

Network Performance Monitoring is Becoming a Requirement

The 451 Take

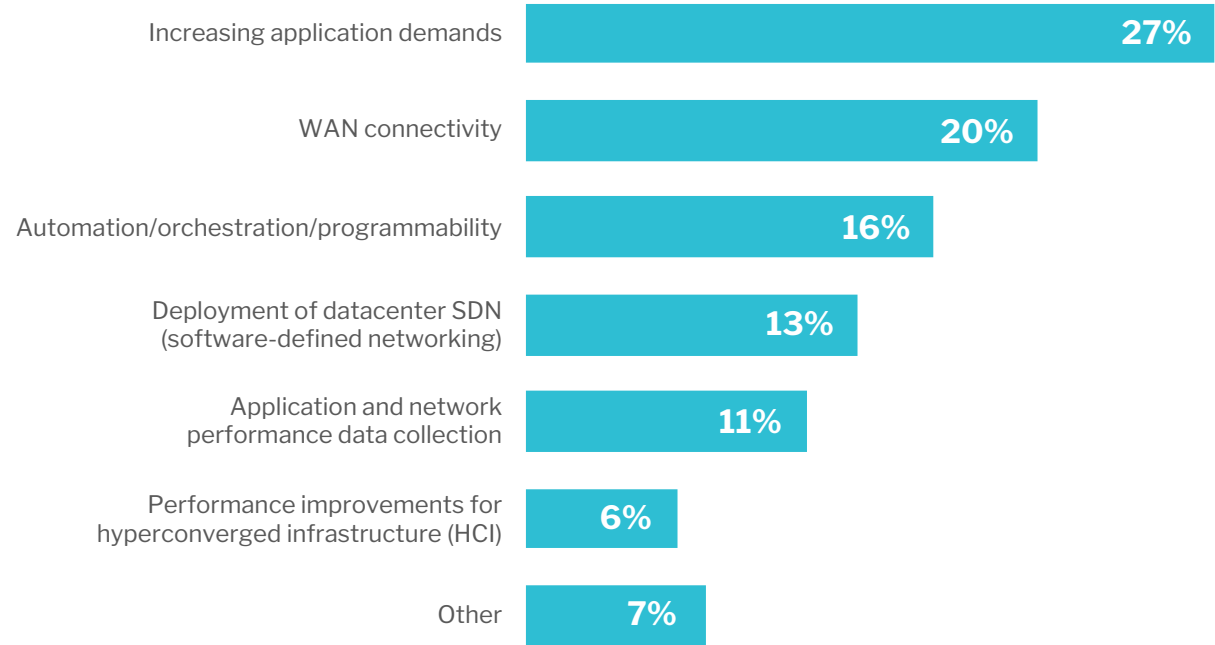
Enterprises must adapt their performance monitoring to meet new requirements stemming from the diversity of application environments, as well as how applications, things and people are connected over broadband, MPLS and mobile networks. Without reliable and deep application and network performance monitoring, enterprises won't be able to adequately ensure that performance levels are maintained, nor will IT be able to detect and respond to performance issues. Additionally, enterprises without robust performance monitoring will be limited in terms of how they can apply automation in support of the businesses need for rapid application delivery.

The diversity of cloud-native applications, coupled with how users are accessing company-owned applications and those hosted in cloud services, changes how IT ensures application delivery. In a 451 Research Voice of the Enterprise survey, 27% of IT professionals said application demands are driving spending, while only 11% said they were spending on application and network performance management. That's a common disparity when it comes to enterprises addressing application and network performance improvements and monitoring.

Networking Issues Driving Spending

Source: 451 Research, Voice of the Enterprise: Servers and Converged Infrastructure, Budgets & Outlook 2018

Q. Which of the following networking issues are the biggest driver of your organization's spending and investment strategy?



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Business Impact

CLOUD-NATIVE APPLICATIONS ARE DYNAMIC. Cloud-native applications are dynamic in the ability of their microservices components to independently scale by adding and removing instances on demand, or potentially becoming distributed across multiple public and private cloud services. Cloud-native applications also operate in a diverse set of environments such as bare metal, virtual machines and containers on-premises, or in cloud services that sit behind load-balanced network infrastructure. The dynamism and diversity of environments complicates performance monitoring while simultaneously increasing the need for it.

THE DISTANCE BETWEEN APPLICATIONS AND USERS IS CHANGING. Organizations are delivering more applications via internet-based IaaS and SaaS models, and IT needs to monitor network and application performance to ensure that user expectations are being met. Enterprises can target application instances into cloud regions that are close to where users are accessing the network, or use technologies like SD-WAN and network-as-a-service to improve performance between users and cloud locations. But without robust monitoring, IT cannot determine the effectiveness of these strategies.

CLOUD-NATIVE DRIVES NEW MONITORING DEMANDS. Dynamism and diversity in applications means performance monitoring will be equally dynamic and diverse as the application scales and moves. Ensuring there is adequate monitoring in place is a difficult task, even in largely static environments. The additional wrinkle in cloud adoption or migration is the dependence on multiple segments of LAN, WAN and internet, combined with a reliance on third-party SaaS providers that host business-critical apps. SaaS applications, which enterprises typically can't instrument, are particularly difficult to measure.

NEW NETWORK TECHNOLOGIES MASK PERFORMANCE MONITORING. The middle-mile network between the client and the servers they are using has always been an opaque cloud where traffic disappears on one side and reappears on the other. SD-WAN further obfuscates network traffic into overlay networks, which provides connectivity benefits but masks the visibility necessary for network performance monitoring. While the paths used for the underlying network used by the SD-WAN may be modeled, there is no determinant way to discover which path through the SD-WAN overlay a specific application took, which hampers performance monitoring and makes correlating overlay to underlay traffic impossible. Many SD-WAN products have their own monitoring dashboard, which may be sufficient in some deployments but may lack the capabilities and reach needed for comprehensive enterprise monitoring, and the data is not always easily available for processing by a third-party tool.

Looking Ahead

Disruptive and transformative IT projects succeed when they are implemented as disciplined processes. For example, the primary benefits claimed with SD-WAN are improved network performance and reliability, but without measuring application performance over the wide area before deployment to get a baseline, and then again after the deployment, there's no reliable way to see if performance changed and to learn what benefit you're getting from the SD-WAN deployment. Application and network performance management tools help IT understand how their networks are performing and are an integral component in determining which potential strategies will provide the greatest improvements.

Combining data sources like internet routing topologies with network flow analysis and synthetic transactions provides a more complete picture of the factors that impact network performance compared with any single method, plus the combined analysis provides insight into where to begin addressing performance issues and which changes are successful. SD-WAN, for example, can address many WAN issues, but problems in the underlay network are difficult to understand without performance monitoring of both the underlying network and the SD-WAN overlay.

The lessons learned with application and network performance monitoring can be applied to any deployment scenario, regardless of where the enterprise starts. As IT moves toward deeper automation in the network, servers, storage and application lifecycle management, a disciplined approach that includes application and network performance monitoring will have an increasing return on investment as more benefits are realized.



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