hp OpenView

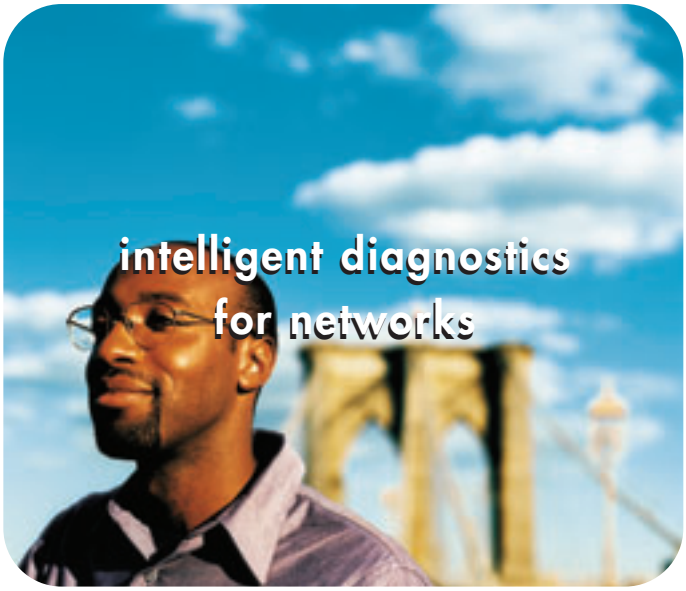
network node manager 6.4 and network node manager extended topology 2.0

product brief

your network provides the foundation for your business

Your network infrastructure provides the foundation for your entire business. To ensure your business is running at peak performance, you must ensure your network is running at peak performance. Whether you are managing an e-business, providing Internet services to customers or managing your company's internal IT infrastructure, your network is your lifeblood. If it's down, every minute could cost you hundreds of thousands of dollars.

For network administrators, the stakes are high. And so are the challenges. Maintaining network availability and performance is a daunting task in today's climate of staff reductions, increasingly complex networks and technologies, cost cutting and pressures to maximize the use of existing infrastructure. What's more, the health of your network is highly visible. When so many aspects of your business rely on network availability and performance, any problems with your network can become immediately visible to people inside and outside your organization.



how visible is your network?

If everything in your operation is humming along without any problems, life is good. But watch out when a network problem occurs and the dominos start falling. Your business operations can come to a sudden halt. Your network is the foundation for your applications and services. If it has a problem, all the things that depend on the infrastructure will have a problem. Then your network is really visible to your colleagues, your customers, and your management because they are feeling the impact of the underlying issues.

Because your business operations depend on your network, your challenge is to become the master of how all the parts work together, and quickly deal with the results when one of the parts fails. Your key challenge is to resolve any network problems as they take shape—and before they become visible to anyone else. HP OpenView Network Node Manager 6.4 and Network Node Manager Extended Topology 2.0 provide the tools you need to understand the pieces and their relationships to each other to keep your operation running smoothly. They help ensure that you can predict problems and their impact and fix them before they become visible to others.

hp OpenView is your management partner

HP OpenView Network Node Manager 6.4 and Network Node Manager Extended Topology 2.0 together provide your management team with the capabilities you need to address your key business and network challenges.

advanced root-cause analysis

- Intelligent Diagnostics for Networks (ID for Networks) for unique advanced root-cause analysis, dramatic event reduction, troubleshooting for layer 2 and 3 networks
- Web user interface with dynamic views to show device and interface status

discovery, maps and views

- Accurate discovery of layer 3 and heterogeneous layer 2 switched networks for Ethernet and ATM, LANs and WANs
- Custom visual mapping of layer 2 and 3 devices, connectivity and relationships
- Dynamic views for:
  – devices
  – types of devices
  – protocols running on top of network Open Shortest Path First (OSPF), Hot Standby Router Protocol (HSRP) and IPv6
  – VLANs
  – complex relationships between devices such as meshes and aggregated ports and other high-availability configurations, including Cisco HSRP
  – combinations such as VLANs running over layer 2 topology

data collection, storage and reporting

- Intelligent data collection
- Out-of-the-box reports for proactive growth planning for a broad range of supported devices and protocols

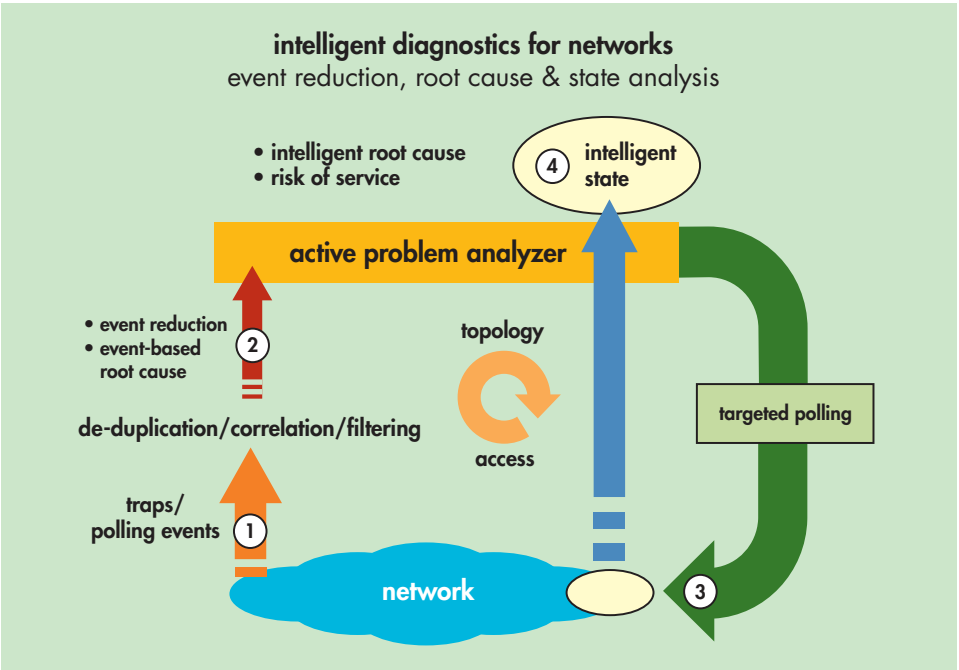
"Our results show that three of the four products scored well enough to earn World Class Award status. However, the official World Class Award goes to OpenView, for excellence in managing devices through a consistent interface. Its monitoring of network resources and reporting network activities also shined. OpenView scales well, runs on several different platforms and makes network administration much easier."

– **Barry Nance**, *Network World Global Test Alliance, Network World, Oct. 21, 2002*

managing problems before they become critical

Network Node Manager 6.4 and Network Node Manager Extended Topology 2.0 include **ID for Networks**. This new approach to root-cause analysis includes a set of easy-to-use tools to help you identify and resolve conditions before they become problems.

ID for Networks delivers advanced capabilities for network event reduction, root-cause analysis and a new management concept called State Analysis, which actively determines the health of network protocols and complex network configurations. It also includes out-of-the-box **Correlators** (correlation scenarios) for enhanced root-cause analysis and the new **Correlation Composer** to easily tailor the out-of-the-box correlators shipped with Network Node Manager to fit your particular needs.

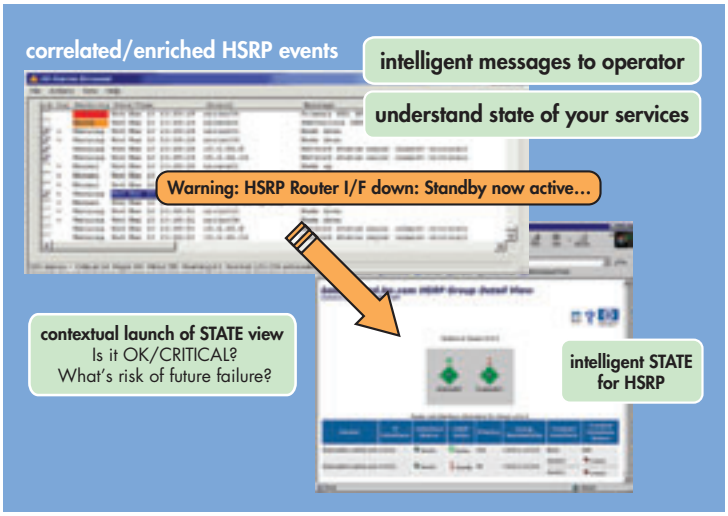


Step 1 preprocesses events.

Step 2 filters and correlates the preprocessed events.

Step 3 performs targeted polling to gather additional data to isolate the problem even further.

Step 4 processes all data to result in more intelligent information and assesses risk to services.



HSRP State Analysis

The Mean Time to Repair (MTTR) life cycle becomes a critical measure for how long it takes from the time you discover problems until you confirm resolution.

MTTR measures the time it takes to identify true problems, diagnose problems, prioritize problems, fix problems and verify the remedy.

The goal is to shorten the time it takes for each of these steps, so you can identify and resolve problems in the shortest amount of time and with the least effort—and before they impact your business.

identify and diagnose *true* problems

A critical challenge for network operators today is dealing with the massive amount of information related to network problems. This information comes in many forms. The key is for your network management solution to accurately determine what is important to present to your operators, what can be discarded, and what is needed for use by network specialists who may need to follow a "bread-crumb trail" when diagnosing complex problems.

Network Node Manager and Network Node Manager Extended Topology are equipped with unique technology that filters and correlates the volume of network events, and then determines the root cause before presenting the information to your operators. This technology identifies the initial problem that has created other less important false symptoms masquerading as problems.

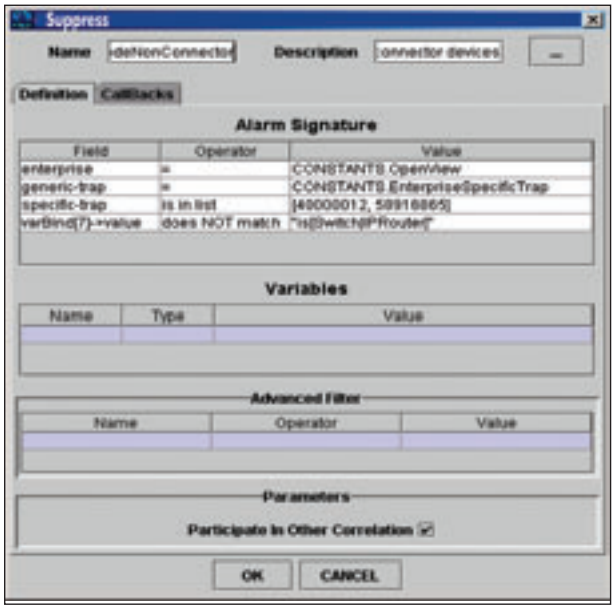
As a proactive response to managing modern resilient network protocols and redundant configurations, the new ID for Networks goes beyond reactive root-cause analysis to present the state of operation of your key network technologies. This gives you insight into whether your services are at risk of future failure—in a predictive manner.

Network Node Manager ships with out-of-the-box correlators to enhance root-cause analysis and to significantly reduce the number of events you receive. If you are also using Network Node Manager Extended Topology, you will achieve better correlation of events from the layer 2 switched portions of your network.

The product includes out-of-the-box correlators for:

- Frame Relay
- Cisco HSRP state
- PairWise events
- Chassis
- Intermittent status
- Node interface
- Multiple reboot
- De-duplication
- Physical address mismatch
- Authentication failure
- Connector down
- Scheduled maintenance

The new **Correlation Composer Graphical User Interface** (GUI) enables users to tailor the event correlation behavior of the correlators that are shipped with Network Node Manager. Correlators can be used out-of-the-box or can be easily fine-tuned to fit your environment. You don't need any special programming knowledge. This capability is unique to the industry.



Correlation Composer: easy tuning of parameters

prioritize problems

Due to the massive complexity often associated with leading-edge network designs, some classes of network problems still require additional human analysis. Network Node Manager and Network Node Manager Extended Topology equip your staff with capabilities to understand the details of problems via a rich set of tools.

These features include industry-leading topology visualizations (which present just the right amount of information for a specific problem), detailed reports of device configurations, and tools to interactively probe the network and analyze responses. These tools are quick to access, whenever the user needs them.

fix problem and verify remedy

To reduce your MTTR, you need easy access to additional tools that focus on a vendor's device-specific configuration and diagnosis. You also need the ability to easily check the conditions of your network after remedies have been applied, so you can confirm the problem has been fixed correctly.

Network Node Manager and Network Node Manager Extended Topology provide these tools. They give you the capability to verify many scenarios to assure that proper configuration has been established. For example, if a device is brought back online after a fix procedure, Network Node Manager will quickly and automatically rediscover the device and establish its status.

manage the big picture

Today, successful management of any network requires the ability to understand how all the pieces fit together and to view their relationships to the rest of your operation. Working together, Network Node Manager and Network Node Manager Extended Topology automatically discover and map TCP/IP and your heterogeneous Ethernet and ATM switched fabric in your network.

The maps quickly show the health of network devices and the location of trouble spots before they become critical. If you have a connectivity problem, you can see a view of how your network elements are connected. If you have a routing problem, you can view how the routing protocol is configured to help determine what is wrong.

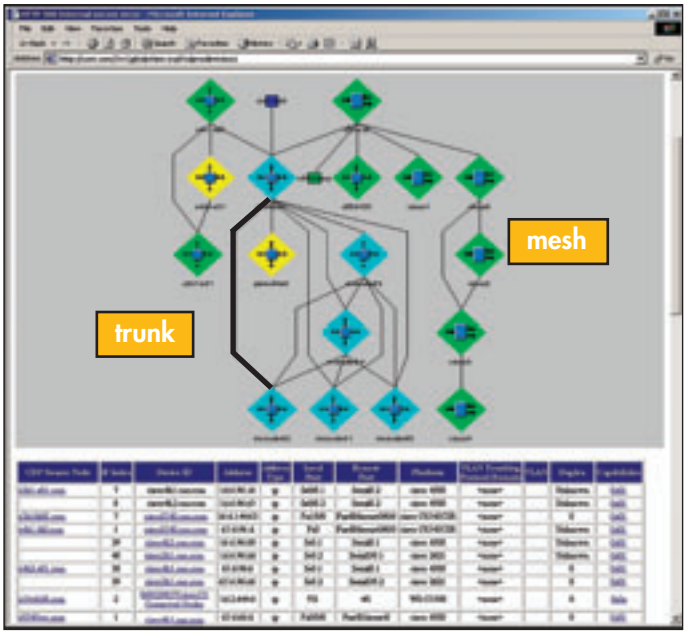
You can launch targeted views from an event to get to the heart of the problem. From your event browser, just select an event and a specific menu will appear showing you what you need in order to troubleshoot the problem. This brings up the right view to help you resolve the problem easily and quickly, without having to learn how to navigate through the software, thereby reducing training and the time necessary to fix the problem.

"OpenView's NNM report generation is so easy it took just a few minutes to generate daily reports on general availability, Cisco routers, top talkers and asset inventory. NNM's delivery of performance data via e-mail reports, which contain HTML links to individual devices, was simple to set up and thoughtfully designed for use over bandwidth-challenged dial-up remote connections."

– **Barry Nance**, *Network World Global Test Alliance, Network World, Oct. 21, 2002*

You gain the capability to:

- View complex switched environments to understand relationships between devices in one map, including trunked and meshed connections
- View network services such as OSPF and VLANs to troubleshoot routing and containment problems
- View VLANs configured on a switch as well as switches, boards and ports participating in a VLAN
- Use Ethernet- and ATM-switched views to troubleshoot your backbone problems



Easily see an accurate picture of your heterogeneous switched network in one view, including meshed and trunked connections.

data collection, storage and reporting

Network Node Manager's out-of-the-box reports enable proactive trend analysis on the health of the network. These Web-based reports point out trends on performance, availability, inventory and exceptions. Analysis of this historical data provides a clear picture of the devices in the network and allows your network managers to become more proactive by taking action before problem appear in the network.

Additionally, Network Node Manager's valuable topology, event and SNMP-collected data is stored in an external database and is available for further analysis. The data is then intelligently aggregated and trimmed. The data warehouse includes an open schema to allow access from reporting and data mining tools.

An auto-baselining capability automatically starts collecting data and sets thresholds based on deviation from norms. If these norms are exceeded, an event will be generated to alert you to the situation before a problem arises.

Network Node Manager collects non-numeric string variable information and generates alarms if there are changes in firmware, status of links or other variables. For example, it can collect the IOS version on each switch in your environment and send an alarm when it changes, helping you keep track of changes.

Network Node Manager provides a variety of reports that allow your network managers and your internal and external customers to see a complete picture of the health of the network. You can use these reports to demonstrate that you are meeting your service level agreements.

Out-of-the-box reports include:

- **Performance**, including reports on utilization, top talkers and listeners, and interface inbound and outbound errors; examples of the performance reports in Network Node Manager include:
  - ***Ping Response Time and Ping Retry***, showing ping response times and the number of retries to measure latency across the network cloud and identify devices on the verge of failure
  - ***RMON Segment Utilization*** by octets, showing the percentage of network bandwidth in use
  - ***Frame Relay***, tracking forward and backward congestion rates to see where bottlenecks are occurring
- **Availability**—summary and detailed reports on the availability of devices by percentage
- **Inventory**—summary and detailed reports on inventory
- **Exceptions**—reports on the number and severity of the thresholds that have been violated
- **Authentication event failure**—reports on authentication failure traps by device to identify worst offenders
- **Physical Address Mismatch**, creating a list of mismatches to reduce noise to the browser
- **Multiple Reboot events**, tracking multiple reboots of a network device indicating a problem with the device
- **De-duplication events**, identifying duplicate events

In addition, HP OpenView Performance Insight and Network Node Manager are integrated to easily launch Performance Insight's network performance reports directly from the Network Node Manager event browser or network map.

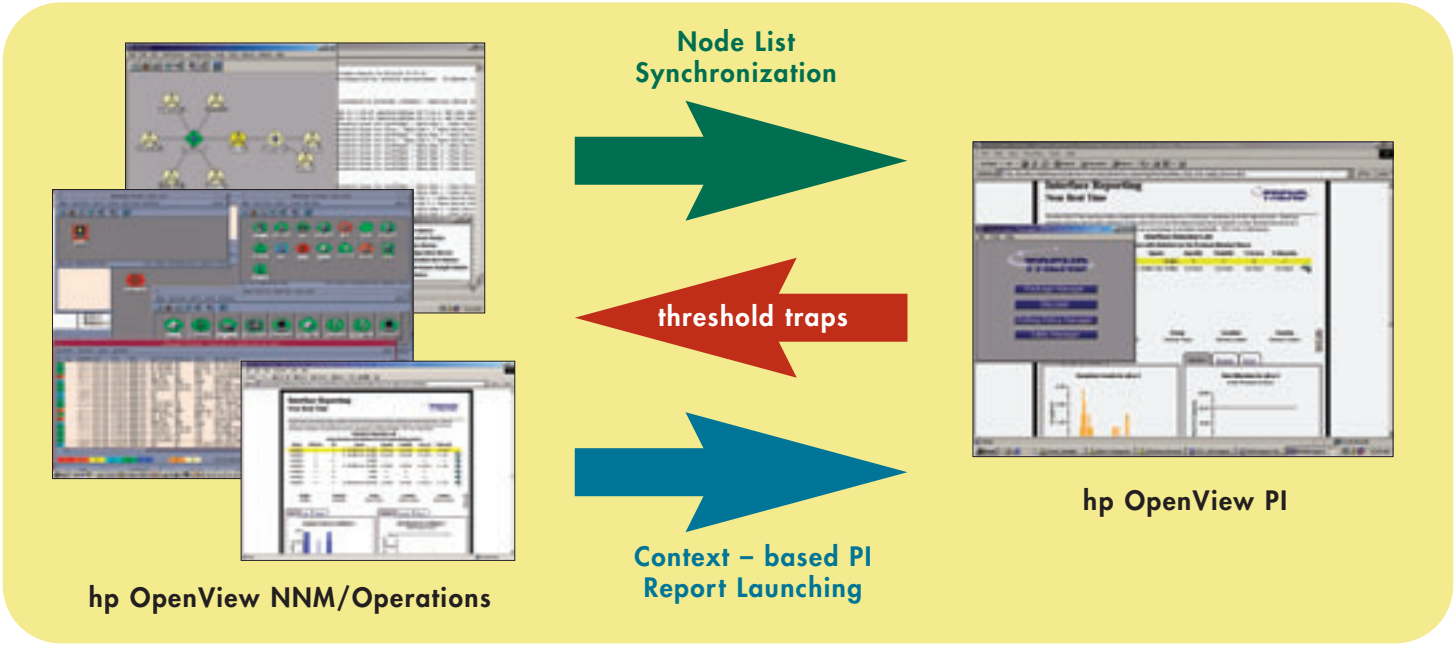
The integration between Network Node Manager and Performance Insight allows Performance Insight to use node/polling configuration information from Network Node Manager, which saves time and reduces errors. Performance Insight monitors thresholds and sends Network Node Manager a notification if there is a performance violation.

stay up and running 24x7

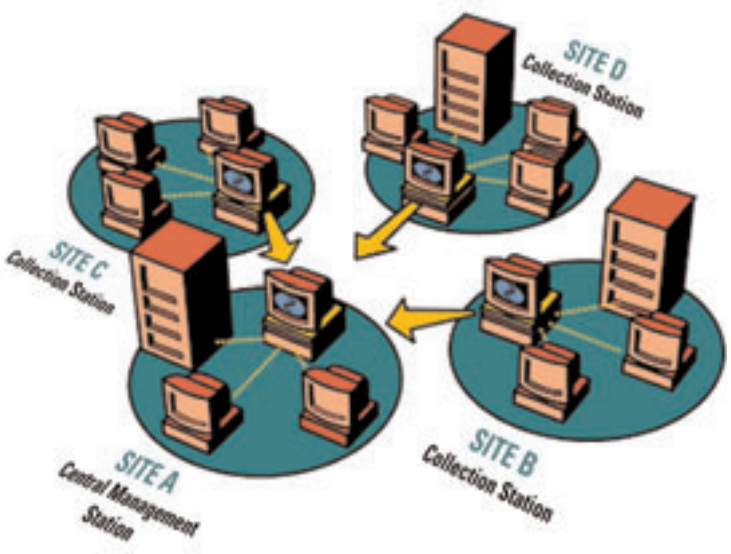
Network Node Manager allows you to do scheduled backups of your business-critical network management information while continuing to monitor and manage critical network elements.

Additionally, Network Node Manager collection stations can be configured to fail-over to Network Node Manager management stations for continuous network monitoring. In the event of a collection station failure, network monitoring will continue uninterrupted.

Network Node Manager even monitors itself to ensure that it is running and performing well—so you can be sure that your network is being monitored, available and performing.



HP OpenView Network Node Manager – Performance Insight integration



Network Node Manager's distributed architecture lets you manage your large network centrally. It optimizes the use of network bandwidth, allowing your network to be used for business needs.

easily manage small to very large networks

The capabilities of Network Node Manager and Network Node Manager Extended Topology can expand to meet the requirements of your growing network. Network Node Manager's single-system scalability depends on the host platform's performance. On high-end systems you can manage 100,000 plus objects with a single Network Node Manager.

Windows® XP Professional, Windows 2000, HP-UX and Sun Solaris Collection Stations can be distributed throughout your environment to collect data locally and forward the most important information to one or more Windows or UNIX® Management Stations.

Distributed Network Node Manager environments have been demonstrated to support up to 300,000 managed objects. HP OpenView customers achieve further scalability by adding the HP OpenView Operations product as a MoM (Manager of Managers), providing world-class scalability and operations console.

web access

Network Node Manager and Network Node Manager Extended Topology provide access to network management tools from anywhere via the Web. You'll have access to your network maps, data and events. This helps your team members manage from anywhere—including remote offices, at home and on the road—to keep your network available and performing at its peak.

partnerships

Network Node Manager has the strongest partnership program in the industry. More than 300 third-party applications are integrated with Network Node Manager, giving you the highest degree of flexibility to tailor your own comprehensive and customized network availability solution.

Ask your HP sales representative or reseller for information on how other HP and third-party products can extend the value of Network Node Manager.

getting the most from your investment

HP provides high-quality software services that address all aspects of your software application life-cycle needs and align with your business goals. With HP as your partner, you have access to standards-based, modular, multi-platform software coupled with HP's best-in-class services and support portfolio.

HP offers premier onsite deployment assistance and development support, in addition to consulting, outsourcing, financing, education, extensive online self-help, and mission-critical support options. All of these offerings are focused on helping you maximize the return on your investment.

system requirements

For Network Node Manager as a standalone product, the following hardware and software recommendations for HP, Sun and Windows systems are based on management of a 2,500-node network with one Network Node Manager session on a management or collection station.

Management of larger networks requires more RAM and swap space. For detailed product information, please refer to the release notes and the performance and configuration guides for Network Node Manager 6.4 and Network Node Manager Extended Topology 2.0.

For one customer, network events fell from 25,000 to just 200. Gains like these allow your network operators to focus on real problems—not the meaningless "noise."

hp systems

- HP 9000 servers and workstations, including multiprocessors
- HP-UX 11.0, 11.11
- RAM: 768 MB for Network Node Manager only; 1 GB for Network Node Manager and Network Node Manager Extended Topology
- Bit-mapped display or X-terminal
- Color graphics: 1024x768 minimum resolution (1280x1024 recommended for optimum clarity); 6 color planes minimum (8 color planes recommended)
- Free disk space for Network Node Manager only: 400 MB plus 1 GB of swap space
- Free disk space for Network Node Manager and Network Node Manager Extended Topology: 500 MB plus 1 GB of swap space
- LAN/Link for HP 9000
- ARPA services/9000

Sun systems

- SunSPARC servers and workstations including multiprocessors
- Solaris 2.8 and 2.9
- RAM: 512 MB recommended for Network Node Manager only: 1 GB for Network Node Manager and Network Node Manager Extended Topology
- Bit-mapped display or X-terminal
- Color graphics: 1024x768 minimum resolution (1280x1024 recommended for optimum clarity); 6 color planes minimum (8 color planes recommended)
- Free disk space for Network Node Manager only: 700 MB plus 250 MB of swap space
- Free disk space for Network Node Manager and Network Node Manager Extended Topology: 800 MB plus 512 MB of swap space

network node manager extended topology delivers:

- accurate views of your layer 2 switched network for faster problem isolation
- correlation of layer 2 switched information in connector-down circuit, including trunks and meshes
- IPv6 support

Windows 2000 and XP Professional systems

- Intel Pentium processor, 333 MHz or greater
- Microsoft Windows 2000 or XP Professional Systems TCP/IP networking installed and configured
- RAM: 512 MB
- 800x600 monitor with SVGA graphics card
- Free disk space: 400 MB plus 512 MB free paging file space
- Network Adapter Card

ordering information

Order Network Node Manager and Network Node Manager Extended Topology separately. Network Node Manager 6.4 can be used standalone or with Network Node Manager Extended Topology for layer 2, HSRP, VLAN and OSPF management.

product number	*product name/ description*
hp OpenView network node manager	
J5315BA	HP OpenView Network Node Manager Enterprise 6.4 for HP-UX. Includes license-to-use, media and manuals.
J5316BA	HP OpenView Network Node Manager 250 6.4 for HP-UX. Includes license-to-use, media and manuals.
J1249AB	HP OpenView Network Node Manager 250 Increment 6.x for HP-UX. Includes license-to-use.
J5317BA	HP OpenView Network Node Manager Enterprise 6.4 for Solaris. Includes license-to-use, media and manuals.
J5320BA	HP OpenView Network Node Manager 250 6.4 for Solaris. Includes license-to-use, media and manuals.
J1256AB	HP OpenView Network Node Manager 250 Increment 6.x for Solaris. Includes license-to-use.
J5321BA	HP OpenView Network Node Manager Enterprise 6.4 for Windows 2000/XP. Includes license-to-use, media and manuals.
J5322BA	HP OpenView Network Node Manager 250 6.4 for Windows 2000/XP. Includes license-to-use, media and manuals.
J1242AB	HP OpenView Network Node Manager 250 Increment 6.4 for Windows 2000/XP. Includes license-to-use.
J5323BA	HP OpenView Network Node Manager 6.4 Manuals for HP-UX, Solaris and Windows. Includes printed manuals for Network Node Manager 6.4 (Enterprise, 250 and 250 Increment).
J5324BA	HP OpenView Network Node Manager 6.4 and Network Node Manager Extended Topology 2.0 Media
J5328BA	Network Node Manager 250 upgrade to Network Node Manager Enterprise for HP-UX.
J5397BA	Network Node Manager 250 upgrade to Network Node Manager Enterprise for Solaris.
J5398BA	Network Node Manager 250 upgrade to Network Node Manager Enterprise for Windows.

hp OpenView network node manager extended topology

J5303CA	HP OpenView Network Node Manager Extended Topology 250 2.0 for HP-UX. Includes license-to-use, media and manual.
J5304CA	HP OpenView Network Node Manager Extended Topology 250 Increment 2.0 for HP-UX. Includes license-to-use.
J5305CA	HP OpenView Network Node Manager Extended Topology 250 2.0 for Solaris. Includes license-to-use, media and manual.
J5306CA	HP OpenView Network Node Manager Extended Topology 250 Increment 2.0 for Solaris. Includes license-to-use.

developer kits

J5310BA	HP OpenView Network Node Manager Developer's Toolkit 6.4 for HP-UX. Includes license-to-use, media and manuals. This product is for development on Network Node Manager 6.4.
J5311BA	HP OpenView Network Node Manager Developer's Toolkit 6.4 for Solaris. Includes license-to-use, media and manuals. This product is for development on Network Node Manager 6.4.
J5312BA	HP OpenView Network Node Manager Developer's Toolkit 6.4 for Windows 2000/XP. Includes license-to-use, media and manuals. This product is for development on Network Node Manager 6.4.
J1091EA	HP OpenView ECS Designer 3.2 LTU
J1093EA	HP OpenView ECS Designer 3.2 Media
J1095EA	HP OpenView ECS Designer 3.2 Manuals

other network management products

J5136AA	HP OpenView Problem Diagnosis 1.1 Media. Includes CD-ROM and manual for HP-UX, Solaris or Windows 2000/XP.
J5137AA	HP OpenView Problem Diagnosis LTU. Includes license-to-use Problem Diagnosis on HP-UX, Solaris or Windows 2000/XP.
J4518BA	HP OpenView Customer Views 1.3 100 customers for Microsoft Windows 2000/XP LTU
J4519BA	HP OpenView Customer Views 1.3 Unlimited Microsoft Windows 2000/XP LTU
J4520BA	HP OpenView Customer Views 1.3 200 managed customer bank Microsoft Windows 2000/XP LTU
J4521BA	HP OpenView Customer Views 1.3 Upgrade Microsoft Windows 2000/XP LTU
J4522BA	HP OpenView Customer Views 1.3 100 customers for HP-UX LTU
J4523BA	HP OpenView Customer Views 1.3 Unlimited HP-UX LTU
J4524BA	HP OpenView Customer Views 1.3 200 managed customer bank HP-UX LTU
J4525BA	HP OpenView Customer Views 1.3 Upgrade HP-UX LTU
J4526BA	HP OpenView Customer Views 1.3 100 customers for Solaris LTU
J4527BA	HP OpenView Customer Views 1.3 Unlimited Solaris LTU
J4528BA	HP OpenView Customer Views 1.3 200 managed customer bank Solaris LTU
J4529BA	HP OpenView Customer Views 1.3 Upgrade Solaris LTU
J1245AA	HP OpenView Network Node Manager Multicast 2.0 for HP-UX
J1246AA	HP OpenView Network Node Manager Multicast 2.0 for Sun Solaris

to learn more

For more information on Network Node Manager Extended Topology device support, visit:
www.openview.hp.com/products/nnmet/support/device_support.html

For more information on HP software services available to address your specific business needs, visit:
http://support.openview.hp.com/support_options.jsp.

for more information

For more information on HP OpenView, please contact your local HP reseller or HP sales office.

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