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Juniper AP12 Access Point Deployment Guide

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The information in this document is current as of the date on the title page.

YEAR 2000 NOTICE

Juniper Networks hardware and software products are Year 2000 compliant. Junos OS has no known time-related limitations through the year 2038. However, the NTP application is known to have some difficulty in the year 2036.

END USER LICENSE AGREEMENT

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About This Guide

Use this guide to install, manage, and troubleshoot the Juniper® AP12 High-Performance Access Point. After completing the installation procedures covered in this guide, refer to the Juniper Mist™ Wi-Fi Assurance documentation for information about further configuration.

1
CHAPTER

Overview

IN THIS CHAPTER

AP12 Access Point Overview

IN THIS SECTION

The Juniper® AP12 High Performance Access Point is a Wi-Fi 6 indoor access point (AP) that leverages the Mist AI to automate network operations and enhance Wi-Fi performance. Easy and flexible wall plate deployment and simultaneous support for multiple devices makes the AP12 suitable for branch office, remote worker, school dormitory, and hotel room environments.

The AP12 has three IEEE 802.11ax radios, which deliver up to 2x2 multiple input, multiple output (MIMO) with two spatial streams. The AP12 can operate in either multi-user or single-user mode. The AP12 is backward compatible with the 802.11a, 802.11b, 802.11g, 802.11n and 802.11ac wireless standards.

Out of the three radios, one is dedicated for scanning. The AP uses this radio for radio resource management (RRM) and wireless security.

The AP12 has an omnidirectional Bluetooth antenna to support asset visibility use cases. With these features, the AP12 provides real-time network insights and asset location services without the need for battery-powered BLE beacons and manual calibration.

The AP12 provides maximum data rates of 1200 Mbps in the 5-GHz band and 575 Mbps in the 2.4-GHz band.

Figure 1: Front and Rear View of the AP12

AP12 Access Point Models

The AP12 is available in two models:

- AP12-US (United States only)
- AP12-WW (Outside of United States)

NOTE: Juniper products are manufactured in accordance with electrical and environmental regulations specific to certain regions and countries. Customers are responsible for ensuring that any regional or country-specific SKUs are only used in the specified authorized area. Failure to do so may void the warranty of Juniper products.

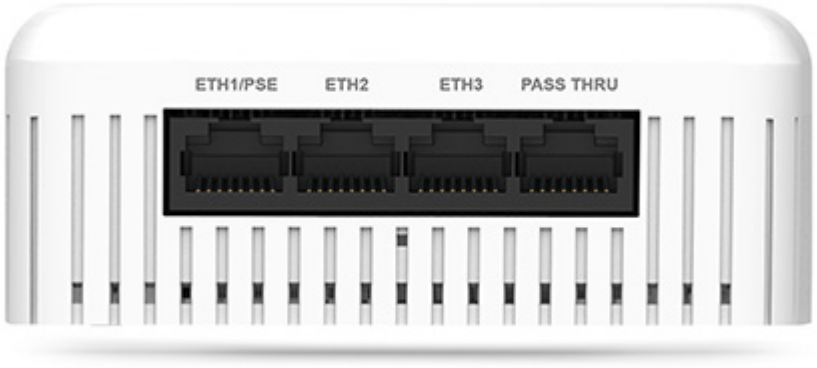
Benefits of AP12 Access Points

- Compact size with multiple Ethernet ports—You can install and integrate the AP12 into the existing infrastructure easily because of its wall-plate form factor. You can use the Ethernet ports on this compact AP to connect multiple devices simultaneously.
- Simple and quick deployment—You can deploy the AP with minimal manual intervention. The AP automatically connects to the Mist cloud on powering on, downloads its configuration, and connects to the appropriate network. Automatic firmware upgrades ensure that the AP runs the latest firmware version.
- Proactive troubleshooting—The AI-driven Marvis® Virtual Network Assistant leverages the Mist AI to identify issues proactively and provide recommendations to fix the issues. Marvis can identify issues such as offline APs and APs with insufficient capacities and coverage.
- Reduced interference—Juniper radio resource management (RRM) automates dynamic channel and power assignment, which helps to reduce interference and enhance user experience.

AP12 Components and Specifications

Table 1 on page 5 shows the components on the AP12.

Figure 2: AP12 Components



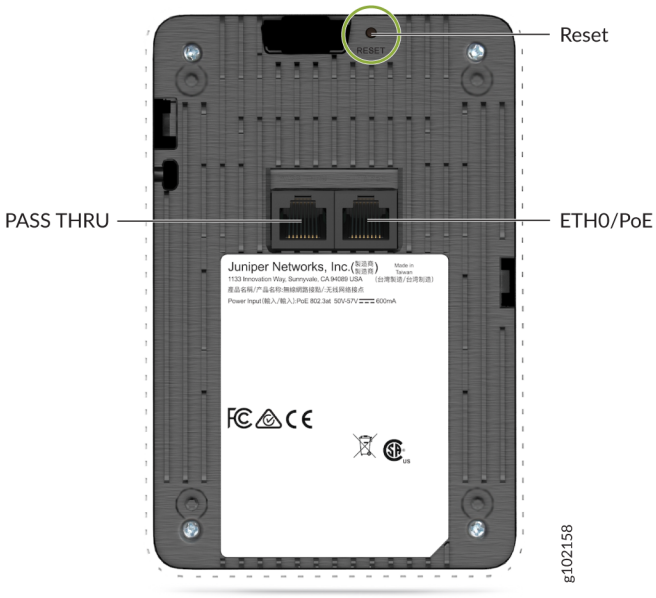
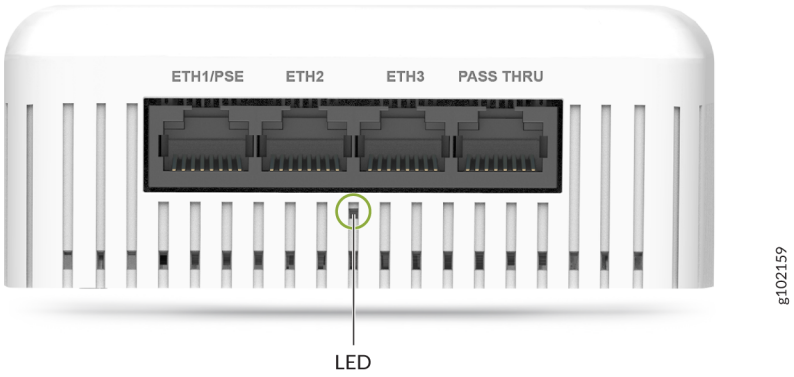


Table 1: AP12 Components

Component	Description
ETH1/PSE	10/100/1000Base-T RJ-45 port Functions as a Class 2 Power over Ethernet (PoE) output port if you provide 802.3at PoE input on the ETH0 port
ETH2	10/100/1000BASE-T RJ-45 port
ETH3	10/100/1000BASE-T RJ-45 port
PASS THRU	Passive RJ-45 passthrough port
ETH0 + POE	10/100/1000BASE-T RJ-45 port that supports an 802.3at PoE-powered device
RESET	A pinhole reset button that you can use to reset the AP configuration to the factory default. See *Reset an AP to the Factory-Default Configuration*.
Status LED	A multicolor status LED to indicate the status of the AP and to help troubleshoot issues. See *Troubleshoot a Juniper Access Point*.

Figure 3: Status LED on the AP12



For AP12 specifications, see the AP12 Datasheet.

Power-On Options for the AP12

You can use any of the following options to power on an AP12:

- Power over Ethernet Plus (PoE+) from an Ethernet switch

  We recommend that you use an Ethernet cable with a maximum length of 100 m to connect the access point (AP) to the switch port.

  If you use an Ethernet cable that is longer than 100 m by placing an Ethernet PoE+ extender in the path, the AP might power up, but the Ethernet link does not transmit data across such a long cable. You might see the status LED blink yellow twice. This LED behavior indicates that the AP is unable to receive data from the switch.

- PoE injector

See PoE Requirements for Juniper Mist APs for the power requirements for an AP12.

2
CHAPTER

Installation

IN THIS CHAPTER

Mount the AP12 Access Point

IN THIS SECTION

You can mount the AP12 either on a wall or on a desk.

NOTE: We recommend that you claim your access point (AP) before you install it. The claim code is located on the rear of the AP and it might be difficult to access the claim code after you mount the AP. For information about claiming an AP, see *Claim a Juniper Access Point*.

Mounting Brackets for AP12

Table 2 on page 8 lists the brackets available for the AP12.

Table 2: Mounting Brackets for AP12

Part Number	Description
APBR-WP1	Wall plate bracket for mounting the AP12 on a wall. The bracket ships with the AP and is compatible for installation on single-gang and double-gang junction boxes.
APBR-DS1	Desktop stand that you can order separately

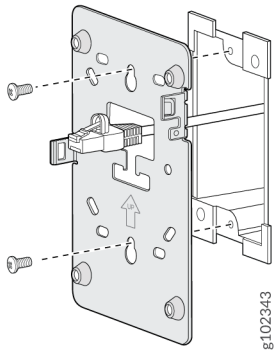
Mount the AP12 on a Single-Gang Junction Box

You can mount the AP12 on a single-gang junction box by using the wall plate bracket (APBR-WP1) that we ship along with the AP12.

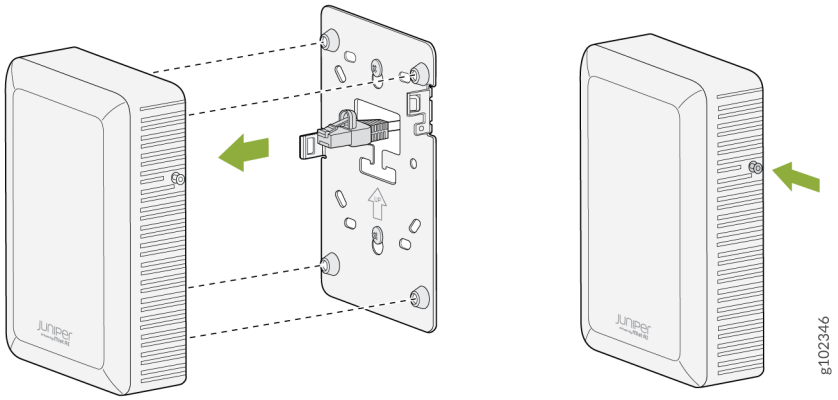
To mount an AP12 on a single-gang junction box:

1. Attach the wall plate to the single-gang junction box, as shown in Figure 4 on page 9.

Figure 4: Attach the Wall Plate Bracket to the Single-Gang Junction Box



2. Connect the Ethernet cable to the AP.
3. Slide the AP onto the wall plate until the lock is engaged. Then, tighten the security screw.

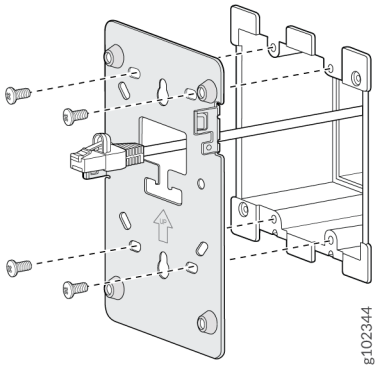


Video: Mounting an AP on a US Single-Gang Junction Box

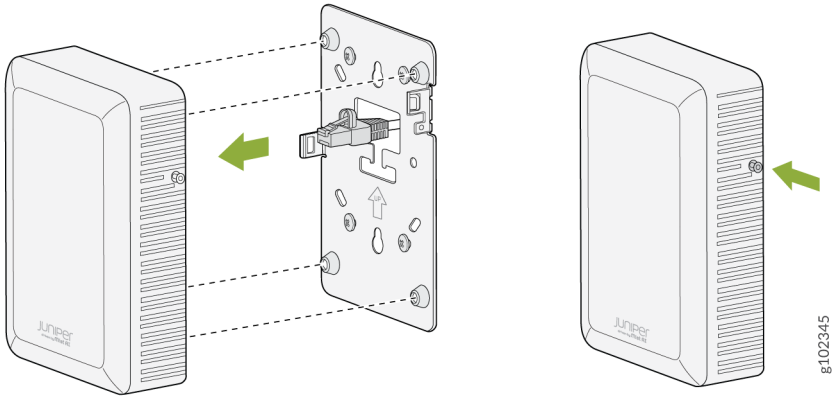
Mount the AP12 on a Double-Gang Junction Box

1. Attach the wall plate to the double-gang junction box as shown in Figure 5 on page 10.

Figure 5: Attach the Wall Plate Bracket to the Double-Gang Junction Box



2. Connect the Ethernet cable to the AP.
3. Slide the AP onto the wall plate until the lock is engaged. Then, tighten the security screw.



Video: Mounting an AP on a US Double-Gang Junction Box

Connect an AP12 to the Network and Power It On

The AP onboarding process involves the following steps:

- When you power on an AP, the AP obtains an IP address from the DHCP server on the untagged VLAN.
- The AP performs a DNS lookup to resolve the Juniper Mist cloud URL. See Firewall Configuration for specific cloud URLs.
- The AP establishes a HTTPS session with the Juniper Mist cloud for management.
- The Mist cloud then provisions the AP by pushing the required configuration once the AP is assigned to a site.

To ensure that your AP has access to the Juniper Mist cloud, ensure that the required ports on your Internet firewall are open. See Firewall Configuration.

To connect the AP to the network:

1. Connect an Ethernet cable from a switch to the **Eth0+PoE** port on the AP.

   For information on power requirements, see PoE Requirements for Juniper Mist APs.

   You might need to enable the Link Layer Discovery Protocol (LLDP) on the switch for it to deliver 802.3at power.

   > **NOTE**: If you are setting up the AP in a home setup where you have a modem and a wireless router, do not connect the AP directly to your modem. Connect the **Eth0+PoE** port on the AP to one of the LAN ports on the wireless router. The router provides DHCP services, which enables wired and wireless devices on your local LAN to get IP addresses and connect to the Mist cloud. An AP connected to a modem port connects to the Mist cloud but does not provide any services.
   >
   > The same guideline applies if you have a modem/router combo. Connect the **Eth0+PoE** port on the AP to one of the LAN ports.

   If the switch or router that you connect to the AP is not PoE capable, use an 802.3at or 802.3bt injector:

   - Connect an Ethernet cable from the switch to the **data in** port on the power injector.
   - Connect an Ethernet cable from the **data out** port on the power injector to the **Eth0+PoE** port on the AP.

2. Wait for a few minutes for the AP to boot completely.
   When the AP connects to the Juniper Mist portal, the LED on the AP turns green, indicating that the AP is connected and onboarded to the Juniper Mist cloud.

   After you've onboarded the AP, you can configure the AP according to your network and requirements. See the Juniper Mist Wireless Configuration Guide to configure your AP.

NOTE: If the AP is unable to connect to the Juniper Mist cloud, you can use the status LED to troubleshoot. See *Troubleshoot a Juniper Access Point*.

A few things to keep in mind about your AP:

- When an AP boots for the first time, it sends a Dynamic Host Configuration Protocol (DHCP) request on the trunk port or native VLAN. You can reconfigure the AP to assign it to a different VLAN after you've onboarded the AP (that is, the AP state shows as Connected in the Juniper Mist Portal. Ensure that you reassign the AP to a valid VLAN because, on rebooting, the AP sends DHCP requests only on that VLAN. If you connect the AP to a port on which the VLAN doesn't exist, Mist displays a **No IP address found** error.

- We recommend that you avoid using a static IP address on an AP. The AP uses the configured static information whenever it reboots, and you cannot reconfigure the AP until it connects to the network. If you need to correct the IP address, you'll need to reset the AP to the factory-default configuration.

  If you must use a static IP address, we recommend that you use a DHCP IP address during the initial setup. Before assigning a static IP address, ensure that:

  - You've reserved the static IP address for the AP.

  - The switch port can reach the static IP address.

3

CHAPTER

Troubleshoot

IN THIS CHAPTER

Troubleshooting Overview

If your access point (AP) is not working correctly, follow these steps to troubleshoot the issue:

- See the **Marvis** > **Marvis Actions** dashboard to identify issues. See *Marvis Actions Overview*.
- Use Marvis Query Language to monitor your network. See *Troubleshoot Using Marvis Query Language*.
- Check the blinking pattern of the status LED. See *AP Troubleshooting Overview*.

If you are unable to resolve the issue, you can create a support ticket on the Juniper Mist portal.

Contact Customer Support

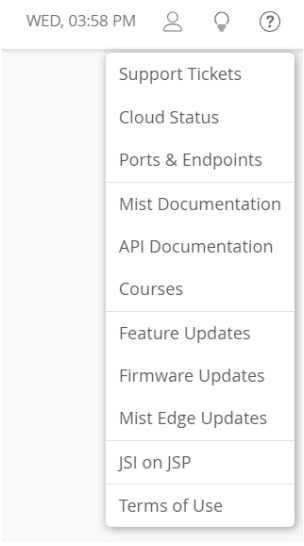
You can create a support ticket on the Juniper Mist portal. The Juniper Mist Support team will contact you to help resolve your problem. If needed, you can request a Return Material Authorization (RMA).

Before you begin, ensure that you have the following information:

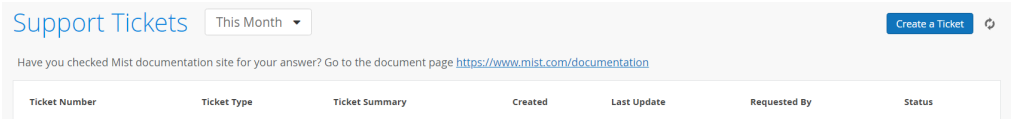
- The MAC address of the faulty AP
- The exact LED blink pattern seen on the AP (or a short video of the blinking pattern)
- The system logs from the AP

To create a support ticket:

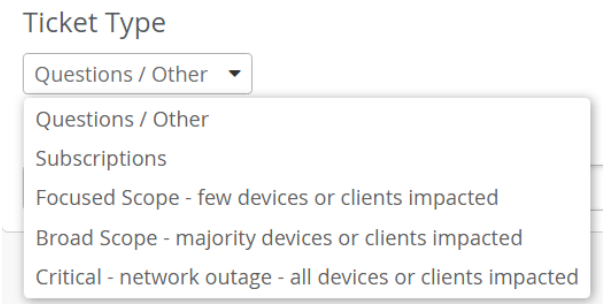
1. Click the **?** (question mark) icon in the top-right corner of the Juniper Mist portal.
2. Select **Support Tickets** from the drop-down menu.



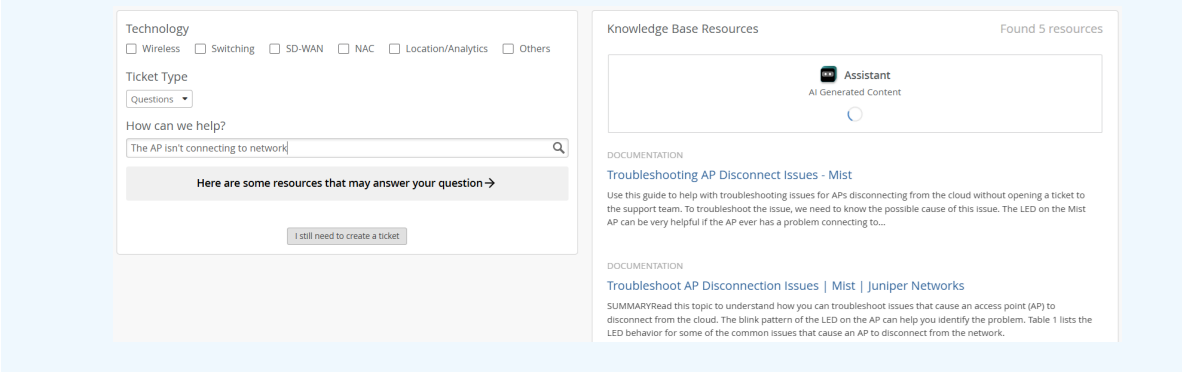
3. Click **Create a Ticket** in the top-right corner of the **Support Tickets** page.



4. Select the appropriate ticket type depending on the severity of your problem.

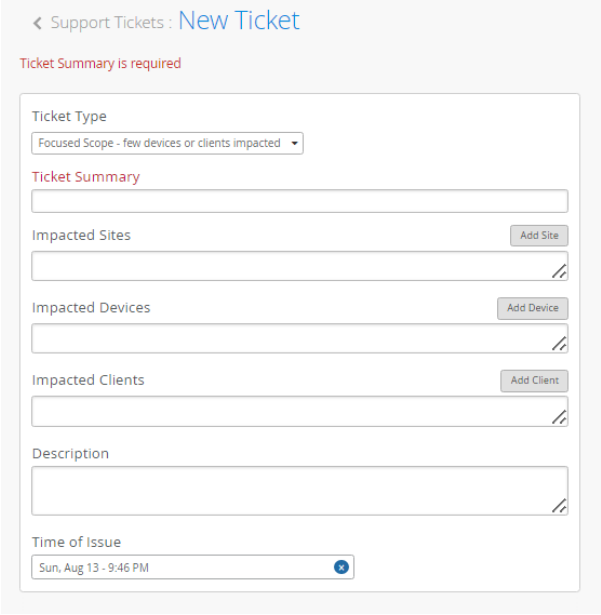


NOTE: Selecting **Questions/Other** will open a search box and redirect you to available documentation and resources related to your issue. If you cannot resolve your issue by using the suggested resources, click **I still need to create a ticket**.



5. Enter a ticket summary, and select the sites, devices, or clients that are impacted.

   If you are requesting an RMA, select the impacted device.



6. Enter a description to explain the issue in detail.

   Provide the following information:

   - The MAC address of the device
   - The exact LED blink pattern seen on the device
   - The system logs from the device

NOTE: To share device logs:

a. Navigate to the **Access Points** page in the Juniper Mist portal. Click the impacted device.

b. Select **Utilities** > **Send AP Log to Mist** in the top right corner of the device page.

It takes at least 30 seconds to 1 minute to send the logs. Do not reboot your device in that interval.

7. (Optional) You can provide any additional information that may help to resolve the issue, such as:
   - Is the device visible on the connected switch?
   - Is the device receiving power from the switch?
   - Is the device receiving an IP address?
   - Is the device pinging on the Layer 3 (L3) gateway of your network?
   - Have you already followed any troubleshooting steps?
8. Click **Submit**.