

EAP600 Product User Manual

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Conventions

Symbol	Indication
[]	Referring to function modules or menus, such as in the [Status] menu."
“ ”	Referring to a button name, such as Clicking the “Add” button.
>	Multiple levels of menus are separated by "> ". For example, "File> New> Folder" represents the "Folder" menu item under the "New" submenu, which is under the "File" menu.
Cautions	Please be mindful of the following points during the operation, as improper actions may result in data loss or device damage.
Note	Supplement and provide necessary explanations for the description of the operation.

Technical Support

E-mail : support@inhandnetworks.com

URL: www.inhandnetworks.com

1. Overview

The EAP600, developed by InHand Networks, is a Wi-Fi 6 Access Point designed for the commercial sector. This product delivers secure and high-speed network access, catering to a wide range of industries. Harnessing the robust network access capabilities of Wi-Fi 6, it provides a straightforward and efficient solution for small businesses, enterprise branches, hotels, and any other settings requiring wireless coverage with high-speed network access. With a comprehensive set of security features and intelligent software services, it ensures an efficient and worry-free networking experience, delivering a secure and dependable business data connection in wireless environments.



Fig. 1 EAP600 application scenario

2. Hardware

2.1 LED Indicators

LED Indicator	Status and Description
PWR	<p>OFF --- The device is Off.</p> <p>Blink in green --- The system is starting.</p> <p>Blink in green rapidly --- The system does not work properly.</p> <p>Blink in green --- The system is upgrading.</p>
WAN	<p>OFF --- The network is disconnected.</p> <p>Blink in green --- The router is connecting to the wired network.</p>
Wi-Fi 2.4G	<p>OFF --- AP mode disabled.</p> <p>Always on --- Other anomalies.</p> <p>Blink in rapidly green --- The device functions normally as an AP.</p>

Wi-Fi 5G	OFF --- AP mode disabled. Always on --- Other anomalies Blink in green rapidly --- The device functions normally as an AP.
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Note: The rapid blinking occurs every 200ms, and the steady blinking interval is 500ms.

2.2 Perform a factory reset using the Reset button.

Step 1: Power on the device, and within 10 seconds, long-press the Reset button until the PWR indicator light rapidly blinks green with a 200ms interval.

Step 2: After the rapid blinking, release the Reset button and wait for the device to complete the factory reset process. The PWR indicator light will stay constantly lit, indicating that the factory reset is complete.

3. Default Settings

Function	Default Settings
Wi-Fi	1. The Wi-Fi 2.4 GHz access point (AP) is enabled, and its SSID is "EAP600-" followed by the last six digits of the wireless MAC address. 2. The Wi-Fi 5 GHz AP is enabled, and its SSID is "EAP600-5G-" followed by the last six digits of the wireless MAC address. 3. The authentication method is WPA2-PSK. 4. The two access points have the same password: The last eight digits of the router's SN.
Network access control	1. Local HTTPS service is enabled, using port 443. 2. The device management address is 192.168.10.1
Username and password	adm/123456

4. Device Initialization Settings

4.1 Environment Setup

Step 1: Connect the power cable and Ethernet cable. When using PoE (Power over Ethernet) to power the EAP600, please ensure that the upstream device has PoE functionality enabled.

Step 2: Set the PC and device management IP addresses in the same network segment. The DHCP Server function is enabled by default, and the PC and device must be in the same address segment. The PC needs to be connected to the device's Wi-Fi (SSID and password reference 3. Default Settings), and check whether the PC has obtained an address, which should belong to the 192.168.10.0 network segment.



Fig. 4-1 EAP600 Web Login page

4.2 Internet Connection

The EAP600 supports single-port wired access, and you can configure it to use DHCP or static IP address assignment based on their requirements. Click on “Configuration > WAN” to select the network connection type.

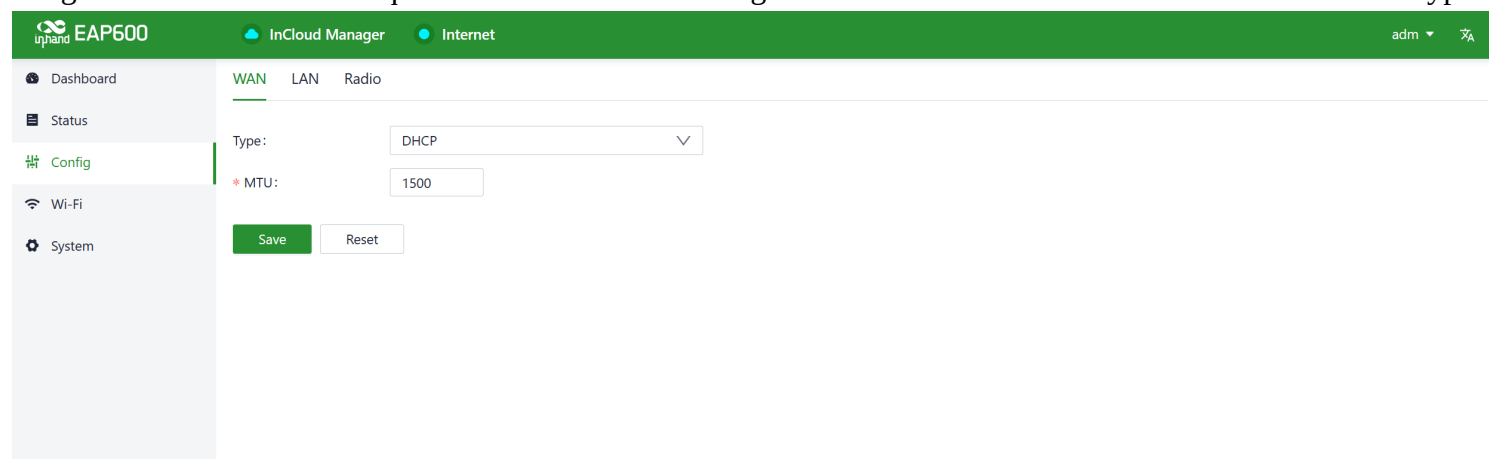


Fig. 4-2-a Access the WAN editing interface

- **DHCP:** The device's WAN interface is set to enable DHCP service by default. You can simply connect the WAN interface to the internet using an Ethernet cable to establish the AP's network connection.
- **Static IP:** You can manually configure the address assigned by the ISP or upstream device. After the configuration is completed, the AP will connect to the network using the specified static IP.

The screenshot displays the EAP600 configuration interface. At the top, a green header bar contains the 'inhand EAP600' logo, 'InCloud Manager' and 'Internet' status indicators, and a user profile 'adm'. A left sidebar lists navigation options: Dashboard, Status, Config (highlighted), Wi-Fi, and System. The main content area is titled 'WAN' and includes tabs for 'LAN' and 'Radio'. The 'Type' dropdown is set to 'Static IP'. Below this, fields for 'IP Address', 'Mask', 'Gateway Address', 'Main DNS', and 'Secondary DNS' are provided, each with a red asterisk indicating a required field. The 'MTU' field is set to '1500'. At the bottom of the configuration area are 'Save' and 'Reset' buttons.

Fig. 4-2-b Configuring the AP to connect to the network via a static IP address

4.3 Connect to InCloud Manager

EAP600 is a cloud-managed router, and with InCloud Manager, you can achieve batch configuration deployment and software upgrades. The cloud platform offers rich visual charts and advanced features such as Connector for remote maintenance, enabling small and medium-sized enterprise branches to complete their digital network infrastructure. To use InCloud Manager to manage your EAP600, please follow the steps below:

4.3.1 Registration

In your web browser (we recommend using Google Chrome), enter the following

URL: <https://star.inhandcloud.com>. You will be automatically redirected to the portal page, where you can select "InCloud Manager" to access the SaaS platform for enterprise branch networking. Click 'Create now' to create a new platform account.

Accelerate Digital Transformation with Innovative IoT Technologies



Welcome to InHand Cloud Service

Email Login Phone Login

Email

This is a required field.

Password

This is a required field.

☒ Remember me

[Forgot Password?](#)

Sign In

Don't have an account? [Create now](#)

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Fig. 4-3-1 Create a new account

4.3.2 Login

After completing the email registration, you can log in to InCloud Manager using the username and password you used during the registration.

Console

InCloud Manager

InCloud Manager is a network management platform for retail chain stores and enterprise networks. Integrating with InHand edge routers and AP products, the platform can help enterprises build a modern network environment.

Access

DeviceLive

DeviceLive platform is designed for the industrial IoT field to quickly build intelligent edge networks and applications paired with InHand edge intelligent hardware.

Access

Fig. 4-3-2 Choose your SaaS Service

Note:

- When a device is initially added to the platform account, it will automatically receive a 1-year Essential license. Users can renew the license through the "License" menu.

4.3.3 Add Device

After logging in, go to the "Devices" menu, click the "Add" button, fill in the device's name, serial number, and MAC address, and then click "Finish" to complete the addition.

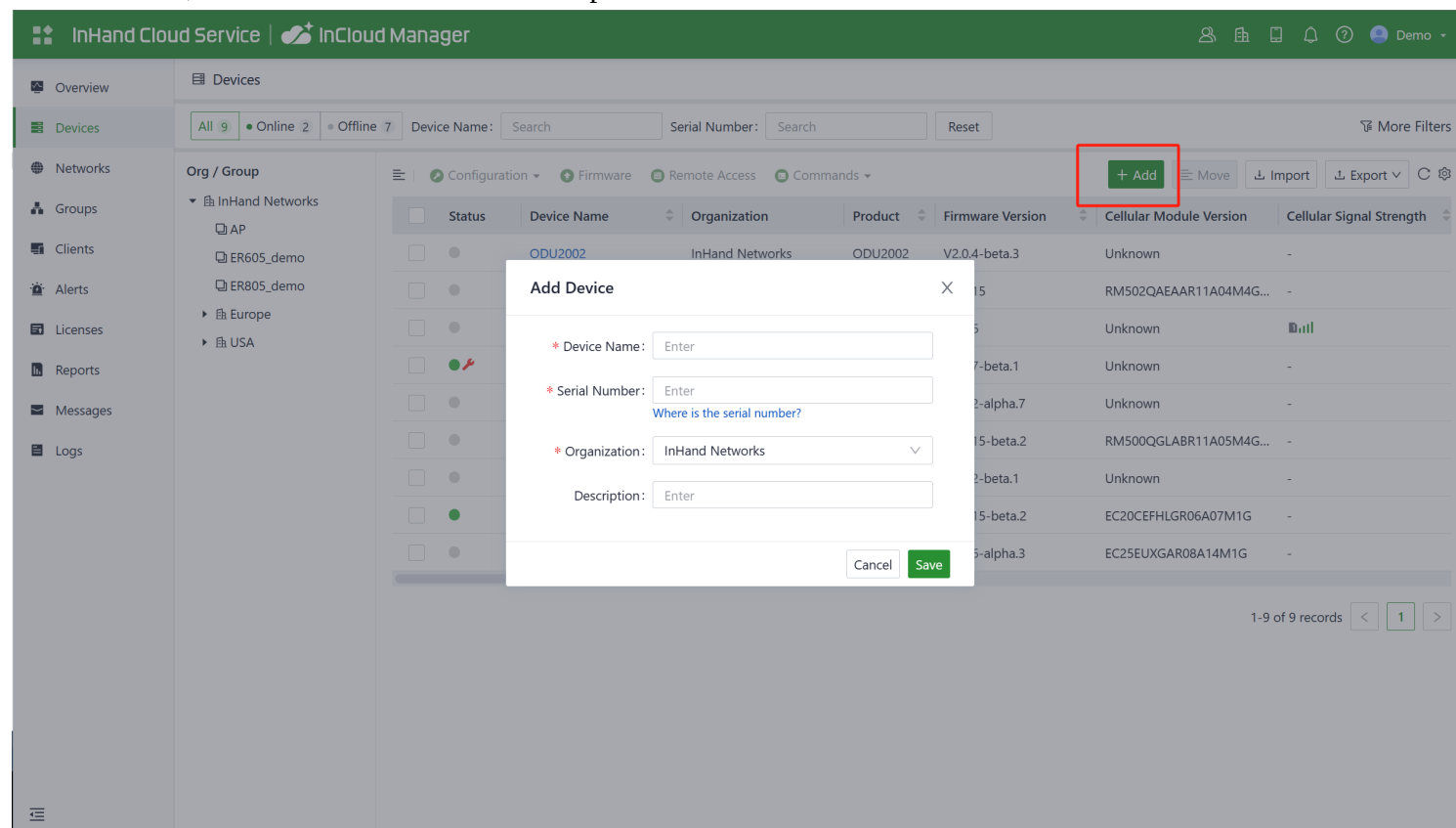


Fig. 4-3-3 Add your device

5. Monitoring

Once the device is added to the platform, you can manage and monitor the network from the platform while also supporting users in remotely viewing real-time status information on the device's local interface.

5.1 Overview of Devices

In the "Devices" section, you can click on the "Device Name" to access the device's details page.

5.1.1 Overview

Click on [Dashboard] in the left menu to access the dashboard interface. Here, you can view essential device information, interface status, traffic statistics, cellular signal strength, and the number of connected Wi-Fi devices.

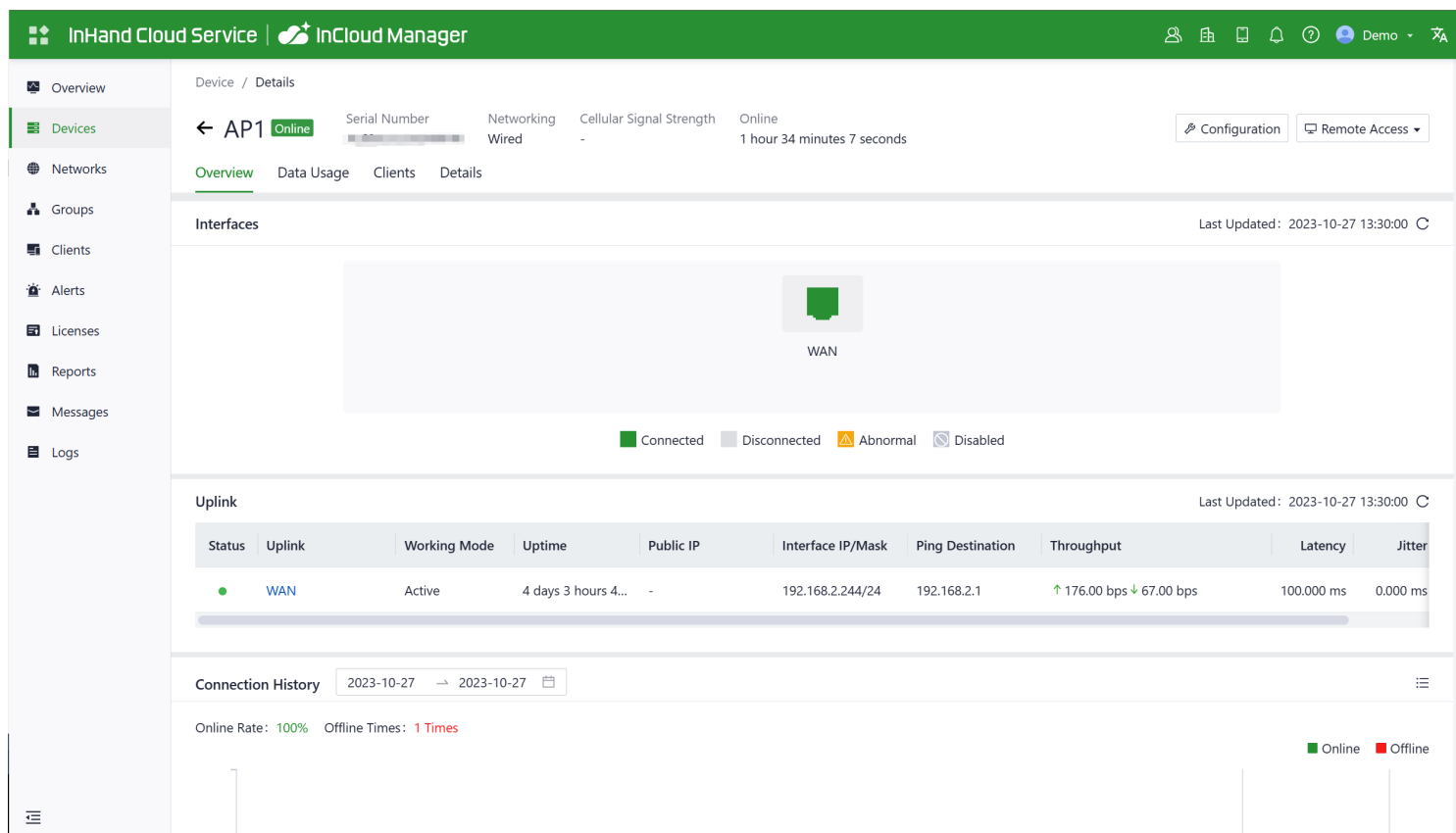


Fig. 5-1-1 View the device

5.1.2 Data Usage

In the function, you can view the traffic usage and historical data of various upstream links.

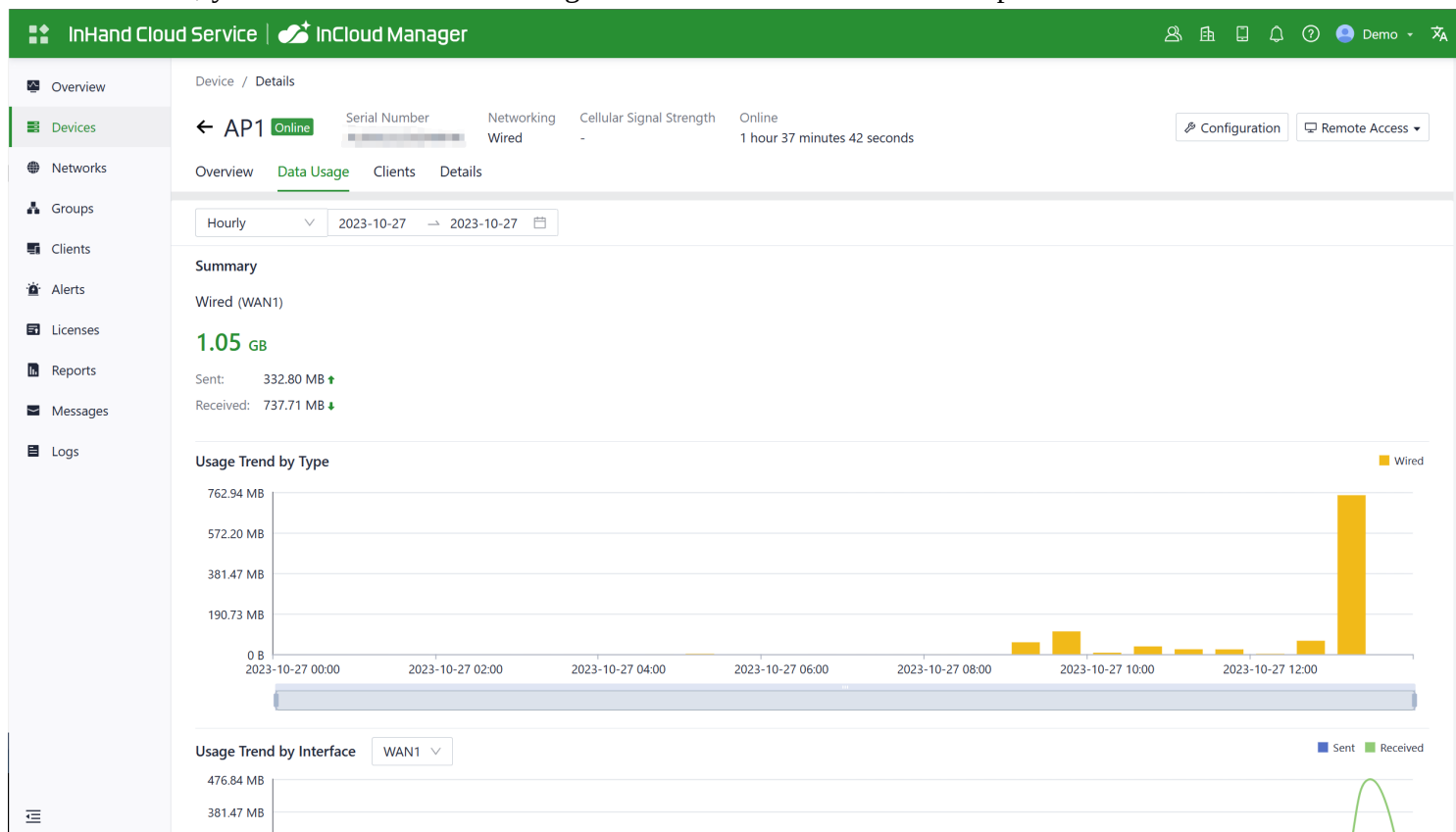


Fig. 5-1-2 Check the traffic data usage

5.2 Local Device Information

Through the platform's "Remote Access" feature, you can assist in real-time viewing and configuring of devices. Select the target device, click "Remote Access," and it will open the device's local login interface.

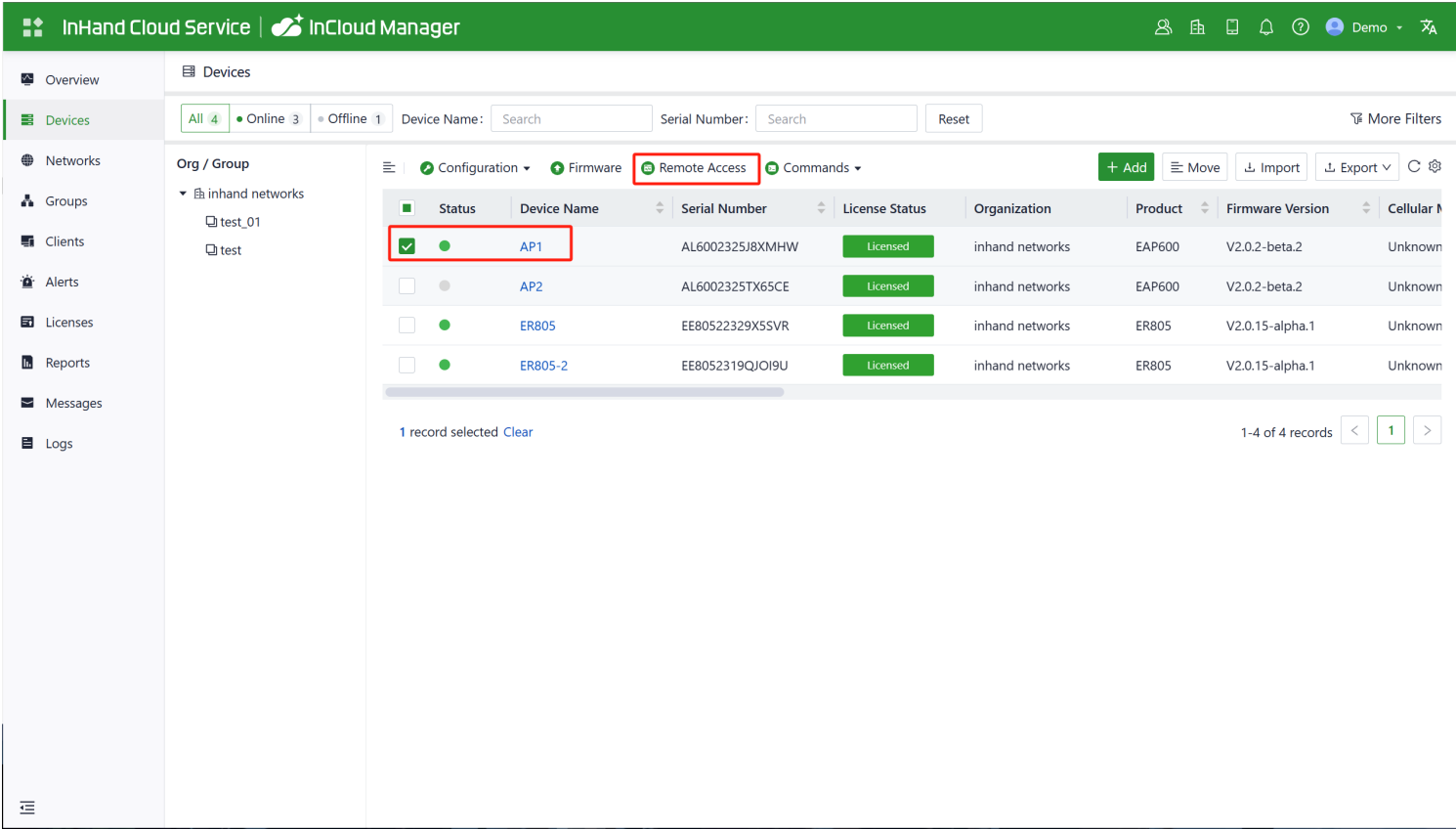


Fig. 5-2-a Remote access entry

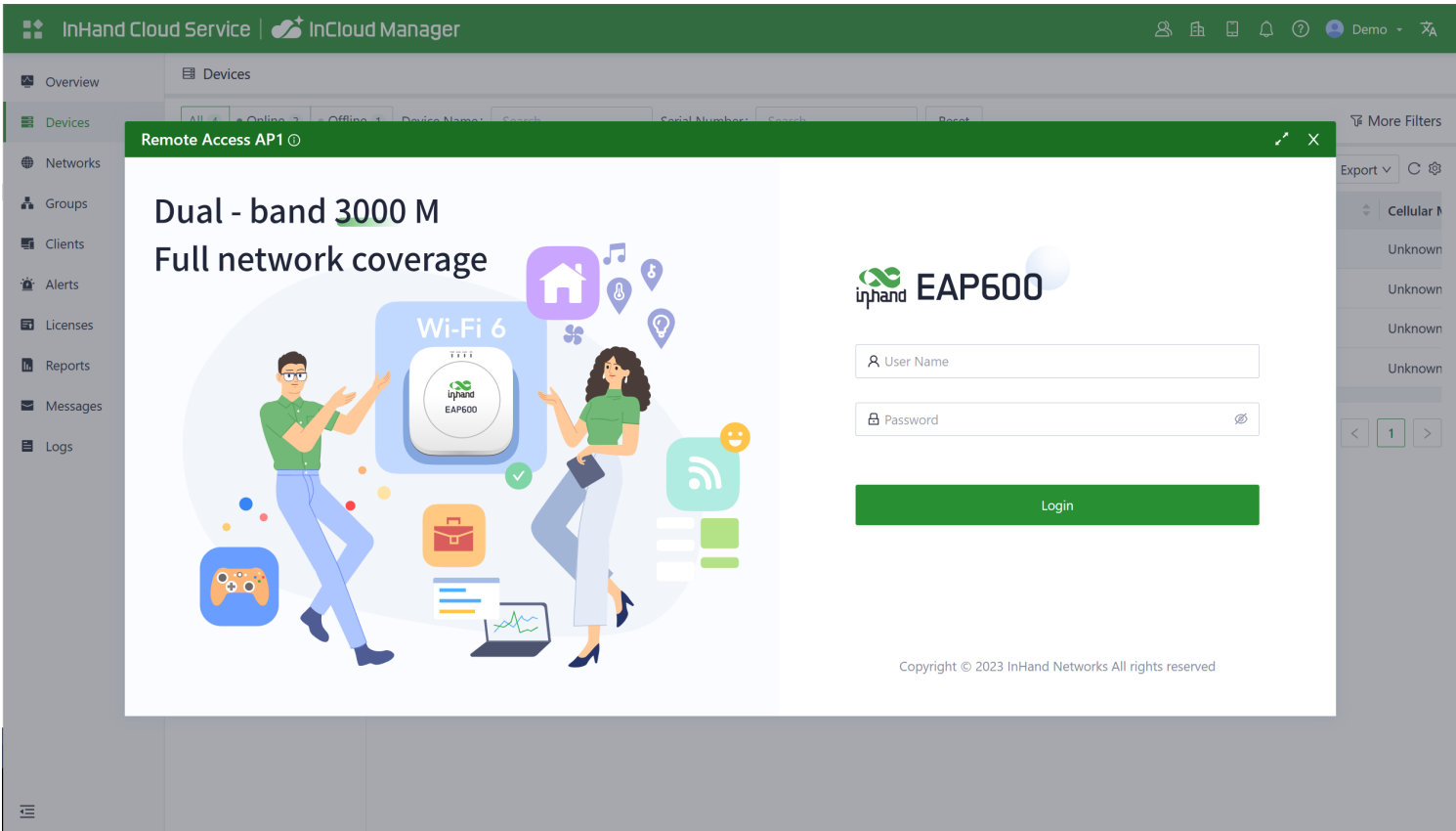


Fig.5-2-b Access to local page

5.2.1 Function Configuration

Click on [Dashboard] in the left-hand menu to access the dashboard interface and view the device's basic information, operating mode, traffic statistics, Wi-Fi connection count, and other information.

You can click the icon next to the "Name" field to customize the name of this device.

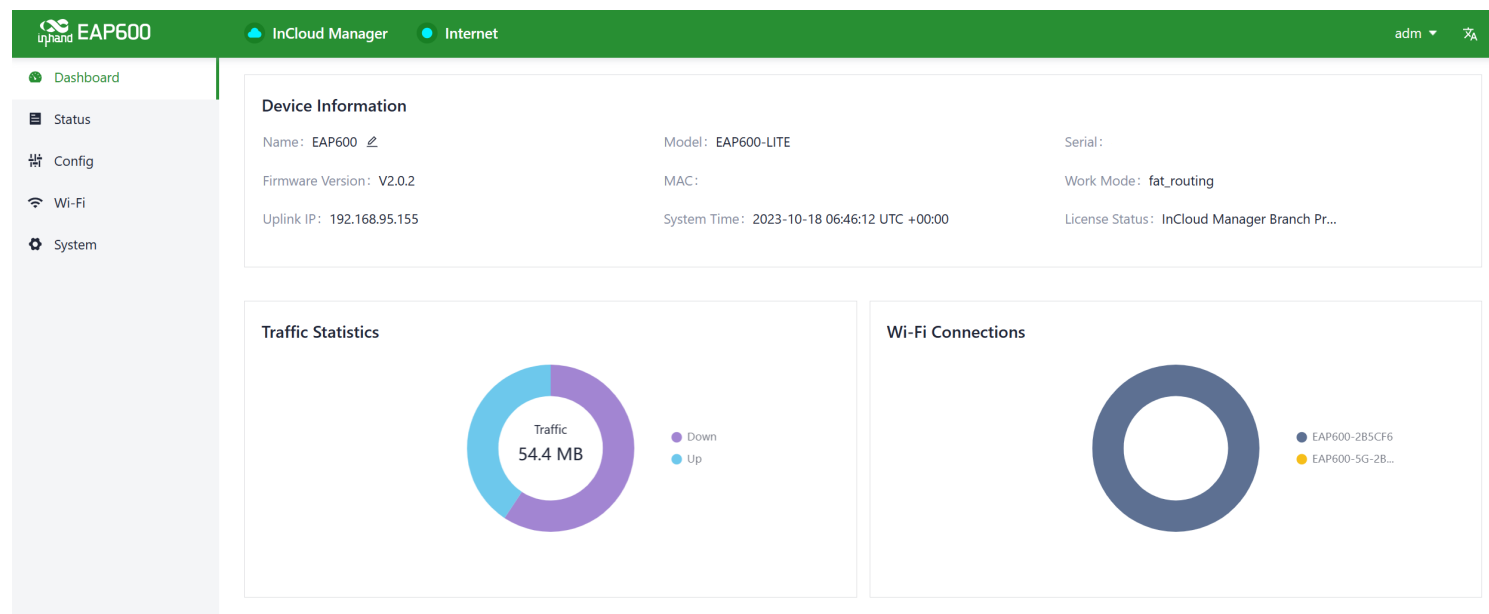


Fig. 5-2-1 Dashboard interface

- **Name:** Identifies the device's name, which is initially set to "EAP600" but can be customized.
- **MAC Address:** Identifies the device's physical MAC address.
- **Model:** Specifies the device's specific model
- **System Time:** Displays the device's time zone and system time.
- **Serial:** A unique code that serves as an identifier for the device and can be used for indexing or adding the device to a platform account.
- **Work Mode:** EAP600 has two operational modes: FAT-Bridge and FAT-Routing.
- **Internet Access:** The upstream interface used by the device for internet connectivity.
- **License Status:** Information about the applied license on the device, distinguishing between Small Star Cloud Manager Basic and Small Star Cloud Manager Professional.
- **Firmware Version:** Shows the device's current software version.
- **Uplink IP:** The IP address of the upstream interface used for device internet connectivity.

5.2.2 Traffic Statistics

You can check the usage of traffic on various upstream interfaces since EAP600 was powered on through the "Dashboard > Traffic Statistics" feature. The data for traffic statistics will reset after the device is restarted. If you need to view historical traffic records, you can do so on the corresponding device's details page in the InCloud Manager.

Traffic Statistics

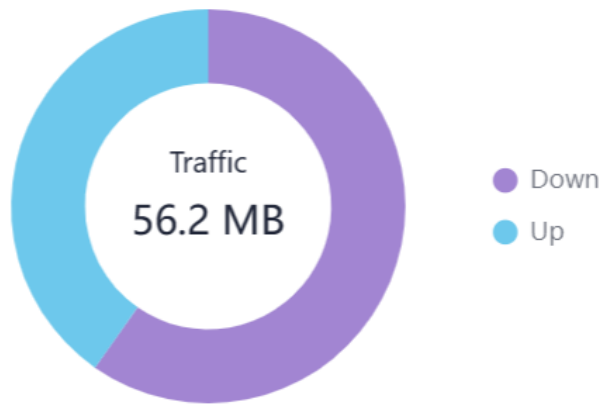


Fig. 5-2-2 Traffic statistics

5.2.3 Wi-Fi Connections

You can view the number of active SSIDs and the client count for each SSID that is connected to the EAP600 through the "Dashboard > Wi-Fi Connections" feature.

Wi-Fi Connections

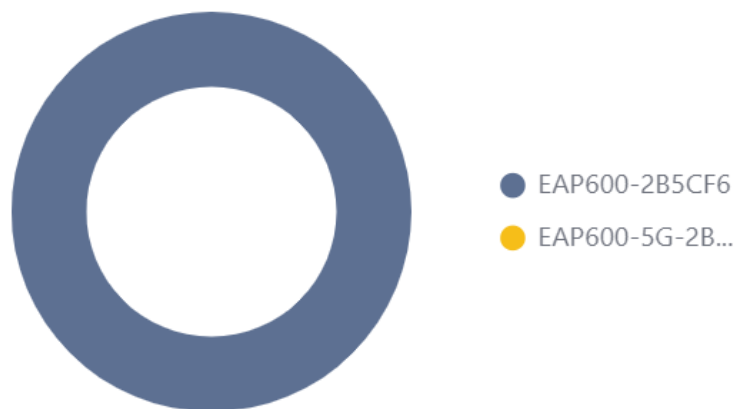


Fig. 5-2-3 view the Wi-Fi connection status

5.2.4 Link Monitoring

You can utilize the "Status > Link Monitoring" feature to check the health status of uplink and access information about throughput, latency, packet loss, and more for each interface.

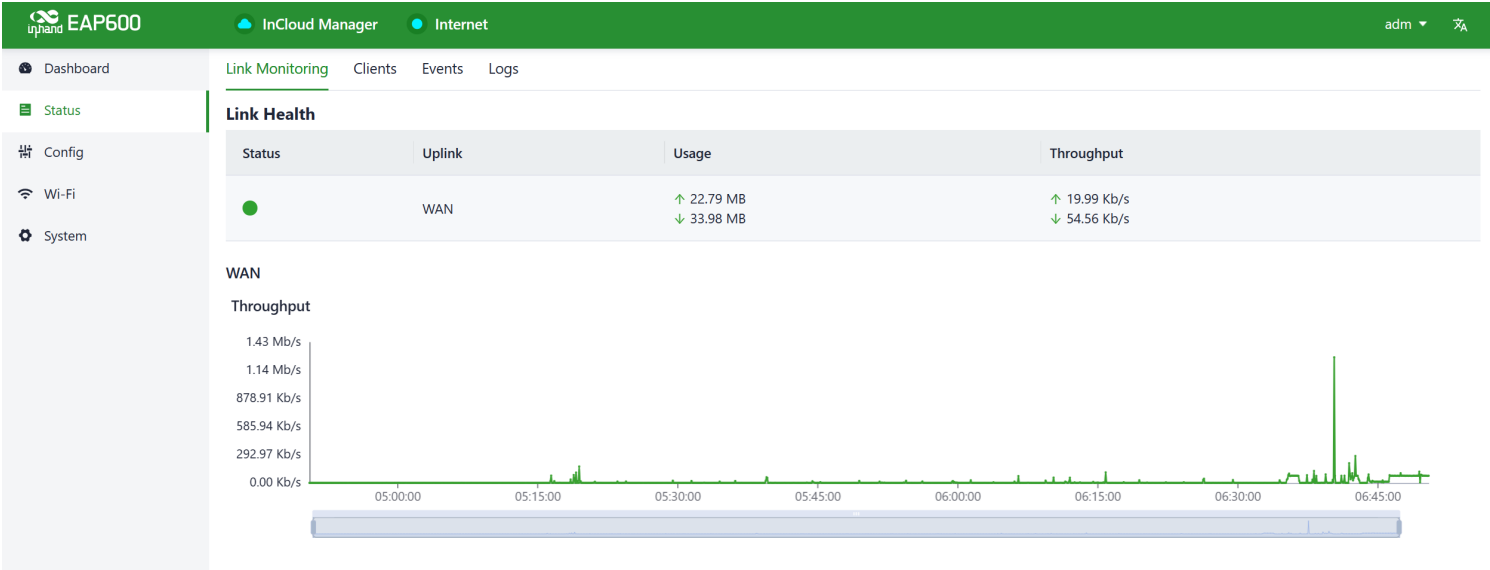


Fig. 5-2-4 Link Monitor Data

5.2.5 Clients

Clients typically refer to wireless devices connected to an access point (AP), such as laptops, smartphones, tablets, and other similar devices.

You can access detailed client information connected to the EAP600 via the "Status > Clients" feature. This information includes client names, IP addresses, MAC addresses, VLAN, connected SSID, RSSI, operating channels, Wi-Fi standards, traffic usage, online duration, and more.

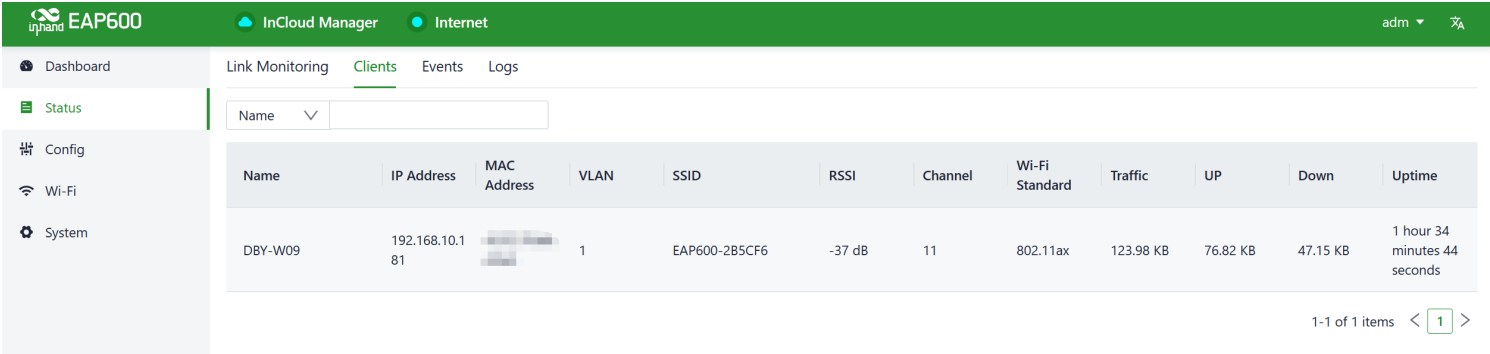


Fig. 5-2-5 Wireless Client Connection Information

5.2.6 Events

[Event] is used to record information related to the device's status, performance, and user-triggered operations. This helps IT personnel understand the network's operational status, detect problems promptly, and take necessary measures. It is a valuable tool for network monitoring and troubleshooting.

You can access event information generated during the device's operation via the "Status > Events" function. This helps IT understand the device's operational status and can be useful for troubleshooting issues. New events will be updated at the beginning of the table.

<div> <div> <div>inhand</div> <div>EAP600</div> </div> <div> <div>InCloud Manager</div> <div>Internet</div> </div> </div> <div>adm</div> <div> <div>🔍</div> <div>🌐</div> </div>																																									
<div>Dashboard</div> <div>Status</div> <div>Config</div> <div>Wi-Fi</div> <div>System</div>	<div>Link Monitoring</div> <div>Clients</div> <div>Events</div> <div>Logs</div>	<div> <div>Start date</div> <div>→</div> <div>End date</div> <div>📅</div> <div></div> <div>▼</div> </div> <div> <div>Clear Events</div> <div>Export Events</div> <div>🔄</div> </div> <table> <tr> <th>Time</th><th>Type</th><th>Content</th></tr> <tr> <td>2023-10-18 06:55:00</td><td>Memory utilization is too high</td><td>In the last 5 minutes of Memory utilization over 70%</td></tr> <tr> <td>2023-10-18 06:50:00</td><td>Memory utilization is too high</td><td>In the last 5 minutes of Memory utilization over 70%</td></tr> <tr> <td>2023-10-18 06:45:00</td><td>Memory utilization is too high</td><td>In the last 5 minutes of Memory utilization over 70%</td></tr> <tr> <td>2023-10-18 06:43:52</td><td>Login successfully</td><td>Cloud remote access login successfully</td></tr> <tr> <td>2023-10-18 06:42:26</td><td>Login successfully</td><td>Cloud remote access login successfully</td></tr> <tr> <td>2023-10-18 06:42:08</td><td>Login successfully</td><td>Cloud remote access login successfully</td></tr> <tr> <td>2023-10-18 06:40:00</td><td>Memory utilization is too high</td><td>In the last 5 minutes of Memory utilization over 70%</td></tr> <tr> <td>2023-10-18 06:35:19</td><td>Login successfully</td><td>Cloud remote access login successfully</td></tr> <tr> <td>2023-10-18 06:35:00</td><td>Memory utilization is too high</td><td>In the last 5 minutes of Memory utilization over 70%</td></tr> <tr> <td>2023-10-18 06:30:00</td><td>Memory utilization is too high</td><td>In the last 5 minutes of Memory utilization over 70%</td></tr> <tr> <td>2023-10-18 06:25:00</td><td>Memory utilization is too high</td><td>In the last 5 minutes of Memory utilization over 70%</td></tr> <tr> <td>2023-10-18 06:20:00</td><td>Memory utilization is too high</td><td>In the last 5 minutes of Memory utilization over 70%</td></tr> </table> <div> <div>1-20 of 4238 items</div> <div> <div><</div> <div>1</div> <div>2</div> <div>3</div> <div>4</div> <div>5</div> <div>...</div> <div>212</div> <div>></div> </div> <div>20 / page</div> </div>	Time	Type	Content	2023-10-18 06:55:00	Memory utilization is too high	In the last 5 minutes of Memory utilization over 70%	2023-10-18 06:50:00	Memory utilization is too high	In the last 5 minutes of Memory utilization over 70%	2023-10-18 06:45:00	Memory utilization is too high	In the last 5 minutes of Memory utilization over 70%	2023-10-18 06:43:52	Login successfully	Cloud remote access login successfully	2023-10-18 06:42:26	Login successfully	Cloud remote access login successfully	2023-10-18 06:42:08	Login successfully	Cloud remote access login successfully	2023-10-18 06:40:00	Memory utilization is too high	In the last 5 minutes of Memory utilization over 70%	2023-10-18 06:35:19	Login successfully	Cloud remote access login successfully	2023-10-18 06:35:00	Memory utilization is too high	In the last 5 minutes of Memory utilization over 70%	2023-10-18 06:30:00	Memory utilization is too high	In the last 5 minutes of Memory utilization over 70%	2023-10-18 06:25:00	Memory utilization is too high	In the last 5 minutes of Memory utilization over 70%	2023-10-18 06:20:00	Memory utilization is too high	In the last 5 minutes of Memory utilization over 70%
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2023-10-18 06:20:00	Memory utilization is too high	In the last 5 minutes of Memory utilization over 70%																																							

Fig. 5-2-6 Check the recorded events

At the top of the event list, you can filter the displayed content by setting the time and selecting the event level. You can also export or clear recorded events using the "Clear Events" and "Export Events" buttons. In addition, you can set the number of events displayed per page and use the fast page navigation at the bottom right of the page.

The currently supported event types that can be recorded include:

- Successful User Login
- Failed User Login
- Configuration Changes
- High CPU Utilization
- High Memory Utilization
- Device Reboot
- Firmware Upgrade
- Client Status Changes
- Connection Status Changes
- These events are recorded to help you monitor and manage the device's operation and network activity.

5.2.7 Logs

The log function is used to record the raw return information of the device's operation under various circumstances. It is typically employed by IT or research and development personnel for the analysis and troubleshooting of issues.

You can access the device's system logs by navigating to the "Status > Logs" section. System logs provide detailed information about the device's operation, and they are invaluable for troubleshooting when issues arise. Users have the option to download and clear logs as needed.

You can filter the displayed log entries based on log level or by entering keywords. New log entries are added to the end of the log, keeping the most recent events at the bottom of the log.

The screenshot displays the EAP600 web interface. The top navigation bar is green and contains the 'EAP600' logo, 'InCloud Manager' status, and 'Internet' status. The left sidebar is light gray and contains a menu with 'Dashboard', 'Status', 'Config', 'Wi-Fi', and 'System'. The main content area is white and shows the 'Logs' tab selected. Above the log table, there are filters for 'Level' (set to 'ALL') and a 'Key' search field. The log table has three columns: 'Level', 'Time', and 'Content'. The log entries are as follows:

Level	Time	Content
Information	Oct 18 07:04:30	ih_record[1023]: RSSI: -37
Warning	Oct 18 07:04:30	ih_record[1023]: logtrace: write failed, Bad file descriptor
Information	Oct 18 07:04:33	api_gateway[13815]: Http Request login new
Warning	Oct 18 07:04:33	api_gateway[13815]: PAM unable to resolve symbol: pam_sm_authorize
Information	Oct 18 07:04:33	api_gateway[13815]: Web auth succeeded for adm, priv 15 from 127.0.0.1
Information	Oct 18 07:04:33	events[1026]: Cloud remote access login successfully
Warning	Oct 18 07:04:36	ih_record[1023]: logtrace:can not stat /var/log/ih_record156.log fd[0], error[9:Bad file descriptor]
Warning	Oct 18 07:04:36	ih_record[1023]: logtrace:can not stat /var/log/ih_record156.log fd[0], error[9:Bad file descriptor]
Information	Oct 18 07:04:40	ih_record[1023]: RSSI: -37
Warning	Oct 18 07:04:40	ih_record[1023]: logtrace: write failed, Bad file descriptor
Warning	Oct 18 07:04:42	api_gateway[13815]: Can't get vif name map for IF_INFO(4, 0, 0)
Warning	Oct 18 07:04:42	api_gateway[13815]: get iface err by ifname wan2
Warning	Oct 18 07:04:42	api_gateway[13815]: Bad VIF buffer MGMT information, type 4

At the bottom right of the log table, there are three buttons: 'Clear Logs', 'Download Logs', and 'Diagnostic Logs'.

Fig. 5-2-7 Check the recorded logs

6. Functions

6.1 Configuration

Click on the "Config" button in the left-side navigation menu to access the configuration page. On this page, you can set up the device's WAN/LAN interface settings and RF parameters.

6.1.1 WAN

The EAP600 supports single-port wired access, and you can configure it to use DHCP or static IP address assignment based on their requirements. Click on "Configuration > WAN" to select the network connection type.

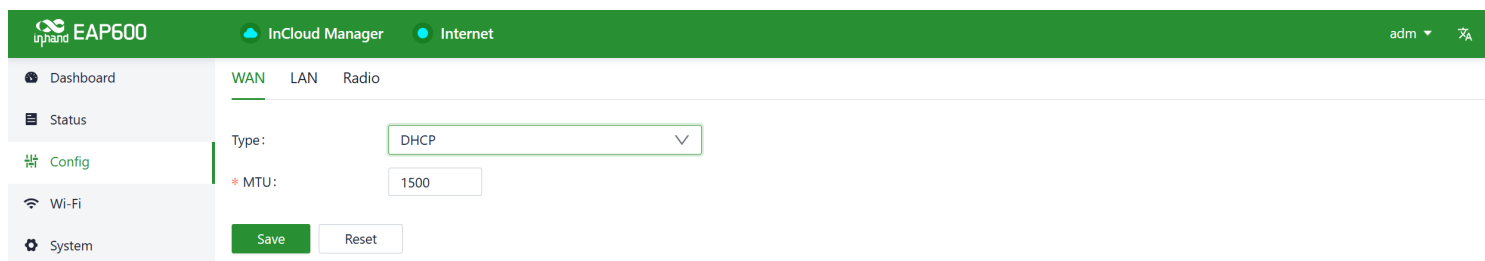


Fig. 6-1-1 Access the WAN editing interface

- **DHCP:** The EAP600 can dynamically obtain an internet IP address by using the DHCP server of the upstream router.
- **Static IP:** You can manually configure the address assigned by the ISP or upstream device. After the configuration is complete, the AP will connect to the network using the specified static IP.
- The default MTU value is 1500, and the valid input range is from 128 to 1500.

6.1.2 LAN

This page is only visible when the device is operating in FAT-Router mode. For more details, please refer to 5.5.10 *System Settings*.

When the device operates in FAT-Routing mode, you can create subnets and VLANs for different network segments in "Config > LAN" and configure subnet properties.

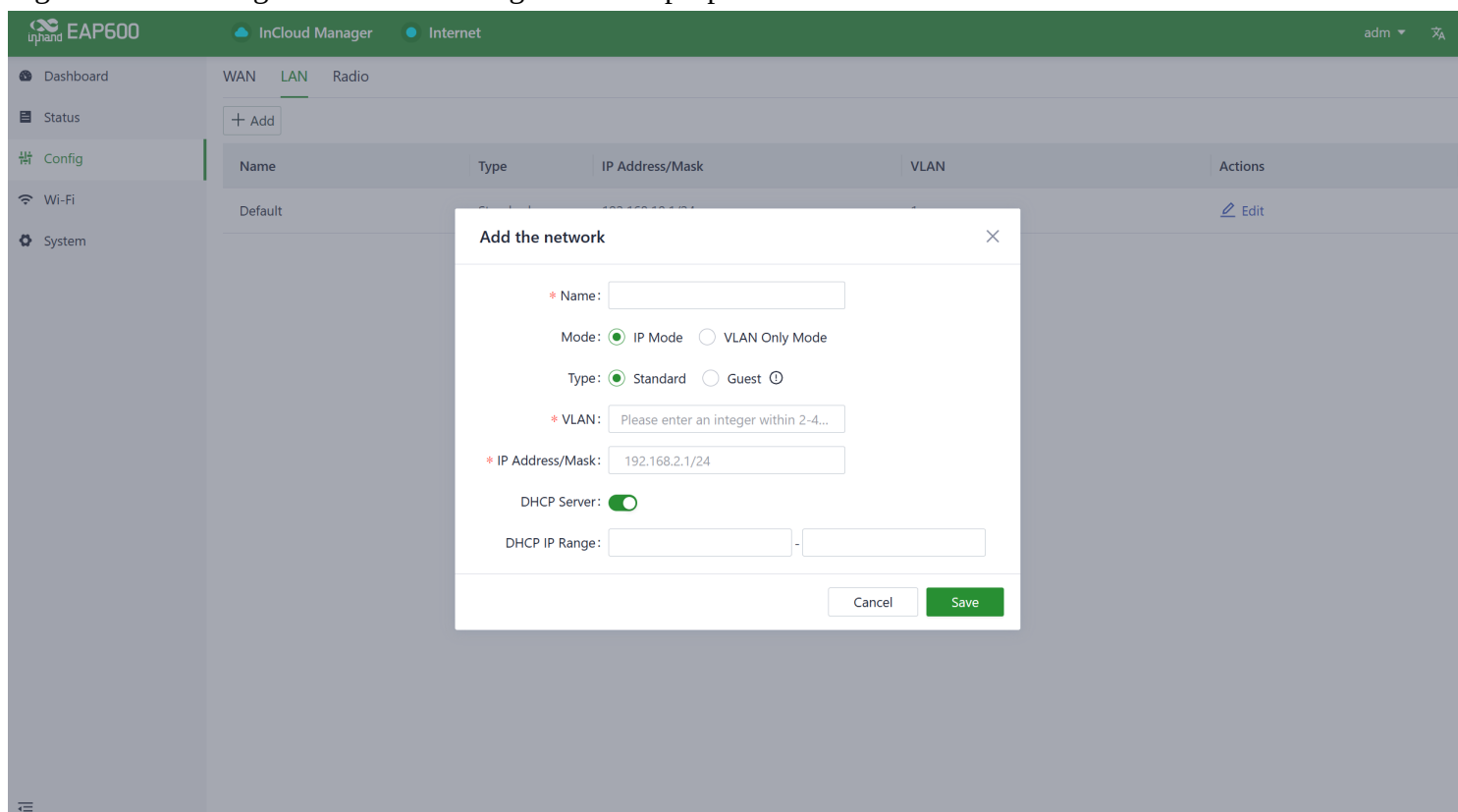


Fig. 6-1-2 Add a local network

The "Network Type" field provides two available modes:

- **Standard:** Clients connected to the standard mode network can access the Internet and the device's web interface.
- **Guest:** Clients connected to the guest mode network can only access the Internet and cannot log in to the device's web interface.
- **Edit Local Network:** You can adjust the parameters of an existing local network, and the configuration fields are the same as when creating a new network.

6.1.3 Radio

Radio Frequency (RF) refers to the wireless communication technology used by access points (APs) in a wireless local area network. It primarily involves the configuration and adjustment of AP RF parameters to ensure optimal wireless coverage and performance.

You can configure the device's Wi-Fi radio settings, such as the operating channels, radio power, and wireless mesh features, under "Config > Radio" in the device settings.

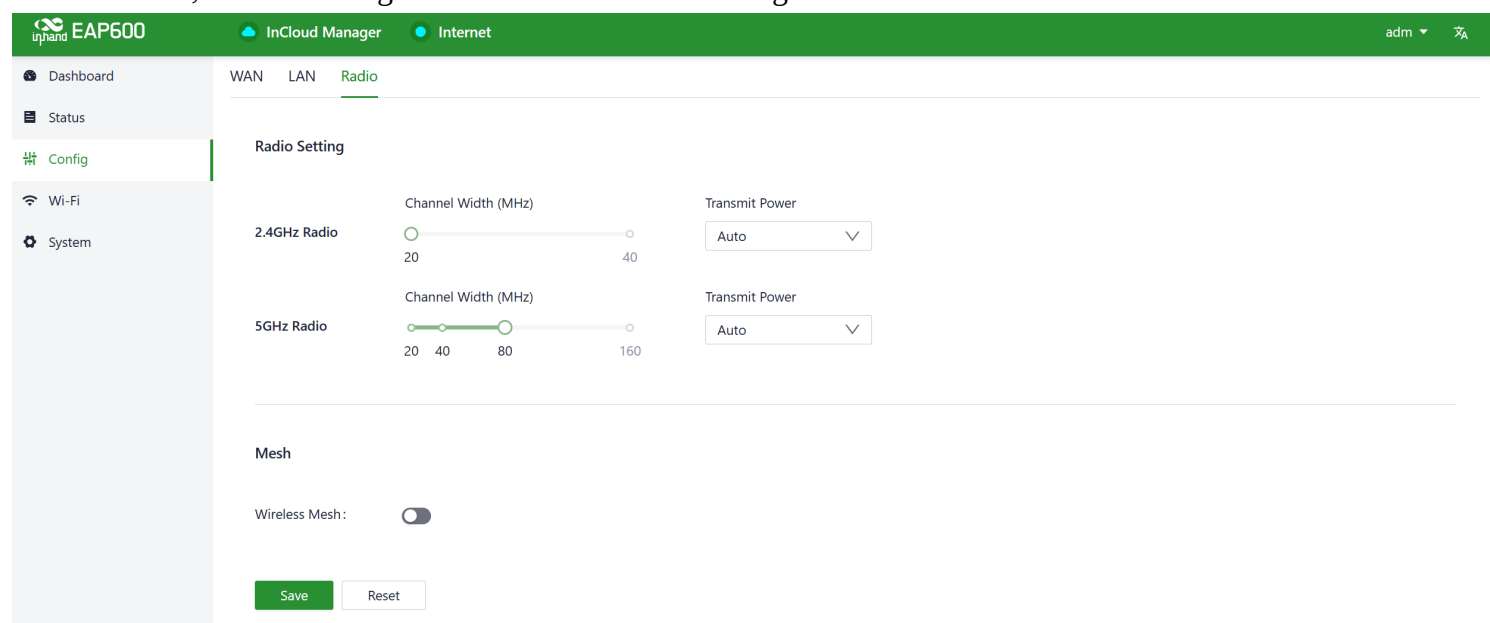


Fig. 6-1-3-a Edit the radio's parameters

You can configure the frequency width and transmit power for 2.4GHz and 5GHz radio frequencies under "Configuration > Radio > Radio Settings." When you set the "Transmit Power" to "Custom," you must manually enter the power value. The valid input range for power is between 1 and 20, with the default value being 20.

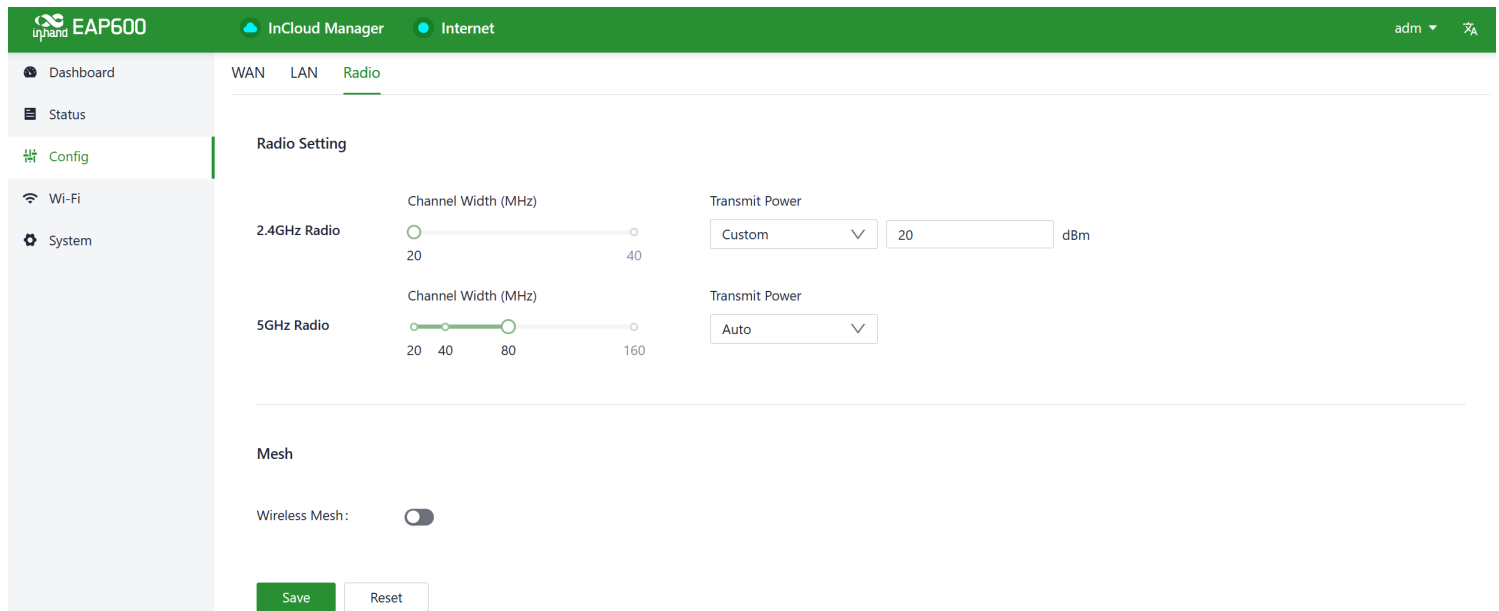


Fig. 6-1-3-b Set the Transmit Power manually

The wireless mesh network feature is disabled by default. When enabled in "config > radio > mesh," devices of the same model can quickly form a network through Mesh.

Mesh

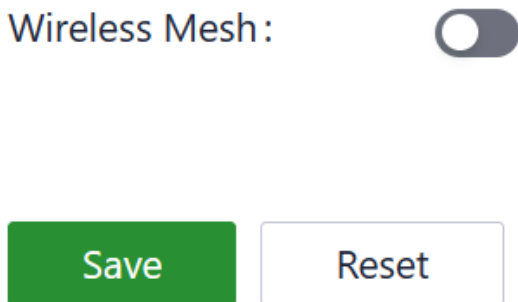


Fig.6-1-3-c Enable the Wireless Mesh

6.2 Wi-Fi

Wi-Fi functionality provides wireless local area network (LAN) connectivity for devices such as computers, smartphones, tablets, and more. It allows these devices to connect to a network wirelessly, providing internet access and communication capabilities.

EAP600 offers the ability to provide multiple SSIDs for wireless network access. You can customize and configure different SSIDs for various purposes in the [Wi-Fi] interface.

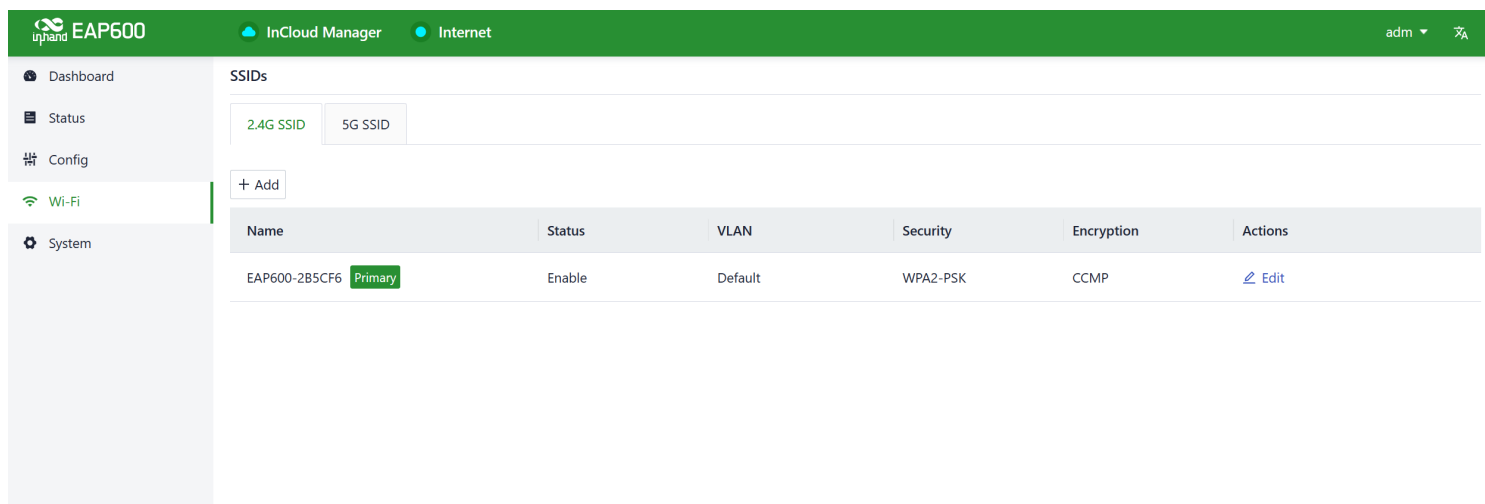


Fig. 6-2-a SSID List

By clicking on the "Wi-Fi > SSIDs" section and then the "Add/Edit" button, you can add a new SSID or edit an existing one. You can choose to hide the SSID. In this case, you will need to manually enter the SSID name and password on their client devices, and the SSID won't be visible in the list of available Wi-Fi networks.

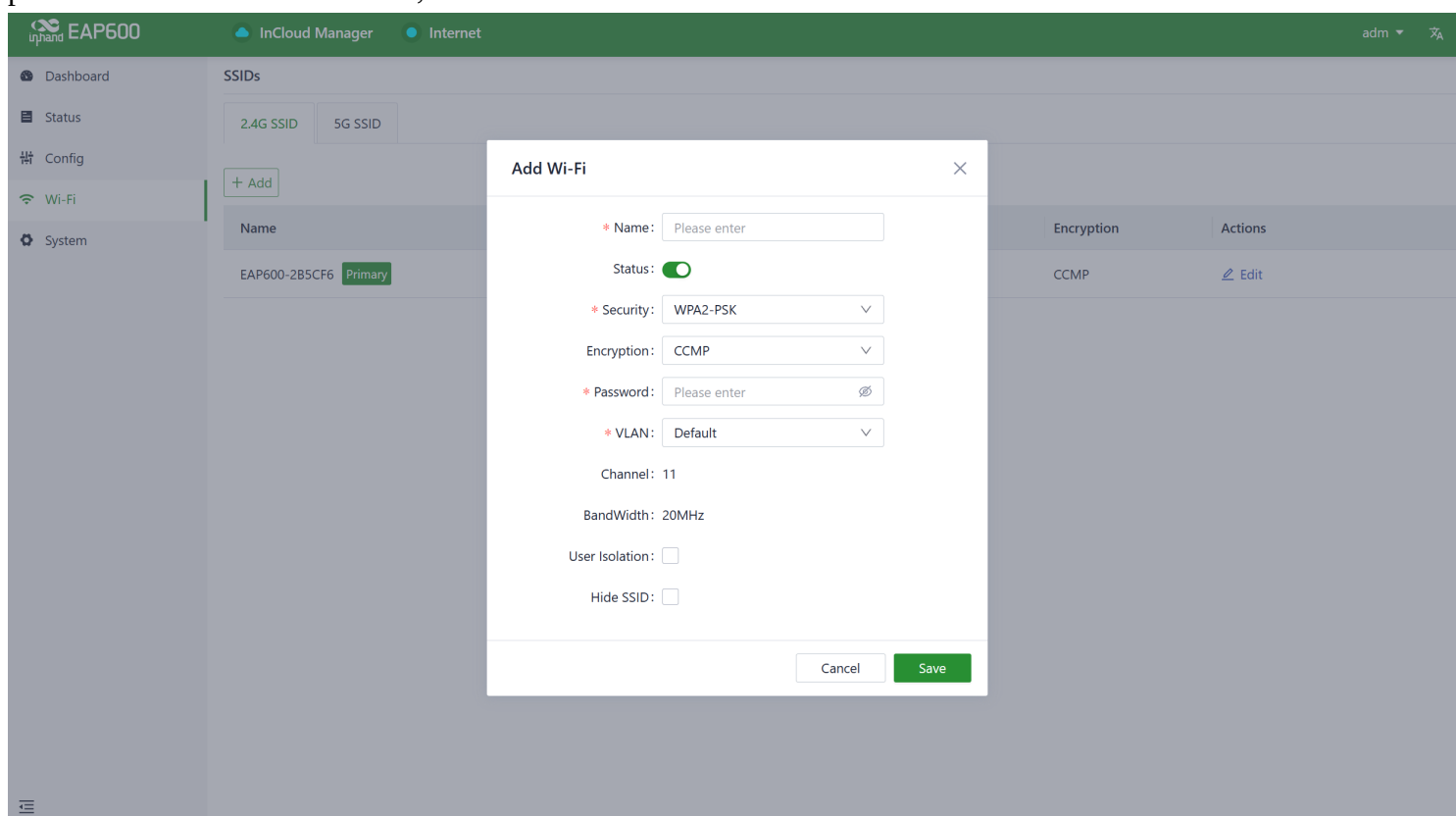


Fig. 6-2-b Add a new SSID

Cautions:

- The device comes with two default main SSIDs for the 2.4GHz and 5GHz bands, and these main SSIDs cannot be modified or deleted.
- Once you've added an SSID, you cannot change its frequency band. The channel will automatically match the channel of the corresponding main SSID.

6.3 System

Under the "System" menu, you can configure various settings and features, including cloud management, remote access control, clock settings, device options, configuration management, device alerts, tools, and log server configurations.

6.3.1 Adm Management

The initial username and password for the device are "adm" and "123456." To enhance security, it is recommended to change this password. You can do this by clicking on "adm" in the top navigation bar, and then selecting "Change Password" from the dropdown menu.



Fig. 6-3-1-a Modify the password

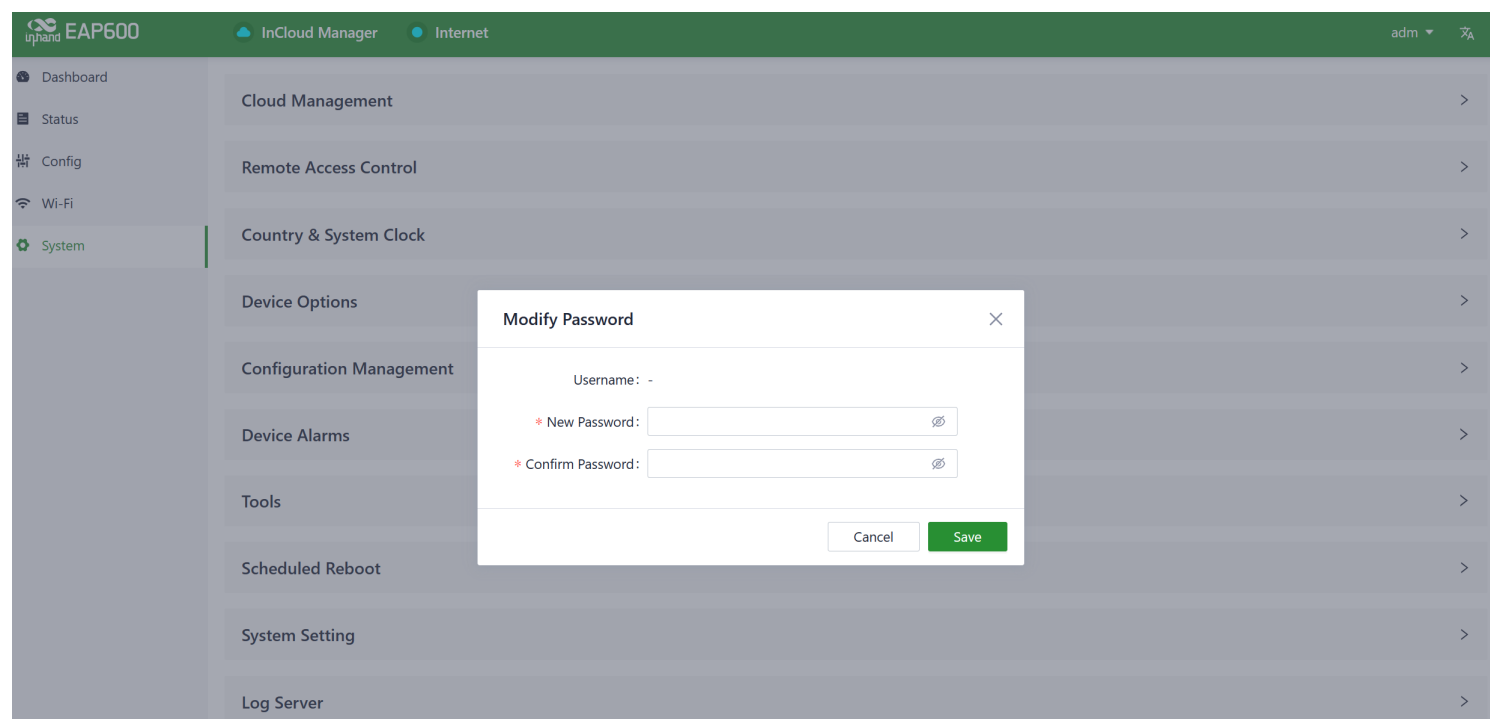


Fig.6-3-1-b Set a new password

6.3.2 Cloud Management

The Incloud Manager` (star.inhandcloud.com) is a cloud platform developed by InHand Networks to address the challenges faced by enterprise networks, such as slow deployment, complex operations, and poor user experiences. This platform prioritizes user needs and combines features like zero-touch deployment, intelligent operations and maintenance, security protection, and exceptional business experience capabilities. Once devices

are connected to the cloud platform, you can perform remote management, batch configuration, and traffic monitoring, making network device management more convenient and efficient.

The EAP600, by default, automatically connects to the Small Star Nebula Manager once it's online. If you prefer not to use the cloud management functionality, you can manually disable this service in the "System > Cloud Management" section.

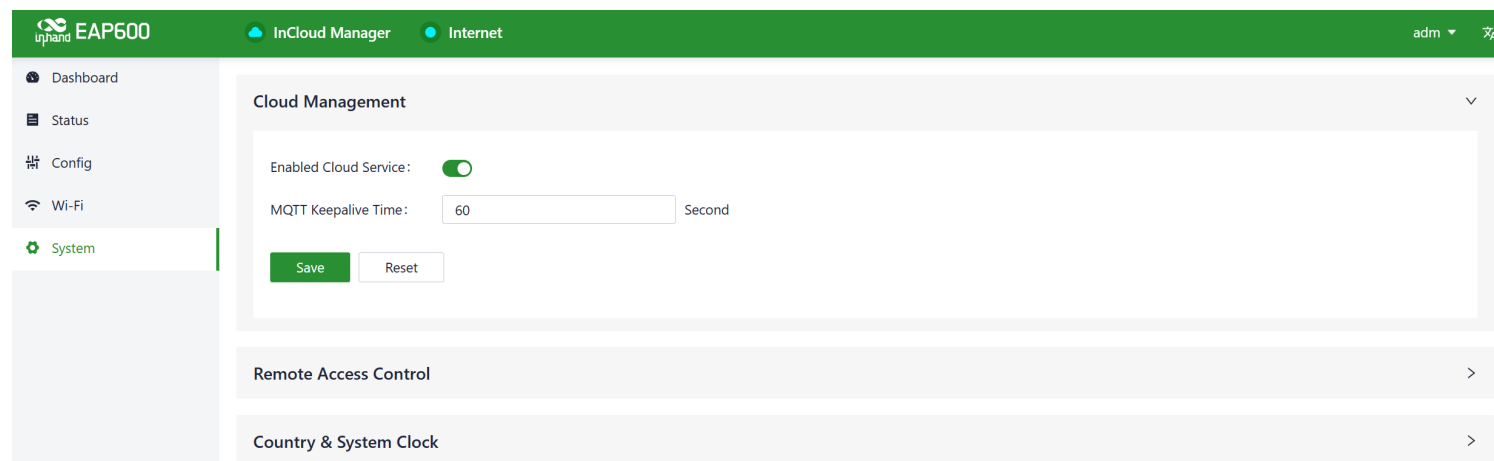


Fig. 6-3-2 Enable the Incloud Manager service

6.3.3 Remote Access Control

You can manage the accessibility of the router's web configuration interface from external sources via the Internet by using the "System > Remote Access Control" feature. This feature enables you to control and configure remote access to the router's web interface.

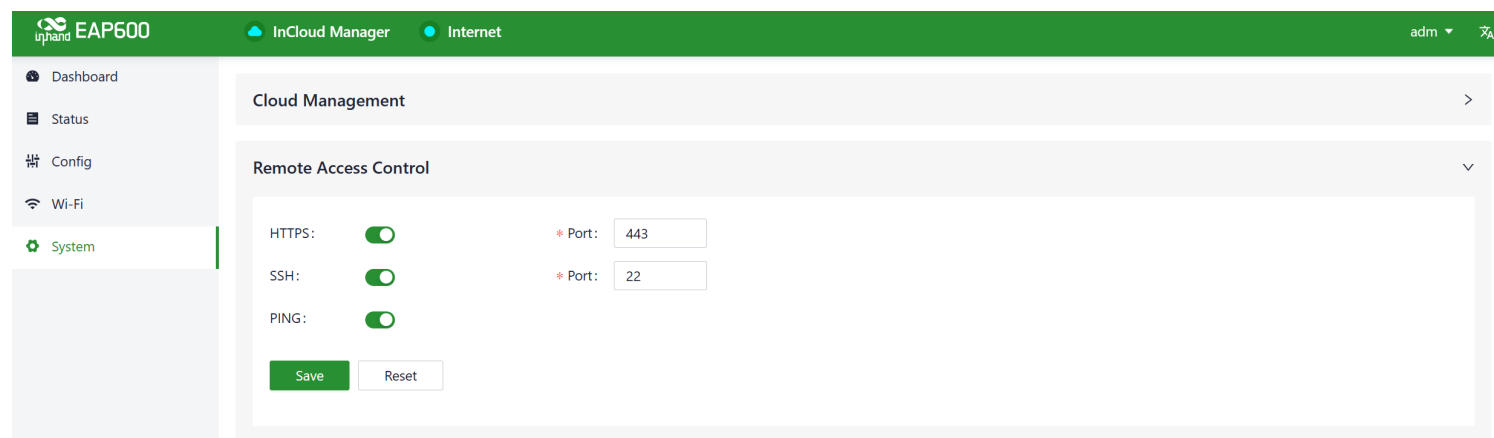


Fig. 6-3-3 Configure the remote access

When you enable remote access to the router's web configuration interface through the "System > Remote Access Control" feature, you have the following options:

- **HTTPS:** Once enabled, you can access the router's web interface remotely through a web browser by entering the public IP address and port number associated with the upstream interface.
- **SSH:** When enabled, you can remotely log in to the router's backend using a remote tool like CRT. Enter the public IP address and port number of the upstream interface, along with the username and password to

establish remote access.

- **Ping:** Enabling this option allows external networks to initiate Ping requests to the IP address of the upstream interface.

6.3.4 Country & System Clock

In network functionality, the clock function refers to the capability used to coordinate and synchronize time between network devices. Clock functionality within a network is crucial for data transmission, log recording, security, coordination, and troubleshooting. It ensures that various devices in the network are operating at synchronized times, which is essential for efficient and secure network operations.

In the "System > Clock" function, you can perform the following actions.

- Select your country to configure the device with the appropriate time zone.
- Set the time and date to align with your local time. This will become the device's system time.
- Configure at least one valid NTP (Network Time Protocol) Server address. This allows the device to synchronize its system time with the selected NTP server, ensuring accurate timekeeping.

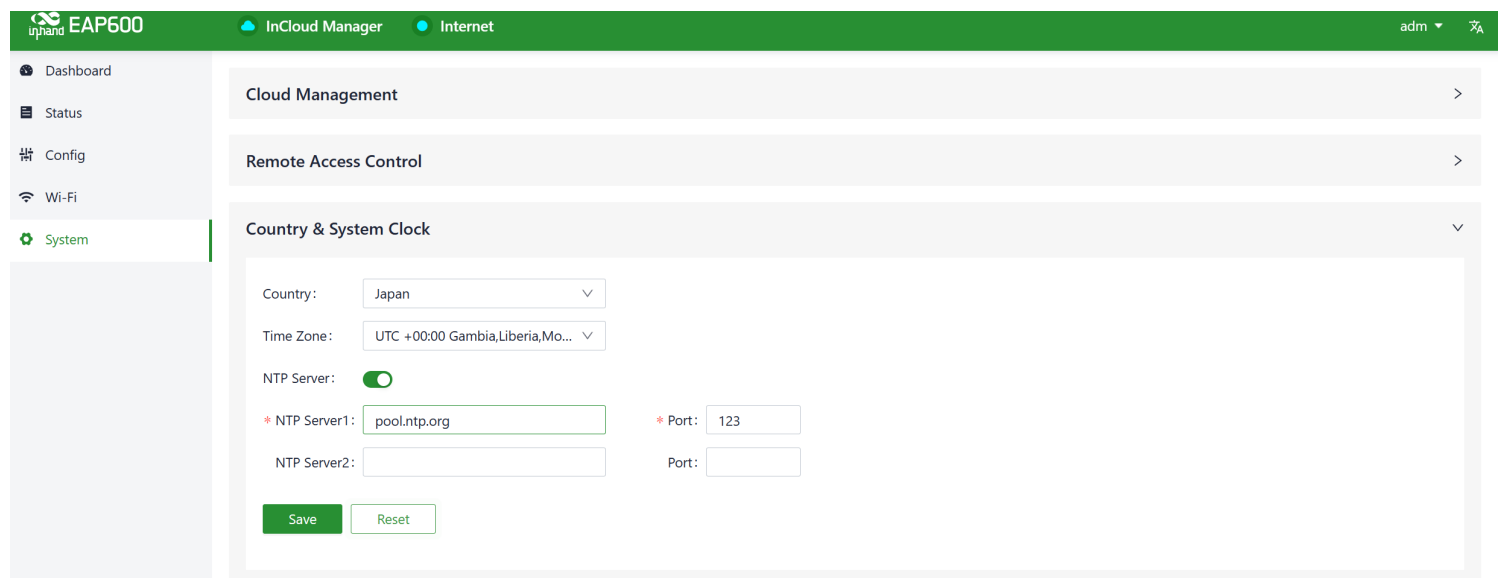
The screenshot shows the web management interface for an EAP600 device. The top header is green with the 'inhand EAP600' logo on the left and 'InCloud Manager' and 'Internet' status indicators in the center. On the right of the header, there's a user dropdown 'adm' and a language icon. A left sidebar contains navigation links: Dashboard, Status, Config, Wi-Fi, and System (which is highlighted with a green bar). The main content area has a light gray background and contains three expandable sections: 'Cloud Management', 'Remote Access Control', and 'Country & System Clock' (which is currently expanded). The 'Country & System Clock' section contains the following configuration options: 'Country' set to 'Japan', 'Time Zone' set to 'UTC +00:00 Gambia, Liberia, Mo...', an 'NTP Server' toggle switch that is turned on, 'NTP Server1' set to 'pool.ntp.org', 'NTP Server2' as an empty field, 'Port' set to '123', and another empty 'Port' field. At the bottom of this section are 'Save' and 'Reset' buttons.

Fig.6-3-4 Choose the Country and configure the NTP server address

6.3.5 Device Option

In "System > Device Options," you can perform actions on the device, such as rebooting, firmware upgrades, and restoring to factory settings.

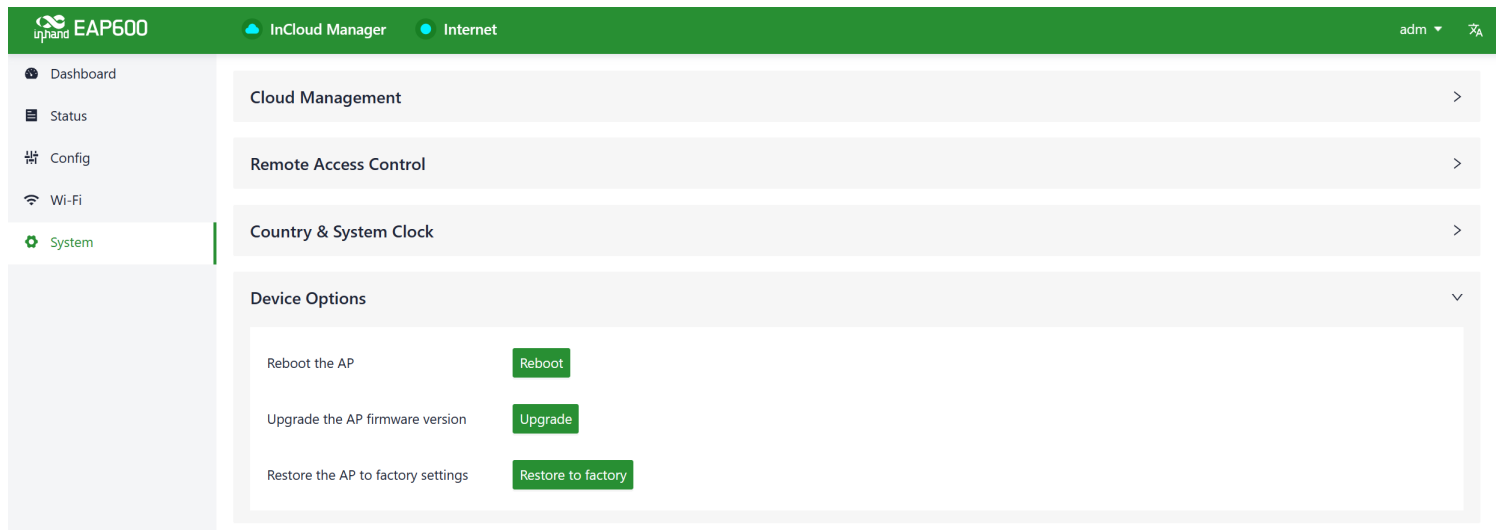


Fig. 6-3-5 Device Option interface

Cautions:

- When upgrading firmware locally, ensure that you obtain the firmware from legitimate sources to prevent the device from becoming unusable due to incorrect firmware installation.
- When the device is connected to the cloud platform, due to the cloud-based configuration synchronization mechanism, the platform will reapply the configuration that was in place before the factory reset, with the device only clearing historical data.

6.3.6 Configuration Management

Configuring backups and backup recovery are critical tasks in network management and maintenance. They involve the process of preserving configuration information for network devices so that they can be quickly restored or migrated when needed. This practice ensures the resilience and reliability of network operations and simplifies the recovery process in case of system failures or configuration changes.

In the “System > Configuration Management” section, users have the option to export the device configuration for local storage. This exported configuration can be saved on the local system and can be utilized to restore the device's configurations if they are lost or need to be replaced.

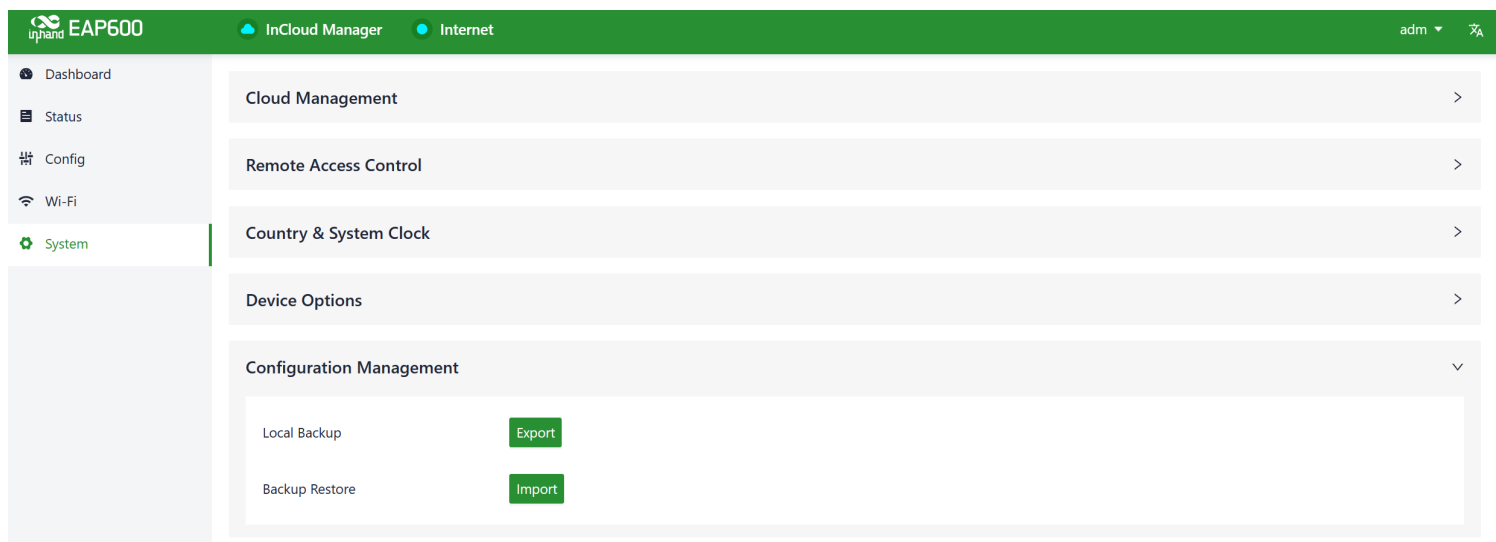


Fig. 6-3-6 Manage the device configuration

6.3.7 Device Alarms

You can choose to focus on specific events that may occur on the device by selecting the corresponding alarm events and configuring the email address for receiving alerts. When an alarm event occurs, the device will automatically send an email notification. It's important to note that even if a user doesn't select certain alarm options, related alarm events will still be recorded in the device's local logs.

You can set alarm event types and configure the email address for alerts in the "System > Device Alarms" function. The currently supported alarm events for the device are as follows:

← Device Alarms

Alarm Settings (Mail Receiving)

- ☐ select all
- ☐ User logged in successfully
 - ☐ User login failed
 - ☐ Configuration changes
 - ☐ CPU utilization is too high in the last 5 minutes Over
 - ☐ Memory utilization is too high in the last 5 minutes Over
 - ☐ Client status changed
 - ☐ Network state changed
 - ☐ Reboot
 - ☐ Upgrade

Save

Reset

Fig. 6-3-7-a Configure the alarm events

Once you've configured the outgoing email server address, port, username, and password for the sender's email, the device will use this email account to send alarm notifications. To verify the configuration of the sender's email, you can use the "Send Test Email" option. This feature allows you to check if the sender's email settings are correctly configured and that the device can successfully send test emails.


Receive Mail Settings

Enable: ☒

* Mail Server Address:

* Mail Server Port:

* Username:

* Password: 

TLS: ☐

* Receiving Email Address:

Send a test email to:

Fig. 6-3-7-b Set the alarm email receiving address

6.3.8 Tools

6.3.8.1 Ping

You can use ICMP (Internet Control Message Protocol) to check the device's external network connectivity. In the "Target" field, enter any domain name or IP address you want to test the device's connectivity to, and then click "Start" to check the connectivity status between the device and the specified target. This can help you determine whether the device can reach the target over the internet.

You can perform a network ping test on a target by going to "System > Tools > Ping." This allows to send ICMP echo requests to the specified target IP address or domain name and receive ICMP echo replies to check network connectivity and latency to that target.

← Tools

Ping

* Target:

Source:

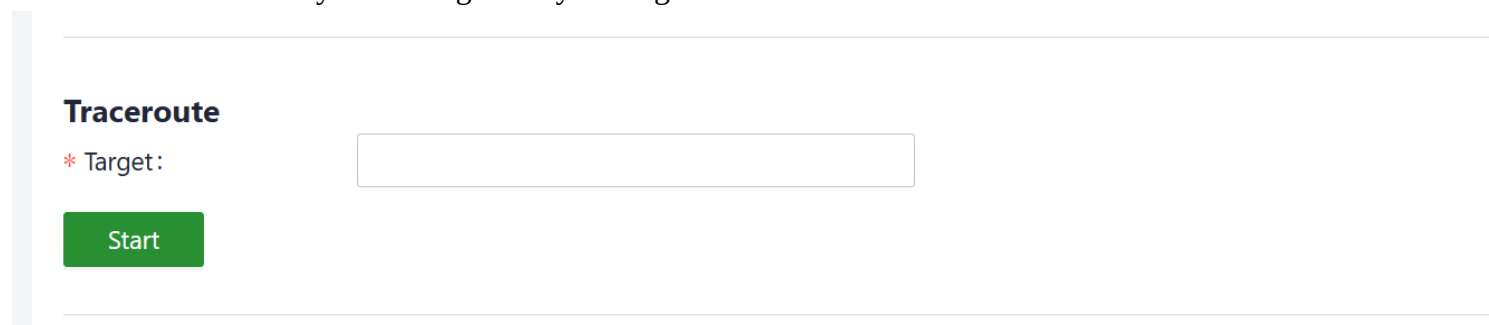
* Packet Size: Bytes

* Packet numbers:

Fig. 6-3-8-1 Ping

6.3.8.2 Traceroute

Traceroute is a network diagnostic tool used to determine the network path that data packets take from the source to the destination, as well as the intermediate routers or hops along that path. You can enter the target host's IP address in "System > Tools > Traceroute," choose the outgoing interface for the traffic, click "Start," and check the device's connectivity to the target IP by tracing the route.

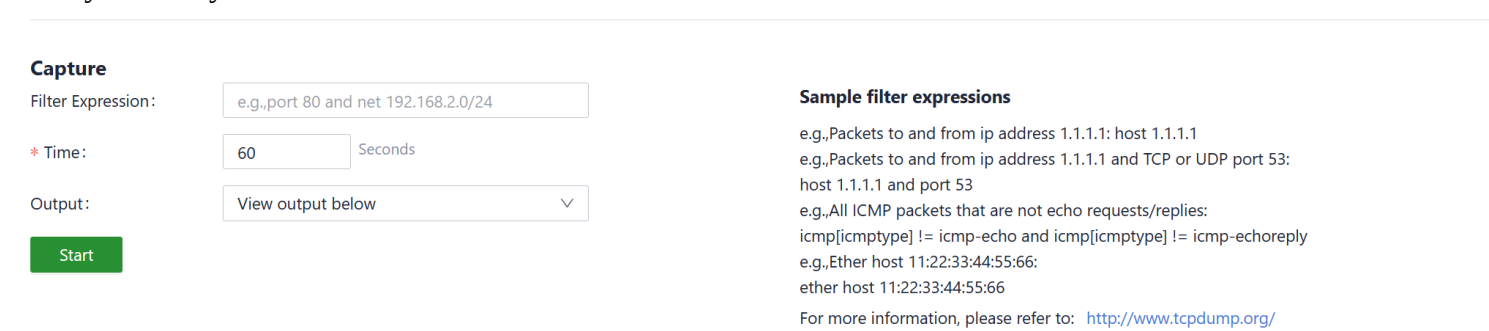


The screenshot shows the "Traceroute" tool interface. It has a title "Traceroute" in bold. Below it is a label "* Target:" followed by a text input field. At the bottom left is a green "Start" button.

Fig. 6-3-8-2 Traceroute

6.3.8.3 Capture

You can capture packets passing through a specific interface using the "System > Tools > Capture" feature. Select the "Output" option, and you can choose to either display the captured packets in the interface or export them locally for analysis or further examination.



The screenshot shows the "Capture" tool interface. It has a title "Capture" in bold. Below it is a label "Filter Expression:" followed by a text input field containing "e.g.,port 80 and net 192.168.2.0/24". Below that is a label "* Time:" followed by a text input field containing "60" and a label "Seconds". Below that is a label "Output:" followed by a dropdown menu showing "View output below" with a downward arrow. At the bottom left is a green "Start" button. To the right of the form is a section titled "Sample filter expressions" with several examples of filter expressions and a link to "http://www.tcpdump.org/" for more information.

Fig. 6-3-8-3 Packet Capture

6.3.9 Scheduled Reboot

You can set up an automatic reboot schedule in "System > Scheduled Reboot." You can choose the reboot frequency, such as daily, weekly, or monthly, and specify the exact time for each scheduled reboot.

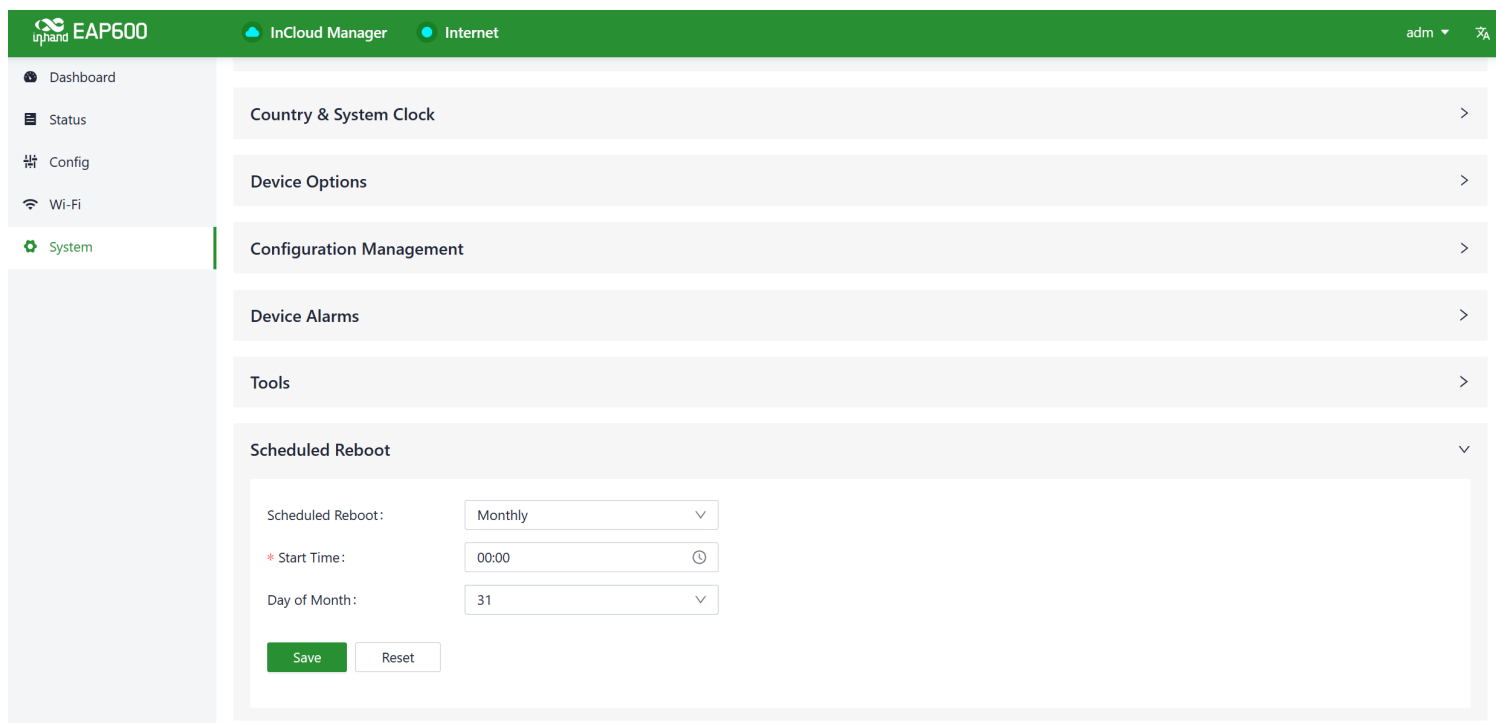


Fig. 6-3-9 Set the reboot plan

When selecting "Monthly Reboot," if the chosen reboot day is greater than the actual number of days in that month, the device will perform the scheduled reboot at the specified time on the last day of that month.

6.3.10 System Settings

In the "System > System Settings" function, you can set the operating mode of EAP600.

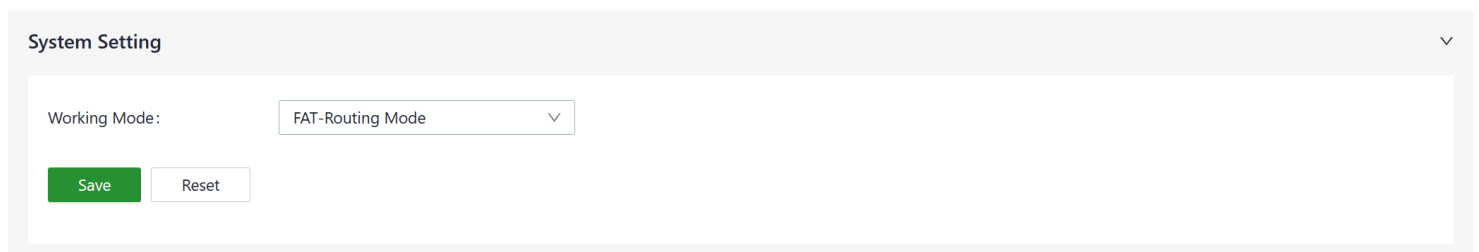


Fig. 6-3-10 Set the reboot plan

- **FAT (Firmware-Defined Access Point) Router Mode:** In this mode, the AP operates in a FAT mode and uses the configuration set on the AP itself, including SSID, password, and other settings. In router mode, the WAN and LAN ports are isolated from each other, and client devices connected to the AP are assigned addresses from the AP's local address pool.
- **FAT Bridge Mode:** In this mode, the AP operates in FAT mode and uses the AP's configured SSID, password, and other settings. In bridge mode, the WAN and LAN ports are in the same Layer 2 network, and client devices connected to the AP obtain addresses from the DHCP server of the upstream router connected to the AP.

6.3.11 Log Server

When you enable the log file server function in the "System > Log Server" feature, the device will periodically upload log files to the specified server.

Log Server

Enable log Server:

Server Address1:

Port :

514

Server Address2:

Port :

514

Save

Reset

Fig. 6-3-11 Enable the log server service

6.3.12 Other Settings

6.3.12.1 Web Login Management

You can set the logout time in "System > Other Settings > Web Login Management." Once the online time for a single login session on the device's web page exceeds the set time, the system will automatically log out of the user, requiring them to log in again to continue their operations.

Other Settings

Web login management

Web login for

300

minutes automatically log out

Save

Reset

Fig. 6-3-12-1 Setting the automatic log-out time

6.3.12.2 Automatically Restart

When you enable this feature in "System > Other Settings > Automatically Restart," the device will automatically reboot if it cannot connect to the network and, after one hour of retrying, remains unable to access the network.

Other Settings

Web login management

Web login for

300

minutes automatically log out

Save

Reset

Automatically Restarts:

Save

Reset

7. Security Precautions

1. Please use PoE (Power over Ethernet) equipment that complies with the IEEE 802.3af/at standards to power the AP. If you are not using PoE for powering the device, make sure to use the original power adapter to avoid damaging the device.
2. Do not install the device in environments with strong electromagnetic interference and keep it away from high-power equipment. After installation, ensure that the device is securely fixed to prevent damage or potential harm due to the device falling.
3. Verify that the operating environment meets the specified temperature and humidity conditions for the device.
4. Regularly inspect the device cables, keeping them clean, and promptly replace any damaged cables.
5. When cleaning the device, avoid spraying chemical agents directly on the device's surface to prevent damage to the casing or internal components. Use a soft cloth for cleaning.
6. Do not attempt to disassemble or modify the device on your own, as this can pose safety risks and void the warranty for the device.

8. Troubleshooting

8.1 Clients Cannot Connect to the Wireless Network?

1. Verify that the Access Point (AP) is operational and online. If any issues are detected, try restarting the AP or restoring it to a backup configuration.
2. Refer to the 2.1 LED Indicators to check the AP's LED indicators for any abnormal signals.
3. Ensure that the AP's firmware is up to date. Obtain the latest firmware version from the official source.
4. Double-check that the AP's SSID and encryption settings match the configurations on your client devices.
5. Examine the AP's wireless channel settings to ensure there is no interference from neighbouring channels.
6. Review the AP's wireless configuration, including transmit power and frequency band settings.
7. If the issue persists, attempt to overwrite the current configuration with a backup or restart the device.

8.2 Wireless network is slow or experiencing instability?

1. Check the signal strength and interference level of the Access Point (AP).

2. Verify that the number of clients connected to the AP does not exceed its capacity.
3. Review the AP's channel settings and transmit power parameters to ensure they are configured appropriately.
4. Inspect the vicinity for other electronic devices or high-power equipment, such as microwave ovens or Bluetooth devices. Ensure that the AP is not located too close to such devices.
5. If the problem persists, try overwriting the current configuration with a backup or reboot the AP.

8.3 AP Cannot Start Properly or Frequent Crashes?

1. Check if the AP's power adapter is properly connected or if the PoE power supply device is functioning correctly.
2. Refer to the "2.1 LED Indicator Description" to check the AP's LED indicators for any abnormal indications.
3. Inspect the AP's temperature to ensure it is not overheating and verify that the environmental humidity meets the device's requirements.
4. If the issue persists, consider updating or reinstalling the AP's firmware.

8.4 Unable to Connect to a Specific Website or Service?

1. Check if other devices can access the website or service.
2. Clear your browser's cache and cookies.
3. Verify if the DNS server addresses are configured correctly and consider trying different DNS server addresses.

8.5 Is the cloud platform free?

InHand has been committed to providing high-quality network services for small and medium-sized chain organizations. When users use the cloud platform service, they need to purchase licenses for each device to access the rich cloud-based features.

8.6 How can I add devices to the cloud platform?

First, register for a login account on the InCloud Manager platform at <https://star.inhandcloud.com/>. Use the registered account to log in to the cloud platform, navigate to the "Devices" menu, and click on "Add." Follow the prompts to enter the device's serial number and MAC address to complete the addition process. When adding a device for the first time, a complimentary one-year Basic license is provided, and you can renew it as needed.

8.7 Is it possible to use devices without the cloud platform?

Yes. You have the option to configure most settings locally. However, for features like batch configuration deployment, firmware upgrades, Connector, and more, it is recommended to use the cloud platform for enhanced functionality and management.

If you are unable to resolve the issue using the steps mentioned above or encounter any other problems, please contact InHand Network for technical support. You can visit www.inhandnetworks.com to obtain more information.

FCC Statement

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates,uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
 - Increase the separation between the equipment and receiver.
 - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- sult the dealer or an experienced radio/TV technician for help.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment .This equipment should be installed and operated with minimum distance 20cm between the radiator& your body.

ISED Statement

This device complies with Innovation, Science and Economic Development Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:

- (1) this device may not cause interference, and
- (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'ISED applicables aux appareils radio exempts de licence.

L'exploitation est autorisée aux deux conditions suivantes:

- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This equipment complies with ISED radiation exposure limits set forth for an uncontrolled environment .This equipment should be installed and operated with minimum distance 20cm between the radiator& your body.

Cet équipement est conforme aux limites d'exposition aux rayonnements de la ISED définies pour un environnement non contrôlé.Cet équipement doit être installé et utilisé avec une distance minimale de 20 cm entre le radiateur et votre corps.

5150-5250MHz indoor use only

5150-5250MHz utilisation d'intérieur seulement