

Juniper AP63 Access Point Deployment Guide

Published
2023-11-09

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Juniper AP63 Access Point Deployment Guide

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About This Guide

Use this guide to install, manage, and troubleshoot the Juniper® AP63 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

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AP63 Access Point Overview

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The Juniper® AP63 High Performance Access Point is a [Wi-Fi 6](#) outdoor access point (AP) that provides high-performance wireless access. This weather-resistant AP is suitable for retail curbside, enterprise campus, public venue, outdoor station, and industrial site deployments.

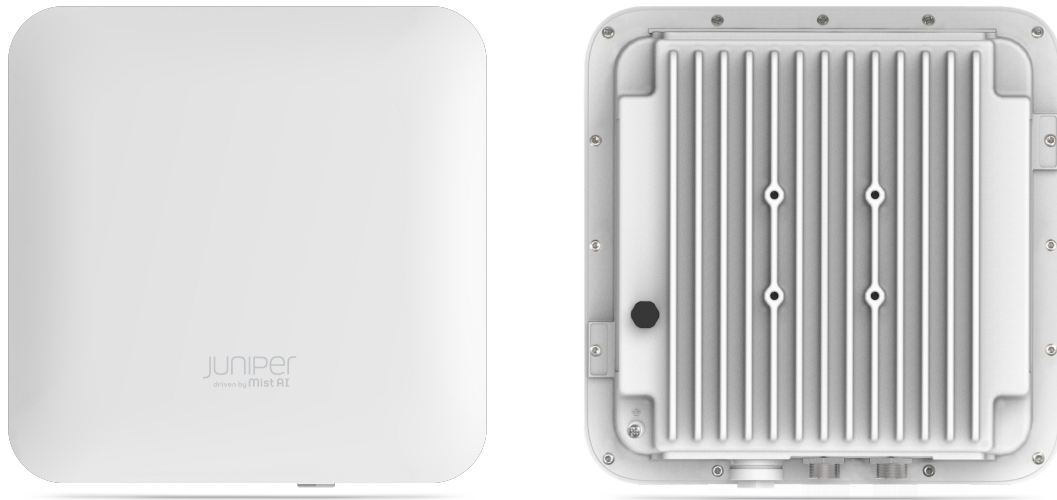
The AP63 has three IEEE 802.11ax radios, which deliver up to 4x4 multiple input, multiple output (MIMO) with four spatial streams. Out of the three radios, one is dedicated for scanning. The AP uses this radio for radio resource management (RRM) and wireless security.

The AP63 can operate in either multi-user or single-user mode. The AP63 is backward compatible with the 802.11a, 802.11b, 802.11g, 802.11n, and 802.11ac wireless standards.

The AP63 has a dynamic [virtual Bluetooth Low Energy \(vBLE\)](#) antenna array that the Juniper Mist cloud controls. The AP63 leverages the Mist AI to provide highly accurate Bluetooth LE location services using virtual beacons. Virtual beacons eliminate the need for physical beacons, resulting in time and cost savings.

The AP63 provides maximum data rates of 2400 Mbps in the 5-GHz band and 1148 Mbps in the 2.4-GHz band. In the internal antenna models of the AP63, each radio can operate in the 5 GHz band with a data rate of 2400 Mbps.

Figure 1: Front and Rear View of AP63



AP63 Access Point Models

The AP63 is available in the following models:

Model	Antenna	Regulatory Domain
AP63-US	Internal	United States only
AP63-WW	Internal	Outside of the United States
AP63E-US	External	United States only
AP63E-WW	External	Outside of the 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 used only in the specified authorized area. Failure to do so may void the warranty of Juniper products.

Benefits of AP63 Access Points

- Deployment in extreme conditions—You can deploy the rugged and weather-resistant AP in extremely harsh outdoor environments.
- Simple and quick deployment—You can deploy the AP with minimal manual intervention. The AP automatically connects to the Mist cloud after 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 issues. Marvis can identify issues such as offline APs and APs with insufficient capacities and coverage issues.
- Automatic RF optimization—Juniper radio resource management (RRM) automates dynamic channel and power assignment, which helps reduce interference and enhance user experience. Mist AI monitors the coverage and capacity metrics to optimize the RF environment.
- Precise location and location services—The directional vBLE antenna array provides precise distance and location accuracy.

AP63 Components

Figure 2 on page 4 shows the ports on the AP63.

Figure 2: AP63 Ports

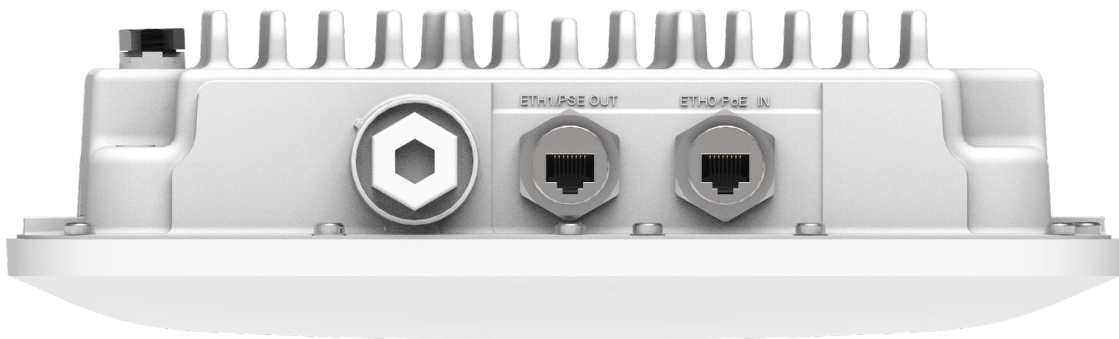
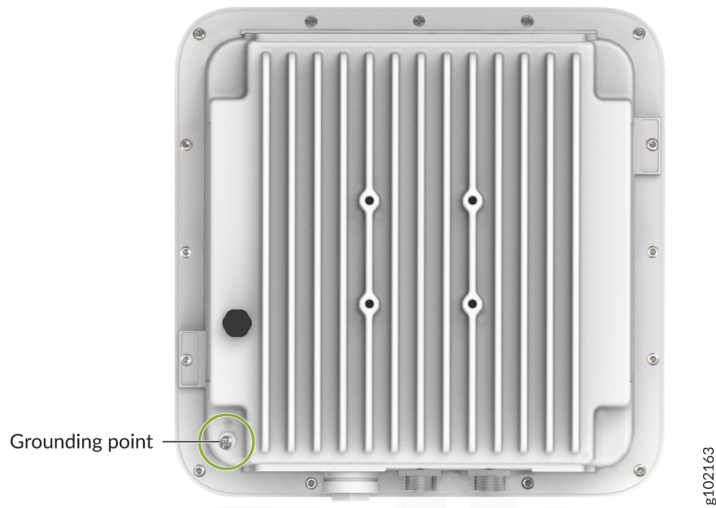


Table 1: AP63 Ports

Component	Description
ETH1/PSE OUT	10/100/1000BASE-T RJ-45 port + 802.3af PoE power sourcing equipment (PSE) (if PoE In is 802.3bt)
ETH0/POE IN	100/1000/2500BASE-T RJ-45 port that supports an 802.3at-powered or 802.3bt-powered device
Antenna connectors (available only in AP63E models)	Six N-type connectors (four dual-band for client radios; two dual-band for the third radio)
Status LED	A multicolor status LED to indicate the status of the AP and to help troubleshoot issues. See <i>Troubleshoot a Juniper Access Point</i> .

The AP63 also has a grounding point on the rear. [Figure 4 on page 5](#) shows the location of the grounding point on the AP63.

Figure 4: Rear Panel of AP63



2

CHAPTER

Requirements and Specifications

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AP63 Specifications

Table 2 on page 7 lists the specifications for AP63.

Table 2: Specifications for AP63

Parameter	Description
Physical Specifications	
Dimensions	11.2 in. (285 mm) x 11.2 in. (285 mm) x 3.3 in. (85 mm)
Weight	<ul style="list-style-type: none"> • AP63—7.43 lb (3.4 kg) • AP63E—8.58 lb (3.9 kg)
Environmental Specifications	
Operating temperature	<ul style="list-style-type: none"> • Without solar loading— -40 °F (-40 °C) through 149 °F (65 °C) • With solar loading— -40 °F (-40 °C) through 131 °F (55 °C)
Operating humidity	10% through 90% maximum relative humidity, non-condensing
Operating altitude	Up to 10,000 ft (3,048 m)
Other Specifications	
Wireless standard	802.11ax (Wi-Fi 6)
Internal antennas (AP63)	<ul style="list-style-type: none"> • Four 2.4-GHz omnidirectional antennas with a peak gain of 4 dBi • Four 5-GHz omnidirectional antennas with a peak gain of 6 dBi

Table 2: Specifications for AP63 (Continued)

Parameter	Description
External antennas (AP63E)	<p>The AP does not support an external antenna if the antenna gain exceeds the values listed here:</p> <ul style="list-style-type: none"> • Omnidirectional antennas <ul style="list-style-type: none"> • 2.4-GHz antenna—4-dBi peak gain • 5-GHz antenna—6-dBi peak gain • Directional antennas <ul style="list-style-type: none"> • 2.4-GHz antenna—8-dBi peak gain • 5-GHz antenna—10-dBi peak gain
Bluetooth	vBLE 16-element directional antenna array and omnidirectional Bluetooth antenna
Power options	<ul style="list-style-type: none"> • 802.3at (PoE+) with no PoE out • 802.3bt (PoE++)
RF	<ul style="list-style-type: none"> • 5-GHz radio—4x4:4SS 802.11ax MU-MIMO and SU-MIMO • 2.4-GHz radio—4x4:4SS 802.11ax MU-MIMO and SU-MIMO • 2.4-GHz or 5-GHz scanning radio • 2.4-GHz BLE with dynamic antenna array
Maximum PHY rate (maximum transmit rate at the physical layer)	<ul style="list-style-type: none"> • Total maximum PHY rate—3548 Mbps • 5 GHz—2400 Mbps • 2.4 GHz—1148 Mbps <p>NOTE: On the AP63 models with internal antennas, the second radio can also operate in the 5-GHz band, giving a maximum PHY rate of 4800 Mbps.</p>
Maximum devices supported on each radio	256

AP63 Power Requirements

AP63 requires 802.3at (PoE+) power. The AP63 requests 25.2 W to provide full wireless functionality. You can use any of the following options to power on the AP:

- 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 indicating that the AP is unable to receive data from the switch.

- PoE injector

3

CHAPTER

Installation

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Mount the AP63 Access Point

IN THIS SECTION

- Mounting Brackets for AP63 | 11
- Connect the Grounding Cable | 14
- Mount the AP63 on a Wall (Flush Mount) | 15
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You can mount the AP63 either on a wall or on a pole using two methods—flush mount or articulating mount.

Mounting Brackets for AP63

IN THIS SECTION

- Mounting Brackets for Flush Mount Method | 12
- Mounting Brackets for Articulating Mount Method | 13

You can order a single mounting kit containing the mounting brackets for both flush mount and articulating mount. You can also order the flush mount and articulating mount brackets separately. [Table 3 on page 12](#) lists the part numbers for the mounting brackets.

Table 3: Part Numbers for AP63 Mounting Brackets

Part Number	Description
APOUTBR-KIT	Mounting brackets for both flush mount and articulating mount
APOUTBR-FM	Flush mount brackets
APOUTBR-ART2	Articulating mount brackets

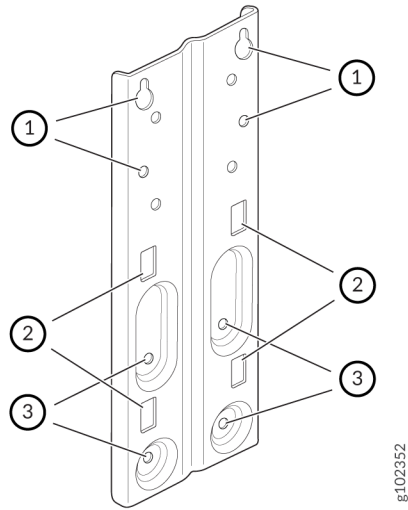
Mounting Brackets for Flush Mount Method

The mounting accessories for flush mounting include the following:

- One flush mount bracket (part number: APOUTBR-FM)
- Two hose clamps
- Four M6 screws
- Four sets of M6 screws, washers, and spring washers
- Five sets of anchors and screws

[Figure 5 on page 13](#) shows the screw holes to use for mounting on a wall and pole.

Figure 5: APOUTBR-FM Flush Mount Bracket

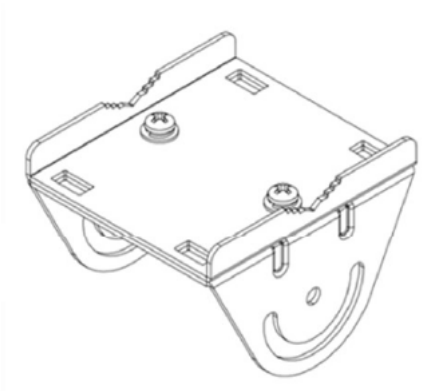


1—Screw holes to use for mounting an AP63 on a wall	2—Holes to use for attaching hose clamps
3—Screw holes to use for attaching the bracket to an AP63	

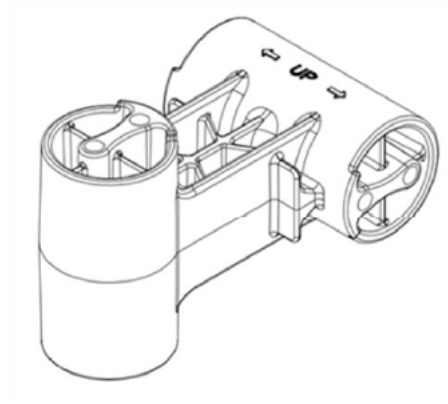
Mounting Brackets for Articulating Mount Method

The mounting accessories for articulating mounting include the following:

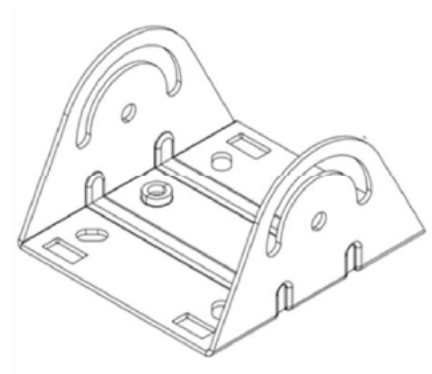
- Three mounting brackets (part number: APOUTBR-ART2):
 - Mounting bracket 1



- Mounting bracket 2



- Mounting bracket 3



- Four M6x10mm screws
- Four bolts and nuts

Connect the Grounding Cable

We recommend that you ground the AP before mounting it on a wall or pole. The AP63 has a single-hole protective grounding terminal on the rear. Use this grounding terminal to ground the AP.

To ground the AP61:

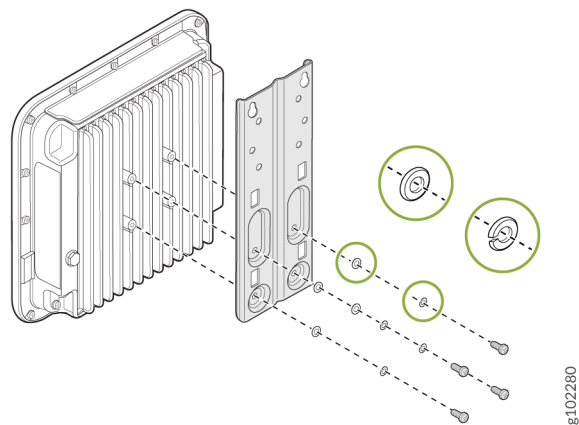
1. Remove the screw.
2. Place the grounding lug attached to the grounding cable over the grounding terminal.
3. Secure the grounding cable lug to the grounding terminal with the screw.

Mount the AP63 on a Wall (Flush Mount)

To flush mount the AP63 on a wall:

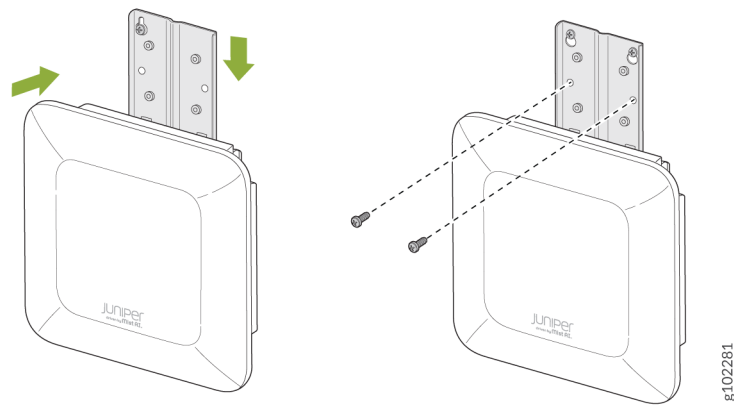
1. Drill four holes on the wall based on the location of holes marked with callout #1 in [Figure 5 on page 13](#)
2. Insert screws in the two upper holes. Do not tighten the screws fully.
3. Attach the APOUTBR-FM flush mount bracket to the AP by using the four screws, washers, and lock washers provided along with the AP. Use the bracket screw holes marked with callout #3 in [Figure 5 on page 13](#).

Figure 6: Attach the APOUTBR-FM Flush Mount Bracket to an AP63



4. Position the AP such that the two screws that you inserted in Step 1 fit into the holes in the bracket. Slide the AP downward so that the screws lock in place.

Figure 7: Mount an AP63 on a Wall (Flush Mount)



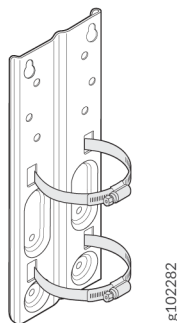
5. Insert the other two screws and then tighten all the four screws.

Mount the AP63 on a Pole (Flush Mount)

To flush mount the AP63 on a pole:

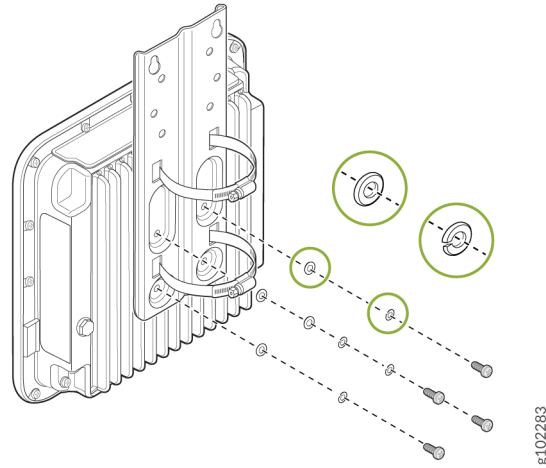
1. Attach the hose clamps to the APOUTBR-FM flush mount bracket. Use a screwdriver to release the hose clamps and then pass the hose clamps through the slots in the flush mount bracket.

Figure 8: Attach Hose Clamps to the APOUTBR-FM Flush Mount Bracket



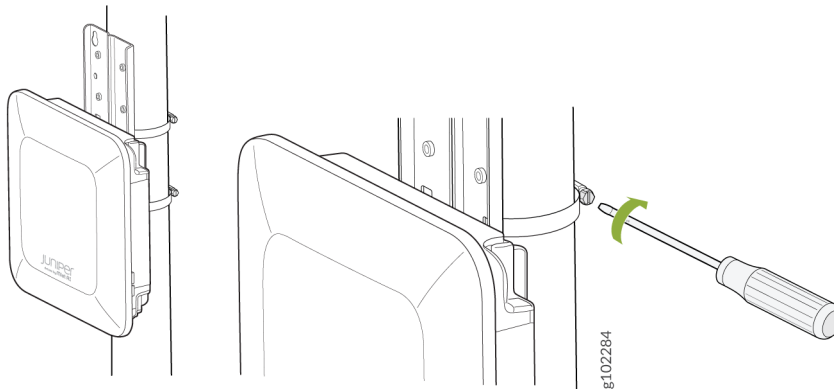
2. Attach the APOUTBR-FM flush mount bracket to the AP by using the four screws, washers, and lock washers provided along with the AP.

Figure 9: Attach the APOUTBR-FM Flush Mount Bracket to an AP63



3. Mount the AP on the pole. Wind the open end of the hose clamps around the pole and tighten the hose clamp screws by using a screwdriver. Tighten the screws until the AP and bracket assembly are secured in place.

Figure 10: Mount an AP63 on a Pole (Flush Mount)

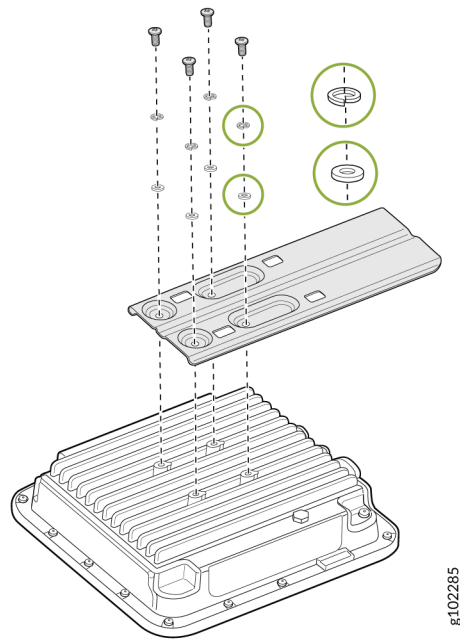


Mount the AP63 on a Wall (Articulating Mount)

To mount the AP63 on a wall using the articulating mount bracket:

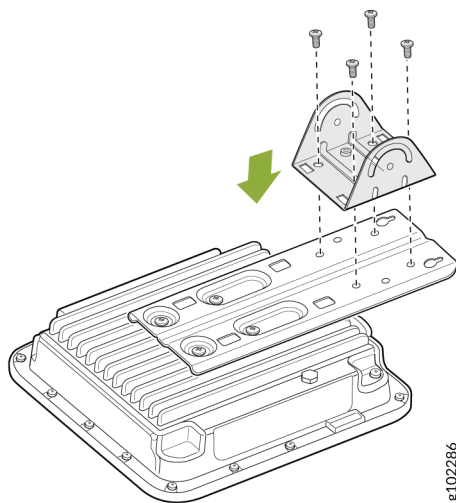
1. Attach the flush mount bracket APOUTBR-FM to the AP by using the four M6x16mm screws, washers, and lock washers.

Figure 11: Attach the APOUTBR-FM Flush Mount Bracket to an AP63



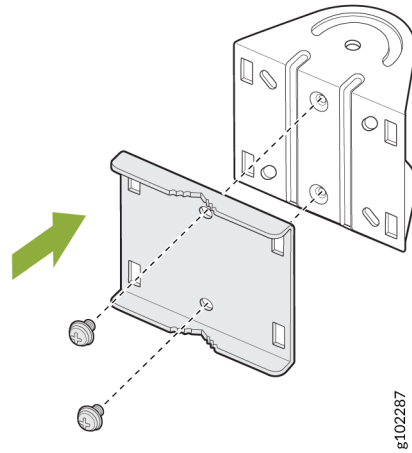
2. Attach the APOUTBR-ART2 mounting bracket 3 to the flush mount bracket APOUTBR-FM by using the four M6x10mm screws.

Figure 12: Attach the APOUTBR-ART2 Mounting Bracket 3 to the APOUTBR-FM Flush Mount Bracket



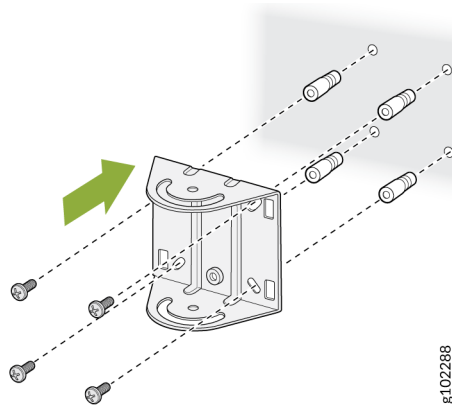
3. Disassemble the APOUTBR-ART2 mounting bracket 1 by removing the two screws.

Figure 13: Disassemble the APOUTBR-ART2 Mounting Bracket 1



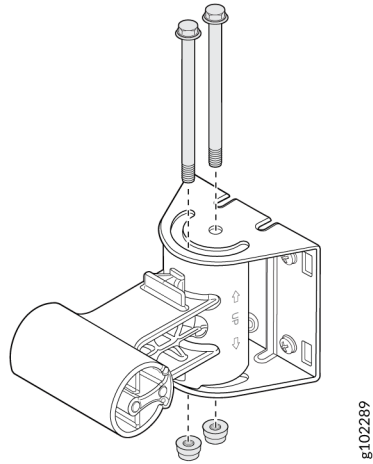
4. Install the APOUTBR-ART2 mounting bracket 1 on the wall using four screws.

Figure 14: Install the APOUTBR-ART2 Mounting Bracket 1 on a Wall



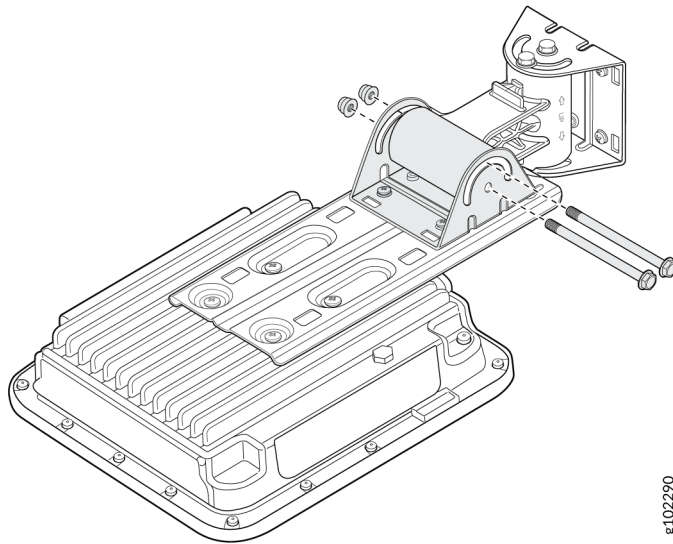
5. Attach the APOUTBR-ART2 mounting bracket 2 to the mounting bracket 1 by using two bolts and nuts. Orient the side with "← UP →" as shown in [Figure 15 on page 20](#).

Figure 15: Attach the APOUTBR-ART2 Mounting Bracket 2 to the Mounting Bracket 1



6. Attach the APOUTBR-ART2 mounting bracket 3 to the mounting bracket 2 by using two bolts and nuts.

Figure 16: Attach the APOUTBR-ART2 Mounting Bracket 3 to the Mounting Bracket 2

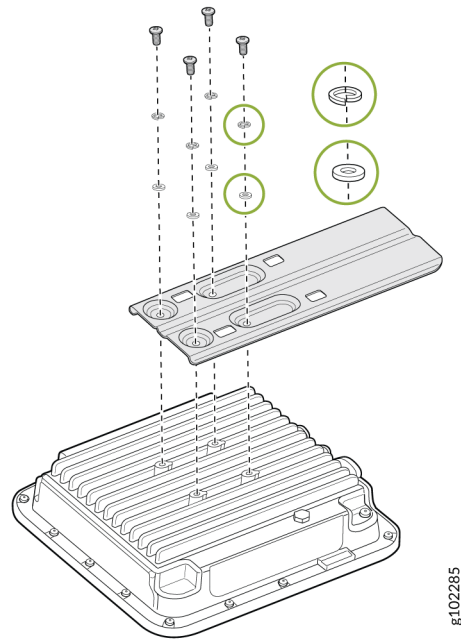


Mount the AP63 on a Pole (Articulating Mount)

To mount the AP63 on a wall using the articulating mount bracket:

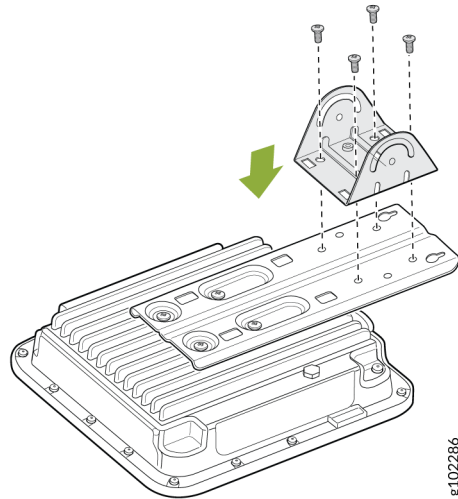
1. Attach the flush mount bracket APOUTBR-FM to the AP by using the four M6x16mm screws, washers, and lock washers.

Figure 17: Attach the APOUTBR-FM Flush Mount Bracket to an AP63



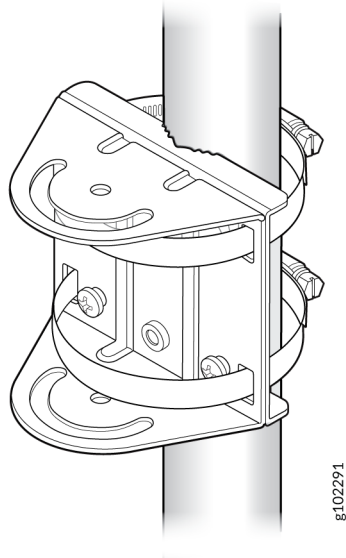
2. Attach the APOUTBR-ART2 mounting bracket 3 to the flush mount bracket APOUTBR-FM by using the four M6x10mm screws.

Figure 18: Attach the APOUTBR-ART2 Mounting Bracket 3 to the APOUTBR-FM Flush Mount Bracket



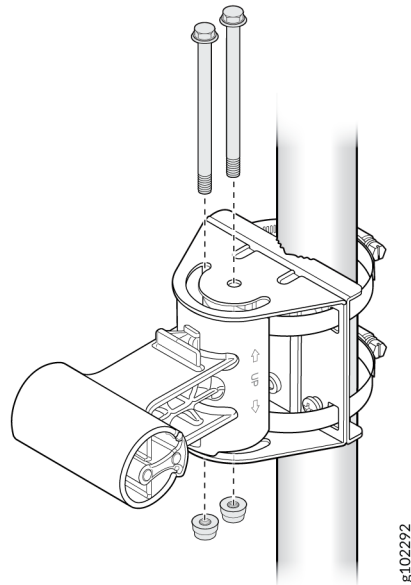
3. Attach the hose clamps to the APOUTBR-ART2 Mounting Bracket 1. Use a screwdriver to release the hose clamps and then pass the hose clamps through the slots on the bracket.
4. Attach the APOUTBR-ART2 mounting bracket 1 to the pole. Wind the open end of the hose clamps around the pole and tighten the hose clamp screws by using a screwdriver. Tighten the screws until the bracket is secured in place.

Figure 19: Attach the APOUTBR-ART2 Mounting Bracket 1 to a Pole



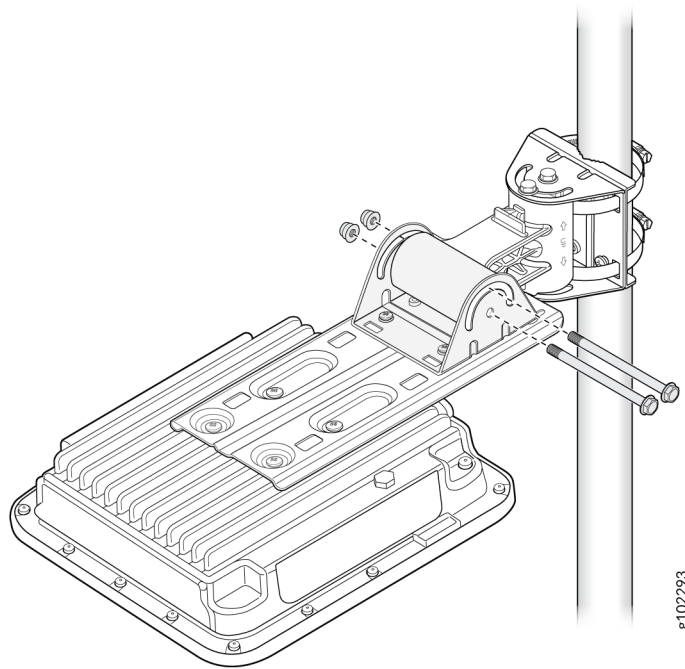
5. Attach the APOUTBR-ART2 mounting bracket 2 to the mounting bracket 1 by using two bolts and nuts included in the bracket kit. Orient the side with the label ← UP → as shown in [Figure 20 on page 23](#).

Figure 20: Attach the APOUTBR-ART2 Mounting Bracket 2 to the Mounting Bracket 1



6. Attach the APOUTBR-ART2 mounting bracket 3 to the mounting bracket 2 by using two bolts and nuts included in the bracket kit.

Figure 21: Attach the APOUTBR-ART2 Mounting Bracket 3 to the Mounting Bracket 2

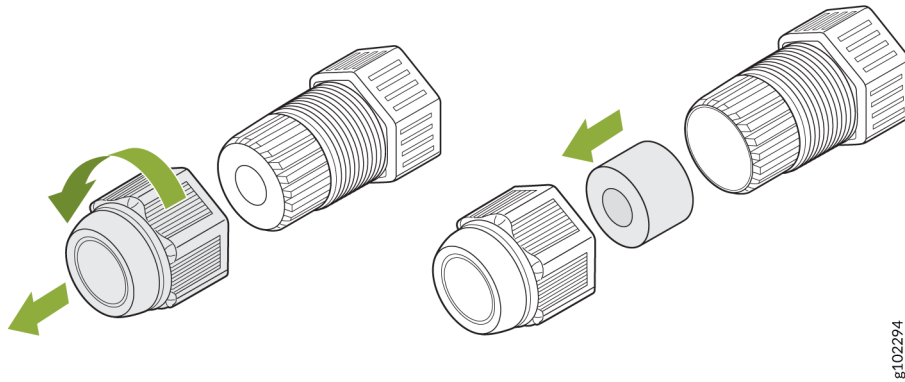


Connect an RJ-45 Cable Gland

Use an RJ-45 cable gland when you connect an RJ-45 cable to the AP. The cable gland helps secure the RJ-45 cable and protects the cable from damage. To connect an RJ-45 cable using the cable gland:

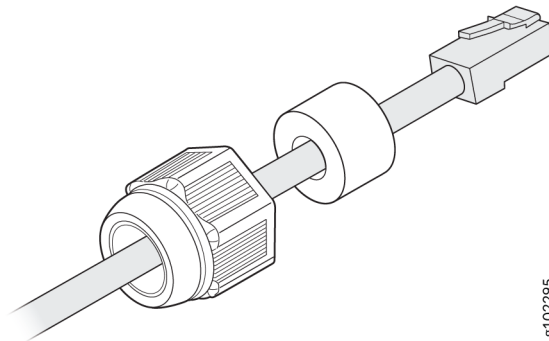
1. Disassemble the cable gland:
 - a. Remove the cable gland nut by turning it counter-clockwise.
 - b. Remove the blue seal. Ensure that you select the correct seal. The cable gland has two seals—a blue seal (7 mm through 9.5 mm diameter) and a red seal (5.5 mm through 7 mm diameter).

Figure 22: Disassemble an RJ-45 Cable Gland



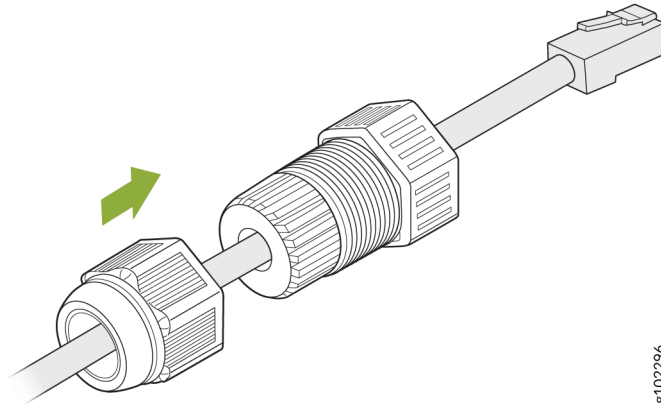
2. Insert the RJ-45 cable through the cable gland:
 - a. Open the seal and insert the RJ-45 cable through the nut and the seal.

Figure 23: Insert the RJ-45 Cable Through the Nut and the Seal of the Cable Gland



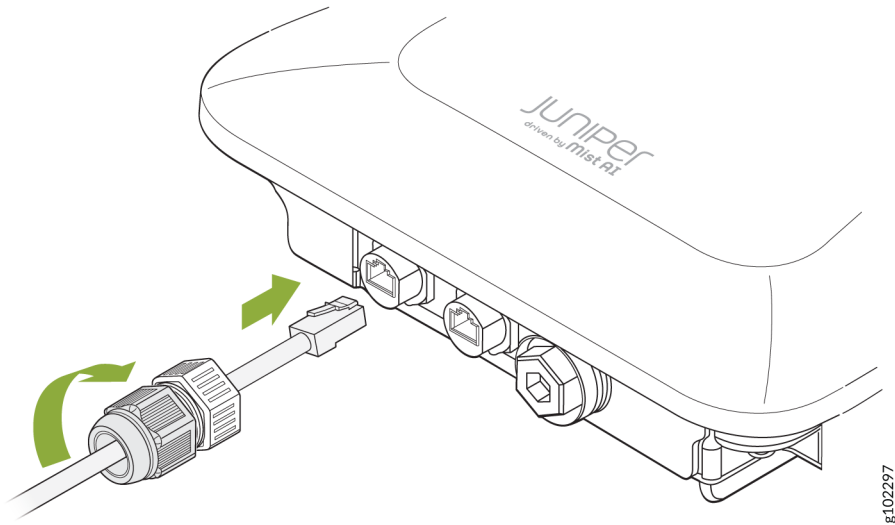
- b. Push the RJ-45 cable through the cable gland. Push the seal into the cable gland and loosely tighten the nut.

Figure 24: Push the RJ-45 Cable Through the Cable Gland



3. Connect the RJ-45 cable to the AP port. Attach the cable gland to the AP and tighten it with a torque of 10–12 kg-cm. Then, fully tighten the nut to the cable gland with a torque of 7–10 kg-cm.

Figure 25: Attach a Cable Gland to the AP63



Connect an AP63 to the Network and Power It On

When you power on an AP and connect it to the network, the AP is automatically onboarded to the Juniper Mist cloud. 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 Domain Name System (DNS) lookup to resolve the Juniper Mist cloud URL. See [Firewall Configuration](#) for the 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 after 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.

The AP63 requires at least 802.3at (PoE+) power. To provide full wireless functionality, it requests 25.2 W.

If the switch or router that you connect to the AP does not support PoE, use an 802.3at or 802.3bt power 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, which indicates 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 [Wireless Configuration Guide](#) and [Location Services Guide](#) to configure your AP.

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.

4

CHAPTER

Troubleshoot

[Contact Customer Support](#) | 30

Contact Customer Support

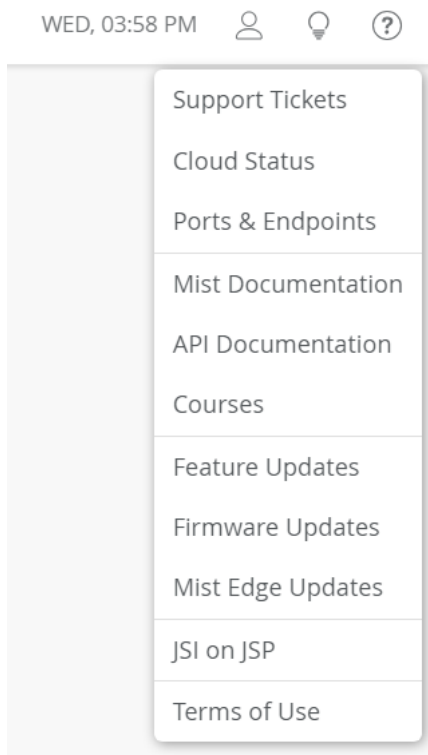
If your access point (AP) is not working correctly, see *Troubleshoot a Juniper Access Point* to troubleshoot the issue. If you are unable to resolve the issue, you can create a support ticket on the Juniper Mist portal. The Juniper Mist Support team will contact you to help resolve your problem. If 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.

Support Tickets This Month ▾ Create a Ticket

Have you checked Mist documentation site for your answer? Go to the document page <https://www.mist.com/documentation>

Ticket Number	Ticket Type	Ticket Summary	Created	Last Update	Requested By	Status
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- Select the appropriate ticket type depending on the severity of your problem.

Ticket Type

Questions / Other ▾

- Questions / Other
- Subscriptions
- Focused Scope - few devices or clients impacted
- Broad Scope - majority devices or clients impacted
- Critical - network outage - all devices or clients impacted

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**.

- Enter a ticket summary, and select the sites, devices, or clients that are impacted.
If you are requesting an RMA, select the impacted device.

< Support Tickets: **New Ticket**

Ticket Summary is required

Ticket Type
Focused Scope - few devices or clients impacted ▾

Ticket Summary

Impacted Sites Add Site

Impacted Devices Add Device

Impacted Clients Add Client

Description

Time of Issue
Sun, Aug 13 - 9:46 PM ✕

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**.