

WHITE PAPER

Establish Complete Network Observability

How MSPs Can Optimize Network Performance
and Customer Experience

TABLE OF CONTENTS

Executive Summary	2
MSPs' Pressing Business Imperatives.....	2
MSPs' Pressing Technological Imperatives.....	2
Accelerate Cloud Adoption	2
Leverage Modern Network Architectures	2
Expand Automation	3
Network Performance Keeps Getting More Critical—and Complexity Keeps Growing	3
Limitations of Traditional Siloed Network Tools and Approaches.....	3
Costly Implications	3
Requirements	4
How Broadcom Can Help.....	4
AppNeta: Key Capabilities.....	5
Network Observability by Broadcom: Making Every Network Work for You.....	5
Customer Case Studies.....	6
Large European MSP	6
Genesys.....	7
Kyndryl	8
Conclusion	9

EXECUTIVE SUMMARY

Revenues. Customer loyalty. SLAs. Reputation. For today's managed service providers (MSPs), pretty much everything is contingent upon optimized network availability, performance, and customer experience. This white paper explores why meeting these demands has become so challenging for MSPs' network operations teams—and it shows how these groups can overcome these challenges.

MSPS' PRESSING BUSINESS IMPERATIVES

The services that MSPs provide are at the core of enterprise digital transformation, and only continue to grow more essential and more in demand. The global managed services market was valued at nearly \$284 billion in 2023 and is expected to grow to \$316 billion in 2024.¹

While continued growth in demand is anticipated, competition will continue to intensify, with hyper-scale cloud providers, established players, and new market entrants all vying for market share. At the same time, MSPs have to meet key business imperatives:

- **Grow the business.** To sustain growth, MSPs need to provide more value, both through the delivery of innovative new offerings and enhancements to existing services. It is through these enhanced offerings that MSPs will be positioned to expand their reach, boost cross-sell and up-sell opportunities, and reduce churn. At the same time, by offering these enhanced services, MSPs will strengthen existing services and customer relationships, so they can more effectively combat price pressures and competitive threats.
- **Reduce costs.** In their dynamic, ultra-competitive markets, MSPs must be able to strike the balance between attractive pricing and sustainable margins. Ultimately, they can't succeed by making incremental cost improvements. To achieve their objectives, these organizations must chart a transformative path to remove complexity, including from networks, portfolios, and business models. To do so, it is vital to maximize the efficiency of tooling and operational processes.

MSPS' PRESSING TECHNOLOGICAL IMPERATIVES

To meet their urgent business imperatives, MSPs must speed technological innovation and digital transformation. This transformation will be key in their ability to optimize the efficiency and quality of their own operations and to enable rapid innovation of the offerings they deliver to customers.

MSPs will need to harness new technologies that enable the delivery of new high-value service offerings and that provide support for new business models. This will require the rapid integration and continued optimization of a range of technologies and approaches. Following are a few of the specific paths they'll need to pursue.

Accelerate Cloud Adoption

Fundamentally, cloud adoption will be a key enabler of the MSP's digital transformation. Cloud services will play an increasingly integral role in the delivery of applications and services that support the MSP's internal operations, and they'll continue to enable the delivery of external, customer-facing service offerings.

Leverage Modern Network Architectures

Networks increasingly feature technologies like software-defined wide area networks (SD-WAN), software-defined data centers (SDDC), and secure access service edge (SASE) architectures. These technologies are key to establishing networks that deliver the agility, security, and cost efficiency MSPs and their customers require. As they continue to employ a mix of legacy and modern technologies, integration poses significant hurdles. To overcome these challenges, teams need to move away from manual approaches and leverage out-of-the-box solutions that offer the required integrations.

¹ Fortune Business Insights, "Managed Services Market," March 2024

Expand Automation

MSPs must increasingly employ automation as a cost-effective way to speed innovation and support growing demand. Toward this end, network operations groups are establishing an open architecture to enable streamlined automation and seamless operational support system (OSS) integration.

NETWORK PERFORMANCE KEEPS GETTING MORE CRITICAL—AND COMPLEXITY KEEPS GROWING

Now more than ever, the penalties of downtime are severe. For the largest businesses, lengthy outages can be catastrophic. For example, one report found that for the largest organizations, downtime can cost hundreds of thousands of dollars a minute, and a day-long outage could result in losses of a staggering \$1.4 billion.²

For the MSP, ensuring optimized user experiences and network performance and availability only keeps getting more critical. Whether an MSP's focus is on managed security services, managed cloud offerings, managed infrastructure, or all of the above, network connectivity represents a core foundation. At the same time, the rapid move to pursue digital transformation and all the innovations above will have one key thing in common: They'll fuel increasing complexity for IT and network operations teams.

Software-defined networks, automation, the increasing reliance upon cloud services and networks of other external providers, and other innovations are all making networks more dynamic. With each passing day, it feels like networks get more moving parts and more interdependencies, along with more diverse technologies, protocols, and interfaces.

LIMITATIONS OF TRADITIONAL SILOED NETWORK TOOLS AND APPROACHES

All these technology innovations must be rapidly leveraged to optimize existing services and enable the fast, efficient delivery of new and enhanced offerings. However, these innovations can't jeopardize service levels.

For the teams responsible for ensuring optimized service levels, legacy network operations and monitoring tools are presenting an increasing set of challenges and obstacles. Many of these teams are relying on a significant number of siloed tools and custom integrations to monitor different network technology domains. For MSPs, the cost of developing and maintaining custom integrations across disparate technologies and networks can be extremely high, and these costs only keep increasing.

Further, as more technologies and services are introduced, the number of tools continues to climb. For example, in the wake of implementing SD-WAN, a team may deploy a tool specifically for monitoring one vendor's SD-WAN technology. Over time, they may employ a dual or multi-vendor SD-WAN strategy. As a result, they may be running SD-WAN solutions from multiple vendors, meaning multiple tools are employed just for SD-WAN. All these tools make it difficult to aggregate and normalize data and to gain real intelligence.

Even with all these tools, teams still have visibility gaps. For example, they lack coverage of the networks managed by third parties, such as cloud providers, internet service providers (ISPs), and so on. When issues arise, disparate teams are left having to sift through data from multiple tools to try and locate the problem.

COSTLY IMPLICATIONS

The lack of end-to-end network visibility exposes MSPs to potentially damaging monitoring blind spots that can lead to costly outages. These limitations leave MSPs vulnerable to a range of obstacles:

- **Latency and performance issues.** Teams lack the unified, aggregated intelligence needed to spot potential problems. These groups only find out about issues after subscriber or user services have been affected.

² PCMag, "In a Catastrophic Internet Outage, This Is How Much Money Big Tech Would Lose Every Minute," Eric Griffith, January 15, 2024

- **Increasing mean time to resolution (MTTR).** Costly, time-consuming troubleshooting and remediation efforts result in lengthy MTTR. When issues arise, many teams need to get engaged in troubleshooting, with each group looking in several disparate tools. As networks grow more complex and interdependent, these resolution metrics continue to expand. Finding and fixing network issues gets more complicated, which means it takes longer to resolve issues. This increases the MSP's risk of encountering damaging outages and SLA compliance violations as well as associated penalties, including eroding customer loyalty, customer churn, and financial losses.
- **Lengthy mean time to innocence (MTTI).** Because teams lack intelligence into all the networks that user services are reliant upon, they spend significant amounts of time diagnosing internal systems when issues arise. This time continues to be expended, even when issues arise in externally managed environments.

REQUIREMENTS

To contend with the proliferation of technologies and increasing complexity, while ensuring optimized service levels, your teams must take a more unified approach, one that encompasses cloud networks and SaaS applications. Here are a few key requirements:

- **End-to-end visibility.** Teams must gain visibility into the entire network delivery path between users, managed infrastructure, cloud environments, and business-critical applications.
- **User experience.** You need visibility into the user's experience, regardless of where users may be located or which applications they're accessing.
- **Unified platforms.** It is vital for your teams to reduce their reliance on disparate tools and establish a single console that can provide a unified view of multi-vendor, multi-technology environments. This is key to not only accessing actionable, correlated intelligence but making significant gains in operational efficiency. This unified platform needs to be open, capable of supporting technologies from a wide range of vendors. This platform must scale effectively to handle business growth and be resilient in the face of disruptions. Security is crucial, so the platform must be hardened. Additionally, it should be flexible enough to keep up with the accelerating pace of cloud and AI adoption.
- **Ease of operations.** Operating a multi-vendor network can be quite challenging for your network operations teams. However, having a dashboard that provides a single-pane-of-glass view that spans across MSP and customer networks can alleviate these obstacles. To capitalize on this potential, teams need network tools that are extensible enough to accommodate emerging technologies and services, including new cloud offerings. Specifically, your teams need capabilities for quickly identifying and isolating root causes of network issues, proactively detecting issues before they affect customers, and effectively utilizing automation to streamline network operations.

With these capabilities, your organization will be better positioned to boost MTTR, MTTI, and all the other network performance and network experience metrics that matter to the business. Further, you'll be able to accelerate network transformations and enhance connected experiences.

HOW BROADCOM CAN HELP

Today, Broadcom delivers the advanced, comprehensive network operations capabilities MSPs need today. With Broadcom solutions, MSPs can optimize network performance and customer experience. Broadcom offers a leading network observability solution that features these products:

- **AppNeta by Broadcom.** With AppNeta, you can monitor network performance from users' perspectives, no matter where they are, which network they are using, or which cloud-based apps they access.
- **DX NetOps by Broadcom.** With this solution, you can gain unified, scalable network monitoring for traditional and modern, software-defined infrastructures.

Broadcom enables your teams to gain complete visibility, from the customer site to the cloud. AppNeta can feed cloud monitoring and user experience data into DX NetOps, enabling unified visibility, reporting, and administration.

With this network observability solution, teams can use a single, unified portal that offers visibility of inventory, topology, device metrics, logs, configurations, faults, flows, and user experience metrics. The solution converts all this intelligence into actionable insights—enabling your team to track issues, analyze trends, and efficiently isolate and resolve the network delivery issues that degrade user experiences.

APPNETA: KEY CAPABILITIES

AppNeta provides the active monitoring capabilities that network operations teams in MSPs need today. By employing AppNeta, your teams can gain the timely intelligence they need to streamline troubleshooting, speed remediation, and boost service levels—no matter where users are based or which networks they are relying upon.

The product works with any device, deployment, and network, employing active and passive monitoring. Teams can place monitoring points anywhere: on premises, in virtual hosts, on workstations, or near application code. AppNeta monitors any connection between users, data, and locations, and spots congestion.

Following are some of the solution's key capabilities for MSPs:

- **Complete visibility for any network.** Broadcom can help MSPs and their customers move to the cloud, without losing visibility into their applications, users, and networks. The solution provides performance monitoring for any cloud architecture and network, including public and private clouds and hybrid cloud environments. AppNeta can show you the path of your data inside any cloud network.
- **Validation of SD-WAN overlay and underlay.** In SD-WAN environments, the solution can track the performance of both overlay and underlay networks, across remote sites. This is critical as MSPs grow increasingly reliant upon cost-effective SD-WAN technology to enable user connections to cloud and SaaS apps. The solution features an SD-WAN dashboard that enables NOC operators to quickly validate that the SD-WAN is healthy, both from an underlay and overlay point of view. In a single portal, the solution provides intelligent views and unified support across multi-vendor software-defined networks, reducing tool sprawl and streamlining operations.
- **Optimized insights into VMware VeloCloud SD-WAN deployments.** AppNeta extends the native management capabilities of VeloCloud SD-WAN, providing end-to-end visibility into the network overlay, underlay, and cloud-based applications. The solution provides actionable intelligence to automatically pinpoint problems. This reduces internal resource costs and speeds issue resolution, so teams can more quickly return to revenue-producing activities. With its active monitoring capabilities, AppNeta enables network operations teams to fully understand how performance is affected by common events like application outages, route changes, connectivity drops, and ISP peering changes. Armed with proactive insights, teams can boost SD-WAN performance and resilience.
- **Flexible deployment.** Broadcom offers an array of options, so that you can tailor your monitoring deployment in the way that makes most sense for your environment and objectives. AppNeta can be delivered as a service that is accessed from our public cloud. Alternatively, you can deploy the solution in your own environment.

NETWORK OBSERVABILITY BY BROADCOM: MAKING EVERY NETWORK WORK FOR YOU

AppNeta and DX NetOps are part of the Network Observability by Broadcom solution set. Network Observability by Broadcom delivers complete visibility across private and public networks, offering a unified solution that integrates user experience metrics with standardized operational workflows.

With the solution, your network operations teams can quickly isolate any network performance issues that affect the connected experience. The solution offers an extensive range of advanced capabilities, such as patented alarm noise reduction, sophisticated traffic analysis, unified network topology, capacity planning, volatility analytics, multi-vendor technology support, and more.

With these capabilities, you can realize a range of benefits:

- **Optimize network operations.** Network Observability by Broadcom enables teams to establish optimized network operations that fuel intelligent and fast triage. The solution offers proven, scalable, multi-vendor data collection and correlation. It also delivers advanced alarm noise reduction and analytics.
- **Accelerate network transformations.** With the solution's comprehensive coverage and unified operations, your teams can accelerate network transformation and improve new service delivery time to market. The solution provides unified, end-to-end visibility into LAN, WAN, Wi-Fi, ISP, and cloud networks. Plus, it enables seamless performance management across traditional and software-defined architectures.
- **Enhance connected experiences.** By delivering active monitoring that spans from client to cloud, Network Observability by Broadcom helps you ensure users have optimized experiences. With the solution, your teams can speed root cause isolation across external, third-party managed networks, and minimize MTTR.
- **Leverage a hardened MSP platform that fuels business growth.** The solution ensures network scalability, availability, and performance, supporting business growth. Through its open architecture, the solution enables seamless OSS integration and automation. Network Observability by Broadcom is a fully multi-tenant solution, enabling efficient, secure, and scalable support of your entire customer base.

CUSTOMER CASE STUDIES

Large European MSP

Business

A large European MSP serves hundreds of clients in such diverse sectors as finance, healthcare, and manufacturing.

Challenges

The network team manages complex customer environments with thousands of devices, such as routers, switches, firewalls, load balancers, and more. However, they grappled with some significant challenges:

- First, the absence of a unified dashboard hindered both customers and internal staff from effectively monitoring inventory, performance, and real-time network health.
- Second, the team lacked a solution capable of supporting massive volumes of data, which constrained their ability to analyze performance at the scale required.

Solutions

The organization has been a Broadcom customer for more than 20 years. Broadcom's innovations and new solutions continue to enable the company to respond to its emerging imperatives and rapidly evolving technological and business realities. The team has employed DX NetOps and AppNeta.

With AppNeta, the team is able to visualize the entire network path user traffic traverses, no matter where users are based or which networks they rely upon. AppNeta offers complete, hop-by-hop visibility for user traffic, including across SD-WAN, cloud, and last-mile ISP networks.

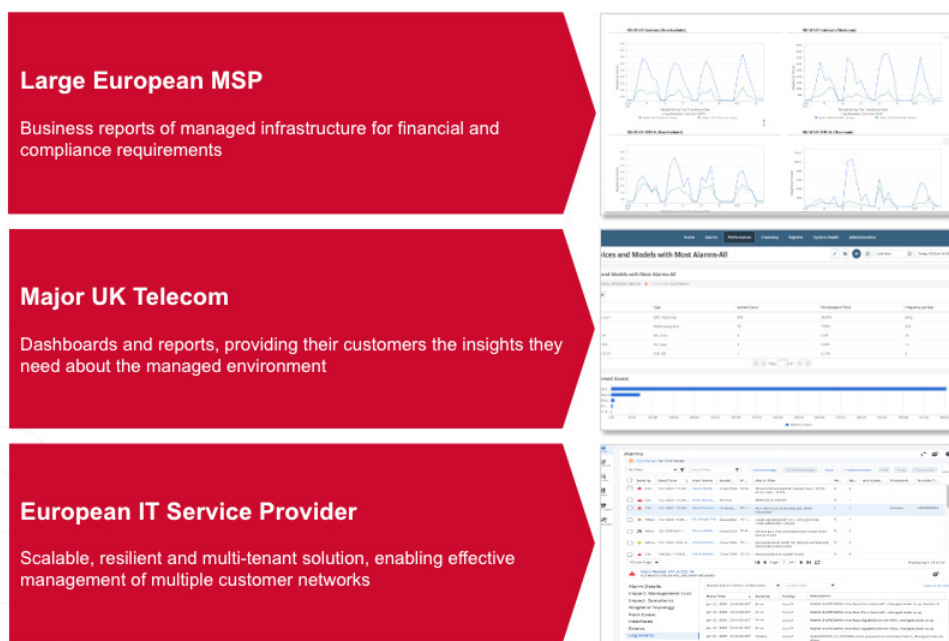


Figure A. Network Observability by Broadcom delivers real results and ROI for MSPs.

Benefits

By leveraging Network Observability by Broadcom, the organization was able to increase operational efficiencies by improving monitoring processes, monitoring scale, and network configuration management practices.

The team saw a 70% reduction in alarm noise, and now typically receives just five to 10 alarms a week. Further, they've gained the insights needed to retire redundant toolsets. As a result, their network operations center has realized a 75% reduction in total cost of ownership for their network operations center (NOC).

Genesys

Business

Genesys is a global leader in cloud customer experience and contact center solutions. The company's technology enables businesses across the globe to deliver highly personalized, empathetic customer experiences across every touchpoint. The company's customer base spans six continents and touches almost every industry.

Challenges

Genesys provides the technological foundation that enables enterprise contact center resources to interact with customers via virtually any channel. However, delivering a satisfying customer experience is contingent upon consumers being able to connect seamlessly with agents across increasingly complex network pathways.

This is where ensuring success goes beyond just the channel or platform but into the infrastructure that delivers voice, video, or chat traffic between end users, agents, and Genesys products. Sustaining the visibility required proved increasingly daunting given the exact location of where users were logging in from remained in constant flux.

Solution

To ensure businesses using Genesys technology have the best performance possible from the outset, the company leverages AppNeta. AppNeta offers a vendor-agnostic approach to performance monitoring, granting visibility into all the potential error domains along their solution's delivery paths out to customers.

With AppNeta, Genesys can conduct end-to-end quality-of-service monitoring that enables teams to gain a complete understanding of their customers' application delivery infrastructure.

Benefits

AppNeta is integral in helping teams at Genesys conduct VoIP assessment and monitor quality of service across a diverse array of network environments. AppNeta's unique, lightweight approach to performance monitoring enables the Genesys team to actively test the efficacy of their customers' network infrastructures, without adding another level of complexity to the deployment process.

Genesys deploys AppNeta across many organizations and multiple platforms annually, helping support their growing customer base. With AppNeta, the team can verify the company's cloud solutions are deployed successfully, ensuring ongoing customer satisfaction.

Kyndryl

Business

Kyndryl is the world's largest provider of IT infrastructure services, serving thousands of enterprise customers in more than 60 countries. The company has 4,400 customers, including 75 of the Fortune 100.

The company manages six global service areas, including network and edge computing. Kyndryl's customers are highly reliant upon these outsourced network operations.

Given the business-critical nature of their outsourced network services, Kyndryl establishes strict SLAs with clients. These SLAs hold Kyndryl's team accountable for service levels, and, if issues arise, the network operations team can be exposed to financial penalties and other negative ramifications.

Challenges

The team had previously relied upon siloed monitoring approaches and tools, including those from SD-WAN vendors. With these tools, the team was left with blind spots, and couldn't track end-to-end delivery paths of user connections. Further, the team had been contending with spiraling volumes of alarms. This has left the team increasingly exposed to downtime and performance issues.

Solutions

Combining DX NetOps with AppNeta, the team is able to monitor connections between data centers and cloud services and between hybrid workers and cloud environments. With the products, the team can ensure optimized user experiences, even as user traffic gets increasingly reliant upon a complex mix of legacy infrastructure, SD-WAN, cloud, and ISP networks.

DX NetOps provides visibility into the network underlay and overlay within their data centers. AppNeta provides hop-by-hop visibility across cloud environments, enabling the team to get essential visibility into application response, network response, and retransmission time.

Benefits

Broadcom solutions have enabled the team to effectively scale to meet the monitoring demands of a large, and rapidly growing SD-WAN estate. By employing Broadcom solutions, the team was able to boost monitoring scale by 50%.

With Broadcom solutions, the network operations team can quickly pinpoint the location and root cause of issues, speeding MTTR. With the solution, the team has been able to significantly reduce alarm noise and gain enhanced root cause analysis, so it can speed MTTR.

By ensuring network services are reliable and responsive, the team at Kyndryl can better ensure optimized user experiences, helping improve customer loyalty and protect the company's brand.

CONCLUSION

For today's MSPs, the opportunities are massive—but so are the challenges. By establishing optimized network operations, MSPs will be well positioned to address the challenges posed by today's dynamic, complex networks—while accelerating not only MTTR, but new service delivery and digital transformation.

Learn more about [Network Observability by Broadcom](#) today. Find out how the solution is enabling MSPs to capitalize on their market opportunities.