JUNIPER AP27 HIGH-PERFORMANCE ACCESS POINT

Product description

The Juniper AP27 High-Performance Access Point is an entry-level Wi-Fi 7 access point (AP) offering organizations a cost-effective and faster, more reliable wireless experience. The AP27 features a tri-band concurrent design plus a dedicated fourth radio for continuous security monitoring, RF optimization, and network assurance without impacting client performance. Managed by HPE Mist AI cloud architecture, a modern microservices platform, the AP27 allows for scalable, simplified management and streamlined deployment across any number of sites. For deployments requiring specialized or directional coverage in locations like warehouses or freezer/cooler penetrations, the AP27E model provides the same capabilities with the flexibility of external antennas.

While robust wireless networking is business critical, traditional architectures that require manual configuration and troubleshooting lack the visibility and agility to support modern mobile and Internet of Things (IoT) environments. The HPE Mist platform addresses these challenges with HPE Mist AI, which powers services like Juniper Wi-Fi Assurance to deliver predictable user experiences and automate operations. The Marvis AI Assistant provides proactive insights and rapid root cause analysis to reduce IT overhead. Optional support for HPE Mist Edge enables on-premises data processing for sites with specific privacy or latency needs while a hardware-based device strengthens security. The AP27 combines the power of Wi-Fi 7 with the operational simplicity of AI-native and self-driving networking to deliver a reliable, easy-to-manage solution for enterprise deployments.

HPE Juniper Networking: an AI-native network

HPE Juniper Networking, powered by the HPE Mist platform, simplifies and automates WLAN operations across day 0, day 1, and day 2. Day 0 onboarding uses cloud-based claiming and provisioning to speed deployment and improve consistency. Day 1 changes are streamlined with templates that support bulk site rollouts while allowing site-specific settings. Day 2 incorporates Juniper Wi-Fi Assurance to apply AI-native insights and service-level expectations (SLEs) to make Wi-Fi more predictable, reliable, and measurable, using user-experience metrics such as successful connects and throughput, not only uptime.

Marvis AI Assistant and Marvis Actions add self-driving automation to proactively identify issues and recommend or take corrective action, reducing troubleshooting time and operational costs. The platform is delivered through an open, programmable cloud architecture built on HPE Mist microservices.

Product overview

The Juniper AP27 High-Performance Access Point, an HPE Wi-Fi 7 AP, driven by HPE Mist AI delivers self-driving network operations and Wi-Fi performance boost for environments that require easy, flexible deployments and simultaneous devices support.

AP27 benefits

- Wi-Fi 7 cost-effective design delivers reliable user experiences for retails, school, healthcare clinics, and home office environments
- 2x2 MIMO on 2.4 GHz, 5 GHz, and 6 GHz
- Tri-band concurrent with dedicated fourth radio for supporting growing mobility demands
- Second 1GbE (data-only) port for wired device bridging, reducing cabling and switch ports
- Internal (AP27) and External Antenna (AP27E) options

HPE Mist benefits

- Fast and reliable deployment and ease of ongoing management
- Centralized control and visibility
- Quick access to new features and functionality with no disruption to services
- Agility to scale as network needs grow

Table 1. HPE Juniper Networking Wi-Fi 7 AP comparison chart

	AP47	AP37	AP36	AP27	AP17	AP66
Deployment	Indoor	Indoor	Indoor	Indoor	Indoor/wall plate	Indoor/outdoor
Wi-Fi standard	Wi-Fi 7 802.11be (4x4:4)	Wi-Fi 7 802.11be 5/6 GHz: (4x4:4) 2.4 GHz: (2x2:2)	Wi-Fi 7 802.11be 5/6 GHz: (4x4:4)	Wi-Fi 7 802.11be (2x2:2)	Wi-Fi 7 802.11be (2x2:2)	Wi-Fi 7 802.11be (2x2:2)
Wi-Fi radio modes	2.4/5/6 GHz + 5 GHz + 6 GHz	2.4 GHz + 5 GHz + 6 GHz	2.4 GHz + 5 GHz + 6 GHz	2.4 GHz + 5 GHz + 6 GHz	2.4 GHz + 5 GHz + 6 GHz	2.4 GHz + 5 GHz + 6 GHz
Scanning radio	Dedicated	Dedicated	Dedicated	Dedicated	Dedicated	Dedicated
Antenna options	Internal/ directional/ external	Internal	Internal/ directional/ external	Internal/external	Internal	Internal/ directional
Virtual BLE	Yes	Yes	No	No	No	No
Ultra-wideband (UWB)	Yes	No	No	No	No	No
USB	Yes	Yes	Yes	Yes	No	No
IoT sensors	Pressure, temperature, accelerometer	Pressure, temperature, accelerometer	Pressure, temperature, accelerometer	Pressure, temperature, accelerometer	Pressure, temperature	Accelerometer
GNSS/GPS	L1/L5	L1/L5	L1/L5	L1/L5	No	L1/L5
Secondary Ethernet port	Yes, dual PoE failover	Yes, PoE out	Yes, PoE out	Yes	Yes, 3 x 1GbE ports (1x PoE Out)	No
Warranty	Limited lifetime	Limited lifetime	Limited lifetime	Limited lifetime	Limited lifetime	One year

The cloud architecture of the HPE Mist AI platform

The secure, AI-native architecture of HPE Mist platform delivers agility, scale, and resiliency while lowering OpEx. It turns rich metadata collected by HPE Juniper Networking APs into outcomes by applying data science to analyze and correlate network behaviors and traffic patterns, revealing performance trends and potential trouble spots. By linking what the network is doing to what users and devices are experiencing, HPE Mist AI provides actionable insights and AI-native actions that reduce manual troubleshooting and accelerate resolution. HPE optimizes operator and user experiences through secure client-to-cloud automation and insight. With HPE Mist, purpose-built to leverage AIOps, the AP27 harnesses Wi-Fi 7 speed and performance and helps assure excellent experiences for all users and devices, along with improved end-to-end operator experiences.

HPE Juniper Networking AP family
The real-time microservices in HPE Mist platform cloud manage the HPE Juniper Networking AP family.

– Wi-Fi 7: AP47, AP37, AP36, AP27, AP17, and AP66
– Wi-Fi 6E: AP45, AP34, AP24, and AP64

Table 1 compares the supported major functions of the HPE Juniper Networking Wi-Fi 7 APs to assist in selecting the most appropriate models.

Services available for the AP27 Wi-Fi cloud services

Juniper Wi-Fi Assurance
For IT and NOC teams

– Predictable and measurable Wi-Fi
– SLE support
– WLAN policy fabric for role-based access
– Customizable guest Wi-Fi portal
– Radio resource management (RRM), driven by AI

Marvis AI Assistant
– For IT help desk teams
– AI-native virtual network assistant
– Natural language processing interface
– Anomaly detection
– Client SLE visibility and enforcement
– Data science-driven root cause analysis

Bluetooth cloud services

Juniper Asset Visibility
For process and resource improvement teams

– Identification of assets by name and location visibility
– Zonal/room accuracy for third-party tags
– Historical analytics for asset tags
– Telemetry for asset tags (temperature, motion, and other data)
– APIs for viewing assets and analytics

Analytics cloud services

Juniper Premium Analytics

For network teams

- Baseline analytics features come included with Juniper Wi-Fi Assurance, Juniper User Engagement, and Juniper Asset Visibility subscriptions
- End-to-end network visibility
- Orchestrated networking and application performance queries
- Simplified network transparency

For business teams

- Baseline analytics features come included with Juniper Wi-Fi Assurance, Juniper User Engagement, and Juniper Asset Visibility subscriptions
- Customer segmentation and reporting based on visitor telemetry
- Customized dwell and third-party reporting for traffic and trend analysis
- Correlation of customer-guest traffic and trend analysis
- Correlated customer-guest traffic and trend analysis

Access point features

High-performance Wi-Fi

The AP27 is four-radio, 802.11be Wi-Fi 7 APs. Three two-spatial stream data serving radios with maximum data rates of 5.8 Gbps in the 6 GHz band, 2.9 Gbps in the 5 GHz band, and 688 Mbps in the 2.4 GHz band. A dedicated fourth tri-band scanning radio provides WIDS/WIPS, spectrum analysis, sensor and location analytics. With 802.11be multi-link operation (MLO), orthogonal frequency division multiple access (OFDMA), multi-user multiple input multiple output (MU-MIMO), and BSS Coloring technologies, AP27 offers performance at unprecedented levels to support new bandwidth-hungry applications and soaring device densities.

Wi-Fi 7 amendment

The new 802.11be amendment (Wi-Fi 7) expands the capabilities of Wi-Fi 6E, including the use of up to 1200 MHz of the 6 GHz band for higher throughput and improved application performance. New capabilities include 320 MHz channels which provide double the throughput, MLO for more efficient load balancing and failover, multi-resource units (multi-RU), preamble puncturing, and 4K QAM for higher transmission rates and better user experiences. Only Wi-Fi 7 and 6E client devices can use the 6 GHz band, so there is no interference due to IoT or legacy devices.

AI for AX

HPE automates and optimizes Wi-Fi 7 features with AI for agent experience (AX) capabilities to optimize BSS Coloring, improve data transmission scheduling within OFDMA and MU-MIMO, and assign clients to the optimal radio to boost the overall performance of the network.

Improved IoT operations

The AP27 extends network monitoring and insights to omnidirectional Bluetooth Low Energy (BLE), Thread,* Zigbee,* or Matter* to increase IoT capabilities with dual 802.15.4 radios for concurrent location services and electronic shelf labels (ESL).

Greater spectral efficiency

OFDMA improves spectral efficiency so that an increasing density of devices can be supported on the network. Density has become an issue with the rapid growth of IoT devices that often utilize smaller data packets than

* Future considerations

mobile devices and, hence, increase the burden and contention on the network. Additionally, BSS Coloring improves the coexistence of overlapping BSSs and allows spatial reuse within a given channel by reducing packet collisions.

Automatic RF optimization
Reliable RF optimization is even more critical with the addition of 6 GHz spectrum. Radio Resource Management (RRM) uses a dedicated sensor radio to automate dynamic channel and power assignments, thus avoiding Wi-Fi and external sources of interference. The Marvis AI engine continuously monitors coverage and capacity SLE metrics to learn and optimize the RF environment. A learning algorithm uses hysteresis on a 24-hour window to conduct a sitewide rebalancing for optimal channel and power assignment.

6 GHz device operation
In some regulatory domains, there are special rules to govern the usage of 6 GHz when the AP has either removable external antennas or is weatherized.

The Automatic Frequency Coordination (AFC) mandated by the FCC specifies that when using the 6 GHz band (in the US) with either an AP that has a removable external antenna or a weatherized access point, it must operate in standard power (SP) mode.

AP27E-US:

– SP only (US only)

AP27E-WW:

– Low power indoor in most regulatory domains
– SP only in some regulatory domains (Canada)

AP27-US:

– Low power indoor and SP (US only)

AP27-WW:

– Low power indoor only in most regulatory domains

Proactive insight and action
A dedicated, tri-band fourth radio collects data for HPE Mist, which uses machine learning to analyze user experiences, correlate problems, and automatically detect their root causes. These metrics are used to monitor SLEs and provide proactive recommendations to help ensure problems don't occur (or are fixed as quickly as possible when they do).

Improved IoT battery efficiency
By incorporating the 802.11ax target wake time (TWT) capability and Bluetooth 6.0, AP27 helps extend the battery life of IoT devices, particularly as additional ones join the network.

Dynamic debugging
Constantly monitor services running on the AP27, sending alerts whenever a service behaves abnormally. Dynamic debugging relieves IT of having to worry about an AP going offline or any services running on it becoming unavailable.

Dynamic packet capture and dynamic spectrum capture
HPE Mist platform automatically captures packets and radio frequency spectrum and streams them to the cloud when major issues are detected. AI-native dynamic packet capture and dynamic spectrum capture enable **network rewind** to identify and resolve wireless interference issues more efficiently. Both features save IT teams time and effort. They use sniffers to reproduce and capture data for troubleshooting, which eliminates the need for truck rolls.

Marvis AI Assistant

Marvis AI Assistant is a natural language processing-based assistant with a conversational interface that helps with the understanding of user intent and goals, simplifies troubleshooting, and collects network insights. Marvis AI Assistant uses AI and data science to proactively identify issues, determine the root causes and scope of impact, and gain insights into your network and user experiences. Marvis AI Assistant eliminates the need to manually hunt through endless dashboards and CLI commands.

Effortless, cloud-based setup and updates

The AP27 automatically connects to the HPE Mist platform cloud, downloads its configuration, and joins the appropriate network. Firmware updates are retrieved and installed automatically, helping ensure that the network is up to date with new features, bug fixes, and security updates.

Juniper Premium Analytics

Juniper Wi-Fi Assurance, Juniper User engagement, and Juniper Asset Visibility services include a base analytics capability that analyzes up to 13 months of data, which simplifies the process of extracting network insights across your enterprise. If you require dynamic insights like motion paths and other third-party data and would like the option of customized reports, the Juniper Premium Analytics service is available as an additional subscription.

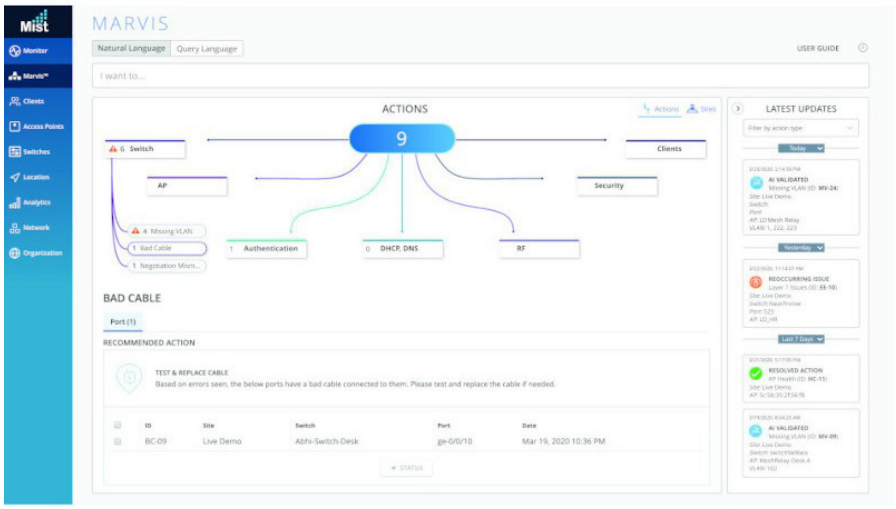

Figure 1. HPE Mist dashboard depicting Marvis Actions on client network.

Figure 2. HPE Mist dashboard depicting Juniper Premium Analytics dataset

HPE Mist Edge

HPE Juniper Networking APs offer a flexible data plane. HPE Mist Edge is an on-premises appliance that runs a tunnel termination service. Traffic can be broken out locally or tunneled to HPE Mist Edge.

HPE Mist Edge use cases include seamless mobility in large campus environments, tunneling of guest traffic to a demilitarized zone (DMZ), IoT segmentation, and teleworker services.

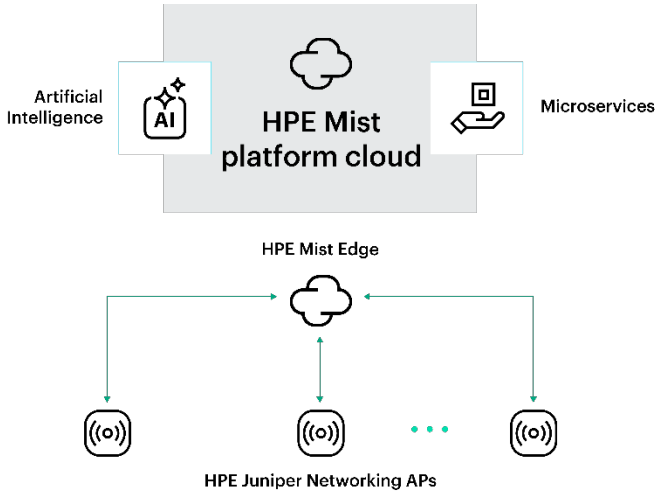

Figure 3. AI-native enterprise solution with HPE Mist Edge

AP27 product images

Figure 4. Front view of AP27 and AP27E

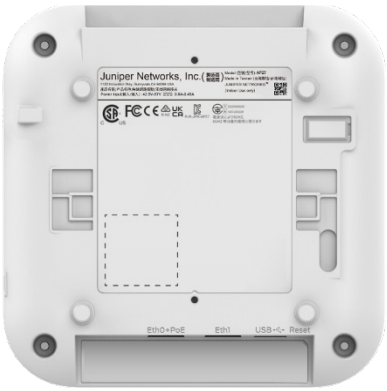

Figure 5. Rear view of AP27

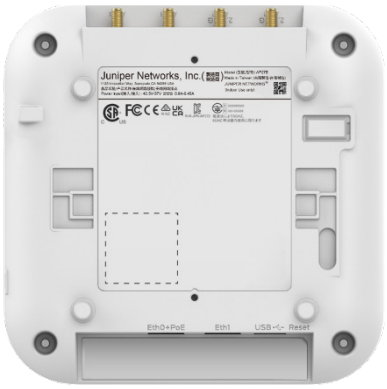

Figure 6. Rear view of AP27E

Specifications

Wi-Fi standard	Wi-Fi 7 802.11be backwards compatibility with 802.11a/b/g/n/ac/ax
Wi-Fi radios	2.4 GHz 802.11b/g/n/ac/ax/be radio 5 GHz 802.11a/n/ac/ax/be radio 6 GHz 802.11ax/be radio
Combined highest supported data rates	Tri-band: 9.38 Gbps—2.4 GHz + 5 GHz + 6 GHz
2.4 GHz	2x2:2 802.11be up to 688 Mbps data rate
5 GHz	2x2:2 802.11be up to 2.9 Gbps data rate
6 GHz	2x2:2 802.11be up to 5.8 Gbps data rate
MIMO operation	2 spatial stream SU-MIMO for up to 5.8 Gbps wireless data rate to individual 2x2 EHT320 2 spatial stream MU-MIMO for up to 5.8 Gbps wireless data rate to up to four MU-MIMO capable client devices simultaneously
Dedicated fourth radio	2.4 GHz, 5 GHz, and 6 GHz tri-band WIDS/ WIPS, spectrum analysis, sensor, and location analytics radio
Internal Omnidirectional antennas—AP27	2 x 2.4 GHz directional antennas with 4 dBi peak gain 2 x 5 GHz directional antennas with 6 dBi peak gain 2 x 6 GHz directional antennas with 6 dBi peak gain
IoT radios	Dual core 802.15.4 radios and dual omnidirectional antennas, Bluetooth 6.0
Beamforming	Transmit beamforming and maximal ratio combining
Power options	PoE PD support via Eth0: 802.3at: Full function 802.3af: Cloud connectivity only
Product dimensions	AP27, AP27E: 185 mm x 185 mm x 40 mm / 7.28" x 7.28" x 1.58"
Product Weights	AP27: 0.85 kg / 1.9 lbs AP27E: 0.85 kg / 1.9 lbs
Packaged Weights (unit box with accessories)	AP27: 1.22 kg / 2.7 lbs AP27E: 1.22 kg / 2.7 lbs
Shipping box	245 mm x 228 mm x 67 mm / 9.65" x 8.98" x 2.64"
Operating temperature	AP27, AP27E: 0°C to 40°C (32°F to 104°F)
Operating humidity	10% to 90% maximum relative humidity, noncondensing
Operating altitude	3048 m (10,000 ft)
Trusted Platform Module (TPM)	Included a TPM for infrastructure security
Supported frequency bands (country-specific restrictions apply)	2.400 to 2.4835 GHz ISM 5.150 to 5.250 GHz U-NII-1 5.250 to 5.350 GHz U-NII-2A 5.470 to 5.725 GHz U-NII-2C 5.725 to 5.850 GHz U-NII-3/ISM 5.925 to 6.425 GHz U-NII-5 6.425 to 6.525 GHz U-NII-6 6.525 to 6.875 GHz U-NII-7 6.875 to 7.125 GHz U-NII-8

I/O and indicators

IoT sensors	Pressure, temperature, accelerometer
GNSS/GPS	GNSS L1 supporting GPS, Galileo, GLONASS, BeiDou, and QZSS GNSS L5 supporting GPS, Galileo, BeiDou, and NavIC
USB	USB 2.0 support interface (up to 4.5W)
Eth0	100/1000/2500/5000/10000BASE-T (802.3an/802.3bz), RJ45, PoE PD
Eth1	100/1000BASE-T (802.3an), RJ45
External Antennas (AP27E)	4 x RPSMA antenna connectors. 2 x 2.4/5 GHz + 2 x 6 GHz
Reset	Reset to the factory default settings
Indicators	One multicolor status LED
Traffic forwarding options	Eth0, Eth1, HPE Mist Edge

Mounting brackets

SKU	Description
APBR-U	Universal bracket
APBR-ADP-M16	16 mm threaded rod (M16-2)
APBR-ADP-T12	1/2" threaded rod
APBR-ADP-T58	5/8" threaded rod
APBR-ADP-CR9	9/16" T-rail, channel rail
APBR-ADP-RT15	15/16" T-rail
APBR-ADP-WS15	1"–1/2" T-rail
APBR-ADP-SC30	Spring clips

Ordering information

Region	Description
United States only	AP27-US (internal antenna with BLE) AP27E-US (external antenna with BLE)
Outside of United States	AP27-WW (internal antenna with BLE) AP27E-WW (external antenna with BLE)

The AP package includes one universal bracket APBR-U and is also available separately as an accessory purchase.

HPE products are manufactured in accordance with local regulations specific to certain regions and countries. For example, customers should not use any SKUs designated for outside of the U.S. in the U.S. Customers are responsible for ensuring that any regional- or country-specific SKUs are only used in the specified authorized area and accept all associated liability. Failure to comply with the applicable regional designations of SKUs may void the warranty of the HPE products.

About HPE

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