

# Technical Disclosure Commons

---

Defensive Publications Series

---

December 2019

## TOPOLOGY ZOOM TO PHYSICAL PORTS FROM A DEVICE LEVEL

Iain Hamilton

Swati Ardeshta

Srinivasan Packirisamy

Follow this and additional works at: [https://www.tdcommons.org/dpubs\\_series](https://www.tdcommons.org/dpubs_series)

---

### Recommended Citation

Hamilton, Iain; Ardeshta, Swati; and Packirisamy, Srinivasan, "TOPOLOGY ZOOM TO PHYSICAL PORTS FROM A DEVICE LEVEL", Technical Disclosure Commons, (December 13, 2019)  
[https://www.tdcommons.org/dpubs\\_series/2767](https://www.tdcommons.org/dpubs_series/2767)



This work is licensed under a [Creative Commons Attribution 4.0 License](https://creativecommons.org/licenses/by/4.0/).

This Article is brought to you for free and open access by Technical Disclosure Commons. It has been accepted for inclusion in Defensive Publications Series by an authorized administrator of Technical Disclosure Commons.

## TOPOLOGY ZOOM TO PHYSICAL PORTS FROM A DEVICE LEVEL

### AUTHORS:

Iain Hamilton  
Swati Ardeshta  
Srinivasan Packirisamy

### ABSTRACT

Common mapping tools typically provide for gradually zooming in and out for further in-depth location information without ever switching views. Techniques are described herein that allow zoom functionality to exist in the realm of Networking Topology mapping. Using natural user interactions, a user may simply zoom-in for more in-depth information and configuration abilities without losing a device mapping.

### DETAILED DESCRIPTION

Many web-based interfaces for viewing status or configuring device ports involve interactions that step a user out of a current view context via singular device selection. Whether viewing status or performing configuring actions, the ability is typically presented via a sidebar, a separate tab page, or a modal popup. This problem is amplified when the user is presented a visual representation of their network in the form of a Network Topology diagram. In general, the purpose of a Network Topology diagram is to show users how their network flows and help build a mental mapping of how their devices both connect and interact. Forcing a user to lose this visualization or obscuring this visualization when performing port level actions is detrimental to the experience, as the purpose of the diagrams, connections, and coordinate mapping are lost.

This proposal provides techniques that allow zoom functionality to be provided for Network Topology visualizations. From with a Network Topology visualization, a user may easily zoom via a mouse wheel and/or two-finger touchpad movement, similar to other map/Global Positioning System (GPS) applications and/or tools, in order to zoom down to a chassis level. In one example, the user can pan and zoom a Network Topology diagram using common conventional means that are typically standard for Topology viewing applications.

If the user wishes to view further information for a specific device (e.g., port Up/Down status, ports connecting two devices, specific link information, additional port level configurations, etc.) the user can simply zoom in to that specific device. Such zooming capability has a large impact as it means that no context is lost as devices are viewed at a zoomed-in level. For example, while zoomed-in on the device, the user can continue to pan around the network at a port level (e.g., to trace links between devices) and then, when ready, can simply zoom back out to the overall network device level.

Figures 1–4, below, illustrate various features that may be provided by the techniques of this proposal. Figure 1 illustrates a Network Topology diagram for an example network.

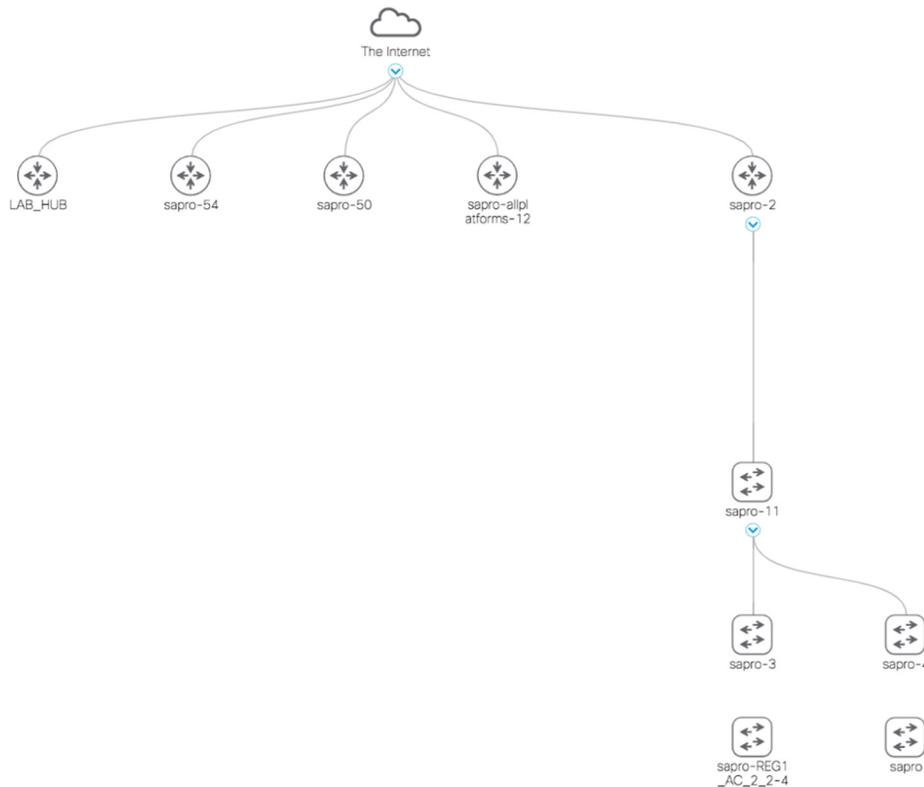


Figure 1 - Network Topology Diagram

As shown in Figure 2, a user may perform a first zoom-in operation to view a portion of the network, such as a portion of the network including devices labeled 'sapro', 'sapro-REG1\_AC\_2\_2-4', 'sapro-3', and 'sapro-4'.

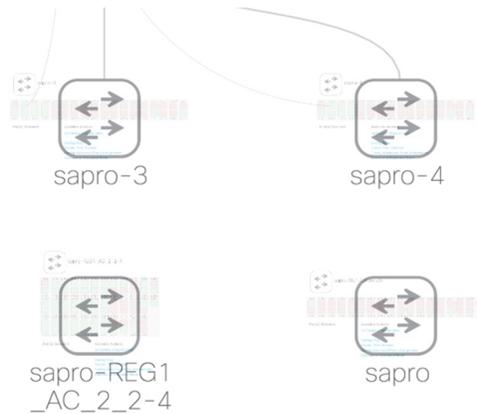


Figure 2 - Zoomed-In Network Portion

The user may view additional information and/or perform other actions while zoomed-in on the portion of the network, as shown in Figure 3.

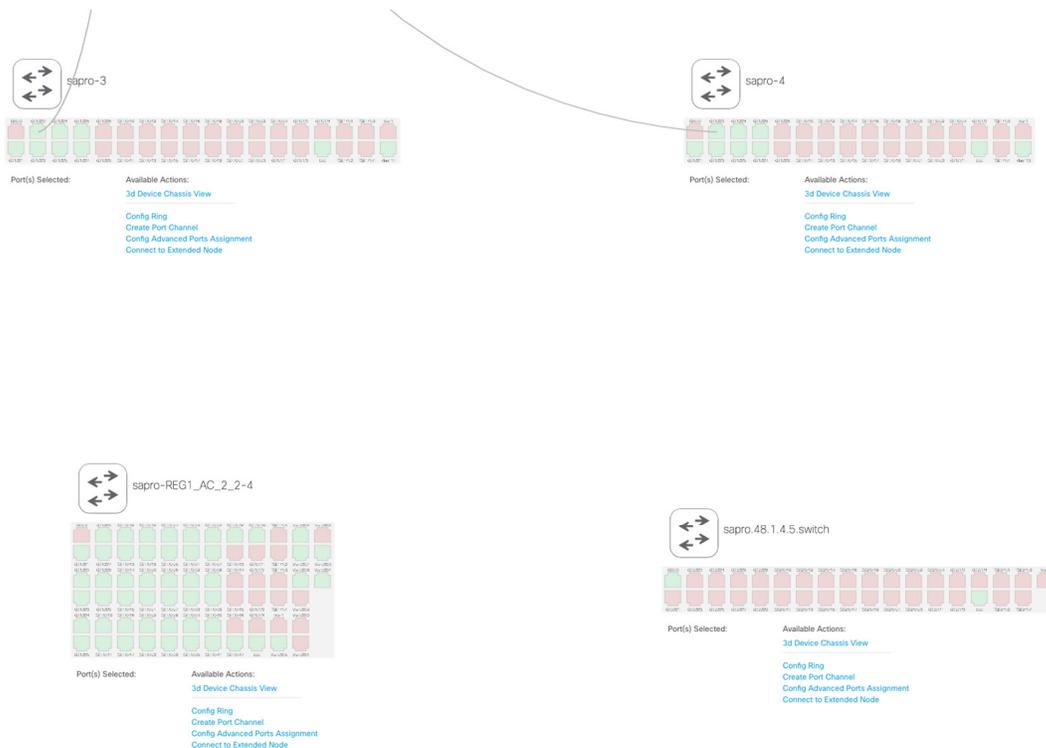


Figure 3 - Additional Information/Actions

For each device shown in the zoomed-in view, the user may select one or more ports for viewing additional information related to the ports and/or may perform one or more available actions. For example, as shown in Figure 4, the user may select and view information related various ports for the sapro-3 device.

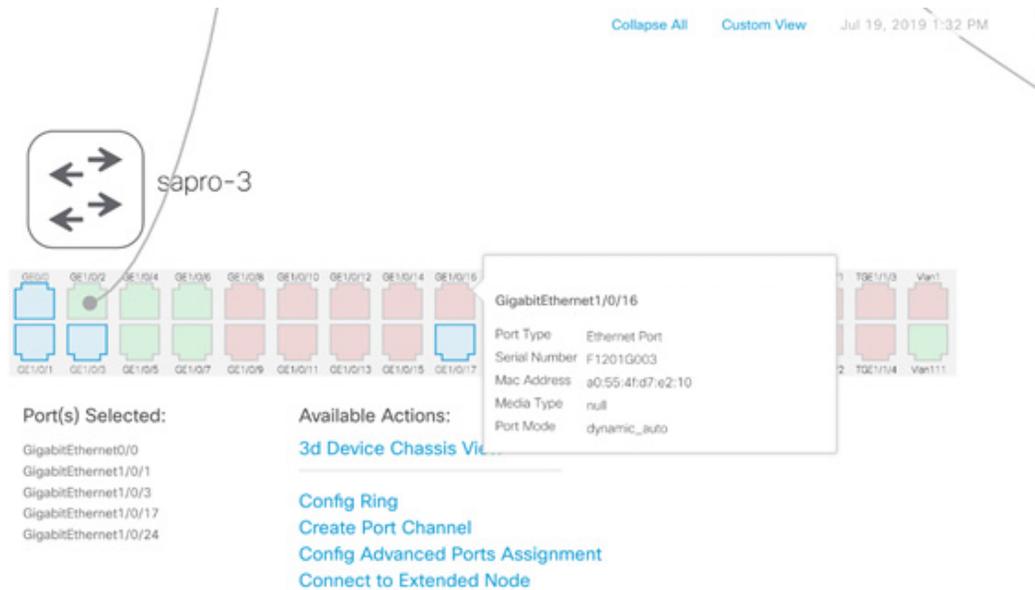


Figure 4 - Device Information/Actions

In summary, techniques herein enable zoom functionality to exist in the realm of Networking Topology mapping. Using natural user interactions, a user may simply zoom-in for more in-depth information and configuration abilities without losing a device mapping.