WaveTunnel Configuration Guide

Pilot Program

Q1 2022

AIRVINE

This document provides step-by-step instructions on how to configure your WaveTunnel network. After completing the steps described in this guide, you will be able to bring-up your wireless backbone and begin passing traffic.

Package Contents

A complete installation package includes the items listed below:

- WaveTunnel node
- Mounting bracket
- Power supply

## Before You Begin you will need the following:

- MAC address which is printed on each WaveTunnel (WT) node.

- Mounting location for each node

- Root node Ethernet cabling

- Each of the nodes to be installed must be in the factory default state

- The network topology of your deployment. Please refer to the following example for the pilot phase.

- Note: the pilot phase will not support a ring configuration.

Mounting Instructions

Select mounting locations for each node in the network. Nodes should be mounted using the appropriate bracket and hardware, and then powered-up before beginning the configuration process.

For mounting instructions please see the "WaveTunnel Installation Guide".

This document will take you through the process of configuring a 3-node network as described in the figure below.

Network Segment
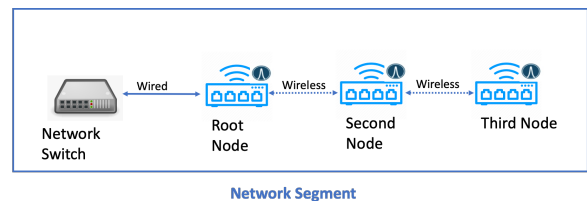
Configuration Steps

Step 1: Collect the following hardware:

A mobile device running either the Android or the IOS operating system.

A computer installed with one of the following web browsers (Optional)

- Google Chrome
- Microsoft Edge
- Safari
- Firefox

An Ethernet cable (Optional)

Serial console cable (Optional)

Step 2: Download the "wtmanager" APP to your mobile device

The "wtmanager" APP for configuring a WaveTunnel device can be downloaded from the Apple APP Store or Google Play to enable pilot testing. The following steps will aid in the download process.

For Apple IOS devices:

- Provide your Apple ID account email to Airvine support. We will then add you to the pilot testing group.

- Please contact: support@airvine.com

- You will receive an invitation email to download the "wtmanager" APP. This does require that you first install the "TestFlight" APP.

- The "TestFlight" application was developed by Apple to allow vendors to test their application before it goes through the formal approval process. Once we have that approval, this step will no longer be required.
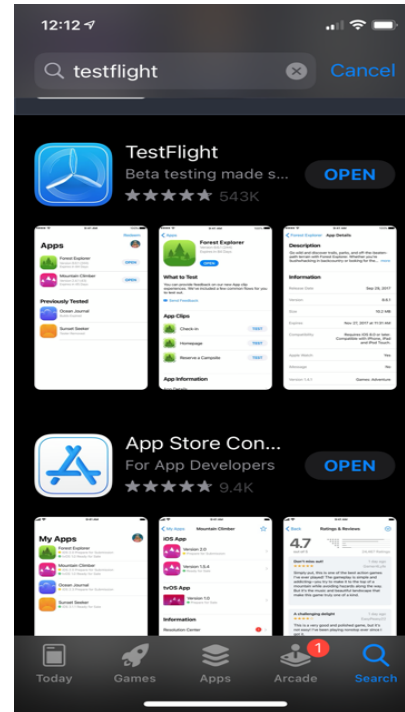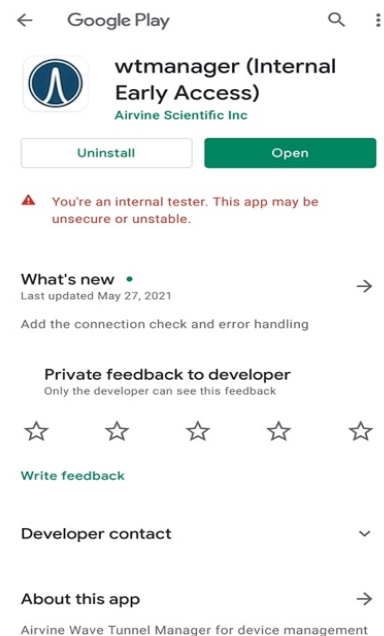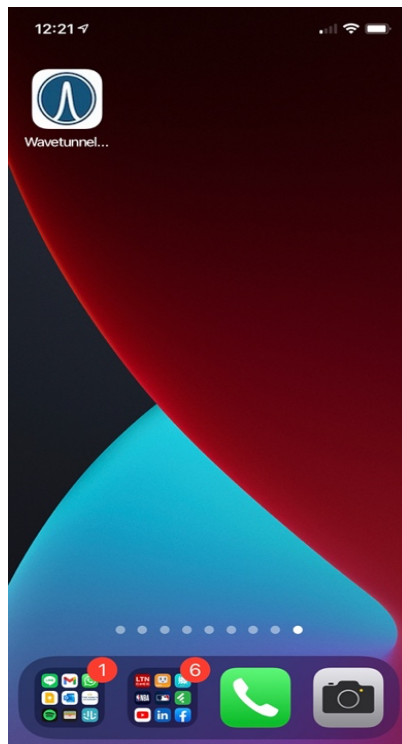
Open the "TestFlight" APP and you will see the "wtmanager" APP.
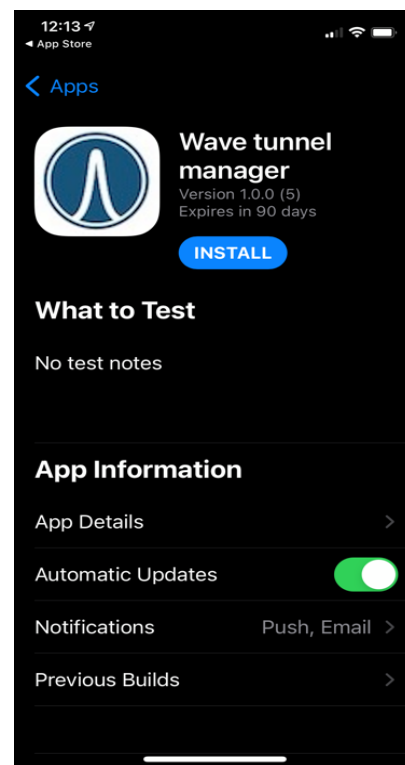
Install the WaveTunnel manager from "TestFlight". After the installation, you will

see the "wtmanager" APP on your IOS device.

For Android devices:

- Provide your Google Play account email to Airvine support. We will then add you to the pilot testing group.

- You will receive an email that provides the download link (e.g. https://play.google.com/apps/internaltest/4699881988975691697)

- Click the link from your Android device and you will see the page from which you can download the mobile APP from Google Play.

- Install the Mobile APP from Google Play.
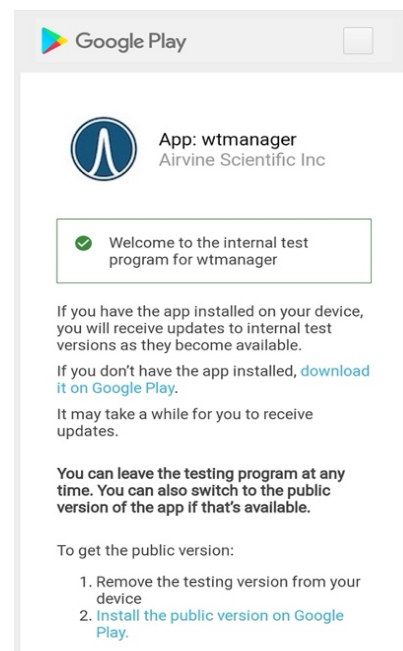
After the installation, you can see "wtmanager" on your Android device.

Step 3: Initializing the WaveTunnel device via the Mobile APP

Open "wtmanager" APP on your mobile device to configure a WaveTunnel node. The "Select Device Network" page appears for you to select the device network. Click "Select Wi-Fi" to select the management Wi-Fi SSID.
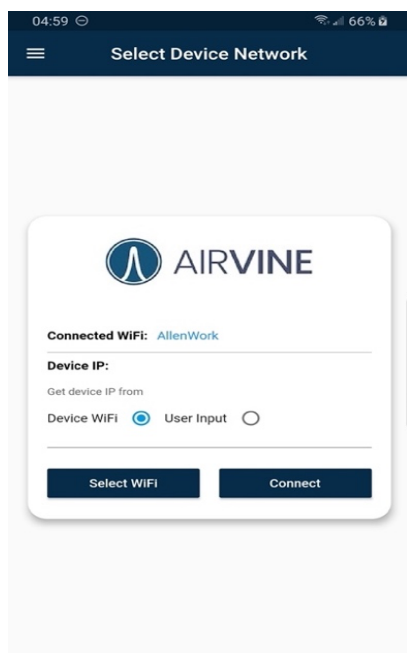

Connect the WaveTunnel node to be configured via the default management SSID which is "AirVine_mgmt_[Device MAC]".

The device MAC address is part of the default SSID to aid in bringing up a network when there are other WaveTunnel nodes in the area that are also broadcasting SSIDs. The MAC address is written on each WaveTunnel unit.
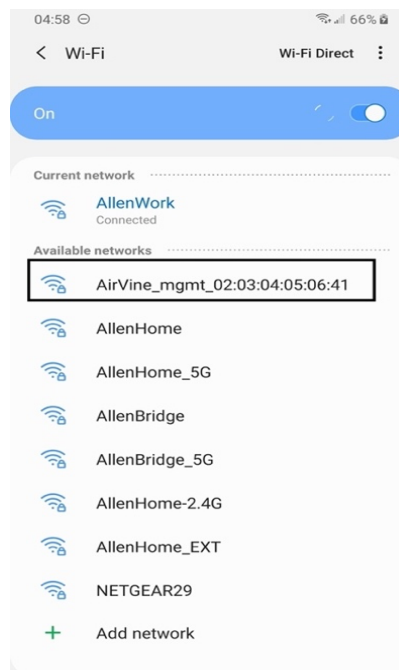
The default password for the management SSID is "airvine!". The exclamation mark is required.
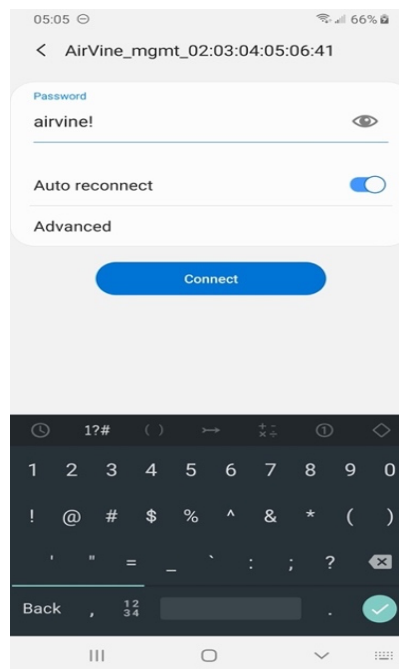
Once connected to the management Wi-Fi SSID, please press "<" on the bottom right to go to the "wtmanager" APP.
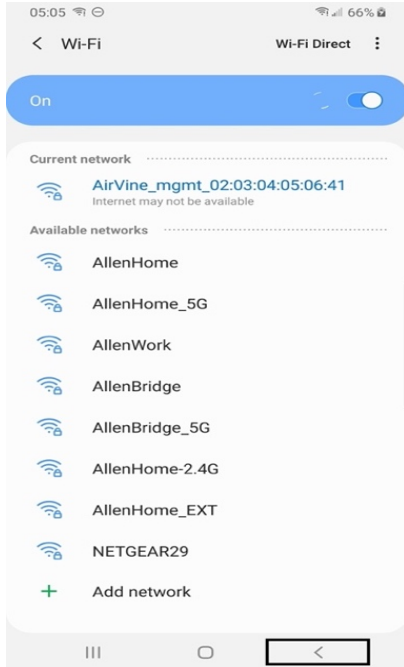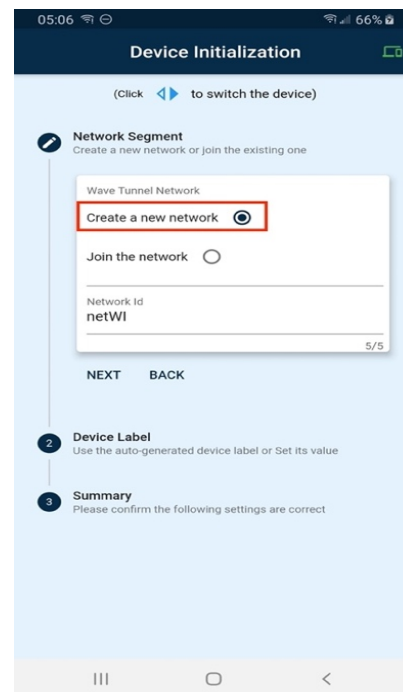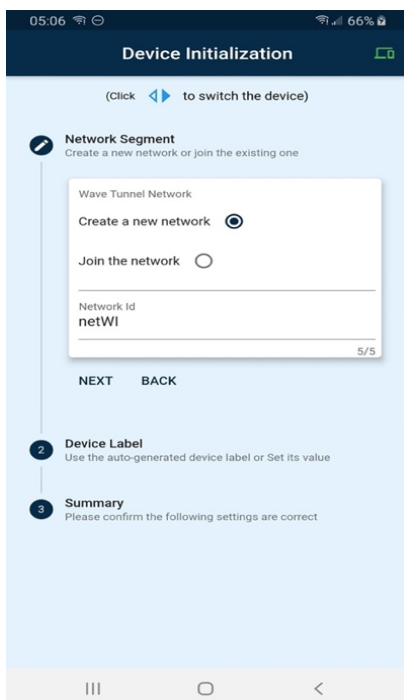

There are slight differences between the configurations of the root node and all other nodes. Please check the steps below.
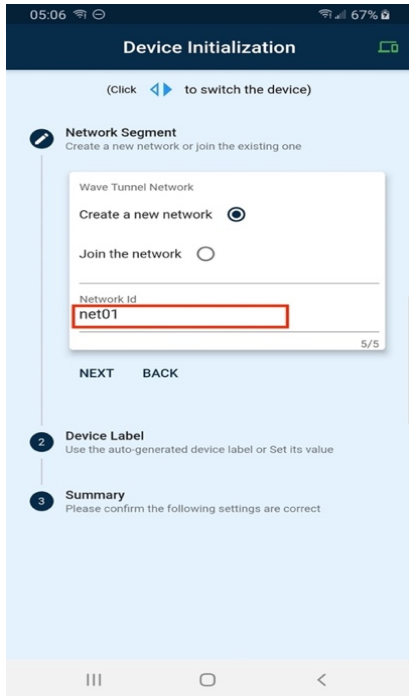
Initializing the root device:

- To configure the root device, select the "Create a new network" option in the network segment step.

- Then input the Network ID for this new deployment. The Network ID can be automatically generated, or you can input any meaningful string for future identification of your network, for example "net01".
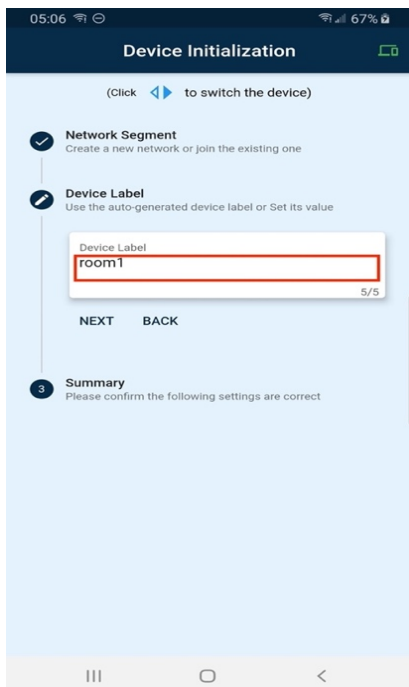
- Click "NEXT" for the next setting.

The "wtmanager" APP is checking to see if it can reach the device via the configured Wi-Fi SSID.

If the mobile APP is able to reach the device, the Initialization page will be shown.
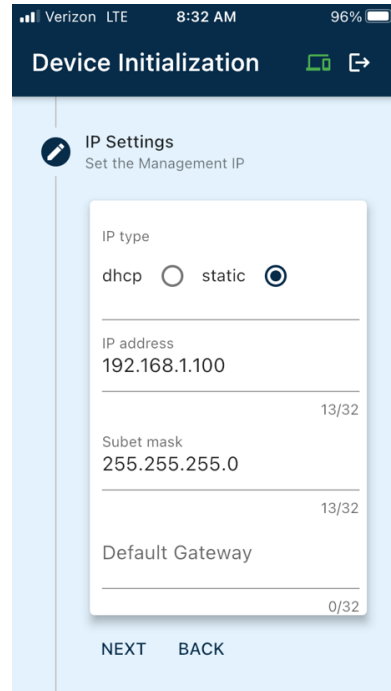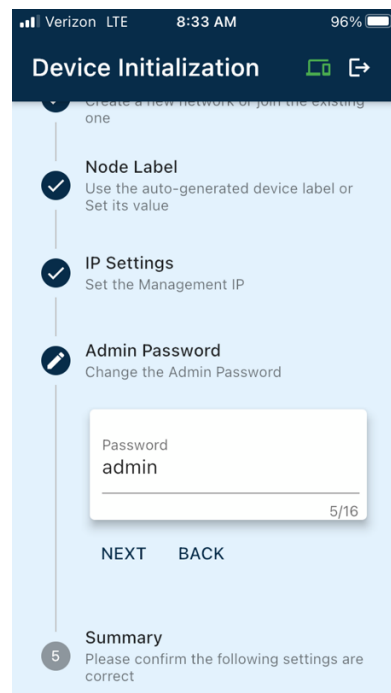
Input the "Device Label" for this device. It will be used to recognize your device later.

Configure IP Address

Click "Next" to check the summary of your configurations.

Change admin password if desired

Once you confirm the configurations are correct, click "Next" to initialize the settings for this device.

When the initialization is completed, the popup window appears. Click "Continue" to finish the settings.

Note: the format of the management SSID for the WaveTunnel node has changed to a combination of **avb_[network Id]_[device label]_[node id].**

The node ID is automatically set by the system with the root node being 01, the next node 02, and so on.
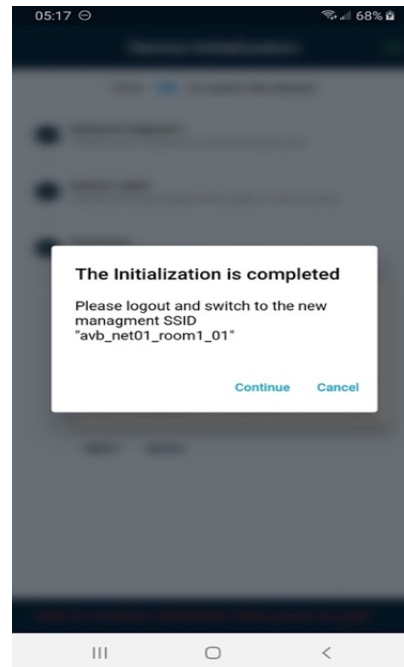
The "Select Device Network" page will be shown to you after completing the initialization step.

Click on "Select Wi-FI" to switch to the newly configured management SSID "avb_net01_room1_01".

The management SSID changes after completing the initialization process from a default SSID to an SSID based on network and node names.

Click "Connect" to go to the Login page.

The root device has now been configured successfully. You can use the default username and password to login into the mobile APP management pages.
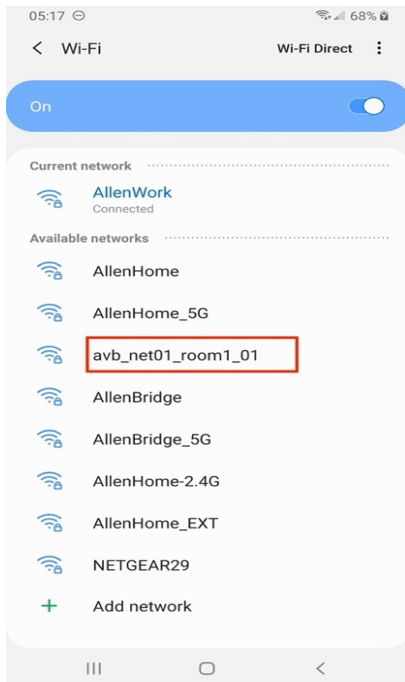
To configure the remaining devices in the network, select the "Join the network" option in the network segment step.

Nearby WaveTunnel devices will be broadcasting their SSIDs, which will appear in the list. Click on the SSID of the next node to be configured. This is the node that will talk to the root node that was just configured. Then click "next" for next settings.
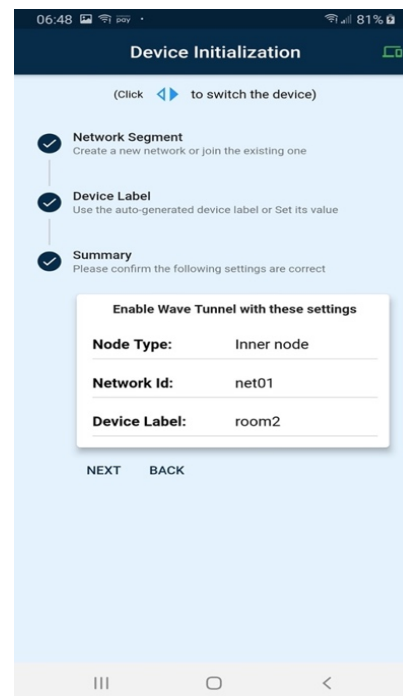
As each node is added to the network, traffic flows are automatically configured between that node and the root node. These flows can pass through relay nodes, but all traffic must flow to and from the root node.
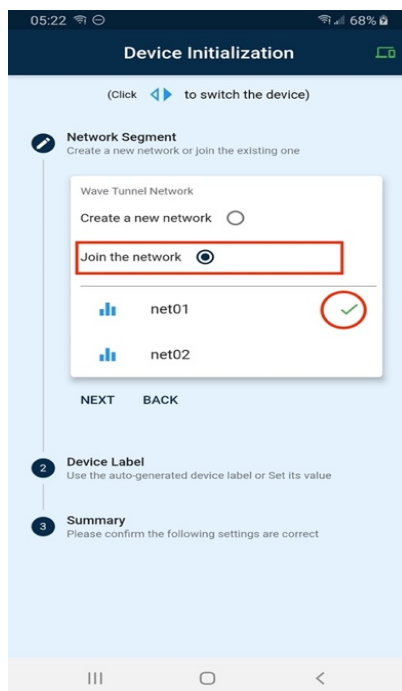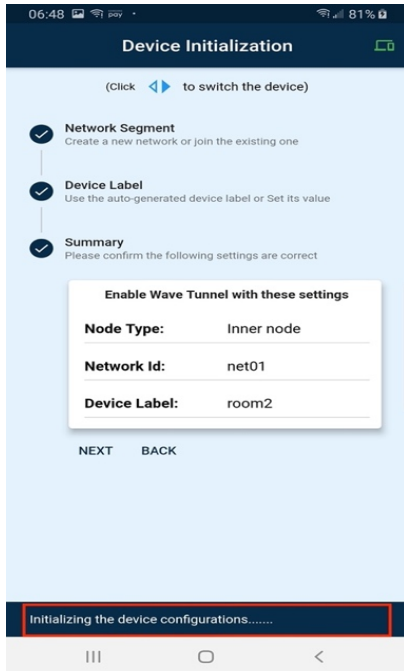
Input the "Device Label" for this device. It will be used to recognize your device later.
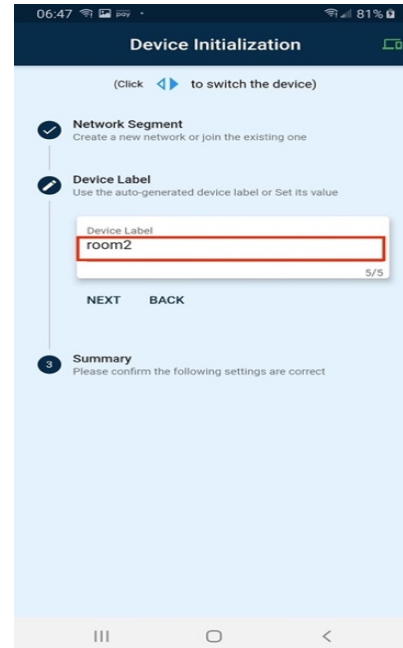
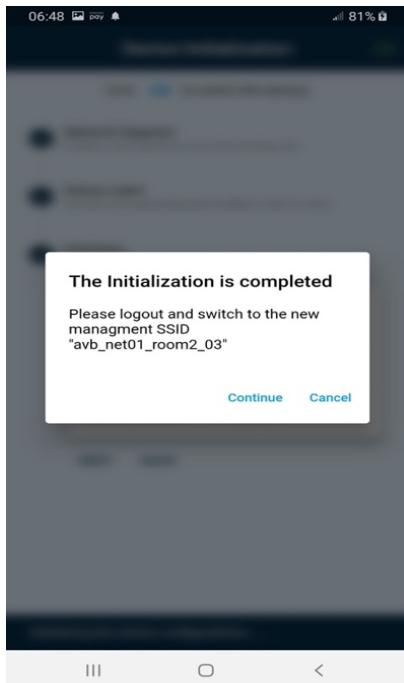Click "Next" to check the summary of your configurations.

Once you confirm the configurations are correct, click "Next" to initialize the WaveTunnel settings for this device.

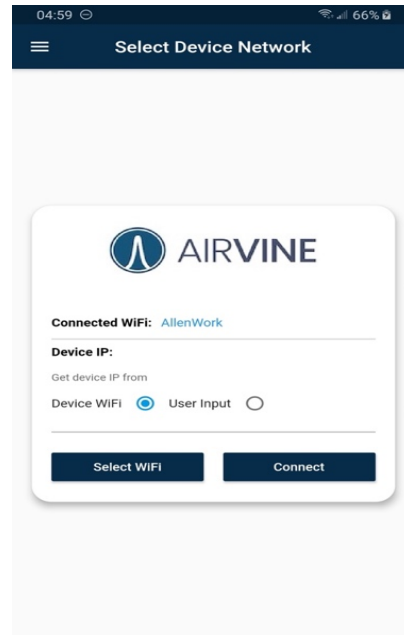The "Select Device Network" page will be shown for you to switch the Wi-Fi SSID.

When the initialization is completed, the popup window appears. Click "Continue" to finish the settings.

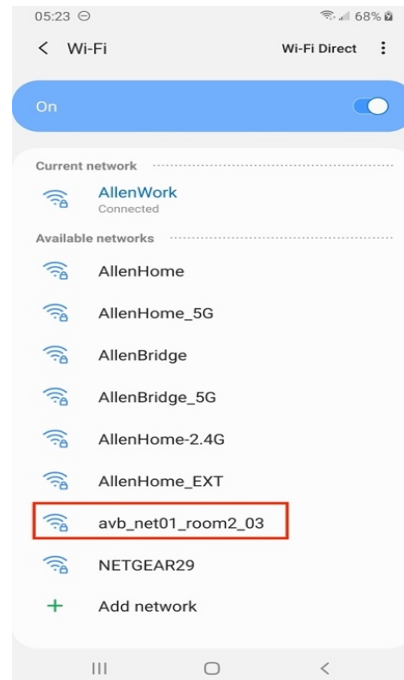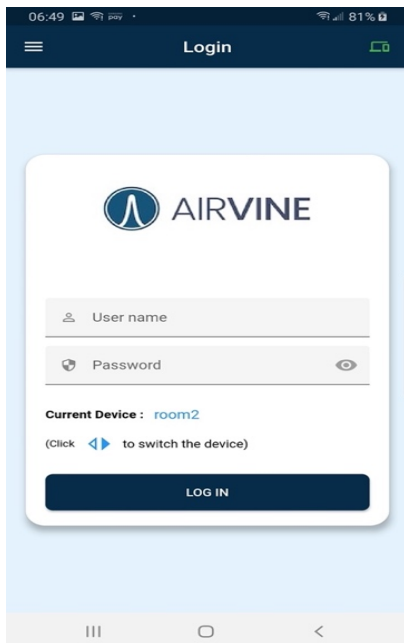The format of the management SSID is now a combination of **avb_[network Id]_[device label]_[node id].**

Click "Select Wi-FI" to switch to the newly configured management SSID "avb_net01_room2_02".
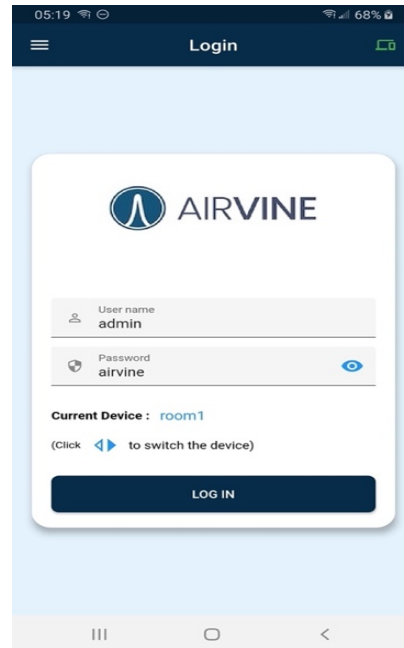
Click "Connect" to go to the Login page

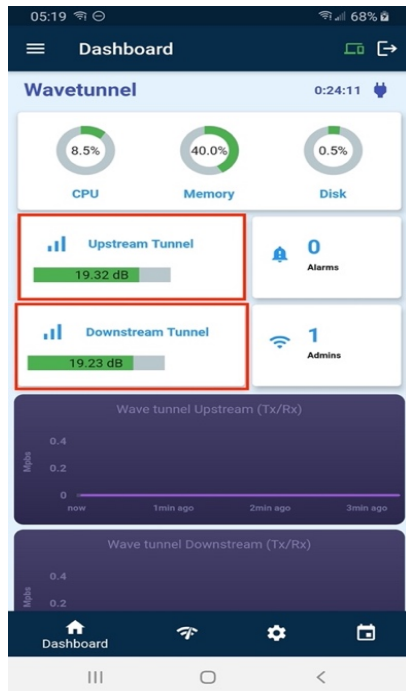This device is configured successfully. You can use the default username and

password to login into the mobile APP management page.

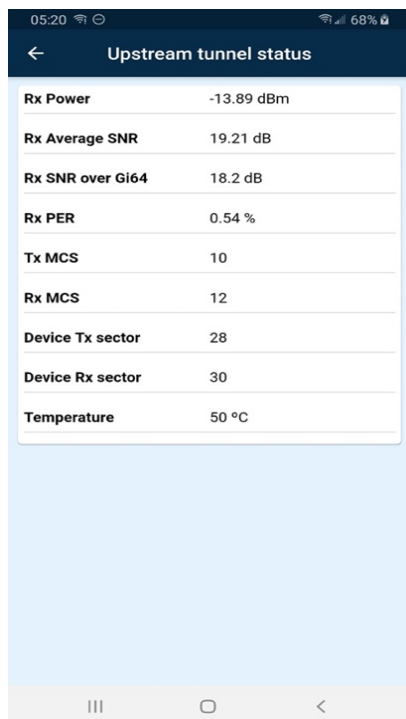### Step 4: Verifying the Wave Tunnel Connections

Login into the mobile APP to verify the WaveTunnel connections.
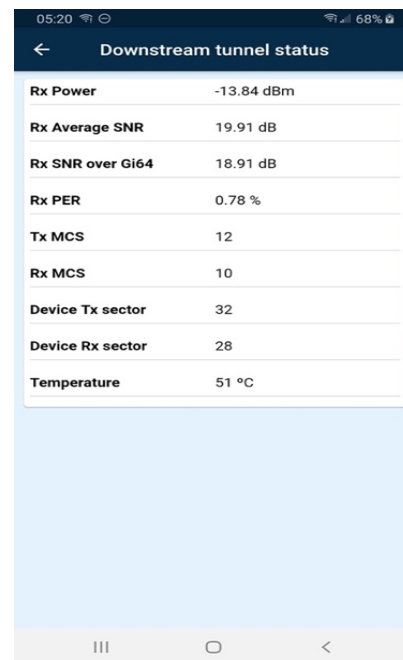

Check the Signal Strength of the upstream and downstream tunnel connections on Dashboard.
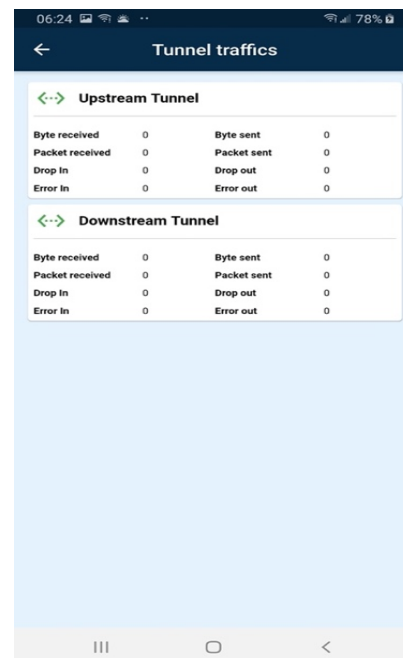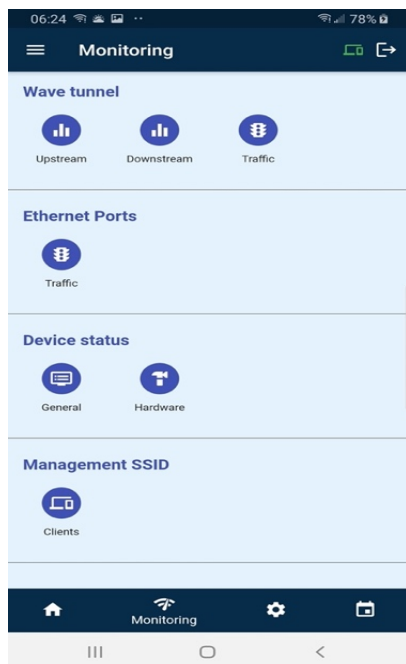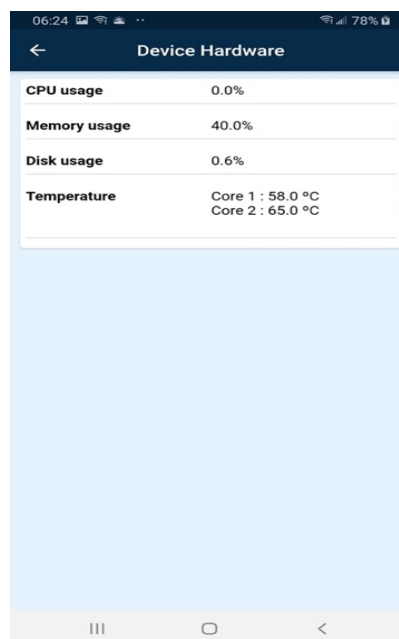
Downstream tunnel status

Upstream tunnel status

WaveTunnel traffic

Check the device status from monitoring pages.

General device information
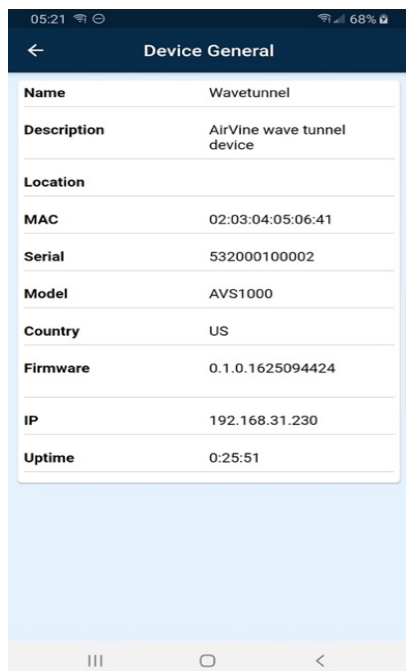

Hardware status

Ethernet Port traffic

Step 5: Logging into the WaveTunnel Device

Once the device has been initialized, you can access the device via the following management interfaces for further operations.

Web GUI

To access the WEB GUI, you can connect to the device via the management SSID or Ethernet cable. If you connect to the WEB GUI via management SSID, the default IP address is 192.168.3.1

If you connect the WEB GUI via Ethernet cable, the IP address is on the management interface which should be configured or assigned by your backhaul network.
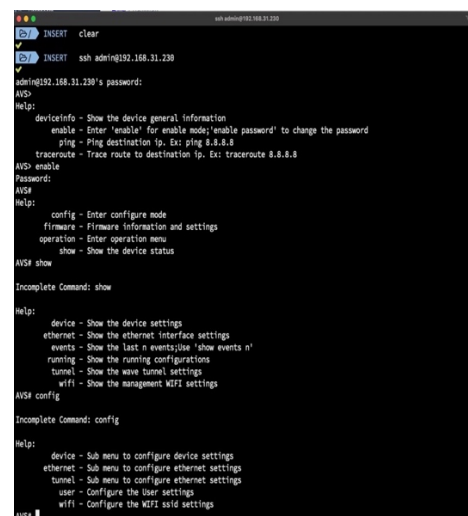
The username/password is "admin/airvine".
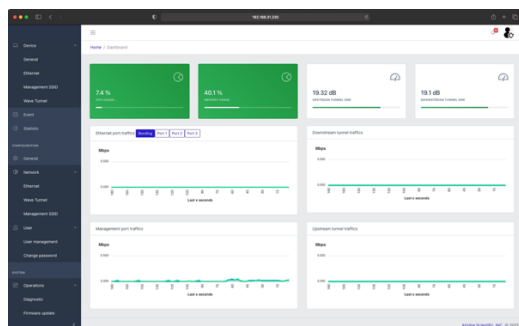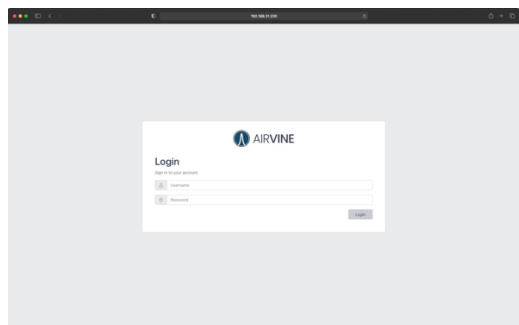
Command Line Interface (CLI)

To access the CLI, you can connect the device via Ethernet Cable or USB console port.

SSH to the device CLI. The default username/password is "admin/airvine".

For advanced commands, user enable password to enter the shell. The default enable password is empty.

Mobile APP

Open the "wtmanager" on your mobile device and login into the application.

ABOUT AIRVINE

Airvine is a fast-growing Silicon Valley innovator of advanced high-capacity wireless solutions. The company has developed the industry's first indoor 60 GHz wireless system that exceeds the speed and rivals the reliability of existing cabling at a fraction of the deployment time and cost. Patented RF innovations extend the range and gain of wireless signals, penetrating walls and steering around obstacles that impede transmission. Something never before possible within the 60 GHz band.