# OpenRoaming set up guide for Arista Wi-Fi solution

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*Users should be able to automatically connect to Wi-Fi networks seamlessly and securely.*

## Introduction

Secure, seamless roaming between Wi-Fi and cellular networks is a necessity in today's hyper-connected world to provide users uninterrupted connectivity wherever they are - at events, on the road, in airports, shopping malls, universities or sports arenas. The key requirement of such seamless connectivity is that users should be able to automatically 'connect' to Wi-Fi networks without the need for entering passwords and exposing themselves to cyber attacks.

## What is OpenRoaming?

The OpenRoaming framework facilitates Wi-Fi users to connect to the Wi-Fi network owned by any Access Network Provider (ANP) who is a part of the OpenRoaming consortium. The users can use access credentials provided by Identity Providers (IDPs) which are part of the OpenRoaming consortium. OpenRoaming is built on top of Passpoint technology and creates a standardized federation policy to establish a scalable, one-to-many relationship between multiple IDPs and ANPs. The configuration effort is done one time and for all the federation participations, offering scalable roaming across networks of multiple ANPs.


*Fig 1: OpenRoaming framework of Identity Providers and Access Network Providers for seamless roaming and onboarding*

*Source: Wireless Broadband Alliance*

## Benefits of OpenRoaming

The OpenRoaming capability of Arista APs benefits all the stakeholders in a network - network operators, users and enterprises alike.

**Network operators**

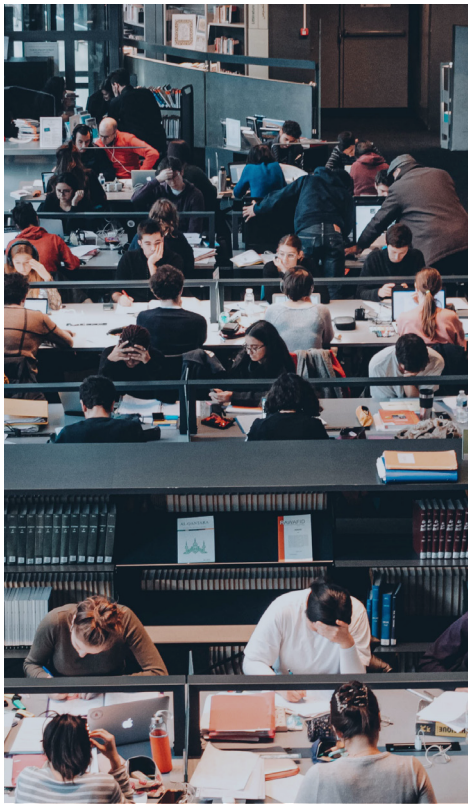
- Wi-Fi offload: Dense deployments where a cellular network's capacity falls deficient from the heavy traffic demands can benefit by offloading traffic seamlessly to Wi-Fi hotspots.
- Differentiated user experience: Operators can improve customer engagement through personalization and value-added services such as loyalty integration and locationing services.
- Advanced analytics: Seamless roaming across multiple IDPs and ANPs provides a richer data pool of users for extracting meaningful insights.

**Users**

- Enhanced experience: Users are spared from the risks of joining public networks through streamlined onboarding and security procedures.
- Personalisation: OpenRoaming facilitates personalized user experiences through integration with loyalty and payment applications.

**Enterprises**

- Scalability: Large enterprises and universities often receive a sizable footfall of guest users from other Identity Providers, or need to allow their users to roam to third-party networks. OpenRoaming guarantees this scalability and roaming capability.
- Secure network: OpenRoaming ensures that only authorized users get connected to the enterprise network via an 'active directory' or a user's allow-listing mechanism that can be integrated in the enterprise's AAA.
- Easy user management: User lifecycle management is simplified due to the federated architecture. through integration with loyalty and payment applications.



# How to configure Arista APs for OpenRoaming

STEP 1

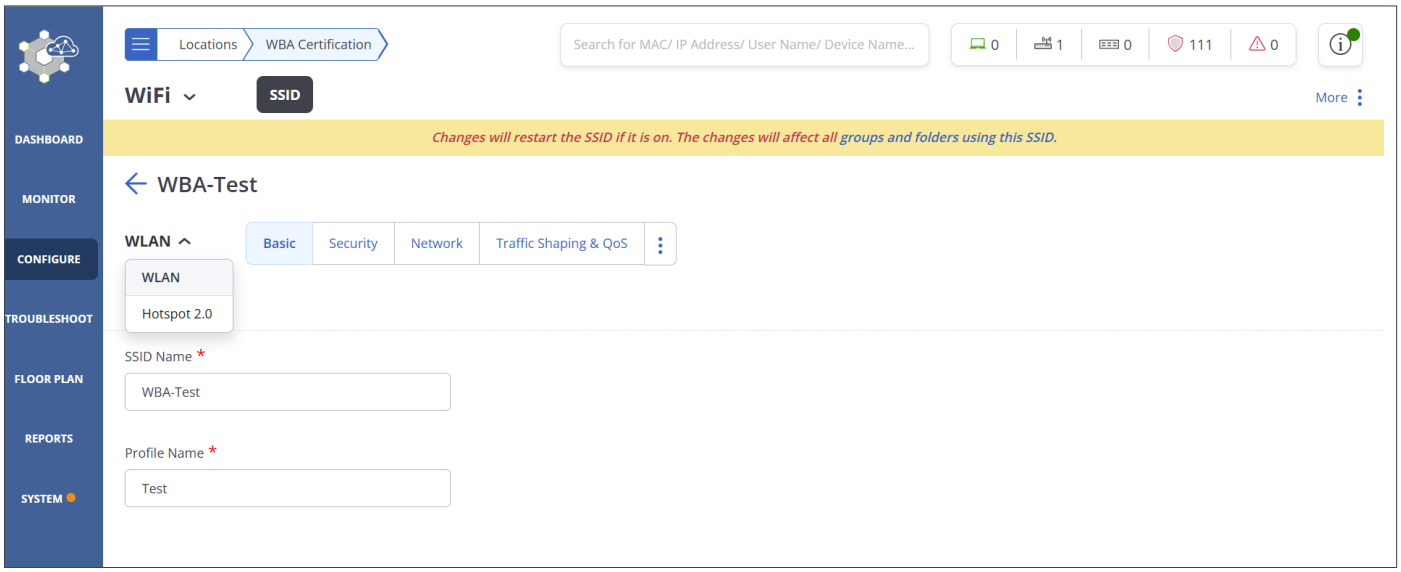
## Setup firewall rules

Ensure that the following ports are open in firewall/security group:
- TCP: 80, 443, 1812, 1813, 2083, 3306, 11812, 11813
- UDP: 1812, 1813, 2083, 11812, 11813

STEP 2

## Add a Hotspot 2.0 SSID

Create a Hotspot 2.0 SSID by navigating to Configure ⟶ Hotspot 2.0. Add an SSID (eg., WBA-Test in the above screenshot) with appropriate Security levels to support Hotspot 2.0, following the below WLAN settings



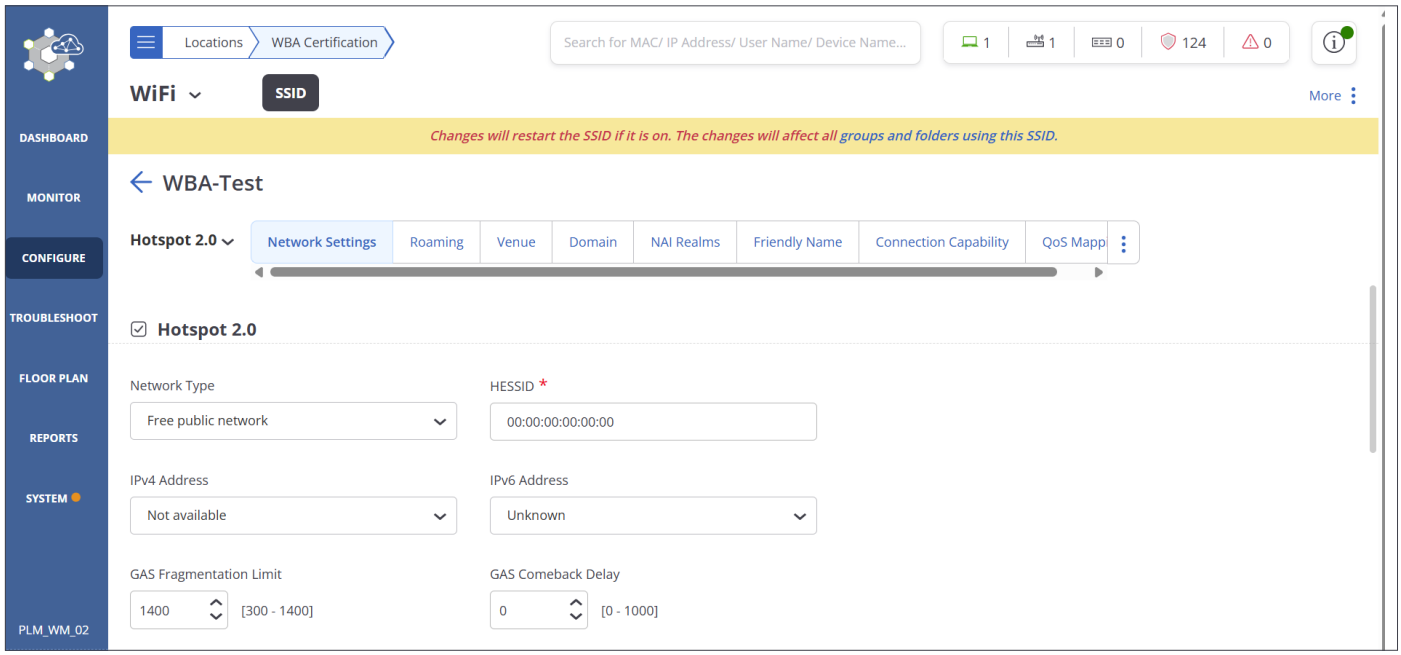
### WLAN Settings

| Parameter | Setting/Value |
|---|---|
| **Security** | |
| Security Level | WPA3 Transition mode |
| RADIUS Authentication Server | WBA |
| RADIUS Accounting Server | WBA |
| **RADIUS** | |
| RADIUS Server Name | WBA |
| Authentication Port | 1812 |
| Accounting Port | 1813 |
| **Network** | |
| Network Mode | Bridged |
| **Traffic Shaping & QoS** | |
| Enforce WMM Admission Control | Uncheck |

***Table 1:*** *WLAN Settings*

### Hotspot 2.0 Settings

The configuration parameters required for enabling OpenRoaming on the Arista AP can be set under Hotspot 2.0. The parameters to be set on each tab and their representative values are listed in the table below. The parameters can be set to appropriate values as per the deployment choices.




| Parameter | Setting/Value |
|---|---|
| **Network Settings** | |
| Network Type | Free Public Network |
| HESSID | 00:00:00:00:00:00 |
| IPv4 Address | Not available |
| IPv6 Address | Unknown |
| Internet Access | Check |
| Network Authentication Type | Not configured |
| **Roaming** | |
| Roaming consortiums | 5A03BA0000<br>004096 (Cisco) |

***Table 2:*** *Hotspot 2.0 Settings*

| Parameter | Setting/Value |
|---|---|
| **Venue** | |
| Venue Group | Business |
| Venue Type | Unspecified Business |
| Venue Name | WBA |
| Language Code | ENG |
| **Domain** | |
| Domain | google.openroaming.net<br>apple.openroaming.net<br>Openroaming.goog<br>idp.openroamingconnect.org |
| **NAI Realms** | |
| None required | |
| **Friendly Name** | |
| None required | |
| **Connection Capability** | |
| None required | |
| **QoS Mapping** | |
| None required | |

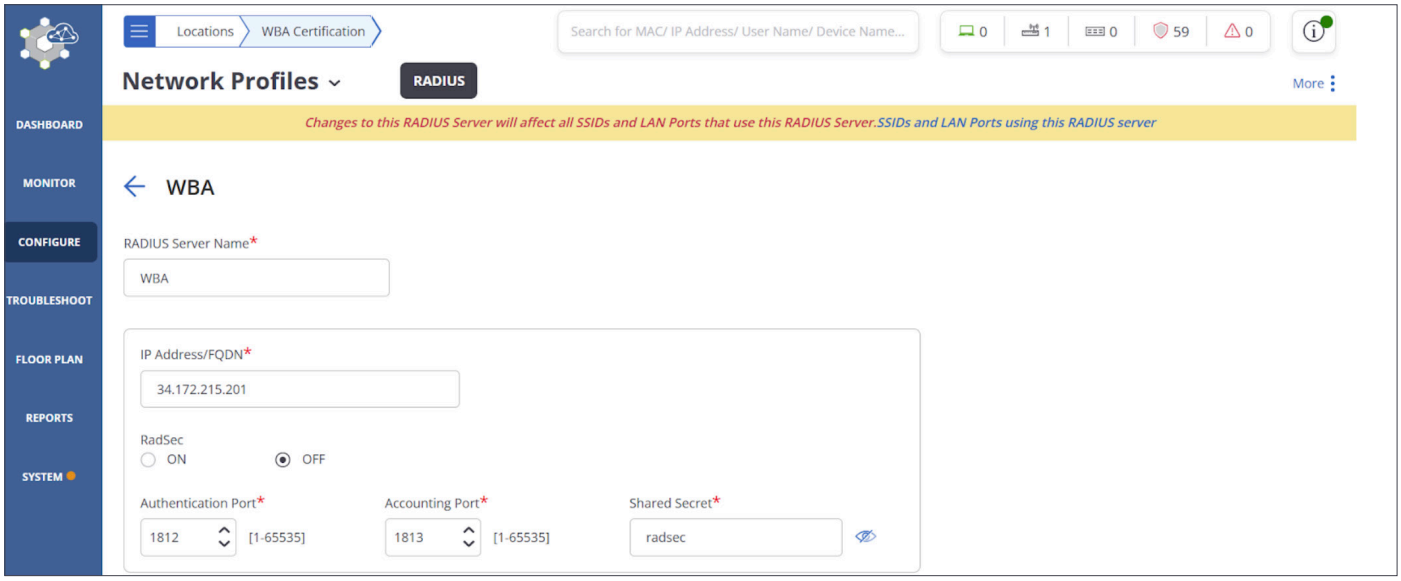
***Table 2:*** *Hotspot 2.0 Settings*

**Step 3: Configure RADIUS server**

Go to Configure ⟶ Network Profiles ⟶ RADIUS. Configure the RADIUS settings as below:

| Parameter | Setting/Value |
|---|---|
| RADIUS Server Name | WBA |
| Authentication Port | 1812 |
| Accounting Port | 1813 |

***Table 3:*** *RADIUS Settings*



STEP 3

### Download client profile

Download and install client profile on the client from one of the following urls:

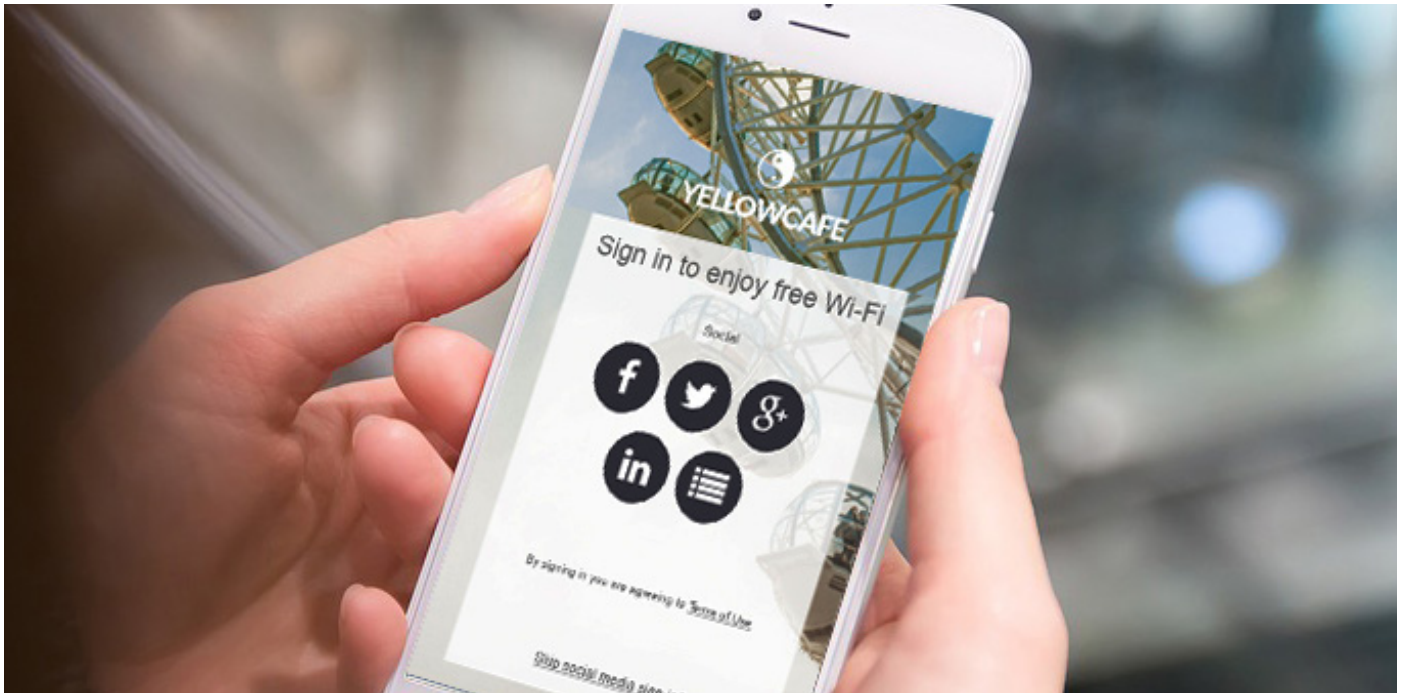
https://provision.connectionassist.com/wba

https://www.openroamingconnect.org/register

STEP 4

### Connect client to OpenRoaming SSID

On the client Wi-Fi settings, choose the configured Hotspot 2.0 SSID and connect.

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