Delivering the AI-Driven Enterprise as a Managed Service

Experience-first networking assurances for a diversified customer base

White Paper

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Executive Summary

Managed Service Providers (MSPs) have huge opportunities in the coming years, but the marketplace for their services is very competitive. Enterprises can select from a variety of managed offerings as they look to solve their internal challenges. Accordingly, providers must differentiate themselves from the competition and offer superior services that allow them to keep—and grow— market share.

Juniper provides a comprehensive solution set for MSPs that enables the AI-Driven Enterprise. When deployed as a managed service, service providers can maintain networks for hundreds of organizations in all network domains—wireless, wired, and WAN.

Solutions from the Juniper Networks® AI-Driven Enterprise, powered by Mist AI™ and Cloud, allow providers to create an expansive service catalog with broad new cross-domain networking capabilities for their entire customer base. Offerings include Managed SD-LAN for wired and wireless, Managed SD-WAN, and Managed Indoor Location Services.

Benefits for enterprise customers include growth and differentiation with experience-first networking. Service providers enjoy increased monetization of their entire infrastructure, with simplified operations on a single, full-stack cloud platform with integrated AIOps for automated troubleshooting and full API programmability to support third-party equipment, systems, and applications.

Along with analyst validation that includes detailed TCO and ROI analysis, this paper lists customer case studies that affirm a unique level of loyalty due to optimized user experiences, enhanced zero-trust security, and industry-leading technology.

Evolving Landscape

MSPs face many challenges as they attempt to differentiate their services to grow market share. While margins are tightening on connectivity services, traffic patterns are shifting due to cloud adoption. Legacy technologies cannot be handle these converging trends.

Adding to the challenges are application sprawl and overlapping management tools that make it difficult to stay ahead of service disruption, plus gaps in personnel and technical resources that make it hard to fulfill customer demands for superior experience.

However, with the right sets of tools, high margin and new revenue opportunities can help MSPs thrive and grow their business (Figure 1).

Figure 1: Opportunities for Growth in the Evolving Environment

MSPs know they can benefit by expanding their service catalog, simplifying operations, and delivering experiences that maintain customer loyalty. AIOps helps achieve this, saving huge amounts of money and improving customer experience.

MSP Opportunities

Significant opportunities for MSPs include SD-LAN, SD-WAN, SD-branch (LAN+WAN), and security services. For example, Dell'Oro Group expects the SD-WAN market to double by 2027, while Gartner and IDC report similar forecasts, anticipating an addressable market between $7 to 8 billion by 2026.[1] And ACG Research notes that the aggregate market for managed LAN, WAN, Wi-Fi, security, VPN, and network monitoring is "projected to grow from $61.7 billion in 2022 to $88.5 billion in 2027, with an annual growth rate of 7.5%."[2]

Initiatives and Challenges

To successfully take advantage of these opportunities, MSPs must:

- Acquire and retain customers
- Increase margins and revenue
- Provide exceptional end-user experiences
- Deploy solutions that enable modernization today and in the future, and
- Simplify operations

At the same time, service providers must overcome a myriad of challenges as they address future growth plans. Among the most prevalent concerns are:

- **Changes in buyer behavior**: Customers are very discerning when it comes to evaluating network solutions.

[1] See SDXCentral, SD-WAN By the Numbers: Market Growth, Size, and Adoption, Sean M. Kerner, August 1, 2023.
[2] See Financial Benefits of Juniper Networks Managed Network Services, Peter Fetterolf, Ph.D., July 2022.

- **Cloud adoption and migration**: Changing architectures and traffic patterns to accommodate cloud networking affects how organizations consume services and impacts network performance strategies.
- **Margin erasure:** Although MPLS is still deployed today, much of the revenue dependability has eroded, leaving service providers looking for ways to backfill previous gains.
- **Increased competition**: Today's market is saturated with solutions offering consumers choice and leverage. It's difficult to differentiate without adding complexity.
- **Resource gaps**: Technical expertise is difficult to find and the gap is growing, making it more difficult to address current operational needs, and those of the future.

The Primacy of Experience

The key to seizing initiatives and overcoming challenges is ensuring superior experiences for both providers and enterprises. These are unsurprisingly interlinked—the customer experience suffers when users don't get the service they're looking for or the performance they need, and the MSP experience suffers when providers cannot stay ahead of disruptions.

The AI-Driven Enterprise (Figure 2) solutions are powerful client-to-cloud offerings for MSPs to incorporate into their service portfolios. Whether installed as a full stack or with domain-specific solutions such as managed SD-LAN, SD-WAN, or indoor location, MSPs can offer turnkey solutions with open, published, fully documented APIs.

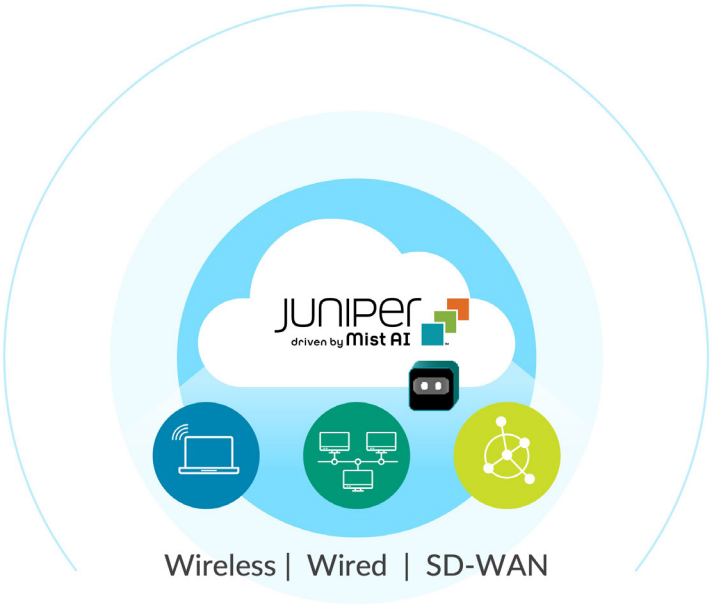

Figure 2: The AI-Driven Enterprise

The solutions in the AI-Driven Enterprise integrate well with other IT and networking solutions, such as ServiceNow, Zoom, Microsoft Teams, and even ChatGPT. The managed service can all be presented in a SaaS consumption model: build once and sell often.

The AI-Driven Enterprise solutions are also well aligned with future SASE opportunities. Table 1 details the features and benefits of Juniper's experience-first networking, which is full-stack, AI-driven, and cloud based.

Table 1: Features and Benefits of the AI-Driven Enterprise Solution Set

Full Stack	AI-Driven	Cloud Based
• Wired, Wireless, SD-WAN, and Connected Security solutions • Simplified deployments and management • Indoor Location Services	• Real-time client insight and automation • Reduced MTTR • Assured application experiences	• Modern microservices cloud • 100% open API architecture • Responsive to business; seamless upgrades

Using AIOps to Optimize Experience

AIOps can be used in all domains to optimize experience. When management solutions are cloud connected and leverage a common AI engine, it becomes much easier to deploy and operate the network, thereby improving business operations. AIOps allows for a quick and effective expansion of a service catalog and better monetization. Delivering solutions as software, and with flexible customer premises equipment options, helps even further.

Solutions can be form-fitted to meet an MSP's partitioned deployment's needs. For example, in a deployment of a managed LAN offering, the cloud-based management platform can still provide visibility into user experiences on the network across the SD-WAN domain.

AIOps reduces truck rolls, re-allocates on-site engineers, and works across all domains, from the WAN all the way to embedded Bluetooth for Indoor Location Services.

Assured Deployment

The deployment and provisioning for all Day 0, 1, and 2 operations is simple and secure (Figure 3).

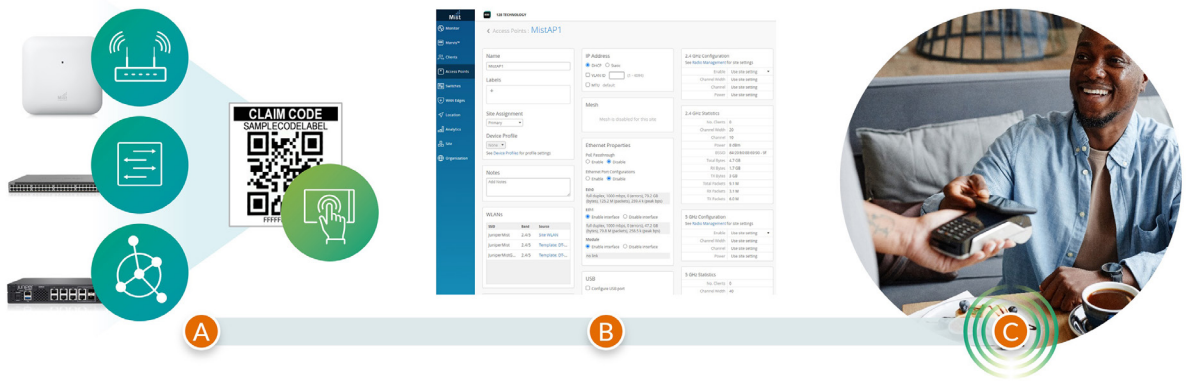

Figure 3: Simplest Day 0, 1, and 2 Operations in the Industry

The operations are very straightforward:

A. Scan and claim your devices to deploy industry-leading wired, wireless, and WAN access

B. Apply policies and configurations via templates and remotely provide updates from the Mist portal

C. Deliver best-in-class connectivity throughout all locations

For more information, see Implementing Branch Networks for AI-Driven Enterprise Customers.

Assuring Client Experiences

The Juniper Mist™ AI Platform makes networking predictable, reliable, and measurable with unprecedented visibility into the user experience. The platform offers a suite of assurance offerings for wireless, wired, and WAN networks:

- Juniper Mist Wi-Fi Assurance: Enables elastic scalability to meet your customers' wireless network experience requirements. Delivers operational simplicity, 100% API-based programmability, and customer engagement through location-based services.
- Juniper Mist Wired Assurance: Brings automated operations and service levels to enterprise campus switches, IoT devices, access points, servers, printers, and other equipment.
- Juniper Mist WAN Assurance: A key component of the Juniper AI-Driven SD-WAN solution, WAN Assurance brings automated operations and service levels to the enterprise access layer at the WAN edge.

Wi-Fi, Wired, and WAN Assurance operate from the Juniper Mist Cloud and rely on AI to monitor Service Level Expectations (SLE) that present minute-by-minute insights into the user experience. These assurances replace manual troubleshooting tasks with automated operations to make branch networks more predictable, reliable, and measurable.

The power of Juniper Mist Cloud, powered by AI, includes the ability to analyze large amounts of rich metadata collected from not only the wireless, but the wired and WAN domains as well. This results in actionable insights and problem remediation powered by machine learning.

Figure 4 shows the role of Juniper Mist Cloud and maps Juniper products to the domains and functions of the AI-Driven Enterprise portfolio.

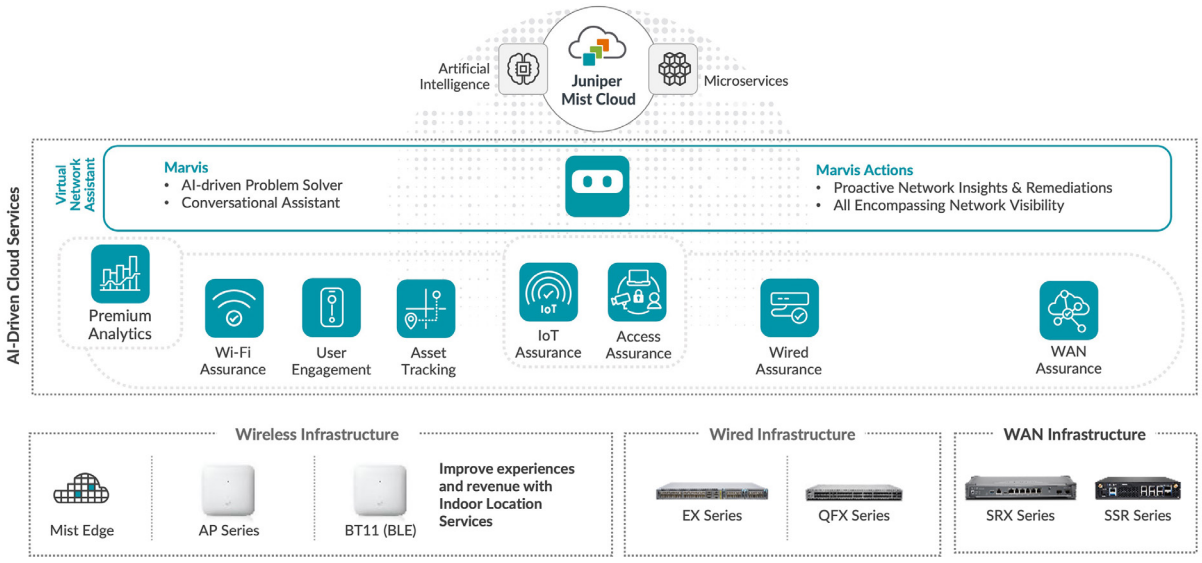

Figure 4: AI-Driven Enterprise Portfolio, Enabled by Juniper Mist Cloud

This portfolio comprises the most complete full-stack solution in the market. Juniper Mist Cloud, along with Marvis™ Virtual Network Assistant and Marvis Actions, brings the power of AI to service provider and enterprise infrastructure.

The productivity differences can be enormous. These services will auto-create—and often solve—trouble tickets with minimal or no operator intervention. This capability reduces OpEx and maintains healthy margins.

Managed Service Examples

Many managed service options can be deployed with AI-Driven Enterprise solutions. Some key examples are discussed here, and these can also be delivered in tandem as a full-stack solution.

Managed SD-LAN

Managed SD-LAN is a popular service that provides your customers—both network administrators and end users—with outstanding experiences. Managed SD-LAN includes reliable Wi-Fi, better IT outcomes (including ROI), and an agile network that is responsive to the specific business needs.

Managed SD-LAN is based on the wired and Wi-Fi components of the AI-Driven Enterprise portfolio.

Managed Indoor Location Services

Managed Indoor Location Services benefits the enterprise in numerous ways:

- Accelerates customer digital transformation with scalable and highly accurate location services using virtual Bluetooth LE (vBLE)

- Provides insights into workflows and productivity with asset tracking
- Minimizes complexity and reduces TCO with no additional hardware or software
- Improves customer engagements and provides greater control of the mobile journey
- Provides real-time wayfinding with accurate (1- to 3-meter) turn-by-turn navigation

Managed Indoor Location Services can help create new revenue streams and position service providers as strategic business partners to end customers.

Managed SD-WAN

The market for managed SD-WAN is massive. AI-Driven SD-WAN as a managed service is simple to deploy and manage, and is an order of magnitude more scalable than tunnel-based solutions.

This makes it easy for providers to improve mean time to revenue, annual recurring revenue, and TCO. Customers benefit with high performance, availability, and security.

For more information, see Creating Business Value with AI-Driven SD-WAN as a Managed Service.

MSP Dashboard for Multitenant Operations

Using the enhanced MSP dashboard for Multitenant Operations, MSPs can utilize a snapshot of their entire estate of customers, including real-time SLEs and subscription inventory (Figure 5).

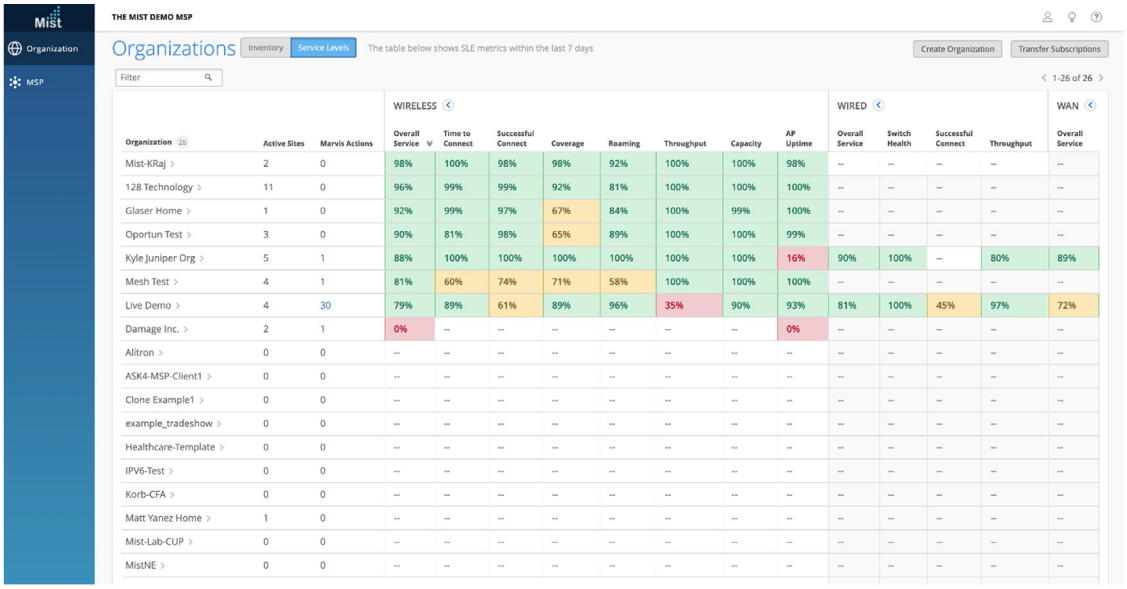

Figure 5: Multitenant Visibility and Control for the MSP's Customer Base

The MSP dashboard simplifies the life-cycle management and operations of this unified solution. For each customer, the solution spans the LAN (wired and wireless) and SD-WAN at scale.

To handle support tickets, the MSP dashboard includes a summary to help MSP administrators quickly identify the customers needing attention. With one click of the mouse, an MSP operator can quickly drill down into a specific organization to check status or make changes. This results in greatly reduced MTTR.

Wireless Leadership

Juniper's extension of Mist AI across the portfolio, from **client-to-cloud**, maintains our leadership as the vendor of choice with differentiated solution offerings. By providing an AI-driven Wi-Fi service, MSPs can expand revenue opportunities, transform operations, and deliver optimized and differentiated experiences.

Juniper access points supporting the AI-Driven Enterprise portfolio (listed in Table 2) are all built on a real-time microservices platform and are managed by the Juniper Mist Cloud.

Table 2: Access Points for an AI-Driven Enterprise:

Access Point	Deployment	Frequencies	Antenna Options	Virtual BLE
AP45	Indoor	5GHz 6GHz	Internal, External	Yes
AP34	Indoor	5GHz 6GHz	Internal	
AP43	Indoor	5GHz	Internal, External	Yes
AP63	Outdoor	5GHz	Internal, External	Yes
AP33	Indoor	5GHz	Internal	Yes
AP24	Indoor	2.4GHz 5GHz 6GHz	Internal	
AP12	Indoor	5GHz	Internal	

Full details on each access point can be found in **Enabling the AI-Driven Enterprise** and in the linked product pages for each access point.

Key features of **Indoor Location Services** (enabled by vBLE) include **user engagement** and **asset visibility**. According to **top analysts**, Juniper's Indoor Location Services is an **industry leader**, ahead of all other vendors in *completeness of vision*.

Wireless leadership offers providers other ways to differentiate with enterprises. Juniper **Mist Premium Analytics** provides insights into your customer's network and business operations while overcoming the complex challenges associated with the influx of big data from the multitude of networks and clients.

Juniper Mist Access Assurance combines full network access control (NAC) and policy enforcement to simplify operations. Also, Juniper Mist IoT Assurance provides a full suite of access control functionality for IoT and BYOD using multiple and private pre-shared keys (MPSK and PPSK).

Wired Leadership

Juniper's wired solutions deliver unparalleled user experiences for campus switching with simpler operations, shorter MTTR, and better visibility into connected devices. MSPs can generate new lines of revenue with industry-leading campus solutions (Table 3).

Table 3: Switches for an AI-Driven Enterprise:

Switch	Location	Form Factor	Capacity	PoE
EX2300	Access or Multigig access	1 U	176 Gbps	PoE+
EX3400	Access	1 U	336 Gbps	PoE+
EX4100	Access	1 U	376 Gbps	PoE+ (802.3at) PoE++ (802.3bt)
EX4100-F	Access	1 U	256 Gbps	PoE+ (802.3at) PoE++ (802.3bt)
EX4300	Multigig access and aggregation	1 U	496 Gbps	POE+ (802.3at) POE++ (802.3bt
EX4400	Multigig access and aggregation	1 U	912 Gbps	POE+ (802.3at) POE++ (802.3bt)
EX4400-24X	Multigig access and aggregation	1 U	1080 Gbps	POE+ (802.3at) POE++ (802.3bt)
EX4600/ EX4650	Core and aggregation	1 U	720 Gbps/2 Tbps	N/A
QFX51xx	Data center	1-2 U	See Datasheet	N/A
EX9200	Core and aggregation	5, 8, or 16 U	13.2 Tbps	N/A
EX9250	Core and aggregation	1-3 U	See Datasheet	N/A

With Wired Assurance, Juniper EX Series Switches provide rich telemetry to the Juniper Mist Cloud, which streamlines deployment and management of the campus fabric. Wired Assurance provides metrics for throughput, successful connections, and switch health.

Wired Assurance also includes **Campus Fabric Workflow**, which provides cloud-based Ethernet VPN–Virtual Extensible LAN (EVPN-VXLAN) configuration using intent and choice of topology. More information can be found in this **explainer video** and in **Enabling the AI-Driven Enterprise**.

WAN Leadership

The AI-Driven SD-WAN portfolio (Table 4) allows MSPs to quickly and cost effectively launch multiple high-value, cloud-centric services.

Table 4: Session Smart Routers and Suggested Locations:

Appliance	Suggested Location	Max Throughput (Unencrypted)	Antenna Options
SSR120	Small branch	1.5 Gbps	SSR 100 Line of Routers
SSR130	Medium branch	2 Gbps (Line rate on ports)	
SSR1200	Large branch or small data center/campus	10 Gbps	SSR 1000 Line of Routers
SSR1300	Medium data center/campus	20 Gbps (Max. throughput on NIC)	
SSR1400	Large data center/campus	40 Gbps	
SSR1500	Extra large data center /campus	50 Gbps (Max. throughput on NIC)	

The hardware datasheets provide standard specifications such as interface options, number of interfaces, encrypted throughput, memory and hard drive capacity, and more. Juniper Networks Session Smart™ Routers are available in other form factors, including certified white boxes (see the **Session Smart Networking** datasheet) or the Juniper Networks NFX Series Network Services Platforms.

AI-Driven SD-WAN also supports the following Juniper SRX Series Firewalls when deployed as WAN gateways:

- SRX 300
- SRX 320
- SRX 340
- SRX 345
- SRX 380
- SRX 1500

With Session Smart Networking, MSPs can enable new functionality and deliver new services in an incremental, non-disruptive fashion with a simple software license update. Tiered offerings provide multiple services in a **Flexible Service Edge**, including managed router, managed unified communications (UC), and a Layer 3 Network Interface Device (NID).

The Flexible Service Edge allows MSPs to expand their total addressable market and maximize upgrade revenue without requiring a truck roll. The option serves as an extensible platform for innovation, and can ultimately be integrated with Mist AI when customers are ready for the full AI-Driven SD-WAN.

Marvis Virtual Network Assistant

Marvis, the platform's **Virtual Network Assistant** and conversational AI interface (**with ChatGPT support** for documentation) solves issues anywhere in the network, providing insights and remediations for devices, users, and applications (Figure 6).

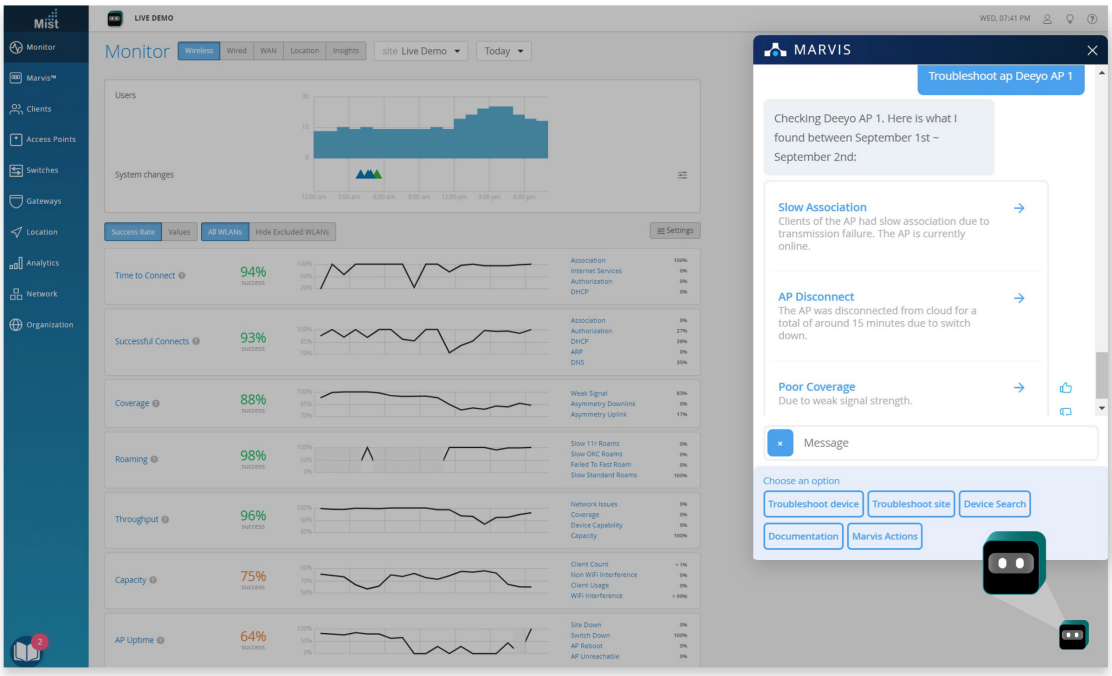

Figure 6: Marvis Virtual Network Assistant

Marvis Actions (Figure 7) help drive operational simplicity and transform IT from reactive troubleshooting to proactive remediation.

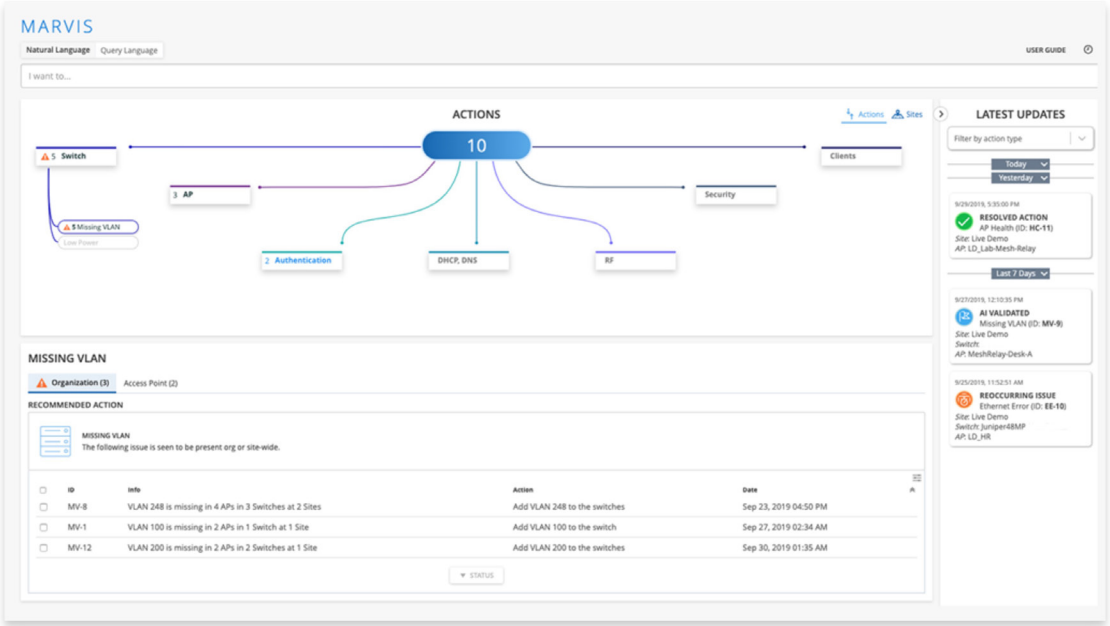

Figure 7: Marvis Actions

Marvis offers a high-level view that delivers visibility into network issues at an organizational level, so administrators know exactly what they need to prioritize and focus on for the day. As sites are added, Marvis Actions scales with ease—requiring no additional setup from the user.

Marvis uses advanced natural language processing (NLP) to understand user intent and goals. It contextualizes inquiries to return specific results and can even take actions based on user feedback.

Case Studies

Juniper customers are outspoken on the benefits of the AI-Driven Enterprise in every domain:

- Wireless leadership is touted by The Gap, who explain that Mist AI lays the foundation for game-changing services, with AI-powered insight reducing technical staff visits to stores by 85%.
- Wired leadership is illustrated by the case study on Dartmouth College, who built a state-of-the-art wired network to fuel the campus experience.
- WAN leadership is discussed by Ossur, who securely and reliably utilize the Juniper AI-Driven SD-WAN solution to connect their corporate office to the rest of their global network that spans 25 countries.

Service provider case studies include:

- VolkerWessels, which offers customers secure, full-stack connectivity from client to cloud, including all of the available domain assurances.
- Granite Telecom, who reduced their time to deploy branch connectivity by 75% and costs by as much as 50%.

Driven by experience, AI-Driven Enterprise solutions have generated many other service provider and customer referrals. The number of customer references in both the provider and enterprise spaces is increasing all the time. Our customers all attest to the AI-Driven Enterprise solution set's ability to differentiate itself across all verticals in any network domain.

Analyst Recognition

Juniper AI-Driven Enterprise solutions have been recognized as the unequivocal leader in for Wired and Wireless LAN Access infrastructure for three consecutive years (2020-2022). Juniper is positioned as a Leader, ahead of all other vendors in both completeness of vision and ability to execute.

Juniper is also a leader in 2023 for Indoor Location Services, along with the Wired and Wireless Leadership, providers get two industry-leading products integrated into a single solution.

Finally, Juniper is recognized as a visionary for SD-WAN. From a portfolio-wide perspective, this is the strongest combined position of any networking vendor.

The financial benefits of the AI-Driven Enterprise portfolio are detailed in this report from ACG Research. The report shows an 85% reduction in OpEx and a 27% reduction in TCO using the AI-Driven Enterprise to deliver managed SD-LAN and SD-WAN.

Partnering with Juniper

Juniper's reduced cost of deployment, along with the technical advantages and the business outcomes they produce, allow service provider partners to thrive in this competitive environment. We offer a full range of resources, programs, and onboarding capabilities to help.

Programs include Juniper Partner Advantage and a focused Unified MSP Partner Program.

As Juniper works closely with Tier 1 analysts across the networking industry, we are able to provide support for our partners with credible validation. Furthermore, we may assist our partners with Market Development Funds (MDF) to sharpen brand awareness.

Juniper onboarding services include training, certifications, and deployment assistance. Our ongoing support options include building, operating, and creating a seamless transfer to the partner so they can assume control of a robust offering.

The results for our MSP partners include higher margins on a broad portfolio offering, simplified pricing, and extended reach to increase market share and enjoy rapid time to market.

Conclusion

Traditional networking products and legacy solutions, designed to support conventional enterprise IT architectures and traffic flows, are siloed, costly, and complicated. They don't meet the need for an evolving digital era. With AI-Driven Enterprise solutions, MSPs can dramatically simplify service management, expand their solution catalog, and differentiate themselves from the competition. As a result, providers support their enterprise customers with key strategic offerings that deliver premium user experiences across all domains.

Next Steps

To learn how to deliver managed services with Juniper AI-Driven Enterprise solutions, contact your Juniper account representative or visit our AI-Driven Enterprise Solutions for Managed Services page.

Juniper also provides a **Weekly Mist AI Demo**, allowing you to see the AI-Driven Enterprise in action.

Finally, you can see firsthand how to perform many of these tasks by setting up an account at manage.mist.com and following the tutorials. Ask your account representative to help you get started.

Resources

The following resources are provided to support and enhance the content in this solution brief.

Web Pages

- 2022 Gartner Magic Quadrant for Enterprise Wired and Wireless LAN Infrastructure
- 2023 Gartner Magic Quadrant for Indoor Location Services
- Mist AI and Cloud
- Juniper Partner Advantage
- Juniper Unified Managed Services Program
- Session Smart Router

White Papers

- Client to Cloud Assurance with an AI-Driven Enterprise
- Creating Business Value with AI-Driven SD-WAN as a Managed Service
- Enabling SASE with Juniper AI-Driven SD-WAN

Data Sheets

- Marvis Virtual Network Assistant
- Mist Wi-Fi Assurance
- Mist Wired Assurance
- Mist WAN Assurance

Case Studies

- Dartmouth College
- Ossur
- The Gap
- VolkerWessels
- Granite Telecom

Videos

- Differentiate with Juniper AI-Driven Solutions for Managed Services
- Juniper AI-Driven Enterprise: Momentum and Key Developments
- Delivering Indoor Location as a Managed Service

About Juniper Networks

At Juniper Networks, we are dedicated to dramatically simplifying network operations and driving superior experiences for end users. Our solutions deliver industry-leading insight, automation, security and AI to drive real business results. We believe that powering connections will bring us closer together while empowering us all to solve the world's greatest challenges of well-being, sustainability and equality.

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