ACCESS POINT FEATURES

High Performance Wi-Fi

The AP43 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 AP43 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

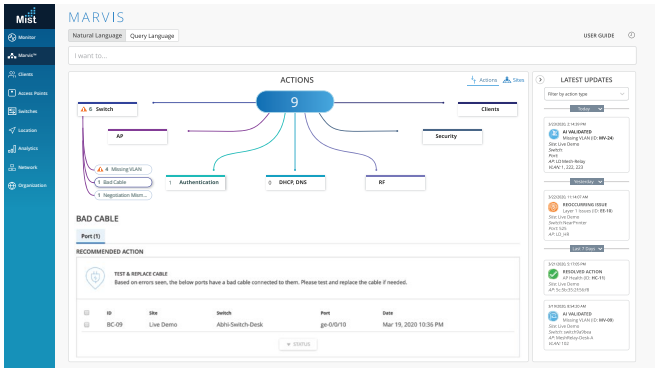
Constantly monitor services running on the AP43 Series and send alerts whenever a service behaves abnormally. Dynamic debugging relieves IT of having to worry about an AP going offline or any services running on becoming unavailable.

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 AP43 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.

Integrated IoT Sensors and Interface Port

Juniper has integrated pressure, temperature and humidity sensors into the access point to enable new applications and increase environmental context. This can be leveraged to get better visibility into your deployments and further improve location context.

Juniper also continues its industry innovation with its unique IoT port that has analog and digital interfaces to directly connect IoT devices that lack network interfaces and thus allow customers to leverage our complete APIs to interact and integrate these things into their business applications and workflows.

Premium Analytics

Juniper Mist's Wirelesss 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 AP43 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: 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	2x2 : 2SS, Dual-band WIDS/WIPS, spectrum analysis, synthetic client and location analytics radio
Internal Antennas (AP43)	Four 2.4GHz omni-directional antennas with 4 dBi peak gain Four 5GHz 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, 802.3bt PoE, 12V/3A DC power supply
Power Adaptor	100-240VAC, 50-60 Hz, input. 12V/3A DC output
Dimensions	222 x 222 x 53 mm (8.74 x 8.74 x 2.09 in)
Weight	1.6 kg (3.53 lbs) excluding mount and accessories
Shipping Box	Size (L x W x H): 279 x 298 x 76 mm (11.0 x 11.8 x 3.0 in) Weight: 2.18 kg (4.2 lbs)
Operating Temperature	Internal antenna: 0° to 40° C External antenna: -20° to 50° C
Operating Humidity	10% to 90% maximum relative humidity, non-condensing
Operating Altitude	3,048m (10,000 ft)

ORDERING INFORMATION

US/FCC Domain	AP43-US (Internal Antenna) AP43E-US (External Antenna)
Rest of the World	AP43-WW (Internal Antenna) AP43E-WW (External Antenna)

I/O AND INDICATORS

IoT Sensors	Humidity Pressure Temperature
IoT Port	8-pin interface for digital I/O and analog input (0 to +5V)
USB	USB2.0 support interface
12VDC	Input for optional DC power supply
Eth0	100/1000Base-T, 2.5GBase-T (802.3bz); RJ45; PoE PD
Eth1	10/100/1000Base-T; RJ45; optional PoE PSE mode (requires 802.3bt on Eth0)
External Antennas (AP43E)	Six RP-SMA Plugs (four dual-band for client radios; two dual-band for 3rd radio)
Reset	Reset to the factory default settings
Indicators	One multi-color status LED

MOUNTING BRACKETS

APBR-U*	Universal Bracket
APBR-T58	⅜" Threaded Rod
APBR-M16	16mm Threaded Rod (M16-2)
APBR-ADP-CR9	9⁄16" T-Rail
APBR-ADP-RT15	15⁄16" T-Rail
APBR-ADP-WS15	1½" T-Rail
APBR-ADP-T12	½" Threaded Rod

**The AP package includes one Universal Bracket. APBR-U is available separately as an accessory.*

BLUETOOTH ANTENNA ARRAY

PATENTED vBLE TECHNOLOGY

In addition to the industry-leading Wi-Fi technology that is at the heart of the AP43 Series, 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.