

Mist, Juniper's AI-Native Networking Platform: Built With AI and For AI

Leverage industry-leading AIOps to optimize network operations and build the optimal network for AI workloads

See how the Mist platform delivers exceptional experiences for every end user and operator.

[Explore the platform →](#)

The challenge

80%

of organizations believe the network is more/much more complex than just two years ago¹

The capabilities you need

80%

Decrease in time spent managing the network reported by [Port Huron Schools](#)

3x

Faster to configure the data center network reported by [Bizway](#)

Limited resources, growing complexity, increasing security risks

IT leaders like yourself are expected to deliver greater value from their networks with the same or lower budgets and limited staff. You must also manage rising complexity from exponential growth in data and the proliferation of network devices and users. And as user expectations for exceptional network experiences continue to grow, security is critical as bad actors constantly probe for any opportunity to breach your network defenses.

A secure network optimized for performance

The impact of a security breach or network downtime can be devastating for nearly any organization, but secure connectivity does not in itself assure a great experience. Mist™, Juniper's AI-native networking platform, enables networks to evolve by continually getting smarter, more automated, and more capable of leveraging the transformative, proactive power of AI.

- **Simplicity**
Reduce network complexity and streamline operations so operators can focus on more strategic initiatives and innovation
- **Productivity**
Automate routine tasks, gain real-time insights into user experiences, and enable proactive, self-healing network operations
- **Reliability at scale**
Ensure consistent performance and high availability across all network devices, demanding workloads, and modern enterprise applications
- **Zero Trust security**
Protect users, devices, applications, and data wherever they are with built-in security, unparalleled visibility, and simplified policy control applied and enforced at a global scale

The answer: Mist

Delivering on the promise of AI

The Mist platform utilizes a common cloud and the **Marvis® AI engine** across all networking domains—wireless, wired, SD-WAN, WAN, data center, and security.

This end-to-end approach simplifies IT operations—from deployment to proactive troubleshooting and rapid issue resolution—to boost productivity with up to 90% fewer trouble tickets, reduce OpEx by up to 85%, and optimize end user experiences. It also represents the industry's most high-performance, adaptive network infrastructures, purpose-built to support mission-critical AI workloads to achieve up to 10x more AI data center network reliability.

How it works

Purpose-built with AI and for AI

Networking is essential to how we live, work, and play, which is why in today's digital landscape, network performance can no longer be defined by uptime alone. Simply being connected is not the same as exceptional network experiences, and AI is the key to unlocking the full potential of network performance. At Juniper, our experience-first approach to AI-native networking is leading the convergence of AI and networking to drive flawless, personalized end user experiences. We do this by leveraging four key pillars: the right data, the right infrastructure, the right results, and the right security.

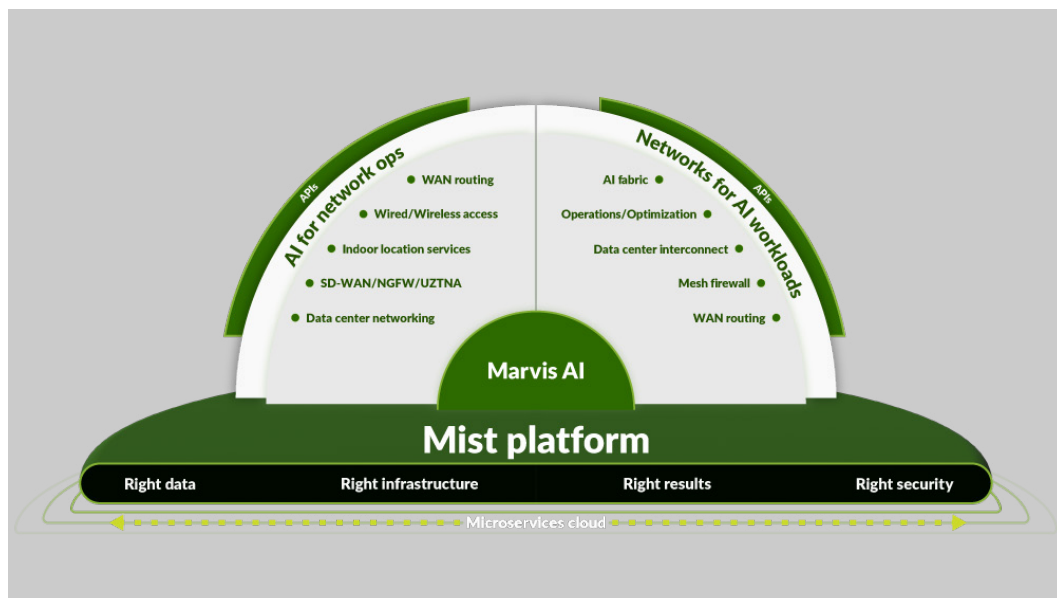


FIGURE 1

Mist, Juniper's AI-native networking platform, is built on the right data and right infrastructure to deliver the right results—all protected by the right security.

The right data

Great AI begins with great data. Juniper is the first technology provider to truly capture the right data by asking experience-first questions like, “How do we ensure every user in every location is getting a consistent experience?” and “Can the network adapt to fix issues before users even know they exist?”

Using quality data collected over 10 years via rich, relevant, real-time telemetry—across purpose-built APs, routers, switches, firewalls, and integration with third-party applications—Mist analyzes and optimizes operations across the network in real time, providing actionable insights down to the level of individual users and sessions.

The right infrastructure

Processing massive amounts of data and producing actionable results in real time requires a scalable, sustainable, and secure infrastructure. Mist provides the right infrastructure with proven performance across highly complex deployments in some of the largest and most innovative enterprises. Our optimized silicon strategy and 100% open API-driven microservices cloud architecture offers agility, scalability, optimal performance, and seamless third-party integration for even the most diverse networking environments.

The right results

IT teams are under constant pressure to ensure highly reliable connectivity and proactively resolve network issues before they impact user experiences. However, the complexity of modern networks and the sheer volume of data make this a significant challenge.

The Marvis AI engine provides smarter recommendations, faster issue identification, and automated resolutions through continuous development and improvement of AI models trained on anomaly detection, unique service levels, and event correlation.

Armed with these capabilities, IT operators can respond faster and leverage Self-Driving Network™ operations to resolve issues before they impact end users—whether it’s wireless, WAN, an application, or a security breach.

And the [Marvis® AI Assistant](#) further simplifies network operations and democratizes operations through its conversational interface, recommended proactive actions, and Marvis Minis digital experience twins.

The right security

Staying ahead of the evolving threat landscape is paramount. Juniper helps organizations secure their network with easy-to-automate Zero Trust at scale and end-to-end visibility and control via a unified management Mist dashboard, common Junos OS, and single policy framework. This gives IT operators a comprehensive view for configuring, managing, and troubleshooting network and security operations, enabling them to monitor traffic patterns, detect anomalies, and enforce consistent security policies across the entire infrastructure.

93%

Organizations stating that integrated AI and automation solutions meet or exceed their expectations for increased network team productivity²

How it works

97%

Organizations citing they are open to evaluating new network vendors if they have superior AIOps technology³

AI for network operations

The Mist platform delivers industry-leading AIOps across all networking domains to simplify operations for IT teams and deliver exceptional experiences to end users. Marvis AI provides proactive insights and actions to ensure issues are rapidly identified and actioned. This enables your IT team to spend less time troubleshooting and more time on strategic initiatives while end users enjoy seamless connectivity with no interruptions or slowdowns.

With a cloud-native unified platform, Mist provides unparalleled visibility and control while drastically simplifying operations. Consolidated management also breaks down network silos, enabling more efficient and streamlined operations, as well as exponential time and cost savings.



WAN routing

Secure, reliable, and scalable routing connectivity between campuses, branches, data centers, and cloud



Wireless and wired access

High performance, secure, and scalable connectivity for mobile and wired devices across enterprise environments



Indoor location services

Accurate, real-time indoor location tracking using Wi-Fi, BLE, AI and cloud based analytics



SD-WAN/NGFW/UZTNA

Cloud networking and security solutions offering secure, reliable, and application-aware connectivity across enterprise environments



Data center networking

Comprehensive hardware, software, and AIOps for secure, scalable, automated data center infrastructures

How it works

Networks for AI workloads

To maximize AI investments, your enterprise needs robust, highly specialized networking infrastructure designed to build AI data centers optimized for high-speed data processing. Juniper's AI data center networking solution leverages highly scalable, AI-native WAN and industry-leading AIOps to support the unique needs of AI training, inference, and storage clusters. This innovative solution brings together the highest performing routers and switches, simplified management, and Zero Trust security to optimize AI data center networking performance. It delivers the fastest job completion times (JCTs), maximizes GPU utilization, and achieves optimal ROI with minimal demand on limited IT resources.

Juniper also gives you the only multivendor management solutions available for data center networks, giving you complete freedom with no vendor lock-in. Intent-based networking automates and validates operations for streamlined deployments and day-to-day operations. And by leveraging standards-based Ethernet, you gain a more flexible and cost-effective alternative to proprietary solutions like InfiniBand.

 AI fabric (switching/routing)

AI-native network fabric that integrates automation, AI, and ML to optimize network operations at scale

 Operations and AI optimization

AI, ML, and automation optimize network performance, simplify operations, and improve service delivery

 Data center interconnect (DCI)

Ensures high-performance, scalable, and automated data transport between and within data centers

 Mesh firewall

Mesh firewalls and distributed services architecture deliver industry leading scale. AI-native threat detection, advanced analytics tools, and automation enhance security

 WAN routing

High-performing routing infrastructure that ensures scalability and network performance

43% of organizations identified network security as their top connectivity-related challenge⁴

Comprehensive security, visibility, and control

As cyberattacks rapidly grow more sophisticated, network security must quickly evolve to protect increasingly complex infrastructures. Traditional siloed security approaches, which separate network and security management, struggle to keep up with modern threats.

The Mist platform seamlessly integrates networking and security functions, enabling Zero Trust security via unified management, a common Junos OS, and single policy framework. By consolidating security, networking, and AIOps under a single UI, routers, switches, firewalls, and full network access control (NAC) work together to coordinate effective threat protection and consistent policy enforcement across all domains—for all users—regardless of location.

Embedding security natively into the platform empowers organizations to respond more effectively to incidents, minimize downtime, and optimize network performance.

Core capabilities



Routine task automation	Allows IT teams to deploy faster and focus on strategic initiatives instead of day-to-day maintenance
Proactive insights	Enables operators to quickly identify and resolve issues through event correlation, anomaly detection, and root cause analysis
The Self-Driving Network™	Autonomously identifies and resolves network issues, optimizing performance with minimal IT intervention
Integrated Zero Trust security	Unifies networking, security, and AIOps, delivering greater visibility and control with consistent policies for effective threat protection
Microservices cloud	Offers optimal performance and agility and 100% open APIs for seamless third-party integrations with applications like Microsoft Teams, ServiceNow, and Zoom
Industry-leading AI assistant	Marvis AI Assistant provides simple natural language answers on par with a human expert; performs automated actions that save time and money while optimizing user experiences
Scalable AI infrastructure	Delivers high-bandwidth, low-latency connections to ensure the fastest JCTs and maximized GPU utilization for AI workloads



“With Mist, the **City of Parkland** doesn’t stress about its network.”



“**eMag** delivers seamless shopping experiences to millions of users with Juniper’s automated data center networking.”

Our advantage

Designed from the ground up with AI at its core

Juniper stands out in the market by taking an experience-first approach to networking. From the beginning—over 10 years ago—we designed the Mist platform with AI and for AI to simplify operations and boost productivity for operators, while providing seamless, secure, and reliable connectivity for end users.

Why Juniper

The NOW Way to Network

Juniper Networks believes that connectivity is not the same as experiencing a great connection. Mist™, Juniper's AI-native networking platform, is built from the ground up to leverage AI to deliver exceptional, highly secure, and sustainable user experiences from the edge to the data center and cloud. Additional information can be found at Juniper Networks ([juniper.net](https://www.juniper.net)) or connect with Juniper on [X](#) (Twitter), [LinkedIn](#), and [Facebook](#).

More information

Dive deeper into the platform

The Mist platform <https://www.juniper.net/us/en/ai-native-networking-platform.html>

Notes and references

- 01 2024 ETR Technology Spending Intentions Survey (TSIS)
- 02 Ibid
- 03 Ibid
- 04 IDC's Future of Connectedness Survey (06/23)

Take the next step

Connect with us

Learn how together we can build what's next.

[Let's chat](#) →

Accelerate your journey

Streamline your adoption of the industry's first AI-native networking platform.

[Go there NOW](#) →

The Q&AI Podcast

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Customer stories

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