



## LEVERAGED FOR SUCCESS

- Elite Partnership Status
- Expert-Level Certified Engineers
- Extensive Platform Specific Experience & Knowledge
- Gained Efficiencies from Strategic Distributor Relationships
- Secure Supply Chain
- Flexible Onsite Availability
- Best Practice Project Management and Engineering Methodologies

## NETWORK INFRASTRUCTURE SERVICES

- Architecture Design & Deployment
- Cyber Defense Infrastructure
- Modernization / Optimization
- Assessment / Compliance
- Migration / Refresh
- Customized Engineering Block Schedules

## PROVEN PAST PERFORMANCE

- Enterprise
- K-12 and Higher Education
- Service Provider
- State and Local Government



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# ENABLING THE AI-DRIVEN ENTERPRISE

MIST DELIVERS ON THE POWER OF AUTOMATION

## JUNIPER NETWORK'S MIST PLATFORM SAVES TIME AND MONEY, MAXIMIZES IT PRODUCTIVITY, AND DELIVERS THE BEST NETWORKING EXPERIENCE TO ANY DIGITAL USER

Copper River is partnered with Juniper Networks to deliver the Mist Platform—a true innovation to the networking space with the world's first AI-driven wired and wireless network.

The Mist AI Platform makes networking predictable, reliable and measurable with unprecedented visibility into the user experience. Time consuming manual IT tasks are replaced with AI-driven proactive automation and self-healing capabilities, lowering networking operational costs and saving substantial time and money.

Mist also brings enterprise-grade Wi-Fi, Bluetooth® LE and IoT together so businesses can increase the value of their wireless networks through personalized location services, such as wayfinding, proximity notifications, and asset location. With Mist's patented virtual BLE (vBLE) technology, no battery beacons or manual calibration are required. Mist also extends our AI operational efficiency and insights to the wired side of the business.†

All operations are managed via Mist's open and programmable microservices cloud architecture. This delivers maximum scalability and performance while also bringing DevOps agility to wired and wireless networking and location services.

## THE MIST CLOUD

### Microservices bring unparalleled agility, scale, resiliency

Mist makes it easy to add or remove new features by leveraging a microservices cloud architecture. New enhancements and bug fixes are delivered almost weekly without network disruption. Services scale up or down elastically when they're needed, eliminating the cost and complexity of monolithic hardware. Plus, the Mist platform is inherently resilient as the failure of one service does not impact others.

### AI engine lowers OpEx, delivers unprecedented insight

The Mist Cloud uses AI and data science to analyze large amounts of rich metadata collected from Mist Access Points and Juniper EX Series Switches† to provide actionable insight.

For example:

- Supervised machine learning correlates events for rapid root cause identification.
- Time-series anomaly detection identifies negative trends and determines the magnitude of their impact.
- AI-driven Radio Resource Management (RRM) optimizes the RF settings in real-time based on changing conditions.
- Natural Language Processing (NLP) is used for making complex queries simple and fast.
- Unsupervised machine learning is used with Mist's vBLE technology to accurately locate users and devices.

†Juniper Networks EX Series Access and Aggregation Switches

### Networking-as-a-Service

The Mist Cloud enables networking and location services to be consumed in a scalable and cost effective manner. Customers select the specific subscription services (detailed on page 2) that are best for their environment, and can easily add/remove cloud services as business requirements change. No additional hardware is required.

### Fully programmable cloud

The Mist platform is 100% programmable, using open APIs, for full automation and seamless integration with complementary products including our AI for IT partners across LAN, WAN, security, engagement and asset location.

### Accelerate Your Digital Transformation with Network and Business Insights

Mist’s Wired/Wireless Assurance, User Engagement, or Asset Visibility service includes a base analytics capability for analyzing up to 30 days of data, simplifying the process of extracting network insights from data and analytics across your enterprise—allowing you to properly align support resources or introduce enhanced premium services. For enterprises needing deeper flexibility to extend the data timeline beyond\* 30 days or access other 3rd Party\*solutions with customizable\* reporting for better shopper and guest behavior understanding, Mist Premium Analytics Subscription services is available.

## ACCESS POINTS

### Best Wi-Fi and Bluetooth LE performance

In addition to delivering the best 802.11ax (Wi-Fi 6) and 802.11ac Wi-Fi range and performance, Mist APs incorporate a patented dynamic vBLE 16 element antenna array to deliver the industry’s most accurate and scalable location services.

### Data collection, analysis and enforcement

Mist APs collect data and enforce policies in conjunction with the Mist Cloud, which is critical when doing analytics, machine learning, location services, and event correlation. For enhanced visibility, several models incorporate IoT sensors and a third radio for business process automation, constant monitoring and intelligent packet capture to speed up troubleshooting.

### Single, enterprise-grade platform for Wi-Fi, Bluetooth LE, and IoT

For network convergence, Mist APs incorporate a port for direct, and programmable, integration to the analog and digital interfaces of Internet of Things (IoT) devices.



| MIST ACCESS POINTS |                                 |                              |                                                         |                                                        |                              |                                     |                           |                           |                  |
|--------------------|---------------------------------|------------------------------|---------------------------------------------------------|--------------------------------------------------------|------------------------------|-------------------------------------|---------------------------|---------------------------|------------------|
|                    | AP43                            | AP63                         | AP33                                                    | AP32                                                   | AP12                         | AP41                                | AP61                      | AP21                      | BT11             |
| Deployment         | Indoor                          | Outdoor                      | Indoor                                                  | Indoor                                                 | Indoor Wall Plate            | Indoor                              | Outdoor                   | Indoor                    | Indoor           |
| Wi-Fi Standard     | 802.11ax (Wi-Fi 6) 4x4 : 4SS    | 802.11ax (Wi-Fi 6) 4x4 : 4SS | 802.11ax (Wi-Fi 6) 5GHz: 4x4 : 4SS<br>2.4GHz: 2x2 : 2SS | 802.11ax (Wi-Fi 6) 5GHz:4x4 : 4SS<br>2.4GHz: 2x2 : 2SS | 802.11ax (Wi-Fi 6) 2x2 : 2SS | 802.11ax (Wi-Fi 6) Wave 2 4x4 : 4SS | 802.11ax Wave 2 4x4 : 4SS | 802.11ax Wave 2 2x2 : 2SS |                  |
| Wi-Fi Tri-Radio    | ✓                               | ✓                            | ✓                                                       | ✓                                                      | ✓                            | ✓                                   | ✓                         | —                         | —                |
| Antenna Options    | Internal/ External              | Internal/ External           | Internal                                                | Internal/ External                                     | Internal                     | Internal/ External                  | Internal/ External        | Internal                  | Internal         |
| Virtual BLE        | ✓                               | ✓                            | ✓                                                       | —                                                      | —                            | ✓                                   | ✓                         | ✓                         | ✓                |
| IoT Interface      | ✓                               |                              |                                                         |                                                        |                              |                                     |                           |                           |                  |
| IoT Sensors        | Humidity, Pressure, Temperature | —                            | —                                                       | —                                                      | —                            | —                                   | —                         | —                         | —                |
| Warranty           | Limited Lifetime                | One Year                     | Limited Lifetime                                        | Limited Lifetime                                       | Limited Lifetime             | Limited Lifetime                    | One Year                  | Limited Lifetime          | Limited Lifetime |

## JUNIPER NETWORKS EX SERIES SWITCHES

Meet your digital transformation needs with a Juniper portfolio EX Series Switches address growing enterprise demands for high for a full end-to-end software-defined enterprise. The Juniper availability, unified communications and virtualization.

| JUNIPER EX SERIES SWITCHES           |                                                          |                                                      |                                           |                                                                        |                                                                       |                                                  |
|--------------------------------------|----------------------------------------------------------|------------------------------------------------------|-------------------------------------------|------------------------------------------------------------------------|-----------------------------------------------------------------------|--------------------------------------------------|
| EX2300                               | EX2300<br>Multigigabit                                   | EX3400                                               | EX4300                                    | EX4300                                                                 | AP12                                                                  | AP41                                             |
| Access                               | Multigig Access                                          | Access                                               | Access and Aggregation                    | Multigig Access and Aggregation                                        | Core and Aggregation                                                  | Core and Aggregation                             |
| 48 x 1GbE and<br>4 x 1/10GbE uplinks | 16 x 1/2.5GbE and<br>32 x 1GbE or<br>6 x 1/10GbE uplinks | 48 x 1GbE and<br>4 x 1/10GbE or<br>2 x 40GbE uplinks | 48 x 1GbE and<br>4 x 10/40 GbE<br>uplinks | 48 x 1/2.5/5/<br>10GbE and<br>4 x 10GbE or<br>2 x 40/100GbE<br>uplinks | 24 x 10GbE and<br>4 x 40GbE with<br>8 x 10GbE<br>or 4 x 40GbE uplinks | 48 x 10/25GbE<br>and 8 x<br>40/100GbE<br>uplinks |
| PoE/PoE+                             | PoE/PoE+                                                 | PoE/PoE+                                             | PoE/PoE+                                  | PoE/PoE+/PoE++                                                         | N/A for PoE                                                           | N/A for PoE                                      |

## ENTERPRISE NETWORKING CLOUD SERVICES

### Wi-Fi Assurance

Mist makes Wi-Fi predictable, reliable, and measurable. Automate operations, save time and money, and get unprecedented visibility into the Wi-Fi user experience. Secure your network with 802.1X, IPSec, RogueAP detection and more.

- **Customizable Wi-Fi Service Levels** Set, monitor, and enforce Service Level Expectations (SLE) for key Wi-Fi performance metrics.
- **Root Cause Identification in One Click** Proactively identify and fix the root causes of problems using Mist's ProactiveAnalytics and Correlation Engine (PACE).
- **Guest Wi-Fi** The industry's most scalable guest access solution with options including: multiple language support, customizable branding, social login, and external portal/AAA/RADIUS integration.
- **AI-Driven Radio Resource Management** Learn and better optimize radio settings to assure performance, while also instantaneously adapting to intermittent outside interference.
- **Real-time User State Information** Dynamically capture packets the moment an event occurs; Rewind to see any user's state at any point in time.
- **Simple Resource Assignment and QoS** With WxLAN, assign and prioritize network resources to Wi-Fi users with the click of a mouse or via pre-assigned policies.

### Wired Assurance

Deliver better experiences for connected devices with Alpowered automation and service levels. Wired Assurance leverages rich Junos telemetry from EX Series Switches to enable simpler operations, shorter mean time to repair and improved visibility into end-user experiences of wired devices.

- **Wired Service Levels** Enforce SLEs of pre-/postconnection performance metrics such as throughput, successful connects and switch health.
- **Root Cause Identification in One Click** Proactively identify and fix the root causes of problems using Mist's ProactiveAnalytics and Correlation Engine (PACE).
- **AI-Driven Switch Insight** Get switch insights down to the port level for detailed views of CPU, memory utilization, bytes transferred, traffic utilization and power draw.
- **Simplified Onboarding Claim** Juniper EX Switches with one activation code for true plug-and-play capabilities. Use templates and profiles to streamline for auto-provisioning and switch configuration.

## WAN Assurance

Bring AI-driven insights for the WAN and branch to your Juniper secure SD-WAN solution and shift the focus from network and application behavior to actual user experiences.

- **Improved User Experience** with insights derived from SRX Series SD-WAN edge device telemetry data. This allows WAN Assurance to compute unique “User Minutes” that indicate whether users are having a good experience.
- **End to End Impact Analysis** by working with Marvis to correlate events across the LAN, WLAN and WAN for rapid fault isolation and resolution across all domains.
- **Automatic Identification and Correction** enables proactive actions as a result of anomaly detection with automated workflows, with an eye towards completely self-driving networks from client to cloud.

## Marvis Virtual Network Assistant

Meet Marvis – the first interactive, virtual network assistant for The Self-Driving Network™. It helps IT teams get to answers in real-time by streamlining operations and simplifying troubleshooting, while boosting user experiences.

- **A Conversational Interface** Marvis uses Natural Language Processing (NLP) with Natural Language Understanding and Knowledge Graphs to understand user intent and goals. It contextualizes the inquiry and returns specific results, and can even take actions based on user feedback.
- **Marvis Actions for The Self Driving Network** Marvis Actions leverages the Mist AI engine to identify the root cause of issues across the IT domains (WLAN, LAN, WAN, Security) and automatically fixes (self-driving) or recommends actions (driver-assist) with high efficacy.
- **Anomaly Detection** Marvis adds anomaly detection to the SLE framework so that administrators can rapidly and proactively identify service impacting events that assure rapid determination and resolution of the root cause of issues.
- **Correlate Data to Understand Scope** Marvis correlates information across a large knowledge base to determine the scope and magnitude of a problem.
- **Accurate Root Cause Analysis** Bayesian Inference, a part of our data science toolbox, is used to identify causes with the highest probability of association to the problem occurring on the network.

## Premium Analytics

- **End-to-end Network Visibility** Get 30 days of insights through the analysis of network data from Mist across your network to optimize end-user/client experiences and identify trends to improve network resource optimization. Additional insights with other third party\* networking solutions with customized\* reporting is available.
- **Orchestrated Networking and Application Performance Queries** Correlate and analyze data across Mist Cloud for optimized application delivery. Deeper insights across 3rd Party\* networking solutions and devices to generate customized queries for WAN performance from campus to branch is available.
- **Simplified Network Transparency** Get Access to real-time line of site reporting to view network abnormalities, like rogues and honeypots. Extend viewing periods beyond 30 days\* and request customized\* reports with other 3rd Party\* networking solutions.

## BLUETOOTH LE CLOUD SERVICES

### User Engagement

- **Real-time Wayfinding** Help employees, guests, and customers get to where they need to be with turn-by-turn directions. Enable wayfinding with accuracy of up to 1 meter (3.3 feet) with sub-second latency.
- **Real-time Proximity Notification and Alerts** Greet patients, clients or customers as they arrive onsite. Create push notifications anywhere with unlimited virtual beacons. Deliver contextually relevant messages anywhere for a personalized mobile experience.
- **SDK for Mobile App Integration** Mist offers a mobile SDK that enables you to integrate your mobile application wayfinding and notifications with Mist’s virtual Bluetooth LE infrastructure.

### Asset Visibility

With Mist’s patented virtual Bluetooth LE technology, the same infrastructure for engaging with mobile users can be used for asset visibility.

- **Get Full Visibility Into People and Things Using Standards-based Bluetooth LE Services** Easily locate key resources, like nurses, security guards, and sales associates. Track IV pumps, forklifts, and high value assets with Bluetooth LE tags.

## ABOUT COPPER RIVER INFORMATION TECHNOLOGY

Serving in an elevated capacity as both an Elite and as a "by invitation only" Enterprise+ Juniper Networks Partner, Copper River IT delivers extraordinary engineering, design and professional services expertise to craft a complete, end-to-end technology solution. Since our inception, Copper River IT continues to transform the way our clients do business. As a Federally Recognized Alaskan Tribal Small Disadvantaged Business, owned by the Native Village of Eyak (NVE), we deliver high-performance IT solutions and services based on our unique advantage of holding elite-level partnerships with today's most innovative technology manufacturers. Some of the innovative solutions and services we offer enable Cybersecurity, Data Center & Cloud Architectures, Enterprise Networks, and Mobility for Federal, SLED and Commercial customers alike.

### AT A GLANCE

- Federally Recognized, Alaskan Tribal Owned Disadvantaged Business
- Founded in 2006
- ISO 9001:2008 Certified
- SBA 8(a) Graduated | 2015

### CONTRACT ROSTER

- State, Local & Education Vehicles
  - Virginia Higher Education Procurement Consortium (VHEPC)
  - Maryland Department of Information Technology (DoIT)
  - Maryland Education Enterprise Consortium (MEEC)
  - Virginia Information Technologies Agency (VITA)

- **Asset Identity** Assign names to asset tags or BLE-enabled mobile/IoT devices to locate these assets on your venue map or integrate location with business applications.
- **Detailed Analytics** Monitor visits and dwell times, with detailed drill down into zone traffic patterns and congestion points.
- **Asset Location and Analytics Powered by APIs** A complete and open set of APIs enable you to integrate your asset tags as well as asset location and analytics applications with the Mist virtual Bluetooth LE infrastructure.

#### Premium Analytics

- **Customer segmentation and reporting based on visitor telemetry** Review your customer/workforce traffic visits for resource planning or customized notification services. Out-of-the-box reporting and dashboards for 30 days, with extended option\* to 12 months or longer.
- **Customized\* dwell and third party** reporting for traffic and trend analysis. Generate customized\* visitor segmentation with motion paths (traffic flows between departments dynamically or historically for cross-sell service delivery across brands and product affiliates.
- **Correlate customer-guest traffic and trend analysis** Identify and segment various customer/guest types across your product portfolio. Expand data correlation beyond\* 30 days for planning of existing and new resources and services.

\*Mist Premium Analytics service subscription is needed.

*By delivering unprecedented automation and insights, the Mist AI Platform saves time and money, maximizes IT productivity, and delivers the best networking experience.*

*To learn more about how your organization can benefit from the AI-Driven Enterprise, contact Copper River IT today.*