Digital Transformation

Hybrid IT Monitoring Is Critical

An ENTERPRISE MANAGEMENT ASSOCIATES® (EMA™) White Paper
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Table of Contents

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Executive Summary

To support digital transformation IT organizations will be asked to adopt new technologies and architectures, including software-defined networking, hybrid clouds, and the Internet of Things. Many IT organizations are finding that their existing infrastructure monitoring tools do not fully support these technologies. While many IT professionals will be tempted to buy new tools to operationalize these technologies, they may benefit from adopting hybrid infrastructure monitoring tools that can be extended to support new digital infrastructure. This white paper explores these issues in detail and reviews the suitability of ScienceLogic, a leading provider of hybrid infrastructure monitoring, for addressing these management gaps.

The Technologies You Take With You on a Digital Transformation Journey

More and more enterprises find themselves caught up in a wave of digital transformation where business leaders and IT organizations partner to rapidly innovate and support new business models. For example, a sports apparel company may embed health tracking sensors in its clothing, which will require infrastructure to collect and analyze the data generated by those sensors. A car manufacturer may want to deploy new applications to support location-based services. A brick-and-mortar university might need to scale out its content delivery capabilities to support the launch of an online degree program.

As part of these transformation efforts, IT organizations are leveraging new and existing digital infrastructure to enable the applications that underpin new digital business models. This infrastructure will support the rapid deployment and scaling of new applications developed to support new digital business models. Enterprises will broaden and deepen their use of private, public, and hybrid clouds to give them the elastic compute and storage resources they need. These efforts will lean on cloud providers like Amazon Web Services (AWS) and Microsoft Azure, new DevOps-friendly technologies like software-defined networking (SDN) and Docker containers, open source cloud orchestration technologies like OpenStack, and new technology paradigms like the Internet of Things (IoT). Furthermore, as IT organizations adopt these technologies they must ensure that the tools they use to manage, monitor, and troubleshoot IT infrastructure can adapt to them.

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New Enterprise Management Associates (EMA) research, "Network Management Megatrends 2016: Managing Networks in the Era of the Internet of Things, Hybrid Clouds, and Advanced Network Analytics," confirms enterprise adoption of many of these technologies. For instance, 35% of enterprise network infrastructure professionals said their organizations have already deployed a hybrid cloud into production. To support these hybrid clouds, 55% of network infrastructure professionals in these hybrid cloud organizations said they are deploying network virtualization overlays. More telling, however, is that 51% are deploying new performance management software to support these hybrid clouds. This points to the realization that existing management tools are not necessarily ready for the hybrid cloud.

SDN gives enterprises a programmable network that can provide rapid connectivity and network services to new applications. EMA research found that more than 90% of enterprises are active with

SDN in the data center and the WAN today. While most are still in early stages of an SDN journey, a significant minority fully deployed it. Thirty-one percent (31%) have a fully deployed software-defined WAN, 27% have fully deployed data center network virtualization overlays, and 26% have fully deployed data center SDN underlays (for example, Cisco ACI).[1]

IoT is another potential pillar of digital transformation. The ability to collect data from and extend applications to devices of all shapes and sizes creates new business opportunities, and EMA's Network Megatrends 2016 research found that IoT is already pervasive. Eighty-seven percent (87%) of enterprise network infrastructure teams are supporting IoT today, and the majority of them are providing leadership on IoT planning and implementation. However, not all networks are prepared for IoT. Enterprise IT teams are adopting a number of technologies to support it. Forty-eight percent (48%) are adding new IoT device management systems, 47% are upgrading network bandwidth, 43% are adding new network connectivity, and 40% have added new IoT performance monitoring systems.

New Digital Technologies Come With New Management Challenges

The technologies that enterprises implement for digital transformation come with their fair share of management challenges. For instance, network operations lacks visibility into hybrid networks. EMA's Network Megatrends 2016 research asked network managers who support hybrid clouds to identify their biggest networking challenges. They pointed to a lack of end-to-end, multi-site network visibility and troubleshooting as their second biggest, with 26% identifying it as a top challenge.

SDN also presents operational problems for network operations. EMA's SDN research found that 60% to 70% of early adopters determined that their existing network planning, engineering, monitoring, and troubleshooting tools do not fully support SDN. Some enterprises are modifying their existing tools to close their management gaps, while others are acquiring specialized SDN management tools.

Network virtualization overlays are a particular area of concern for SDN management, since they add a new layer of infrastructure and complexity to IT operations. EMA asked overlay adopters to identify their top management challenges. End-to-end monitoring across physical and virtual network elements emerged as the second biggest problem (35% of early adopters) and end-to-end troubleshooting across physical and virtual network elements (32%) was the third biggest challenge with overlays.

Finally, IoT introduces its own collection of management challenges. Forty-four percent (44%) of network infrastructure professionals identified limited monitoring of IoT devices as their biggest challenge, making it the number one issue facing IoT network teams. Also, 33% said they consider IoT-related network congestion to be a major challenge.

A lack of visibility is the common theme among all these areas. Enterprises that adopt SDN, hybrid cloud, IoT, and other transformative digital technologies need to make sure IT operations has the tools it will need to monitor, troubleshoot, and manage this new infrastructure.

44% of network infrastructure professionals identified limited monitoring of IoT devices as their biggest challenge, making it the number one issue facing IoT network teams.

[1] EMA, "Managing Tomorrow's Networks: The Impacts of SDN and Network Virtualization on Network Management," December 2015.

Digital Transformation Service Assurance: Take a Unified Approach

Enterprises may be tempted to install new management tools to extend visibility into hybrid clouds, SDN, IoT, and other technologies. EMA warns against this approach. Adding more tools to manage new architectures can do more harm than good. EMA research found that the more tools an IT organization uses to manage the network, the less effective it is.

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The typical enterprise has between 4 and 15 tools in active use for monitoring and troubleshooting their networks, according to EMA's Network Megatrends 2016 research. This excludes so-called shelfware. Those who maintain a smaller, more unified network management toolset are more successful. For instance, EMA found that across all enterprises 40% of all network problems are experienced and reported by end users before network operations is aware of them. The goal should be to get that number to zero. Unfortunately, the number rises to 52% for organizations that use 11 or more network monitoring and troubleshooting tools. On the other hand, this ratio shrinks to 29% in organizations that use just one to three tools.

EMA's research also found that the typical network infrastructure team spends 36% of its time in reactive troubleshooting mode. Again, ideally this number should be as close to zero as possible, but in organizations with 11 or more tools it inches up to 38%. Organizations that use just one to three tools see that number shrink to 33%.

Finally, network stability is a major problem for organizations with large toolsets. Network infrastructure professionals who use 11 or more network monitoring tools suffer from a high rate of outages. Thirty-four percent (34%) reported that they experience several network-related outages per day, and another 28% experience network outages several times a week. On the other side of the spectrum, only 6% of organizations that use one to three tools experience daily outages. Instead, 18% of these network teams said they "almost never" have a network outage, another 21% say they have just one or two outages a year, and yet another 21% only have an outage every couple months.

A unified approach to infrastructure monitoring can help an IT organization improve network operations. Such a tool can consolidate network management tasks. Also, a unified monitoring tool can extend visibility and management beyond the network and into different technology domains in the traditional data center, the private cloud, and the public cloud for a more consolidated approach to hybrid IT operations.

This need for consolidated management is not just a network issue. EMA's Network Megatrends 2016 research found that hybrid IT monitoring capabilities deliver tremendous value to enterprises. EMA asked network managers to identify the product features that add significant value to their organizations. The top five features were:

- Customizable reporting 37%
- Specific support of virtual server environments 35%
- Log file analysis 35%
- Specific support for cloud environments 33%
- Specific support for virtualized network devices 32%

Support for virtual server environments, cloud environments, and virtual networks all point to the value of a unified cross-domain and multi-cloud operations platform. Moreover, customizable reporting is a valuable feature for collaboration with other groups within IT and within the business.

EMA's Network Megatrends 2016 research also found that 26% of enterprises maintain a unified, cross-domain operations center instead of a standalone network operations center. These cross-domain operations centers jointly monitor and troubleshoot servers, storage, networks, applications, and more. Even other enterprises see the value of cross-domain operations. EMA asked those IT organizations that don't have a cross-domain operations center whether they integrate management systems of various IT domains into a cross-domain operations console. The vast majority of them said yes.

Now consider the IT organization partnering with business leaders to pursue a digital transformation initiative. When implementing hybrid cloud, SDN, and IoT, an organization may be tempted to add new management systems to operationalize this technology. However, as the data suggests, new tools lead to complexity that degrades operational effectiveness. It may be impossible to manage all new technologies with existing tools, but IT organizations should at least make consolidated and unified management their first choice.

ScienceLogic: Unified Performance Management for Hybrid IT and Digital Transformation

The road ahead is clear. Enterprises are adopting a variety of new technologies to support digital transformation. An IT organization needs the right tools to manage this new infrastructure. Perhaps the best approach to managing new digital infrastructure is a unified platform that can support new and existing architectures.

ScienceLogic is a leading provider of unified infrastructure monitoring and management solutions. The ScienceLogic platform operationalizes digital transformation by supporting hybrid IT that spans multiple clouds and new emerging technologies.

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The core capabilities of the platform include the discovery, dependency mapping, and monitoring of physical and virtual resources in traditional infrastructure, private clouds, public clouds, and multi-cloud architectures. ScienceLogic offers in-depth monitoring of data center SDN (Cisco ACI), private clouds (CloudStack, OpenStack, VMware vCloud Air), containers (Docker), public cloud providers (AWS, Microsoft Azure, IBM SoftLayer), SaaS (Office 365), converged and hyper-converged infrastructure (Nutanix, Cisco HyperFlex) and other software-defined and cloud technologies. Furthermore, it offers strong unified communications monitoring for voice and video, which protects collaboration. Finally, its customers are adapting ScienceLogic for monitoring IoT applications such as power grids and traffic light controls. ScienceLogic is a leading example of an infrastructure monitoring tool that can be extended to support digital transformation initiatives.

EMA Perspective

Digital transformation is all about agility. To compete in today's market, many enterprises must rapidly formulate and execute new business models. This process will require an IT infrastructure that can continuously deploy new applications to support these business models.

As a result, enterprises are increasingly deploying next-generation infrastructure solutions including SDN, hybrid cloud, and IoT. EMA research determined that monitoring and troubleshooting these technologies is a significant challenge. While many IT organizations will be tempted to add to an ever-growing collection of tools to close this management gap, EMA suggests another course. Rather than increase complexity by adopting new infrastructure management tools, IT organizations should lean on a unified monitoring platform for hybrid IT that can extend support for new technologies like IoT and the cloud. ScienceLogic is a leading vendor for hybrid IT operations that enterprises should evaluate when operationalizing digital transformation.

About ScienceLogic

ScienceLogic is the global leader in hybrid IT monitoring for the network of everything. Over 25,000 global service providers, enterprises, and government organizations rely on ScienceLogic to significantly enhance IT efficiency, optimize operations, and ensure business continuity. ScienceLogic is the first monitoring solution to provide a comprehensive view of all IT components through a single pane of glass, whether they reside in a public cloud environment or on-premises. With over 1,500 dynamic management apps and custom dashboarding capabilities, we deliver the scale, resiliency, and automation needed to simplify the constantly evolving task of managing IT resources, services, and applications.

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 blogs.enterprisemanagement.com. You can also follow EMA on Twitter, Facebook or LinkedIn.

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