Modern IT Operations Teams Require a Unified Network Monitoring Platform

An ENTERPRISE MANAGEMENT ASSOCIATES® (EMA™) White Paper
Prepared for Progress

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EXECUTIVE SUMMARY

This white paper, prepared for Progress, explores why IT organizations should adopt unified, multifunction network monitoring solutions to improve overall effectiveness of the network management team. It also offers a guide to defining requirements for such a monitoring solution.

THE CHALLENGES THAT DRIVE NETWORK MONITORING REQUIREMENTS

Now more than ever, the network is the platform for digital enterprises. Applications drive business processes, transactions, revenue, and innovation. Digital enterprises rely on networks to connect employees, partners, and customers to those applications. Given this state of play, network health and performance directly affect business performance. If the network goes down, the business goes down.

IT organizations must acquire network operations tools that can protect network health and performance. When building a tool strategy, network managers must think about the problems that plague network operations teams today. According to Enterprise Management Associates (EMA) research, the single biggest issue that undermines network operations is the budget.[1] One-third of network managers say this is a top challenge. Next, nearly one in three network managers say their teams are plagued by a skills gaps. Their people simply don't have enough network management expertise. One-quarter of network managers say poorly implemented network infrastructure is a significant problem. Finally, one in five network managers struggle severely with network management tool fragmentation.

Network managers should keep these challenges in mind as they shape their tool strategies:

- Take a comprehensive approach to defining management tool requirements. Given budget challenges, network managers won't have the flexibility to fill gaps with new tools.
- Look for tools that are usable by a wide range of users. Given the issue of the network team skills gap, tools should be easy to use, regardless of network expertise.
- Look for deep visibility into infrastructure. Given the prevalence of flawed network implementations, network managers must see what's happening with problematic devices and oversubscribed links.
- Pursue a unified toolset that covers a wide number of use cases and offers end-to-end visibility. This will counter the tool fragmentation that so many network teams encounter.

WHY UNIFIED NETWORK MANAGEMENT TOOLS ARE ESSENTIAL

A unified, multifunction network monitoring and management tool can integrate workflows and provide end-to-end insights by consolidating the capabilities of a handful of standalone tools. It starts with the ability to discover and inventory network devices and manage the configurations of those devices. Next, these unified tools should be able to collect metrics and events from network devices and detect events and collect network traffic flows. Finally, unified tools should provide workflows for operational monitoring, troubleshooting, and capacity management.

[1] All research cited in this paper was originally published in the EMA report "Network Management Megatrends 2020" in April 2020.

Many enterprises use multiple tools to cover these requirements, leading to inefficient network operations. Large toolsets add complexity to management. EMA research recently found that network operations teams with larger toolsets struggle more often with tool fragmentation, poor collaboration with the rest the IT organization, and poorly defined network management processes.

EMA research has long found that tool fragmentation has remained a consistent issue for network managers, but network operations teams are making progress with consolidation. Figure 1 shows that over the last two years, the number of IT organizations that use 11 or more network monitoring and troubleshooting tools has shrunk, while the number of organizations use just 4 or 5 tools has increased.

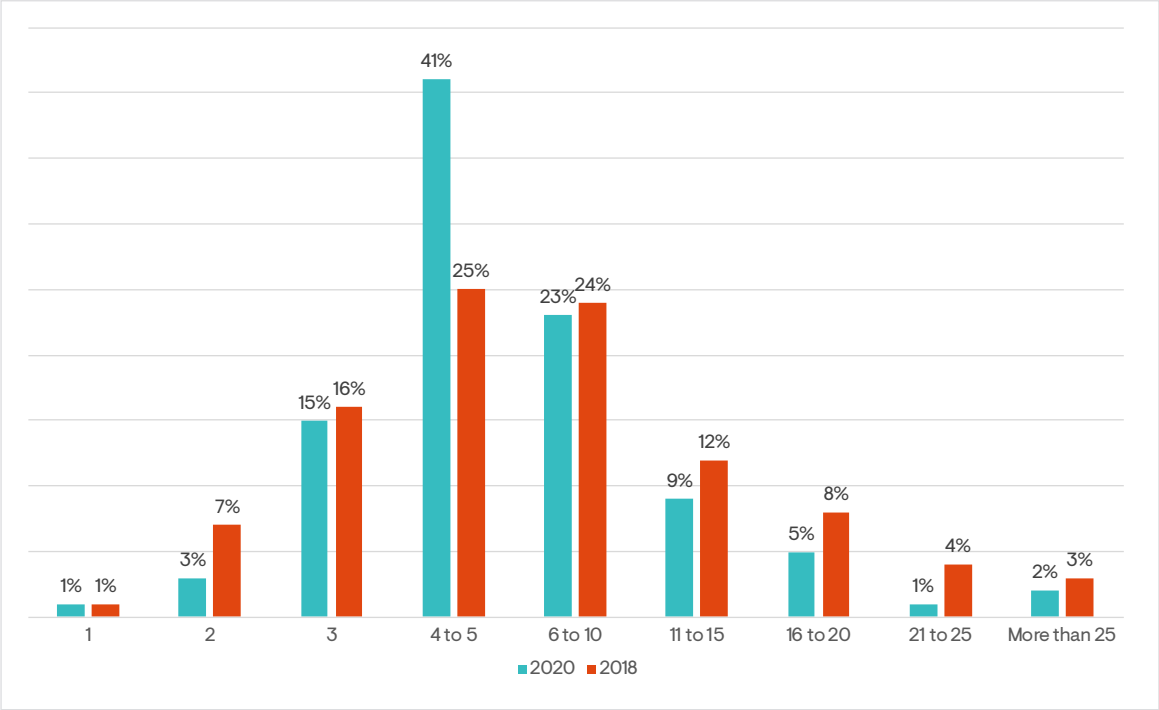

Figure 1. Number of tools used to monitor and troubleshoot the network

EMA recommends that network managers look for ways to consolidate tools wherever possible. This can be a gradual process. For instance, when refreshing or upgrading a monitoring tool, the network team should look for opportunities to replace other discrete legacy tools. Perhaps engineers are using an open-source tool for network discovery and mapping. A new unified network monitoring tool with an integrated discovery and mapping feature could replace that tool.

Figure 2 reveals that this approach to tool procurement is a best practice. Successful network operations teams are more likely to seek out unified, multifunction platforms when procuring network management solutions. Less successful NetOps teams prefer standalone, best-of-breed tools with little integration.

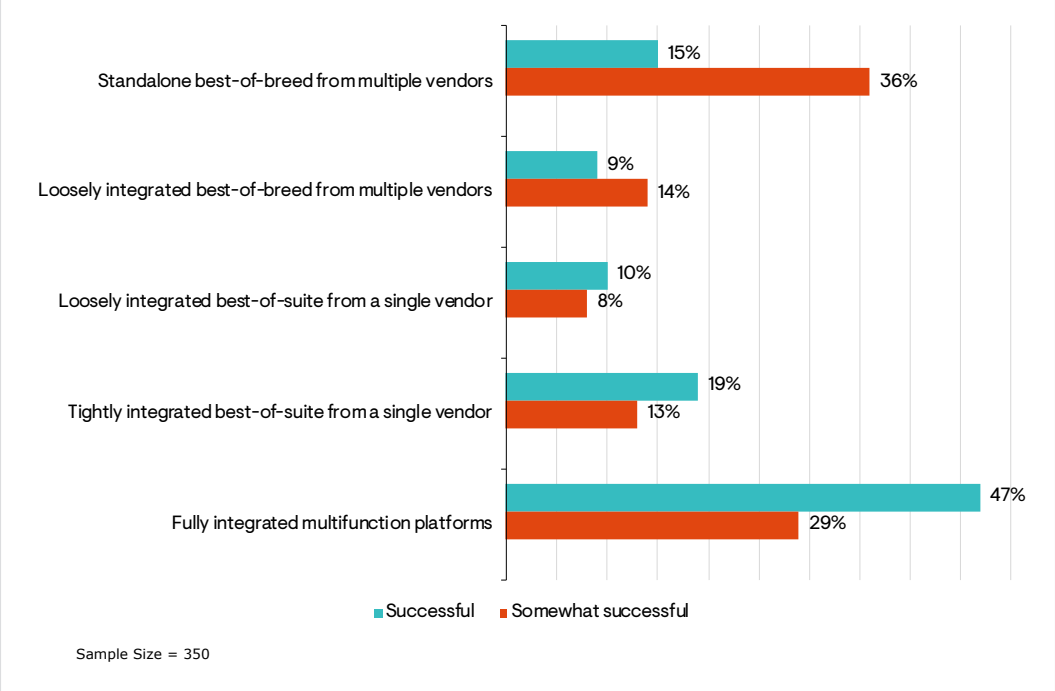

Figure 2. Successful network teams prefer tightly integrated network management tools

DEFINING REQUIREMENTS FOR A UNIFIED NETWORK MONITORING SOLUTION

Every IT organization will have its own specific needs, but EMA research identified several core requirements that NetOps teams should look for when adopting unified network monitoring tools.

DIVERSE DATA COLLECTION

SNMP MIBs and traps are the foundation of network monitoring and troubleshooting, but network managers should collect multiple types of data for full visibility. Network device logs are another important source of network metrics and events. API integration with other IT management systems is essential, too. For instance, this can allow events detected in a monitoring tool to open tickets in an IT service management platform.

The collection and analysis of network flows, such as NetFlow and IPFIX, can provide a high-level view of network traffic flows, traffic volumes, and source and destination insights. Configuration data can be essential to troubleshooting, especially the ability to detect and compare changes. Finally, DNS query logs and other metrics from core network services can reveal common root causes of connectivity problems.

ESSENTIAL AVAILABILITY MONITORING CAPABILITIES

EMA research identified several critical functional requirements for network monitoring and management tools. Every network management team is unique, but the following is a good starting point for defining one's requirements.

For network fault and availability monitoring, network managers should look for tools that can reveal network conversation insights, such as who is talking to whom. Thirty-five percent of network managers told EMA that this capability is one of the most important functions in such a tool. Also, 31% said they absolutely require dashboard drilldown capabilities and graphical dependency map workflows. These capabilities allow a user to go from a high-level view of the network to an individual device or traffic flow and investigate problems quickly.

Auto-discovery of endpoints, interfaces, and applications is also a critical availability monitoring capability for 31% of network managers. Networks are complex and support countless applications, and change is constant. Tracking all the devices, connections, and applications can be impossible, so auto-discovery is essential. Automated notifications and escalations (28%) are also critical capabilities for network managers. When something goes wrong, it's essential to get eyes on the problem quickly. Automated notifications can speed up response times. Also, if a problem is complex, an automated escalation can bypass administrators and engage relevant subject matter experts quickly.

Finally, availability monitoring tools should provide insight into network topologies and track network device inventories across the infrastructure. At least 26% of network managers say this is critical because they need to see everything in an organized, logical way. This allows them to answer questions such as: How do the components of the network fit together? How do device types across the network function?

ESSENTIAL PERFORMANCE MONITORING CAPABILITIES

In a performance monitoring solution, 36% of respondents believe that performance data trending is a critical capability. They need a feature that can compare performance data over time, allowing them to spot patterns and anomalies that can point to the root cause of a problem or reveal a capacity issue on the horizon.

Twenty-nine percent of network managers say that application performance insights are essential to performance management. Network managers can use this visibility to focus on network issues that impact the most important applications. It can also help a network manager draw connections between application problems and the network during troubleshooting.

ESSENTIAL NETWORK MANAGEMENT PRODUCT FEATURES

Network mapping and visualization is the most essential feature in a network management product, according to EMA research. More than 36% of network managers consider this critical. Maps should be easy to build, if not automatically created by the tool. The maps should be flexible, customizable, and infused with network data and metrics. Network managers should be able to drill down from a map view into individual parts of the network and start a workflow.

Other features that network managers consider critical are customizable reports (29%), collaboration workflows (29%), APIs for integrations with other tools (29%), and customizable dashboards (22%).

ESSENTIAL PLATFORM REQUIREMENTS

Beyond functionality and features, network managers should think about the platform characteristics of a unified network monitoring solution. EMA research found that flexible deployment is at the top of the list for 36% of network managers. For instance, some IT organizations will prefer an appliance, while others will want to deploy a tool as a virtual machine on a hypervisor. This flexibility can make it easier to get a tool up and running, which in turn accelerates one's time to value.

Tool resilience is critical to 33% of network managers. These unified monitoring solutions must be stable so that bugs and software faults don't undermine visibility and hurt business operations. Given that downtime is unacceptable for critical monitoring tools, these solutions should also support high-availability configurations so a backup version can take over if the main server goes down.

Thirty-two percent of network managers say ease of use is critical in their tools. Network operations teams chronically struggle with skills gaps, so a tool's hold be useful to as many people as possible. For instance, if a tool can empower low-skilled administrators to take on more responsibility, the whole IT organization will benefit. Also, training requirements for a tool should be minimal, or that training should be easily accessible.

Low maintenance cost is essential to 30% of network managers. This means that the time and recurring costs spent on administering a tool should be minimal. Product updates and upgrades should not be painful to install, and adding monitoring profiles for new devices and services should be simple, if not automated.

Finally, 28% of network managers are especially concerned about affordable prices and support costs. Budget is a major challenge these days, so a unified network monitoring tool shouldn't break the bank.

EMA PERSPECTIVE

Network teams are under pressure to deliver a high-quality network for critical applications. EMA research has established that an integrated, multifunction network monitoring platform will support this mandate more effectively.

Network managers who rely on too many discrete tools simply aren't as effective at delivering quality networks. They are less likely to be successful with network operations in general, and they experience several key network operations challenges more acutely.

EMA recommends that network managers look for opportunities to consolidate network management tools. Network managers should approach this consolidation carefully. This paper has offered a guide for what requirements a network manager should focus on, but IT organizations should match these to what their own environments require. They may have unique needs. Network managers should ask current and prospective vendors how they deliver a unified network monitoring solution, including the use cases they support, the key technical features they offer, and the platform capabilities they deliver.

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About Enterprise Management Associates, Inc.

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