

# Dell Networking W-AP103H Wireless Access Point

## Installation Guide

The Dell Networking W-AP103H wireless access point supports the IEEE 802.11n standard for high-performance WLAN. This access point uses MIMO (Multiple-Input, Multiple-Output) technology and other high-throughput mode techniques to deliver high-performance, 802.11n 2.4 GHz or 5 GHz functionality while simultaneously supporting existing 802.11a/b/g wireless services. The W-AP103H access point works only in conjunction with a Dell Networking W-Series Mobility Controller.

The W-AP103H access point provides the following capabilities:

- Wireless transceiver
- Protocol-independent networking functionality
- IEEE 802.11a/b/g/n operation as a wireless access point
- IEEE 802.11a/b/g/n operation as a wireless air monitor
- Compatibility with IEEE 802.3af PoE
- Central management configuration and upgrades through a Dell Controller



**Note:** The W-AP103H requires Dell Networking W-Series ArubaOS 6.4.1.0 or later version.

### Package Contents

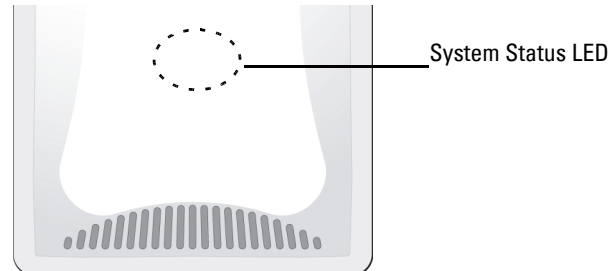
- W-AP103H Access Point
- Single Gang Wall-box Mounting bracket
- 2x #6-32 Machine Screws
- Security Key
- Installation Guide (this document)



**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.

### Hardware Overview

**Figure 1** W-AP103H LED on Front



### LED

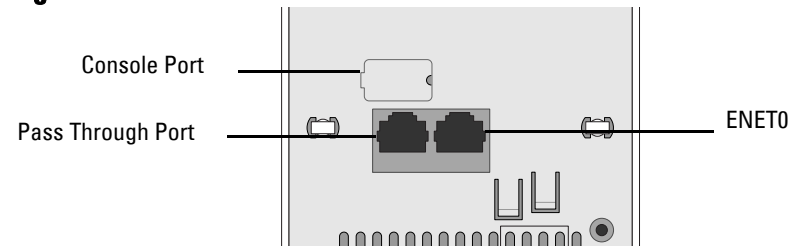
The W-AP103H access point is equipped with one LED that indicates the system status of the AP.

LED	Color/State	Meaning
System Status LED	Off	No power to AP, or LED switched to 'off mode'
	Red	Error condition
	Green - Flashing	LED switched to 'blink mode'
	Green - Steady	AP ready
	Amber - Flashing	AP booting, or AP in Air or Spectrum monitor mode
Amber - Steady	AP ready, restricted mode: <ul style="list-style-type: none"> <li>• 10/100Mbps uplink negotiated</li> <li>• Either radio in non-HT mode</li> </ul>	



**Note:** For more information on blink and off mode of the LED, refer to the *Dell Networking W-Series ArubaOS User Guide*.

**Figure 2** W-AP103H Ports on Back



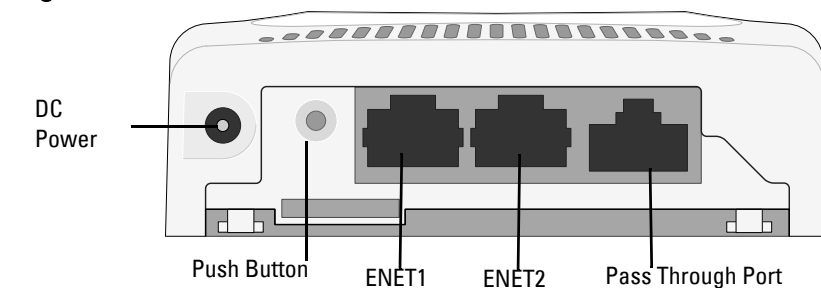
### Console Port

The serial console port allows you to connect the AP to a serial terminal or a laptop for direct local management. This port is a 4-pin connector covered by a dust cover. An optional serial adapter cable (AP-CBL-SER) is available for use with the W-AP103H access point and is sold separately.



**Warning:** Hot-plug operation is not recommended for the console port.

**Figure 3** W-AP103H Bottom View

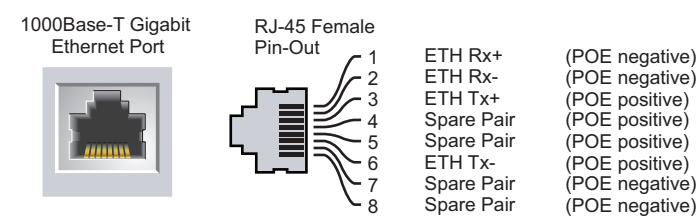


### Ethernet Ports

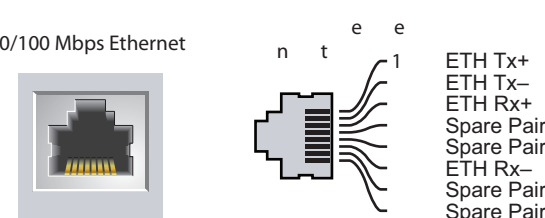
W-AP103H access point is equipped with a total of three active Ethernet ports (ENET 0-2). ENET 0 is a 10/100/1000Base-T (RJ-45) auto-sensing, MDI/MDX wired-network uplink connectivity port. This port supports IEEE 802.3af Power over Ethernet (PoE), accepting 48VDC (nominal) as a standard defined Powered Device (PD) from a Power Sourcing Equipment (PSE) such as a PoE midspan injector or network infrastructure that supports PoE. ENET 1 and 2 are 10/100Base-T (RJ-45) auto-sensing, MDI/MDX wired-network downlink connectivity ports, used to provide secure network connectivity to wired devices. ENET 0 is located on the back of the AP (Figure 2), while ENET 1 and 2 are located on the bottom of the AP (Figure 3).

Additionally, the W-AP103H access point supports a passive pass-through RJ-45 interface to extend a physical connection (typically another Ethernet connection) from the back of the device to a connector on the bottom.

**Figure 4** Gigabit Ethernet Port Pin-Out



**Figure 5** Fast Ethernet Port Pin-Out



### DC Power Socket

The W-AP103H access point has a single 12V DC power jack socket to support powering through an AC-to-DC power adapter.



**Note:** If both PoE and DC power are available, the AP uses PoE.

### Push Button

The push button can be used to reset the AP to factory default settings or turn off/on the System Status LED.

- To reset the AP to factory default settings:
  1. Power off the AP.
  2. Press and hold the push button using a small, narrow object, such as a paperclip.
  3. Power-on the AP without releasing the push button. The system status LED will flash within 5 seconds.
  4. Release the push button.

The system status LED will flash again within 15 seconds indicating that the reset is completed. The AP will now continue to boot with the factory default settings.

- To turn off/on the system status LED:
 

During the normal operation of the AP, press the push button using a small, narrow object, such as a paperclip. The system status LED will be turned off/on immediately.

### 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).



**Caution: EU Statement:** Lower power radio LAN product operating in 2.4 GHz and 5 GHz bands. Please refer to the *Dell Networking W-Series ArubaOS User Guide* for details on restrictions.

Produit réseau local radio basse puissance operant dans la bande fréquence 2.4 GHz et 5 GHz. Merci de vous référer au *Dell Networking W-Series ArubaOS User Guide* 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 *Dell Networking W-Series ArubaOS User Guide*.

Apparati Radio LAN a bassa Potenza, operanti a 2.4 GHz e 5 GHz. Fare riferimento alla *Dell Networking W-Series ArubaOS User Guide* per avere informazioni dettagliate sulle restrizioni.

### 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 performed before the APs are deployed.

### AP Pre-Installation Checklist

Before installing your W-AP103H access point, be sure that you have the following:

- Pre-installed wall box
- Cat5 UTP cable with network access installed in the wall box
- One of the following power sources:
  - IEEE 802.3af-compliant Power over Ethernet (PoE) source
  - Dell AP AC-DC adapter kit (sold separately)
- Dell 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

### Summary of the Setup Process



**Note:** It is important that you verify the items listed under **AP Pre-Installation Checklist** before you attempt to set up and install a W-AP103H access point.

Successful setup of a W-AP103H access point consists of five tasks, which must be performed in this order:

1. Verify pre-installation connectivity.
2. Identify the specific installation location for each AP.
3. Install each AP.
4. Verify post-installation connectivity.
5. Configure each AP.



**Note:** Dell, in compliance with governmental requirements, has designed the W-AP103H access point so that only authorized network administrators can change the settings. For more information about AP configuration, refer to the *Dell Networking W-Series ArubaOS Quick Start Guide* and *Dell Networking W-Series ArubaOS User Guide*.



**Caution:** Access points are radio transmission devices and as such 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.

### Verifying Pre-Installation Connectivity

Before you install APs in a network environment, make sure that the APs 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 AP is assigned a valid IP address
- APs are able to locate the controller

Refer to the *Dell Networking W-Series ArubaOS Quick Start Guide* for instructions on locating and connecting to the controller.

### Identifying Specific Installation Locations

You can mount the W-AP103H access point on a wall. Use the AP placement map generated by 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. RF absorbers/reflectors/interference sources will impact RF propagation and should have been accounted for during the planning phase and adjusted for in VisualRF 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 AP to its fixed location.

RF absorbers include:

- Cement/concrete—Old concrete has high levels of water dissipation, which dries out the concrete, allowing for potential RF propagation. New concrete has high levels of water concentration in the concrete, blocking RF signals.
- Natural Items—Fish tanks, water fountains, ponds, and trees
- Brick

RF reflectors include:

- Metal Objects—Metal pans between floors, rebar, fire doors, air conditioning/heating ducts, mesh windows, blinds, chain link fences (depending on aperture size), refrigerators, racks, shelves, and filing cabinets.
- Do not place an AP between two air conditioning/heating ducts. Make sure that APs are placed below ducts to avoid RF disturbances.

RF interference sources include:

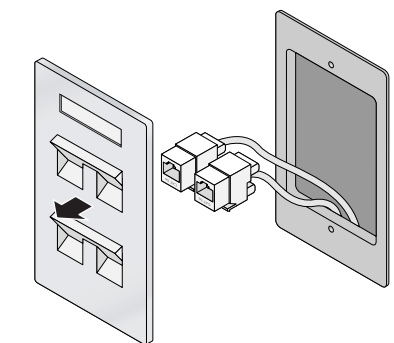
- Microwave ovens and other 2.4 or 5 GHz objects (such as cordless phones)
- Cordless headset such as those used in call centers or lunch rooms

### Installing the AP

The W-AP103H access point is designed to mount into a variety of electrical gang boxes.

1. Begin by removing the existing data wall plate (if applicable).

**Figure 6** Removing Wall Plate (US Single Gang Outlet Box Shown)



2. Remove any existing RJ45 connectors (typically snap-in) or cut/remove the UTP cable.
3. Use a short Ethernet cable (sold separately) to connect the ENET0 port to an RJ45 connector or crimp an RJ45 plug (not supplied) on the cable and insert in the ENET0 port. Do the same for the Pass Through port, if used.
4. Align the mounting holes of the W-AP103H mounting bracket with mounting holes in the gang box as shown in **Figure 7** and **Figure 8**. For worldwide single gang outlet box, the mounting bracket provides two sets of mounting holes for fixing to the box to meet different installation position requirement. See **Figure 8** for details.

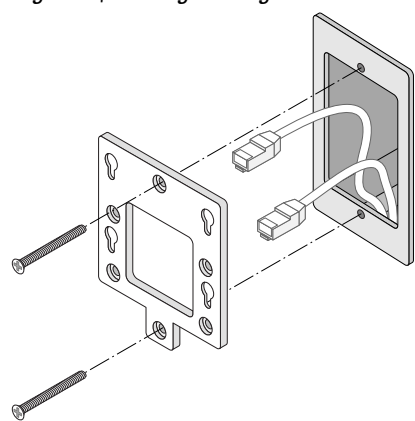
The applicable standards for the wall boxes are:

- IEC 60670-1, GB17466, BS4662 and DIN49073 for Worldwide
- ANSI/NEMA OS 1 and OS 2 for US

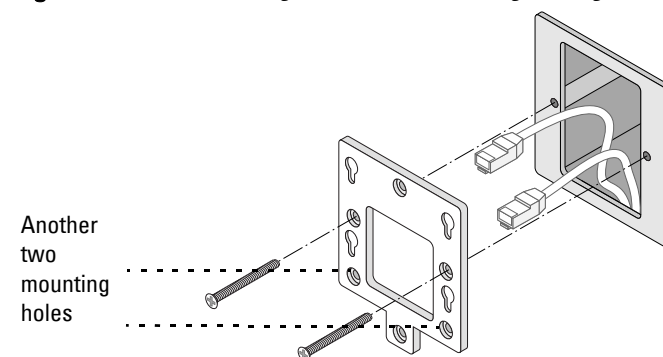
- Insert the two included machine screws and tighten them to secure the mounting bracket.

**Note:** The included machine screws may not fit all wall boxes.

**Figure 7** Bracket to Gang Box (US Single Gang Outlet Box Shown)

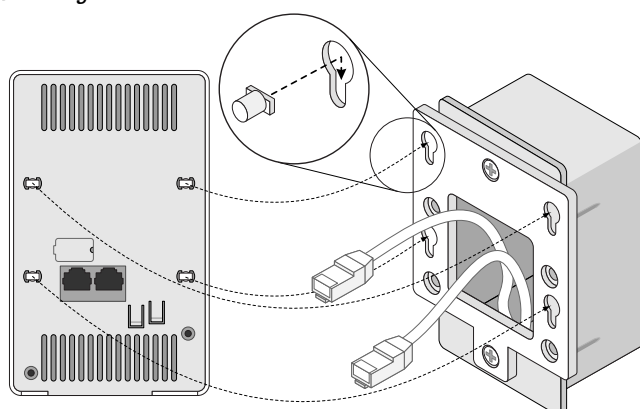


**Figure 8** Bracket to Gang Box (Worldwide Single Gang Outlet Box Shown)

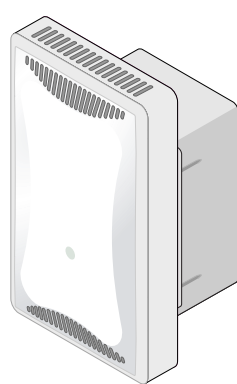


- Connect any required cables to the back of the W-AP103H access point.
- Align the mounting posts on the back of the W-AP103H access point with the corresponding mounting holes on the mounting bracket as shown in **Figure 9**.
- Push the AP against the holes and downward until the posts engage the slots at the top of the mounting holes. See **Figure 9** and **Figure 10** for more details.

**Figure 9** Fitting W-AP103H to Bracket



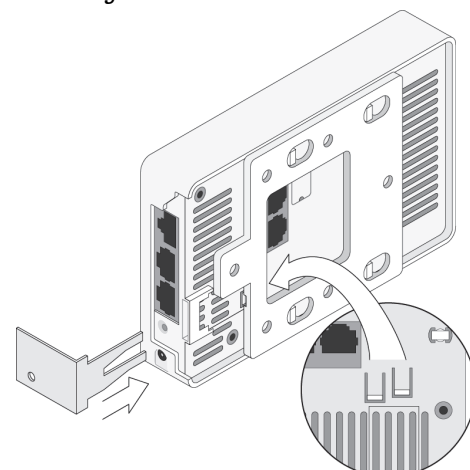
**Figure 10** Completed Installation



## Removing the AP

- To remove the W-AP103H access point from the mounting bracket, begin by inserting the security key into the hole as shown in **Figure 11**.
- Use the security key to depress the tab on the AP and push the AP up, releasing the AP from the mounting holes on the bracket.

**Figure 11** Removing W-AP103H



- If not using PoE, connect the AC-DC power adapter (sold separately) to the DC power socket located on the bottom of the W-AP103H access point.

## Verifying Post-Installation Connectivity

The integrated LED on the AP can be used to verify that the AP is receiving power and initializing successfully (see **Table 1**). Refer to the *Dell Networking W-Series ArubaOS Quick Start Guide* for further details on verifying post-installation network connectivity.

## Configuring the AP

### AP Provisioning/Reprovisioning

Provisioning parameters are unique to each AP. These local AP parameters are initially configured on the controller which are then pushed out to the AP and stored on the AP itself. Dell recommends that provisioning settings be configured via the ArubaOS Web UI only. Refer to the *Dell Networking W-Series ArubaOS User Guide* for complete details.

### AP Configuration

Configuration parameters are network or controller specific and are configured and stored on the controller. Network configuration settings are pushed out to the AP(s) but remain stored on the controller.

Configuration settings can be configured via the *Dell Networking W-Series ArubaOS Web UI* or CLI. Refer to *Dell Networking W-Series ArubaOS User Guide* and/or *Dell Networking W-Series ArubaOS CLI Reference Guide* for details.

## Product Specifications

### Electrical

- Ethernet:
  - 1 x 10/100/1000Base-T auto-sensing Ethernet RJ-45 Interface (ENET 0)
  - 2 x 10/100Base-T auto-sensing Ethernet RJ-45 Interfaces (ENET 1 and ENET 2)
  - 1 x passive RJ-45 pass-through interface
  - MDI/MDX
  - IEEE 802.3 (10Base-T), IEEE 802.3u (100Base-T), IEEE 802.3ab (1000Base-T)
  - Power over Ethernet (IEEE 802.3af compliant), 48V DC (nominal) and 56V DC (maximum)/350mA (see **Figure 4** for pin configuration)
- Power:
  - 12 VDC power interface, supports powering through an AC-to-DC power adapter
  - POE support on Ethernet ports: 802.3af-compliant POE sourcing device

**Note:** If a power adapter other than the one provided by Dell is used in US or Canada, it should be NRTL Listed, with an output rated 12 VDC, minimum 1.25A, marked "LPS" and "Class 2", and suitable for plugging into a standard power receptacle in US and Canada.

For additional specifications on this product, refer to the product data sheet on [dell.com](http://dell.com).

## Safety and Regulatory Compliance

**Note:** For country specific restrictions and additional safety and regulatory information, refer to the multi-language *Dell Networking W-Series Safety, Environmental, and Regulatory Information* document included with your Dell controller.

### Regulatory Model Names

The regulatory model name of W-AP103H is APINH103.

### FCC

This device is electronically labeled. To view the FCC ID:

- Log into the controller WebUI.
- Navigate to **Maintenance > Controller > About**.



**Caution:** Dell access points must be installed by a professional installer. The professional installer is responsible for ensuring that grounding is available and it meets applicable local and national electrical codes.



**Caution: RF Radiation Exposure Statement:** This equipment complies with FCC RF radiation exposure limits. This equipment should be installed and operated with a minimum distance of 7.87 inches (20cm) between the radiator and your body for 2.4 GHz and 5 GHz operations. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. When operated in the 5.15 to 5.25 GHz frequency range, this device is restricted to indoor use.

### FCC Class B Part 15

This device complies with Part 15 of the Federal Communications Commission (FCC) Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.



**Caution:** Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instructions, may cause interference harmful to radio communications.

If this equipment does cause interference, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio or TV technician for help.

### CE EU Regulatory Conformance

Dell, hereby declares that the APINH103 device model is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC - CE(I). The Declaration of Conformity made under Directive 1999/5/EC is available for viewing on [dell.com](http://dell.com).

### EMC Compliance and Warning Statement

This equipment generates, uses and can radiate radio frequency energy, and, if not installed and used in accordance with the manufacturer's instructions may cause harmful interference to other devices in the vicinity. However, there is no guarantee that interference will not occur in a particular installation. If this equipment causes interference with other devices, which may be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

- Reorient or relocate the device receiving the interference.
- Increase the separation between the equipment.
- Connect the equipment into an outlet on a circuit different from that to which the other device(s) are connected.
- Consult the manufacturer or field service technician for help.

The protection against electric shock is Class II.

Equipment not suitable for use in the presence of flammable mixtures.

### Canadian Statement

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

This device complies with Industry Canada licence-exempt RSS standard(s).

Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Complies with the Class B limits for radio noise emissions as set out in the interference-causing equipment standard entitled "Digital Apparatus," ICES-003 of Industry Canada.

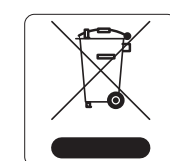
Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Users are advised that high power Radars are allocated as primary users of the bands 5250-5350 MHz and 5650-5850 MHz and these Radars could cause interference and/or damage to Licensed Exempt WLAN devices.

## Proper Disposal of Dell Equipment

For the most current information about Global Environmental Compliance and Dell products, visit [dell.com](http://dell.com).

### Waste of Electrical and Electronic Equipment

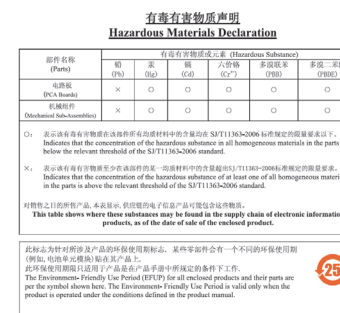


Dell products at end of life are subject to separate collection and treatment in the EU Member States, Norway, and Switzerland and therefore are marked with the symbol shown at the left (crossed-out wheeled bin). The treatment applied at end of life of these products in these countries shall comply with the applicable national laws of countries implementing Directive 2002/96/EC on Waste of Electrical and Electronic Equipment (WEEE).

### China RoHS



Dell products also comply with China environmental declaration requirements and are labeled with the "EFUP 25" label shown at the left.



### European Union RoHS

Aruba Networks Inc., hereby, being the manufacturer of this product, declares that all CE Marked Dell wireless controller and access points product are manufactured in accordance to the provisional requirements set forth in the RoHS Directive 2011/65/EC.

A copy of the Aruba Declaration of Conformity may be obtained upon request from:

Aruba Networks International Ltd.  
Building 1000,  
Citygate Mahon  
Cork Ireland

Please include the regulatory model number located on the product's regulatory nameplate with the request.

### India RoHS

This product complies with RoHS requirements as prescribed by E-Waste (Management & Handling) Rules, governed by the Ministry of Environment & Forests, Government of India.

# Dell Networking W-AP103H Wireless Access Point Installation Guide



### Contacting Dell

Web Site Support	
Main Website	<a href="http://dell.com">dell.com</a>
Contact Information	<a href="http://dell.com/contactdell">dell.com/contactdell</a>
Support Website	<a href="http://dell.com/support">dell.com/support</a>
Documentation Website	<a href="http://dell.com/support/manuals">dell.com/support/manuals</a>

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[http://www.arubanetworks.com/open\\_source](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.

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[www.dell.com](http://www.dell.com)

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