Wireless LAN Controller

User's Manual

Attention:

1. Check box contents:

Ceiling Wireless AP
Power adapter
LAN cable
QIG
Setting Screws

2. Warning:

- Do not use the product in high humidity or high temperatures.
- Do not use the same power source for the Product as other equipment. Only use the power adapter that comes with the package. Using a different voltage rating power adapter may damage the device.
- Do not open or repair the case yourself. If the Product is too hot, turn off the power immediately and have it repaired at a qualified service center.
- Place the Product on a stable surface and avoid using this product and all accessories outdoors.

Content

Chapter 1 Manual Introduction

This manual is subject to tell users how to use this WLAN management platform properly; Contents include description of this platform's properties, and how to configure this platform; Pre-reading this manual before operation is highly recommended;

1.1 Target reader

This manual is for those familiar with basic networking knowledge and terminology;

1.2 Conventions

If without extra explanation, this device, or WIFI management platform mentioned on this guide stands for AC Controller WiFi management platform, short for AC Controller;

>> stand for the sequence entering interface page; Default: Class A menu>>Sub menu;
There is no sub menu on some functions;

< including words> on body part, means menu name, like <apply>
"including words" means other definition except menu on Web page, like "ARP Binding"

1.3 Chapter allocations

Chapter 1: Manual Introduction:

Grasp the structure of this manual, know convention of this manual, so that make well use of this manual;

Chapter 2: Products Introduction: Introduce properties、application and layout of this device;

Chapter 3:Installation Guide: Instruct users how to login and manage this platform, then introduce the device's interface briefly;

Chapter 4:Function Settings: Introduce all functions of this platform, help clients to make fully use of this device;

Appendix A: Product SPEC;

Appendix B LICENSE STATEMENT / GPL CODE STATEMENT

Chapter 2: Products Introduction

2.1 Products description

AC Controller is a highly performance WIFI management platform, special for WIFI in hotel or small-medium sized enterprise;
It's capable for managing all Access point, support AP auto-detection, AP status preview, AP configuration, MAC filtering, AP software upgrade simultaneously to provide high quality & performance& reliability, easy installation & maintenance WIFI service to different clients;

2.2 Products Properties

Hardware property

- Deploy dual core CPU, 880Mhz frequency

- Deploy high capacity & speed memory, up to 256M DDR3 SDRAM;

- 5 * 10/100/1000Mbps Gigabit Ethernet port

Software property

- AC Controller detect and connect to wireless access point automatically, no need to configure any AP, realize true

  centralized AP management function

- Monitor AP status in real-time, auto-inspection AP's working status (up or down), show each ap status under interface

  page;

- Configure related properties to each AP simultaneously, like setting SSID, connection type, Security type, etc;

- Adjust WIFI RF output manually, to fit for different networking environment, and maximum WIFI coverage;

- AP address server function can allocate IP address for different AP working in the same segment, no need to set up AP's IP

  address manually;

- Support smart gateway mode, working as a Gigabit router, to realize router, AC, AP address server function in the same

  unit;

- Adjust each AP's WIFI settings like Channels or location remark, providing auto-restarting functions on AP;

- Support WIFI MAC filtering, only allow the device, whose MAC address is in the rule list, to have WIFI access, make sure

  a securer network allowed;

- Full WEB management, clear and concise, make AP management easier and much convenient;

2.3Product Layout

2.2.1 Front Panel

AC Controller front panel is like following:
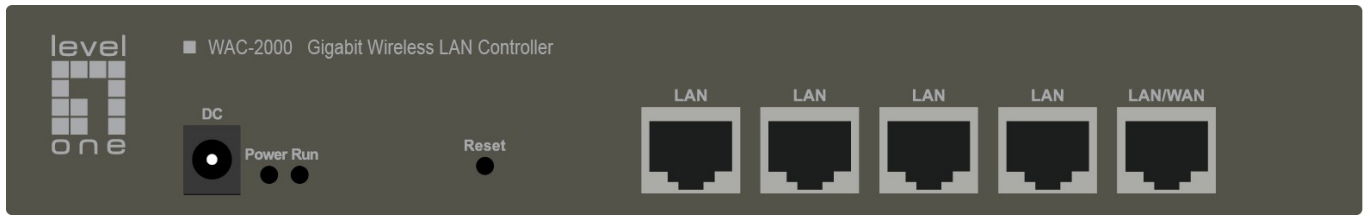
P2-1 AC Controller's Front Panel Diagram

LED indicator

LED Light	Name	Indication
Power	Power Light	Power is on, means status is up;
		Power is off, mean status is down;
Run	System Light	flashing, means system status is normal
		off or stable steady, means status is abnormal

Reset button

If you need to restore the AC Controller into factory default, please do following procedure: Power on AC Controller, use a pin to press and hold the reset button until all LED becomes quick-flash from slow-flash.
Then release the button and wait AC Controller to reboot to its factory default settings. After that, the default IP address of AC Controller is still 192.168.1.1, default user name and password are both admin;

RJ45 Ports: 5x 10/100M/1000Mbps auto-negotiation RJ45 Ethernet Port;
Support any connection devices in 10/100M/1000Mbps bandwidth;

DC: Connect with 12V/1.5A DC adapter, to power this AC controller. Please use original power cord for installation; Set locate

power outlet near the devices, to make safer and easier installation and operation

Notice:
LAN/WAN port is LAN port only on the default mode, only when WAN setting is enabled then LAN/WAN port will change to WAN port;

2.2.2 Rear Panel

AC Controller rear panel is blank like following:

P2-2 AC Controller Rear Panel Diagram

Chapter 3 Configuration Guide

3.1 Login Web Interface

AC Controller has normal power up, one port has been connected to the management host.

1) The management host has been properly installed IE 7.0 or higher browser version
2)   AC Controller's default IP address is 192.168.1.1, the management host IP address has been set the same network segment with WAC-2000, namely 192.168.1.X (X is between 2-254 arbitrary integer Number), a subnet mask of 255.255.255.0.
3) In order to ensure a better effect of Web interface displays, it is recommended to adjust the display resolution to 1024 × 768 or more pixels.

Operation Steps:

A. Open IE browser, Input http://192.168.1.1/ in the address bar to login AC Controller Web management interface.
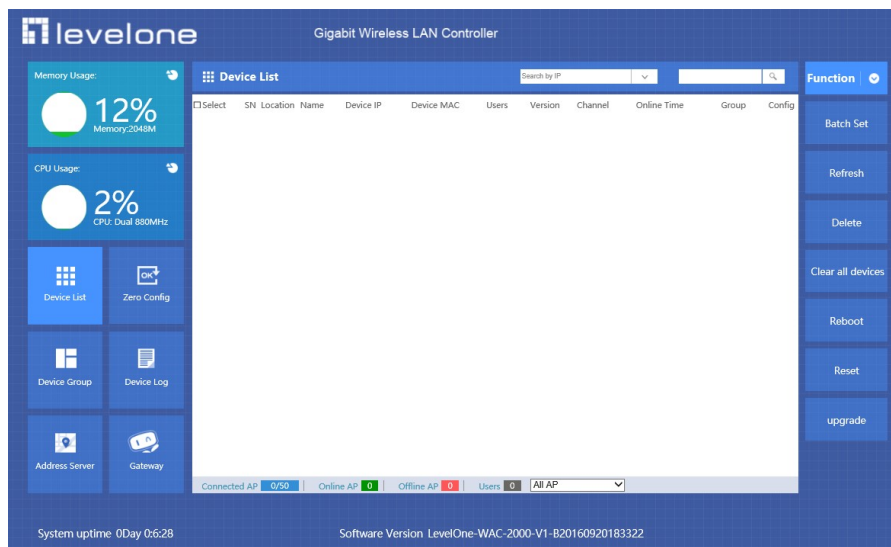

B. AC Controller login screen shown in Figure 3-1. In this screen enter the AC Controller for user name and password, the factory default is admin / admin, click <OK>.
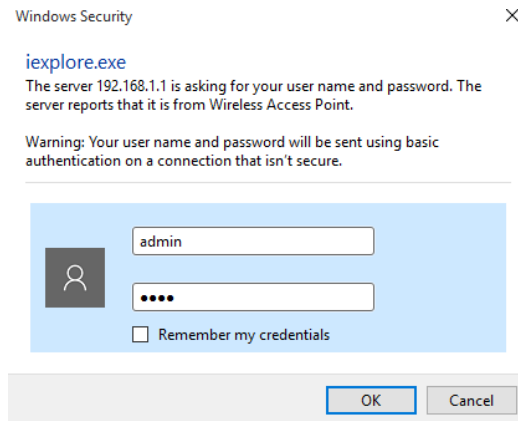
P 3-1 Web Login page

C. After a successful login, then see AC 1000 Web interface page, shown in Figure 3-2.

3-2 AC Controller's Web Interface page

4.1 Zero Config

If the SSID, password is same in one networking, prefer to choose Zero Config operation mode before connect AP to AC controller, set AC controller's Zero Config based on following steps, then AP will get data when plug into AC controller, then play.

Click "Zero Config"--- "New"---"Wireless Basic" to config Wireless AP's SSID, password, Group name---"Wireless advanced" to to config wireless AP's channel, RF Power---"Apply", then wireless AP can get the data from new zero config group.
Notice: Device List: "Wlan Device 1" mean 2.4G Wireless; "Wlan Device 2" mean 5G Wireless

If some wireless AP connected to AC controller already, then want to apply Zero Config, click "Zero Config"---"New"---"Wireless Basic" to config Wireless AP's SSID, password, Group name---"Wireless advanced" to to config wireless AP's channel, RF Power---"Apply"---Restart AP, then wireless AP can get the data from new zero config group.
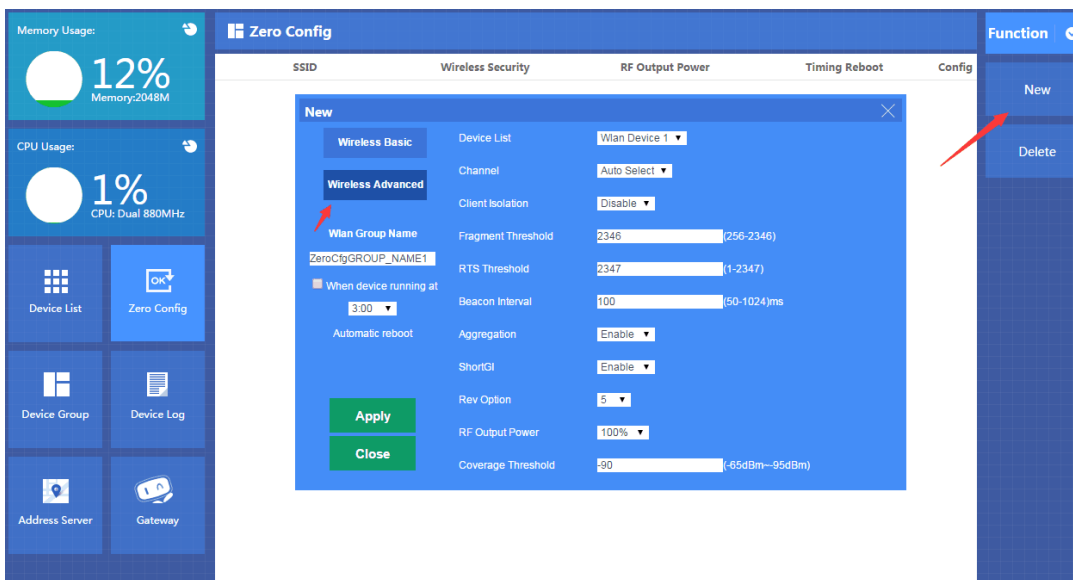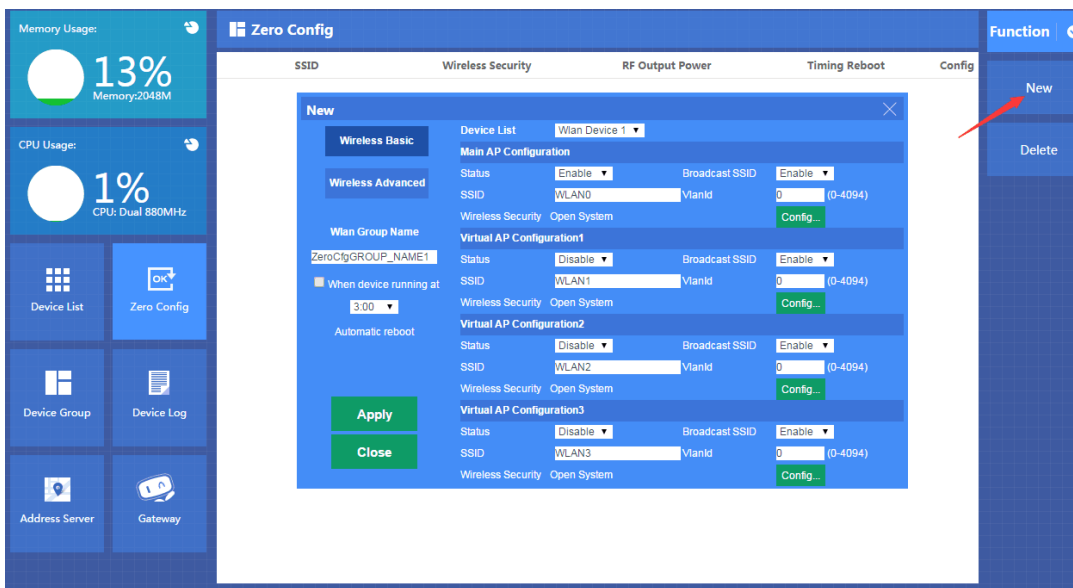
Notice: If there are different SSID/password in one networking, then prefer to choose device group, the different between zero config and device group showed as follow:

A. Zero Config can create a new group only, device group can create multi new group.
B. Zero Config: No need to add AP into group by manual; Device group: need to add AP into group by manual
C. Zero Config: there are auto channel, RF power, automatic reboot functions; Device group: none

4.2 Device List

Device list show the current wireless AP connected AC Controller.
It show wireless AP's location, name, IP address, MAC address, user QTY, firmware version, channel, online time, device group, config button, then can refresh/delete/reboot/reset wireless AP, can set wireless AP in batch, or upgrade firmware for wireless AP.

In the bottom page of device list, display the total quantity of AP connected to AC Controller, the quantity of AP online or offline to easy detect the wireless AP's performance in P4-1


P 4-1 AP List

4.2.1 Device list setting

Through the device list, can login corresponding wireless AP's IP address directly, can set parameters from wireless AP's Web management if this PC is set another fixed IP address same segment as device IP.

Or can click the config button [✎], to set parameters, view the Device Status of the AP; setting the Device Network; setting the Wireless Base; Wireless Advanced showed in red part as P4-1-1
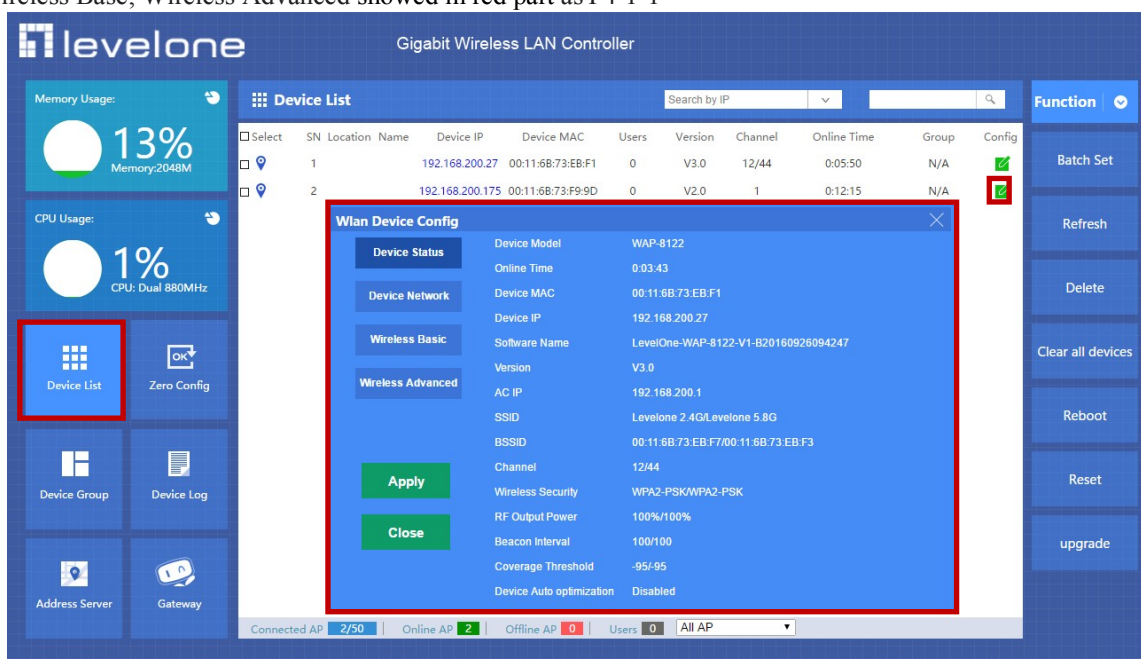

P4-1-1

Device status can check Device Model, Online Time, Device MAC and Device IP; Software name; software version; AC IP; SSID; BSSID; Channel; Wireless Security RF Output Power; Beacon Interval; Coverage Threshold as Figure 4-1-2
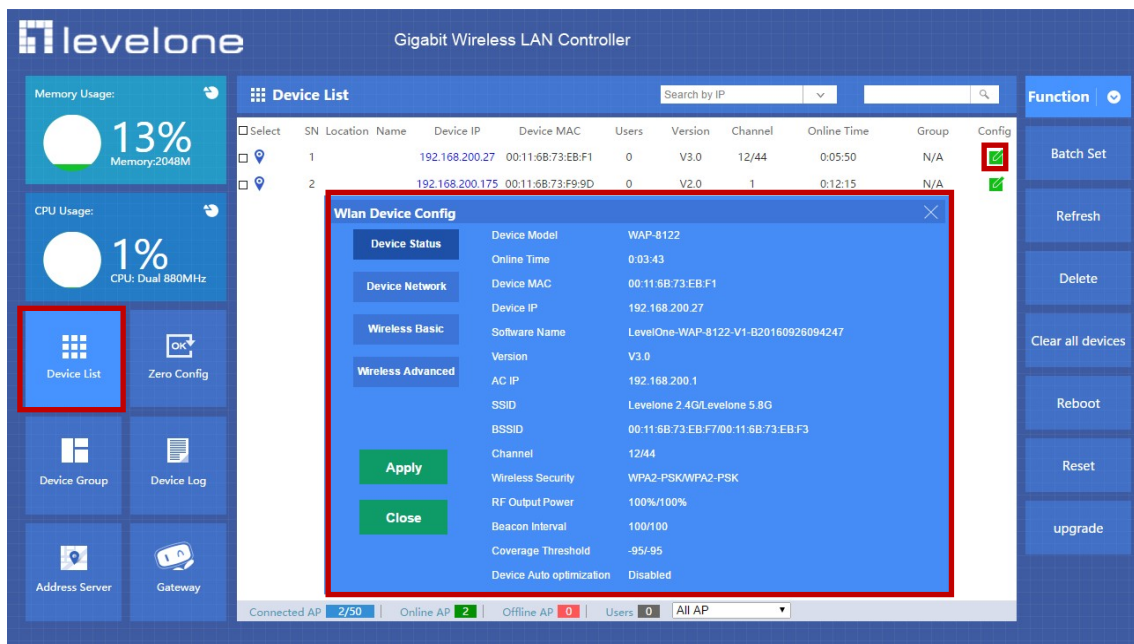
P4-1-2 Device Status

4.2.3 Device Network

AC Controller's IP address is 192.168.1.1. In Device Network option, AC Controller can assign IP address for connected wireless AP. The default IP setting is DHCP, mean wireless AP can get IP address from AC Controller in dynamic way; Then IP address mean wireless AP's IP address. Subnet Mask mean Wireless AP's Subnet Mask.
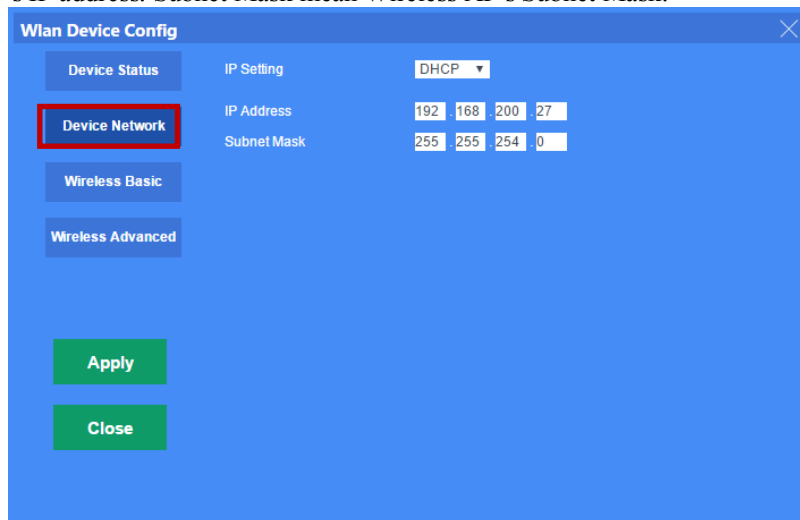

P4-1-3

4.2.4 Wireless Basic Setting

Wireless basic setting show wireless status, like enable or disable (enabled in default); broadcast SSID is enable or disable; Virtual AP is turned on or off;   Wireless Security turn open or not.
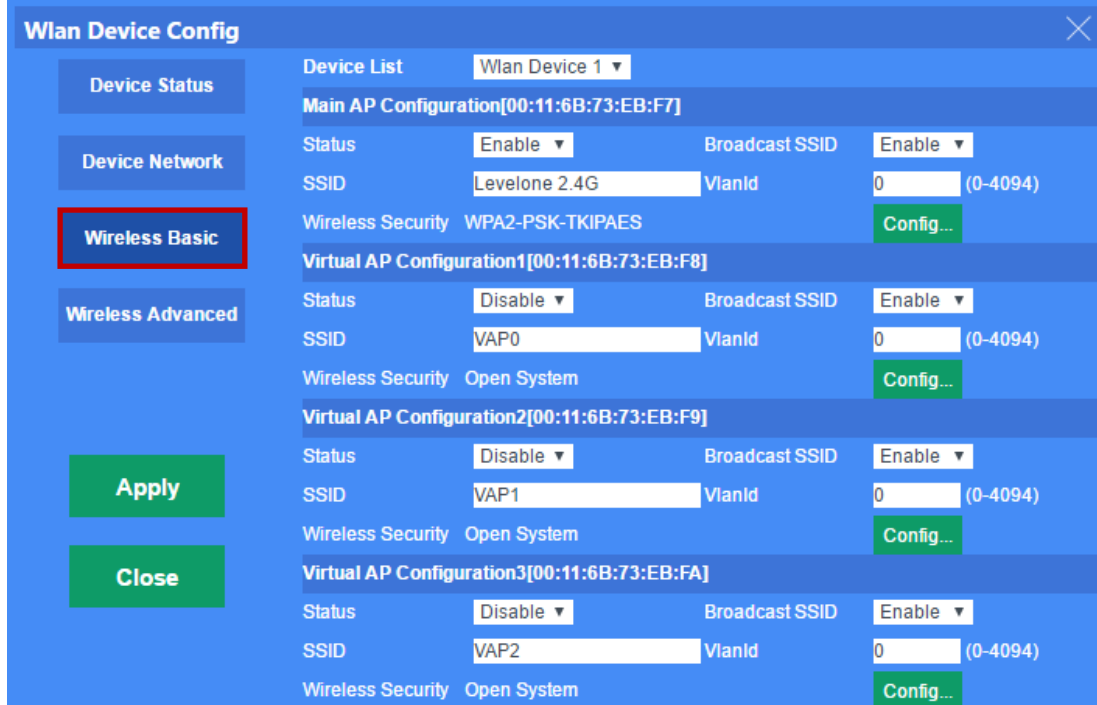
P 4-1-4 Wireless Basic Info

4.2.5 Wireless Advanced

Wireless advanced setting mainly for AP's wireless parameters, including Device List; Mode; Channel; Client isolation; Coverage Threshold; Max Station
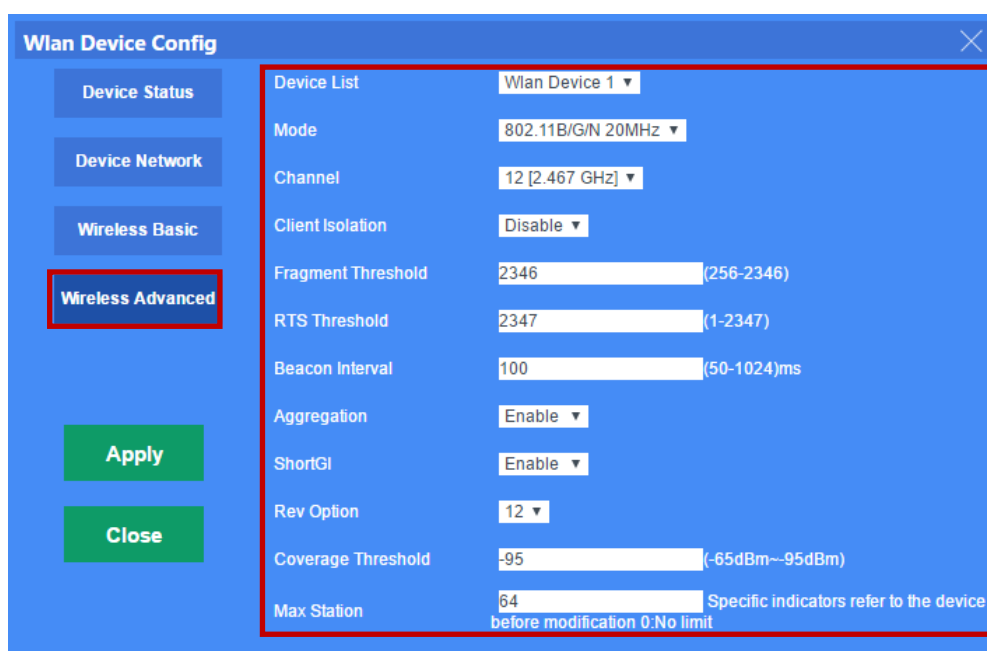
P 4-1-5 Wireless Advanced Setting

Device List: Display the AC controller is manage 2.4G wireless devices AP

Mode: This mode is used to set up the mode of Wireless Access Point, recommended 11b / g / n 20MHz mode.

Channels: channel range, FCC default is 1-11, ETST default 1-13

Client Isolation: The option is to make the host cannot communicate with each other on a different SSID's if this option Enable.

Coverage threshold: You can set the threshold to achieve wireless signal roaming

Max Station: mean number of end users can access into wireless AP.
(The default is 32 mean 32 end users can access int this wireless AP, 0 mean unlimited).

Device Log show AP's record, such as on line recording, offline recording, device configuration recording.
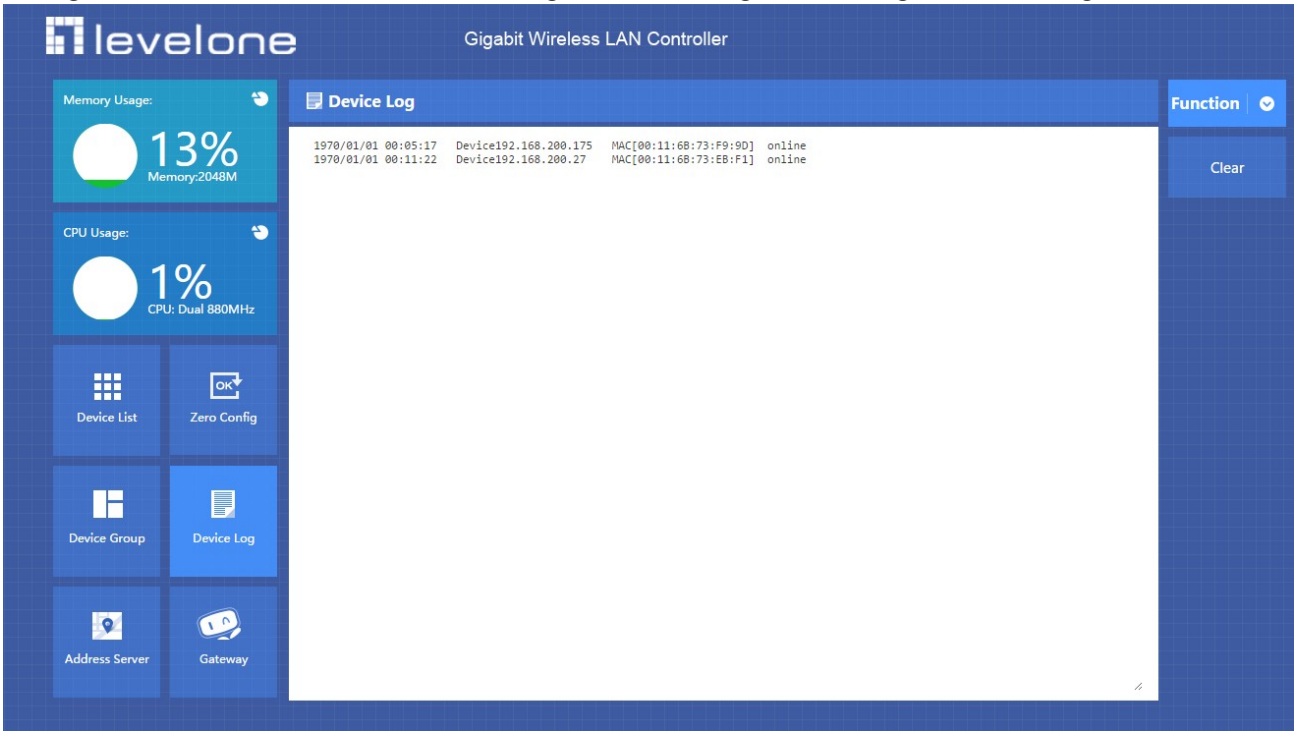
P4-2 Device Log

4.4 Address Server

Through Address Server, to set server IP address, subnet mask; Server address Pool, main to assign IP address to the connected wireless AP, no need to specify the IP address for wireless AP manually when operation.
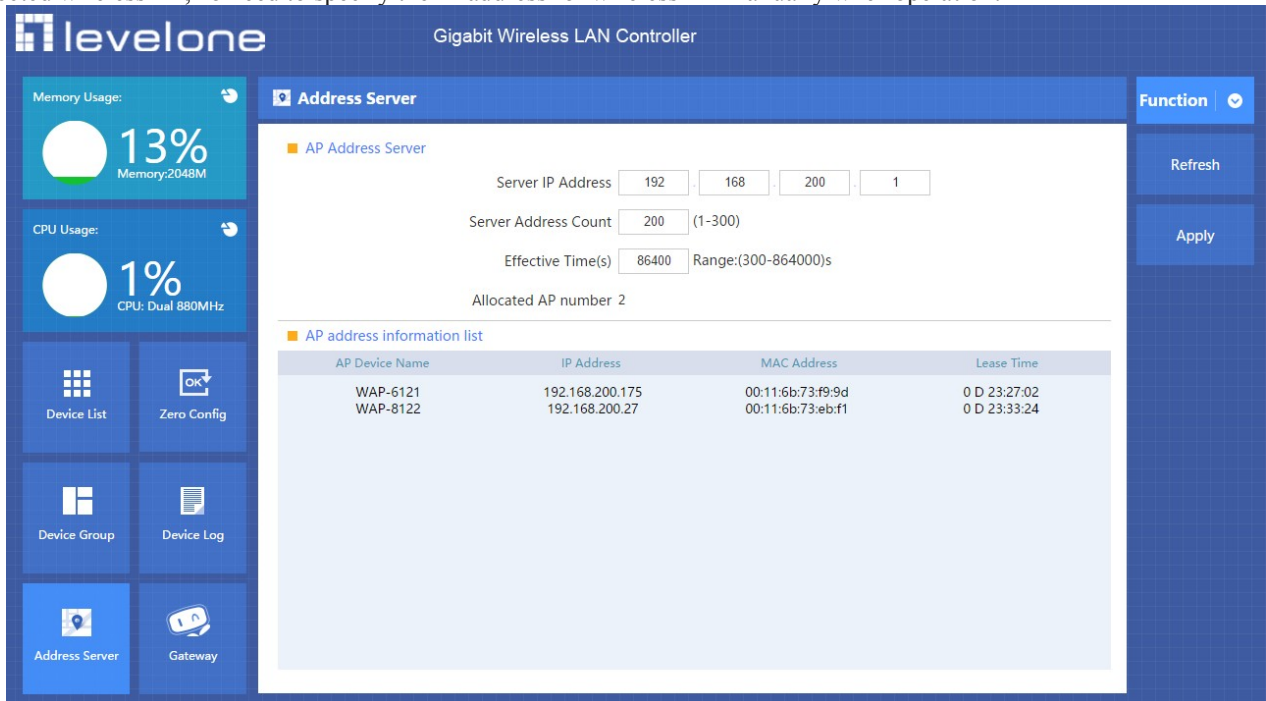
P4-3

Server IP Address: modify the default AP address server's IP address; (default is 192.168.200.1)
Server Subnet: Modify AC controller's subnet; 255.255.255.0 in default
Server Address Pool: When wireless AP connected with this address server, then address server will assign IP address for wireless AP. (The default IP address pool is 192.168.200.2-192.168.200.254)

12

4.5   Gateway

4.5.1 WAN Setting

Click Gateway in the home page, then will pop up following page, click Network will automatically jump to the WAN settings as P4-5-1.

P4-5-1 WAN Setting

When select to intelligent gateway, AC Controller will have a router function, can work as a main router with Gigabit WAN/LAN port. It supports Dynamic IP, Static IP; PPPOE; PPTP.

Dynamic IP:
WAN interface obtains IP and DNS information through DHCP mode.

PPPOE(ADSL):
WAN interface obtains IP and DNS information via PPPOE dial-up mode.

Static IP:
Set IP and DNS information for WAN interface manual

PPTP:
WAN interface obtains IP and DNS information via PPTP mode

MAC Clone:
Specifies the WAN interface MAC, by clicking [Search MAC Address] button, and then will pop up a connected device's MAC, select the MAC desired to clone. You can manually specify the MAC

Enable IGMP Proxy:
Enables IGMP proxy, this feature can be forwarded IGMP data from WAN to the LAN

Enable Ping Address on WAN:
This feature allows outer net to ping WAN

Enable Web Server Address on WAN port
Enable this feature, allows to manage AC Controller from outer net via a specified remote management port

4.5.2 LAN Setting

Lan Setting is based on the LAN IP address and DHCP server setting, including MAC address and IP address bind.
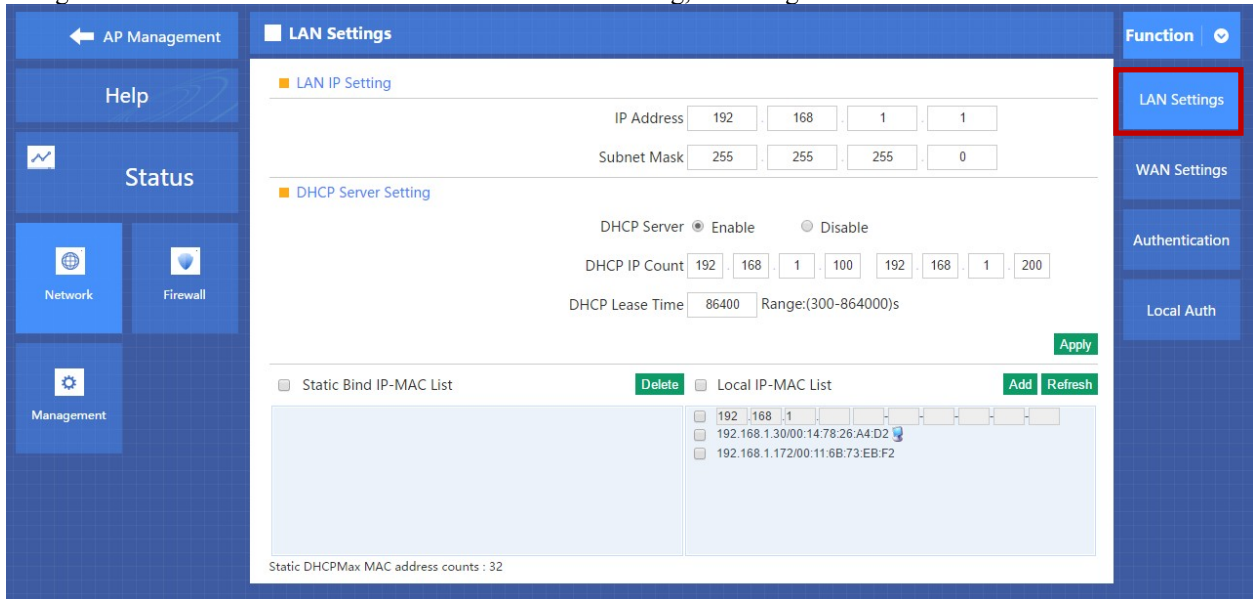
P4-5-2

LAN IP Setting:
Set IP address for LAN
Subnet mask
Set Subnet mask for LAN
DHCP Server
DHCP server enable mean it will assign IP address for users.
DHCP Client IP
DHCP Client IP mean the IP address range assigned by DHCP Server.
DHCP Lease Time
The networking device get IP lease time from DHCP server.

4.5.3 Local Authentication Settings

The main function of local authentication is advertisement, then can finished by AC controller, no need the cloud server; Choose Local Authentication in Picture 4-5-5, then window will pop up.
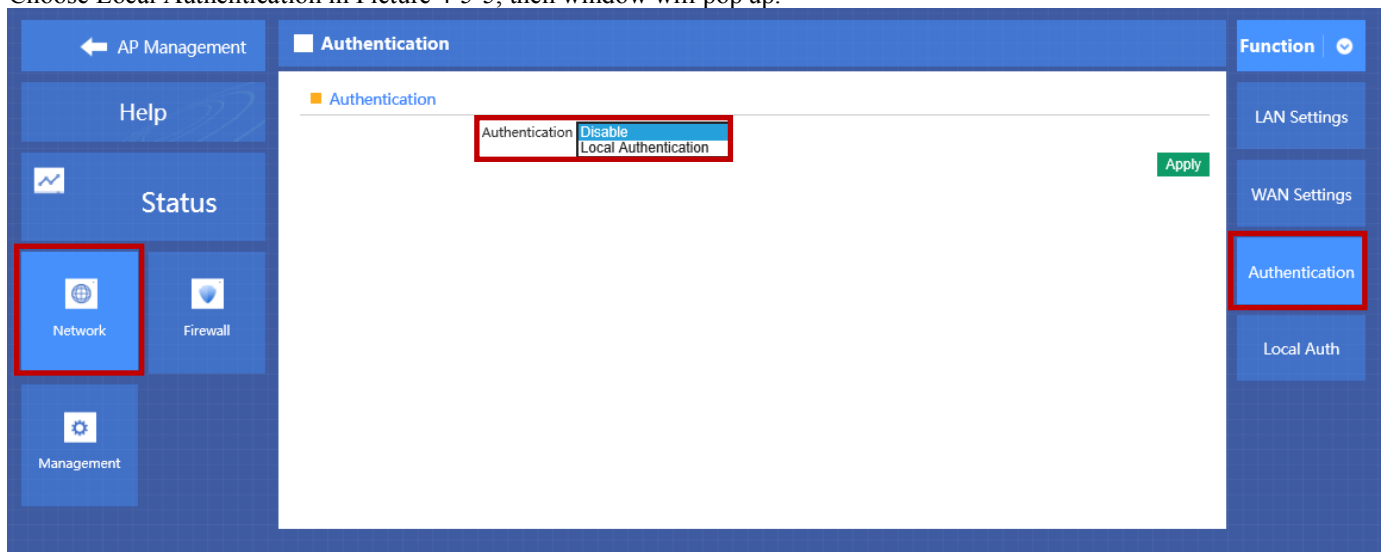
P4-5-5 Authentication

Maximum Users: QTY of end users, default is 500, the range can be 1~500, as picture 4-5-6
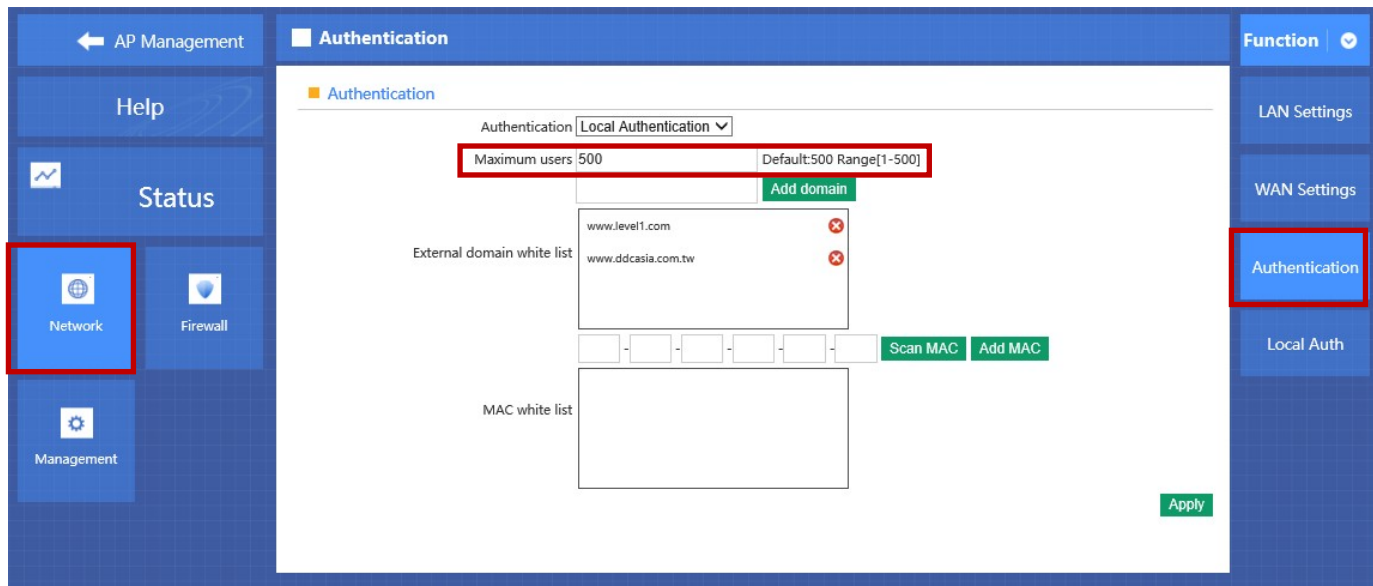
P4-5-56

External domain white list: User can visit this domain directly, no need any authentication.
Add external domain white list: Just input the domain in yellow part, then click add domain.

Delete external domain white list: click ⊗ this button to delete it.   Picture 4-57
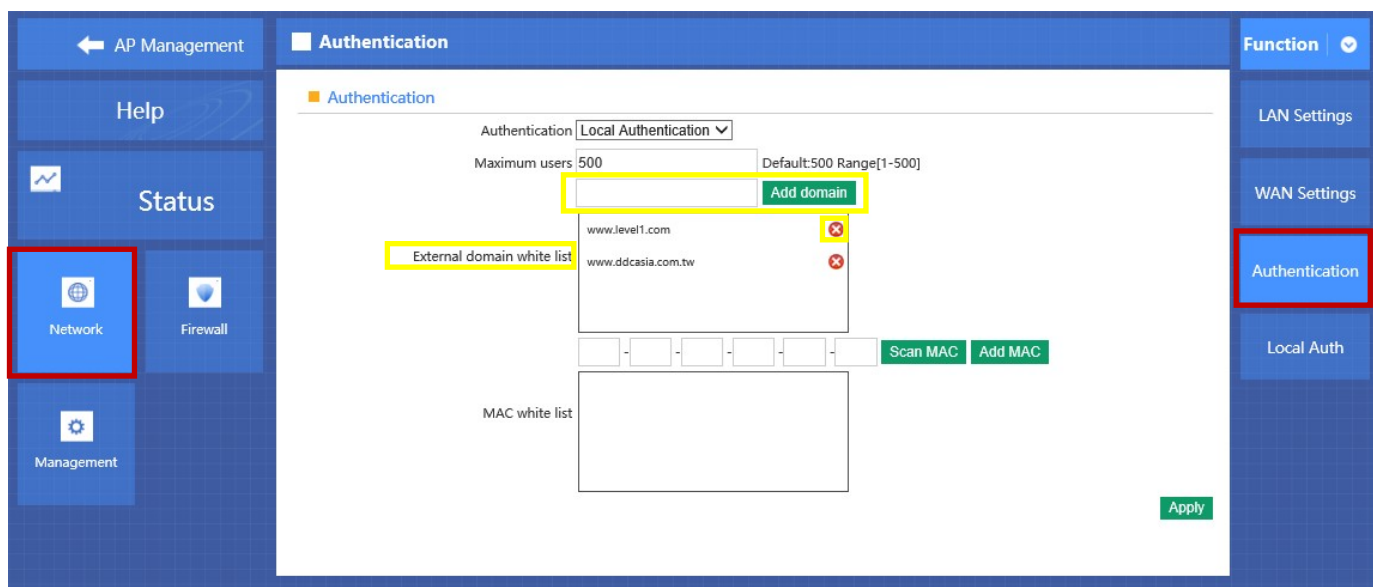
Picture 4-5-7

MAC white list: User with MAC address in MAC white list can access into Enternet directly, no need authentication.
Add white MAC: Input the MAC address in blue part, or scan the MAC address,   then click add MAC.

Delete White MAC: click ⊗ this button to delete it.

After finished this settings, then Apply to complete the local authentication setting.
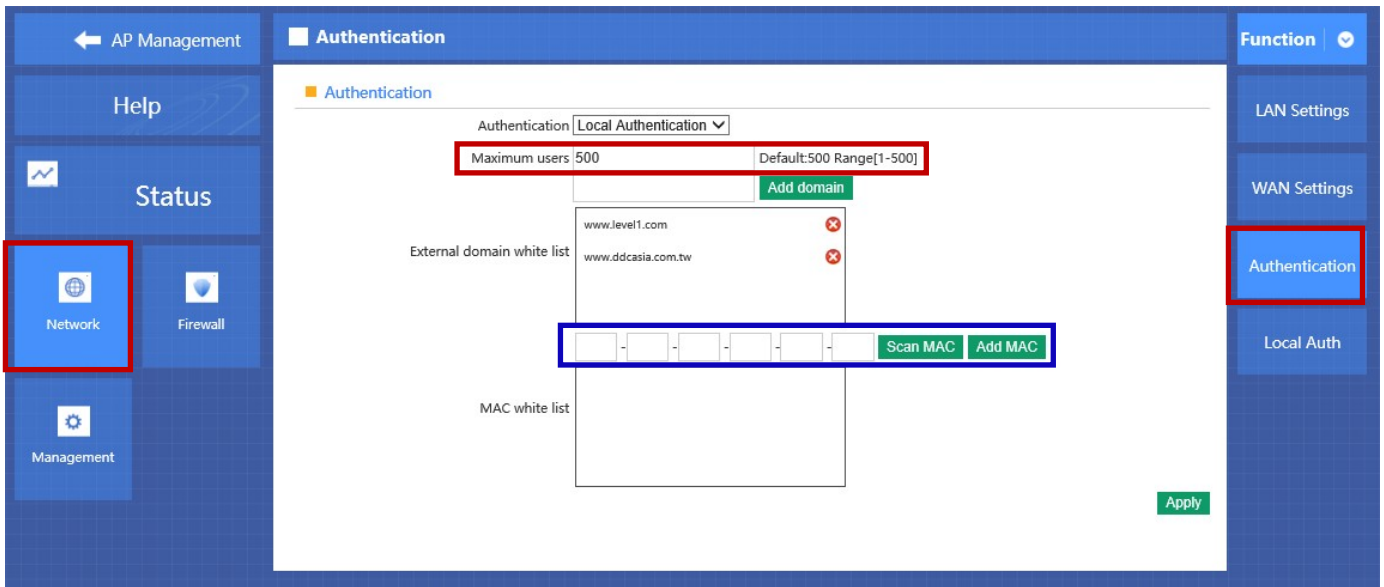
Picture 4-5-8
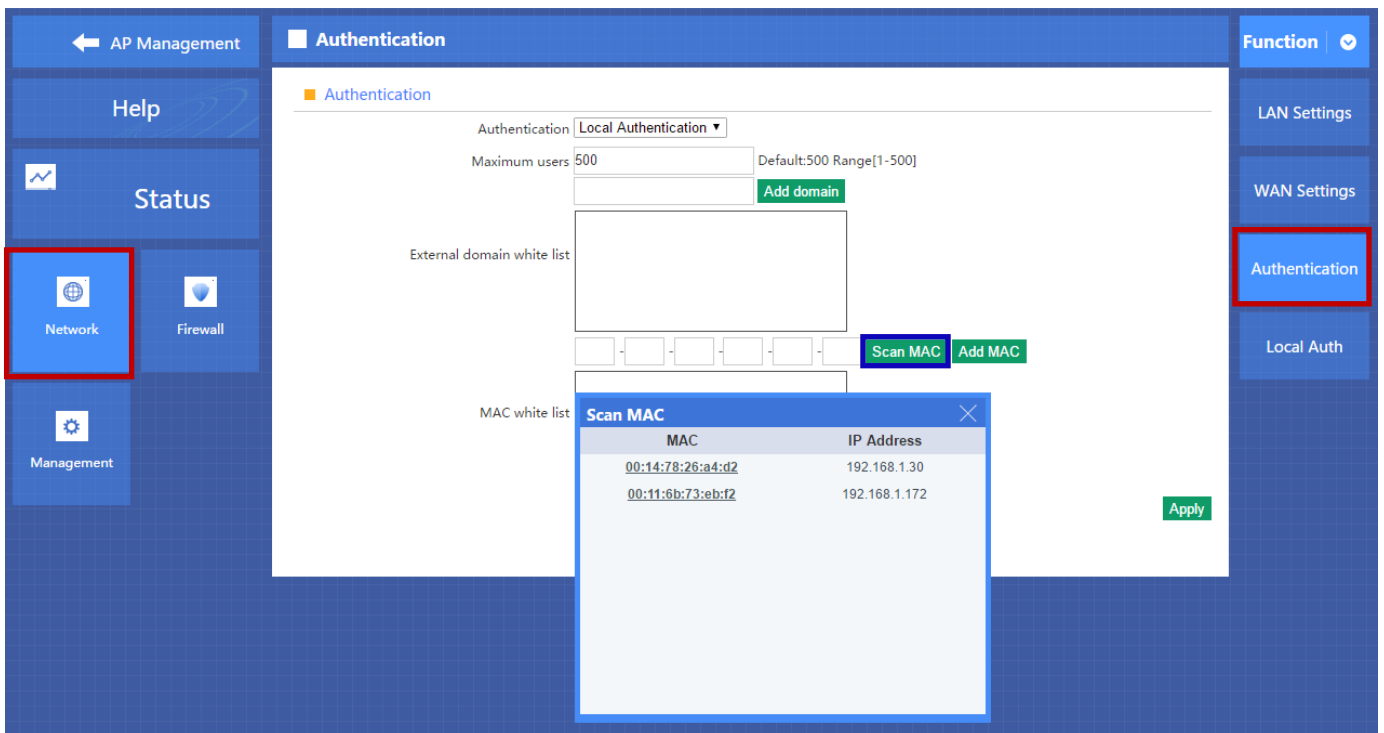
P4-5-9

4.5.4   Local Authentication Management

User can edit the advertisement from local authentication management, as picture P4-5-10 and P4-5-11
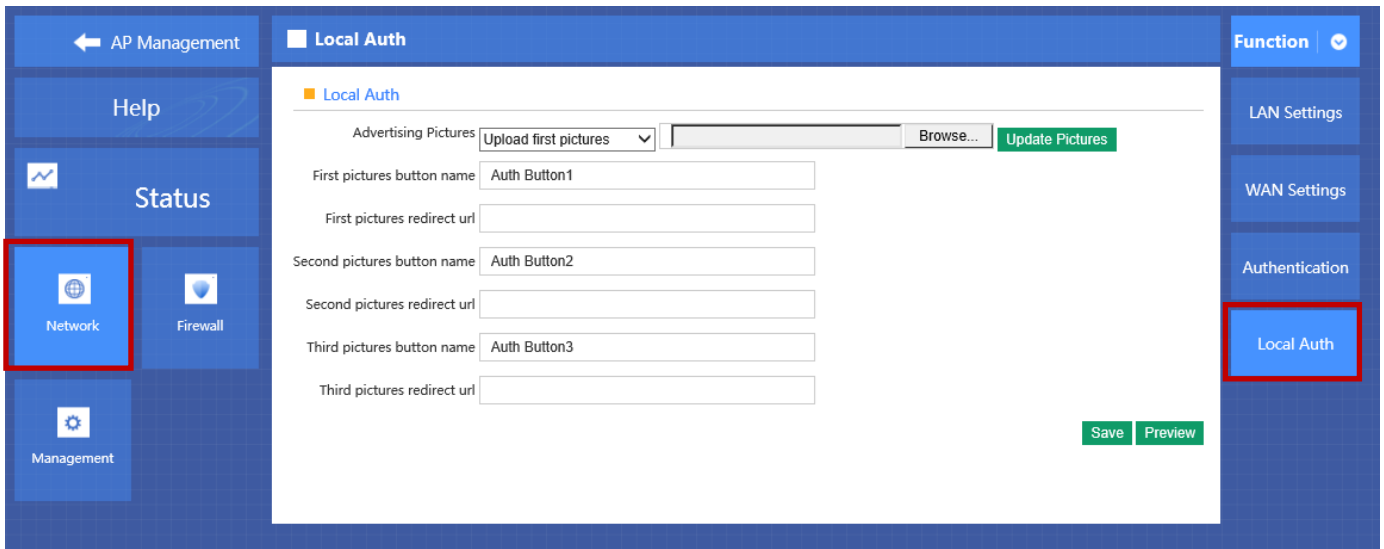
P4-5-10
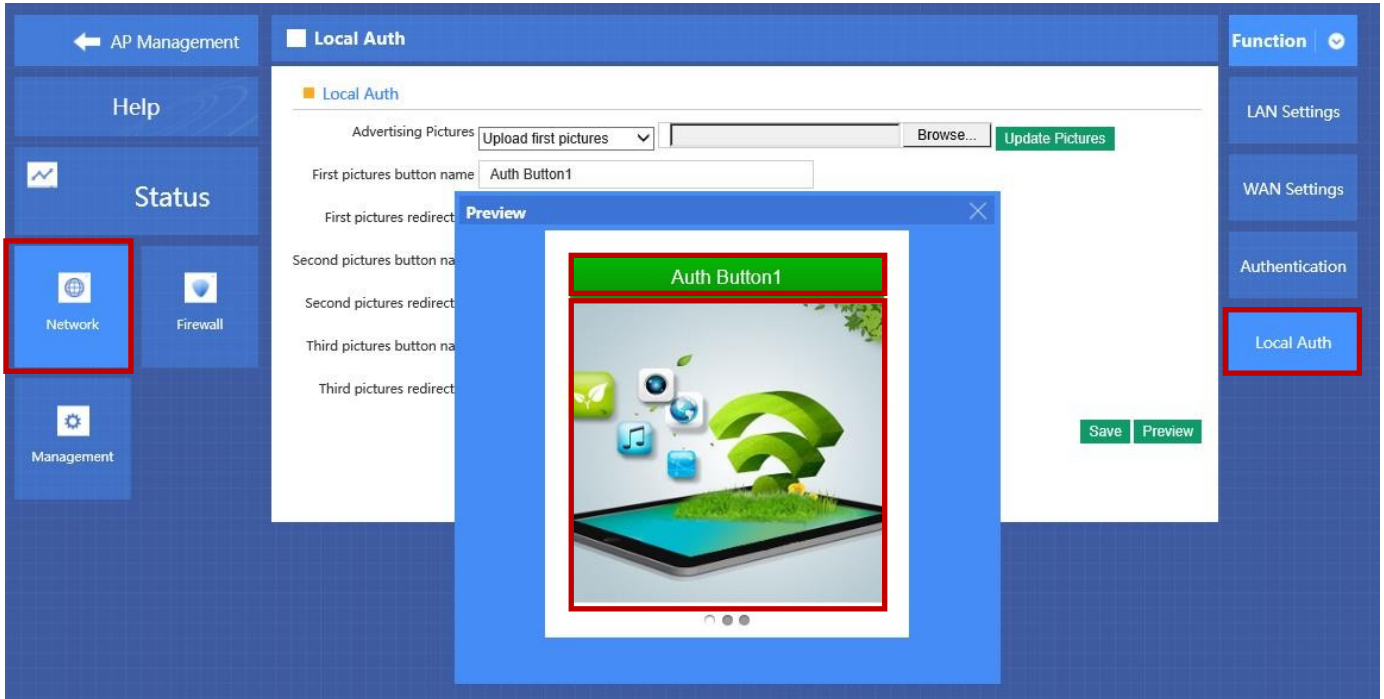
P4-5-11

Advertising Pictures: in this part, you can use exist pictures, or can browse and update the pictures you want. You can upload 3 pictures at same time.

First Picture: the part in Red line in Picture 4-5-10

First Pictures button name: it is the content of Red part Picture 4-5-10

First Pictures redirect url: mean after browse the first picture, what's the url users will visit.

4.6 Status

Show AC Controller's firmware version, hardware version, system uptime.

P4-6-1

4.6.1 LAN Status

LAN Setting
Show AC Controller's LAN IP, DHCP server status and MAC address

P4-6-2

4.6.2 WAN Status

WAN Setting
It show AC Controller's WAN status, Connect Type, WAN IP, Subnet Mask, Gateway IP, DNS and MAC info.
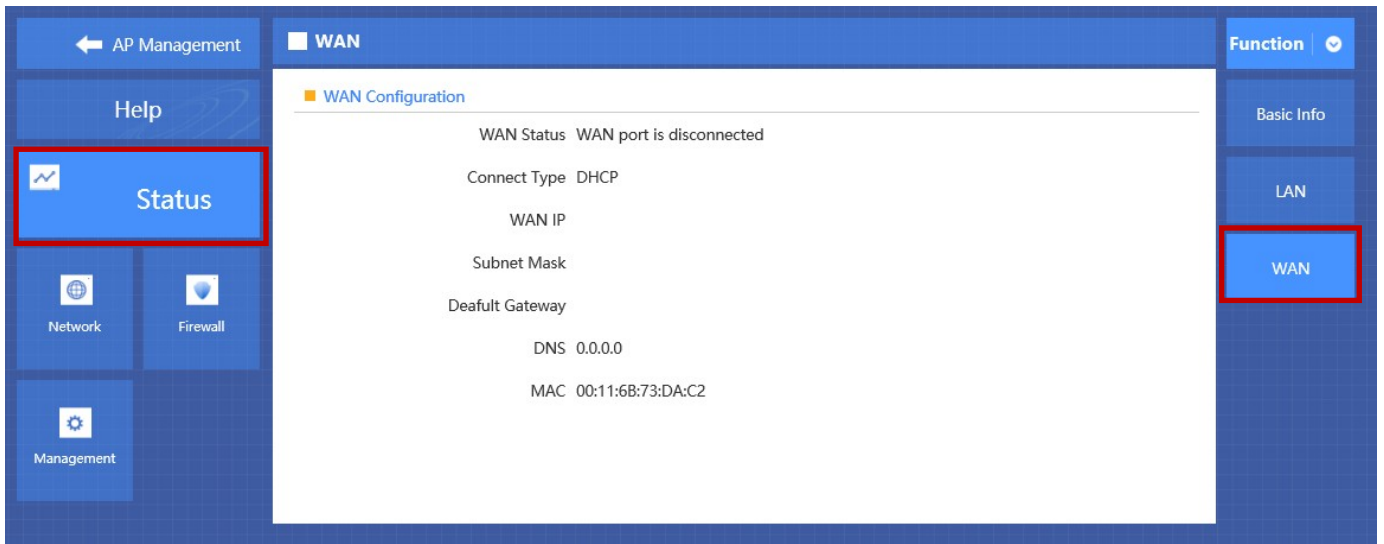
P4-6-3

4.7 Firewall

4.7.1 IP/Port Filtering
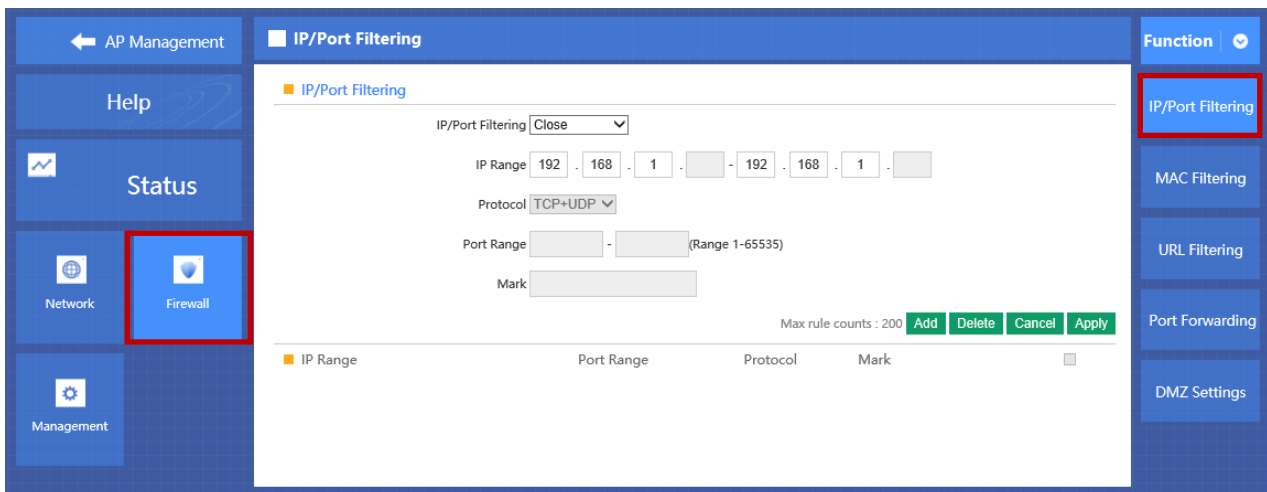
P4-7-1

IP/Port Filtering
IP/Port forwarding enable, router will limited the data forwarding according to the filtering rule. If the filtering rule is [refuse] , then the router will refuse to forward the data in accordance with filtering rule.; If the filtering rule is [allow], the router will forward the data in accordance with filtering rule.
IP Range
Set IP address range
Protocol
Set filtering rule protocol
Port Range
Set filtering port range
Mask
A simple description of the entry rules, for user's easly management;

4.7.2 MAC Filtering
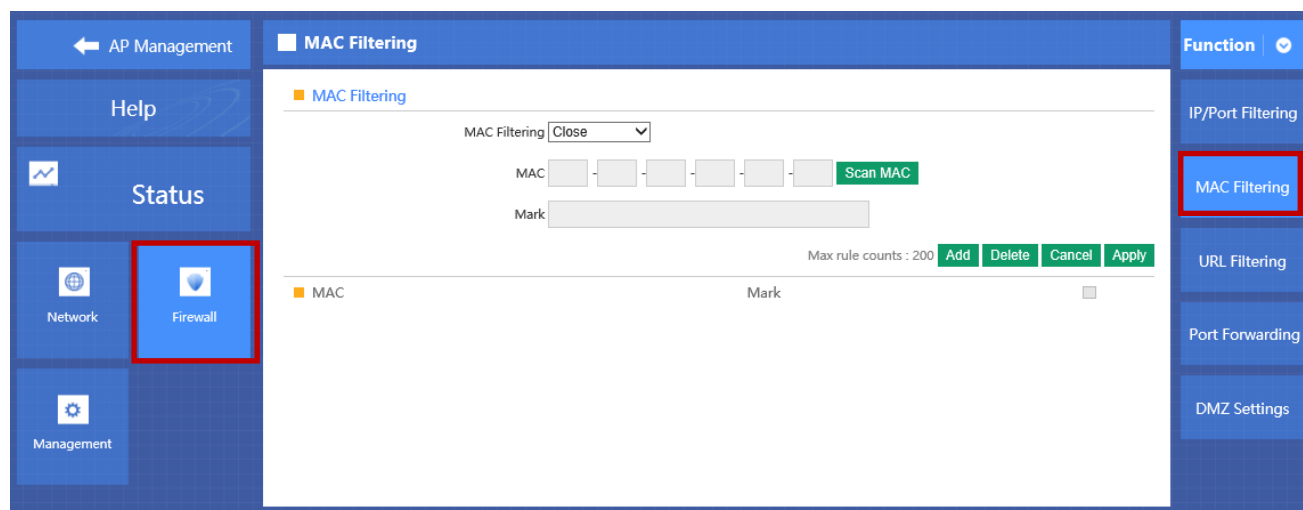
P 4-7-2

MAC Filtering

Enabling Mac filtering, router will restrict data forwarding based on the selected filtering rules; When selected **Close**, router will decline the pointed incoming data; When selected as **Open**, then router will allow the pointed incoming rules;

Mac address

Set up rules in mac address, users can click **Searching Mac Address** from the clients in routers, or can set up the mac address manually;

Mask

A simple description of the entry rules, for user's easier management;

4.7.3 URL Filtering
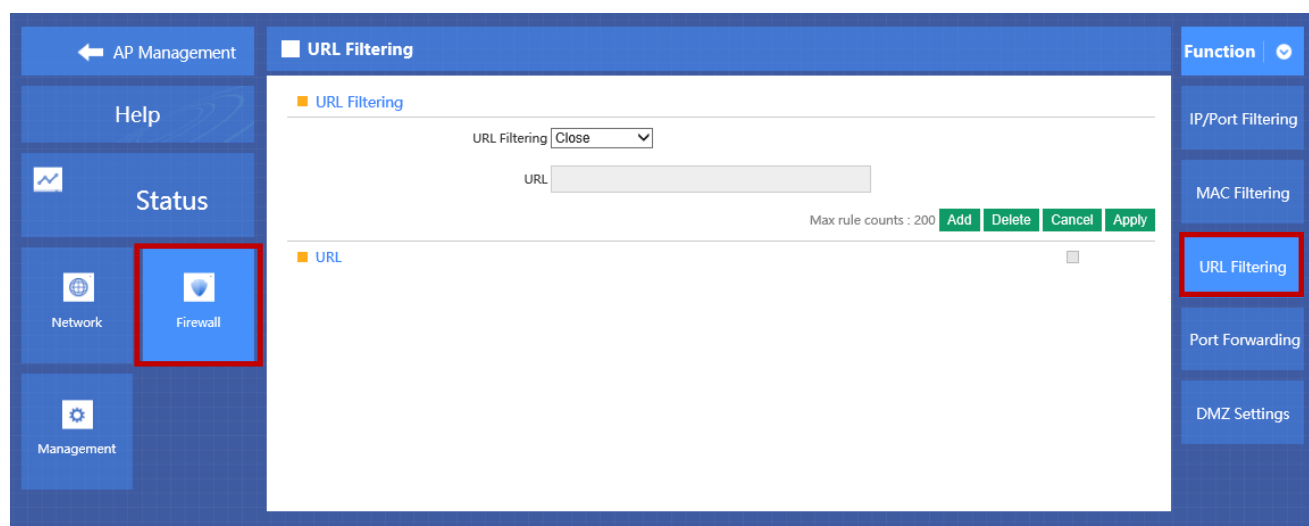
P 4-7-3

URL Filtering

Enabling URL filtering, router will restrict access to the pointed URL;

URL address

Set up the declined URL address
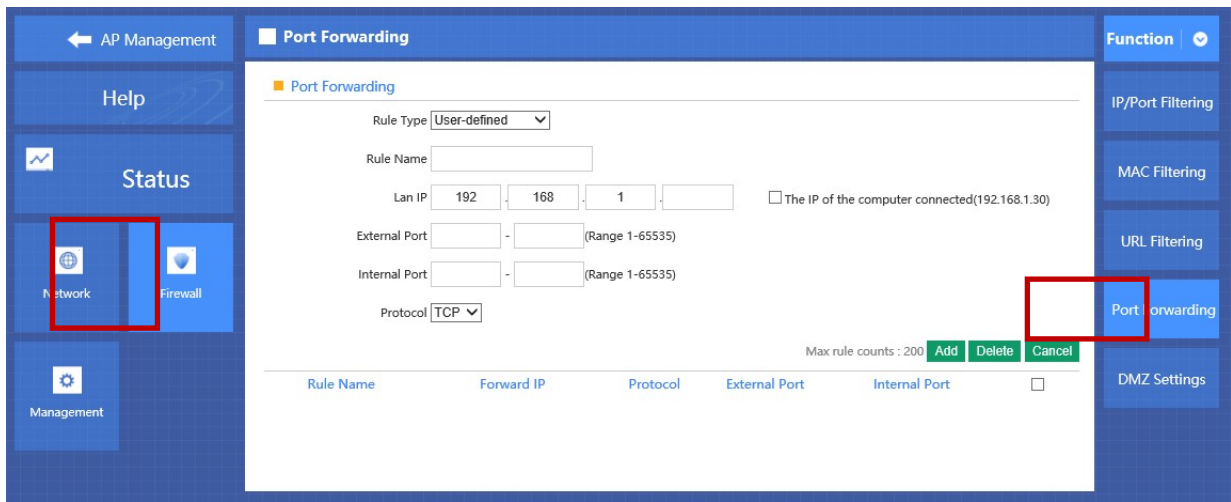
P 4-7-4

Port forwarding

Port forwarding is to forward data from one port to another port, enabling external users have access to an internal private IP in LAN, from an external triggered NAT router ;

Rule Type

Set up rule type, which have specific port number;

Rule name

Port forwarding rule name

LAN IP

IP of the port forwarding

External port

External port number of port forwarding

Internal port

Internal port number of port forwarding

Protocol

Protocol used for port forwarding

4.7.5 DMZ Settings
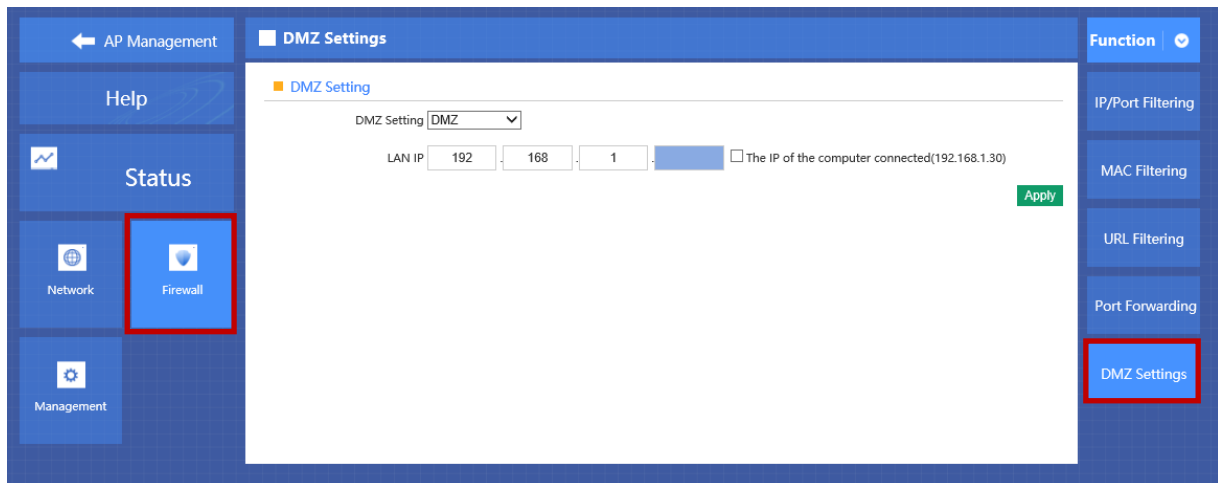
P 4-7-5

DMZ

DMZ is short for demilitarized zone; It's a compartment between security zone and non-security zone, in order to solve the problem of external network can not access into internal server after firewall installation;This DMZ zone is a small network zone between external and internal network; While in this small zone, users usually place some open server, like web server, FTP server, or forum; DMZ will protect internal network more efficiently, because this network allocation is another obstacle for hackers, compared to normal firewall;

LAN IP

IP address of DMZ host

4.8.1 System management
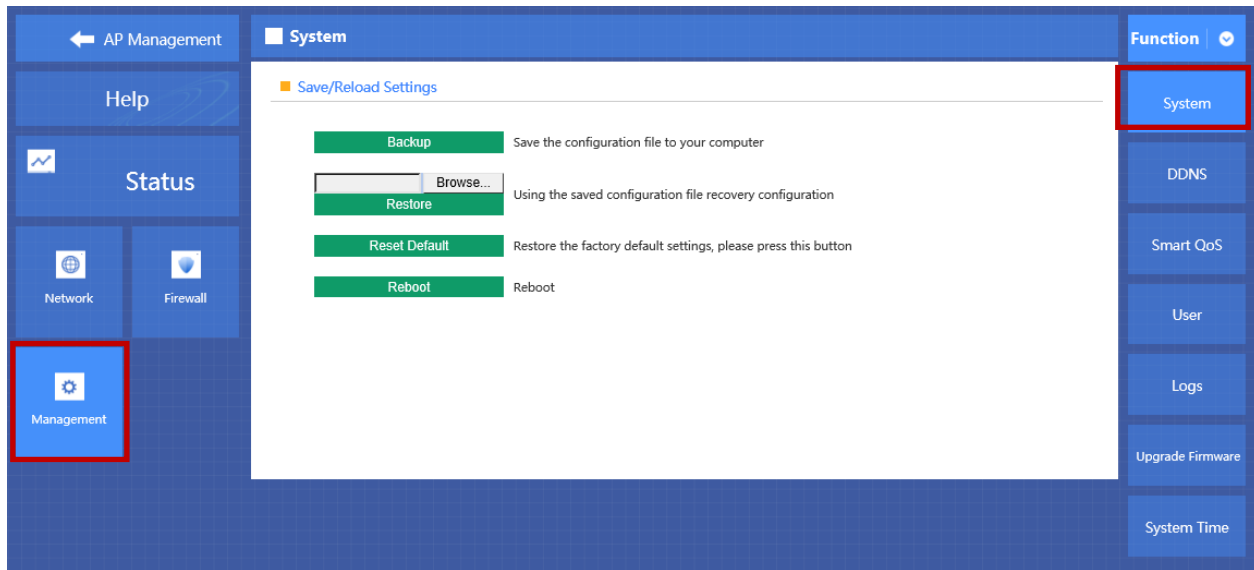
P 4-8-1

Backup
Save the configuration files to your computer
Restore
Using the saved configuration file recovery configuration
Restore default
Restore the factory default settings, please press this button
Reboot
Reboot the system

4.8.2 QoS
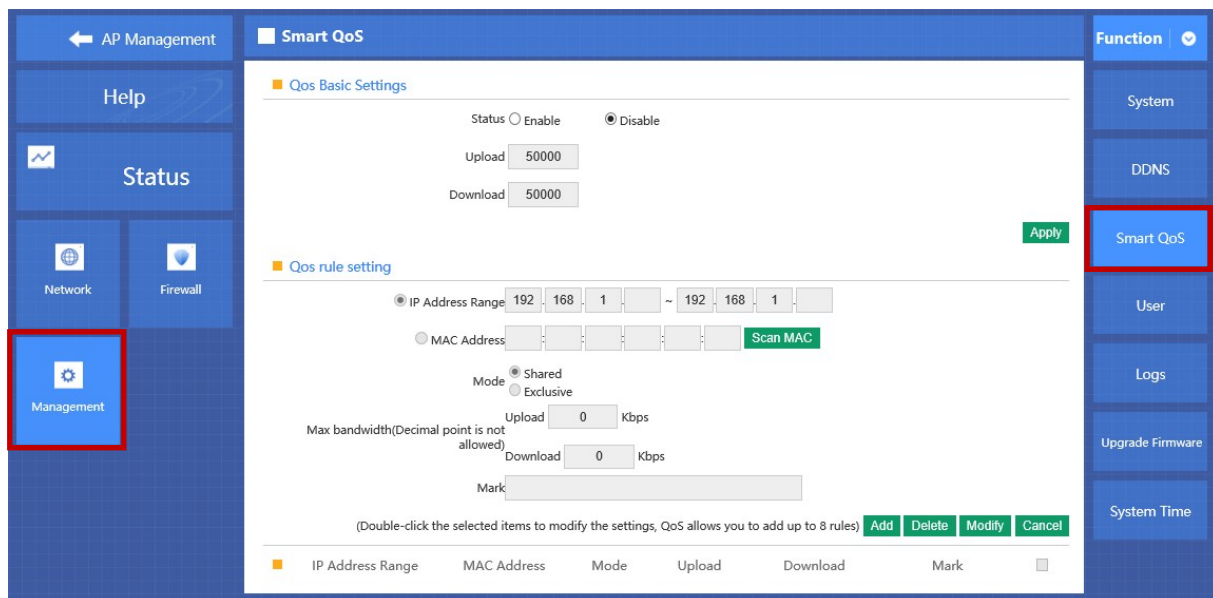
P 4-8-2

Status
Enable or Disable QoS function
Upload
Set up total uploading bandwidth
Download
Set up total downloading bandwidth

IP Address Range
Set up IP range of bandwidth

Set up bandwidth control by mac address, user can choose it from Scan MAC, or setup by manual.

Mode

QoS mode settings, shared mode means under the QoS rules, the main PC within all IP range can share the specified bandwidth; Exclusive mode means single main PC can share the specified bandwidth;

Max bandwidth

Max bandwidth under QoS rules

4.8.3   User management
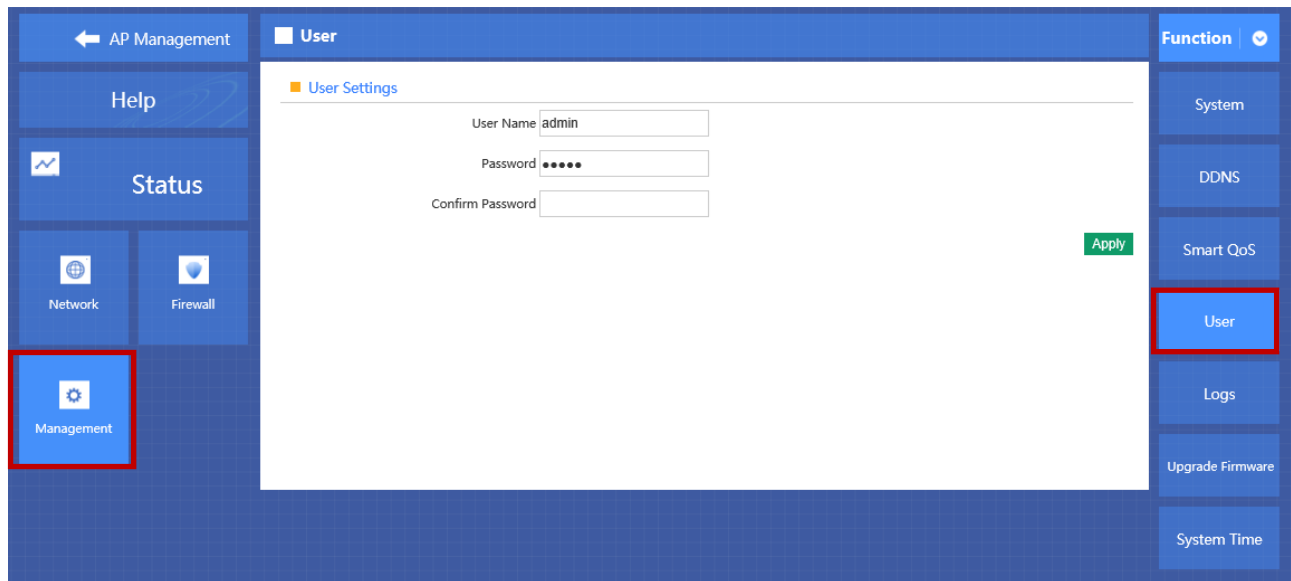
P 4-8-3

User Name

Reset new log-in user name

Password

Reset new log-in password

Confirm Password

Comparison to new password, to confirm user input password correctly in two times;

4.8.4   Device Log
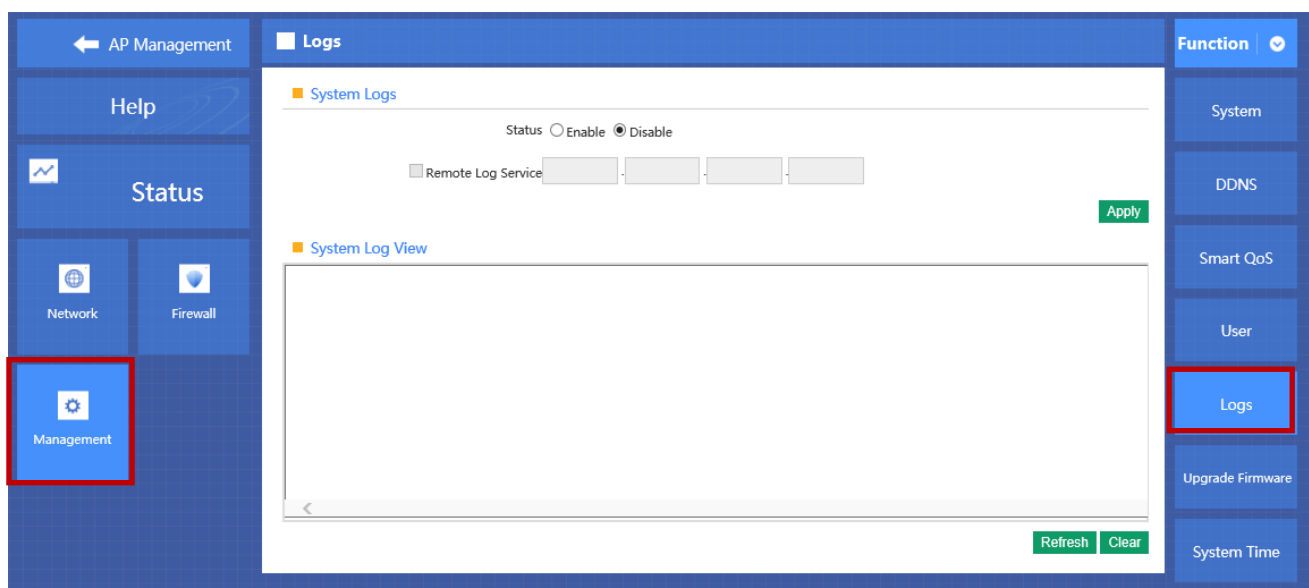
P 4-8-4

Status

Enable or Disable to show system log

Remote Log Service

To decide whether send System log into some pointed remote server synchronously;

4.8.5 Upgrade Firmware

This feature allows the device firmware upgrade.
Noted: Upgrading software may cause system outage, In the process of upgrading the firmware, do not power off, otherwise it may damage the AC controller!
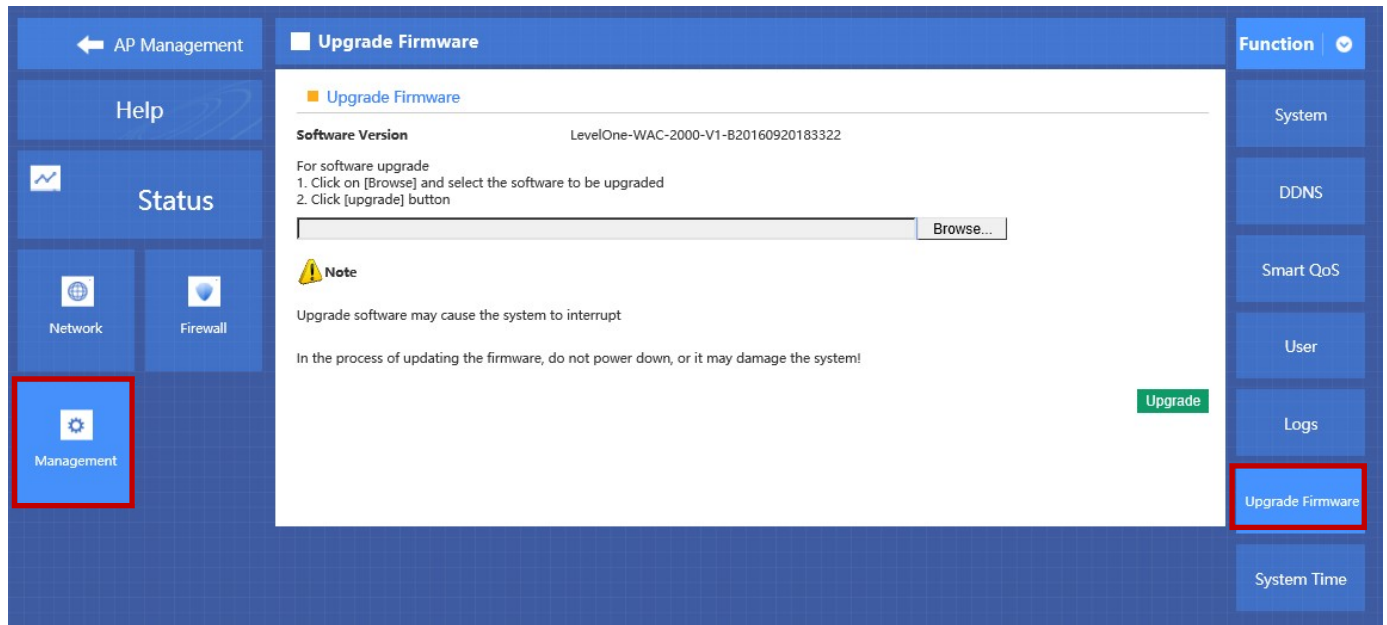
P 4-8-5

4.8.6 System Time
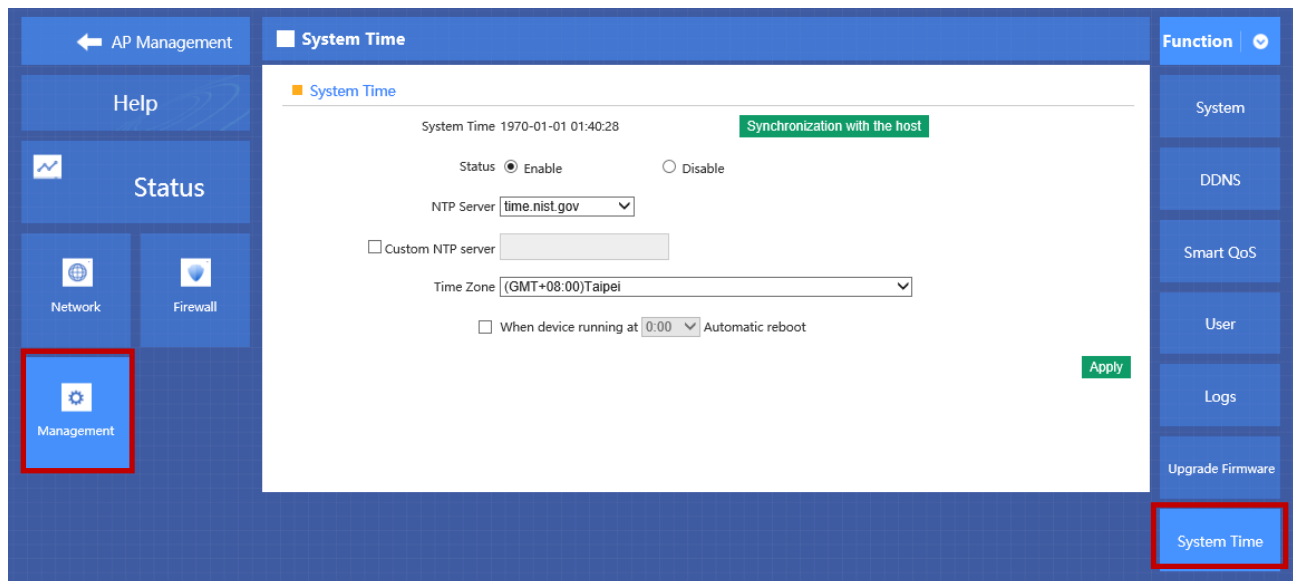
P 4-8-6

Synchronization with the host
Synchronization time with connected PC and router
Status
Enable or Disable NTP
NTP Server
Select the server time synchronization
Custom NTP Server
Setting user-defined synchronization server IP address
Time Zone
Setting the router's time zone

Appendix A Product SPEC

Item		Parameter
Standard Protocol		IEEE 802.3、IEEE 802.3u
QTY of manageable AP		Default: 200pcs, Max: 300pcs
CPU		MT7621, 880MHz
FLASH		128Mb
DDR3		DDR3 4096Mb
Power Consumption		＜ 5W
Interface	LAN port	Four 10/100M/1000M RJ45 port（Auto MDI/MDIX）
	LAN/WAN port	1 LAN/WAN port，Default is LAN port, WAN port when open WAN mode
LED Indicator	Power	Adapter
	Run	System status
Demension (L x W x H)		440mm x200 mm x 45mm
Cooling		Nature cooling + Fan cooling
Working environment		Working temperature：0ºC ～40ºC
		Storage temperature：-40ºC ～70ºC
		Working Humanity：10%～90%RH (No condensation)
		Storage Humanity：5%～90%RH (No condensation)
Power		100-240V~ 50/60Hz

Appendix B LICENSE STATEMENT / GPL CODE STATEMENT

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