

Aruba

Version 6.4



Configuration Guide

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Document Revisions and Enhancements

[Table 1](#) summarizes new Aruba Configuration features in AWMS Version 6.4, to describe graphical user interface (GUI) enhancements and additional document changes from the prior *Aruba Configuration Guide*, Version 6.3. Additional information supporting AWMS Version 6.4 is available in the documents cited in [“Related Documents” on page 12](#).

Table 1 *AirWave Configuration Guide Document Revisions, AWMS Version 6.4*

Enhancement	Document Section	Description
AWMS Version 6.4 Enhancements	<ul style="list-style-type: none">General document	Document adds GUI, procedural, and feature-oriented enhancements in support of the Aruba Configuration feature in AWMS 6.4.
Deploying Aruba APs	<ul style="list-style-type: none">“Using AWMS to Deploy Aruba APs for the First Time” on page 38	New procedure describes how to deploy and name Aruba APs and controllers from AWMS for the first time, rather than importing such configurations from AOS.
Using Groups and Folders in AWMS	<ul style="list-style-type: none">“Using General AWMS Device Groups and Folders” on page 39	<p>New procedure describes two ways in which to deploy device groups and folders in AWMS. This general group-level topic also has potential benefit of Aruba AP Groups.</p> <p>Generally, device groups in AWMS can be deployed as follows:</p> <ul style="list-style-type: none">Deploy device groups by device type and folders by location.Deploy device groups by location and folders by type.

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Document Audience and Organization

This configuration guide is intended for wireless network administrators and helpdesk personnel who deploy ArubaOS (AOS) on the network and wish to manage it with the AirWave Wireless Management Suite (AWMS). AWMS Version 6.3 and later releases support Aruba Configuration. This document provides instructions for using Aruba Configuration and contains the following chapters:

Table 1 *Document Organization and Purposes*

Chapter	Description
Chapter 1, "Overview of Aruba Configuration in AWMS"	Introduces the concepts, components, navigation, and initial setup of Aruba Configuration.
Chapter 2, "Using Aruba Configuration in Daily Operations"	Provides a series of procedures for configuring, modifying, and using Aruba Configuration once initial setup is complete. This chapter is oriented around the most common tasks in Aruba Configuration.

Related Documents

The following documentation supports the AirWave Wireless Management Suite:

ArubaOS Documentation

- [AOS User Guide](#)

AirWave Wireless Management Suite / AirWave Management Platform

- Release Notes for the AirWave Wireless Management Suite
- [AirWave Wireless Management Suite Knowledge Base](#)
- [AWMS Quick Start Guide](#)
- [AWMS User Guide](#)
- [Aruba Configuration Guide](#) (this document)
- [Supported APs/Devices](#)
- [Supported Firmware Versions](#)

VisualRF

- Release Notes for the AirWave Wireless VisualRF Module
- [Overview Page](#)
- [User Guide](#)

RAPIDS

- [Overview Page](#)
- [AirWave Management Client User Guide](#)
- [Download AirWave Management Client](#)

Best Practice Guides

- [Aruba and AirWave Best Practices Guide](#)
- [Choosing the Right Server Hardware](#)
- [Helpdesk Guide: Troubleshooting WLAN Issues](#)
- [Converting Cisco IOS APs to LWAPP](#)

Interfacing With AWMS

- [AWMS Integration Matrix](#)
- [State and Statistical XML API Documentation](#)
- [Location XML API Documentation](#)

NMS Integration

- [See AMP Setup NMS](#)
- [Download AWMS Trap MIB](#)
- [AWMS/NMS Integration Guide](#)

AMPWatch Widget

- [AMPWatch is a widget for the Yahoo! Widget Engine](#)
- [Download AMPWatch](#)

Text Conventions

The following conventions are used throughout this manual to emphasize important concepts:

Table 2 *Text Conventions*

Type Style	Description
<i>Italics</i>	This style is used to emphasize important terms and to mark the titles of books.
GUI components	Bold, sans-serif font indicates that the AWMS GUI displays this item exactly as cited in body text.
System items	This fixed-width font depicts the following: <ul style="list-style-type: none">• Sample screen output• System prompts• Filenames, software devices, and specific commands when mentioned in the text
Commands	In the command examples, this bold font depicts text that you must type exactly as shown.

This document uses the following notice icons to emphasize advisories for certain actions, configurations, or concepts:



Indicates helpful suggestions, pertinent information, and important things to remember.



Indicates a risk of damage to your hardware or loss of data.

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Online Contact and Support	
Main Website	http://www.airwave.com
Email Contact	
• AirWave Wireless Sales	sales@airwave.com
• AirWave Wireless Technical Support	support@airwave.com
• Aruba Networks general information	info@arubanetworks.com
• Aruba Networks Sales	sales@arubanetworks.com
• Aruba Networks Technical Support in the Americas and APAC	support@arubanetworks.com
• Aruba Networks Technical Support in the EMEA	emea_support@arubanetworks.com
• WSIRT Email—Please email details of any security problem found in an AirWave or Aruba product.	wsirt@arubanetworks.com

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

Introduction

ArubaOS (AOS) is the operating system, software suite, and application engine that operates Aruba mobility controllers and centralizes control over the entire mobile environment. The AOS Wizards, the AOS command-line interface (CLI), and the AOS WebUI are the primary means by which to configure and deploy AOS.

The Aruba Configuration feature in the AirWave Wireless Management Suite consolidates AOS configuration and pushes global Aruba configurations from one utility. This chapter introduces the components and initial setup of Aruba Configuration with the following topics:

Overview of Aruba Configuration in AWMS

- The Primary Pages of Aruba Configuration
- Device Setup > Aruba Configuration Page
 - Aruba AP Groups Section
 - AP Overrides Section
 - WLANs Section
 - Profiles Section
 - Security Section
 - Advanced Services Section
- Groups > Aruba Config Page
- APs/Devices > List Page
- APs/Devices > Manage Page
- APs/Devices > Monitor Page
- Groups > Basic Page

Additional Concepts and Components of Aruba Configuration

- Global Configuration and Scope
- Embedded Profile Setup in Aruba Configuration
- Save, Save and Apply, and Revert Buttons
- Folders, Users, and Visibility
- Additional Concepts and Benefits

Setting Up Initial Aruba Configuration



NOTE

AWMS supports **Aruba AP Groups**, and these are distinct and must not be confused with standard AWMS Device **Groups**. This document provides information about the configuration and use of **Aruba AP Groups**, and describes how **Aruba AP Groups** interoperate with standard AWMS Device **Groups**.

Requirements, Restrictions, and AOS Support in AWMS

Requirements

Aruba Configuration has the following **requirements** in AWMS:

- AWMS 6.3 or a later AWMS version must be installed and operational on the network.
- Aruba Controllers on the network must have AOS installed and operational.
- Ensure you have Telnet/SSH credentials (configuration only) and the “enable” password (configuration only). Without proper Telnet/SSH credentials a user is not able to fetch the running configuration, nor acquire license and serial information from controllers.

Restrictions

Aruba Configuration has the following **restrictions** in AWMS:

- At the present time, Aruba Configuration in AWMS does not support every AOS Network component. AWMS supports only **IP Mobility** and **VLANs** in the **Advanced Services** section, for example.
- Future versions of AWMS will support additional AOS features, to include **Aruba AP Group** and **Profile** distribution from the Master Console.

AOS Support in AWMS



Refer also to “Using AWMS to Deploy Aruba APs for the First Time” on page 38.

AWMS users can choose between the existing template-based configuration and new GUI-based configuration for Aruba devices on firmware 3.3.2.10 and greater. Upon upgrading to AWMS, groups with all devices in monitor-only mode will automatically use the GUI-based configuration.

- Only global configuration is supported; AWMS can work in a master-local or an all-master configuration.
- Configuration changes are pushed to the controller via SSH with no reboot required.
- All settings for Profiles, Aruba AP Groups, Servers and Roles are supported, as is the AOS WLAN Wizard (basic view). Controller IP addresses, VLANs and interfaces are not supported, nor are Advanced Services with the exception of VPN and IP Mobility.
- AWMS now understands AOS license dependencies.
- You can provision thin APs from the **AP/Devices > Manage** page. You can move APs into **Aruba AP Groups** from the **Modify These Devices** option on the **APs/Devices > List** page.
- You can configure AP names as **AP Overrides** on the **Device Setup > Aruba Configuration** page.
- Support for AOS GUI configuration via global groups and the AWMS Master Console will be added in a future release.

Changes to dependency between the AMP group and folders help customers who want to use the folder structure to manage configuration; however, users are now be able to see (but not access) group and folder paths for which they do not have permissions.

For more detailed information about this feature, as well as steps for transition from template-based configuration to web-based configuration, refer to additional chapters in this user guide. For known issues in the general AWMS release, refer to the *AWMS Release Notes*.

AOS 3.4.0

AWMS 6.4 and later versions support AOS 3.4.0 with these additional enhancements:

- AMP displays Aruba APs with disabled radios as up.

- AMP supports IP addresses for Aruba thin APs.
- Air Monitor is now a per-radio mode in AMP.
- AMP displays the user's cipher for Aruba clients, as supported in AOS 3.4.
- AWMS supports several additional IDS traps.
- AWMS supports additional Aruba 600 Series controllers and the Aruba AP-105 access point.

Refer to the *AWMS 6.4 Release Notes* for additional information.

Overview of Aruba Configuration in AWMS

This section describes the **Device Setup > Aruba Configuration** page and all additional pages in AWMS that support Aruba Configuration.

The Primary Pages of Aruba Configuration

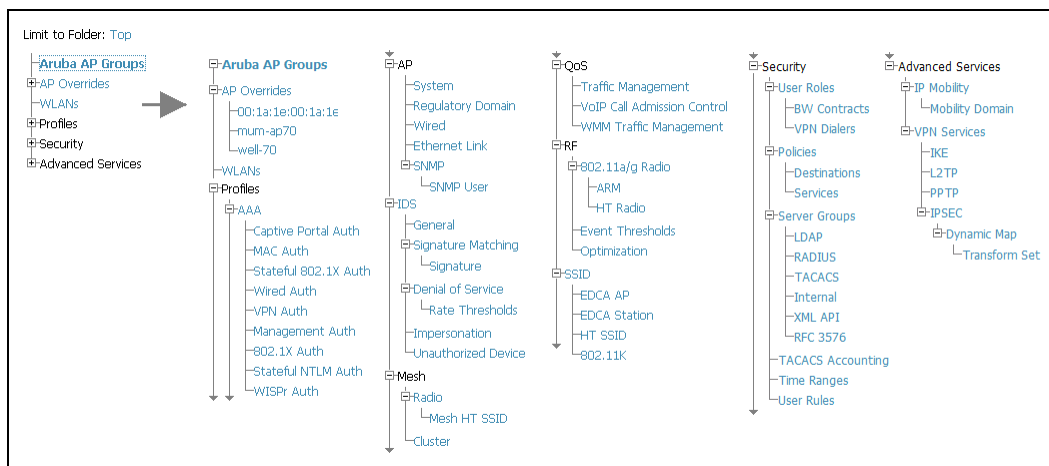
AWMS supports Aruba Configuration with the following pages:

- **Device Setup > Aruba Configuration Page**—deploys and maintains Aruba Configuration in AWMS. This page supports several sections, as follows:
 - **Aruba AP Groups Section**
 - **AP Overrides Section**
 - **WLANs Section**
 - **Profiles Section**
 - **Security Section**
 - **Advanced Services Section**
- **Groups > Aruba Config Page**—manages Aruba AP group and other controller-wide settings defined on the **Device Setup > Aruba Configuration** page.
- **APs/Devices > List Page**—modifies or reboots all devices, including Aruba devices deployed with Aruba Configuration.
- **APs/Devices > Manage Page**—supports device-level settings and changes in AWMS as a whole.
- **APs/Devices > Monitor Page**—supports device-level monitoring in AWMS as a whole.
- **Groups > Basic Page**—enables Aruba Configuration in the AWMS GUI and displays preferences for Aruba and other devices.

Device Setup > Aruba Configuration Page

This page uses an expandable navigation pane to support Aruba AP Groups, AP Overrides, WLANs, Profiles, Security, and Advanced Services.

Figure 1 *Device Setup > Aruba Configuration Navigation Pane (Contracted and Expanded)*





Only **Aruba AP Groups**, **AP Overrides**, and **WLANs** contain custom-created items in the navigation pane.

The navigation pane can be used as follows:

- Any portion with a plus sign (+) expands with a click to display additional contents.
- Any portion of the navigation tree can be contracted by clicking the contract sign (-).
- You can display the **Edit** or **Details** page for any component with a single click.

Aruba AP Groups Section

An Aruba AP Group is a collection of configuration profiles that define specific settings on Aruba controllers and the devices that they govern. An Aruba AP Group references multiple configuration profiles, and in turn links to multiple WLANs.

Navigate to the **Device Setup > Aruba Configuration > Aruba AP Groups** page. [Figure 2](#) illustrates one example of this page.

Figure 2 *Device Setup > Aruba Configuration > Aruba AP Groups Navigation*

Name	Used By Group	Number of APs	Used By User Role	Folder
10.0.0	-	0	-	Top
office	-	0	-	Top
office-am	-	0	-	Top
beijing	HQ-RemoteAP	0	-	Top
Client40	HQ-RemoteAP	0	-	Top
corp	-	0	-	Top
Corp_AM_Ch1	-	0	-	Top
Corp_AM_Ch6	-	0	-	Top
corpTest	-	0	-	Top
default	Sunnyvale Lab, Cisco Gear, HQ-RemoteAP, Training, Outdoor, and more.	28	-	Top

Aruba AP Groups are not to be confused with conventional AWMS device groups. AWMS supports both group types and both are viewable on the **Groups > List** page when so configured.

Aruba AP Groups have the following characteristics:

- Aruba AP Groups are global, and any Aruba controller can support multiple Aruba AP Groups.
- Aruba AP Groups are assigned to folders, and folders define visibility. Using conventional AWMS folders to define visibility, Aruba AP Groups can provide visibility to some or many components while blocking visibility to other users for more sensitive components, such as SSIDs. Navigate to the **Users** pages to define folder visibility, and refer to “[Visibility in Aruba Configuration](#)” on page 40.
- You can import a controller configuration file from ArubaOS for Aruba AP Group deployment in AWMS.

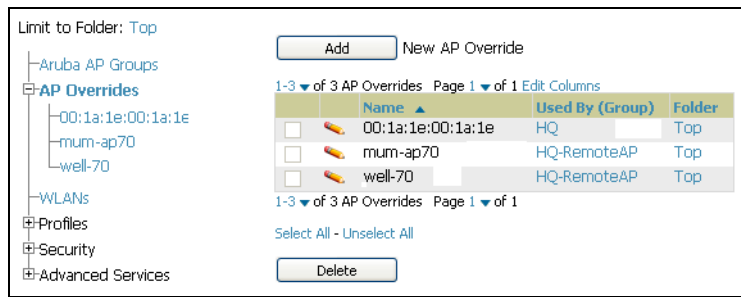
For additional information, refer to the following sections in this document:

- “[Setting Up Initial Aruba Configuration](#)” on page 22
- “[General Aruba AP Groups Procedures and Guidelines](#)” on page 30

AP Overrides Section

The second major component of Aruba Configuration is the **AP Overrides** page, appearing immediately below **Aruba AP Groups** in the Navigation Pane. [Figure 3](#) illustrates this location and access:

Figure 3 *Device Setup > Aruba Configuration > AP Overrides Navigation*



AP Overrides operate as follows in Aruba Configuration:

- Custom-created AP Overrides appear in the Aruba Configuration navigation pane, as illustrated in [Figure 3](#).
- Aruba controllers and AP devices operate in Aruba AP Groups that define shared parameters for all devices in those groups. The **Device Setup > Aruba Configuration > Aruba AP Groups** page displays all current Aruba AP groups.
- **AP Override** allows you to change some parameters for any specific device without having to create an Aruba AP group per AP.
- The name of any **AP Override** should be the same as the name of the device to which it applies. This establishes the basis of all linking to that device.
- Once you have created an **AP Override** for a device in a group, you specify the **WLANs** to be included and excluded.
- For additional information about how to configure and use AP Overrides, refer to these topics:
 - [“AP Overrides Guidelines” on page 36](#)
 - [“Configuring or Editing AP Overrides” on page 36](#)

WLANs Section

Access WLANs with **Device Setup > Aruba Configuration > WLANs**, illustrated in [Figure 4](#).

Figure 4 *Device Setup > Aruba Configuration > WLANs Navigation*

Limit to Folder: [Top](#)

Aruba AP Groups

AP Overrides

WLANs

Profiles

Security

Advanced Services

Add

New WLAN

1-20 ▼ of 49 WLANs

Page 1 ▼ of 3 > >|

Edit Columns

		Name ▲	SSID	Aruba AP Group	Used By		Folder
					AP Override	Traffic Management	
<input type="checkbox"/>		1.0.0_ethersphere-voip	ethersphere-voip	corpTest, corp, voip-test	-	-	Top
<input type="checkbox"/>		1.0.0_ethersphere-wpa2	ethersphere-wpa2	corpTest, voip-test-nokia, corp, voip-test	-	-	Top
<input type="checkbox"/>		1.0.0_guest	guest	corpTest, voip-test-nokia, corp, voip-test	-	-	Top
<input checked="" type="checkbox"/>		ethersphere-vocera	ethersphere-vocera	-	-	-	Top
<input checked="" type="checkbox"/>		office	office	-	-	-	Top
<input type="checkbox"/>		office-ethersphere-voip	ethersphere-voip	aire-office	-	-	Top
<input type="checkbox"/>		office-ethersphere-wpa2	ethersphere-wpa2	aire-office	-	-	Top
<input type="checkbox"/>		office-guest	guest	aire-office	-	-	Top

1-20 ▼ of 49 WLANs

Page 1 ▼ of 3 > >|

Select All - Unselect All

Delete

The following concepts govern the use of WLANs in Aruba Configuration:

- WLANs are the same as virtual AP configuration profiles.
- WLAN profiles contain several diverse settings to include SSIDs, referenced **Aruba AP Groups**, **Traffic Management** profiles, and device **Folders**.

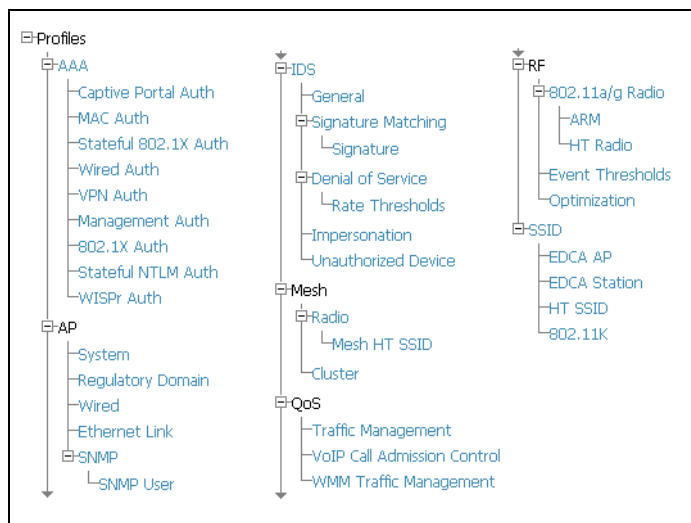
This document describes WLAN configuration in the following section and chapter:

- “Setting Up Initial Aruba Configuration” on page 22
- “General WLAN Procedures and Guidelines” on page 32

Profiles Section

Profiles provide a way to organize and deploy groups of configurations for Aruba AP Groups, WLANs, and other profiles. Profiles are assigned to folders; this establishes visibility to Aruba AP Groups and WLAN settings. Access **Profiles** with **Device Setup > Aruba Configuration > Profiles**, illustrated in [Figure 5](#).

Figure 5 *Device Setup > Aruba Configuration > Profiles Navigation*



Profiles are organized by type in Aruba Configuration. Custom-named profiles do not appear in the navigation pane as do custom-named Aruba AP Groups, WLANs, and AP Overrides.

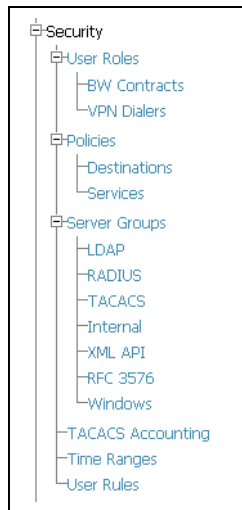
For additional information about profile procedures and guidelines, refer to the following sections in this document:

- “Setting Up Initial Aruba Configuration” on page 22
- “General Profiles Guidelines” on page 34

Security Section

The **Security** section displays, adds, edits, or deletes security profiles in multiple categories, to include user roles, policies, rules, and servers such as RADIUS, TACACS+, and LDAP servers. Navigate to Security with the **Device Setup > Aruba Configuration > Security** path, illustrated in [Figure 6](#).

Figure 6 *Device Setup > Aruba Configuration > Security Navigation*



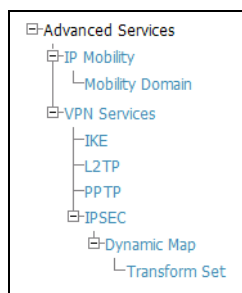
The following general guidelines apply to **Security** profiles in Aruba configuration:

- Roles can have multiple policies; each policy can have numerous roles.
- Server groups are comprised of servers and rules. Security rules apply in Aruba Configuration in the same way as deployed in AOS.

Advanced Services Section

Navigate to Advanced Services with the **Device Setup > Aruba Configuration > Advanced Services** path. The **Advanced Services** section includes IP Mobility and VPN Services. [Figure 7](#) illustrates this navigation and the components.

Figure 7 *Device Setup > Aruba Configuration > Advanced Services Navigation*



Groups > Aruba Config Page

This focused submenu page displays and edits all configured Aruba AP groups, with the following factors:

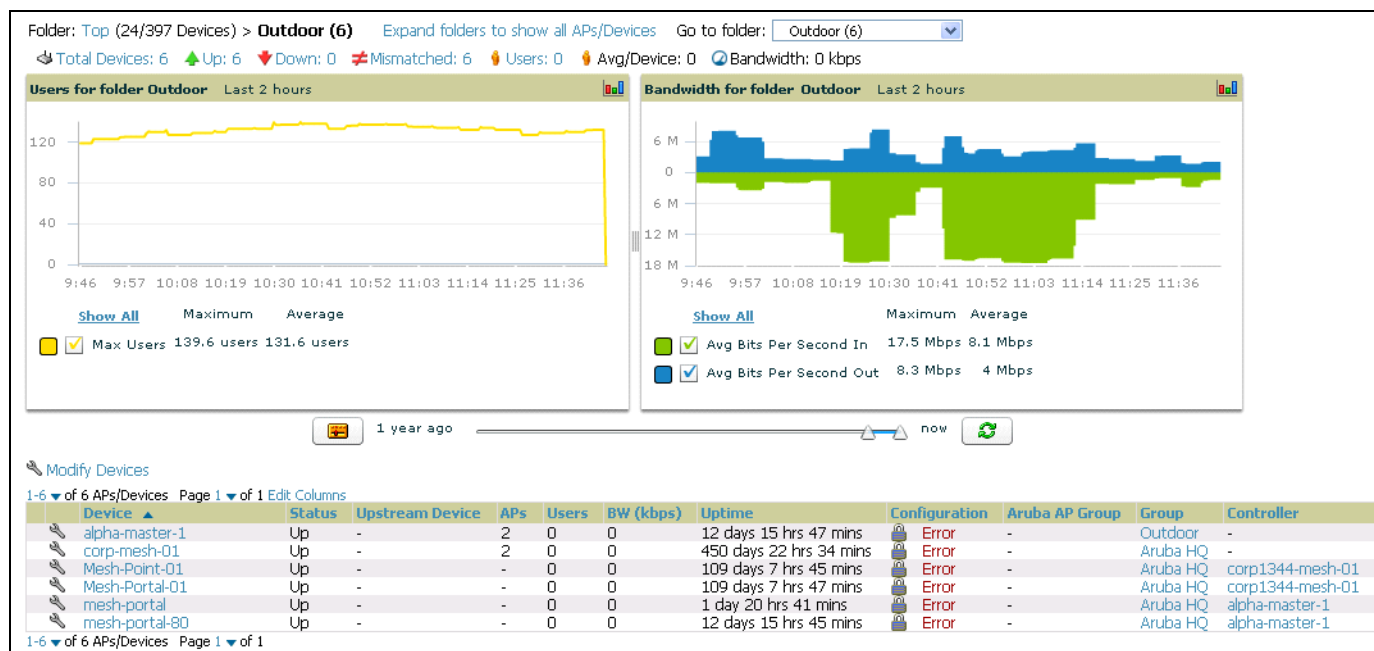
- Aruba AP Groups must be defined from the **Device Setup > Aruba Configuration** page before they are visible on the **Groups > Aruba Config** page.
- Use this page to select the Aruba AP Groups that you push to controllers.
- Use this page to associate a standard device group to one or more Aruba AP Groups.
- From this page, you can select other profiles that are defined on the controller, like an internal server.

Figure 8 *Groups > Aruba Config Page Illustration*

APs/Devices > List Page

This page supports devices in all of AWMS. This page supports controller reboot, controller re-provisioning, and changing Aruba AP groups. Select **Modify Devices** to configure thin AP settings.

Figure 9 *APs/Devices List Page Illustration (Partial Display)*



APs/Devices > Manage Page

This page configures device-level settings, including **Manage** mode that enables pushing configurations to controllers. For additional information, refer to [“Pushing Device Configurations to Controllers”](#) on page 35.

Figure 10 *APs/Devices > Manage Page Illustration (Partial Display)*

The screenshot displays the 'APs/Devices > Manage Page' for a device named 'ethersphere-lms3'. The page is divided into several sections:

- General:** Displays device information including Name (ethersphere-lms3), Status (Up (OK)), Configuration (Mismatched (More Details)), Last Contacted (10/7/2009 11:03 AM), Type (Aruba 6000), Firmware (3.4.0.2-vowifi), Group (HQ), Folder (Top), and Management Mode (Monitor Only + Firmware Upgrades, Manage Read/Write).
- Settings:** Includes fields for Name (ethersphere-lms3), Location (Networks), Contact, Latitude, Longitude, Altitude (m), Group (HQ (SSID: aruba-ap)), Folder (Top), Auto Detect Upstream Device (Yes/No), Upstream device will automatically be updated when the device is polled, Automatically clear Down Status Message when device comes back up (Yes/No), and Down Status Message.
- Notes:** A text area for notes.
- Device Communication:** Includes instructions on updating IP address and management ports, and fields for IP Address (10.254.254.254) and SNMP Port (161). It also includes instructions on updating credentials and a field for the Community String.
- Network Settings:** Includes a field for Gateway (10.254.254.254).

At the bottom, there are buttons for 'Save and Apply', 'Revert', 'Delete', 'Ignore', 'Import Settings', 'Replace Hardware', and 'Update Firmware'.

APs/Devices > Monitor Page

Used in conjunction with the **Manage** page, the **Monitor** page enables review of device-level settings. This page is large and often contains a great amount of information, to include the following sections:

- **Status** information
- **User** and **Bandwidth** flash graphs
- **CPU Utilization** and **Memory Utilization** flash graphs
- **APs Managed by this Controller** (when viewing a controller)
- **Alert Summary**
- **Recent Events**
- **Audit Log**

For additional information, refer to [“Pushing Device Configurations to Controllers”](#) on page 35.

Groups > Basic Page

The **Groups > Basic** page deploys the following aspects of Aruba Configuration:

- This page contains a new **Aruba GUI Config** field. Use this page and field to make the **Device Setup > Aruba Config** page visible. This page is enabled by default in AWMS.
- Use this page to control which device settings appear on the **Groups** pages.
- If you are using Aruba firmware prior to version 3.0, you should disable Aruba GUI configuration from the **Groups > Basic** page and use template-based configuration.

Refer to [Figure 13](#) for an illustration of this page.

Additional Concepts and Components of Aruba Configuration

Aruba Configuration emphasizes the following components and network management concepts:

- [Global Configuration and Scope](#)
- [Embedded Profile Setup in Aruba Configuration](#)
- [Save, Save and Apply, and Revert Buttons](#)
- [Folders, Users, and Visibility](#)
- [Additional Concepts and Benefits](#)

Global Configuration and Scope

Aruba Configuration supports AOS as follows:

- AWMS supports global configuration from both a master-local controller deployment and an all-master controller deployment:
 - In a master-local controller deployment, AOS is the agent that pushes global configurations from master controllers to local controllers. AWMS supports this AOS functionality.
 - In an all-master-controller scenario, every master controller operates independent of other master controllers. AWMS provides the ability to push configuration to all master controllers in this scenario.
- AWMS Aruba Configuration supports AOS profiles, Aruba AP Profiles, Servers, and User Roles.

For additional information about these and additional functions, refer to [“General Controller Procedures and Guidelines” on page 35](#).

Embedded Profile Setup in Aruba Configuration

AWMS allows you to add or reconfigure many configuration profiles while guiding you through a larger configuration sequence for an Aruba AP Group or WLAN. Consider the following example:

- When you create a new Aruba AP Group from the **Device Setup > Aruba Configuration** page, the **Referenced Profile** section appears as shown in [Figure 11](#):

Figure 11 *Embedded Profile Configuration for an Aruba AP Group*

Referenced Profiles		
802.11a Radio Profile:	5_am	+
802.11g Radio Profile:	2.4_am	+
RF Optimization Profile:	default	+
Event Thresholds Profile:	default	+
Wired AP Profile:	default	+
Ethernet Interface 0 Link Profile:	default	+
Ethernet Interface 1 Link Profile:	default	+
AP System Profile:	default	+
Regulatory Domain Profile:	default	+
SNMP Profile:	default	+
VoIP Call Admission Control Profile: Requires a Voice Service license	default	+
802.11a Traffic Management Profile:	--None--	+
802.11g Traffic Management Profile:	--None--	+
IDS Profile: Requires a Wireless Intrusion Protection license	default	+
Mesh Radio Profile: Requires an Outdoor Mesh Access Points license	default	+

- Click the **Add** icon (the plus symbol) at right to add a referenced profile. Once you **Save** or **Save and Apply** that profile, AWMS automatically returns you to the original Aruba AP Group configuration page.
- This embedded configuration is also supported on the **Additional Aruba Profiles** section of the **Groups > Aruba Config** page.

Save, Save and Apply, and Revert Buttons

Several **Add** or **Detail** pages in Aruba Configuration include the **Save**, **Save and Apply**, and **Revert** buttons. These buttons function as follows:

- **Save**—This button saves a configuration but does not apply it, allowing you to return to complete or apply the configuration at a later time. If you use this button, you may see the following alert on other Aruba Configuration pages. You can apply the configuration when all changes are complete at a later time.

Figure 12 *Unapplied Aruba Configuration Changes Message*

Note: You have unapplied Aruba Configuration changes. You must click 'Save and Apply' to make them take effect.

- **Save and Apply**—This button saves and applies the configuration with reference to Manage and Monitor modes. For example, you must click **Save and Apply** for a configuration profile to propagate to all devices immediately if the controller is in **Manage** mode. If you have devices in **Monitor** mode, AWMS compares the current device configuration with the new desired configuration. For additional information and instructions about using **Manage** and **Monitor** modes, refer to [“Pushing Device Configurations to Controllers” on page 35](#).
- **Revert**—This button cancels out of a new configuration or reverts back to the last saved configuration.

Folders, Users, and Visibility

Access and edit folders and visibility using the **Folder** column on the **Groups > Aruba Config** page. Profiles and Aruba AP Groups are assigned to folders. Folders allow you to set the visibility for controller information, and to set read/write privileges as required.

- As one example, it may be necessary to provide AWMS users with RF radio parameters while restricting access to SSID profiles.

Additional Concepts and Benefits

Scheduling Configuration Changes

You can schedule deployment of Aruba Configuration to minimize impact on network performance. For example, configuration changes can be accumulated over time by using **Save and Apply** for devices in **Monitor** mode, then pushing all configuration changes at one time by putting devices in **Manage** mode. Refer to [“Pushing Device Configurations to Controllers” on page 35](#).

AWMS pushes configuration settings that are defined in the GUI to the Aruba Controllers as a set of CLI commands using Secure Shell (SSH). No controller reboot is required.

Auditing and Reviewing Configurations

AWMS supports auditing or reviewing in these ways.

1. You can review the AOS running configuration file. This is configuration information that AWMS reads from the device. In template-based configuration, you can review the running configuration file when working on a related template.
2. You can use the **APs/Devices > Audit** page for device-specific auditing.
3. Once you audit your controller, you can click **Import** from the **APs/Devices > Audit** page to reverse all of the profiles on the controller.

Licensing and Dependencies in Aruba Configuration

You can review your current licensing status with the **Licensing** link on the **APs/Devices > Monitor** page.

AWMS requires that you have PEF always installed on all Aruba controllers. If you push a policy to a controller without PEF, a **Good** configuration will not result, and the controller will show as **Mismatched** on AWMS pages that reflect device configuration status.

Aruba Configuration includes several settings or functions that are dependent on special licenses. The user interface conveys that a special license is required for any such setting, function, or profile. AWMS does not push such configurations when a license related to those configurations is unavailable.

The following licenses are required for additional functions, profiles, or settings in Aruba Configuration:

- External Services Interface (ESI)
- Indoor Mesh Access Points
- Ortronics Access Points
- Outdoor Mesh Access Points
- Policy Enforcement Firewall
- Remote Access Points
- Voice Service Module
- VPN Server Module
- Wireless Intrusion Protection Module
- xSec Module

Setting Up Initial Aruba Configuration

This section describes how to deploy an initial setup of Aruba Configuration in AWMS 6.3 or later versions.

Prerequisites

- Complete the AWMS 6.4 upgrade from a prior AWMS version. Refer to [“Related Documents” on page 7](#) for installation or upgrade documents. Upon upgrade to AWMS Version 6.3 or later, Aruba Configuration is enabled by default in groups with devices in monitor-only mode and AOS firmware of 3.3.2.10 or greater.
- Back up your ArubaOS controller configuration file. Information about backing AWMS is available in the *AWMS User Guide* in the “Performing Daily Operations in AWMS” chapter.

Procedure

Perform the following steps to deploy Aruba Configuration when at least one Aruba AP Group currently exists on at least one Aruba controller on the network:

1. On the **Groups > Basic** page, enable device preferences for Aruba devices. [Figure 13](#) illustrates this page. This configuration defines optional group display options. This step is not critical to setup, and default settings will support groups appropriate for Aruba Configuration. One important setting on this page is the **Aruba GUI Config** option. Ensure that setting is **Yes**, which is the default setting.

Figure 13 Groups > Basic Page Illustration (Partial Display)

Basic Name: <input type="text" value="New_Group_Blank"/> Missed SNMP Poll Threshold (1-100): <input type="text" value="1"/> Regulatory Domain: <input type="text" value="United States"/> Timezone: <input type="text" value="AMP system time"/> For scheduling group configuration changes Allow One-to-One NAT: <input type="radio"/> Yes <input checked="" type="radio"/> No Audit Configuration on Devices: <input checked="" type="radio"/> Yes <input type="radio"/> No	Cisco IOS/VxWorks SNMP Version: <input type="text" value="2c"/> Cisco IOS CLI Communication: <input checked="" type="radio"/> Telnet <input type="radio"/> SSH Cisco IOS Config File Communication: <input checked="" type="radio"/> TFTP <input type="radio"/> SCP
Global Groups Is Global Group: <input type="radio"/> Yes <input checked="" type="radio"/> No	Cisco WLC SNMP Version: <input type="text" value="2c"/> CLI Communication: <input type="radio"/> Telnet <input checked="" type="radio"/> SSH
SNMP Polling Periods Up/Down Status Polling Period: <input type="text" value="5 minutes"/> Override Polling Period for Other Services: <input type="radio"/> Yes <input checked="" type="radio"/> No User Data Polling Period: <input type="text" value="10 minutes"/> Thin AP Discovery Polling Period: <input type="text" value="15 minutes"/> Device-to-Device Link Polling Period: <input type="text" value="5 minutes"/> Device Bandwidth Polling Period: <input type="text" value="10 minutes"/> 802.11 Counters Polling Period: <input type="text" value="15 minutes"/> Rogue AP and Device Location Data Polling Period: <input type="text" value="30 minutes"/> CDP Neighbor Data Polling Period: <input type="text" value="30 minutes"/>	Proxim/Avaya SNMP Version: <input type="text" value="1"/> Enable DNS Client: <input type="radio"/> Yes <input checked="" type="radio"/> No HTTP Server Port: <input type="text" value="80"/> Country Code: <input type="text" value="United States"/>
Notes Notes: <div style="border: 1px solid #ccc; height: 40px;"></div>	Symbol/Intel SNMP Version: <input type="text" value="2c"/> Symbol/Intel Client Inactivity Timeout (3-600 min): <input type="text" value="3"/> Symbol Controller CLI Communication: W55100 and RF57000 only <input checked="" type="radio"/> Telnet <input type="radio"/> SSH Web Config Interface: <input checked="" type="radio"/> Yes <input type="radio"/> No
Group Display Options Show device settings for: <input type="text" value="Only devices on this AMP"/> Selected Device Types: Alcatel-Lucent, Aruba, Cisco IOS, Cisco WLC, Nomadix, Proxim, Proxim MP.11, Router/Switch, Symbol, Symbol Wireless Switch	Aruba/Alcatel-Lucent SNMP Version: <input type="text" value="2c"/> Offload Aruba/Alcatel-Lucent WMS Database: <input type="radio"/> Yes <input checked="" type="radio"/> No Aruba GUI Config: <input checked="" type="radio"/> Yes <input type="radio"/> No
Spanning Tree Protocol Spanning Tree Protocol: Proxim only <input type="radio"/> Yes <input checked="" type="radio"/> No	Routers and Switches Read ARP Table: <input type="text" value="4 hours"/> Read CDP Table for Device Discovery: <input type="text" value="4 hours"/> Read Bridge Forwarding Table: <input type="text" value="4 hours"/> Interface Polling Period: <input type="text" value="5 minutes"/>
	Universal Devices, Routers and Switches SNMP Version: <input type="text" value="1"/>

2. Authorize Aruba controllers into the AMP Group.



CAUTION

When authorizing the first controller onto a group, you must add the device in monitor-only mode. Otherwise, AWMS removes the configuration of the controller before you have a chance to import the configuration, and this would remove critical network configuration and status.



NOTE

Aruba Configuration is enabled by default in AWMS.

- Navigate to the **APs/Devices > Audit** page for the first controller to prepare for importing an existing Aruba controller configuration file. [Figure 14](#) illustrates this page when all configurations are current. Much additional information is available if the device is mismatched.

Figure 14 APs/Devices > Audit Page Illustration

Device Configuration of **Core1** in group **HQ** in folder **Top**
 This Device is in monitor-only-with-firmware-upgrades mode.
Configuration read from device at 10/6/2009 8:24 PM
Configuration: Good
 Audit the device's current configuration.
[Show entire config](#)
[Refresh this page](#)

There are no mismatches for this device. You can click 'Show entire config' to see the full configuration.

4. Navigate to the **APs/Devices > Manage** page for this device. Import the Aruba controller settings from an Aruba Controller that has already been configured. Click **Import** and AWMS advises you with a confirmation page.

Importing this configuration creates all the Profiles and Aruba AP Groups on the **Device Setup > Aruba Configuration** page. This action also adds and selects the Aruba AP Groups that appear on the **Groups > Aruba Config** page.

The folder for all the Profiles and Aruba AP Groups is set to the top folder of the AWMS user who imports the configuration. This folder is **Top** in the case of managing administrators with read/write privileges.

5. After configuration file import is complete, navigate to the **Device Setup > Aruba Configuration** page.
 - This page displays a list of APs authorized on the AMP that are using the Aruba AP Group.
 - The **User Role** is the Aruba User Role used in firewall settings.
 - The **Folder** column cites the visibility level to devices in each Aruba AP Group. For additional information, refer to [“Visibility in Aruba Configuration” on page 40](#).
6. Add or modify **Aruba AP Groups** as required.
 - a. Navigate to the **Device Setup > Aruba Configuration > Aruba AP Groups** page, illustrated in [Figure 15](#).

Figure 15 *Device Setup > Aruba Configuration > Aruba AP Groups Page*

Limit to Folder: Top

[Add](#) [New Aruba AP Group](#)

1-20 ▼ of 50 Aruba AP Groups Page 1 ▼ of 3 > >| [Edit Columns](#)

	Name ▲	Used By Group	Number of APs	Used By User Role	Folder
<input type="checkbox"/>	10.0.0	-	0	-	Top
<input type="checkbox"/>	office	-	0	-	Top
<input type="checkbox"/>	office-am	-	0	-	Top
<input type="checkbox"/>	beijing	HQ-RemoteAP	0	-	Top
<input type="checkbox"/>	Client40	HQ-RemoteAP	0	-	Top
<input type="checkbox"/>	corp	-	0	-	Top
<input type="checkbox"/>	Corp_AM_Ch1	-	0	-	Top
<input type="checkbox"/>	Corp_AM_Ch6	-	0	-	Top
<input type="checkbox"/>	corpTest	-	0	-	Top
<input type="checkbox"/>	default	Sunnyvale Lab, Cisco Gear, HQ-RemoteAP, Training, Outdoor, and more.	28	-	Top

1-20 ▼ of 50 Aruba AP Groups Page 1 ▼ of 3 > >|

[Select All](#) - [Unselect All](#)

[Delete](#)

- a. Click **Add** from the **Aruba AP Groups** page to create a new Aruba AP Group. To edit an Aruba AP Group, click the pencil icon next to the group. The **Details** page for the Aruba AP Group group appears. This page allows you to select the profiles to apply to the Aruba AP Group, and to select one or more WLANs that support that Aruba AP Group. [Figure 16](#) illustrates this page.

Figure 16 *Device Setup > Aruba Configuration > Aruba AP Groups > Add/Edit Details Page*

General Settings

Folder: Top

Name:

WLANs

WLANs:

Add a new WLAN

Show Only Selected

☐ 1.0.0_ethersphere-voip

☐ 1.0.0_ethersphere-wpa2

☐ 1.0.0_guest

☐ 10.0.0_ethersphere-voip

☐ 10.0.0_ethersphere-wpa2

☐ 11.0.0_ethersphere-voip

☐ 11.0.0_ethersphere-wpa2

☐ 11.0.0_guest

Select All - Unselect All

Referenced Profiles

802.11a Radio Profile: default

802.11g Radio Profile: default

RF Optimization Profile: default

Event Thresholds Profile: default

Wired AP Profile: default

Ethernet Interface 0 Link Profile: default

Ethernet Interface 1 Link Profile: default

AP System Profile: default

Regulatory Domain Profile: default

SNMP Profile: default

VoIP Call Admission Control Profile: default
Requires a Voice Service/Policy Enforcement Firewall license

802.11a Traffic Management Profile: --None--

802.11g Traffic Management Profile: --None--

IDS Profile: default
Requires a Wireless Intrusion Protection license

Mesh Radio Profile: default
Requires an Outdoor Mesh Access Points license

Mesh Cluster Profiles

Add New Mesh Cluster Profile

☐ default

Select All - Unselect All

Delete

Add Cancel

The following section of this configuration guide provide additional information about configuring Aruba AP Groups:

- [“General Aruba AP Groups Procedures and Guidelines” on page 30](#)

7. Add or edit WLANs in Aruba Configuration as required.

- Navigate to **Device Setup > Aruba Configuration > WLANs** page. This page can display all WLANs currently configured, or can display only selected WLANs.
- Click **Add** to create a new WLAN, or click the pencil icon to edit an existing WLAN.

You can add or edit WLANs in one of two ways, as follows:

- **Basic**—This display is essentially the same as the AOS Wizard View on the Aruba controller. This page does not require in-depth knowledge of the profiles that define the Aruba AP Group.
- **Advanced**—This display allows you to select individual profiles that define the WLAN and associated Aruba AP Group. This page requires in-depth knowledge of all profiles and their respective settings.

The following section of this configuration guide provide additional information and illustrations for configuring WLANs:

- [“General WLAN Procedures and Guidelines” on page 32](#)

8. Add or edit Aruba Configuration **Profiles** as required.

- Navigate to **Device Setup > Aruba Configuration > Profiles** section of the navigation pane.
- You must select the type of profile to configure: **AAA**, **AP**, **IDS**, **Mesh**, **QoS**, **RF**, or **SSID**.
- Click **Add** from any of these specific profile pages to create a new profile, or click the pencil icon to edit an existing profile.

Most profiles in AWMS are similar to the **All Profiles** display in the Aruba Controller WebUI. The primary difference in AWMS is that **AAA** and **SSID** profiles are not listed under the **Wireless LAN** column as the controller.

d. Save changes to each element as you proceed through profile and WLAN configuration.

All other settings supported on Aruba controllers can be defined on the **Device Setup > Aruba Configuration** page. The following section in this document provides additional information about configuring profiles:

- [“General Profiles Guidelines” on page 34](#)

9. Provision multiple Aruba AP Groups on one or more controllers by putting the controllers into an AMP group and configuring that group to use the selected Aruba AP Groups. Configure such Aruba AP Groups settings on the **Group > Aruba Config** page. The following section of this document provides additional information:

- [“General Aruba AP Groups Procedures and Guidelines” on page 30](#)

10. As required, add or edit AP devices. The following section of this document has additional information:

- [“Supporting APs with Aruba Configuration” on page 36](#)

11. Each AP can be assigned to a single Aruba AP Group. Make sure to choose an AP Group that has been configured on that controller using that controller's AMP Group. Use the **APs/Devices > List, Modify Devices** field and the **APs/Devices > Manage** page. You can create or edit settings such as the AP name, syslocation, and syscontact on the **APs/Devices > Manage** page. For additional information, refer to [“Supporting APs with Aruba Configuration” on page 36](#).

Figure 17 *APs/Devices > Manage Page Illustration (Partial Display)*

General		Settings	
Name:	ethersphere-lms3	Name:	ethersphere-lms3
Status:	Up (OK)	Location:	Networks
Configuration:	Mismatched (More Details)	Contact:	
Last Contacted:	10/7/2009 11:03 AM	Latitude:	
Type:	Aruba 6000	Longitude:	
Firmware:	3.4.0.2-vowifi	Altitude (m):	
Group:	HQ	Group:	HQ (SSID: aruba-ap)
Folder:	Top	Folder:	Top
Management Mode:	<input checked="" type="radio"/> Monitor Only + Firmware Upgrades <input type="radio"/> Manage Read/Write	Auto Detect Upstream Device:	<input checked="" type="radio"/> Yes <input type="radio"/> No
		Upstream device will automatically be updated when the device is polled.	
		Automatically clear Down Status Message when device comes back up: <input type="radio"/> Yes <input checked="" type="radio"/> No	
		Down Status Message:	
Notes		Network Settings	
		Gateway: 10.254.254.254	
Device Communication		<input type="button" value="Save and Apply"/> <input type="button" value="Revert"/> <input type="button" value="Delete"/>	
If this device is down because its IP address or management ports have changed, update the fields below with the correct information.		<input type="button" value="Ignore"/> <input type="button" value="Import Settings"/> <input type="button" value="Replace Hardware"/>	
IP Address:	10.254.254.254	<input type="button" value="Update Firmware"/>	
SNMP Port:	161		
If this device is down because the credentials on the device have changed, update the fields below with the correct information.			
This device is currently using SNMP version 2c.			
Community String:		
Confirm Community String:		
SNMPv3 Username:			
Auth Password:			
Confirm Auth Password:			
SNMPv3 Auth Protocol:	SHA-1		
Privacy Password:			
Confirm Privacy Password:			
SNMPv3 Privacy Protocol:	DES		
Telnet/SSH Username:	viewonly		

12. Navigate to the **APs/Devices > Audit** page for the controller to view mismatched settings. This page provides links to display additional and current configurations. You can display all mismatched devices by navigating to the **APs/Devices > Mismatched** page.

Figure 18 APs/Devices > Audit Page Illustration (Partial Display)

Device Configuration of **Aruba800** in group **Cisco Gear** in folder **Top**
 This Device is in monitor-only-with-firmware-upgrades mode.
 Configuration read from device at 10/6/2009 8:21 PM

Configuration: Error (Too Many Errors Fetching Existing Configuration)

Audit the device's current configuration.

[Show Archived Device Configuration](#)

Update group settings based on this device's current configuration.
 Choose settings to ignore during configuration audits.

[Show entire config](#)
[View Telnet/SSH Command log](#)

[Refresh this page](#)

Controller Settings		Current Device Configuration	Desired Configuration
Name		Alcatel-Lucent-4308	Aruba800
System Properties			
Contact		Aire	Aire, CA
Syslocation		Sale	Sale, CA
Group Basic Settings			
Offload Aruba/Alcatel-Lucent WMS Database		(not set)	No
Guest User Settings			
Guest user 'subhash' username		(not set)	subhash
Guest user 'subhash' email		(not set)	(empty string)
Guest user 'subhash' enabled		(not set)	true
Guest user 'subhash' expiry		(not set)	never
Guest user 'subhash' status		(not set)	Create

Figure 19 APs/Devices > Mismatched Page Illustration

Folder: **Top (6/88 Mismatched Devices) > Sale HQ (3/74)** [Expand folders to show all APs/Devices](#) Go to folder:
 Sale HQ (3/74)

Total Devices: 3 Users: 132 Avg/Device: 2.81 Bandwidth: 3689 kbps

Users for folder Sale HQ Last 2 hours

[Show All](#) Maximum Average

☒ Max Users 139.6 users 131.6 users

Bandwidth for folder Sale HQ Last 2 hours

[Show All](#) Maximum Average

☒ Avg Bits Per Second In 17.5 Mbps 8.1 Mbps
☒ Avg Bits Per Second Out 8.3 Mbps 4 Mbps

1 year ago

[Modify Devices](#)

1-3 of 3 APs/Devices Page 1 of 1 [Edit Columns](#)

Device	Status	Upstream Device	APs	Users	BW (kbps)	Uptime	Configuration	Aruba AP Group	Group	Controller
AL16	Up	-	-	11	810	11 hrs 9 mins	Mismatched	corp	Ethersphere-lms3	ethersphere-lms3
AL25	Up	-	-	8	101	11 hrs 8 mins	Mismatched	corp	Ethersphere-lms3	ethersphere-lms3
ethersphere-lms4	Up	-	1	0	0	11 hrs 14 mins	Mismatched	-	Aruba HQ	-

1-3 of 3 APs/Devices Page 1 of 1

Location	Remote AP	SSID	First Radio	Ch	Second Radio	Ch	Type
Sale > HQ	No	-	802.11bgn	1	802.11an	36	Aruba AP 125
Sale > HQ	No	-	802.11bgn	6	802.11an	48	Aruba AP 125
-	-	-	-	-	-	-	Aruba 5000

Version	Firmware Status	IP Address	LAN MAC Address	Radio MAC Address
3.4.0.2-vowifi	-	10.6.1.228	00:1A:1E:00:1A:1E	00:1A:1E:00:1A:1E
3.4.0.2-vowifi	-	10.6.1.240	00:1A:1E:00:1A:1E	00:1A:1E:00:1A:1E
3.4.0.2-vowifi	-	10.6.2.253	00:08:86:00:08:86	-

Folder APs/Devices

HQ Cisco LWAPP	4
HQ-RAP	42
Lab	14
Demo RAP	11

4 Folders

[Add New Folder](#)

What Next?

After initial AOS deployment with the Aruba Configuration feature, you can make many additional configurations or continue with maintenance tasks, such as with the following examples:

- Once Aruba Configuration is deployed in AWMS, you can perform debugging with Telnet/SSH. Review the `telnet_cmds` file in the `/var/log` folder from the command line interface, or access this file from the **System > Status** page. Such configurations are supported on the **Groups > Basic** and **Device Setup > Communications** pages of AWMS. Refer to the *AWMS User Guide* for additional information.
- To resolve communication issues, review the credentials on the **AP Manage** page.
- Mismatches can occur when importing profiles because AWMS deletes orphaned profiles, even if following a new import. To display and resolve mismatched devices, refer to [“Pushing Device Configurations to Controllers” on page 35](#).
- Use the **Groups > Templates** page to configure Aruba controllers that use 2.x firmware.

Additional Capabilities of Aruba Configuration

AWMS supports many additional AOS configurations and settings. Refer to these additional resources for more information:

- *AOS User Guide*
- *AWMS User Guide*
- *AirWave and Aruba Best Practices Guide*

Introduction

This chapter presents the more common tasks or concepts after initial setup of Aruba Configuration is complete, as described in the section “[Setting Up Initial Aruba Configuration](#)” on page 22. This chapter emphasizes frequent procedures as follows:

General Aruba AP Groups Procedures and Guidelines

- Guidelines and Pages for Aruba AP Groups in Aruba Configuration
- Selecting Aruba Controller Groups
- Configuring Aruba AP Groups
- Retaining Unreferenced Aruba Configuration Profiles

General WLAN Procedures and Guidelines

- Guidelines and Pages for WLANs in Aruba Configuration
- Configuring or Editing WLANs with Basic View
- Configuring or Editing WLANs with Advanced View

General Controller Procedures and Guidelines

- Using Master, Standby Master, and Local Controllers in Aruba Configuration
- Pushing Device Configurations to Controllers

Supporting APs with Aruba Configuration

- AP Overrides Guidelines
- Configuring or Editing AP Overrides
- Changing the Aruba AP Group for an AP Device
- Changing Adaptive Radio Management (ARM) Settings
- Changing SSID and Encryption Settings

Visibility in Aruba Configuration

- Visibility Overview
- Defining Visibility for Aruba Configuration

Using AWMS to Deploy Aruba APs for the First Time

General Aruba AP Groups Procedures and Guidelines

Guidelines and Pages for Aruba AP Groups in Aruba Configuration

The following **guidelines** govern the configuration and use of Aruba AP Groups across AWMS:

- Aruba AP Groups function with standard AWMS groups that contain them. Add Aruba AP Groups to standard AWMS groups. Additional procedures in this document explain their interoperability.
- APs can belong to a controller's AWMS group or to an AWMS group by themselves.
- All configurations of Aruba AP Groups must be pushed to Aruba controllers to become active on the network.
- Additional dynamics between master, standby master, and local controllers still apply. In this case, refer to “Using Master, Standby Master, and Local Controllers in Aruba Configuration” on page 35.

The following **pages** in AWMS govern the configuration and use of Aruba AP Groups or standard device groups across AWMS:

- The **Device Setup > Aruba Configuration** navigation pane displays standard AOS components and your custom-configured Aruba AP Groups, WLANs, and AP Overrides.
- You define or modify Aruba AP Groups on the **Device Setup > Aruba Configuration** page. Click **Aruba AP Groups** from the navigation pane.
- You select Aruba AP Groups to associate with AMP (AWMS) Groups with the **Groups > Aruba Config** page.
- You modify devices in Aruba AP Groups with the **APs/Devices > List** page, clicking **Modify These Devices**. This is the page at which you assign devices to a given group and Aruba AP Group.

Selecting Aruba Controller Groups

To select Aruba AP Groups, navigate to the **Device Setup > Aruba AP Groups** page. This page is central to defining Aruba AP Groups, to viewing the AMP groups with which an Aruba AP Group is associated, changing or deleting Aruba AP Groups, and assigning AP devices to an Aruba AP Group.

Configuring Aruba AP Groups

Perform the following steps to display, add, edit, or delete Aruba AP Groups in **Aruba Configuration**.

1. Browse to the **Device Setup > Aruba Configuration** page, and click the **AP Groups** heading in the navigation pane on the left. The **Groups Summary** page appears and displays all current Aruba AP Groups.

Figure 20 *Device Setup > Aruba Configuration > AP Groups Page Illustration*

Limit to Folder: Top

Add New Aruba AP Group

1-20 of 50 Aruba AP Groups Page 1 of 3 > > | Edit Columns

	Name	Used By Group	Number of APs	Used By User Role	Folder
<input type="checkbox"/>	10.0.0	-	0	-	Top
<input type="checkbox"/>	office	-	0	-	Top
<input type="checkbox"/>	office-am	-	0	-	Top
<input type="checkbox"/>	beijing	HQ-RemoteAP	0	-	Top
<input type="checkbox"/>	Client40	HQ-RemoteAP	0	-	Top
<input type="checkbox"/>	corp	-	0	-	Top
<input type="checkbox"/>	Corp_AM_Ch1	-	0	-	Top
<input type="checkbox"/>	Corp_AM_Ch6	-	0	-	Top
<input type="checkbox"/>	corpTest	-	0	-	Top
<input type="checkbox"/>	default	Sunnyvale Lab, Cisco Gear, HQ-RemoteAP, Training, Outdoor, and more.	28	-	Top

1-20 of 50 Aruba AP Groups Page 1 of 3 > > |

Select All - Unselect All

Delete

2. To add a new group, click the **Add AP Group** button.

To edit an existing group, click the **pencil** icon next to the group name.

The **Group Details** page appears with current or default configurations. [Figure 21](#) illustrates the **Details** page for a new group to be defined.

Figure 21 *Device Setup > Aruba Configuration > Add/Edit Group Details Page Illustration*

Adding: **Aruba AP Group**

General Settings

Folder: Top
Name:

WLANs

WLANs:

[Add a new WLAN](#)
[Show Only Selected](#)

- ☐ 1.0.0_ethersphere-voip
- ☐ 1.0.0_ethersphere-wpa2
- ☐ 1.0.0_guest
- ☐ 10.0.0_ethersphere-voip
- ☐ 10.0.0_ethersphere-wpa2
- ☐ 11.0.0_ethersphere-voip
- ☐ 11.0.0_ethersphere-wpa2
- ☐ 11.0.0_guest

[Select All - Unselect All](#)

Referred Profiles

802.11a Radio Profile:	default		
802.11g Radio Profile:	default		
RF Optimization Profile:	default		
Event Thresholds Profile:	default		
Wired AP Profile:	default		
Ethernet Interface 0 Link Profile:	default		
Ethernet Interface 1 Link Profile:	default		
AP System Profile:	default		
Regulatory Domain Profile:	default		
SNMP Profile:	default		
VoIP Call Admission Control Profile: <small>Requires a Voice Service/Policy Enforcement Firewall license</small>	default		
802.11a Traffic Management Profile:	--None--		
802.11g Traffic Management Profile:	--None--		
IDS Profile: <small>Requires a Wireless Intrusion Protection license</small>	default		
Mesh Radio Profile: <small>Requires an Outdoor Mesh Access Points license</small>	default		

Mesh Cluster Profiles

[Add](#) New Mesh Cluster Profile

Mesh Cluster Profile	
<input type="checkbox"/>	default

[Select All - Unselect All](#)

[Delete](#)

[Add](#) [Cancel](#)

3. Click **Add** or **Save** to finish creating or editing the Aruba AP Group. Click **Cancel** to back out of this screen and to cancel the AP Group configurations.
4. New AP groups appear in the **AP Groups** section of the Aruba Configuration navigation pane, and clicking the group name takes you to the **Details** page for that group.
5. When this and other procedures are completed, push the configuration to the Aruba controllers by clicking **Save and Apply**. The principles of Monitor and Manage mode still apply. For additional information, refer to “[Pushing Device Configurations to Controllers](#)” on page 35.

What Next?

Once Aruba AP groups are defined, ensure that all desired WLANs are referenced in Aruba AP Groups, as required. Repeat the above procedure to revise WLANs as required. You can add or edit AP devices in Aruba AP Groups, and you can configure AP Override settings that allow for custom AP configuration within the larger group in which it operates.

Retaining Unreferenced Aruba Configuration Profiles

AWMS supports the ability to retain Aruba Configuration profiles even when they are not used. Perform these steps to define the retention of unused Aruba Configuration profiles.

1. Navigate to the **AMP Setup > General** page.
2. Locate the **Configuration Options** section and adjust settings as required. The settings in this field configure whether certain changes can be pushed to devices in monitor-only mode.
3. In the **Configuration Options** section, adjust the setting for the **Keep Unreferenced Aruba Configuration** field as required.

This setting allows AWMS to retain unused ArubaOS configuration profiles pertaining to Aruba Configuration. With Aruba Configuration, you can define profiles on an Aruba controller but it is not necessary to reference them from a virtual AP configuration or other component of Aruba Configuration. Normally AWMS deletes unreferenced profiles, but this setting retains them when enabled with **Yes**.

4. Click **Save** to retain this setting.

General WLAN Procedures and Guidelines

Guidelines and Pages for WLANs in Aruba Configuration

- The **Device Setup > Aruba Configuration** navigation pane displays custom-configured WLANs and Aruba AP Groups. You define or modify WLANs on the **Device Setup > Aruba Configuration** page. Click **WLANs** from the navigation pane.
- You can create or edit any profile in an WLAN as you define or modify that WLAN. If you digress to profile setup from a different page, AWMS returns you to your place on the **WLAN** setup page once you are done with profile setup.
- All configurations must be pushed to Aruba controllers to become active on the network.

Configuring or Editing WLANs with Basic View

Perform the following steps to create or configure a basic WLAN in Aruba Configuration.

1. Navigate to the **Aruba Configuration > WLANs** page. This page displays currently configured WLANs. [Figure 22](#) illustrates this page.

Figure 22 *Device Setup > Aruba Configuration > WLANs Page Illustration*

Limit to Folder: [Top](#)

Aruba AP Groups

AP Overrides

WLANs

Profiles

Security

Advanced Services

Add

New WLAN

1-20 ▼ of 49 WLANs

Page 1 ▼ of 3

> >|

Edit Columns

		Name ▲	SSID	Aruba AP Group	Used By	Traffic Management	Folder
<input type="checkbox"/>		1.0.0_ethersphere-voip	ethersphere-voip	corpTest, corp, voip-test	-	-	Top
<input type="checkbox"/>		1.0.0_ethersphere-wpa2	ethersphere-wpa2	corpTest, voip-test-nokia, corp, voip-test	-	-	Top
<input type="checkbox"/>		1.0.0_guest	guest	corpTest, voip-test-nokia, corp, voip-test	-	-	Top
<input checked="" type="checkbox"/>		ethersphere-vocera	ethersphere-vocera	-	-	-	Top
<input checked="" type="checkbox"/>		office	office	-	-	-	Top
<input type="checkbox"/>		office-ethersphere-voip	ethersphere-voip	aire-office	-	-	Top
<input type="checkbox"/>		office-ethersphere-wpa2	ethersphere-wpa2	aire-office	-	-	Top
<input type="checkbox"/>		office-guest	guest	aire-office	-	-	Top

1-20 ▼ of 49 WLANs

Page 1 ▼ of 3

> >|

[Select All](#) - [Unselect All](#)

Delete

2. To add a new WLAN, click the **Add WLAN** button. To edit an existing WLAN, click the **pencil** icon next to the WLAN name. Select **Basic** to define or modify the settings. Otherwise, refer to the “[Configuring or Editing WLANs with Advanced View](#)” on page 33 for additional information. [Figure 26](#) illustrates the **Basic** view.

Figure 23 *Device Setup > WLANs > Add > Basic Page Illustration*

3. Click **Add** or **Save**. The added or edited WLAN appears on the **WLANs** page. You can now use this WLAN with one or more Aruba AP Groups.
4. Repeat this procedure or continue to additional procedures to complete WLAN, Profile, Aruba AP Group or other configurations.
5. Push the newly added or edited WLAN to the desired Aruba Controllers. Refer to “[Pushing Device Configurations to Controllers](#)” on page 35.

Configuring or Editing WLANs with Advanced View

1. Navigate to the **Aruba Configuration > WLANs** page. This page displays currently configured WLANs. [Figure 22](#) illustrates this page.
2. To add a new WLAN, click the **Add WLAN** button. To edit an existing WLAN, click the **pencil** icon next to the WLAN name. Select **Advanced** to define or modify the settings that pertain to advanced WLAN configuration. [Figure 24](#) illustrates the **Advanced** view.

Figure 24 *Device Setup > Aruba Configuration > WLANs > Add > Advanced Page Illustration*

General Settings		Other Settings	
Folder:	Top	Virtual AP Enable:	<input checked="" type="radio"/> Yes <input type="radio"/> No
Name:		Allowed Band:	all
Referenced Profiles		VLAN:	
SSID Profile:	default	Forward Mode:	tunnel
AAA Profile:	default	Deny Time Range:	--None--
802.11k Profile:	default	Mobile IP:	<input checked="" type="radio"/> Yes <input type="radio"/> No
Requires a minimum version of 3.4.0.0		HA Discovery On Association:	<input type="radio"/> Yes <input checked="" type="radio"/> No
WMM Traffic Management Profile:	--None--	DoS Prevention:	<input type="radio"/> Yes <input checked="" type="radio"/> No
Requires a minimum version of 3.4.1.0		Station Blacklisting:	<input checked="" type="radio"/> Yes <input type="radio"/> No
		Blacklist Time (sec):	3600
		Authentication Failure Blacklist Time (sec):	3600
		Fast Roaming:	<input type="radio"/> Yes <input checked="" type="radio"/> No
		Strict Compliance:	<input type="radio"/> Yes <input checked="" type="radio"/> No
		VLAN Mobility:	<input type="radio"/> Yes <input checked="" type="radio"/> No
		Remote AP Operation:	standard
		Requires a Remote Access Points license	
		Drop Broadcast And Multicast:	<input type="radio"/> Yes <input checked="" type="radio"/> No
		Convert Broadcast ARP Requests To Unicast:	<input type="radio"/> Yes <input checked="" type="radio"/> No
		Band Steering:	<input type="radio"/> Yes <input checked="" type="radio"/> No
		Dynamic Multicast Optimization (DMO):	<input type="radio"/> Yes <input checked="" type="radio"/> No
		Requires a Policy Enforcement Firewall license and a minimum version of 3.4.1.0	
		Dynamic Multicast Optimization (DMO) Threshold (2-255):	6
		Requires a Policy Enforcement Firewall license and a minimum version of 3.4.1.0	

3. Click **Add** or **Save**. The added or edited WLAN appears on the **WLANs** page. You can now use this WLAN with one or more Aruba AP Groups.
4. Repeat this procedure or continue to additional procedures to complete WLAN, Profile, Aruba AP Group or other configurations.
5. Push the newly added or edited WLAN to the desired Aruba Controllers. For additional information, refer to [“Pushing Device Configurations to Controllers”](#) on page 35.

General Profiles Guidelines

AOS elements can be added or edited after an AOS configuration file is imported to AWMS and pushed to controllers with the steps described in [“Setting Up Initial Aruba Configuration”](#) on page 22.

Profiles in Aruba configuration entail the following concepts or dynamics:

- Profiles define nearly all parameters for Aruba AP Groups and WLANs, and Aruba Configuration supports many diverse profile types.
- Some profiles provide the configurations for additional profiles that reference them. When this is the case, this document describes the interrelationship of such profiles to each other.
- Profiles can be configured in standalone fashion using the procedures in this chapter, then applied elsewhere as desired. Otherwise, you can define referenced profiles as you progress through Aruba AP Group or WLAN setup. In the latter case, AWMS takes you to profile setup on separate pages, then returns you to your place in Aruba AP Group or WLAN setup.

General Controller Procedures and Guidelines

Using Master, Standby Master, and Local Controllers in Aruba Configuration

AWMS implements the following general approaches in relation to controllers.

- **Master Controller**—This controller maintains and pushes all global configurations. AWMS pushes configurations only to a master controller.
- **Standby Controller**—The master controller synchronizes with the standby master controller, which remains ready to govern global configurations for all controllers should the active master controller fail.
- **Local Controller**—Master controllers push local configurations to local controllers. Local controllers retain settings such as the interfaces and global VLANs.

AWMS is aware of differences in what is pushed to master controllers and local controllers, and automatically pushes all configurations to the appropriate controllers. Thin AP provisioning is pushed to the controller to which a thin AP is connected.

You can determine additional details about what is specific to each controller by reviewing information on the **Groups > Aruba Config** page, and the **Groups > Monitor** page for any specific AP that lists its master and standby master controller.

Pushing Device Configurations to Controllers

When you add or edit device configurations, you can push device configurations to controllers as follows:

- Make device changes on the **Device Setup > Aruba Configuration** page and click **Save and Apply**.
- Make devices changes on the **Groups > Aruba Config** page and click **Save and Apply**.

A device must be in **Manage** mode to push configurations in this way.



If you click **Save and Apply** when a device is in **Monitor** mode, this initiates a verification process in which AWMS advises you of the latest mismatches. Mismatches are viewable from the **APs/Devices > Mismatched** page. Additional **Audit** and **Group** pages list mismatched status for devices.

Normally, devices are in **Monitor** mode. It may be advisable in some circumstances to accumulate several configuration changes in **Monitor** mode prior to pushing an entire set of changes to controllers. Follow these general steps when implementing configuration changes for devices in **Monitor** mode:

1. Make all device changes using the **Device Setup > Aruba Configuration** page and the **Groups > Aruba Config** page. Click **Save and Apply** as you complete device-level changes. This builds an inventory of pending configuration changes that have not been pushed to the controller and APs.
2. Review the entire set of newly mismatched devices on the **APs/Devices > Mismatched** page.
3. For each mismatched device, navigate to the **APs/Devices > Audit** page to audit recent configuration changes as desired.
4. Once all mismatched device configurations are verified to be correct from the **APs/Devices > Audit** page, use the **Modify Devices** link on the **Groups > Monitor** page to place these devices into **Management** mode. This instructs AWMS to push the device configurations to the controller.
5. As desired, return devices to **Monitor** mode until the next set of configuration changes is ready to push to controllers.

Supporting APs with Aruba Configuration

AP Overrides Guidelines

The **AP Override** component of Aruba Configuration appears in the navigation pane of the **Device Setup > Aruba Configuration** page. This component operates with the following principles:

- AP devices function within groups that define operational parameters for groups of APs. This is standard across all of AWMS.
- **AP Overrides** allows you to change some parameters of any given AP without having to remove that AP from the configuration group in which it operates.
- The name of any **AP Override** that you create should be the same as the name of the AP device to which it applies. This establishes the basis of all linking to that AP device.
- Once you have created an **AP Override**, you select the **WLANs** in which it applies.
- Once you have created the AP Override, you can go one step further with the **Exclude WLANs** option of **AP Override**, which allows you to exclude certain SSIDs from the **AP override**. For example, if you have a set of WLANs with several SSIDs available, the **Exclude WLANs** option allows you to specify which SSIDs to exclude from the **AP Override**.
- You can also exclude mesh clusters from the **AP Override**.

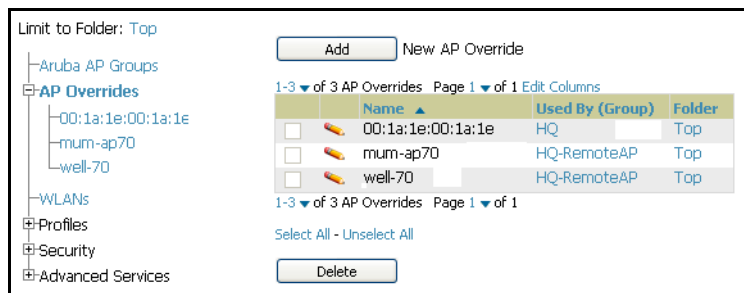
In summary, the **AP Override** feature prevents you from having to create a new AP group for customized APs that otherwise share parameters with other APs in a group. **AP Override** allows you to have less total AP groups than you might otherwise require.

Configuring or Editing AP Overrides

Perform the following steps to create or edit AP Overrides.

1. Navigate to the **Aruba Configuration > AP Overrides** page. This page displays currently configured AP overrides. [Figure 25](#) illustrates this page.

Figure 25 *Device Setup > Aruba Configuration > AP Overrides Page Illustration*



2. To add a new AP Override, click the **Add New AP Override** button.

To edit an existing AP Override, click the **pencil icon** next to the **AP Override** name.

The details page appears. [Figure 26](#) illustrates the **AP Overrides** detail view.

Figure 26 AP Overrides Add or Edit Page Illustration (Non-scrolling View)

Adding: **AP Override**

General Settings

Folder: Top

Name:

WLANs

WLANs:

Add a new WLAN
Show Only Selected

☐ 1.0.0_ethersphere-voip
☐ 1.0.0_ethersphere-wpa2
☐ 1.0.0_guest
☐ 10.0.0_ethersphere-voip
☐ 10.0.0_ethersphere-wpa2

Excluded WLANs

Excluded WLANs:

Show Only Selected

☐ 1.0.0_ethersphere-voip
☐ 1.0.0_ethersphere-wpa2
☐ 1.0.0_guest
☐ 10.0.0_ethersphere-voip
☐ 10.0.0_ethersphere-wpa2
☐ 11.0.0_ethersphere-voip
☐ 11.0.0_ethersphere-wpa2

Referenced Profiles

802.11a Radio Profile: --Inherit--
802.11g Radio Profile: --Inherit--
RF Optimization Profile: --Inherit--
Event Thresholds Profile: --Inherit--
Wired AP Profile: --Inherit--
Ethernet Interface 0 Link Profile: --Inherit--
Ethernet Interface 1 Link Profile: --Inherit--
AP System Profile: --Inherit--
Regulatory Domain Profile: --Inherit--
SNMP Profile: --Inherit--
VoIP Call Admission Control Profile: --Inherit--
Requires a Voice Service/Policy Enforcement Firewall license
802.11a Traffic Management Profile: --Inherit--
802.11g Traffic Management Profile: --Inherit--
IDS Profile: --Inherit--
Requires a Wireless Intrusion Protection license
Mesh Radio Profile: --Inherit--
Requires an Outdoor Mesh Access Points license

Mesh Cluster Profiles

Add New Mesh Cluster Profile

Excluded Mesh Cluster Profiles

Excluded Mesh Cluster Profiles:

Show Only Selected

☐ default
☐ mguo

Select All - Unselect All

- Click **Add** or **Save**. The added or edited **AP Override** appears on the **AP Overrides** page.
- Push the newly added or edited AP Override configuration to the desired Aruba Controllers. Refer to [“Pushing Device Configurations to Controllers”](#) on page 35.
- Repeat this procedure or continue to additional procedures to complete WLAN, Profile, Aruba AP Group or other configurations.

Changing Adaptive Radio Management (ARM) Settings

You can adjust ARM settings for the radios of a particular Aruba AP Group. To do so, refer to the following topic that describe ARM in relation to Aruba AP groups and device-level radio settings:

- [“Configuring Aruba AP Groups”](#) on page 30

Changing SSID and Encryption Settings

You can adjust SSID and Encryption parameters for devices by adjusting the profiles that define these settings, then applying those profiles to Aruba AP Groups and WLANs that support them. To do so, refer to the following topics that describe relevant steps and configuration pages:

- [“Configuring Aruba AP Groups”](#) on page 30
- [“Guidelines and Pages for WLANs in Aruba Configuration”](#) on page 32

Changing the Aruba AP Group for an AP Device

You can change the Aruba AP Group to which an AP device is associated. Perform the following steps to change the Aruba AP Group for an AP device:

1. As required, review the Aruba AP Groups currently configured in AWMS. Navigate to the **Device Setup > Aruba Configuration** page, and click **Aruba AP Groups** from the navigation pane. This page displays and allows editing for all Aruba AP Groups that are currently configured in AWMS.
2. Navigate to the **APs/Devices > List** page to view all devices currently seen by AWMS.
3. If necessary, add the device to AWMS using the **APs/Devices > New** page.
To discover additional devices, ensure that the controller is set to perform a thin AP poll period.
4. On the **APs/Devices > List** page, you can specify the **Group** and **Folder** to which a device belongs. Click **Modify Devices** to change more than one device, or click the **Wrench** icon associated with any specific device to make changes. The **APs/Devices > Manage** page appears.
5. In the **Settings** section of the **APs/Devices > Manage** page, select the new Aruba AP Group to assign to the device. Change or adjust any additional settings as desired.
6. Click **Save and Apply** to retain these settings and to propagate them throughout AWMS, or click one of the alternate buttons as follows for an alternative change:
 - Click **Revert** to cancel out of all changes on this page.
 - Click **Delete** to remove this device from AWMS.
 - Click **Ignore** to keep the device in AWMS but to ignore it.
 - Click **Import Settings** to define device settings from previously created configurations.
 - Click **Replace Hardware** to replace the AP device with a new AP device.
 - Click **Update Firmware** to update the Firmware that operates this device.
7. Push this configuration change to the AP controller that is to support this AP device. For additional information, refer to [“Pushing Device Configurations to Controllers” on page 35](#).

Using AWMS to Deploy Aruba APs for the First Time

In addition to migrating Aruba access points (APs) from AOS-oriented administration to AWMS administration, you can use AWMS to deploy Aruba APs for the first time without separate AOS configuration. Be aware of the following dynamics in this scenario:

- AWMS can manage all wireless network management functions, to include:
 - the first-time provisioning of Aruba APs
 - managing Aruba controllers with AWMS
- In this scenario, when a new Aruba AP boots up, AWMS may discover the AP before you have a chance to configure and launch it through AOS configuration on the Aruba controller. In this case, the AP appears in AWMS with a device name based on the MAC address.
- When you provision the AP through the Aruba controller and then rename the AP, the new AP name is not updated in AWMS.

One possible workaround to update an Aruba AP device name in AWMS would be as follows, and this is not the most efficient approach:

1. Configure and deploy the AP from AOS (separate from AWMS).
2. Delete the AP from AWMS.
3. Have AWMS rediscover the device.

A more efficient and robust approach is to deploy Aruba APs in AWMS with the following steps:

1. Define communication settings for Aruba APs pending discovery. Use the **Device Setup > Communication** page. This assigns communication settings to multiple devices at the time of discovery, and prevents having to define such settings manually for each device after discovery.
2. Add or discover new Aruba APs with AWMS. You can do so with the following pages:

- **Device Setup > Add**
- **Device Setup > Discover**

3. Click **New Devices** In the **Status** section at the top of any AWMS page, or navigate to the **APs/Devices > New** page, illustrated in [Figure 27](#).

Figure 27 APs/ Devices > New Page Illustration

To discover more devices, visit the [Discover](#) page.

1-20 ▼ of 174 APs/Devices Page 1 ▼ of 9 > >| Edit Columns

Device	Controller	Type	IP Address	LAN MAC Address	Discovered ▼
<input type="checkbox"/> ap70	RAP-Local	Aruba AP 70	10.240.194.194	00:08:86:C7:86:C7	10/5/2009 4:06 AM
<input type="checkbox"/> 00:0b:86:00:0b:86	RAP-OPS-02	Aruba RAP-2WG	10.230.207.207	00:08:86:C3:C3:60	10/4/2009 8:49 PM
<input type="checkbox"/> ap65-1	RAP-Local	Aruba AP 65	10.240.14.14	00:08:86:CD:86:C7	10/4/2009 6:20 PM
<input type="checkbox"/> rap5	apollo	Aruba RAP-5WN	10.69.140.140	00:08:86:66:C3:60	10/4/2009 4:21 PM
<input type="checkbox"/> ap65-2	RAP-Local	Aruba AP 65	10.240.42.42	00:1A:1E:C1:86:C7	10/3/2009 8:31 AM
<input type="checkbox"/> ap65-3	RAP-Local	Aruba AP 65	10.240.249.249	00:08:86:CC:C3:60	10/2/2009 10:45 PM
<input type="checkbox"/> rap2	apollo	Aruba RAP-2WG	10.69.149.149	00:08:86:C3:86:C7	10/2/2009 3:18 PM
<input type="checkbox"/> zest	apollo	Aruba RAP-5	10.69.74.74	00:08:86:66:C3:60	10/2/2009 3:03 PM
<input type="checkbox"/> RAP2WG	RAP-OPS-02	Aruba RAP-2WG	10.230.224.224	00:08:86:C3:86:C7	10/2/2009 2:48 PM
<input type="checkbox"/> rap5	apollo	Aruba RAP-5WN	10.69.167.167	00:08:86:66:C3:60	10/2/2009 11:48 AM
<input type="checkbox"/> ap70	RAP-Local	Aruba AP 70	10.240.94.94	00:08:86:CE:86:C7	10/2/2009 10:59 AM
<input type="checkbox"/> 00:0b:86:00:0b:86	RAP-OPS-02	Aruba RAP-2WG	10.230.207.207	00:08:86:C3:C3:60	10/2/2009 6:18 AM
<input type="checkbox"/> ap70	RAP-Local	Aruba AP 70	10.240.154.154	00:08:86:CE:86:C7	10/1/2009 10:27 PM
<input type="checkbox"/> 00:0b:86:00:0b:86	RAP-OPS-02	Aruba RAP-2WG	10.230.207.207	00:08:86:C3:C3:60	10/1/2009 4:17 PM

1-20 ▼ of 174 APs/Devices Page 1 ▼ of 9 > >|

Select All - Unselect All
View Ignored Devices

Group:
Folder:

☒ Monitor Only + Firmware Upgrades
☐ Manage Read/Write

4. Select (check) the box next to any AP you want to provision.
5. Rename all new APs. Type in the new device name in the **Device** column.
6. Scroll the bottom of the page and put APs in the appropriate AWMS group and folder. Set the devices to **Manage Read/Write** mode.
7. Click **Add**. Wait approximately five to 10 minutes. You can observe that the APs have been renamed not only in AMP but also on the Aruba controller with the **show ap database** AOS command.
8. To set the appropriate Aruba AP Group, select the **AP/Devices** or **Groups** page and locate your APs.
9. Click **Modify Devices** under the **User** and **Bandwidth** flash graphics.
10. Select the APs you want to re-group.
11. In the field that states **Move to Aruba AP Group**, below the list of the APs, select the appropriate group, and click **Move**.



If the list of Aruba AP Groups are not there, ensure you either create these Aruba AP groups manually on the **Device Setup > Aruba Configuration** page, wherein you merely need the device names and not the settings, or import the configuration from one of your controllers to learn the groups.

12. Wait another five to 10 minutes to observe the changes on AMP. The changes should be observable within one or two minutes on the controller.

Using General AWMS Device Groups and Folders

AWMS only allows any given AP to belong to one AWMS device group at a time. Supporting one AP in two or more AWMS device groups would create at least two possible issues, to include the following:

- Data collection for such an AP device would have two or more sources and two or more related processes.

- A multi-group AP would be counted several times and that would change the value calculations for AWMS graphs.

As a result, some users may wish to evaluate how they deploy the group or folder for any given AP.



Aruba APs can also belong to Aruba AP Groups, but each AP is still limited to one general AWMS device group.

You can organize and manage any group of APs by type and by location. Use groups and folders with either of the following two approaches:

- Organize AP device groups by device type, and device folders by device location.
In this setup, similar devices are in the same device group, and operate from a similar configuration or template. Once this is established, create and maintain device folders by location.
- Organize AP device groups by location, and device folders by type.
In this setup, you can organize all devices according to location in the device groups, but for viewing, you organize the device hierarchy by folders and type.

Be aware of the following additional factors:

- Configuration audits are done at the AWMS group level.
- AWMS folders support multiple sublevels.
- Therefore, unless there is a compelling reason to use the folders-by-device-type approach, AirWave generally recommends the first approach where you use groups for AP type and folders strictly for AP location.

Visibility in Aruba Configuration

Visibility Overview

Aruba Configuration supports device configuration and user information in the following ways;

- user roles
- AP/Device access level
- folders.

These and additional factors for visibility are as follows:

- Administrative and Management users in AWMS can view the **Device Setup > Aruba Configuration** page and the **APs/Devices > Aruba Config** pages.
 - Administrative users are enabled to view all configurations.
 - Management users have access to all profiles and Aruba AP groups for their respective folders.
- The **Device Setup > Aruba Configuration** page has a limit to folder drop-down options for customers that manage different accounts and different types of users.
- Aruba Configuration entails specific user role and security profiles that define some components of visibility.
- AWMS continues to support the standard operation of folders, users, and user roles as described in the *AWMS User Guide*.

Defining Visibility for Aruba Configuration

Perform these steps to define or adjust visibility for users to manage and support Aruba Configuration:

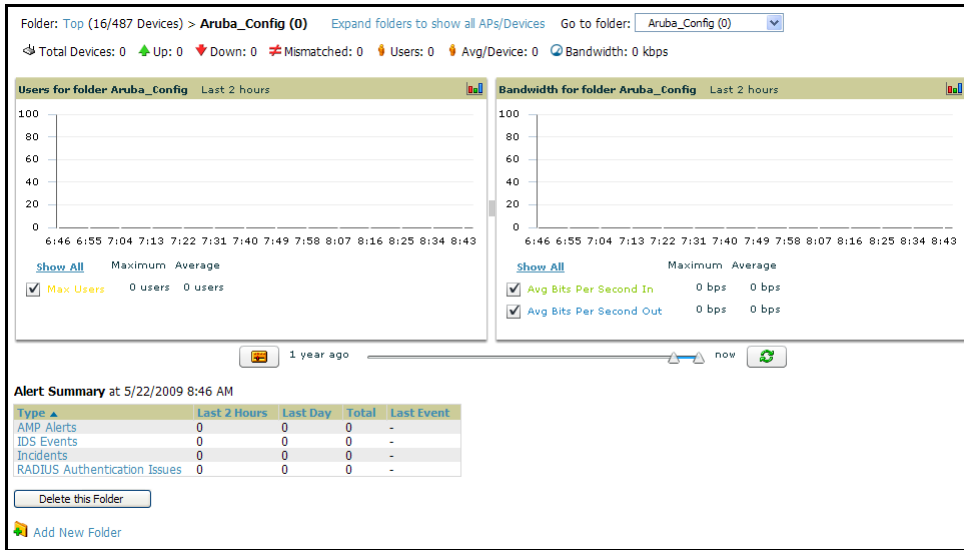
1. As required, create a new AWMS device folder with management access.

- a. Navigate to the **APs/Device > List** page, scroll to the bottom of the page. (An alternate page supporting new folders is **Users > Connected** page).
- b. Click the **Add New Folder** link. The **Folder** detail page appears, as illustrated in [Figure 28](#):

Figure 28 *APs/Devices > Add New Folder > Folders Page Illustration*

- c. Click **Add**. The **APs/Devices > List** page reappears. You can view your new folder by selecting it from the **Go to folder** drop-down list at the top right of this page. [Figure 29](#) illustrates an unpopulated device page for an example folder.

Figure 29 *APs/Devices > List Page With No Devices*



2. Add Aruba controller devices to that folder as required. Use the **Device Setup > Add** page following instructions available in the *AWMS User Guide*.
3. As required, create or edit a user role that is to have rights and manage privileges required to support their function in Aruba Configuration.
 - a. At least one user must have administrative privileges, but several additional users may be required, with less rights and visibility, to support Aruba Configuration without access to the most sensitive information, such as SSIDs or other security related data.
 - b. Navigate to the **AMP Setup > Roles** page, and click **Add New Role** to create a new role with appropriate rights, or click the **pencil** (manage) icon next to an existing role to adjust rights as required. The Role page appears, illustrated in [Figure 30](#).

Figure 30 AMP Setup > Roles > Add/Edit Role Page Illustration

The screenshot shows the 'Role' configuration page. The fields and their values are as follows:

Field	Value
Name	
Enabled	<input checked="" type="radio"/> Yes <input type="radio"/> No
Type	AP/Device Manager
AP/Device Access Level	Monitor (Read Only)
Top Folder	Top
RAPIDS	None
VisualRF	Read Only
Helpdesk	<input type="radio"/> Yes <input checked="" type="radio"/> No

Buttons: Add, Cancel

- c. As per standard AWMS configuration, complete the settings on this page. The most important fields with regard to Aruba Configuration, device visibility and user rights are as follows:
 - **Type**—Specify the type of user. Important consideration should be given to whether the user is an administrative user with universal access, or an AP/Device manager to specialize in device administration, or additional users with differing rights and access.
 - **AP/Device Access Level**—Define the access level that this user is to have in support of Aruba controllers, devices, and general Aruba Configuration operations.
 - **Top Folder**—Specify the folder created earlier in this procedure, or specify the Top folder for an administrative user.
- d. Click **Add** to complete the role creation, or click **Save** to retain changes to an existing role. The **AMP > Setup** page now displays the new or revised role.
4. As required, add or edit one or more users to manage and support Aruba Configuration. This step creates or edits users to have rights appropriate to Aruba Configuration. This user inherits visibility to Aruba controllers and Aruba Configuration data based on the role and device folder created earlier in this procedure.
 - a. Navigate to the **AMP Setup > Users** page.
 - b. Click **Add New User**, or click the **pencil** (manage) icon next to an existing user to edit that user.
 - c. Select the user role created with the prior step, and complete the remainder of this page as per standard AWMS configuration. Refer to the *AWMS User Guide*, as required.
5. Observe visibility created or edited with this procedure.

The user, role, and device folder created with this procedure are now available to configure, manage, and support Aruba Configuration and associated devices according to the visibility defined in this procedure. Any component of this setup can be adjusted or revised by referring to the steps and AWMS pages in this procedure.
6. Add or discover devices for the device folder defined during step 1 of this procedure. Information about devices is available in the *AWMS User Guide*.
7. Continue to other elements of Aruba Configuration, described in this document. Early emphasis entails creation or editing of Aruba AP Groups and WLANs with which they are associated.

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