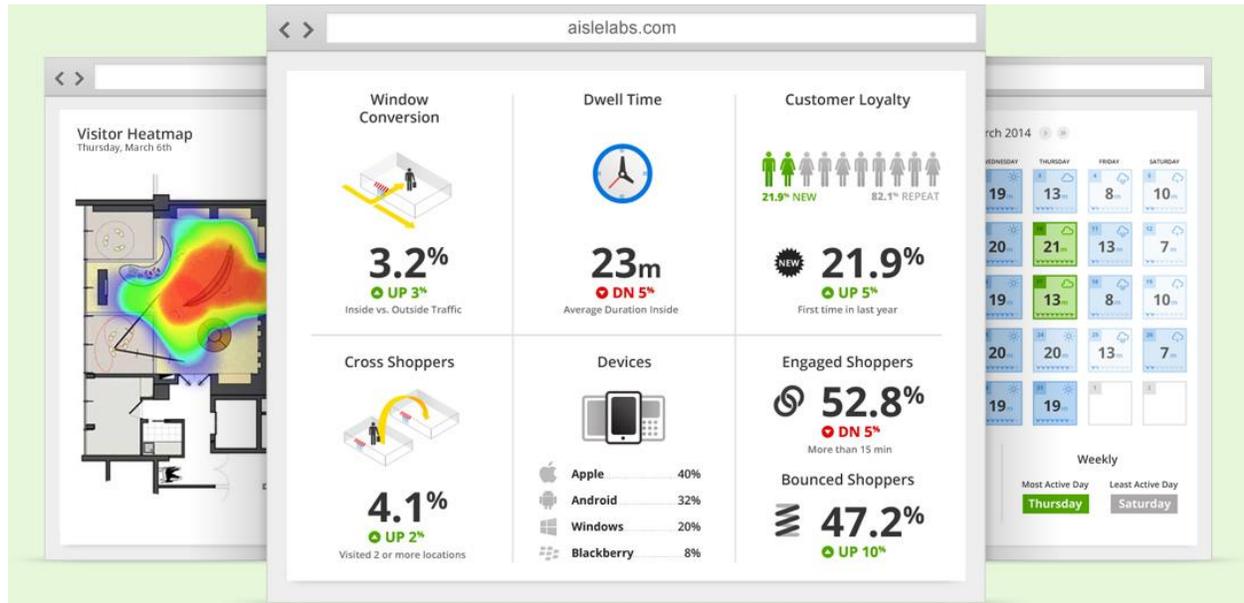


Aislelabs Flow Integration With Aruba Networks Wi-Fi Infrastructure

Using Aruba's Analytics & Location Engine For Anonymous Wi-Fi Location Analytics

Introduction

Aislelabs provides a comprehensive location-based technology platform for physical venues and stores. Aislelabs' cloud based product suite enables an end-to-end solution for enterprise users utilizing Wi-Fi and Bluetooth technology. Aislelabs Flow product for advanced in-store location analytics can be implemented using the existing Aruba Wi-Fi infrastructure. This document details integration with Aruba ALE (Analytics & Location Engine).



ALE Service

Aruba's Analytics & Location Engine (ALE) service can be enabled to send Wi-Fi location data to the Aislelabs' cloud platform for further analysis. The data consists entirely of anonymous and non-personal information – MAC address and location. No other information is collected or transmitted.

Prerequisites

Following Aruba components are needed:

- AirWave Management Suite for floor maps and infrastructure monitoring
- Mobility Controller and Access Points (APs) or Aruba Instant Access Points (IAPs)
- ALE Server to process location information received from the Mobility Controller

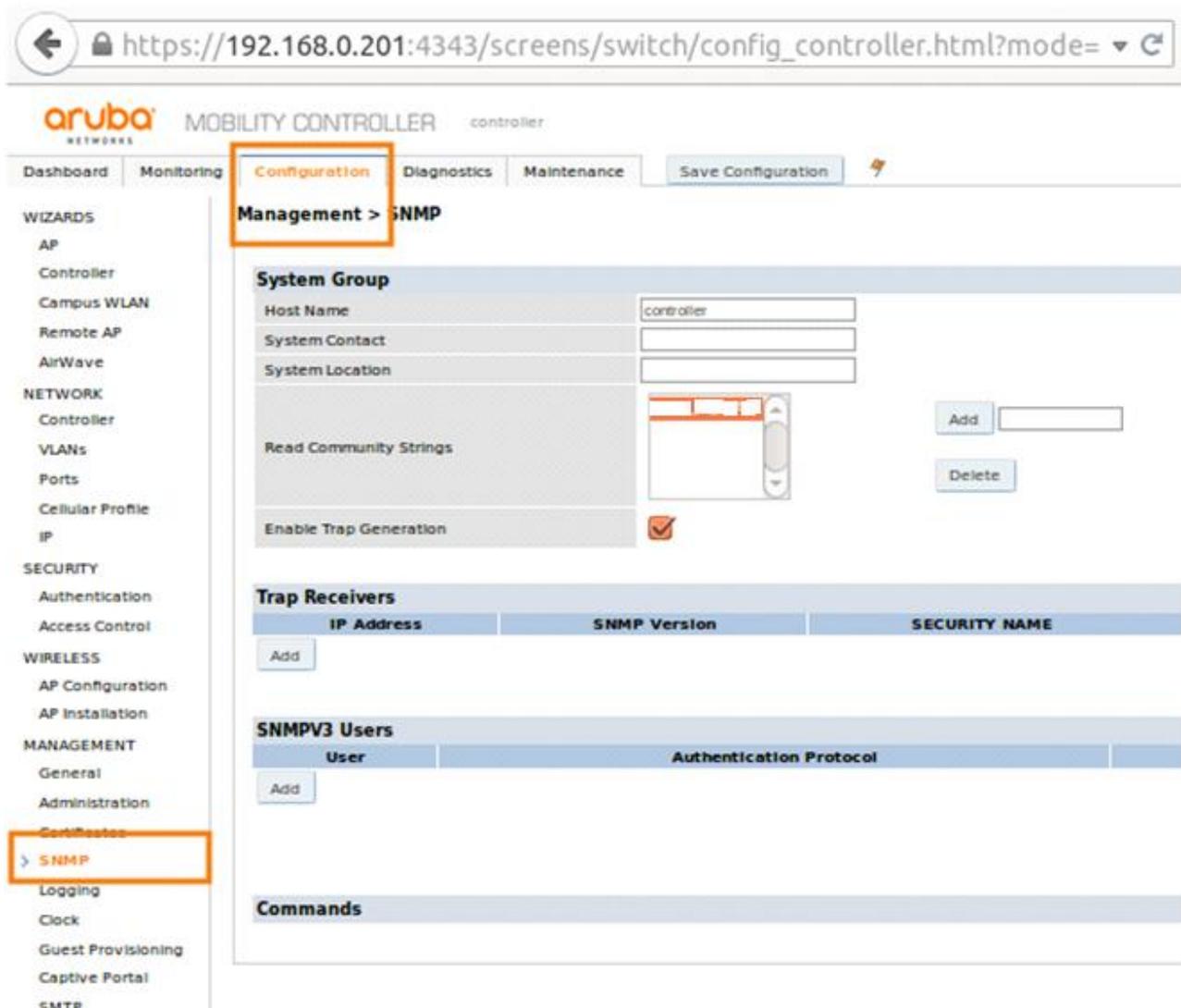
All Aruba controllers, APs and IAPs should be deployed and functional before configuring ALE. It is recommended that the same subnet be used for both AirWave and ALE so they can communicate seamlessly with the controllers, APs and IAPs.

Configuring AirWave and ALE

First setup all the APs and controllers by importing them in the AirWave configuration dashboard. They will be plotted using Visual RF on the floor map.

If using a Mobility Controller enter a customized "community string" for the controller to send data to AirWave. If using IAPs, follow the instructions in this guide to make sure they show up:

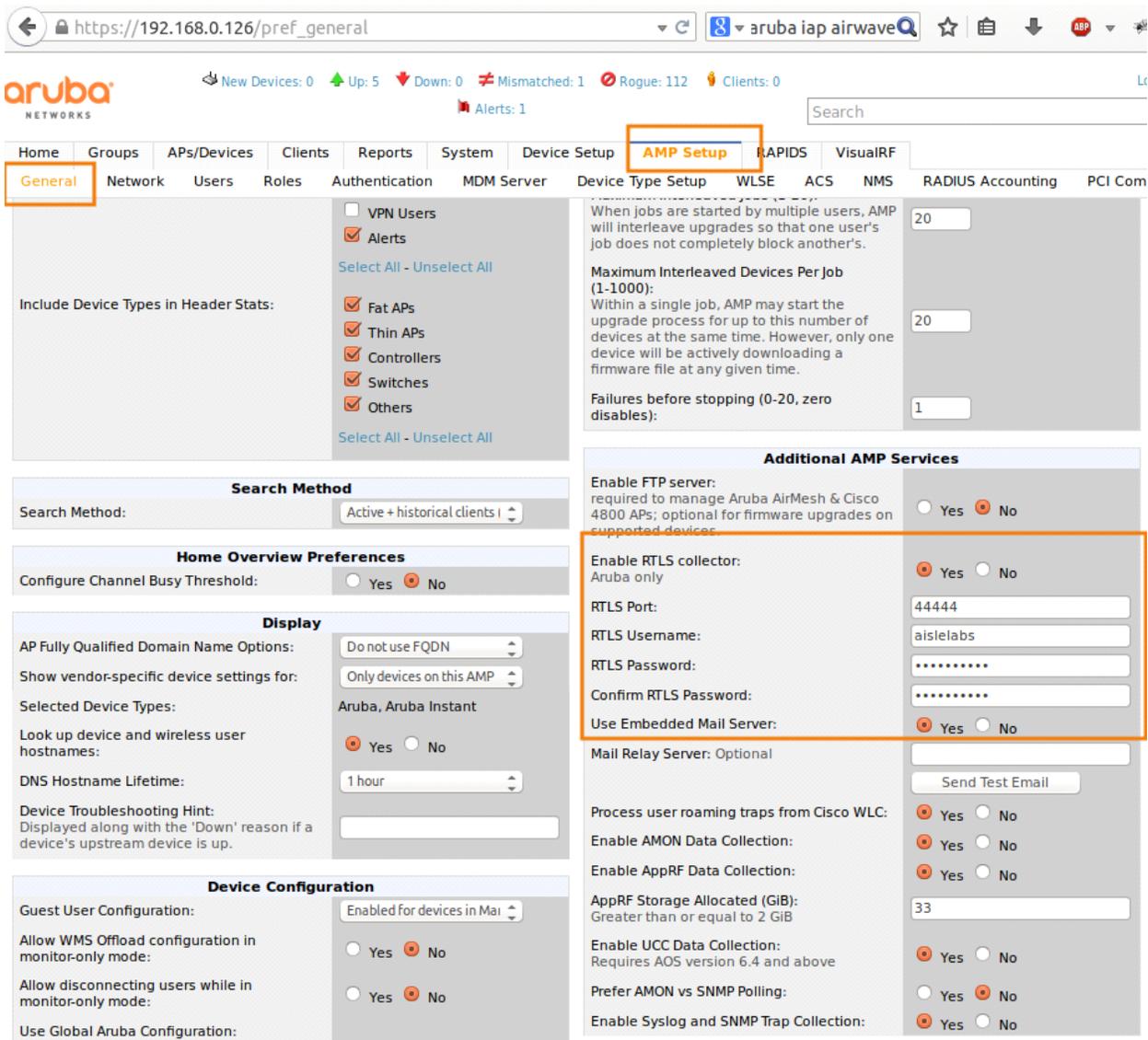
<http://community.arubanetworks.com/aruba/attachments/aruba/unified-wired-wireless-access/21314/1/Aruba%20Instant%20and%20AirWave.pdf>



The screenshot shows the Aruba Mobility Controller configuration page for SNMP. The browser address bar displays `https://192.168.0.201:4343/screens/switch/config_controller.html?mode=`. The page title is "aruba NETWORKS MOBILITY CONTROLLER controller". The navigation menu includes Dashboard, Monitoring, Configuration (highlighted), Diagnostics, and Maintenance. A "Save Configuration" button is visible. The left sidebar lists various configuration categories, with "SNMP" highlighted under the "MANAGEMENT" section. The main content area is titled "Management > SNMP" and contains the following sections:

- System Group**: Fields for Host Name (filled with "controller"), System Contact, and System Location. Below these is a table for "Read Community Strings" with an "Add" button and a "Delete" button. The "Enable Trap Generation" checkbox is checked.
- Trap Receivers**: A table with columns for IP Address, SNMP Version, and SECURITY NAME. An "Add" button is present below the table.
- SNMPV3 Users**: A table with columns for User and Authentication Protocol. An "Add" button is present below the table.
- Commands**: A section for entering configuration commands.

Next enable the RTLS collector in AirWave



The screenshot shows the Aruba AirWave AMP Setup configuration page. The 'AMP Setup' tab is selected, and the 'General' sub-tab is active. The 'Enable RTLS collector' option is checked, and the 'RTLS Port' is set to 44444. The 'RTLS Username' is 'aislelabs' and the 'RTLS Password' is masked with dots. The 'Use Embedded Mail Server' option is also checked.

AMP Setup - General

Include Device Types in Header Stats:

- VPN Users
- Alerts
- Select All - Unselect All
- Fat APs
- Thin APs
- Controllers
- Switches
- Others
- Select All - Unselect All

Search Method

Search Method: Active + historical clients

Home Overview Preferences

Configure Channel Busy Threshold: Yes No

Display

AP Fully Qualified Domain Name Options: Do not use FQDN

Show vendor-specific device settings for: Only devices on this AMP

Selected Device Types: Aruba, Aruba Instant

Look up device and wireless user hostnames: Yes No

DNS Hostname Lifetime: 1 hour

Device Troubleshooting Hint: Displayed along with the 'Down' reason if a device's upstream device is up.

Device Configuration

Guest User Configuration: Enabled for devices in Monitor-Only Mode

Allow WMS Offload configuration in monitor-only mode: Yes No

Allow disconnecting users while in monitor-only mode: Yes No

Use Global Aruba Configuration: Yes No

Additional AMP Services

Enable FTP server: required to manage Aruba AirMesh & Cisco 4800 APs; optional for firmware upgrades on supported devices. Yes No

Enable RTLS collector: Aruba only Yes No

RTLS Port: 44444

RTLS Username: aislelabs

RTLS Password:

Confirm RTLS Password:

Use Embedded Mail Server: Yes No

Mail Relay Server: Optional

Send Test Email

Process user roaming traps from Cisco WLC: Yes No

Enable AMON Data Collection: Yes No

Enable AppRF Data Collection: Yes No

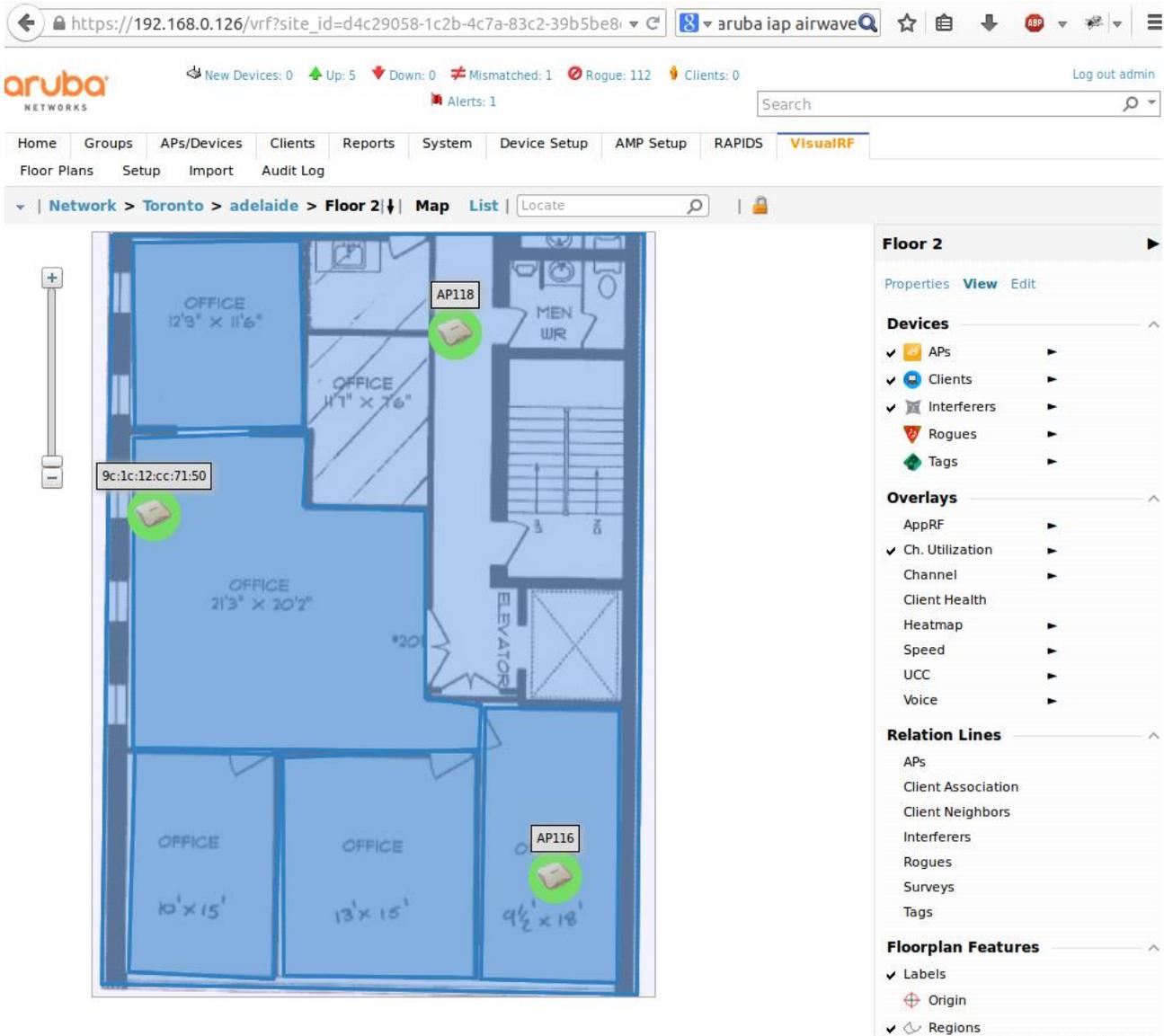
AppRF Storage Allocated (GiB): Greater than or equal to 2 GiB: 33

Enable UCC Data Collection: Requires AOS version 6.4 and above Yes No

Prefer AMON vs SNMP Polling: Yes No

Enable Syslog and SNMP Trap Collection: Yes No

Set-up VisualRF in AirWave. Create all the necessary geo-fences and place the APs and IAPs at the correct locations. The completed floor plan should look like this the screenshot below.



The screenshot displays the Aruba AirWave VisualRF interface. The browser address bar shows the URL: `https://192.168.0.126/vrf?site_id=d4c29058-1c2b-4c7a-83c2-39b5be8...`. The interface includes a navigation menu with options like Home, Groups, APs/Devices, Clients, Reports, System, Device Setup, AMP Setup, RAPIDS, and VisualRF. The main content area shows a floor plan for "Floor 2" with several office rooms and their dimensions:

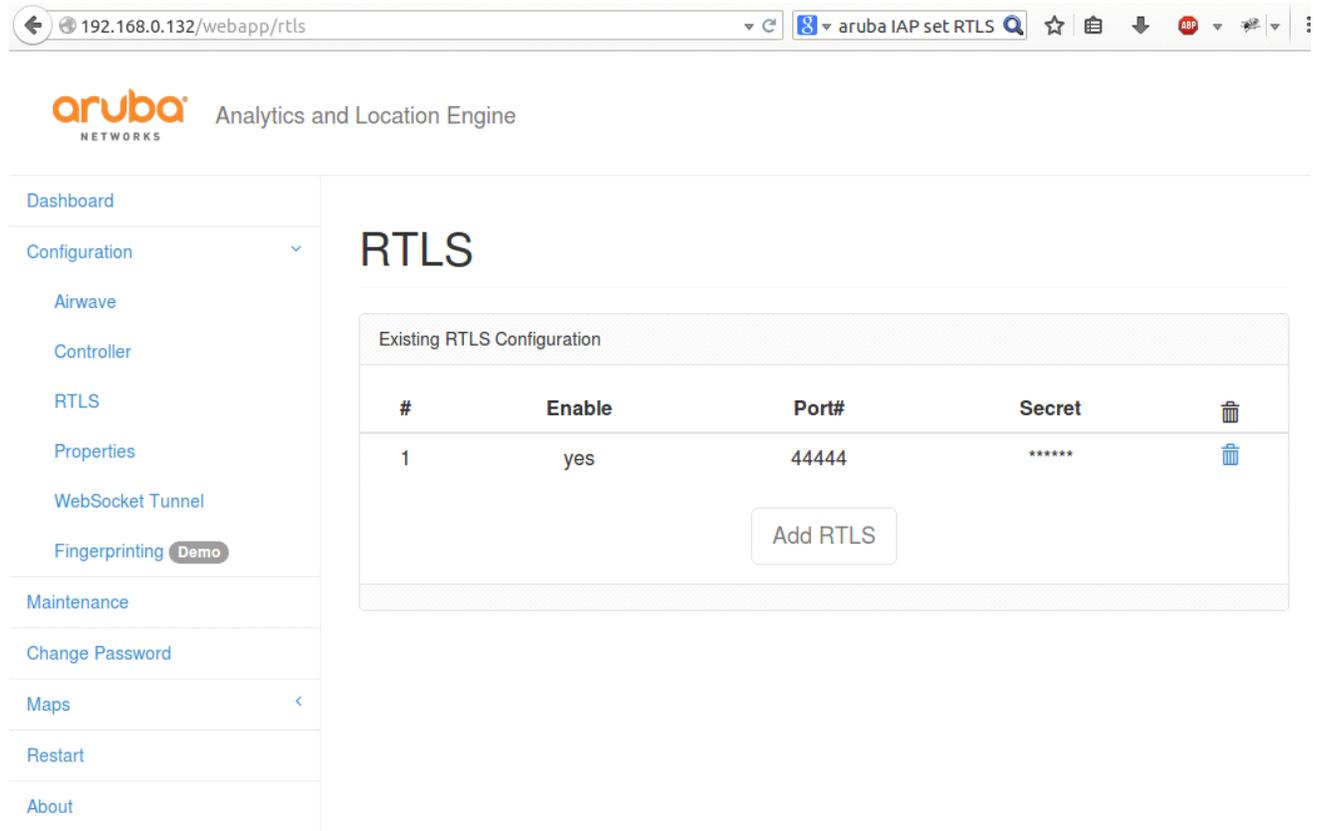
- OFFICE 12'9" x 11'6"
- OFFICE 11'1" x 7'6"
- OFFICE 21'3" x 20'2"
- OFFICE 10' x 15'
- OFFICE 13' x 15'
- OFFICE 9 1/2' x 18'

Three Access Points (APs) are placed on the floor plan, labeled AP118, AP116, and one with MAC address 9c:1c:12:cc:71:50. The interface also shows a sidebar with various settings and overlays for the floor plan, including:

- Devices:** APs, Clients, Interferers, Rogues, Tags
- Overlays:** AppRF, Ch. Utilization, Channel, Client Health, Heatmap, Speed, UCC, Voice
- Relation Lines:** APs, Client Association, Client Neighbors, Interferers, Rogues, Surveys, Tags
- Floorplan Features:** Labels, Origin, Regions

Inside ALE, set-up communication to AirWave and the Mobility Controller by entering the IP of the AirWave server and the Controller. Also, start RTLS on ALE: ALE will act as a RTLS server taking RTLS data from the controller and AirWave. If you are running IAPs, set RTLS following this guide:

http://www.arubanetworks.com/techdocs/Instant_40_Mobile/Advanced/Content/UG_files/RTLS_conf/ConfProc.htm



Existing RTLS Configuration

#	Enable	Port#	Secret	
1	yes	44444	*****	

Add RTLS

Assuming everything is correctly configured within 15 minutes the ALE dashboard should look like the screenshot below. The "Number of Location Computer" should be greater than zero. If this number stays at zero, check that Configuration -> Enable Geo Fence is enabled.

Make sure the firewall inside the ALE virtual machine allows data to TCP port 7999. This can be done by logging in and changing the IP tables.

192.168.0.132/webapp/uidashboard

aruba IAP set RTLS

aruba NETWORKS Analytics and Location Engine

Dashboard

Configuration <

Maintenance

Change Password

Maps <

Restart

About

Dashboard

Airwave Status

Site Fetch : 192.168.0.126 Success

Number of Campuses	1
Number of Buildings	1
Number of Floors	1
Number of APs	3
Number of Radios	6
Number of Geo Fences	6

Controller Status

Source	Status	# Messages
Controller 1 : 192.168.0.201	Up	2928
Controller 2 :		
Controller 3 :		
Controller 4 :		
RTLS Status	Enabled	122503 (3 APs)
IAP		0

Location Engine Status

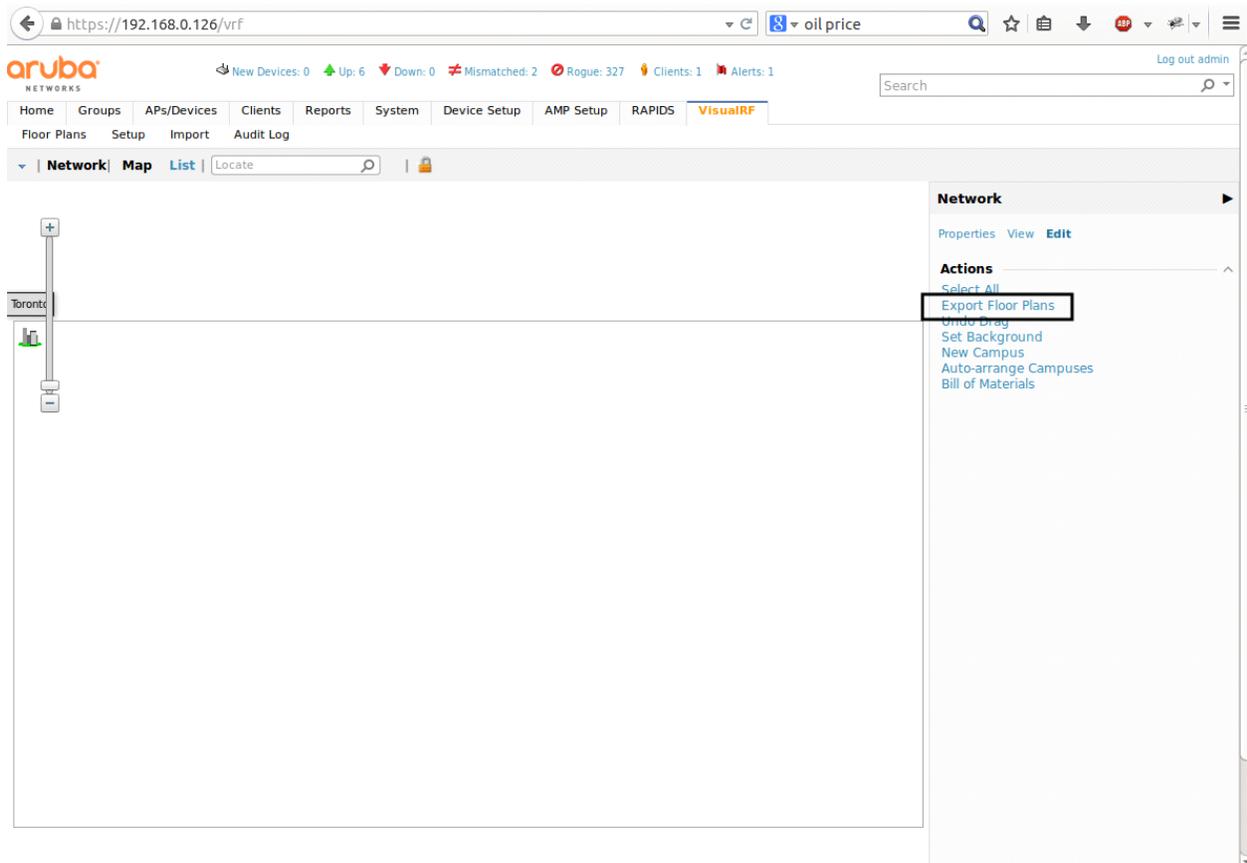
Number of Locations Computed	1800
Number of Single AP Locations	0
RSSI readings from unknown APs	0
Fingerprinting	Disabled
Number of floors fingerprinted	0

Others

Meridian Service	Down
Meridian Tunnel	Down
WebSocket Tunnel	Down
Geo Fences	Enabled
Single AP	Disabled
Anonymization	Disabled

192.168.0.132/webapp/uidashboard

Lastly, export the floor plans as an archive and send it to Aislelabs.



Firewall and VPN

You may need to make changes to the firewall or VPN to get data from the ALE. This can be done by either white-listing the IP address or creating a secure site-to-site VPN tunnel. Provide details of your network firewall and supported tunnel parameters to your Aislelabs' technical contact to initiate the connection.

Questions & Assistance

For technical assistance please contact us at the address listed below:

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