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MONITORING NETWORK HEALTH IN THE RAPIDLY EVOLVING DIGITAL LANDSCAPE: A PARADIGM SHIFT

Today's transition from traditional network infrastructures to sophisticated cloud based environments—with a move towards Software-as-a-Service (SaaS) and Platform-as-a-Service (PaaS) offerings, increased remote workforces, and the proliferation of Internet of Things (IoT) devices—is making the network landscapes exponentially more complex. The consequences of network disruptions have become more pronounced, necessitating a more rigorous and nuanced approach to network performance monitoring. Innovative strategies to monitor, analyze, and optimize network health are critical to ensure that the digital ecosystem functions seamlessly, delivers uninterrupted services to users, and supports business continuity.

As enterprises move beyond traditional network infrastructures to cloud based architectures that promise greater scalability and flexibility, network performance monitoring strategies must adapt to keep up. SaaS and PaaS solutions have taken center stage as businesses focus on streamlining operations to stay competitive and boost profitability. Meanwhile, IoT technology continues to expand its footprint, with a market size that's forecasted to reach $2.37 trillion by 2029.[1] Taken together, these developments require a new paradigm in how networks are monitored and managed; the underlying systems must be not only resilient and responsive to the current landscape, but also strategically prepared for the evolving demands of the future.

TOP NETWORK PERFORMANCE CHALLENGES BUSINESSES FACE TODAY

With the rise of virtual interactions in the digital workspace, maintaining optimal network availability is fundamental in ensuring consistent access to cloud services, video and VoIP connectivity, and SaaS applications. But for many businesses, doing so is easier said than done. The increasing complexity of network infrastructures has led to more complex performance monitoring processes, making it harder for businesses to:

✓ Manage complex hybrid and multi-cloud environments:

As modern network architectures evolve, many businesses struggle to maintain seamless network performance across disparate cloud services. Each service has its own set of tools, security protocols, and metrics, making it difficult to assure performance and reliability across the varied data transit routes.

✓ Monitor accuracy in real-time:

Today's complex network infrastructures make it harder to quickly identify and pinpoint problems. Without real-time access to precise and actionable data, organizations struggle to respond swiftly to performance issues, which can lead to prolonged downtime and negative user experiences.

✓ Secure their IT ecosystem

As network parameters expand, so do the security threats. "Your network is the heart of your organization—and a tempting prize for bad actors," says SDN expert Narayan Annamalai. "In the last year alone, network security failures have led to downed websites, delayed flights, unavailable video games, and much more."[2] he adds. Without proactive and continuous monitoring protocols in place, businesses cannot adequately protect their digital assets in today's evolving threat landscape.

✓ Achieve end-to-end visibility

"Enterprises are accountable for the data that travels on their networks," says tech expert Ben Lutkevich. "As this data becomes more complex, network monitoring becomes more difficult, and potential threats become more likely," he adds. Without complete visibility, IT teams struggle to effectively manage and support the digital ecosystem. "Having network visibility allows the enterprise to parse noisy data environments and ensure sensitive data is accounted for and properly secured," explains Lutkevich.[3]

A NEW APPROACH TO NETWORK PERFORMANCE MONITORING

According to a recent Salesforce report, 71 percent of enterprise IT teams are shifting from "a technology-providing cost center to a value-based service brokerage," as network performance takes

on an increasingly critical role in business operations. With that, IT teams must be ready, willing, and able to proactively address issues before they impact end users while strengthening the network for future complexities.[4]

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Given the increasingly complex network landscape, a new approach to network performance monitoring is required. While key network health metrics such as availability, latency, jitter, throughput, and error rates are essential, those alone aren't enough in today's intricate network environments. A broader spectrum of performance indicators is needed to ensure optimal network health and business continuity within and beyond the network, including:

✓ Application performance
Beyond basic responsiveness and uptime, measuring user engagement and the interaction quality with cloud-hosted apps is essential. These advanced analytics offer insight into user behavior patterns, which in turn can inform infrastructure adjustments for better service delivery.

✓ Accessibility
As workforces become increasingly distributed, measuring the ease with which users access cloud services and collaboration applications helps to ensure that all team members, regardless of their location, can efficiently and effectively interact and fulfill their job requirements.

✓ Bandwidth Use
In addition to assessing network capacity during peak times, IT teams must also consider how efficiently the data flows across different network segments and how well the network adapts to fluctuating demands without compromising on service quality.

✓ Security and Compliance
With the rise of stringent data protection regulations, performance monitoring must include robust security protocols and compliance checks that ensure not only the secure transmission and handling of data, but also that the network complies with relevant laws and industry standards.

✓ Distributed Workforce Collaboration

As the Work from Anywhere (WFA) model becomes commonplace, ensuring consistent performance and reliability across all platforms and ecosystems, whether cloud or multi-cloud-based, co-located, on-premises, or facilitated through collaboration tools like Zoom, Teams, and WebEx, is essential.

TRANSFORMATIVE STRATEGIES FOR NEXT-LEVEL NETWORK PERFORMANCE MONITORING

A resilient network infrastructure requires a strategic and proactive approach to network performance monitoring that ensures every click, every call, and every connection is not just functional, but also frictionless for the end user. To achieve this, businesses must not only reduce MTTR (Mean Time To Repair) and MTTI (Mean Time To Identify) to ensure they find and repair abnormalities before they affect users or customers, but also implement advanced analytics and intelligent automation that preemptively identify potential issues and streamline the resolution process.

Here are four strategies businesses are adopting to enhance network performance and reliability:

1. Implement continuous and automated monitoring systems

With real-time insights into network performance, organizations can detect and address irregularities instantaneously. Automation not only streamlines this process, but also minimizes human error and overall response time. With continuous monitoring, businesses can proactively address issues, reduce downtime, and radically boost network reliability.

2. Use artificial intelligence (AI) and machine learning (ML) for predictive analytics

AI and ML offer advanced capabilities for pattern recognition and predictive modeling to proactively detect anomalies. By harnessing these technologies, businesses can identify and address potential problems before they impact users and significantly improve network stability. "Traditional methods may take several weeks or months to identify a new pattern in data," says cloud architect Greg Cox. "AI can recognize the new pattern by the second or third recurrence in the same data flow and adjust future predictions accordingly."[5]

3. Integrate network health monitoring

An advanced network health monitoring system, when integrated with existing IT service management and DevOps processes, gives IT teams a comprehensive view of the entire network. This integrated approach allows IT teams to proactively identify, analyze, and resolve network issues, minimizing downtime and ensuring uninterrupted network performance.

4. Develop a proactive performance network monitoring approach
Above all else, establishing a proactive network management framework is key to bolstering network performance. By addressing potential problems before they become apparent leveraging emerging tools and technologies, IT teams stay one step ahead, maintaining continuous network reliability and high levels of user satisfaction.

CONCLUSION

With the proliferation of WFA models and an increased reliance on cloud based services, collaboration tools, and SaaS applications—across a range of environments from the cloud, co-location ..., on-prem, or even between users themselves—monitoring network performance health has never been more important. By implementing a robust network performance monitoring framework, IT teams can proactively support the multi-faceted demands of the digital landscape—ensuring optimal network health, seamless digital experiences, and uninterrupted business processes.

AppNeta by Broadcom stands at the forefront of digital transformation in performance monitoring, embracing the shift towards cloud-driven strategies that cater to the dynamic needs of modern enterprises. AppNeta delivers actionable insights that empower IT teams to ensure the best possible connections to business-critical apps, wherever they're hosted. With advanced expertise in AppNeta's suite of network performance monitoring solutions, Melillo can help you establish a comprehensive and proactive IT strategy that ensures robust network health, optimized for the unique demands of your digital transformation journey.

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ABOUT THE AUTHOR

Melillo Consulting is a technology solution provider that helps organizations power their business through technology. With a full range of complete IT solutions that address customers' on-premises, hybrid, and cloud needs, Melillo offers advanced expertise in infrastructure, development, security, and data management. Backed by a team of seasoned IT solution architects, expert delivery consultants, and project management pros, Melillo offers an unsurpassed level of expertise that positions customers for success. Contact Melillo to discuss your approach to the hybrid cloud at getinfo@mjm.com.

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