Securitas Healthcare

AeroScout® Location Engine Integration with Aruba Wireless Infrastructure

Configuration Guide

We Are Now Securitas Healthcare

STANLEY Healthcare is now Securitas Healthcare. We are currently rebranding all our products and documentation, but until that process is complete you may still see visual references to STANLEY Healthcare in this document. All descriptions of functionality are accurate to the best of our knowledge.

Disclaimer

Trademark Acknowledgements

Contents

Abbreviation and Terms

| Terms	Description
AP	Access Point
CLI	Command line Interface
E.G.	Example Given
ICMP	Internet Control Message Protocol
ICMP	Internet Control Message Protocol
IP	Internet Protocol
MAC	Media Access Control (Hardware Address)
PDA	Personal Digital Assistant
RFID	Radio Frequency Identification
RTLS	Real Time Location System
Tag	AeroScout Tag
UDP	User Datagram Protocol
VLAN	Virtual Local Area Network
VLAN	Virtual Local Area Network
VoWLAN	Voice Over Wireless Local Area Network
Wi-Fi	Wireless Fidelity or WLAN
WLAN	Wireless Local Area Network

Introduction

Securitas Healthcare's Unified Asset Visibility solutions utilize the power of Wi-Fi networks to provide significant business benefits through Real-time Location, Active RFID, sensors, and telemetry. Securitas Healthcare uses Wi-Fi and other wireless networking standards to accurately track the real-time location and status of valuable assets such as equipment or people. By leveraging popular wireless data communications standards, Securitas Healthcare's solutions add minimal incremental cost to a communications network and enable a broad set of visibility applications. With Securitas Healthcare's innovative MobileView software, customers turn visibility information into everyday decisions, to improve operational efficiency and drive a compelling ROI.

Aruba WLAN has partnered with Securitas Healthcare (previously AeroScout); a leading developer of Wi-Fi based Active RFID solutions, to address the demand for advanced visibility and improved business processes. With an integrated 802.11 RTLS solution from Aruba WLAN and Securitas Healthcare, organizations can securely run existing mobile applications and add location-based applications utilizing the same network. Having a common network infrastructure for data, voice, and location services provides a higher return on investment.

Solution Overview

Aruba's integrated location capability is ideal for locating interferers, rogue devices, and specific client devices. AeroScout enhances this capability by enabling the real-time tracking of thousands of tagged devices, clients with integrated Wi-Fi (for example, laptops and VoWLAN handsets), and people (for example, at-risk patients in healthcare settings). AeroScout supplies Wi-Fi tags and exciters for "choke point" detection, room-level and sub-room-level resolution, a Location Engine, and MobileView software – a Web-based asset visibility platform.

Securitas Healthcare and Aruba Wireless Joint Solution
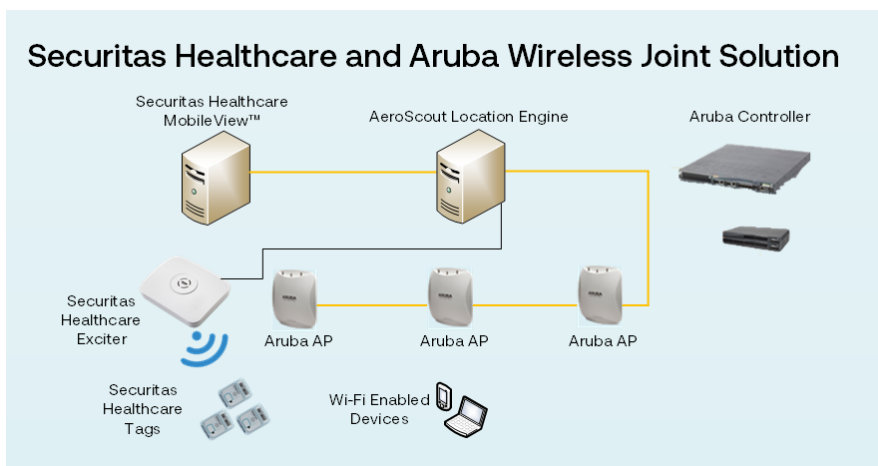
The AeroScout-Aruba joint solution can work with **IBSS** and **WDS.**

Note   The **CCX** format is not supported.

AeroScout Tags

Securitas Healthcare offers small form factor Wi-Fi tags, which can be mounted on assets or worn as a badge clip or wristband. In addition to a standard Wi-Fi interface, they can be triggered, at low frequency or Ultrasound signal, by AeroScout Exciters to send immediate alerts, their precise location, or a customized message. Tags also include several advanced features, such as motion detection, call-button functionality, temperature and humidity measurement and tamper-proof configuration. The unique interface between AeroScout Tags and Aruba WLAN infrastructure helps reduce network impact and conserve tag battery life by allowing communication without requiring tags to complete an 802.11 association to the access point. This ensures high scalability – tens of thousands of tags – without exhausting the wireless network. In addition, AeroScout Tags support a serial interface that can be used for the transmission of telemetry readings supplied by the asset (e.g., IV pumps, patient monitors)

Securitas Healthcare offers a broad range of AeroScout Wi-Fi tags: the market-leading T2s, T14e, and T12s Asset and staff Tags, T5, T15e Temperature Tag, and T15h Temperature & Humdity Tag, and the Hugs Tag.

AeroScout Location Engine

The AeroScout Location Engine determines location by using signal strength measurements (RSSI) taken by the Aruba APs, which serve location sensor and network access roles simultaneously. This infrastructure-based approach to location, in contrast to competing solutions that rely on measurements taken by the tag, enables the tracking of standard Wi-Fi clients without any software or hardware modification. Additional capabilities can be obtained by installing AeroScout Exciters in areas of interest (e.g. doors, specific rooms) to trigger the tag to transmit when in proximity.

Securitas Healthcare MobileView

MobileView supports Securitas Healthcare's strategy of delivering focused, solution-centric applications. Each MobileView application has its own unique functionality, but also leverages the powerful core features offered by the MobileView platform. User experience is tailored to the specific application. The platform enables you to track asset locations and status throughout a site; manage assets and the tags that are used to locate them; set up powerful event monitors, which can automatically send alerts through a variety of channels when certain conditions are met.
MobileView offers a suite of instant reports that can be generated on-demand or automatically run. As assets move or perform tasks, MobileView is notified of their location as well as other important status information.

Solution Setup

High-Level Setup Steps

To work with Aruba Wireless do the following:

1.   Identify your hardware and firmware and verify that they are compatible with AeroScout.
2.   Configure the Aruba WLAN controller to handle AeroScout Tag reports.
3.   Add an AP to AeroScout Engine Manager.
4.   Verify that there are no known issues, and if there are, consider the workarounds offered.

Configuring AeroScout Engine Manager

Do the following:

1.   Open AeroScout Engine Manager
2.   On the map, right-click the physical location of the AP and select **Add, Add Access Point**. The **Access Point Properties** dialog box opens.

3. Enter the following information.

AP Name

Give the AP a recognizable name.

Vendor

Select Aruba from the drop menu.

IP Address

Any IP can be entered in this field. The address value is automatically modified to the real AP IP address when the device is connected. For ease of deployment it is recommended to enter the Controller's IP Address.

Port

This is greyed out with a default set as 1144.

MAC

Enter the AP's MAC address.

Coordinates

In **Z Coordinates**, enter the height at which the AP is mounted, in meters.
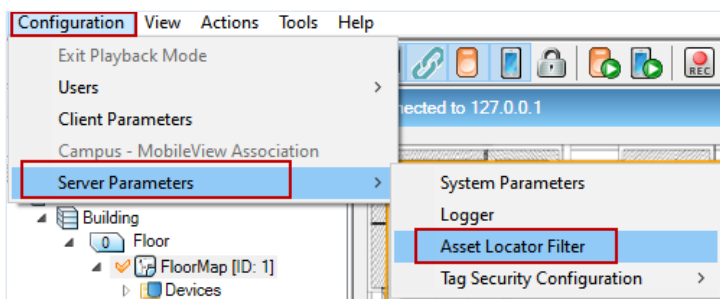
4. Click **OK**.

Configuring an Aruba AP for Wi-Fi Device tracking

Follow these steps:

1. Open the *preproperties* file and ensure the parameters are set as follows:

    *   *MuDilutionRate=50*
    *   *MuDilutionTimeout=10*

2. Upload the Wi-Fi devices that need to be tracked in the Asset Locator Filter:
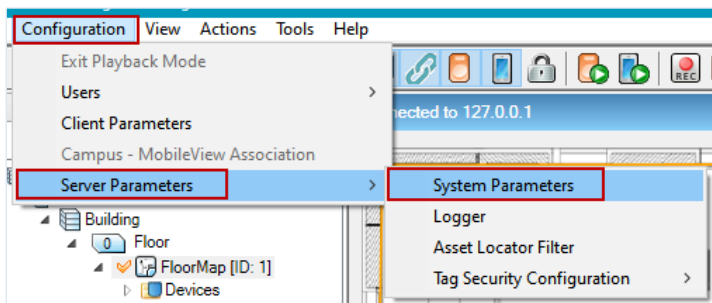
    a. Open the AeroScout Engine Manager.

b. Select **Configuration > Server Parameters > Asset Locator Filter**.

c. Upload a CSV file with all the MAC Addresses of the Wi-Fi devices that need to be tracked.

d. Click **Close**.

3. Enable Wi-Fi Device tracking:

a. From the AeroScout Engine Manager click on **Configuration > Server Parameters > System Parameters.**

b. Select the **Wi-Fi Devices** tab.

c. Check the **Locate Wi-Fi Devices** checkbox.
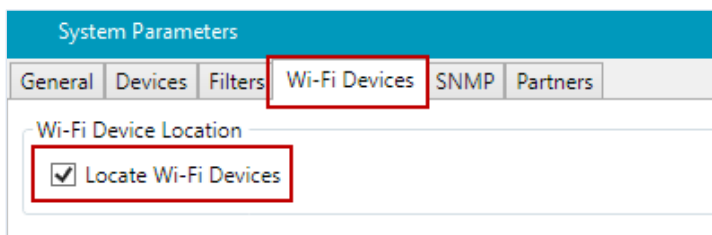
d. Click **OK** on the warning message.

e. Click **OK**.

Configuring Aruba WLAN controller

Note

The CCX tag format is not supported.

In Aruba OS versions 5x, the Aruba Mobility Controller must be configured with the specific Engine IP address and port.

Configuring the Aruba WLAN Controller Using the Command Line Interface (CLI)

(Aruba800) >ena

Password:*********

(Aruba800) #configure t   ← Command

Enter Configuration commands, one per line. End with CNTL/Z

(Aruba800) (config) #AP system-profile default

(Aruba800) (AP system profile "default") #

(Aruba800) (AP system profile "default") # AeroScout-rtls-server ip-addr 192.168.101.4 port 12092   ← Command

(Aruba800) (AP system profile "default") #

Configuring the Aruba WLAN Controller Using the WEB User Interface (WEB-UI)

1. Open the Controller WEB-UI
2. From the top menu select **Configuration**.
3. Select **All Profiles**, located at the bottom in the left bar.
4. Open the **AP** by clicking on the plus sign and select **System Profile**.
5. Select the appropriate profile (the default profile name is default).
6. In the right column specify the **IP Address** and **Port** on which the Engine will listen to incoming location reports.
7. Disable the '**includeunassocsta**' parameter to not receive messages about unassociated Wi-Fi devices.

See the example below:
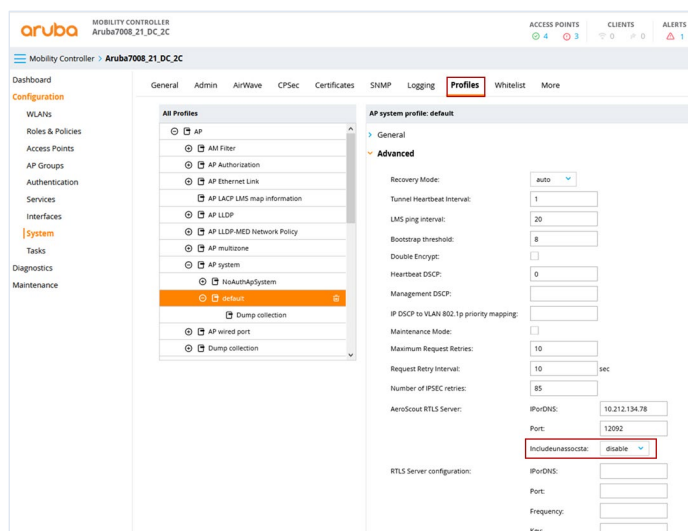
Aruba WLAN Controller Troubleshooting

If the AP could not be added to the Engine

1. Issue the following command through the switch CLI to verify that the APs are online:

   `show ap active`   ← Command

2. Verify that the AP MAC address in AeroScout Engine Manager and the AP's MAC on the Ethernet port are identical.

3. Issue the following commands from the Windows Command line to verify the IP and MAC addresses:

   a. Ping <AP and controller IP addresses>   ← Command

   b. Type arp –a (to see the arp table and to verify which MAC is bind to which AP).   ← Command

If you do not see tags in AeroScout Engine Manger:

Issue the following command from the switch CLI to verify the VLAN 1 address:

1. Verify the AeroScout Engine IP address and port in the Aruba Mobility Controller configuration

   Method #1:

   `#show AP system-profile <profile name>`   ← Command

In the output look for this line

AeroScout RTLS Server   <AE IP address>:12092   ← Output

Method #2:

(Aruba800) #show running-config | include aero   ← Command

Building Configuration...

aeroscout-rtls-server ip-addr 192.168.101.4 port 12092   ← Output

2. Verify the AP's MAC address and IP address (note the AP Status is UP or Down):

(Aruba800) #show ap database   ← Command

AP Database

Name	Group	AP Type	IP Address	Status	Flags	Switch IP	← Output
00:0b:86:c0:c8:70	default	65	192.168.101.85	Down		192.168.101.14	

3. Verify that tag reports are received at the Aruba WLAN controller (using a sniffer such as Wire Shark).

Check the list of common problems

1. Verify that all channels offered by the Aruba infrastructure are configured on the tag issue the following command:

(Aruba800) #show ap regulatory-domain-profile default   ← Command

Regulatory Domain profile "default"

Parameter	Value
Country Code	IL
Valid 802.11g channel	13
Valid 802.11a channel	36
Valid 802.11g 40MHz channel pair	N/A
Valid 802.11a 40MHz channel pair	N/A

2. Verify channel settings. (Only 11-g channels are valid.)

> (Aruba800) #show running-config | include chann   ← Command
>
> Building Configuration...
>
> crypto isakmp groupname changeme
>
> valid-11g-channel 13   ← Output

3. Verify the connection between the Aruba WLAN controller and AeroScout Positioning Engine (use ICMP ping).

4. Verify that the following communication ports are open:

AeroScout Engine	Aruba AP
12092	1144

5. Verify that there the **Play Tag** button is pressed.

Configuring Aruba Controller-less APs

✎
Note

To ensure accuracy and good performance of the IP address, the Aruba Access Point must be static! (or reserved by the DHCP server).

The Aruba Instant AP must be configured with the specific Engine IP address and port.

Configuring the Aruba Controller-less AP over the WEB

1. Locate the IP Address that the DHCP allocated to the AP.
    If there is no DHCP and a local switch is used, approximately 10 minutes after connecting to the switch, the AP will become available with an SSID named 'instant'.
    The device should be connected to the SSID 'instant' network in order to gain access to the iAP webpage and configure it. Once connected, running the ipconfig command from the cmd window should present the IP of the Access Point as the default gateway.

2. Open the IAP WEB-UI.

3. Use the following login details:
    Username: admin
    Password: admin

4. Click **Log In**.
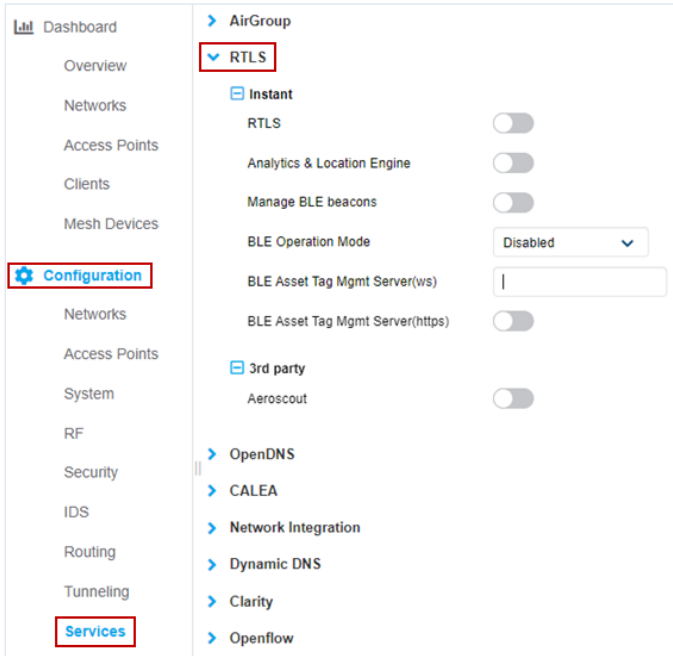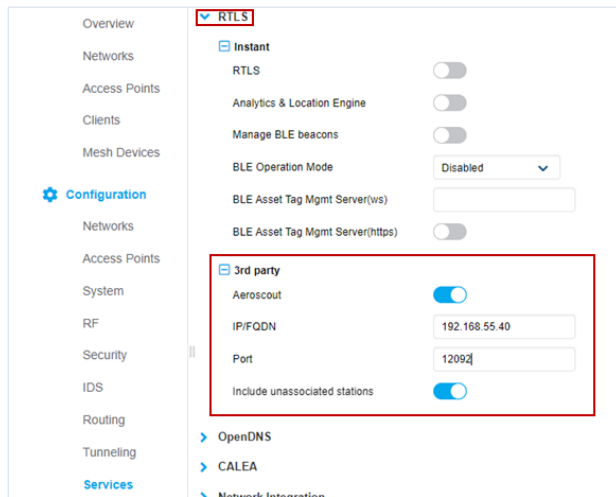
8. Under **Configuration** select **Networks**.
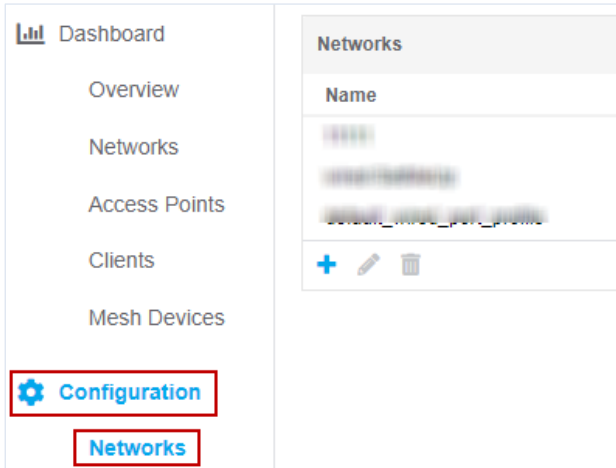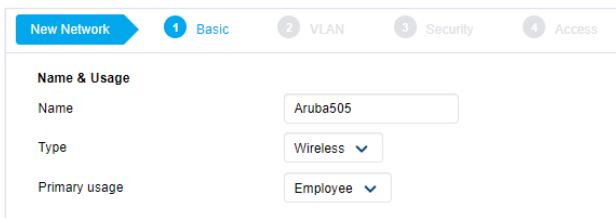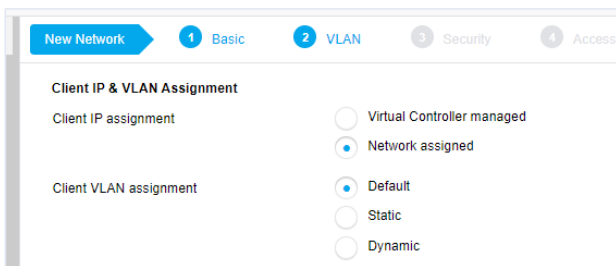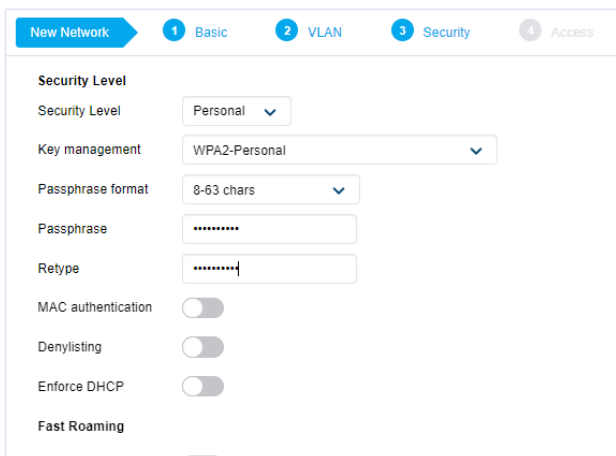

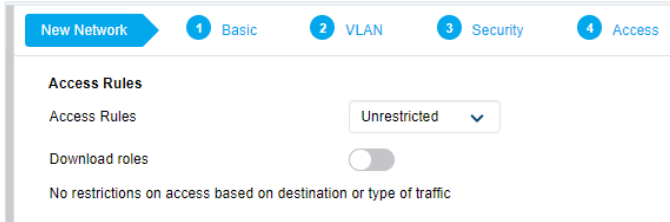9. Click the plus icon and create a Wi-Fi setting for the AP according to the following screens:

10. Click on **VLAN**.

11. Click on **Security**:

12. Click on **Access**:

13. Click **Finish**.

Aruba Controller-less AP Troubleshooting

If Tags are not seen on the Engine Manager

ArubalAP # sh ap monitor status | begin RTLS   ← Command

RTLS Configuration and State   ← Output

Type	Server IP	Port	Freq	Active	Rpt-Tags	Tag-Mcast-Addr	Tags-Sent	Rpt-Sta	Incl-Unassoc-Sta	Sta-Sent	Cmpd-Msgs-Sent CM
MMS	N/A	N/A	30	disable	01:0c:cc:00:00:00	N/A	disable	N/A	N/A	N/A	N/A
Aeroscout	10.20.23.53	12092	1	* enable	01:0c:cc:00:00:00	3	enable	enable	100	20	N/A
RTLS	N/A	N/A	30	disable	01:18:8e:00:00:00	N/A	disable	N/A	N/A	N/A	disable

Compatibility and Supported Features

Hardware-Software Compatibility between AeroScout and Aruba

The latest version of AeroScout Location Engine Compatibility with Wireless LAN Infrastructure is available in the Knowledge Base.

Refer to Article #1620 in Securitas Healthcare Knowledge base.

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