Aruba 320 Series Wireless Access Point

Installation Guide

The Aruba 320 Series Wireless Access Points support IEEE 802.11ac standards for high-performance WLAN, and is equipped with two dual-band radios, which can provide access and monitor the network simultaneously. Multi-user Multiple-in, Multiple-output (MU-MIMO) technology allows this access point to deliver high-performance 802.11n 2.4 GHz and 802.11ac 5 GHz functionality, while also supporting 802.11a/b/g wireless services.

The AP-324 and AP-325 access points work in conjunction with an Aruba controller, while the IAP-324 and IAP-325 access points can be configured using a built-in virtual controller.

The 320 Series Wireless Access Points provide the following capabilities:

- Dual wireless transceiver
- IEEE 802.11a/b/g/n/ac operation as a wireless access point
- IEEE 802.11a/b/g/n/ac operation as a wireless air monitor
- Compatibility with IEEE 802.3at and 802.3af PoE
- Centralized management configuration and upgrades
- Integrated Bluetooth Low Energy (BLE) radio

CAUTION

This device must be professionally installed and serviced by a trained ACMP or similar Aruba-certified technician. Aruba access points are classified as radio transmission devices, and are subject to government regulations of the host country. The network administrator(s) is/are responsible for ensuring that configuration and operation of this equipment is in compliance with their country's regulations. For complete list of approved channels in your country, refer to the *Aruba Downloadable Regulatory Table* at www.arubanetworks.com.

Package Contents

- (I)AP-324 or (I)AP-325 access point
- 9/16" and 15/16" Ceiling Rail Adapters
- *Regulatory Compliance and Safety Information* Guide
- Instant Quick Start Guide (for Instant access points only)
- Professional Install Guide (for (I)AP-324 only)
- Installation guide (this document)

NOTE

Inform your supplier if there are any incorrect, missing, or damaged parts. If possible, retain the carton, including the original packing materials. Use these materials to repack and return the unit to the supplier if needed.

Software

The AP-324 and AP-325 require ArubaOS 6.4.4 or higher. For additional information, refer to the *ArubaOS User Guide* and *ArubaOS Quick Start Guide*.

The IAP-324 and IAP-325 require Aruba Instant 4.2.1 or higher. For additional information, please refer to the *Aruba Instant User Guide* or the *Aruba Instant Quick Start Guide*.

CAUTION

Access points are radio transmission devices and are subject to governmental regulation. Network administrators responsible for the configuration and operation of access points must comply with local broadcast regulations. Specifically, access points must use channel assignments appropriate to the location in which the access point will be used.

320 Series Hardware Overview

Figure 1 *LEDs*

LEDs

The 320 Series access points have two LEDs that indicate the system and radio status of the device.

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Table 1 *320 Series LED Status*

LED	Color/State	Meaning
System Status (Left)	Off	AP powered off
	Green/Amber-Alternating	Device booting; not ready
	Green- Solid	Device ready
	Amber- Solid	Device ready; power-save mode (802.3af PoE): • Single radio • USB disabled
	Green or Amber-Flashing	Restricted mode: • Uplink negotiated in sub optimal speed; or • Radio in non-high throughput (HT) mode
	Red	System error condition
Radio Status (Right)	Off	AP powered off, or both radios disabled
	Green- Solid	Both radios enabled in access mode
	Amber- Solid	Both radios enabled in monitor mode
	Green/Amber-Alternating	One radio enabled in access mode, one enabled in monitor mode

External Antenna Connectors

The (I)AP-324 access points are equipped with four external antenna connectors located on the front corners of the access point (see Figure 2).

Figure 2 *External Antenna Connectors for the (I)AP-324*

CAUTION

All Aruba devices with external antennas must be installed by an Aruba Certified Mobility Professional (ACMP) qualified technician using manufacturer-approved antennas only. The ACMP installer is responsible for ensuring that the Equivalent Isotropically Radiated Power (EIRP) levels for all external antenna devices are compliant with regulatory standards of the host country/domain. Installers are required to record the antenna gain for this device in the system management software.

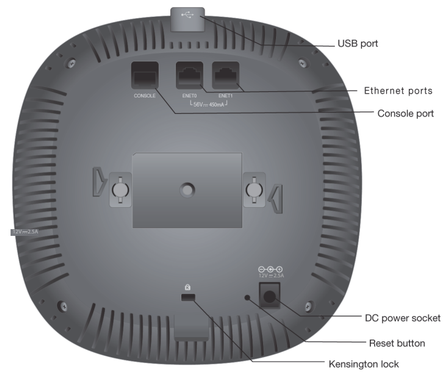
USB Interface

The 320 Series is equipped with a USB port for connectivity with cellular modems and other USB client devices. When powered by an 802.3at or DC source the USB port can supply up to 5W.

NOTE

The USB is disabled when powered by an 802.3af PoE.source.

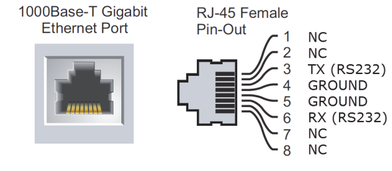
Figure 3 *Bottom Panel*



Console Port

The serial console port allows the user to connect the access point to a serial terminal or a laptop for direct local management. This port is an RJ-45 connector, with pinouts details in Figure 4. Connect it directly to a terminal or terminal server using an Ethernet cable.

Figure 4 *Serial Port Pin-Out*

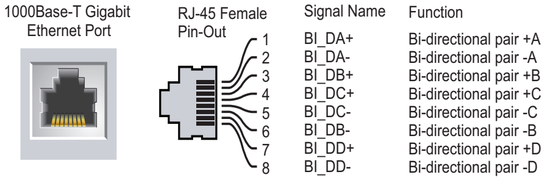


Ethernet Ports

The 320 Series is equipped with two 10/100/1000 Base-T (RJ-45) auto-sensing, MDI/MDX wired-network connectivity port. These ports support IEEE 802.3af and 802.3at Power over Ethernet (PoE) compliant sources, accepting 56V DC (nominal) as a standard defined Powered Device (PD) from a Power Sourcing Equipment (PSE), such as a PoE midspan injector, or network infrastructure that supports PoE.

The 10/100/1000 Mbps Ethernet ports are on the bottom of the access point. These ports have RJ-45 female connectors with the pin-outs shown in Figure 5.

Figure 5 *Gigabit Ethernet Port Pin-Out*



Kensington Lock Slot

The 320 Series is equipped with a Kensington lock slot for additional security.

Reset Button

The reset button can be used to return the access point to factory default settings. To reset the access point, refer to the steps below:

1. Power off the access point.
2. Press and hold the reset button using a small, narrow object, such as a paperclip.
3. Power-on the access point without releasing the reset button. The power LED will flash within 5 seconds.
4. Release the reset button.

The power LED will flash again within 15 seconds indicating that the reset is completed. The access point will now continue to boot with the factory default settings.

Power

The E0 and E1 port support PoE-in, allowing one port to draw power from an 802.3at (recommended) or an 802.3af source. When both PoE and DC power sources are available, the access point will default to using the DC power source.

If PoE is not available, the 320 Series has a single 12V/30W DC power jack socket to support the AP-AC-12V30UN AC-to-DC adapter kit (sold separately).

Power Modes

The 320 Series can operate in two power modes. The modes are not configurable and are determined by the access point based on the amount of power available.

The 320 Series Wireless Access Points operate without restrictions when powered by a DC or 802.3at PoE source. When powered by an 802.3af PoE source, the following restrictions apply:

- Second Ethernet port disabled
- USB interface disabled
- 2.4 GHz in 1x1:1 mode

Before You Begin

CAUTION

FCC Statement: Improper termination of access points installed in the United States configured to non-US model controllers will be in violation of the FCC grant of equipment authorization. Any such willful or intentional violation may result in a requirement by the FCC for immediate termination of operation and may be subject to forfeiture (47 CFR 1.80).

EU Statement:
Lower power radio LAN product operating in 2.4 GHz and 5 GHz bands. Please refer to the *ArubaOS User Guide/Aruba Instant User Guide* for details on restrictions.

CAUTION

Produit réseau local radio basse puissance operant dans la bande fréquence 2.4 GHz et 5 GHz. Merci de vous referrer au *ArubaOS User Guide/Aruba Instant User Guide* pour les details des restrictions.

Low Power FunkLAN Produkt, das im 2.4 GHz und im 5 GHz Band arbeitet. Weitere Informationen bezlüglich Einschränkungen finden Sie im *ArubaOS User Guide/Aruba Instant User Guide.*

Apparati Radio LAN a bassa Potenza, operanti a 2.4 GHz e 5 GHz. Fare riferimento alla *ArubaOS User Guide/Aruba Instant User Guide* per avere informazioni detagliate sulle restrizioni.

Access Point Pre-Installation Checklist

Before installing your 320 Series access point, ensure that you have the following:

- CAT5E or CAT6 UTP cable of required length
- One of the following power sources:
  - IEEE 802.3at or 802.3af-compliant Power over Ethernet (PoE) source. The PoE source can be any power source equipment (PSE) controller or midspan PSE device
  - Aruba APAC-DC adapter kit (sold separately)

For AP-324 and AP-325 only:

- Aruba Controller provisioned on the network:
  - Layer 2/3 network connectivity to your access point
  - One of the following network services:
    - Aruba Discovery Protocol (ADP)
    - DNS server with an "A" record
    - DHCP Server with vendor-specific options.

NOTE

Aruba Networks, Inc., in compliance with governmental requirements, has designed the 320 Series access points so that only authorized network administrators can change the settings. For more information about access point configuration, refer to the *ArubaOS Quick Start Guide/Aruba Instant Quick Start Guide* and *ArubaOS User Guide/Aruba Instant User Guide*.

Verifying Pre-Installation Connectivity

NOTE

The instructions for this section are applicable to the AP-324 and AP-325 only.

Before installing access points in a network environment, make sure that they are able to locate and connect to the controller after power on.

Specifically, you must verify the following conditions:

- When connected to the network, each access point is assigned a valid IP address
- Access points are able to locate the controller

Refer to the *ArubaOS Quick Start* Guide for instructions on locating and connecting to the controller.

Pre-Installation Network Requirements

After WLAN planning is complete and the appropriate products and their placement have been determined, the Aruba controller(s) must be installed and initial setup performed before the Aruba access points are deployed.

For initial setup of the controller, refer to the *ArubaOS Quick Start Guide* for the software version installed on your controller.

Identifying Specific Installation Locations

You can mount the 320 Series access point on a wall or on the ceiling. Use the access point placement map generated by Aruba's RF Plan software application to determine the proper installation location(s). Each location should be as close as possible to the center of the intended coverage area and should be free from obstructions or obvious sources of interference. These RF absorbers/reflectors/interference sources will impact RF propagation and should have been accounted for during the planning phase and adjusted for in RF plan.

Identifying Known RF Absorbers/Reflectors/Interference Sources

Identifying known RF absorbers, reflectors, and interference sources while in the field during the installation phase is critical. Make sure that these sources are taken into consideration when you attach an access point to its fixed location. Examples of sources that degrade RF performance include:

- Cement and brick
- Objects that contain water
- Metal
- Microwave ovens
- Wireless phones and headsets

Installing the Access Point

NOTE

Service to all Aruba Networks products should be performed by an AMCP certified technician or similar.

Using the Ceiling Rail Adapter

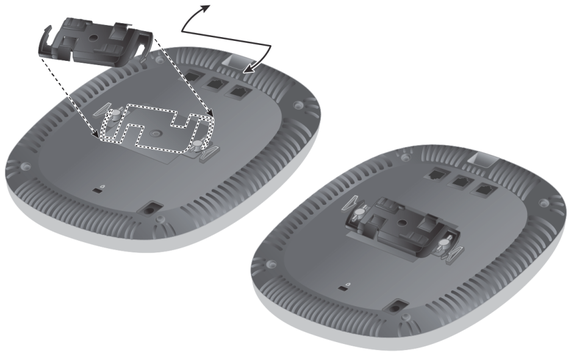
The 320 Series ships with two ceiling rail adapters for 9/16" and 15/16" ceiling rails. Additional wall mount adapters and ceiling rail adapters for other rail styles are available as accessory kits.

CAUTION

The installer is responsible for securing the access point onto the ceiling tile rail in accordance with the steps below. Failure to properly install this product may result in physical injury and/or damage to property.

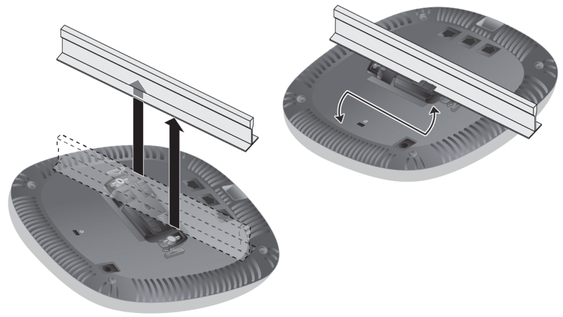
1. Pull the necessary cables through a prepared hole in the ceiling tile near where the access point will be placed.
2. Place the adapter against the back of the access point with the adapter at an angle of approximately 30 degrees to the tabs (see Figure 6).
3. Twist the adapter clockwise until it snaps into place in the tabs (see Figure 6).

Figure 6 *Attaching the Ceiling Rail Adapter*



4. If necessary, connect the console cable to the console port on the back of the access point.
5. Hold the access point next to the ceiling tile rail with the ceiling tile rail mounting slots at approximately a 30-degree angle to the ceiling tile rail (see Figure 7). Make sure that any cable slack is above the ceiling tile.
6. Pushing toward the ceiling tile, rotate the access point clockwise until the device clicks into place on the ceiling tile rail.

Figure 7 *Mounting the Access Point*



7. On the (I)AP-324, install the external antennas according to the manufacturer's instructions, and connect the antennas to the antenna interfaces on the access point.

Connecting Required Cables

Install cables in accordance with all applicable local and national regulations and practices.

Verifying Post-Installation Connectivity

The integrated LEDs on the access point can be used to verify that the device is receiving power and initializing successfully (see Table 1). Refer to the *ArubaOS Quick Start Guide* for further details on verifying post-installation network connectivity.

Configuring the 320 Series

NOTE

The instructions for this section are applicable to the AP-324 and AP-325 only.

Access Point Provisioning/Reprovisioning

Provisioning parameters are unique to each access point. These local access point parameters are initially configured on the controller which are then pushed out to the access points and stored on the devices. Aruba recommends that provisioning settings be configured via the ArubaOS Web UI only. Refer to the *ArubaOS User Guide* for complete details.

Access Point Configuration

Configuration parameters are network or controller specific and are configured and stored on the controller. Network configuration settings are pushed out to the access points, but remain stored on the controller.

Configuration settings can be configured via the ArubaOS Web UI or ArubaOS CLI. Refer to their respective guides for further details: the *ArubaOS User Guide*.

Aruba 320 Series Wireless Access Point

Installation Guide

Contacting Aruba Networks

Web Support	
Main Site	http://www.arubanetworks.com
Support Site	https://support.arubanetworks.com
Airheads Social Forums and Knowledge Base	community.arubanetworks.com
North American Telephone	1-800-943-4526 (Toll Free) 1-408-754-1200
International Telephones	arubanetworks.com/support-services/aruba-support-program/contact-support/
Software Licensing Site	licensing.arubanetworks.com/login.php
Wireless Security Incident Response Team (WSIRT)	arubanetworks.com/support/wsirt.php
Support Email Addresses	
Americas and APAC	support@arubanetworks.com
EMEA	emea.support@arubanetworks.com
Americas and APAC Support Email	support@arubanetworks.com
WSIRT Email Please email details of any security problem found in an Aruba product.	wsirt@arubanetworks.com

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http://www.arubanetworks.com/open_source

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Warranty

This hardware product is protected by an Aruba warranty. For details, see Aruba Networks standard warranty terms and conditions.

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