

Network Visibility Capabilities Report

Measuring Auvik's network monitoring and management system against major competitors

Test Report

#222131 | June 2022

Commissioned by Auvik Networks, Inc.

Executive Summary

Solving user connectivity problems requires visibility into those problems. It is essential that all locations, networks and devices be quickly visible and easily navigated to expedite the problem resolution process. Auvik has designed its cloud-based network monitoring and management solution to allow friction-free, rapid access to all network devices.

Auvik commissioned Tolly to evaluate its network visibility system versus the network visibility capabilities of three other prominent solutions. These solutions represented both commercial options licensed by node and by sensor and open source options. These will be referenced generically. Tolly evaluated installation and functional capabilities such as dynamically generating topology maps, providing network visibility by IP subnetwork and VLAN, and providing detailed information about network infrastructure devices and access to those devices.

Auvik was very easy to install and configure for discovery. Auvik generated a topology map dynamically, provided network inventory by subnet and details on network infrastructure. Auvik's capabilities exceeded those of the other solutions. See Figure 1 for the topology map.

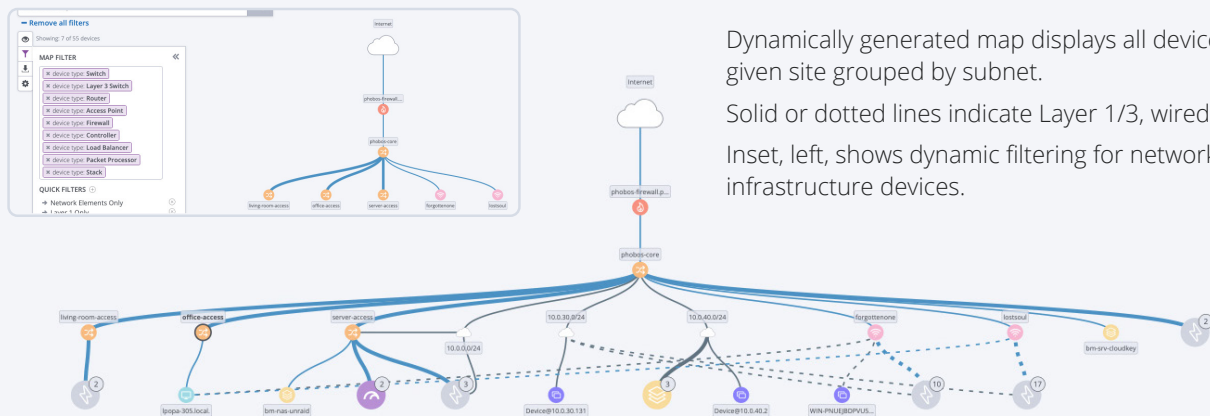


THE BOTTOM LINE

Auvik delivers:

- 1 Rapid time-to-value: Less than one hour from starting installation to full management of network
- 2 Well-designed, intuitive interface; no need to reference documentation to get the system operational and fully populated
- 3 Simple navigation from all sites down to an individual device or network component
- 4 Accurate recognition and detailed reporting on devices from Cisco, HP, Ubiquiti and many other vendors

Auvik Site Topology Map



Dynamically generated map displays all devices at a given site grouped by subnet. Solid or dotted lines indicate Layer 1/3, wired/wireless. Inset, left, shows dynamic filtering for network infrastructure devices.

Clicking on device icon shows essential information. Example, right, for firewall in the upper middle part of the map. Simultaneously, some two dozen information elements for the device are displayed below the map screen, see Figure 2.

phobos-firewall Firewall - phobos-firewall.phobos.local

Online Status: Up
Manage Status: Managed
Make & Model: Cisco ASA 5512
IP Address(es): 10.0.2.1, 99.251.90.247
Network(s): 99.251.90.0/23, Transit



Tolly structured the evaluation to follow a workflow natural for many network admins. First, came the installation and deployment steps¹. As that is a one-time process, that will be described later. Once installed, Tolly believes that most admins will proceed with a “top down” approach. That is, start at the highest level of visibility and progressively navigate down to the subnet and devices of interest. See the Test Setup & Methodology section for more details.

Test Results

Dynamic Topology Mapping

With Auvik, when the discovery process is complete, the user can view a complete environment map generated automatically by the Auvik solution. See, again, Figure 1.

This hierarchical map organizes the site by subnetwork and provides links that clearly show devices that have interfaces connected to more than one subnet.

Not only is the map generated dynamically (i.e., without any user intervention), the map itself is dynamic. This is, understandably, difficult to show in a static image. To help illustrate some of the dynamic feature, there are several overlays on Figure 1.

The overlay on the upper left shows some of the filters that can be applied dynamically to the topology map to help the network admin focus on specific devices or device types of interest.

The associated network diagram shows fewer nodes as those not currently of interest have been temporarily filtered out.

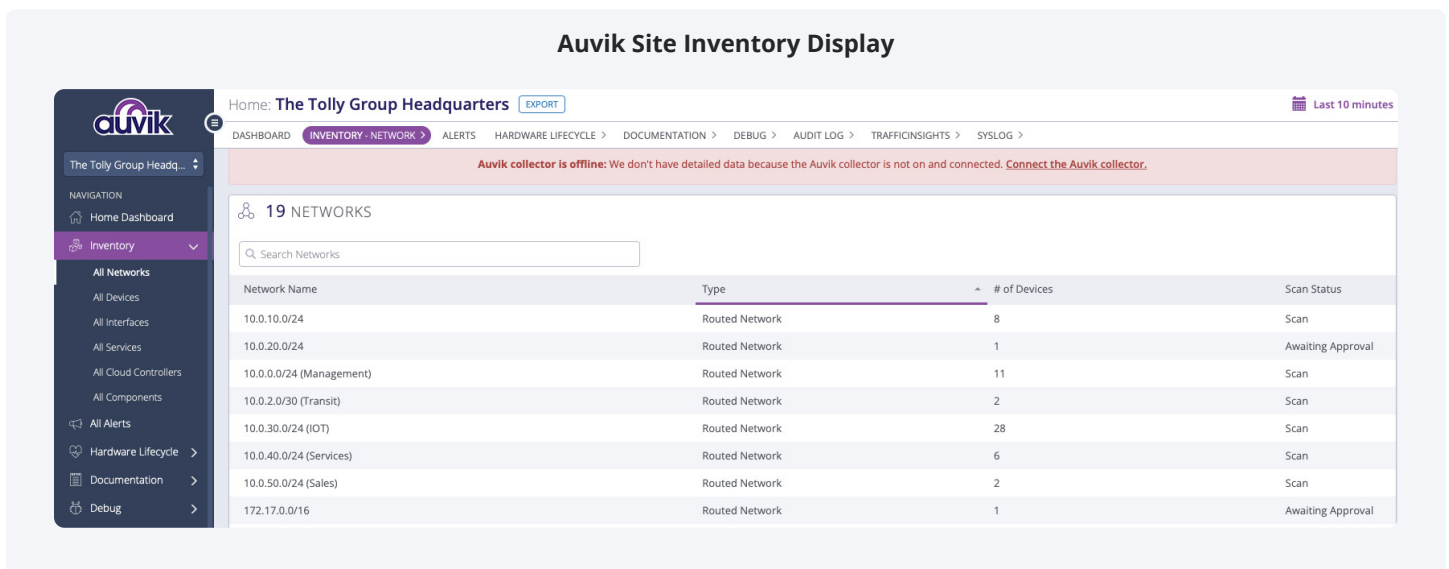
The overlay on the bottom right illustrates the summary device information that is displayed when the cursor hovers over a device, in this case, the Cisco firewall. (Auvik collects much more information about the firewall. That will be discussed presently.)

See Table 1 for a summary of all test results.

Not one of the other solutions provided a comparable, dynamically-generated topology map.

The OS solution showed nothing, only its own management server. The PN solution's “map” was just a device list in visual format. There was no hierarchical organization that mapped to subnets. The PS solution did not provide any overall map. Testers did find that if one navigates to a given switch, that switch will present a diagram showing all of the network infrastructure devices connected to it but did not display any endpoint devices at all.

Some of the solutions note that topology maps can be built manually but that did not fit the requirements of the current test as the test was focused on time savings.



Source: Tolly, June 2022

Figure 2

¹ In many cases, it is sufficient to refer to the other solutions in general. Where reference to a particular solution is beneficial, the report will reference licensing model: Per Sensor (PS), Per Node (PN), and Open Source (OS) by their initials.



Devices by Subnet

The next area of interest to a network admin would likely be to drill-down and look at all devices and infrastructure in a logical group. For networks today, that would mean grouping devices by IP subnet and VLAN group. In all cases, these would likely be the most important groupings of devices for network admins.

Auvik provides this hierarchical listing of subnets through its “Inventory” screen which is a single click away at all times. It lists the groupings, notes whether the group is a routed network or a VLAN, provides a device count, and a scan status. See Figure 2 on the previous page.

None of the other solutions offered any similar capabilities. In fact, some of the screens labeled “Device List” by the other solutions were nothing more than interface lists. That is, what was labeled as “devices” simply listed all the interfaces that the solution detected in the network. In most cases, multi-interface devices (e.g. routers, access points (APs)) were not identified as being a single, multi-interface device. None of the other solutions provided, by default, organization or segmentation by subnetwork or VLAN.

While one or more solutions might allow this type of organization to be built manually, this did not fit the requirements of the current test.

Network Infrastructure Device Details

Finally, the admin would want to look at details for a specific network infrastructure device. For this part of the test, engineers evaluated how each solution reported key device attributes for several majorbrand switches, a firewall, and a popular access point.

The information queried included serial number, software version, and various interface and utilization metrics. Additionally, testers determined whether a configuration backup could be made via the solution. Additionally, for the AP, testers determined whether the solution could report a list of end devices associated to this AP.

Auvik reported all this information accurately, was able to execute a backup of the running configuration², and listed all devices connected to the AP. Figure 3 shows a graphical depiction of the Auvik device details for the firewall. (Not all information collected is shown in that figure.)

See Tables 2 and 3, below for detailed results.

The results from the other solutions varied considerably.

The PS solution had the best results of the competitors, though still incomplete compared to Auvik. It was able to report all of the device attributes except for reporting broadcast traffic. Also, it was able to run a backup on the configuration file. Interestingly, this solution failed with respect to the WLAN AP. It did not recognize it as a network infrastructure device and, thus, provided no information at all about it.

Common Sense TCO/ROI

You don't always need a calculator to demonstrate TCO/ROI. Auvik's well-designed, intuitive GUI allows network admins to just “jump in” and use Auvik to monitor and manage their network. Tolly found Auvik could be used without training and had basically no learning curve. With Auvik's ease and rich functionality, TCO/ROI are improved by reducing effort on the part of the admin and by the admins solving problems more quickly.

Source: Tolly, June 2022

Auvik Device Details Example

phobos-firewall.phobos.local

Firewall

Make & Model
Cisco ASA 5512

IP Address(es)
10.0.2.1, 99.251.90.247

Serial Number
FGL164740Q2

Network(s)
Subnet: 10.0.2.0/30, 99.251.90.0/23

Description
Cisco Adaptive Security Appliance Version 9.12(3)12

Software Version
9.12(3)12

Firmware Version
2.1(9)8

Vendor Suggested Software Version
9.16.2 Interim

Device Contract Information

Service Coverage
Expired

Warranty Coverage
2013/05/31

Service Attachment
2018/08/25

Contract Renewal
2021/11/20

Vendor Device Lifecycle Information

Sales Availability
2017/08/25

Software Maintenance
Empty Result

Security Software Maintenance
2020/08/24

Last Support
2022/08/31

Source: Tolly, June 2022

Figure 3

² Users of other solutions would presumably need to leave the solution and initiate an external connection to a device to run a configuration backup.



Network Visibility Test Summary Results

Solution	Dynamic Topology Map	Device List by Subnetwork	Infrastructure Device Details
Auvik	Yes	Yes	Yes
Per Sensor (PS)	No	No (Device list is interface list)	Limited
Per Node (PN)	No	No (Device list is interface list)	Limited
Open Source (OS)	No	No (Device list is interface list)	Not found

Note: Infrastructure test consisted of a Cisco firewall, Cisco, HP, and HP Comware switches, and Ubiquiti access points as these were devices available in the lab. All solutions require an agent on a local LAN. Deployment model references the location of the management software.

Source: Tolly, June 2022

Table 1

The PN solution provided some, but even less, information. It was able to collect the serial number and software version from some of the network infrastructure devices but, for others, reported an error and displayed no results. Troubleshooting errors was beyond the scope of the current test.

As with the PS solution, the PN solution did not report broadcast traffic. Generally, it also failed to report CPU and memory utilization. This solution was not able to run backups of device configurations. As with the prior solution, the PN solution did not recognize the AP (Ubiquiti) as a network device. Rather, it was identified as a Linux server. Because the solution did not detect that it was a network infrastructure device, it did not report any information about it or any list of connected devices.

Installation & Deployment

The Auvik installation was, as advertised, very quick.

After downloading the installer (three minutes), the installation was completed in under six minutes. At that point, Auvik was ready to discover the networks and begin report. As with all solutions, device credentials would be entered as part of the discovery configuration. Auvik implements a hierarchical credentials system which can dramatically decrease the time spent inputting credentials.

The PN solution installed in 12 minutes but requires individual credentials per device which can add significantly to the overall deployment time.

The PS solution required 53 minutes to install but also required individual credentials.

Finally, the OS solution was problematic to install. While it provided multiple options (e.g. Windows installer, virtual appliance), the documentation wasn't clear.

AUVIK IN A NUTSHELL

Deployment & Configuration

Tolly found Auvik to be fast and simple to deploy. Once device credentials were entered, Auvik did the rest. Discovery was effortless. Six minutes to install and less than one hour for full management.

Works "Out of the Box"

No complex configuration was required to become fully functional. It was not necessary to refer to anything beyond the Auvik GUI.

Ease-of-use on Daily Basis

Tolly found Auvik to be very intuitive with clean, easy-to-use screen layouts and menu configurations. Customers should expect little to no learning curve for new users.



Device Information Detailed Results (1 of 2)

Device	Device Attribute	Auvik	By Sensor	By Node	Open Source
Cisco ASA Firewall	Serial number	Yes	Yes	Yes	Not found
	Software version	Yes	Yes	Yes	Not found
	Backup configuration	Yes	Yes	No	Not found
	Throughput statistics	Yes	Yes	Yes	Not found
	Interface list: details & negotiated speed	Yes	Yes	Yes, but no negotiated speed.	Not found
	Broadcast traffic	Yes	No	No	Not found
HP ProCurve LAN Switch	CPU utilization	Yes	Yes	Yes	Not found
	Memory utilization	Yes	Yes	Yes	Not found
	Serial number	Yes	Yes	Yes	Not found
	Software version	Yes	Yes	Yes	Not found
	Backup configuration	Yes	Yes	No (Not supported per doc.)	Not found
	Throughput statistics	Yes	Yes	Yes	Not found
Cisco SG 300 Switch	Interface list: details & negotiated speed	Yes	Yes	Yes, but not negotiated speed.	Not found
	Broadcast traffic	Yes	No	No (Not supported per doc.)	Not found
	CPU utilization	Yes	Yes	Yes	Not found
	Memory utilization	Yes	Yes	Yes (actual used)	Not found
	Serial number	Yes	No	No, showing error	Not found
	Software version	Yes	No	No, showing error	Not found
Cisco SG 300 Switch	Backup configuration	Yes	Yes	No	Not found
	Throughput statistics	Yes	Yes	Yes	Not found
	Interface list: details & negotiated speed	Yes	Yes	Yes, but no negotiated speed.	Not found
	Broadcast traffic	Yes	No	No	Not found
	CPU utilization	Yes	No	No	Not found
	Memory utilization (Device does not report)	N/A	N/A	N/A	N/A

Note: "Backup configuration" is not a device attribute but rather refers to the capability to run a config backup from the visibility solution.

Source: Tolly, June 2022

Table 2



Device Information Detailed Results (2 of 2)

Device	Device Attribute	Auvik	By Sensor	By Node	Open Source
HP Comware Switch	Serial number	Yes	Yes	Yes	Not found
	Software version	Yes	Yes	Yes	Not found
	Backup configuration	Yes	Yes	No	Not found
	Throughput statistics	Yes	Yes	Yes	Not found
	Interface list: details & negotiated speed	Yes	Yes	Yes, but no negotiated speed.	Not found
	Broadcast traffic	Yes	No	No	Not found
Ubiquiti Access Point	CPU utilization	Yes	Yes	Yes	Not found
	Memory utilization	Yes	Yes	Yes	Not found
	Serial number	Yes	No, does not recognize as AP just as Ubuntu Linux device.	No, reports the AP as a generic server	Not found
	Software version	Yes	No	No, showing error	Not found
	Backup configuration	Yes	No	No, showing error	Not found
	Throughput statistics	Yes	No	No	Not found
	Interface list: details & negotiated speed	Yes	No	No, just shows as a linux server.	Not found
	Broadcast traffic	Yes	No	No	Not found
Ubiquiti Access Point	CPU utilization	Yes	No	No	Not found
	Memory utilization	Yes	No	Yes	Not found

Note: "Backup configuration" is not a device attribute but rather refers to the capability to run a config backup from the visibility solution.

Source: Tolly, June 2022

Table 3

ABOUT AUVIK NETWORKS

Auvik makes network management easier. By automating and simplifying network management, our cloud-based software improves the efficiency and capacity of IT teams and helps protect their business from network risk.



Auvik is one of the fastest growing North American technology companies, and is winner of the Deloitte Technology Fast 50, Deloitte Fast 500, and was recognized as the #1 ranked Canadian company in the FT Americas' Fastest Growing Companies.

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Source: Auvik, June 2022



Testers first tried one method, then, when encountering errors that were not simple to fix, ended up trying an alternative approach. Overall, some hours were spent trying to install. Similarly, testers found the configuration of discovery to be nonintuitive. Ultimately, after repeated attempts only three of the test subnets were discovered by OS even though all subnets were configured the same way in the discovery configuration panels.

Test Setup & Methodology

Approach

Tolly designed the test process to follow the approach that could be taken by a prospective customer conducting its own “proof of concept” (PoC) trial of each of the four solutions.

Thus, it was assumed that person conducting the trial would be an experienced network engineer who understood general installation concepts but did not have prior experience with either installing any of the solutions under test.

Testers followed all instructions provided by the vendor from the initial download demo link.

In some instances, there were multiple installation options. For example, a solution might offer components as a Windows installer or as a virtual appliance with a preinstalled system. Testers chose what appeared to be the most efficient installation path.

Understanding that PoC teams cannot afford to spend unlimited amounts of time, Tolly placed a limit of 10 man-hours on installing and configuring (deploying) a system before running its evaluation. (Not all solutions required anywhere near this amount of time.)

The goal was to deploy the system using the guidance each solution provided within the installer. When this was not sufficient, public documentation and vendor knowledge bases were searched.

In at least one case, at the end of available deployment time, some features were either not found or not working. The PoC review was conducted with what functionality could be found or be made working within the prescribed time window and reported accordingly.

Test Environment

The environment consisted of six LANs, each its own IP subnetwork, linked together by a core switch that provided a link into a Cisco firewall and from there to the internet.

A total of 50 unique devices were connected across the LANs. These included switches, routers, access points, servers, and user devices both desktop and mobile.

The unique infrastructure devices consisted of a Cisco ASA firewall, an HPE ProCurve switch, Cisco SG 300 switch, an HP Comware switch, and a Ubiquiti AP.

Test Methodology

In keeping with the PoC approach, the test methodology was kept simple and straight forward. While the network contained dozens of user devices, the focus was on the network infrastructure devices.

Installation & Deployment

Testers downloaded any required modules and followed each solutions installation instructions. Once installation was complete, testers followed the instructions required to provide whatever information was needed for the solution to begin the discovery process.

Topology Mapping

Testers started at the main screen of each solution and determined if the system had built a topology map dynamically. If no map was found, documentation was searched to determine the solution's capabilities.

Subnet Display

Testers used the solution GUI and attempted to find a menu option that would display all discovered devices organized by a given subnet.

Device Details

Testers navigated into the detailed information for the aforementioned infrastructure devices and determined which device details were accurately reported by each solution.





About Tolly

The Tolly Group companies have been delivering world-class IT services for more than 30 years. Tolly is a leading global provider of third-party validation services for vendors of IT products, components and services.

You can reach the company by E-mail at sales@tolly.com, or by telephone at +1 561.391.5610.

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