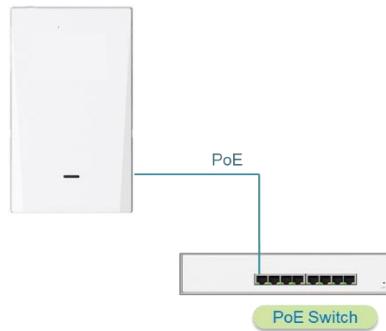
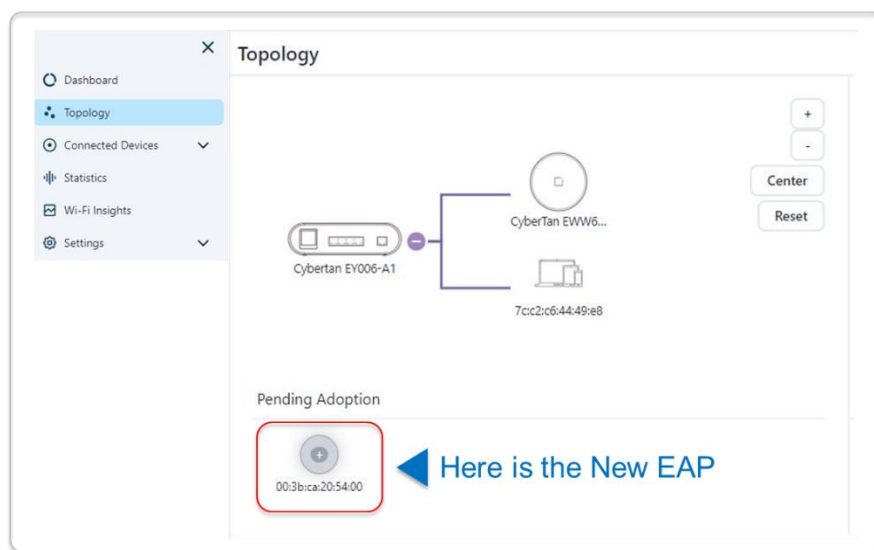
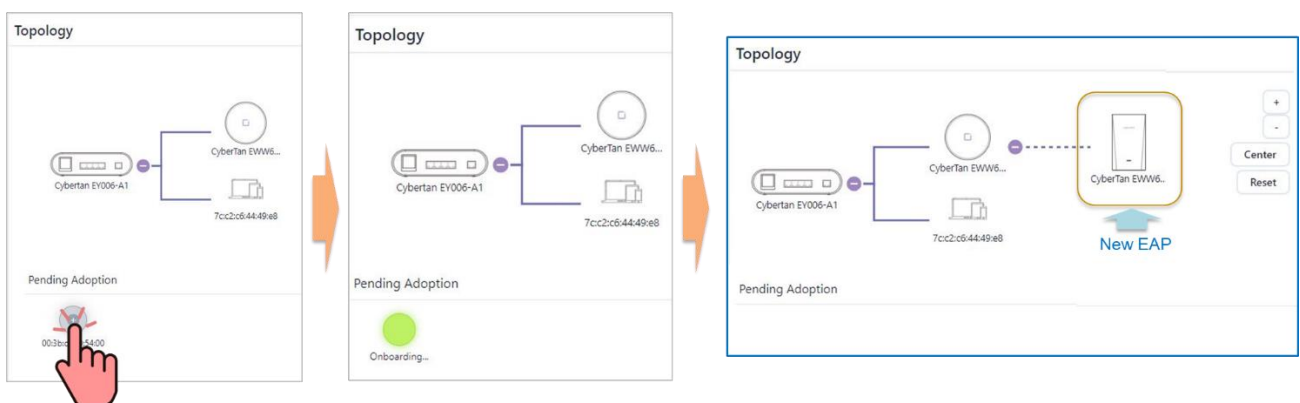




Step 2, Access the topology page of Controller. Waiting the new EAP shows on the “pending adoption” area.



Step 3, Click the new EAP and then this EAP adds on the topology automatically.



4.2 Ethernet Switch on boarding

When Ethernet Switch is connecting to network, the Switch can onboard automatically. User doesn't need to click any icons. The following is an example to show the network topology.

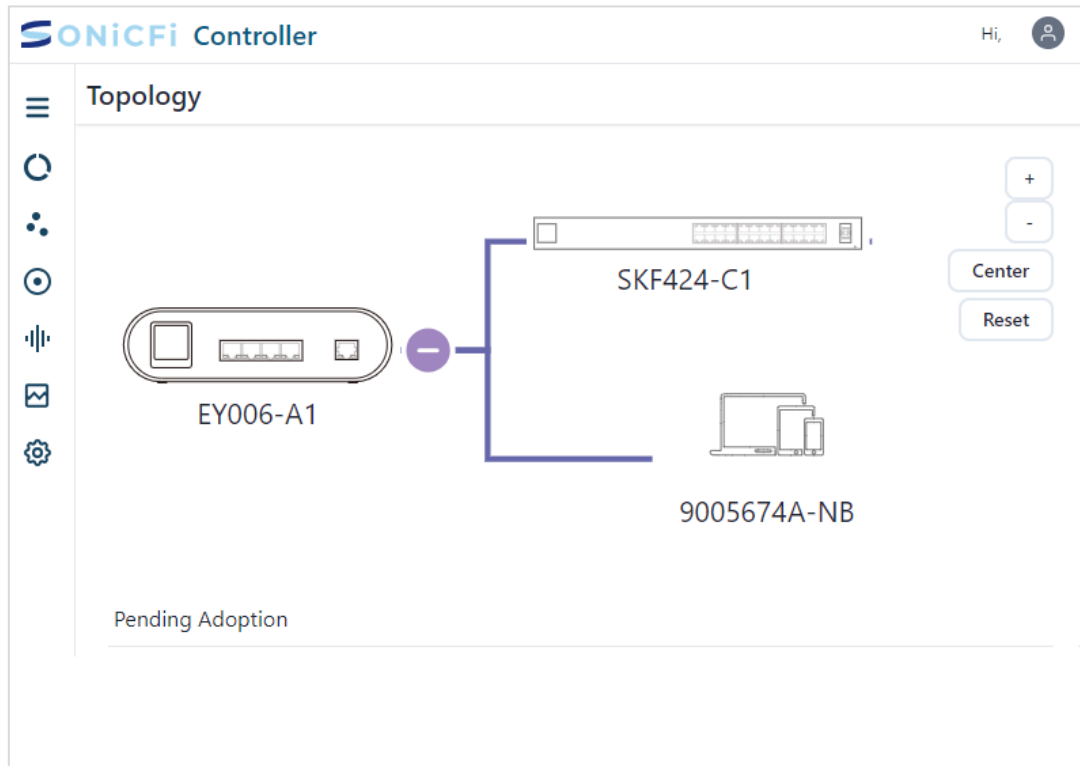


Figure 7. Switch Onboarding of Topology Page

5. Functionalities

5.1 Dashboard Page

The information provided on the Dashboard page includes Controller information, Traffic Overview, Client Table, Wi-Fi Quality, and Internet Health. Most of the information is presented in the form of charts to facilitate users in quickly understanding the status. Controller Information provides below information.

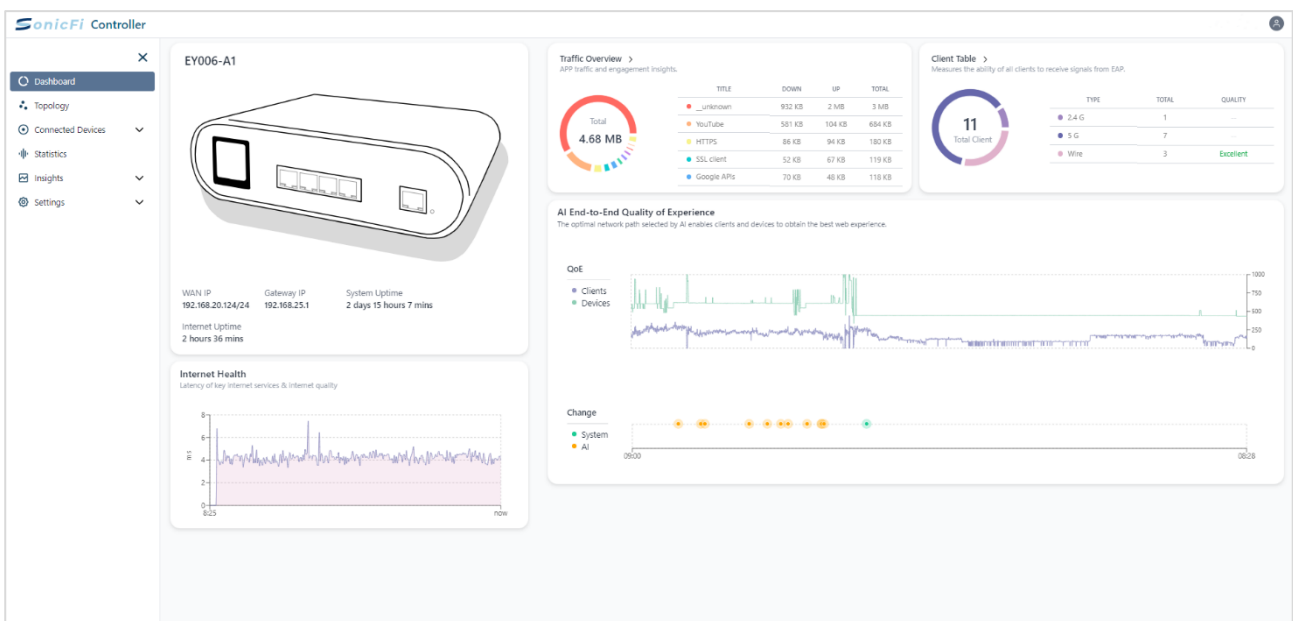


Figure 8. Dashboard overview

- **WAN IP, Gateway IP, System Uptime** (the amount of time since the system was last rebooted or turned on), **Internet Uptime** (the amount of time that an internet connection has been available), and **Internet Health** (include latency of internet services and usage of broadband)
- **Traffic Overview**, presented in chart form, shows that network service uses the most data and provides information on upload, download, and total usage for each service.
- **Client Table** shows how many clients connected and what kind of connection type (2.4G, 5G, or wired) they used. It shows us the quality of each connection type as well. Wi-Fi Quality uses chart to present user's internet experience or quality of experience (QoE).
- **Internet Health** shows latency of key internet services and internet quality in chart.



Figure 9. AI End-to-End Quality of Experience (QoE-AI)

The QoE-AI feature utilizes algorithms to automatically detect and correct network quality issues to maintain a stable connection.

On the graph, you will see System and AI markers on the timeline. The System markers indicate where manual configuration changes have been made to the network. The AI markers show when the algorithms have adjusted the network conditions automatically.

The current Controller algorithm score is maxed out. The displayed Clients and Devices scores are relative algorithm scores benchmarked against the Controller.

The QoE-AI algorithms continuously monitor metrics like speed, latency, and reliability to proactively fix problems. When performance drops below defined thresholds, it will make corrections to settings and adjust parameters to restore optimal wireless quality. The self-healing intelligence maximizes network uptime and ensures the best end user wireless experience with no manual intervention required.

SonicFi Controller										
Client Devices										
Dashboard Topology Connected Devices Client Switch Statistics Insights Settings SEARCH										
STATUS	NAME	CONNECTION	IP ADDRESS	CHANNEL	QUALITY	SIGNAL	RX RATE	TX RATE	HISTORY	
Online	68:7908c749d1	ethernet	192.168.25.254	---		---	1.00 Gbps	1.00 Gbps	---	
Online	9035683A-NB	5G	192.168.25.55	124		-51	0.21 Gbps	0.54 Gbps		
Online	RacordeAir	5G	192.168.25.171	124		-55	0.58 Gbps	0.14 Gbps		
Online	46fe7647202f	5G	192.168.25.178	124		-62	0.32 Gbps	0.27 Gbps		
Online	86a078210c2f	5G	192.168.25.149	124		-51	0.86 Gbps	86.00 Mbps		
Online	M2101K7BNV	5G	192.168.25.68	124		-57	0.43 Gbps	0.12 Gbps		
Online	Galaxy-A53-5G	5G	192.168.25.42	124		-58	0.43 Gbps	0.14 Gbps		
Online	M2103K19G	5G	192.168.25.94	124		-41	0.43 Gbps	78.00 Mbps		
Online	9035796A-NB	5G	192.168.25.222	128		-43	6.00 Mbps	0.19 Gbps		
Online	SQA-PC2	2.4G	192.168.25.126	11		-52	13.00 Mbps	1.00 Mbps		
Showing 1 to 10 of 12 results										< 1 >

Figure 10. Client Devices Details

5.2 Topology Page

The Topology page displays a network topology, where each node is labeled as either a Controller, EAP, or end-user device. Additionally, each node is identified by name and provides relevant information.

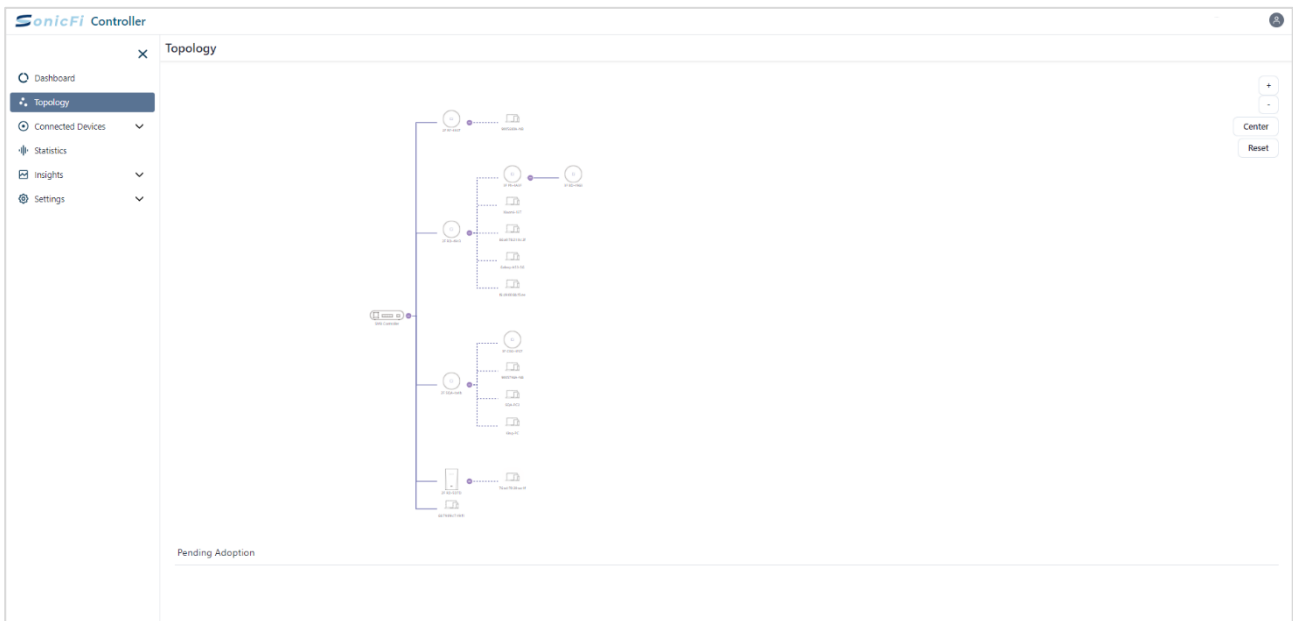


Figure 11. Topology Page

When you click on a node in the network topology, detailed information about the node will appear on the right side of the screen. The type of node will determine what information is displayed in addition to the overview section.

In the Overview tab of the Controller nodes, you'll find information on the Controller Model, Clients, General, WAN, Downlink, and Statistics.

- **Controller Model**- This section provides information about the specific model of the Controller device. It typically includes details like the model name, hardware version, and potentially other unique identifiers.
- **Clients** - This section displays a list of all the client devices that are currently connected to the Controller. For each client, it shows information such as the client's name, connection status, and the quality or strength of the connection.

- **General** - This section contains general information about the Controller device itself. It may include details like the Controller's IP addresses (both WAN and LAN), MAC address, system uptime, memory usage, and CPU load average.
- **WAN** - This section focuses on the Wide Area Network (WAN) connection of the Controller. It provides information about the WAN IP address, internet download and upload speeds, the associated Internet Service Provider (ISP), and various network activity metrics like download/upload packets and bytes, as well as the current download and upload activity levels.
- **Downlink** - This section lists the SonicFi devices that are connected to the Controller. For each connected SonicFi device, it displays the device name and the quality or strength of the connection.
- **Statistics** - This section presents a visual representation, typically in the form of a chart or graph, of the Controller's resource utilization over time. It may include metrics like CPU usage and RAM usage, allowing you to monitor the performance and load on the Controller device.

These parameters provide a comprehensive overview of the Controller's configuration, connected devices, network status, and system performance, giving you a detailed understanding of the Controller's operational state.

Additionally, the Port tab lists all the ports on the Controller and displays the status of each, including Speed, Activity, TX Counts, and RX Counts. Lastly, in the Settings tab, you'll find options to restart or factory reset the Controller, as well as the ability to use the Controller to ping other devices.

- **Speed** - This parameter indicates the current link speed of the port, typically measured in bits per second (bps) or megabits per second (Mbps). It shows the negotiated speed between the port and the connected device, reflecting the maximum supported speed of the port and the connected device.
- **Activity** - This parameter represents the current activity or traffic level of the port. It provides an indication of whether the port is actively transmitting or receiving data, and the relative level of that activity.

- **TX Counts** - TX stands for "Transmit". This parameter shows the total number of packets or bytes that have been transmitted through the port. It represents the outgoing traffic or data sent from the Controller through the port.
- **RX Counts** - RX stands for "Receive". This parameter shows the total number of packets or bytes that have been received through the port. It represents the incoming traffic or data received by the Controller through the port.

These parameters give you a detailed view of the port-level activity and performance on the Controller, allowing you to monitor the network traffic, understand the utilization of each port, and potentially identify any issues or bottlenecks related to the port connections.

In the Overview tab of the Controller nodes, you can find several information sections. The Controller Model Info Section displays the WAN IP, IP Address, and Device Version. The Clients section provides a list of all clients connected to the Controller, including their status, name, and quality of connection. In the General Section, you can find information such as IP Address (WAN), IP Address (LAN), MAC Address, Uptime, Memory Usage, and Load Average. The WAN Section provides details on the IP Address, Speed, ISP, Down Pkts/Bytes, Up Pkts/Bytes, Down Activity, and Up Activity. The Downlink Section lists all SonicFi devices connected to the Controller and their respective device name and quality of connection. Finally, the Statistics Section shows a chart displaying CPU and RAM usage.

- **WAN IP** - This is the public IP address of the Controller on the Wide Area Network (WAN). It represents the external IP address that the Controller uses to communicate with the internet.
- **IP Address** - This is the local IP address of the Controller on the Local Area Network (LAN). It's the internal IP address used by devices on the same LAN to communicate with the Controller.
- **Device Version** - This parameter represents the firmware version or software version running on the Controller device. It's an important identifier for the specific software/firmware that the Controller is using.
- **MAC Address** - The MAC (Media Access Control) address is a unique hardware identifier assigned to the network interface of the Controller. It's a 12-digit hexadecimal number that uniquely identifies the Controller on the network.
- **Uptime** - This parameter shows the total time the Controller has been continuously powered on and running. It's a measure of the Controller's reliability and stability.
- **Memory Usage** - This indicates the current utilization of the Controller's available memory resources. It can help identify if the Controller is experiencing high memory usage, which could impact its performance.
- **Load Average** - This represents the average system load on the Controller over a specific time period. It provides an indication of the overall CPU usage and workload on the Controller.
- **Speed** - This parameter shows the current internet download and upload speeds for the WAN connection. It reflects the actual internet bandwidth available to the Controller.
- **ISP** - This identifies the Internet Service Provider (ISP) associated with the WAN connection.

- **Down Pkts/Bytes** - Down Pkts refers to the number of download packets. Down Bytes refers to the number of download bytes transferred. These metrics provide information about the incoming network traffic.
- **Up Pkts/Bytes** - Up Pkts refers to the number of upload packets. Up Bytes refers to the number of upload bytes transferred. These metrics provide information about the outgoing network traffic.

These parameters collectively provide a comprehensive overview of the Controller's network configuration, performance, and resource utilization, helping you understand the overall state and behavior of the Controller within the network environment.

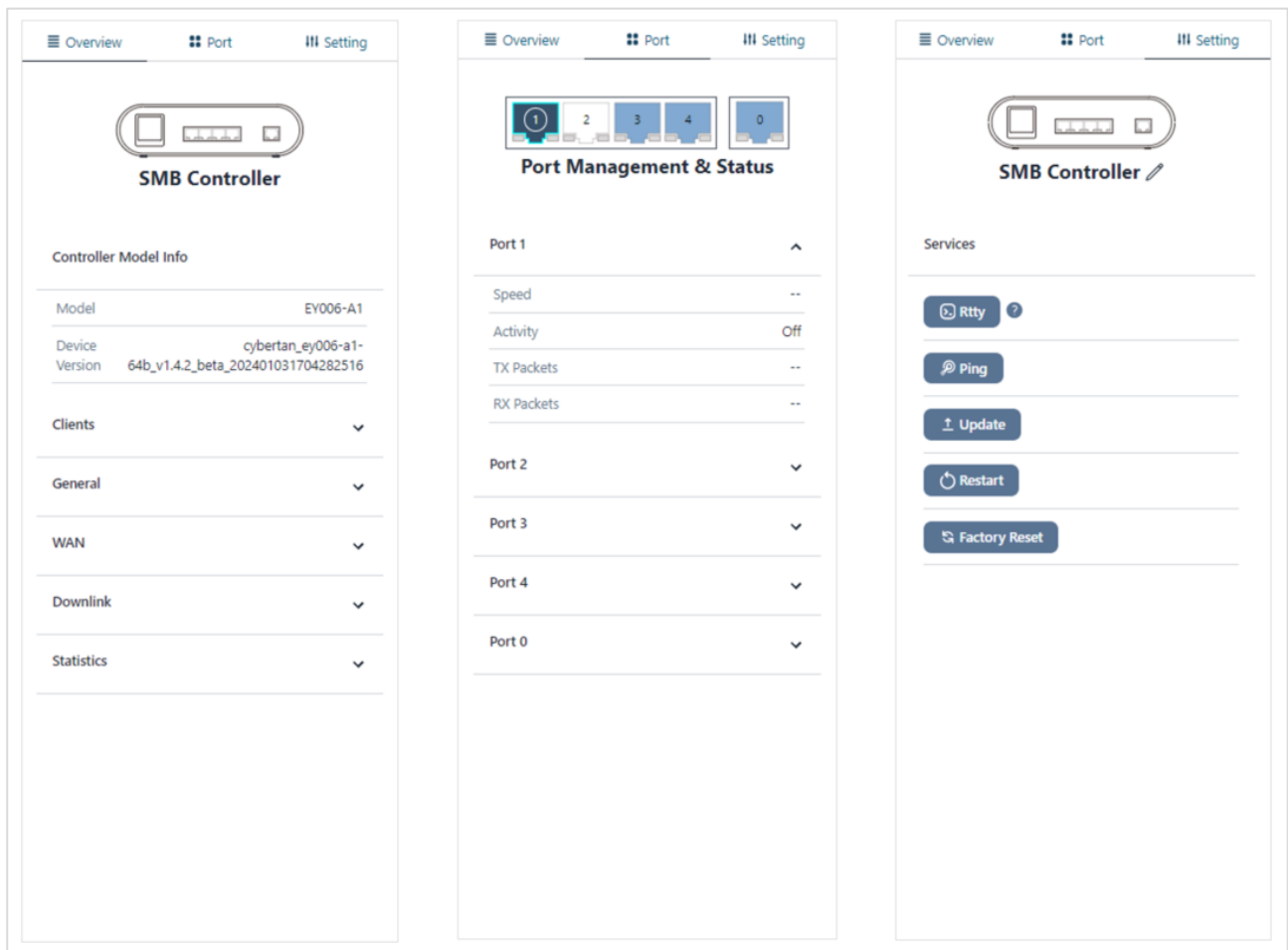


Figure 12. Controller Node Details

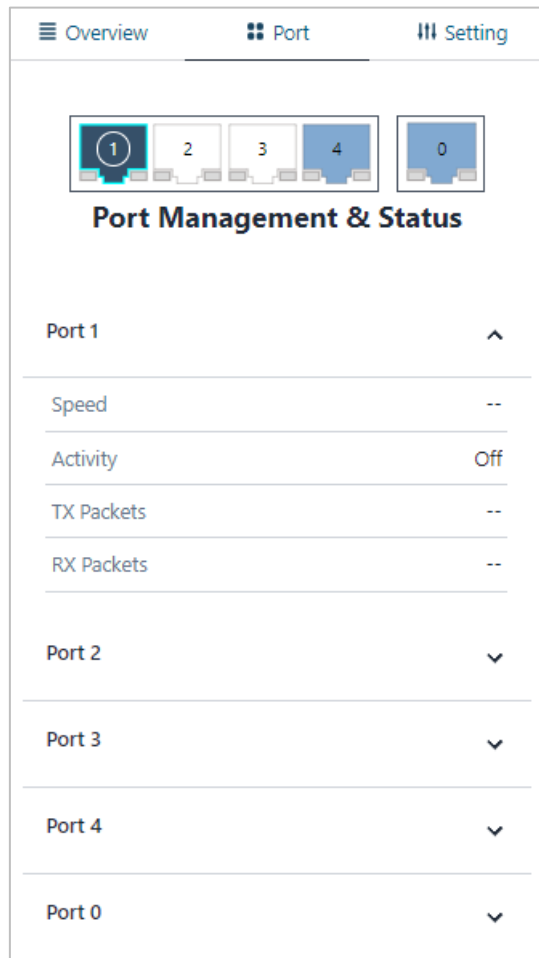


Figure 13. Port Management and Status

Ports

The access point Controller has 5 total ports for network connectivity:

- **Port 0** - This port is used for the WAN (internet) connection. Connect your broadband modem or uplink Switch port to this port using a standard ethernet cable.
- **Ports 1-4** - These ports provide LAN connectivity to connect with the local wired network. Connect Switches, or devices such as computers and printers, to ports 1-4 to allow access to the Controller GUI and traffic monitoring capabilities.

The table displays port statistics and activity:

- **Speed** - The link speed of connections to the ports, such as 100Mbps or 1Gbps.
- **Activity** - Indicates if there is an active wired link detected on the port.

- **TX/RX Packets** - Traffic counters displaying the number of packets transmitted and received on each port. Provides throughput monitoring.

The ports allow the Controller centralized access to both the local LAN and upstream networks for functionality like wireless traffic shaping, bridging between VLANs, and inline packet analysis.

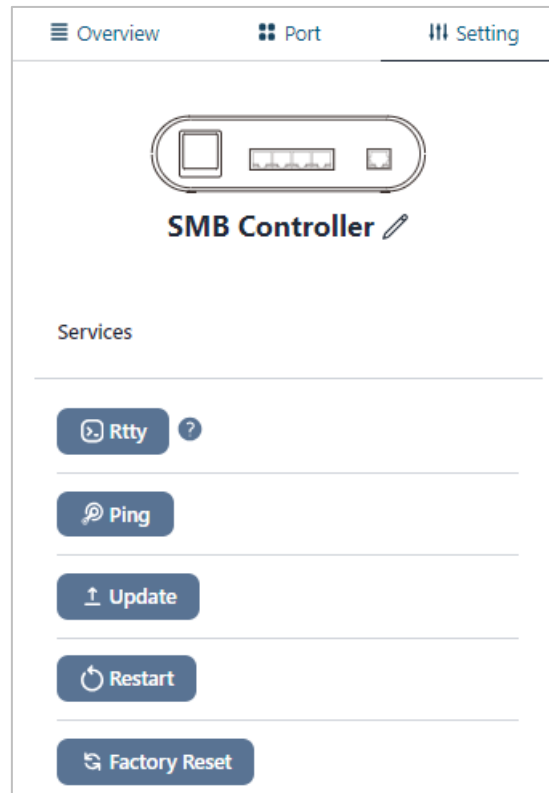


Figure 14. Settings

The settings section allows configuring general options and behaviors for the access point Controller system.

- **Rtty (Terminal)** - Provides command line SSH terminal access directly to the Controller's linux shell for advanced users. Allows troubleshooting issues through additional utilities and debugging info.
- **Ping** - Allows the user to perform a ping operation to a specified IP address or hostname to check network connectivity to a remote system. Provides detailed ping output including transfer times and packet loss to aid in network troubleshooting and monitoring network quality.
- **Update** - Manually check and install firmware updates for the Controller if a new version is available. Keeps system up-to-date.
- **Restart** - Performs a graceful reboot of the Controller system. Ensures proper shutdown and restart of all monitoring systems unlike hard power cycling.

- **Factory Reset** - Reset the system to original default state, removing all custom config. Used when Controller is being relocated or all local settings need cleared.

The settings provide control over core Controller operations for change management workflows independent of config profiles.

The Overview tab for EAP nodes provides information on the EAP model, clients, general settings, uplink (wired/wireless), and air stats (2.4G, 5G). In addition, the Traffic Statistics tab displays the total data download/upload usage in separate charts and lists all services and their corresponding data usage for both download and upload through the EAP. Finally, within the Settings tab, users can manage the EAP by updating, locating, restarting, factory resetting, or removing it.

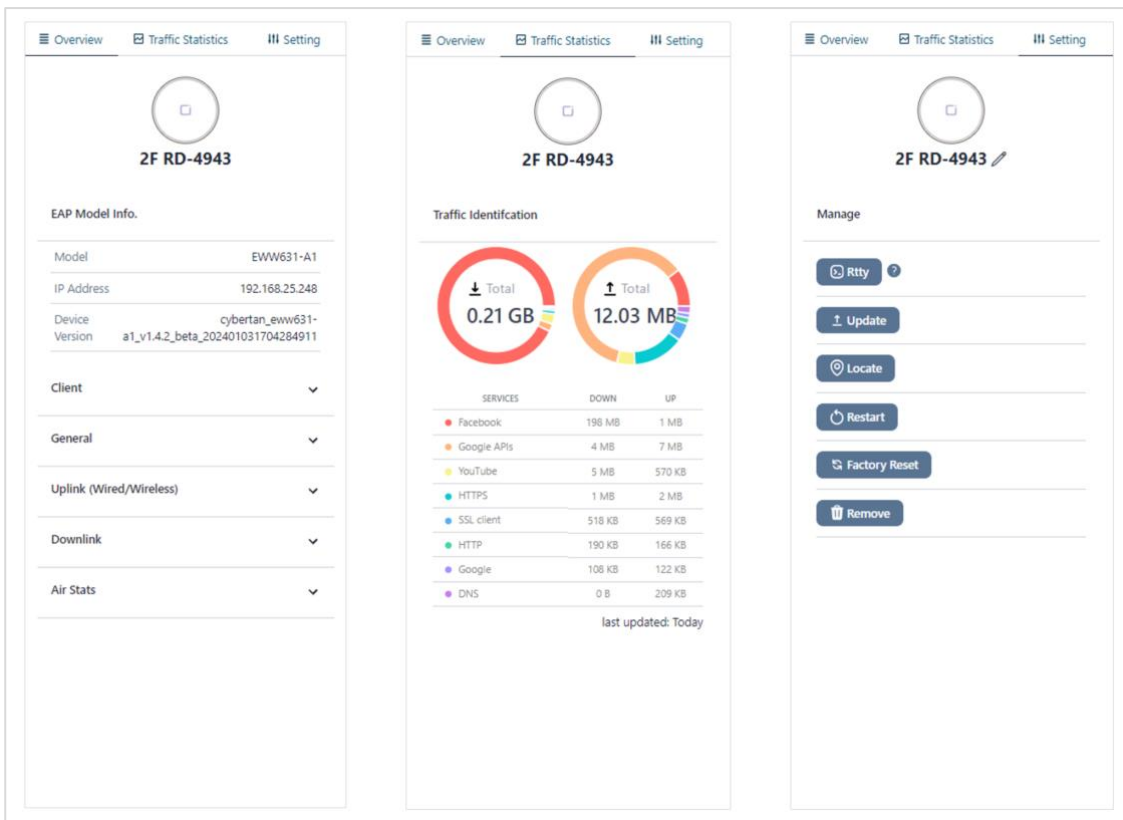


Figure 15. EAP Node Details

In the EAP nodes' Overview tab, you can access various sections with different types of information. The EAP Model Info Section displays important information such as the Model Name, IP Address, and Device Version.

- **Model Name** - This refers to the model name or product name of the Controller device. It identifies the specific hardware model of the Controller, which can be useful for determining its capabilities and features.

- **IP Address** - This parameter represents the IP address of the Controller. There are typically two IP addresses shown:
 - WAN IP Address: The public IP address of the Controller on the Wide Area Network (WAN).
 - LAN IP Address: The local IP address of the Controller on the Local Area Network (LAN).
- **Device Version** - This parameter indicates the firmware or software version running on the Controller device. It's an important piece of information that helps identify the specific software/firmware release installed on the Controller. Knowing the device version can be useful for understanding the features and capabilities available, as well as for ensuring you have the latest updates and security patches.

These three parameters - Model Name, IP Address, and Device Version - provide fundamental information about the Controller. The Model Name identifies the hardware, the IP Addresses show the network connectivity, and the Device Version indicates the software/firmware version. Together, these details give you a basic understanding of the Controller's configuration and capabilities.

Additionally, the Clients section provides a comprehensive list of all connected clients, including their name, channel, signal (RSSI), and connection quality.

- **Channel** - This parameter refers to the wireless channel that the client device is using to connect to the Controller.
- **Signal (RSSI)** - RSSI stands for Received Signal Strength Indicator. This parameter represents the strength of the wireless signal received by the client device from the Controller.
- **Connection Quality** - This parameter provides an indication of the overall quality or health of the connection between the client device and the Controller. It takes into account factors like signal strength, interference, and network congestion to give an overall assessment of the connection quality.

These three parameters - channel, signal (RSSI), and connection quality - provide valuable insights into the wireless connectivity of the clients connected to the Controller. They help you understand

the wireless environment, identify potential troubleshooting areas, and ensure optimal performance for the connected devices.

The General Section contains crucial details such as the MAC Address, Uptime, Memory Usage, and Load Average.

- **MAC Address** - The MAC (Media Access Control) address is a unique hardware identifier assigned to the network interface of a device. The MAC address is an important identifier for the device, as it can be used for network management, access control, and troubleshooting.
- **Uptime** - The uptime refers to the total time the device has been continuously powered on and running. It's a measure of the device's reliability and stability, as a higher uptime typically indicates a more stable and reliable system. Monitoring the uptime can help identify any unexpected reboots or power cycles that may indicate an issue with the device.
- **Memory Usage** - This parameter represents the current utilization of the device's available memory resources. It provides an indication of how much of the device's memory is being consumed by running processes and applications.
- **Load Average** - The load average represents the average system load on the device over a specific time period.

Furthermore, the Uplink Section (Wired/Wireless) provides specific statistics on the Uplink, Down Pkts/Bytes, Up Pkts/Bytes, and Activity. Lastly, the Air Stats Section showcases the status of both 2.4GHz and 5GHz, including Channel, Transmit Power, Tx Pkts/Bytes, Rx Pkts/Bytes, Tx Retry/Dropped, Rx Retry/Dropped, Ch. Util. (Busy/Rx/Tx), and Clients. These sections offer a comprehensive overview of all essential aspects of the EAP nodes.

The Overview tab of the end-user nodes provides information about the Client Model and RSSI History. Additionally, the Traffic Statistics tab presents charts that display the total data download/upload usage separately, and lists all services along with their corresponding data usage for both download and upload on the end-user device.

Overview	Traffic Statistics	Setting
General		
Uplink (Wired/Wireless)		
Downlink		
Air Stats		
2.4 GHz		
Channel	1	
Noise Level	-99 dBm	
Transmit Power	20 dBm	
Tx Pkts/Bytes	0/0B	
Rx Pkts/Bytes	0/0B	
Tx Retry/Dropped	0/0	
Clients	0	
5 GHz		
Channel	124	
Noise Level	-93 dBm	
Transmit Power	20 dBm	
Tx Pkts/Bytes	93.32M/0.10TB	
Rx Pkts/Bytes	43.49M/11.37GB	
Tx Retry/Dropped	0/0	
Clients	5	

Figure 16. EAP Node Overview / Air Status

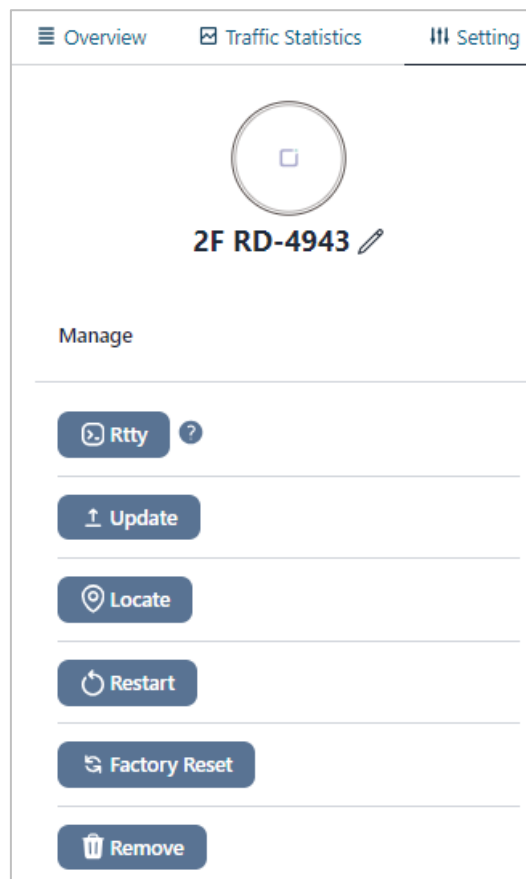
The overview page displays high-level performance metrics, system health monitoring, client counts, and key wireless settings for managed access points.

Air Status - Quick view of current radio frequency bands status (2.4GHz/5GHz enabled).

- **Channel** - The channel each wireless band is currently transmitting on.
- **Noise Level** -Background RF interference levels measured on channels. Higher = more noisy.

- **Transmit Power** - Configured radio transmit power set in dBm. Higher = wider coverage radius.
- **Pkts/Bytes** - Real-time monitoring of Tx/Rx packets and data volume provides wireless usage analytics.
- **Retry/Dropped** - Tx retry and packet drop counters help identify RF interference or coverage issues.
- **Clients** - Number of clients currently connected to each AP radio provides basic capacity monitoring.

Setting section - allows configuring general options and behaviors for the access point system.



- **Rtty (Terminal)** - Provides command line SSH terminal access directly to the AP's linux shell for advanced users. Allows troubleshooting issues through additional utilities and debugging info.
- **Update** - Manually check and install firmware updates for the AP if a new version is available. Keeps system up-to-date.

- **Locate** - Lights up LEDs on the Controller to physically locate the device if needed. Similar to blinking hard drive locate functionality on servers.
- **Restart** - Performs a graceful reboot of the AP system. Ensures proper shutdown and restart of all monitoring systems unlike hard power cycling.
- **Factory Reset** - Reset the system to original default state, removing all custom configuration. Used when Controller is being relocated or all local settings need cleared.
- **Remove** - Factory reset as above, plus forcefully remove all adoption or pairing info for access points. Use when moving AP.

On the Overview tab of the end-user nodes, there are two sections: Client Model Info and RSSI History. The Client Model Info section displays basic information about the end-user device, including its name, uplink, wireless quality, IP address, MAC address, manufacturer, operating system, and uptime. Meanwhile, the RSSI History section shows the quality of RSSI in both 2.4G and 5G bands in the form of a chart that tracks the device's connectivity over time.

On the Traffic Statistics tab of the end-user nodes, displays a status of traffic which is application-aware used by a client.

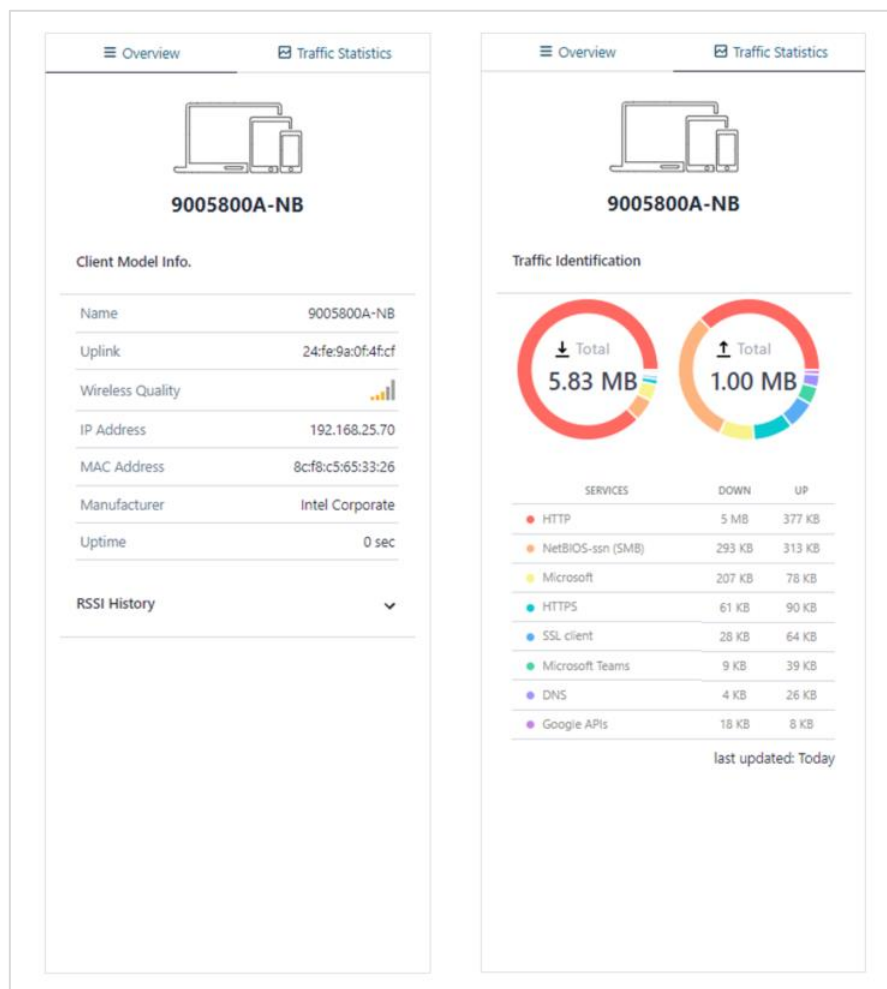


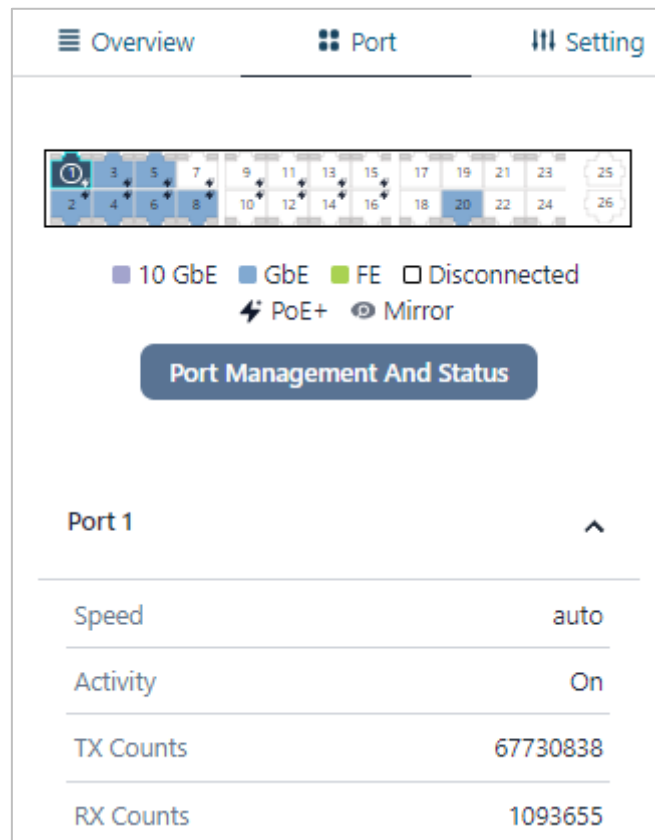
Figure 17. End-user Node Details

The Switch Overview section provides a comprehensive look at the status and configuration details of the network Switch. It allows you to view crucial information about the Switch hardware, connected clients, uplink/downlink interfaces, and traffic statistics. This centralized dashboard gives you full visibility into the Switch's operations for monitoring, troubleshooting and optimizing the network performance. The overview includes the following items:



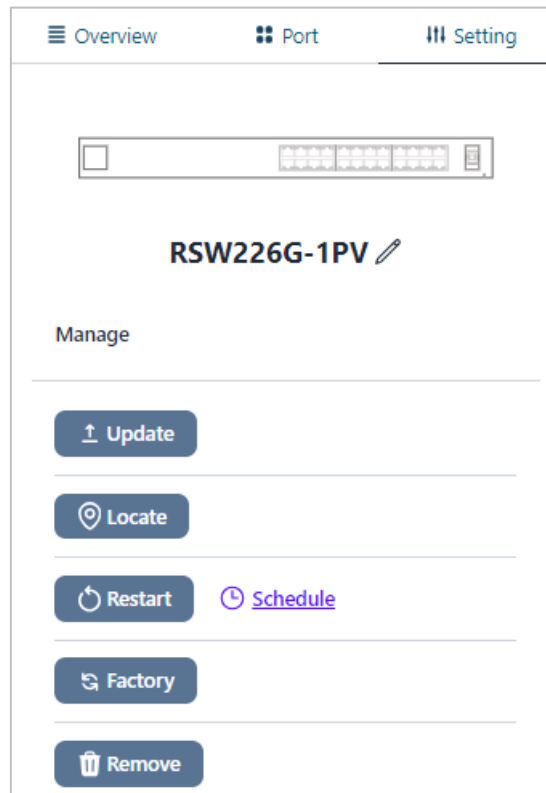
- **Switch Model Info** - Displays detailed information about the Switch model including manufacturer, model number, hardware revision, serial number, and other identifiers.
- **Clients** - Shows a list of all client devices currently connected to the Switch, including their IP and MAC addresses, connection interface, and uptime.
- **Uplink (Wired)** - Provides status of the uplink wired network connections from the Switch to upstream devices like routers or other Switches.
- **Downlink** - Displays downlink port status and statistics for the ports the Switch uses to connect to client devices.

- **Statistics** - Presents interface statistics like data rates, errors, drops for the different Switch ports to analyze throughput and performance.



The Switch Port section displays detailed real-time statistics for the individual Switch ports. Monitoring these metrics allows you to analyze traffic patterns, verify proper operation, and troubleshoot potential issues on each port interface. The statistics provide insight into the port's throughput, errors, broadcasts, and overall activity levels.

- **Speed** - Shows the current negotiated speed of the port's Ethernet link in Mbps or Gbps.
- **Activity** - Indicates if the port is currently active with link and actively passing traffic or not.
- **TX Counts** - Provides packet and byte counters for traffic being transmitted out of this port, including unicast, multicast and broadcast traffic.
- **RX Counts** - Displays packet and byte counters for traffic being received on this port from connected devices.



The Switch Settings section provides access to various system-level utilities and functions for managing and maintaining the network Switch. From this centralized menu, you can perform firmware updates, physically locate the device, reboot the Switch, restore factory defaults, or remove it from your network management. These options give you full control over the operational state of the Switch.

Update - Checks for and installs the latest available firmware update for the Switch to keep it running the newest software version with bug fixes and enhancements.

Locate - Triggers a locator LED to start blinking on the physical Switch, allowing you to easily identify the device when examining multiple installed Switches.

Restart - Initiates a safe reboot of the Switch's operating system while gracefully disconnecting clients to ensure a clean restart.

Factory Reset - Reverts all Switch configuration settings back to their factory defaults, clearing any customizations or changes made.

Remove - Decommissions and removes this Switch from your centralized network management, allowing you to replace or deactivate it.

5.3 Connected Devices Page

To view all connected devices, simply click on “Connected Devices” in the left sidebar. This will expand to display all kind of connected devices, including EAP and Client. By clicking on the specific kind of device of interest, you will be directed to its corresponding Devices page, which lists all relative devices. By selecting the particular type of device you are interested in, you will be directed to its corresponding Devices page, which provides a list of all the related devices. The EAP Devices page lists all the EAP devices and provides detailed information such as connection status, name, MAC address, IP address, connection quality, firmware version, and clients associated with each device. On the other hand, the Client Devices page lists all the end-user devices and provides information such as connection status, name, connection type, IP address, channel connection quality, RSSI signal, RX Rate, TX Rate, and history of each device.

STATUS	NAME	MAC ADDRESS	IP ADDRESS	QUALITY	FW VERSION	PROFILES	CLIENTS	
Online	2F RF-4937	24:fe:9a:0f:49:37	192.168.25.236	...	cybertan_eww631-a1_y1...	DefaultSSID_95038-EY00...	0	Remove
Online	2F RD-4943	24:fe:9a:0f:49:43	192.168.25.248	...	cybertan_eww631-a1_y1...	DefaultSSID_95038-EY00...	3	Remove
Online	3F BD-4963	24:fe:9a:0f:49:63	192.168.25.31	...	cybertan_eww631-a1_y1...	DefaultSSID_95038-EY00...	0	Remove
Online	3F Ph-4A3F	24:fe:9a:0f:4a:3f	192.168.25.107	...	cybertan_eww631-a1_y1...	DefaultSSID_95038-EY00...	0	Remove
Online	2F SQA-4a4b	24:fe:9a:0f:4a:4b	192.168.25.119	...	cybertan_eww631-a1_y1...	DefaultSSID_95038-EY00...	3	Remove
Online	3F CEO-4FCF	24:fe:9a:0f:4f:cf	192.168.25.64	...	cybertan_eww631-a1_y1...	DefaultSSID_95038-EY00...	0	Remove
Offline	3F Ph-5D61	24:fe:9a:0f:5d:61	--	--	cybertan_eww631-c1_y1...	DefaultSSID_95038-EY00...	0	Remove
Online	2F RD-5D7D	24:fe:9a:0f:5d:7d	192.168.25.56	...	cybertan_eww631-c1_y1...	DefaultSSID_95038-EY00...	1	Remove
Offline	3F BD-5DAD	24:fe:9a:0f:5d:ad	--	--	cybertan_eww631-c1_y1...	DefaultSSID_95038-EY00...	0	Remove
Offline	2F SQA-5E5D	24:fe:9a:0f:5e:5d	--	--	cybertan_eww631-c1_y1...	DefaultSSID_95038-EY00...	0	Remove

Showing 1 to 10 of 10 results

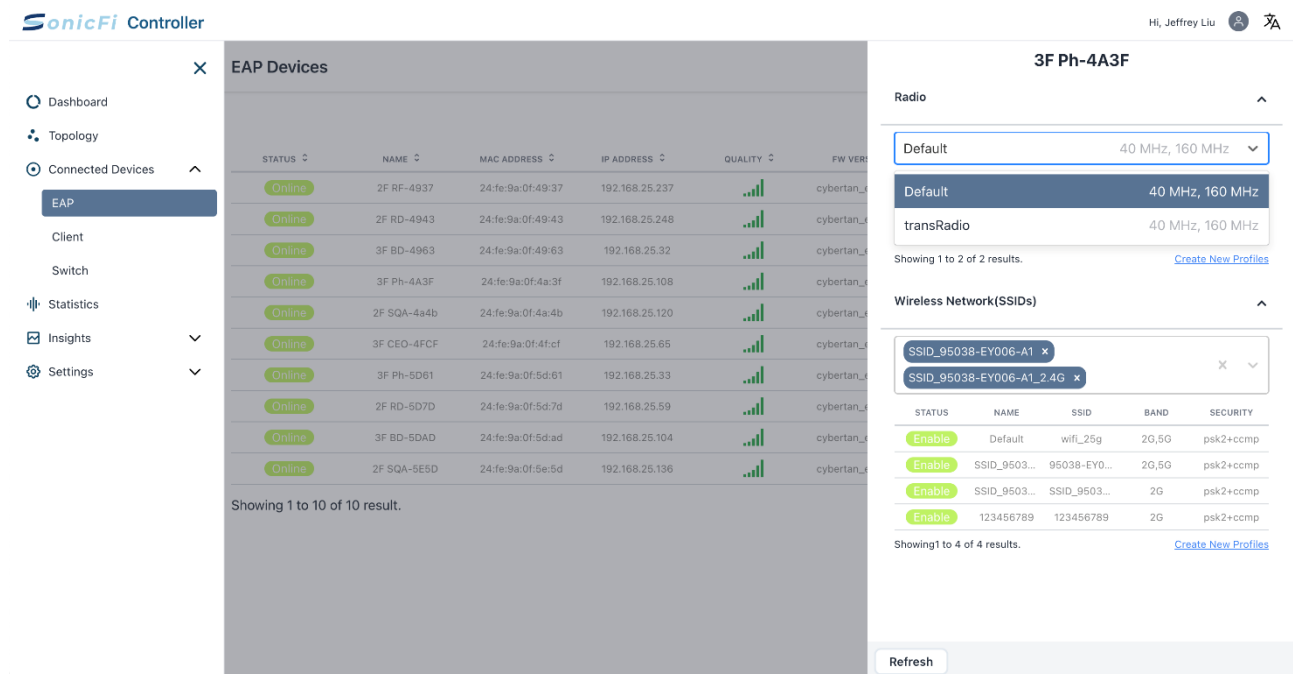
Figure 18. Connected Devices Page (EAP)

1. Connected Devices / EAP

This section displays all wireless access points adopted by the Controller and allows drilling down into their details and clients.

- **Status** - Connectivity status indicates whether APs are currently reachable by Controller.
- **Name** - Configured name/label for each access point.
- **MAC Address** - Unique hardware MAC address ID of each AP.
- **IP Address** - The IP address of adopted APs. Dynamically assigned from Controller subnet.
- **Quality** - Radio signal quality metric from AP to clients. Helps identify bad connections.
- **Firmware** - Version running on APs - upgradeable from Controller.
- **Profiles** - Applied configuration and policy profiles syncing settings to this AP.
- **Clients** - Number of clients actively connected to the AP radios. Drill down further.

When you want to assign a radio profile and/or wireless networks profile to an access point, you can click on a profile field of it. A menu will pop up on the right side for assigning profiles that you create at profile management in settings.



The screenshot displays the SonicFi Controller interface. On the left, a sidebar menu includes Dashboard, Topology, Connected Devices (with EAP selected), Client, Switch, Statistics, Insights, and Settings. The main area is titled 'EAP Devices' and shows a table of 10 access points. The table columns are STATUS, NAME, MAC ADDRESS, IP ADDRESS, QUALITY, and FW VER. All devices are 'Online'. The device '3F Ph-4A3F' is highlighted. On the right, a detailed view for '3F Ph-4A3F' is shown. It includes a 'Radio' section with a dropdown menu currently set to 'Default' (40 MHz, 160 MHz). Below this, it shows 'Showing 1 to 2 of 2 results.' and a link to 'Create New Profiles'. The 'Wireless Network(SSIDs)' section shows a list of SSIDs with columns for STATUS, NAME, SSID, BAND, and SECURITY. The first two SSIDs are 'Default' and 'SSID_95038-EY006-A1', both with 'Enable' status. The bottom of the interface has a 'Refresh' button.

STATUS	NAME	MAC ADDRESS	IP ADDRESS	QUALITY	FW VER
Online	2F RF-4937	24:fe:9a:0f:49:37	192.168.25.237	...	cybertan...
Online	2F RD-4943	24:fe:9a:0f:49:43	192.168.25.248	...	cybertan...
Online	3F BD-4963	24:fe:9a:0f:49:63	192.168.25.32	...	cybertan...
Online	3F Ph-4A3F	24:fe:9a:0f:4a:3f	192.168.25.108	...	cybertan...
Online	2F SQA-4a4b	24:fe:9a:0f:4a:4b	192.168.25.120	...	cybertan...
Online	3F CEO-4FCF	24:fe:9a:0f:4f:cf	192.168.25.65	...	cybertan...
Online	3F Ph-5D61	24:fe:9a:0f:5d:61	192.168.25.33	...	cybertan...
Online	2F RD-5D7D	24:fe:9a:0f:5d:7d	192.168.25.59	...	cybertan...
Online	3F BD-5DAD	24:fe:9a:0f:5d:ad	192.168.25.104	...	cybertan...
Online	2F SQA-5E5D	24:fe:9a:0f:5e:5d	192.168.25.136	...	cybertan...

STATUS	NAME	SSID	BAND	SECURITY
Enable	Default	wifi_25g	2G,5G	psk2+ccmp
Enable	SSID_9503...	95038-EY0...	2G,5G	psk2+ccmp
Enable	SSID_9503...	SSID_9503...	2G	psk2+ccmp
Enable	123456789	123456789	2G	psk2+ccmp

Figure 19. Profile Assignment of Access Point

SonicFi Controller

Client Devices

SEARCH

STATUS	NAME	CONNECTION	IP ADDRESS	CHANNEL	QUALITY	SIGNAL	RX RATE	TX RATE	HISTORY
Online	9005680A-NB	5G	192.168.25.55	124		-42	1.73 Gbps	1.73 Gbps	
Online	86a07b210c2f	5G	192.168.25.149	124		-54	0.26 Gbps	0.72 Gbps	
Online	M2101K7BNY	5G	192.168.25.68	124		-53	72.20 Mbps	0.23 Gbps	
Online	Galaxy-A53-5G	5G	192.168.25.42	124		-61	0.33 Gbps	0.29 Gbps	
Online	SQA-PC2	2.4G	192.168.25.126	11		-54	86.70 Mbps	12.00 Mbps	
Online	King-PC	2.4G	192.168.25.205	11		-52	86.50 Mbps	6.50 Mbps	
Online	74a6c0b8b8b10	2.4G	192.168.25.171	8		-64	1.00 Mbps	6.00 Mbps	

Showing 1 to 7 of 7 results

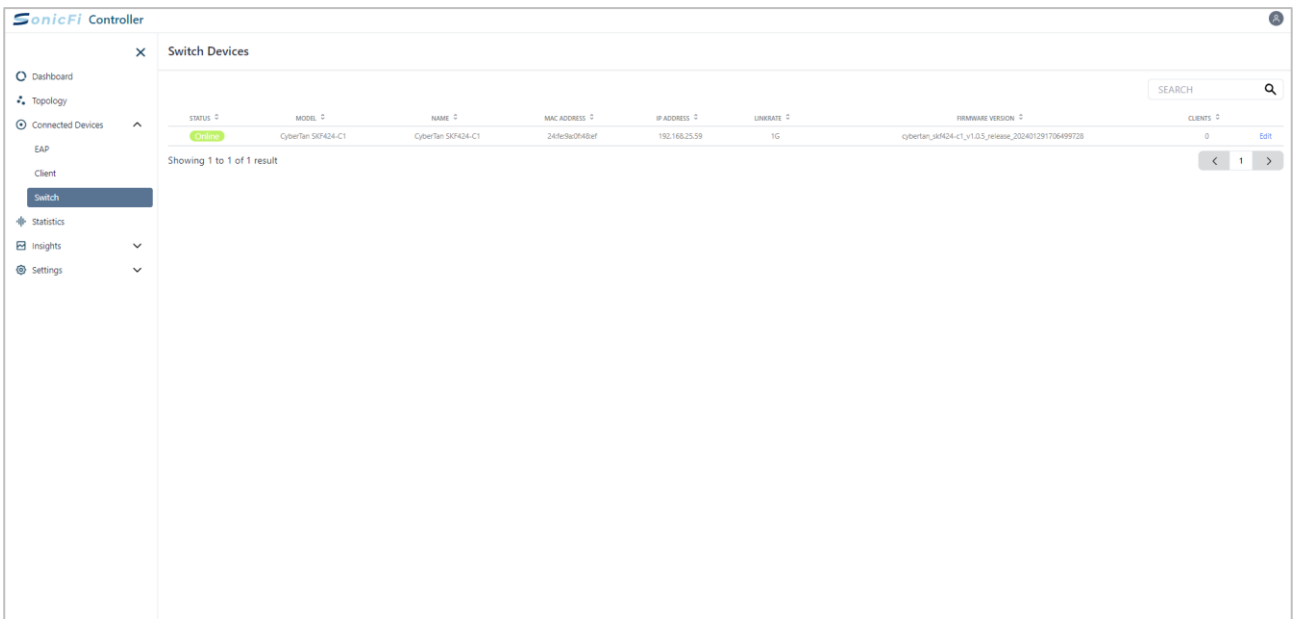
< 1 >

Figure 20. Connected Devices Page (Client)

2. Connected Devices / Client

This section shows end user client devices connected to managed access points with rich detail.

- **Status** - Connectivity status of clients - disconnected clients greyed out.
- **Name** - Reported device hostnames if available.
- **Connection** - SSID of wireless network connected to.
- **IP Address** - DHCP assigned IP addresses for clients.
- **Channel** - The radio band/channel clients are connected on.
- **Quality** - Quantified signal quality metric from AP to client device.
- **Signal** - Received signal strength indicator (RSSI) dBm measurement.
- **Rx/Tx Rate** - Negotiated transmit and receive data rates (bandwidth speed) per device.
- **History** - Graph of reconnect history and radio metrics over time.



STATUS	MODEL	NAME	MAC ADDRESS	IP ADDRESS	LINK RATE	FIRMWARE VERSION	CLIENTS
Online	CyberTan SKF424-C1	CyberTan SKF424-C1	24fc9c0f48bf	192.168.25.59	1G	cybertan_skf424-c1_v1.0.5_release_202401291706499728	0

Showing 1 to 1 of 1 result

Figure 21. Connected Devices / Switches

3. Connected Devices / Switch

This section displays any network Switches adopted by or connected to the Controller for centralized visibility.

- **Status** - Connectivity status indicates if Controller can currently reach Switch management.
- **Model** - Model hardware number of each connected Switch.
- **Name** - Configured name for each Switch.
- **MAC Address** - Unique MAC address hardware ID for each Switch.
- **IP Address** - IP address used to reach management interface of Switches.
- **Link Rate** - Uplink port speed connectivity to Switches.
- **Firmware** - Current firmware version running on Switches. Upgrade through Controller.
- **Clients** - Number of Switch ports with active device connections for capacity info.

When you click on edit of Switch of interest, you can manage ports of the Switch and setup settings like STP protocol, 802.1x, and QoS of it as well.

Hi, CybertanTW

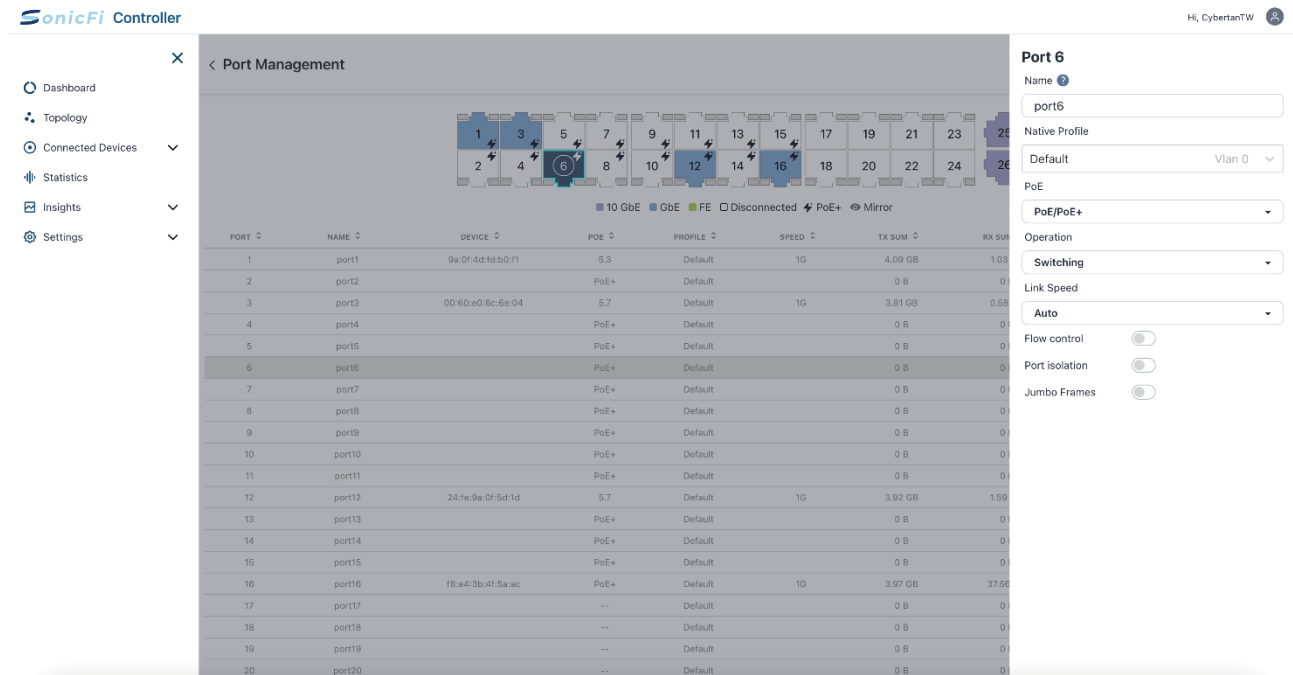
Dashboard
Topology
Connected Devices
Statistics
Insights
Settings

Port Management

PORT	NAME	DEVICE	POE	PROFILE	SPEED	TX SUM	RX SUM	TX RATE	RX RATE
1	port1	9a:0f:4d:fd:b0:f1	5.3	Default	1G	4.09 GB	1.03 GB	0.94 Mbps	0.25 Mbps
2	port2		PoE+	Default		0 B	0 B	0 bps	0 bps
3	port3	00:60:e0:8c:9e:04	5.7	Default	1G	3.81 GB	0.58 GB	0.20 Mbps	0.12 Mbps
4	port4		PoE+	Default		0 B	0 B	0 bps	0 bps
5	port5		PoE+	Default		0 B	0 B	0 bps	0 bps
6	port6		PoE+	Default		0 B	0 B	0 bps	0 bps
7	port7		PoE+	Default		0 B	0 B	0 bps	0 bps
8	port8		PoE+	Default		0 B	0 B	0 bps	0 bps
9	port9		PoE+	Default		0 B	0 B	0 bps	0 bps
10	port10		PoE+	Default		0 B	0 B	0 bps	0 bps
11	port11		PoE+	Default		0 B	0 B	0 bps	0 bps
12	port12	24:fe:9a:0f:5d:1d	5.7	Default	1G	3.92 GB	1.59 MB	0.31 Mbps	0.63 Kbps
13	port13		PoE+	Default		0 B	0 B	0 bps	0 bps
14	port14		PoE+	Default		0 B	0 B	0 bps	0 bps
15	port15		PoE+	Default		0 B	0 B	0 bps	0 bps
16	port16	f8:e4:3b:4f:3a:ac	PoE+	Default	1G	3.97 GB	37.56 MB	0.31 Mbps	0.32 Kbps
17	port17		--	Default		0 B	0 B	0 bps	0 bps
18	port18		--	Default		0 B	0 B	0 bps	0 bps
19	port19		--	Default		0 B	0 B	0 bps	0 bps
20	port20		--	Default		0 B	0 B	0 bps	0 bps

Figure 22. Port Management of a Switch

In port management, you can easily get status of all ports of the Switch. And you can click on a specific port to configure it. Configurable functionality includes name, profile, POE, link speed, flow control, port isolation, and jumbo frames.



SonicFi Controller Hi, CybertanTW

< Port Management

Port status grid (Legend: 10 GbE, GbE, FE, Disconnected, PoE+, Mirror):

PORT	NAME	DEVICE	POE	PROFILE	SPEED	TX SUM	RX SUM
1	port1	9a:0f:4d:fd:b0:f1	5.3	Default	1G	4.09 GB	1.03
2	port2		PoE+	Default		0 B	0
3	port3	00:60:a0:8c:6e:04	5.7	Default	1G	3.81 GB	0.58
4	port4		PoE+	Default		0 B	0
5	port5		PoE+	Default		0 B	0
6	port6		PoE+	Default		0 B	0
7	port7		PoE+	Default		0 B	0
8	port8		PoE+	Default		0 B	0
9	port9		PoE+	Default		0 B	0
10	port10		PoE+	Default		0 B	0
11	port11		PoE+	Default		0 B	0
12	port12	24:7e:9a:0f:5d:1d	5.7	Default	1G	3.92 GB	1.59
13	port13		PoE+	Default		0 B	0
14	port14		PoE+	Default		0 B	0
15	port15		PoE+	Default		0 B	0
16	port16	f8:e4:3b:4f:5a:ac		Default	1G	3.97 GB	37.58
17	port17		--	Default		0 B	0
18	port18		--	Default		0 B	0
19	port19		--	Default		0 B	0
20	port20		--	Default		0 B	0

Port 6 Configuration:

- Name: port6
- Native Profile: Default (Vlan 0)
- POE: PoE/PoE+
- Operation: Switching
- Link Speed: Auto
- Flow control: ☐
- Port isolation: ☐
- Jumbo Frames: ☐

Figure 23. Port Configuration

4. Switch / Port Configuration

- **Name** – Configured name.
- **Profile** – VLAN profile created in profile management of settings.
- **POE** – Power on Ethernet.
- **Operation** – Switching mode, and mirroring mode.
- **Link Speed** – Auto, 100Mbps, 1Gbps.
- **Flow Control** – match a speed of end user devices.
- **Port isolation** – physically isolate a port to prevent unexpected actions by other devices.
- **Jumbo frames** - an Ethernet frame, or data packet, with a payload greater than the standard size of 1,500 bytes. The maximum jumbo frame size can be configured to be up to 9,000 bytes

5.4 Statistics Page

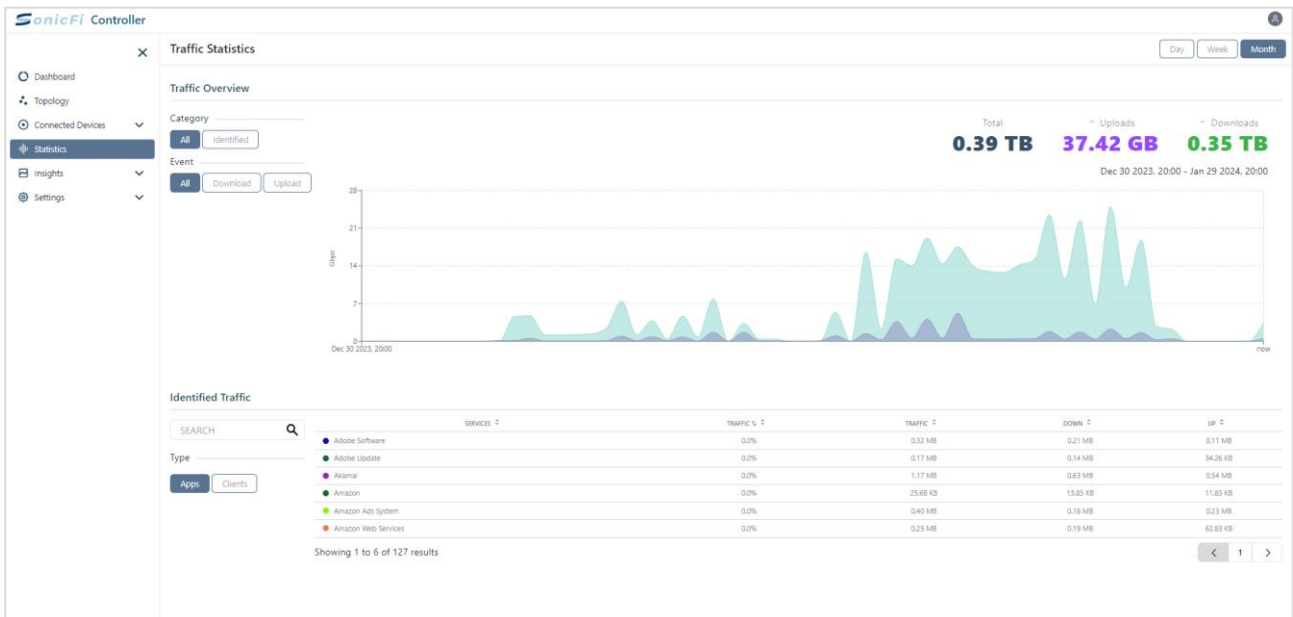


Figure 24. Statistics Page

This page consists of two sections of information - the “Traffic Overview” section and the “Identified Traffic” section.

The “Traffic Overview” section offers details on the amount of data uploaded, downloaded, and used in total. You have the option to filter the information by selecting the category type (All or Identified) and the event type (All, Download, or Upload).

The “Identified Traffic” section has two types: Apps and Clients. The Apps type displays a list of services and provides information on each service's name, traffic, download, and upload. The Clients type displays all the information offered in the Apps type, except that it shows the client's name instead of the service's name.

Identified Traffic					
SEARCH	SERVICES	TRAFFIC %	TRAFFIC	DOWN	UP
Type	Adobe Software	0.0%	1.50 KB	0.78 KB	0.72 KB
Apps	Akamai	0.0%	3.12 KB	1.23 KB	1.89 KB
Clients	Amazon Ads System	0.0%	3.42 KB	1.64 KB	1.78 KB
	Amazon Web Services	0.0%	8.93 KB	6.91 KB	2.03 KB
	Android browser	0.0%	28.09 KB	7.90 KB	20.19 KB
	Apple Maps	0.0%	49.89 KB	41.81 KB	8.08 KB
Showing 1 to 6 of 75 results					

Identified Traffic					
SEARCH	NAME	TRAFFIC %	TRAFFIC	DOWN	UP
Type	000000000000	0%	0 B	0 B	0 B
Apps	0021865C1258	0%	0 B	0 B	0 B
Clients	0026C7D34204	0%	0 B	0 B	0 B
	0032C85A1101	0%	0 B	0 B	0 B
	0045E2806964	3.9%	0.16 GB	0.13 GB	21.72 MB
	00AABC132244	0%	0 B	0 B	0 B
Showing 1 to 6 of 157 results					

Figure 25. Identified Traffic

5.5 Wi-Fi Insights Page

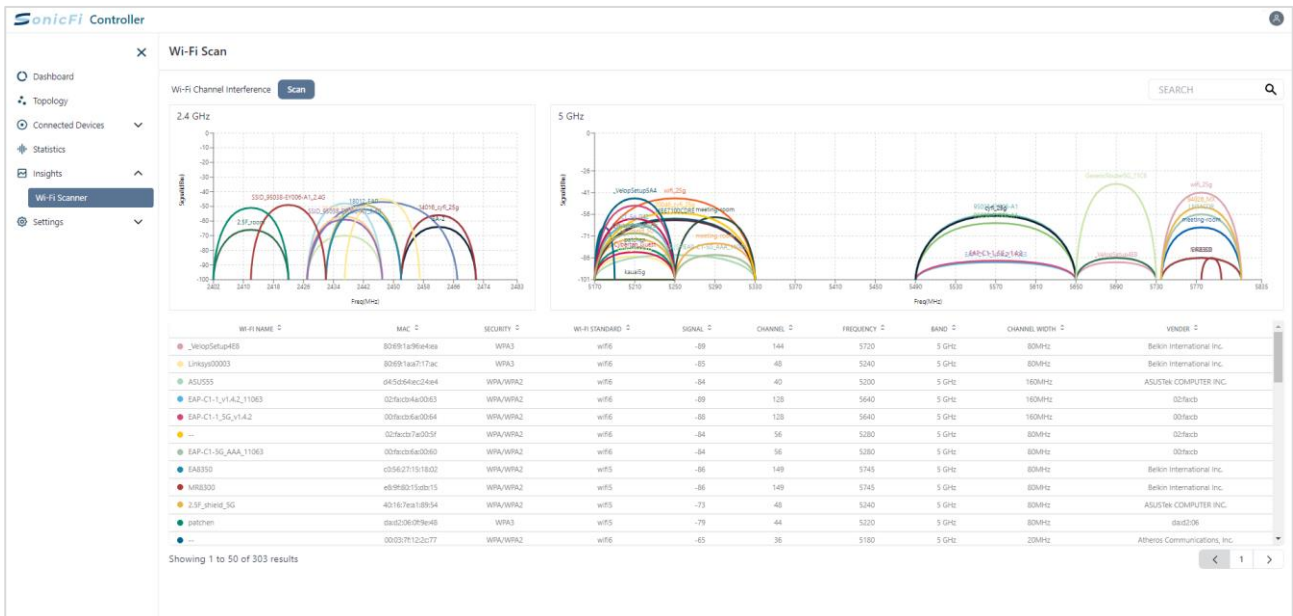


Figure 26. Wi-Fi Insights Page

The Wi-Fi scanning dashboard allows viewing details on both your own SSIDs as well as third party networks detected in the area surrounding your access points. The page may be empty with no information displayed, but by clicking on the “Scan” button, the Controller will initiate a scan of all potential APs. Please note that the scanning process may take anywhere between 3 to 5 minutes.

- **Wi-Fi Name** - The network SSID name being broadcast.
- **MAC** - The MAC address of the AP broadcasting the SSID.
- **Security** - The security protocol in use, such as WPA, WPA2, or open/none.
- **Wi-Fi Standard** - The wireless standard supported, such as 802.11ac Wave 2 (WiFi 5) or AX (WiFi 6).
- **Signal** - Received Signal Strength Indicator (RSSI) which indicates the signal strength quality being received by connected clients.

- **Channel** - The wireless channel the SSID is configured to broadcast on.
- **Frequency** - The frequency of the wireless channel.
- **Band** - The wireless band the SSID is broadcasting on - typically either 2.4Ghz or 5Ghz. Any networks detected in your environment, additional visibility is provided into:
- **Channel Width** - The channel width being broadcast, such as 20Mhz or 40Mhz. Wider channels provide faster speeds.
- **Vendor** - The manufacturer name reporting the network such as Cisco, CyberTan, etc. Useful for tracking potential interference sources.

Combining this RF scanning view with Wi-Fi airtime usage graphs helps identify sources of interference or network congestion in the covered area impacting users. Proactively optimize your own SSIDs based on the environment insights.

5.6 Settings Page

When you click on “Settings” in the left sidebar, a list of all possible settings to manage the Controller and the EAPs will expand. These settings include Wi-Fi, Network, Internet, Static Route, Firewall, Port Forwarding, and System.

- The Wi-Fi settings page allows you to customize Channel Width, Transmit Power, and Channels in both the 2.4G and 5G bands, along with Steering and Sensitivity options. Additionally, you can create new Wi-Fi settings or edit existing ones with fields such as Name, Password, Wi-Fi Band, Fast Roaming, Security Protocol, Group Rekey Interval, Hide Wi-Fi Name, and MAC Address Filtering.
- The Network Settings page enables you to configure your LAN by setting up the IP address and Netmask, as well as the DHCP server with a range of IPs and lease time.
- The Internet Settings page displays the current Internet status, including active status, name, IP address, and uptime. From this page, you can also edit WAN settings and the IPv4 connection type. WAN settings include name, VLAN ID, MAC address clone, and DNS server.
- The Profile Management page can help you manage Internet setting easily. By decoupling profiles from access point configurations, teams can define profiles once then efficiently assign to multiple APs. This prevents duplicate work.
- The Static Route & Firewall Settings page displays a comprehensive list of the current settings for Static Routes, Firewalls, and Port Forwarding. You have the ability to modify or create new Static Routes with fields such as Enable, Name, Target Network IP, Netmask, Gateway IP, and Interface. Similarly, you can create or modify Firewalls with fields such as Enable, Name, Action, Input Interface, Output Interface, IP Type, Source IP, Source Port, Destination IP, and Destination Port. Additionally, you can set up Port Forwarding by creating or editing entries with fields such as Enable, Name, Private IP, Interface Private Port, Type, and Source Port. The Firewall and Port Forwarding functions can be easily Switched on or off as needed.
- On the System Settings page, you can configure your language settings, check for firmware updates, restore from a backup, download backup configurations, enable or disable system logging and set up an NTP server IP.

5.6.1 Wi-Fi Section

This section allows you to configure advanced WiFi optimization features to improve the wireless performance and client experience on your network. Fine-tune settings like band steering and sensitivity to better control how clients connect and roam between access points.

- **Steering (toggle on/off)** - The steering feature, when enabled, encourages dual-band capable client devices to preferentially connect or steer to the 5GHz WiFi band instead of the more crowded 2.4GHz band. This can reduce interference and maximize available bandwidth.
- **Sensitivity: Low/Medium/High** - This setting adjusts the sensitivity level that determines when and how aggressively the steering function will attempt to move dual-band clients off the 2.4GHz band and over to 5GHz. A higher sensitivity means more clients will get steered, while lower sensitivity limits this to only clients with very strong 5GHz signal.

The proper Sensitivity level depends on your environment - higher levels work best when you have strong, redundant 5GHz coverage, while lower may be preferable if you have lower 5GHz signal propagation.

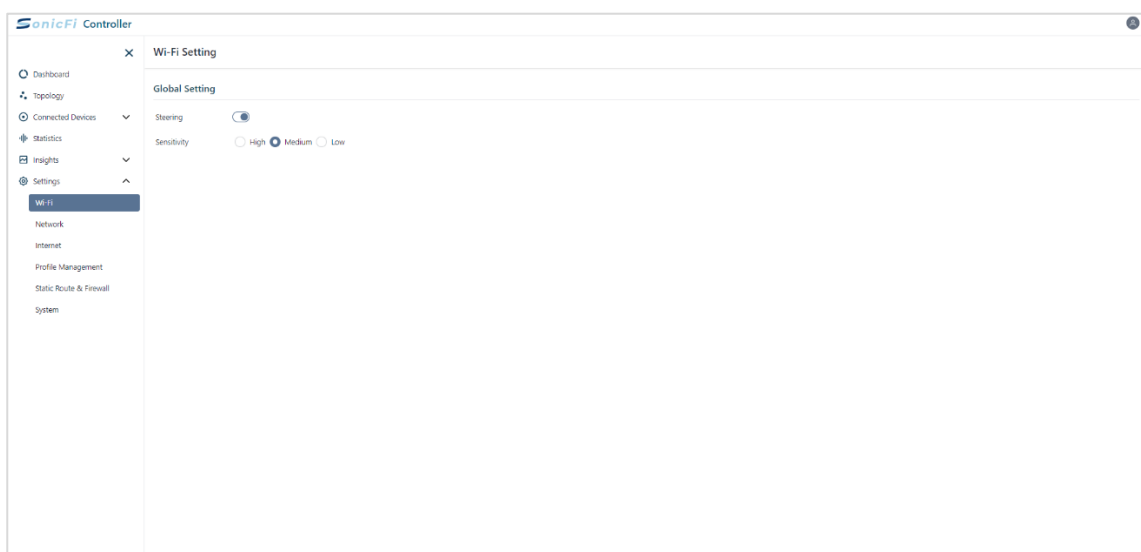


Figure 27. Wi-Fi Setting

5.6.2 Network Section

It lists LAN profiles. You can add new LAN profile or edit exist one with the Network Name, VLAN, IP Address, Netmask, and the starting and ending points of the DHCP server. Finally, you can decide whether to enable the IPv6 option.

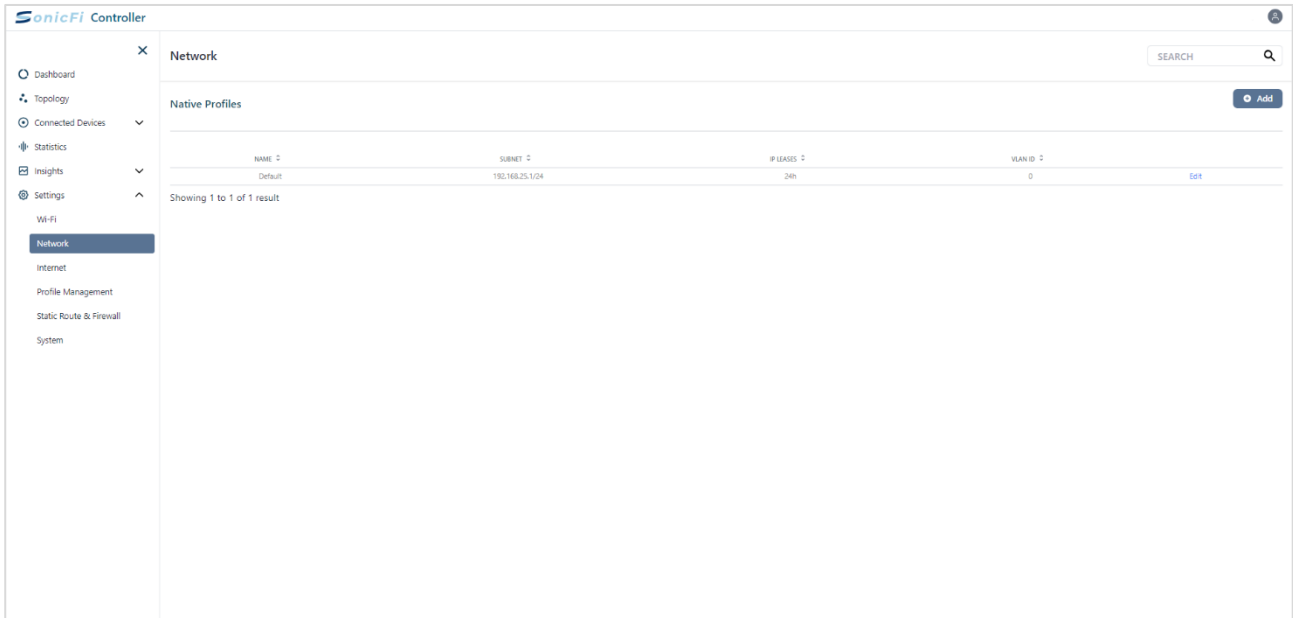


Figure 28. Network Settings (1/2)

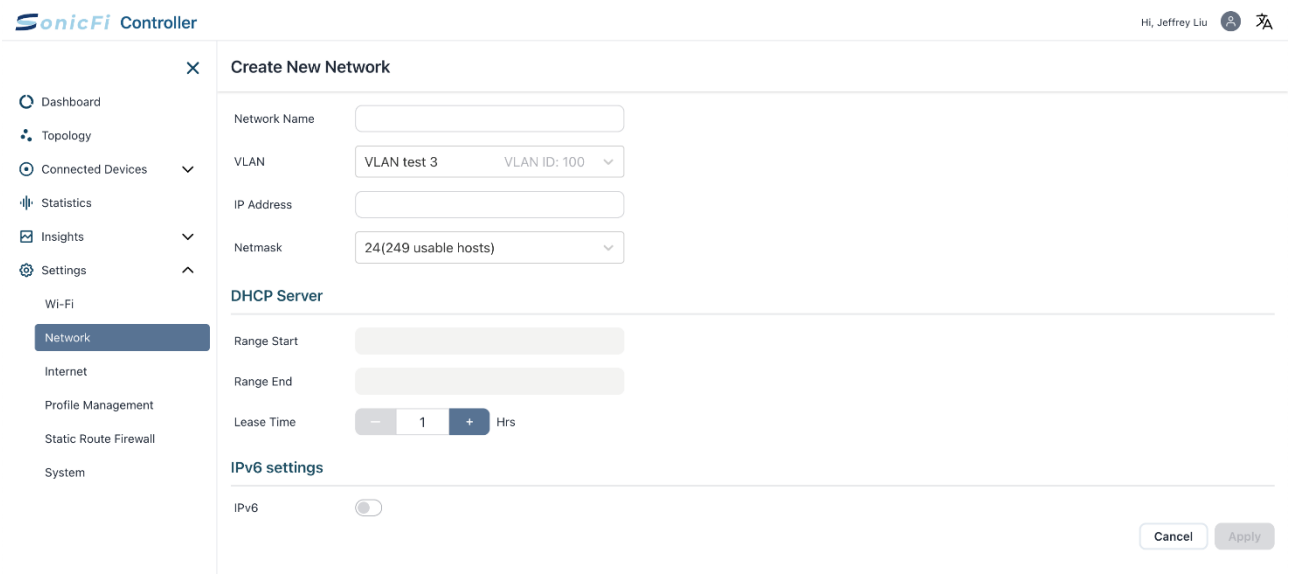


Figure 29. Network Settings (2/2)

- **Network Name** - This is the name assigned to your LAN network. It identifies your network and is often used to differentiate it from other networks.

- **VLAN (Virtual Local Area Network)** - The VLAN configuration created at Profile Management allows you to segment your LAN into multiple virtual networks, each operating independently of the others. The default VLAN is VLAN0, which is commonly used for the primary LAN.
- **IP Address** - Specifies the IP address assigned to the LAN interface. This address is used to identify your network on the local network segment.
- **Netmask** - The netmask defines the size of the network segment associated with the LAN IP address. It determines the range of IP addresses that are considered part of the LAN.
- **DHCP Server** - Enables or disables the DHCP (Dynamic Host Configuration Protocol) server functionality for the LAN network. DHCP simplifies network configuration by automatically assigning IP addresses to devices on the LAN.
 - **Range Start:** The starting IP address of the DHCP address pool.
 - **Range End:** The ending IP address of the DHCP address pool.
 - **Lease Time:** The duration for which DHCP-assigned IP addresses are valid before they expire and may be reassigned.
- **IPv6 Toggle On/Off** - Allows you to enable or disable IPv6 support for the LAN network. IPv6 is the latest version of the Internet Protocol and provides a larger address space compared to IPv4.

By configuring these Network settings, you can effectively manage your local network, assign IP addresses dynamically, and control IPv6 connectivity according to your network requirements. Remember to save your changes after configuring the settings for them to take effect.

5.6.3 Internet Section

Upon entering the Internet Settings, you can edit any of the configurations in the Internet Status section. You can modify the Internet Name, number of VLANs, Mac Address Clone, and choose whether to check the Automatic mode option for the DNS Server. Finally, there are IPv4 Connection options: DHCP, Static IP, and PPPoE.

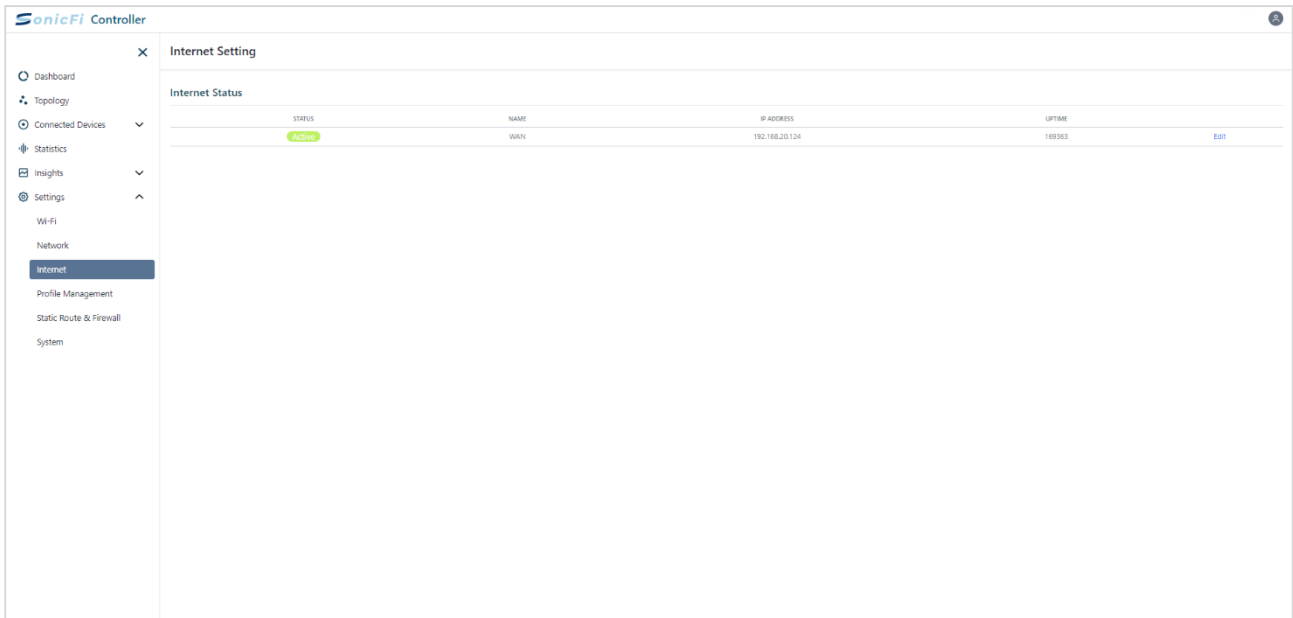


Figure 30. Internet Settings

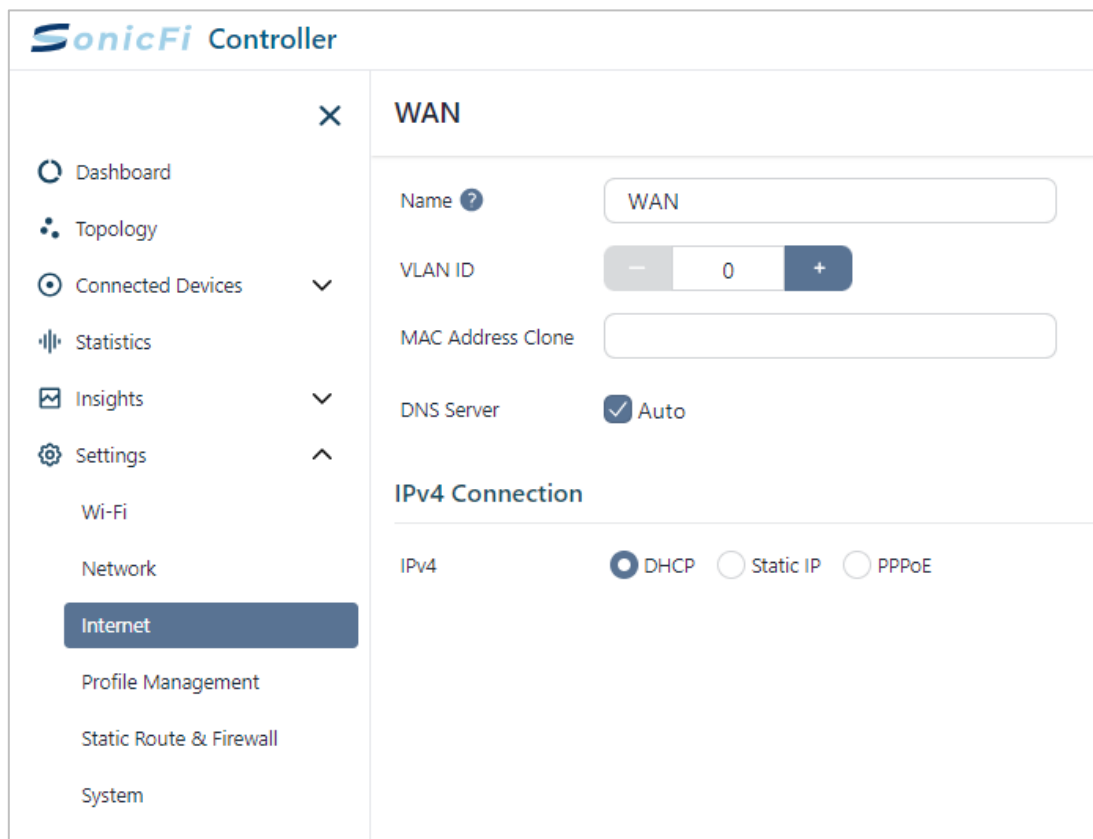


Figure 31. Settings / Internet / WAN

- **Name** - This field allows you to assign a name to your WAN connection for identification purposes.
- **VLAN ID** - If your WAN connection requires VLAN tagging, you can specify the VLAN ID here.
- **MAC Address Clone** - This feature allows you to clone the MAC address of another device connected to the WAN interface. Cloning the MAC address can sometimes help with compatibility or troubleshooting with your ISP.
- **DNS Server Auto (Toggle On/Off)** - Enabling this option allows your router to automatically obtain DNS server information from your ISP. Disabling it lets you manually specify DNS server settings.
- **IPv4 Connection Type** - You can select the appropriate connection type for your IPv4 WAN connection. The available options are:
 - **DHCP** (Dynamic Host Configuration Protocol): Obtain IP address, subnet mask, default gateway, and DNS server information automatically from the ISP.
 - **Static IP**: Manually configure the IP address, subnet mask, default gateway, and DNS server information provided by your ISP.
 - **PPPoE** (Point-to-Point Protocol over Ethernet): Establish a PPPoE connection with your ISP using a username and password. This is common for DSL internet connections.

By configuring these WAN settings, you can establish a connection between your local network and the internet, ensuring that your devices can access online resources and services. Remember to save your changes after configuring the settings for them to take effect.

5.6.4 Profile Management Section



Figure 32. Profile Management (1/2)

On the Profile Management page, you can view the status of the Wireless Networks (SSIDs), Radios, Virtual Networks, and Radius (2.4G/5G). By clicking edit, you can edit the configurations for each network. Afterwards, you can easily and quickly manage each network through the assignment method.

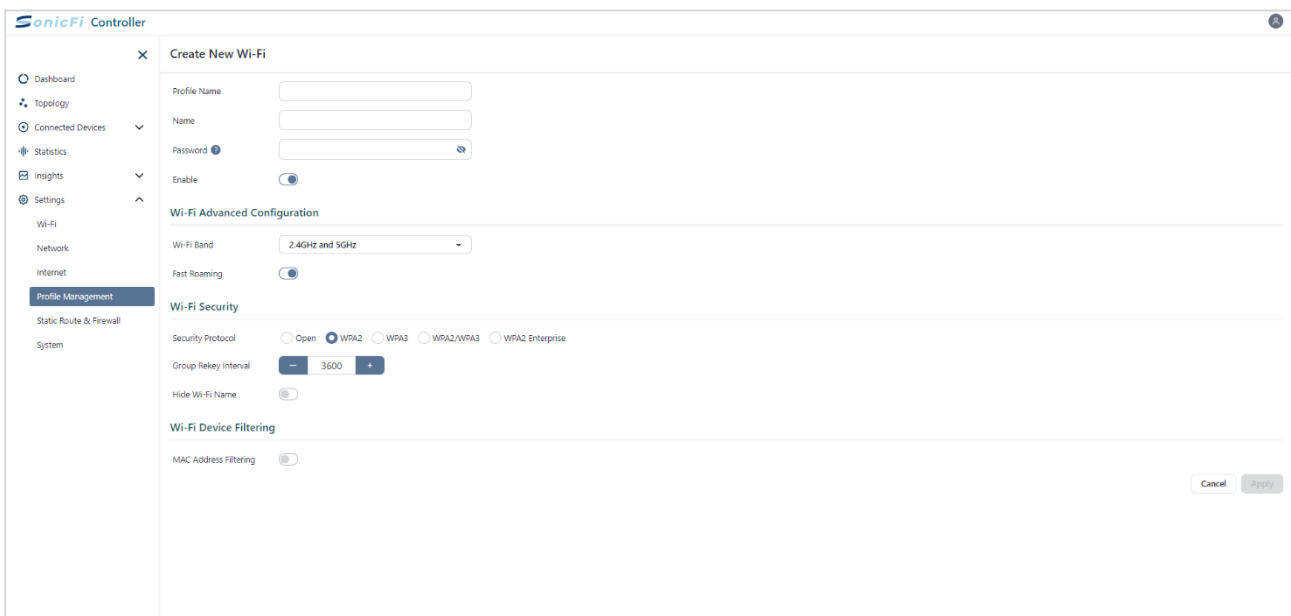


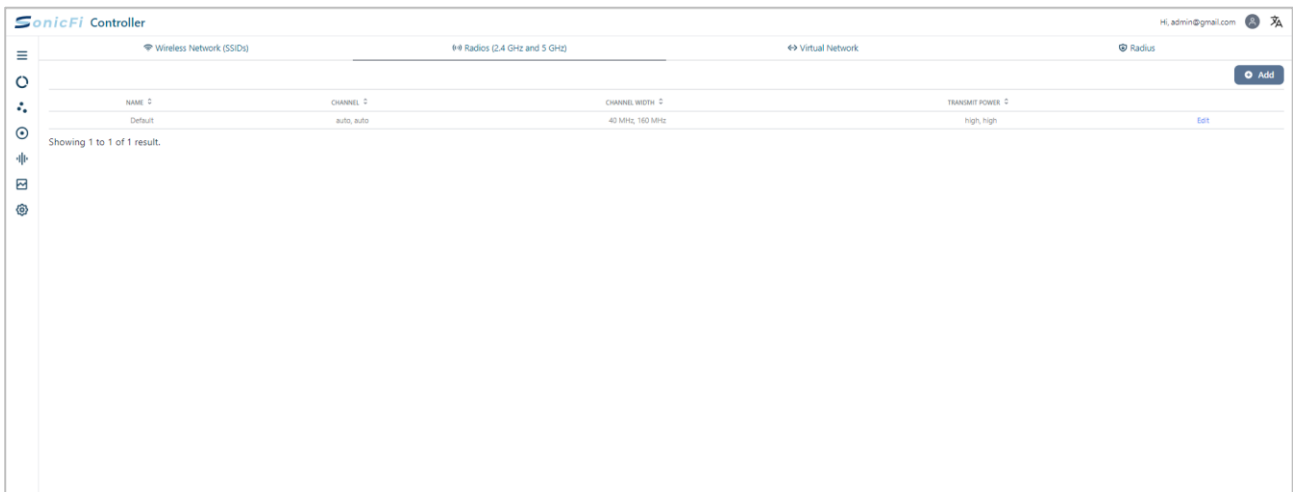
Figure 33. Profile Management (2/2)

- **Profile Name** - This field allows you to assign a name to the Wi-Fi profile for identification purposes.

- **Name** - Enter the name of your Wi-Fi network (SSID) here.
- **Password** - Set the password for your Wi-Fi network. This password will be required for devices to connect to the network.
- **Enabled** - Toggle this option on to enable the Wi-Fi profile.
- **Wi-Fi Band** - Select the frequency bands supported by your Wi-Fi network. Options typically include 2.4GHz, 5GHz, or both.
- **Fast Roaming (Toggle On/Off)** - Enabling fast roaming allows devices to Switch seamlessly between access points without experiencing interruption in connectivity.
- **Security Protocol** - Choose the security protocol for your Wi-Fi network. Options may include Open (no security), WPA2 (Wi-Fi Protected Access 2), WPA3, WPA2 & WPA3, or WPA2 Enterprise.
- **Group Rekey Interval** - Set the interval (in seconds) for refreshing encryption keys used in WPA security protocols.
- **Hide Wi-Fi Name (Toggle On/Off)** - Enabling this option hides the Wi-Fi network name (SSID) from being broadcasted publicly.
- **MAC Address Filtering** - This feature allows you to specify MAC addresses of devices that are permitted or denied access to the Wi-Fi network based on a filtering list.

By configuring these settings, you can customize and secure your Wi-Fi network according to your preferences and requirements, ensuring optimal performance and protection for your wireless connections. Remember to save your changes after configuring the settings for them to take effect.

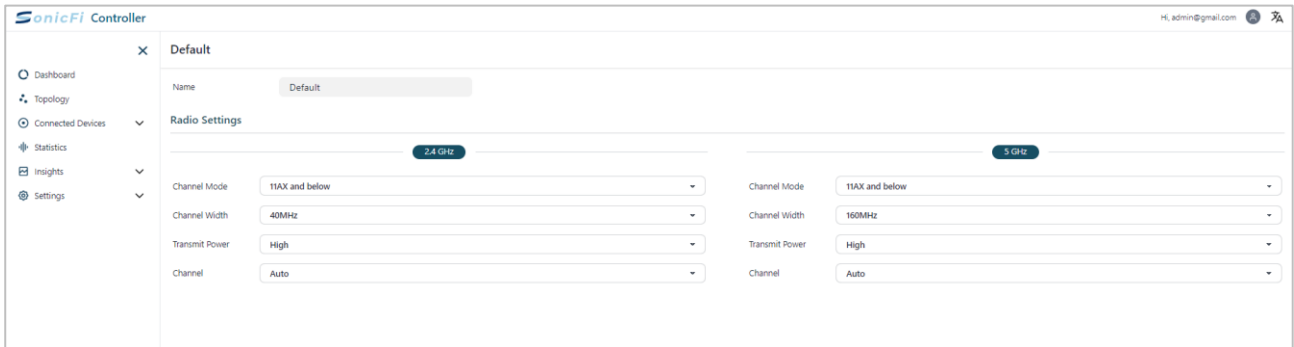
The Wi-Fi settings page allows you to customize Channel Width, Transmit Power, and Channels in both the 2.4G and 5G bands. Additionally, you can create new Wi-Fi settings or edit existing ones with fields such as Name, Password, Wi-Fi Band, Fast Roaming, Security Protocol, Group Rekey Interval, Hide Wi-Fi Name, and MAC Address Filtering.



This section allows you to configure separate WiFi radio profiles for the 2.4GHz and 5GHz frequency bands. Customize settings like the radio name, operating channel, channel width, and transmit power levels to optimize performance for your environment. These profiles can then be applied to individual access points or groups of APs.

- **Name** - Assign a descriptive name to each radio profile for easy identification.
- **Channel** - Select which WiFi channel the radio will operate on for the respective 2.4GHz or 5GHz band.
- **Channel Width** - Set the channel width in MHz, allowing wider 40/80MHz channels for higher throughput or narrower 20MHz for increased range.
- **Transmit Power** - Adjust the transmit power level as a percentage of the maximum. Lower levels reduce interference but decrease range.

Creating separate optimized profiles allows you to tune the 2.4GHz and 5GHz radios differently based on their signal propagation characteristics in your environment. Apply the profiles to access points to provision the configured settings.



The screenshot shows the SonicFi Controller web interface. The top bar displays the SonicFi Controller logo and the user's email address (H. admin@gmail.com). The sidebar on the left contains navigation links: Dashboard, Topology, Connected Devices, Statistics, Insights, and Settings. The main content area is titled 'Default' and shows the configuration for the 2.4GHz and 5GHz radio bands. The 2.4GHz settings include Channel Mode (11AX and below), Channel Width (40MHz), Transmit Power (High), and Channel (Auto). The 5GHz settings include Channel Mode (11AX and below), Channel Width (160MHz), Transmit Power (High), and Channel (Auto).

This edit page allows you to customize advanced settings for the 2.4GHz and 5GHz radio bands to optimize wireless performance and meet the needs of your environment. You can adjust the operating channel, channel width, transmit power, and more.

2.4GHz Settings:

- **Transmission Mode:**

- 11ax and below: Enables 802.11ax (Wi-Fi 6) and backward compatible modes
- 11n and below: Limits to 802.11n (Wi-Fi 4) and older modes

- **Channel Width:**

- 20MHz: Operates on a single 20MHz channel
- 40MHz: Bonds two 20MHz channels for higher 40MHz throughput

- **Transmit Power:**

- Low/Medium/High: Adjusts the 2.4GHz radio's transmit output power

- **Channel:**

- Auto: Automatically selects an operating channel
- Manual: Specify a fixed channel from 1 to 11

5GHz Settings:

- **Transmission Mode:**

- 11ax and below: Enables 802.11ax (Wi-Fi 6) and backward compatible
- 11ac and below: Limits to 802.11ac (Wi-Fi 5) and older
- 11n and below: Only 802.11n and older

- **Channel Width:**

- 20MHz/40MHz/80MHz/160MHz: Select different channel widths

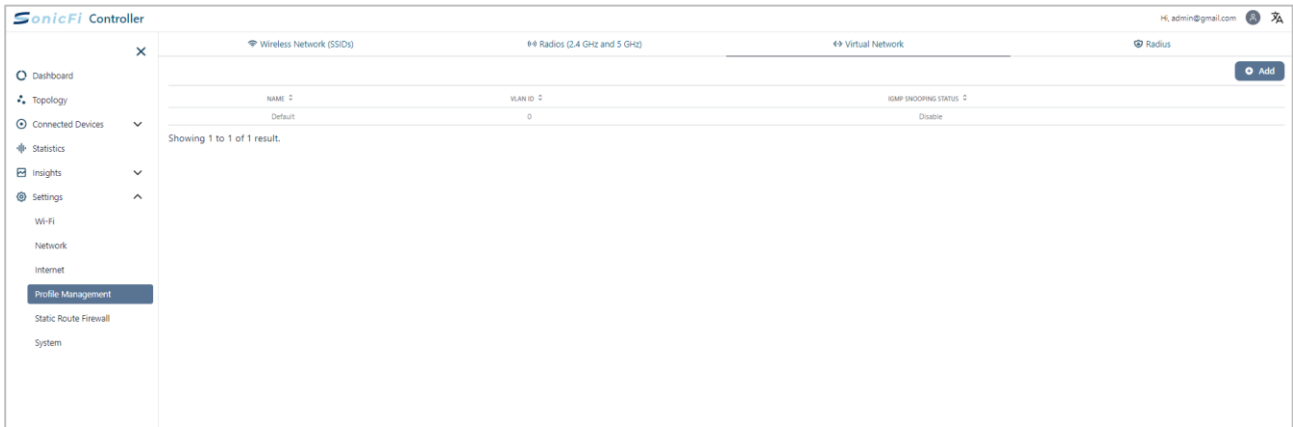
- **Transmit Power:**

- Low/Medium/High

- **Channel:**

- Auto: Automatically selects
- Manual: Specify a fixed channel from 36 to 165

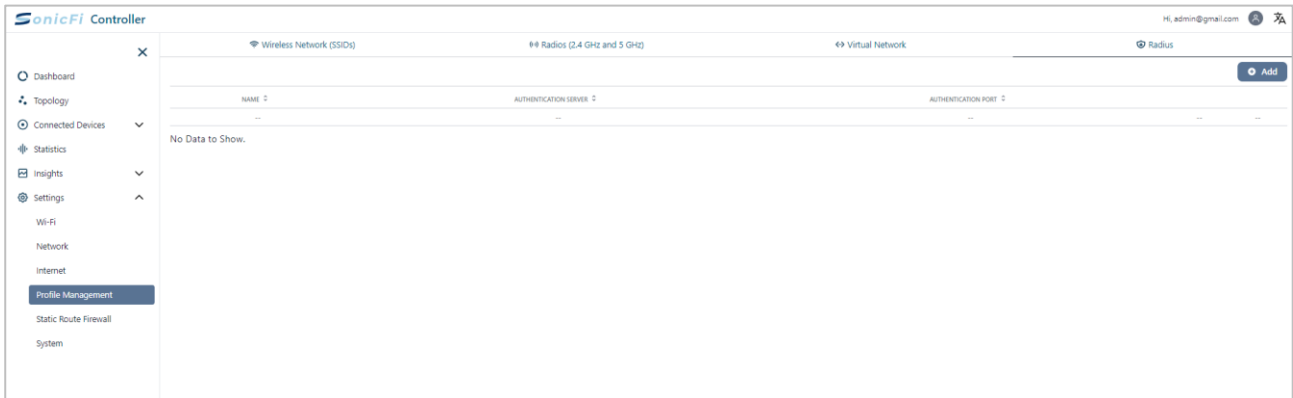
The 5GHz band offers more available channels and wider channel width options to enable higher throughput, but has shorter range compared to 2.4GHz. Properly configuring these settings can maximize the wireless network's performance.



This section allows you to configure virtual network profiles that segment your wireless network into multiple separate broadcast domains or VLANs. Creating different VLAN profiles enables features like network isolation, bandwidth management, and access control. These profiles can then be mapped to specific SSIDs.

- **Name** - Assign a descriptive name to each virtual network profile for identification.
- **VLAN ID** - Specify the numeric VLAN ID that this virtual network will map to. This enables routing traffic for the SSID to the configured VLAN.
- **IGMP Snooping Status** - Toggle IGMP snooping on or off for this VLAN. When enabled, it limits multicast traffic to only the ports associated with receivers requesting it.

By configuring multiple VLAN profiles with different IDs and settings, you can segment wireless clients and control their network access and traffic routing based on individual profiles applied to different WiFi networks (SSIDs). Common uses include guest network isolation, employee/corporate separation, and Quality of Service prioritization.



RADIUS (Remote Authentication Dial-In User Service) server profiles define external authentication servers used to validate wireless client credentials and control network access. Configuring RADIUS enables centralized authentication and policy management instead of using local credentials stored on each device.

- **Name** - Specify a name to identify this RADIUS server profile.
- **Authentication Server** - Enter the IP address or hostname of the RADIUS authentication server.
- **Authentication Port** - Set the UDP port number the RADIUS server is listening on for authentication requests, typically 1812.

Additional settings like shared secrets, timeouts, and specific RADIUS protocols like EAP types can also be configured per profile. Once created, RADIUS server profiles can be mapped to individual wireless networks (SSIDs) or device groups to enforce authentication before granting network access. This allows using the same RADIUS server centrally across your wireless infrastructure for consistent access policies.

5.6.5 Static Route & Firewall Section

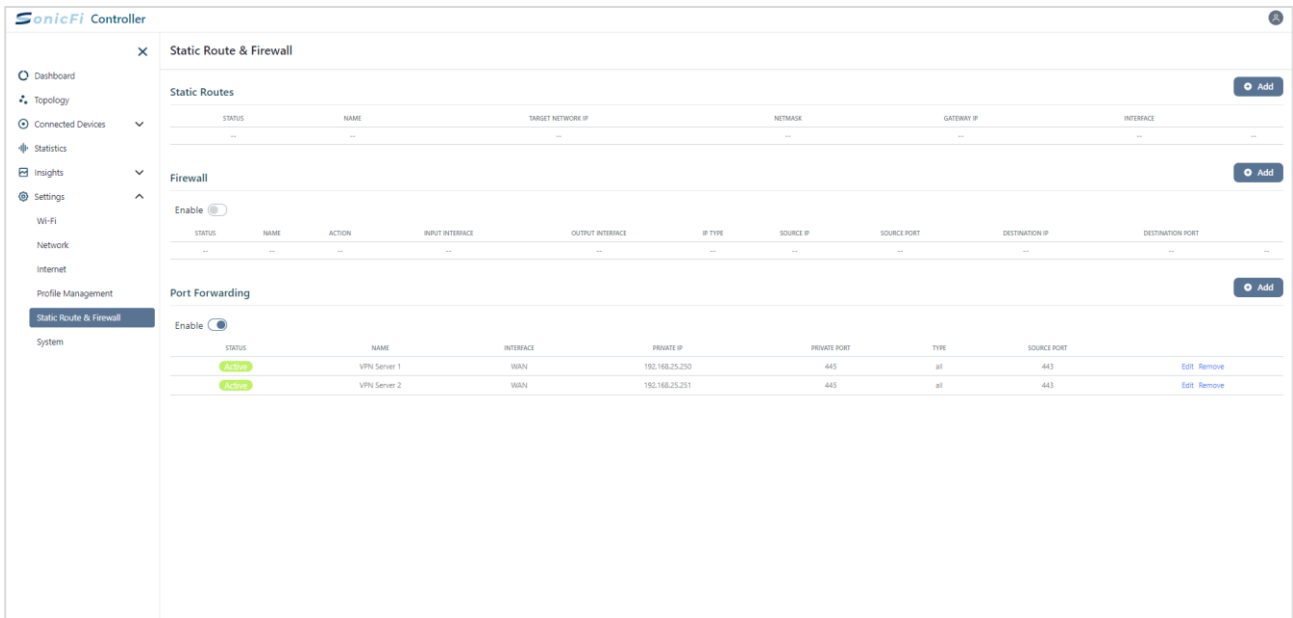


Figure34. Static Route & Firewall

Static Route

- **Status** - This column indicates whether the static route is currently enabled or disabled.
- **Name** - Assign a name to the static route for easy identification.
- **Target Network IP** - Enter the IP address of the target network for which the static route is being configured.
- **Netmask** - Specify the netmask for the target network.
- **Gateway IP** - Provide the IP address of the gateway through which traffic to the target network should be routed.
- **Interface** - Indicate the interface through which the traffic will be sent to reach the target network.

Firewall

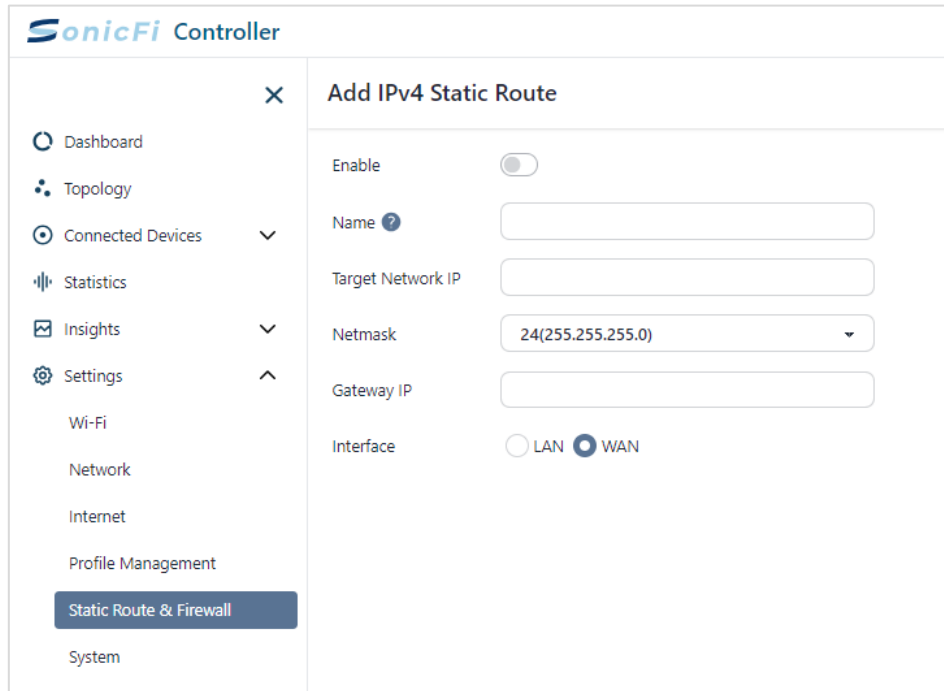
- **Enable (Toggle On/Off)** - Use this toggle button to enable or disable the firewall.
- **Status** - Shows whether the firewall rule is currently active.

- **Name** - Assign a name to the firewall rule for easy identification.
- **Action** - Specify the action to be taken for traffic matching this rule (e.g., allow, deny).
- **Input Interface** - Indicate the input interface for incoming traffic affected by this rule.
- **Output Interface** - Specify the output interface for outgoing traffic affected by this rule.
- **IP Type** - Specify the IP protocol type (e.g., TCP, UDP) for traffic affected by this rule.
- **Source IP** - Specify the source IP address or range for traffic affected by this rule.
- **Source Port** - Specify the source port or port range for traffic affected by this rule.
- **Destination IP** - Specify the destination IP address or range for traffic affected by this rule.
- **Destination Port** - Specify the destination port or port range for traffic affected by this rule.

Port Forwarding

- **Enable (Toggle On/Off)** - Use this toggle button to enable or disable port forwarding.
- **Status** - Indicates whether the port forwarding rule is currently active.
- **Name** - Assign a name to the port forwarding rule for easy identification.
- **Interface** - Indicate the network interface through which the port forwarding rule will be applied.
- **Private IP** - Specify the private IP address of the device to which traffic will be forwarded.
- **Private Port** - Specify the private port on the device to which traffic will be forwarded.
- **Type** - Specify the type of traffic (e.g., TCP, UDP) to be forwarded.
- **Source Port** - Specify the source port or port range for incoming traffic to be forwarded.

Through Add IPv4 Static Route, you can configure the Name, Target Network IP, Netmask, Gateway IP, and whether the Interface goes through LAN or WAN.



SonicFi Controller

Add IPv4 Static Route

Enable ☐

Name

Target Network IP

Netmask

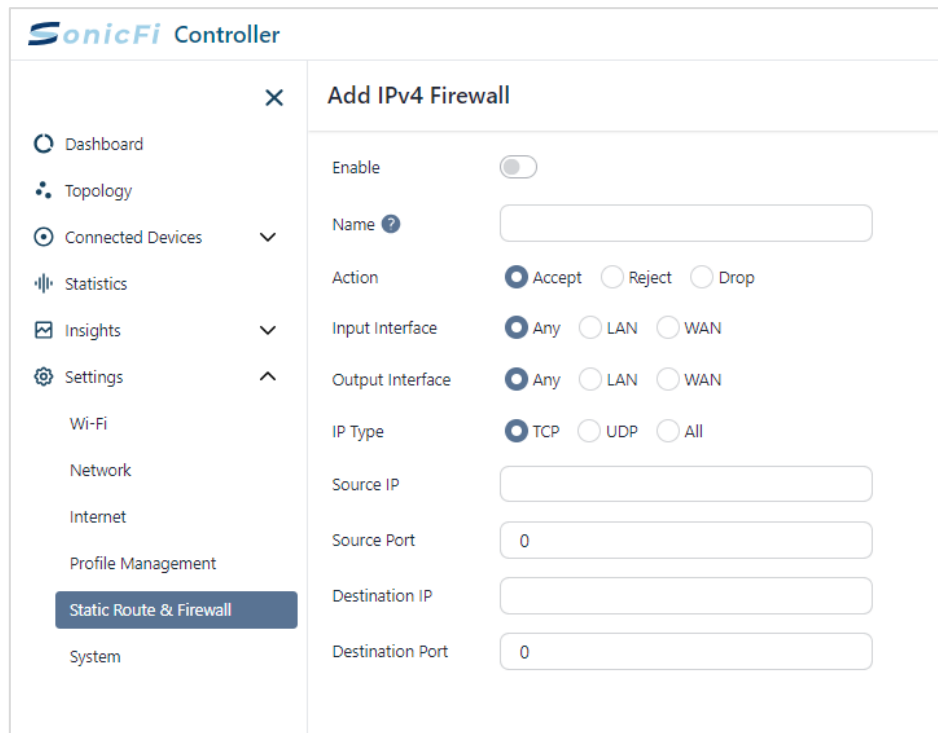
Gateway IP

Interface ☐ LAN ☒ WAN

Left sidebar menu: Dashboard, Topology, Connected Devices, Statistics, Insights, Settings, Wi-Fi, Network, Internet, Profile Management, **Static Route & Firewall**, System.

Figure 35. Add IPv4 Static Route

Through Add IPv4 Firewall, you can configure the Name, Action, Input Interface, Output Interface, IP Type, Source IP, Source Port, Destination IP, and Destination Port.



SonicFi Controller

Add IPv4 Firewall

Enable ☐

Name

Action ☒ Accept ☐ Reject ☐ Drop

Input Interface ☒ Any ☐ LAN ☐ WAN

Output Interface ☒ Any ☐ LAN ☐ WAN

IP Type ☒ TCP ☐ UDP ☐ All

Source IP

Source Port

Destination IP

Destination Port

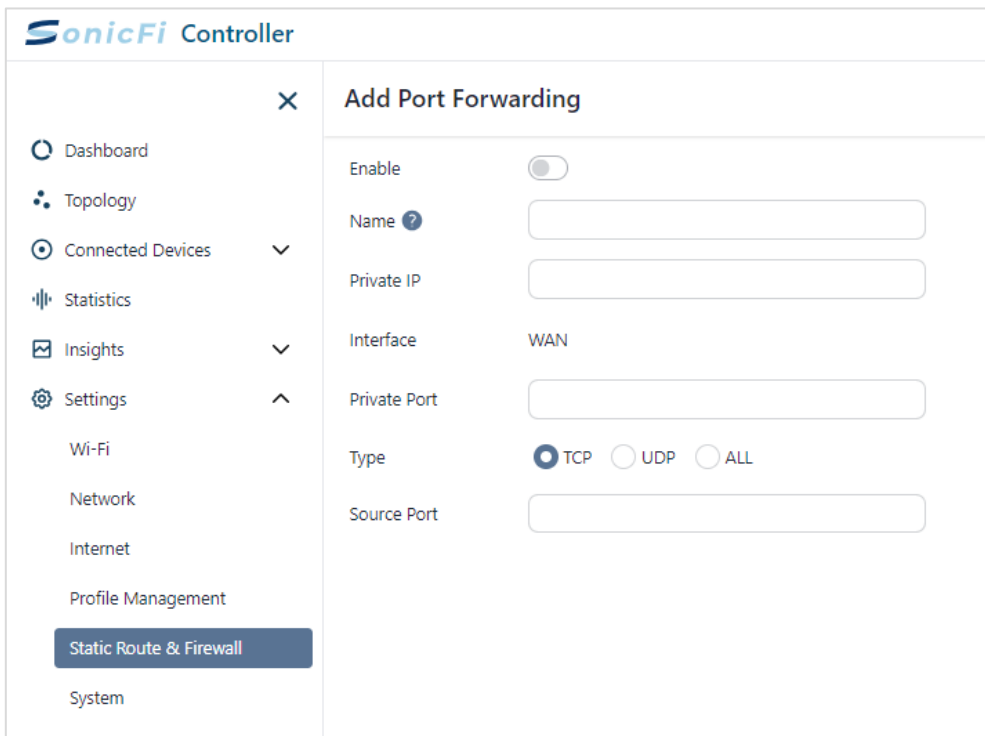
Left sidebar menu: Dashboard, Topology, Connected Devices, Statistics, Insights, Settings, Wi-Fi, Network, Internet, Profile Management, **Static Route & Firewall**, System.

Figure 36. Add IPv4 Firewall

- **Enable (Toggle On/Off)** - Use this toggle button to enable or disable the IPv4 firewall rule.

- **Name** - Assign a name to the firewall rule for easy identification.
- **Action** - Specify the action to be taken for traffic matching this rule. Options include accept, reject, or drop.
- **Input Interface** - Indicate the input interface for incoming traffic affected by this rule. Options may include any, LAN, or WAN.
- **Output Interface** - Specify the output interface for outgoing traffic affected by this rule. Options may include any, LAN, or WAN.
- **IP Type** - Specify the IP protocol type for traffic affected by this rule. Options may include TCP, UDP, or All.
- **Source IP** - Specify the source IP address or range for traffic affected by this rule.
- **Source Port** - Specify the source port or port range for traffic affected by this rule.
- **Destination IP** - Specify the destination IP address or range for traffic affected by this rule.
- **Destination Port** - Specify the destination port or port range for traffic affected by this rule.

The Port Forwarding feature allows you to know what the current Source Port is coming from. By Editing Port Forwarding, you can change its name, Private IP, Private Port, Source Port, and specify its form as TCP, UDP, or both.





×

Add Port Forwarding

Enable

☐

Name ?

Private IP

Interface

WAN

Private Port

Type

☒ TCP
 ☐ UDP
 ☐ ALL

Source Port

Dashboard

Topology

Connected Devices

Statistics

Insights

Settings

Wi-Fi

Network

Internet

Profile Management

Static Route & Firewall

System

Figure 37. Add Port Forwarding

- **Enable (Toggle On/Off)** - Use this toggle button to enable or disable the port forwarding rule.
- **Name** - Assign a name to the port forwarding rule for easy identification.
- **Private IP** - Specify the private IP address of the device on your LAN that you want to forward incoming traffic to.
- **Interface** - Select the interface through which the incoming traffic will be received. Options may include WAN or other available interfaces.
- **Private Port** - Specify the port on the private IP address to which the incoming traffic will be forwarded.
- **Type** - Specify the type of protocol for the forwarded traffic. Options may include TCP, UDP, or All.
- **Source Port** - Specify the source port or port range for the incoming traffic that will be forwarded.

5.6.7 System Section

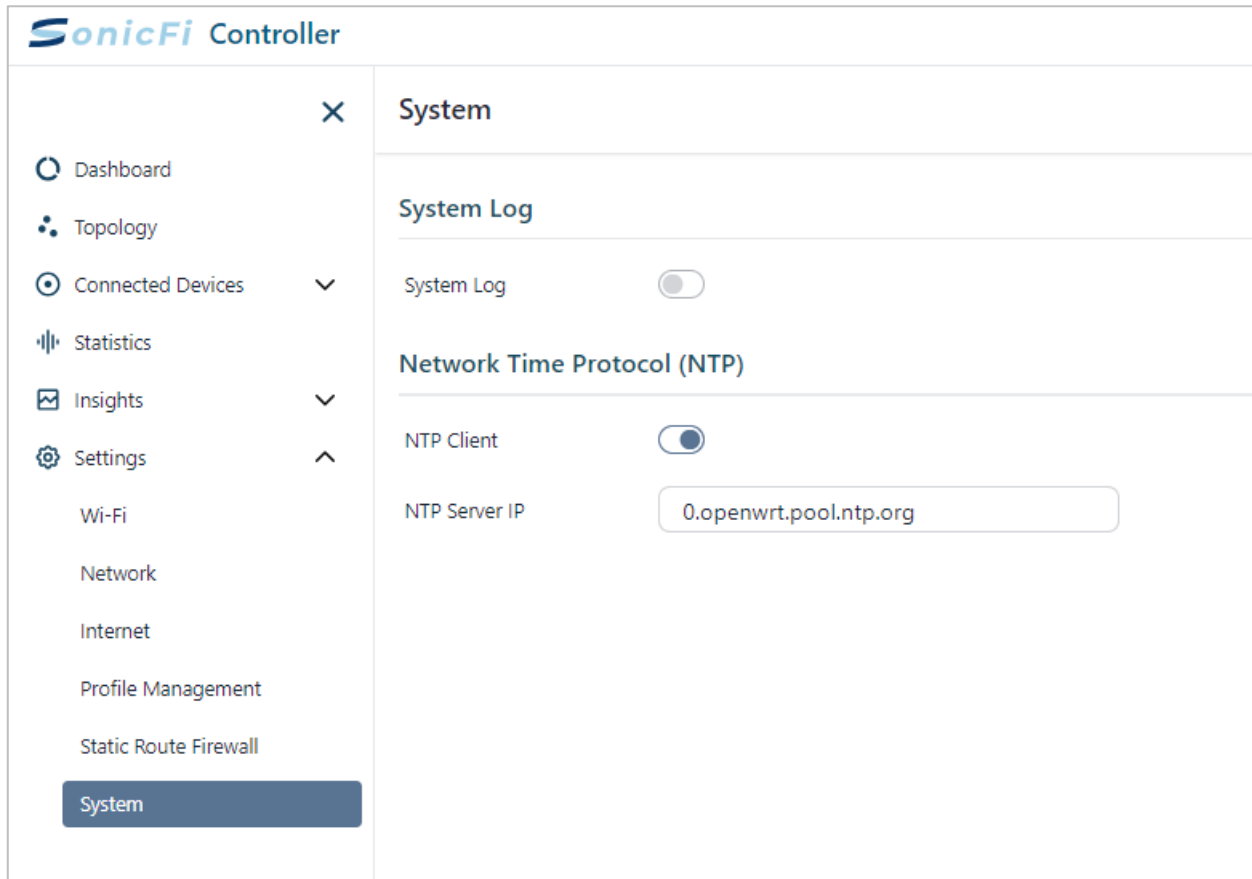


Figure 38. System Configuration

- **System Log (Toggle On/Off)** - Enable or disable logging of system events for troubleshooting and monitoring purposes.
- **NTP Client (Toggle On/Off)** - Enable or disable the Network Time Protocol (NTP) client to synchronize the device's time with an NTP server.
- **NTP Server IP** - Specify the NTP server address to use for time synchronization.

On the System page, you can select the language to be set and perform Maintenance on the Device. If you need to update the hardware device or rebuild the network environment in the future, you can easily restore the original settings back through Restore Backup and Download Backup Configuration. Turning on System Log can also allow you to view previous system records. Finally, there is the Network Time Protocol (NTP) function where you can configure whether the NTP Client needs to be enabled as well as set the NTP Server IP.

5.7 Account Profile

On the top right corner of the main page, you will find your personal icon. Clicking on it will take you to the Configuration Manager page. Here, you can change your password, create cloud credentials, and log out.

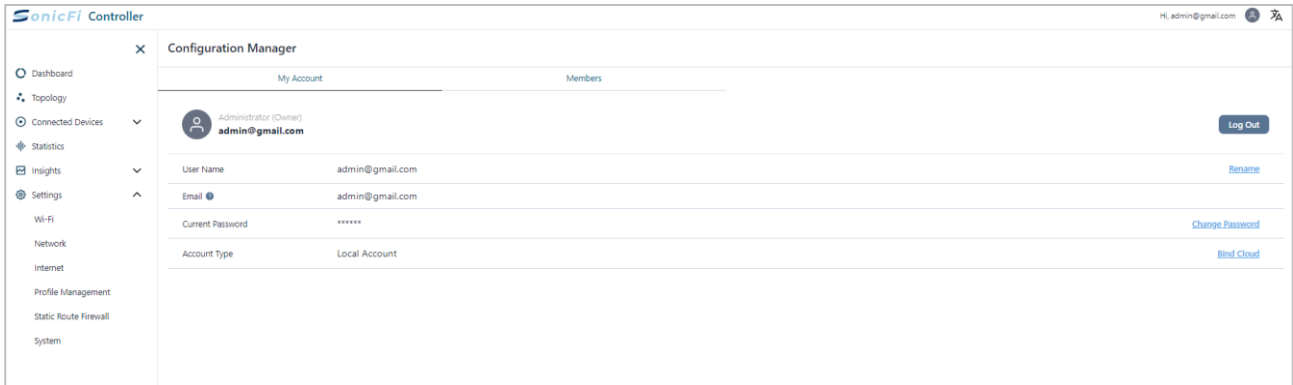
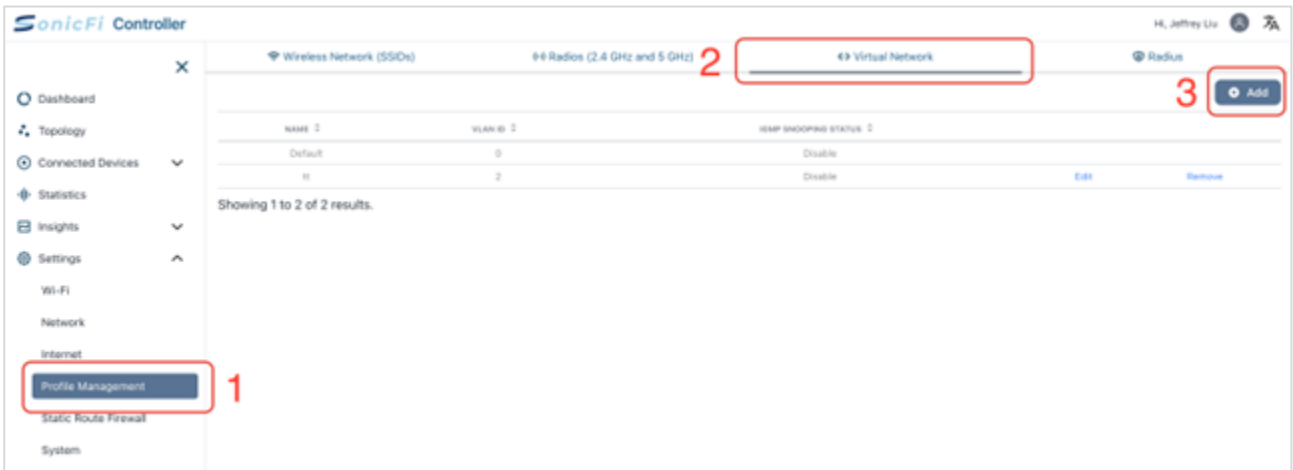


Figure 39. Account Profile

5.8 Virtual Network Settings

A. Create a Profile of Virtual Network



The screenshot shows the SonicFi Controller interface. In the left sidebar, the 'Profile Management' link is highlighted with a red box and labeled '1'. In the top navigation bar, the 'Virtual Network' tab is highlighted with a red box and labeled '2'. In the top right corner, the 'Add' button is highlighted with a red box and labeled '3'.

Create New Virtual Network

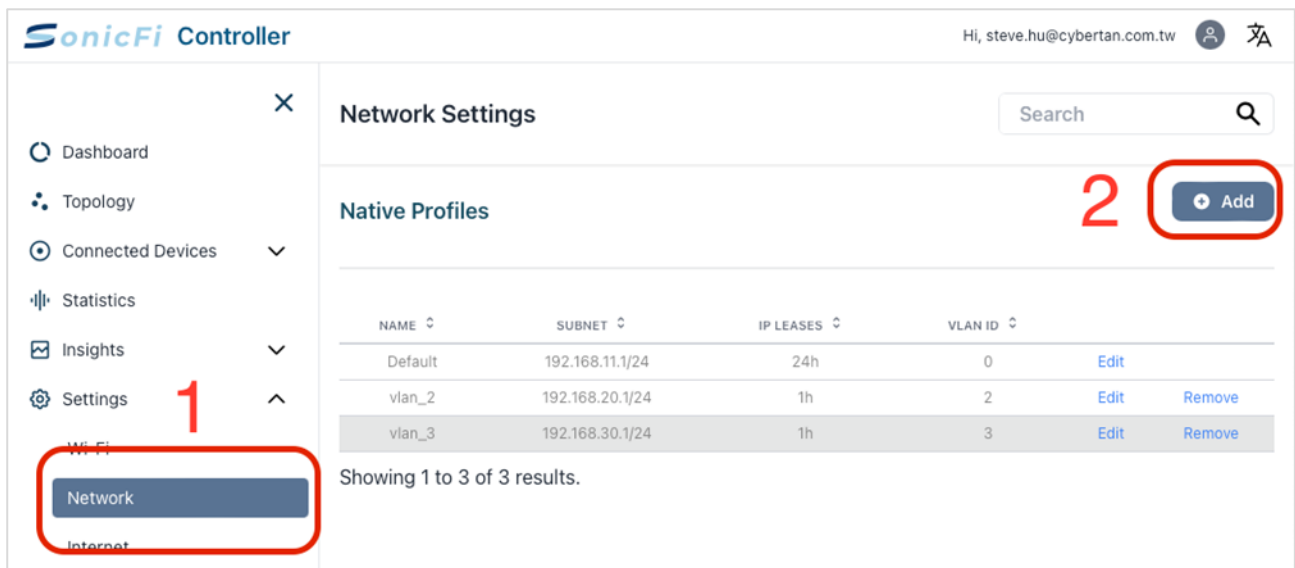
Name

Vlan ID

IGMP Snooping ☐

Create Profile of Virtual Network. my_virtual_network is created for example.

B. Assign the Profile of Virtual Network to Network



SonicFi Controller Hi, steve.hu@cybertan.com.tw

Network Settings

Search

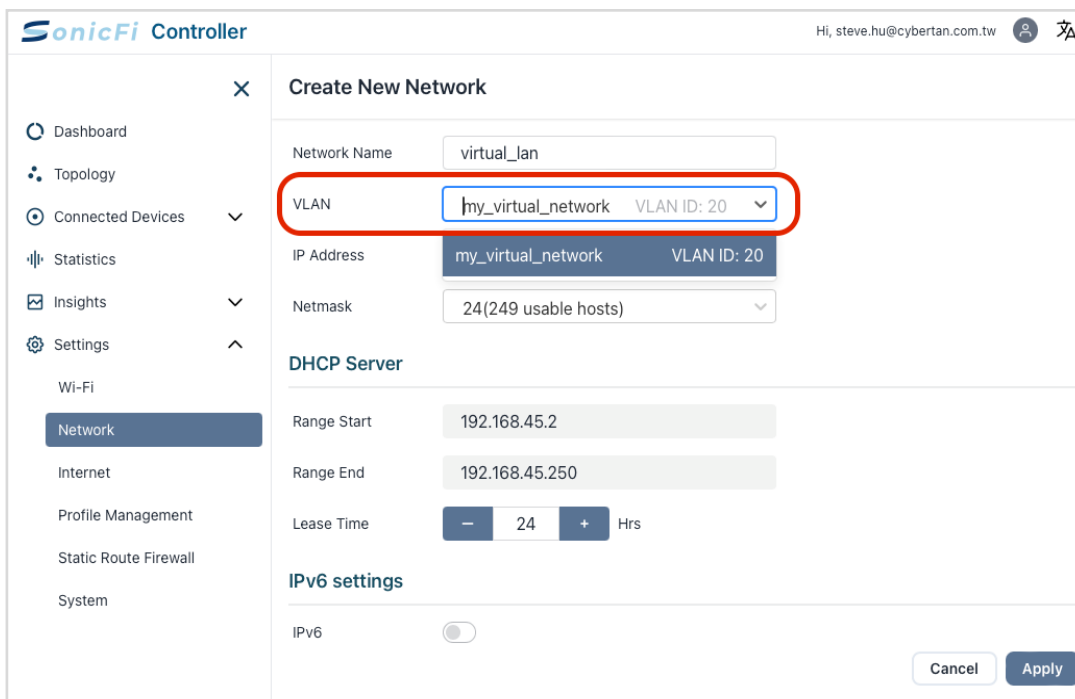
Native Profiles

NAME	SUBNET	IP LEASES	VLAN ID	
Default	192.168.11.1/24	24h	0	Edit
vlan_2	192.168.20.1/24	1h	2	Edit Remove
vlan_3	192.168.30.1/24	1h	3	Edit Remove

Showing 1 to 3 of 3 results.

Add

1. Go to Settings -> Network -> Add new Network with the profile



SonicFi Controller Hi, steve.hu@cybertan.com.tw

Create New Network

Network Name: virtual_lan

VLAN: my_virtual_network VLAN ID: 20

IP Address: my_virtual_network VLAN ID: 20

Netmask: 24(249 usable hosts)

DHCP Server

Range Start: 192.168.45.2

Range End: 192.168.45.250

Lease Time: 24 Hrs

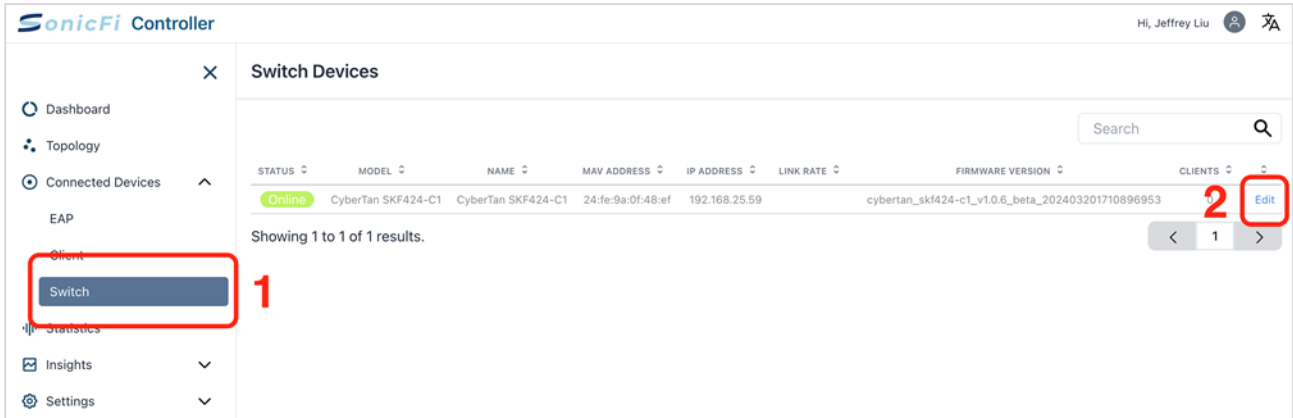
IPv6 settings

IPv6: ☐

Cancel Apply

2. Create New Network with the profile in VLAN field.

C. Assign the Profile of Virtual Network to Switch



The screenshot shows the SonicFi Controller interface. On the left sidebar, under 'Connected Devices', the 'Switch' option is highlighted with a red box and labeled '1'. The main content area is titled 'Switch Devices'. It contains a table with columns: STATUS, MODEL, NAME, MAC ADDRESS, IP ADDRESS, LINK RATE, FIRMWARE VERSION, and CLIENTS. One device is listed: 'CyberTan SKF424-C1' with status 'Online'. The 'Edit' button for this device is highlighted with a red box and labeled '2'.

1. Go to Switch -> Edit of Switch in interest.
2. Go to Port Management and then choose desired port and menu will pop up on the right side.
3. Select my_virtual_network in Native Profile field.

D. Assign the profile of Virtual Network to profile of EAP (SSID)



The screenshot shows the SonicFi Controller interface. On the left sidebar, under 'Settings', the 'Profile Management' option is highlighted with a red box and labeled '1'. The main content area is titled 'Wireless Network (SSIDs)' (labeled '2'). It contains a table with columns: STATUS, NAME, SSID, BAND, and SECURITY. Four SSIDs are listed, all with status 'Enable'. The 'Edit' button for the last SSID is highlighted with a red box and labeled '3'.

1. Go to Profile Management -> Wireless Network (SSIDs) -> Edit of desired SSIDs

Wi-Fi Advanced Configuration

Wi-Fi Band: 2.4GHz and 5GHz

Fast Roaming: ☐

Native Profile: my_virtual_network VLAN ID: 200

Default	VLAN ID: 0
tt	VLAN ID: 2
my_virtual_network	VLAN ID: 200

2. In Wi-Fi Advanced Configuration, select my_virtual_network in Native Profile field and apply it.

SonicFi Controller

EAP Devices

1

STATUS	NAME	MAC ADDRESS	IP ADDRESS	QUALITY	FW VERSION	2 PROFILES
Offline	CyberTan EWW631-A1	00:11:22:cb:17:14	--	--	cybertan_eww631-a1_...	Default,Default,23013_...
Online	EW631-A1	00:ea:cb:aa:06:01	10.100.1.204	...	cybertan_eww631-a1_...	my test,Default

Showing 1 to 2 of 2 result.

3. Go to EAP > Click {rofile field of desired EAP

4. Choose Profile of SSID you edit with Virtual Network and apply it.

E. Enable a trunk mode with a Profile of Virtual Network in EAP

EWW631-A1

Radio ▼

Wireless Network(SSIDs) ^

Default x
x ▼

23013_test_25g

23013_test_25g

test

test

Enable
test
test
2G,5G
psk2+ccmp

Showing 1 to 3 of 3 results. [Create New Profiles](#)

SonicFi Controller

Hi, Jeffrey Liu

Topology

Connected Devices

EAP

Client

Switch

Insights

Settings

1

EAP Devices

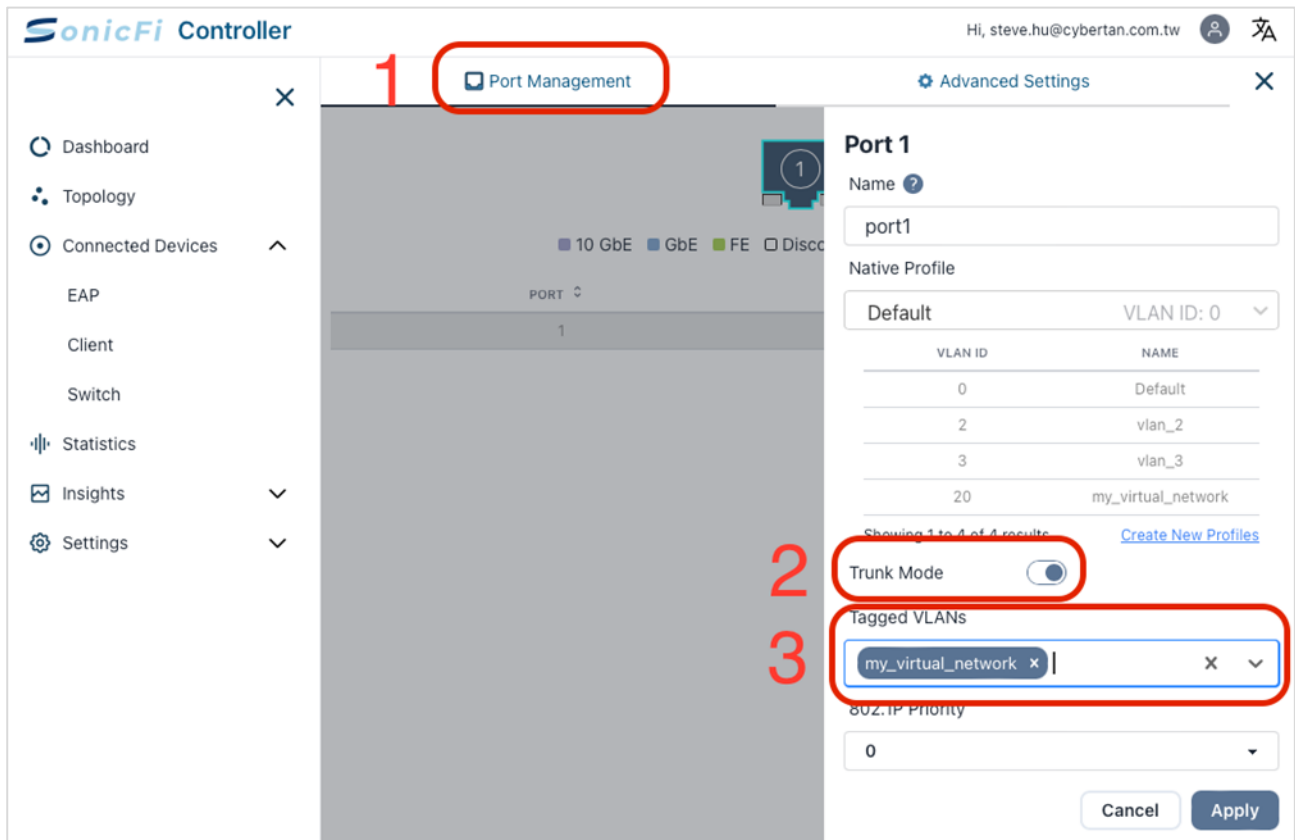
Search

Q

STATUS	NAME	MAC ADDRESS	IP ADDRESS	QUALITY	FW VERSION	PROFILES	CLIENTS	
Offline	RAP630W-311G	24:fe:9a:0f:64:55	--	--	cybertan_eww631-bt_v1.3.0_release_202401241706075171	transRadio,cht-test	0	Port-Settings Remove
Offline	RAP630W-311G	24:fe:9a:0f:64:59	--	--	cybertan_eww631-bt_v1.3.0_release_202401241706075171	transRadio,cht-test	0	Port-Settings Remove
Offline	RAP630W-Sybil	24:fe:9a:0f:64:61	--	--	cybertan_eww631-bt_v1.3.0_release_202401241706075171	transRadio,cht-test,sybil-test	0	Port-Settings Remove
Offline	RAP630W-311G	24:fe:9a:0f:64:a1	--	--	cybertan_eww631-bt_v1.3.0_release_202401241706075171	transRadio,cht-test	0	Port-Settings Remove
Online	Uno	24:fe:9a:0f:64:c5	10.168.1.152		cybertan_eww631-bt_v1.3.0_release_202401241706075171	Uno-Home,Uno-Home,Uno-Home-Guest	3	Port-Settings Remove

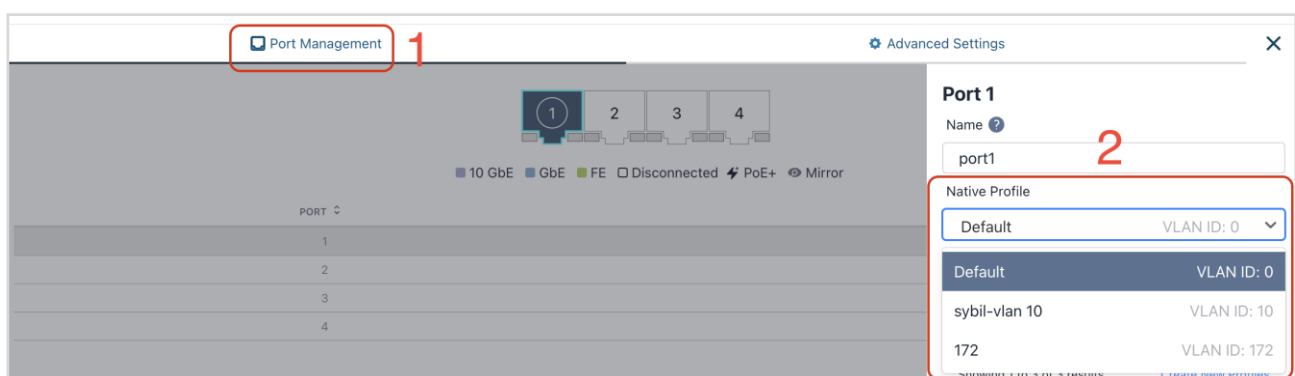
1. Go to EAP -> Click Port Settings field of desired EAP

2. Go to Port Management -> click uplink port (ceiling-mount is port 1 and wall-mount is port



3. Enable Trunk Mode -> Select a desired virtual network in Tagged VLANs field -> Apply it.

F. Assign the Profile of Virtual Network to EAP (ports)



1. Go to EAP -> Click Port Settings field of desired EAP as step E.1

2. Go to Port Management -> click desired port -> select profile of Virtual Network in Native Profile field -> apply it.

Appendix 1: RoHS Marking for Presence of Restricted Substances

- RAP630C-311G

Equipment Name: AX3000 Ceiling-Mounted Wi-Fi 6 Wireless Access Point Model (Type) : RAP630C-311G						
Unit	Restricted substances and its chemical symbols					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent chromium (Cr ⁺⁶)	Polybromina ted biphenyls (PBB)	Polybromina ted diphenyl ethers (PBDE)
Printed Circuit Board Assembly and Components	-	○	○	○	○	○
Enclosure	○	○	○	○	○	○
Other Electronic Components (not including Printed Circuit Boards)	○	○	○	○	○	○
Accessories	○	○	○	○	○	○
Note 1. "Exceeding 0.1 wt %" and "exceeding 0.01 wt %" indicate that the percentage content of the restricted substance exceeds the percentage limit. Note 2. "○" indicates that the percentage content of the restricted substance does not exceed the percentage limit. Note 3. "-" indicates that the restricted substance is an excluded item.						

● RAP630W-311G

Equipment Name: AX3000 Ceiling-Mounted Wi-Fi 6 Wireless Access Point Model (Type) : RAP630C-311G						
Unit	Restricted substances and its chemical symbols					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent chromium (Cr ⁺⁶)	Polybromina ted biphenyls (PBB)	Polybromina ted diphenyl ethers (PBDE)
Printed Circuit Board Assembly and Components	-	○	○	○	○	○
Enclosure	○	○	○	○	○	○
Other Electronic Components (not including Printed Circuit Boards)	○	○	○	○	○	○
Accessories	○	○	○	○	○	○
Note 1. "Exceeding 0.1 wt %" and "exceeding 0.01 wt %" indicate that the percentage content of the restricted substance exceeds the percentage limit. Note 2. "○" indicates that the percentage content of the restricted substance does not exceed the percentage limit. Note 3. "-" indicates that the restricted substance is an excluded item.						

- RCN205G-1PV

Equipment Name:						
Enterprise Network Controller Model (Type) : RCN205G-1PV						
Unit	Restricted substances and its chemical symbols					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent chromium (Cr ⁺⁶)	Polybromina ted biphenyls (PBB)	Polybromina ted diphenyl ethers (PBDE)
Printed Circuit Board Assembly and Components	-	○	○	○	○	○
Enclosure	○	○	○	○	○	○
Other Electronic Components (not including Printed Circuit Boards)	-	○	○	○	○	○
Accessories	○	○	○	○	○	○
Note 1. "Exceeding 0.1 wt %" and "exceeding 0.01 wt %" indicate that the percentage content of the restricted substance exceeds the percentage limit. Note 2. "○" indicates that the percentage content of the restricted substance does not exceed the percentage limit. Note 3. "-" indicates that the restricted substance is an excluded item.						

● RSW226G-1PV/RSW226-1P/SKF224-C1/SKF224-C2

Equipment Name:						
PoE Ethernet Switch Model (Type) : RSW226G-1PV/RSW226-1P/SKF224-C1/SKF224-C2						
Unit	Restricted substances and its chemical symbols					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent chromium (Cr ⁺⁶)	Polybromina ted biphenyls (PBB)	Polybromina ted diphenyl ethers (PBDE)
Printed Circuit Board Assembly and Components	-	○	○	○	○	○
Enclosure	○	○	○	○	○	○
Other Electronic Components (not including Printed Circuit Boards)	○	○	○	○	○	○
Accessories	○	○	○	○	○	○
Note 1. "Exceeding 0.1 wt %" and "exceeding 0.01 wt %" indicate that the percentage content of the restricted substance exceeds the percentage limit. Note 2. "○" indicates that the percentage content of the restricted substance does not exceed the percentage limit. Note 3. "-" indicates that the restricted substance is an excluded item.						