## Overview

This document is designed as a reference for installing AirWave 8.0 using the CentOS software bundled with the .iso disc image.

> **NOTE**
>
> AirWave does not support downgrading to older versions. Significant data could be lost or compromised in such a downgrade. In unusual circumstances requiring that you return to an earlier version of AirWave, we recommend you perform a fresh installation of the earlier AirWave version, and then restore data from a pre-upgrade backup.

## Pre-Installation Checklist

Use this check list to ensure installation goes smoothly.

**Table 1:** *Pre-Installation Checklist*

| Checklist | |
| --- | --- |
| Have available the AirWave license key sent to you in an email sent from Aruba Networks. | |
| Obtain dedicated server meeting Aruba sizing specifications. | |
| Determine the static IP address for each AirWave server. | |
| Firewall provisioning enabling proper ports/protocols. | |
| Determine WLAN infrastructure properties (type, quantity, and location). | |
| Determine WLAN infrastructure access credentials (SNMP, telnet, SSH, etc.). | |
| Determine WLAN security policy specifications. | |
| Set router and switches to monitoring (optional). | |
| Configure upstream NMS applications (optional). | |
| Determine wireless client authentication servers (optional). | |
| Determine AirWave administrative authentication servers like TACACS+, LDAP, or RADIUS (optional). | |
| If upgrading, ensure that your current version is not more than two versions behind. For example, when upgrading to AirWave 8.0, you must already be using AirWave 7.7 or newer. Contact technical support for assistance with upgrading if you are upgrading from greater than two versions. | |

## Minimum Supported Browsers

Windows®

- Internet Explorer® 9

- Mozilla Firefox® 3.x
- Google Chrome™ 9.x (stable)

Mac OS X® (10.5, 10.6, 10.7)

- Safari® 5.x
- Mozilla Firefox® 3.x
- Google Chrome™ 9.x

## Hardware Requirements and Installation Media

The AirWave installation DVD includes all software (including the Linux OS) required to complete the installation of AirWave. AirWave supports any hardware that is Red Hat Enterprise Linux 6.2 certified. By default, all installs are based on a 64-bit operating system.

AirWave hardware requirements vary by version. As additional features are added to AirWave, increased hardware resources become necessary. For the most recent hardware requirements, refer to the *AirWave 8.0 Server Sizing Guide* on the **Home > Documentation** page.

AirWave is intended to operate as a soft appliance. Other applications should not run on the same installation. Additionally, local shell users can access data on AirWave, so it is important to restrict access to the shell only to authorized users.

You can create sudo users in place of root for companies that don't allow root logins. Customers who disallow root access can give sudo privileges to other user accounts. For more information, see https://arubanetworkskb.secure.force.com/pkb/articles/FAQ/Disabling-SSH-access-by-root-user or contact Aruba support.

## Creating the AirWave Installation DVD from the .iso Disc Image

A variety of software tools can be used to create an installation DVD from the AirWave Installation DVD .iso disc image.

1. Download and save the AirWave 8.0 Installation DVD .iso disc image.
2. Download and install free DVD burner software (such as Nero or similar) from a trusted site.
3. Insert a blank DVD-R into the DVD-R drive.
4. Right-click on the AMP Installation DVD .iso disc image file and select the DVD burner software.

For help with DVD burning software, please refer to the user guide for that product and reference the option to create a DVD from .iso disc image. With Nero, for example, this option may be found under **File > Burn Image** or **Recorder > Burn Image**.

### Server Requirements

AirWave runs on a dedicated system and is compatible with most standard PC or rack-mount server hardware. The Installation DVD will format the hard disk, install the CentOS operating system, and install the AirWave software.

For minimum hardware requirements, refer to the *AirWave 8.0 Sizing Guide* on the **Home > Documentation** page, or contact Aruba support. The hardware must support Red Hat Enterprise Linux 6.0.

## Installing Linux CentOS 6.2 (Phase 1)

Perform the following steps to install the Linux CentOS 6.2 operating system. The Linux installation is a prerequisite to installing AirWave on the network management system.

This procedure erases the hard drive(s) on the server.

1. Insert the AirWave installation DVD into the drive and boot the server.

2. Type **install** and press **Enter**.

   To configure the partitions manually, type **manual** and press **Enter**.

**Figure 1:** *AirWave Installation*



3. Allow the installation process to continue. Installing the CentOS software (Phase I) takes 10 to 20 minutes to complete. This process formats the hard drive and launches Anaconda to install all necessary packages. Anaconda gauges the progress of the installation.

   Upon completion, the system will prompt you to eject the installation DVD and reboot the system. The GRUB screen will appear upon reboot.

4. Remove the DVD from the drive and store it in a safe location.

# Installing the AirWave Software (Phase 2)

## Getting Started

Perform the following steps when the GRUB screen appears.

1. Press **Enter** or wait six seconds. The system automatically loads the kernel.

2. When the kernel is loaded, log into the server using the following credentials:

   - login = **root**
   - password = **admin**

### Step 1: Configuring Date and Time

The following message appears. This step ensures the proper date and time are set on the server.

```
----------------------- Date and Time Configuration -------------------
Current Time: Fri May 30 09:18:12 PST 2014
1)  Change Date and Time
2)  Change Time Zone
0)  Finish
```

Ensure that you enter the accurate date and time during this process. Errors will arise later in the installation if the specified date varies significantly from the actual date, especially if the specified date is in the future and it is fixed later. Best practices is to configure NTPD to gradually adjust your clock to the correct time.

1. Select **1** to set the date and select **2** to set the time zone. Press **Enter** after each configuration to return to the message menu above.

> ⚠ **CAUTION**
> Changing these settings after the installation can cause data loss, especially for time-series data such as Client and Usage graphs. Avoid delayed configuration.

2. Press **0** to complete the configuration of date and time information and to continue to the next step.

## Step 2: Checking for Prior Installations

The following message appears after the date and time are set:

```
Welcome to AMP Installer Phase 2
STEP 2:  Checking for previous AMP installations
```

If a previous version of AirWave software is not discovered, the installation program automatically proceeds to Step 3. If a previous version of the software is discovered, the following message appears on the screen.

```
The installation program discovered a previous version of the software. Would you like to
reinstall AMP? This will erase AMP's database. Reinstall (y/n)?
```

Type **y** and then press **Enter** to proceed.

> ⚠ **CAUTION**
> This action erases the current database, including all historical information. To ensure that the AMP database is backed up prior to reinstallation, answer `n` at the prompt above and contact your Value Added Reseller or directly contact Aruba support.

## Step 3: Installing AMP Software

The following message appears while the AirWave software is transferred and compiled.

```
STEP 3:  Installing AMP software
  This will take a few minutes.
  Press Alt-F9 to see detailed messages.
  Press Alt-F1 return to this screen.
```

This step requires no user input, but you can follow the instructions to monitor its progress and switch back to the installation screen.

## Step 4: Checking the AirWave Installation

After the AirWave software installation is complete, the following message appears:

```
STEP 4:  Checking AMP installation
  Database is up.
AMP is running version: (version number)
```

This step requires no user input. Proceed to the next step when prompted to do so.

## Step 5: Assigning an IP Address to the AMP System

While the AirWave primary network interface accepts a DHCP address initially during installation, AirWave does not function when launched unless a static IP is assigned. Complete these tasks to assign the static IP address. The following message appears:

```
STEP 5: Assigning AMP's address
  AMP must be configured with a static IP.

--------------- Primary Network Interface Configuration ------------
        1)  IP Address   : xxx.xxx.xxx.xxx
        2)  Netmask       : xxx.xxx.xxx.xxx
        3)  Gateway       : xxx.xxx.xxx.xxx
        4)  Primary DNS  : xxx.xxx.xxx.xxx
        5)  Secondary DNS: xxx.xxx.xxx.xxx
```

```
9)   Commit Changes
0)   Exit (discard changes)
```

```
If you want to configure a second network interface, please
use AMP's web interface, AMP Setup --> Network Tab
```

1. Enter the network information.

> **NOTE**
>
> The Secondary DNS setting is an optional field.

2. To commit the changes, type **9** and then press **Enter**. To discard the changes, type **0** and then press **Enter**.

## Step 6: Naming the AirWave Network Administration System

Upon completion of the previous step, the following message appears:

```
STEP 6:  Naming AMP
AMP is currently set to: New AMP
Please enter a name for your AMP:
```

At the prompt, enter a name for your AirWave server and press **Enter**.

## Step 7: Generating AMP's SSL Certificate

Upon completion of the previous step, the following message appears on the screen:

```
STEP 7:  Generating AMP's SSL Certificate
 Does AMP have a valid DNS name on your network (y/n)?
```

1. If AirWave does not have a valid host name on the network, type **n** at the prompt. The following appears:

```
Generating SSL certificate for < IP Address >
```

2. If AirWave has a valid host name on the network, type **y** at the prompt. The following appears:

```
Enter AMP's fully qualified domain name:
```

3. Type the AirWave DNS name and press **Enter**. The following message appears:

```
Generating SSL certificate for < IP Address >
```

Proceed to the next step when the system prompts you.

## Step 8: Changing the Default Root Password

Upon completion of the prior step, the following message appears:

```
STEP 8:  Changing default root password.
It is strongly recommended that you change the default 'root' password.
Please use a password that you consider to be safe, secure, and memorable.

Changing password for user root.
New Password:
```

Enter the new root password and press **Enter**. The Linux root password is similar to a Windows administrator password. The root user is a super user who has full access to all commands and directories on the computer.

This password should be kept as secure as possible because it allows full access to the machine. This password is not often needed on a day-to-day basis but is required to perform AirWave upgrades and advanced troubleshooting. If you lose this password, contact Aruba support for resetting instructions.

# Completing the Installation

Upon completion of all previous steps, the following message appears.

```
CONGRATULATIONS! AMP is configured properly.
 To access the AMP web console, browse to https://<IP Address>
 Login with the following credentials:
 Username: admin
 Password: admin
```

- To view the Phase 1 installation log file, type **cat /root/install.log**.
- To view the Phase 2 installation log file, type **cat /root/amp-install.log**.
- To access the AMP GUI, enter the AMP IP address in the address bar of any browser. The AMP GUI then prompts for your license key. If you are entering a dedicated Master Console or AMP Failover license, refer to "Supporting AirWave Servers with the Master Console" in the *AirWave 8.0 User Guide* for additional information.

# Installing AirWave on VMware ESX(i)

This section provides information on installing AirWave on VMware® ESX(i). This section includes the following topics.

## Requirements and Recommendations

- AirWave is supported on VMware ESX(i) 4.0 and later.
- Always install VMware Tools in a text-based environment prior to installing AirWave.
- Consult the *AirWave 8.0 Server Sizing Guide* to be sure that enough resources are allocated to the VM.
- If your VM host is hosting other instances, ensure that the AirWave instance has the highest priority.
- A virtual SCSI disk is recommended over IDE.

## Creating a New Virtual Machine

Perform the following steps to create a new virtual machine.

1. From the VMware Infrastructure Client, select **Create a new virtual machine**.
2. Select **Next**, and then select **Typical > Virtual Machine Configuration**.
3. Name your virtual machine (for example, AirWave), and then click **Next**.
4. Select an available datastore with sufficient space for the number of APs that your AMP will manage, choosing the right server hardware to comply with the hardware requirements in this document. Click **Next**.
5. Select the **Linux** radio button, and then select the OS. The recommended OS is CentOS 4/5/6 (64-bit). Click **Next**.
6. Select the appropriate number or processors, and then specify the minimum virtual RAM. Refer to the *AirWave 8.0 Server Sizing Guide*.
7. Accept the VMware default virtual network adapter, and click **Next**.
8. Allocate a virtual disk large enough to contain the AMP operating system, application, and data files. Refer to the *AirWave 8.0 Server Sizing Guide*.
9. Review the virtual machine settings, and then click **Finish** when you are done.

## Installing AirWave on the Virtual Machine

Installing AirWave on a VMware virtual machine is typically done in one of three ways:

- By writing an AMP ISO to DVD, inserting the DVD into a physical drive on a VMware server, and then configuring the AMP virtual machine to boot from the DVD.

- By copying the AMP ISO to the VMware server's datastore or to a networked filesystem available to the VMware server, and then configuring the AMP virtual machine to boot from the ISO file.
- By using either a local physical DVD or an AMP ISO file from the VMware Infrastructure Client, and then creating a virtual CD on the virtual AMP to point to and boot from that device.

Overall, the second option is likely the most efficient method to install AMP. After booting the AMP virtual machine with either a physical DVD or the ISO image file, the installation process with this method is identical to the steps outlined earlier in this document.

# Installing in a Hyper-V Environment

This section provides information on installing AirWave on Hyper-V. This section includes the following topics.

- "Prerequisites" on page 7
- "Installing AirWave on the Virtual Machine" on page 8

## Prerequisites

- AirWave has been tested in-house using the Hyper-V Manager on a Windows Server 2000 R2.
- A legacy network adapter must be configured in order to install in a Hyper-V virtual environment. Follow the steps below before installing AirWave.

  1. During the initial setup of the virtual machine, specify to add a new Legacy Network Adapter in the Add Hardware section. The image is similar to below.

**Figure 2:** *Add a Legacy Network Adapter*
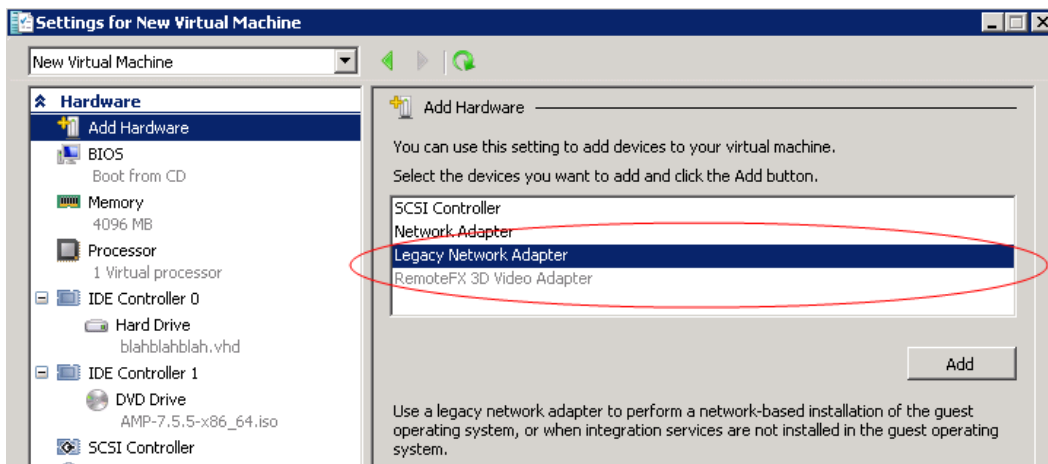


  2. Click **Add**. In the left pane, select the legacy network adapter, and configure its settings in the right pane.

**Figure 3:** *Add a Legacy Network Adapter*
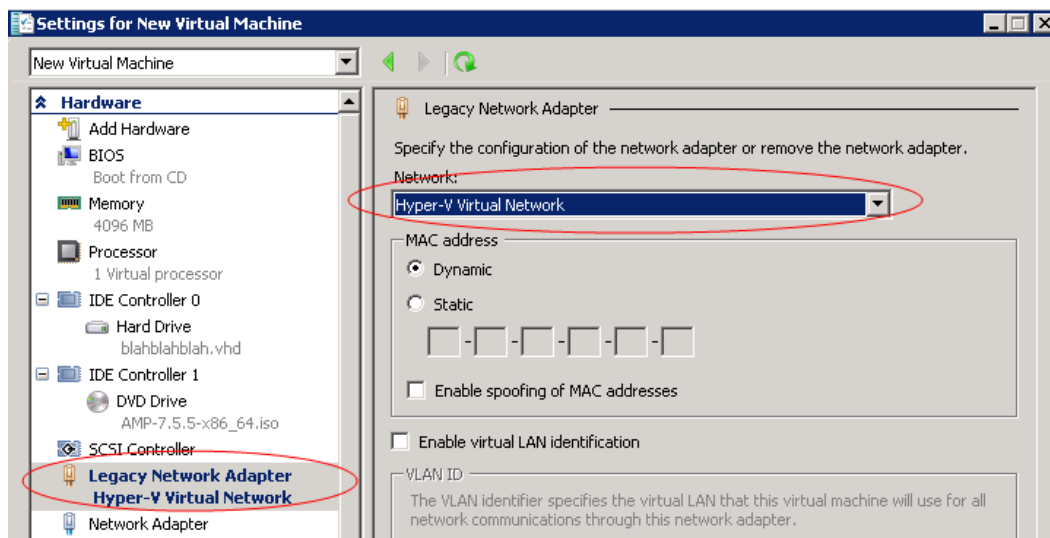


## Installing AirWave on the Virtual Machine

Installing AirWave on a Hyper-V virtual machine is typically done in one of two ways:

- By writing an AMP ISO to DVD, inserting the DVD into a physical drive on a Hyper-V server, and then configuring the AMP virtual machine to boot from the DVD.
- By copying the AMP ISO to the Hyper-V server's datastore or to a networked filesystem available to the Hyper-V server, and then configuring the AMP virtual machine to boot from the ISO file.

Overall, the second option is likely the most efficient method to install AMP. After booting the AMP virtual machine with either a physical DVD or the ISO image file, the installation process with this method is identical to the steps outlined earlier in this document.

# Installing on a Red Hat Enterprise Linux Server

If you are installing AirWave on a Red Hat® Enterprise Linux® server, you must install to a Basic Server RHEL preset and not have significant customization or other applications present.

# Upgrading AirWave

This section describes the process for upgrading AirWave. Note that the AirWave upgrade process may change. Please consult the latest AirWave release announcement for detailed instructions and changes.

## Upgrade Instructions

To upgrade AirWave:

1. Log in to the AirWave server as the root user.
2. Run the following command (where x.x.x is equal to the latest AMP version)

   ```
   # start_amp_upgrade -v x.x.x
   ```

## Upgrading Without Internet Access

If your AirWave cannot get to the Internet:

1. Download the latest AMP version from the Aruba Support Center at: http://support.arubanetworks.com
2. Copy the file to the AMP /root directory using WinSCP.

3. Run the following command on AMP:

```
# start_amp_upgrade -v x.x.x
```

The `start_amp_upgrade` script will check the `/root` directory for the latest update. If the update is not found, the script will attempt to download it from the Aruba Support Center. The script will then extract the version specific upgrade script. The version specific script will deploy all needed files, update the database, perform any data migrations, and restart the AirWave services.

## Configuring and Mapping Port Usage for AMP

The following table itemizes the communication protocols and ports necessary for AMP to communicate with wireless LAN infrastructure devices, including access points (APs), controllers, routers, switches, and RADIUS servers. Assign or adjust port usage on the network administration system as required to support these components.

**Table 2:** *AMP Protocol and Port Chart*

| Port | Type | Protocol | Description | | Device Type |
|------|------|----------|-------------|---|-------------|
| 21 | TCP | FTP | Firmware distribution | > | APs or controllers |
| 22 | TCP | SSH | Configure devices | > | APs or controllers |
| 22 | TCP | SSH | Configure AMP from the CLI | < | Laptop or workstation |
| 22 | TCP | VTUN | Support connection (optional) | > | Aruba supports home office |
| 22 | TCP | SCP | Transfer configuration files or FW | < | APs or controllers |
| 23 | TCP | Telnet | Configure devices | > | APs or controllers |
| 23 | TCP | VTUN | Support connection (Optional) | > | Aruba supports home office |
| 25 | TCP | SMTP | Support email (optional) | > | Aruba supports email server |
| 49 | UDP | TACACS | AMP Administrative Authentication | > | Cisco TACACS+ |
| 53 | UDP | DNS | DNS lookup from AMP | > | DNS Server |
| 69 | UDP | TFTP | Transfer configuration files or FW | < | APs or controllers |
| 80 | TCP | HTTP | Configure devices | > | Legacy APs |
| 80 | TCP | VTUN | Support connection (optional) | > | Aruba supports home office |
| 161 | UDP | SNMP | Get and Set operations | > | APs or controllers |
| 162 | UDP | SNMP | Traps from devices | < | APs or controllers |
| 162 | UDP | SNMP | Traps from AMP | > | NMS |

**Table 2:** *AMP Protocol and Port Chart (Continued)*

| Port | Type | Protocol | Description | | Device Type |
|------|------|----------|-------------|------|-------------|
| 443 | TCP | HTTPS | Web management | < | Laptop or workstation |
| 443 | TCP | HTTPS | WLSE polling | > | WLSE |
| 443 | TCP | VTUN | Support connection (optional) | > | Aruba supports home office |
| 1701 | TCP | HTTPS | AP and rogue discovery | > | WLSE |
| 1741 | TCP | HTTP | WLSE polling | > | WLSE |
| 1812 | UDP | RADIUS Auth | Authenticate & authorize AMP administrative users on a RADIUS server. | > | RADIUS auth server |
| 1813 | UDP | RADIUS accounting | Retrieve usernames for authenticated WLAN clients from NAS (captive portal, controller, autonomous AP). Only used when usernames are not available in the SNMP MIB of a controller or autonomous AP. | < | RADIUS accounting client |
| 2002 | TCP | HTTPS | Retrieve client authentication info | > | ACS |
| 5050 | UDP | RTLS | Real Time Location Feed | < | Aruba thin APs |
| 8211 | UDP | PAPI | Real Time Feed (AMON) | < > | WLAN controllers |
| | | ICMP | Ping Probe | > | APs or controllers |

# AirWave Navigation Basics

Every AirWave page contains the following three basic sections:

In addition, throughout AirWave, you will come across common buttons/icons and a series of customizable tables. Refer to the following section for more information.

The AirWave pages also contain **Help** links that open the *AirWave 8.0 User Guide*.

> On most pages in AMP, the help link is available in the upper-right portion of the page. On some of the newer pages (for example, Home > AppRF or Home > Network Deviations), the help link is a "?" beside the page title.

## Status Section

The **Status** section is a snapshot view of overall WLAN performance and provides direct links for immediate access to key system components. You can customize the contents of the Status section on the **Home > User Info** page (see Figure 4). For more information, see the *AirWave 8.0 User Guide*.

**Figure 4:** *Status section of the Home > Overview Page*

New Devices: 0    Up: 49    Down: 4    Mismatched: 1    Rogue: 0    Clients: 148    Alerts: 0

Log out admin

Search
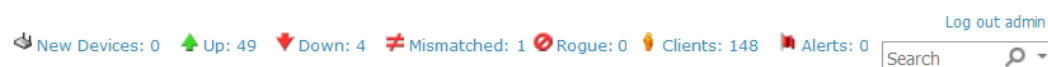
Table 3 describes the elements in further detail.

**Table 3:** *Status Section/Top Header Components of the AMP GUI*

| Field | Description |
|-------|-------------|
| New Devices | The number of wireless APs or wireless LAN controllers that have been discovered by AMP but not yet managed by network administrators. When selected, AMP directs you to a page that displays a detailed list of devices awaiting authorization. |
| Wired & Wireless) | The number of managed authorized devices that are currently responding to AMP requests. When selected, AMP shows a detailed list of all Up devices. |
| Up (Wired) | The number of managed authorized, wired devices that are currently responding to AMP requests. When selected, AMP shows a detailed list of all Up devices. |
| Up (Wireless) | The number of managed authorized, wireless devices that are currently responding to AMP requests. When selected, AMP shows a detailed list of all Up devices. |
| Down (Wired & Wireless) | The number of managed, authorized devices that are not currently responding to AMP SNMP requests. When selected, AMP shows a detailed list of all Down devices. |
| Down (Wired) | The number of managed authorized, wired devices that are not currently responding toAMP requests. When selected, AMP shows a detailed list of all Down devices. |
| Down (Wireless) | The number of managed authorized, wireless devices that are not currently responding to AMP requests. When selected, AMP shows a detailed list of all Down devices. |
| Mismatch | The actual configuration of the device does not matches the configuration in the Group template. |
| Rogue | The number of devices that have been classified by the RAPIDS rules engine above the threshold defined on the **Home > User Info** page. If, for example, the threshold is defined as Suspected Rogue, then the Rogue count will include Suspected Rogues as well as classifications above Suspected, which include Rogue and Contained Rogue. |
| Clients | The number of wireless users currently associated to the wireless network via all the APs managed by AMP. When selected, AMP shows a list of users that are associated. Prior to version 7.4, this was called Users. |
| Alerts | Displays the number of non-acknowledged AMP alerts generated by user-configured triggers. When selected AMP shows a detailed list of active alerts. |
| Search | Use the Search field to perform partial string searches on a large number of fields including the notes, version, secondary version, radio serial number, device serial number, LAN MAC, radio MAC and apparent IP of all the APs as well as the client MAC, VPN user, LAN IP, and VPN IP fields. |

## Navigation Section

The **Navigation** section displays tabs for all main GUI pages within AirWave. The top bar is a static navigation bar containing tabs for the main components of AirWave, while the lower bar is context-sensitive and displays the subtabs for the highlighted tab.

**Figure 5:** *Navigation section of the Home > Overview Page*
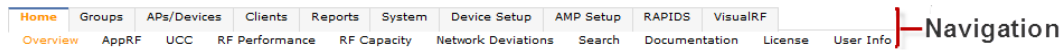


Some navigation items might be hidden from users depending on a user's role. Table 4 describes the navigation elements in further detail.

**Table 4:** *Components and Subtabs of AirWave Navigation*

| Main Tab | Description | Subtabs |
|---|---|---|
| Home | The **Home** pages provide basic AMP information including system name, host name, IP address, current time, running time, and software version.<br><br>The Home pages also provide a central point for network status information and monitoring tools, giving graphical display of network activity, and links to many of the most frequent tools in AMP. For additional information, refer to *Monitoring and Supporting AirWave with the Home Pages* in the *AirWave 8.0 User Guide*. | • Overview<br>• AppRF<br>• UCC<br>• RF Performance<br>• RF Capacity<br>• Network Deviations<br>• Search<br>• Documentation<br>• License<br>• User Info |
| Groups | The **Groups** pages provide information on the logical groups of devices that have been established for efficient monitoring and configuration. For additional information, seethe *AirWave 8.0 User Guide*.<br><br>Some of the focused subtabs will not appear for all groups. Focused subtabs are visible based on the Name selected from the **Groups > List** view.<br><br>Example 1: If you click a link named Cisco One in the Name column of the **Groups >List** page, you will see submenus named Monitor, Basic, Templates, Cisco WLC Config and Firmware.<br><br>Example 2: If you click a link named Aruba One in the Name column of the **Groups >List** page, you will see submenus named Monitor, Basic, Templates, Controller Config, Switch Config, Cisco WLC Config and Firmware.<br><br>When individual device configurations are specified, device-level settings override the Group-level settings to which a device belongs. | List<br><br>Focused Subtabs:<br><br>Monitor<br><br>Basic<br><br>Templates<br><br>Security<br><br>SSIDs<br><br>AAA Servers<br><br>Radio<br><br>Controller Config<br><br>Switch Config<br><br>Cisco WLC Config<br><br>PTMP<br><br>Proxim Mesh<br><br>MAC ACL<br><br>Firmware |
| APs/Devices | The **APs/Devices** pages provide detailed information about all authorized APs and wireless LAN switches or controllers on the network, including all configuration and current monitoring data. | • List<br>• New<br>• Up<br>• Down<br>• Mismatched |

**Table 4:** *Components and Subtabs of AirWave Navigation (Continued)*

| Main Tab | Description | Subtabs |
|---|---|---|
| | These pages interact with several additional pages in AMP. Refer to the *AirWave 8.0 User Guide*.<br><br>**NOTE:** When specified, device-level settings override the default Group-level settings. | • Ignored<br>• *Focused Subtabs:*<br>• Monitor<br>• Interfaces<br>• Manage<br>• Audit<br>• Compliance<br>• Rogues Contained |
| Clients | The **Clients** pages provide detailed information about all client devices and users currently and historically associated to the WLAN, including VPN users. Prior to 7.4, this tab was called Users. For additional information, refer to *Monitoring and Supporting WLAN Clients* in the *AirWave 8.0 User Guide*. | Overview<br><br>Connected<br><br>All<br><br>Rogue Clients<br><br>Guest Users<br><br>VPN Sessions<br><br>VPN Users<br><br>Tags<br><br>*VPN Users* Subtab:<br>• VPN User Detail |
| Reports | The **Reports** pages list all the standard and custom reports generated by AMP. For additional information, refer to the *AirWave 8.0 User Guide*. | Generated<br><br>Definitions<br><br>Definitions Subtab:<br>• Detail |
| System | The **System** page provides information about AMP operation and administration, including overall system status, the job scheduler, trigger/alert administration, and so forth.<br><br>For additional information, refer to *Monitoring and Supporting with the System Pages* in the *AirWave 8.0 User Guide*. | Status<br><br>Syslog & Traps<br><br>Event Log<br><br>Triggers<br><br>Alerts<br><br>Backups<br><br>Configuration Change Jobs<br><br>Firmware Upgrade Jobs<br><br>Performance |
| Device Setup | The **Device Setup** pages provide the ability to add, configure, and monitor devices, to include setting AP discovery parameters, performing firmware management, defining VLANs, and so forth. For additional information, refer to *Enabling AMP to Manage Your Devices* in the *AirWave 8.0 User Guide*. | Discover<br><br>Add<br><br>Communication<br><br>Aruba Configuration (if Use global Aruba Configuration is enabled in AMP Setup > General) |

**Table 4:** *Components and Subtabs of AirWave Navigation (Continued)*

| Main Tab | Description | Subtabs |
|---|---|---|
| | | Upload Firmware & Files |
| | | Certificates |
| AMP Setup | The **AMP Setup** pages provide all information relating to the configuration of AMP itself and its connection to your network. This page entails several processes, configurations, or tools in AMP.<br>**NOTE:** Some **AMP Setup** pages may not be visible depending on the role of the logged-in user set in AMP. | General<br>Network<br>Users<br>Roles<br>Guest Users<br>Authentication<br>MDM Server<br>Device Type Setup<br>WLSE<br>ACS<br>NMS<br>RADIUS Accounting<br>PCI Compliance |
| RAPIDS | The **RAPIDS** pages provide all information relating to rogue access points, including methods of discovery and lists of discovered and possible rogues. For additional information, refer to *Using RAPIDS and Rogue Classification* in the *AirWave 8.0 User Guide*.<br>**NOTE:** The **RAPIDS** pages may not be visible to the logged-in user, depending on their role set in AMP. | Overview<br>List<br>IDS Events<br>Setup<br>Rules<br>Score Override<br>Audit Log |
| VisualRF | **VisualRF** pages provide graphical access to floor plans, client location, and RF visualization for floors, buildings, and campuses that host your network. Refer to *Using VisualRF* in the *AirWave 8.0 User Guide*. | Floor Plans<br>Setup<br>Import<br>Audit Log |

**NOTE**

The **AMP Setup** tab varies with the user role.

## Activity Section

The **Activity** section is the main section of the user interface. This section displays all detailed configuration and monitoring information. It is where you view activity and implement configuration changes (see Figure 6).

**Figure 6:** *Activity section of the* ***Home > Overview*** *Page*
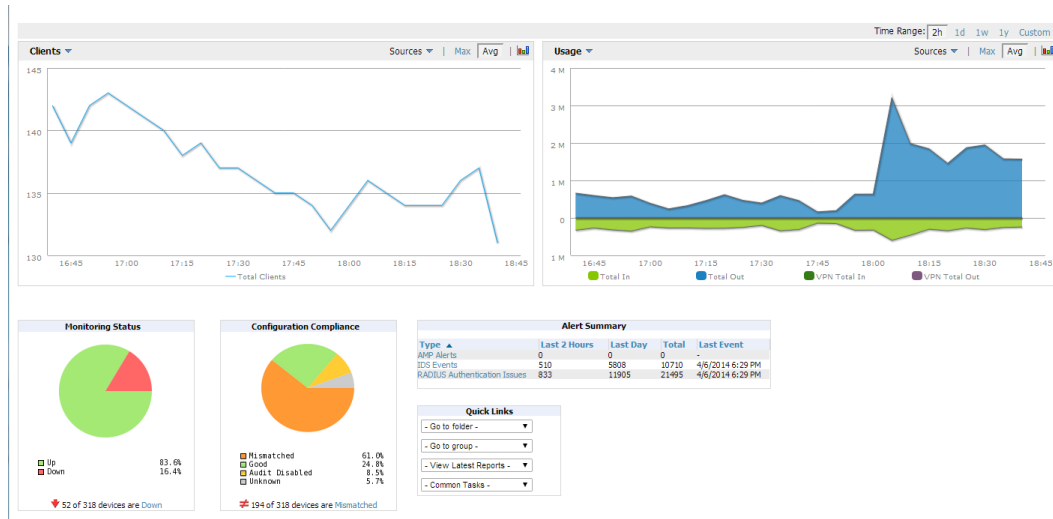


## Filter Views

The columns in the default view for each of the following pages are defined in AirWave and cannot be modified. However, you can create and run a new view in each of these pages that returns custom information based on the filter parameters and data columns you selected when creating the new view.

- **APs/Devices > List**
- **APs/Devices > Up**
- **APs/Devices > Down**
- **APs/Devices > Mismatched**
- **Groups > Monitor**
- **APs/Devices Page**

### Create a Filter View

Navigate to a page that contains a Default View list, such as APs/Devices.

1. Click the ✚ icon. The **Filtered View** page opens.
2. Enter the name of the new view.
3. Click **Add Filter**. A new list of parameters is added to the **Filter** field.
4. Scroll the list of parameters and select a **Device** or **Radio** parameter. If required, enter search parameters such as "=" to refine the filter parameters.
5. Click **Add Filter** until you have completed configuring the filter parameters.
6. Select the columns to display in the view.
7. Click **OK**. The name of the new view is added to the **Default View** list.

**Table 5:** *Filter Icons*

| Icon | Description |
|------|-------------|
| ✚ | Click this icon to create a custom filtered view. |

| Icon | Description |
|------|-------------|
|  | Click this icon to edit an existing custom filtered view. |
|  | Click this icon to clone a custom filtered view. |
|  | Click this icon to delete a custom filtered view. |

## Buttons and Icons

The standard buttons and icons described in Table 6 are used throughout AirWave:

**Table 6:** *Standard Buttons and Icons*

| Function | Image | Description |
|----------|-------|-------------|
| Acknowledge | Acknowledge | Acknowledges and clears an AMP alert. |
| Add | Add | Adds the object to both the AMP database and the onscreen display list. |
| Add | + | Creates a custom filtered view. |
| Add Folder | | Adds a new folder to hierarchically organize APs. |
| Alert | | Indicates an alert. |
| Apply | Apply | Applies all saved configuration changes to devices on the WLAN. |
| Audit | Audit | Reads device configuration, compare to desired, and update status. |
| Cancel | Cancel | Cancels the current edit or task. |
| Choose | | Chooses a new Helpdesk incident to be the Current Incident. |
| Clients | | Indicates WLAN users. Select this number to see a list of connected clients. |
| Clone | | Clones a custom filtered view. |
| Create | + | Creates a new Helpdesk incident. |
| Customize | Customize | Ignores selected settings when calculating the configuration status. |
| Delete | | Deletes an object from AMP's database. |

**Table 6:** *Standard Buttons and Icons (Continued)*
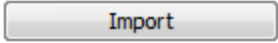
| Function | Image | Description |
|---|---|---|
| Delete | | Deletes a custom filtered view. |
| Down | | Indicates Down devices and radios. |
| Download Original Floor Plan | | Downloads the original VisualRF floor plan drawing. When you click this button, you have the option of opening the drawing or saving it to a file. |
| Drag and Drop | | Dragging and dropping objects with this icon changes the sequence of items in relation to each other. |
| Duplicate | | Duplicates or makes a copy of the configuration of an AMP object. |
| Edit | | Edits the object properties. |
| Edit | | Edits an existing custom filtered view. |
| Email | | Links to email reports. |
| Filter (Funnel icon) | | Filters list by values of the selected column. To reset all filters in all columns, click Reset filters link at the bottom of the table. |
| Google Earth | | Views device's location in Google Earth (requires plug-in). |
| Ignore | Ignore | Ignores specific device(s) - devices selected with check boxes. |
| Import | Import | Updates a Group's desired settings to match current settings. |
| Manage | | Manages the object properties. |
| Match Event Error | | Indicates an unsuccessful steering attempt. This can occur, for example, when a client has already roamed, when the client is disconnected from the network, when the client is in sleep mode, and so on. |
| Mismatched | | Indicates mismatched device configuration, in which the most recent configuration in AMP and the current configuration on a device are mismatched. |
| Monitor | | Indicates an access point is in monitor only mode. |
| New Devices | | Indicates new access points and devices. |
| Open in New Window | | Opens a VisualRF floor plan in a new browser window. |

**Table 6:** *Standard Buttons and Icons (Continued)*
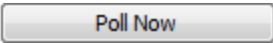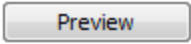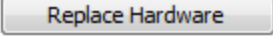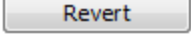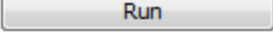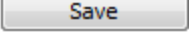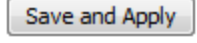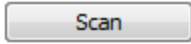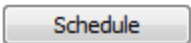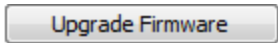
| Function | Image | Description |
|---|---|---|
| Poll Now | Poll Now | Polls device (or controller) immediately, override group polling settings. |
| Preview | Preview | Displays a preview of changes applicable to multiple groups. |
| Print | | Prints the report. |
| Quick Search | | Performs a quick search of connected clients. Results for Quick Search display in a separate popup window. |
| Reboot | Reboot | Reboots devices on AMP. |
| Refresh | | Refreshes the display of interactive graphs when settings have changed. |
| Relate | | Relates an AP, Group or Client to a Helpdesk incident. |
| Replace Hardware | Replace Hardware | Confers configuration and history of one AP to a replacement device. |
| Revert | Revert | Returns all configurable data on the screen to its original status. |
| Rogue | | Indicates a rogue AP, and links to RAPIDS. |
| Run | Run | Runs a new user-defined report. |
| Save | Save | Saves the information on the page in the AMP database. |
| Save & Apply | Save and Apply | Saves changes to AMP's database and apply all changes to devices. |
| Scan | Scan | Scans for devices and rogues using selected networks. |
| Schedule | Schedule | Schedules a window for reports, device changes, or maintenance. |
| Search | | Searches AMP for the specified client, device, rogue, group, folder, tag, or session. |
| Set Time Range | | Sets the time range for interactive graphs to the range specified. |
| Up | | Indicates devices that are in the Up status. |
| Upgrade Firmware | Upgrade Firmware | Applies a new firmware image to an AP/device. |

**Table 6:** *Standard Buttons and Icons (Continued)*

| Function | Image | Description |
|---|---|---|
| Usage | | Displays current bandwidth. |
| View Historical Graph in New Window | | Displays all data series for the selected graph over the last two hours, last day, last week, last month, and last year in one new pop-up window. |
| VisualRF | | Links to VisualRF - real time visualization. |
| VPN Sessions | | |
| XML | | Links to export XHTML versions of reports. |

# Getting Started with AirWave

This topic describes how to perform an initial launch of the AirWave network management solution on a session-based authentication scheme.

When an AirWave URL is accessed either interactively using a browser or programmatically using an API, a sent cookie may match a session stored in the database, granting authentication (but not necessarily access, depending on how the user's role matches the required role for the URL). If the cookie is not present or the session in the database has expired, the request is denied.

For browser requests, this results in a login form being displayed. When you submit the login form, the supplied credentials are checked against the AMP's user database, an external RADIUS server, an external TACACS+ server, or an external LDAP server, per the AMP configuration. If the credentials are valid, the user's browser is sent a session cookie to use in subsequent requests.

Use your browser to navigate to the static IP address assigned to the internal page of the AMP, as shown in Figure 7. Enter the User Name and Password as **admin/admin** for your initial login, and then select **Log In**.

**Figure 7:** *AirWave Login Form*



If desired, you can set one of the available languages for your login. AirWave will remember your selected language until you log out and select another. You must log out in order to select a different language.

The first page to appear after you initially log in is the **Home > License** page. Paste the AirWave license key you received into the license field on this page, then click **Save** to display the AirWave licensing agreement.

Click **I Accept** to agree to the terms of the license agreement and apply the license key.

For subsequent logins, your browser launches the AirWave **Home > Overview** page.

| | |
|---|---|
| **NOTE** | AirWave pages are protected via SSL. Some browsers will display a confirmation dialog for your self-signed certificate. Signing your certificate will prevent this dialog from displaying. Changing the default login and password on the **AMP Setup > Users** page is recommended. Refer to the procedure Creating AMP User Roles in the *AirWave 8.0 User Guide* for additional information. |