M366
Outdoor Dual SIM LTE
Cellular Router

User Manual

Version 1.00

Table of Contents

1 Introduction

Proscend M366 Outdoor 4G LTE Cellular Router is embedded mobile broadband technology and designed for dual APN to integrate easily with different types of devices or gateways for lower investment and faster deployment. The M366 is suitable and flexible to use in any venue like suburban areas, public premises, offices, homes, substation, banking ATM, retail POS, and vending machine, etc.

Equipped with high-gain directional antennas, the M366 supports up to 10 dBi in multiple bands and enhances LTE signal for better performance. Built in standard 802.3at PoE PD feature, it makes the users easier to deployment. With the dual-SIM design, the M366 can connect to different telecommunication providers and automatically switch to a redundant standby network connection when the primary connection fails.

Operating temperature from -20 to +60°C, the M366 is rated as IP67 to protect from dust ingress and inclement weather in outdoor environments. By taking advantage of robust design, PoE feature, and VPN security, Proscend M366 comes with the wired and wireless communications matching outdoor use for optimal transmission and reception performance.

1.1 Features

- Support multi-band connectivity with FDD LTE / TDD LTE / WCDMA.
- Dual SIM supports failover feature.
- Highly reliable and secure for outdoor cellular communications.
- Built-in a Gigabit LAN port with 802.3at Power over Ethernet (PoE PD).
- Integrated embedded high gain antenna against radio interference.
- Operating temperature from -20°C to +60°C for using in harsh environments.
- Waterproof and dustproof housing with IP67 grade protection.
- Enhance secure VPN connections and encryption security.
- LED indicators for connection and data transmission status.

1.2 Specifications

Processor & I/O Interface

- 2 x Micro SIM Card Slot
- 1 x LAN 10/100/1000 Mbps Ethernet port with 802.3at PoE
- 1 x Reset Button
- 2 x Embedded high-gain antennas

Physical Characteristics

- Enclosure：Waterproof Shell
- Housing：IP67 Protection
- Dimensions (W x H x D)：170 x 225 x 89 mm
- Weight：433 g (0.9546 lb)
- Installation：Pole Mount

LED Display

- 1 x PWR status LED (Green)
- 1 x LAN on/off LED (Green)
- 1 x Internet status LED (Green)
- 1 x SIM card inserted status LED (Green)
- 1 x LTE Signal Strength LED (Green, Orange, Red)

Power Supply

- Power Consumption：12 Watts(Max)
- Power Input：802.3at PoE

Environment

- Operating Temperature -20 ~ +60°C
- Storage Temperature -40 ~ +85°C
- Ambient Relative Humidity 10 ~ 95% (non-condensing)
- Humidity 0 ~ 95% (non-condensing)

Software

- **Network Protocols:**

  IPv4, IPv6, DHCP server and client, Static IP, SNTP, DNS Proxy

- **Routing/Firewall:**

  NAT, Virtual Server, MAC Filter, URL Filter, IP Filter, VLAN, Static Routing, Policy Route

- **VPN:**

  IPSec (3DES, AES128, AES196, AES256, MD5, SHA-1, SHA256), GRE, PPTP, L2TP, OpenVPN

- **Others:**

  DDNS, QoS, UPnP, SMS Action

- **Alarm:**

  SMS, VPN/WAN Disconnect, SNMP Trap, E-mail,TR069

- **Dual APNs:**

  Two separate APNs that can be used simultaneously

Management Software

- Web GUI for remote and local management, CLI
- Dual Image firmware
- Syslog monitor
- SNMP, TR069
- Remote management via SSH v2, HTTPS
- Local management via Telnet, SSH v2, HTTP/HTTPS

Standards and Certifications

- EN 300 328, EN 301 908-1
- EN 55032/35 + EN 301 489-1/-17
- NCC LP002, NCC PLMNALL
- CNS 13448, CNS 14336-1

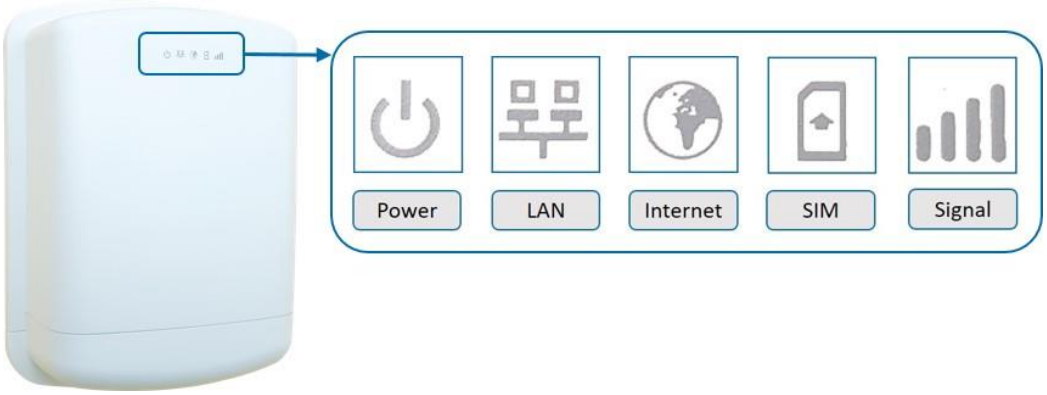
2 Hardware Overview

This chapter introduces the layout of physical appearance, Ethernet, PoE connection port, and LED Indicators.

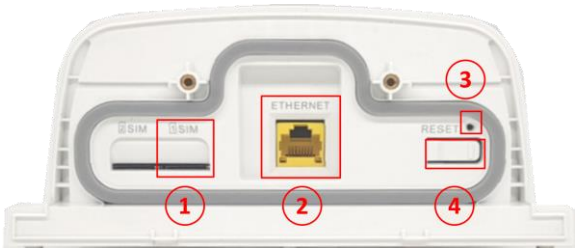
2.1 Physical Appearance

(1) External Front Panel:

There are five icons of LED indication with Power, LAN, Internet, SIM, and Signal.



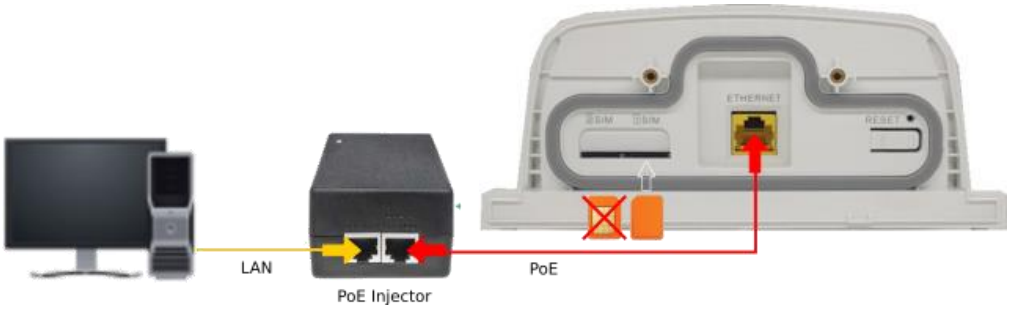
(2) Internal Bottom Panel:



	Item	Description
1	SIM Card Slot	Insert a single Micro SIM card.
2	Ethernet Port	10/100/1000 Mbps Ethernet Port.
3	RESET	Reset: Press less than 5 seconds Restore to factory default: Press at least 5 seconds
4	Reserved	For future use

2.2 Adapter

You can use an adapter with PoE and LAN connectors to connect the Cellular Router and PC or Switch device.



2.3 LED Indicators

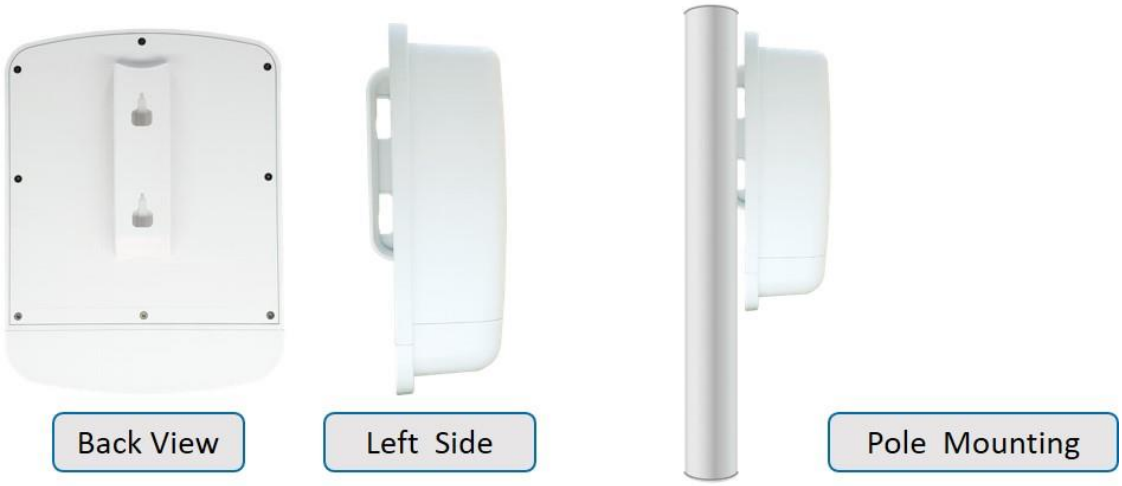
The indication of LED icons embedded in the front of hardware are as below.

The following table shows the status of the LEDs.

LED	ON	OFF	Blinking
System: GREEN	System is ready	x	Booting
LAN: GREEN	Ethernet is up	Ethernet is down	Ethernet is active
Internet: GREEN	LTE is up	LTE is down	LTE error
SIM: GREEN	SIM is active	No SIM	SIM error
Signal: RED, ORANGE, GREEN	Signal Strength: Low (RED) / Medium (ORANGE) / Good (GREEN)		

2.4 Installation

You can install the pole mounting or the wall mounting to fix the router outside.



***Pole Mounting Installation:**

- Loosen the screw of pole mounting kit and open it.
- Fixed the router and the pole mounting with the kit.
- Tighten the screw of the pole mounting kit.

3 Configuration via Web Browser

3.1 Access the Web Configurator

The web configuration is an HTML-based management interface for quick and easy set up of the cellular router. Monitoring of the status, configuration and administration of the router can be done via the Web interface.

After properly connecting, the hardware of cellular router as previously explained. Launch your web browser and enter http://192.168.1.1 as URL.

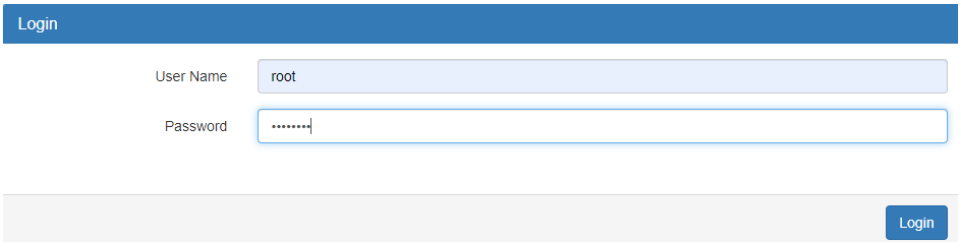
The default IP address and sub net-mask of the cellular router are 192.168.1.1 and 255.255.255.0. Because the cellular router acts as DHCP server in your network, the cellular router will automatically assign IP address for PC or NB in the network.

Title Bar Panel > Selecting Language

You can choose the different language display of web GUI.

Logging in the Router

In this section, please fill in the default User Name **root** and the default Password **2wsx#EDC** and then click Login.

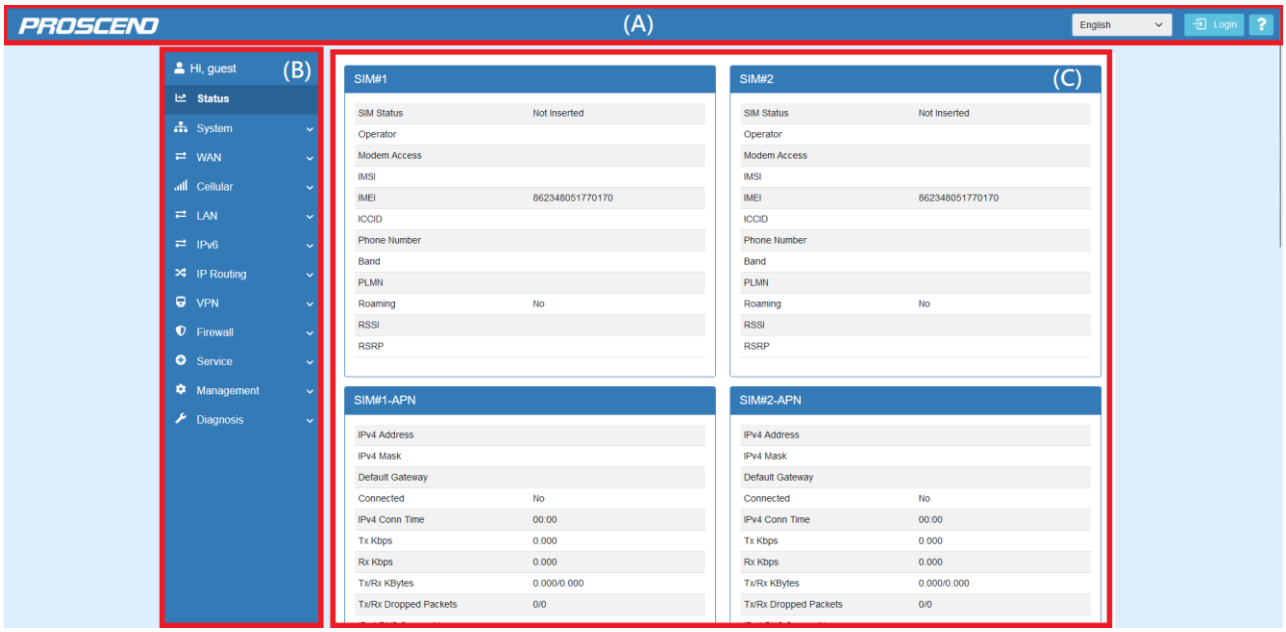


Note: After changing the Username and Password, strongly recommend you to save them because another time when you login, the Username and Password have to be used the new one you changed.

3.2 Navigate the Web Configurator

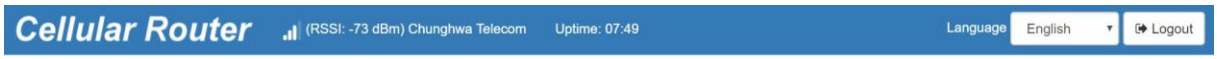
The main screen is divided into three parts as below.

A -Title Bar, B -Navigation Panel and C -Main Window.



(1) A : Title Bar

The title bar provides some useful instructions that appear the situation of router.



Title Bar	
Item	**Description**
Language	Choose your language from the drop-down list on the upper right corner of the title bar.
Login / Logout	Click to login or logout the web GUI.
?	Click to get the online manual.

(2) B : Navigation Panel-Main Menu and Sub Menu

The menu items are divided into main and sub menu to configure the settings and get the status of connectivity on the navigation panel.

Navigation Panel	
Main Menu	**Sub Menu**
Status	Device overall status
System	Time and Date, Logging, Alarm, Ethernet, Client List
WAN	Connection Table, IPv6 DNS, Health Check
Cellular	Config, SIM Config, SIM Usage, SMS, Serving Cell, DNS
LAN	IPv4, VLAN, Subnet
IPv6	IPv6 Config
IP Routing	Static Route, Policy Route

VPN	OpenVPN, IPSec, GRE, PPTP Server, L2TP
Firewall	Basic Rules, Port Forwarding, DMZ, Management IP, Service Port, IP Filter, MAC Filter, URL Filter, NAT, IPS
Service	SNMP, TR069, Dynamic DNS, MQTT, UPnP, SMTP, IP Alias, QoS
Management	Identification, Administration, Contacts / On Duty, SSH, Web, Telnet, Firmware, Configuration, Load Factory, Restart, Schedule Reboot, Fail2Ban, FOTA
Diagnosis	Ping, Traceroute, TTY2TCP

4 Web Menu Item > Status

This page shows overall status of device.

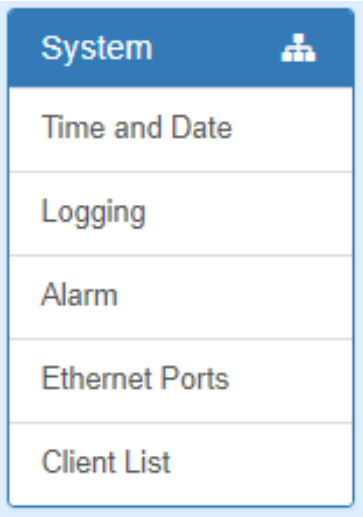
Status > SIM#1 and SIM#2	
Item	**Description**
SIM Status	The status of SIM.
Operator	The name of operator.
Modem Access	The access type between LTE module and base station.
IMSI	The IMSI number of the SIM card.
IMEI	The IMEI number of the SIM card.
ICCID	The ICCID number of the SIM card.
Phone Number	The phone number of the SIM card.
Band	The current connected band.
PLMN	The Public LAN Mobile Network ID.
Roaming	The status of Roaming.
RSSI	RSSI is measured over the entire bandwidth.
RSRP	RSRP is the received power of 1 RE average of power levels received across all Reference Signal symbols within the considered measurement frequency bandwidth

Status > SIM#1-APN/APN2 and SIM#2-APN/APN2	
Item	**Description**
IPv4 Address	The IPv4 address that assigned by operator.
IPv4 Mask	The IPv4 mask that assigned by operator.
Default Gateway	The default gateway that assigned by operator.
Connected	The status of connection. “Yes” means Connected; “No” means Disconnected.
IPv4 Conn Time	The connection time of IPv4 network.
Tx Kbps	The uplink speed in Kbps.
Rx Kbps	The downlink speed in Kbps.
Tx/Rx KBytes	The accumulated TX/RX in KBytes.
Tx/Rx Dropped Packets	The dropped packets of Tx/Rx.
IPv4 DNS Server #1/#2/#3	The DNS server address that assigned by operator.

Status > LAN Ethernet	
Item	**Description**
IPv4 Address	The IPv4 address of the M366 device.
IPv4 Mask	The IPv4 mask of the M366 device.
IPv6 Address	The IPv6 address of the M366 device.
IPv6 Prefix	The IPv6 Prefix of the M366 device.
IPv6 DNS Server #1/#2/#3	The IPv6 DNS server address.
IPv6 Conn Time	The connection time of IPv6 network.
Tx Kbps	The speed of uplink in Kbps.
Rx Kbps	The speed of downlink in Kbps.
Tx/Rx KBytes	The accumulated TX/RX in KBytes.
Tx/Rx Dropped Packets	The dropped packets of Tx/Rx .

5 Web Menu Item > System

This system section allows you to configure the following items, including Time and Date, Logging, Alarm, Ethernet Ports, and Client List.



5.1 Time and Date

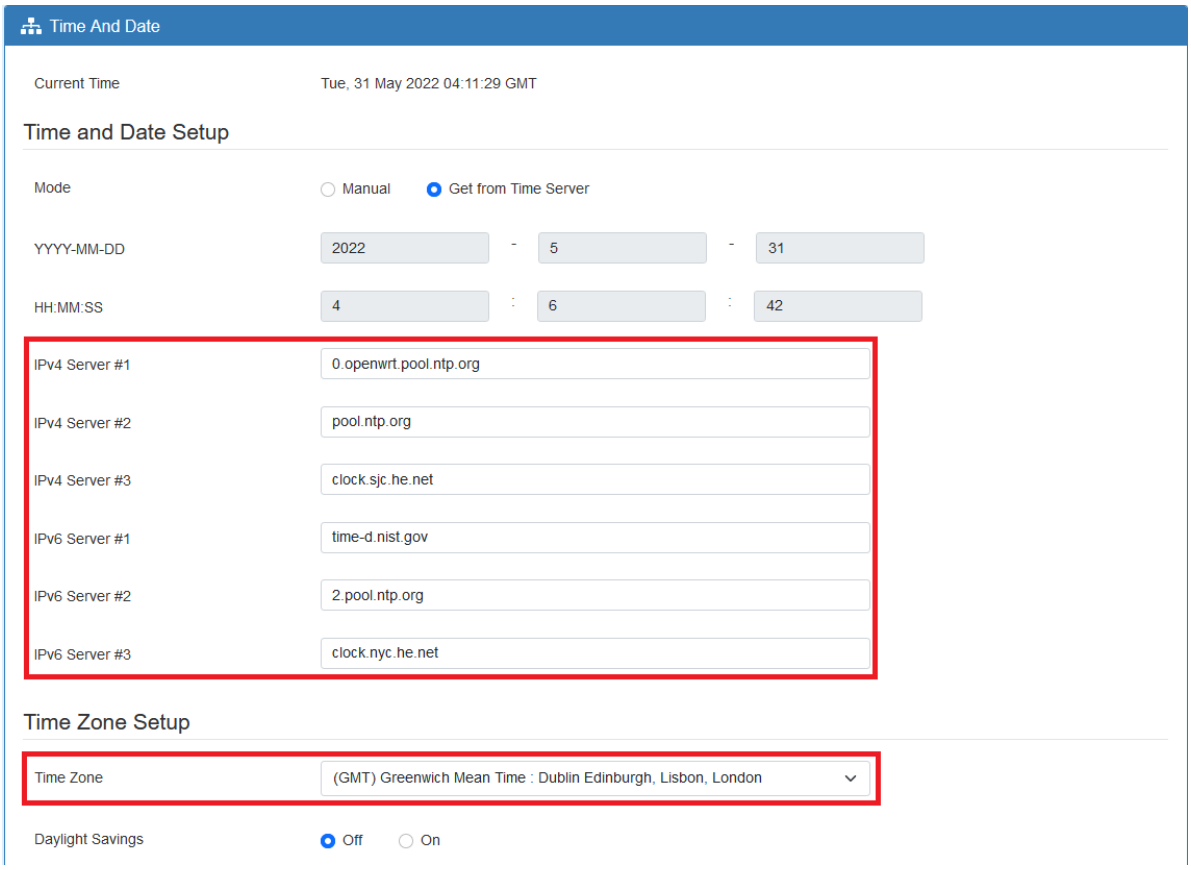
This section allows you to set up the time and date of router and NTP server. There are two modes at **Time and Date Setup**, including **Manual** and **Get from Time Server**. The default mode is **Get from Time Server**.

For **Time Zone Setup**, the **Daylight Savings Time** allows the device to forward/backward the amount of time from **Ahead of standard time** setting automatically when the time is at the **Daylight Savings** duration that you have set up before.

The **Time Server** feature allows you to set a timeserver for LAN side client to get the time through NTP/SNTP protocol.

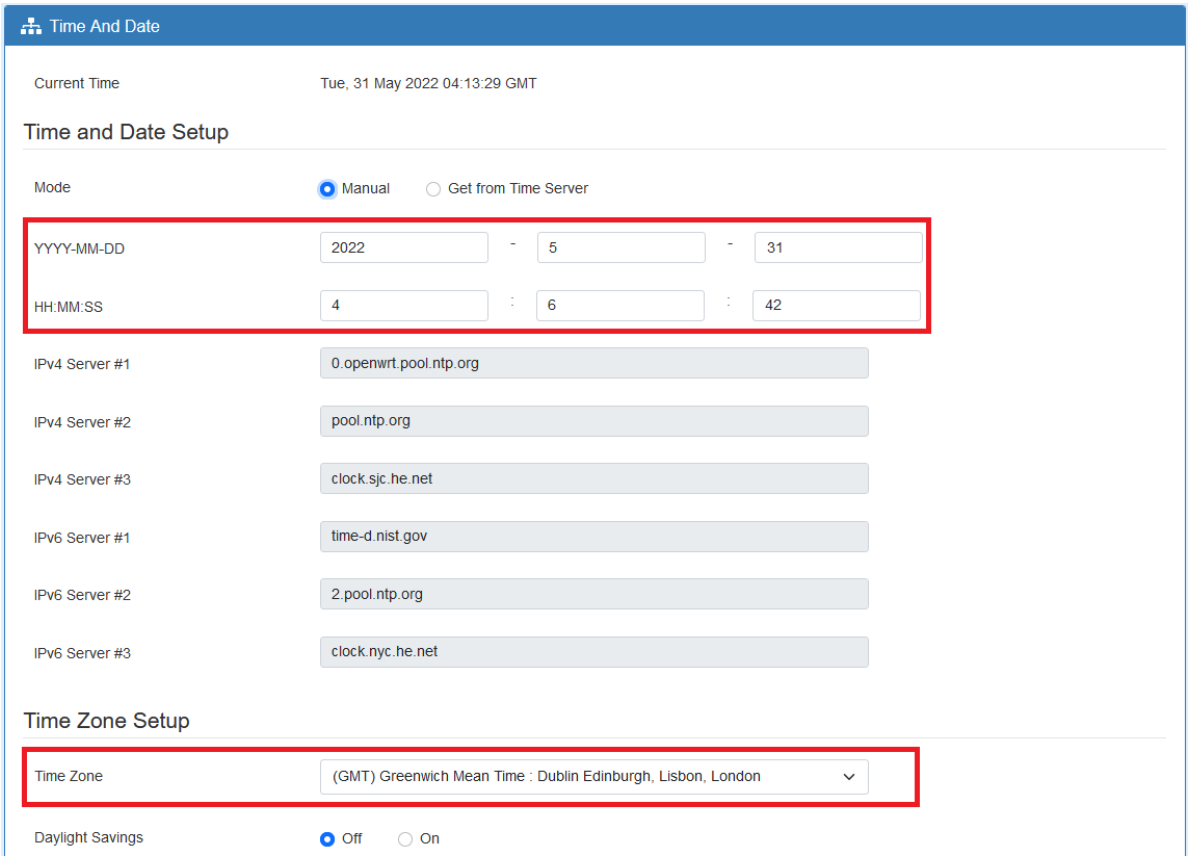
I. Get from Time Server

- Set up the time servers of IPv4 and IPv6.
- Select your local time zone.
- Click Apply to keep your configuration settings.



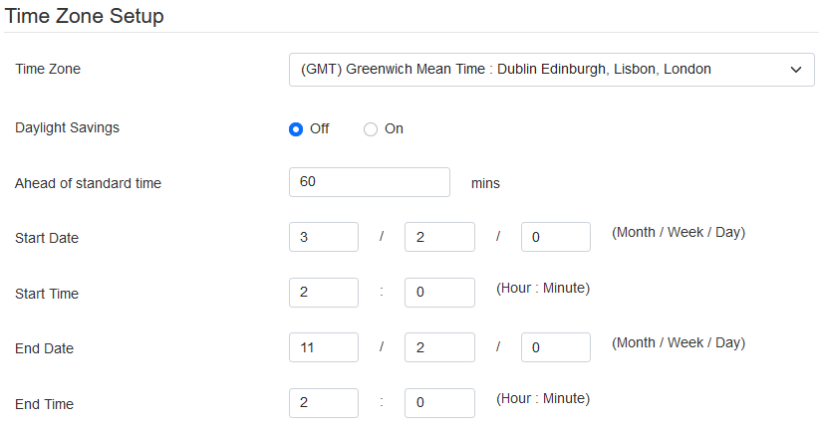
II. Manual

- Set up the information of time and date, including year, month, date, and hour, minute, and second.
- Set up your local time zone.
- Click Apply to submit your changes.



III. Time Zone Setup

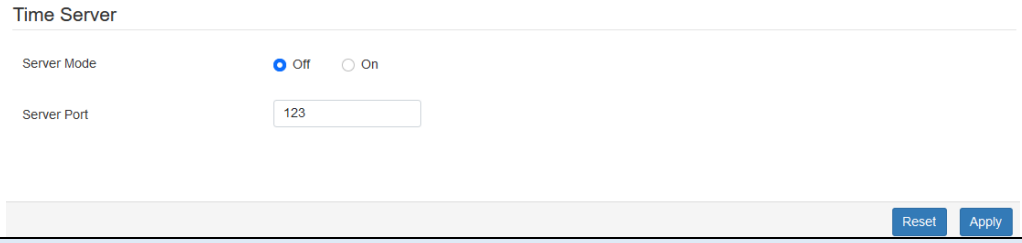
- Set up **Daylight Savings** as On.
- Set up **Ahead of standard time.**
- Set up the information of Start Date/Time, including Month, Week, Day, Hour and Minute.
- Set up the information of End Date/Time, including Month, Week, Day, Hour and Minute.
- Click Apply to submit your configuration changes.



System > Time and Date > Time Zone Setup	
Item	**Description**
Daylight Saving	Turn on / off the Daylight Savings feature. Select from Off or On. The default is Off.
Ahead of standard time	The forward / backward minutes when enter/leave Daylight Savings duration. Default is 60 mins.
Start Date/Start Time	Time to enter Daylight Savings duration. The Month range is 1~12; 1 - Jan. 2 - Feb. 3 - Mar. 4 - Apr. 5 – May 6 - Jun. 7 - Jul. 8 - Aug. 9 - Sep. 10 - Oct. 11 - Nov. 12 - Dec. The Week range is 1~5; 1 - first week in month. 2 - second week in month 3 - third week in month 4 - fourth week in month 5 - fifth week in month The Day range is 0~6; 0 - Sunday (The start day of a week) 1 - Monday 2 - Tuesday 3 - Wednesday 4 - Thursday 5 - Friday 6 - Saturday The Hour range is 0~23; The Min range is 0~59;
End Date/End Time	Time to leave Daylight Savings duration. Same with Start Date/Start Time.

IV. Time Server

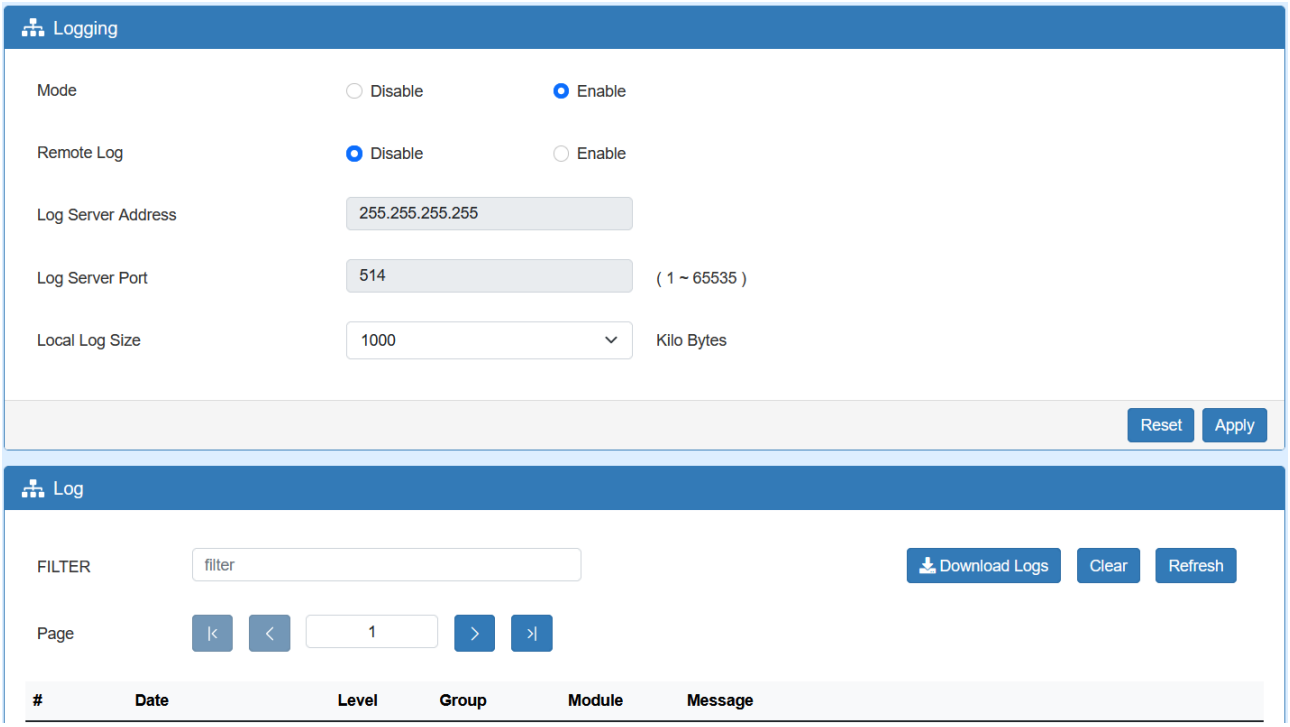
- Set up **Server Mode** as On.
- Set up **Server Port.**
- Click Apply to submit your configuration changes.



System > Time and Date > Time Server	
Item	**Description**
Server mode	Turn on/off the time server.
Server port	The UDP port listened by time server.

5.2 Logging

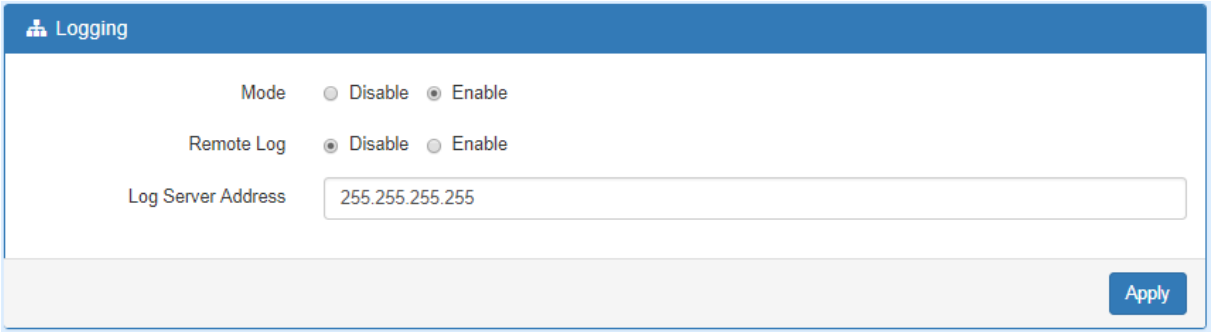
This section allows cellular router to record the data and display the status of data.



5.2.1 Logging > Logging

(1) Logging section provides you to control all logging records.

(2) Users need to select Apply to confirm your settings.



System > Logging > Logging	
Item	**Description**
Mode	Turn on / off the logging configuration. Select from Disable or Enable. The default is Enable.
Remote Log	The logging messages send to remote log or not. Select from Disable or Enable. The default is Disable.
Log Server Address	When you choose “Enable” on Remote Log, you should input IP address to save and receive all logging data. (***Note:*** This server should have installed Log software.)

5.2.2 Logging > Log

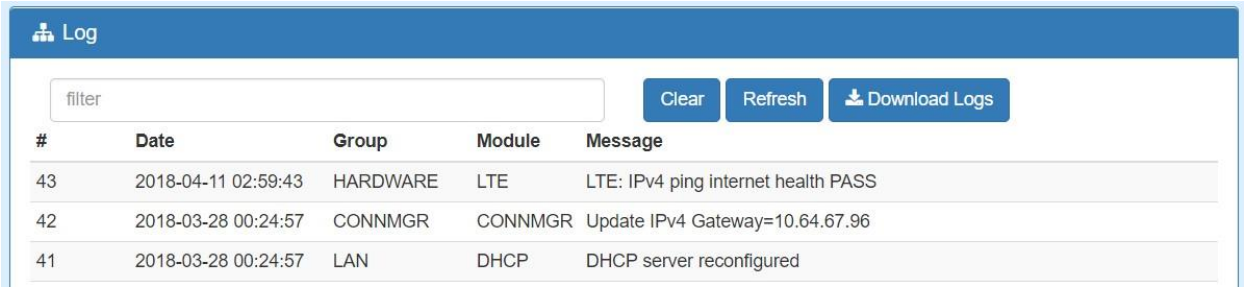
This section displays all data status.

(1) You can choose Filter function to quickly search for your data.

(2) When you click Clear, all of the data that displays on the interface will be cleared totally without any backup.

(3) When you click Refresh, the system will update and display the latest data from your cellular router.

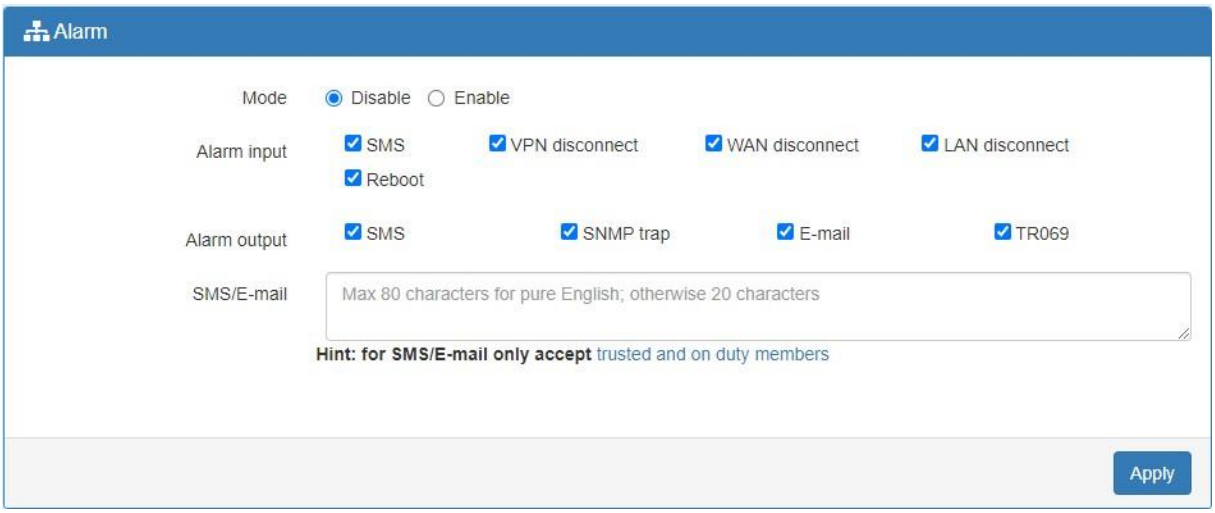
(4) When you click Download Logs, the system will download the latest data from your cellular router.



System > Logging > Log	
Item	**Description**
Filter	Filter the required data quickly.
Date	Show the date of log for each logging data.
Group	Show the group of software functions.
Module	Show the module of groups of software functions.
Message	Show the messages for each logging data.

5.3 Alarm

This section allows you to configure the alarm.



Note:

If you select SMS in Alarm input/output, you need to add the trust phone number into [Contracts/ On Duty].

If you select SNMP trap in Alarm output, you need to set up SNMP trap configuration from Service SNMP.

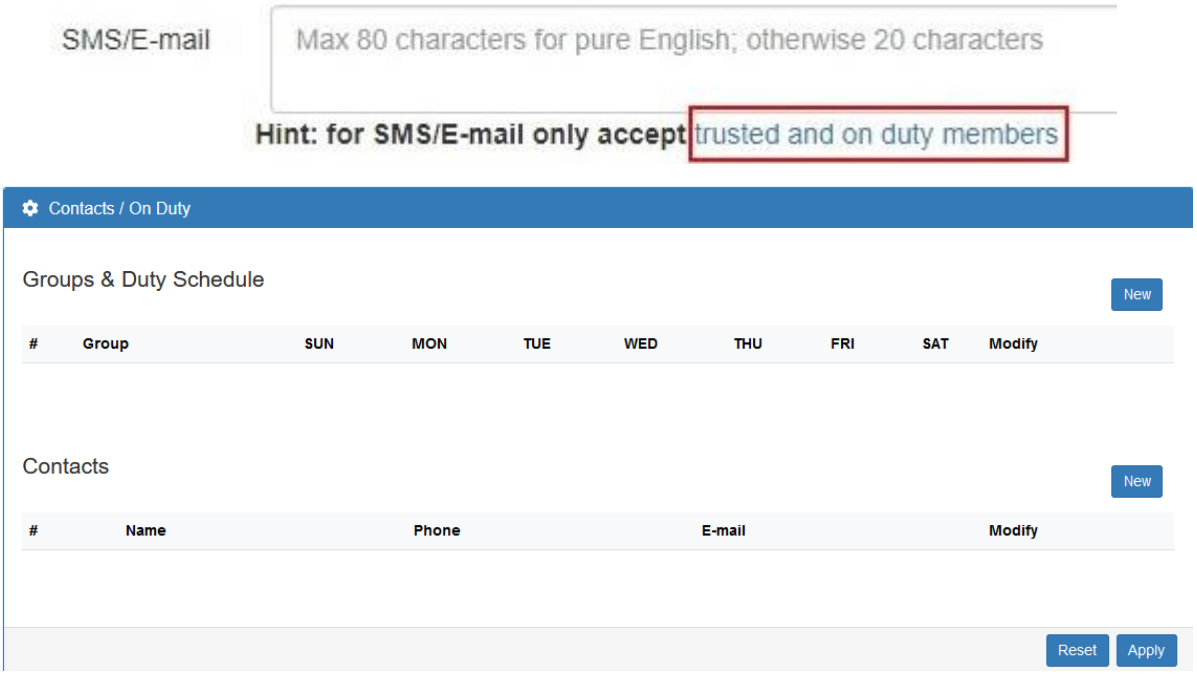
If you select E-Mail in Alarm output, you need to set up SMTP configuration from Service SMTP.

If you select TR069 in Alarm output, you need to set up TR069 configuration from Service TR069.

System > Alarm	
Item	**Description**
Mode	Turn on/off the Alarm configuration. Select from Disable or Enable. The default is Disable.
Alarm Input	● **SMS:** It means on duty team members on [Contacts / On Duty] can send SMS to the phone number of using SIM card to trigger alarm. ● **VPN disconnect:** All tunnels get disconnected then trigger alarm. ● **WAN disconnect:** All WAN connections get disconnected then trigger alarm. ● **LAN disconnect:** All LAN connections get disconnected then trigger alarm. ● **Reboot:** Reboot then trigger alarm.
Alarm Output	Select from SMS, SNMP trap, E-mail and TR069 as alarm output.
SMS / E-mail	Write your messages and the messages limit 80 pure English characters or 20 characters for other languages to deliver.

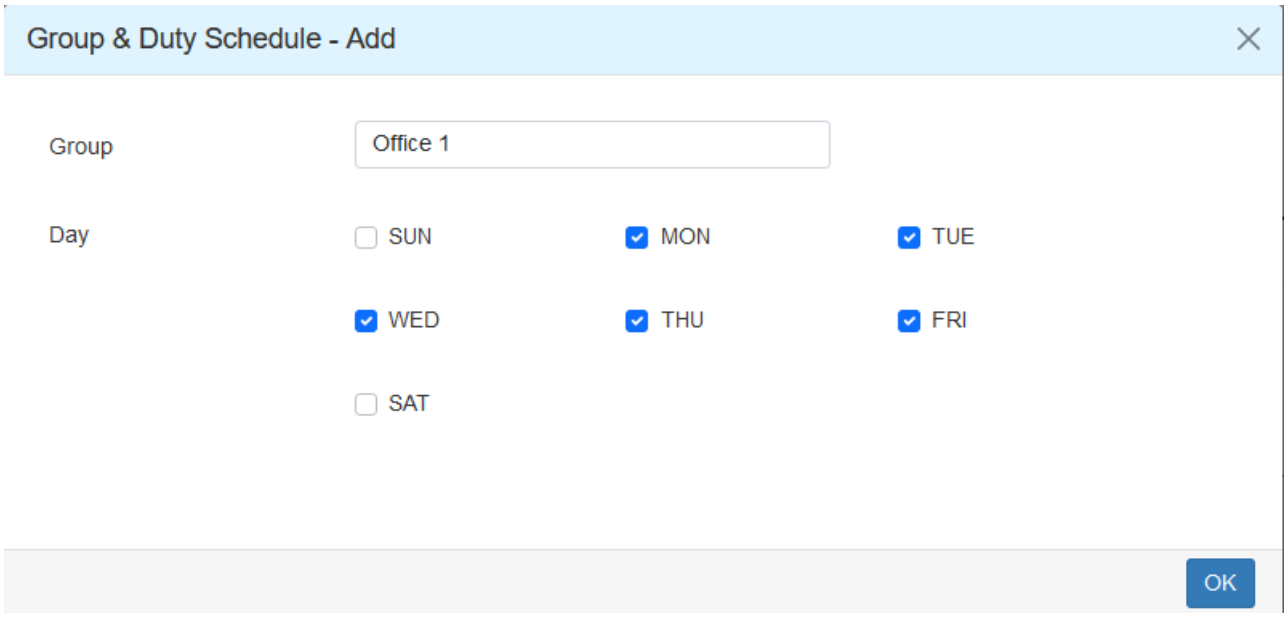
5.3.1 Alarm > Group > Create the Group

- Click **trusted and on duty members** to add trusted user who can send SMS message or receive the mail from device.



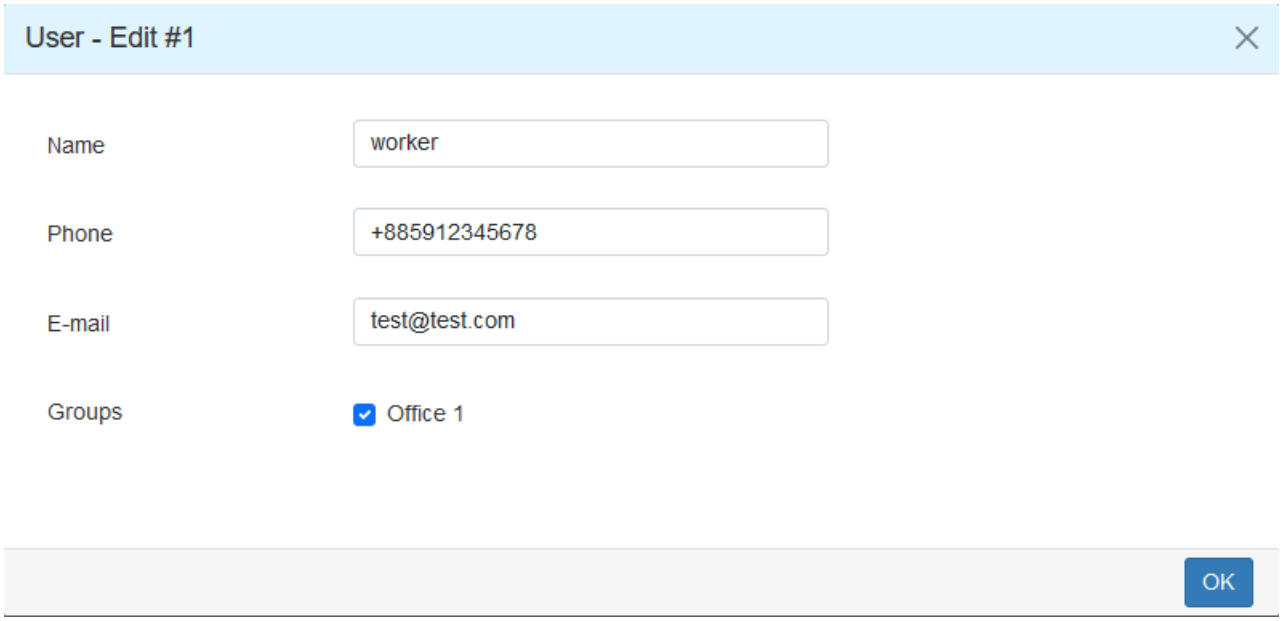
Firstly, we need to create the group and assign the duty day.

The settings below mean the user who only takes effect from Monday to Friday every week in-group “Office 1”.

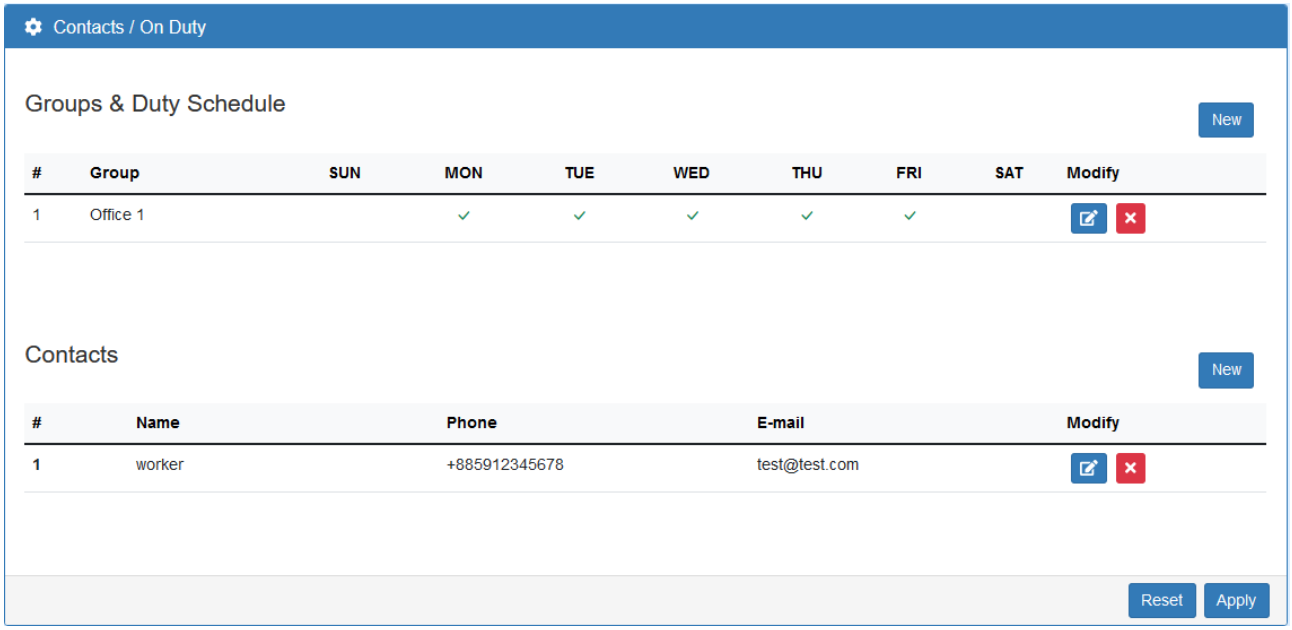


5.3.2 Alarm > Contacts > Add User

Once the group created, we need to create the new user and assign to the group we created. Device only accepts the phone number that specify here.



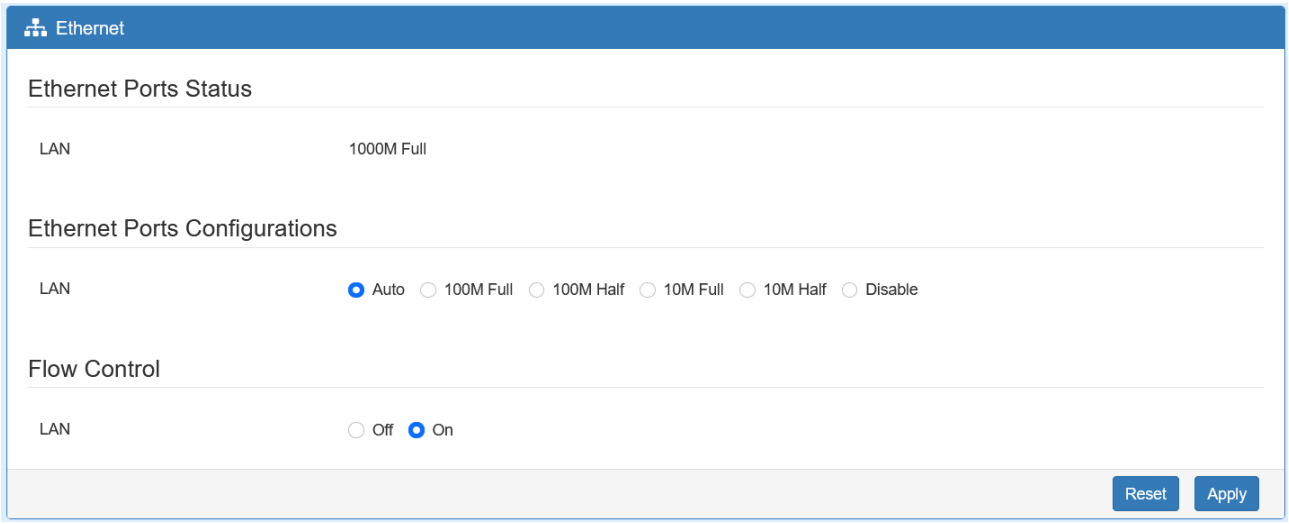
After submitting your setting, the interface returns to Group window setting. Now you can see your naming group and the user’s information that you have added.


Contacts / On Duty
Groups & Duty Schedule
New
Group SUN MON TUE WED THU FRI SAT Modify
1 Office 1
Contacts
New
Name Phone E-mail Modify
1 worker +885912345678 test@test.com
Reset
Apply

5.4 Ethernet

This section allows you to configure the Ethernet.

For **Flow Control**, it allows you to configure the Ethernet and solve unstable throughput under heavy loading. Sending 64 Bytes with bandwidth 100M bps traffic to LAN and WAN at the same time, the throughput may drop to zero at either side. When the system is very busy or buffer is exhausted, the flow control packet will be sent out to indicate the link party that it should stop to send the packet to system. The flow control packet will be sent out again once the system goes back to normal to indicate the link party that it can send packet again.



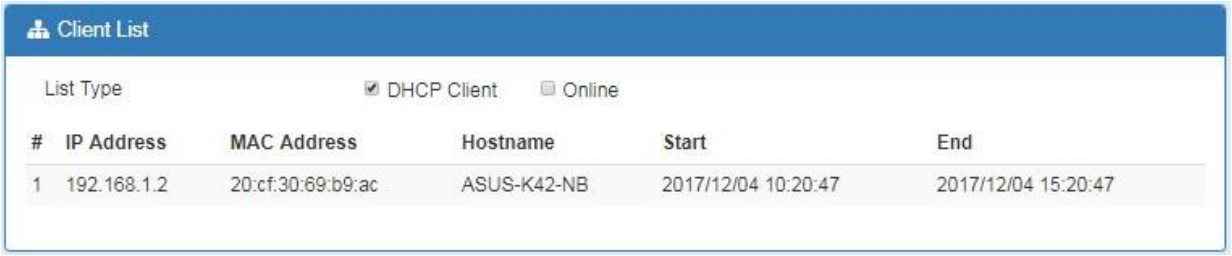
Note: The LAN port of Ethernet has different layout based on which router model you use.

System > Ethernet Ports	
Item	**Description**
Ethernet Ports Status	Show the connectivity status of LAN and WAN.
Ethernet Ports Configurations	Select from Auto, 100M Full, 100M Half, 10M Full, 10M Half and Disable.
Flow Control	Allow user to control the traffic ingress from Ethernet LAN or WAN.

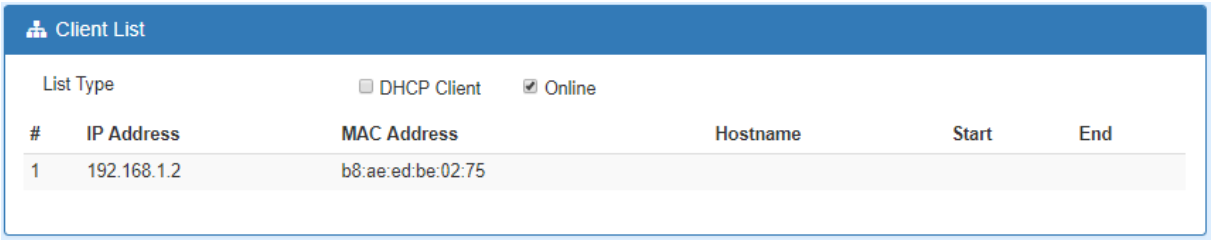
5.5 Client List

This section allows you to understand how many devices have been connected and their status from the router. There are two types, one is **DHCP Client** and the other is **Online**. The default is both types to show all status when the router is on DHCP Client and Online.

For **DHCP Client** type, the information shows IP address, MAC address, Hostname and the expiry time of IP (Start/End).



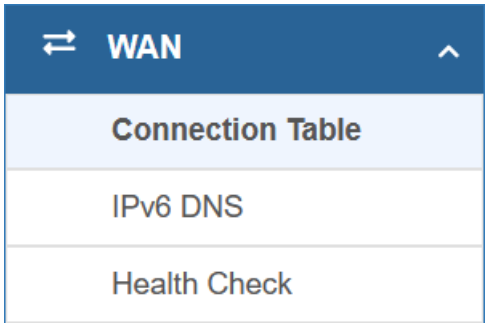
For **Online** type, the information shows IP address and MAC address when the client is online.



System > Client List	
Item	**Description**
List Type	● **DHCP Client:** List all clients' information when it is via DHCP. ● **Online:** List the information when it is online.

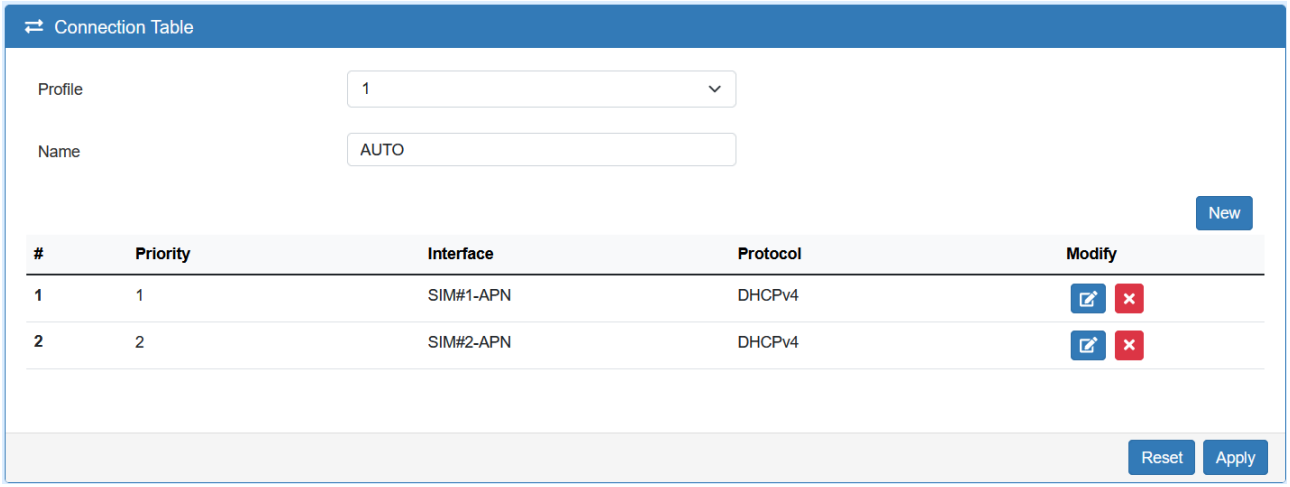
6 Web Menu Item > WAN

This section allows you to configure WAN, including Connection Table, IPv6 DNS, Health Check.



6.1 Connection Table

This section allows to configure the priority for each APN and SIM slot.

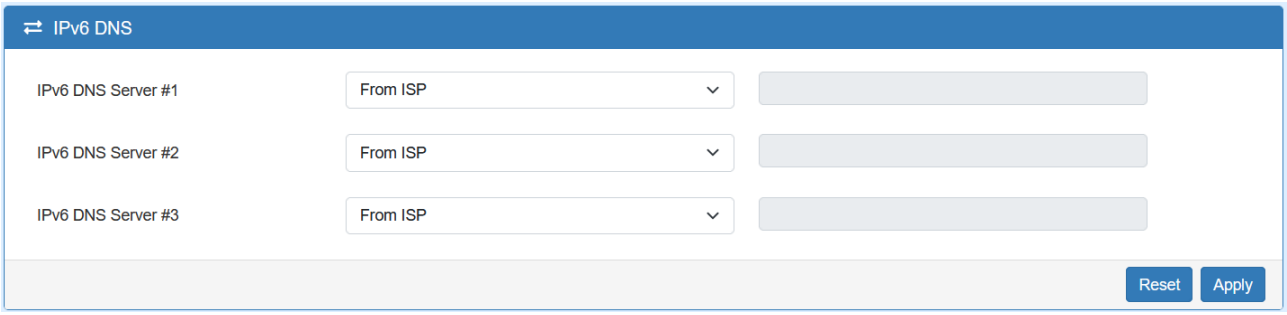


WAN > Connection Table	
Item	**Description**
Profile	Profile number. There are 3 profiles allow to set in advance.
Name	Name for profile
Priority	Interface priority for fail over operation. Only the highest priority interface is working. The other one is standby interface.

6.2 IPv6 DNS

This section allows you to set up IPv6 DNS Server Configuration.

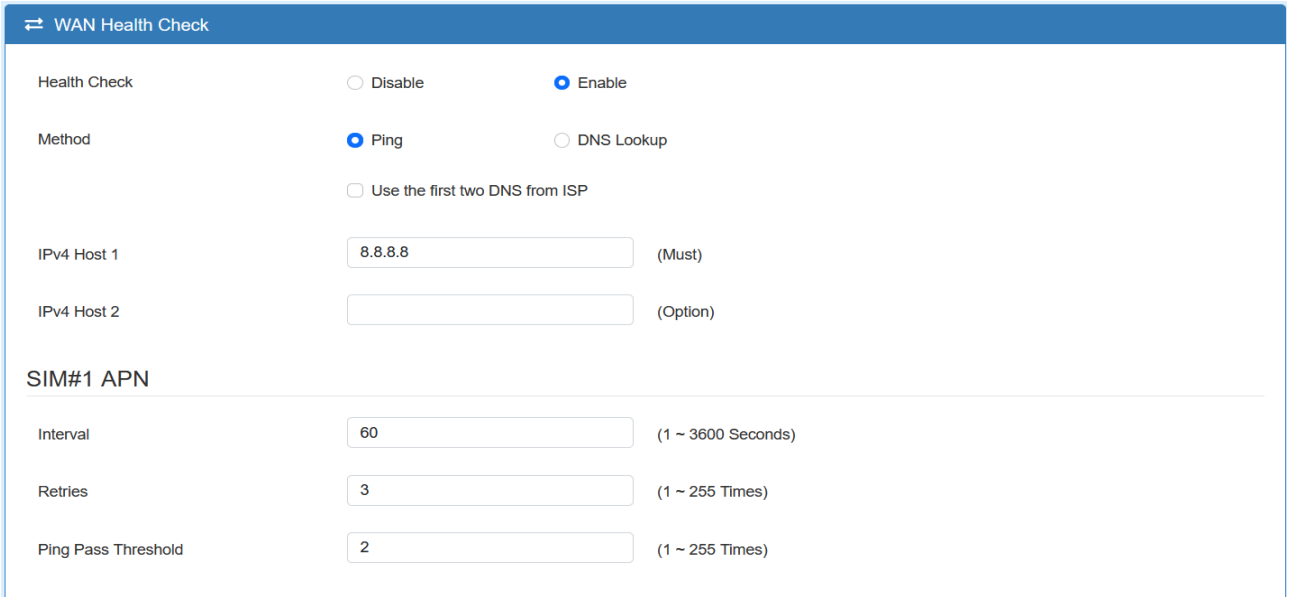
For IPv6 DNS Server, it provides three options to set up and each option has provided with “From ISP”, “User Defined” and “None” to configure.



WAN > IPv6 DNS	
Item	**Description**
IPv6 DNS Server #1 IPv6 DNS Server #2 IPv6 DNS Server #3	Each setting DNS Server has three options, including From ISP, User Defined and None. When you select From ISP, the IPv6 DNS server IP will assign by ISP. When you select User Defined, the IPv6 DNS server IP is enter by user self.

6.3 Health Check

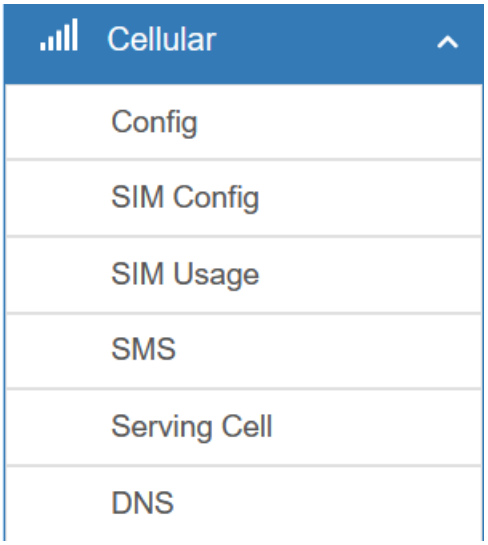
This section allows to configure the WAN healthy check for failover function between different APN and SIM slot.



WAN > Health Check	
Item	**Description**
Health Check	● Select from Disable or Enable. The default is Enable. ● When Disable is chosen, the connection will NOT be treated as down of IP routing error.
Method	This setting specifies the health check method for the WAN connection. This Value can be PING, DNS Lookup. The default is Ping. DNS Lookup: Connections will be considered as up if DNS responses are received from any one of the health check DNS servers, regardless of a positive or negative result.
Use the first two DNS from ISP	● If this setting is checked, the first two DNS from ISP will be DNS lookup targets for checking a connection health. ● If this setting is not checked, Host 1 must be filled, while a value for Host 2 is optional.
IPv4 Host 1	Input the address of IPv4 Host 1.
IPv4 Host 2	Input the address of IPv4 Host 2. This field is optional.
Interval	Set the interval time to ping WAN Ethernet. The interval is from 1 to 60 seconds.
Retries	Retry time for the check.
Ping Pass Threshold	The threshold value of successful check to think WAN interface is OK.

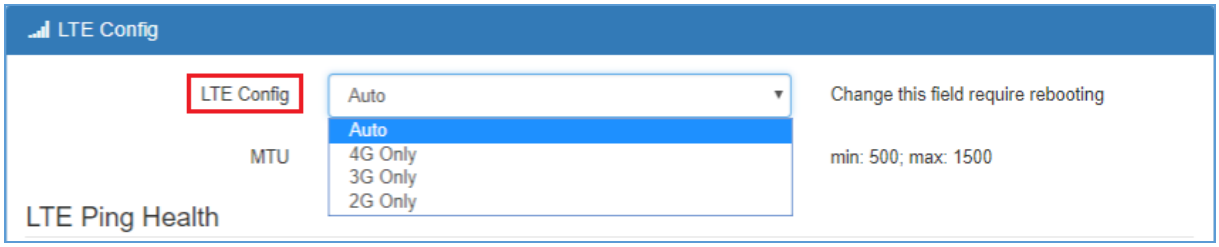
7 Configuration > Cellular

This section allows you to configure LTE Config, Dual APN, APN1 Usage, APN2 Usage, SMS, Serving Cell, and DNS.



7.1 Config

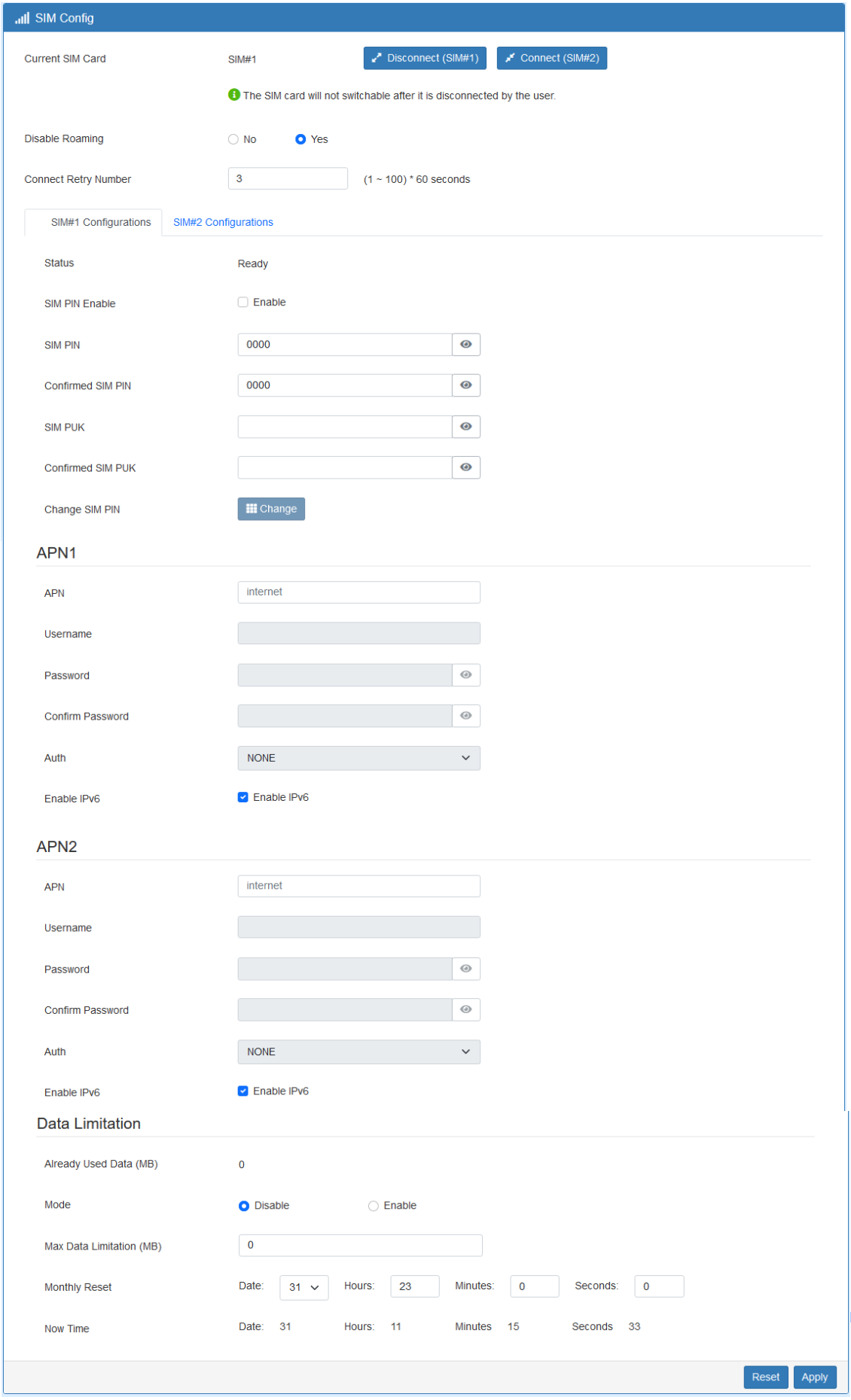
This page allows to setup cellular net mode and MTU size.



Cellular > Config	
Item	**Description**
Net Mode	Auto: Automatically connect the possible band. 4G Only: Connect to 4G network only. 3G Only: Connect to 3G network only. 2G Only: Connect to 2G network only.
MTU	MTU is the Maximum Transmission Unit that can send over the cellular interface. It allows user to adjust the MTU size to fit into their existing network environment.

7.2 SIM Config

This section allows to setup configuration for the SIM card.

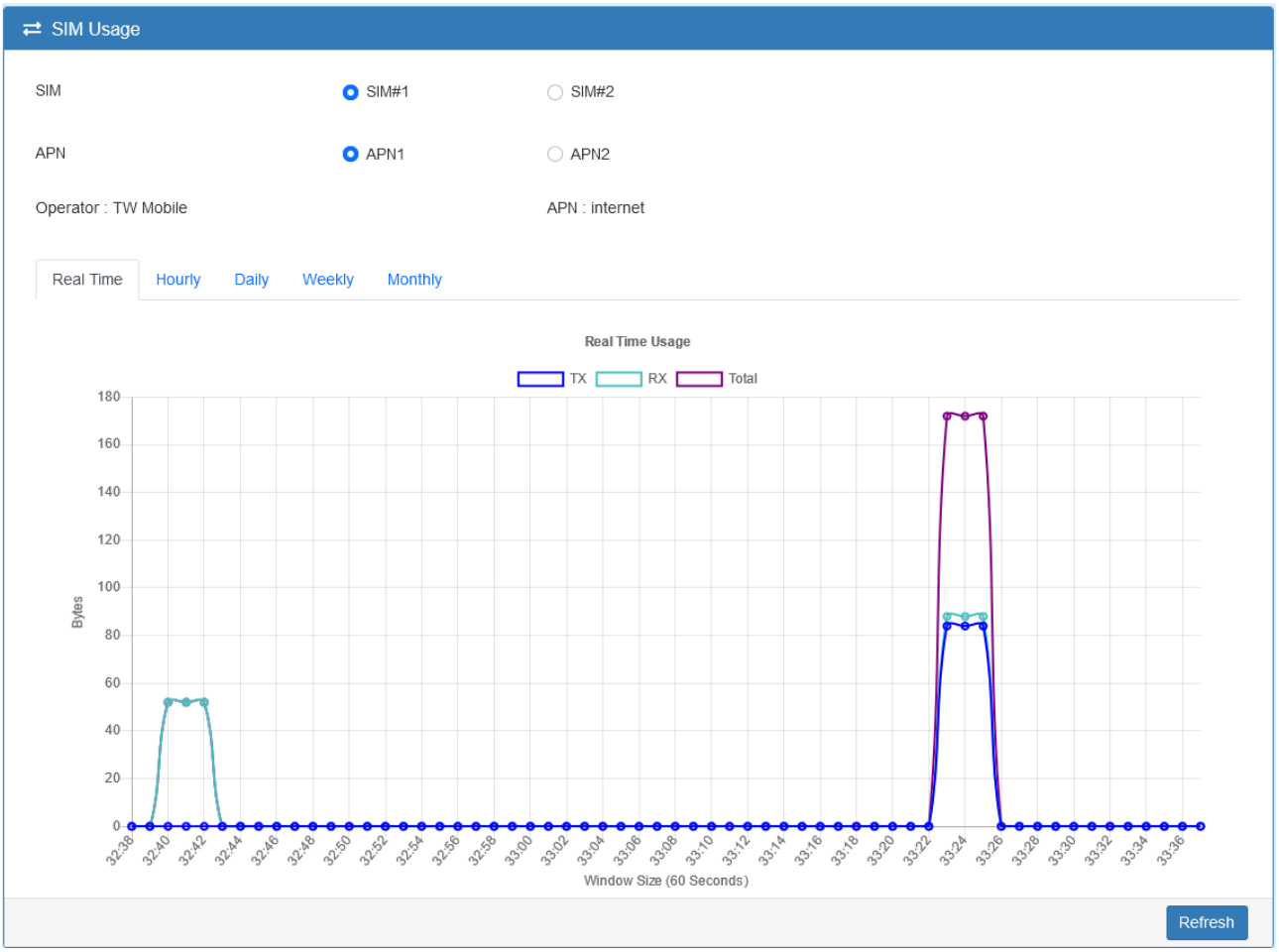


Cellular > SIM Config	
Item	**Description**
Current SIM Card	It shows the current used SIM card. ● **Disconnect:** When getting connection, the Disconnect button appear. After manually click Disconnect, the system would not automatically get connection until next reboot. ● **Connect:** After manually disconnect, it will show Connect button. Click to get connection or reboot the device to make it automatically connect.
Disable Roaming	● **No:** Enable the roaming function. ● **Yes:** Disable the roaming function.
Connect Retry Number	The number of attempts to connect to the network. The interval between each attempt is 60 seconds.
SIM#1 & SIM#2 Configurations	
Status	Display the status of SIM Card.
SIM PIN Enable	● Enable to display SIM PIN setting. ● Disable to hide SIM PIN setting.
SIM PIN	A password personal identification number (PIN) for ordinary use to protect your SIM card.
Confirm SIM PIN	Double confirm SIM PIN password.
SIM PUK	If user input the wrong SIM PIN more than 3 times, the user needs another password personal unblocking code (PUK) for PIN unlocking. Please check your operator for forgotten PUK number.
Confirm SIM PUK	Double confirm SIM PUK.
Change SIM PIN	If you want to change SIM PIN code, you can click Change button and type old SIM PIN code and new SIM PIN code. Please aware not to exceed the retry number (PIN remaining number and PUN remaining number).
Old PIN	Please input the current SIM PIN code.
New PIN	Please input the newly update SIM PIN.
PIN remaining number	Display the allowed remaining PIN retry number.
PUK remaining number	Display the allowed remaining PUK retry number.
APN1 / APN2	
APN	The Access Point Name (APN) is the name of the setting that set up a connection to the gateway between your carrier's cellular network and the public Internet. Leaving it empty will search internally database automatically by SIM card for connection.
Username	Username for authentication. The username can be input by user or the

	system will search from internal database if the APN setting is empty.
Password	Password for authentication. The password can be input by user or the system will search from internal database if the APN setting is empty.
Confirm Password	Double confirm password.
Auth	Select the authentication method (None/PAP/CHAP).
Enable IPv6	If IPv6 is not selected, then only pure IPv4 connection.
Data Limitation	
Already Used Data (MB)	Display current used Data since last reset.
Mode	Turn on/off the Data Limitation to disable or enable.
Max Data Limitation (MB)	Configure maximum Data Limitation.
Monthly Reset	Set up the reset time during the month.
Now Time	Show the current time of system.

7.3 SIM Usage

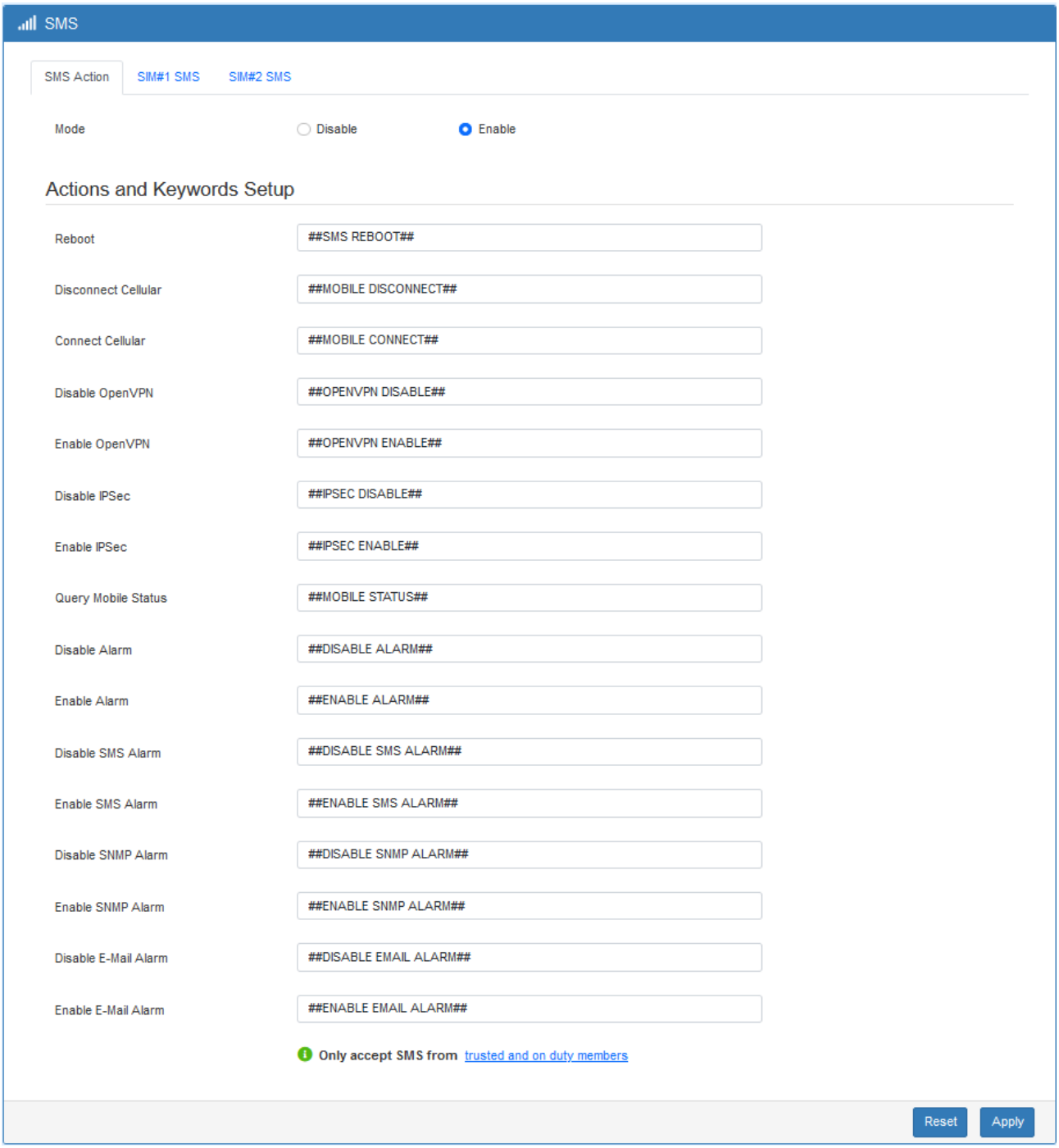
This section shows the status of **current SIM card**, **operator**, **APN** and the charts for **Real Time**, **Hourly**, **Daily**, **Weekly**, and **Monthly**.


SIM Usage
SIM
SIM#1
SIM#2
APN
APN1
APN2
Operator : TW Mobile
APN : internet
Real Time
Hourly
Daily
Weekly
Monthly
Real Time Usage
TX
RX
Total
Bytes
Window Size (60 Seconds)
Refresh

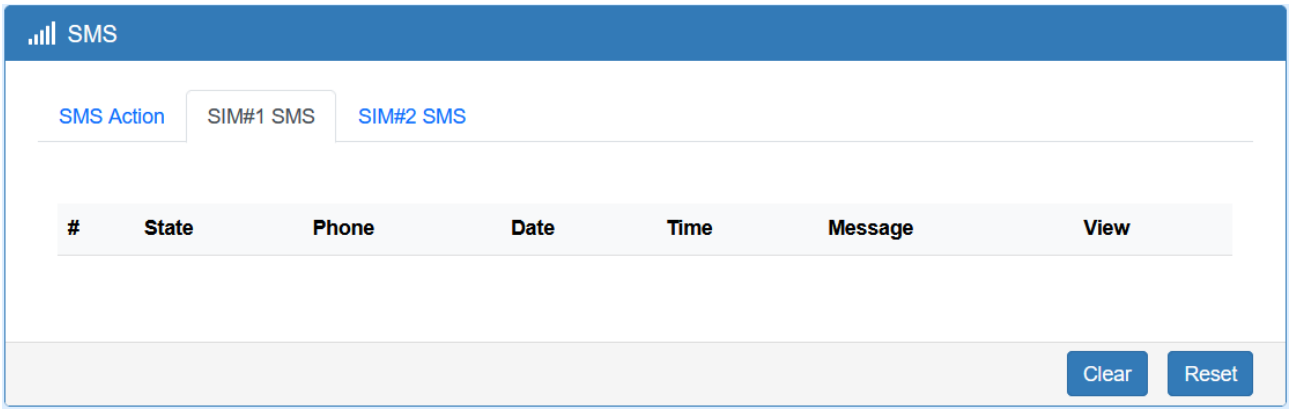
7.4 SMS

This section provides two settings, one is **SMS Action**, and the other is **View SMS**.

(1) When enabling **SMS Action**, it allows trust phone numbers which in [Contacts/On Duty] list by sending key words SMS to trigger device setting/action/query status.

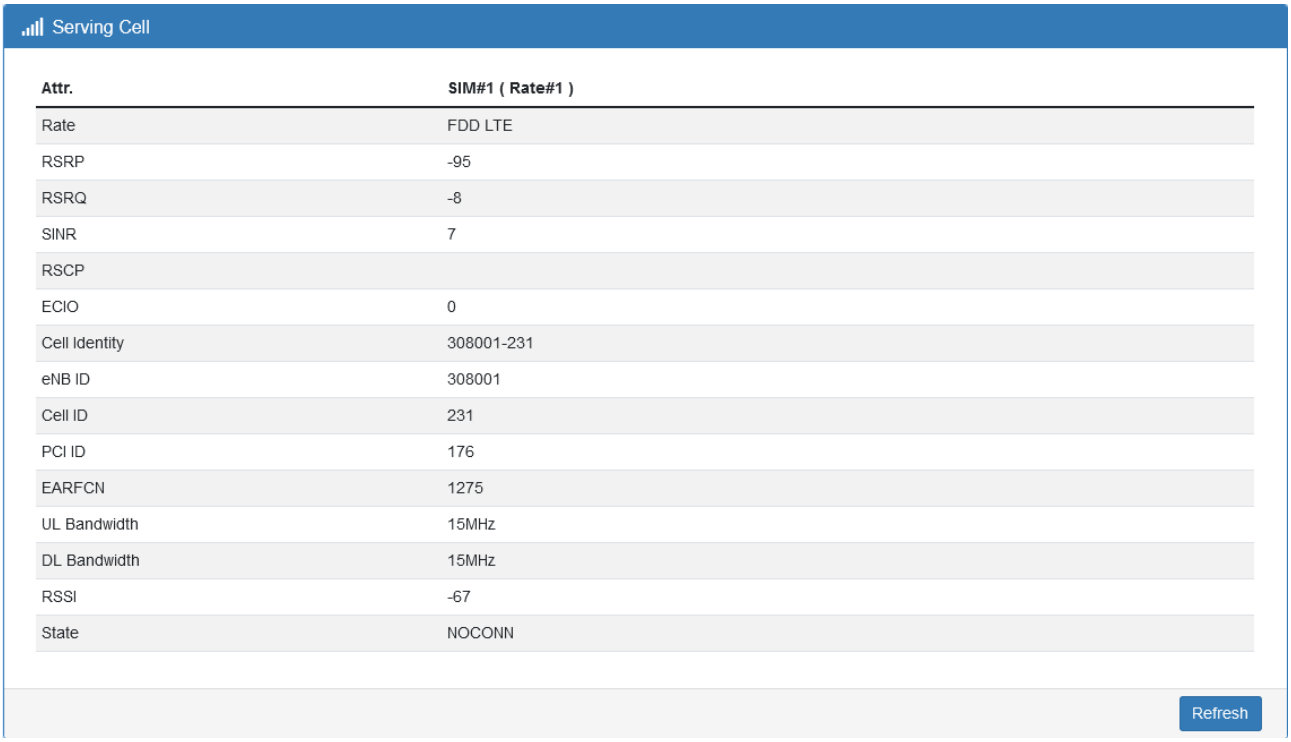


(2) **SIM#1 and SIM#2 SMS** allows you to review the information of SMS that you have received, including the state, phone, date and time. You can click  button to view the whole message, click Refresh button to reload the messages, or click Clear button to remove all read messages.



7.5 Serving Cell

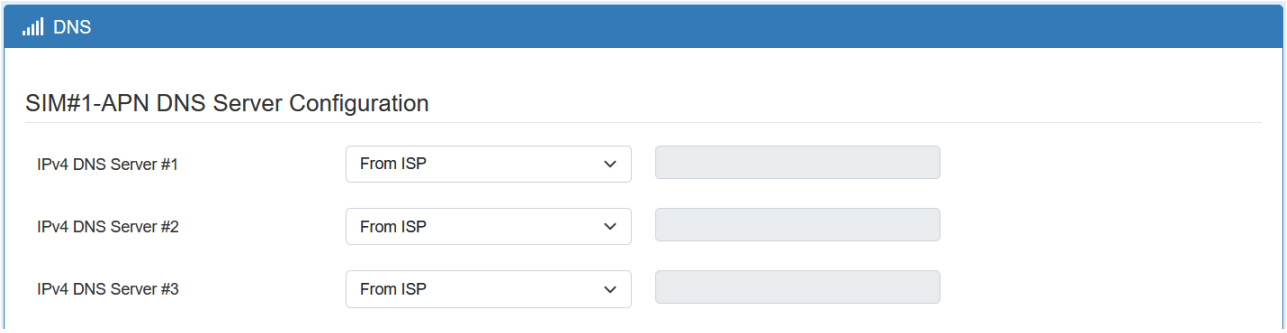
This section displays the information of Serving Cell, including the following items.



Attr.	SIM#1 (Rate#1)
Rate	FDD LTE
RSRP	-95
RSRQ	-8
SINR	7
RSCP	
ECIO	0
Cell Identity	308001-231
eNB ID	308001
Cell ID	231
PCI ID	176
EARFCN	1275
UL Bandwidth	15MHz
DL Bandwidth	15MHz
RSSI	-67
State	NOCONN

7.6 DNS

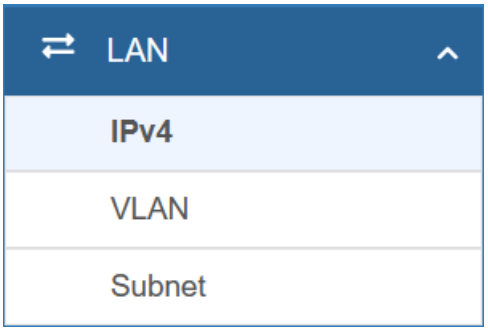
This section allows you to set specific DNS server setting.



Cellular > DNS	
Item	**Description**
IPv4 DNS Server #1 IPv4 DNS Server #2 IPv4 DNS Server #3	There are three options, including From ISP, User Defined and None. When you select From ISP, the IPv4 DNS server IP will assign from ISP. When you select User Defined, the IPv4 DNS server IP is enter by user self.

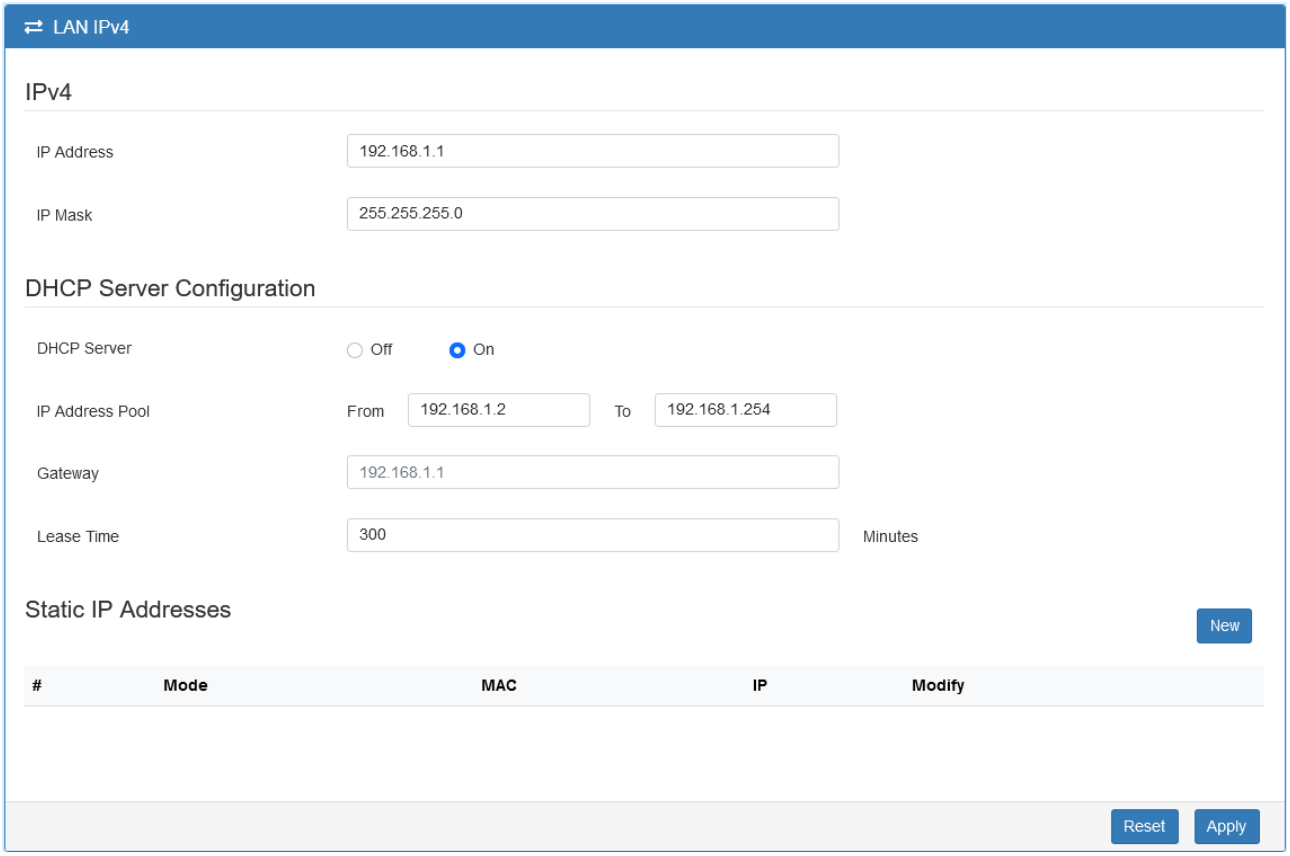
8 Web Menu Item > LAN

This section allows you to configure LAN IPv4, LAN IPv6, VLAN and Subnet.



8.1 IPv4

Set up your IP Address and IP Mask. Also, fill in the information of DHCP Server Configuration.



LAN > IPv4	
Item	**Description**
LAN IPv4	IP Address:192.168.1.1 IP Mask:255.255.255.0 Both of them are default, you can change them according to your local IP Address and IP Mask.
DHCP Server Configuration	Turn on/off DHCP Server Configuration. Enable to make router can lease IP address to DHCP clients, which connect to LAN.
IP Address Pool	Define the beginning and the end of the pool of IP addresses, which will lease to DHCP clients.
Gateway	Define the gateway IP address that will assign to DHCP clients.
Lease Time	Define the lease time for DHCP clients.
Static IP Addresses	DHCP server support static IP address assignment. The static IP address can add by clicking the **New** button. Each static IP consist of mode (on/off), MAC and IP address. Mode: Turn on/off the static IP address. MAC: The MAC address of target host or PC. IP: The desired IP address for target host or PC.

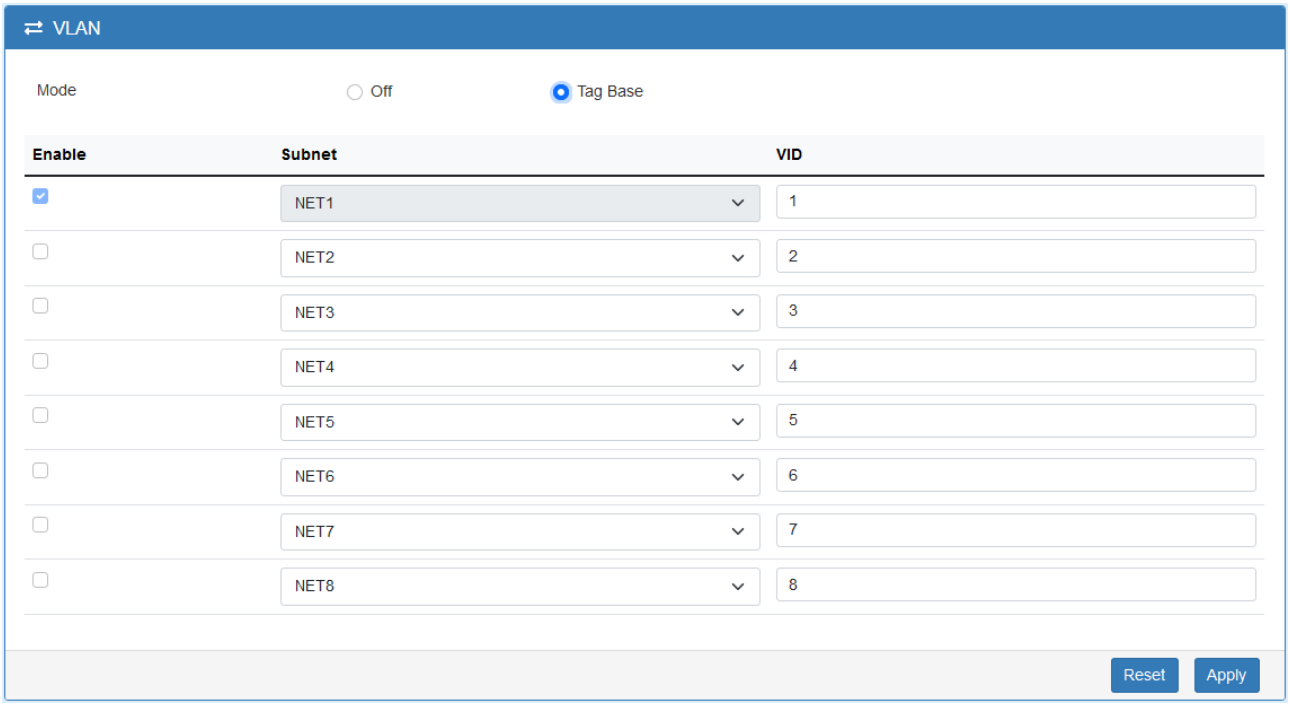
8.2 VLAN

This section allows you to set up VLAN that provides a network segmentation system to distinguish the LAN clients and separate them into different LAN subnet for enhancing security and controlling traffic.

When VLAN Mode sets to **Tag Base**, the VLAN setting window will appear.

For each row, the settings can be enabled or disabled by checkbox and select the Subnet and the VLAN ID (VID). The Subnet sets up the IP address and IP mask for the router so this router can communicate with the third party by this IP address and IP mask on this VLAN.

(***Note:*** The NET1 cannot remove it and fixes in the first row.)



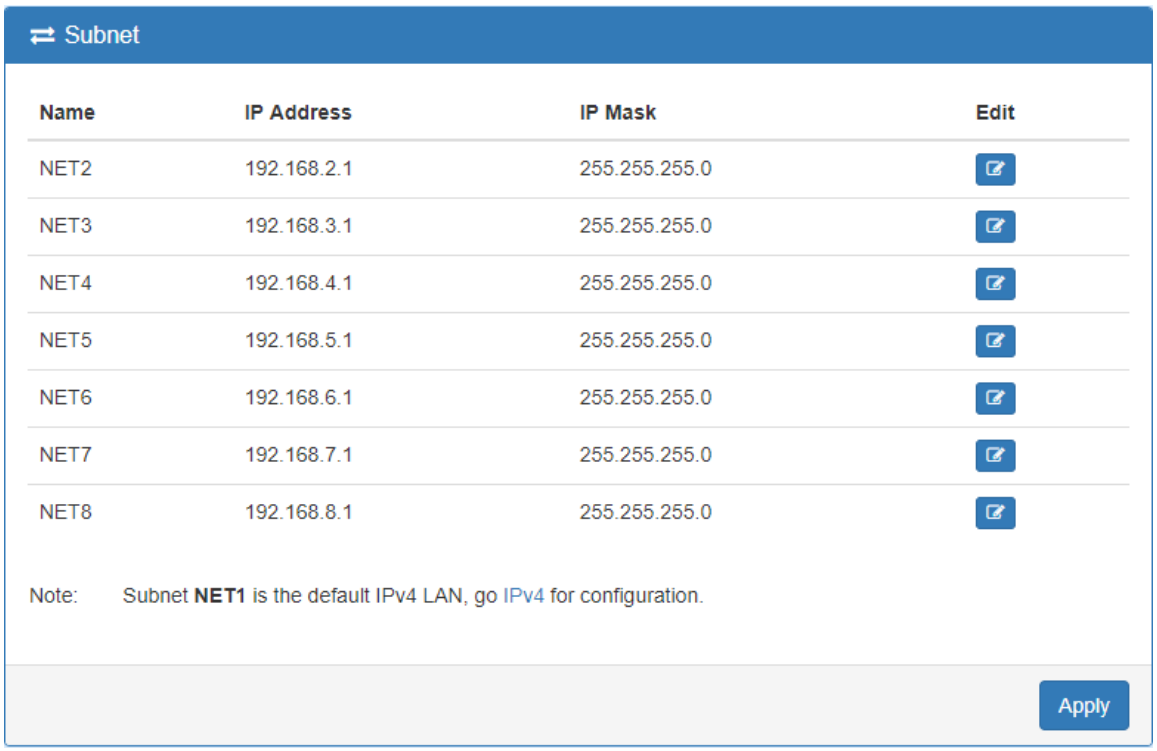
LAN > VLAN	
Item	**Description**
Mode	There are Off and Tag Base modes of VLAN for choosing.
Enable	Enable or disable the selected entry.
Subnet	The subnet provides IP address and IP mask for the router.
VID	The VLAN ID range is from 1 to 4094.

Furthermore, the **Subnet** provides DHCP Server function to allow the third party for the same VLAN to get IP address and IP mask. Therefore, you do not need to configure manually.

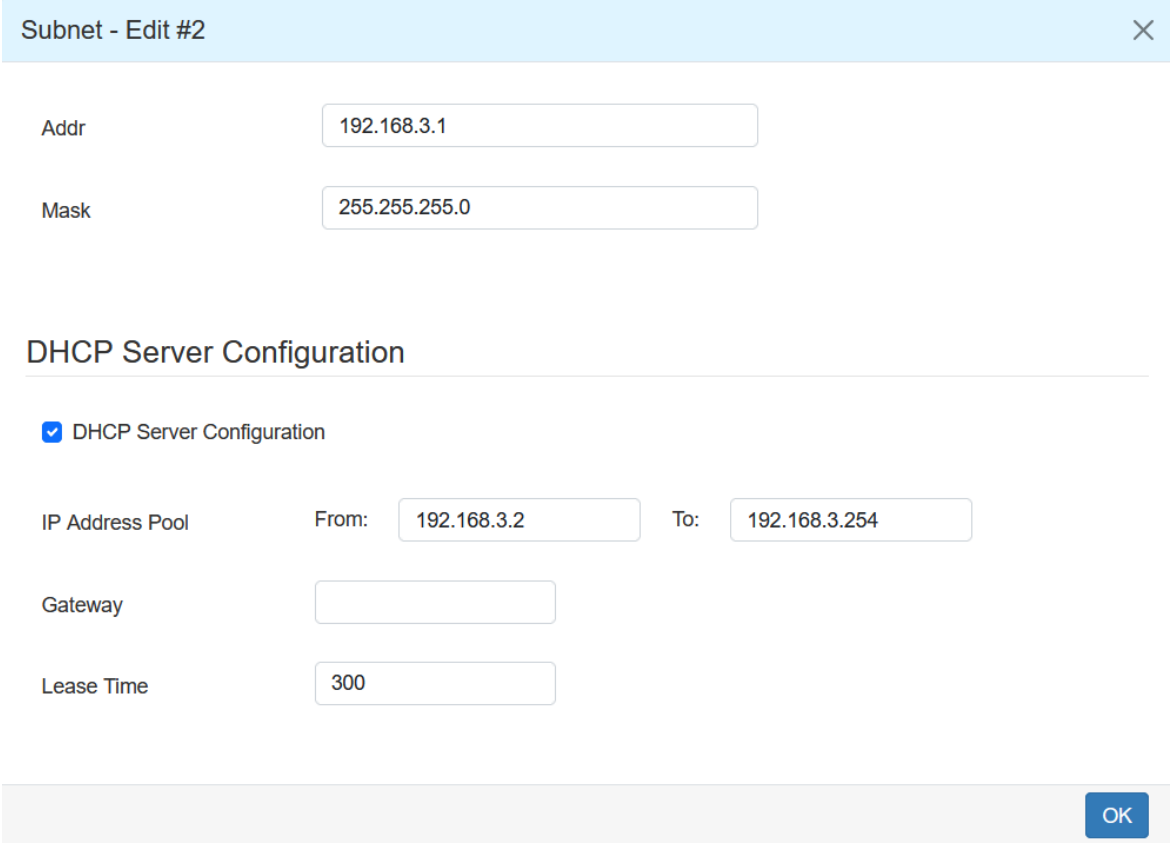
(***Note:*** The subnet information will show the Subnet window from the LAN catalogue.)

8.3 LAN > Subnet

This section allows you to get the information of IP Address and IP Mask and edit for the VLAN Subnets from DHCP Server Configuration.



Click Edit button, the edit interface will show and you can configure Subnet setting. The **Subnet** setting to enable the function is the same with **LAN > IPv4**.

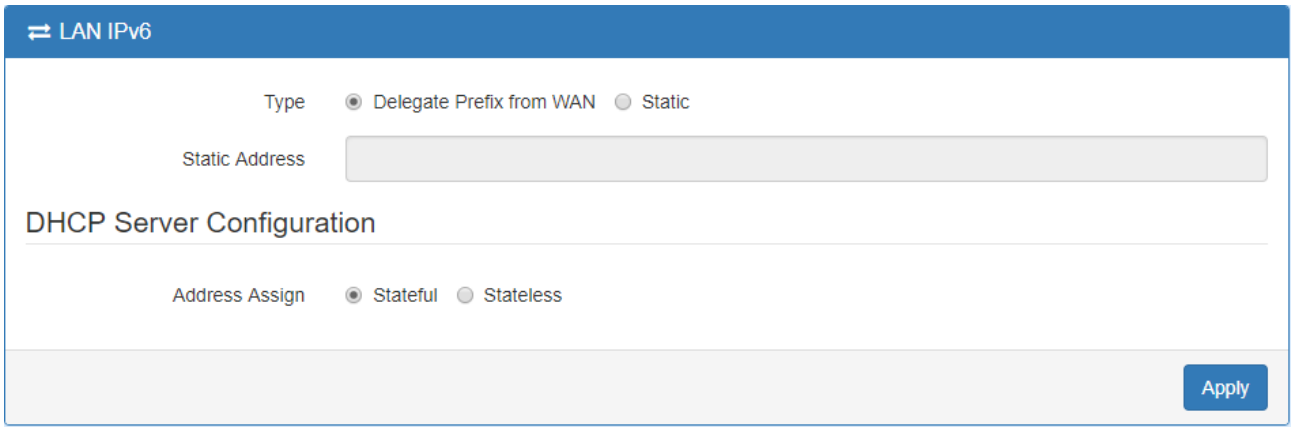


9 Web Menu Item > IPv6

This section allows you to configure the LAN IPv6.

9.1 IPv6

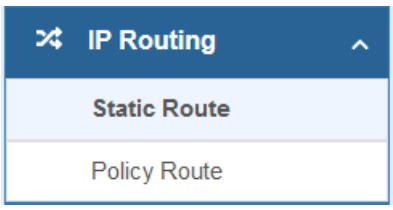
Select your type of IPv6, which shows **Delegate Prefix from WAN** or **Static,** and then set up DHCP Server Configuration.



LAN > IPv6	
Item	**Description**
Type	• **Delegate Prefix from WAN** Select this option to obtain an IPv6 network prefix automatically from the service provider or an uplink router. • **Static** Select this option to configure a fixed IPv6 address for the cellular router's LAN IPv6 address.
Static Address	You need to input the static address when you select the static type.
DHCP Server Configuration	
Address Assign	Select how you obtain an IPv6 address. • **Stateless:** The cellular router uses IPv6 stateless auto configuration. RADVD (Router Advertisement Daemon) is enable to have the cellular router send IPv6 prefix information in router advertisements periodically and in response to router solicitations. • **Stateful**: The cellular router uses IPv6 stateful auto configuration. The LAN IPv6 clients can obtain IPv6 addresses through DHCPv6.

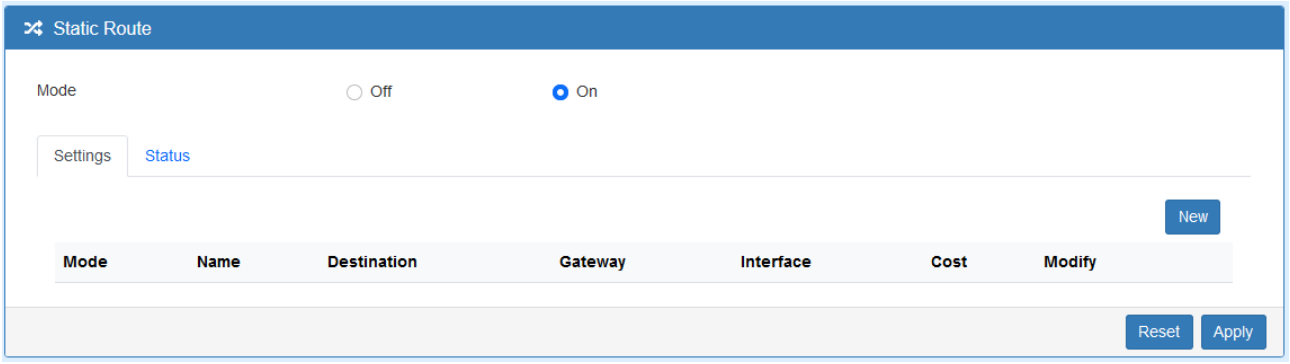
10 Web Menu Item > IP Routing

This section allows you to configure the Default Gateway, Static Route, and BGP.

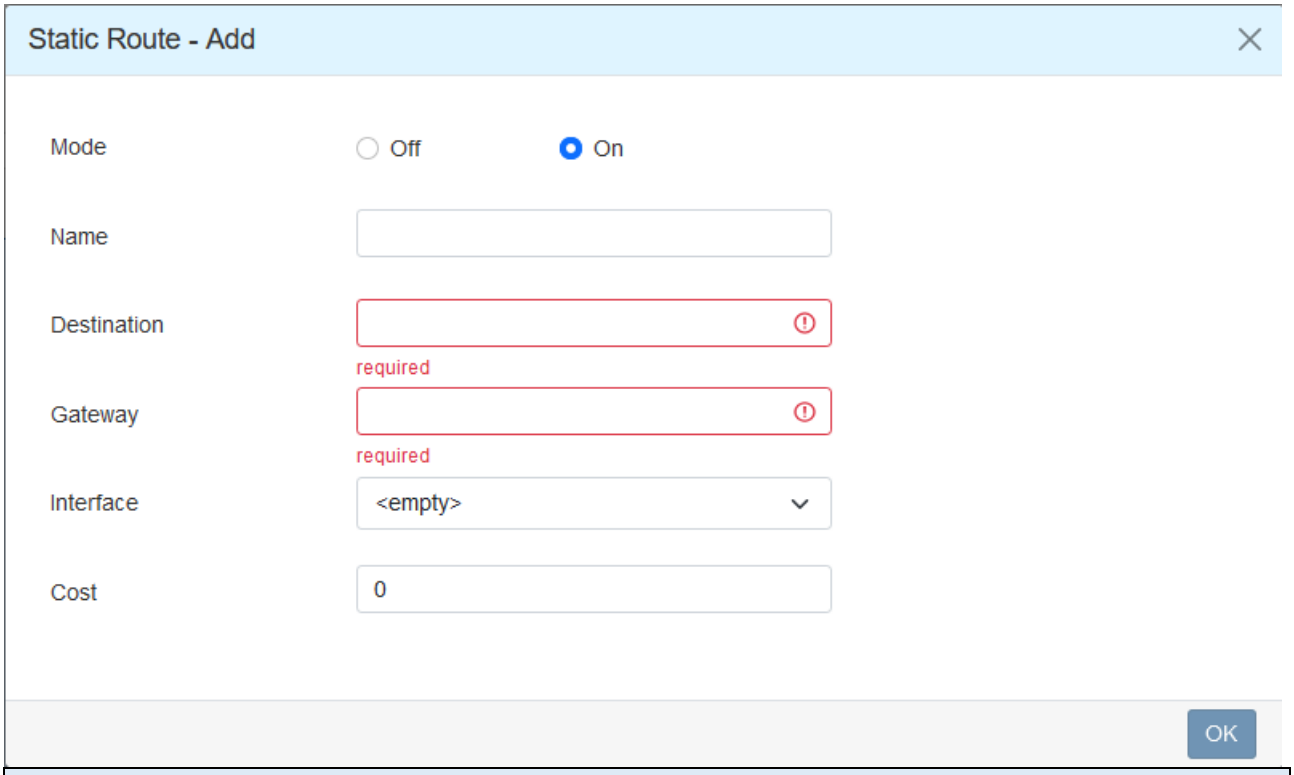


10.1 Static Route

This section allows you to configure the Static Route. A static route is a pre-determined path that network information must follow to reach a specific host or network.



Click the **New** button to add the static route.



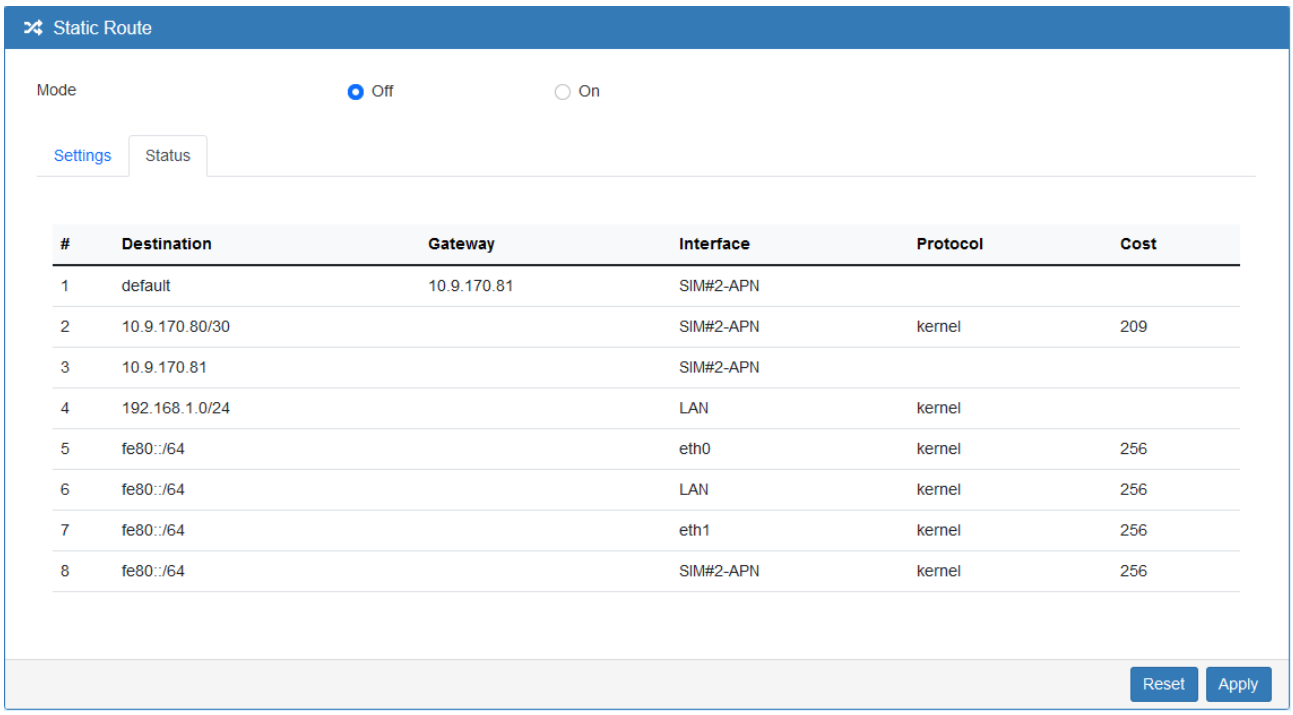
IP Routing > Static Route

Item	Description
Mode	The setting is to enable or disable the static route for full network.
Settings	
Mode	The setting is for the specific network. Select Off or On.
Name	Set up each name for your running host or network.
Destination	Fill in the destination of a specific subnet or IP from network.
Gateway	Fill in the gateway address of your router.
Interface	Select the interface from LAN or Ethernet.
Cost	Cost is a policy for router to commit router, to determine the optimal route. Enter one number greater than or equal to 0.

Note:

- The destination field is required to fill in. The format of destination is IPv4 or IPv6.
- The address of gateway or the type of interface can chose one or both to fill in the field.

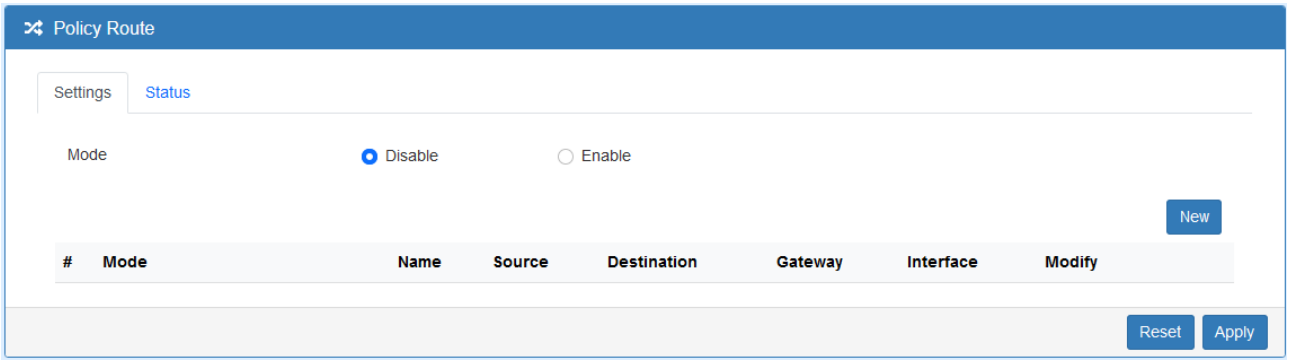
The status tab shows the information from the settings of static route.

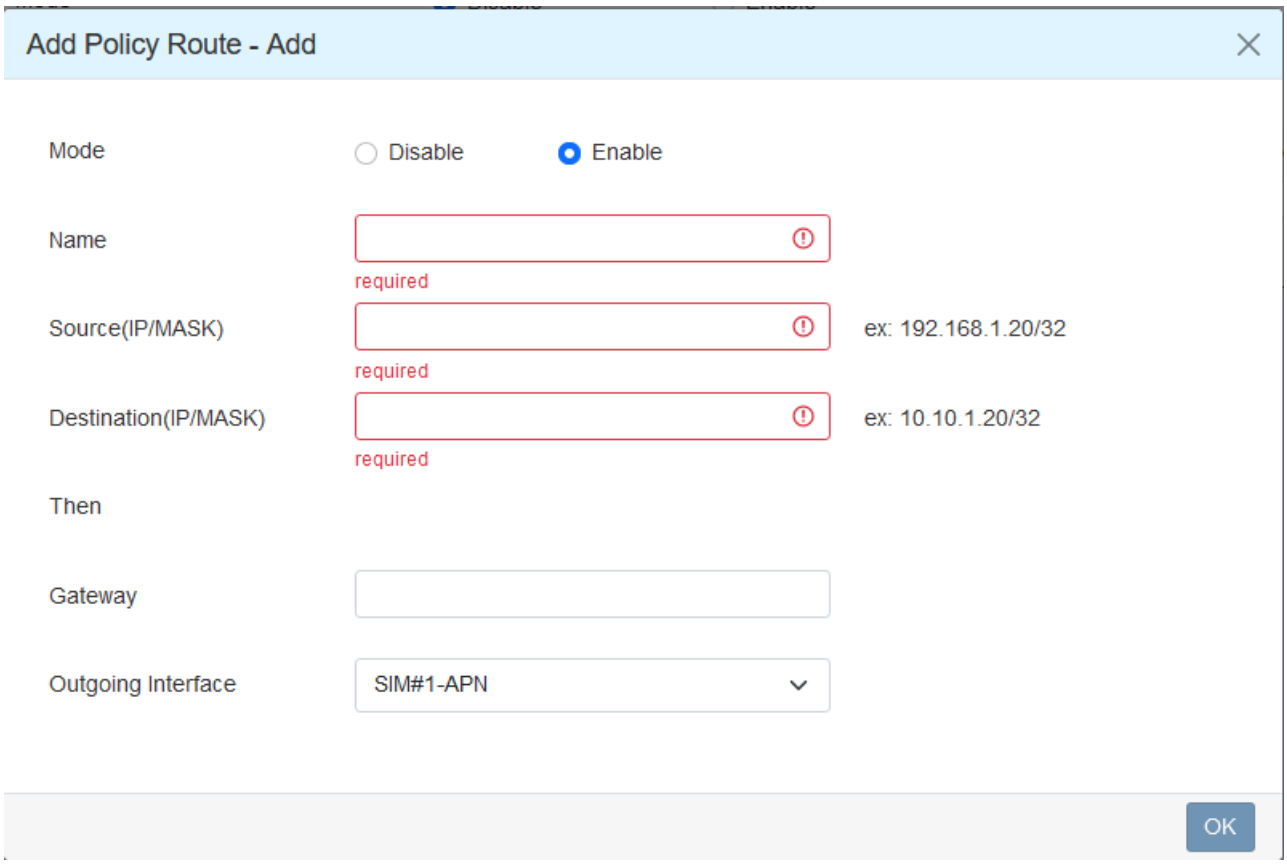


#	Destination	Gateway	Interface	Protocol	Cost
1	default	10.9.170.81	SIM#2-APN		
2	10.9.170.80/30		SIM#2-APN	kernel	209
3	10.9.170.81		SIM#2-APN		
4	192.168.1.0/24		LAN	kernel	
5	fe80::/64		eth0	kernel	256
6	fe80::/64		LAN	kernel	256
7	fe80::/64		eth1	kernel	256
8	fe80::/64		SIM#2-APN	kernel	256

10.2 Policy Route

This section allows user to setup the policy route and check the status of policy route settings. Policy routing works on the activated interfaces only, but disabled on deactivated interfaces automatically.



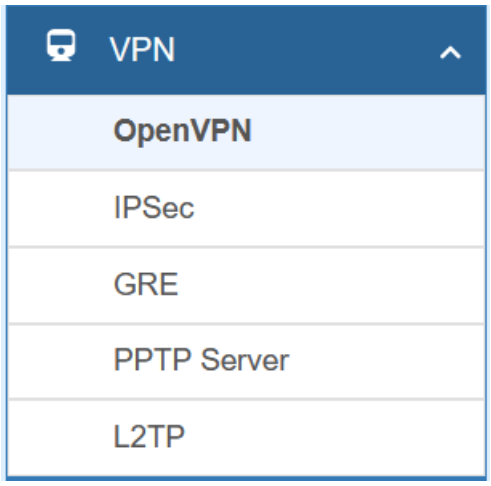


IP Routing > Policy Route

Item	Description
Mode	Enable or disable the policy route function.
Settings	
Mode	Enable or disable the selected policy route entry.
Name	Set up each name for your running host or network.
Source(IP/MASK)	Fill in the source of a specific IP/MASK from network.
Destination(IP/MASK)	Fill in the destination of a specific IP/MASK from network.
Gateway	Fill in the gateway address of your router.
Outgoing Interface	Select the outgoing interface.

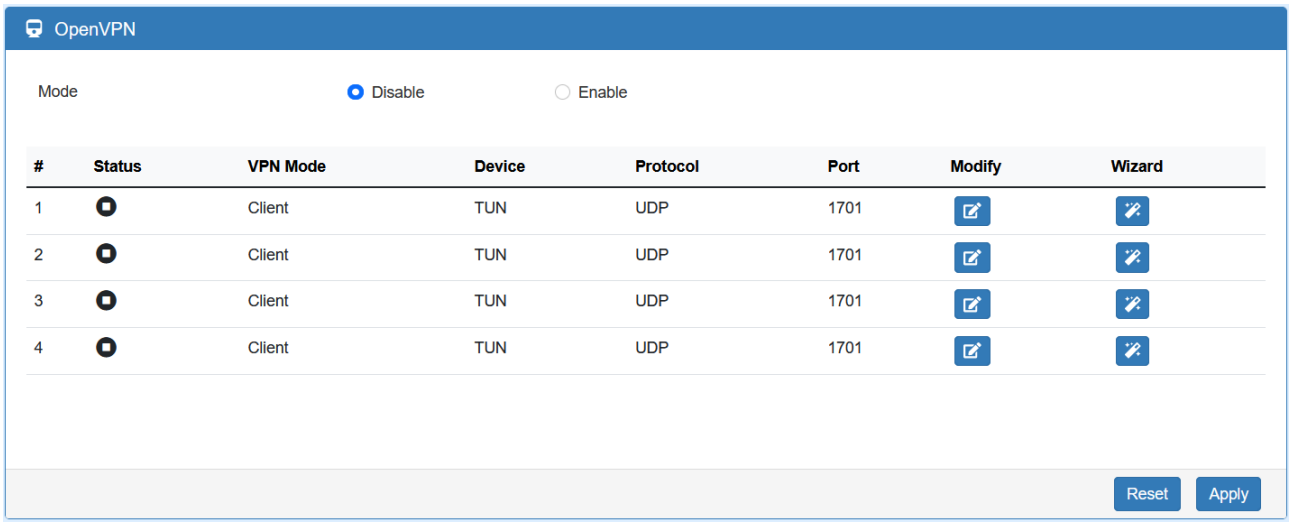
11 Web Menu Item > VPN

This section allows you to configure OpenVPN, IPsec, GRE, PPTP Server, and L2TP.



11.1 OpenVPN

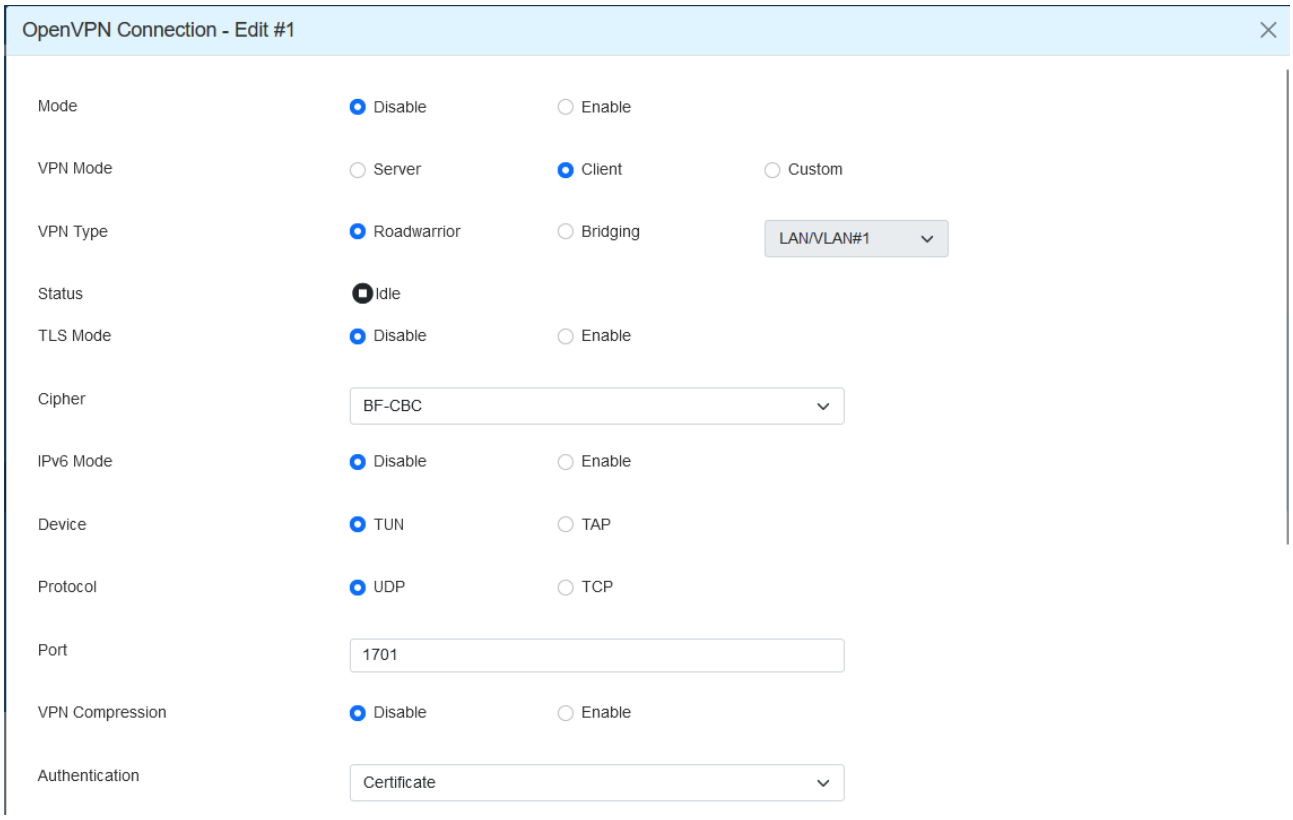
This section allows you to set up the connection of OpenVPN. The default mode is Disable. From **Log** tab, the interface will show the status of connection to make you follow the situation whenever it is successful or fail connection.



11.1.1 OpenVPN Common Setting

(1) Click button to edit OpenVPN Connection.

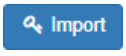
(2) From **Setting** tab, you can set up the connection of OpenVPN.



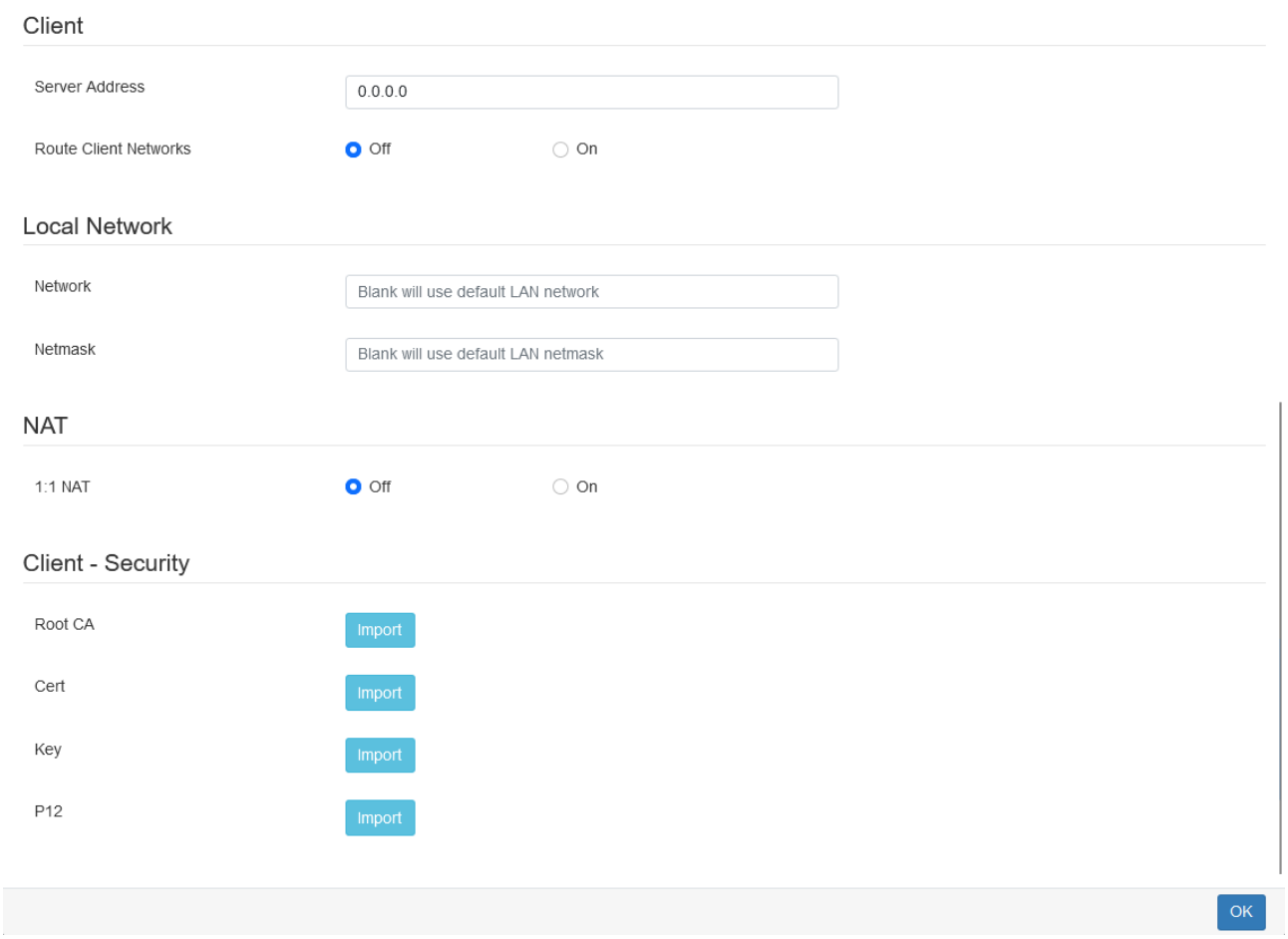
VPN > OpenVPN > Setting	
Item	**Description**
Mode	Turn on/off OpenVPN to select Disable or Enable.
VPN Mode	Server: Tick to enable OpenVPN server tunnel. Client: Tick to enable OpenVPN client tunnel. The default is Client. Custom: This option allows user to use the .ovpn configuration file to set up VPN tunnel quickly with third-party server or use the OpenVPN advanced options to be compatible with other servers.
VPN Type	Roadwarrior (default) Bridging: Bridging the VPN tunnel and LAN/VLAN
Status	Display the status of OpenVPN.
TLS Mode	Select from Disable or Enable for data security. The default is Disable.
Cipher	The OpenVPN format of data transmission.
IPv6 Mode	Select from Disable or Enable. The default is Disable.
Device	Select from TUN or TAP. The default is TUN.
Protocol	Select from UDP or TCP Client that depends on the application. The default is UDP.
Port	Enter the listening port of remote side OpenVPN server.
VPN Compression	Select Disable or Enable to compress the data stream. The default is Disable.
Authentication	Select from two different kinds of authentication ways: Certificate or pkcs#12 Certificate. The pkcs#12 option is only available on the VPN client mode.

11.1.2 OpenVPN Client Setting

Select option "**Client**" from VPN Mode, and this section allows you configure the **OpenVPN client** and authentication files.

The files can import by clicking 

button and the file should download from OpenVPN server.

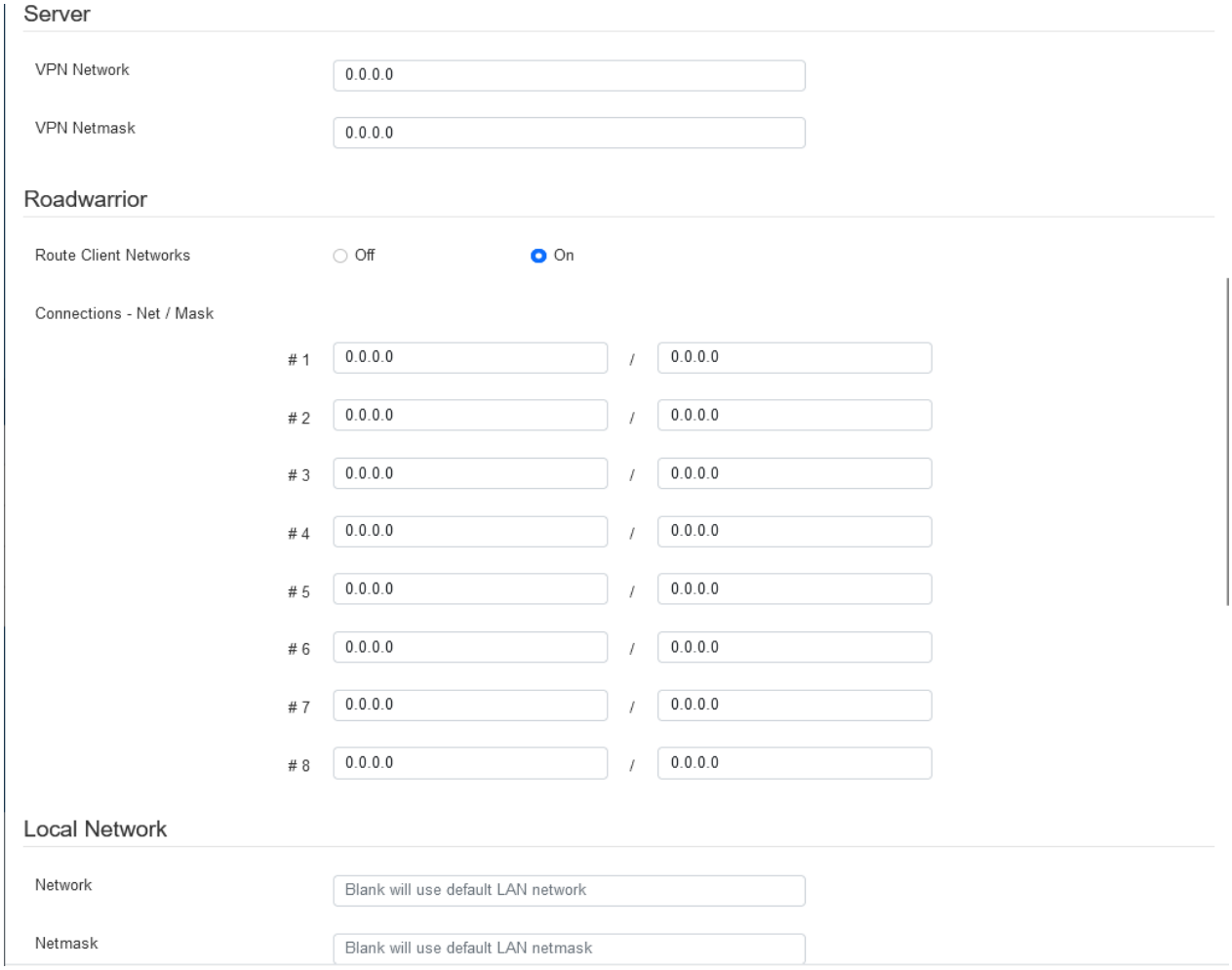


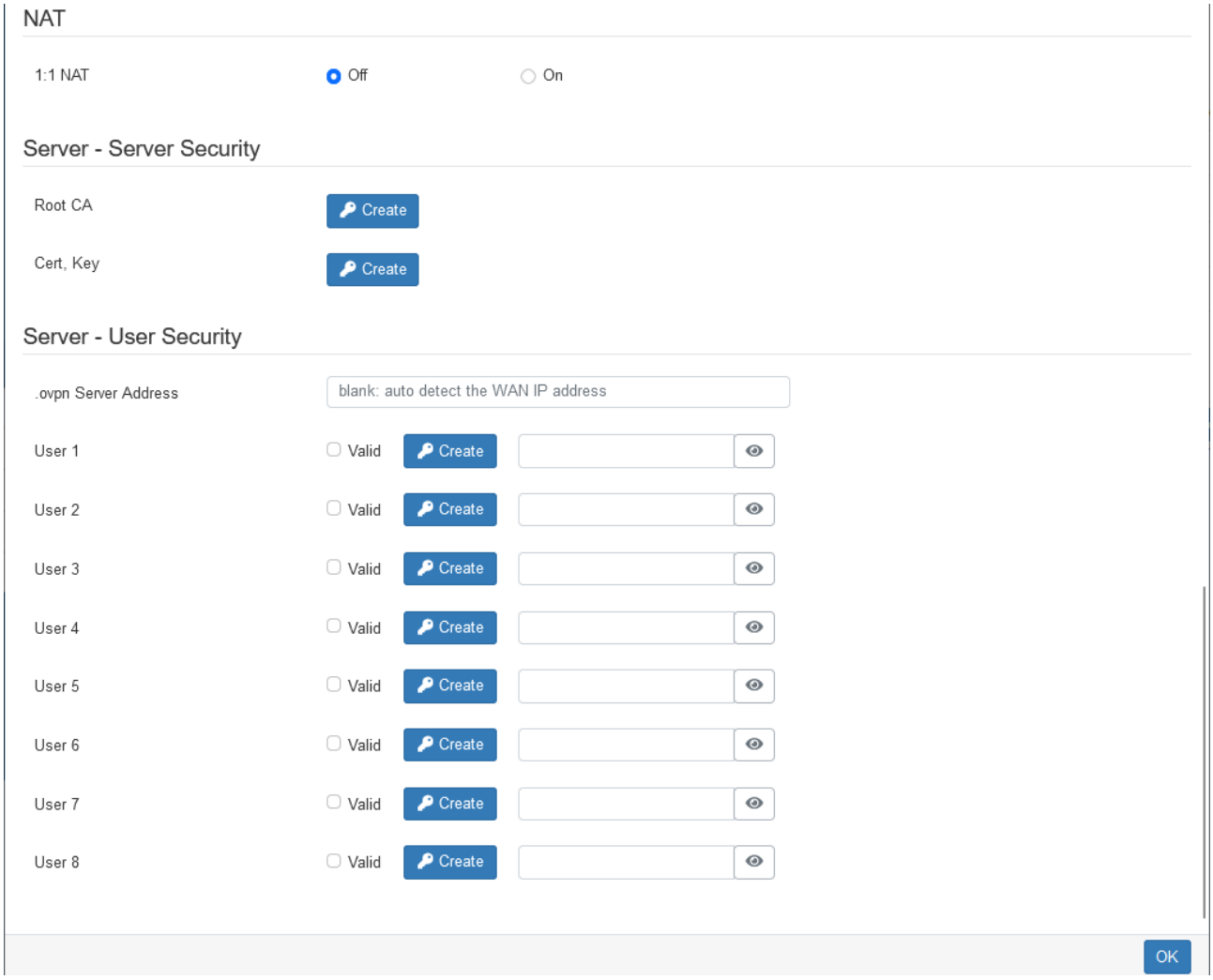
VPN > OpenVPN > Client VPN Mode	
Item	**Description**
Client	
Server Address	Fill in WAN IP of OpenVPN server.
Route Client Networks	This setting needs to match the server side. When enabled, the cellular router will auto apply the properly routing rules.
Local Network	
Network	The local network exported by OpenVPN. When keeping this option blank, the OpenVPN will export the LAN network automatically.
Netmask	The local netmask exported by OpenVPN. When keeping this option blank, the OpenVPN will export the LAN netmask automatically.
NAT	
1:1 NAT	Tick to enable NAT Traversal for OpenVPN. This item must be enabled when the router under NAT environment. When two routers' LAN Subnet are same and create OpenVPN tunnels, this function should turn on.
Client-Security	
Root CA	The Certificate Authority file of OpenVPN server, which can

	download from OpenVPN server.
Cert	The certification file is for OpenVPN client, which can download from OpenVPN server.
Key	The private key file is for OpenVPN client, which can download from OpenVPN server.
P12	The PKCS#12 file is for OpenVPN client, which can download from OpenVPN server.

11.1.3 OpenVPN Server Setting

Select option "**Server"** from VPN Mode, and this section allows you to configure the **server settings of VPN Mode**.



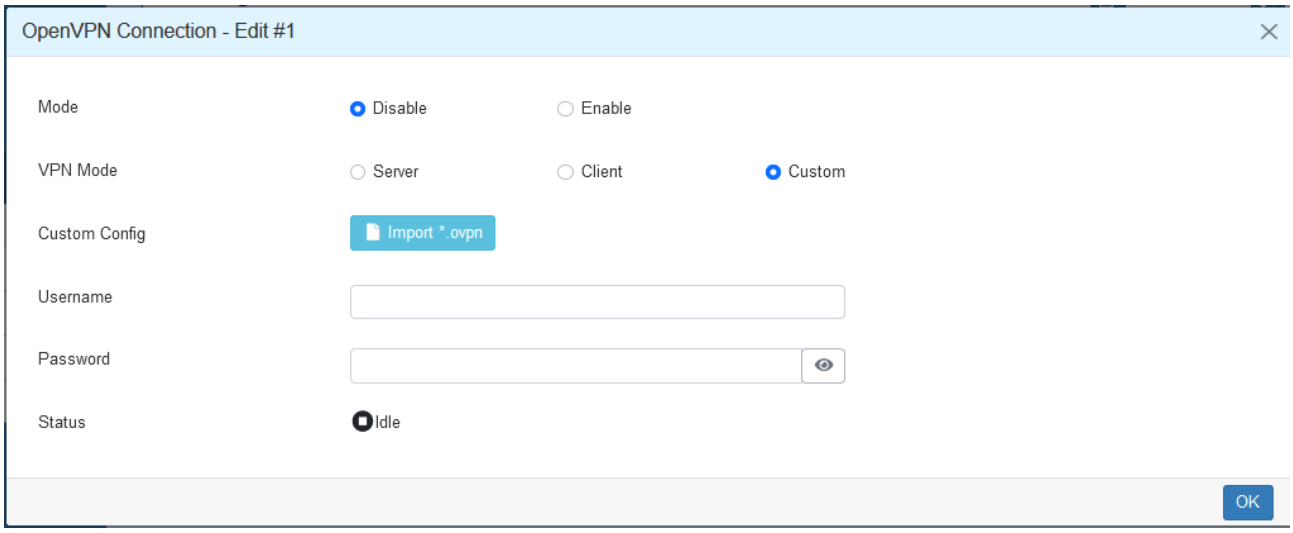


VPN > OpenVPN > Server VPN Mode	
Item	**Description**
Server	
VPN Network	The network ID for OpenVPN virtual network.
VPN Netmask	The netmask for OpenVPN virtual network.
Roadwarrior: Route Client Networks	The OpenVPN server will route the client traffic or not. User should fill in the client IP and netmask when this option is enable.
Local Network	
Network	The local network exported by OpenVPN. When keeping this option blank, the OpenVPN will export the LAN network automatically.
Netmask	The local netmask exported by OpenVPN. When keeping this option blank, the OpenVPN will export the LAN netmask automatically.
NAT	
1:1 NAT	Tick to enable NAT Traversal for OpenVPN. This item must be

	enabled when router under NAT environment. The default is Off.
Server- Server Security	
Root CA	Create Root CA key.
Cert, Key and DH	Create Cert, Key and DH key.
Server- User Security	
User 1 - User 8	According to your requirement, you can create different kinds of user security key from User 1 to User 8.

11.1.4 Set up OpenVPN Custom

This section helps you use the .ovpn configuration file to set up OpenVPN tunnel quickly with third-party server or use the OpenVPN advance options to be compatible with other servers.

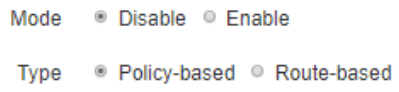


VPN > OpenVPN > Custom VPN Mode	
Item	**Description**
Mode	Enable or disable the selected OpenVPN connection.
VPN Mode	Select the custom mode.
Custom Config	Import OpenVPN configuration with ".ovpn" file.
Username	Fill in the username if the imported file has already set up the username.
Password	Fill in the password if the imported file has already set up the password.
Status	Display the connection status of OpenVPN, such as IP address and the connected time.

11.2 IPsec

This section allows you to set up IPsec Tunnel. The setting has four tags, Connections, Authentication IDs, X.509 Certificates, and CA Certificates.

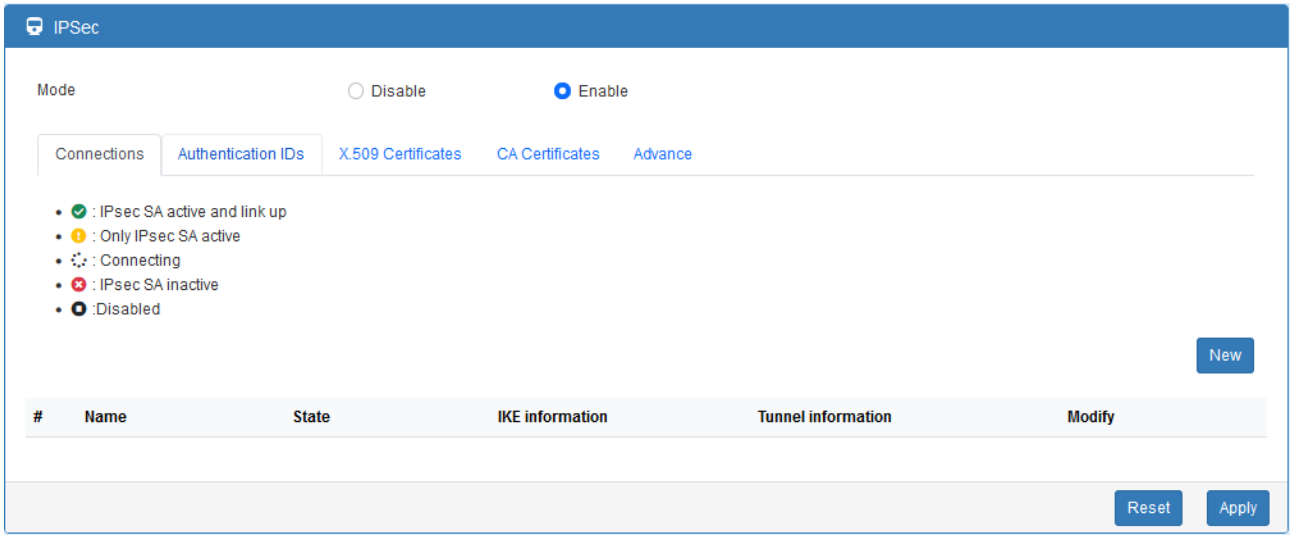
For the IPsec connection which be authenticated by **pre-shared key**, it only need to setup the **Connections** and **Authentication IDs.** For the IPsec connection which be authenticated by **RSA or TLS**, the settings must cover the four parts.



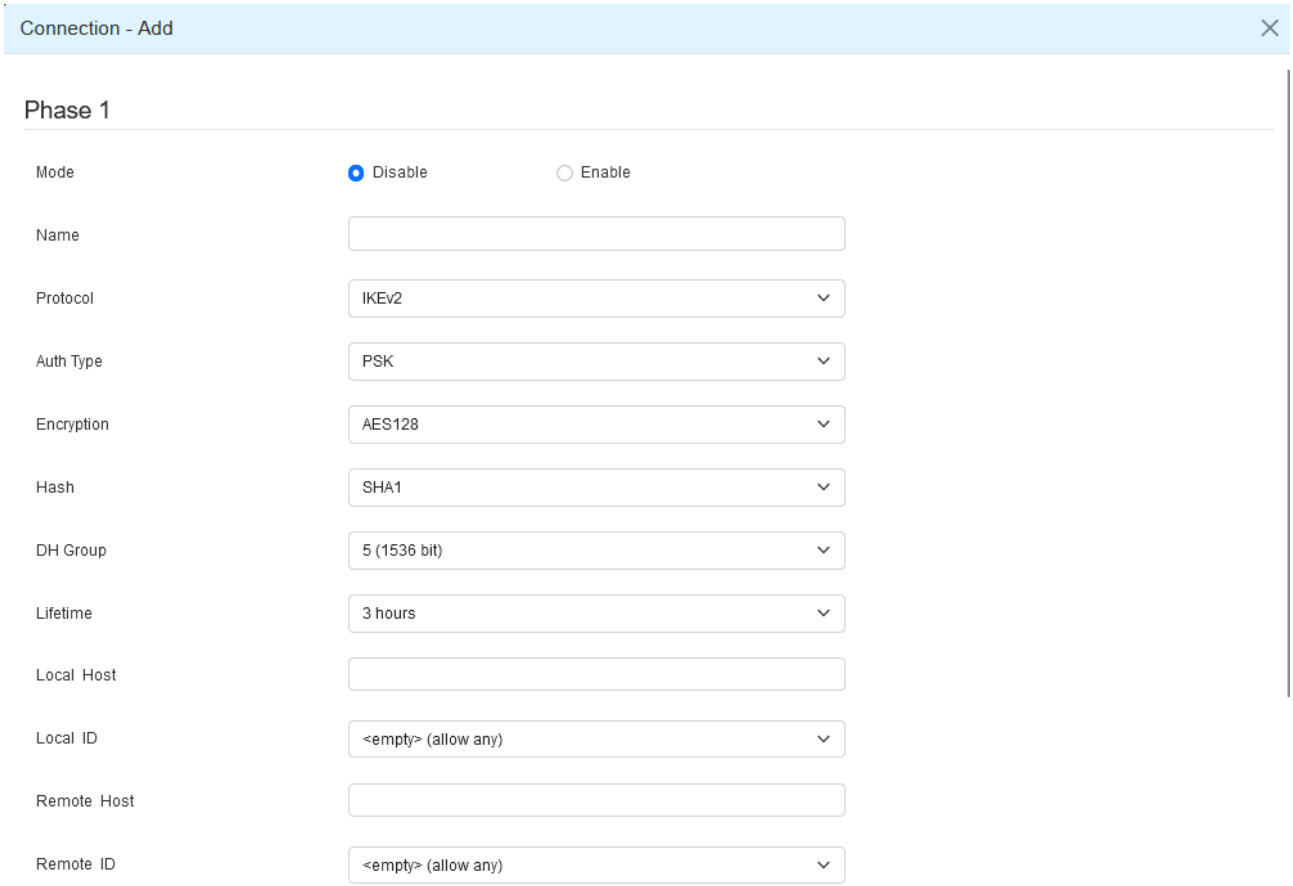
VPN > IPsec > General setting	
Item	**Description**
Mode	Select from Disable or Enable. The default is Disable.

11.2.1 IPsec > Connections

This section provides the information of the IPsec connections. Each connection will show the **State**, **IKE information** and **Tunnel information**. In the default setting, the list of connections is empty. You can create the new connection by clicking **New** button.

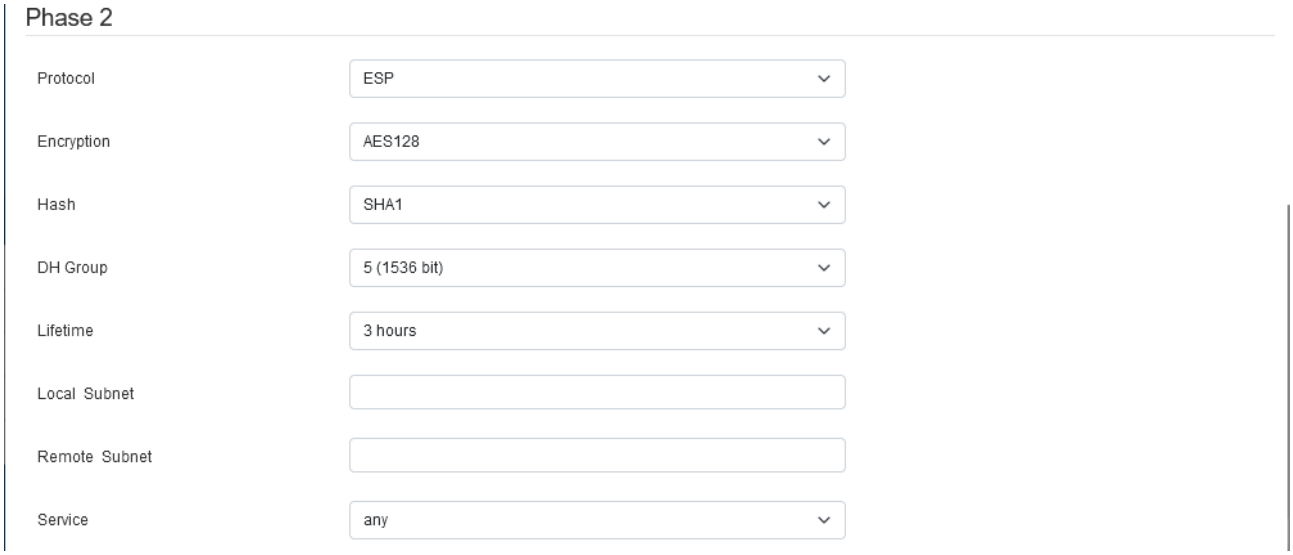


(1) IPsec Phase 1 Setting



VPN > IPsec > Connections > Phrase 1 setting	
Item	**Description**
Mode	Enable or disable the selected IPSec connection.
Name	Short name or description.
Protocol	Select from IKEv1 or IKEv2. The default is IKEv1.
Auth Type	Select from PSK (default), RSA, EAP-TLS. (Note: The EAP-TLS is for IKEv2 only.)
Encryption	The encryption algorithm. Select from AES128 (default), AES192, AES256 or 3DES.
Hash	The integrity algorithm. Select from MD5, SHA1 (default) or SHA256.
DH Group	The Diffie Hellman Group. Select from 1(768 bit), 2(1024 bit), 5(1536 bit) (default), 14(2048 bit), 15(3072 bit), 16(4096 bit), 17(6144 bit) or 18(8192 bit).
Lifetime	The length of the keying channel of a connection. Select from 30 minutes, 1 hour, 2 hours, 3 hours, 6 hours, 12 hours or 24 hours.
Local Host	The IP address of the router's public network interface. If this value is blank, the connection will automatically detect the correct IP address.
Local ID	The identification for authentication on local peer. Select from the created authentication IDs or empty.
Remote Host	The IP address of the peer gateway's public network interface. If this value is blank, the connection will act the server role to wait the incoming request.
Remote ID	The identification for authentication on remote peer. Select from the created authentication IDs or empty.

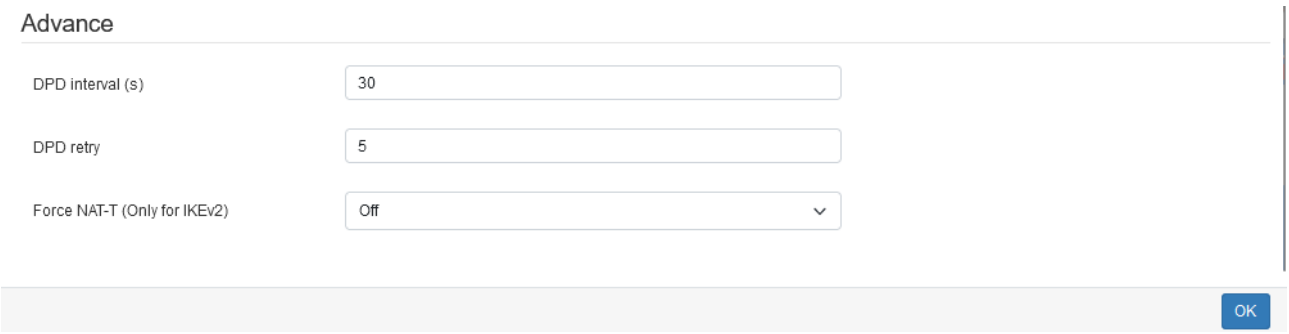
(2) IPsec Phase 2 Setting



VPN > IPsec > Connections > Phrase 2 setting	
Item	**Description**
Protocol	ESP supported only.
Encryption	The encryption algorithm. Select from AES128 (default), AES192, AES256 or 3DES.
Hash	The integrity algorithm. Select from MD5, SHA1 (default) or SHA256.
DH Group	The Diffie Hellman Group. Select from 1(768 bit), 2(1024 bit), 5(1536 bit) (default), 14(2048 bit), 15(3072 bit), 16(4096 bit), 17(6144 bit) or 18(8192 bit).
Lifetime	The length of a particular instance of a connection. Select from 30 minutes, 1 hour, 2 hours, 3 hours, 6 hours, 12 hours or 24 hours.
Local Subnet	The private subnet behind the router. The available formats are A.B.C.D, A.B.C.D/M, A.B::C.D or A.B::C.D/M If this value is blank, the connection will set it as the “Local Host” of Phase 1 setting. *Note:* This option only work on Policy-based IPsec VPN type.
Remote Subnet	The private subnet behind the peer gateway. The available formats are A.B.C.D, A.B.C.D/M, A.B::C.D or A.B::C.D/M If this value is blank, the connection will set it as the “Remote Host” of Phase 1 setting. *Note:* This option only work on Policy-based IPsec VPN type.

Service	Restrict the VPN traffic to the particular protocol only. Select from the Any, TCP, UDP or L2TP.

(3) IPsec Advance Setting

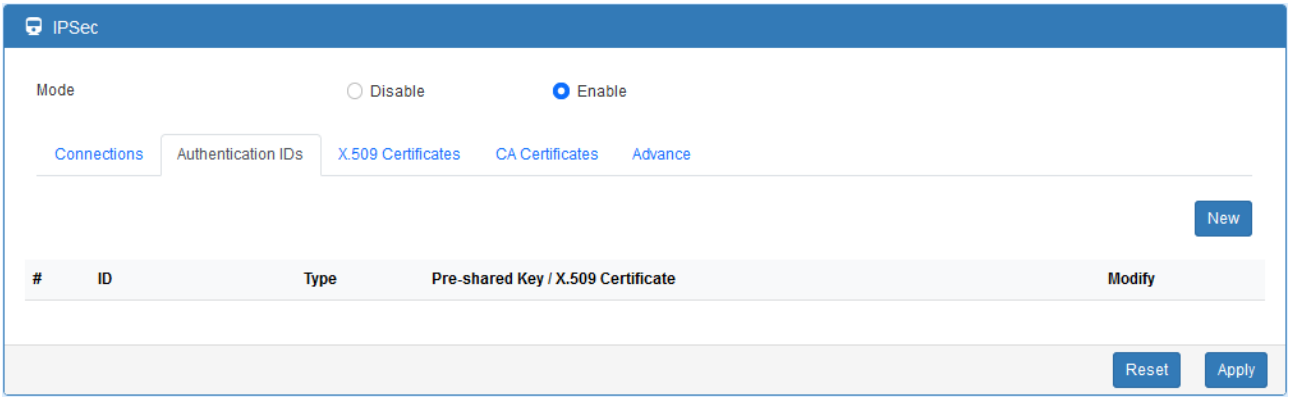


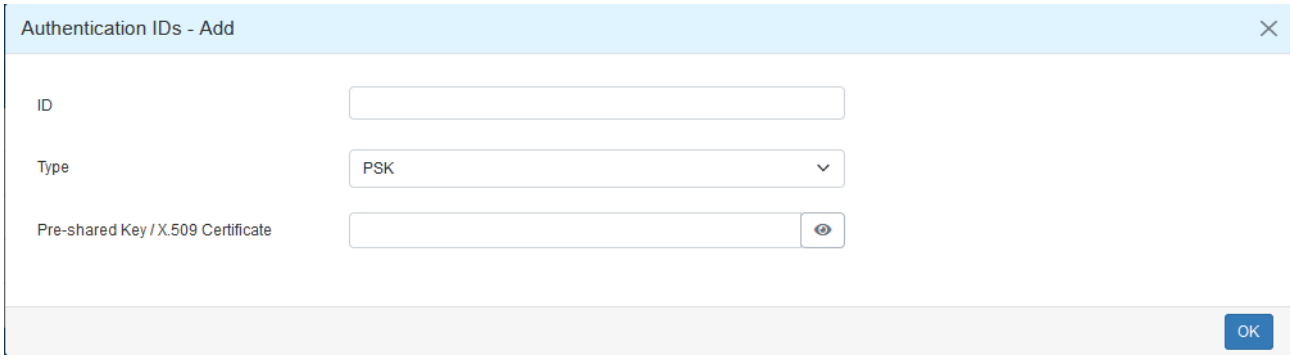
VPN > IPsec > Connections > Advance Setting	
Item	**Description**
DPD interval	The period time interval to detect dead peers. The default is 30 seconds.
DPD retry	The max number of retry of dead peer detection. The default is 5 times.
Force NAT-T (Only for IKEv2)	Enable or disable the NAT-T for selected IPSec connection.

IPsec > Authentication IDs

This section provides the authentication ID set to authenticate the IPsec connections.

In the default setting, the list of authentication ID is empty. You can create the new authentication ID by clicking the **New** button.





VPN > IPsec > Authentication IDs	
Item	**Description**
ID	The identification for authentication. It works with PSK type only.
Type	Select from PSK or RSA. The default is PSK. PSK: Use the pre-shared key to authenticate the connection. RSA: Use the certificate to authenticate the connection.
Pre-shared Key / X.509 Certificate	The X.509 certificate for authentication. The certificate is generate or import by X.509 Certificates section.

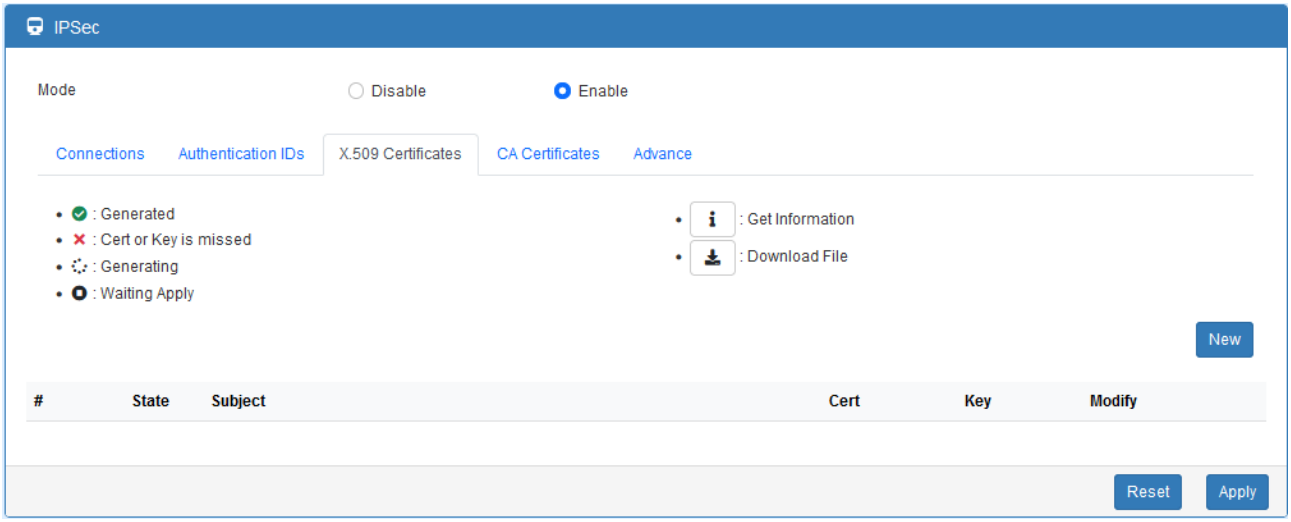
According to the above options, there are some combinations to authenticate the IPsec connection.

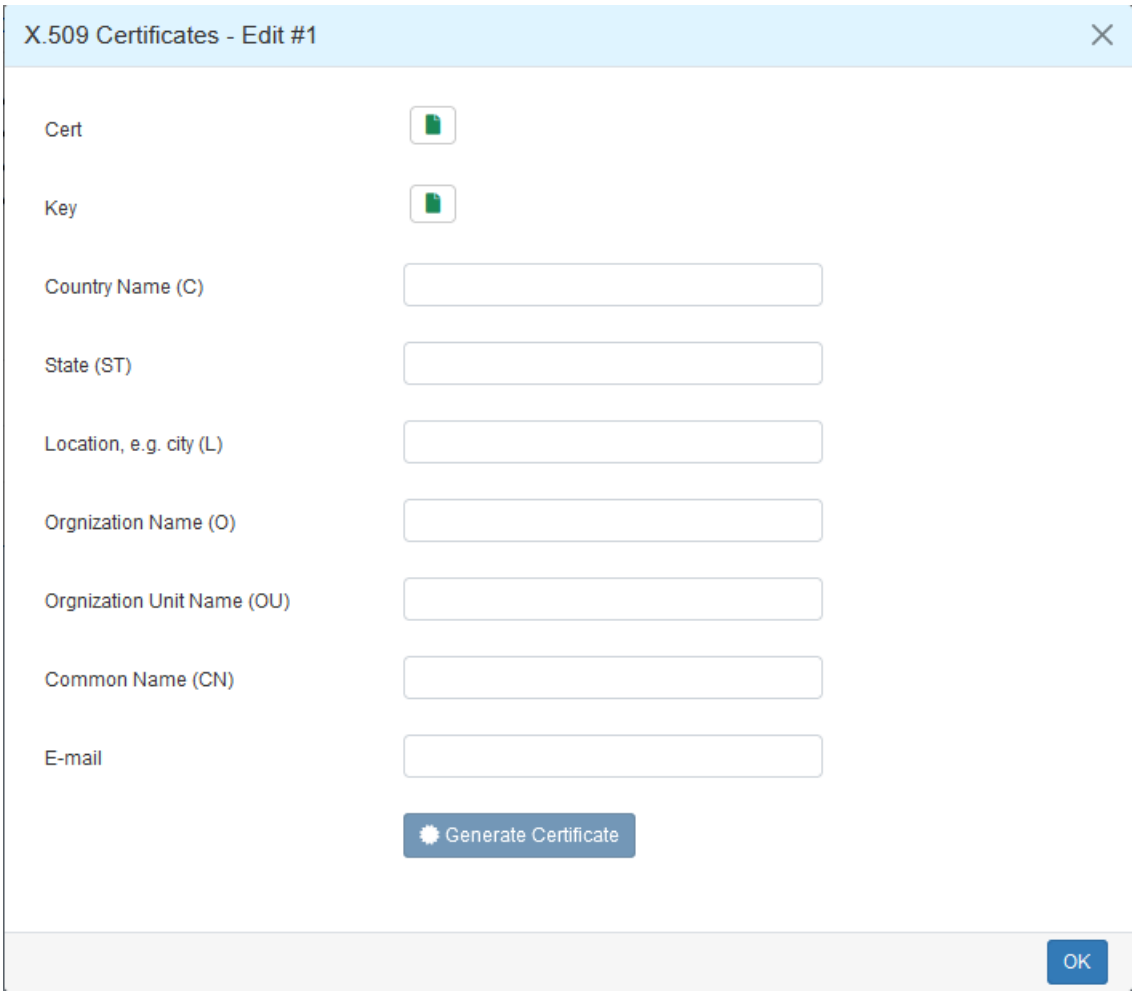
VPN > IPsec > Authentication IDs				
#	**ID**	**Type**	**Pre-shared Key / X.509 Certificate**	**Comment**
1		PSK	password	The default password for the PSK connections.
2	remote.ipsec	PSK	2wsx#EDC	The password only for the PSK connection with remote.IPsec ID. Normally, this case is use to authenticate peer gateway.
3	local.ipsec	PSK		The identification for the connection. Normally, this case is use to announce the ID of the router.
4	test	RSA	created X.509	The ID field will be omitted, and use the common name (CN) of X.509 as the ID field.

11.2.2 IPsec > X.509 Certificates

This section provides the certificates setting which is use by IPsec authentication ID.

Each certificate will show the **State** and **Subject** information.



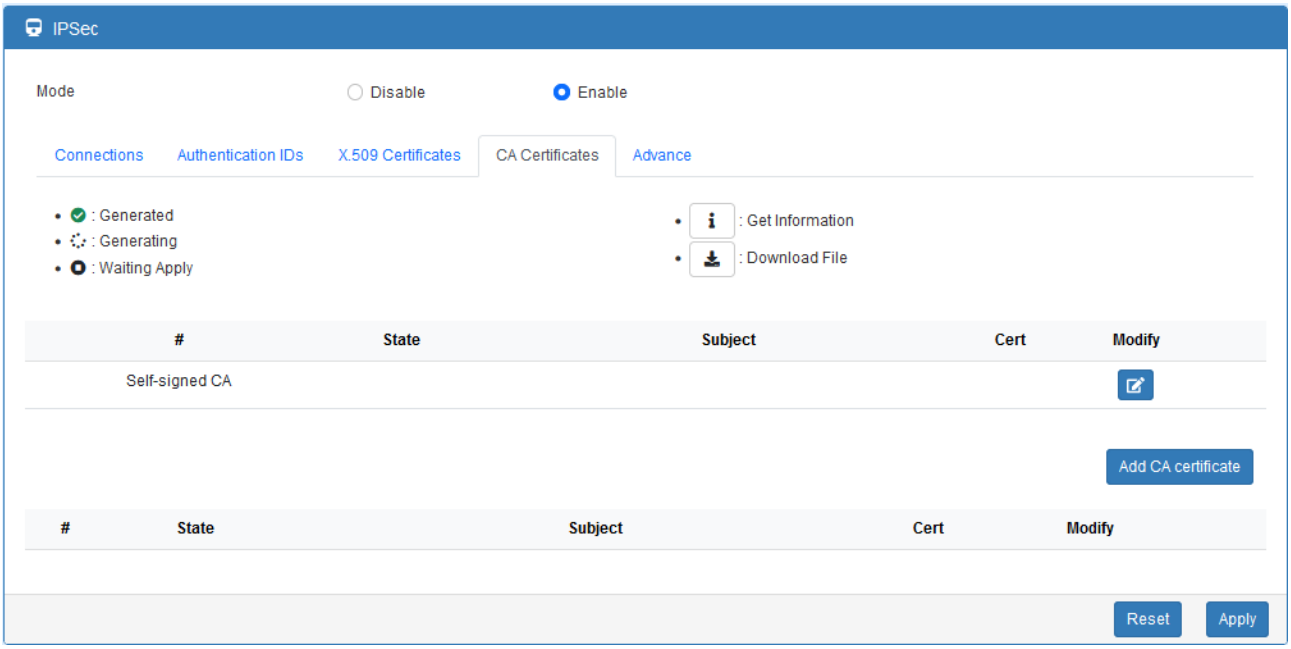


11.2.3 IPsec > CA Certificates

This section provides the CA certificates setting which could check whether the X.509 certificate is valid or not.

There is one self-signed CA (generated by the router), and it supports the user import the self-signed CAs to the router. The self-signed CA will help the router to verify the self-signed X.509 certificate, which is import in X.509 Certificates section.

Each CA certificate will show the **State** and **Subject** information and provide the controlling buttons to let user could download or edit the certificate / key files.



Certificate Generation

There are two kinds of certificate generated by router, one is self-signed CA, the other is X.509.

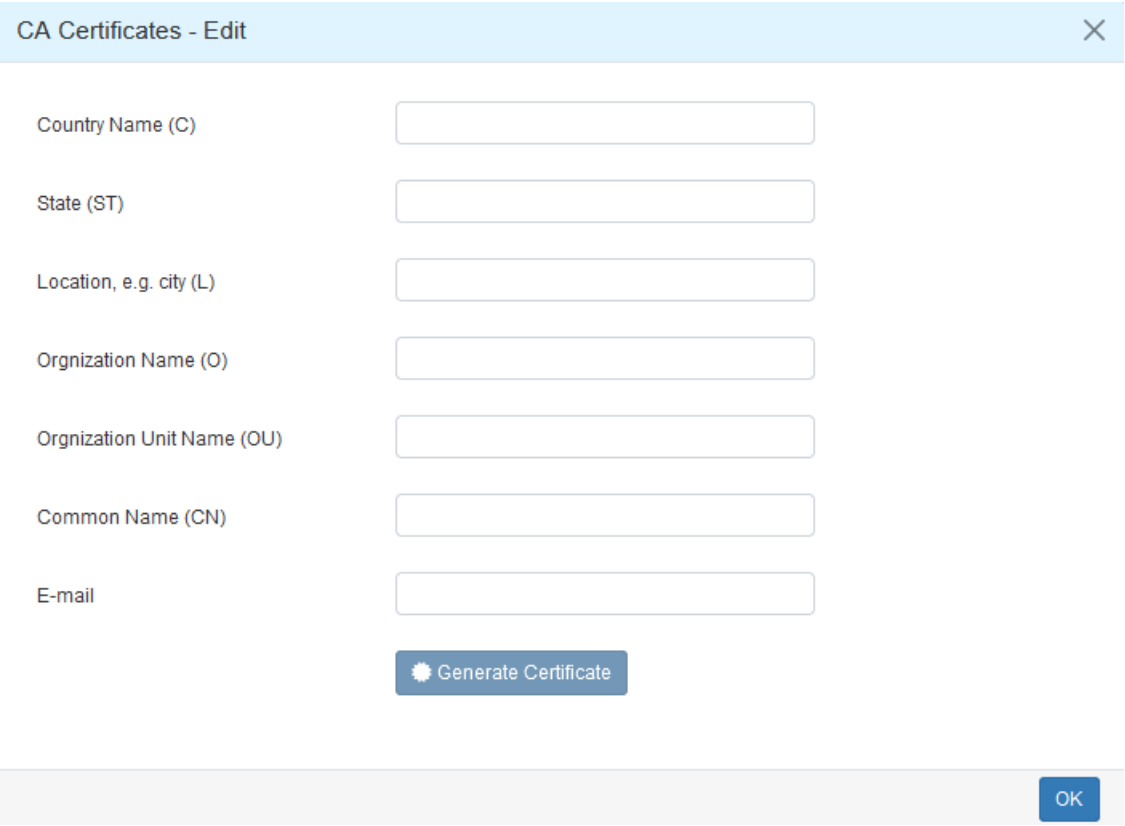
To generate the self-signed CA certificate:

1. Navigate to CA Certificates tab.
2. Click the edit button to navigate the **Certificate Setting** page.
3. Fill up the information of the CA certificate.
4. Click the Generate Certificate button and OK
5. Click the Apply button to apply the changes.

To generate the X.509 certificate:

1. Make sure the self-signed CA certificate generated.
2. Navigate to X.509 Certificates tab.
3. Add the new X.509 certificate by New button. (If it's not existed.)
4. Click the Edit button to navigate the **Certificate Setting** page.
5. Fill up the information of the X.509 certificate.
6. Click the Generate Certificate button and OK.
7. Click the Apply button to apply the changes.

Certificate Setting



VPN > IPsec > CA Certificates	
Item	**Description**
Country Name	The 2-letter country code. e.g. US This option is required for certificate generation.
State	The state name. e.g. Some-State
Location	The location name. e.g. city-name
Organization Name	The organization name. e.g. company-name This option is required for certificate generation.
Organization Unit Name	The organization unit name.
Common Name	The host name associated with the certificate. e.g. example.com This option is required for certificate generation.
E-mail	The maintainer's E-mail.

Certificate Importing

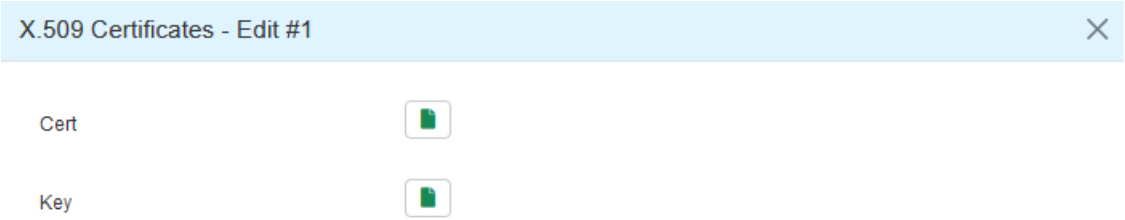
Same as the **Certificate Generation**, the router supports the CA and X.509 certificate importing.

To import the CA certificate:

1. Navigate to CA Certificates tab.
2. Click the Add CA certificate button.
3. Select the CA certificate file from browser window.
4. When the file be selected and everything all right, the newly CA certificate will show the CA certificate list with **Imported** state.

To import the X.509 certificate:

1. Navigate to X.509 Certificates tab.
2. Click the + Add X.509 button. The list will pop up the blank X.509 entry.
3. Click the Cert Import button.
4. Select the X.509 certificate file from browser window.
5. When the file be selected and everything all right, the state should be **Cert or Key is missed**.
6. Click the **Key Import** button.
7. Select the X.509 key file from browser window.
8. When the state shown **Imported**, the importing procedure is completed.



Download the certificate

If the certificate is generated or imported, there will be the download button to download each certificate and key file.

Note: When the connection is authenticate by RSA or EAP-TLS, the user must download the X.509 certificate, key and CA certificate, and import the files to the remote gateway.

11.3 GRE

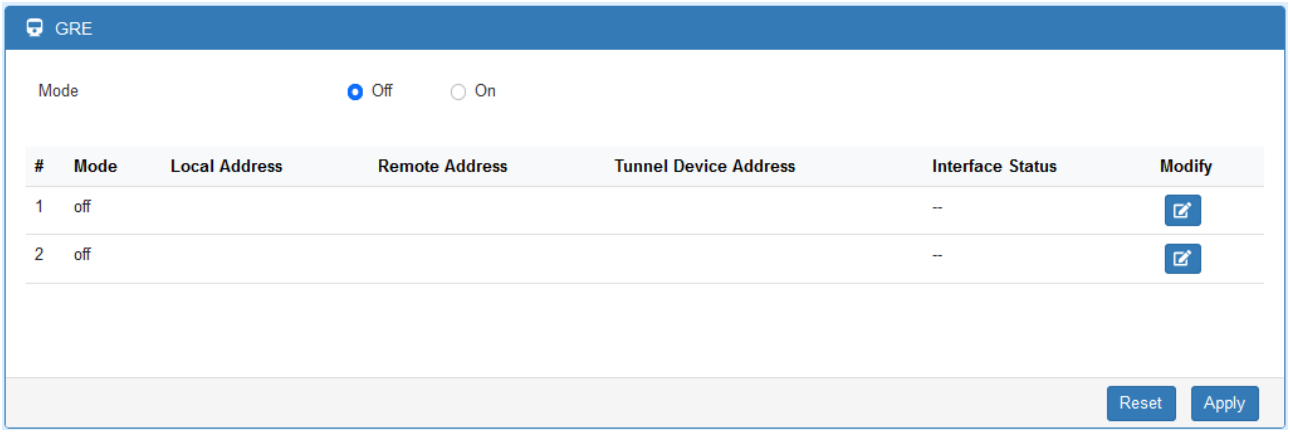
This section allows you to set **GRE configuration**. The default mode is off.

Generic Routing Encapsulation (GRE) is one of the available tunneling mechanisms which uses IP as the transport protocol and can be used for carrying many different passenger protocols. The tunnels behave as virtual point-to-point links that have two endpoints identified by the tunnel source and tunnel destination addresses at each endpoint.

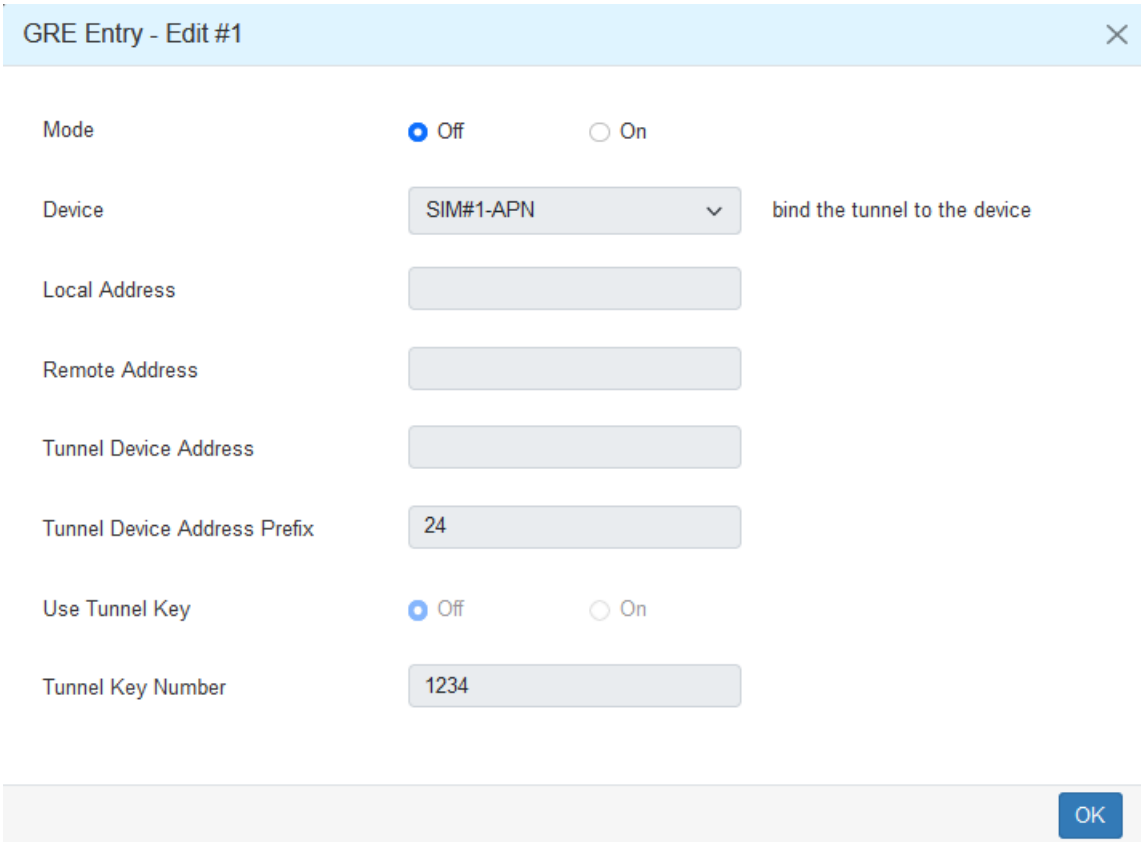
- GRE Tunnel interface comes up as soon as it is configured.
- Local endpoint does not bring the interface down if the remote endpoint is unreachable.
- No way to determine problems in the intervening network.
- Keepalives are used to solve this issue.

The GRE Tunnel Keepalive feature provides the capability of configuring keepalive packets to be sent over IP-encapsulated GRE tunnels. You can specify the rate at which keepalives will be sent and the number of times that a device will continue to send keepalive packets without a response before the interface becomes inactive. GRE keepalive packets may be sent from both sides of a tunnel or from just one side.

There are two entries for user to configure, please press Edit button.



Setup the GRE connection by clicking Edit button.

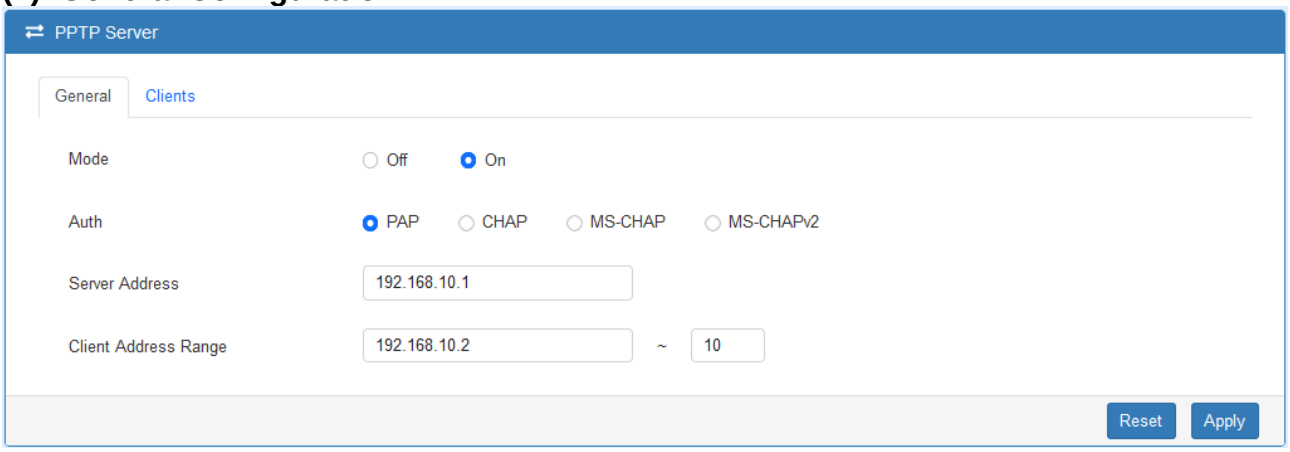


VPN > GRE	
Item	**Description**
Mode	Enable or disable the selected GRE connection.
Device	Select the interface that GRE should be applied
Local Address	Set local address of the GRE tunnel.
Remote Address	Set remote address of the GRE tunnel.
Tunnel Device Address	Set IP address of this GRE tunnel device.
Tunnel Device Address Prefix	Set Prefix of the Tunnel Device Address.
Use Tunnel Key	Whether to use the key for identifying an individual traffic flow within a tunnel.
Tunnel Key Number	The number of the tunnel key; default is '1234'.

11.4 PPTP Server

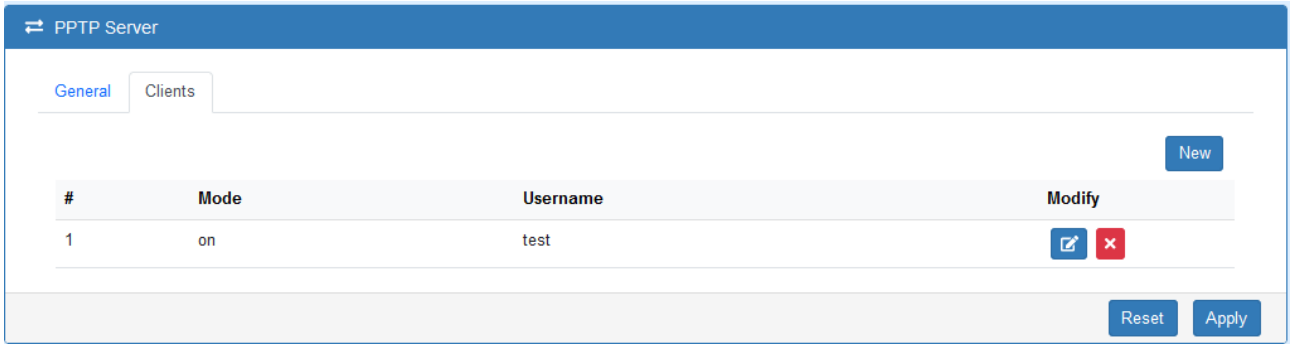
This section provides 2 sub configurations, including General Configuration and Clients Configuration.

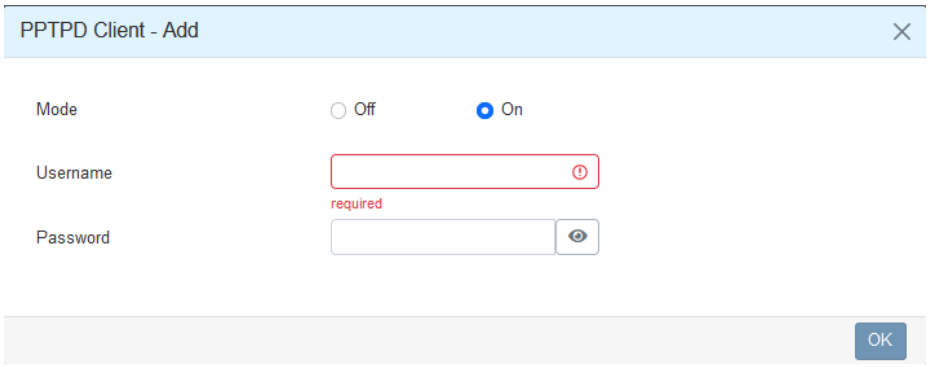
(1) General Configuration



VPN > PPTP Server > General	
Item	**Description**
Mode	Enable or disable the PPTP Server function.
Auth	Select the authentication type.
Server Address	This IP address is use as tunnel IP at server site.
Client Address Range	A list of IP addresses to assign to remote PPTP clients.

(2) Clients Configuration



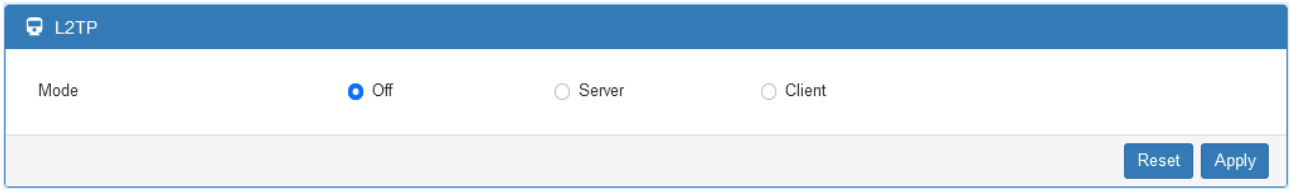


VPN > PPTP Server > Clients	
Item	**Description**
Mode	Enable or disable the selected account.
Username	The username of this client.
Password	The password of this client.

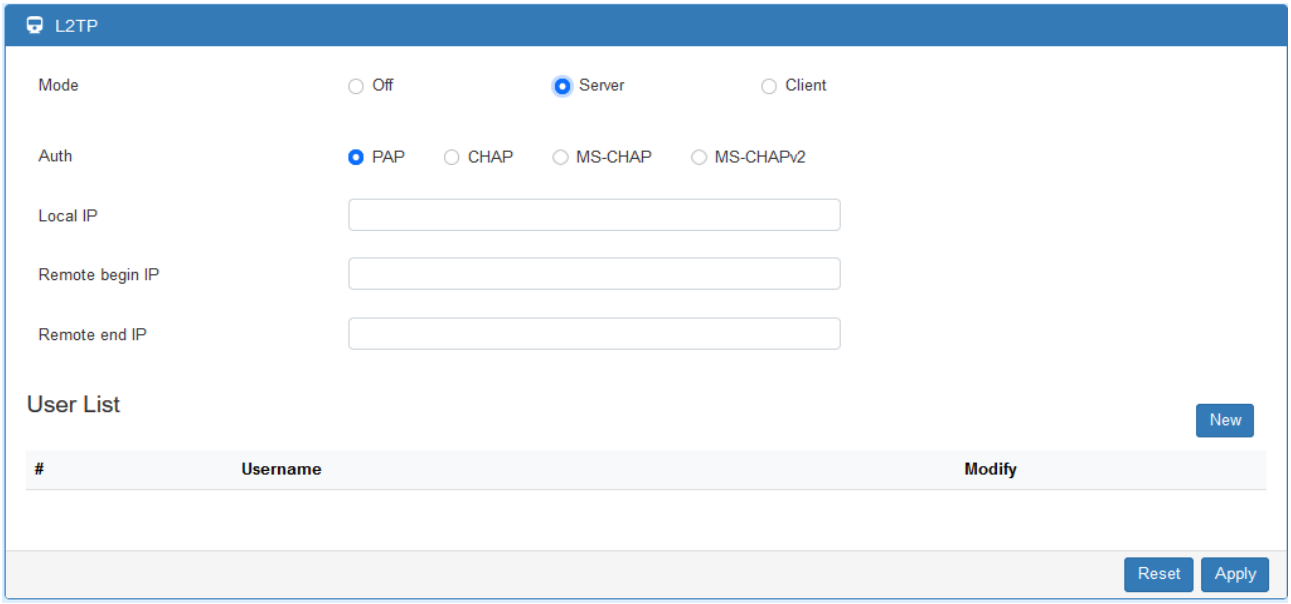
11.5 L2TP

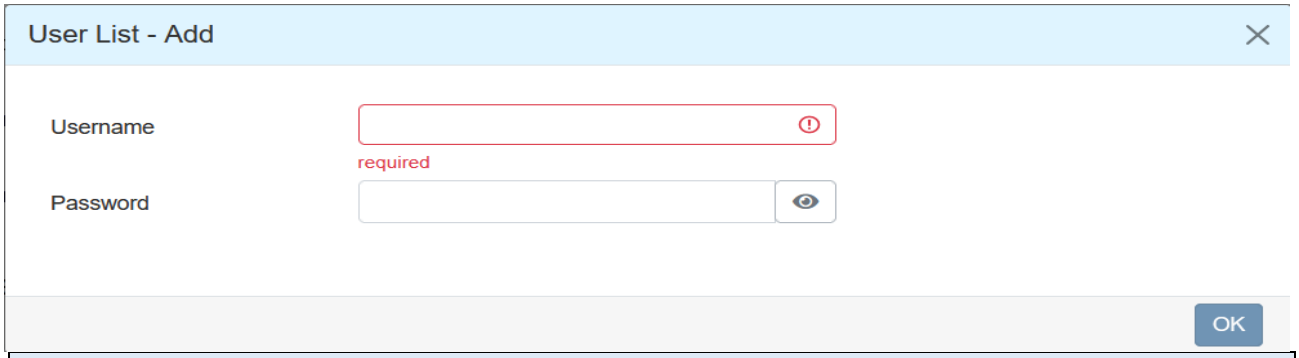
This section allows you to set up L2TP and provides three modes for configuration, including Off, Server, and Client Mode.

(1) General Mode: The default mode is Off as shown as below.



(2) Server Mode:

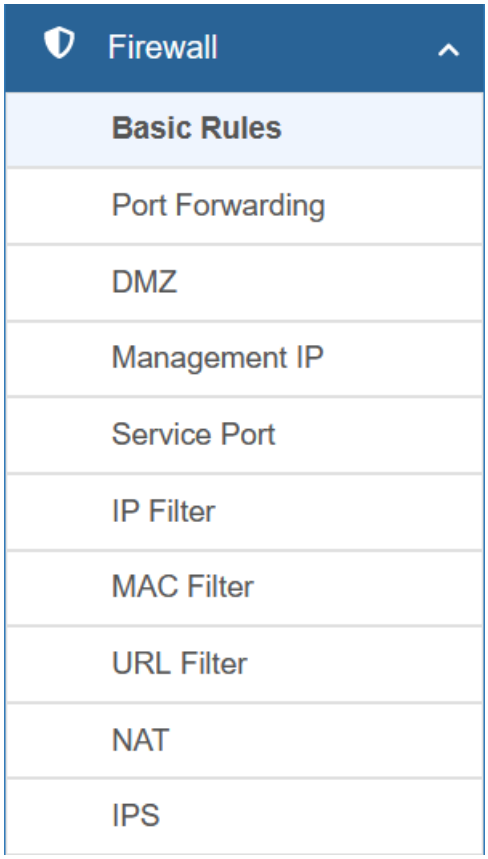




VPN> L2TP > Server Mode	
Item	**Description**
Mode	Select from Off or On to set the client setting.
Auth	The authentication method for L2TP connection. Available options: PAP, CHAP, MS-CHAP, MS-CHAPv2
Local IP	The virtual IP for L2TP server.
Remote begin IP	The begin address of L2TP client's IP pool.
Remote end IP	The end address of L2TP client's IP pool.
New	Create a new user account for connecting with server.
Username	The username for L2TP client.
Password	The password for L2TP client.

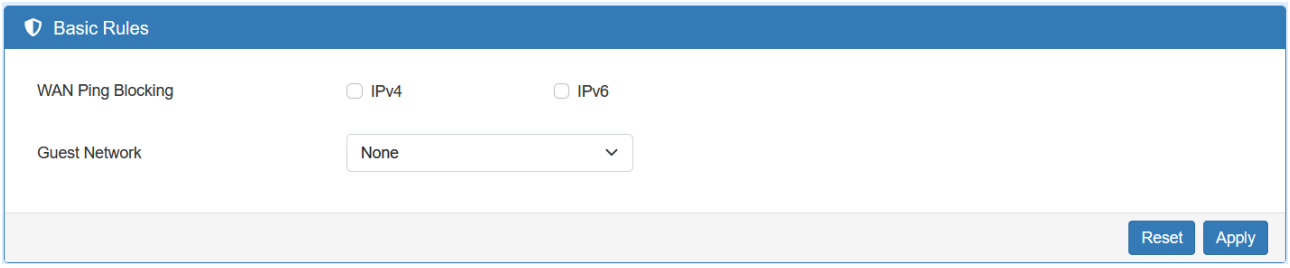
12 Web Menu Item > Firewall

This section allows you to configure Basic Rules, Port Forwarding, DMZ, IP Filter, MAC Filter, URL Filter, NAT and IPS.



12.1 Basic Rules

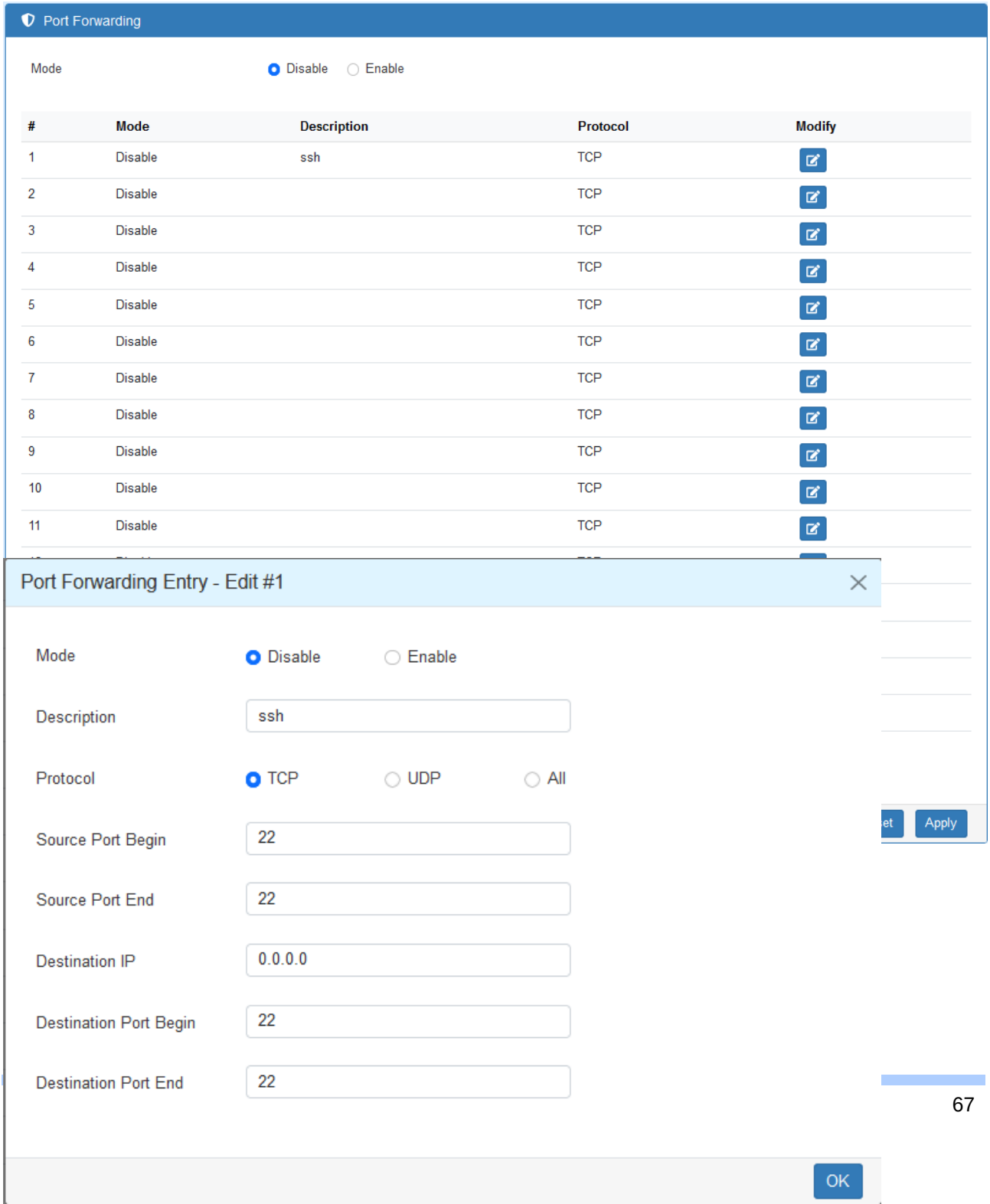
This section allows you to set the Basic Rules configuration.



Firewall > Basic Rules	
Item	**Description**
WAN Ping Blocking	Check IPv4 or IPv6 for blocking
Guest Network	Select a network that only allows Internet access and does not have device management permissions.

12.2 Port Forwarding

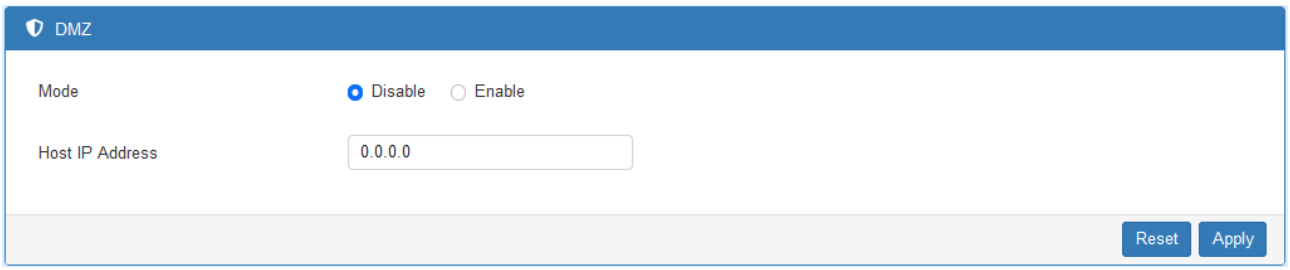
This section allows you to set up **Port Forwarding** and click edit button to configure.



Firewall > Port Forwarding	
Item	**Description**
Mode	Enable or disable the selected port forwarding entry.
Description	Descript the name of Port Forwarding.
Protocol	Select from UDP or TCP Client, which depends on the application.
Source Port Begin	Fill in the beginning of source port.
Source Port End	Fill in the end of source port.
Destination IP	Fill in the current private destination IP.
Destination Port Begin	Fill in the beginning of private destination port.
Destination Port End	Fill in the end of private destination port.

12.3 DMZ

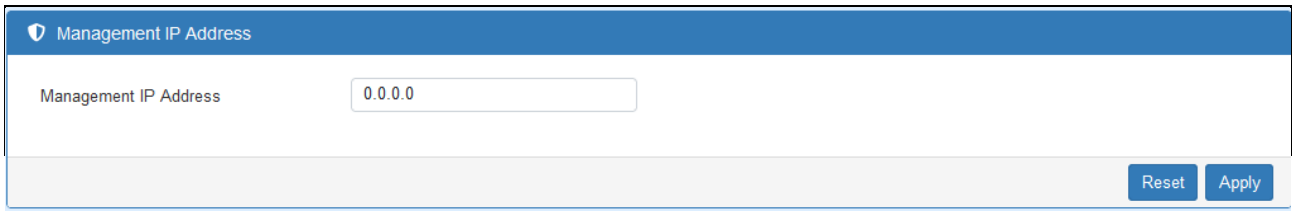
This section allows you to set the DMZ configuration.



Firewall > DMZ	
Item	**Description**
Mode	Enable or disable the DMZ function.
Host IP Address	Fill in your Host IP Address.

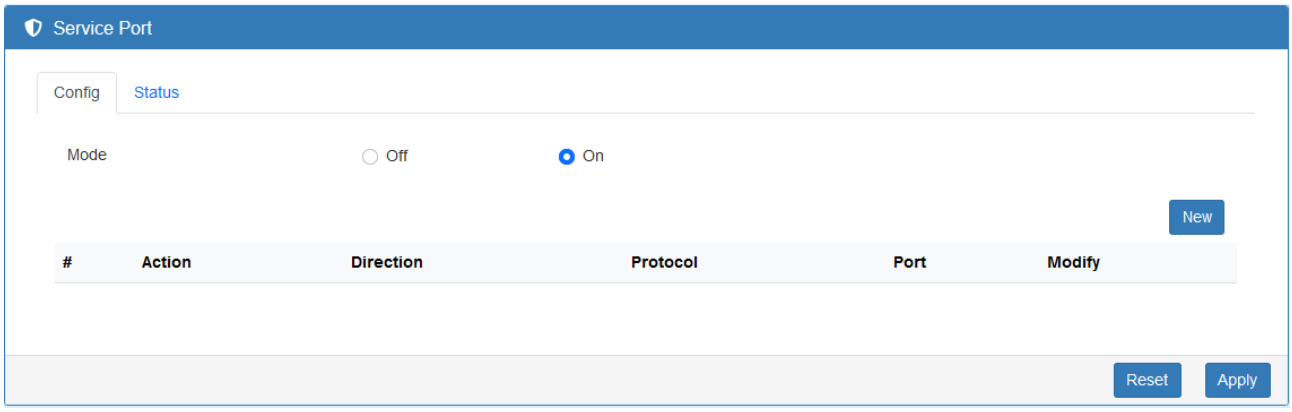
12.4 Management IP

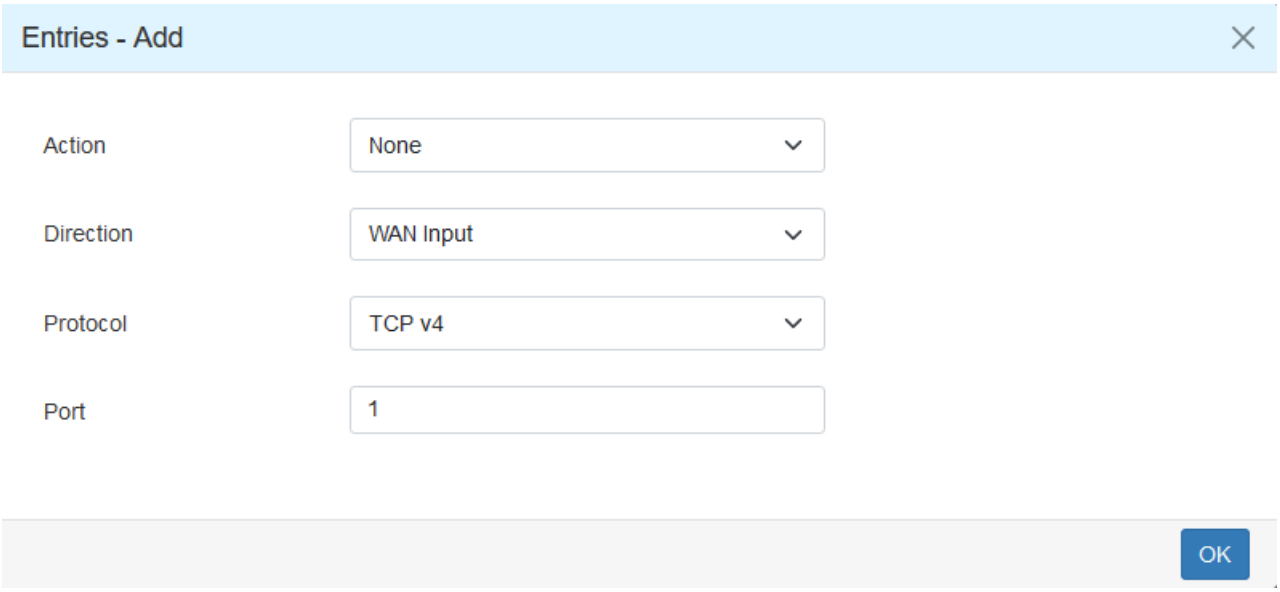
This section allows user to setup a management IP that is able to access the device from LAN or WAN side. This IP has higher management permissions than firewall settings.



12.5 Service Port

This section allows managing access to the router's own services.

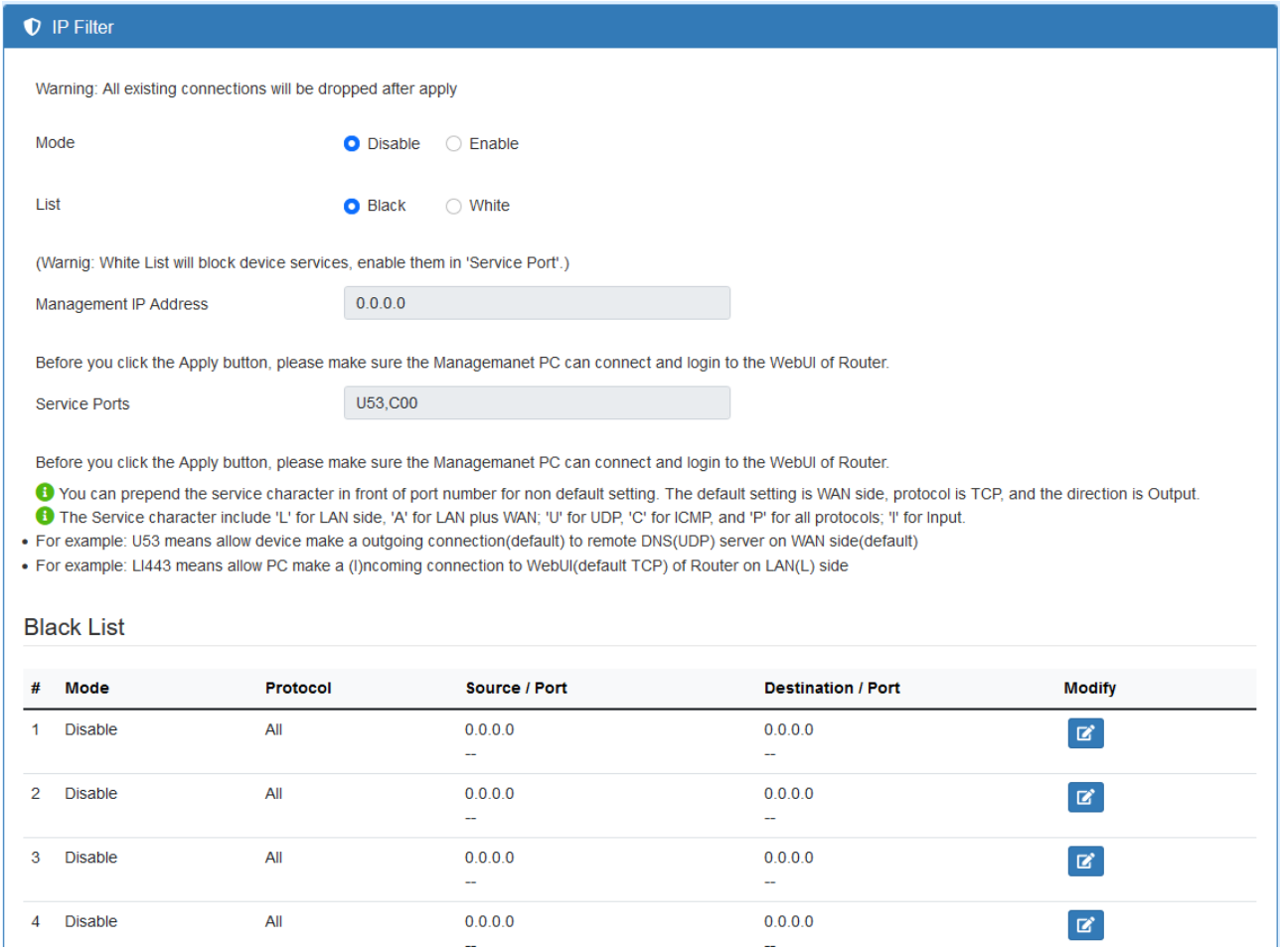




Firewall > Service Port	
Item	**Description**
Mode	Enable or disable the service port function.
Action	Select the action for selected entry.
Direction	Select the direction of traffic for selected entry.
Protocol	Select the protocol type.
Port	Enter the service port number.

12.6 IP Filter

This section allows you to configure IP Filter. After clicking button, you can edit your IP protocol, source/port and destination/port. The default is **Disable** mode and **Black** list.



Black List: When Black List selected, all specified IP address/port are blocked.

White List: When White List selected, all specified IP address/port are accepted.

Management IP Address:

For White List only. Since White List will block all user communication except those has been assigned by rules, it is better to assign a specific IP address for the administrator to access the Router, which is Management IP Address.

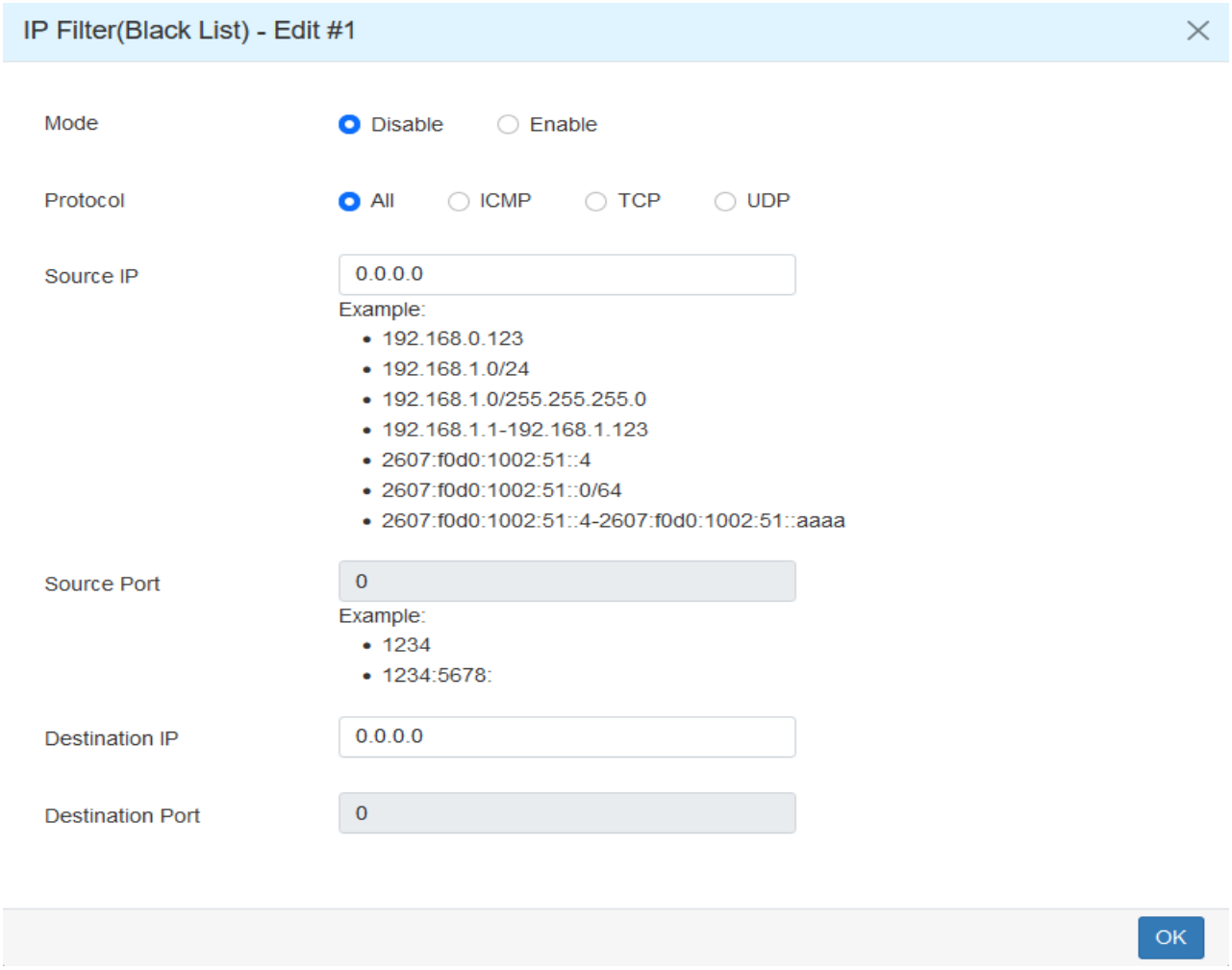
Service Ports:

For White List only. The setting is specified for Router access only. The user can set it to allow Router access outside WAN or inside LAN Service. For example, access outside WAN DNS service. It also allows user to access Router service from outside WAN or inside LAN. For example, access Router Web service.

Edit Black/White List

(1) Click button to edit Black/White list.

(2) The default is **Disable** mode as the following interface (Black/White).



Firewall > IP Filter	
Item	**Description**
Mode	Select from Disable or Enable. The default is Disable.
Protocol	Select from All, ICMP, TCP or UDP.
Source IP	Fill in your source IP address.
Source Port	Fill in your source port.
Destination IP	Fill in your destination IP address.
Destination Port	Fill in your destination port.

(3) When selecting Enable Mode, the protocol is TCP. The source IP has IPv4 and IPv6 setting formats.

(4) For Source IP, there are three types to input your source IP that depends on your requirement, including single IP, IP with Mask or giving a range of IP. The following table provides some examples.

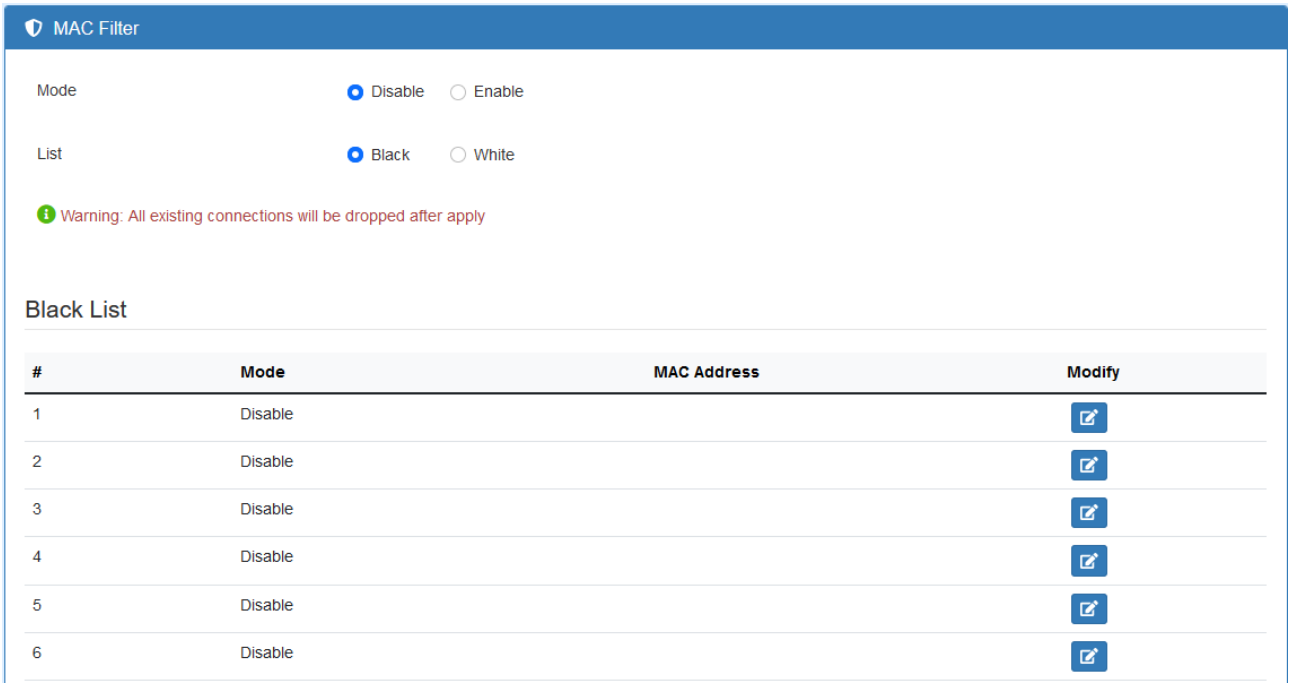
Firewall > Edit IP Filter > Source IP			
IP Format	**Single IP**	**IP with Mask**	**Ranged IP**
IPv4	192.168.0.123	192.168.1.0/24 192.168.1.0/255.255.255.	192.168.1.1-192.168.1.123
IPv6	2607:f0d0:1002:51::4	2607:f0d0:1002:51::0/64	2607:f0d0:1002:51::4- 2607:f0d0:1002:51::aaaa
Note: Setting up a range of IP, please use – hyphen symbol to mark your ranged IP.			

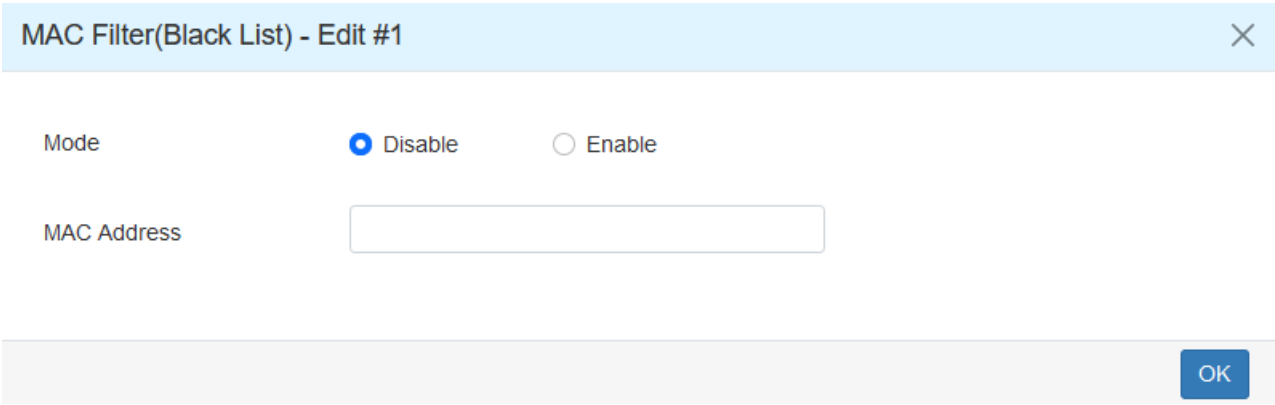
(5) For Source Port, there are two types to input your source port that depends on your requirement, including single port (e.g.1234) or giving a range of ports (e.g.1234:5678).

Note: Setting up a range of source ports, please use: colon symbol to mark your ranged ports.

12.7 MAC Filter

This section allows you to set up MAC Filter. After clicking button, you can edit your MAC address.



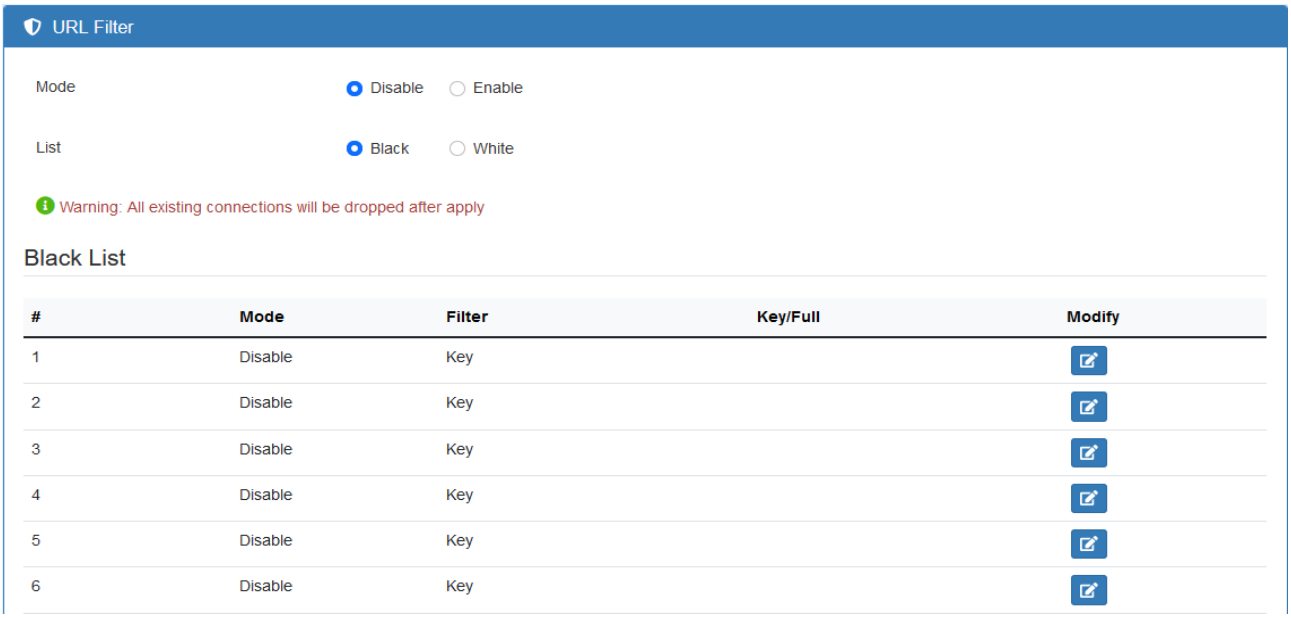


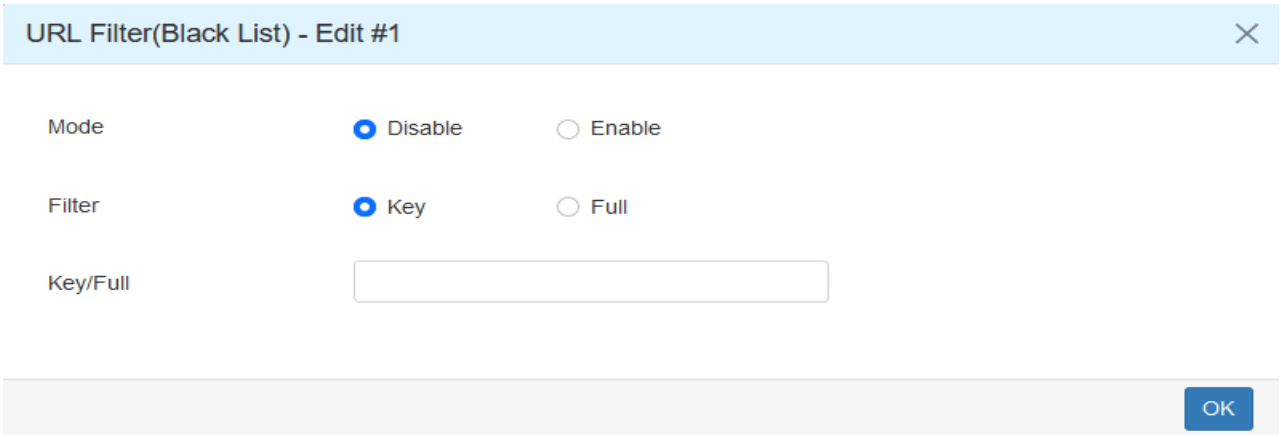
Service > MAC Filter	
Item	**Description**
Mode	Select from Disable or Enable. The default is Disable.
MAC Address	Fill in your MAC address.

Note: Setting up MAC address, please use ":" colon symbol (e.g. xx : xx : xx : xx) or "-" hyphen symbol to mark (e.g. xx - xx - xx - xx).

12.8 URL Filter

This section allows you to set up URL Filter. After clicking button, you can edit the type of filter and information.





Note: Please not include "**https://**" or "**http://**" for the URL address in the **Full** Filter.

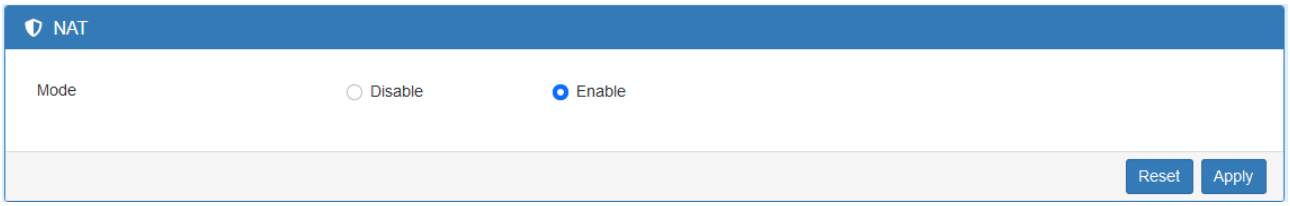
Firewall > URL Filter	
Item	**Description**
Mode	Select from Disable or Enable. The default is Disable.
Filter	Select from Key or Full. The default is Key.
Key / Full	Fill in your Key / Full information.

12.9 NAT

This section allows you to set NAT configuration.

When NAT mode is **Enable**, the router will replace the source private IP address by its Internet public address for outgoing packets, and replace the destination Internet public address by private IP address for incoming packets.

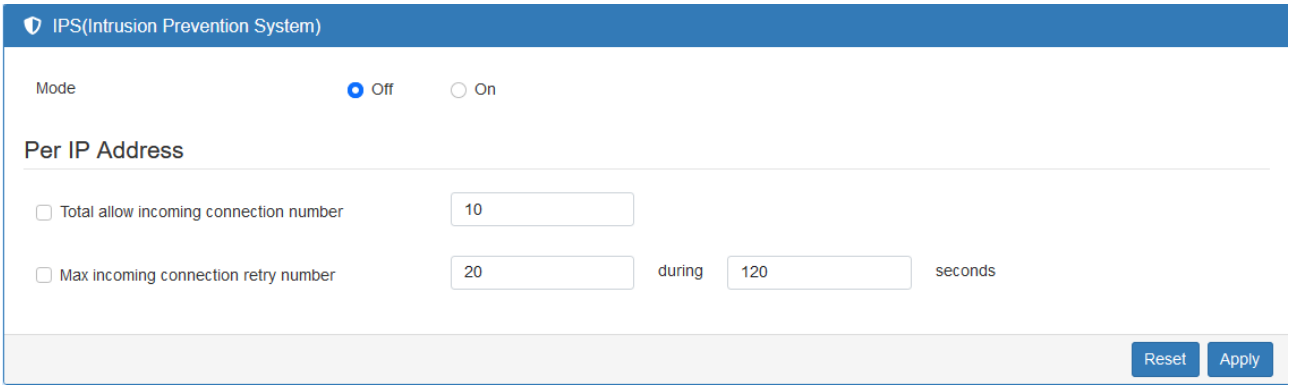
When NAT mode is **Disable**, the router will send the source LAN private IP address for outgoing packets and allow to receive the destination LAN private IP address for incoming packets.



12.10 IPS

This section allows you to set IPS configuration. IPS prevents the system from being attacked by the Internet.

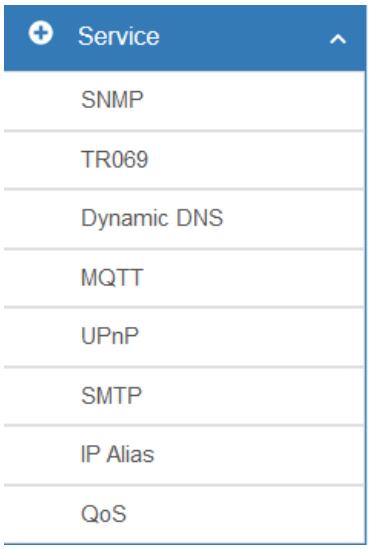
The system allows to limit the max incoming connection number from WAN per source IP address to prevent system resource exhausted. Also, the system allows to limit the max incoming connection retry number during a specific time period from WAN per source IP address to prevent too many unexpected connections retry event from causing system busy.



Firewall > IPS	
Item	**Description**
Mode	Turn on / off IPS function (default: Off)
Total allow incoming connection number	Select the checkbox to enable or disable the function. The default number is 10.
Max incoming connection retry number	Select the checkbox to enable or disable the function. The default number is 20.
Duration time	The default time is 120 seconds.

13 Web Menu Item > Service

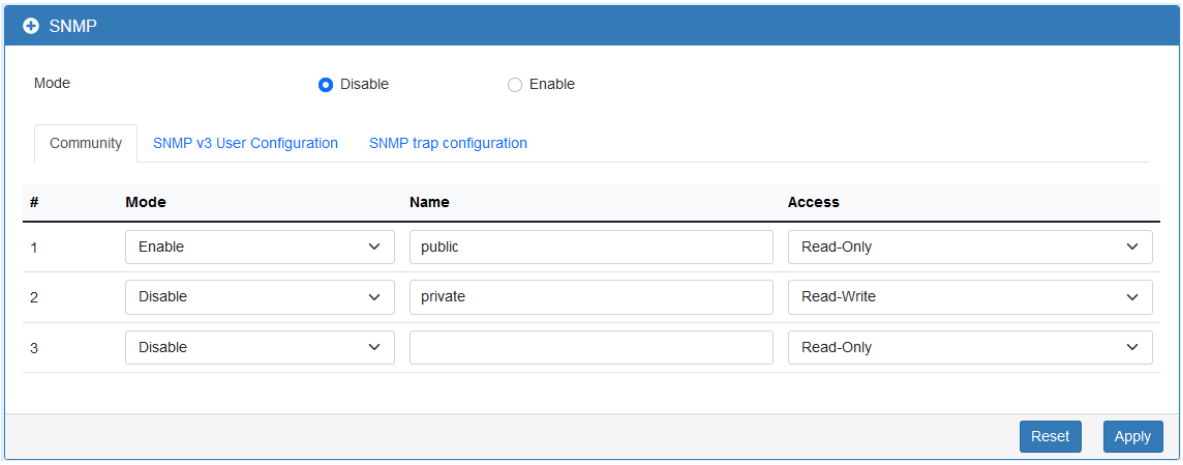
This section allows you to configure SNMP, TR069, Dynamic DNS, VRRP, SMTP, IP Alias, and QoS.



13.1 SNMP

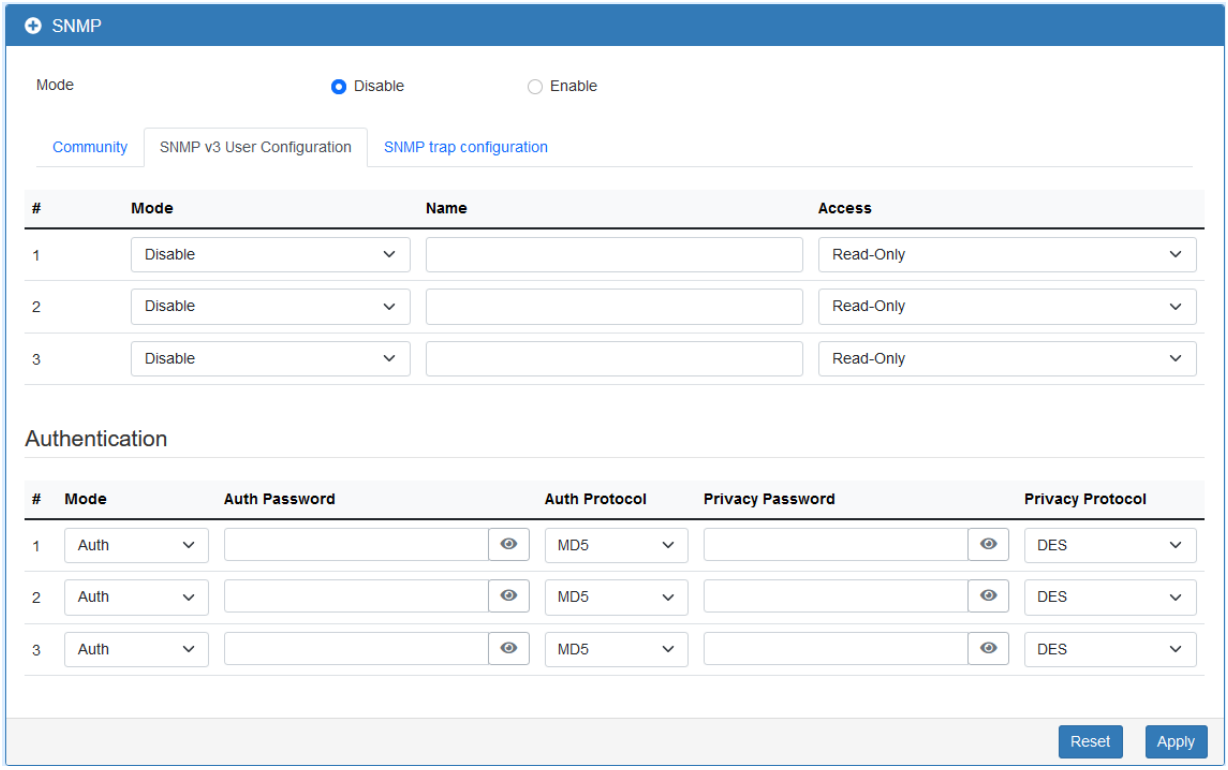
This section allows user to configure the SNMP function.

13.1.1 Community



Service > SNMP > Community	
Item	**Description**
Mode	Select from Disable or Enable to configure SNMP.
Community	Configure community setting with three options, including # 1, # 2 and #3.
Mode	Select from Disable or Enable.
Name	Name each community.
Access	Select from Read-Only or Read-Write.

13.1.2 SNMP v3 User Configuration

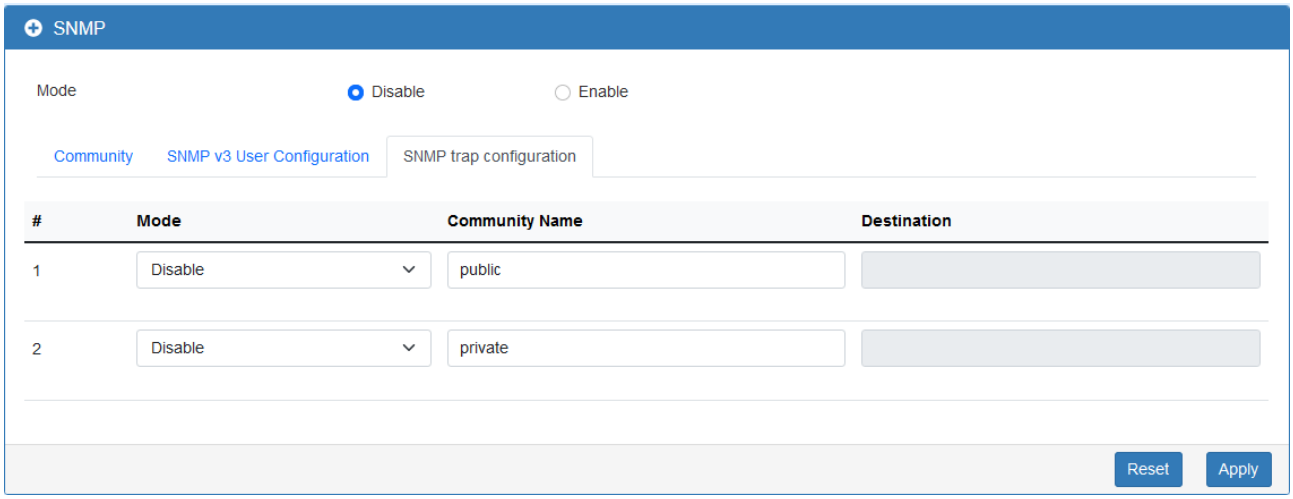


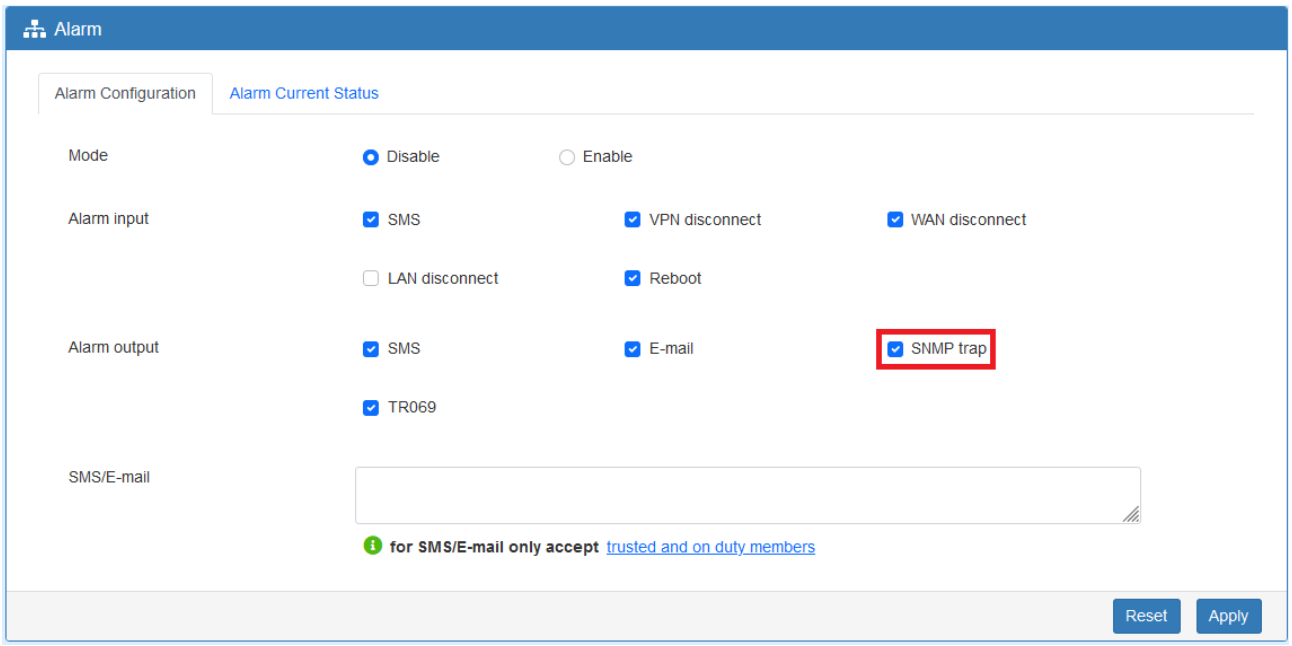
For SNMP v3 User Configuration, you need to register authentication and allow a receiver that confirm the packet was not modified in transit. There are three options to set up SNMP v3 Configuration.

Service > SNMP > SNMP v3 User configuration	
Item	**Description**
Mode	Select from Disable or Enable to configure SNMP. The default is Disable.
Name	Fill in your name.
Auth Mode	Select from Authentication or Privacy.
Authentication Password	Fill in your authentication password.
Authentication Protocol	Select from MD5 or SHA.
Privacy Password	Fill in your privacy password.
Privacy Protocol	Select from DES or AES.
Access	Select from Read-Only or Read-Write.

13.1.3 SNMP trap configuration

This section allows you to set up the SNMP trap configuration when you select the SNMP trap function from Alarm output of system for your router. With SNMP trap setting, you can know the status of remote device.

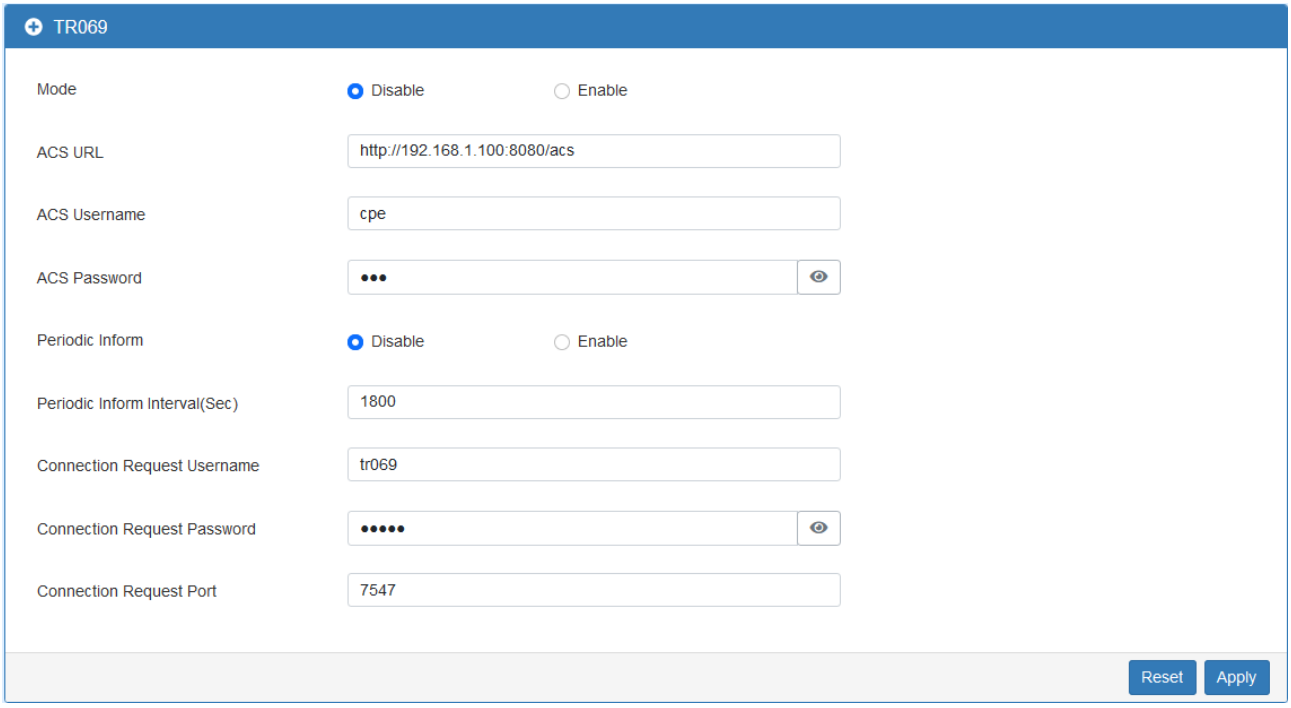




Service > SNMP > SNMP trap configuration	
Item	**Description**
Mode	Select from Disable or Enable. The default is Disable.
Community Name	Fill in your community name.
Destination	The destination (domain name/IP) of remote SNMP trap server.

13.2 TR069

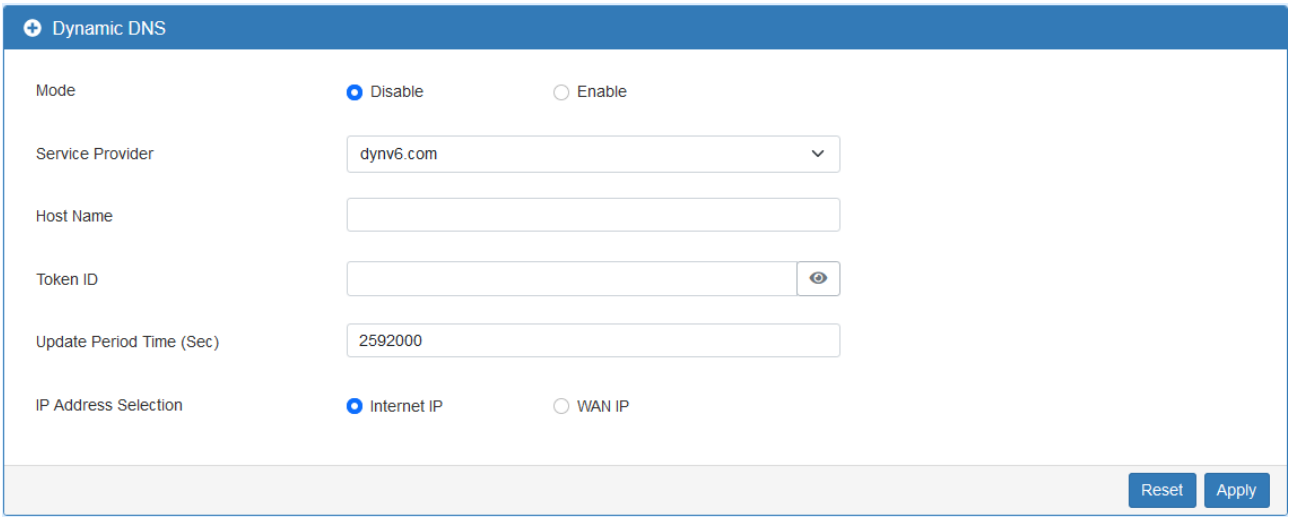
This section allows you to set up TR069 client configuration. You can get information how to install TR069 Server (GenieACS Installation) from the application configuration chapter.



Service > TR069	
Item	**Description**
Mode	Select from Disable or Enable. The default is Disable.
ACS URL	Fill in the URL address of ACS (Auto-Configuration Server).
ACS Username	Fill in the ACS username to authenticate the CPE (this router) when connecting to the ACS.
ACS Password	Fill in the ACS password to authenticate the CPE (this router) when connecting to the ACS.
Periodic Inform	Select from Disable or Enable. The default is Disable. The CPE reports the status to the ACS when enabling a period of time set.
Periodic Inform Interval (Sec)	Fill in the periodic time. The CPE reports to ACS the status according to your duration in seconds of the interval set.
Connection Request Username	Fill in the connection request username to authenticate the ACS if the ACS attempts to communicate with the CPE.
Connection Request Password	Fill in the connection request password to authenticate the ACS if the ACS attempts to communicate with the CPE.
Connection Request Port	Fill in the connection request port to authenticate the ACS if the ACS attempts to communicate with the CPE.

13.3 Dynamic DNS

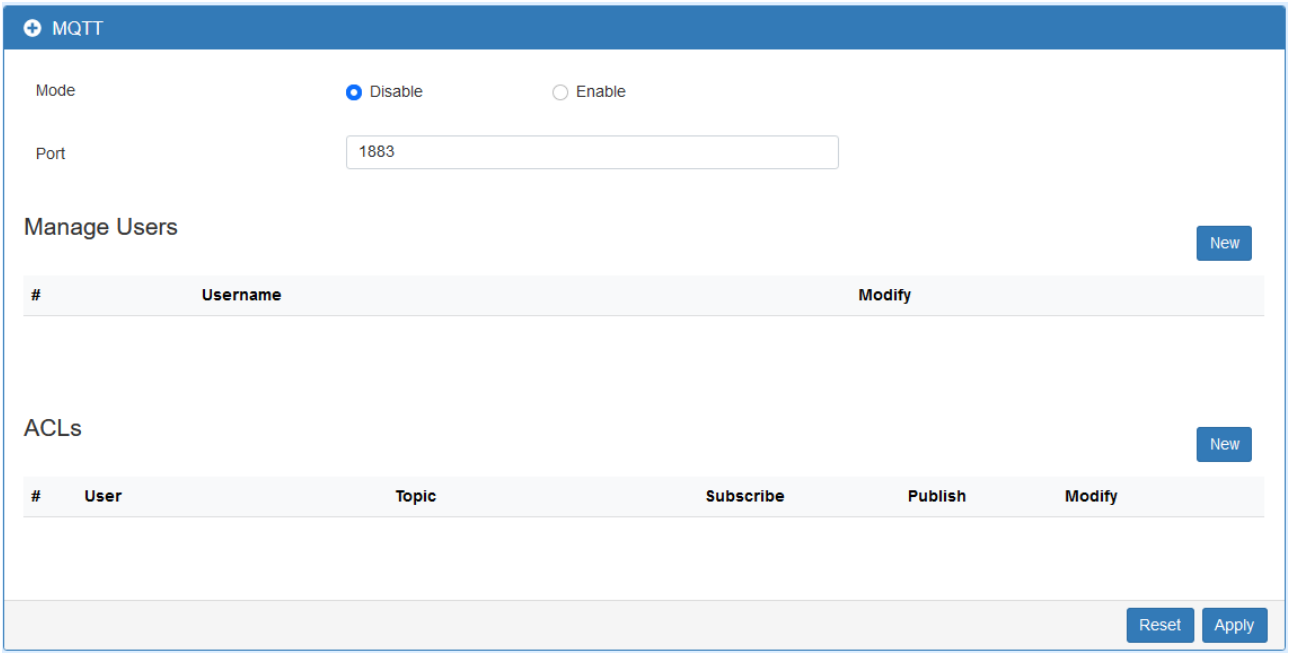
This section allows you to set up Dynamic DNS.



Service > Dynamic DNS	
Item	**Description**
Mode	Turn on/off this function to select Disable or Enable. The default is Disable.
Service Provider	Select the Service Provider of Dynamic DNS.
Host Name	Fill in your registered Host Name from Service Provider.
Token ID	Fill in your Token ID from Service Provider.
Host Secret ID	Fill in your Secret ID from Service Provider.
Username	Fill in your registered username from Service Provider.
Password	Fill in your registered password from Service Provider.
Update Period Time (Sec)	Fill in “0” to mean 30 days.
IP Address Selection	Select either Internet IP or WAN IP.

13.4 MQTT

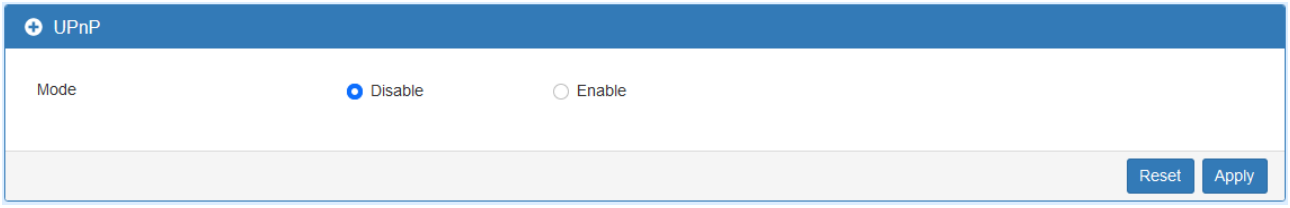
This section allows user to configure the MQTT. It allows the MQTT client to send the message within specific topic or channel. By default, the router does not allow anonymous to read/write the MQTT topic or channel. Thus, you need to create the account with username and password for MQTT client on the web UI.



Service > MQTT	
Item	**Description**
Mode	Select from Disable or Enable. The default is Disable.
Port	Fill in the port number of MQTT application.
Manage Users	Enter the priority value from 1 to 254. The larger value has higher priority. The default is 100.
Username	Fill in the username of manage user.
Password	Fill in the password of manage user.
ACLs	Allow to specify what topic should be limited.
User	Select the users and identify their authority to read or write the MQTT topic/channel.
Topic	Name the topic of MQTT message.

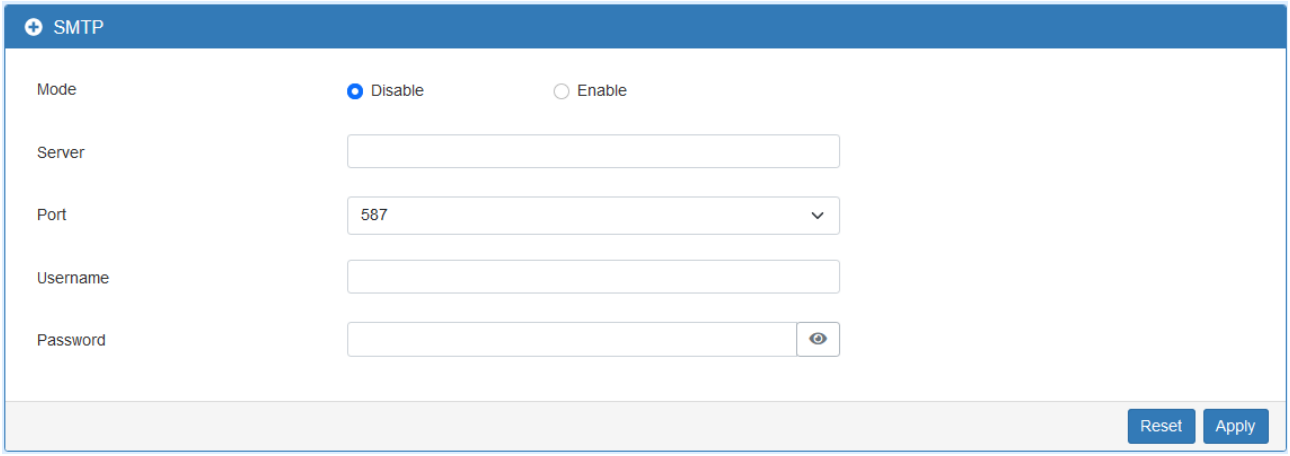
13.5 UPnP

This section allows to set up UPnP confirguration to select the mode from Disable or Enable. The default UPnP is disabled for the cellular router.



13.6 SMTP

This section provides you to send your email for the server. For instance, the email will be sent to notify when the Alarm has a nofitication by the server.

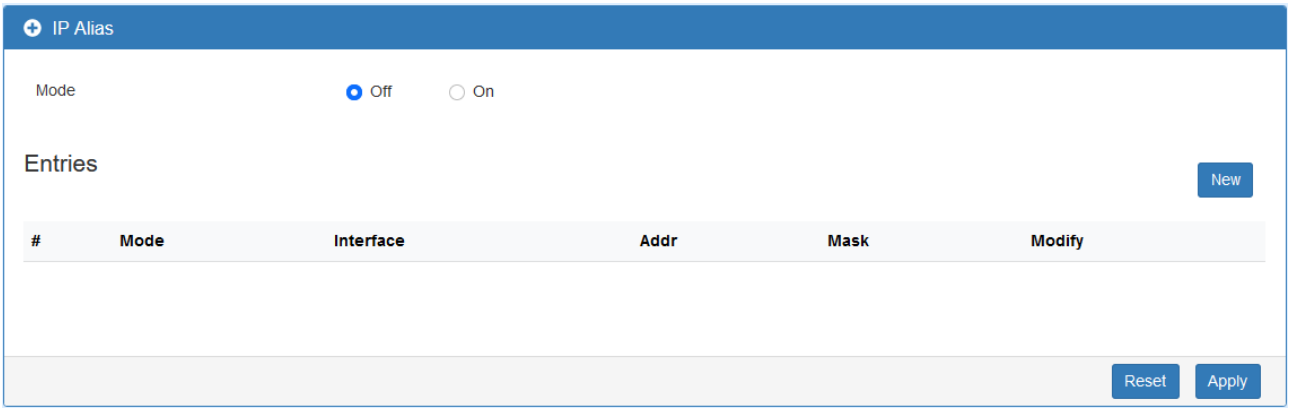


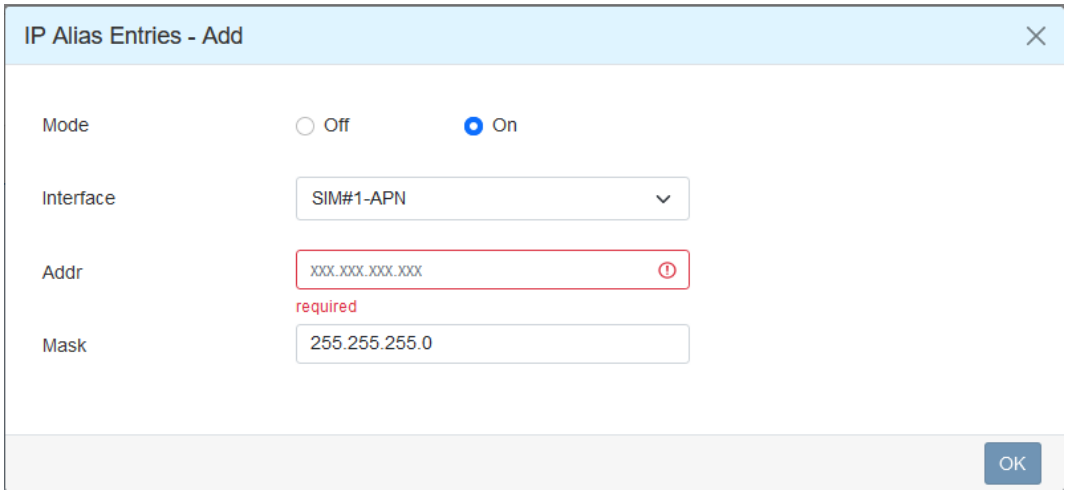
Service > SMTP	
Item	**Description**
Mode	Select from Disable or Enable. The default is Disable.
Server	Enter the domain or IP address of the SMTP server.
Port	There are three ports for SMTP communication between mail servers. Port 25：Use TCP port 25 without encryption. Port 465：SMTP connections secured by SSL. Port 587：SMTP connections secured by TLS.
Username / Password	Fill in your username and password as the same your server.

13.7 IP Alias

This section allows you to set **IP Alias** configuration.

IP Alias is associating more than one IP address to a network interface. With IP Alias, one node on a network can build multiple connections with the network, each serving a different purpose. IP Alias can be used to provide multiple network addresses on a single physical interface.





Service > IP Alias	
Item	**Description**
Mode	Select from Off or On to enable the IP Alias.
Entries	View / Modify / Delete the existing entries.
New / Edit IP Alias Entry	Mode: select from Off or On to use or not use this entry. Interface: the interface you want to provide the additional address. IP Address: Enter the IP address. IP Mask: Enter the network mask.

13.8 QoS

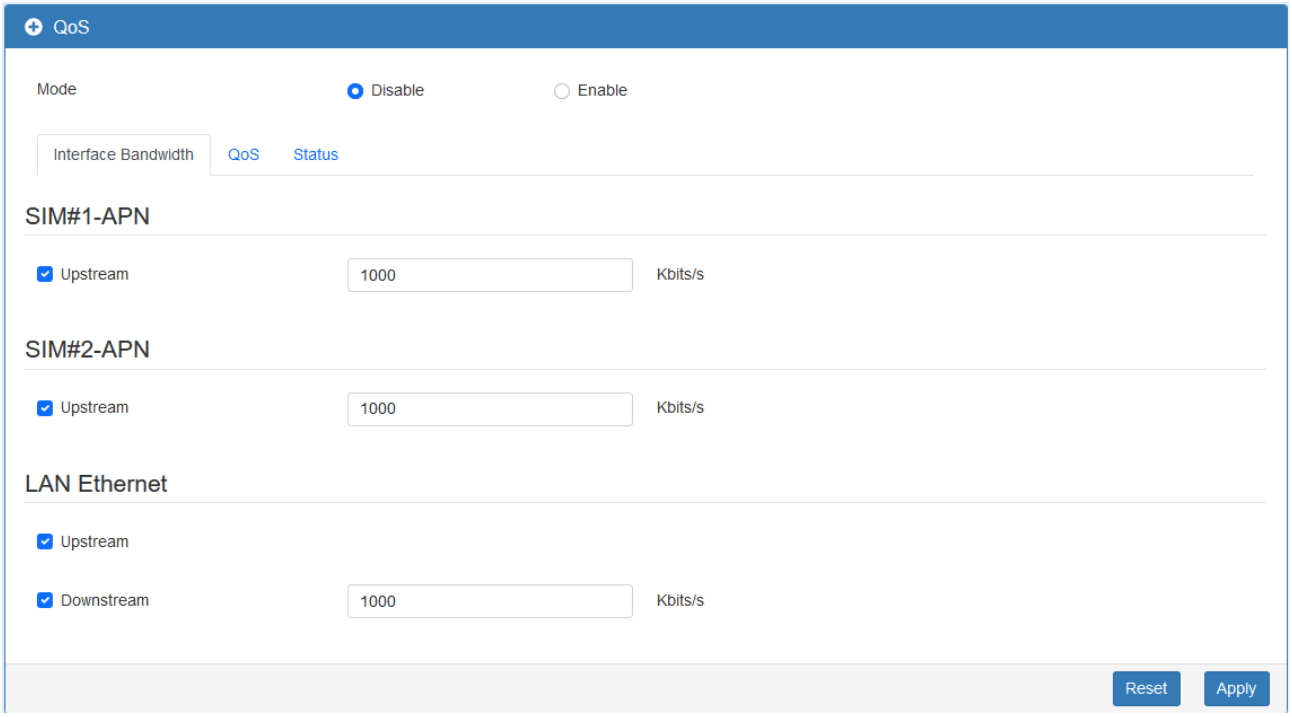
QoS (Quality of Service) refers to a network ability to achieve maximum bandwidth and allow minimum bandwidth. It guarantees the minimum and limit the maximum bandwidth class of traffic. The QoS configuration has three parts, including ISP bandwidth, QoS, and Status.

- ISP bandwidth allows user to configure the max bandwidth for upstream and downstream of specific WAN interface. Upstream means from LAN to WAN. Downstream means WAN to LAN.
- QoS configuration allows user to classify the traffic. Once classified, the traffic will have the guarantee minimum and limit maximum bandwidth.
- Status allows user to monitor the dynamic bandwidth usage.

13.7.1 QoS > Interface Bandwidth

User can assign the Upstream and Downstream Bandwidth for each interface. The Bandwidth unit is kilobits per second.

To prevent guaranteed traffic loss, the assigned bandwidth is better not to exceed the real bandwidth because the allowable traffic quantity may exceed the real bandwidth.



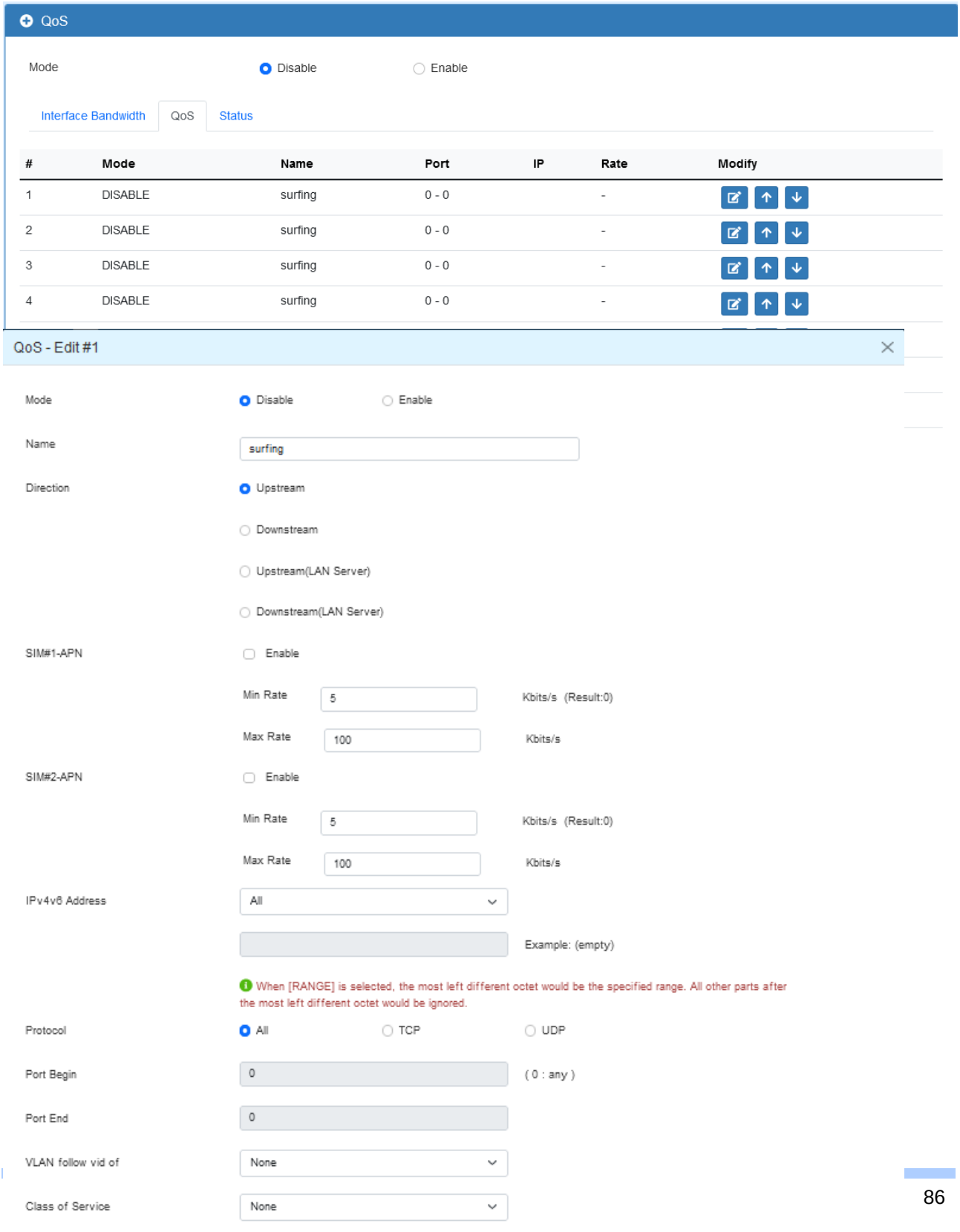
13.7.2 QoS > QoS

You can select QoS tab to show an overall view for QoS configuration.

At right side of window, there are three buttons.

- Edit button: It allows you to edit QoS Entry and configure QoS settings.
- Up/Down arrow button: It allows you to adjust priority of the QoS entry. The first QoS entry is the highest priority.

The QoS entry configuration page has three parts for classify traffic, assign bandwidth, and group IP address bandwidth.



Service > IP Alias	
Item	**Description**
Mode	Select from Disable or Enable QoS.
Name	The setting can be edited or deleted the existed entries.
Direction	When selecting Upstream for LAN to WAN traffic, the Port Begin/End is for public server. When selecting Downstream for WAN to LAN traffic, the Port Begin/End is for public server. When selecting Upstream (LAN server) for WAN to LAN traffic, the Port Begin/End is for LAN server. When selecting Downstream (LAN server) for LAN to WAN traffic, the Port Begin/End is for LAN server. Downstream (LAN server) is for LAN to WAN traffic, and the Port Begin/End is for LAN server.
Interface/Min rate(Result)/Max rate	For traffic from LAN to WAN by selecting Direction, the egress interfaces WAN (Upstream) show up. For traffic from WAN to LAN by selecting Direction, the egress interfaces LAN (Downstream) show up. Max Rate: It is the maximum limited bandwidth. Min Rate: This value guarantees the minimum bandwidth.
IPv4v6 Address	Choose four types to set address format, including All, Single, Subnet, and Range.
Protocol	Select the protocol type of traffic.
Port Begin/Port End	Specify the port range of traffic.
VLAN follow vid of	NONE. NET1 - NET8. Note: For NET1 to NET8, make sure the related subnet is enabled at VLAN->Tag Base. The VLAN ID, vid, will be the VID field of the related Subnet at VLAN->Tag Base.
Class of Service	NONE or 0~7. It is class of service for VLAN.

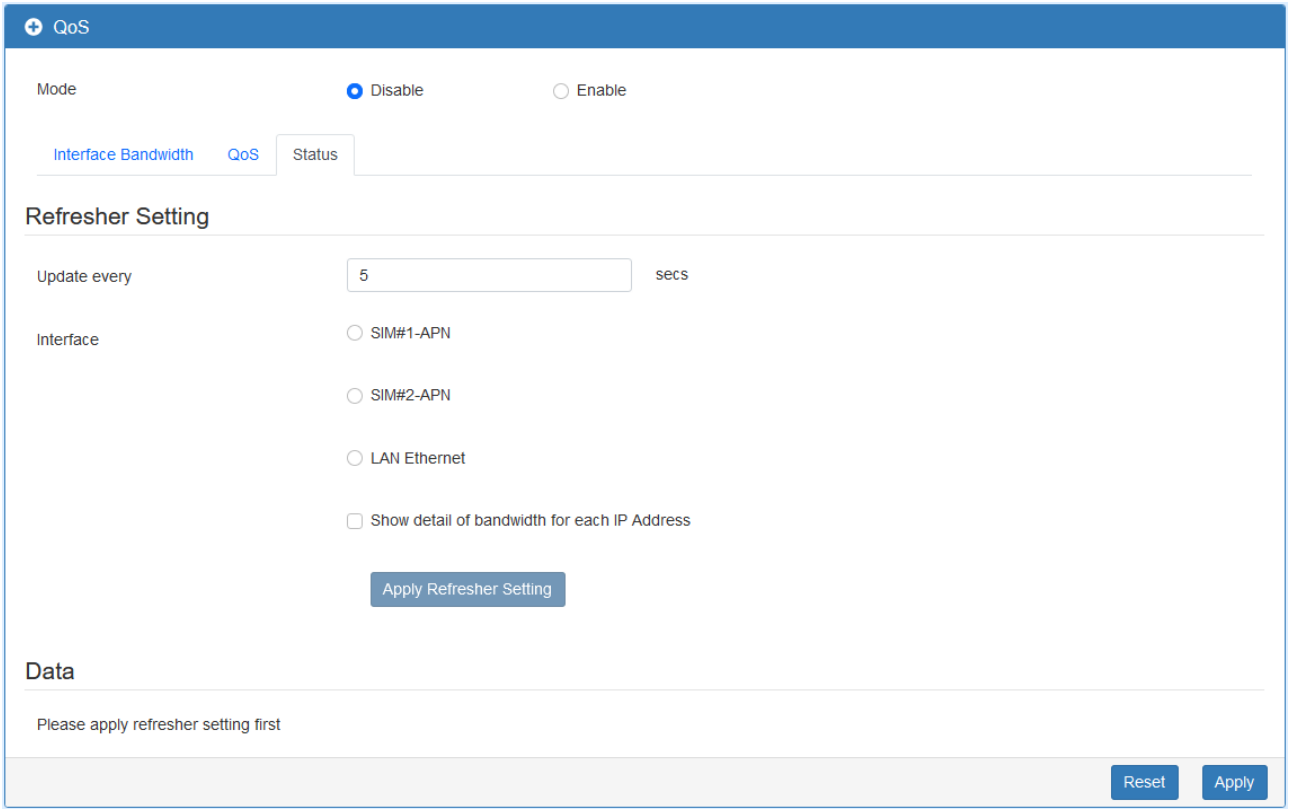
13.7.3 QoS > Status

Refresher Setting select the showed content of bandwidth usage by following items:

- Refresh rate: how long the browser will update the showed content once with selected interface.

- Show detail bandwidth for each IP address: show the group IP bandwidth usage.
- Apply Refresh Setting button: press this button to take effect with above new settings.

Data part is the content of bandwidth usage.



14 Web Menu Item > Management

This section provides you to manage the router, set up your administration and know about the status of current software and firmware. In addition, you can backup and restore the configuration.

14.1 Identification

This section allows you to confirm the profile of router, current software, and firmware version and system uptime.

Identification

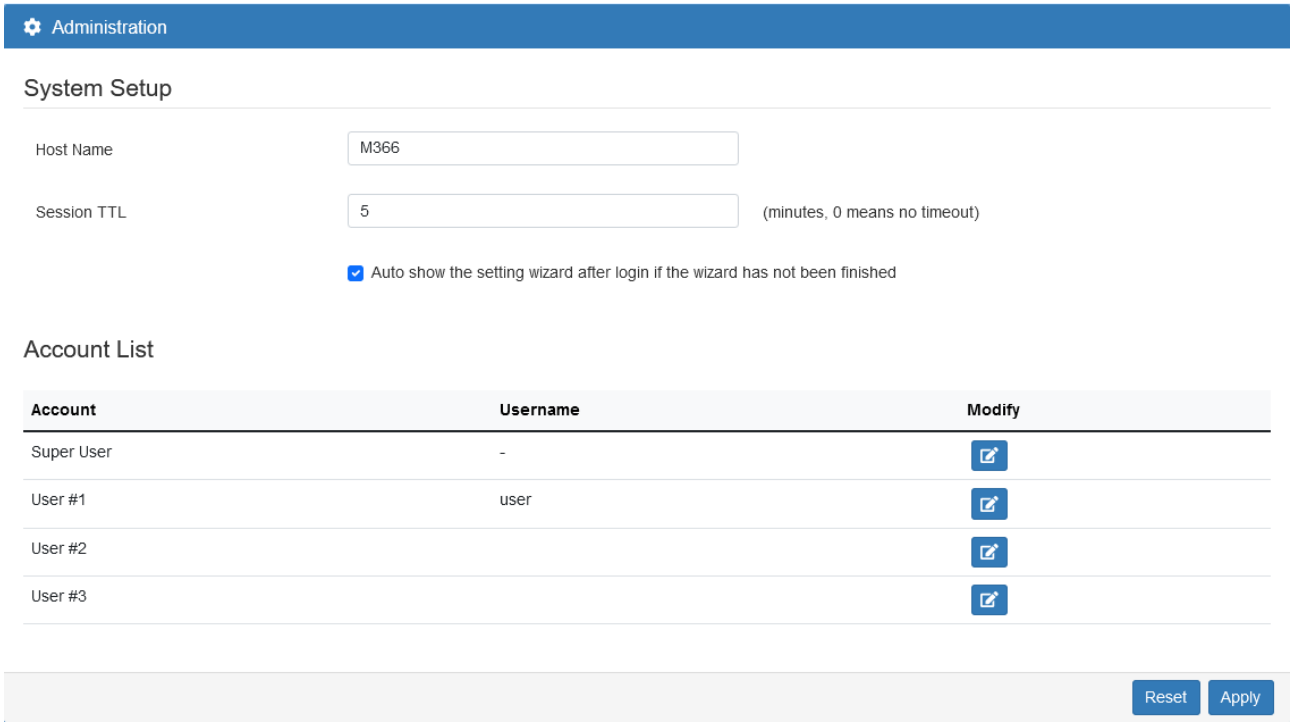
Active Image Partition	b
Model Name	M366
Host Name	M366
LAN Ethernet MAC Address	00:03:79:07:F3:96
Bootloader Version	1.1
Software Version	V1.00
Software MCSV	016E000110035C40
Hardware MCSV	016E0001001336AC
Dual Image A MCSV	016E000110035C3F
Dual Image B MCSV	016E000110035C40
Serial Number	BLCRK44H0007
Modem Firmware Version	EC25EFAR06A06M4G
IMEI	862348051770170
Uptime	5:55:30
FOTA check time	
FOTA Software Version	
FOTA next check time	

Refresh

Management > Identification	
Item	**Description**
Active Image Partition	Show the active image partition: a or b
Model Name	Show the model name of the cellular router.
LAN Ethernet MAC Address	Show the MAC address of LAN interface.
Bootloader Version	The bootloader version of the device.
Software Version	Show the software version currently running on the device.
Software MCSV	Show the software MCSV of the running firmware.
Hardware MCSV	Show the hardware MCSV of the device.
Dual Image A MCSV	Show the Dual Image A MCSV.
Dual Image B MCSV	Show the Dual Image B MCSV.
Serial Number	Show the product serial number.
Modem Firmware Version	Show the modem firmware version of the device.
IMEI	Show the IMEI (International Mobile Equipment Identity number).
Uptime	Show the current system uptime.
FOTA check time	Show the FOTA check time.
FOTA Software Version	Show the FOTA software version.
FOTA next check time	Show the FOTA next check time.

14.2 Administration

This section allows you to set up the name of system and change your new password. For the Session TTL, you can set up what duration of time will be logout. If you do not need to have this timeout limitation, you can fill in “0” (Zero).



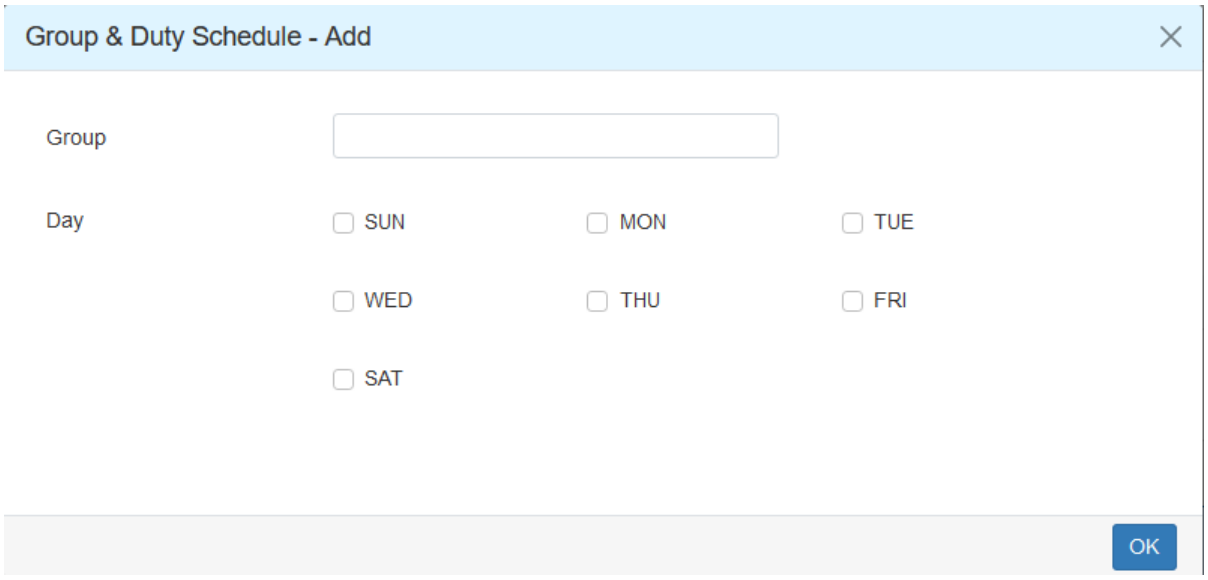
Management > Administration	
Item	**Description**
System Setup	
Host Name	Enter the device’s host name.
Session TTL	Minutes (0 means no timeout).
Admin Password	
New Password	Type the password you want to change.
Retype to confirm	Retype the password you want to change.

14.3 Contacts / On Duty

This section allows you to create groups, and add users. For more detailed instruction, please navigate to System > Alarm.

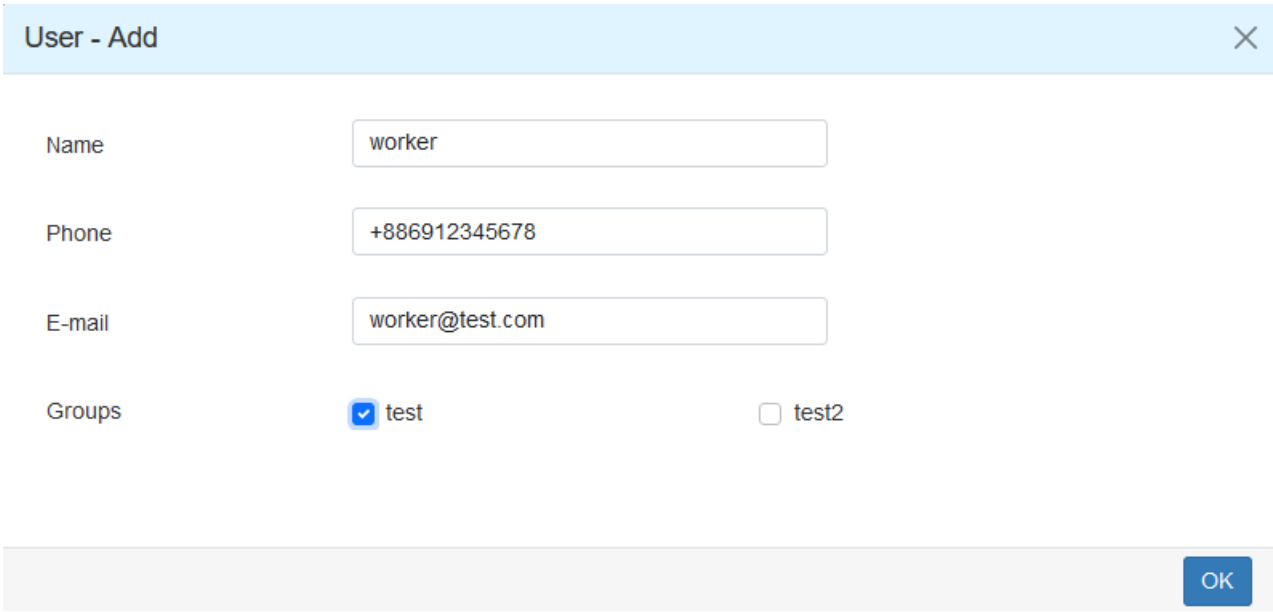
14.3.1 Group

Click the **New** button to create a new group. Then enter the name for the group and select the day that should be applied.



14.3.2 Contacts

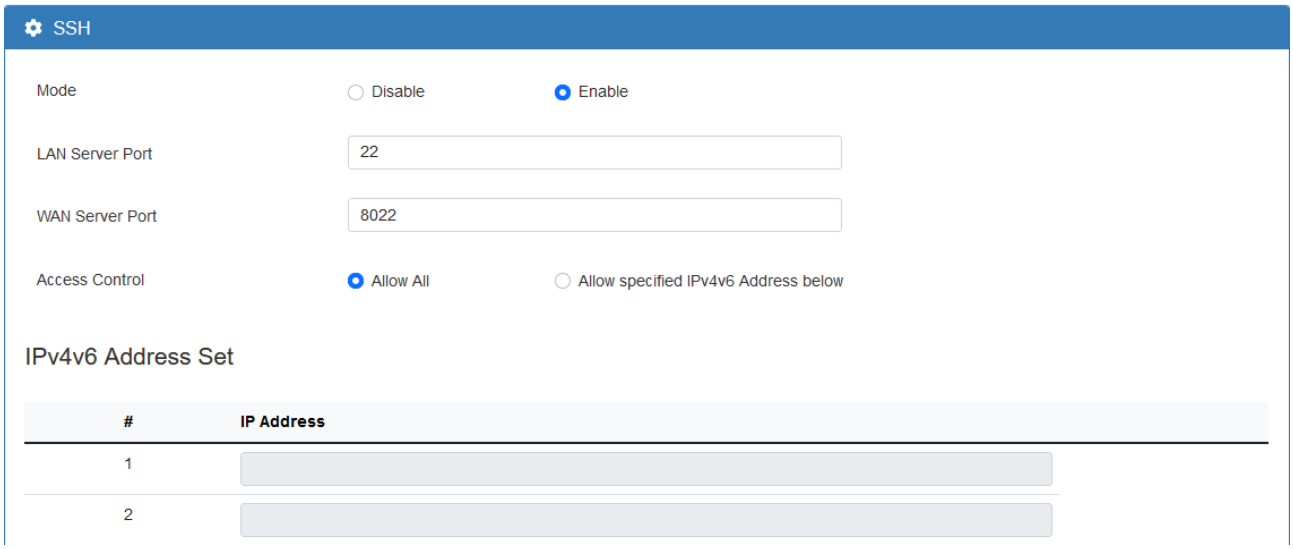
Click the **New** button to create a new user. Enter the user's information and select the group which created by above step.



Please select duty day for every group. The trust and responsible groups can control/receive alarms and SMS.

14.4 SSH

Secure Shell (SSH) allows user to configure system via a secure channel. User can configure system from either public domain or local LAN.

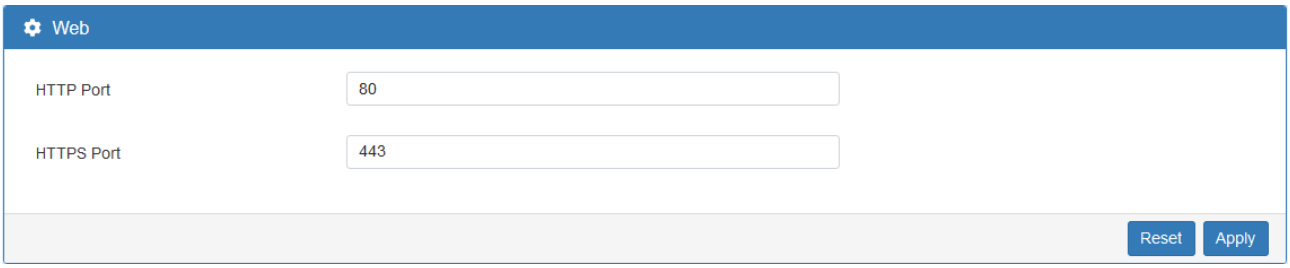


Management > SSH	
Item	**Description**
Mode	Select from Disable or Enable SSH function.
LAN Server Port	The listen port on LAN interface.
WAN Server Port	The listen port on WAN interface.
Access Control	Allow All: Any client who own the IPv4v6 Address can reach system is able to connect system. Allow specified IPv4v6 Address below: Only those configured IPv4v6 Addresses can connect to the system.

14.5 Web

This section allows user to change the HTTP port via HTTP. As long as pressing Apply, the web daemon will restart the new configuration, and you won't see the response at the web browser.

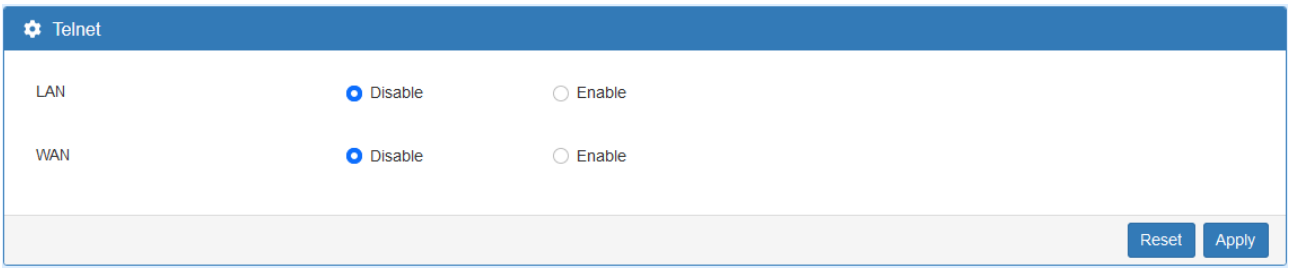
After pressing Apply button, the device will apply immediately and give you some hints "Please use new port to access latter". For example, port 3000.



Management > Web	
Item	**Description**
HTTP Port	The TCP port listened by HTTP daemon.
HTTPS Port	The TCP port listened by HTTPS daemon.

14.6 Telnet

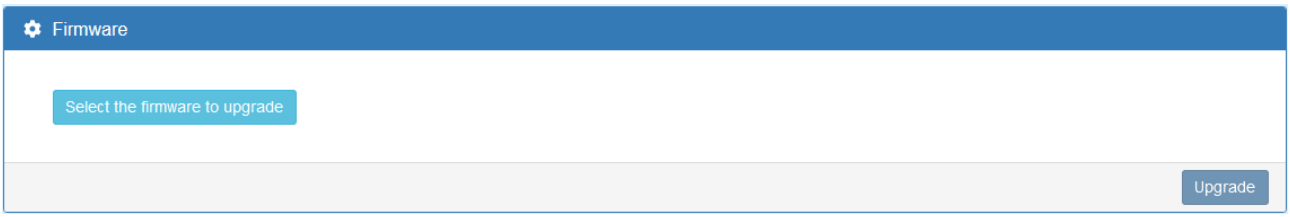
This section allows user to choose whether offer the telnet via LAN/WAN.



Management > Telnet	
Item	**Description**
LAN	Whether or not offer the telnet service.
WAN	Whether or not offer the telnet service.

14.7 Firmware

This section provides you to upgrade the firmware of the device.



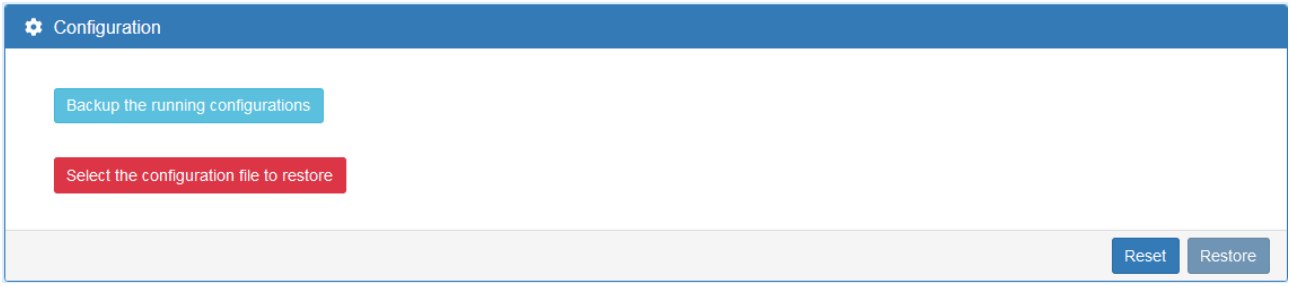
(1) Click Select the firmware to upgrade button to choose your current firmware version in your PC.

(2) Select Upgrade button to update.

(3) After upgrading successfully, please reboot the device.

14.8 Configuration

This section supports you to export or import the configuration file.

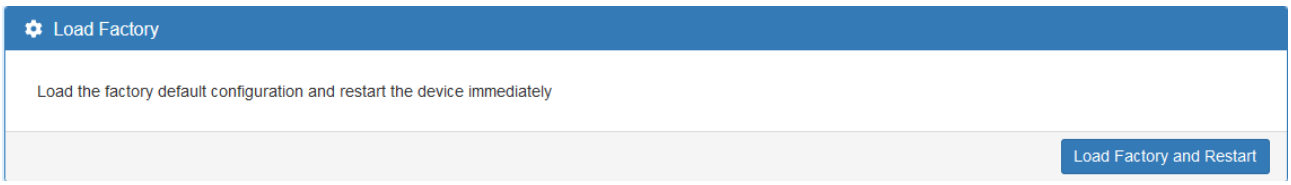


(1) Click Backup the running configurations button to export your current configurations.

(2) Click Select the configuration file to restore button to import the configuration file.

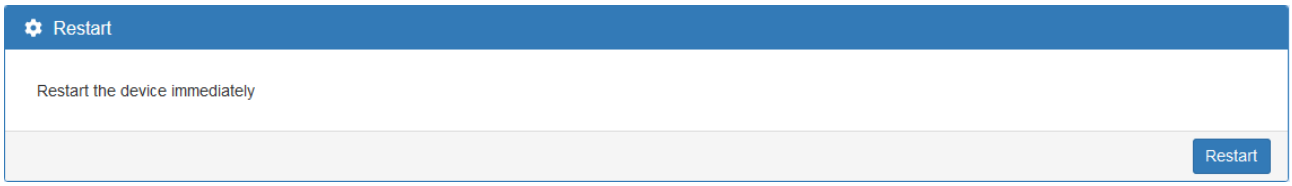
14.9 Load Factory

This section supports you to load the factory default configuration and restart the device immediately. You can click the Load Factory and Restart button.



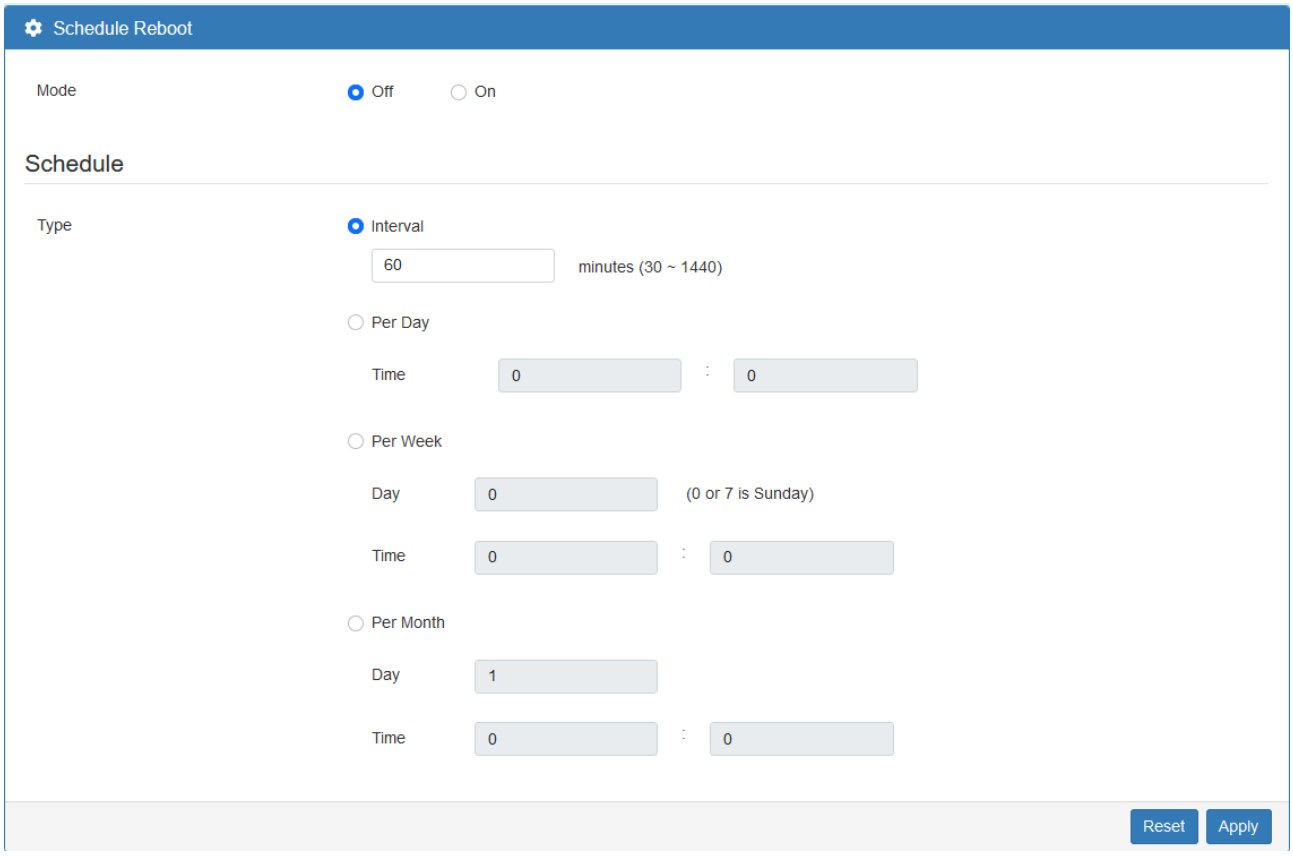
14.10 Restart

This section allows you to click Restart button to restart immediately.



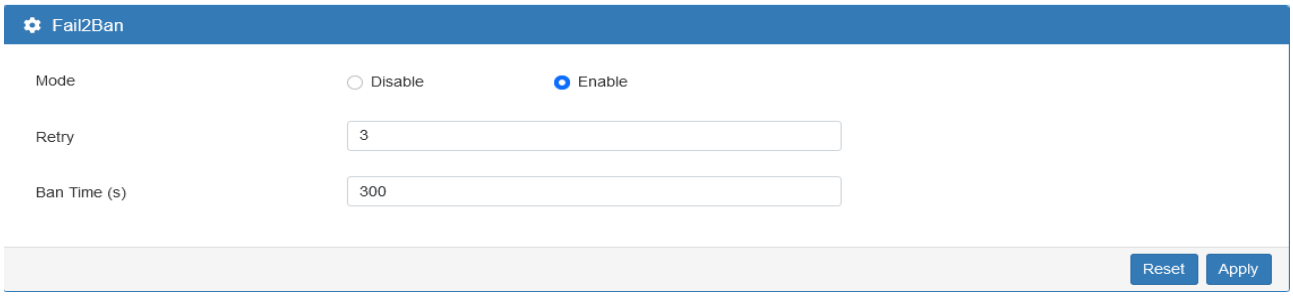
14.11 Schedule Reboot

The setting allows you to schedule the reboot time regularly.



14.12 Fail2Ban

Fail2Ban is an intrusion prevention feature that protects the device from brute-force login attacks.



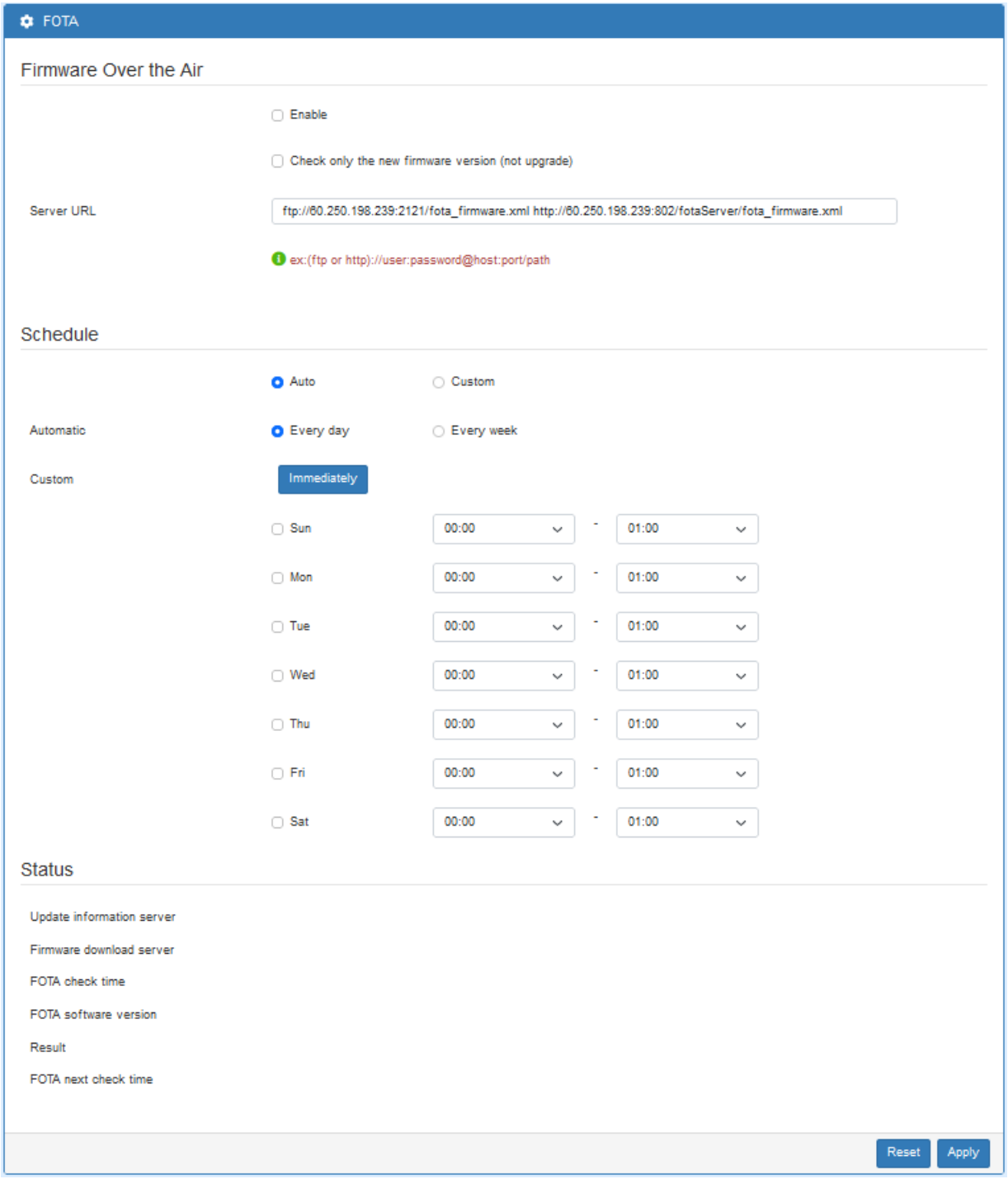
Management > Fail2Ban	
Item	**Description**
Mode	Select from Disable or Enable. The default is Enable.
Retry	The limit for maximum login retries/attempts.
Ban Time(s)	The banned time(s) for user or IP when it exceeded the retry limit.

Note: There is an example to explain how to configure. E.g. Assume the retry is 3 and the ban time is 300 seconds. If a specified IP has 3 login failures within 5 minutes then it will be banned 300 seconds. Moreover, if it keeps to attempt a login and still fail then the banned time will be extended automatically.

Time	The count of login failure	The banned time (s)
2019/1/1 12:00:00	0	0
2019/1/1 12:00:01	1	0
2019/1/1 12:00:03	3	300
2019/1/1 12:00:10	4	300
2019/1/1 12:00:30	6	600

14.13 FOTA

This section allows you to set up the Firmware Over-the-Air (FOTA).



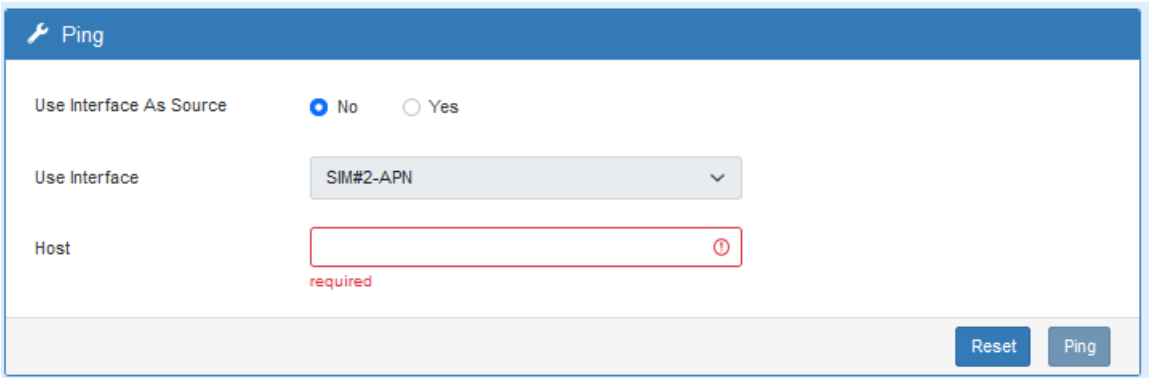
Management > FOTA	
Item	**Description**
Firmware Over the Air	
Enable	Enable or disable the FOTA function, which is disabled by default.
Check only the new firmware version (not upgrade)	Only check, not download firmware from the server.
Server URL	Enter custom server URL.
Schedule	
You can choose Auto or Custom, which is Auto by default.	
Auto	There are two options for automatic, every day or every week.
Custom	You can choose the time or execute it immediately.
Status	Show the status information after running. Update information server, Firmware download server, FOTA check time, FOTA software version, Result, FOTA next check time.

15 Web Menu Item > Diagnosis

This section allows you to diagnose Ping, Traceroute, and TTY2TCP.

15.1 Ping

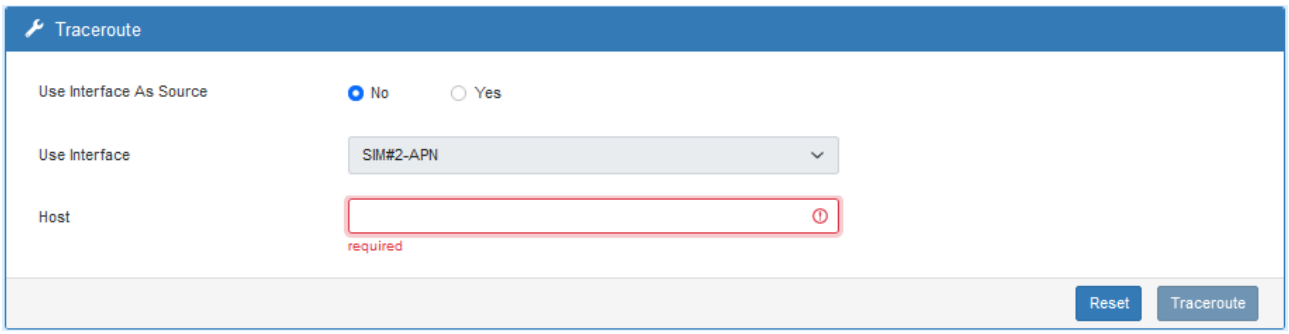
Please assign the Host that you want to ping.



Diagnosis > Ping	
Item	**Description**
Use Interface as Source	When set to Yes, it will use the selected interface as source IP.
Use Interface	Specify the IP address of selected interface as source IP.
Host	The host name or the host IP address

15.2 Traceroute

Please assign the Host you want to traceroute.



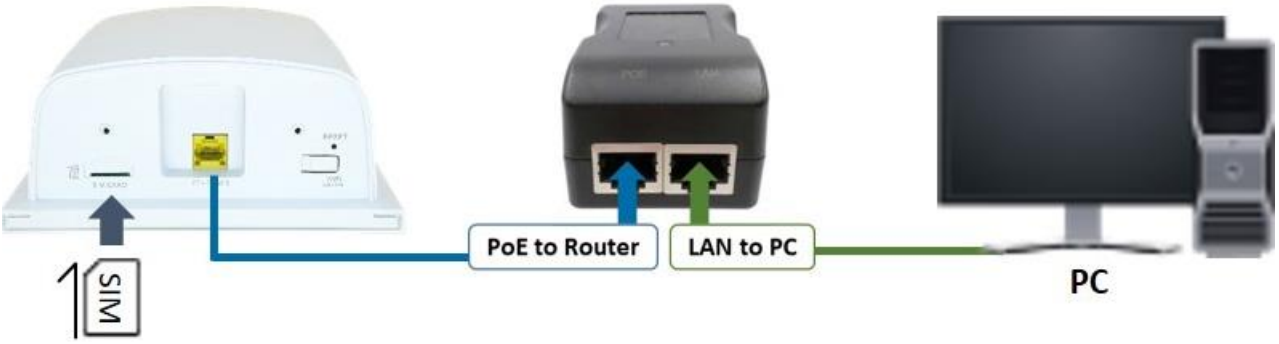
Diagnosis > Traceroute	
Item	**Description**
Use Interface as Source	When set to Yes, it will use the selected interface as source IP.
Use Interface	Specify the IP address of selected interface as source IP.
Host	The host name or the host IP address

15.3 TTY2TCP

Diagnosis > TTY2TCP	
Item	**Description**
Port number	the port number to issue TTY2TCP
Start	start TTY2TCP
Stop	stop TTY2TCP

16 Troubleshooting Guide

Typology:



16.1 Initial installation

Please follow our QIG (Quick Installation Guide) document, and you can get your unit setup and ready for use.

Note: Please refer to our User Manual for more detailed information.

16.2 Troubleshooting Information

If you encounter any issue, please refer to the following troubleshooting guide table first for solutions to common problems:

If you cannot find your issue listed here, please refer to the User Manual document for more information that may help you solve your problem.

Problem Type Table		
No.	Problem Type	Description
1	The Cellular Router No power.	Unit has no power.
2	The Cellular Router Access Issue.	Cannot access the Web management page.
3	No internet (From the Cellular Router).	No Internet from your LTE network.

16.2.1 The Cellular Router “No Power” Problem

#Problem 1: Unit has no power.

For the possible solotion, please try the following:

a. Unplug and replug your PoE adapter from the power source.

b. Disconnect and Connect the Ethernet cable from the Ethernet port of Cellular Router.

If the above didn’t solve your “No power” issue, please contact your support engineer for further advanced troubleshooting. (This could involve a possible software or hardware problem that needs to be identified and solved.)

16.2.2 The Cellular Router “Access Issue” Problem

#Problem 2: Cannot access the Web Management page.

For the possible solotion, please try the following:

a. Check that your PC Ethernet card is enabled and configured to get the IP/DNS address automatically.

b. Disconnect and connect the Ethernet cable from the Ethernet port of Cellular Router.

c. Ping the LAN IP (default IP is 192.168.1.1). The ping should PASS.

d. If ping is OK, please try to access the Web Management page again.

If the above didn’t solve your Access Issue then please contact your MIS or anyone that build your network infrastructure to fix the ping fail problem.

If your network infrastructure is confirmed to be OK (hardware works normally and is configured correctly), please contact your support engineer for further advanced troubleshooting. (This could involve a possible software or hardware problem that needs to be identified and solved.)

16.2.3 No Internet (from the Cellular Router) Problem

#Problem 3: No Internet from LTE network of Cellular Router.

The problem might be on the physical contact of the SIM card.

- For the possible solution 1, please try the following:

a. Remove your SIM card.

b. Please re-insert it again (Cheking that the SIM card is in the correct orentation).

c. Reboot the Cellular Router by turning Off/On the power source.

d. Wait for at least 3 minues and check again if you receive internet correctly.

If the above didn't solve your "No internet" Issue then please continue to solution2 bellow.

- For the possible solution 2, please try the following:

a. Access the Web management page (default url is http://192.168.1.1/).

b. Check that the LTE configuration is OK by going to the "LTE -> LTE Config" web page.

c. If you change any configuration, please wait for 2 minues after apply and check again the internet.

If the above didn't solve your "No internet" issue then please check that your SIM card is active and with traffic enabled (by contacting your SIM card provider or by trying that SIM card in another device).

If you are still experiencing the "No internet issue" then please contact your support engineer for further advanced trublesooting (This could involve a posible Software or Hardware problem that needs to be identified and solved).