Aruba 3000 Multi-Service Mobility Controller Series

ARUBA networks

Installation Guide

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For more information, refer to the ARUBACARE SERVICE AND SUPPORT TERMS AND CONDITIONS.
Altering this device (such as repainting it) voids the warranty.

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Preface

This preface includes the following information:

- An overview of the contents of this manual
- A list of related documentation for further reading
- Aruba support and service information

Guide Overview

- Chapter 1, “Aruba 3000 Series Hardware Overview” on page 7 provides a detailed hardware overview of the three Multi-Service Mobility Controllers within the Aruba 3000 Series: the Aruba 3200, the Aruba 3400, and the Aruba 3600.
- Chapter 2, “Aruba 3000 Series Installation” on page 13 provides rack mounting and installation instructions.
- Appendix A, “Specifications, Safety & Compliance” on page 17 includes product technical specifications and safety and regulatory compliance information.

Related Documents

The following documents are referred to in this guide and are considered components of the complete documentation set needed for successful installation and management of an Aruba Multi-Service Mobility Controller:

- *ArubaOS Quick Start Guide*
- *ArubaOS User Guide*
- *Aruba Mobility Management System User Guide*

Contacting Aruba

Web Site Support	
Main Site	http://www.arubanetworks.com
Support Site	http://www.arubanetworks.com/support
Software Licensing Site	https://licensing.arubanetworks.com
Wireless Security Incident Response Team (WSIRT)	http://www.arubanetworks.com/support/wsirt.php
Support Email	support@arubanetworks.com
WSIRT Email Please email details of any security problem found in an Aruba product.	wsirt@arubanetworks.com

Telephone Support	
Aruba Headquarters	+1 (408) 227-4500
FAX	+1 (408) 227-4550
Customer Support:	
• United States	800-WI-FI-LAN (800-943-4526)
• France	+33 (0) 1 70 72 55 59
• United Kingdom	+44 (0) 20 7127 5989
• Germany	+49 (0) 69 38 09 77 22 8
• All Other Countries	+1 (408) 754-1200

Chapter 1

Aruba 3000 Series Hardware Overview

About the Aruba 3000 Series

The Aruba 3000 Series of Multi-Service Mobility Controllers consists of three enterprise-class, wireless LAN switches. These controllers connect, control, and intelligently integrate wireless Access Points (APs) and Air Monitors (AMs) into a wired LAN system.

The Aruba 3000 Series consists of the following models and licensing upgrade options:

- Aruba 3200 Multi-Service Mobility Controller

  This model is capable of supporting 12 to 36 APs. The base model supports 12 APs and each additional upgrade license increases the support capacity by an additional 12 APs as indicated below:

  - Base Model (3200-AOS-STD): supports 12 APs
  - 1x Upgrade License (3200-UG-12): supports 12 to 24 APs
  - 2x Upgrade License (3200-UG-12): supports 12 to 36 APs
- Aruba 3400 Multi-Service Mobility Controller

  This model is capable of supporting 36 to 64 APs. The base model supports 36 APs and each additional upgrade license increases the support capacity by an additional 14 APs as indicated below:

  - Base Model (3400-AOS-STD): supports 36 APs
  - 1x Upgrade License (3400-UG-14): supports 36 to 50 APs
  - 2x Upgrade License (3400-UG-14): supports 36 to 64 APs
- Aruba 3600 Multi-Service Mobility Controller

  This model is capable of supporting 64 to 128 APs. The base model supports 64 APs and each additional upgrade license increases the support capacity by an additional 32 APs as indicated below:

  - Base Model (3600-AOS-STD): supports 64 APs
  - 1x Upgrade License (3600-UG-32): supports 64 to 96 APs
  - 2x Upgrade License (3600-UG-32): supports 64 to 128 APs

NOTE

Feature related AP licenses are counted independently and in addition to the standard upgrade licenses. Contact your Aruba sales representative for complete details regarding licensing options and support capacity.

Minimum Software Requirements

The Aruba 3000 Series of Mobility Controllers requires ArubaOS 3.2.0 or later.

ArubaOS software builds prior to version 3.2.0 do not support the Aruba 3000 Series of Mobility Controllers. If your network currently runs on a software build prior to 3.2.0, you must upgrade the software on your master and local controllers to 3.2.0 or later prior to installing an Aruba 3000 Series Mobility Controller in your existing network.

NOTE

The master controller, its redundant master controller, and all of its local controllers must run on the same code of ArubaOS. Once you upgrade your network and install an Aruba 3000 Series Mobility Controller into your network, verify that the software version on your controller matches the rest of the network. If the code shipped on the controller is prior to the version that you upgraded your network to, you must upgrade the code on the controller to match the rest of the network.

Package Checklist

- Aruba 3000 Series Multi-Service Mobility Controller
- AC Power Cord (country-specific)
- Rack Mount Brackets with Hardware (for rack mounting)
- Flat Serial Cable (RJ-45)
- Rubber Feet (for table top deployments)
- Serial Console Port Adaptor (RJ-45 to DB9)
- ArubaOS Software Documentation CD
- *ArubaOS Quick Start Guide*
- End User License Agreement (EULA)

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.

NOTE

Optional accessories, such as SFP modules, are available for use with the Aruba 3000 Series and are sold separately. Contact your Aruba sales representative for details and assistance.

Hardware Model Overview

NOTE

The physical hardware overview of the Aruba 3000 Series covers all three models within the series. The difference between the three controller models is dependent on the licensing level purchased, which is covered in About the Aruba 3000 Series on page 7. The controller model depicted in the illustrations throughout this section is the Aruba 3200.

Front View

Figure 1 *Aruba 3000 Series Front View*

NOTE

Ports one through four are dual-media ports and can utilize either the 1000Base-X or 10/100/1000Base-T connections provided. However, the 1000Base-X fiber connection has priority over the 10/100/1000Base-T copper connection. If a link is detected for the 1000Base-X interface, the 10/100/1000Base-T connection will be disabled.

1000Base-X (SFP) Ports

There are four 1000Base-X combination ports for fiber connectivity only and are intended for use with Aruba SFPs (mini-GBICs).

To purchase compatible SFP modules, contact your Aruba sales representative for details and assistance.

NOTE

Aruba tests and supports Aruba optics within their controller systems. Third party optics are not tested or supported; therefore, Aruba does not guarantee proper functionality of third party optics when used in an Aruba system.

10/100/1000Base-T Gigabit Ethernet Ports

There are four 10/100/1000Base-T Gigabit Ethernet (RJ-45) ports. Gigabit Ethernet uses all eight wires and each pair is used in a bi-directional fashion, meaning the same pairs are used for both data transmission and reception. Figure 2 illustrates the CAT-5 pin-out found on an RJ-45 connector. The CAT-5 pin-out pairs the following pins on a 10/100/1000Base-T Gigabit Ethernet port: 1/2, 3/6, 4/5, and 7/8.

Figure 2 *Gigabit Ethernet Port Pin-Out*

Serial Console Port

A serial console port is provided for connection to a terminal, allowing for direct local management. The port's RJ-45 female connector accepts an RS-232 serial cable with a male connector.

Figure 3 *Serial Console Port Pin-Out*

Communication settings for the serial console port are indicated in Table 1.

Table 1 *Console Terminal Settings*

Baud Rate	Data Bits	Parity	Stop Bits	Flow Control
9600	8	None	1	None

CAUTION

Do not connect an Access Point (AP) to the serial console port. The serial console port is compatible with only RS-232 devices. Non-RS-232 devices, such as APs, are not supported.

Serial Console Port Adaptor

A modular adaptor can be used to convert the RJ-45 (female) connector to a DB9 (male) connector. Refer to Figure 4 for complete details.

Figure 4 *RJ-45 (female) to DB9 (male) Modular Adaptor Conversion*

Rear View

Figure 5 *Aruba 3000 Series Rear View*

AC Power Socket

The Aruba 3000 Series supports integrated AC powering and the AC power socket on the rear of the unit is for use with an AC power cord (country-specific). Refer to Power Management Specifications on page 17 for power specification details.

LED Status Indicators

Table 2 *Aruba 3000 Series LED Status Indicators*

LED	Function	Indicator	Status
POWER	Input Power Status Indicator	On (Solid Green)	Power on
		Off	No power
STATUS	Module Status Indicator	On (Solid Green)	Device is operational
		On (Solid Red)	Device failed
		On (Solid Amber)	Device is loading software
		Off	No power
LNK 1000Base-X Ports	Link Status Indicator	On (Solid Green)	Link has been established
		Off	No link on port
ACT 1000Base-X ports	Activity Status Indicator	On (Blinking Green)	Port is transmitting or receiving data
		Off	No activity
LNK/ACT 10/100/1000Base-T Ports	Link/Activity Status Indicator	On (Solid Green)	Link has been established
		On (Blinking Green)	Port is transmitting or receiving data

Table 2 *Aruba 3000 Series LED Status Indicators*

LED	Function	Indicator	Status
		Off	No link on port
1000 10/100/1000Base-T Ports	Interface Speed Indicator	On (Solid Green)	1000 Mbps interface speed in use
		Off	10/100 Mbps interface speed in use

Installation

Pre-Installation Requirements

The following tools and equipment are required for installation of an Aruba 3000 Series controller:

- Rack Mount Bracket (2x)
- 6-32 x 1/4” Phillips Flat Head Screws (6x, included with rack mount brackets)
- 12-24 x 5/8” Phillips Flat Head Screws (4x, 19-inch (48.26 cm) rack system mount screws)
- Suitable Screwdrivers for both screw types
- AC power cord (country-specific)

Physical Installation

Rack Mounting

To install an Aruba 3000 Series controller into a 19-inch (48.26 cm) rack system:

1. Place a rack mount bracket over the mounting holes on one side of the controller (see Figure 1).
2. Secure the bracket to the controller using three 6-32 x 1/4” phillips flat head screws and a suitable screwdriver (see Figure 1).
3. Repeat these steps on the opposite side of the controller.

Figure 1 *Rack Mount Brackets*

4. Mount the controller within your organization's rack system using four 12-24 x 5/8" phillips flat head screws and a suitable screwdriver (see Figure 2).

Figure 2 *Rack Mount Installation*

5. Leave a minimum of four inches (10 cm) of space on the left and right side of the unit for proper air flow and ventilation (see Figure 3).
6. Leave additional space in the front and back of the unit to access power cords, network cables, and LED status indicators (see Figure 3).

Figure 3 *Air Flow Requirements*

7. Connect the AC power cord (country-specific) to the rear of the unit.
8. Plug the opposite end of the power cord into an electrical outlet to power on the controller.

NOTE

Aruba 3000 Series controllers do not have a switch for turning power to the unit on or off. Power to the unit is controlled by connecting or disconnecting the plug on the power cord to or from an electrical outlet.

Tabletop Deployment

To deploy an Aruba 3000 Series controller on a flat surface, such as a tabletop:

1. Insert the four, rubber mounting feet into the bottom of the unit and place the unit on a flat, hard surface.

Initial Setup and Network Connectivity

Once the physical installation is complete, run the initial setup on the controller to configure the IP address and other basic system information. For complete details and instructions, refer to the *ArubaOS Quick Start Guide* for the software version installed on your controller.

Removal

To remove an Aruba 3000 Series controller from a 19-inch (48.26 cm) rack system:

1. Disconnect power to the controller by unplugging the power cord from the electrical outlet.
2. Loosen and remove the four rack system mount screws securing the controller to your organization's rack system.
3. Remove the controller from the rack system.

Specifications

Physical Specifications

- Device Dimensions (without rack mount brackets) (HxWxD):
  - All Models: 1.75” x 13.8” x 11.7”
  - All Models: 44 mm x 351 mm x 297 mm

Device Weight (with rack mount brackets):

- Aruba 3200: 7.1 lbs/3.2 kgs
- Aruba 3400/Aruba 3600: 7.4 lbs/3.4 kgs
- Shipping Dimensions (HxWxD):
  - All Models: 6.5” x 18.2” x 16.5”
  - All Models: 165 mm x 462 mm x 419 mm
- Shipping Weight:
  - Aruba 3200: 9.4 lbs/4.3 kgs
  - Aruba 3400/Aruba 3600: 9.7 lbs/4.4 kgs

Power Management Specifications

Power Consumption

- Aruba 3200: 35 W maximum
- Aruba 3400: 45 W maximum
- Aruba 3600: 60 W maximum

Power Specifications (AC Input Requirements)

- Aruba 3200:
  - AC Input Voltage: 90-264 V~, Universal Input
  - AC Input Current: 1.5 A
  - AC Input Frequency: 47-63 Hz
- Aruba 3400/Aruba 3600:
  - AC Input Voltage: 90-264 V~, Universal Input
  - AC Input Current: 2.2 A
  - AC Input Frequency: 47-63 Hz

Operating Specifications

- Operating Temperature Range: 0°C to 40°C (32°F to 104°F)
- Operating Humidity Range: 5% to 95% (RH), non-condensing

Storage Specifications

- Storage Temperature Range: 0°C to 50°C (32°F to 122°F)
- Storage Humidity Range: 5% - 95% (RH), non-condensing

Safety and Regulatory Compliance

Aruba provides a multi-language document containing country specific restrictions and additional safety and regulatory information for all Aruba hardware products. The *Aruba Safety and Regulatory Addendum* can be viewed or downloaded from the following location: www.arubanetworks.com/pdf/0510272-01.pdf.

Proper Disposal of Aruba Equipment

For the most current information on Global Environmental Compliance and Aruba products please see our website at www.arubanetworks.com.

Waste of Electrical and Electronic Equipment

Aruba 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 wheelie 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 2002/96EC on Waste of Electrical and Electronic Equipment (WEEE).

European Union RoHS

Aruba products also comply with the EU Restriction of Hazardous Substances Directive 2002/95/EC (RoHS). EU RoHS restricts the use of specific hazardous materials in the manufacture of electrical and electronic equipment. Specifically, restricted materials under the RoHS Directive are Lead (including Solder used in printed circuit assemblies), Cadmium, Mercury, Hexavalent Chromium, and Bromine. Some Aruba products are subject to the exemptions listed in RoHS Directive Annex 7 (Lead in solder used in printed circuit assemblies). Products and packaging will be marked with the “RoHS” label shown at the left indicating conformance to this Directive.

China RoHS

Aruba products also comply with China environmental declaration requirements and are labeled with the “EFUP e” label shown at the left.