

# RAP-5WN Remote Access Point

## Installation Guide

### About the RAP-5WN

The Aruba RAP-5WN is part of a comprehensive remote network solution. This device works in conjunction with other Aruba products, such as Aruba Mobility Controllers, and provides the following capabilities:

- Can be deployed remotely as a Remote Access Point (RAP)
- Protocol-independent networking functionality
- IEEE 802.11 a/b/g/n operation as a wireless Access Point
- IEEE 802.11 a/b/g/n operation as a wireless Air Monitor
- Can be centrally managed, configured, and upgraded through an Aruba Mobility Controller
- Wireless Transceiver

#### Package Contents

- 1 x RAP-5WN Remote Access Point
- 1 x Installation Guide (this document)
- 1 x RJ-45 Ethernet Cable
- 1 x Power Adapter (12V 1.25A)
- 1 x Stand

Inform your supplier if there are any incorrect, missing or damaged parts. If possible, retain the carton, including the original packing materials. Use them to repack the product in case there is a need to return it.

#### Before You Begin

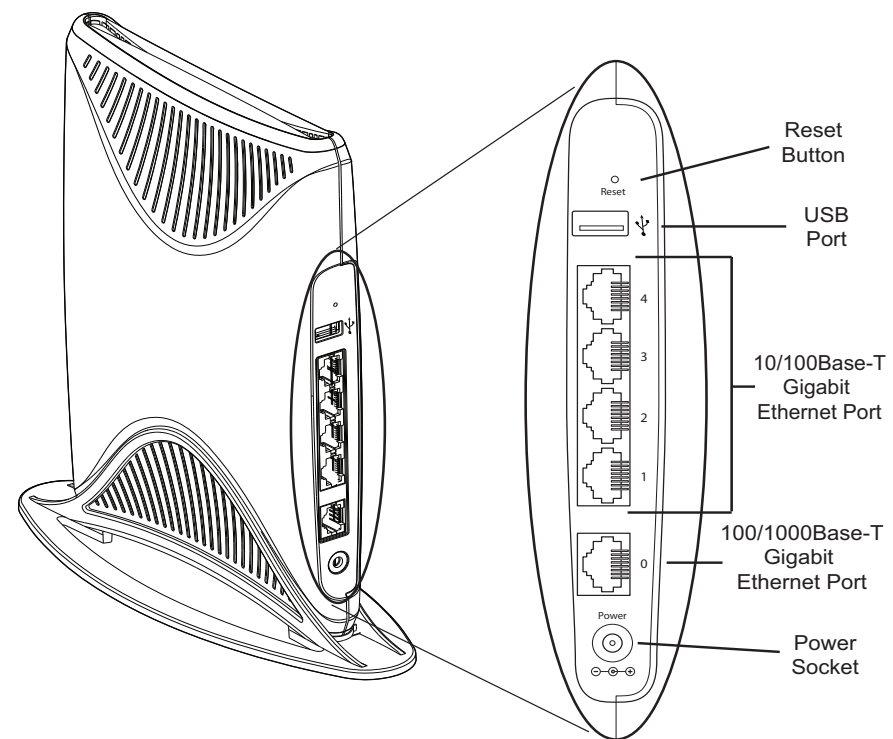
Before installing your RAP-5WN Remote Wireless Access Point, please ensure you have the following:

- 1 x RJ-45 Ethernet Cable
- 1 x Power Adapter
- 1 x RAP-5WN
- 1 x Stand

### RAP-5WN Overview

#### Rear View

Figure 1 Rear View



#### 10/100/1000Base-T Ethernet Port

The RAP-5WN has one 10/100/1000Base-T port used wired connectivity.

#### 10/100Base-T Ethernet Ports

The RAP-5WN has four 10/100Base-T (RJ-45) ethernet ports for wired network connectivity. These are ports 1 through 4.

#### DC IN (Power Socket)

The device is turned on when the attached power adapter (included) is plugged into a power source (outlet). The device turns off by unplugging the device from the power source.

#### USB Port

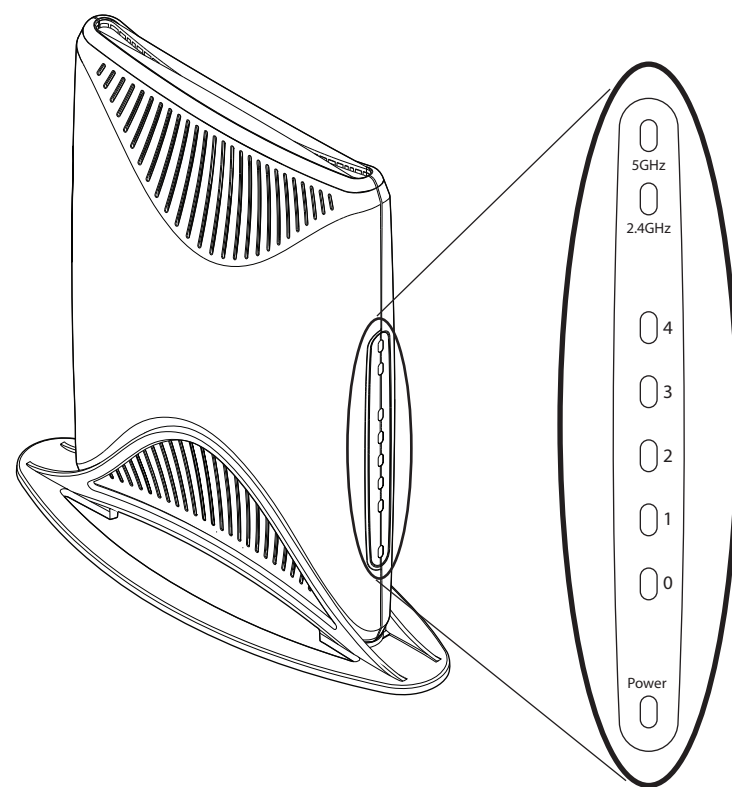
The purpose of this USB port is to support Cellular modems.

#### Reset Button

To reset the RAP-5WN, insert a small, narrow object, such as a pin or paperclip, into the hole indicated in Figure 1 and press and hold the button while powering on the RAP-5WN. This will return the device to factory default settings.

#### Front View

Figure 2 Front View



#### LEDs

The RAP-5WN has eight LED status indicators.

- POWER: Indicates whether or not the RAP-5WN is powered on
- Gigabit Ethernet Port 0: Indicates activity and/or status on this port
- Fast Ethernet Ports 1-4: Indicates activity and/or status on these ports
- 2.4 GHz Radio: Indicates status of the 2.4 GHz radio
- 5 GHz Radio: Indicates status of the 5 GHz radio.

LED	Color	Activity	Action
POWER	Green, Red	Off	No Power
		On (Green)	Power on, device connected
		Flashing (Green)	Device booting, not provisioned. LED will remain green for 1 second, then turn off for 1 second.
		Flashing (Green)	Device is provisioning or in local troubleshooting mode. LED will remain green for 5 seconds, then turn off for 1 second.
		On (Red)	Device is not booting.
Port 0 (WAN)	Green, Amber	Off	No link
		On (Amber)	Link established at 10/100 Mbps
		On (Green)	Link established at 1000 Mbps
		Flashing	Ethernet link activity
Ports 1 - 4 (LAN)	Green, Amber	Off	No link
		On (Amber)	Link established at 10 Mbps
		On (Green)	Link established at 100 Mbps
		Flashing	Ethernet link activity
2.4 GHz	Green, Amber	Off	2.4 GHz radio disabled
		On (Amber)	2.4 GHz radio enabled in 802.11b/g mode
		On (Green)	2.4 GHz radio enabled in 802.11n mode
		Flashing	2.4 GHz air monitor
5 GHz	Green, Amber	Off	5 GHz radio disabled
		On (Amber)	5 GHz radio enabled in 802.11a mode
		On (Green)	5 GHz radio enabled in 802.11n mode
		Flashing	5 GHz air monitor



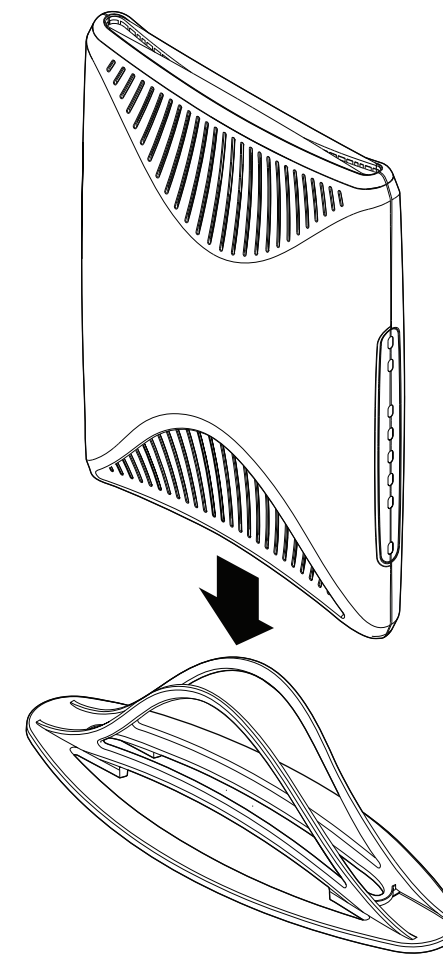
If the POWER LED remains RED for more than 10 seconds, please attempt to power cycle the device. If the LED remains RED, contact your IT administrator.

### The Aruba AP Setup

#### Installation

The RAP-5WN is shipped with a stand to use on flat (i.e. table top) surfaces. Place the RAP-5WN in the stand (see Figure 3) and place the stand on a flat, level surface.

Figure 3 Stand Installation



#### Connecting the Cables

You must connect the RAP-5WN to a network device that has access to the Internet, such as a router or modem.

1. Connect one end of the provided RJ-45 cable to port 0 on the RAP-5WN.
2. Connect the other end of the RJ-45 cable to a free RJ-45 port on your modem or router.
3. Attach the provided power adapter to the DC IN port on the RAP-5WN.
4. Connect the other end of the power adapter to a power outlet.

The POWER LED is lit (solid green) when the RAP-5WN is receiving power.

#### Verifying Successful Installation

Once the RAP-5WN's PWR LED has come up and the boot cycle is complete, you can connect to your company or corporate network.



See the Provisioning at Home section if you are unable to connect successfully.

### Provisioning at Home

If your IT administrator instructed you to provision your RAP-5WN, complete the following steps after the RAP-5WN has been powered.

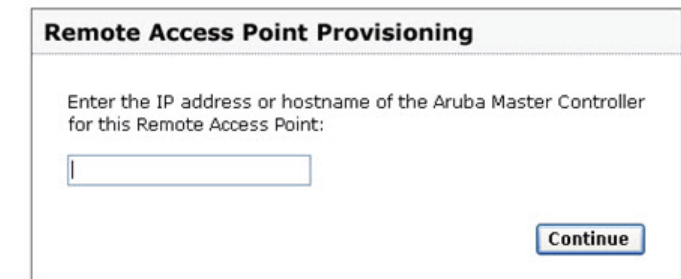
1. Connect one end of a second RJ-45 cable to port 1 on the RAP-5WN and the other end to your computer.
2. Open a web browser and navigate to any URL.
3. An Aruba web page will appear (see Figure 4), requesting the IP address of the master controller. Enter the IP address provided to you by your IT administrator.

The RAP-5WN will connect to the designated master controller and download the necessary provisioning information. When the RAP-5WN comes back up, it is ready to use.



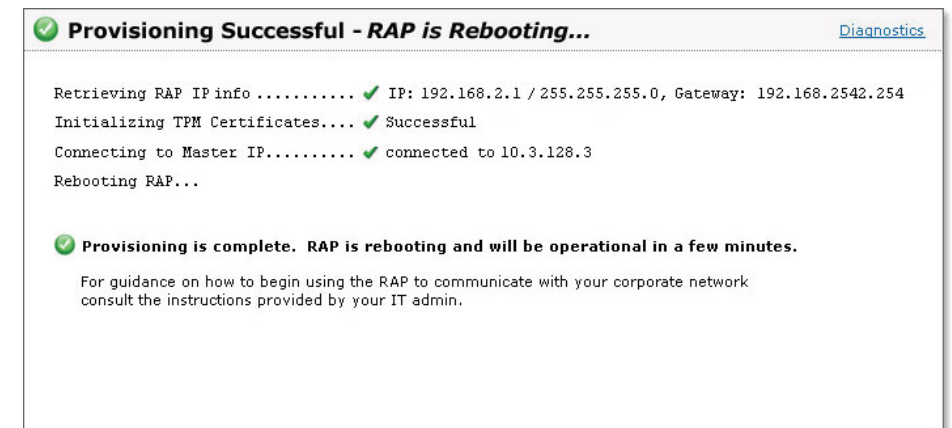
Contact your IT administrator if you are still unable to connect successfully.

Figure 4 Manual Provisioning Page



When the RAP-5WN has been successfully provisioned, a screen (Figure 5) appears. This screen displays network information pertaining to the connection between the RAP-5WN and its controller.

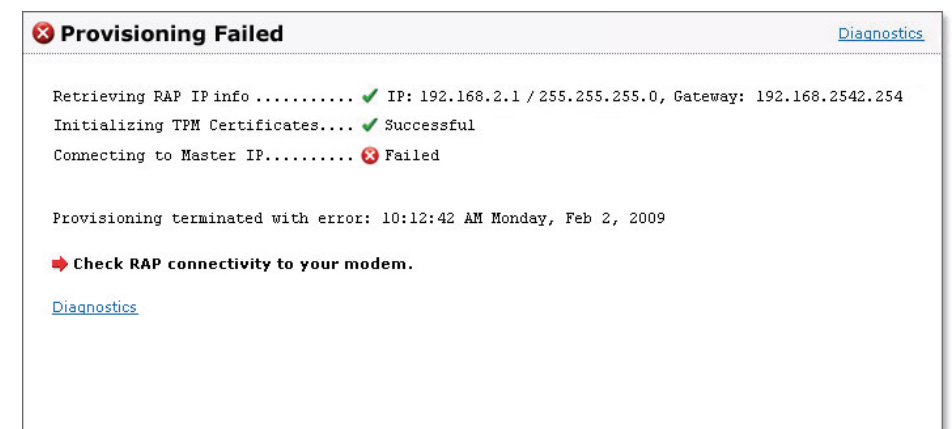
Figure 5 Provisioning Successful



Once completed successfully, disconnect the RJ-45 cable from your computer and the E1 port on the RAP-5WN and restart your browser.

If your RAP-5WN does not provision successfully, the screen indicates where the failure occurred, as shown in Figure 6. If this (or a similar) screen appears, contact your IT administrator.

Figure 6 Unable to Complete Provisioning Process



### Local Debugging

The RAP-5WN includes built-in local debugging capabilities that allow you to report information about the RAP-5WN to your IT administrator. To access this tool, please contact your IT administrator.

### Troubleshooting

If your computer is to obtain an IP from the RAP-5WN, try the following troubleshooting steps. If the procedure is not successful, contact your IT administrator.

1. Unplug the Power and Ethernet cables.
2. Reset the RAP-5WN to its factory default setting by holding down the reset button (use a pin or paperclip to hold down the button).
3. Power on the RAP-5WN (plug-in the power cord) while still holding down the reset button.
4. Wait for the power LED to start blinking (about 5 seconds) then release the reset button.
5. Plug-in your WAN connection to port 0.
6. Connect your laptop to port 1 using the RJ-45 cable.

## Specifications

### Mechanical

#### Device Dimensions (HxWxD):

- 177.8mm x 31.75mm x 241.3mm
- 7" x 1.25" x 9.5"

#### Device Weight:

- 1 lb. / 453.6 grams

#### Shipping Dimensions (HxWxD):

- 92mm x 300mm x 280mm
- 3.6" x 11.8" x 11"

#### Temperature:

- Operating: 0°C to 40°C (32°F to 104°F)
- Storage: -10°C to 70°C (14°F to 158°F)

#### Relative Humidity:

- 5% to 95% non-condensing

#### Mounting:

- Stand for a flat level surface (i.e. table top)

#### Antenna:

- Integrated, non-detachable articulating tri-band antenna

#### Visual Status Indicators (LEDs):

- POWER: Power / Status
- 0: 10/100/1000Base-T Ethernet Port
- 1 - 4: 10/100Base-T Ethernet Port
- 5 GHz
- 2.4 GHz

### Electrical

#### Ethernet:

- 1 x 100/1000Base-T auto-sensing Ethernet RJ-45 Interface, MDI/MDX
- 4x 10/100 Base-T auto-sensing Ethernet RJ-45 Interface, MDI/MDX
- IEEE 802.3, IEEE 802.3u, IEEE 802.3ab

### Wireless LAN

#### Network Standards:

- IEEE 802.11a, IEEE 802.11b, IEEE 802.11g, and IEEE 802.11n

#### Antenna Type:

- Integral, dual, omni-directional multi-band dipole (supports up to 3x3 MIMO with spatial diversity)

#### Antenna Gain:

- 3.5 dBi at 2.4 GHz
- 5 dBi at 5 GHz

#### Radio Technology:

- Orthogonal Frequency Division Multiplexing (OFDM)
- Direct Sequence Spread Spectrum (DSSS)

#### Radio Modulation Type:

- 802.11a - CCK, BPSK, QPSK, 16-QAM, 64-QAM
- 802.11b - CCK, BPSK, QPSK
- 802.11g - CCK, BPSK, QPSK, OFDM
- 802.11n draft 2.0

#### Media Access Control:

- CSMA/CA with ACK

#### Supported Frequency Bands 2.4 GHz:

- 2.400 ~ 2.4835 GHz (Global), channels country specific

#### Support Frequency Bands 5 GHz

- 5.150 ~ 5.250 GHz (low band), country-specific
- 5.250 ~ 5.350 GHz (mid band), country-specific
- 5.470 ~ 5.725 GHz (Worldwide), country-specific
- 5.725 ~ 5.825 GHz (high band), country-specific

#### Data Rates:

- 802.11b - 1, 2, 5.5, 11 Mbps
- 802.11g - 6, 9, 12, 18, 24, 36, 48 and 54 Mbps
- 802.11a - 6, 9, 12, 18, 24, 36, 48 and 54 Mbps
- 802.11n - Data rate MCS0 – MCS15 (from 6.5 Mbps to 300 Mbps)

#### Output Transmit Power:

- 802.11a: 17 dBm at 6 Mbps per channel; 15 dBm at 54 Mbps per channel
- 802.11b: 18 dBm per channel
- 802.11g: 17 dBm at 6 Mbps per channel; 15 dBm at 54 Mbps per channel
- 802.11n: 19 dBm at MCS0 per channel; 11 dBm at MCS15 per channel

### Miscellaneous Functionality

#### Maximum Clients:

- 255 concurrent client sessions

#### Radio Band Selection:

- Via Mobility Controller in software

#### Manageability:

- Management of all 802.11 parameters
- Network Wide AP Management via CLI, WEB GUI and SNMPv3
- Access Point Profiles, managed by Geographical Location, BSSID and Radio Type

#### Encryption (AP and Mobility Controller):

- 40bit / 64bit / 128bit / 152bit WEP, TKIP, AES

## Compliance

Aruba provides a multi-language document containing country-specific restrictions and additional safety and regulatory information for all Aruba hardware products. You can read or download this document, on our website at [www.arubanetworks.com/safety\\_addendum](http://www.arubanetworks.com/safety_addendum).

### Disposal of the RAP-5WN

For the most current information about Global Environmental Compliance and Aruba products, see our website at [www.arubanetworks.com/safety\\_addendum](http://www.arubanetworks.com/safety_addendum).



This product at end of life is subject to separate collection and treatment in the EU Member States, Norway, and Switzerland, and therefore is 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 implementing Directive 2002/96/EC on Waste of Electrical and Electronic Equipment (WEEE).

The WEEE Directive 2002/96/EC and RoHS (Restriction of Hazardous Substances) Directive 2002/95/EC sets collection, recycling and recovery targets for various categories of electrical products and their waste.

### European Union RoHS

The Restriction on Hazardous Substances Directive (RoHS) (2002/95/EC), which accompanies the WEEE Directive, bans the use of heavy metals and brominated flame-retardants in the manufacture of electrical and electronic equipment. Specifically, restricted materials under the RoHS Directive are Lead (Including Solder in PCB's), Cadmium, Mercury, Hexavalent Chromium, and Bromine.

Aruba declares compliance with the European Union (EU) WEEE Directive (2002/96/EC). For more information on WEEE, refer to: <http://www.dti.gov.uk/sustainability/weee>

### China RoHS

Aruba products comply with China environmental declaration requirements and are labeled with the "EFUP 50" label shown at the left.

有毒有害物声明 Hazardous Materials Declaration						
部件名称 (Parts)	有毒有害物或元素 (Hazardous Substances)					
	铅 Lead (Pb)	汞 Mercury (Hg)	镉 Cadmium (Cd)	六价铬 Chromium VI Compounds (Cr <sup>6+</sup> )	多溴联苯 Polybrominated Biphenyls (PBB)	多溴二苯醚 Polybrominated Diphenyl Ether (PBDE)
电路板 PCA Board	X	o	o	o	o	o
机械组件 Mechanical Subassembly	X	o	o	o	o	o
O: 表示该有毒有害物在该部件所有均质材料中的含量均在SJ/T11363-2006标准规定的限量要求以下。 This component does not contain this hazardous substance above the maximum concentration values in homogeneous materials specified in the SJ/T11363-2006 Industry Standard.						
X: 表示该有毒有害物至少在该部件的某一均质材料中的含量超出SJ/T11363-2006标准规定的限量要求。 This component does contain this hazardous substance above the maximum concentration values in homogeneous materials specified in the SJ/T11363-2006 Industry Standard.						
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Part Number: 0510303-01

### Warranty

Standard warranty - 1 year return to manufacturer

# RAP-5WN Remote Access Point Installation Guide



### Contacting Aruba Networks

Web Site Support	
Main Site	<a href="http://www.arubanetworks.com">http://www.arubanetworks.com</a>
Support Site	<a href="https://support.arubanetworks.com">https://support.arubanetworks.com</a>
Software Licensing Site	<a href="https://licensing.arubanetworks.com/login.php">https://licensing.arubanetworks.com/login.php</a>
Wireless Security Incident Response Team (WSIRT)	<a href="http://www.arubanetworks.com/support/wsirt.php">http://www.arubanetworks.com/support/wsirt.php</a>
Americas and APAC Support Email	<a href="mailto:support@arubanetworks.com">support@arubanetworks.com</a>
EMEA Support Email	<a href="mailto:emea.support@arubanetworks.com">emea.support@arubanetworks.com</a>
WSIRT Email Please email details of any security problem found in an Aruba product.	<a href="mailto:wsirt@arubanetworks.com">wsirt@arubanetworks.com</a>

Telephone Support	
Aruba Corporate	+1 (408) 227-4500
FAX	+1 (408) 227-4550
Support United States	800-WI-FI-LAN (800-943-4526) +800-4WIFI-LAN (+800-49434-526)
Universal Free Phone Service Number (UIFN): Australia, Canada, China, France, Germany, Hong Kong, Ireland, Israel, Japan, Korea, Singapore, South Africa, Taiwan, and the UK	
All Other Countries	+1 (408) 754-1200

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

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### Warranty

This hardware product is protected by the standard Aruba warranty of one year parts/labor. For more information, refer to the ARUBAGARE SERVICE AND SUPPORT TERMS AND CONDITIONS.

Altering this device (such as painting it) voids the warranty.



[www.arubanetworks.com](http://www.arubanetworks.com)  
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Fax 408.227.4550

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