MIST AND JUNIPER DELIVER A FULL-ACCESS SOLUTION BUILT ON ARTIFICIAL INTELLIGENCE

Automated solution for seamless wired and wireless networks powered by network insights and machine learning

Challenge
- No visibility into issues adversely affecting the user experience
- Limited metrics across wired and wireless domains
- Manual configuration and management processes causing inefficiencies
- Lack of accountability when disparate solutions are deployed across the IT stack

Solution
Juniper and Mist have partnered to deliver an integrated solution that enables seamless access at the edge, offering a complete portfolio of enterprise-grade network and security infrastructure and an AI-driven wireless solution to ensure a best-in-class user experience.

Benefits
- Visibility into the user's wired and wireless experience empowers IT.
- API-based automation saves time and money when deploying and operating a joint Mist/Juniper network.
- Operational efficiencies through automation enable rapid fault isolation and troubleshooting.

A paradox exists in the business world: while IT's strategic importance is growing, budgets are shrinking, challenging companies to do more with less. As a result, IT organizations are seeking solutions that allow them to move from reactive to proactive, from network-centric to user-centric, and from manual to automated in order to mitigate downtime and reduce the need for human intervention.

Juniper Networks and Mist have joined forces to automate several key elements of the IT stack, creating a powerful, cohesive solution that ensures a superior end-user experience—from the wireless edge, across the wired LAN, to the WAN. Working together, Juniper and Mist deliver end-to-end visibility, simplicity, and exceptional performance to streamline IT operations.

The Challenge

While wired and wireless networks are more business-critical than ever, they are also harder than ever to operate given the sheer number of mobile devices and Internet of Things (IoT) resources—not to mention the extensive variety of hardware, operating systems, and applications currently in use. Traditional architectures—highly manual and network-centric—lack the scale, flexibility, and end-to-end visibility required to support today's users and the IT departments that manage them.

The Juniper Networks-Mist Solution

Juniper Networks, a leading provider of networking and security solutions, and Mist, a leader in artificial intelligence (AI)-driven wireless networking, have partnered to deliver a seamless, end-to-end solution for the modern enterprise: one that offers deep insights into the wired and wireless network while supporting traditional architectures.

The combined Juniper-Mist solution delivers an elastic, simplified architecture with distributed intelligence that optimizes performance, security, resilience, and management for dense, heavily utilized networks hosting a large number of mobile devices. With this joint solution, users experience consistent levels of performance, security, and reliability when accessing resources, whether they connect via a wired or wireless network. Users can work from anywhere and on any device; the intelligent network delivers a consistent experience to all users whether they are at corporate headquarters, in a branch or a remote office, at home, or on the road.
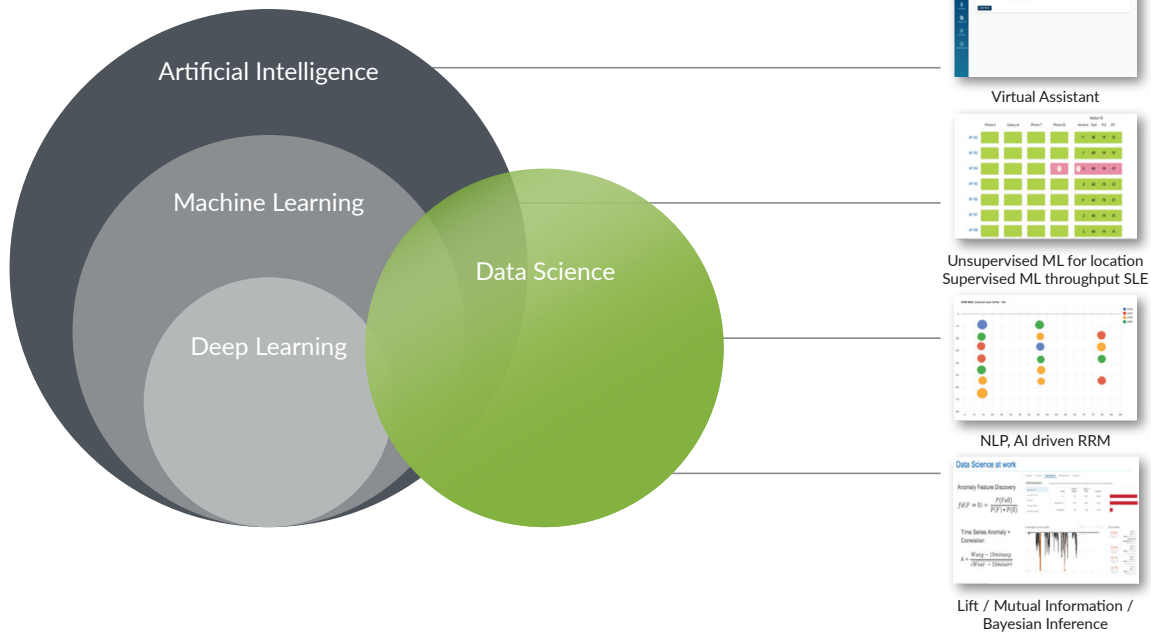
Virtual Assistant

Unsupervised ML for location
Supervised ML throughput SLE

NLP, AI driven RRM

Lift / Mutual Information /
Bayesian Inference

Figure 1: Mist advanced AI solution components

Features and Benefits

The best-of-breed, full-access joint solution from Mist and Juniper delivers:

- Predictable, reliable, and measurable network access with visibility into the user experience
- Consistent network segmentation and security across both wired and wireless infrastructure
- Operational simplicity with automation that saves time and money while eliminating manual errors
- High-value, location-based services such as advertisements, wayfinding, messaging, and asset location

Solution Components

Mist built the first AI-driven wireless LAN (WLAN) designed specifically for the smart device era. The Mist Learning WLAN makes Wi-Fi predictable, reliable, and measurable by providing unprecedented visibility into the user experience and replacing time-consuming manual IT tasks with proactive automation. Mist was also the first vendor to merge enterprise-grade Wi-Fi, Bluetooth Low Energy (BLE), and IoT to deliver personalized, location-based wireless services without requiring battery-powered beacons. All operations are managed via Mist's modern cloud architecture for maximum scalability, agility, and performance.

The Mist Learning WLAN includes the following components:

- **Mist cloud:** All wireless deployment, operational, and management functions are handled via the Mist cloud, which offers the following Wi-Fi and virtual Bluetooth LE services:
  - **Wi-Fi assurance:** Includes user service levels, automated event correlation for troubleshooting, dynamic packet capture, policy configuration, guest WLAN access, and more

  - **Marvis Virtual Network Assistant:** Provides natural language queries with integrated help desk functionality for rapid and simple problem resolution
  - **Mobile user engagement:** Pushes location-based information to mobile users, such as turn-by-turn directions and proximity notifications
  - **Asset location:** Finds high-value resources such as shipping pallets, wheelchairs, security personnel, etc.
- **Mist Access Points** are deployed on premises for Wi-Fi, BLE, and/or IoT access.

The Juniper solution components include:

- **End-to-end network insights and service assurance:** Juniper Networks® Contrail Service Orchestration designs, secures, automates, and runs the entire service life cycle across Juniper Networks NFX Series Network Services Platforms and SRX Series Services Gateways, as well as the vSRX Virtual Firewall and vMX Virtual Router, both of which are available in public cloud marketplaces. Contrail Services Orchestration, part of Juniper Contrail SD-WAN, delivers SD-WAN capability to the branch. The SRX Series features power over Ethernet (PoE) to connect Mist wireless access points. Both the SRX Series and Mist access points support zero touch provisioning (ZTP), eliminating the need for onsite IT expertise during branch deployment. Working with Mist machine learning and artificial intelligence, Contrail Service Orchestration provides deep insights and analytics for the end-to-end network, beyond the silos of disparate wired and wireless domains. Contrail SD-WAN and Mist Learning WLAN together provide a complete branch solution. See figure 2.
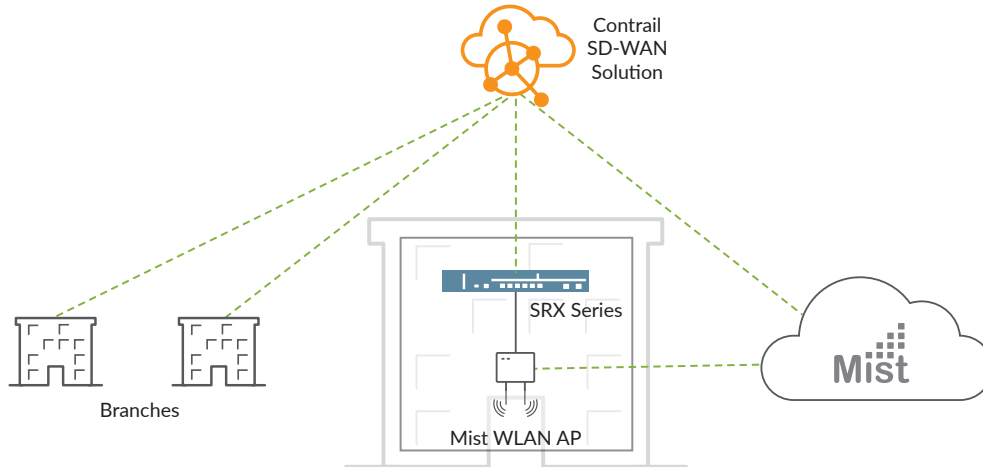
Figure 2: Mist and Juniper SD-WAN solution

- **Enterprise-grade security:** The scalable SRX Series Services Gateways provide a foundation for implementing a wide array of protections, including high-performance unified threat management (UTM) services, next-generation firewall (NGFW) services, and dynamic threat intelligence. SRX Series gateways offer multiple deployment options, including chassis-based and virtual appliances, with full feature parity. Advanced security and VPN features available on the SRX Series solutions ensure that consistent security levels are maintained across branch and campus networks.

- **Cloud-grade switching:** Cloud-grade EX Series switches, designed for the converged enterprise branch, campus, and data center as well as for service providers, address growing demands for high availability, unified communications, and virtualization. High-performance, scalable, fixed-configuration 1GbE and multigigabit platforms, including the EX2300, EX3400, and EX4300, offer optimized network access, Media Access Control Security (MACsec), Power over Ethernet (PoE), and power savings for access point deployment. The EX4300 multigigabit switch supports 1/2.5/5/10GbE and can deliver up to 95W of PoE,
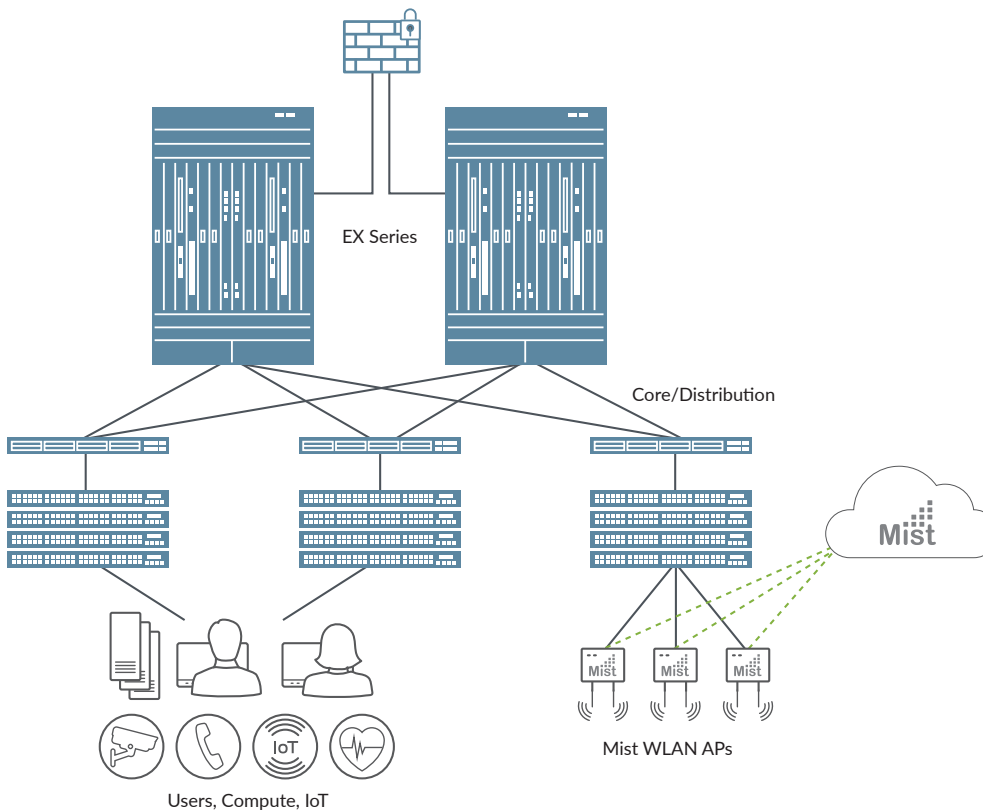

Figure 3: Mist and Juniper Campus solution

future proofing access networks. Additionally, EX Series Ethernet access switches offer an extensive set of features such as port security, 802.1X, and network segmentation to provide different levels of protection based on business needs. Fixed-configuration 10GbE aggregation switches such as the EX4600 and EX4650 offer scalable solutions for high-density campus aggregation and small campus deployments, while the modular EX9200 and EX9250 deliver highly scalable and flexible campus core switching with support for Junos Fusion Enterprise, Multi-Chassis LAG (MC-LAG) and EVPN-VXLAN. (Figure 3)

Summary—Juniper, Mist Unified Wired, Wireless Solution for the Modern Day Enterprise

Today's enterprise networks support a large number of Wi-Fi-connected users and devices, as well as applications deployed in public, private, and hybrid clouds. Users demand the same seamless network experience no matter how they are connected or where their applications reside.

Organizations are also looking to deploy location-based services to enhance the user experience and monetize value-added services. The joint Juniper-Mist solution combines network intelligence with artificial intelligence and deep-learning insights to deliver a remarkable user experience, enabling IT organizations to deploy value-added services through automation.

Next Steps

To learn more about the joint Juniper-Mist solution, please contact your Juniper Networks or Mist representative, or visit **www.juniper.net** and **www.mist.com.**

About Mist

Mist built the first AI-driven wireless platform, designed specifically for the Smart Device Era. The Mist Learning Wireless LAN makes Wi-Fi predictable, reliable, and measurable by providing unprecedented visibility into the user experience and by replacing time-consuming manual IT tasks with proactive automation. In addition, Mist is the first vendor to bring enterprise-grade Wi-Fi, BLE, and IoT together to deliver personalized, location-based wireless services without requiring battery-powered beacons. All operations are managed via Mist's modern cloud architecture for maximum scalability, agility, and performance.

The Mist team consists of leading experts in wireless, machine learning, and cloud, who are responsible for building the largest and most advanced networks in the world. Founded in 2014, the company is based in Cupertino, CA, and funded by top investors, including Lightspeed Venture Partners, Norwest Venture Partners, GV (formerly Google Ventures), and Kleiner, Perkins, Caufield and Byer (KPCB). For more information, visit **www.mist.com**.

About Juniper Networks

Juniper Networks brings simplicity to networking with products, solutions and services that connect the world. Through engineering innovation, we remove the constraints and complexities of networking in the cloud era to solve the toughest challenges our customers and partners face daily. At Juniper Networks, we believe that the network is a resource for sharing knowledge and human advancement that changes the world. We are committed to imagining groundbreaking ways to deliver automated, scalable and secure networks to move at the speed of business.

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