

AGUARDIO – HPE ARUBA INTEGRATION GUIDE

Set up and configure HPE Aruba Networking Access Points to receive Aguardio Pipe Sensor data

1. Architectural Overview · Hardware Overview
2. Settings · Configuration
3. Connection · Verification · Troubleshooting

Aguardio's smart IoT sensors deliver unique data from water pipes and bathrooms. Digitalization of pipes with sensors enhances water & energy management plus optimizes buildings & operations via data (both for cold & hot water plus water for heating). The Pipe Sensor e.g. monitors water activity for water pipes and toilets (e.g. flushes), detects leaks, and enables Legionella risk management plus delivers data for optimization of heating.



[Click here to download Aguardio HUB guide](#)

1. Architectural Overview and Hardware Overview

- Each Aguardio sensor is broadcasting a BLE signal every three seconds. This contains relevant measurement data.
- On average, the signal can be captured within 40 meters, but in some cases, it may be as low as 5 meters. Signal strength is influenced by factors such as sensor placement and physical obstacles like walls, which can significantly impact the Received Signal Strength Indicator (RSSI) value. To determine signal strength and signal reach from a specific location, various apps can be used, such as nRF Connect. Aguardio can guide on this.
- If the RSSI value in Aruba Central is displayed as too low, the HPE Aruba Networking Access Point might fail to pick up all messages from the sensor and this may result in data gaps. The placement of walls and their material can be the cause, to improve RSSI value consider installing an extra HPE Aruba Networking Access Point to collect data.
- If the HPE Aruba Networking Access Point fails to pick up at least one measurement every minute, the Aguardio Hub platform might not be able to show accurate information.
- If configured properly as shown in this guide, the HPE Aruba Networking Access Points scans for BLE advertisement messages from nearby devices based on your radio profile configuration.
- When the Aguardio app is installed on the HPE Aruba Networking Access Points, it filters incoming BLE advertisement data to the Aguardio Pipe Sensors and forwards any data collected to the Aguardio servers via a secure WebSocket connection (WSS).
- The connection expects an access token that verifies the client to the server. Once the data has been successfully transferred to the server, it can be viewed in the Aguardio Hub platform.

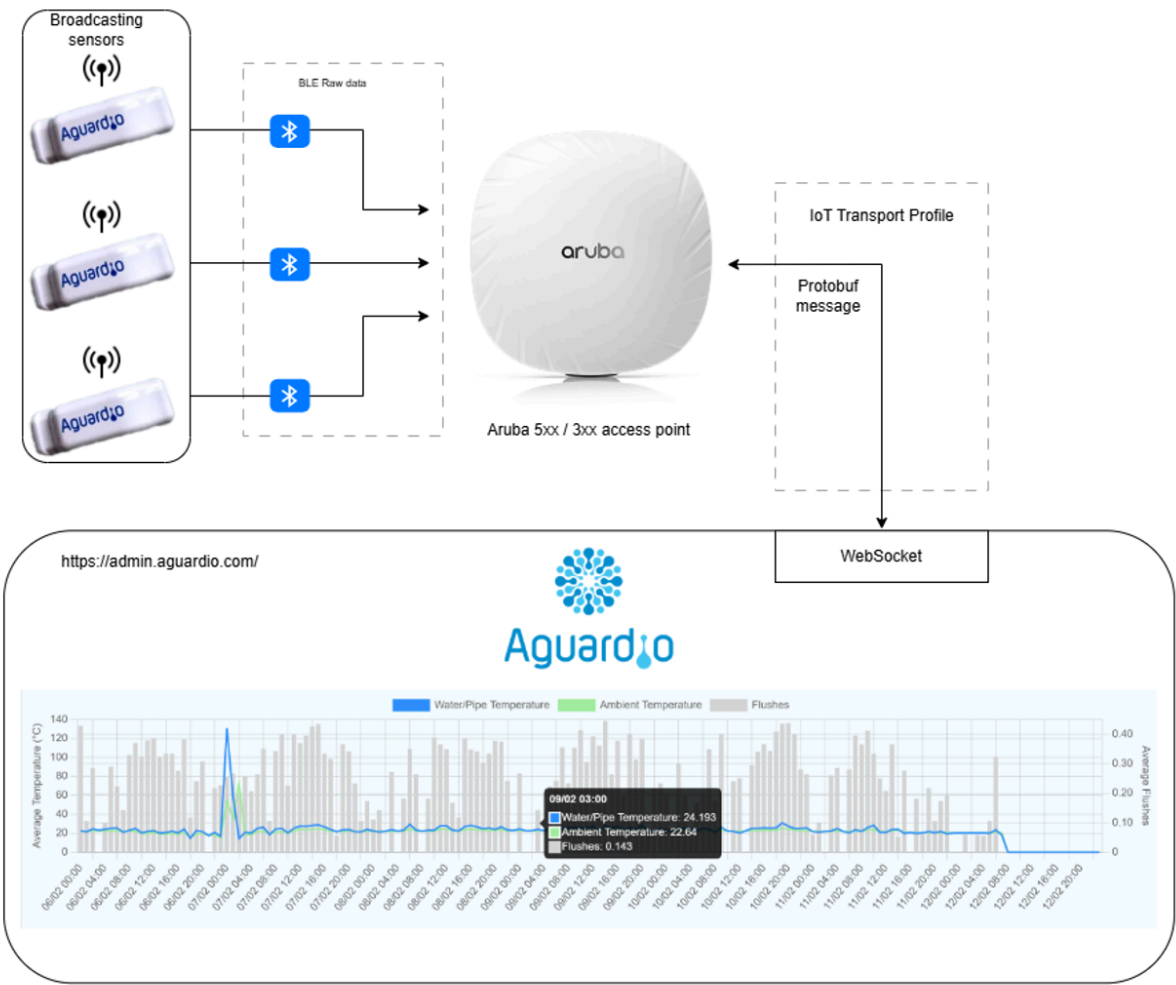


Figure 1: Architectural diagram of an Aguardio-Aruba setup

1.1 In order to configure an HPE Aruba Networking Access Points to handle Aguardio sensor data, it is necessary to have access to the Aruba Central platform. Please make sure that all devices have the required firmware version installed, as, specified in the requirements.

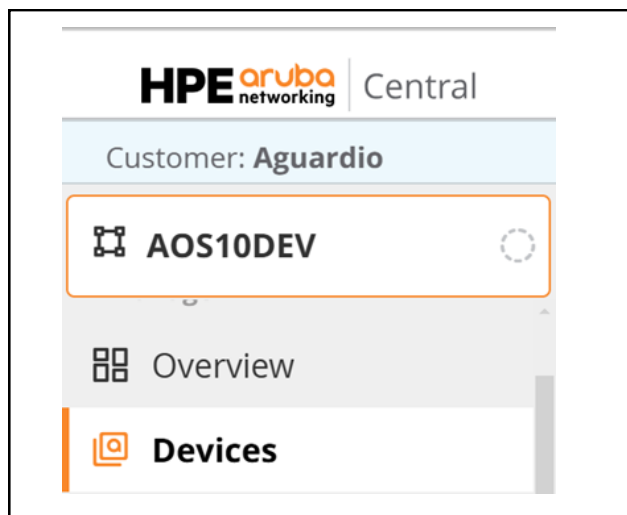
Component	Version Requirement	Notes
HPE Aruba Networking Access Points	Aruba AP – 3xx/5xx	BLE support required
Aruba AP firmware	AOS 10.4 LSR / AOS 10.7 SSR	Refer to release notes for AP hardware support.
Aguardio Pipe Sensor	1.2.0-rc2	There are different types of firmware – if you are unsure which version your device has, contact Aguardio support at support@aguardio.com

2. Settings and Configuration

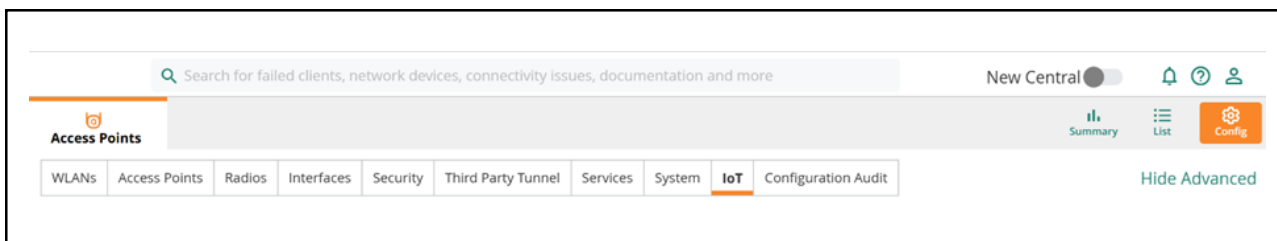
The following step-by-step instruction contains the necessary configuration to set up Aguardio sensors with an HPE Aruba Networking Access Points

Radio Profile

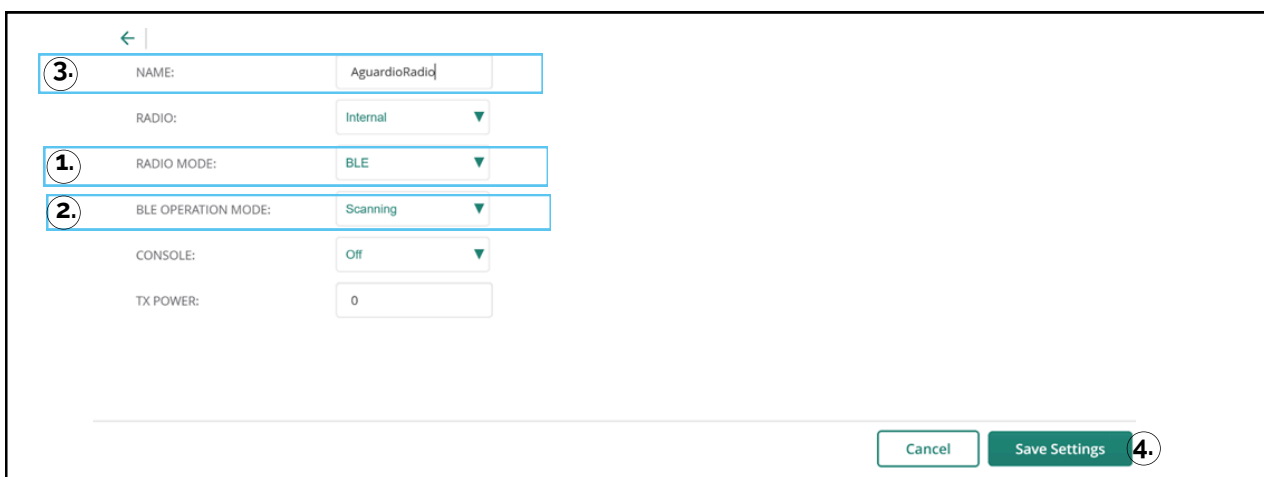
- 2.1 In Aruba Central, select your preferred group to which your access point is assigned to. Then select **'Devices'**. If the device, site, or organization has not yet been set up, please check the Aruba guide, or contact Aruba support.



- 2.2 Select **'Config'** on the right - then go to the 'IoT' tab.



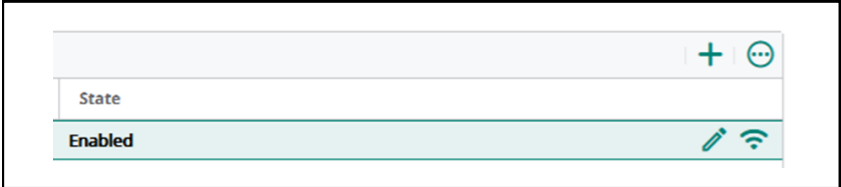
- 2.3 Create a new IoT Radio Profile using the '+' sign and **set the 'Radio Mode' to BLE (1)**. **Set 'BLE Operation Mode' to either 'Scanning' or 'Both' (2)**, **name your radio profile (3)**, click **'Save Settings' (4)**.



The screenshot shows the HPE Aruba Central 'IoT' configuration form. It has a back arrow at the top left. The form contains several fields: 'NAME' (AguardioRadio), 'RADIO' (Internal), 'RADIO MODE' (BLE), 'BLE OPERATION MODE' (Scanning), 'CONSOLE' (Off), and 'TX POWER' (0). The 'RADIO MODE' and 'BLE OPERATION MODE' fields are highlighted with blue boxes and numbered 1 and 2 respectively. The 'NAME' field is highlighted with a blue box and numbered 3. At the bottom right, there are 'Cancel' and 'Save Settings' buttons. The 'Save Settings' button is highlighted with a green box and numbered 4.

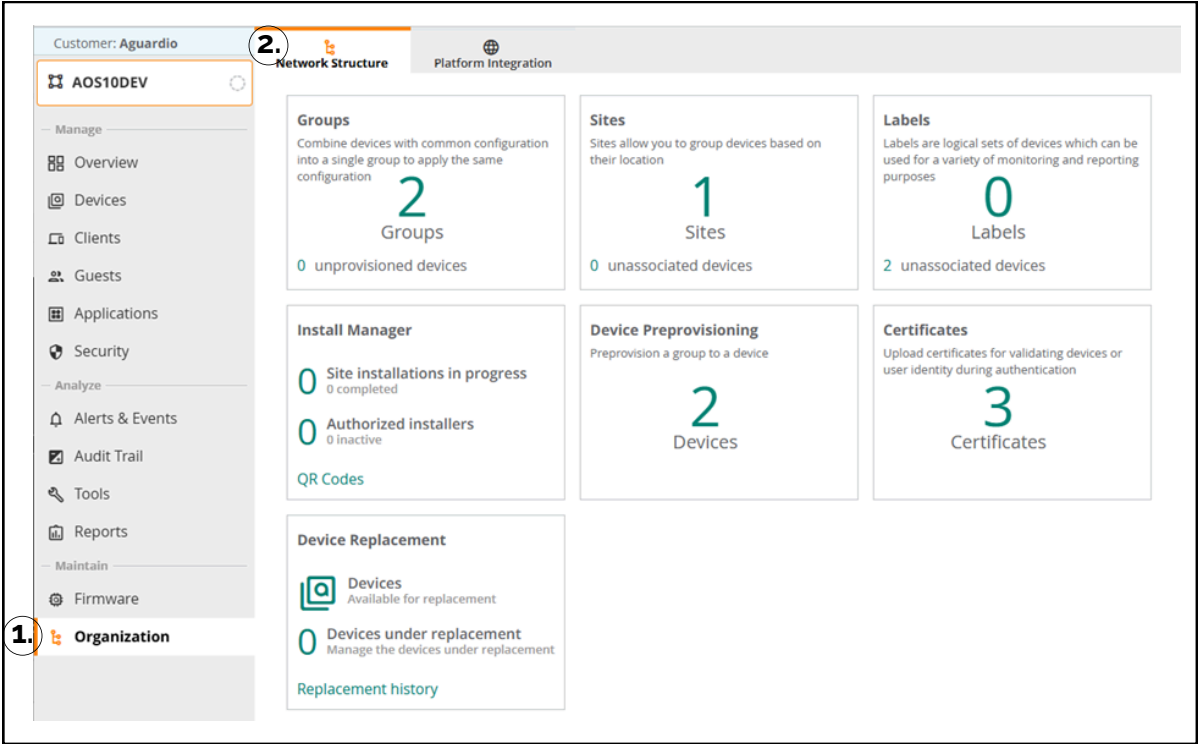
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2.4 Enable the **radio** by hovering over the newly created profile, then click the signal button on the right side. Under **'State'** you should see **'Enabled'**. If you would like to edit the radio profile, you may do so by clicking the pen button next to it.



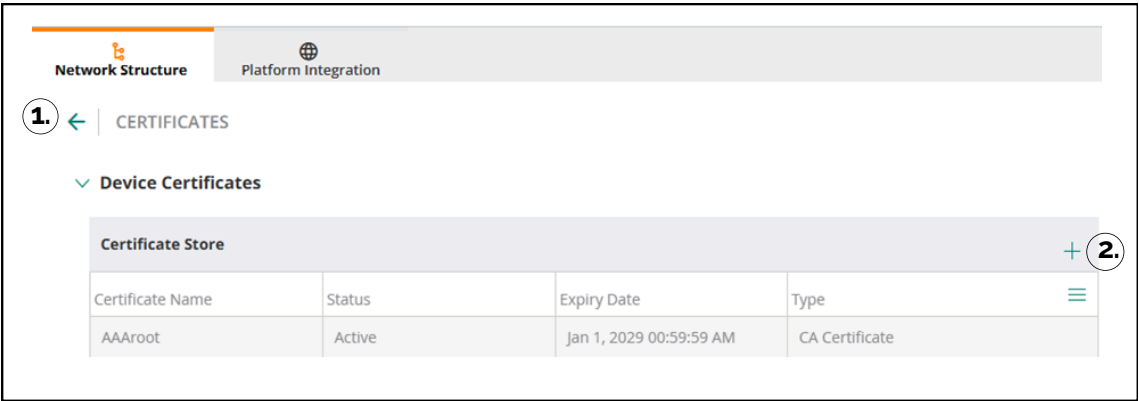
2.5 Install Certificate

- 1 Navigate to **'Organization'** on the left-side menu,
- 2. Select the **'Network Structure'** tab.



2.6 Install Certificate

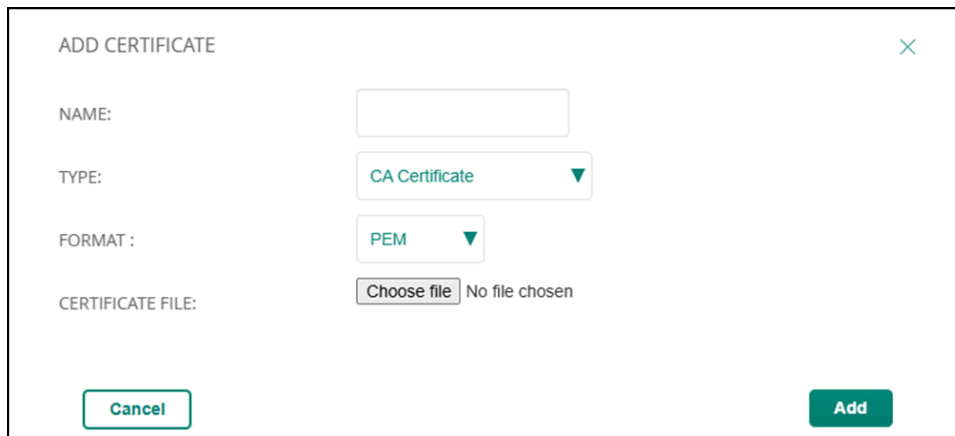
- 1 Click the **'Certificates'** tile.
- 2. Add a new certificate by clicking the **'+'** sign next to 'Certificate Store'.



2.7 Install Certificate

Enter a name for the certificate, then select '**CA Certificate**' as a Type from the drop-down list. The format should remain '**PEM**'. Aguardio uses a publicly signed certificate. You need to upload the necessary root certificate from DigiCert. Download the following certificate from the link below:

<https://cacerts.digicert.com/DigiCertGlobalRootG2.crt.pem>



ADD CERTIFICATE ✕

NAME:

TYPE: CA Certificate ▼

FORMAT : PEM ▼

CERTIFICATE FILE: Choose file No file chosen

Cancel Add

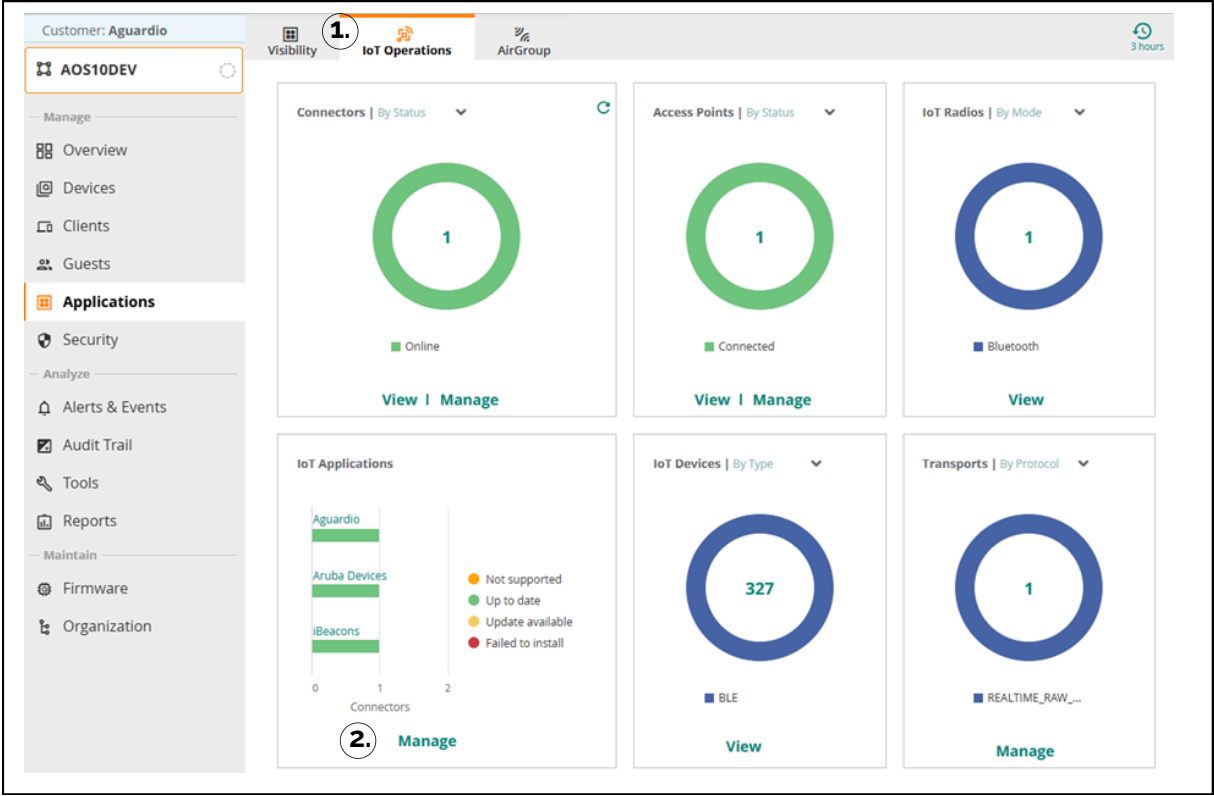
Trouble uploading the certificate?

Please send us a message marked ARUBA to **support@aguardio.com**.

2.8

Installing Aguardio app

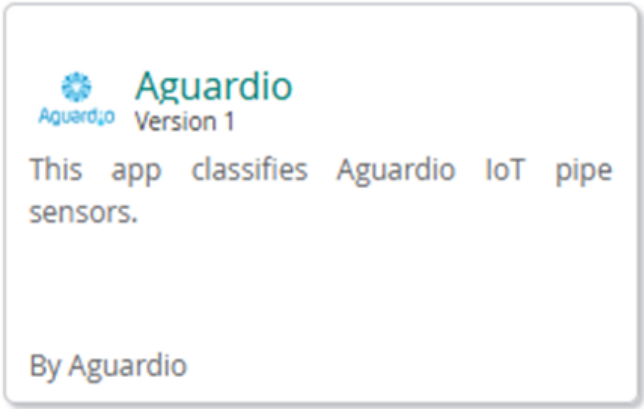
1. Navigate back to the 'IoT Operations' dashboard under 'Applications'
2. On the bottom-left tile, select 'Manage'.



2.9

Installing Aguardio app

1. Browse for the **Aguardio app** from the available apps, then click on it.




Aguardio

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2. Click **'Install'** on the application page, then refresh the status to confirm the successful installation.

← AGUARDIO On Group AOS10DEV



Verticals

- Hospitality
- Healthcare
- Multi Housing

Configured Install State

Installed

Installed version

1

App store status

[Go to platform website](#)

Update

Uninstall

Privacy Statement

Developer [J. Developer Website](#)

Support URL

Apps Resource Requirements

Latest Version | [Version History](#)

License Requirements


Foundation License

Supported Platforms

AP3xx and AP5xx

Aguardio's smart IoT sensors enhance water and energy management by digitalizing water pipes, bathrooms and washrooms. The Pipe Sensor monitors water usage in water pipes and toilets, detects leaks, and ensures Legionella risk management. This app classifies Aguardio sensors for use with Aruba access points.

App Status across Connectors



Not Supported

In Progress

Up to date

Failed to Install

2.10

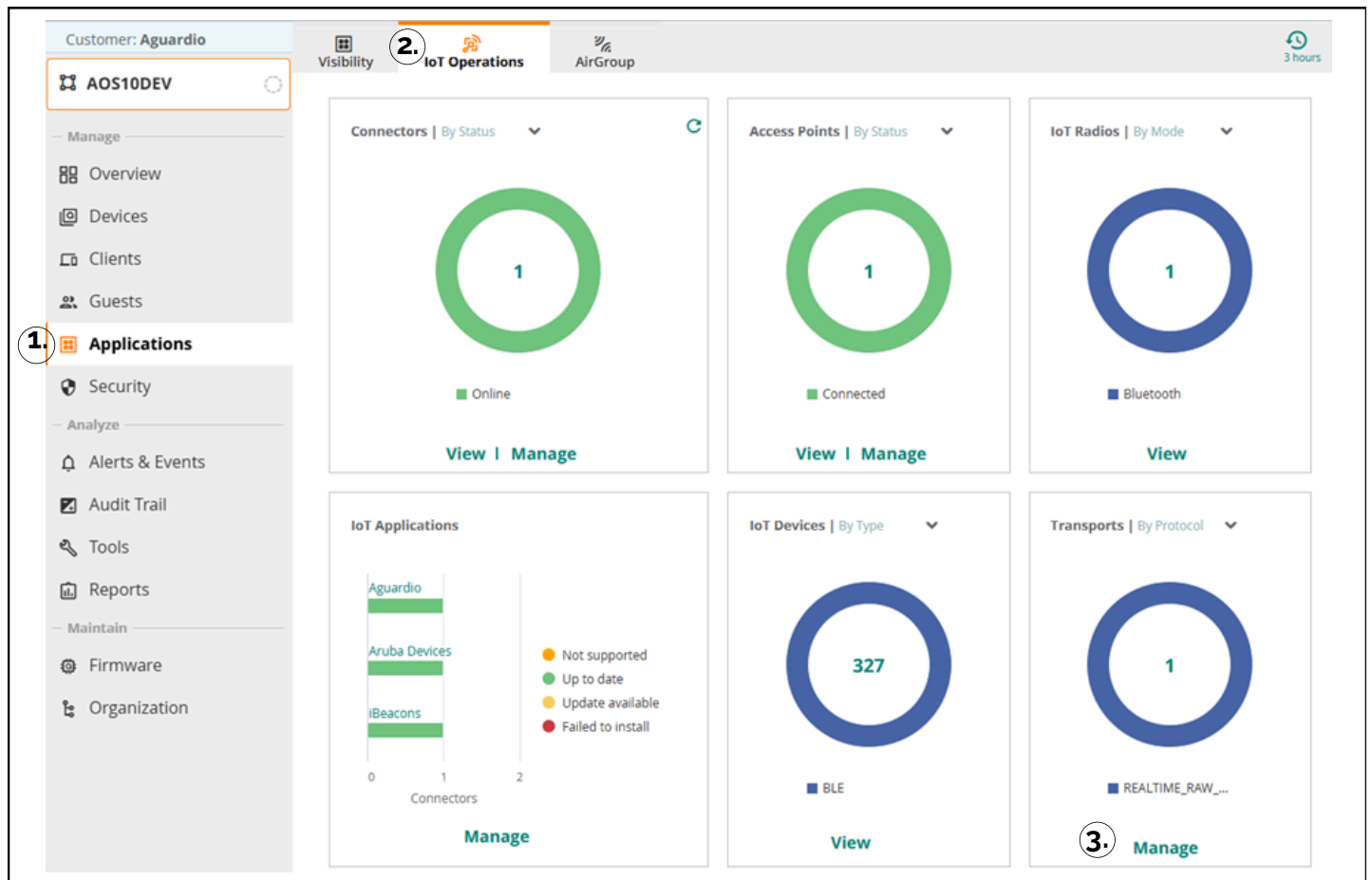
Transport Profile

1. Navigate to **'Applications'** on the left-side menu,
2. Select the **'IoT Operations'** tab.

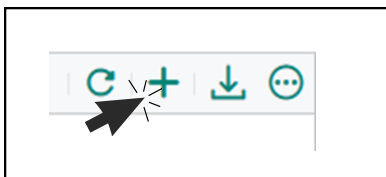
You should see a dashboard with relevant information about your current IoT setup.

3. Click **'Manage'** on the **'Transports'** tile in the bottom right area of the dashboard,

7.



4. Create a new Transport profile by clicking '+' on the right side.



2.11 Configure the Transport Profile

1. Enter a name for your Transport Profile – it is recommended to use a short, easy-to-remember name.
Select the 'Data Frames' Stream Type.
2. Under 'Subscriptions', select 'Device Class' as a Type, then select 'Aguardio' as a value from the drop-down menu.
3. Under 'Destination', set the Protocol Type to 'WSS'
4. Enter the following as a URL: `socket.aguardio.com/sensor`

Aguardio

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5. Set the Format Type to 'protobuf'
6. Under 'Authentication', select 'Use token', then enter your API key that you generated in the Aguardio Hub (<https://admin.aguardio.com/>) . If you have trouble accessing the Aguardio Hub, please send us a message at support@aguardio.com, or check out our Aguardio Hub guide at <https://www.aguardio.com/downloads/>

Edit Transport Profile

1. Name
ATS

Description
Aguardio Server1

Stream Type
☐ Periodic Telemetry ☒ Data Frames

2. Subscriptions

Type
Device Class

Value
Aguardio

+

3. Destination

Protocol Type
WSS

4. URL
socket.aguardio.com/sensor

5. Format Type
protobuf

6. Authentication

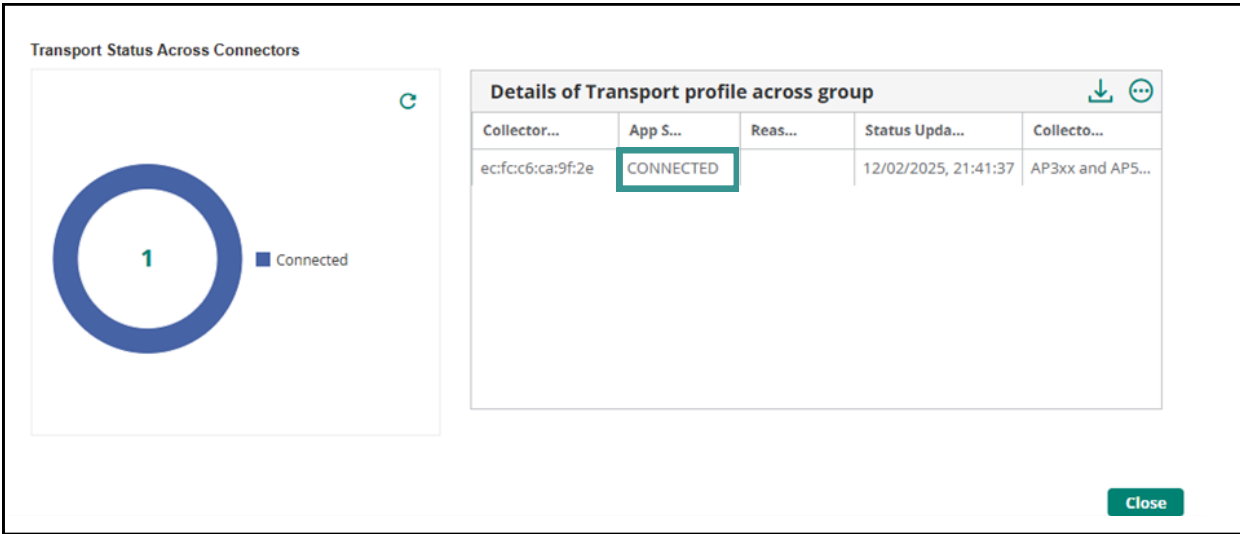
☐ Use credentials ☒ Use token

Token
12345

- 2.12 Transport Profile check
- Ensure that the connection is working by clicking the circular symbol on your transport profile.

Name	Descr...	Type
ATS	Aguardio Se...	Realtime

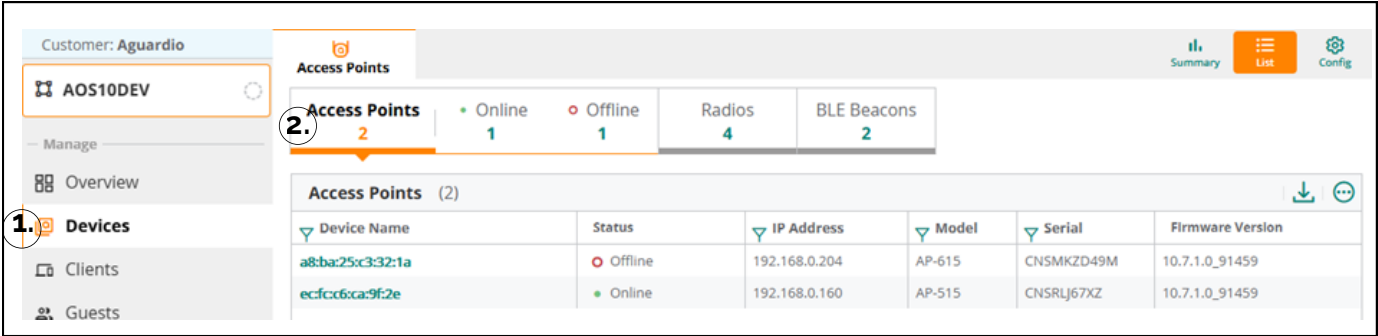
The 'App Status' column should read '**CONNECTED**' on your transport profile.



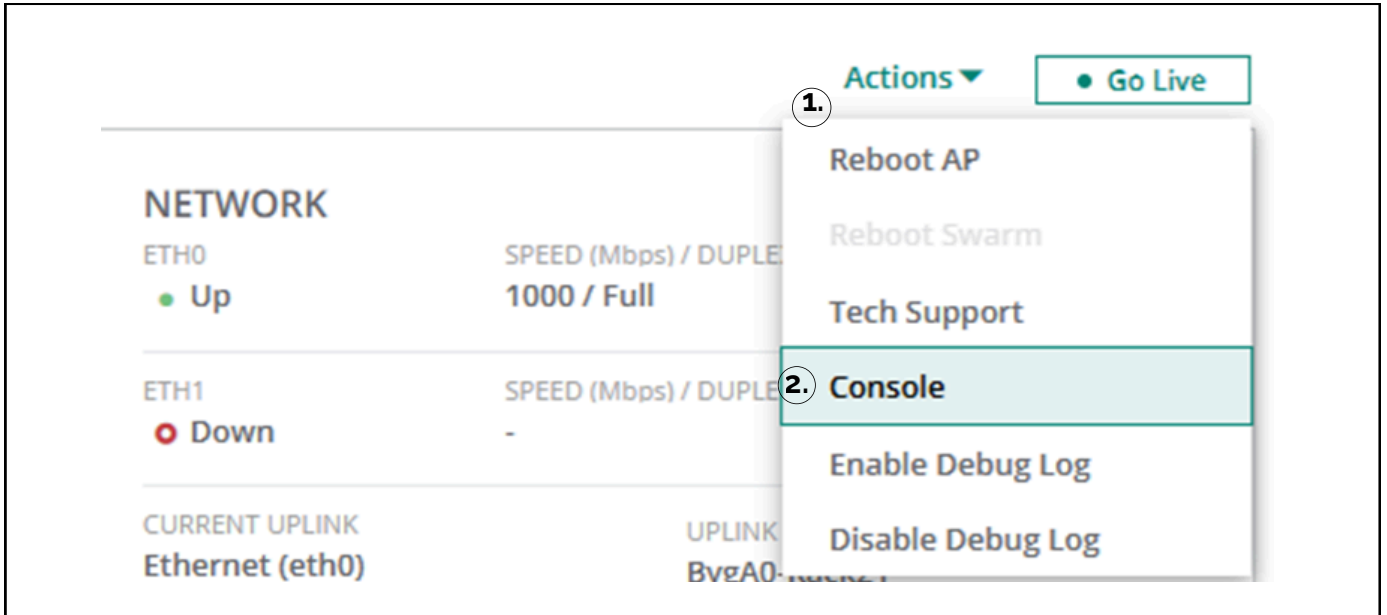
3. Connection, Verification and Troubleshooting

- The HPE Aruba Networking Access Point can be accessed with a console from the Aruba Central platform to perform troubleshooting.
- If you encounter any issues receiving data from the Aguardio sensors with your HPE Aruba Networking Access Point, please check the console commands to verify data, connectivity and app status in the console.
- Please note that the GUI of the Aruba Central may show outdated information.
- If you are unsure whether the status of the HPE Aruba Networking Access Point is up to date, please refer to the console to receive live information on the device.

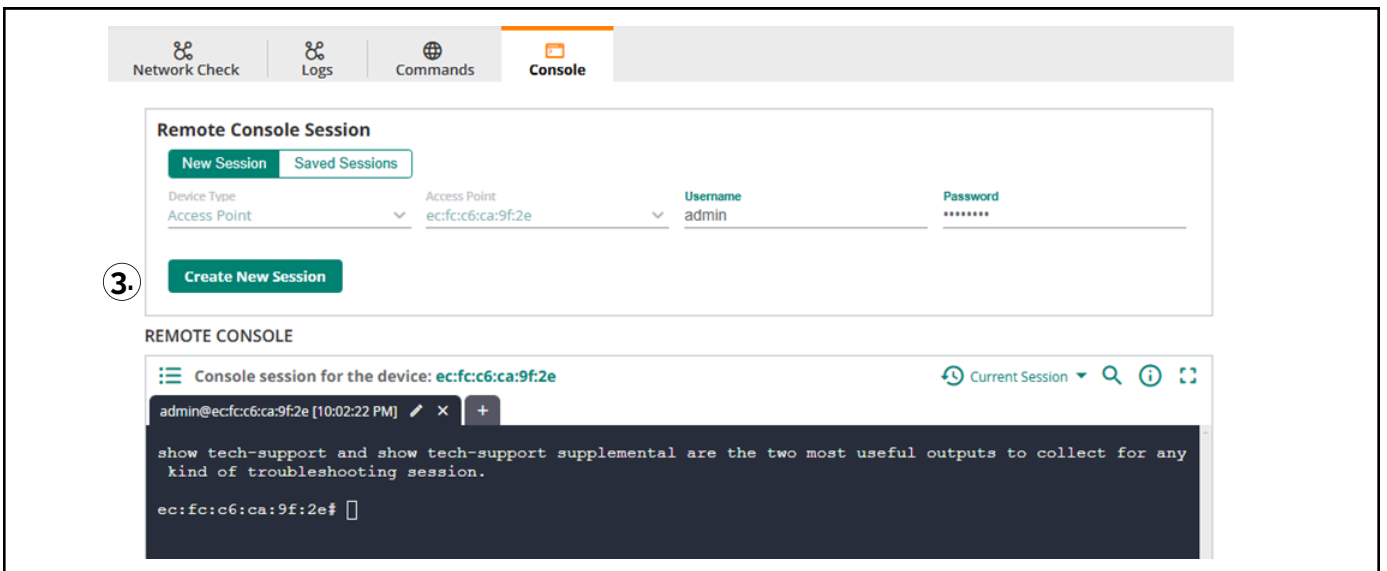
3.1 Select '**Devices**' on the left-side menu, then select the HPE Aruba Networking Access Points you would like to access by clicking its MAC address.



3.2 On the right, select '**Actions**', then '**Console**' from the drop-down menu.



3.3 Enter your HPE Aruba Networking Access Point's username and password, then click '**Create New Session**'



3.4

The following commands can help verify and confirm the status of your connection and the configuration of your HPE Aruba Networking Access Point:

Step verified	Console Command	Notes
Radio Profile	show iot radio-profile <profile_name>	To list all configured profiles, omit profile name.
Transport Profile	show ap debug aec-config transports <profile_name>	To list all transport profiles, omit profile name.
Certificate(s) Assignment	show ap debug aec-config certs	
Transport Profile Connection Status	show ap debug ble-relay repo	
Transport Profile Connection Error log	show ap debug ble-relay ws-log <profile_name>	

3.5

The following additional console commands can be used (not a complete list):

Console Command	Effect
<command> ?	Lists the available sub-commands for the entered <command>
show ap debug ble-config	Shows a summary of radio and transport profile configuration
show ap debug ble-table all	Shows all Bluetooth devices scanned by the AP
show ap debug ble-table mac <macaddress>	Shows detailed information on the device specified by its MAC address
show ap debug ble-daemon	Shows the log for the connection
show ap debug ble-relay iot-profile	Shows detailed information on the transport profiles
show ap debug ble-relay report	Shows detailed report on the connection status
show ap debug aec disp-config-objs	Shows a list of apps that are currently running on the AP