows the EtherScope to interrogate managed switches and routers for connection information to draw a more complete topology and interconnect the devices.

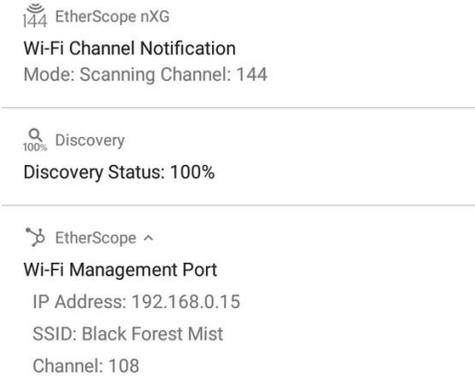


Wi-Fi Topology

By utilizing both radios in the EtherScope, a complete network topology can be acquired even when untethered. Simply let the Wi-Fi Test radio scan while connecting the Wi-Fi management radio to the SSID of interest. The status line provides indication of the status:

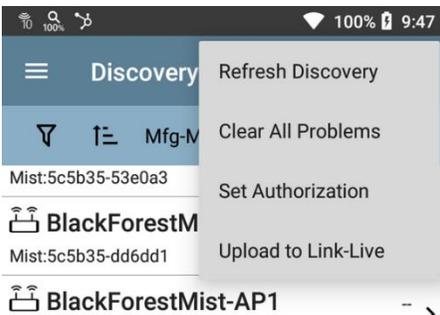


Additional information is found by swiping down from the top.



This allows the scanning test radio to detect all clients, APs and their associations in the air, while the connected radio can actively discover and classify details of the Wi-Fi clients by IP address, NetBIOS/mDNS/SNMP name and services (e.g. printer).

Once discovery is 100% completed, the current snapshot can be uploaded to Link-Live for topology mapping and offline analysis using the  menu in the upper right of Discovery title bar



Link-Live Topology

Once the snapshot is in Link-Live, you have the option of either doing additional analysis or topology mapping in the Analysis section of Link-Live. Select the snapshot from the list

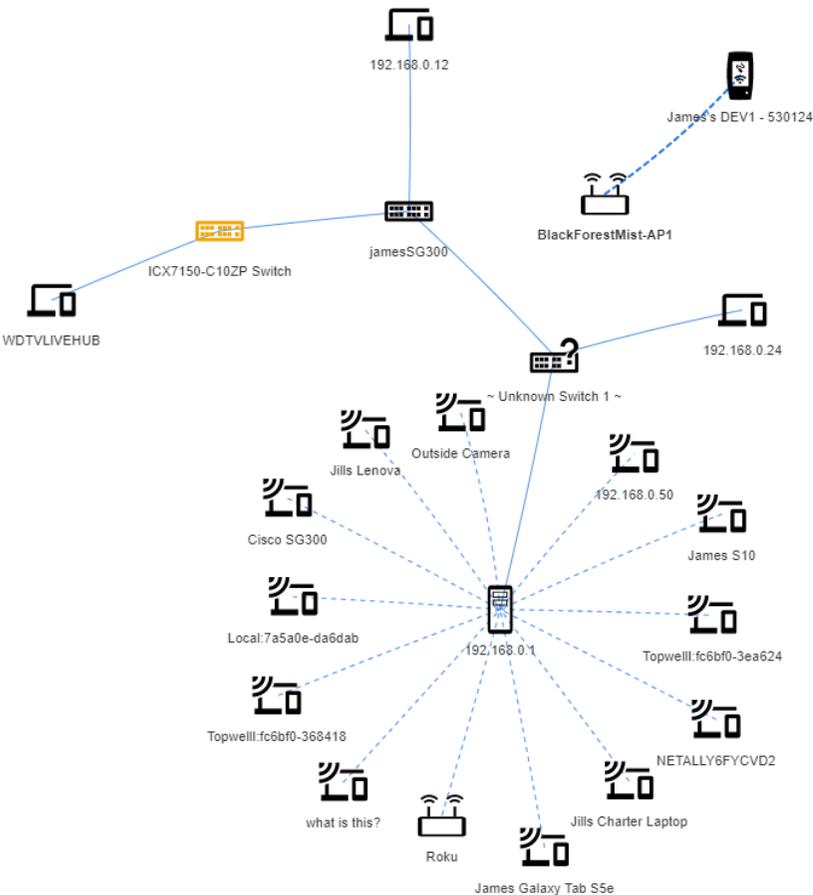


📄 20201108_090931 9:09 AM
11/8/20
🏠 home network Discovery

Then select Topology

🔍 Topology 🔍 View Analysis

Solid lines are wired connections determined from the switches & routers. Dashed lines are Wi-Fi connections determined over the air.



Double-clicking on any of the devices brings up additional details about the node.

Topology Controls

Topology controls allow you optimize the map.



Using the  filter, you can select the individual VLANs, subnets, SSIDs and types of network elements to be displayed.

The Filter allows free string entry and displays only devices matching the name, IP/MAC, addresses or manufacturer prefix of the string.

Under  settings are controls for the labeling devices and their connections.

Devices

Name Mfg-MAC Address IPv4 None

Wireless Connections

None SSID Channel Media Type Security

Wired Connections

None VLAN Port Speed Duplex

Include Connected With Filter

Hide Unconnected Devices

Disable Physics

Edge Length



Network Spread



When filtering, it is best to select Include Connected With Filter to provide a more complete map. Hide Unconnected Devices will only show devices where a connection between the device and network was discovered.

Edge Length can be used to optimize the map based on the Connection labels that are selected. Network Spread controls the spacing between the network clusters. The automated layout can be overridden for manual placement by selecting Disable Physics.

Once you have the desired topology map with appropriate device and connection labels, the image can be captured using a right mouse click or by exporting to Visio for further work.

Save image as...

Copy image