



Dell Networking 320 Series Access Points

Installation Guide

The Dell 320 Series access points (W-AP324, W-AP325, W-IAP324, and W-IAP325) support IEEE 802.11ac standards for high-performance WLAN, and are equipped with two dual-band radios, which can provide access and monitor the network simultaneously. Multi-user Multiple-input, Multiple-output (MU-MIMO) technology allows these access points 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 W-AP324 and W-AP325 access points work in conjunction with a Dell controller, while the W-IAP324 and W-IAP325 Instant access points can be configured using a built-in virtual controller.

The 320 Series 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 and spectrum analyzer
- Compatibility with IEEE 802.3at PoE+ and 802.3af PoE
- Centralized management configuration and upgrades
- Integrated Bluetooth Low Energy (BLE) radio

CAUTION: Access points are classified as radio transmission devices and are subject to government regulations of the deploying country. The network administrators are responsible for ensuring that the configuration and operation of this equipment is in compliance with their country's regulations. Specifically, access points must use channel assignments appropriate to the locale in which the access points will be used. For a complete list of approved channels in your country, refer to the *Dell Networking W-Series Downloadable Regulatory Table (DRT) Release Notes* at download.dell-pcw.com.

ATTENTION: Les points d'accès sont considérés comme appareils de transmission radio et sont soumis aux réglementations gouvernementales du pays dans lequel ils sont déployés. Le ou les administrateurs réseau doivent s'assurer que la configuration et le fonctionnement de cet équipement sont conformes aux normes de leurs pays. De façon plus précise, les points d'accès doivent employer des canaux adaptés à leur emplacement physique. Pour obtenir une liste complète des canaux approuvés dans votre pays, reportez-vous aux notes de version *Dell Networking W-Series Downloadable Regulatory Table (DRT)* à l'adresse download.dell-pcw.com.

Package Contents

- Dell 320 Series Access Point
- 9/16" and 15/16" Ceiling Rail Adapters
- *Dell Networking 320 Series Access Points Installation Guide* (this document)
- *Dell Networking 320 Series Access Points Regulatory Compliance and Safety Information Guide*
- *Dell Networking W-Series Instant Access Point Professional Installation Guide Supplement* (Instant access points only)
- *Dell Networking W-Series Instant Quick Start Guide* (Instant access points only)

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.

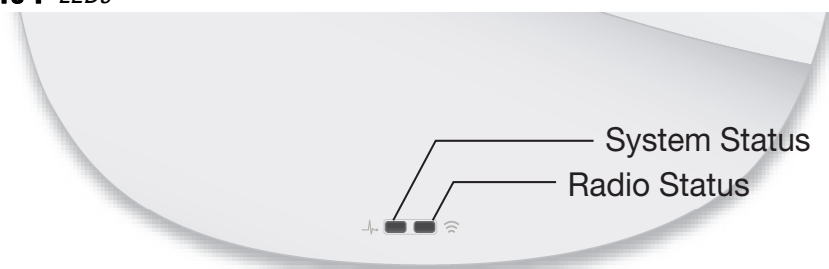
Software

The W-AP324 and W-AP325 access points require AOS 6.4.4 or higher. For additional information, refer to the *Dell Networking W-Series ArubaOS User Guide* and *Dell Networking W-Series ArubaOS Quick Start Guide*.

The W-IAP324 and W-IAP325 Instant access points require Instant 4.2.1 or higher. For additional information, refer to the *Dell Networking W-Series Instant User Guide* and *Dell Networking W-Series Instant Quick Start Guide*.

Hardware Overview

Figure 1 LEDs



LEDs

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

LED	Color/State	Meaning
System Status (Left)	Off	Device powered off
	Green/Amber-Alternating	Device booting; not ready
	Green- Solid	Device ready
	Amber- Solid	Device ready; power-save mode (802.3af PoE): <ul style="list-style-type: none"> • Single radio • USB disabled
	Green or Amber-Flashing	Restricted mode: <ul style="list-style-type: none"> • Uplink negotiated in sub optimal speed; or • Radio in non-high throughput mode
Radio Status (Right)	Off	Device 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 324 model 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



CAUTION: Devices with external antennas must use manufacturer-approved antennas only. The administrators are responsible for ensuring that the Equivalent Isotropically Radiated Power (EIRP) levels for external antenna devices are compliant with the regulatory standards of the host country/domain. Installers are required to record the antenna gain (dBi) for this device in the system management software.

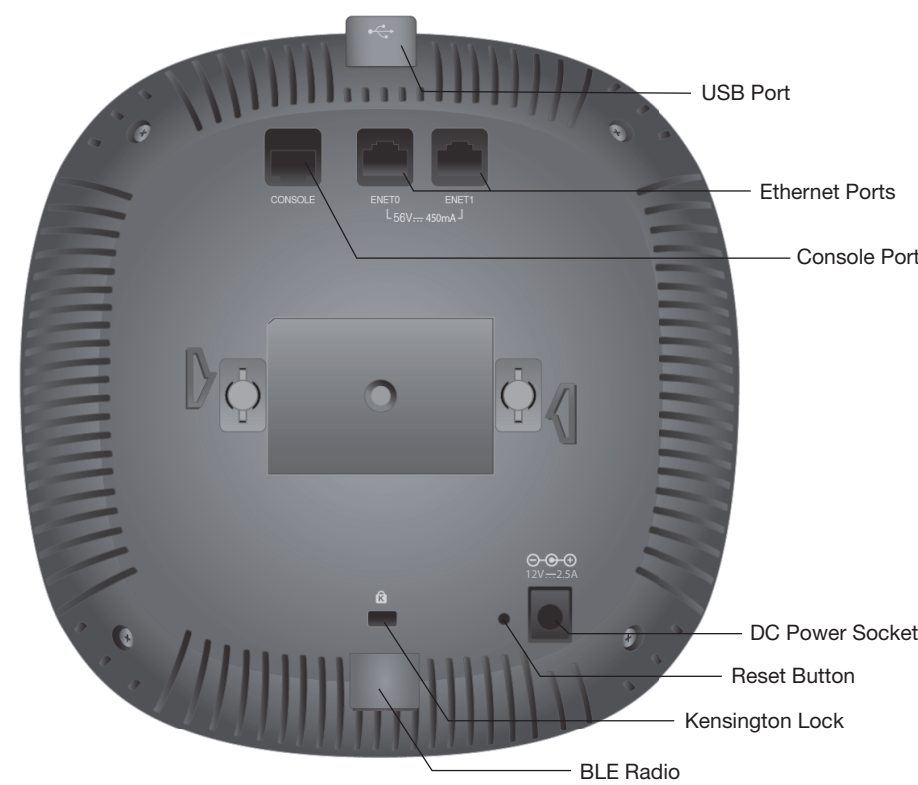
ATTENTION: Les appareils munis d'antennes externes doivent utiliser uniquement des antennes certifiées par le fabricant. Le ou les administrateurs doivent s'assurer que les niveaux de puissance isotrope rayonnée équivalente (PIRE) de tous les appareils munis d'antennes externes sont conformes aux normes réglementaires du pays/domaine hôte. Le ou les installateurs doivent enregistrer le gain d'antenne (dBi) de cet appareil dans le logiciel de gestion du système.

USB Interface

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

NOTE: The USB port is disabled when the access point is powered by an 802.3af PoE source.

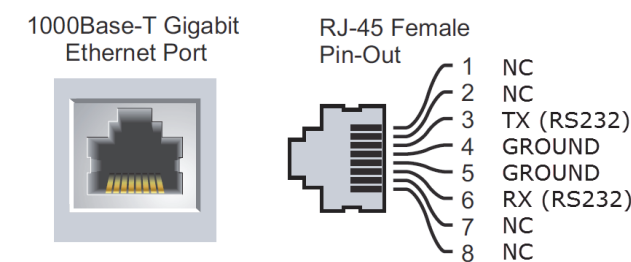
Figure 3 Bottom Panel



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 the pin-outs shown in [Figure 4](#). Connect it directly to a terminal or terminal server using an Ethernet cable.

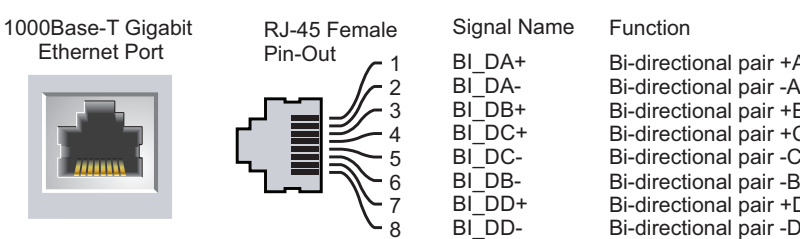
Figure 4 Serial Port Pin-Out



Ethernet Ports

The 320 Series access points are equipped with two 10/100/1000 Base-T (RJ-45) auto-sensing, MDI/MDX wired-network connectivity ports, ENET0 and ENET1. 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 Ethernet ports are on the bottom of the access points. The 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 access points are 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 ENET0 and ENET1 ports support PoE-in, allowing either port to draw power from an 802.3at PoE+ source (recommended) or an 802.3af PoE source. When both PoE and DC power sources are available, the access point will default to using the DC power source.

The 320 Series access points have a single 12V/30W DC power jack socket to support the AP-AC-12V30UN AC-to-DC adapter (sold separately).

Power Modes

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

The 320 Series 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).

ATTENTION: Déclaration FCC l'arrêt incorrect des points d'accès installés aux États-Unis qui sont configurés sur des contrôleurs autres que le modèle agréé aux États-Unis est considéré comme contrevenant à l'homologation FCC. Toute violation délibérée ou intentionnelle de cette condition peut entraîner une injonction d'arrêt immédiat de son utilisation par la FCC et peut déboucher sur la confiscation de l'équipement (47 CFR 1.80).

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

Produit réseau local radio basse puissance opérant dans la bande fréquence 2.4 GHz et 5 GHz. Merci de vous référer au manuel utilisateur pour les détails des restrictions.

Low Power FunkLAN Produkt, das im 2.4 GHz und im 5 GHz Band arbeitet. Weitere Informationen bezüglich Einschränkungen finden Sie im Benutzerhandbuch.

Apparati Radio LAN a bassa Potenza, operanti a 2.4 GHz e 5 GHz. Fare riferimento alla manuale utente per avere informazioni dettagliate 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
 - Dell AP-AC-12V30UN AC-to-DC adapter kit (sold separately)

For W-AP324 and W-AP325 access points only:

- Dell Controller provisioned on the network
 - Layer 2/3 network connectivity to the 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: Dell access points are designed in compliance with governmental requirements, so that only authorized network administrators are permitted to change the settings for this device. For more information about access point configuration, refer to the Quick Start Guide and User Guide for your device.

Verifying Pre-Installation Connectivity



NOTE: The instructions in this section are applicable to the W-AP324 and W-AP325 access points 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 [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 Dell controller(s) must be installed and initial setup completed before the Dell access points are deployed.

For initial setup of the controller, refer to [Quick Start Guide](#).

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 the Dell VisualRF 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 be accounted for during the planning phase and adjusted for in the 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 Dell Networking products should be performed by a qualified technician.

Using the Ceiling Rail Adapter

The 320 Series access points are shipped 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



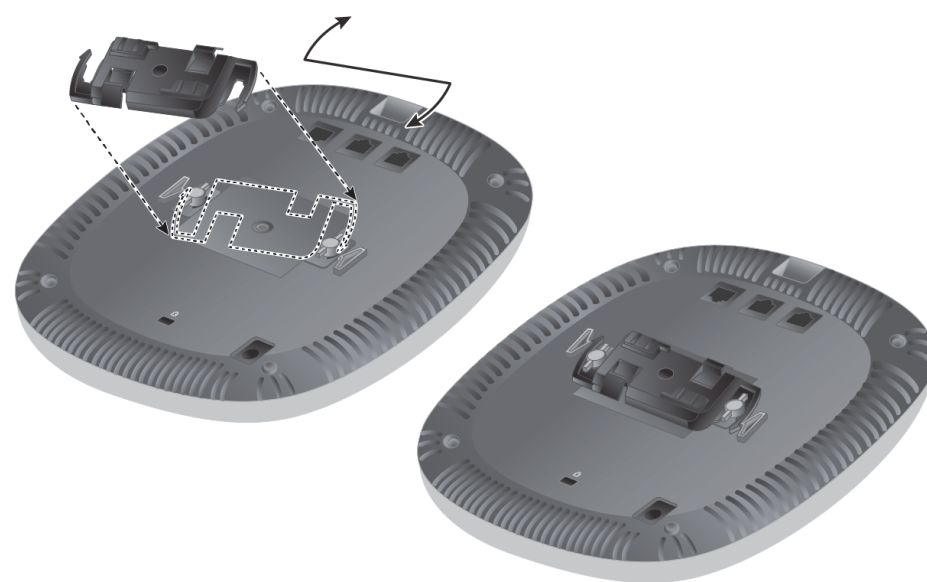
CAUTION: The installer is responsible for securing the access point onto the ceiling tile rail in accordance with the steps below. Failure to properly install this product may result in physical injury and/or damage to property.



ATTENTION: L'installateur est chargé de sécuriser le point d'accès sur le rail de montage au plafond en suivant la procédure ci-après. Toute installation incorrecte du produit peut entraîner des blessures physiques et/ou des dommages matériels.

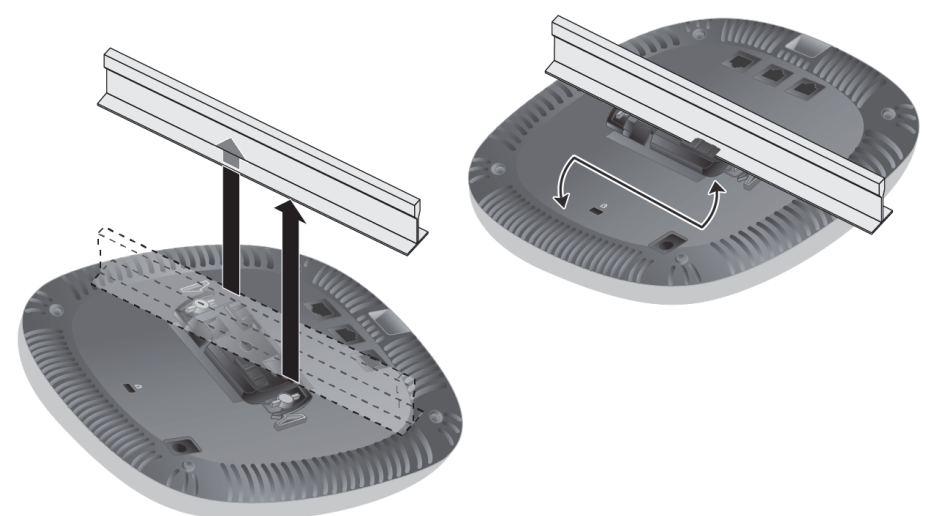
1. Pull the necessary cables through a prepared hole in the ceiling tile close to where the access point will be placed.
2. Place the adapter against the back of the access point with the adapter at an angle of approximately 30 degrees to the tabs (see [Figure 6](#)).
3. Twist the adapter clockwise until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

Figure 7 Mounting the Access Point



7. On the 324 model access points, 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 [Quick Start Guide](#) for further details on verifying post-installation network connectivity.

Configuring the Access Point



NOTE: The instructions for this section are applicable to the W-AP324 and W-AP325 access points only.

Access Point Provisioning/Reprovisioning

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

Access Point Configuration

Configuration parameters are network or controller specific. They are configured and stored on the controller and then pushed out to the access points. These parameters remain stored on the controller.

Configuration settings can be configured via the AOS Web UI or CLI. Refer to the [User Guide](#) or [Dell Networking W-Series ArubaOS Command-Line Interface Reference Guide](#) for details.


Dell Networking 320 Series Access Points Installation Guide



Contacting Dell

Website Support	
Main Website	dell.com
Contact Information	dell.com/contactdell
Support Website	dell.com/support
Documentation Website	dell.com/support/manuals

Copyright

© 2015 Aruba Networks, Inc. Aruba Networks trademarks include  Airwave, Aruba Networks®, Aruba Wireless Networks®, the registered Aruba the Mobile Edge Company logo, and Aruba Mobility Management System®, Dell™, the DELL™ logo, and PowerConnect™ are trademarks of Dell Inc.

All rights reserved. Specifications in this manual are subject to change without notice. Originated in the USA. All other trademarks are the property of their respective owners.

Open Source Code

Certain Aruba products include Open Source software code developed by third parties, including software code subject to the GNU General Public License (GPL), GNU Lesser General Public License (LGPL), or other Open Source Licenses. The Open Source code used can be found at this site:

http://www.arubanetworks.com/open_source

Includes software from Litech Systems Design. The IF-MAP client library copyright 2011 Infoblox, Inc. All rights reserved. This product includes software developed by Lars Fenneberg, et al.

Legal Notice

The use of Aruba Networks, Inc. switching platforms and software, by all individuals or corporations, to terminate other vendors' VPN client devices constitutes complete acceptance of liability by that individual or corporation for this action and indemnifies, in full, Aruba Networks, Inc. from any and all legal actions that might be taken against it with respect to infringement of copyright on behalf of those vendors.



dell.com
Dell Networking 320 Series Access Points | Installation Guide
Part Number 0511834-02 | July 2015



0511834-02