OptiView XG Network Analysis Tablet – Key Use Case: Network Analysis

OptiView XG enables Wi-Fi and wired network infrastructure troubleshooting by local technicians and engineers, giving them the portability to go anywhere – and the visibility they need – to solve problems down to the desktop. With automated discovery, mapping of the local network and multiple functions to isolate the root cause of infrastructure-related problems, OptiView XG helps distribute problem solving throughout your organization, making everyone more effective.

Core capabilities

- Wireless Analysis – Integrated tools for deploying, troubleshooting, and securing of 802.11a/b/g/n/ac WLANs
- Network Infrastructure Analysis – Automated discovery, mapping, analysis and guided troubleshooting of your network infrastructure
- Traffic and Packet Analysis – The ONLY tablet with 10 Gbps "on the wire" analysis
- Performance Testing – Conduct network assessments, validate new infrastructure and devices, test service provider SLAs and QoS, and troubleshoot problems from end to end, at up to a full line-rate of 10 Gbps

For Overview and General Information about the OptiView XG, ***see key use cases.***

The wireless companion to nGeniusONE for full WLAN lifecycle management and troubleshooting network infrastructures

OptiView XG combines multiple functions and technologies in a unique tablet form factor providing engineers the mobility needed to connect, analyze and troubleshoot anywhere in the network – from the access layer to the data center and remote sites. Headquarters or data center engineers can access the analyzer remotely for collaborative troubleshooting or for direct analysis of the problem area when there is no on-site IT staff or instrumentation. Field engineers appreciate OptiView XG as their “one tool” – ideal for traveling to and troubleshooting remote locations.

- Used with nGeniusONE, OptiView XG provides infrastructure diagnostics from the access layer to WAN to data center.
- Integrates the latest wired and wireless technologies with powerful dedicated hardware in a unique tablet form factor to connect, analyze and solve network infrastructure problems anywhere
- Displays your network exactly the way you want to see it through intuitive, customizable dashboards and maps
- Provides performance testing, 'on-the-wire' and 'in-the-air' automated analysis up to 10 Gbps
- Enables proactive analysis by monitoring and analyzing the information you need before problems arise
- Out-of-the-box and customizable reports and maps

Network Analysis – Highlights

- Real-time discovery engine finds and tracks up to 30,000 devices – hosts, phones, switches, routers, access points, servers and more
- Unique Path Analysis provides graphical view of the path between a user and network resources (local, remote, or cloud-based) and visually indicates health data or problems on critical links and devices along the path
- Automated wired and wireless network mapping – Using OptiView's powerful discovery engine, users can interact with their network in a flexible map-based user interface to visually identify configuration and topology issues, speeding troubleshooting. One click sends the map data through a Visio file generator, creating instant, professional network documentation
- Provides visibility of intermittent problems by collecting and monitoring granular data rather than the aggregated data collected by typical network management systems
- Automatically detects problems in the network and suggests resolution procedures; get problem notifications and explore XG's Problem Log from your Apple® or Android phone or tablet
- Measure health of your VMware® environment, including hypervisor availability, interface utilization, and resource usage levels

NETSCOUT

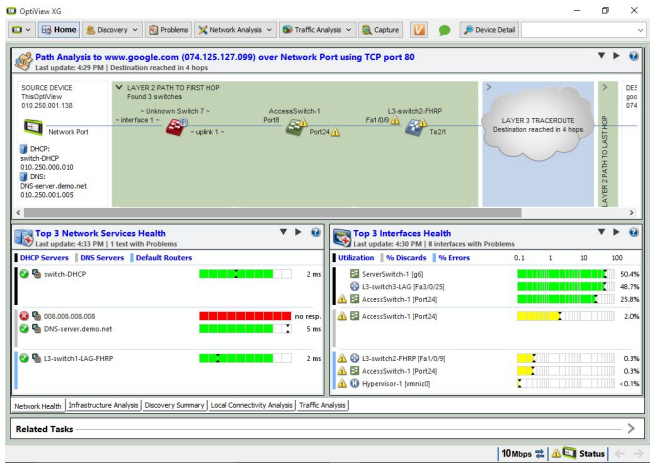
Automated Analysis and Guided Troubleshooting Makes Anyone an Expert Problem-Solver

Instant Visibility with Network Health Checks

Every day, your business depends on a reliable, secure and fast network. Already stretched IT resources are being asked to do more with less and network maintenance and optimization are often overlooked. The results are unhealthy networks improperly utilized, misconfigured and vulnerable to cyber threats.

Immediately upon connecting to the network, XG proceeds to discover all of the subnets, devices and their interconnections within its discovery range. Path Analysis automatically initiates, determining the hop-by-hop layer 2 and 3 path from the analyzer to the Internet (defaults to www.google.com, but can be user-defined as any device or site, inside or outside your network). Network Services Health shows accessibility and responsiveness of DHCP, DNS and default routing services. The Top Interface Health panel identifies and measures the switch and router interfaces with the highest utilization, most discards, and most errors.

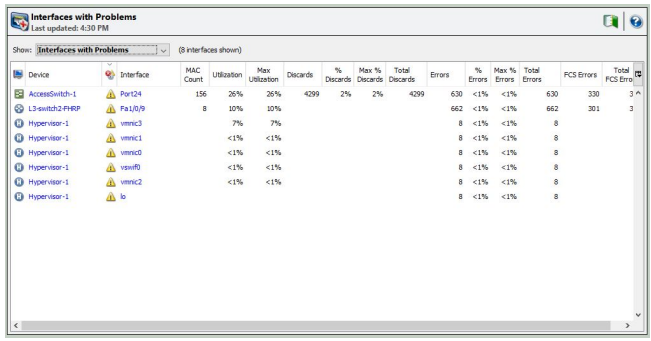
OptiView searches through your switch and router infrastructure to proactively look for these and other problems such as high memory/CPU utilization, device reboots, and FHRP state changes. Once detected, OptiView can notify staff via SNMP trap, syslog message, or push notifications to your Apple or Android device (see HeadsUp XG mobile notification app.)



Network Health

Interface Health

The Interface Health screen identifies and measures the switch and router interfaces with the highest utilization, most discards, and most errors, as well all interfaces with problems across your network or site. Easily sortable by various metrics, this gives the network engineer instant visibility of the worst interfaces in the network by utilization, errors, discards or other problems – this can serve as a daily "action list" for network operations teams.

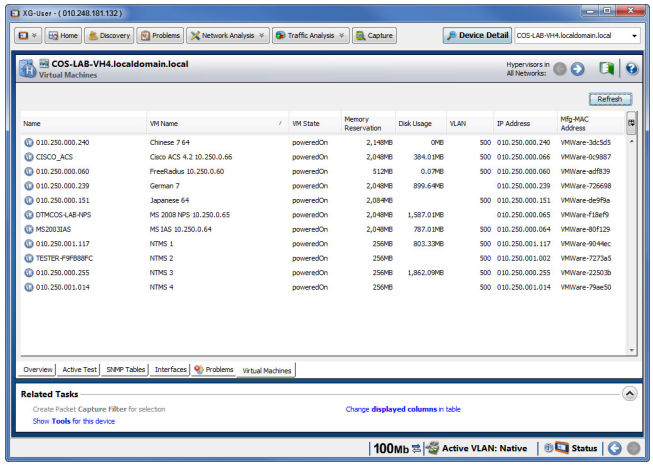


Interface Health

Virtualization Health

Along with the benefits of virtualization comes the complexity of managing the virtualized network. OptiView XG has built-in capability to analyze virtual machines and their host VMware ESX servers. This gives you the capability to quickly track virtual server health and ensure your mission-critical applications never fail. OptiView XG's discovery allows users to find and analyze new virtual machines that are added to ESX host servers.

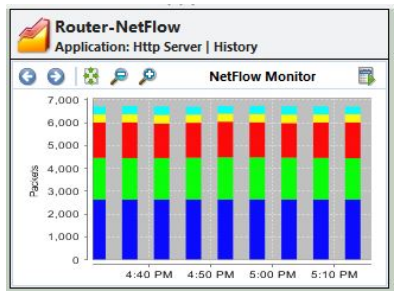
Quickly check the health of your VMware ESX Server by monitoring CPU, memory utilization, number of virtual machines configured and running, and much more. View VM name, guest OS, VM state, and detailed virtual machine health statistics including processor, memory, and network usage.



Virtualization Health Check

Granular Data for Proactive Analysis

Get granular, real-time data into network performance statistics and errors – essential for troubleshooting intermittent and past problems and determining if traffic bursts are the cause of performance problems. This granular data can be gathered proactively and stored for 24 hours so that you can go 'back in time' to analyze what was happening when the problem surfaced.

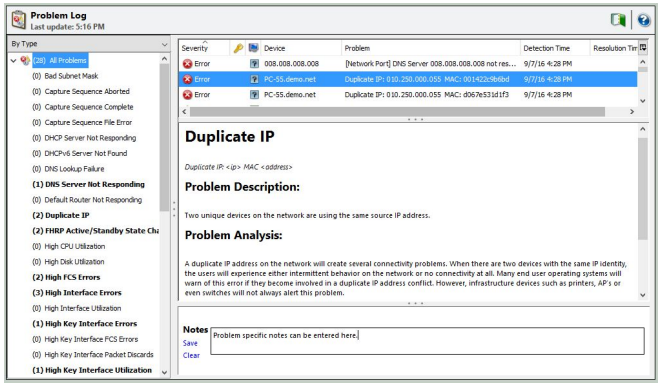


Granular Data to Troubleshoot Intermittent Problems

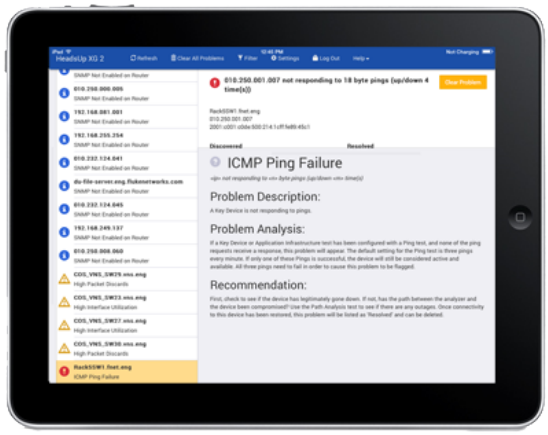
Automated Problem Detection

OptiView XG automatically scans for errors in the network infrastructure. Errors are collected in a Problem Log that can be categorized and sorted. Examples of problems detected are: performance problems, duplicate IP addresses, incorrect subnet masks, default router not responding and many more.

Alerts on detected problems can be delivered to a network management system via SNMP trap or syslog messages. With the HeadsUp™ XG App for Apple iOS or Android devices, problem alerts can be sent directly to your phone or tablet, allowing you to see and drill into problems from wherever you are. See Overview and General Information key use case for more details.



Problem Log and Guided Troubleshooting



HeadsUp XG app for iOS and Android

Guided Troubleshooting

There are a lot of different errors and problems that occur on your network and not having the probable cause and resolution readily available increases the time required to solve problems. The built-in Guided Troubleshooting reduces the time required to identify the root cause and fix the issue, increasing staff efficiency. Clicking on any problem in the problem log immediately shows you the probable cause, potential impacts, and possible solutions for the problem.

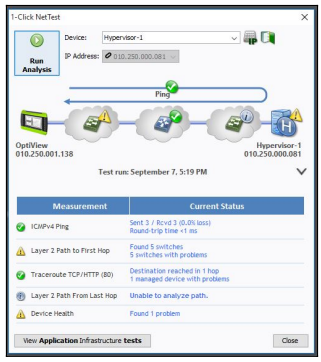
NETSCOUT

Graphical User Interface Elements Speed Troubleshooting

Instantly "Prove It's Not the Network"

The 1-Click NetTest executes a series of tests to quickly prove it is not a network problem. Using ping, layer 2 and 3 path analysis, the 1-Click NetTest verifies connectivity and determines the switch-to-switch and router-to-router path to the target device. All interfaces and infrastructure devices along the path are analyzed and problems clearly indicated. Automatic analysis of the target device reveals configuration and resource issues. With another click, the user can document all those results instantly.

With one additional click, 1-Click NetTest is instantly added to the Application Infrastructure Test suite for continuous monitoring of that path and end device, or launch into the detailed Graphical Path Analysis for in-depth information.



1-Click NetTest

Quickly "Get the Picture" and start troubleshooting faster

Finding the path between a user and networked resources is the first step in troubleshooting a network infrastructure performance problem. Understanding the infrastructure involved in traffic flows, how it is performing, and where to drill down for additional analysis provide the next steps needed to isolate issues.

XG's unique Graphical Path Analysis (GPA) provides a pictorial view of the path between a user and other resources (local, remote, or cloud-based) and visually indicates health data or problems on critical links and devices along the path. GPA shows every hop at layers 2 and 3 and examines the health of every link, interface and device in the path selected. Clicking on any port instantly shows the interface health for the port traversed, speeding access to detailed problem information. This is how XG "brings the problems to you" instead of you having to search for them.

The displayed results include the DNS name and IP address, the inter-switch connections by port number, together with link speed and VLAN information. Once launched, Path Analysis will trend interface utilization and show in/out traffic in clear trend charts. Clicking on any device allows you to drill into specific performance information for that device. Document the path with one-click report generation.

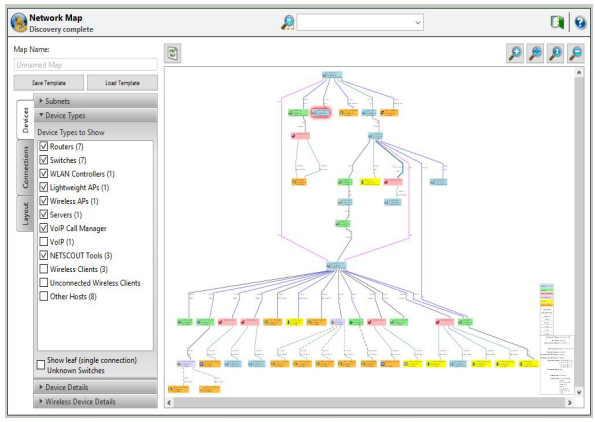
Graphical Path Analysis

Automated network mapping

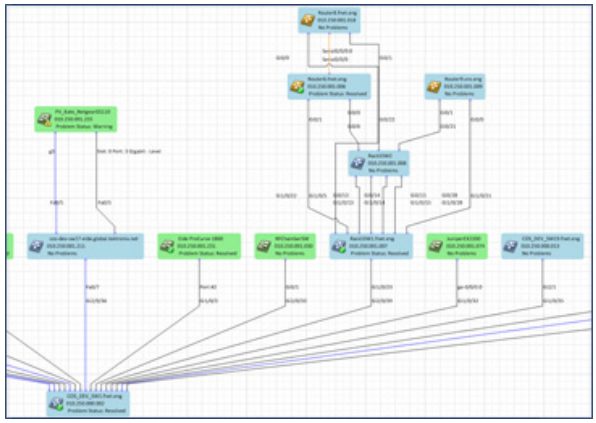
The faster engineers can "see" what is going on in their network, to know who is on the network and where they are connected, and what the path is from "here to there", the faster they can get to root cause when troubleshooting network issues. This is especially true for maintenance organizations or system integrators who often troubleshoot an "unknown" network. The problem is that traditional methods (CLI or element managers) take too long and present complex data that's often hard to interpret and difficult to correlate.

Using OptiView's patented discovery engine, users can now interact with the network in a flexible map-based user interface to quickly visually identify configuration and topology issues, speeding troubleshooting.

Documentation is an essential step for any project, such as pre-deployment network assessments and new technology rollouts, but it can take too much time to complete. From the graphical map-based user interface, one click sends the map data through a Visio file generator, creating instant, professional network documentation. Ideal for enterprises or service organizations, OptiView XG's mapping function saves hours of manual labor, allowing documentation to keep up as the network changes, or provide instant maps for client projects.



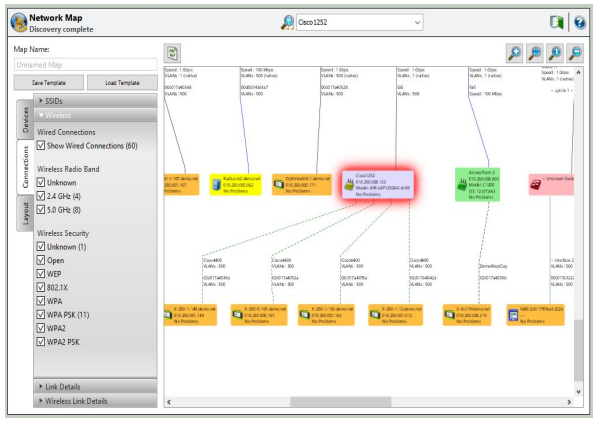
Map-based Discovery user interface



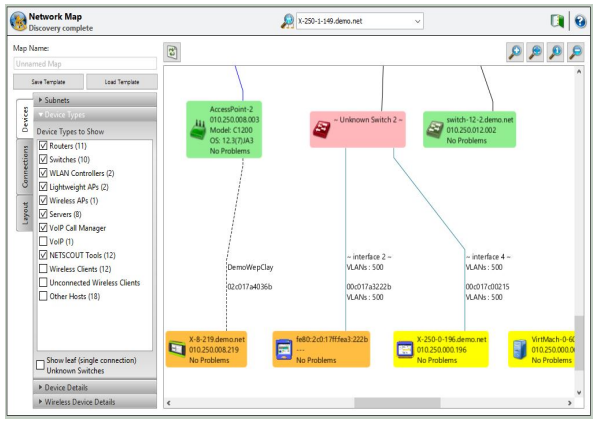
Automated Visio map generation

OptiView XG uses data from wireless LAN controllers (WLCs) to create wireless network connectivity maps. The content of the map can be filtered by selecting one or more SSIDs, desired WLAN frequency bands, device and security types. Map details are user configurable, including link rates, channels used, AP mode and capacity, client count by AP, and more. Wired infrastructure connections show the entire network – from end-to-end – so you are never without updated documentation of your wired and wireless network.

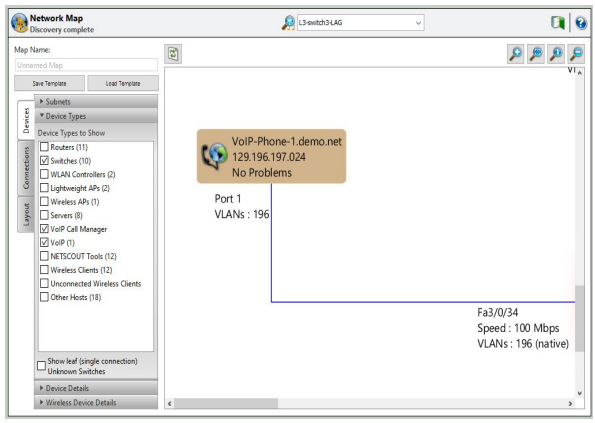
OptiView XG also provides visibility of unmanaged, unknown devices – including WLAN access points. View these potential 'rogue' devices in both the discovery list and see them in a network map, along with the devices connected to them. Secondly, mapping of VoIP phone endpoints provides complete documentation for Unified Communications deployment projects.



Wireless network mapping



Unmanaged or rogue devices in network maps



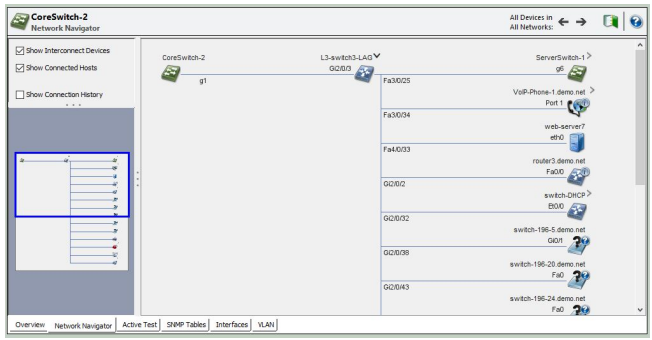
Mapping VoIP phone connectivity

Network Navigator – A Window into the Network

OptiView XG's Network Navigator uses Link Layer Discovery Protocol data (LLDP, and CDP for Cisco switches) to generate a simple diagram of a switch's "network neighborhood". In/out interface IDs are shown along with device names. If OptiView XG detects any problems, they are indicated on the device.

The engineer simply clicks through the diagram to navigate the devices and paths to see whether any problems exist in a particular network area, showing exactly where further analysis is needed. The diagram can instantly be saved as a PDF or HTML formatted report.

Network Navigator, maps and Path Analysis are there to help you visualize your network, to see how it is performing and where to drill in to find the root cause of performance problems.



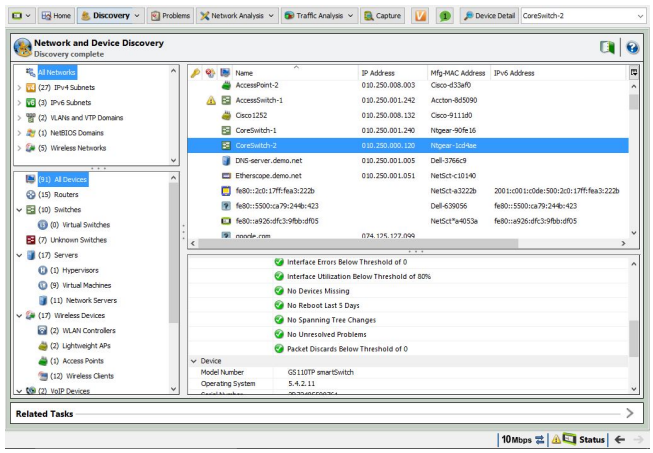
Network Navigator

Ensure Consistent End-User Experience and Network Performance

Advanced Network Discovery – Finds Devices, Networks and Problems in Seconds

As soon as OptiView XG is connected to the network, it automatically begins to discover devices, with no user interaction required, by monitoring traffic and actively querying hosts. IT staff can see what is on the network and where it is connected, by switch, slot and port number. They can investigate and locate "suspect" or rogue devices and identify problems associated with device misconfigurations.

The OptiView XG categorizes devices by type: interconnect (routers, switches), servers, hypervisors, virtual machines, printers, SNMP agents, VoIP devices, wireless devices, and other hosts. Additionally, networks are classified by IPv4 and IPv6 Subnets, VLANs, NetBIOS Domains and (legacy) IPX Networks, and Wireless Networks together with host membership within each classification. Network devices experiencing problems are also discovered.



Network and Device Discovery

Discover and Analyze Remote Networks

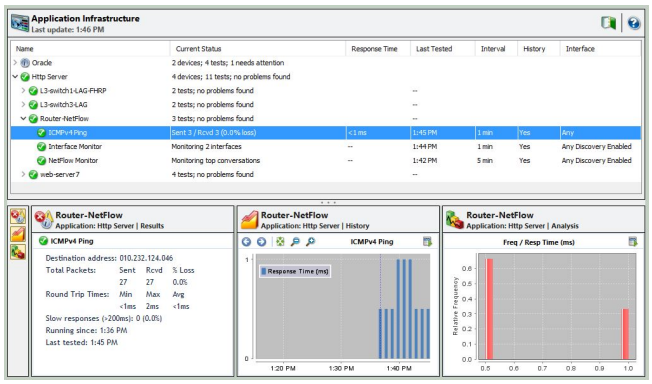
Most network analyzers and troubleshooting tools have limited visibility – usually a single broadcast domain or VLAN. The OptiView XG Network Analysis Tablet can be configured to perform discovery of up to 30,000 devices on off-broadcast domain subnets to extend its discovery beyond the broadcast domain or local VLAN boundaries – across your enterprise network, into remote sites and users anywhere in the world. Generate up-to-date HTML and PDF format inventory reports of devices both on the attached network and on remote sites.

To test performance to and from remote sites, use the Network Performance Test feature (see Performance Testing Key Use Case.)

Application Infrastructure Analysis

Consistent application delivery is critical for business. OptiView XG makes it easy to identify and analyze the underlying network infrastructure of an application. This lets you become proactive about network health issues.

Speed up troubleshooting network infrastructure issues by automatically validating that network services such as DHCP and DNS are available and operating correctly. Ensure that server and application connectivity is accessible by opening specific TCP IPv4 and IPv6 ports on servers and reporting the round trip time as a combination of network latency and server connection set up time. Ensure servers are operating efficiently by viewing resources including number of users, processors, memory and disk utilization, as well as services and processes that are running.



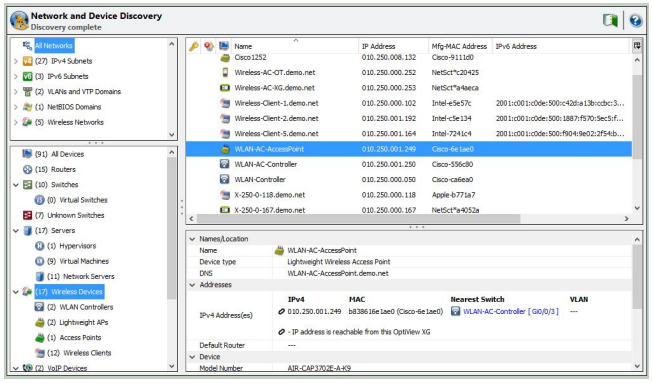
Application Infrastructure Analysis

Discover and Test Through Wireless Connections

OptiView XG's unique capability for fast discovery through a wireless connection keeps you aware of the surrounding network when moving through your site. You can unplug from the network and be confident that the tablet is analyzing your critical devices wirelessly, even when moving to a different location – without losing any data. This offers a perfect solution for testing roaming handoffs.

VoIP and Wireless Device Discovery

The OptiView XG will discover VoIP devices including call managers and IP phones from Cisco®, Nortel®, Avaya® and Mitel®. Device capabilities and configurations may be viewed, allowing the user to identify and correct configuration issues during VoIP deployment. The OptiView XG also discovers and categorizes wireless LAN controllers, lightweight access points (AP), intelligent access points and wireless clients. Detailed device information is provided from Cisco Wireless LAN controllers and LWAPs, including the wireless networks associated with the controller, the SSIDs, security and QoS parameters, the lightweight APs being controlled and the 802.11 protocol in use. With XG version 12, users will be able to instantly generate maps of their wired and wireless infrastructure.

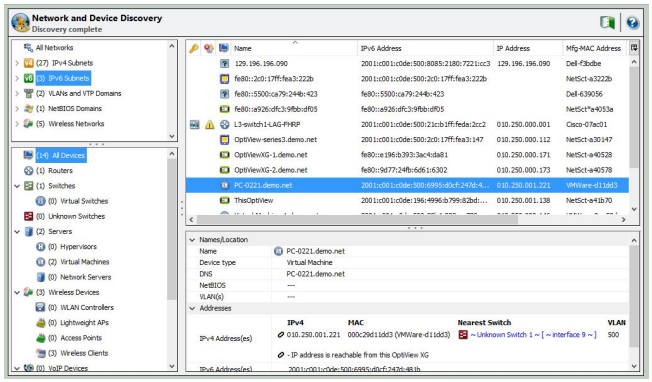


Wireless Infrastructure Discovery

IPv6 Discovery

The OptiView XG will discover and display complete IPv6 network and device inventory including routers, switches, wireless APs, DHCP6 servers and hosts. It enables you to identify active IPv6 devices in the network and those that may have problems in single-stack IPv6 networks. Router advertisements are analyzed and the OptiView XG displays detailed router information and settings. Easily identify applications that may be communicating using both IPv4 and IPv6 protocols.

Detect devices using tunneling mechanisms and identify the tunnels in use. Undetected or unauthorized tunneling could represent a serious security risk.



IPv6 Networks, Apps and Devices