



A Guide to Enterprise Network Monitoring

Author: Vinod Mohan

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Enterprise Network Monitoring - Know What Goes Into Your Spend!

Organizations (large, medium, and small) are starting to recognize the hefty costs they are paying for network management tools. No doubt the tools have essential functionality, but is it justifiable to spend so much on them? Traditional enterprise solutions, such as those from the Big 4 (HP®, IBM®, Cisco®, CA® Technologies), are typically packaged and priced so ambiguously that you often don't realize the amount of money you're shelling out to purchase them. IT budgets are getting leaner so network administration teams are looking for more economical solutions. It's definitely not resourceful to purchase "enterprise solutions" that charge you for more than what you really need.

The smart choice is to spend your budget on [network management systems](#) (NMS) that provide a high return on investment (ROI) with a low total cost of ownership (TCO). When you look closely at the Big 4 products, you begin to see the white elephant in the room—a significant amount of budget spent on products that package many features you'll likely never use.

When evaluating network management tools, you need to look beyond their features and functionality and assess whether you are getting the right value for your investment. ROI and TCO are tricky factors in estimating the net worth of an NMS. Here are some factors to help you determine the TCO of network management solutions:

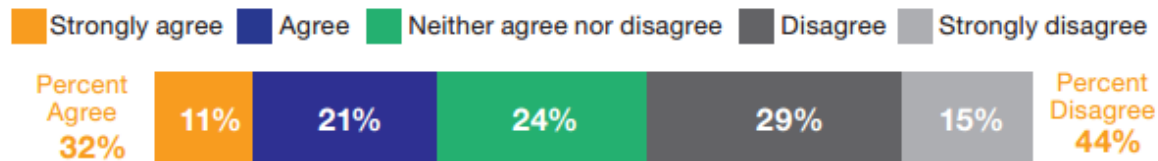
- Initial cost of purchase.
- Cost of consultants or professional services to install, integrate, and optimize the deployment.
- Overhead costs of product management (e.g. dedicated IT staff and time required to manage the NMS).
- Cost of learning and getting ramped-up to use the product to its full potential.
- Annual support and maintenance costs.
- Amount of time between acquisition and deployment (product demonstrations, requirement signoffs, budgetary approvals, etc.) where your network is unmonitored.

According to an [IDG Research Services survey](#) among customers of the Big 4 enterprise software vendors:

- **34% indicated that management and maintenance fees are a big inhibitor to maximizing ROI.**
- **More than 50% claim that they need to pay for staff training in order to maximize the ROI of their Big 4 technology.**

The IDG survey findings revealed that 32% of the more than 100 respondents involved in purchasing network management and/or monitoring solutions agree that the ROI on their current NMS is NOT enough to justify the TCO.

ROI on current network management or monitoring solution is not enough to justify the TCO



SOURCE: IDG Research Services, July 2013

Pay For Only What You Want

It should come as no surprise that when you purchase a Big 4 NMS you're actually paying for many superfluous features that you don't use. This happens because the Big 4 companies commit you to a product lock-in package. You buy what appears to be one product, but, in reality, you get a big, bloated enterprise suite that includes functionality and features that were not part of your IT requirements. On top of that, you end up paying for not only the purchase, but also the annual maintenance of this enormous suite.

The IDG survey findings also revealed that:

“66% of the respondents believe that their network monitoring solutions from HP, Cisco, IBM, or CA include features or capabilities they are not using.”

- **56% of the respondents said their organization's current network management or monitoring solution includes capabilities and/or features they do not need or use.**
- **More specific to the Big 4 solutions, 66% of the respondents believe their network monitoring solution from HP, Cisco, IBM, or CA includes features or capabilities they're not using.**

This clearly shows that enterprise users are not satisfied with traditional network monitoring suites because they are packaged with more features than necessary and sold at high prices.

Current network management solution includes capabilities not needed/not used



SOURCE: IDG Research Services, July 2013

Complexity Accompanies Cost

In addition to cost, Big 4 products tend to be more complex in terms of installation, deployment, and daily operations. A [white paper](#), published by Enterprise Management Associates, a leading industry analyst firm, presents four network performance management solution case studies. These case studies indicate that while traditional enterprise solutions are “highly extensible, scalable, and feature-rich, **they can also be highly complex, requiring services to deploy/maintain/extend, special training to operate, and expensive annual maintenance contracts that must be kept current to receive all the latest patches and software updates.**”

This means, in addition to troubleshooting and fixing issues, network teams using Big 4 products must also devote much of their time to becoming experts with a complex product. In addition to being feature-rich, a network monitoring solution should also be intuitive and easy to use—not require extensive training, expertise, or operational overhead.

Historical Enterprise Network Monitoring Options

Traditionally, enterprises have deployed either a pricey and hard-to-use NMS, or an open source solution, which, while being free, is commonly not feature-rich or scalable. It should also be noted that most free tools do not offer support or product enhancements. It’s always been tough to choose between these options, and enterprise customers have often struggled to find an optimal solution.

WHAT IS AN OPTIMAL NETWORK MONITORING SOLUTION?

An affordable NMS that is powerful, robust, and scalable to cater to growing enterprise networks, while being easy to use and maintain without the high overhead required for consultant services.

The Search for an Optimal and Effective Enterprise Network Monitoring Solution

The challenge many network administration teams face in enterprises is to determine how to evaluate the best NMS to fit their network needs. One of the biggest challenges of the enterprise customer is estimating ROI when selecting an NMS. Here are some tips to help you understand what aspects of usability, performance, and ROI value you should be looking for in your search for a powerful, yet easy-to-use NMS.

1. Minimized total cost of ownership (TCO)

As you search for the optimal NMS based on your needs, it's very important to seek out a product that results in the lowest TCO possible. This includes both the initial purchase and the annual maintenance costs. An ideal NMS will include only the cost of the initial purchase and periodic maintenance—no added technology, service, training, hardware, resource, or any other hidden costs. Also, there should be no compromise on the level of product support and future enhancements. Factor in all these points in your evaluation and work out the TCO for at least 3 to 5 years of product usage.

2. Simple and transparent licensing

Licensing a network monitoring system is generally not applied uniformly across all vendors. Some vendors tend to complicate the licensing with add-ons, extra modules, hidden costs, etc., making it difficult for you to determine whether the solution will fit your requirements and budget. Network monitoring software is best licensed by the number of network nodes and interfaces, which are ultimately the elements that are monitored on the network.

3. Speedy installation and deployment

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Many NMS solutions are difficult to procure because the process usually includes product demonstrations, proof of concepts, budget approvals, etc. Installation and deployment further complicates the process. This often requires consultants or service contracts. Look for a simple and easy-to-deploy solution that you can try out yourself, without the need for technician support and engineer assistance. This gives you hands-on experience and a feel for the product in your own environment.

- **Speedy installation:** Once you've made your purchase, it should not be difficult to deploy and use the tool.

- **Quick network discovery:** Your NMS should be able to do this job for you. You should only need to set it up and let it run. Ideally, it will be able to discover your entire network and present all your devices, ESX® hosts, VMs, and servers to monitor.
- **Instant network monitoring:** The moment your network devices and interfaces are discovered, the NMS should be able to start polling data to monitor network performance and availability.

Typically, it shouldn't take more than an hour to be up and running with your NMS. This includes installation, discovery, and seeing actual monitoring results.

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4. Operational efficiency

Any NMS should improve the operational efficiency of your IT organization, allowing you to spend more time on value-added IT initiatives. Network monitoring tool features that can help improve efficiency include:

- Customizable and intuitive dashboards that let you set up your own monitoring views.
- Accessible from a single monitoring window, without the need to open multiple tools and consoles.
- Ease-of-use, avoiding unnecessary personnel overhead.

5. Modular and flexible network management architecture

Be aware of the complexity involved in large enterprise suites that include non-essential features. An ideal NMS will allow you to pick and choose only the functionality you need. With modular solutions, you can extend functionality as needed to include:

- [Traffic analysis and bandwidth monitoring](#)
- [Network configuration management](#)
- [Server and application monitoring](#)
- [VoIP and WAN performance monitoring](#)
- [IP address management](#)

Individual modules should be able to integrate with one another so you can customize and build your own network management architecture that includes your exact choices of functionality that accommodates your specific network administration.

6. Scalability and future proofing

Scalability is an important factor for capacity planning and evaluating the growth of your network. Scaling from smaller license tiers, the NMS should be able to accommodate any number of network elements to support your growing and evolving network. Ask these questions as you evaluate your NMS:

- Does the NMS support a failover and high availability plan if the server running the NMS fails?
- Will the NMS scale to support polling network performance data from an increased device count?

7. Customer- and community-driven solution

Traditional enterprise solutions, such as from the Big 4 vendors, are typically more focused on providing bigger and more comprehensive solutions than they are on accommodating customers' feature requests and the needs of network engineers. In contrast, the ideal NMS is purpose-built, and focused on the needs of IT professionals. Leveraging knowledge from the IT community helps the product become more user-driven. The IT community serves as a place to:

- Share and exchange knowledge and content, discuss technical queries, and share best practices.
- Vote on future product enhancements, and express desired capabilities to be added to the product.
- Create a platform to add value to product users by leveraging the expertise of community members.

Your Network Monitoring Solution Evaluation Checklist

Here's a quick-reference checklist to help you easily evaluate your network monitoring solution and understand how the NMS you are looking for meets your specific network management requirements.

S.NO.	NMS FUNCTIONALITY	HOW YOUR REQUIREMENT IS ADDRESSED
1	Agentless network monitoring	• Simplified and hassle-free network monitoring. • No need to deploy individual agents to collect monitoring data. • Network monitoring data polled using SNMP and ICMP protocols.
2	Multi-vendor support	• Hardware vendor-agnostic NMS helps you monitor your heterogeneous network environments. • Cost savings on purchasing individual monitoring tools for vendor-specific devices.
3	Simple and intuitive monitoring interface	• Reduced complexity in monitoring and analyzing network performance data. • Customization to view data in various formats for quick, actionable insight.

4	Do-it-yourself deployment	• No dependency on vendor for deployment. • Faster process to get up and running and monitoring the network. • No cost for professional services to deploy NMS.
5	Integration with other network management software modules	• Remains a single-monitoring interface when integrated with other network management modules. • Less administration and management overhead.

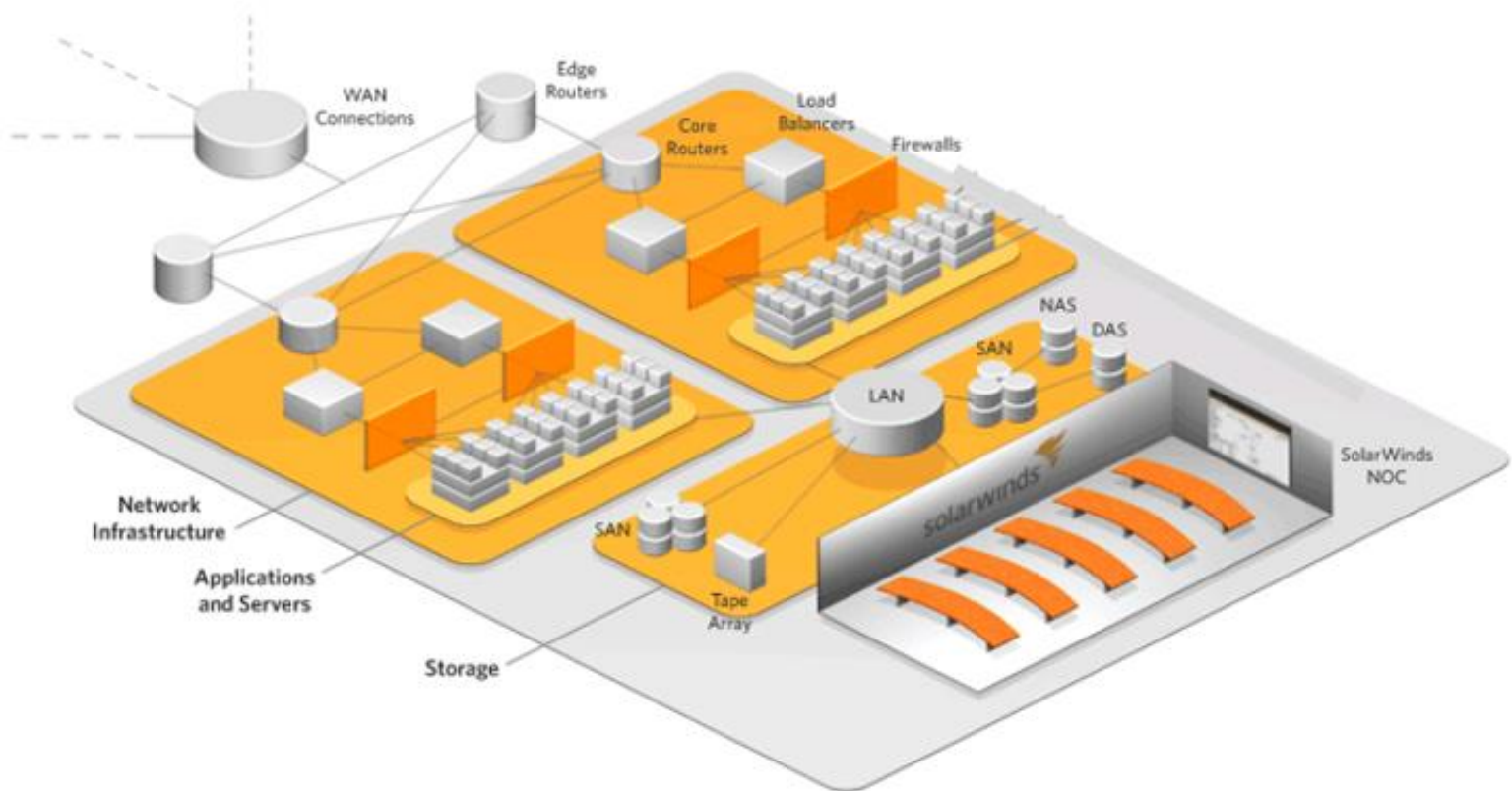
The Right Enterprise Network Monitoring Solution

[SolarWinds® Network Performance Monitor](#) (NPM) is a highly scalable and easy-to-use NMS that addresses all network management needs of large enterprises, as well as mid- and small-sized networks. Purpose-built to be user friendly, NPM provides all the details of [network availability, fault, and performance](#) statistics, and generates intelligent conditional alerts to notify you when there are network issues and faults. NPM addresses all the major concerns of large enterprises in their search for an optimal and affordable NMS.

- **Improved ROI** by saving a huge amount of time and effort through automated alerting and reporting, facilitating faster troubleshooting and other network administration activities.
- **Simple and transparent licensing structure**—no hidden costs.
- **Reduced TCO** even as you continue to grow and use the product for many years.
- **No additional packages** or extraneous add-ons packaged and priced with NPM. You pay for only network monitoring functionality, which makes the product very affordable, costing only a fraction of what the Big 4 charge.
- **Highly scalable** to accommodate network monitoring requirements of any-sized network, and any number of devices from hundreds of vendors and manufacturers.
- **Installs, discovers your network, and starts monitoring within an hour**, giving you ready-to-use functionality and full value of your investment.

SolarWinds® Network Performance Monitor (NPM) extends network monitoring to cover IP multicast monitoring, network route monitoring, capacity forecasting, wireless device monitoring, hardware health monitoring, VSAN health monitoring, and the ability to customize and extend monitoring to virtually any SNMP-enable device with MIB poller.

With SolarWinds NPM, you can monitor your entire enterprise network infrastructure from a single pane of glass on any Web browser interface, enabling you to build your own customizable network operations center (NOC).



NPM, with its extensive industry usage and growing number of enterprise clients ([trusted by over 425 of the Fortune 500 companies](#)), has shown the sustainability and promise to deliver value to enterprise customers across the globe. It has contributed to greater ROI, improved time-to-issue resolution, and, more importantly, saved IT professionals costs, time, and effort.

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SolarWinds NPM is a network monitoring software for organizations of all sizes—from large enterprises to small businesses; from federal government agencies to managed service providers (MSP). NPM makes it easy to quickly detect, diagnose, and resolve performance issues before outages occur. It's an affordable, easy-to-use tool that includes real-time views and dashboards that enable you to visually track and monitor network performance at a glance. Plus, using dynamic network topology maps and automated network discovery, you can deploy and keep up with your evolving network without disrupting service. Discover, map, and monitor your network in about an hour.

NPM Summary

All Nodes managed by NPM

[MANAGE NODES](#) [HELP](#)

GROUPED BY VENDOR

- 3Com
- Adtran
- Agile Storage, Inc.
- American Power Conversion Corp.
- APC NetBotz
- Aruba Networks Inc
 - Aruba-MS200-West
 - Bru-Aruba200
 - Tok-ArubaMS200
- Brocade Communications Systems, Inc.
- Cisco
- Compatible Systems Corp.
- Dell Computer Corporation
- External
- Extreme Networks
- F5 Labs, Inc.
- FlowPoint Corporation
- Fore Systems, Inc.
- Foundry Networks, Inc.
- H3C
- HP
- HUAWEI Technology Co.,Ltd
- IBM
- Juniper Networks
 - EMEA Juniper 3
 - stp-j2320
- Linksys
- Linux
- Meru Networks
- Multi-Tech Systems
- net-snmp
- Network Appliance
- Northern Telecom
- Palo Alto Networks
- Riverbed
- Samsung Group
- Sun Microsystems
- Synoptics
- U.S. Robotics, Inc.
- Unknown
- VMware Inc.
- Windows
- ZyXEL Communications Corp.

stp-j2320

Node is Up.

Polling IP Address: 10.199.6.2

Machine Type: Juniper J2320 Router

Avg Resp Time:

Packet Loss: 100 %

CPU Load: 10 %

Memory Used: 91 %

Overall Hardware Status: Up

Top-Level Network Map

[HELP](#)



Worldwide Map of Orion Nodes

[HELP](#)



FEATURE HIGHLIGHTS

- Speeds detection, diagnosis, and resolution of network issues—before outages occur.
- Monitors and displays response time, availability, and performance of network devices.
- Automatically discovers and maps network devices, and typically deploys in about an hour.
- Improves operational efficiency with out-of-the-box, customizable dashboards, alerts, and reports.
- Provides an enhanced view of your network with automatic capacity planning and topology-aware intelligent alerts.

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SolarWinds in the Enterprise

SolarWinds offers a wide portfolio of [IT management products](#) to meet the needs of enterprises. Each SolarWinds product:

- Is purpose-built to make the IT professional's job easier.
- Eliminates the complexity found in traditional enterprise software—making it easier to find, buy, deploy, and maintain.
- Connects with our community to help guide product development.
- Delivers increasing value over their lifetime by constantly evolving to users' needs.

SolarWinds offers IT management solutions across [network management](#), systems, applications, storage and virtualization management, help desk, remote IT administration, and network security areas to help enterprises build a scalable architecture that provides high operational efficiency and measurable ROI.

About SolarWinds

[SolarWinds](#) (NYSE: SWI) provides powerful and affordable IT management software to customers worldwide. Focused exclusively on IT pros, we strive to eliminate the complexity in IT management software that many have been forced to accept from traditional enterprise software vendors. SolarWinds delivers on this commitment with unexpected simplicity through products that are easy to find, buy, use, and maintain, while providing the power to address any IT management problem on any scale. Our solutions are rooted in our deep connection to our user base, which interacts in our online community, [thwack®](#), to solve problems, share technology and best practices, and directly participate in our product development process. Learn more at <http://www.solarwinds.com>.

Resources for Additional Learning

1. White Paper: [The ROI of Network Management & Monitoring](#)

2. **White Paper:** [Rightsizing Your Network Performance Management](#)
3. **Research Brief:** [Seven Priorities for Network Management](#)
4. **IDG Survey Results:** [Network Management Costs Overshoot User Needs](#)
5. **SlideShare:** [Maximizing the ROI of Network Management Solutions](#)
6. **NMS Buyer's Guide:** [Network Management Software Buyer's Guide](#)
7. **Video:** [Licensing for SolarWinds Network Performance Monitor](#)
8. **NPM Installation:** [NPM Installation and Deployment in 1 Hour – Tutorial](#)