Network Performance Management Requirements of Tomorrow's Digital Enterprise

An ENTERPRISE MANAGEMENT ASSOCIATES® (EMA™) White Paper
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EXECUTIVE SUMMARY

This white paper examines current and emerging enterprise requirements for network performance management tools. Based on new research from Enterprise Management Associates, this paper will guide readers through the platform and functionally capabilities they should look for when selecting a solution. It also reviews the capabilities of OpManager, a leading network performance management product from ManageEngine.

ENTERPRISES SEEK INTEGRATED, MULTIFUNCTION NPM PLATFORMS

Enterprise Management Associates (EMA) recommends that enterprises take a consolidated and integrated approach to network performance management (NPM) tool strategy, leveraging cohesive and multifunction tools instead of discrete, single-function tools. This gives network operators tools with united workflows and a common dataset.

EMA's latest research found that 64% of enterprises prefer this approach to NPM tools. For instance, 43% want a fully integrated, multifunction NPM platform, and 21% prefer a tightly-integrated suite of NPM tools from one vendor.[1]

Unfortunately, many enterprises struggle to achieve this NPM tool strategy. EMA's research found that the typical enterprise has three to six NPM tools installed. Many of these tools have limited value, since the typical enterprise only uses two to four of those tools regularly.

There are a few reasons why enterprises struggle to consolidate. For instance, budget constraints might force them to use a handful of simple open-source tools instead of multifunction commercial tools. Another challenge is the fact that enterprises collect a variety of data sources with NPM tools. EMA research found that the most popular sources of data collected and analyzed by NPM tools are management system APIs (e.g., data collected from other IT management tools), device metrics collected via SNMP MIBs and traps, network flows, network tests, and log files.

Enterprises also apply NPM tools to a variety of use cases. The top three use cases today are capacity planning, network health and performance monitoring, and security monitoring. Troubleshooting is also an essential use case. More and more, enterprises are also finding NPM tools useful for assessing application requirements before migrating them to the cloud.

OpManager From ManageEngine: A Multifunction NPM Platform

OpManager from ManageEngine is a good example of a unified, multifunction NPM platform that integrates with other ManageEngine products for a broader, tightly combined IT operation management suite.

The core OpManager solution monitors network and infrastructure elements, such as routers, switches, servers, and virtual machines via SNMP MIBs and traps, APIs, and other metric collection methods. OpManager also features several add-on modules for expanded operations, starting with NetFlow Analyzer, a bandwidth monitoring tool that supports network traffic analysis and forensics.

OpManager has other add-on modules that go beyond the scope of NPM. For instance, Network Configuration Manager gives IT professionals integrated network change and configuration management. Firewall Analyzer adds firewall policy analysis, firewall change control, and security management to OpManager. OpUtils adds IP address and switch port management to OpManager.

Application Manager, another ManageEngine product, integrates with OpManager for end-to-end application performance monitoring of servers, virtual machines, cloud applications, web servers, application services, and code-level application performance monitoring. It also provides active, synthetic transaction monitoring for end-user experience management.

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1 Unless otherwise noted, all data cited in this paper was originally published in the EMA research report, "Network Performance Management for Today's Digital Enterprise," May 2019.

NPM PLATFORM REQUIREMENTS

When evaluating consolidated NPM platforms, network managers must investigate several key capabilities. EMA research identified some of the most important enterprise requirements of NPM tools. Keep the following in mind.

Correlation of Multiple Network Data Sources

Enterprises collect and analyze several classes of data with NPM tools. Enterprises should adopt tools that can correlate insights across these classes of data. In fact, 98% of enterprises have at least one NPM tool that can correlate insights from two or more classes of network data, and 50% say this correlative capability is essential to network operations.

When an NPM tool can correlate multiple data sources, network managers can glean insights that might go unnoticed when tool analysis covers only one data source. For instance, EMA research found that multi-data correlation in a single tool helps network managers understand application performance (93%), detect security events (90%), understand the end-user experience (82%), detect anomalies (82%), and proactively prevent network problems (80%).

ManageEngine's OpManager can correlate multiple data sources, such as device metrics, network tests, and NetFlow (via the NetFlow Analyzer add-on module).

Essential Technical Functionality

EMA research found that four classes of technical functionality are essential to users of NPM tools, based on the opinions of survey respondents.

Traffic volume analysis is the most highly valued functionality. It helps engineers understand how the volume of traffic affects network health and performance. It can also reveal trends important to capacity planning. Traffic volume spikes can also be indicators of security events, so traffic volume analysis can support security monitoring.

Network traffic visualization, or network conversation reporting, is the second-most valued functionality. Engineers use traffic visualization to understand the scope of various communications across the network. It can reveal potential bottlenecks and anomalous communications. For instance, traffic visualization can quickly reveal that some links are oversubscribed when secondary links are underused. Also, traffic conversation reporting will highlight a web server directly communicating with a database, which is an immediate cause for concern.

Advanced analytics is the third leading class of technical functionality, and one that is becoming a higher priority for many enterprises. NPM vendors are increasingly investing in new methods of event correlation, machine learning, and anomaly detection to empower users of their products. These analytical capabilities can reduce signal-to-noise ratios, provide some automated root-cause analysis, and offer guided remediation of trouble.

Finally, the fourth-most popular functionality is end-to-end path analysis. Such a feature will help engineers understand how network paths impact performance. They can compare the overall latency associated with different paths across the network, and adjust traffic engineering to optimize those paths.

NPM AND THE BROADER ITOM TOOLSET

Context is essential to NPM tools because the network is just one component of a larger service delivery platform. The network impacts security, application performance, end-user experience, and more. Enterprises do not want their NPM platform to exist within a silo.

EMA research has long found that enterprises integrate NPM tools with other IT management platforms to enable cross-domain IT operations. Management system APIs are, in fact, the most valuable source of data for NPM tools, more important than SNMP MIBs, flows, and packets.

Enterprises collect data from a variety of IT systems with their NPM tools. The two most popular integrations are IT service management (40%) and security monitoring (38%).

OpManager integrates with two other ManageEngine solutions. ManageEngine ServiceDesk Plus, ManageEngine's ITSM solution, integrates with OpManager to ensure that network outages generate service desk notifications and support tickets, with advanced features for categorizing, prioritizing, and routing tickets based on predefined network events.

Application Manager integrates with OpManager to correlate application performance with network performance. The vast majority of network managers try to correlate network performance with application performance. For instance, 20% of enterprises correlate these insights by integrating NPM and APM tools. Another 21% claim to have NPM tools that provide application performance insights intrinsically. Many others do this correlation manually. ManageEngine integrates OpManager and Application Manager for this essential correlation, simplifying the process of understanding how networks and applications interact.

OpManager also offers add-on modules that address several integration priorities. Firewall Analyzer monitors firewall logs and correlates security events with performance, which reflects network managers' interest in integrating NPM with security monitoring. The Network Configuration Manager module enables the correlation of network health and performance with network configuration changes. Twenty-eight percent of enterprises say this integration is important.

EMA PERSPECTIVE

This paper has reviewed some of the essential capabilities that enterprises should seek in NPM tools. These tools should be tightly integrated, if not delivered as part of a multifunction platform. They should also correlate multiple data sources and provide some core functionality, including traffic volume analysis and network traffic visualization.

Based on a review of ManageEngine OpManager's capabilities, EMA believes the product addresses many of the requirements reviewed here. Although EMA does not recommend specific products, enterprises should evaluate OpManager against their own internal requirements and determine whether it suits their needs.

ABOUT MANAGEENGINE

ManageEngine is the enterprise IT management division of Zoho Corporation. Established and emerging enterprises—including 9 of every 10 Fortune 100 organizations—rely on our real-time IT management tools to ensure optimal performance of their IT infrastructure, including networks, servers, applications, desktops, and more. We have offices worldwide, including the United States, the Netherlands, India, Singapore, Japan, China, and Australia, as well as a network of 200+ global partners to help organizations tightly align their businesses and IT.

For more information, please visit www.manageengine.com, follow the company blog at blogs.manageengine.com, and visit us on LinkedIn at www.linkedin.com/company/manageengine, Facebook at www.facebook.com/ManageEngine, and Twitter @ManageEngine.

About Enterprise Management Associates, Inc.

Founded in 1996, Enterprise Management Associates (EMA) is a leading industry analyst firm that provides deep insight across the full spectrum of IT and data management technologies. EMA analysts leverage a unique combination of practical experience, insight into industry best practices, and in-depth knowledge of current and planned vendor solutions to help EMA's clients achieve their goals. Learn more about EMA research, analysis, and consulting services for enterprise line of business users, IT professionals, and IT vendors at www.enterprisemanagement.com or blog.enterprisemanagement.com. You can also follow EMA on Twitter, Facebook, or LinkedIn.

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