

# Upgrading Your Network Operations Platform for the Digital Future

An ENTERPRISE MANAGEMENT ASSOCIATES® (EMA™) eBook

By Shamus McGillicuddy  
Prepared for Broadcom  
May 2020



# Table of Contents

Network Operations Tool Modernization is Critical to Digital Enterprises .....	1
Unified Network Operations Tools are Essential .....	1
Network Operations Tools Must be Easier to Use .....	3
Enable Smart Network Operations With AIOps .....	4
Break Down Operational Silos Through Integration .....	6
Monitor and Manage New and Emerging Technology .....	7
Collect Streaming Telemetry From Broadcom Silicon for Granular, Real-Time Insights Into Network Congestion .....	9
Be Strategic, Not Tactical, With Network Operations Tools .....	10



## NETWORK OPERATIONS TOOL MODERNIZATION IS CRITICAL TO DIGITAL ENTERPRISES

As enterprises move toward a digital future, business leaders recognize quickly that the network is critical to success. The network operations team must optimize tools and processes to ensure the network can successfully deliver digital services.

The network operations toolset comes into focus as a vital enabler of the digital future. This eBook explores how IT organizations can secure that future by upgrading their network operations tools. In particular, enterprises with a suite of discrete or loosely integrated network operations tools should look for opportunities to implement tightly integrated, unified network operations platforms enriched by AIOps technology.

The following sections explain why enterprises that use individual fault monitoring, performance monitoring, or flow monitoring tools should explore upgrading to the latest full-suite version of Broadcom's DX NetOps high-scale operations monitoring platform.

### UNIFIED NETWORK OPERATIONS TOOLS ARE ESSENTIAL

Today's network operations teams are doing their best to maintain connectivity and performance, but they could be doing better. In general, EMA research has found that two out of three enterprises see room for improvement in their overall network operations.

#### Tool Fragmentation Leads to Network Firefighting

Too often, network managers are fighting fires and scrambling to fix problems that are already impacting the business.

46% of enterprises detect less than half of IT service problems proactively with network performance monitoring tools.

Two out of three enterprises see room for improvement in their overall network operations.

**46%**  
of enterprises detect less than half of IT service problems proactively with network performance monitoring tools.

Fragmented network operations tools are part of the problem. The typical enterprise has three to six network performance monitoring tools installed.

Discrete, unintegrated network operations tools lead to:

- Broken workflows
- Siloed data
- Poor collaboration
- Difficulty with escalating trouble tickets

EMA recommends an integrated toolset. Network managers are empowered when a network operations tool can correlate insights across fault data, performance data, and flow data.

EMA research has found that network operations tools that can correlate insights across diverse data sources provide better visibility into application performance, security events, and end-user experience.

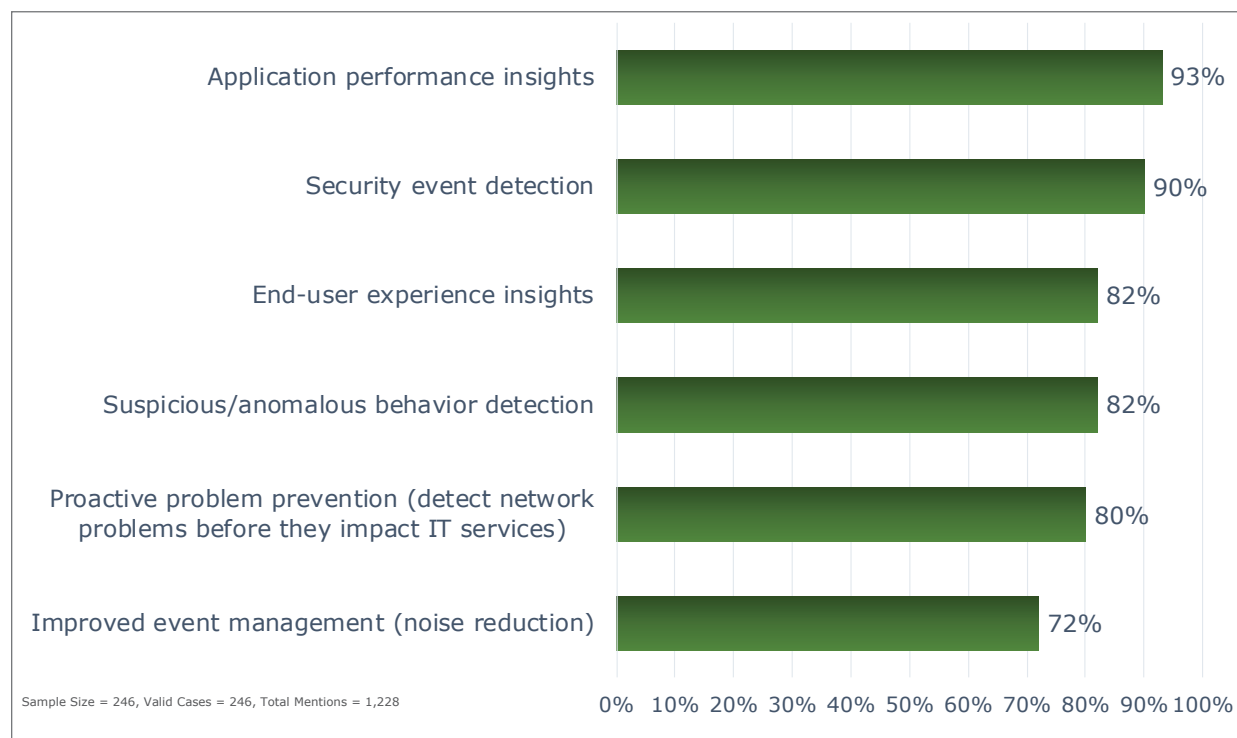


Figure 1. Tasks enhanced by NetOps tools that correlate insights from multiple data sources

DX NetOps from Broadcom is a modern, unified platform that integrates the company's fault management, performance management, and flow analytics capabilities into a single solution with deep operational insights into the delivery of digital services.



# NETWORK OPERATIONS TOOLS MUST BE EASIER TO USE

Network operations teams say ease of use is the most critical business requirement for their tools, according to EMA research.

EMA research has consistently found that enterprises struggle with shortages of skilled network operations personnel. They need tools that can enable junior staff to take on more responsibility.

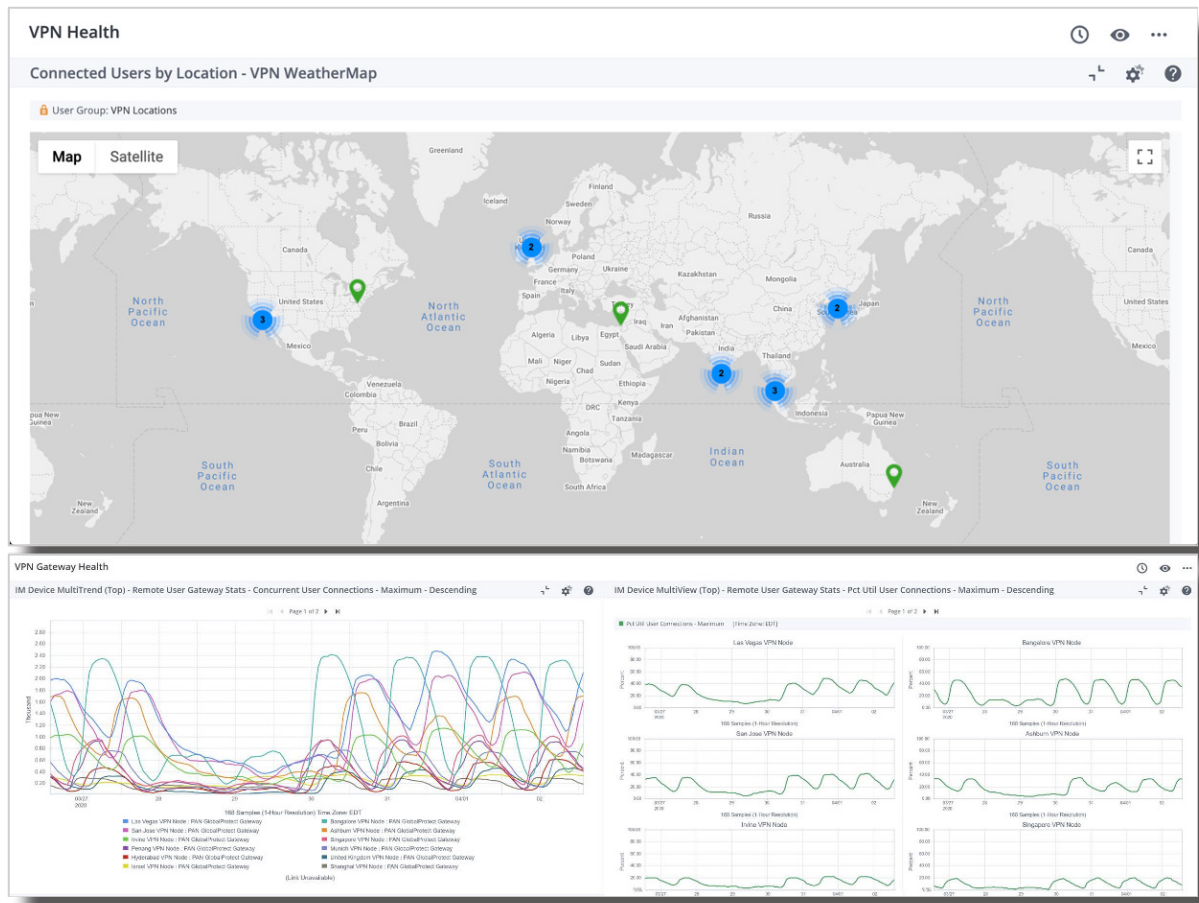
## Ensuring Ease of Use in a NetOps Toolset

Network operations tools must have:

- Well-defined workflows
- Customizable dashboards and reports
- Easy-to-find insights via context dashboard drilldowns
- Correlated views across network fault and performance monitoring, application performance monitoring, traffic flow analysis, and more.

Network operations teams say ease of use is the most critical business requirement for their tools.

DX NetOps from Broadcom provides easy and intelligent workflows for fast triage by Level 1 and Level 2 operations staff; while additional Level 3 granular visibility into performance, fault, and flow are available across traditional, software-defined, and cloud architectures.



## ENABLE SMART NETWORK OPERATIONS WITH AIOPS

"Artificial Intelligence for IT Operations," or AIOps, is technology that applies machine learning algorithms and other advanced heuristics to enhance the capabilities of IT operations tools.

AIOps can extract more insight from individual network operations tools, making them smarter and easier to use. AIOps can also help correlate insights across multiple tools.

Network managers are eager to use AIOps solutions. Nine out of 10 enterprises want to apply the technology to their network performance monitoring tools.

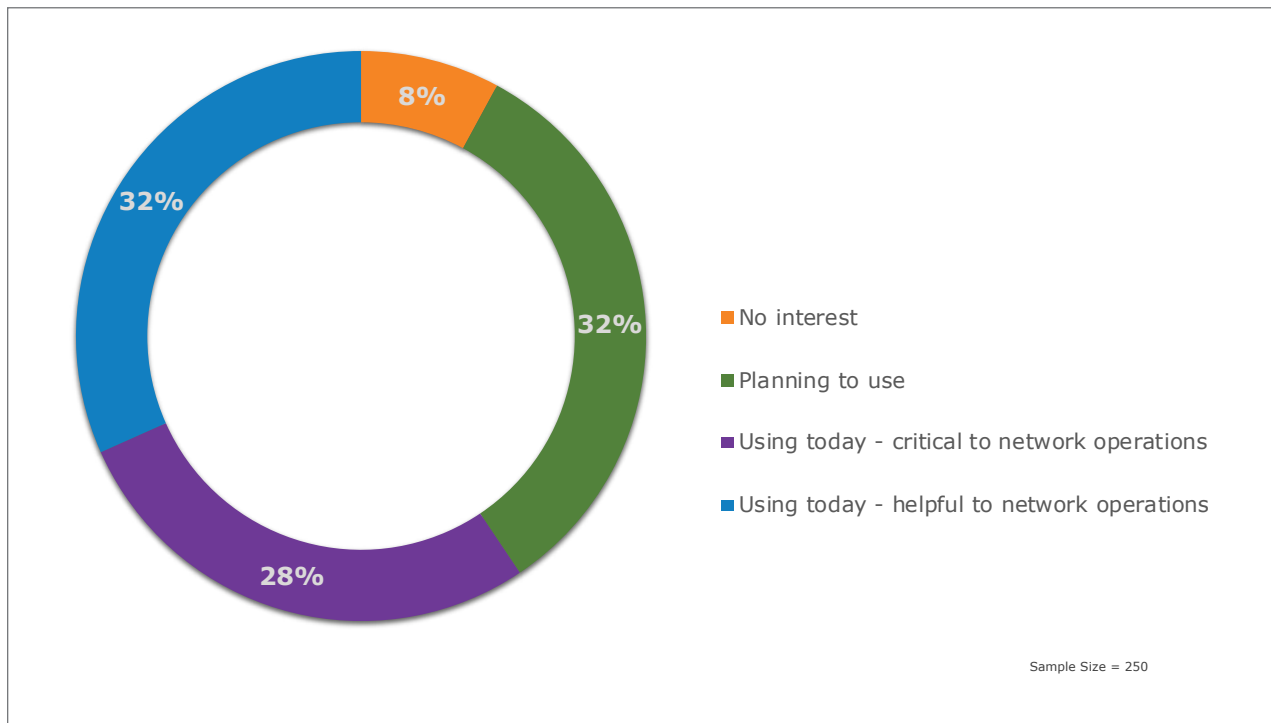
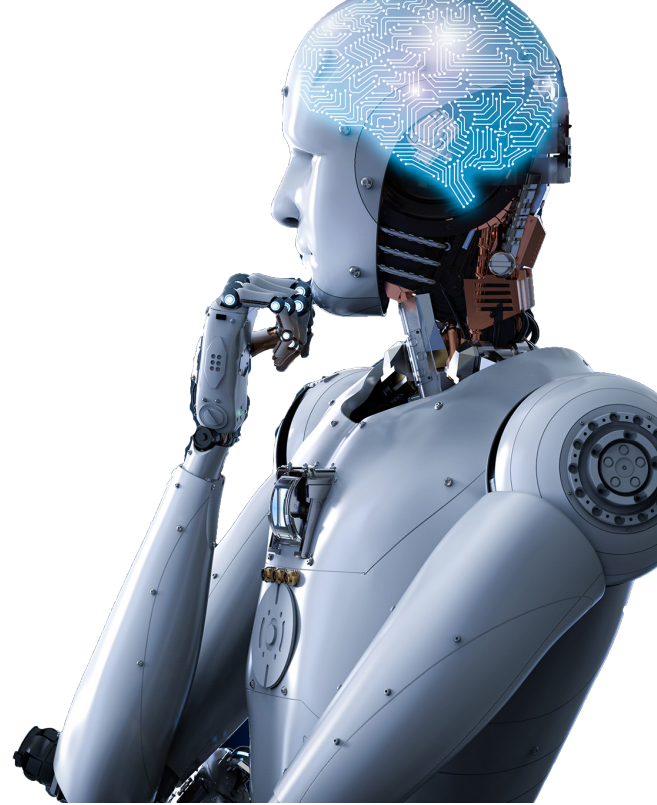


Figure 2. 92% of enterprises are applying or planning to apply AIOps technology to network performance monitoring tools

## Apply AIOps to a Network Data Lake

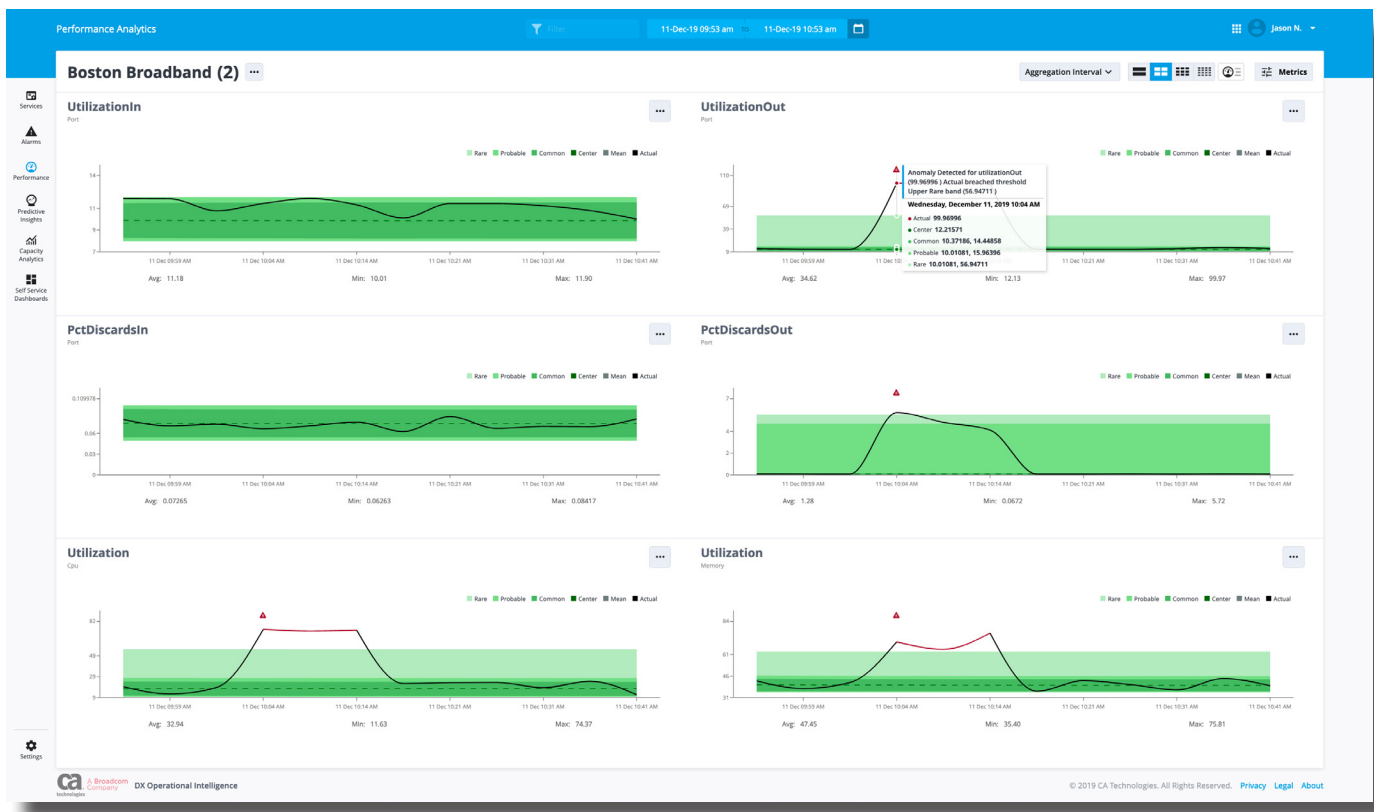
Given the complexity of networks and the diversity of network data, EMA research has found that AIOps technology is the best practice approach to correlating insights across multiple network operations tools.

## AIOps Enhances Network Performance Monitoring Tools

EMA research has found that the top use cases for AIOps-driven network operations tools are:

1. Network traffic analysis for rules-based anomaly detection
2. Automated root-cause analysis of network problems for rapid triage and remediation
3. Automated change for capacity management
4. Automated security response (remediation of an incident)

Enterprises can leverage AIOps-driven network operations with Broadcom for AI-driven operational intelligence and automated remediation. By upgrading to DX NetOps with AIOps from Broadcom powered by Automation.ai, network managers can apply AIOps to performance, fault, and network flow data, along with application, infrastructure, and user experience data to reduce alert noise, automate root cause analysis and remediation, and proactively manage capacity with predictive analysis to ensure a reliable customer experience.



# BREAK DOWN OPERATIONAL SILOS THROUGH INTEGRATION

Network managers must take a systemic approach to operations to break down silos between IT domains and between IT and the business.



## Integrate NetOps Tools With ITOps

Digital enterprises run their entire business over the network. Network operations should be integrated with the rest of the digital service chain. Network performance monitoring tools should not be siloed.

EMA research found that nearly all enterprises integrate network performance monitoring tools with tools in other IT operations domains, pulling events and data from those tools for integrated analysis and operations. The most popular integrations are:

1. IT service management
2. Security monitoring
3. IT/cloud orchestration
4. Cloud monitoring
5. Network configuration management (NCM)
6. Compliance management
7. Application performance management



An upgrade to DX NetOps from Broadcom will allow network managers to easily integrate third-party monitoring tools with network operations for vendor-agnostic data ingestion and analysis. Broadcom's data ingestion and integrity approach leverages normalization of technologies at the source, while correlating that same data based on key identified attributes and topology. This enables network and business services to be automatically driven through attributes and topology without requiring user intervention to maintain service content accuracy.

## MONITOR AND MANAGE NEW AND EMERGING TECHNOLOGY

As an enterprise transforms its network with cloud and software-defined networks, network operations tool vendors must be nimble enough to support that transformation.

### Network Transformation From the Cloud to the Edge

EMA research has found that new network technologies are driving network management tool strategies.

- Data center SDN: Cisco ACI and VMware NSX introduce new abstractions and network objects to manage.
- Network virtualization: Firewalls, load balancers, routers, and switches are virtualizing, creating new layers of abstraction throughout the network.
- Software-defined WAN: Dozens of SD-WAN solutions introduce overlays to the WAN, enabling hybrid connectivity that combines broadband and MPLS.
- Multi-cloud and hybrid cloud networking: Interconnectivity between cloud environments must be managed and monitored.
- The Internet of Things: Diverse endpoints introduce monitoring complexity at the network edge.





Upgrade to the latest version of DX NetOps to gain enhanced capabilities into performance, fault, and flow monitoring of modern network architectures built on Cisco ACI, Cisco SD-WAN (Viptela), VMware (VeloCloud), Silver Peak, 128 Technology, Cisco Meraki cloud-based WiFi, AWS, GCP, and Azure.

DX NetOps

Alarms Performance Inventory Reports System Health Administration

Group: All Groups > VNA Domains > SilverPeak:25 > Sites

Apr 14 11:42 AM to Today 11:42 AM Last 24 Hours

### SDWAN Multi-Vendor Health

#### SilverPeak Tunnel Health - SDN Tunnel

Site: SilverPeak

Timeframe: Last 24 Hours Metric Calculate Level: Component Hierarchy Resolution: As Polled Data

▲ Critical Status ● Major Status ● Minor Status ● Normal Status Weight Applied

Quick Filter

Group/Sub-Group/Item Name	Health Indicator	Pct Time in Up State - Average	Latency - Average	Packet Loss Percentage - Average	Jitter - Average	Provisioned Speed In - Average	Provisioned Speed Out - Average
SilverPeak	25%	86.03%	2.9 ms	3.05%	2.9 ms	89.6 Kbps	88.6 Kbps
SanFranSP01-ian1-INET1-NewYorkSP01-wan1-INET1	13%	100%	3.4 ms	3.17%	2.8 ms	77.7 Kbps	87.1 Kbps
SanFranSP02-wan0-INET1-SydneySP01-wan1-INET1	13%	100%	3.5 ms	3.06%	3.2 ms	85.6 Kbps	78.7 Kbps
NewYorkSP01-wan1-INET1-SydneySP01-wan1-INET1	6%	100%	3.3 ms	2.95%	2.8 ms	87.3 Kbps	92.1 Kbps
NewYorkSP01-wan1-INET1-SanFranSP02-wan0-INET1	6%	100%	3.4 ms	2.89%	2.9 ms	88 Kbps	93.4 Kbps

10 per page Page 1 of 1

#### Viptela Tunnel Health - SDN Tunnel

Site: Viptela

Timeframe: Last 24 Hours Metric Calculate Level: Component Hierarchy Resolution: As Polled Data

▲ Critical Status ● Major Status ● Minor Status ● Normal Status Weight Applied

Quick Filter

Group/Sub-Group/Item Name	Health Indicator	Latency - Average	Packet Loss Percentage - Average	Jitter - Average
Viptela	25%	149.6 ms	0.1%	19.7 ms
1.1.1.11-BROADBAND-1.1.1.12-BROADBAND	50%	669.8 ms	0.67%	30 ms
1.1.1.11-BROADBAND-1.1.1.12-MPLS	56%	582 ms	0.31%	31.6 ms
1.1.1.9-MPLS-1.1.1.8-MPLS	25%	63 ms	0.03%	17.7 ms
1.1.1.9-MPLS-1.1.1.8-BROADBAND	25%	63 ms	0.03%	17.7 ms

10 per page Page 1 of 1

# COLLECT STREAMING TELEMETRY FROM BROADCOM SILICON FOR GRANULAR, REAL-TIME INSIGHTS INTO NETWORK CONGESTION

Streaming network telemetry is an emerging technology that enhances network operations tools. It can replace or complement traditional network monitoring via SNMP polling. Rather than pull metrics from network devices, streaming telemetry allows a network monitoring tool to subscribe to telemetry streams from a device in real time.

Streaming telemetry improves the efficiency and quality of data collection, enhances data granularity, and provides access to insights not typically provided via SNMP MIBs and traps.

Broadcom has integrated DX NetOps with open source SONiC and BroadView™ Instrumentation that enables a streaming telemetry solution that differentiates this AI-driven network monitoring tool in the industry. Third-party switches powered by Broadcom chipsets can now stream granular, per-packet and flow-level statistics directly to DX NetOps and AIOps from Broadcom, enabling advanced capabilities like in-band flow analytics that can report on hop-by-hop analysis of network latency.





## BE STRATEGIC, NOT TACTICAL, WITH NETWORK OPERATIONS TOOLS

Many network operations teams have been tactical with tool procurement for too long. Loosely integrated or discrete tools for fault management, performance management, and flow analytics are not good enough for today's digital world.

Be strategic about how you proceed from here. Do not respond to changes in your environment with tactical decisions. For instance, don't buy a siloed cloud monitoring tool to address cloud network visibility. Instead, modernize what you already own from Broadcom.

Users of legacy Broadcom network monitoring solutions should assess their current installations and ask themselves:

- Do I have a unified console for performance, fault, and flow?
- Do I have emerging monitoring requirements for next-generation technologies?
- Do I have junior admins struggling with current tools from other vendors?
- Do I need a smarter, AI-driven toolset to drive faster triage and automation of network tasks?
- Do I need deeper visibility into how my network delivers the customer experience?

Speak to Broadcom today and find out what you're missing from the latest and greatest enhancements of the DX NetOps platform you already own, and how the solution can help you address your current challenges while enabling your network operations teams to build resilient network architectures.



Upgrading Your Network Operations Platform for the Digital Future  
©2020 Enterprise Management Associates, Inc. All Rights Reserved.



### 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](http://www.enterprisemanagement.com) or [blog.enterprisemanagement.com](#). You can also follow EMA on [Twitter](#), [Facebook](#), or [LinkedIn](#).

This report in whole or in part may not be duplicated, reproduced, stored in a retrieval system or retransmitted without prior written permission of Enterprise Management Associates, Inc. All opinions and estimates herein constitute our judgement as of this date and are subject to change without notice. Product names mentioned herein may be trademarks and/or registered trademarks of their respective companies. "EMA" and "Enterprise Management Associates" are trademarks of Enterprise Management Associates, Inc. in the United States and other countries.

©2020 Enterprise Management Associates, Inc. All Rights Reserved. EMA™, ENTERPRISE MANAGEMENT ASSOCIATES®, and the mobius symbol are registered trademarks or common-law trademarks of Enterprise Management Associates, Inc.

#### Corporate Headquarters:

1995 North 57th Court, Suite 120

Boulder, CO 80301

**Phone:** +1 303.543.9500

[www.enterprisemanagement.com](http://www.enterprisemanagement.com)

3964.05012020