AP63 ACCESS POINT SERIES

Highest Performance Outdoor 802.11ax (Wi-Fi 6) Wi-Fi with Bluetooth® LE Driven by Mist AI

The Wi-Fi 6 (802.11ax) AP63 Series access points driven by Mist AI offer high performance Wi-Fi to ensure enterprise business continuity and operation efficiency in outdoor environments. The ruggedized and weather resistant access points can be deployed in extremely harsh environments to meet expected SLE and deliver unprecedented user experience. The AP63 Series integrates the Juniper patented AI for AX capabilities and dynamic Virtual Bluetooth LE (vBLE) antenna array to automate network operation and boost Wi-Fi performance, while providing real-time network insights and location services. Managed by the Juniper Mist Cloud Architecture, the outdoor AP63 Series is ideal for retail curbside, enterprise campus, public venue, outdoor station, and industrial site environments.

AP63 AP63E (rear)

JUNIPER AI-DRIVEN NETWORK

Juniper brings true innovation to the wireless space with the world's first AI-driven Wireless LAN (WLAN).

The Juniper AI-Driven Network makes Wi-Fi predictable, reliable and measurable with unprecedented visibility into the user experience through customizable Service Level Expectation (SLE) metrics. Time consuming manual IT tasks are replaced with AI-driven proactive automation and self-healing, lowering Wi-Fi operational costs and saving substantial time and money.

All operations are managed via the open and programmable microservices with Juniper Mist Cloud Architecture. This delivers maximum scalability and performance while also bringing DevOps agility to wireless networking and location services.

THE JUNIPER MIST CLOUD ARCHITECTURE

Juniper's Mist AI leverages a cloud-native microservices architecture in order to bring unparalleled agility, scale and resiliency to your network. It leverages an AI engine to lower OpEx and deliver unprecedented insight by using data science to analyze large amounts of rich metadata collected from Juniper Access Points driven by Mist AI.

JUNIPER ACCESS POINT FAMILY

The Juniper enterprise-grade access point family consists of:

- AP63, AP12, AP32, AP33, and AP43 Series that support 802.11ax (Wi-Fi 6), Bluetooth® LE and IoT
- AP21, AP41 and AP61 Series that support 802.11ac Wave 2, Bluetooth LE and IoT
- BT11 that supports Bluetooth LE

These access points are all built on a real-time microservices platform and are managed by the Juniper Mist cloud.

The table below compares the supported major functions of the Juniper Wi-Fi 6 access points to help in selecting the most appropriate model(s).

	AP43	AP63	AP33	AP32	AP12
Deployment	Indoor	Outdoor	Indoor	Indoor	Indoor Wall Plate
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 2.4GHz: 2x2 :2SS	802.11ax (Wi-Fi 6) 5GHz: 4x4 : 4SS 2.4GHz: 2x2 : 2SS	802.11ax (Wi-Fi 6) 2x2 : 2SS
Wi-Fi Tri-Radio	✓	✓	✓	✓	✓
Antenna Options	Internal/ External	Internal/ External	Internal	Internal/ External	Internal
Virtual BLE	✓	✓	✓	–	–
IoT Interface	✓	–	–	–	–
IoT Sensors	Humidity, Pressure, Temperature	–	–	–	–
Warranty	Limited Lifetime	One Year	Limited Lifetime	Limited Lifetime	Limited Lifetime

SERVICES AVAILABLE FOR THE JUNIPER AP63

WI-FI CLOUD SERVICES

Juniper Mist Wi-Fi Assurance

For IT and NOC Teams

- Predictable and Measurable Wi-Fi
- Service Level Expectations (SLE)
- WxLAN Policy Fabric for Role-Based Access
- Customizable Guest Wi-Fi Portal
- Radio Resource Management

Marvis Virtual Assistant

For IT Helpdesk Teams

- AI-powered Virtual Network Assistant
- Natural Language Processing Interface
- Anomaly Detection
- Client SLE Visibility and Enforcement
- Data Science Driven Root Cause Analysis

BLUETOOTH LE CLOUD SERVICES

Juniper Mist Mobile Engagement

For Digital Experience Teams

- Accurate (1-3m) Turn-by-turn Navigation
- Sensor Fusion with Dead Reckoning
- Unsupervised Machine Learning
- Virtual Beacons with Custom Notifications
- Mobile SDK for iOS and Android

Juniper Mist Asset Visibility

For Process and Resource Improvement Teams

- Identify Assets by Name and View Location
- Zonal/Room Accuracy for 3rd Party Tags
- Historical Analytics for Asset Tags
- Telemetry for Asset Tags (temp., motion, ...)
- APIs for Viewing Assets and Analytics

ANALYTICS CLOUD SERVICES

Juniper Mist Premium Analytics

For Network Teams

- Base Features are Included with Wi-Fi Assurance, Mobile Engagement, and Asset Visibility Subscriptions
- End-to-end Network Visibility
- Orchestrated Networking and Application Performance Queries
- Simplified Network Transparency

For Business Teams

- Base Features are Included with Wi-Fi Assurance, Mobile Engagement, and Asset Visibility Subscriptions
- Customer Segmentation and Reporting Based on Visitor Telemetry
- Customized* Dwell and 3rd Party Reporting for Traffic and Trend Analysis
- Correlate Customer-Guest Traffic and Trend Analysis

**Juniper Mist Premium Analytics service subscription is needed*

ACCESS POINT FEATURES

High Performance Wi-Fi

The outdoor AP63 Series are tri-radio 4x4 802.11ax access points with maximum data rates of 2,400 Mbps in the 5GHz band and 1,148 Mbps in the 2.4GHz band. The 3rd radio functions as a network, location, and security sensor, a synthetic test client radio, as well as a spectrum monitor.

By adding 802.11ax Orthogonal Frequency Division Multiple Access (OFDMA), Multi-User Multiple Input Multiple Output (MU-MIMO) and BSS Coloring technologies into the AP63 Series, performance is boosted to unprecedented levels to support new bandwidth-hungry applications and soaring device densities.

AI for AX

With the new features that 802.11ax (Wi-Fi 6) introduces to boost performance and efficiency, the complexity of configuring and operating an access point has soared. Juniper is applying its industry- leading Mist AI technology to automate and optimize these features with its AI for AX capabilities. We are leveraging AI in order to optimize BSS Coloring, to improve data transmission scheduling within OFDMA and MU-MIMO and to assign clients to the best radio to boost the overall performance of the network.

Boosts Spectral Efficiency

OFDMA improves spectral efficiency so that an increasing density of devices can be supported on the network, especially with IoT devices that often utilize smaller data packets than mobile devices and hence increase the burden and contention on the network. Additionally, BSS Coloring improves the co-existence of overlapping BSS' and allows spatial reuse within a given channel by reducing the packet collisions. This helps you improve spectral efficiency for dense networks where channel reuse is increasing.

Automatic RF optimization

Juniper's radio resource management (RRM) automates dynamic channel and power assignment, taking Wi-Fi and external sources of interference into account with its dedicated sensor radio. The AI engine continuously monitors the coverage and capacity SLE metrics to learn and optimize the RF environment. The RRM learning algorithm uses hysteresis on a 24-hour window to conduct a site-wide rebalancing for optimal channel and power assignment.

Unprecedented Insight and Action

A dedicated dual band 3rd radio collects data for Juniper's patent-pending Proactive Analytics and Correlation Engine (PACE), which leverages machine learning to analyze user experience, correlate problems and automatically detect the root cause of problems. These metrics are used to monitor service level expectations and provide proactive recommendations to ensure problems don't occur (or are fixed as quickly as possible when they do). This radio also is able to function as a synthetic test client to proactively detect and mitigate network anomalies.

Improves Battery Efficiency for IoT Devices

By incorporating the 802.11ax target wake time (TWT) capability and Bluetooth 5.0, battery life for IoT devices can be extended as new IoT devices enter the network.

Dynamic Debugging

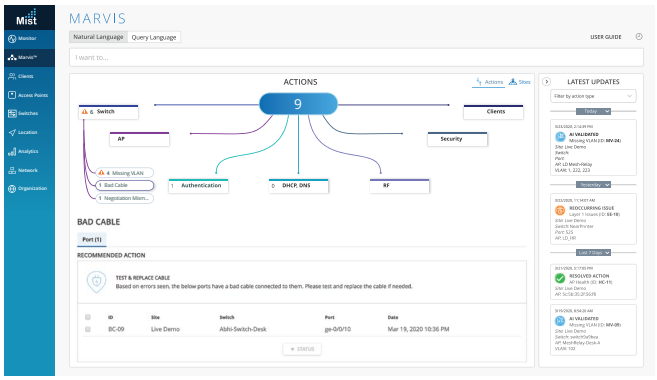
Constantly monitor services running on the AP63 Series and send alerts whenever a service behaves abnormally. Dynamic debugging relieves IT of having to worry about an AP going offline or any services running on becoming unavailable.

Dynamic Packet Capture

The Juniper Mist platform automatically captures packets and streams them to the cloud when major issues are detected. This saves IT time and effort and eliminates the need for truck rolls with sniffers to reproduce and capture data for troubleshooting.

Marvis Virtual Network Assistant

The NLP-based assistant, Marvis, simplifies troubleshooting and collection of insights for your network by leveraging AI and data science to proactively identify issues, determine the root causes and scope of impact and to gain insight into your network and users by eliminating the need to manually hunt through endless dashboards and CLI commands.

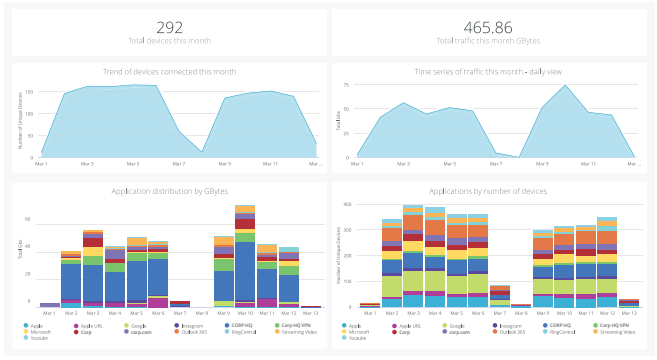


Effortless, Cloud-based Setup and Updates

The AP63 Series automatically connects to the Juniper Mist cloud, downloads its configuration, and joins the appropriate network. Firmware updates are retrieved and installed automatically, ensuring that the network is always up to date with new features, bug fixes, and security updates.

Premium Analytics

Juniper Mist's Wireless Assurance, User Engagement and Asset Visibility services include a base analytics capability for analyzing up to 30 days of data which enables you to simplify the process of extracting network insights from data and analytics across your enterprise. To extend these capabilities for more dynamic insights like motion paths* and other 3rd Party* data, along with the option to generate customized* reports, the Juniper Mist Premium Analytics service is available as an additional subscription.



High Accuracy Indoor Location

The AP63 has a 16-element Virtual Bluetooth LE (vBLE) antenna array controlled from the Juniper Mist cloud. Passive antennas enhance the power of a single transmitter and produce directional beams (or can be combined to act as an omnidirectional radio) to accurately detect distance and location with 1 to 3 meter accuracy. With Juniper's patented vBLE technology, you can deploy an unlimited amount of virtual beacons in your physical environment without requiring battery powered BLE beacons. With support for Bluetooth 5.0, range and battery life is boosted for IoT devices.

*Juniper Mist Premium Analytics service subscription is needed

SPECIFICATIONS	
Wi-Fi Standard	802.11ax (Wi-Fi 6), including support for OFDMA, 1024-QAM, MU MIMO, Target Wake Time (TWT), Spatial Frequency Reuse (BSS Coloring). Backwards compatibility with 802.11a/b/g/n/ac
Combined Highest Supported Data Rates	Dual-Band: 3.5 Gbps Dual-5GHz (internal antenna model): 4.8 Gbps
2.4 GHz	4x4 : 4 802.11ax up to 1,148 Mbps data rate
5 GHz	4x4 : 4 802.11ax up to 2,400 Mbps data rate
MIMO Operation	Four spatial stream Single User (SU) MIMO for up to 2,400 Mbps wireless data rate to individual 4x4 HE80 Four spatial stream Multi User (MU) MIMO for up to 2,400 Mbps wireless data rate to up to four MU-MIMO capable client devices simultaneously
Dedicated Third Radio	2/2 : 2SS, Dual-band WIDS/WIPS, spectrum analysis, synthetic client and location analytics radio
Internal Antennas (AP63)	Four 2.4 GHz omni-directional antennas with 4 dBi peak gain Four 5 GHz omni-directional antennas with 6 dBi peak gain
Bluetooth 5.0	vBLE 16-element Directional Antenna Array + Omni Bluetooth Antenna
Beam Forming	Transmit Beamforming and Maximal Ratio Combining
Power Options	802.3at PoE (no PoE out), 802.3bt PoE
Dimensions	285 x 285 x 86 mm (11.2 x 11.2 x 3.4 in)
Weight	AP63: 3.4kg (7.5 lbs) excluding mount and accessories AP63E: 3.9kg (8.6 lbs) excluding mount and accessories
Shipping Box	Size: 473 x 390 x 153 mm (18.6 x 15.4 x 6.0 in)
Operating Temperature	-40° to 55° C with solar loading -40° to 65° C without solar loading
Operating Humidity	10% to 90% maximum relative humidity, non-condensing
Operating Altitude	3,048 m (10,000 ft)
Enclosure	IP67 / NEMA 4 compliant
Electromagnetic Emission	FCC Part 15 Class B

I/O AND INDICATORS	
Eth0	100/1000Base-T, 2.5GBase-T (802.3bz); RJ45; PoE PD (requires 802.3bt)
Eth1	10/100/1000Base-T; RJ45 Optional 802.3af PoE PSE mode (requires 802.3bt on Eth0)
External Antennas (AP63E)	Six N-type Male connectors (four dual-band for client radios; two dual-band for the 3rd radio)
Reset	Reset to the factory default settings
Indicators	One multi-color status LED
Compliance Standards	CSA/UL 62368-1 FCC Part 15.247, 15.407, 15.107, and 15.109 RSS247 ICES003 (Canada)

MOUNTING BRACKETS	
APOUTBR-KIT	Contains Flush Mount and Articulating Mount Brackets

ORDERING INFORMATION	
US/FCC Domain	AP63-US (Internal Antenna AP63E-US (External Antenna)
Rest of the World	AP63-WW (Internal Antenna) AP63E-WW (External Antenna

BLUETOOTH ANTENNA ARRAY

PATENTED vBLE TECHNOLOGY

In addition to the industry-leading Wi-Fi technology that is at the heart of the AP63 access point, it also incorporates our second generation patented dynamic 16-element Virtual Bluetooth LE (vBLE) antenna array, which combined with our machine learning, enables businesses to eliminate the need for battery-powered beacons. This maximizes the scalability and optimizes the investment cost of deploying location based services.

Virtual Bluetooth LE enables businesses to provide rich location-based experiences that are engaging, accurate, real-time and scalable.

Mist
A Juniper Company

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