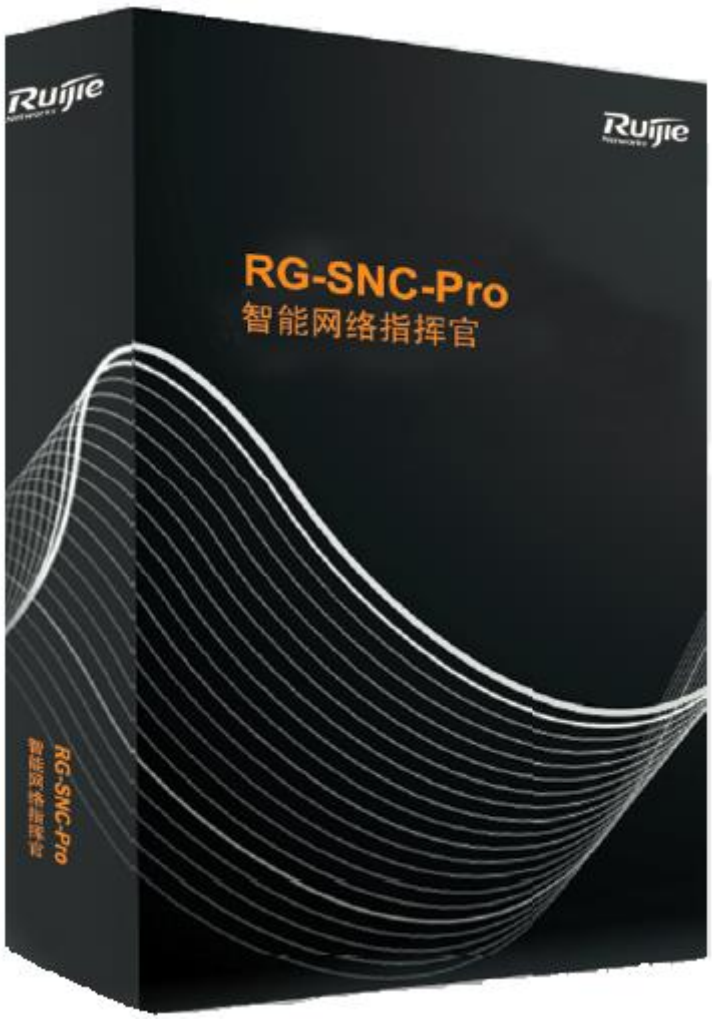
Ruijie Networks – Innovation Beyond Networks



RG-SNC implementation cookbook

V1.0

For SNC En 2.30

Copyright Statement

Exemption Statement

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1 Preface

RG-SNC-Pro smart network commander is Ruijie networks designed for accurate network management system. RG-SNC-Pro focused on the Web, device failure and performance monitoring, device configuration change monitoring and configuration management with friendly Web browser interface, remote maintenance and management together. It can be used non-proxy mode to avoid the traditional "Agent" of tedious and repetitive work. It is easy to implement and maintain, and time saving. Administrative tasks can be defined, actively collecting network status and timely backups, so timely response from the state change or failure to recover; provides network topology diagram showing the effect of the tidy overlooking the network status when an exception occurs in the topology map. SNC is mainly used with Ruijie equipment. It supports the standard MIB based manufacturer device monitoring and management. Meanwhile RG-SNC-Pro system has modular management of various network environments, including: Wireless Wlan egress component, EG equipment central management, MPLS VPN components, 3G network management components to include various devices, simple management of complex networks. Thereby greatly reduce administrator maintanance strength and lower degree of difficulty

This cookbook is applicable for RG-SNC version 2.30(p4)_EN_Build20160302 and later version

Audience

- Network Engineers
- Network Administrator

Obtain Technical Assistance

- Ruijie Networks Websites : http://www.ruijienetworks.com
- Ruijie Service Portal : http://case.ruijienetworks.com

Welcome to report error and give advice in any Ruijie manual to Ruijie Service Portal

Related Documents

- RG-SNC Release Note
- RG-SNC Installation Guide
- RG-SNC Database Installation and Maintenance Guide
- RG-SNC Operation Guide

Revision History

Date	Change contents	Reviser
2016.6.17	Initial publication V1.0	TAC Oversea

2 Contents

3 Daily Maintenance

Before getting started, verify that you install MySQL and RG-SNC, then start SNC Service correctly.

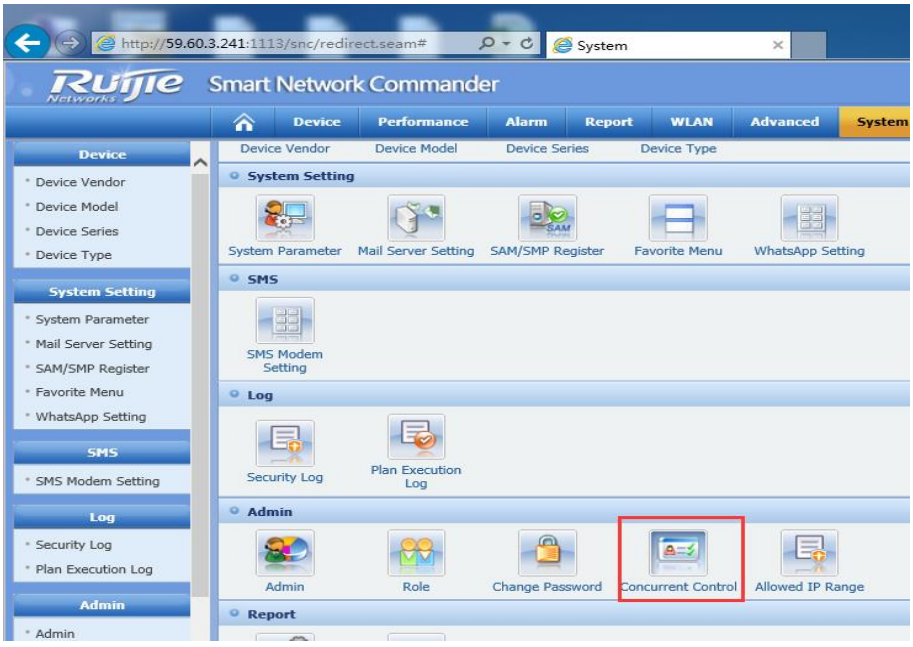
For Database and SNC installation, see ***RG-SNC Installation Guide*** and ***RG-SNC Database Installation and Maintenance Guide***

3.1 Login Web UI

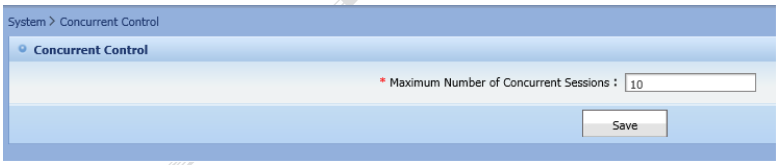
When you complete SNC installation and start SNC service successfully, visit SNC web UI at http://Server IP:8088/snc , the default Username is "***admin***" and password is "***admin***"

Note: Use IE 8.0 and above version in compatibility mode. Firefox and chrome may have compatible issues.

It is recommended to change log sessions when login. Click ***System---→Current Control to*** change maximum number of concurrent sessions



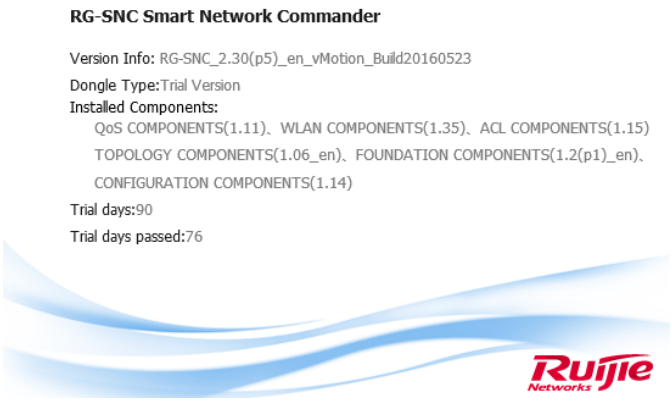
In the middle of the window, it is ***Current Control***



3.2 Check SNC Version

Click ***Help-->About*** in the up right corner, you can view ***version information***.

Pop up information as shown.

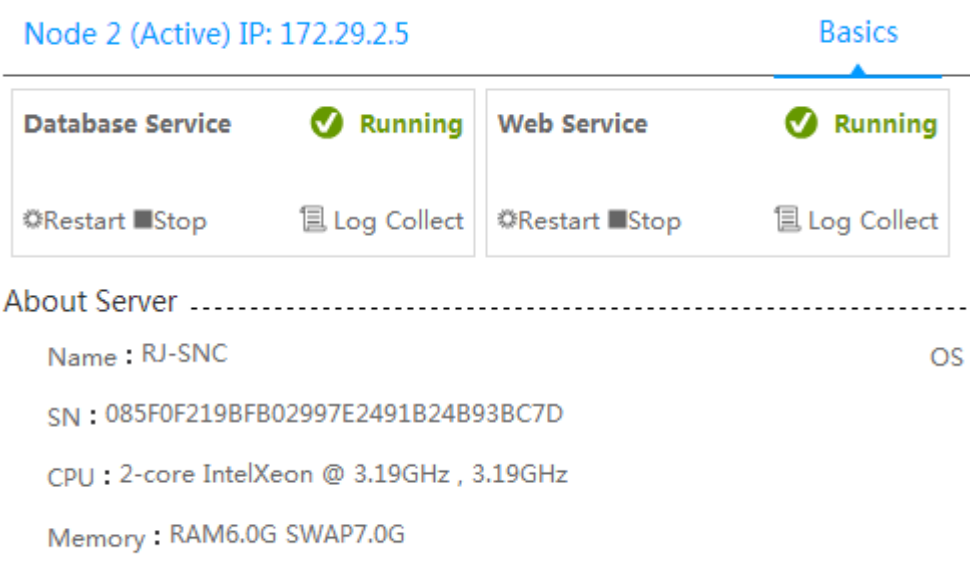


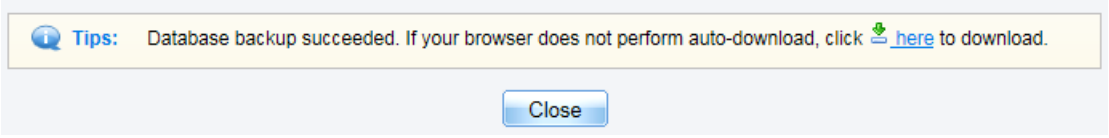
3.3 Service Manager

In this section, you will learn how to manage service.

Remote access to the SNC server and click the shortcut or you can access from URL：http://SNC IP: 8989/ssm as well. Both username and password are "admin".

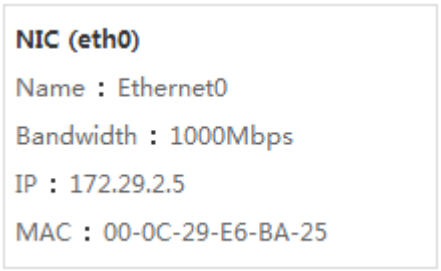
View database status, web service status and server information as shown.



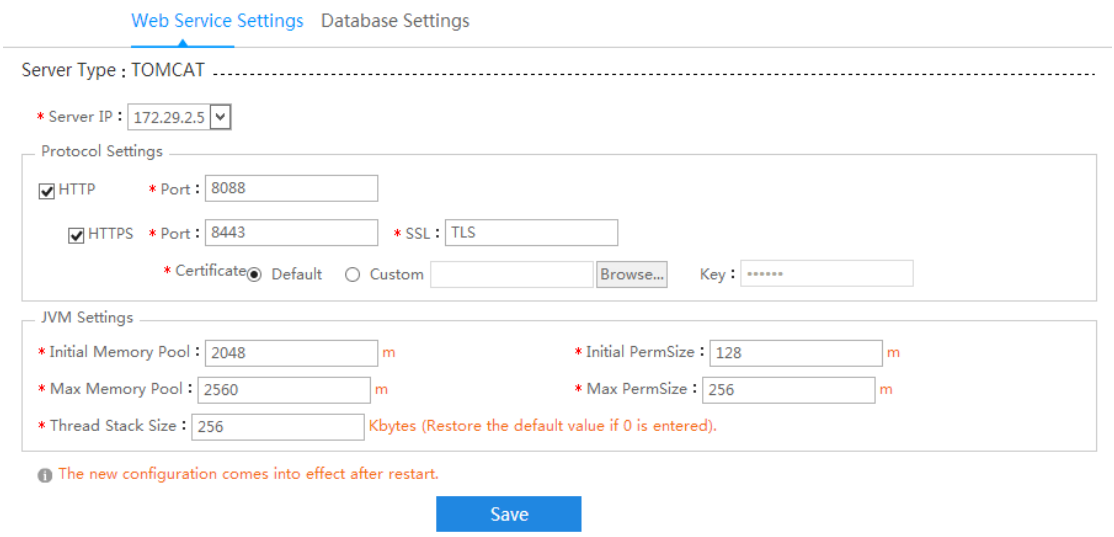


View Server disk usage (Need install flash plugin)

View Server NIC (Need install flash plug-in)



Click "***Web Service Settings*** " to view web service configuration of HTTP, HTTPS access port. Not recommend to change.

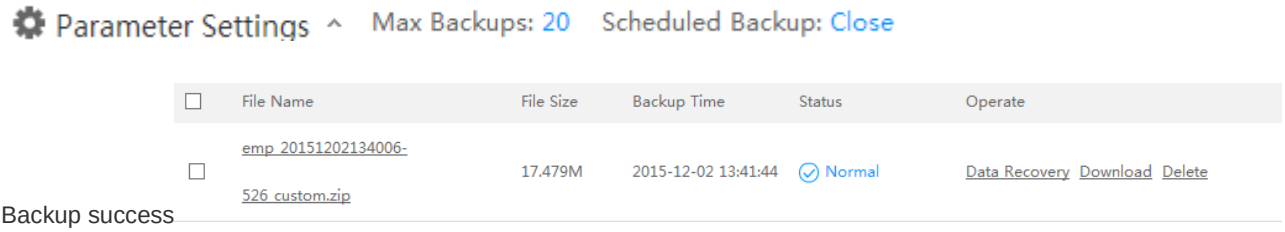


3.4 Database Management

Click "***Integrated tool"*** to set databases.

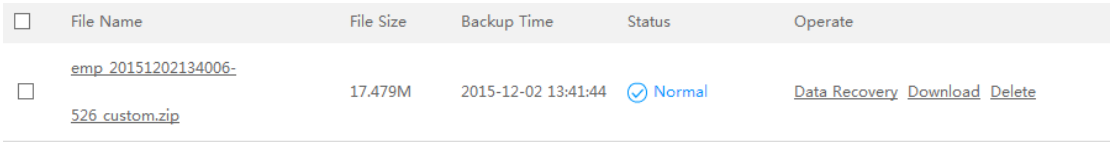
1) Database configuration restore

Instant backup, means backup manually



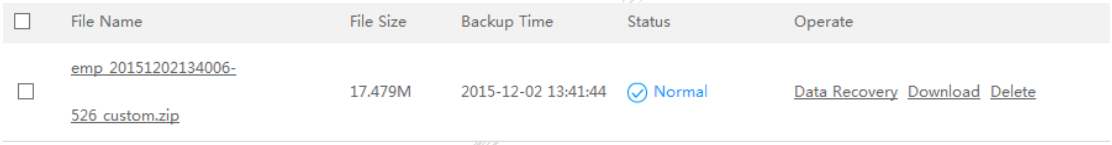
Backup success

2) **You can download or delete the database.**

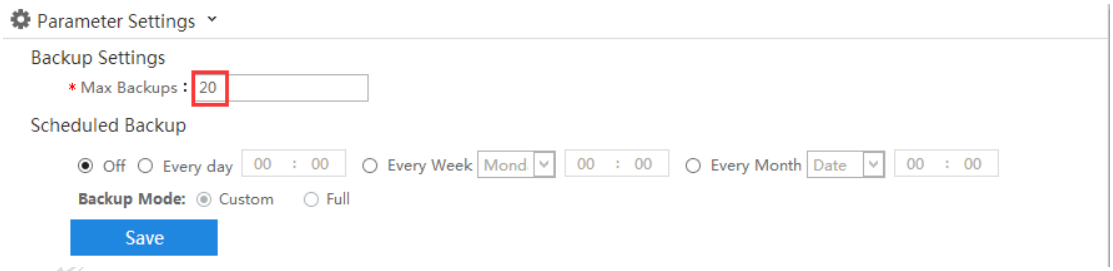


3) **You can upload the database, which is backed up by service manager.**

4) **You can restore the database. Please note the SNC service will be stopped during the restore process.**



5) **Setting parameters. Maximum backup times**



Setting scheduled backup

6) **Collect log for trouble shooting. Zip file will be created after you click "Search" Button.**

7) **As to authorization, please refer to the authorization guide for details.**

8) **Backup database with the following operation steps:**

1. Log on the SNC server, stop the SNC application service and WEB service;
2. Lon on the SNC server, click "start - run - services.msc" to open the service management interface, then stop the MySQL-SNC service;
3. After stop service, wait for about 5 minutes for the starting of database backup operation;
4. Backup the “database” directory under SNC installation directory.

Database recovery with the following operation steps:

1. Make sure SNC service is stopped.
2. Replace the current “database” directory with the whole previous backed up “database” directory.

Supplement:

Regular backups of the database so that you can avoid the problem when the system is unable to recover due to the cause of damage. Database should not be backed up at the SNC server itself. It is recommended to back up the SNC server every two weeks. If there are changes on SNC, it is recommended to backup immediately.

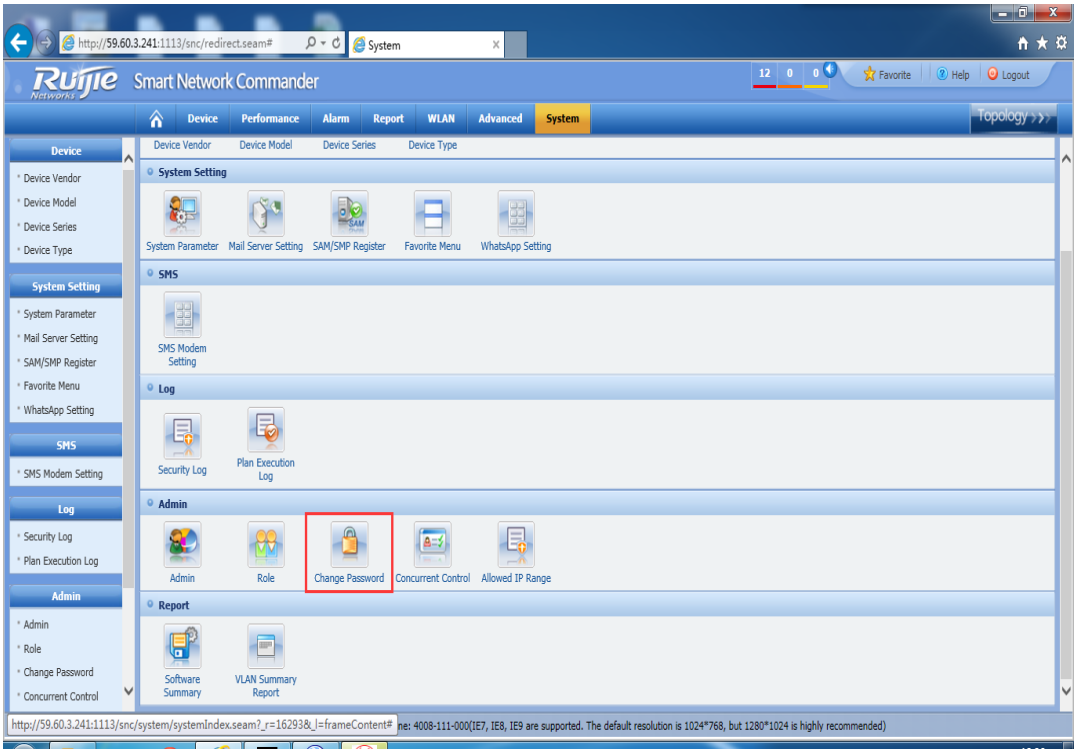
3.5 SNC License Authorization

1. RG-SNC software relies on USB encryption dog to activate license authorization. When software startup, the system will check whether there is a USB dongle on the server, if the dongle does not exist, the software will automatically stop. As to file authorization scenario, if the license file not registered successfully, the WEB service will be stopped.
2. RG-SNC features need different license authorizations to activate. Or, the corresponding feature will not be visible.
3. During RG-SNC dongle grace period, there is no limit on the quantity and features.
4. After version 2.28b1p5, the rest of pro license can be shared with AP. But the PC will not be displayed when the total of terminals and AP exceed 1000.
5. As to file authorization, please refer to file authorization guide for details.

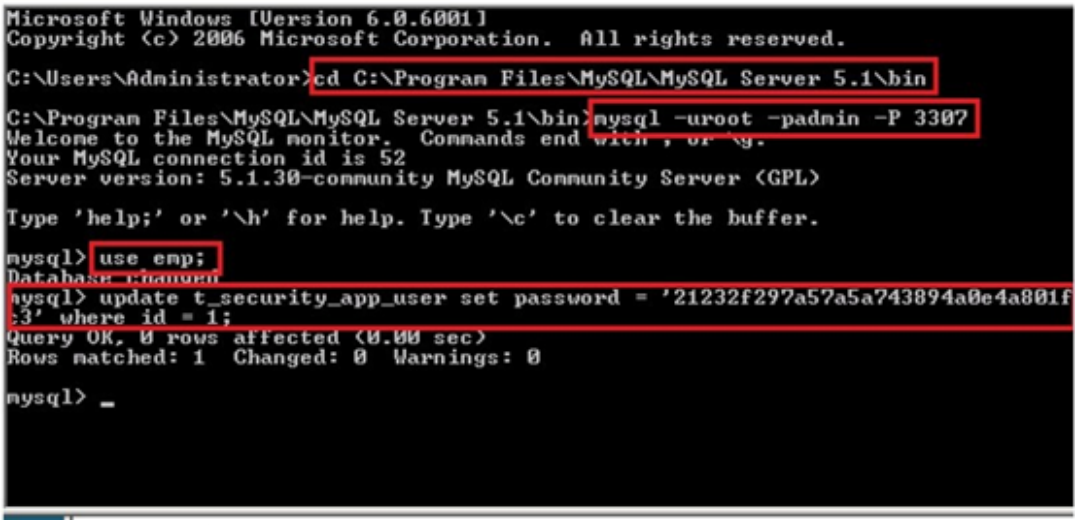
Click ***Help-→About,*** in the top right on SNC WEB UI to display version and license information.

3.6 Administrator and Role Management

Login SNC with admin ID. Click ***System-->Change password.***



You can restore Admin password if forget it. Details as below.


Microsoft Windows [Version 6.0.6001]
Copyright (c) 2006 Microsoft Corporation. All rights reserved.
C:\Users\Administrator>cd C:\Program Files\MySQL\MySQL Server 5.1\bin
C:\Program Files\MySQL\MySQL Server 5.1\bin>mysql -uroot -padmin -P 3307
Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 52
Server version: 5.1.30-community MySQL Community Server (GPL)
Type 'help;' or '\h' for help. Type '\c' to clear the buffer.
mysql> use emp;
Database changed
mysql> update t_security_app_user set password = '21232f297a57a5a743894a0e4a801f
:3' where id = 1;
Query OK, 0 rows affected (0.00 sec)
Rows matched: 1 Changed: 0 Warnings: 0
mysql> _

4 Basic Configuration

In this section, you will learn how to make initial configuration for the networking devices monitoring and management. SNC can read and sync with the devices to realize topology map, performance monitoring and notification after you finish the basic configuration.

4.1 Device Configuration

Configure devices with the following two kinds of function so that they can be managed by SNC:

- Devices SNMP configuration
- Device Telnet configuration

4.1.1 Configure SNMP on Devices

SNMP configuration on devices allows SNC can read and sync with the devices to realize topology map, performance monitoring and notification after you finish the basic configuration. There are three key points in devices SNMP configuration

- Set up public community and permission (read or write)
- community string of device must be the same as SNC server's
- Currently, most of devices use SNMP v2 by default.

4.1.1.1 Step 1, set up community and permission

Enable SNMP on devices, set the read & write community string to “ruijie”.

```
Ruijie>enable
Ruijie#configure terminal
Ruijie(config)#snmp community ruijie rw
```

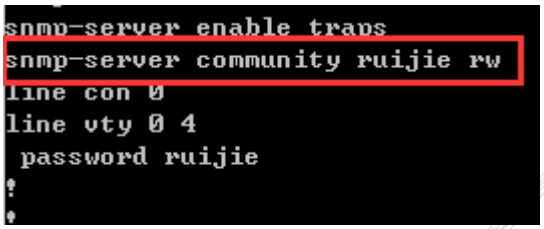
4.1.1.2 Step 2, Save configuration

```
Ruijie#write
```

4.1.1.3 Step 3 , Verify configuration

```
Ruije#show run | begin snmp
```

display SNMP configuration is done.



4.1.2 Configure Telnet on Devices

Devices telnet configuration allows SNC can read and sync with the devices to realize topology map, performance monitoring and notification after you finish the basic configuration. There are three key points in devices telnet configuration:

- Telnet setting can be 4 options.
- You can choose any option you want, but we recommend use "only password" or "username and password"
- Please configure management IP address if it is not be configured before

4.1.2.1 Step 1, set up login way in Line configuration mode.

```
Ruijie(config)#line vty 0 4
Ruijie(config-line)#login
Ruijie(config-line)#password ruijie
Ruijie(config-line)#exit
Ruijie(config)# enable secret    ruijie
Ruijie#write
```

4.1.2.2 Verification

Make sure the connectivity between PC and device. Go to ***Start>Run,*** input cmd to open command prompt.

Input telnet 192.168.51.241（telnet to device management IP）

4.2 Configure Template on Device

SNC network management system is used to discover and manage network devices, you need to make the appropriate SNMP and telnet configuration template.

In this section, you will learn two kinds of template configuration for devices:

- SNMP template configuration
- Telnet template configuration

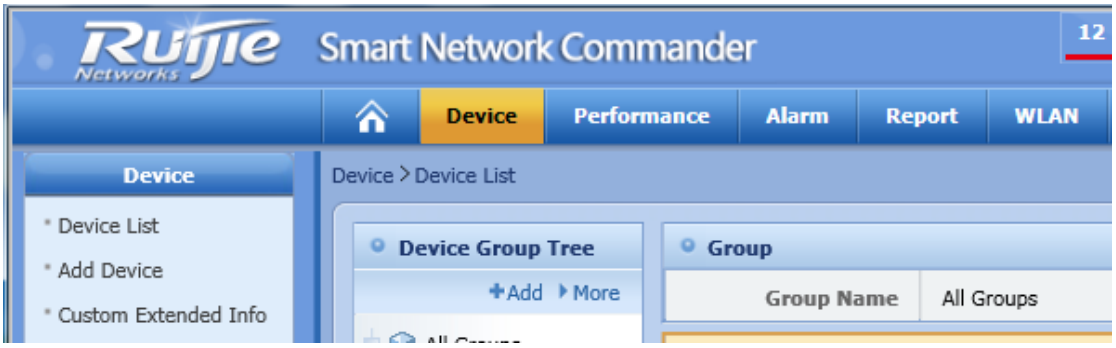
4.2.1 Configure SNMP Template

There are five components in this template configuration.

- Template name
- Port / retries
- Version
- Timeout
- Read / write community string

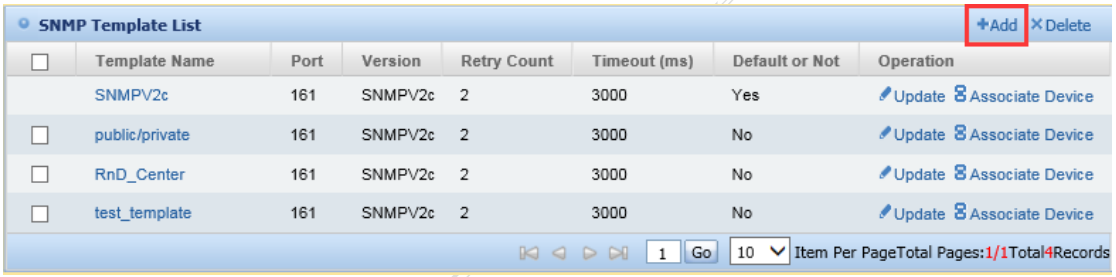
Note: This part is the realization of the public technology, please refer to SNMP protocol principal.

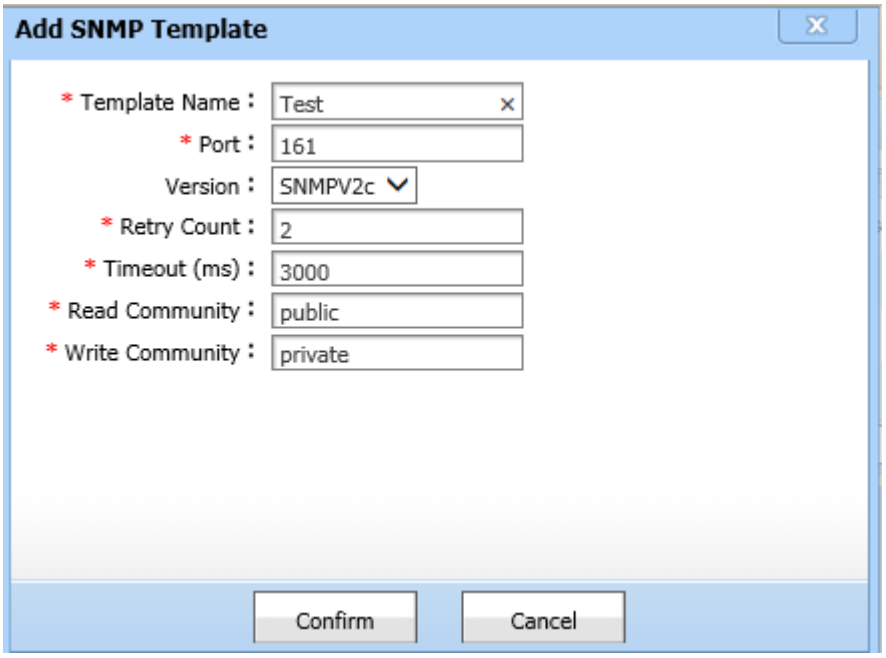
4.2.1.1 Step 1, Log on SNC, click "Device" module.



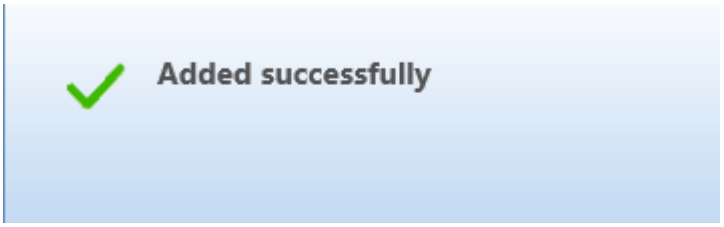
4.2.1.2 Step 2, Configure parameters of SNMP template.

Edit SNMP device template first, go to ***Device template > SNMP template > Add***, set the parameters as below,





Click OK in the pop up menu.



4.2.2 Configure Telnet Template

There are seven components in this template configuration.

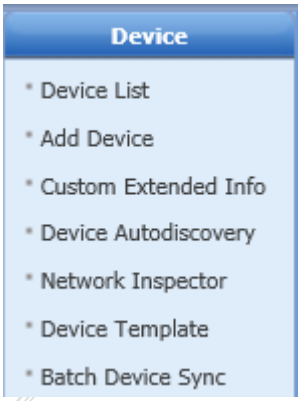
- Profile Name
- Whether to support SSH
- Port / timeout
- Prompt
- Authentication Mode

- The need for super password
- The super user prompt

Note: This part is the realization of the public technology, please refer to telnet protocol principal.

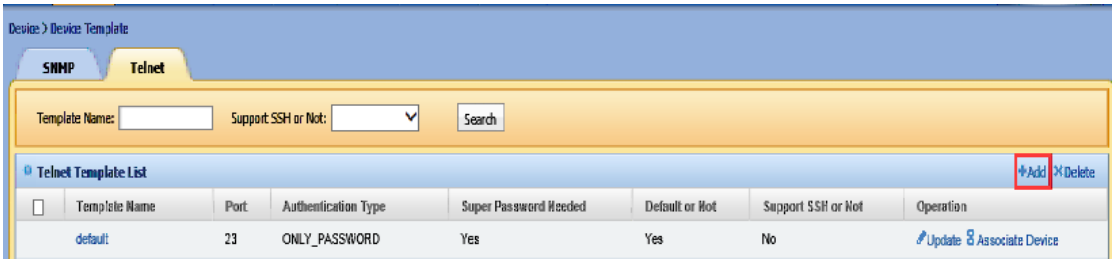
4.2.2.1 Step 1, Log on SNC, click Device template.

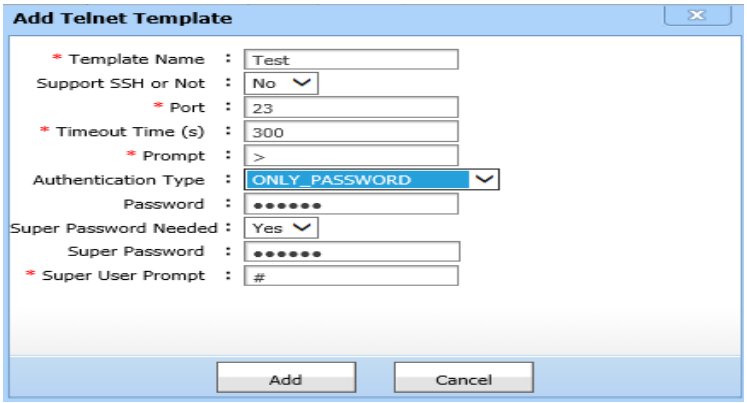
Go to ***Device > Device Template***



4.2.2.2 Step 2, Configure Telnet template parameters.

Go to ***Device Template > Telnet > Add,*** set the parameters as below,





4.2.2.3 Verification

In this interface you can try to modify, delete, and associated equipment and do other operations.

4.3 Add Device

The network device must be properly added to the SNC server, it can be managed by the system.

In this section, you will learn:

- Automatic discovery
- Added manually

4.3.1 Discover Device Automatically

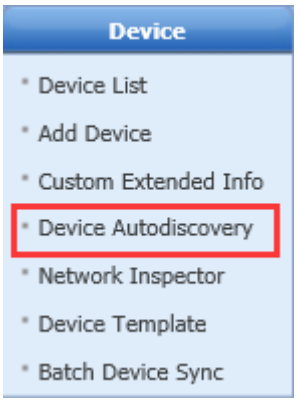
Automatic discovery of equipment in three ways: ARP mode, routing, network segment. Three methods are required to detect the reachability of SNMP over IP.

There are seven key points in automatic discovery,

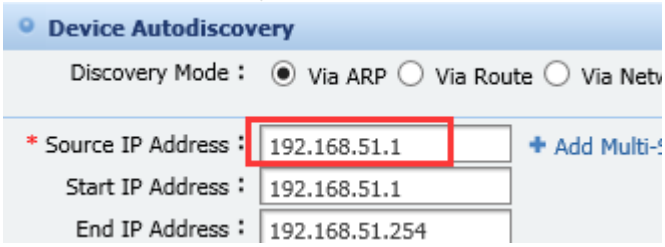
- The template of SNC must has consistent information with the device
- Complete ip address and routing table information of network device
- An automatic discovery might not discover all device at a time
- Manually add the device if you are unable to find the device
- If there is a requirement to find a network of selected seeds IP , the start IP and end IP must be included.
- Select only the required SNMP template
- Add the device by importing previous backup

4.3.1.1 Step 1, Configure Automatic Discovery

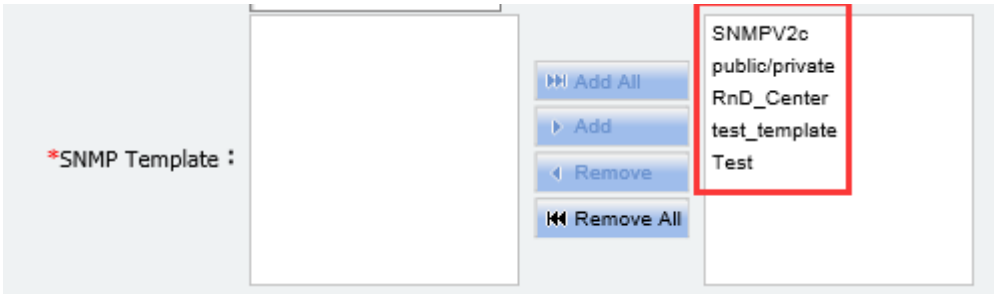
Enter the device management page first , go to Device Auto discovery, modify Device Auto discovery , set the parameters as below ,



Fill in the required topology discovery seed IP address, the start IP address and end IP addresses.



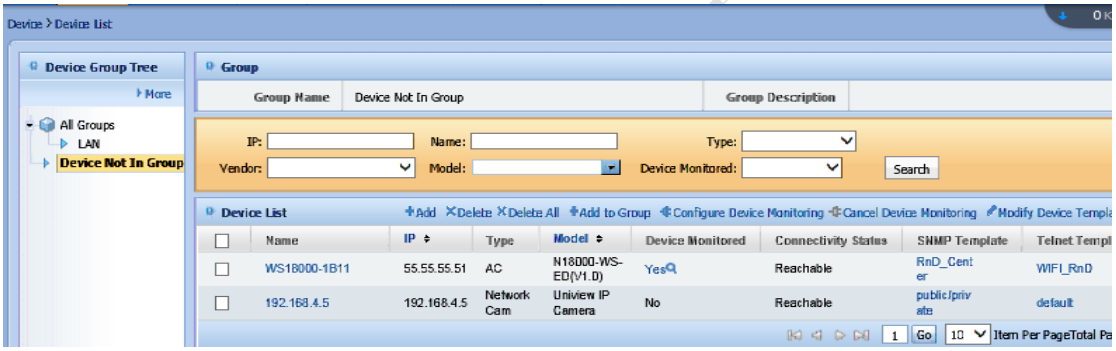
Selected for one or more SNMP template to use automatic



Click "***Auto discovery"*** when complete setting.

4.3.1.2 Verification

Automatic discovery is completed, Go to ***Device> Device List,*** we can see the list of devices by automatically discover network



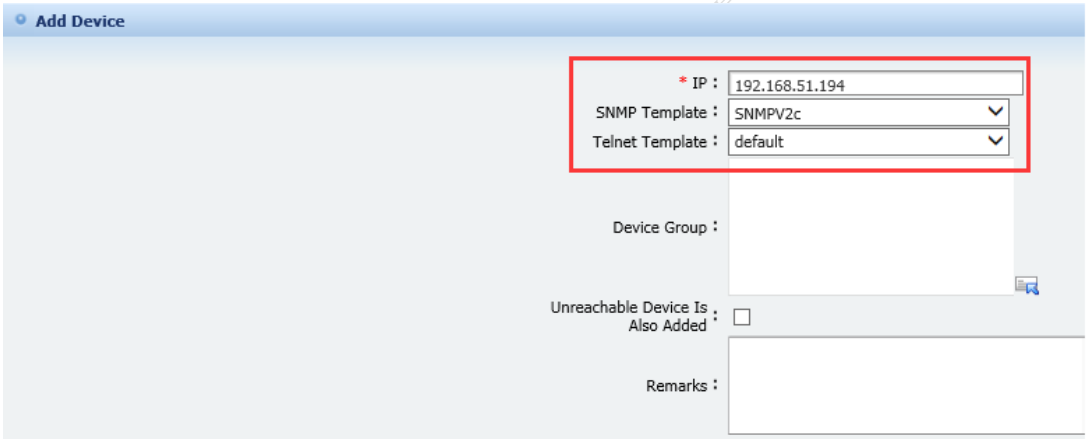
4.3.2 Discover Device Manually

There are five key points in discovering device manually

- The device IP cannot be empty
- The template of SNC must be consistent with the device
- The actual parameters of device match SNMP parameters contained in the template
- You cannot add the device which cannot be ping
- The device can be added by importing the backed-up device information

4.3.2.1 Step 1, Add Devices Manually.

Enter the device management page, go to ***Add Device > Add,*** create a new device.



Click "***Add"*** when complete setting.

4.3.3 Unknown Device Identification

If there is SNC unsupported devices in the network, it will be identified as an unknown model after adding devices, you need to identify this device properly.

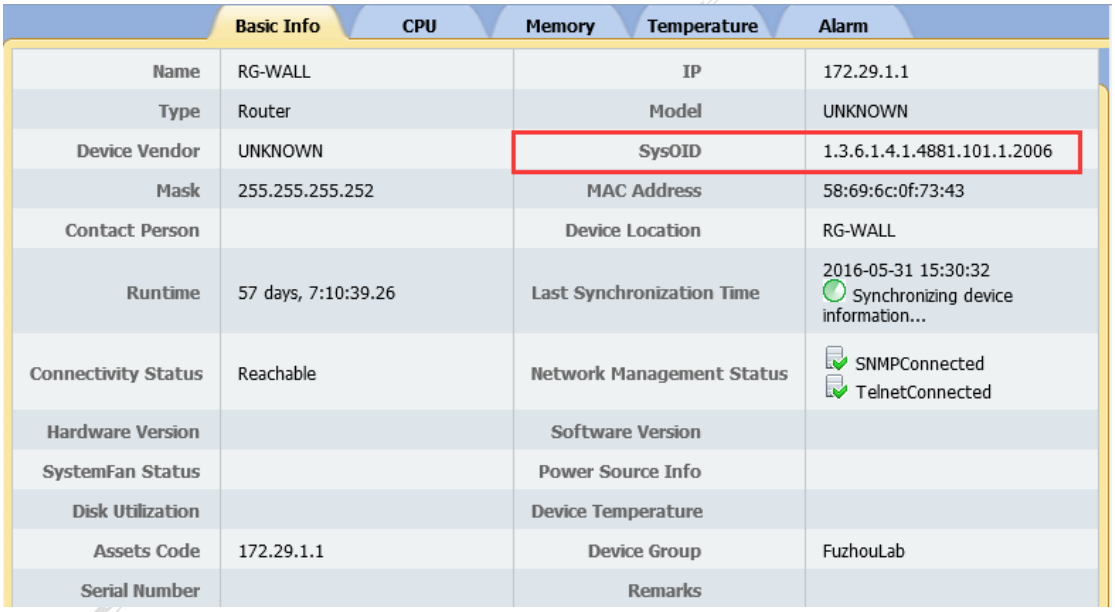
There are three key points in identifying Unknown device,

- The information in device and SNMP template of SNC must be consistent
- By adding custom device models to manage the unknown type of device
- It is recommended to name the device referring to certain norms, such as the name on device panel.

The following configuration do not include basic wireless settings, so ensure your wireless network works properly first before starting. Suggest to create a dedicate wlan-ssid for ***Exemption Authentication (BYOD).***

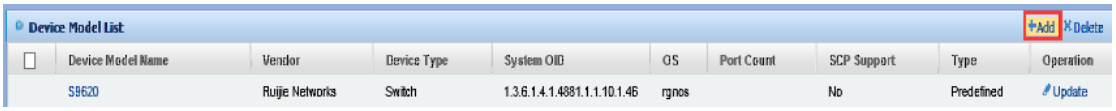
4.3.3.1 Step 1, Find and Copy sysOID in The Device Basic Info.

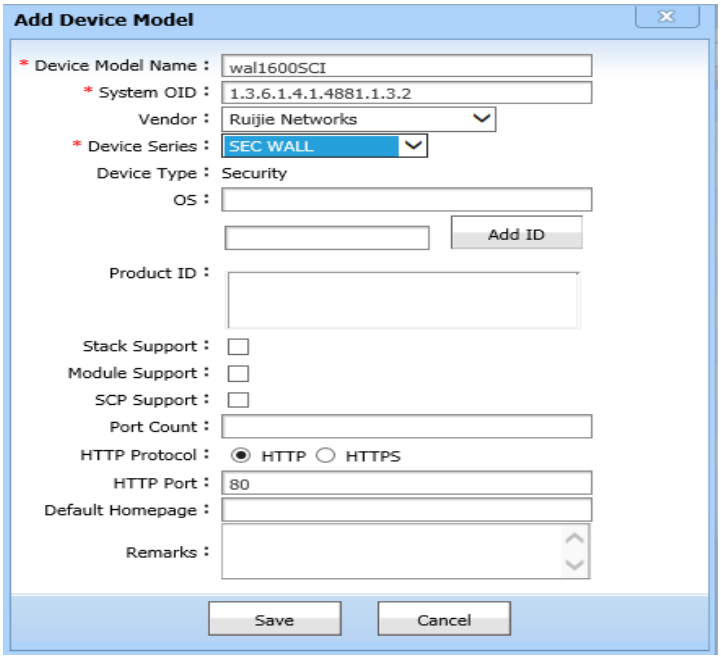
Go to ***Device > Device List> unknown device model name,*** confirm snmp Connected and telnet Connected. Then find and copy sysOID in the device basic info.



4.3.3.2 Step 2, Device model management.

Go to ***Device > Device Model>Add,*** create a new custom device models.





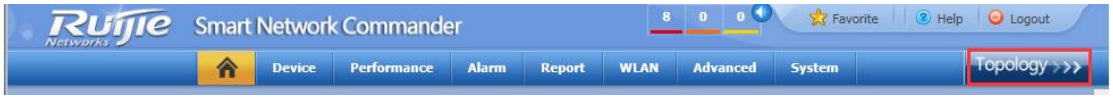
Click "***Save"*** when complete setting.

4.4 Network Topology Configuration

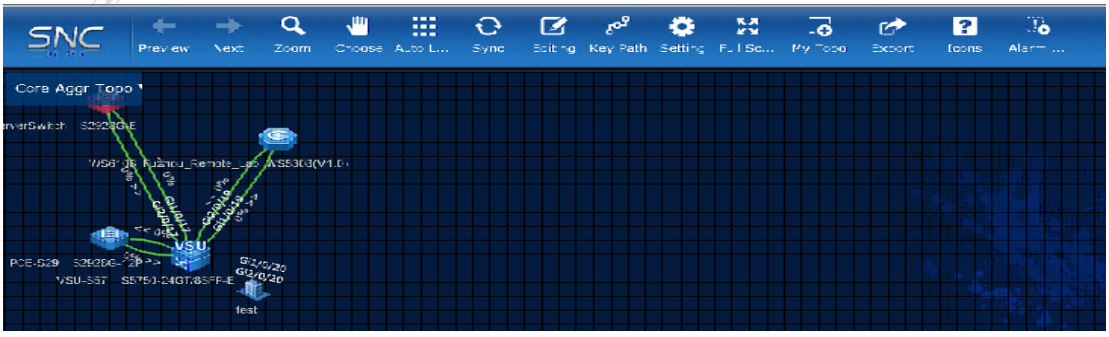
Automatically detect topology after the device is added. Network devices will be showed in the topology diagram. Automatically generated topology should be consistent with the actual topology and lay

4.4.1.1 Step 1, Load data

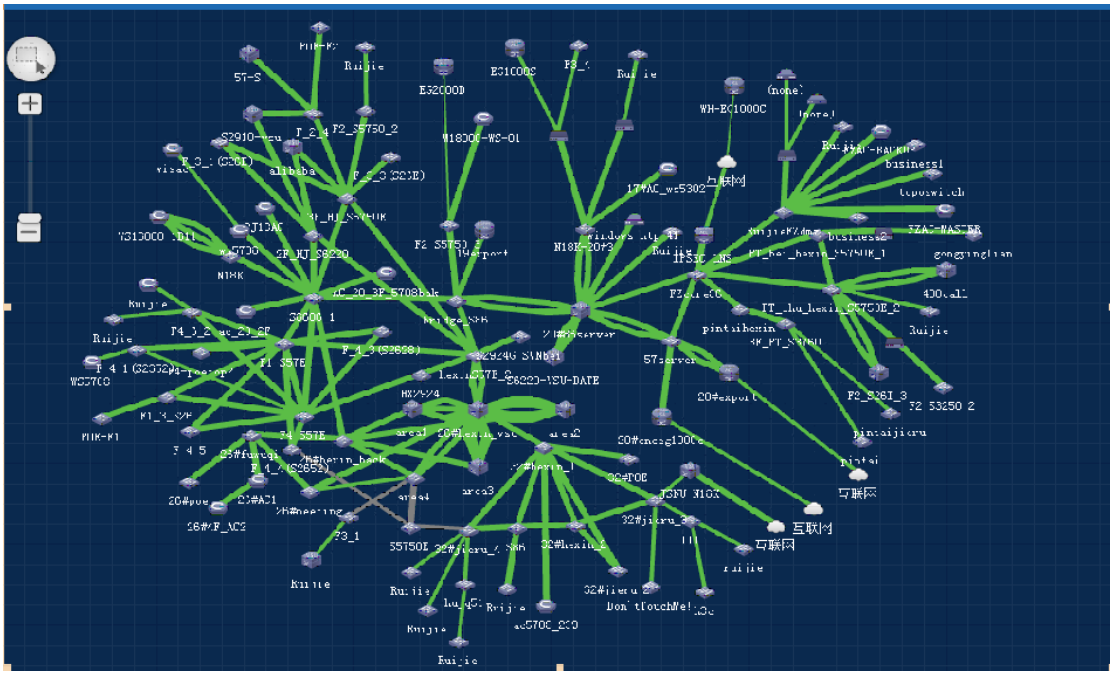
On SNC configuration page，click icon to enter network topology page.



It may take a while to load data into the topology depending on the topology size.

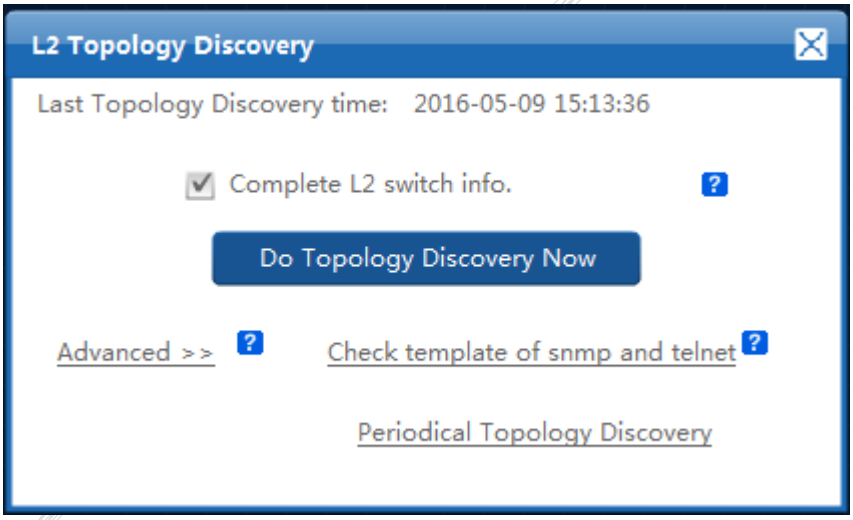


After auto-discovery, SNC will perform topology automatic layout.



4.4.1.2 Step 2, Discover topology manually

Go to ***Fully layer 2 switching information before topology discovery> Start Now topology discovery,*** discover topology manually.



If the device or link does not appear, you need to add them manually.

4.5 Monitoring Device Performance

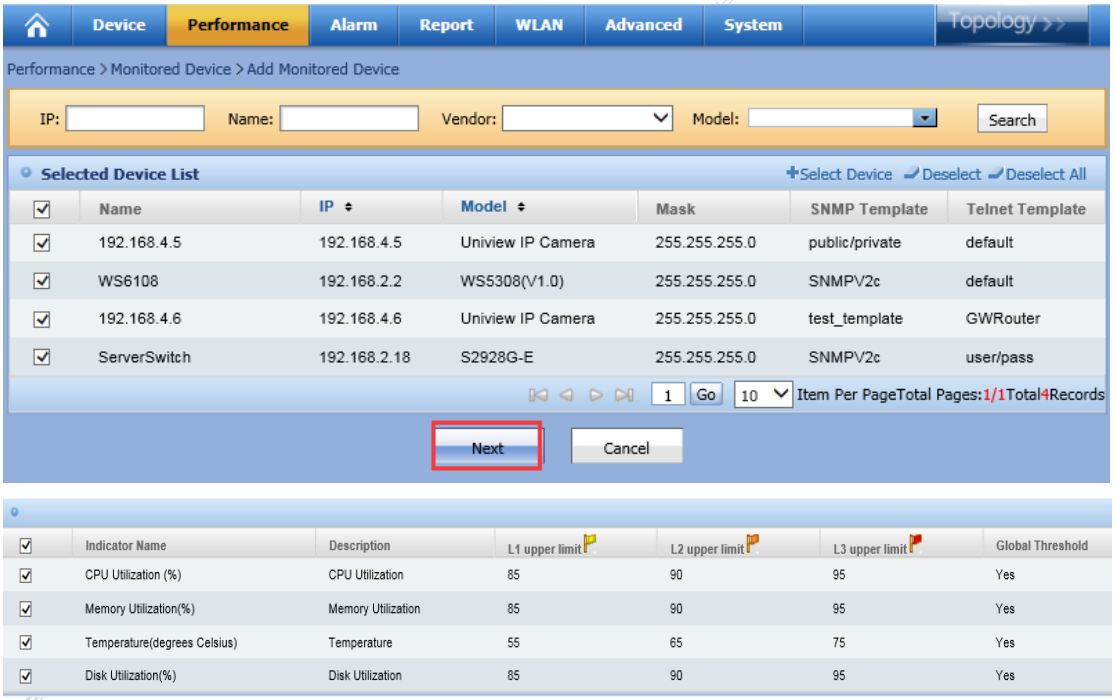
By monitoring these indicators, you can realize the equipment's status information. Monitoring these indicators can be presented at the last page or device details page, if some indicators have reached a certain threshold, it will produce the corresponding alarm.

Monitoring parameters as below：

- Monitoring equipment indicators: CPU utilization, memory utilization, temperature, disk space utilization.
- Monitoring Interface indicators: the interface rate, interface bandwidth utilization, packet loss rate interfaces, interface data error rate table, the interface Unicast packet rate, the interface broadcast packet rate, the interface CRC error rate.

4.5.1.1 Step 1, Enable device monitoring

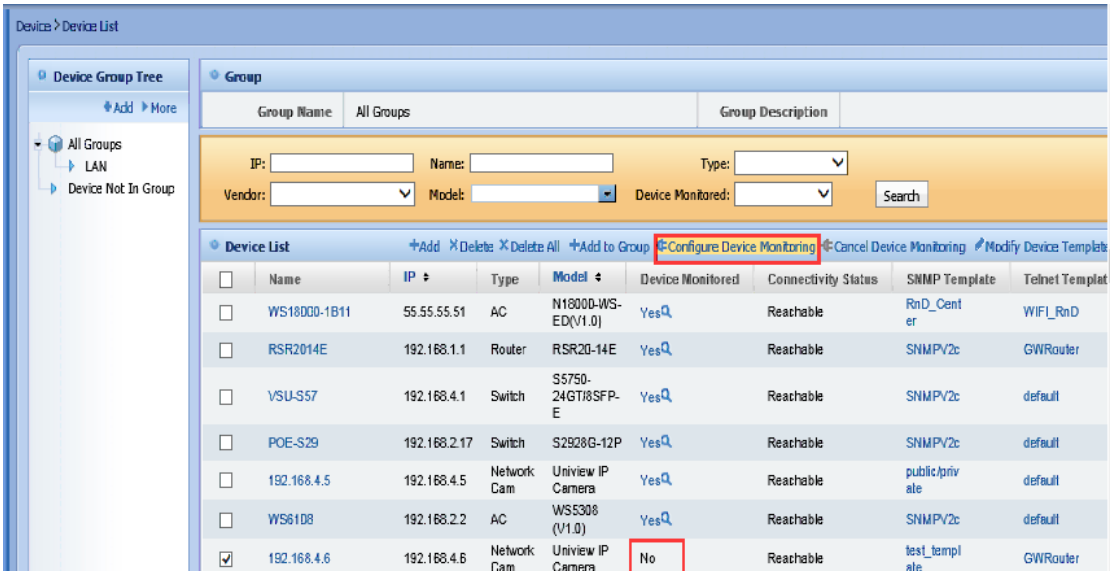
Go to ***Performance > Add> Select Device> Add> Next ,*** use default threshold setting as below ,



Click "***Save***" when complete setting.

4.5.1.2 Step 2, Enable real-time monitoring

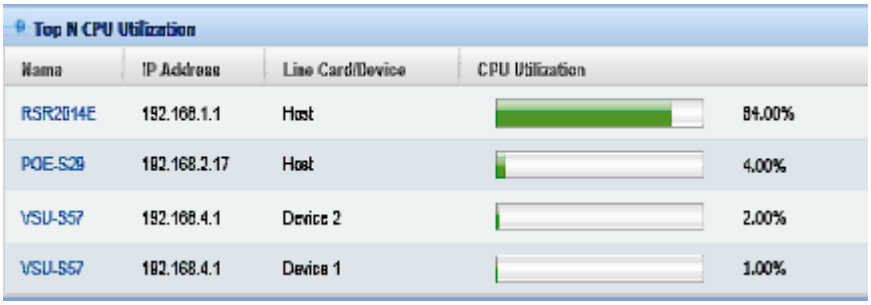
Go to ***Device> Device List> Configure Device Monitor,*** Then you can see the devices already in the real time monitoring list. And the status is enabled.



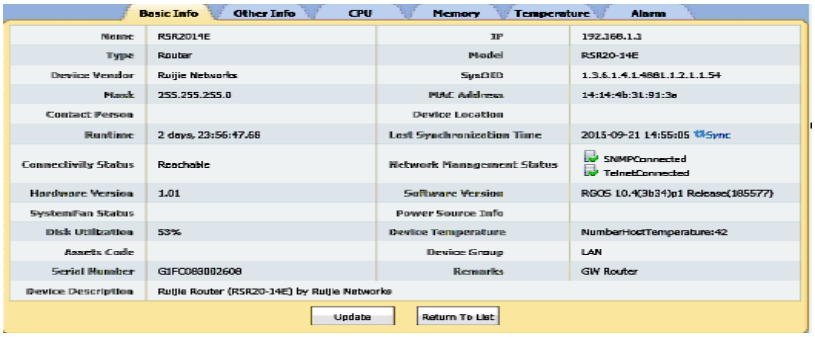
4.5.1.3 Verification

In this interface you try to modify, delete, and associated equipment and do other operations.

If there is traffic passing through, the SNC homepage will display the top N devices of CPU utilization in 5 minutes.



Go to ***Device>specific device > drop down the scroll bar***, you can view the device CPU, memory, temperature performance curve.



4.6 Enable Trap and Syslog Notification

When equipment fails or change, the device can take the initiative to send an error message or a log to SNC. Instead of waiting snc timing synchronization detection. SNC needs to immediately response uploaded snmp trap and syslog message information, and form the alarm message on the SNC.

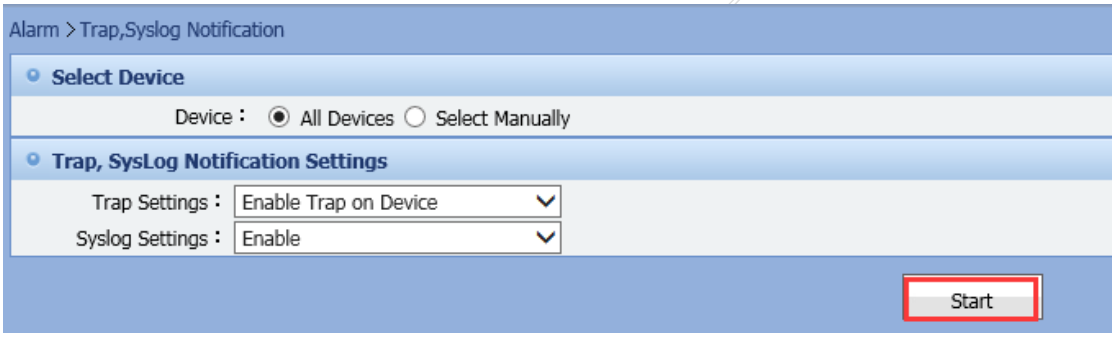
There are three key points in setting trap and syslog notification.

- Enable device trap and syslog notification on SNC is relied on telnet function
- Enable trap and syslog notification feature on SNC is only for ruijie equipment
- Commands to enable trap notifications and syslog notifications

This part of the realization of the principle is public technology, please refer to the SNMP and syslog protocol whitepaper.

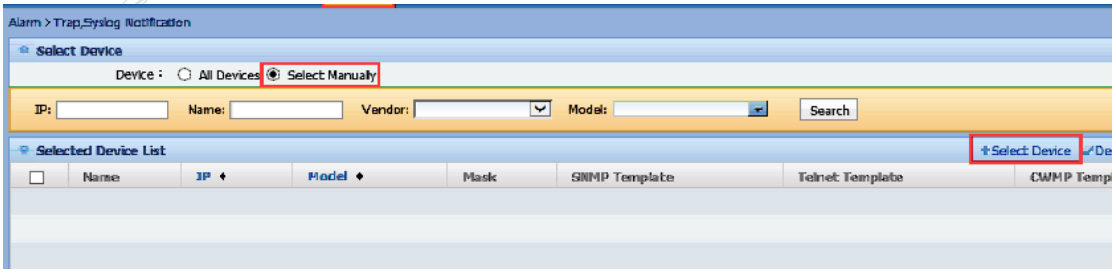
4.6.1.1 Step 1, the bulk trap and syslog notifications enable

Go to ***Alarm> Trap, Syslog Notification,*** Then select all devices needed to start trap and syslog notifications.

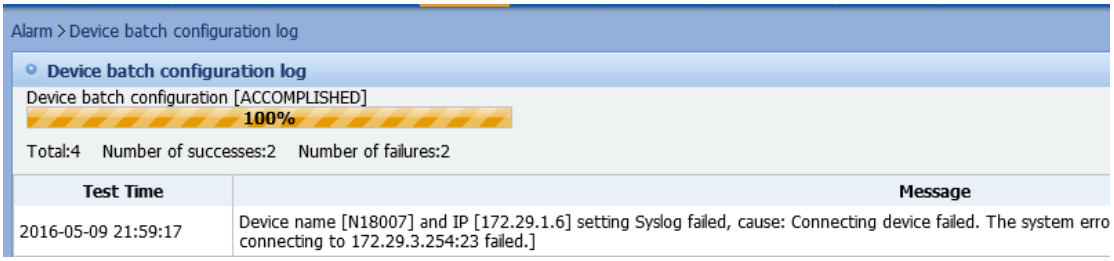


Click **"*Start*"** when complete setting.

Here you can also not choose all devices, select "***Select manually***", added device which need to start the notification, and then click on the "***Start***".

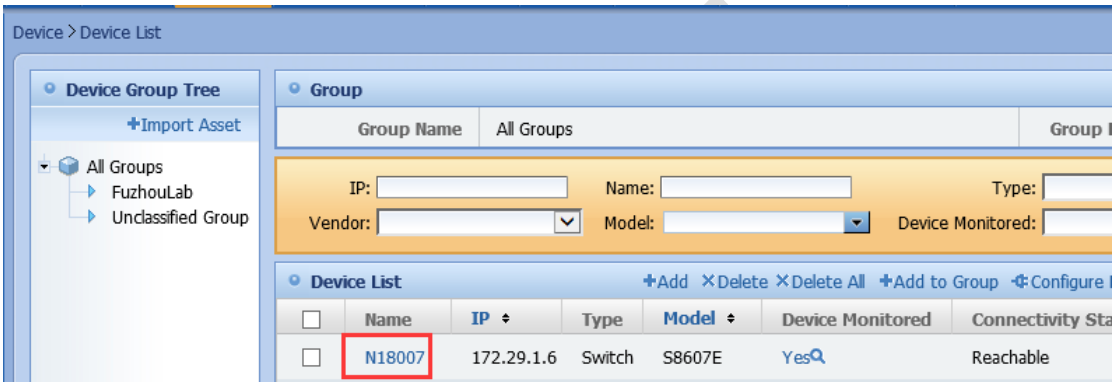


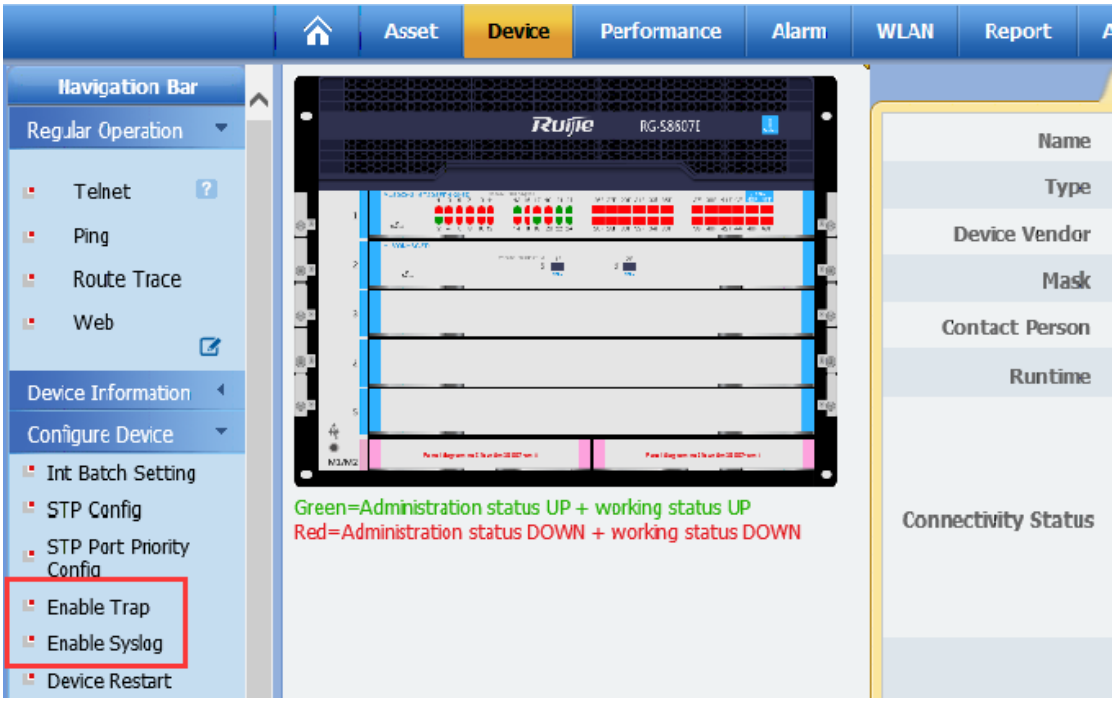
The device automatically jump to bulk set device log page, where you can see the batch setting details.



4.6.1.2 Step 2, Start trap and syslog notifications on a single device

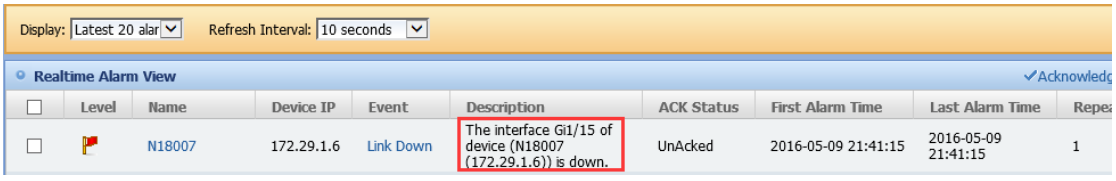
Go to ***Device> Device List> Configure Device> Enable Trap*****,** previous enable button change to disable buttion. That means notification is already enabled.





4.6.1.3 Verification

Test by unplug one cable, there will be immediate warning notification if the device and link enable trap and syslog monitoring function.



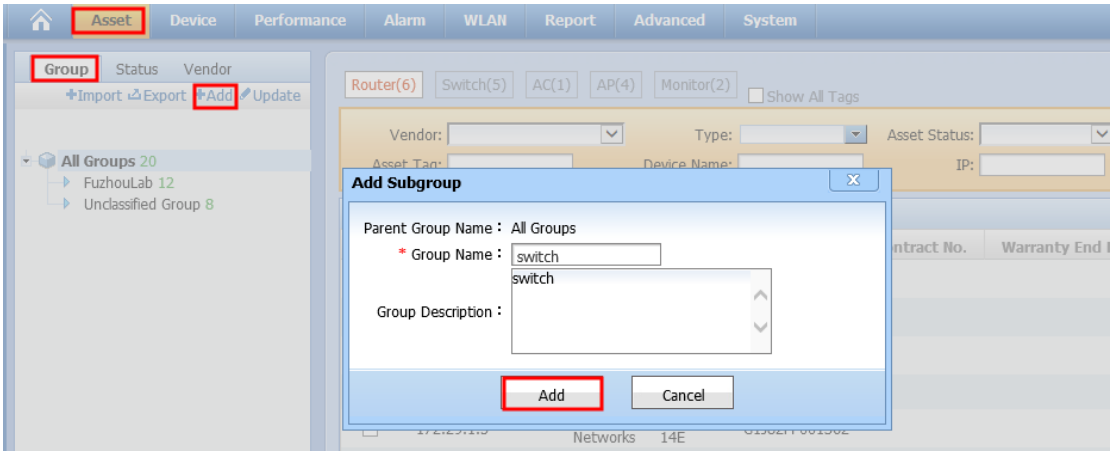
5 Extension Configuration

5.1 Assets

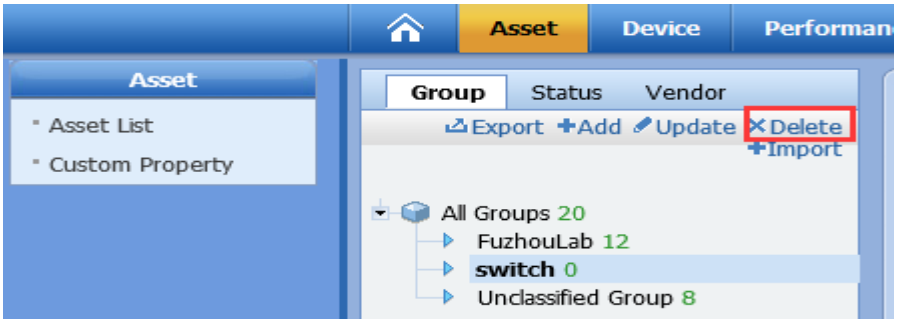
In this section, we will learn how to manage assert.

5.1.1 Assets category

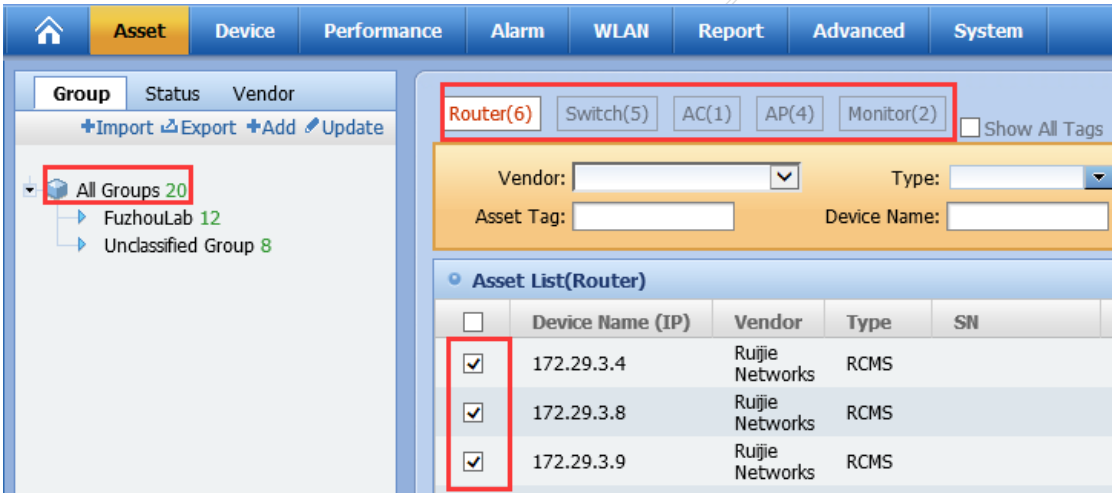
When you want to add an assert, go to ***Assert>Group >Add*****,** Input category information and, click ***Add***,

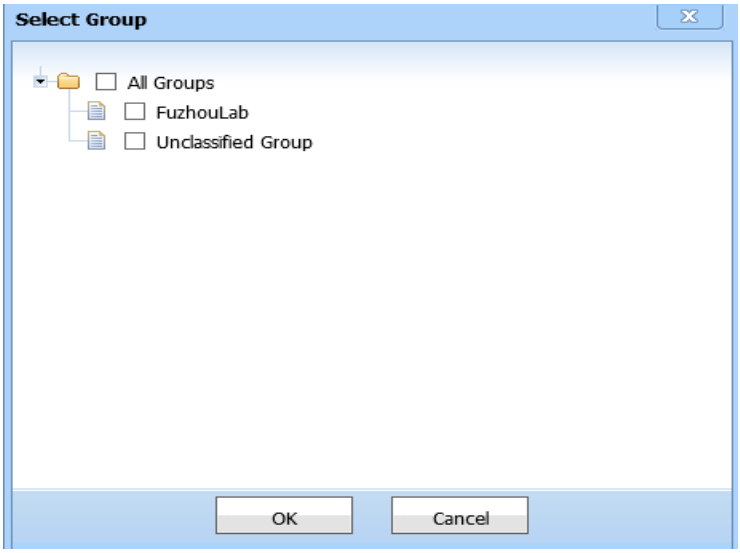


When you want to delete a new assert, go to ***Assert>Group >Delete*****, if** you had confirmed, click ***yes,***



When you want to add asset into category group, go to ***all groups, select*** device and device type, click ***Add to group*** and then check the group you want the device to join and click ***OK.***





After finish adding, you can view the device in the group.

5.1.2 Assets import and export

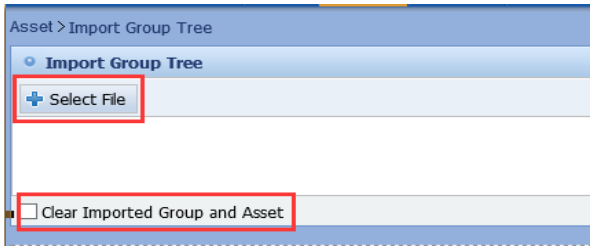
Add a device by importing device information files. Export device grouping files can be imported into the device grouping tree operations back into the system.

There are two key points in assets import and export

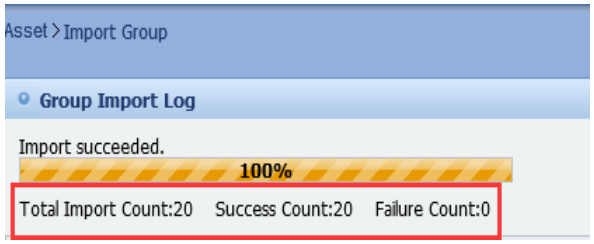
- Group import will delete all existing system grouping and devices configuration.
- Can only import XLS (ie Excel) file format

Note: If you check the "Clear Imported group and Assert", the device group will be deleted. When incremental import check is not required.

When you want to import asserts, go to ***Assert >Import*** or go to ***Device >Import Assert >Select File***



After finishing importing, you can view the result.

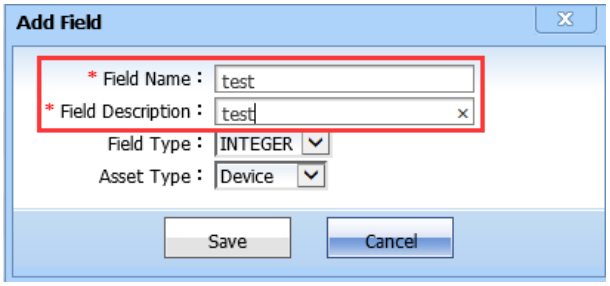


When you want to export asserts, go to ***Assert >Export***

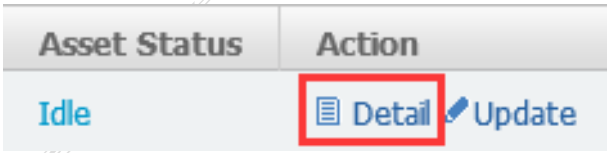
.

5.1.3 Customize extension information

To define extension information for assets, go to ***Assert >Custom Property >Add Field,*** Add the field Name and description.



Configuration verification, go to ***Assert >Details, then*** you can see the new added "Test" field.

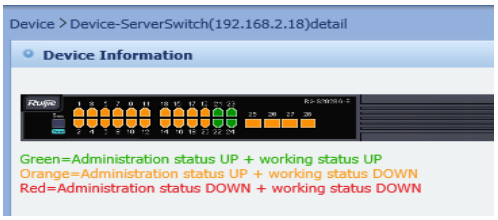


5.2 Device Management

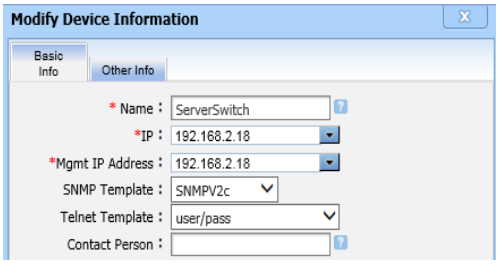
5.2.1 Modify Device Information

By viewing device details, we can know the running status of devices so as to achieve the purpose of the managing device.

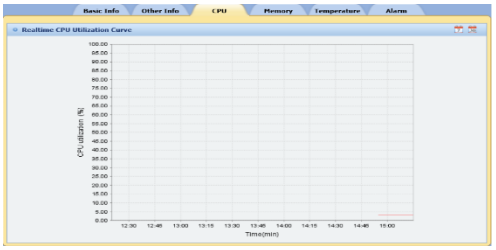
Go to ***Device***, and click ***relative device*** to view the detailed information**.**



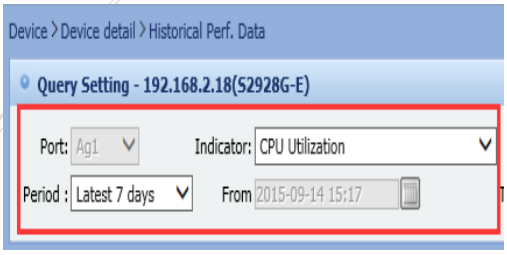
Click ***"Update"*** button to modify the basic information**.**



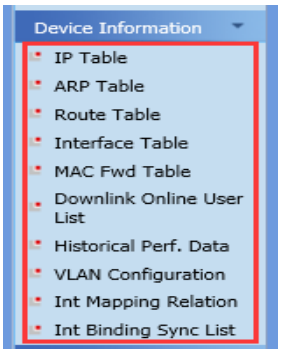
Device CPU, memory and real-time curve chart**.**



Click on the top right corner of the "7" and "30" to see the CPU utilization curves for the last week or month, and you can export data to Excel and PDF.



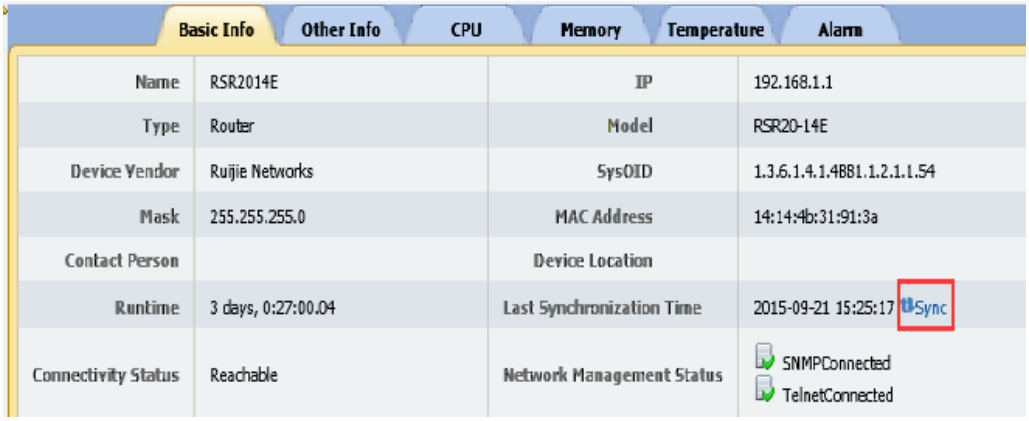
Check the routing table, interface table, MAC address table, ARP table, IP table, etc.. In the navigation bar, in the device information bar, you can view other information about the device, as shown in the following diagram.



5.2.2 Sync up Device Information

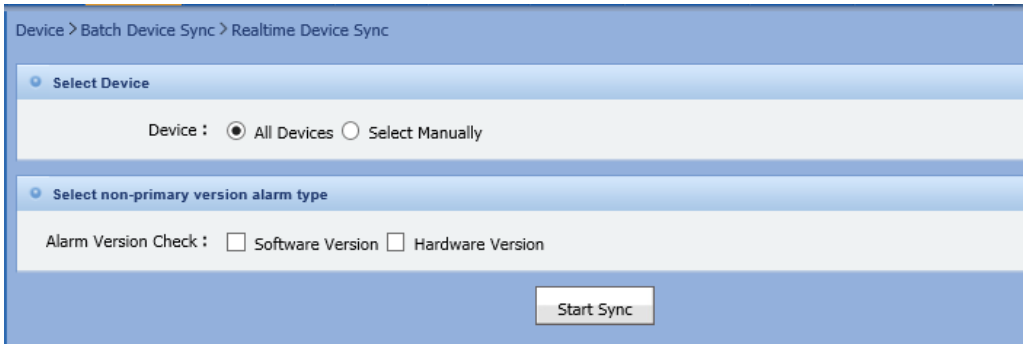
Sync can help to get real-time information of the device, so that the information displayed on the SNC is the latest.

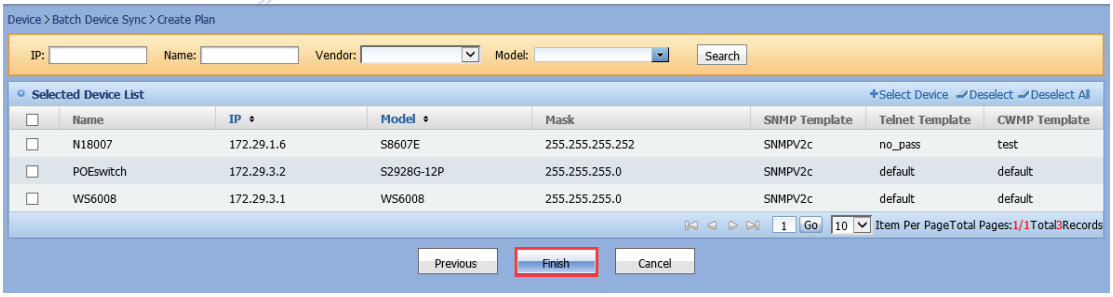
Sync up on single device, go to ***Device >Device List,*** When entering the device details page, you can see the device information automatically synchronized. And you can click “sync” to manually synchronize information.

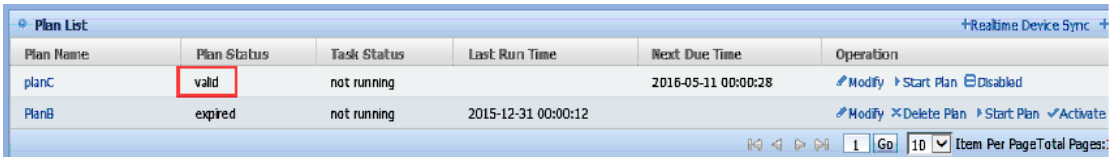


Bulk devices sync up, go to ***Device >Batch device sync >Real-time Device Sync >select Device >Start sync,*** When entering the device details page, you can see the device information automatically synchronized. And you can click “sync” to manually synchronize information.

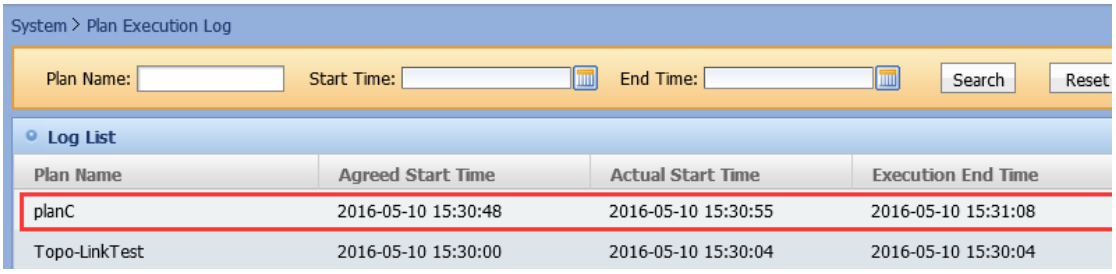
Schedule sync up, go to ***Device >Batch device sync >Create Plan >select Device >Finish,*** the next step is to start plan to activate the program.



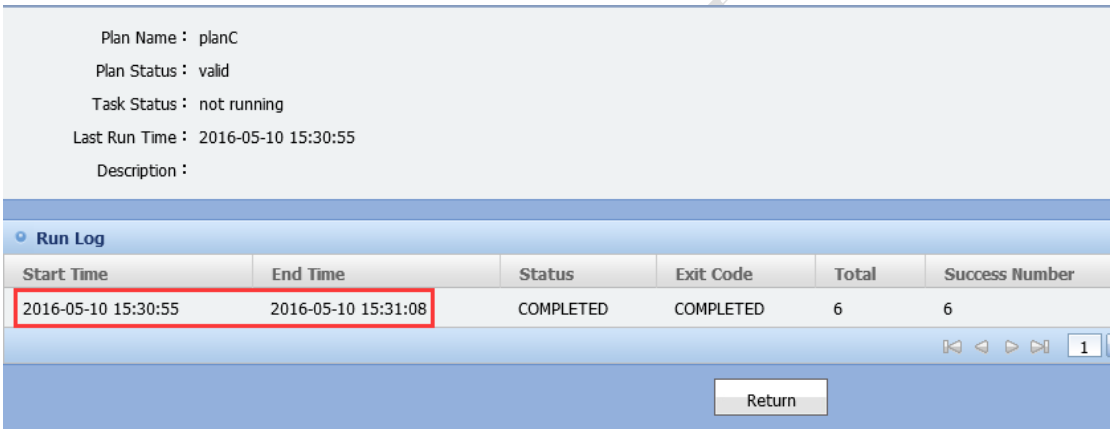




Go to ***System >Plan Execution Log >Create Plan*** to see if the schedule is executed properly

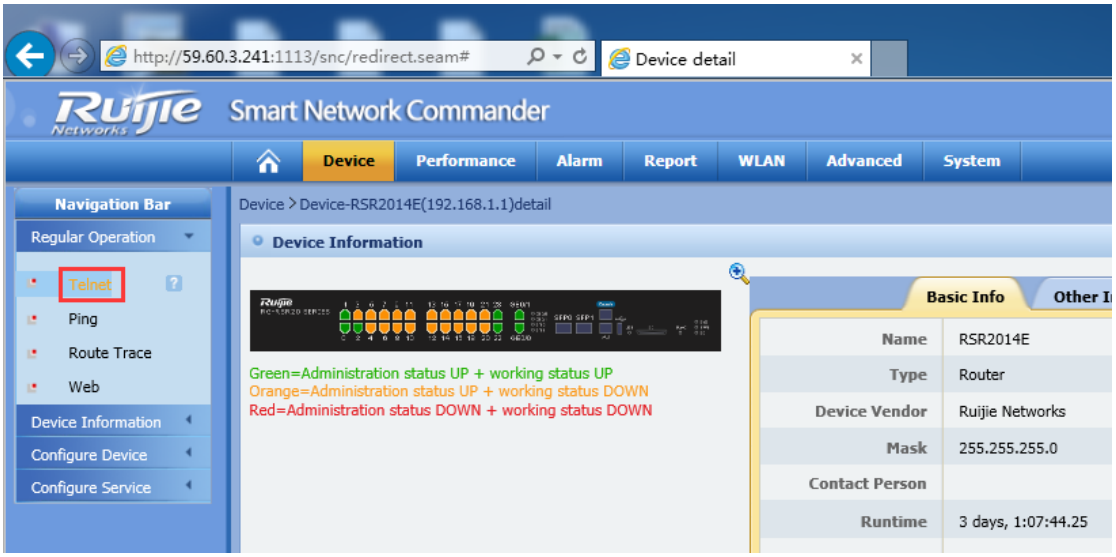


Go to ***Device >Plan List > Plan Name*** to see if the schedule is executed properly



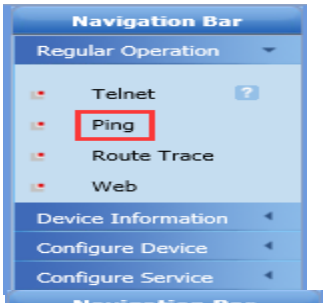
5.2.3 Log in Setting

Telnet to device for configuration from SNC. Go to ***Device >Device List*** enter the device details, click "***Telnet***" button on the left navigation bar.

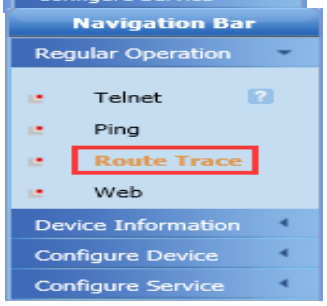


5.2.4 Test the Connectivity of Device

Ping test, go to ***Device >Device List*** on the device details page, click "***Ping***" on the left navigation bar.

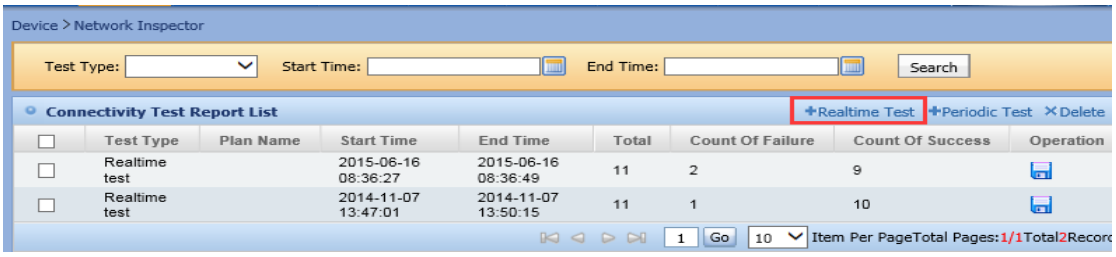


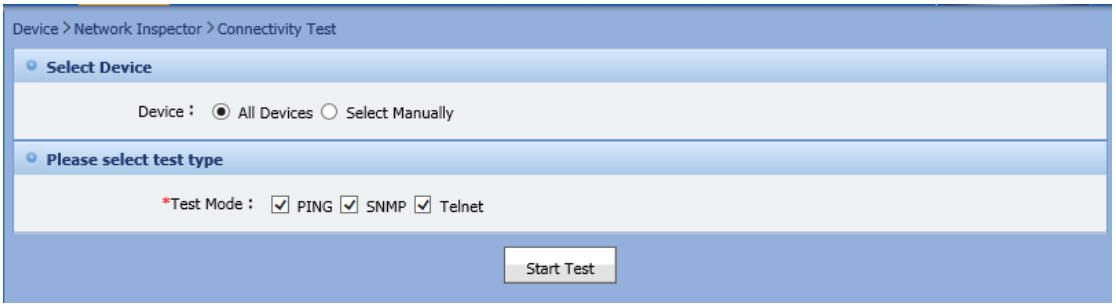
Traceroute test, go to ***Device >Device on the device details page,*** click "***route tracking"*** on the left navigation bar.



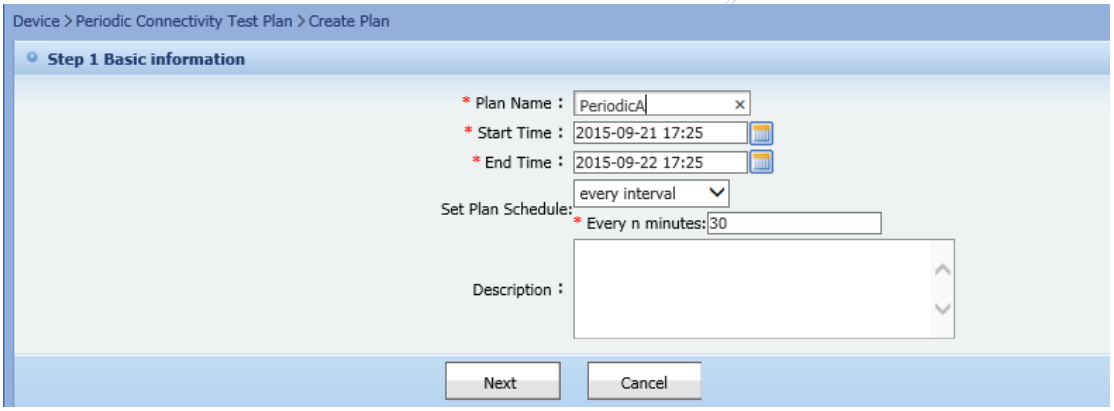
Network inspector, go to ***Device >Device List >Network Inspector >Real-time Test >Select Device >Start Test***

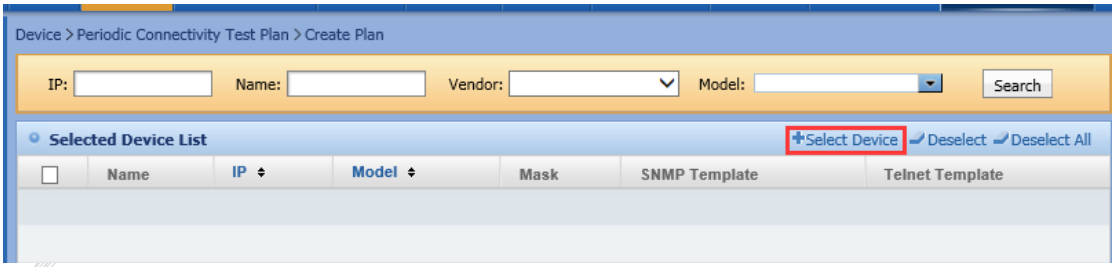
.



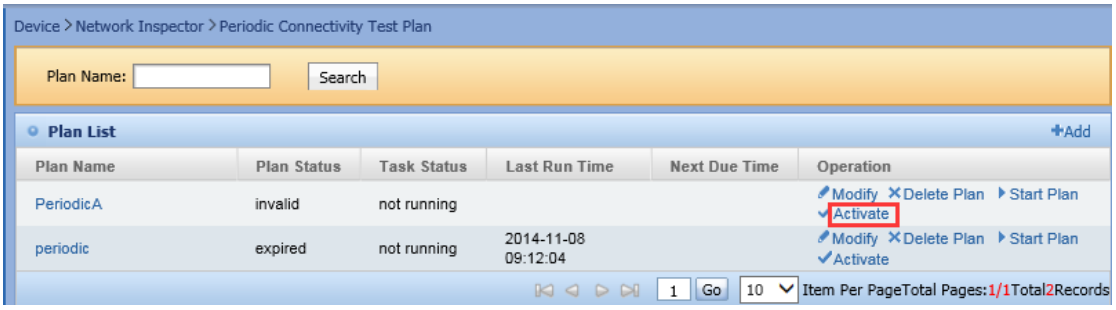


Go to ***Device >Network Inspector >Periodic Test*** and then select the device and test method that needs to be tested, and then click "***start testing"*** to create plan.

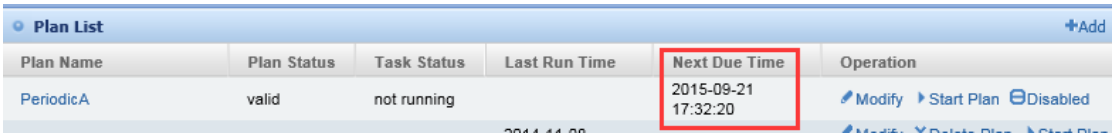




Click ***"finish"*** when complete setting. click on ***"active"***, the plan will take effect.

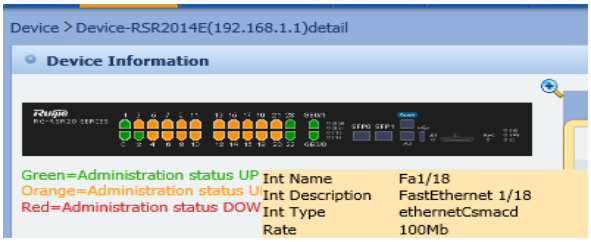


After a period of time to see the running time of the program has been changed, that means the plan has already been executed.

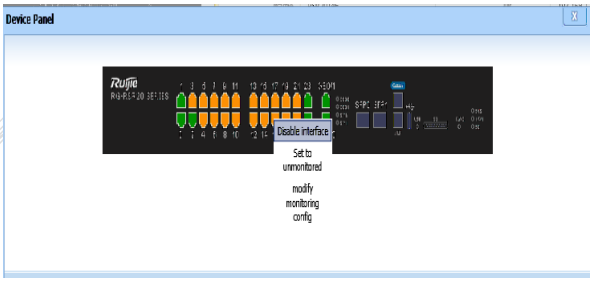


5.2.5 Management of Device Interface

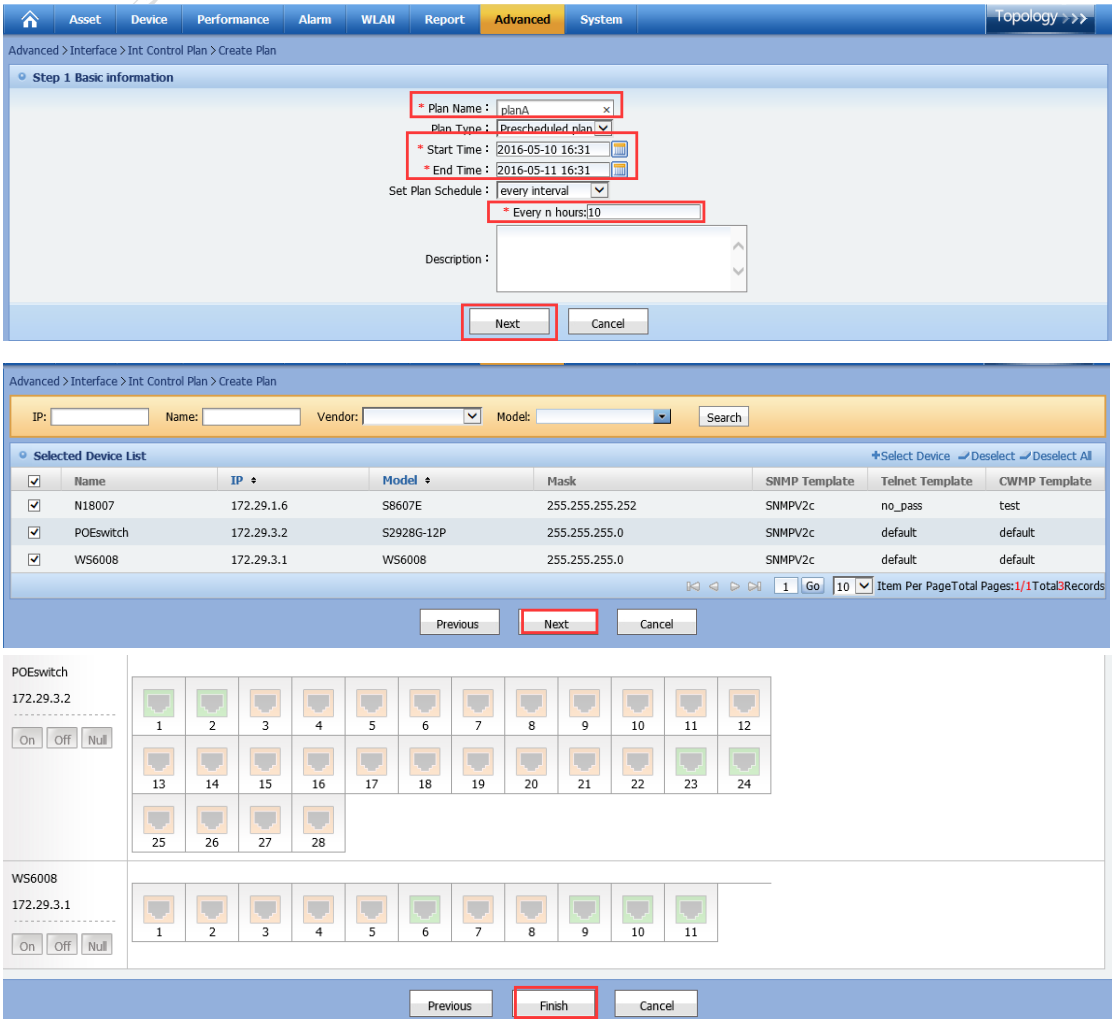
Checking device interface, Go to ***Device >Device List***, on device details page, the system will automatically display the device's interface panel on the page, and the color to represent the current status of the device interface.



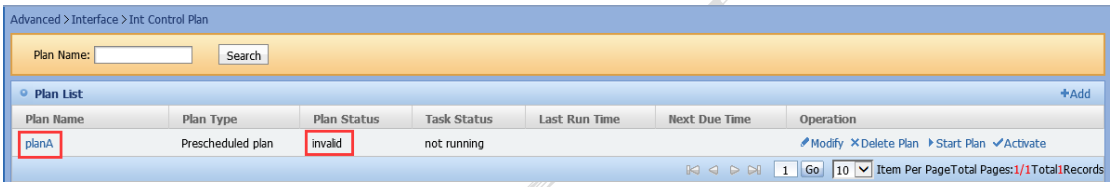
Enable and disable Interface, go to ***Device >Device List*** enter the device details page, right click on the interface of the device panel, select ***"disable interface***"/or "***enable the interface***"



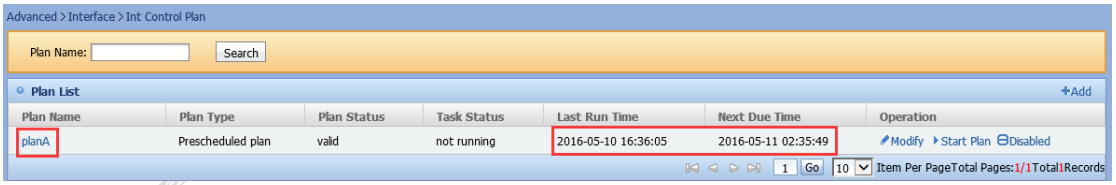
Create interface switching plan, go to ***Advanced >Interface > Int Control Plan >Create Plan >Select Device*** then select the interface need to enable or disable



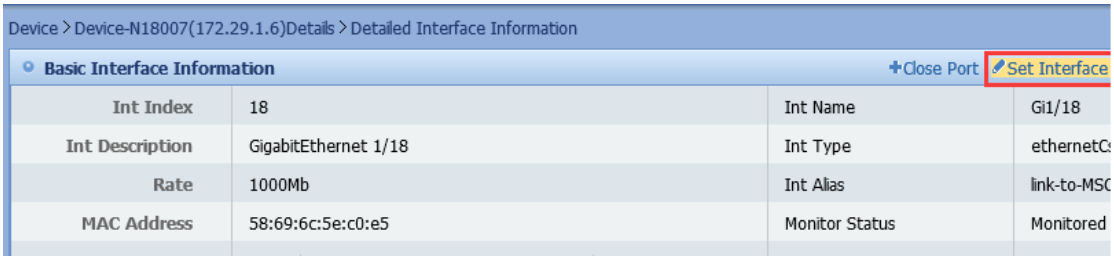
Automatically back to the port switch program page, at this time you need to click on the ***"active***", then the plan will take effect.

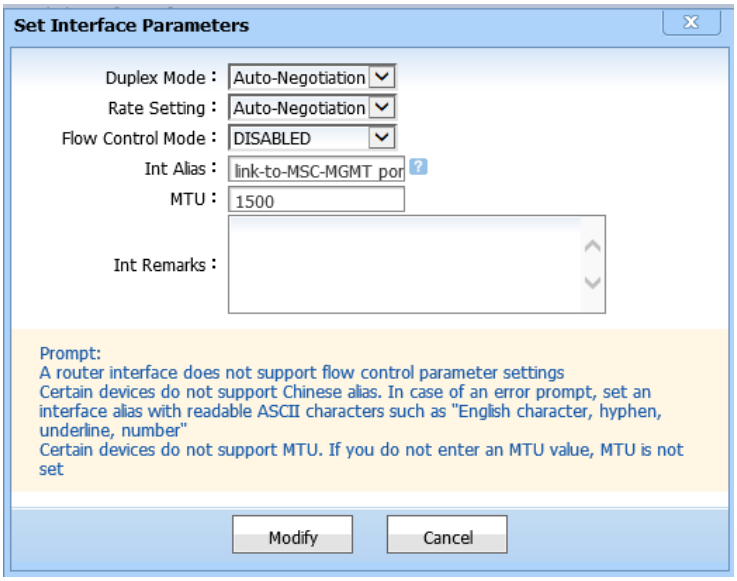


After a period of time, back to the port switch plan page, you can see the running time of the program has changed, there is an executed plan. Click the project name to view the details of the plan.



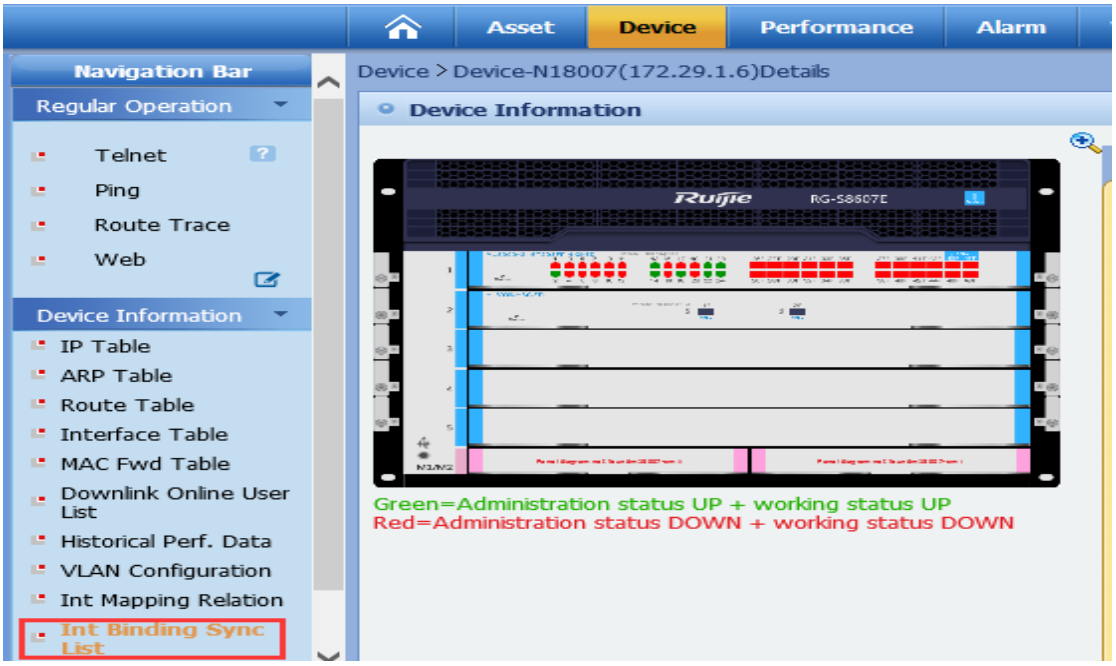
Interface parameter setting, go to ***Device >Device List*** enter the device details page, then click the interface icon, enter the detailed interface information page, then click on the upper right corner of the device "***Set Interface Parameters***"



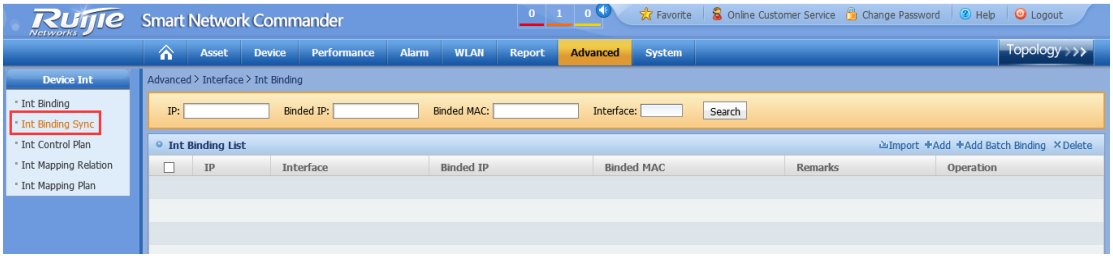


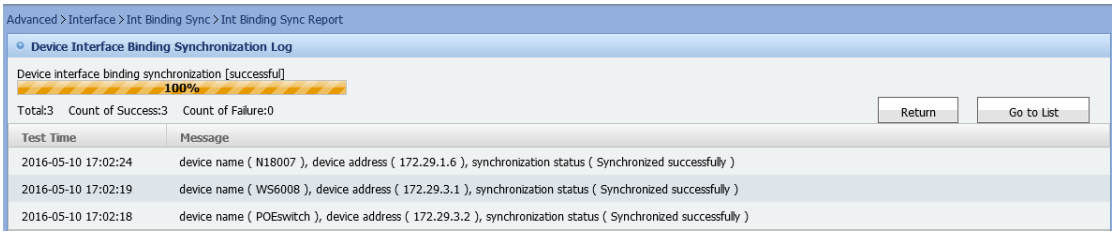
Click ***"Modify"*** when complete setting.

Interface binding management, go to ***Device >Device List >Int Binding Sync,*** on this page you can see the interface binding on the device that is the port security entry, while the interface binding information can be managed and synchronized.

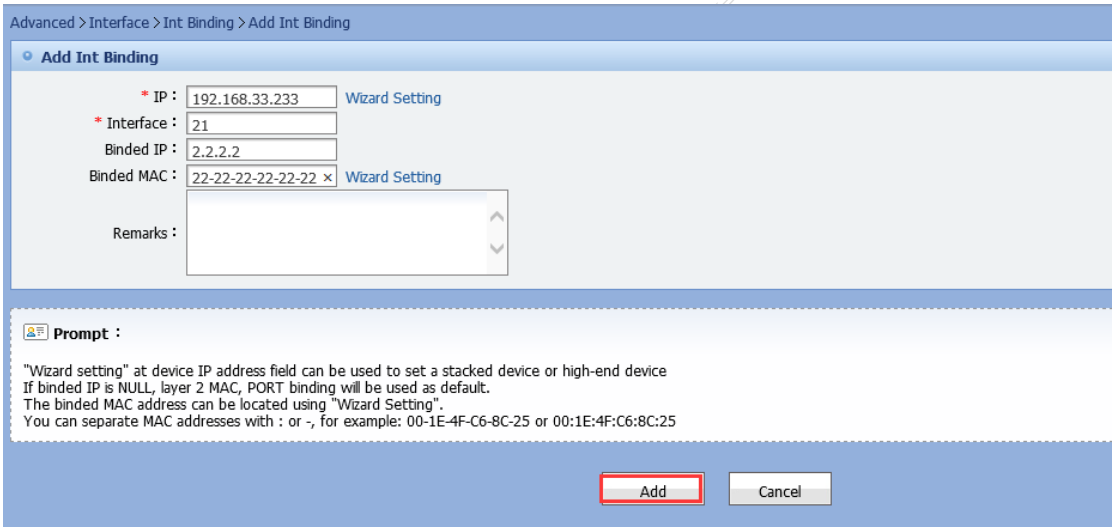


Device interface binding synchronization, go to ***Advanced >Interface >Int Binding Sync >Select Device, t***hen start synchronization.





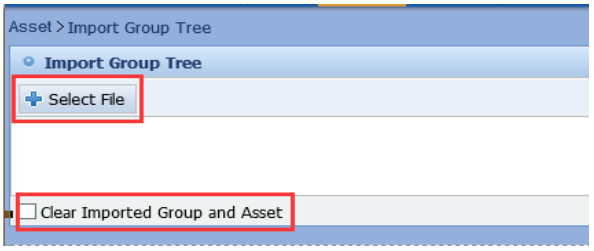
Device interface binding, go to ***Advanced >Interface >Int Binding Sync >Add,*** then fill in the appropriate information, or click the wizard to select the device to bind the device, and then click "***add***".

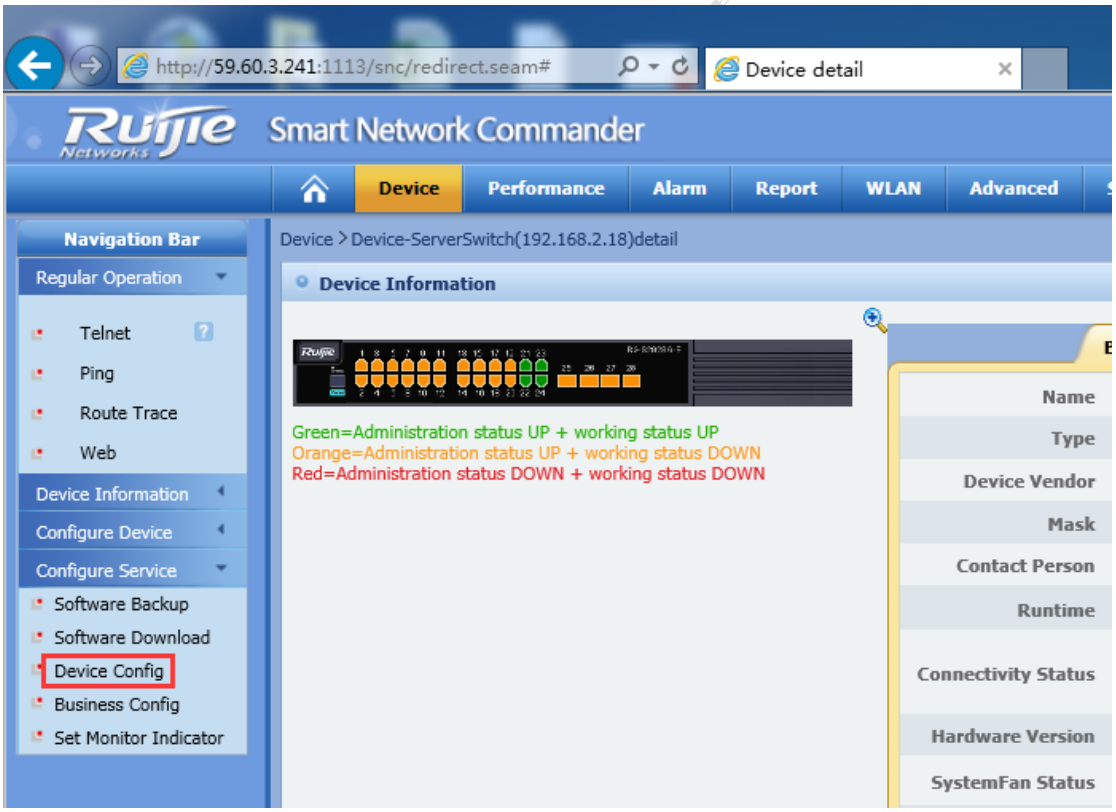


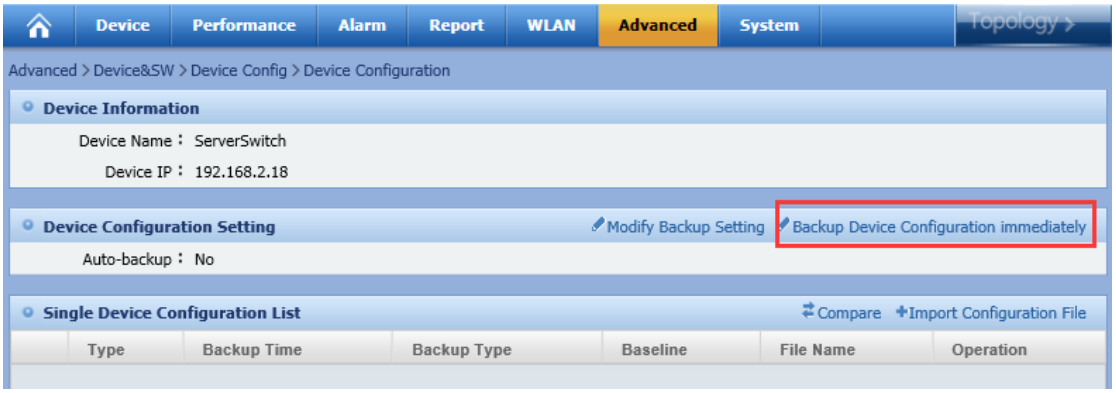
5.3 Device Configuration and Software Version

5.3.1 Management of the Device Configuration

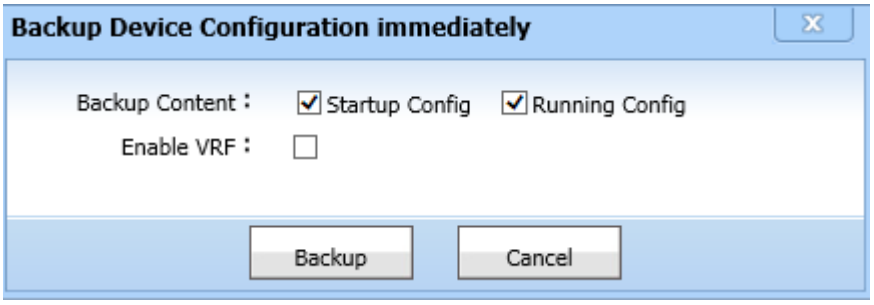
When you want to backup device configuration, go to ***Device >Device List*** and click the appropriate device name to enter the device details page, then click on "***Device Config***" , In the device details the left navigation bar, scroll down, and then click on the "***device configuration management***".



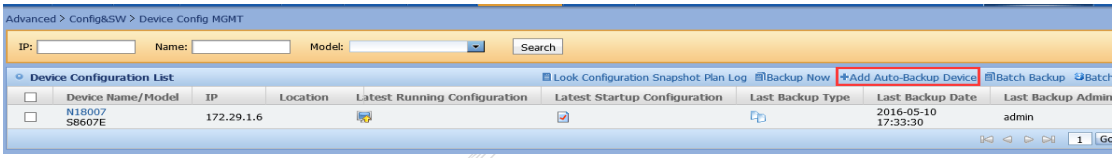


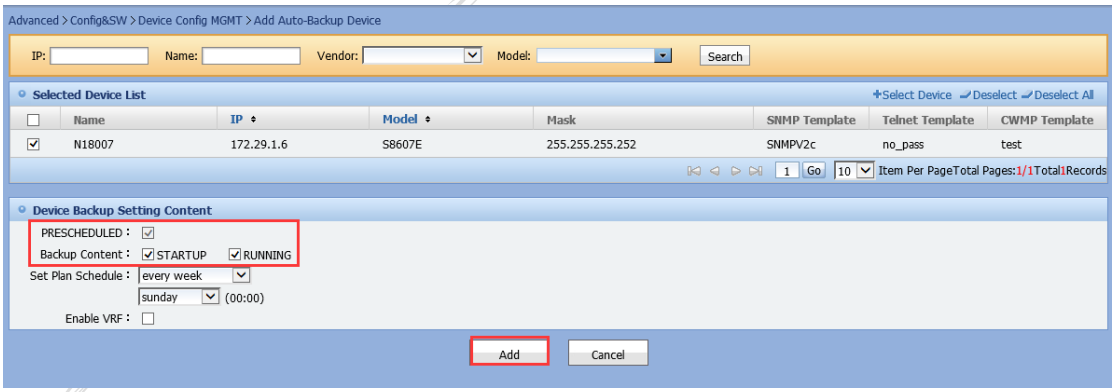


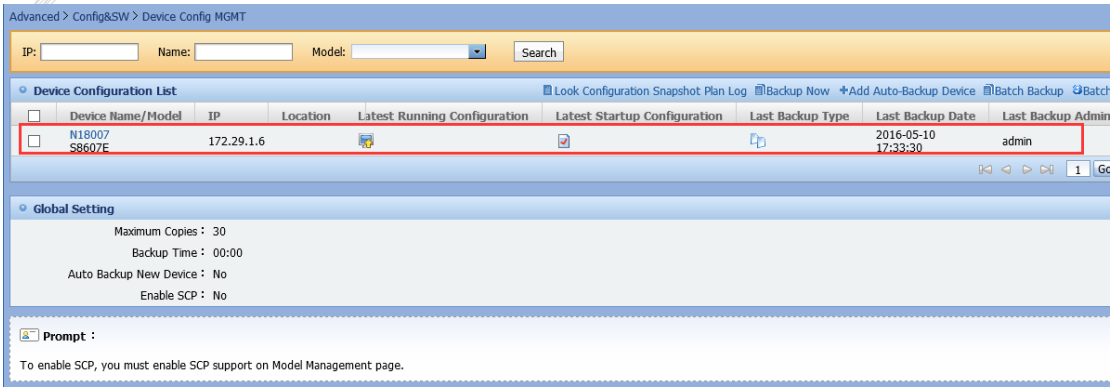
Select the backup option on the below page, click "***Backup***".



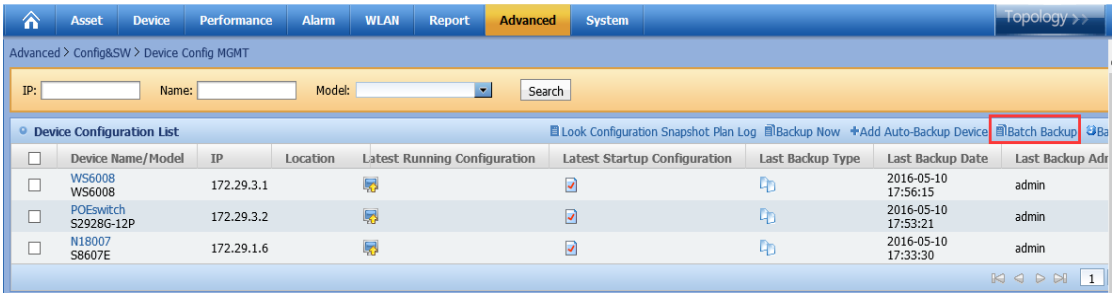
Automatic configuration backup, go to ***Advanced >Config & SW >Add Auto-Backup Device >Select Device*** and add success will automatically jump to the page of device configuration management.

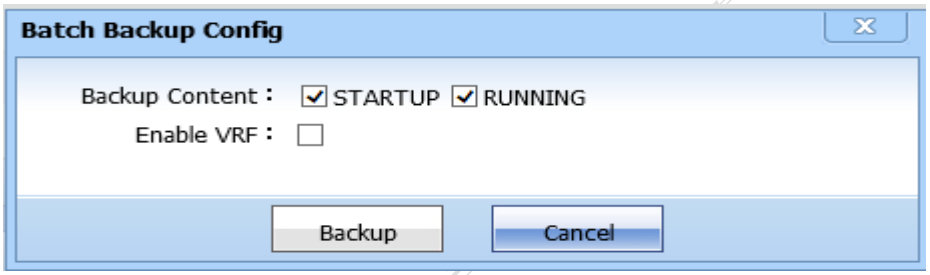






bulk configuration backup, go to ***Advanced >Config &SW >Batch Backup*** then select the backup content and whether you enable VRF, and then click ***backup*** in the backup device configuration box in the pop-up".

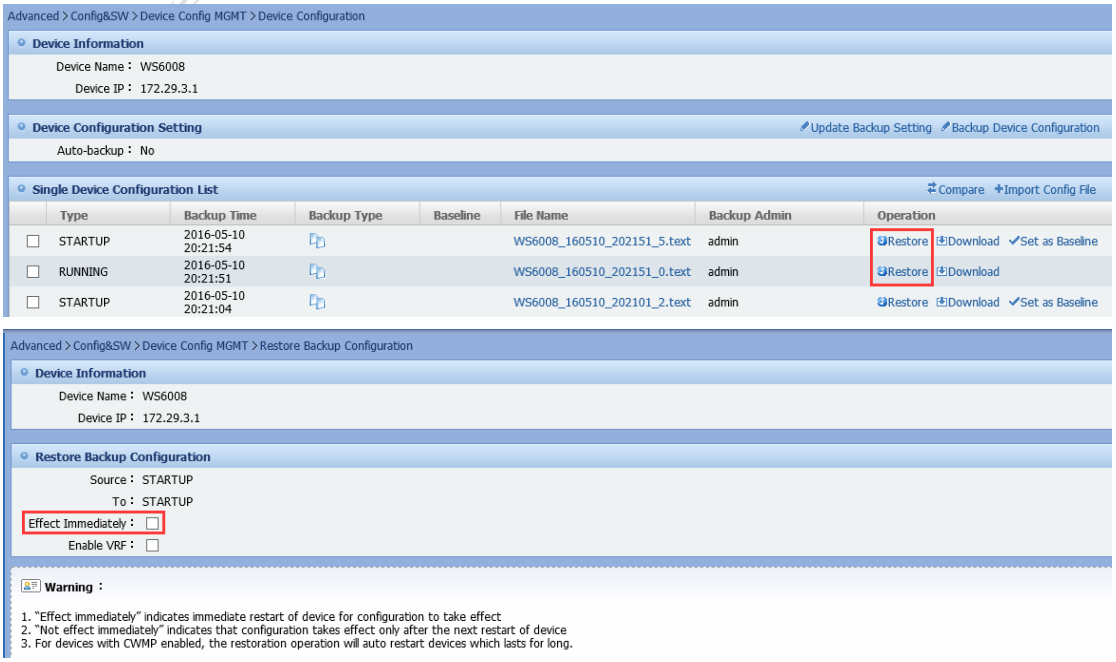




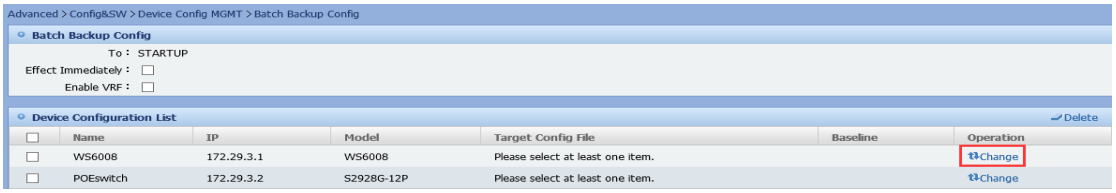
5.3.2 Restore Device Configuration

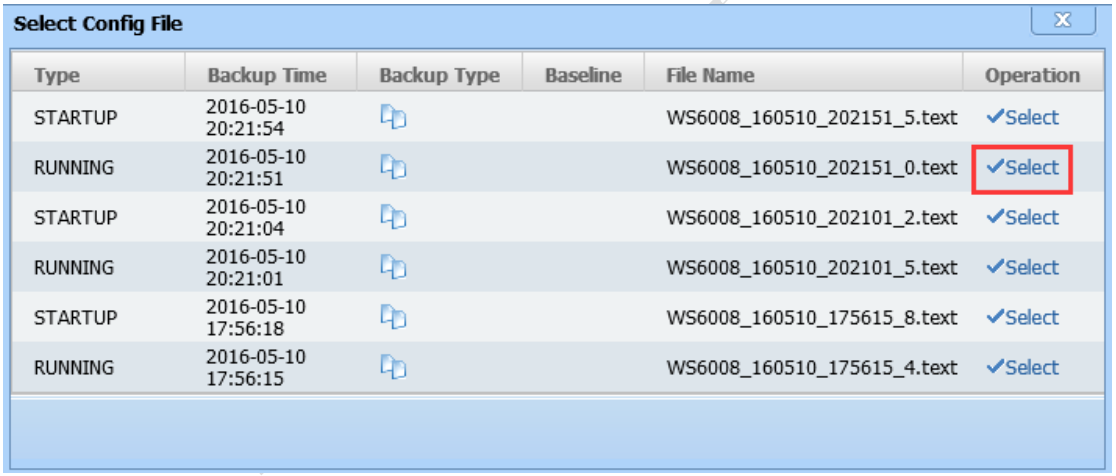
Restore configuration of single device, go to ***Advanced >Config &SW*** then click the device name to enter the device detailed interface, then go to ***Device config >Restore,***

According to the actual situation and needs, determine whether the check "***immediately***".

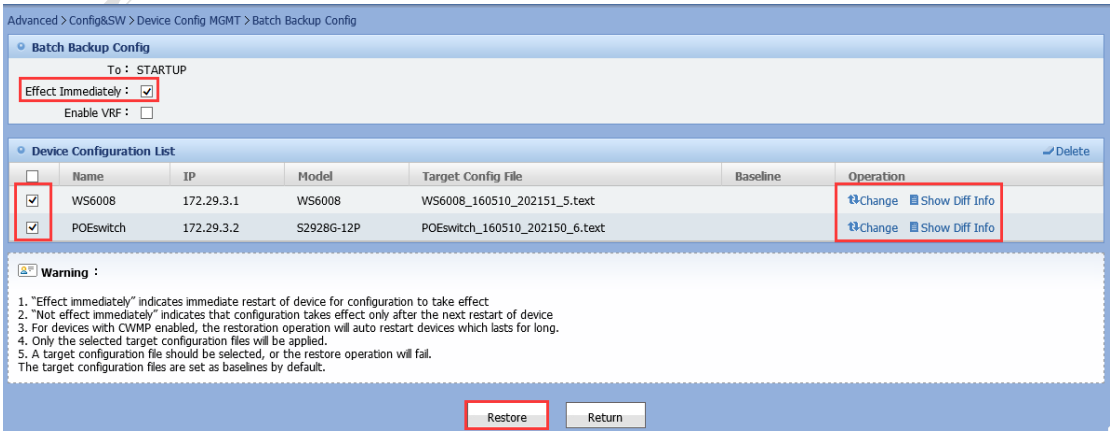


Batch restore equipment configuration, go to ***Advanced >Config & SW >Batch Restore >Change*** then select the correct configuration file to restore the current device



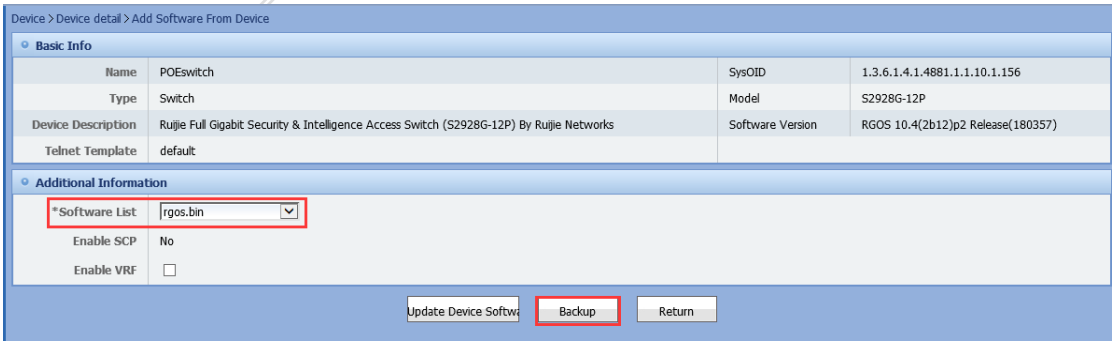


After all the target configuration file is replaced, check the device and click "***restore***"



5.3.3 Device software version management

Restore software version of device, go to ***Device >Device List t***hen click the appropriate device name to enter the device details page and then go to ***Add Software from Device >Update Device Software >Backup.***

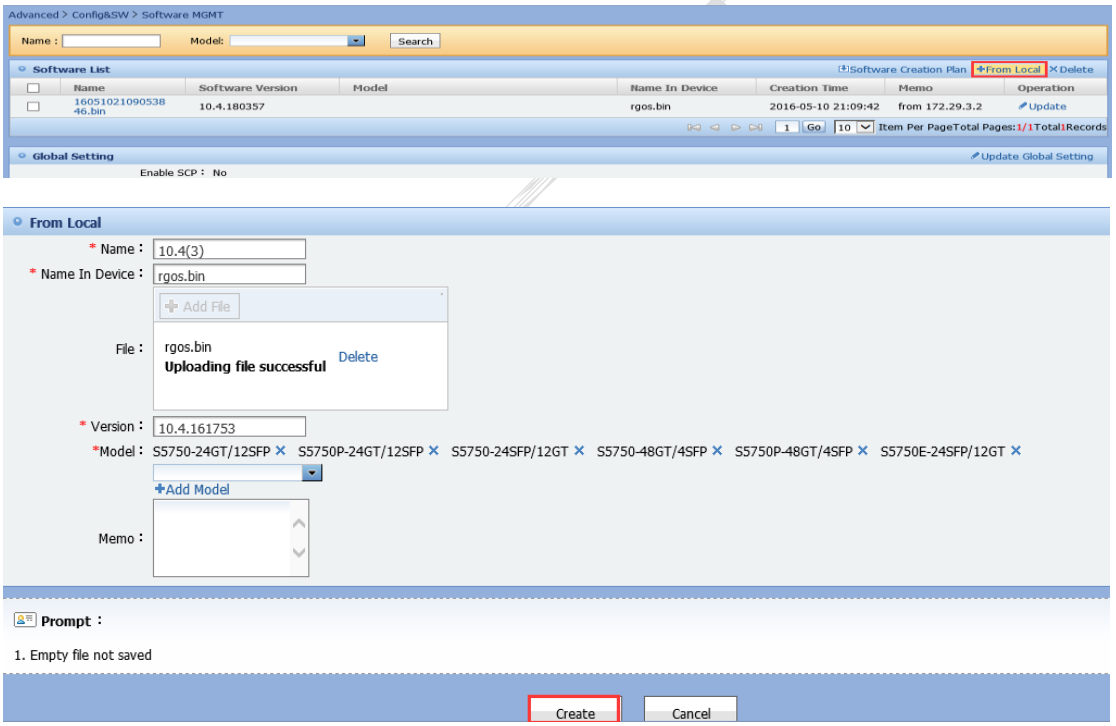


After the completion of the backup, it will automatically jump to the device software management page, you can be see the list of software files have been copied to the SNC server.

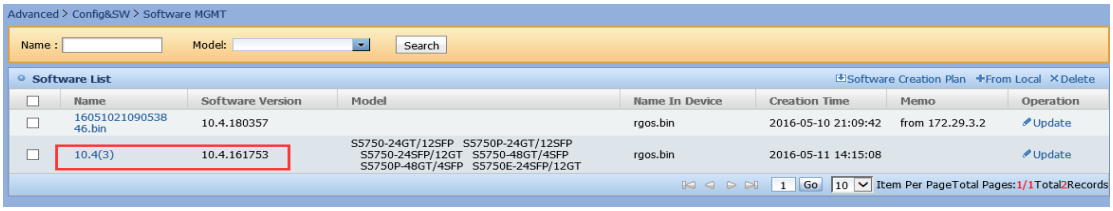
You can log in the device to confirm the software version of the backup.

```
POEswitch#sh version
System description      : Ruijie Full Gigabit Security & Intelligence Access Switch (S2928G-12P) By Ruijie Networks
System start time       : 2016-04-04 8:17:46
System uptime           : 36:12:55:7
System hardware version : 1.01
System software version : RGOS 10.4(2b12)p2 Release(180357)
System BOOT version     : 10.4(2b12)p2 Release(180357)
System CTRL version     : 10.4(2b12)p2 Release(180357)
System serial number    : G1HDC82003208
Device information:
  Device-1
    Hardware version : 1.01
    Software version : RGOS 10.4(2b12)p2 Release(180357)
    BOOT version     : 10.4(2b12)p2 Release(180357)
    CTRL version     : 10.4(2b12)p2 Release(180357)
    Serial Number    : G1HDC82003208
```

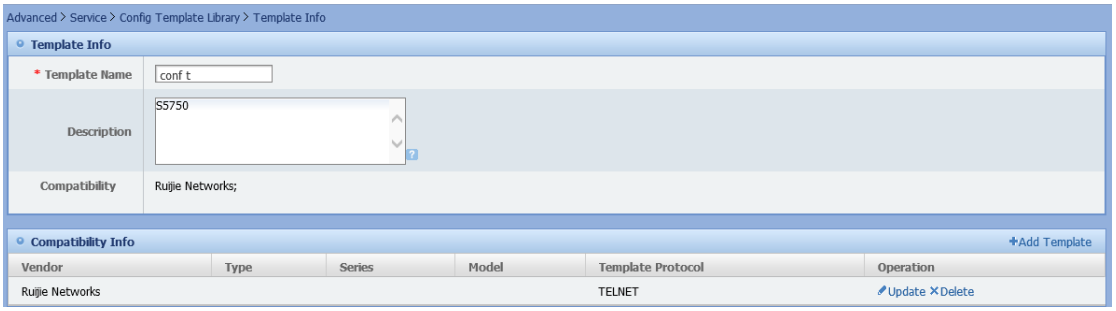
Import Device software version to SNC, go to ***Advanced >Config & SW >Software MGMT >From Local >Create***



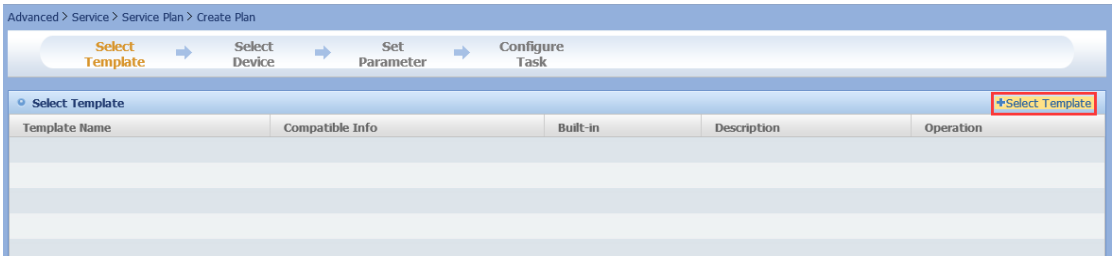
Will go back to device software management page, then you can see the imported file already list here.

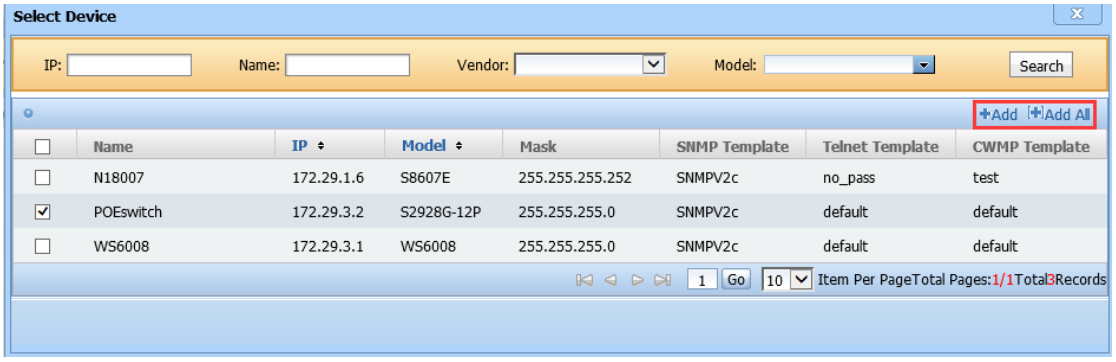


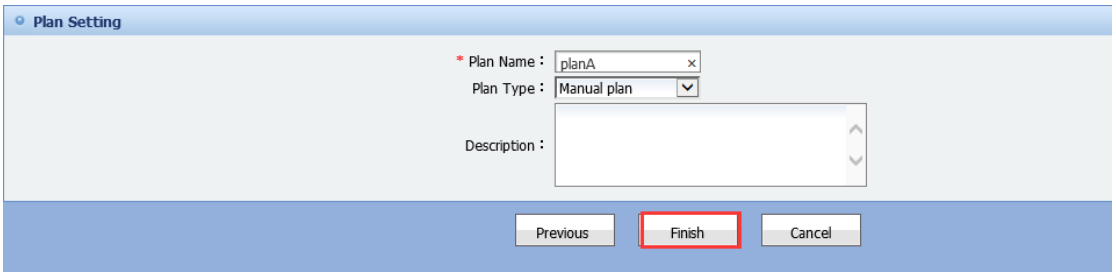
Distribute configuration command of device, go to ***Advanced >Service >Config Template Library >Add, on*** template definition page, input template name, then click the associated command in the command list.

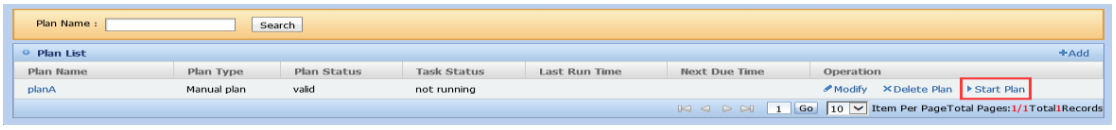


Business configuration schedule, go to ***Advanced >Service >Service Plan >Add >Select Template >Select Device >Finish, then*** click start plan



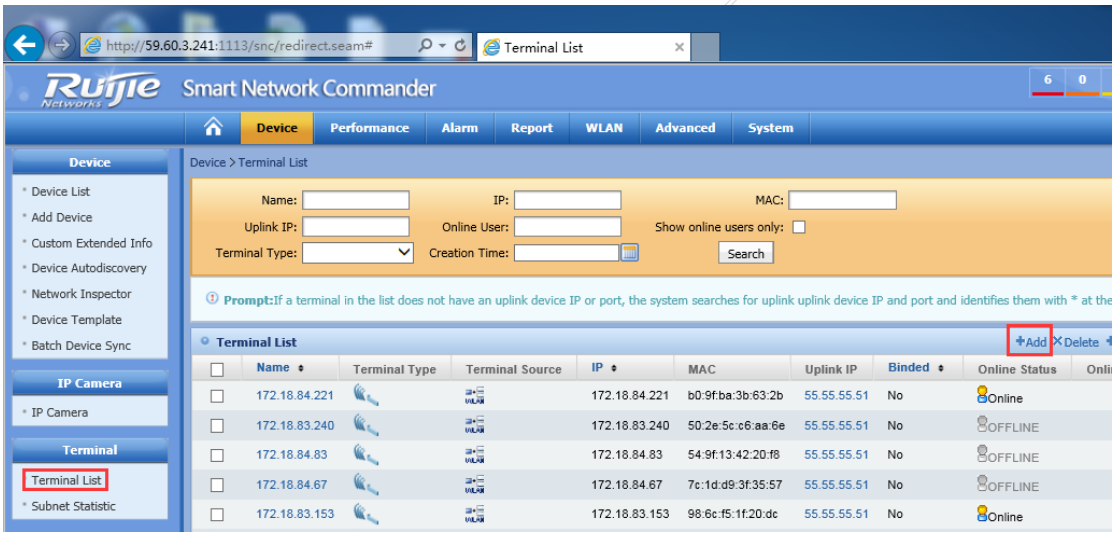


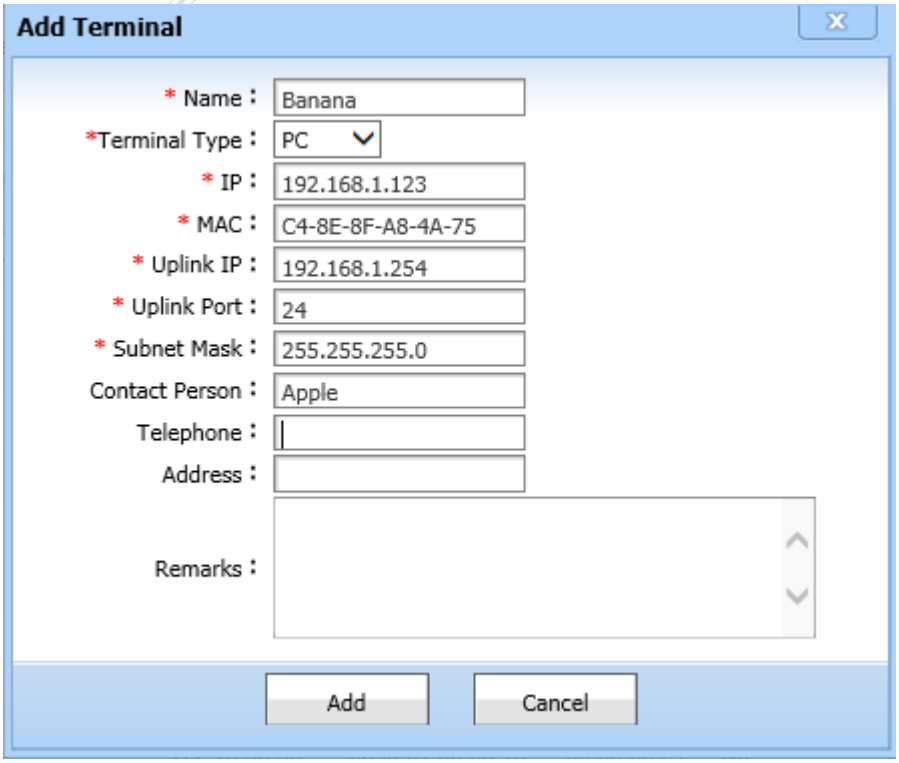




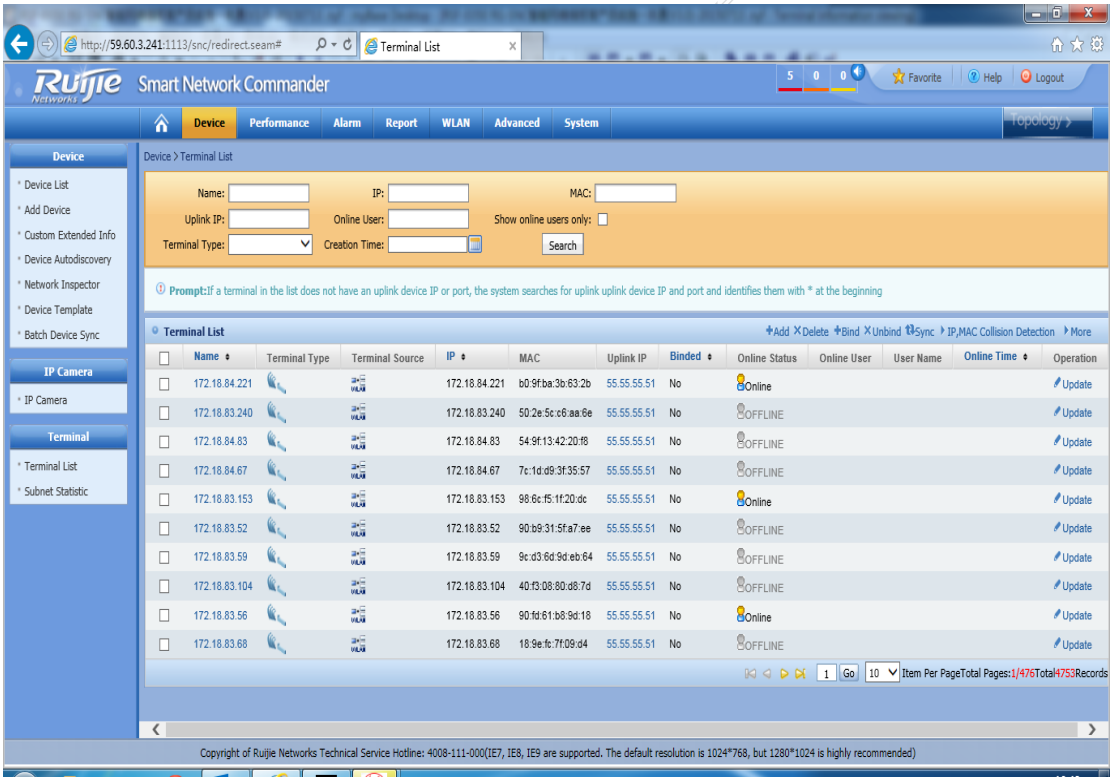
5.4 Terminal management

Modify terminal, go to ***Device >Terminal List > Add /Update /Delete*, then** set the terminal.

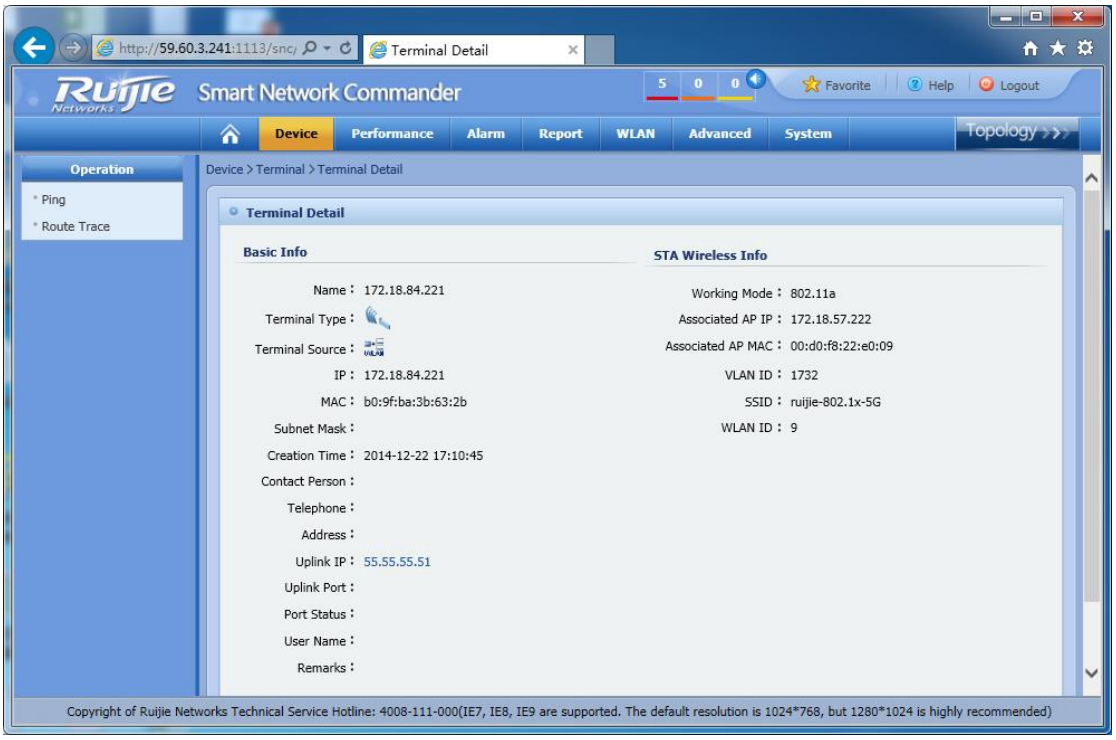




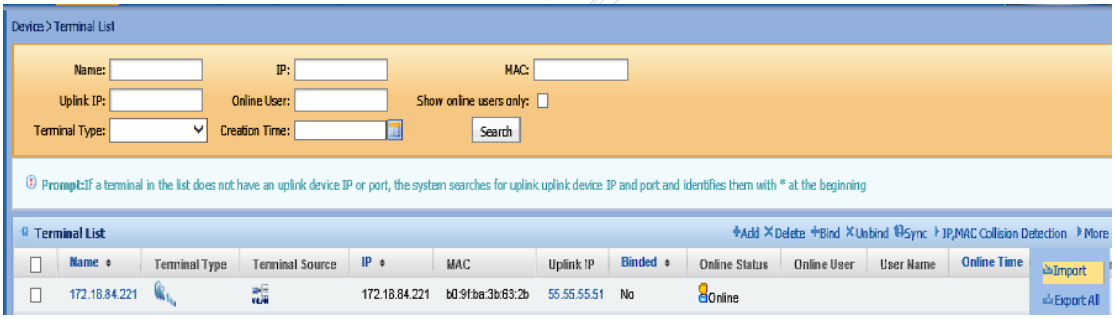
View terminal information, go to ***Device >Terminal List*** then select a row of terminal information, can view information terminal.

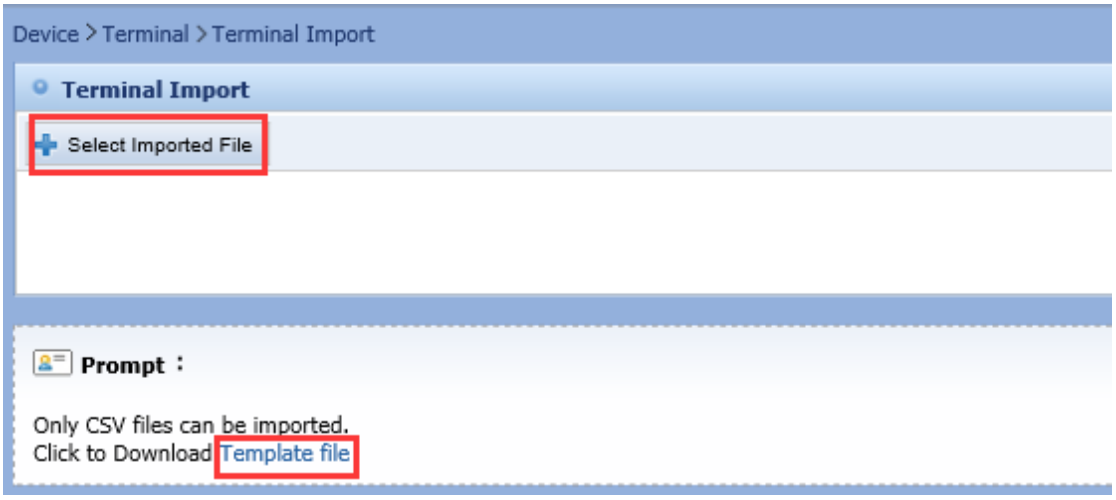


Click the terminal name link to see the terminal details. As shown below:

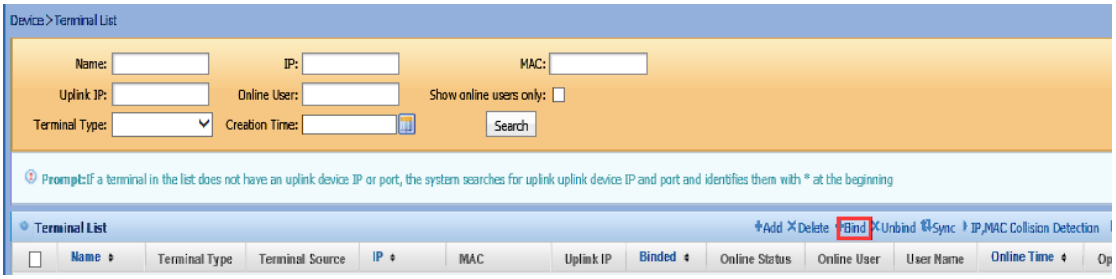


Import and export terminal information, go to ***Device >Terminal List >Import >Select Import File ,***

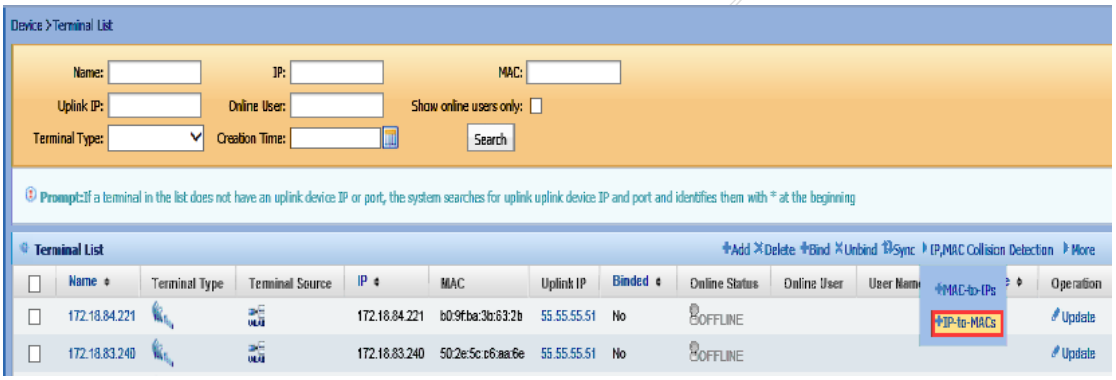




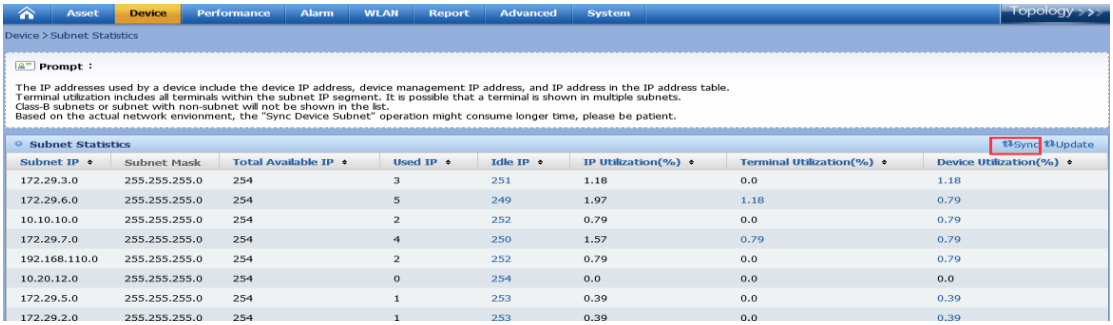
IP/MAC binding, go to ***Device >Terminal List >Select terminal >Bind\Unbind,***



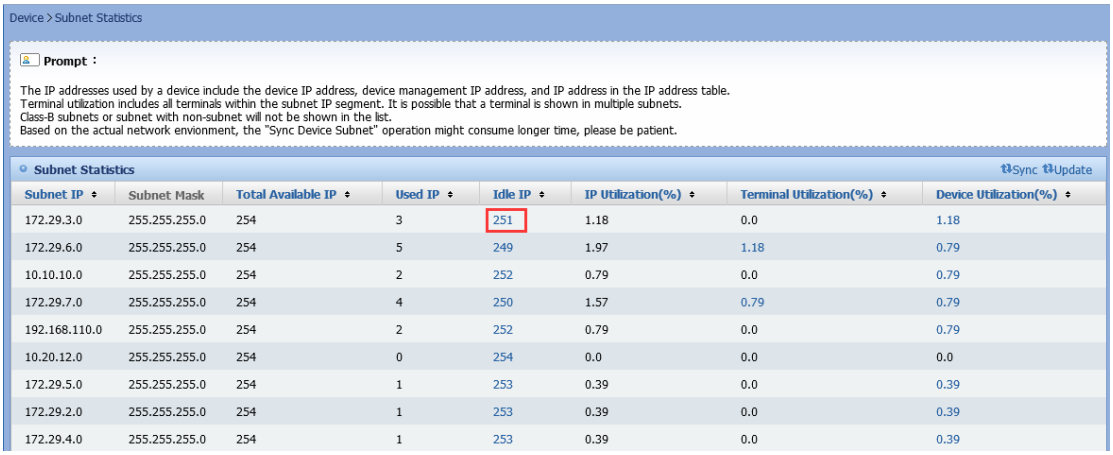
IP/MAC exception detection, go to ***Device >Terminal List >MAC-to-IPS /IP-to-MACs,***



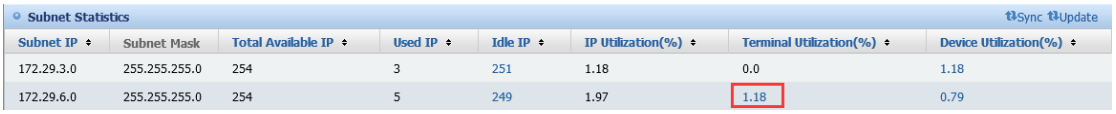
Subnet statistics, go to ***Device > Subnet statistics >Sync.***



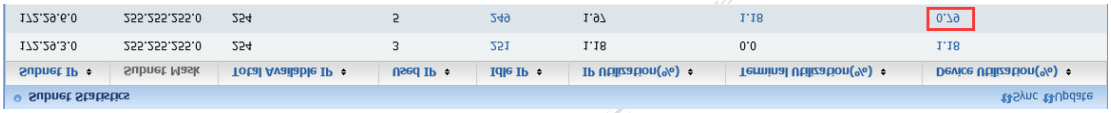
In the sub network usage statistics list page, select the remaining available IP number of this column, click the available IP number of 251, you can enter the available IP list：



In the sub network usage statistics list page, select the PC usage, click the usage rate, you can enter the PC list：

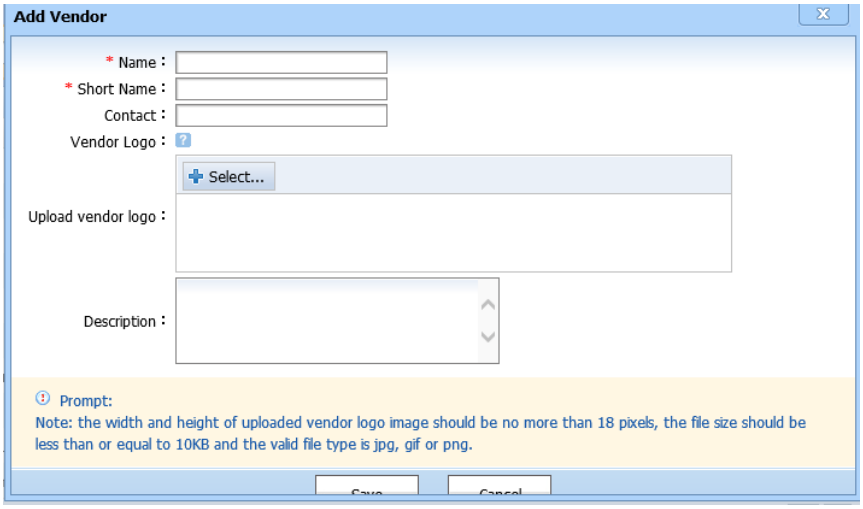


In the sub network usage statistics list page, select the device usage rate column, click on the use of the rate, you can enter the device

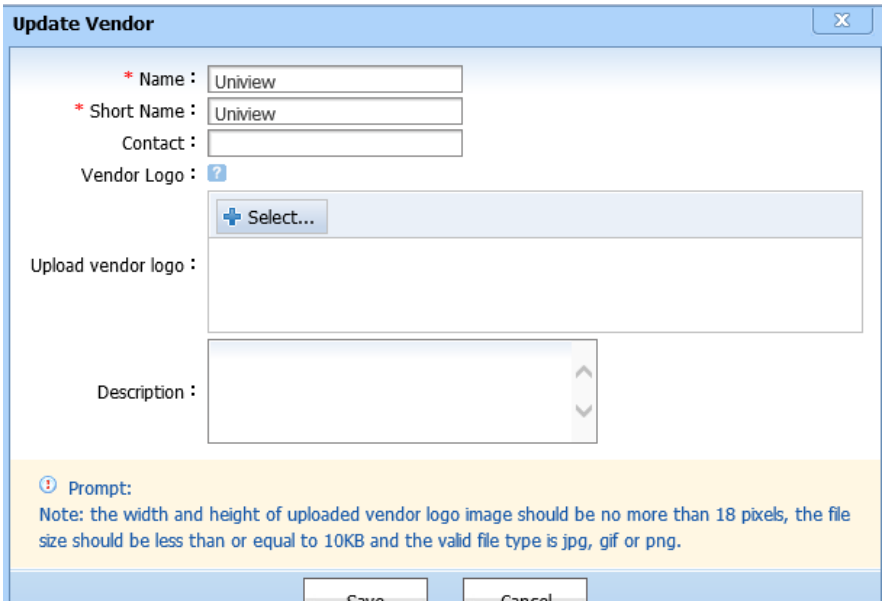


5.5 Management of The Device model, series

Query manufacturer, go to ***System >Device Vendor, then*** click the Add button to add a page, as shown in the following diagram:

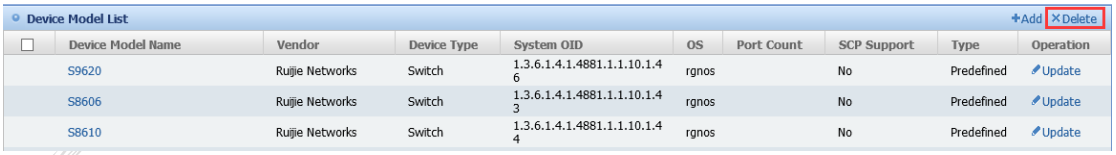


Select a device vendor record, click the "***operation"*** column of the "***modify"*** link to modify the device vendor page, as shown below :

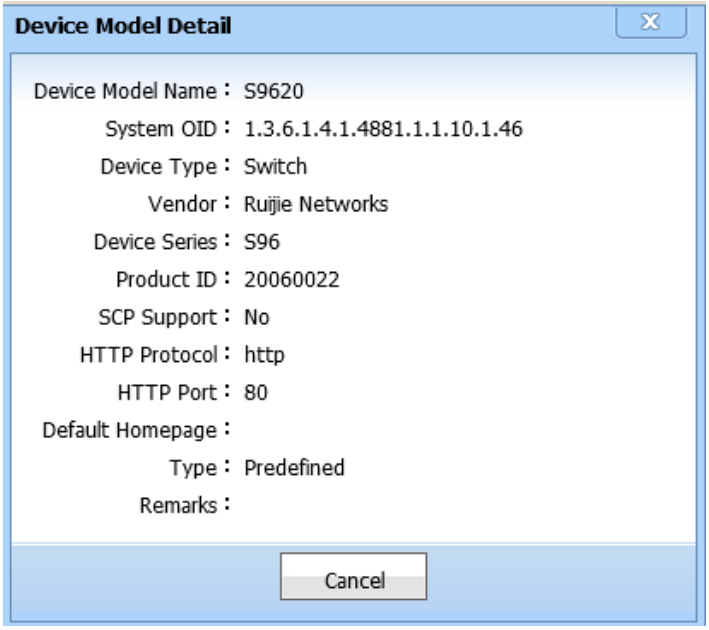


Enter the equipment vendor management page, select to delete the record of equipment manufacturers, click the "***delete***" button, as shown：

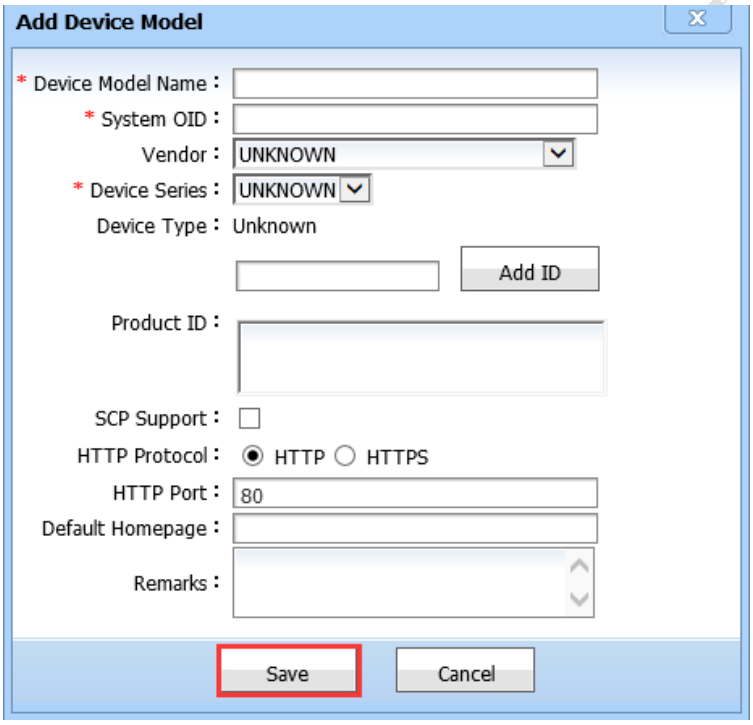
Model management, go to ***System >Device Model,*** then Select at least one device type record, click the delete button, the system will perform the delete operation.



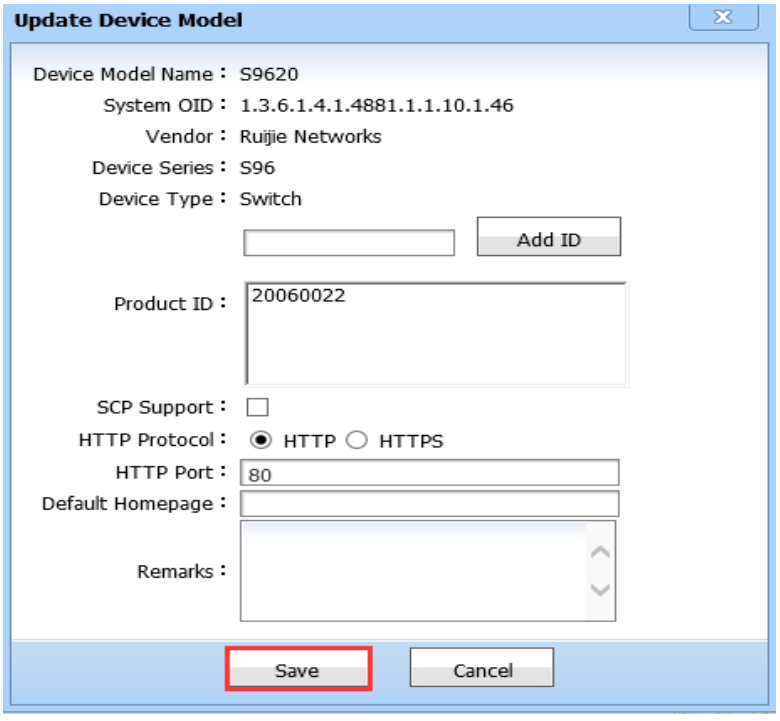
In the list, click the name of the model, and can view the information of the device type.



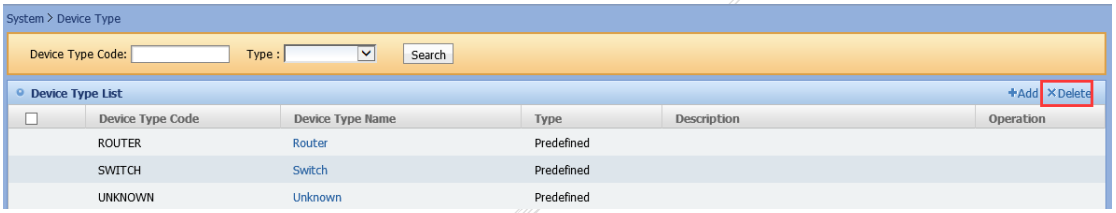
Click the "***Add***" button to add the page and then fill in the device Model information.



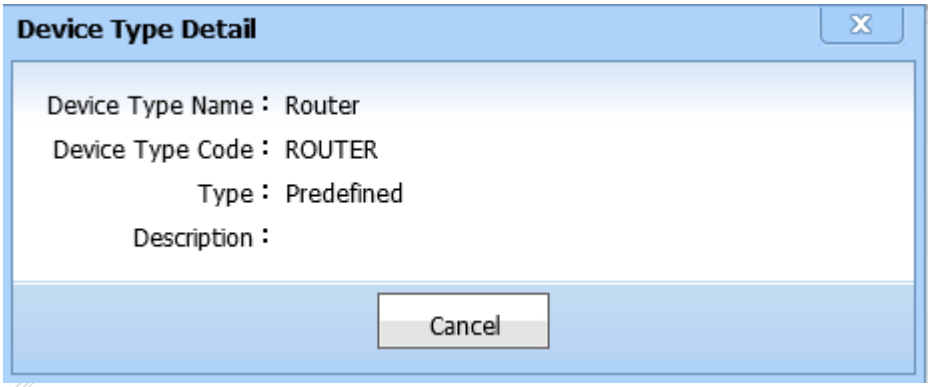
Click the "***Update***" button to update device model.



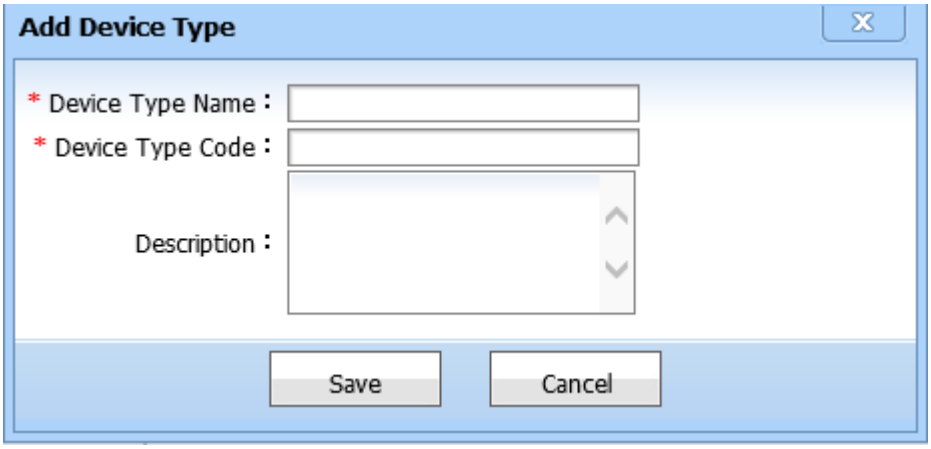
Device category list, go to ***System >Device Type, then*** select at least one device type record, click the delete button, the system will perform the delete operation.



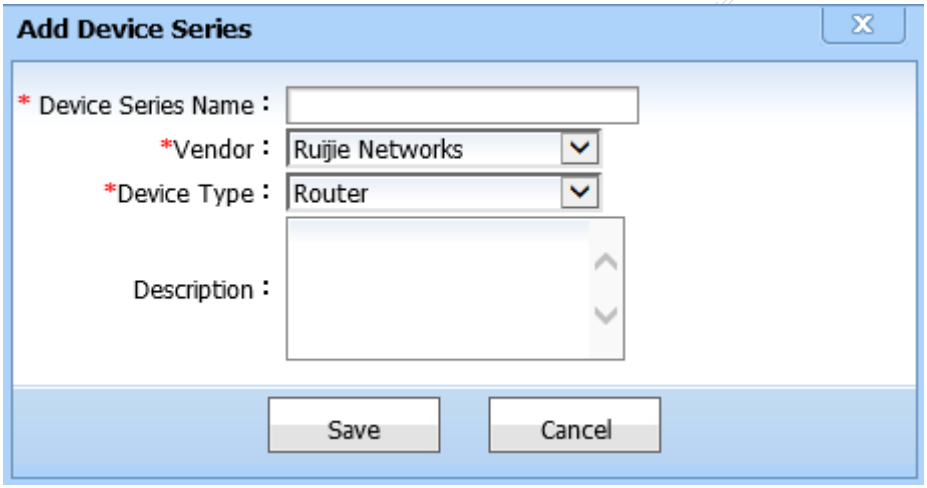
In the list, click the name of the model, and can view the information of the device type.



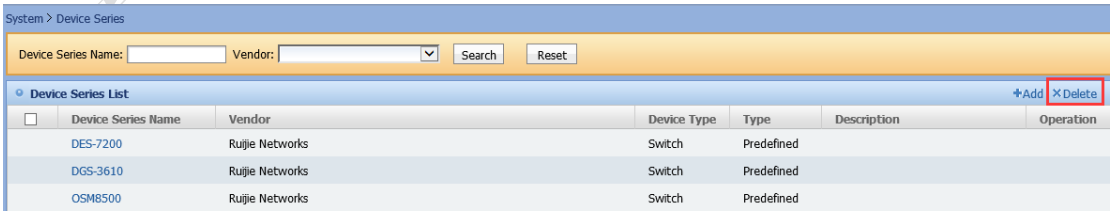
Click the "***Add***" button to add device category, and then fill in the type of device information. As shown below:



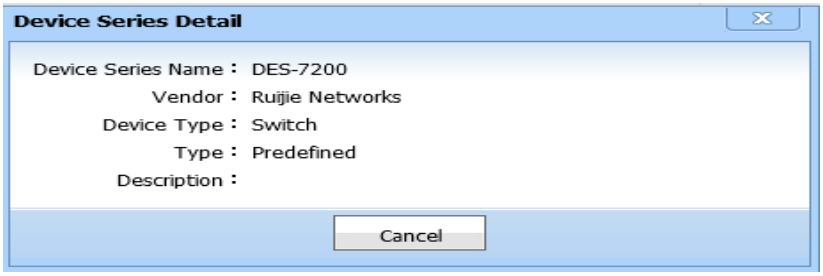
Query equipment series, go to ***System >Device Series ,***then click the Add button to add the device series.



Select the device to delete records, click the "***delete***" button, as shown below:



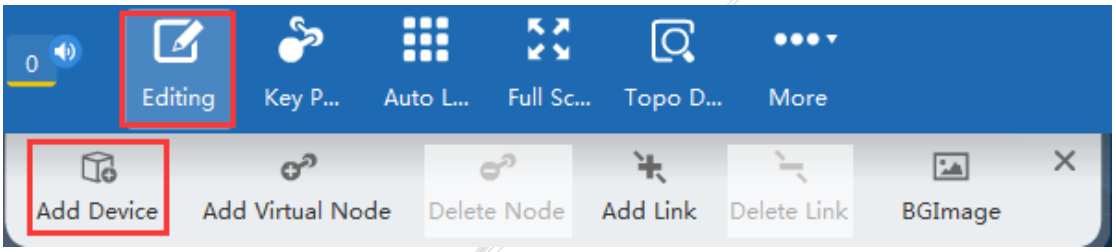
Click the browse detailed information recording equipment series link, enter the details page, shown in the following diagram:



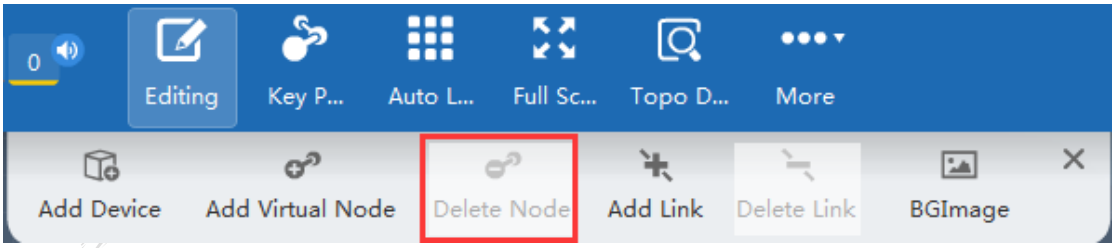
5.6 Topology Management

5.6.1 Topology Edit

Add Device: click ***Edit, add device button***

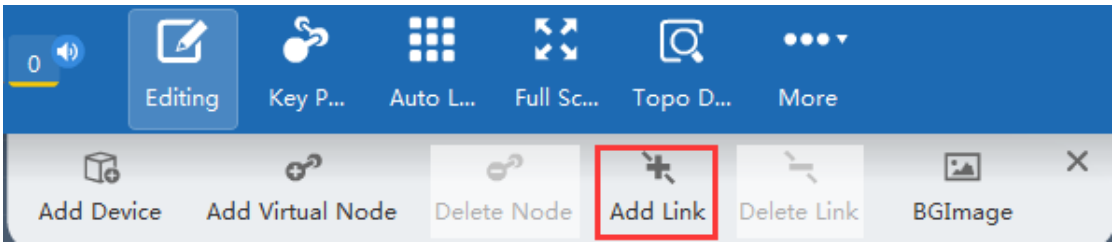


Delete node: select a node, click Edit, delete node button

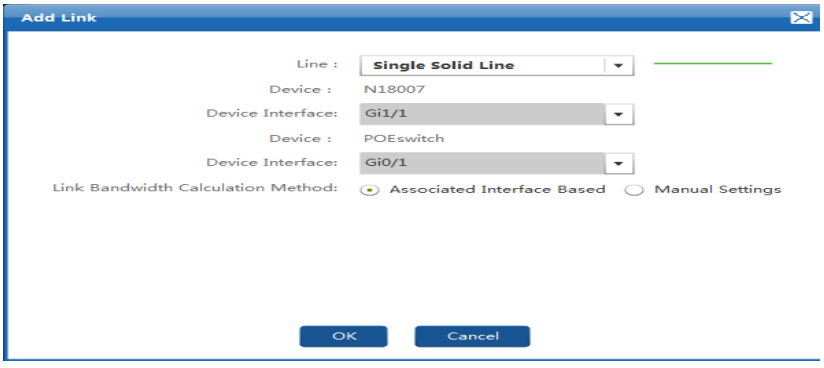


Add link

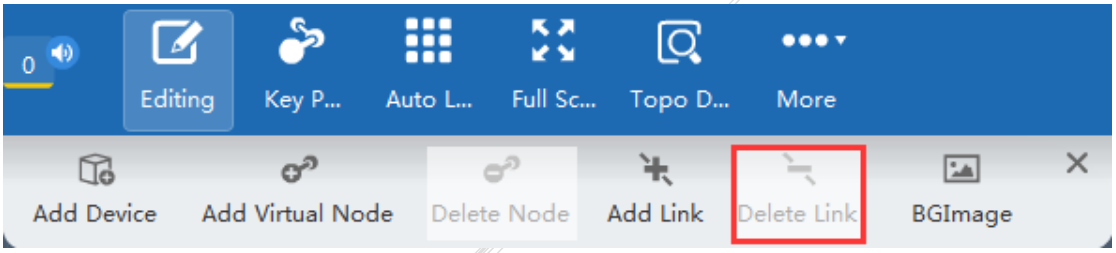
a) Select a node, click ***Edit,*** and ***add the link button***.



b) Drag the cursor, click the target node, in the pop-up dialog box input line, node link interface, etc.

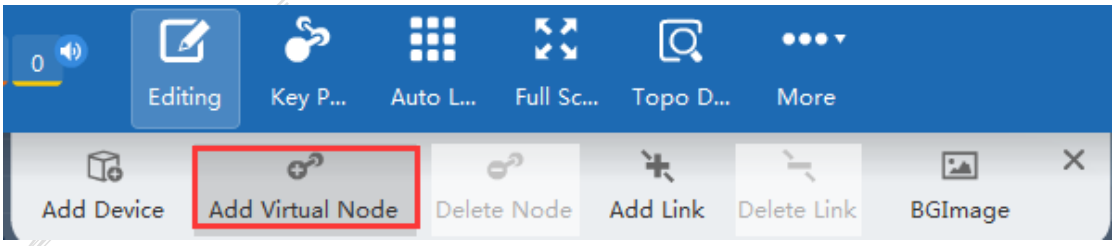


Delete link: select a link, click ***Edit, delete link*** button.

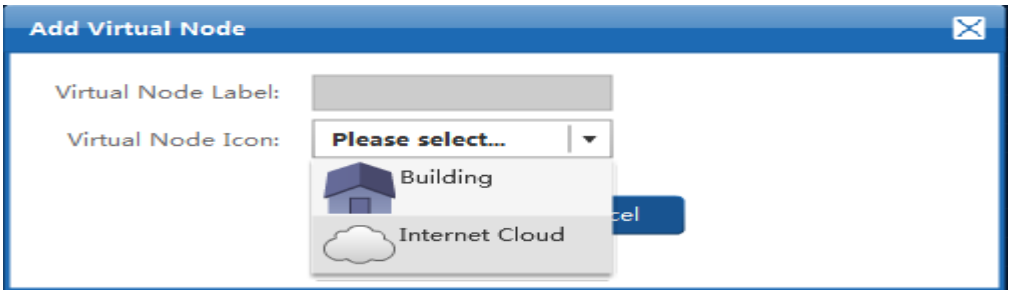


Add virtual node

1) Click ***Edit, add virtual node***



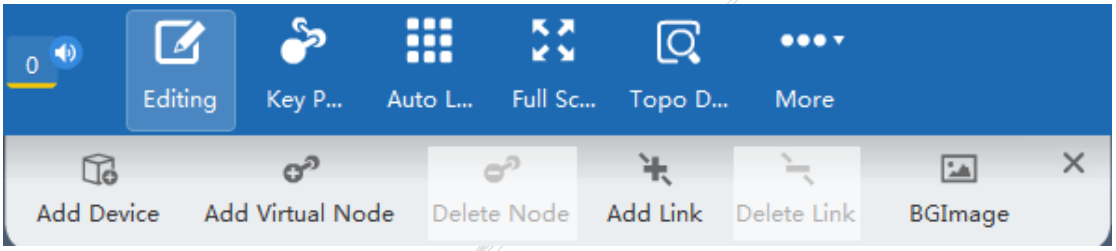
2) In the pop-up dialog box, enter the virtual node tab, select the node icon



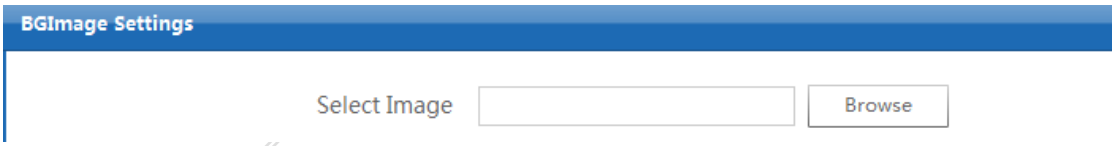
3) Add virtual nodes as shown in Figure

Custom background map

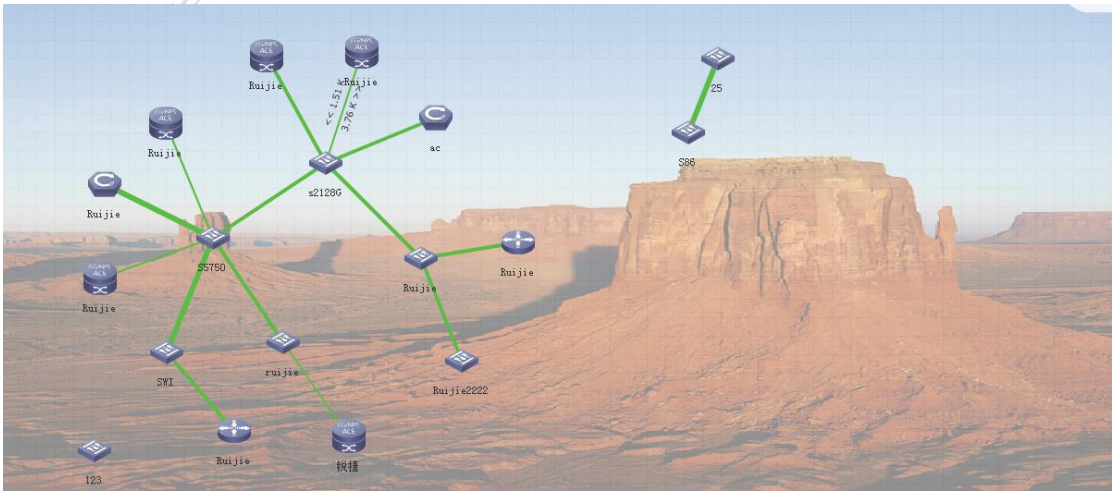
1) Click ***Edit,*** custom background map



2) Click ***browse***, upload pictures, save



3) topology after background picture uploaded

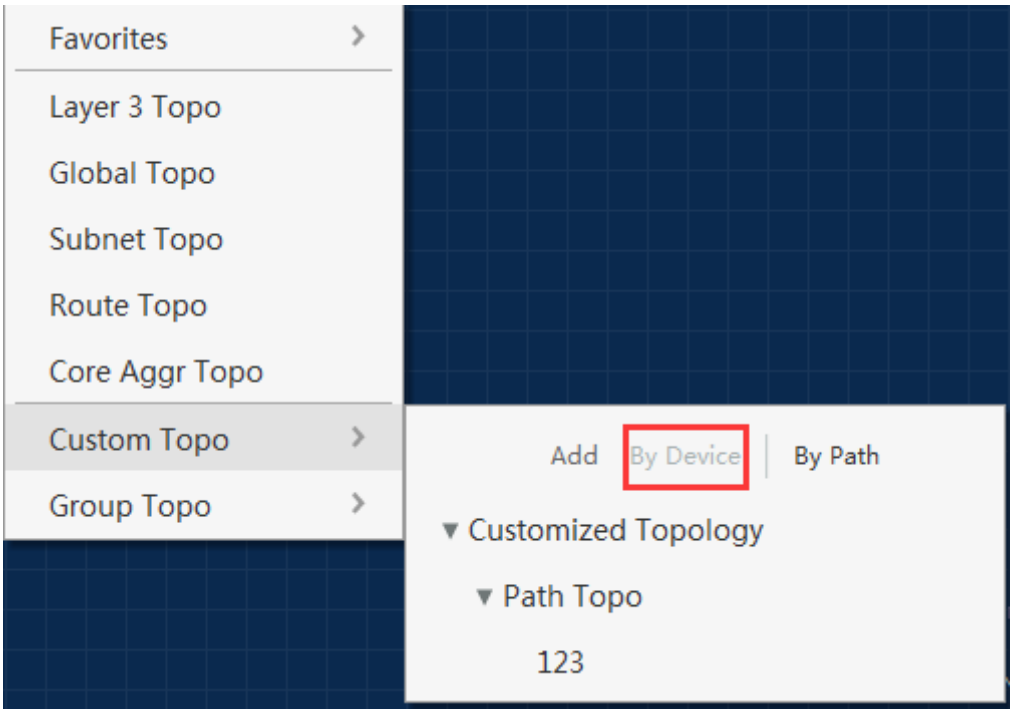


5.6.2 Topology Management

The system has the following topological views by default. the layer 3 topology, the whole network topology, network topology, routing topology, core aggregation topology

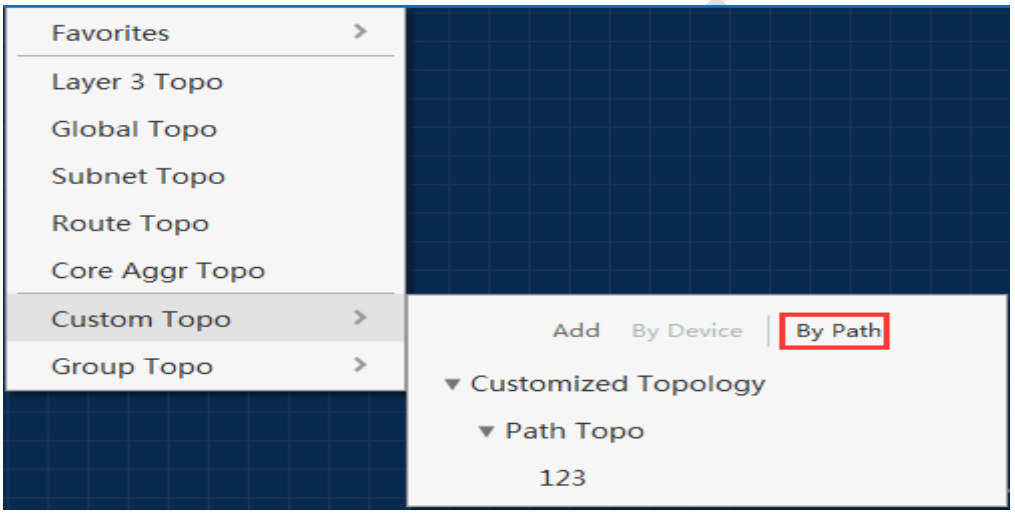
1. Custom topology

1) Custom topology, click on the corresponding tree node, according to the device to create

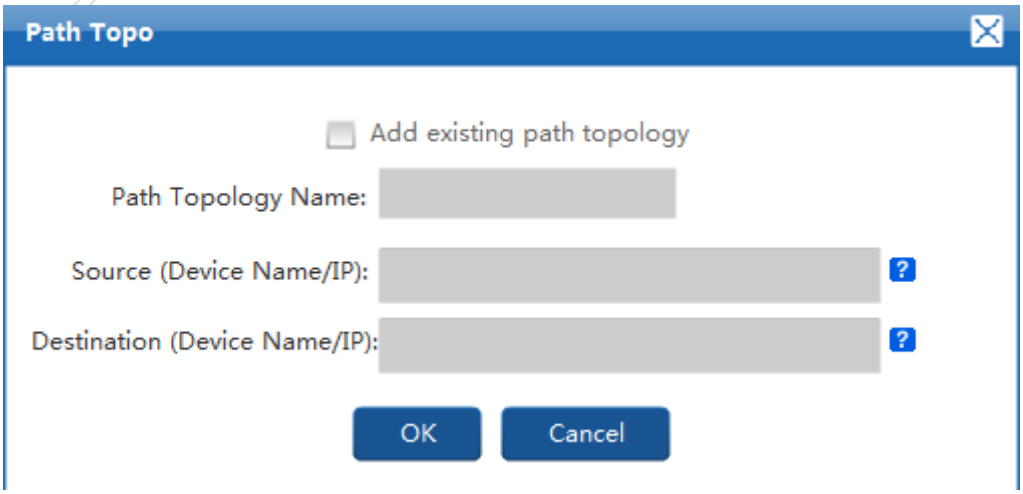


2) Enter the view name, select the device, and click Add.

3) Custom topology, by path creation



4 ） Enter the topological name, source IP, destination IP, determine

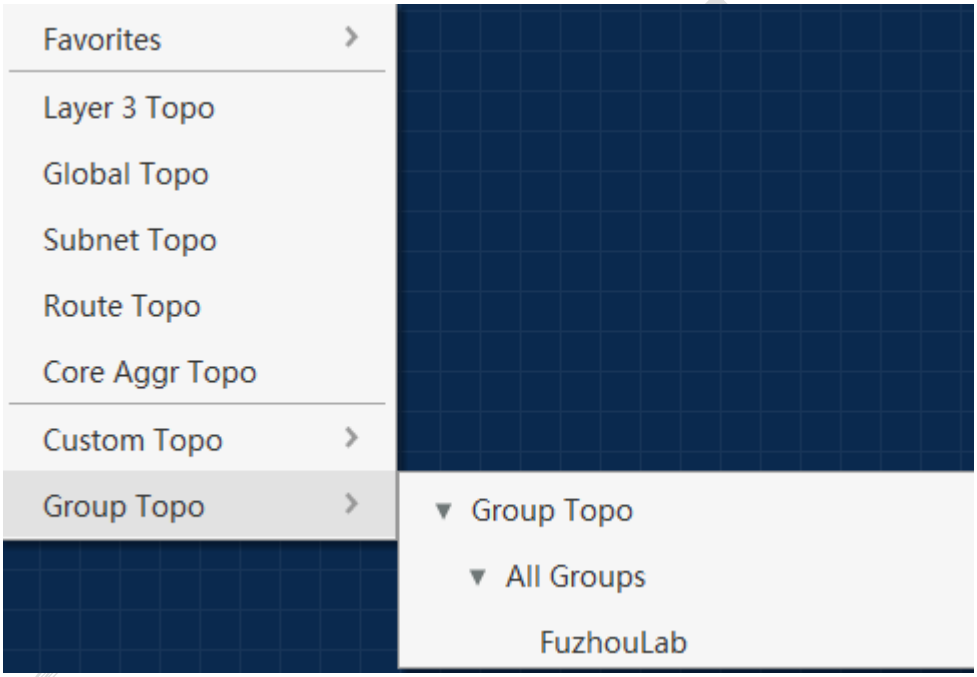


Create success

2. Grouped topology

1） Assets in the group for revision

2） Grouping structure, and the device will be synchronized to the grouping topology



3. Set home topology view

1) In the corresponding view, check the icon of the house, then set the home view to take effect

Default access to the home page after entering the topology

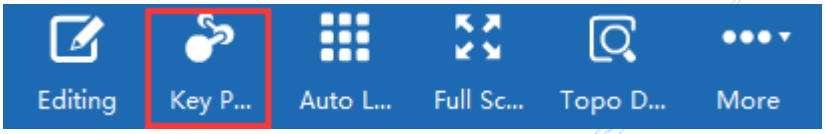
4. Save view

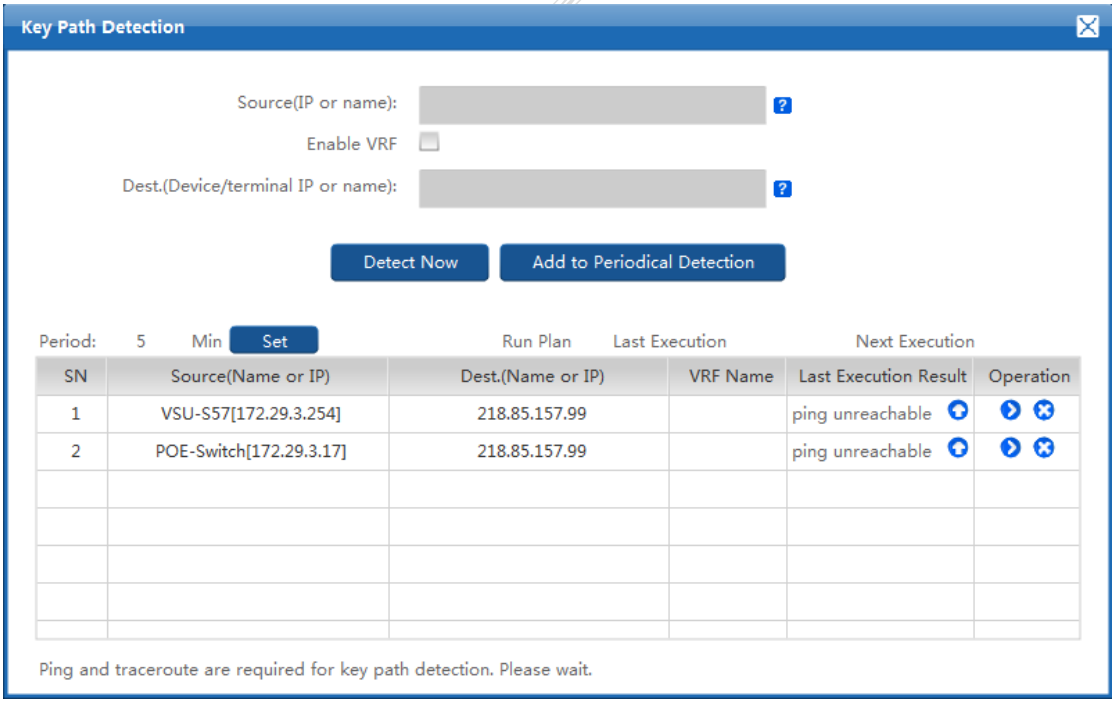
1) In the corresponding view, check the star standard, the save view into effect

5.6.3 Other Topology Operation

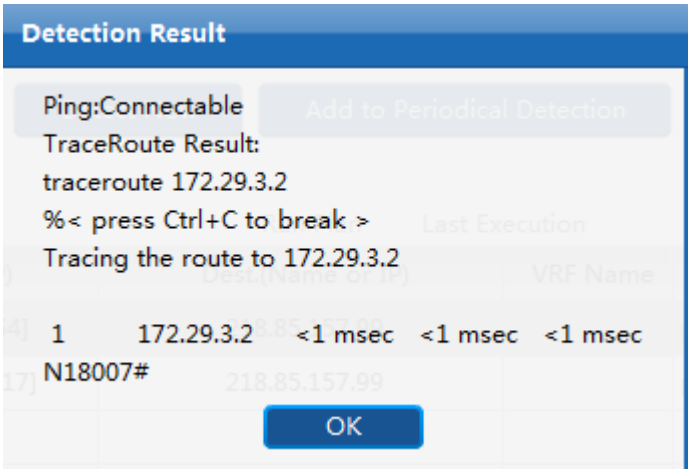
1. Critical path detection

1) On the menu bar, click on the critical path, enter the source IP, IP, which is divided into immediate and periodic detection.

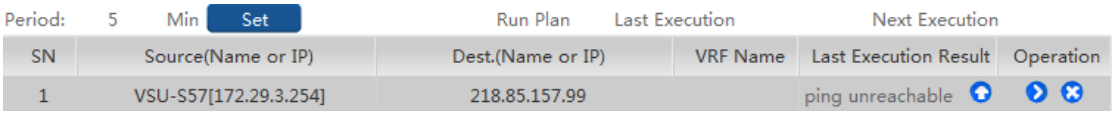




2) This is the result of detection.

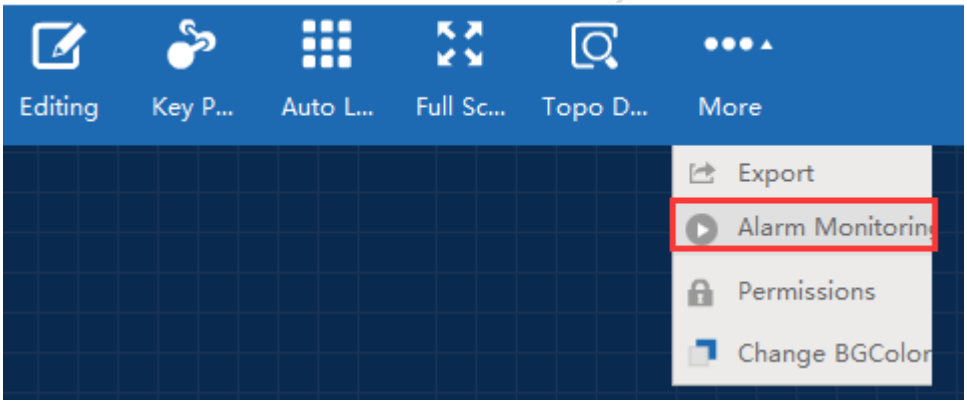


3) Add cycle detection, we can set the detection cycle

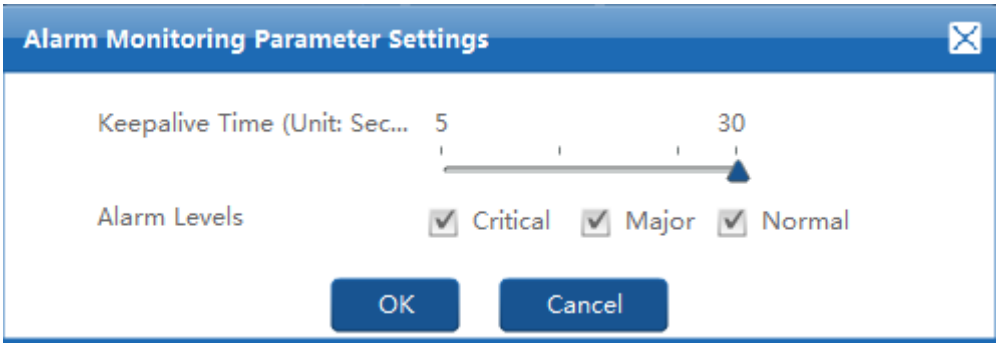


2. Alarm carousel

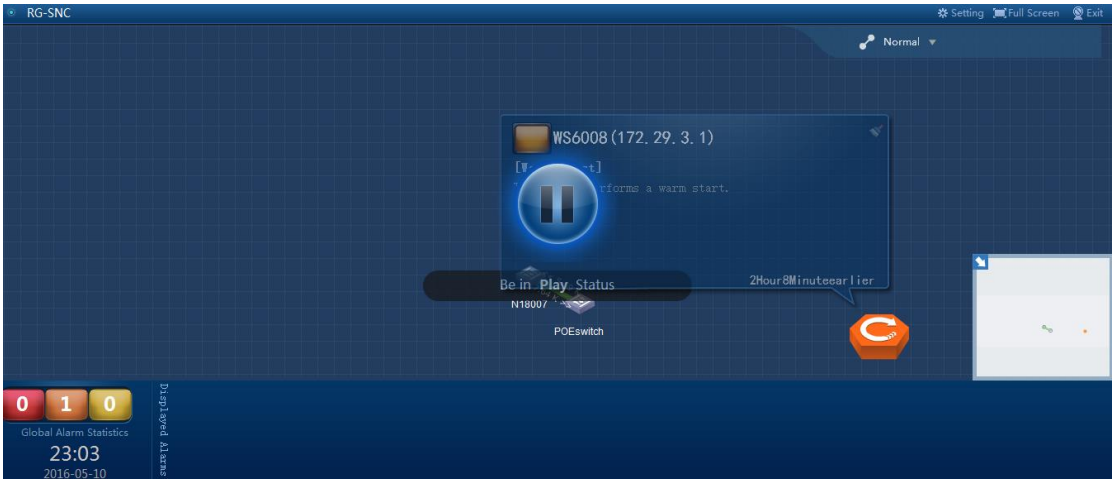
1) On the menu bar click alarm carousel, enter the carousel pattern



2) Click the right upper corner of the setting, can set the keep alive time, the display of the alarm level

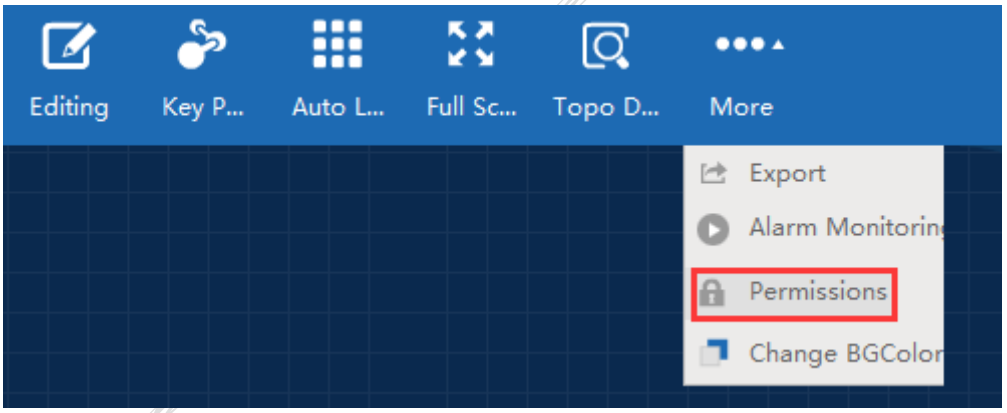


3) Carousel effect as below

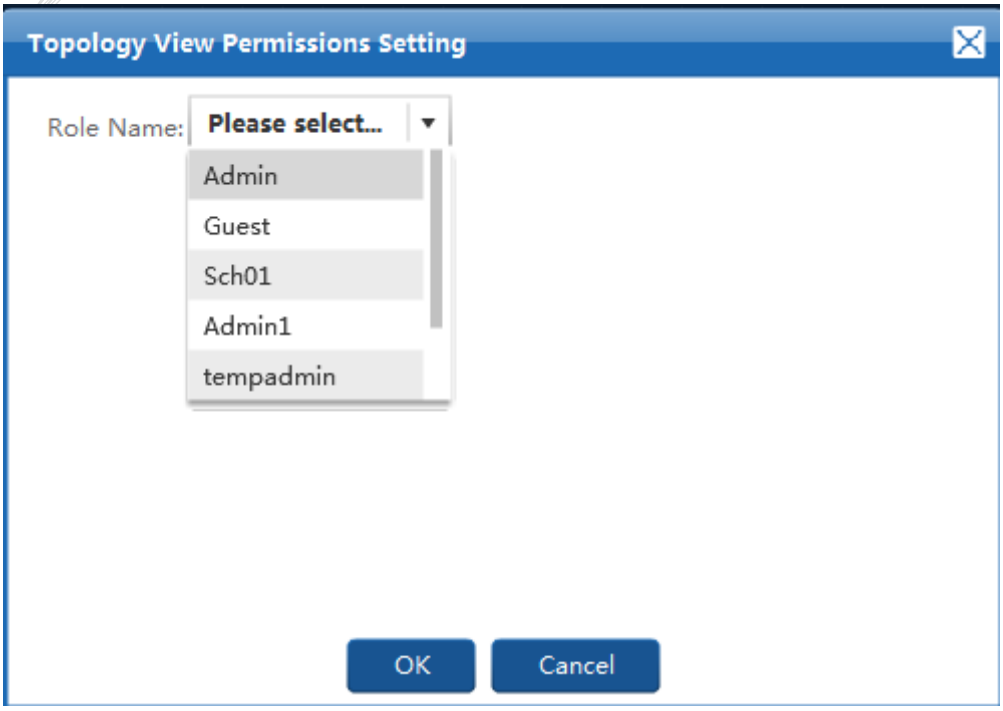


3. Permission settings

1) Click on the permissions settings, permissions can be set corresponding to the role of topology



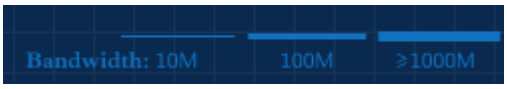
2) Select the role to whom the topology view is visible.



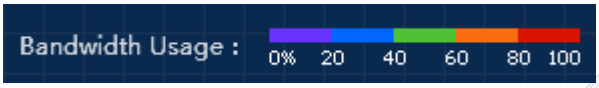
4. The administrator login can only see the topology view which he has the permission

5. Normal and traffic mode

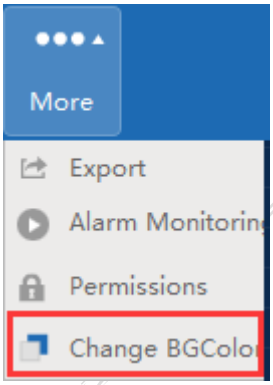
1) Normal mode, with the line of the thickness of the representative bandwidth



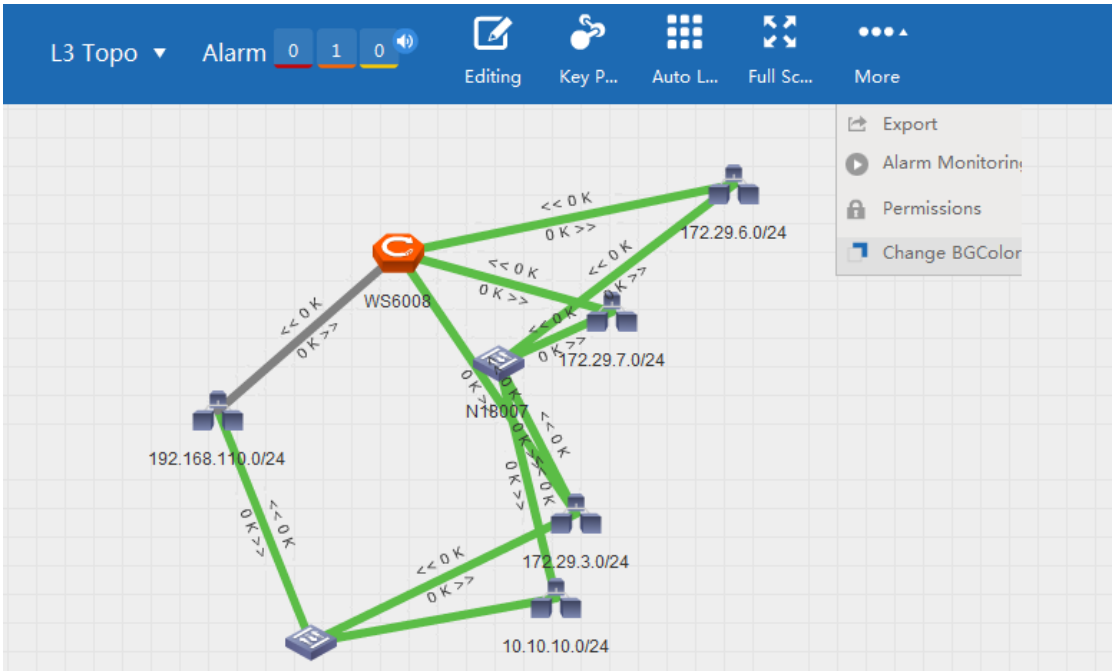
2) Traffic mode, color of the line on behalf of bandwidth utilization



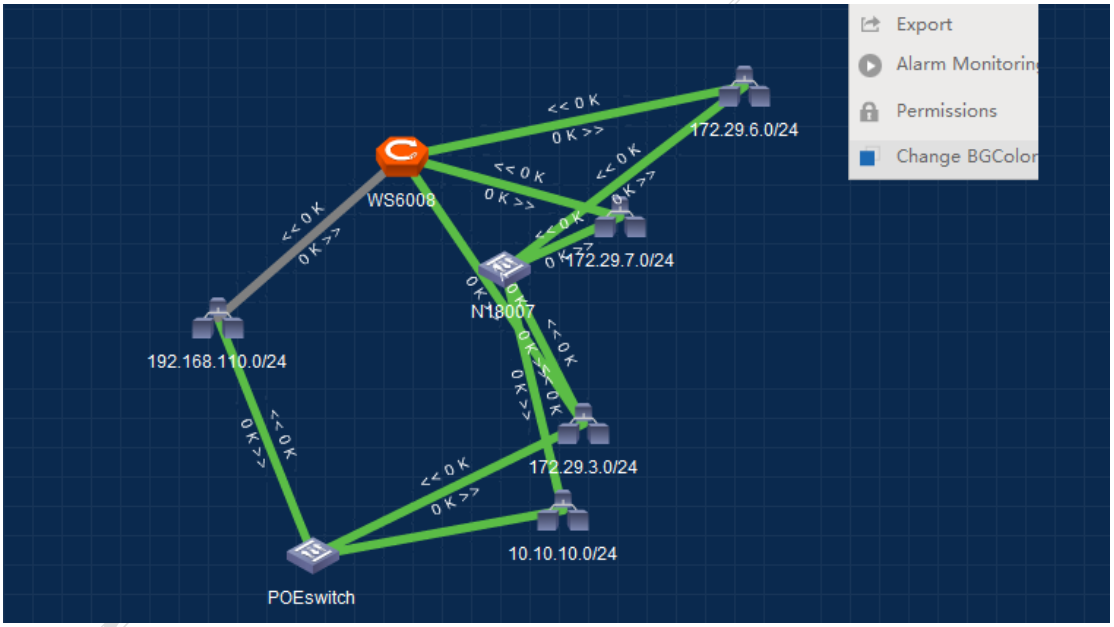
3) Switching background, on the menu bar, click “Change BGColor”



White

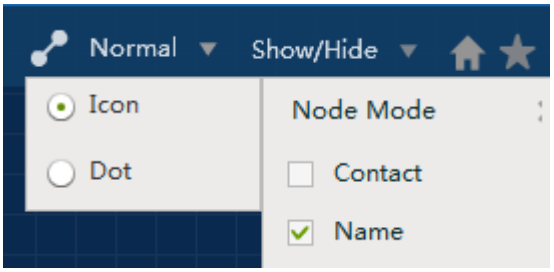


Dark blue

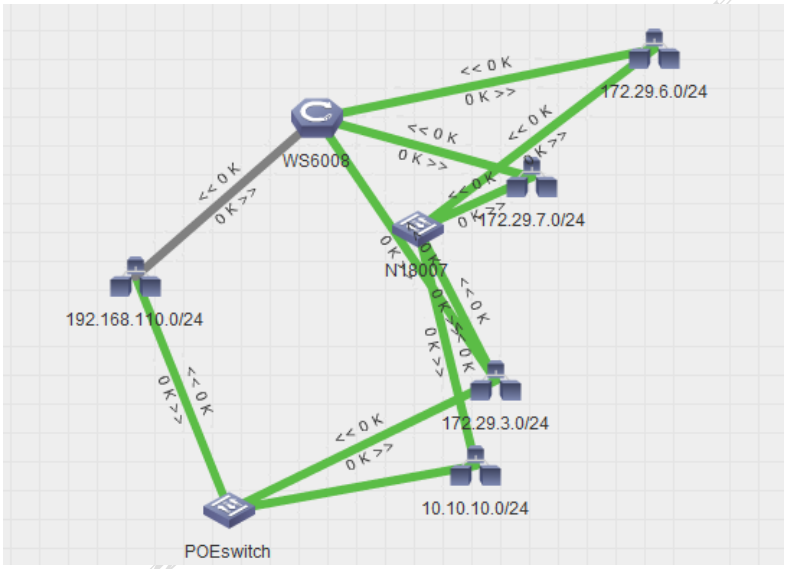


6. Show / hide

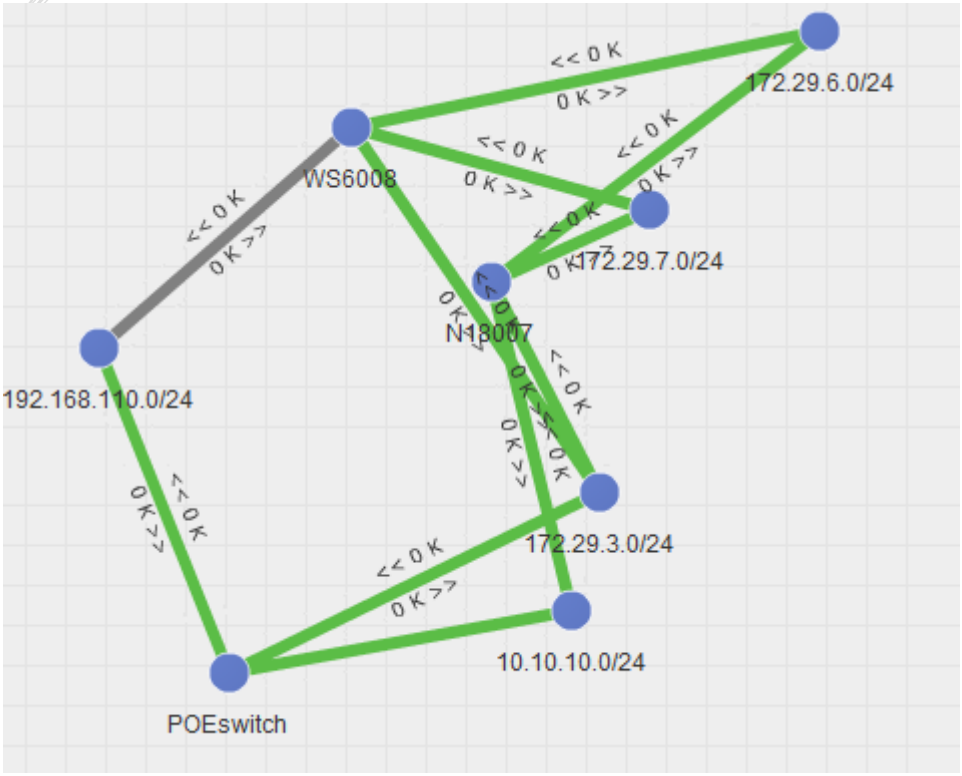
1) Dot / icon display mode switch



Icon pattern

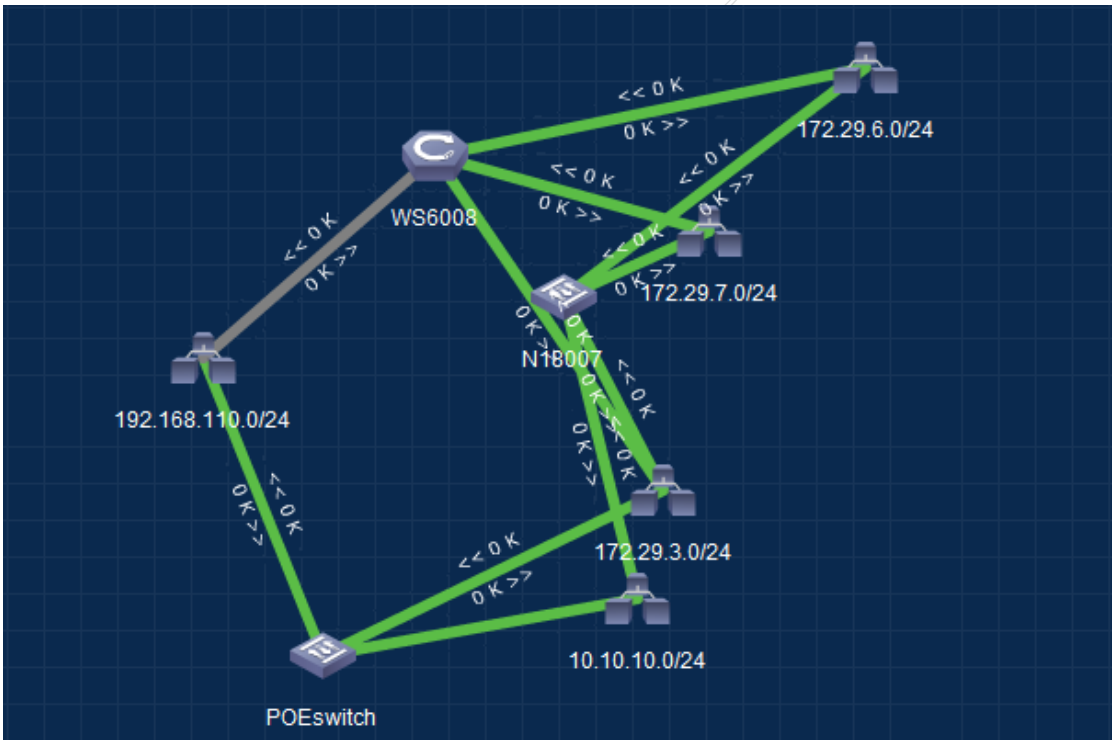


Dot pattern, display required less space



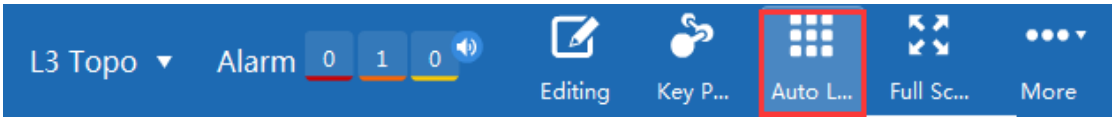
2) Show / hide related items, and can be customized to display / hide the information in the topology

Note: the number of +AP in the terminal list exceeds 1K, in order to ensure the display effect, the topology will not show PC and AP



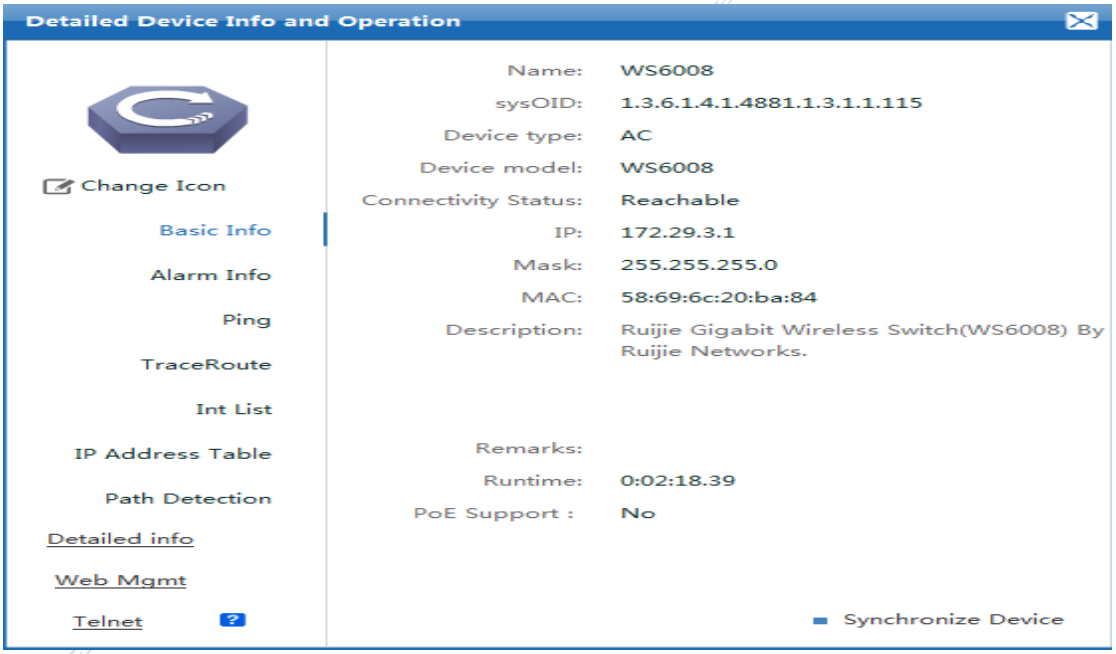
7. Automatic layout

Spread out the nodes and links according to the principle that the linked notes attract each other, and non-linked notes repeal each other. It gets fine effect if the nodes is less than 200.

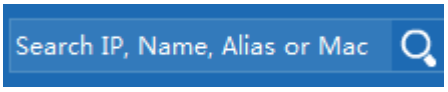


8. Other common operations

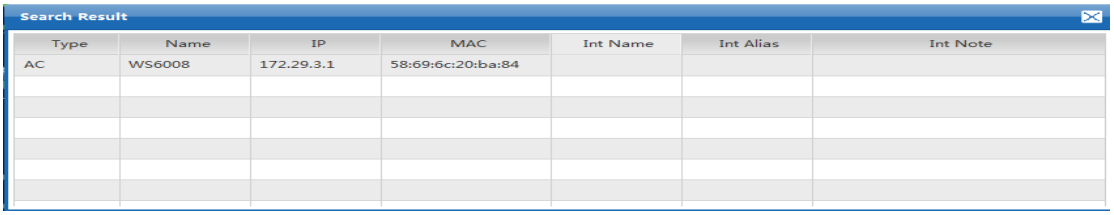
1) Double click the icon to enter the device details page, we can view the device related information, and customize the icon



2) You can input keyword on the upper right corner to search when there are too many devices.

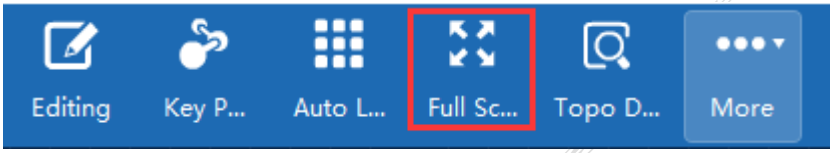


After locating the device, double click the device information in the search area to highlight the topology.

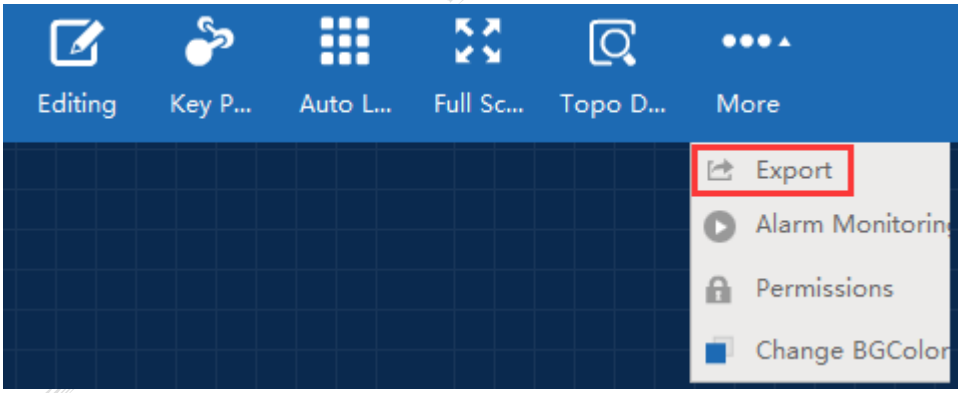


3) Zoom in/out

4) Supports full screen display: full screen display of the browser, which is prompted by the full screen mode will not be able to enter and edit keyboard input, do you want to continue? "We choose yes to enter. To exit the full screen mode, press the ESC key to exit the full screen mode.

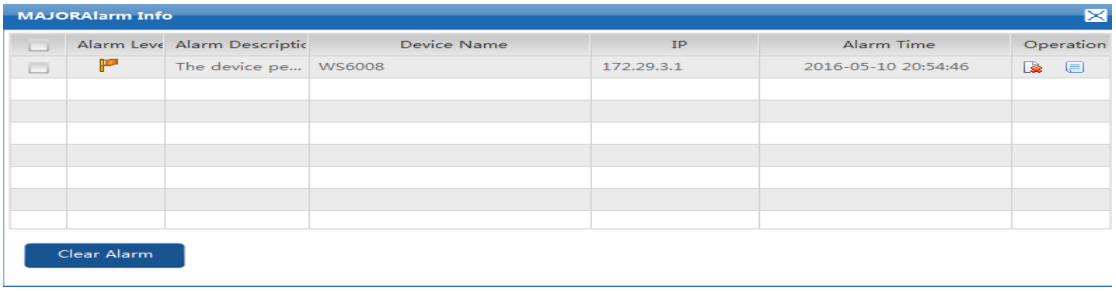


5) export topology file format can be PNG

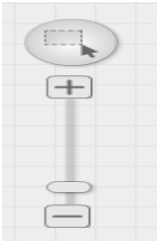


6) In the topology view, the general information of the alarm

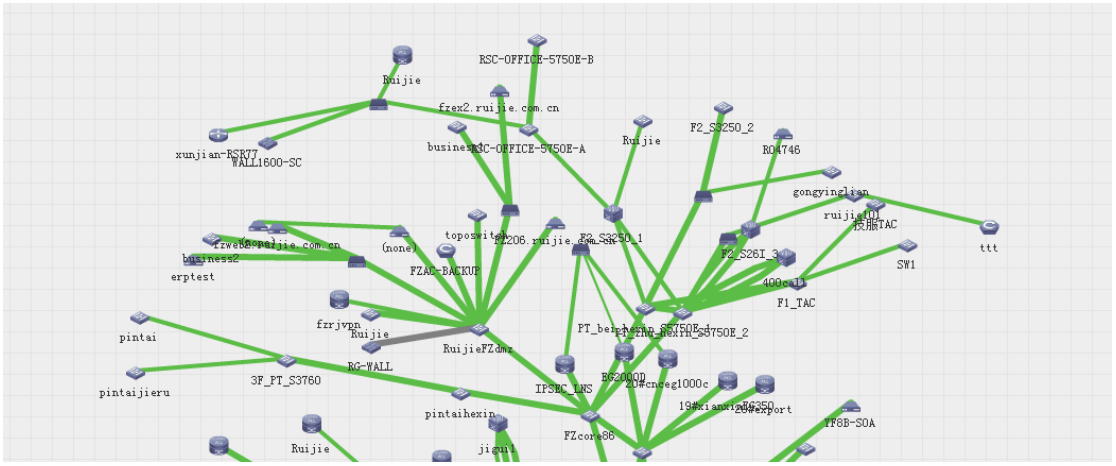
Red means a serious warning, orange is an important warning, yellow said the general alarm, click on the number can be viewed at the corresponding level of alarm information.



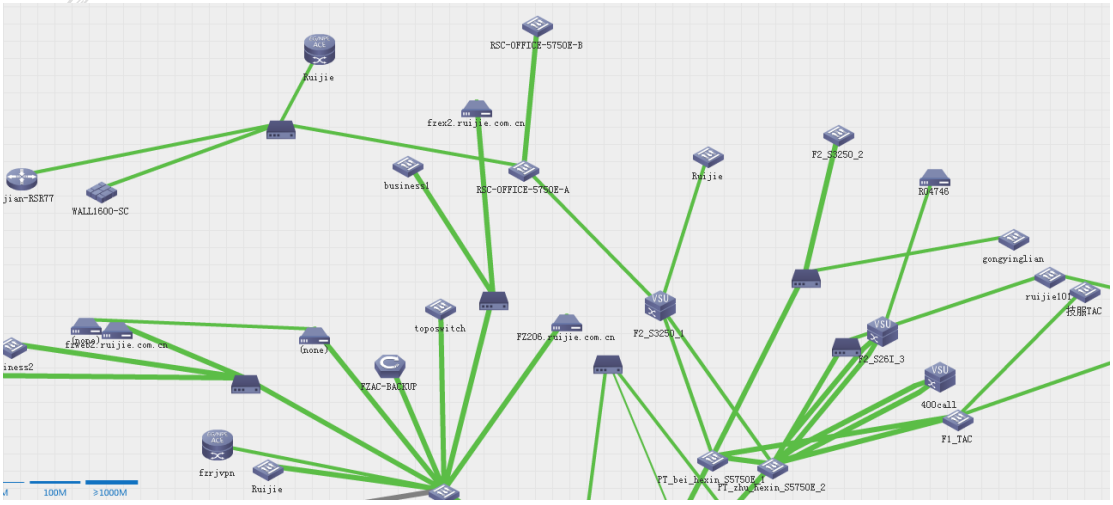
7) Topology can zoom in/out



Zoom out

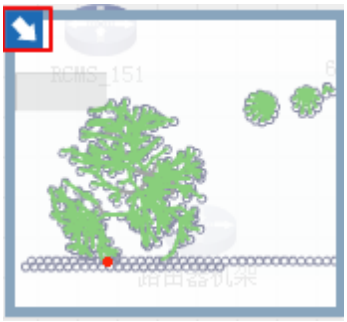


Zoom in



8) Show / hide view: display a miniature version of topology display, can choose a region to show.

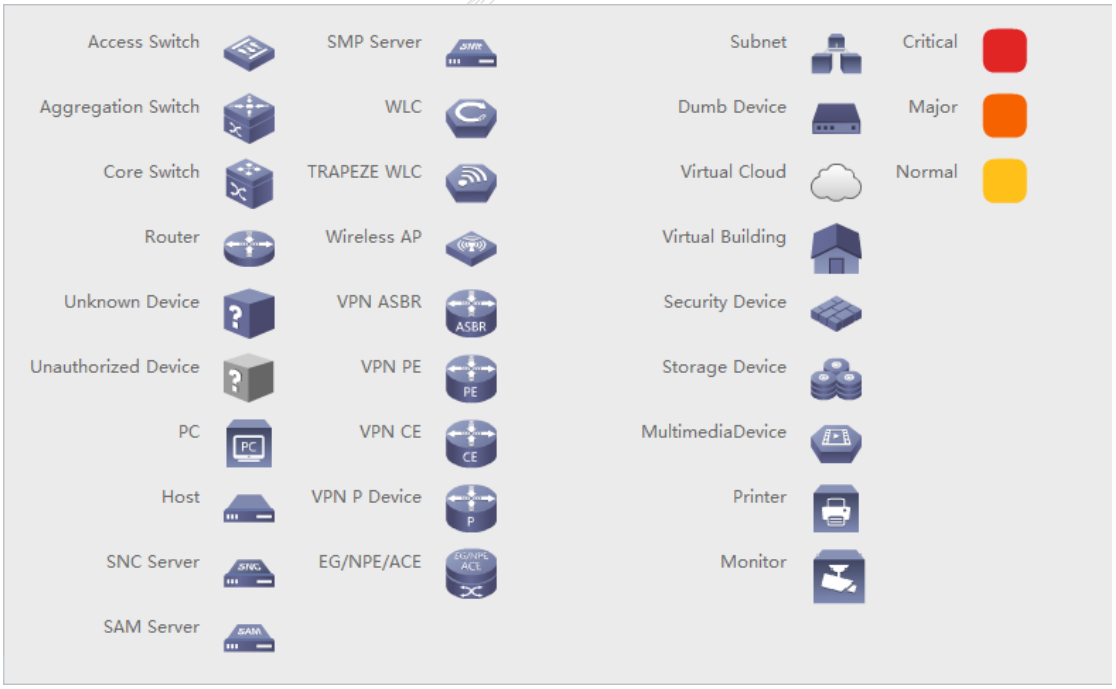
Click the image below to hide.



Click 

to display

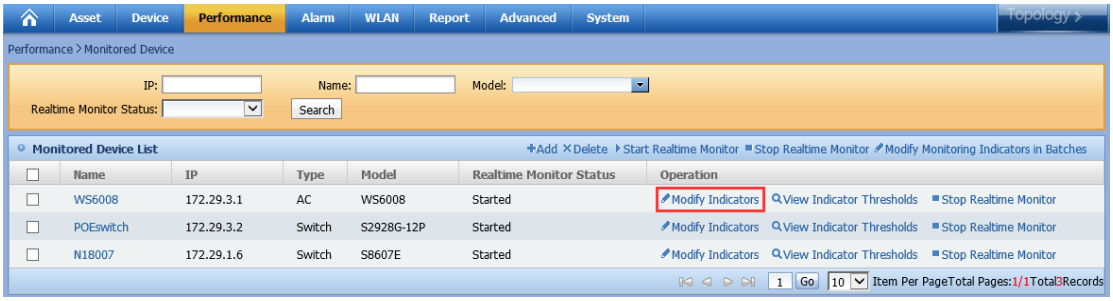
9) Shows the specific meaning of device icon, such as what the shape of the device shows what device, while the alarm level of different display color icon is not the same.



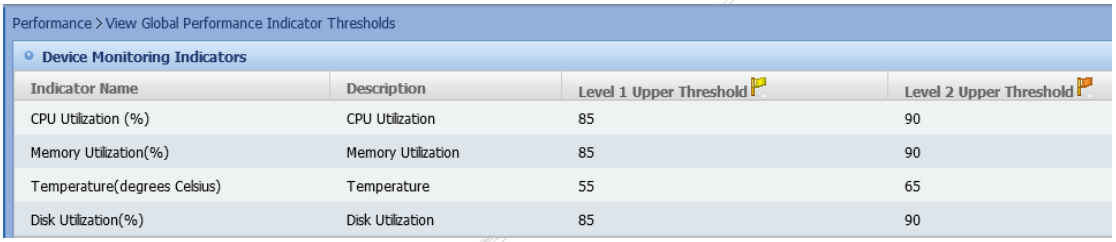
5.7 Performance Monitoring

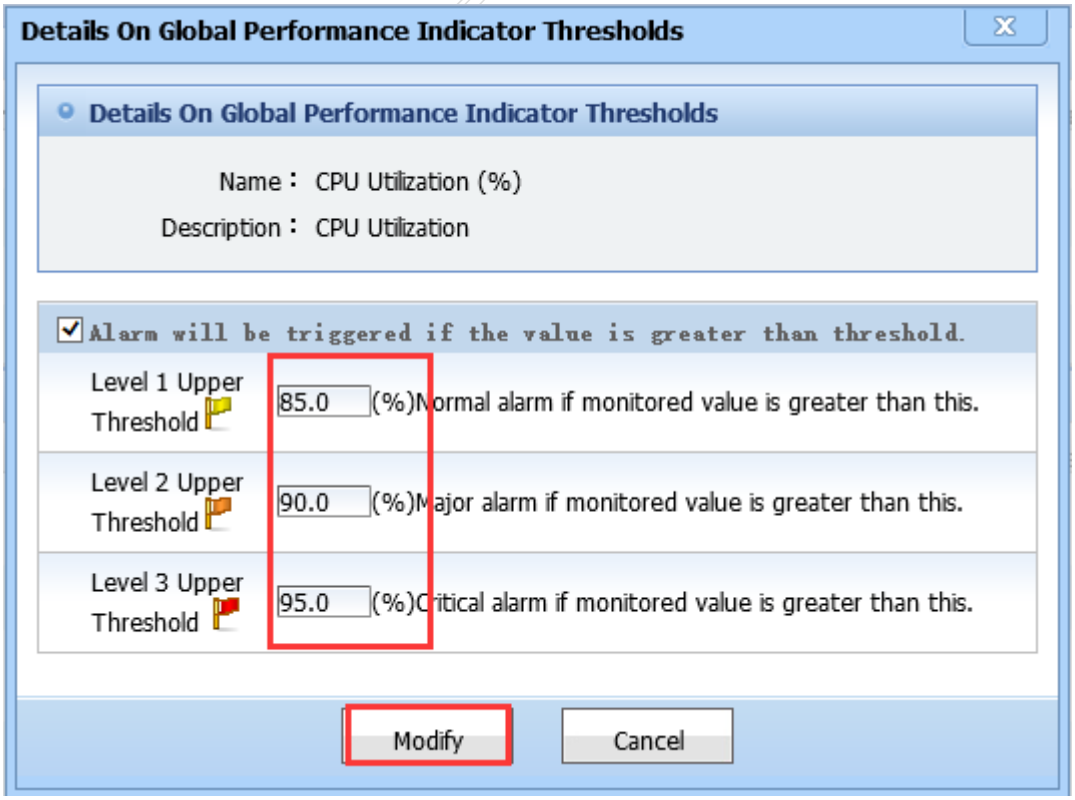
5.7.1 Setting of Performance Parameter

Go to ***Performance > Modify Indicators, then*** click the ***Add*** button to add a page, as shown in the following diagram:



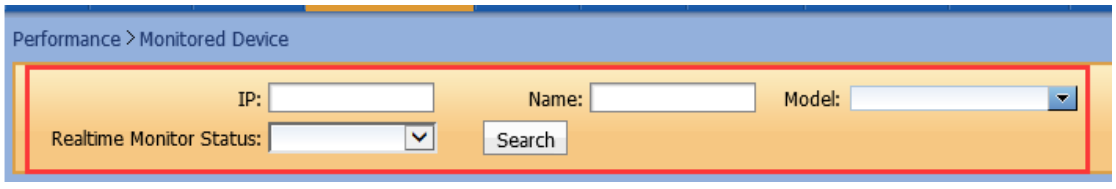
Go to ***Performance > Global Perf Threshold, then*** select the threshold needed adjust, click "***Modify***".





5.7.2 Device Management

Go to ***Performance >Monitored Device >Add >Select Device >Save***, You can enter the device IP, device name, device type or real-time monitoring status, click the search button to query, as shown below：

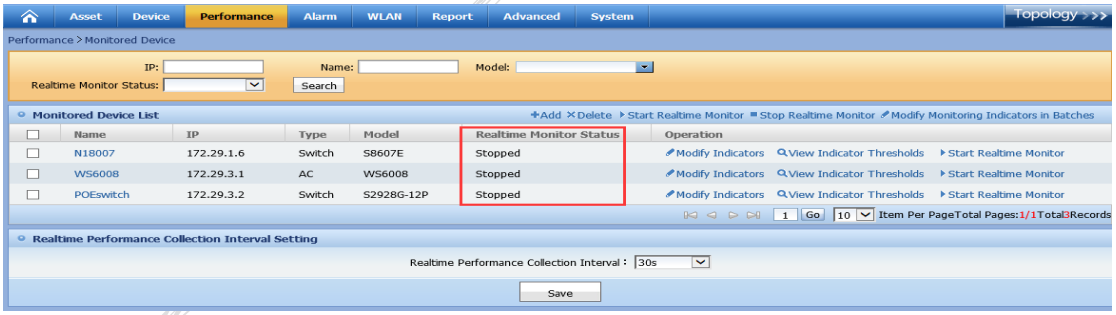


Go to Performance , Click "***Add***" to add a monitor device, then select device, and then click the ***Add and Save*** button to complete the adding operation of the monitoring device,

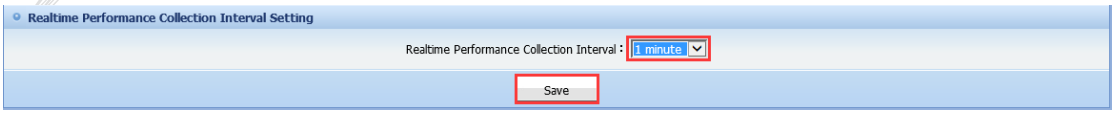
5.8 Monitor Real-time Performance

5.8.1 Monitor Real-time Device

Go to ***Performance > Monitored Device >Start/Stop Real-time Monitor***.



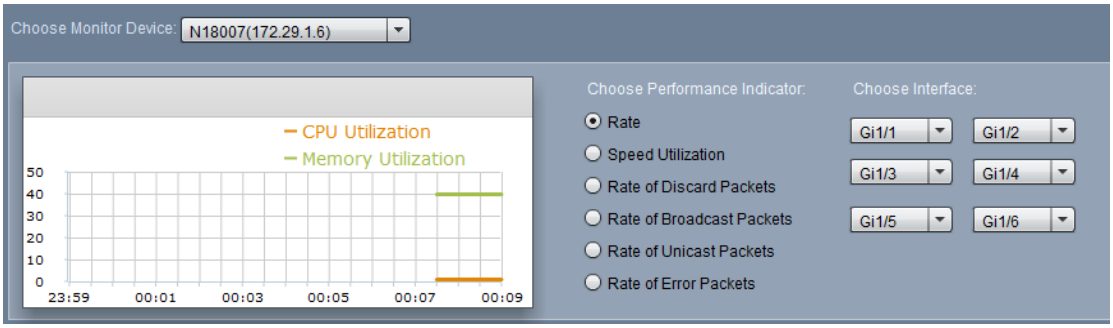
Enter the monitor device management page. You can see the "real time performance sample frequency settings" column.



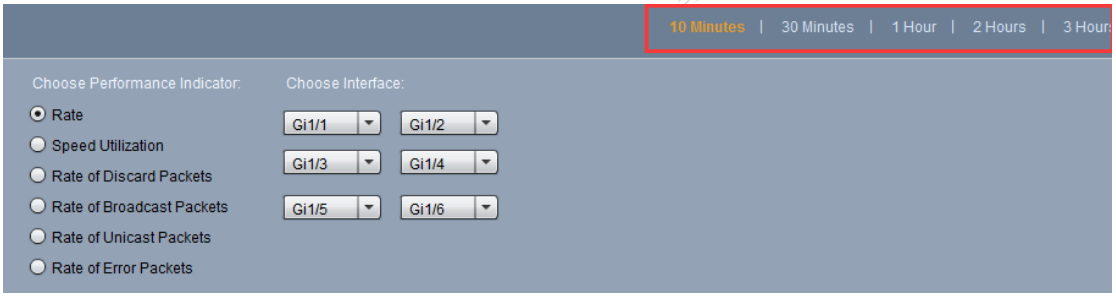
5.8.2 Viewing Single Device

Go to ***Performance > Single-device View and then*** select the device name, and then select the system to refresh the view.

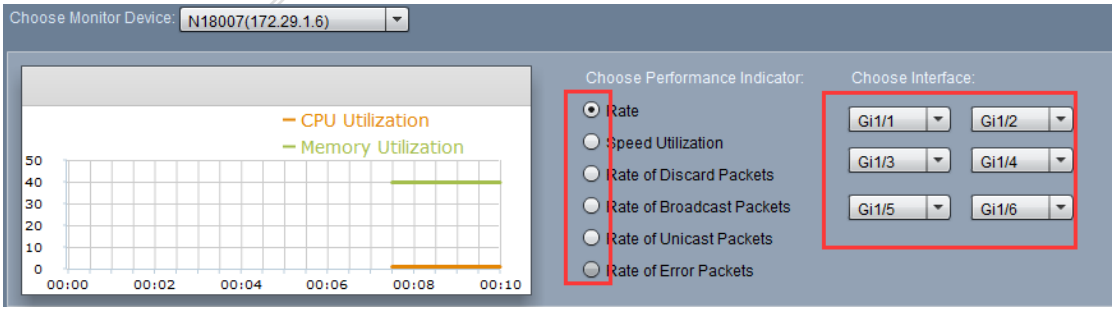
A minute later, the system information collection is completed, you can see the device performance in the upper left corner view:



Select time range.

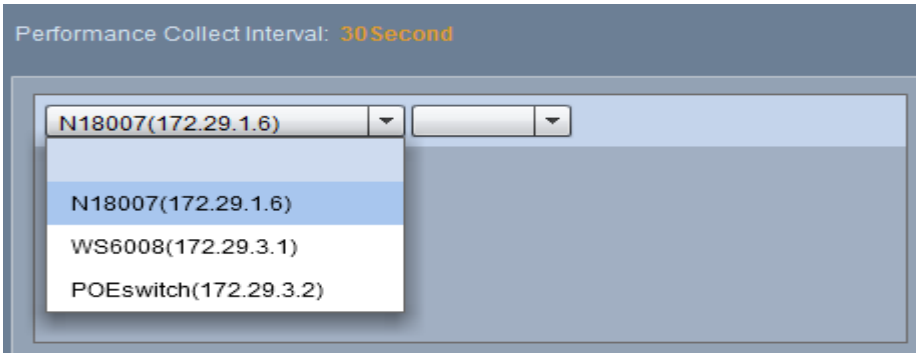


Select monitoring indicators and monitoring interfaces.

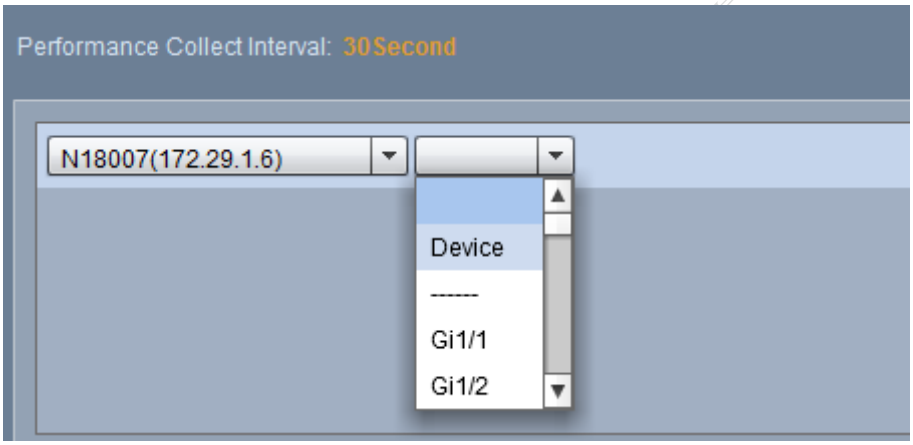


5.8.3 Comprehensive View

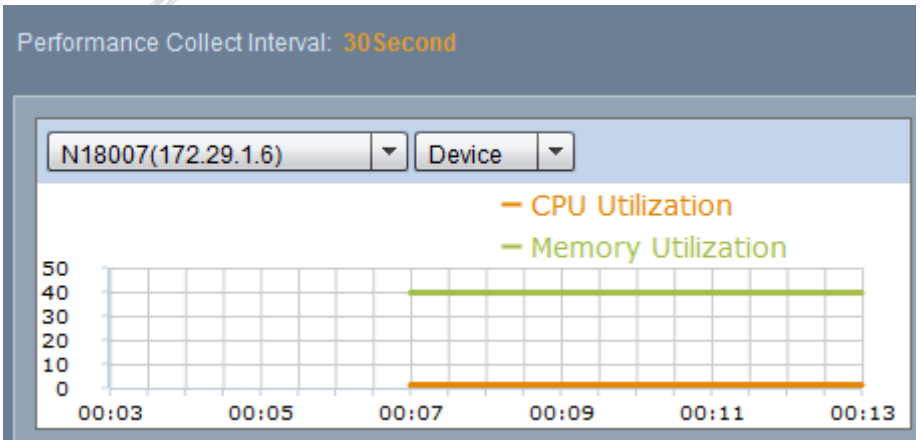
Go to ***Performance > All View*** then select monitoring device



Select the performance indicator, ***"device"*** or "***interface***":

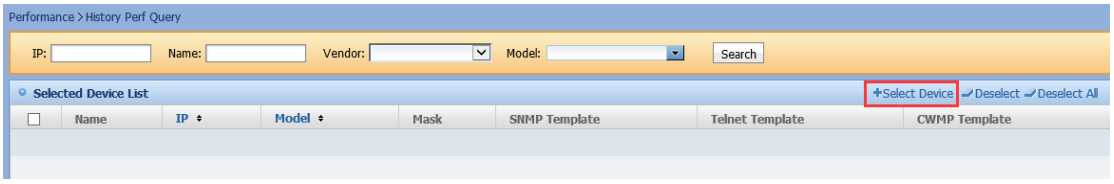


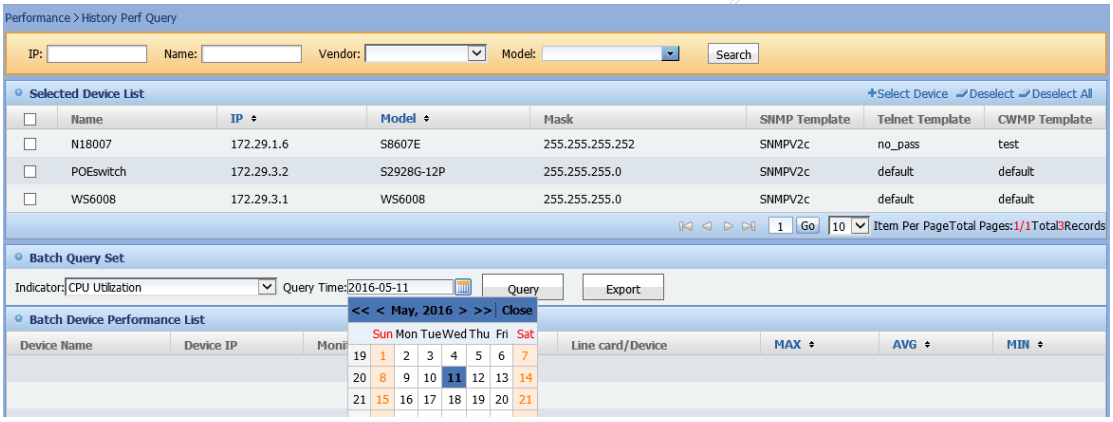
Select monitoring device indicator:



5.8.4 Viewing History Performance

Go to ***Performance > History Per Query*** then select device and indicator.

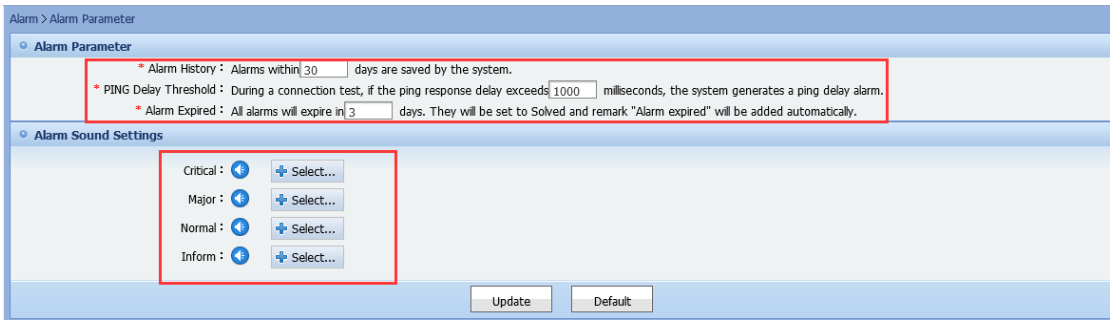




5.9 Alarm Setting

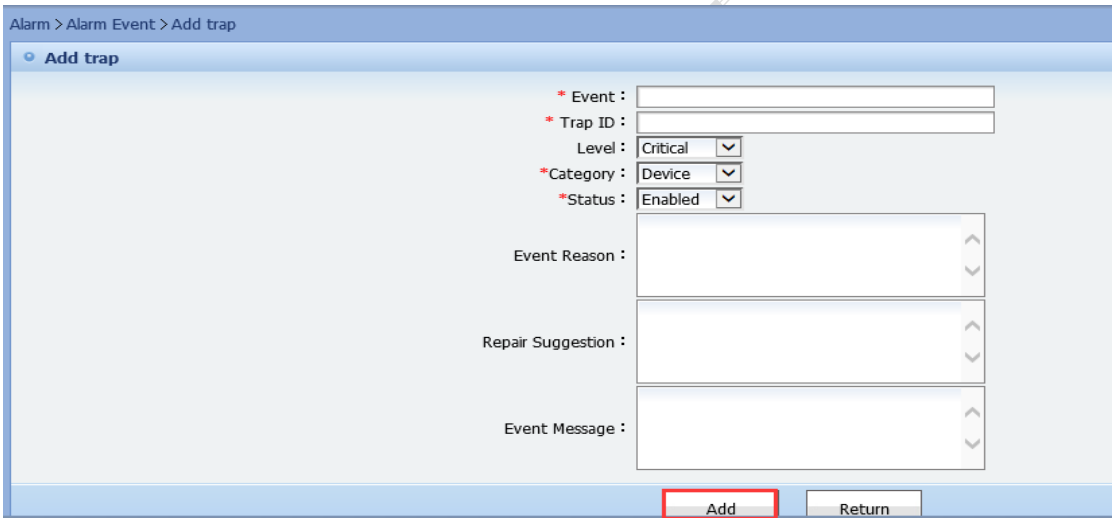
5.9.1 Alarm Parameter

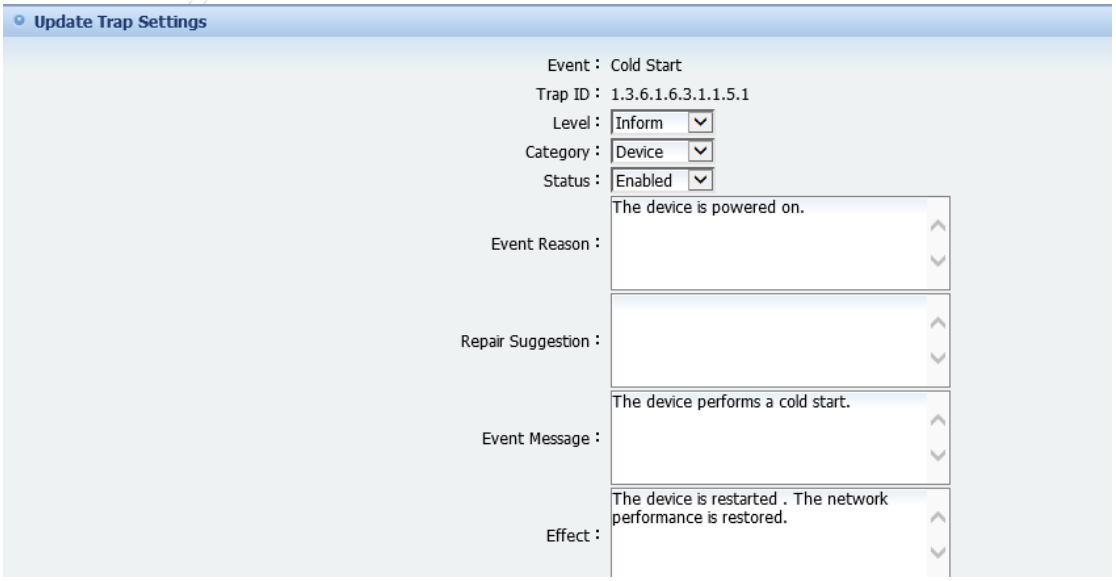
Go to ***Alarm > Alarm parameter*** to set alarm parameter.



5.9.2 Alarm Event Management

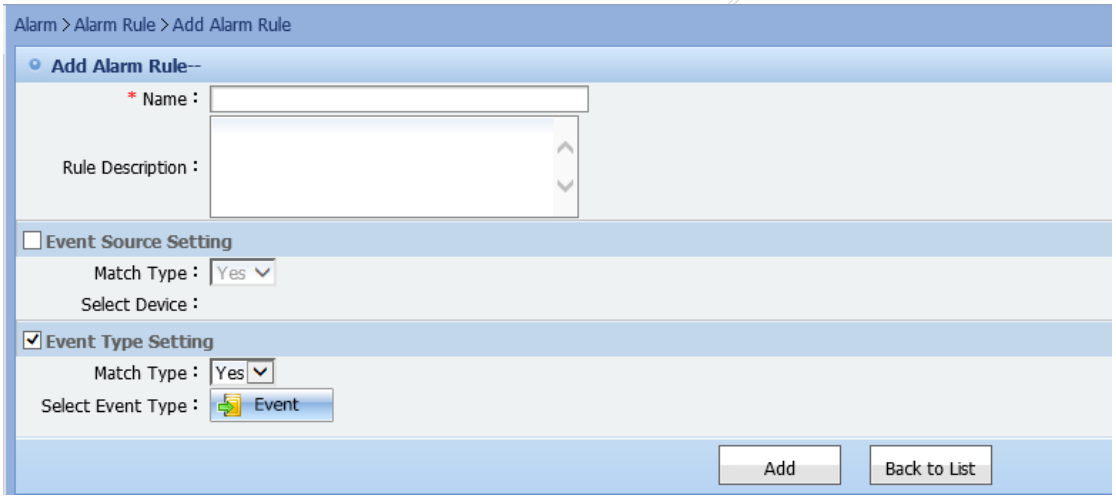
Go to ***Alarm > Alarm Event > Add*** or ***Modify alarm events***.





5.9.3 Alarm Generation Rule

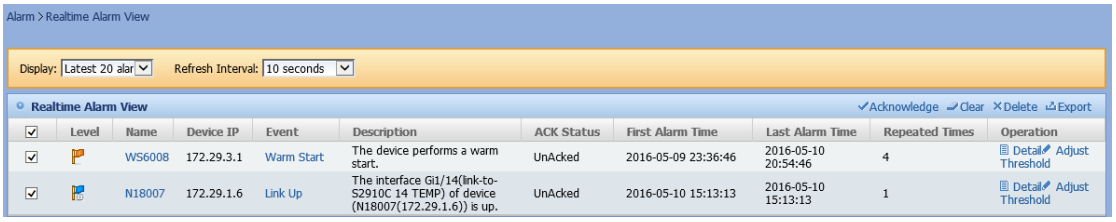
Go to ***Alarm > Alarm Rule> Add*** and then fill in the rule information.



5.10 Viewing Alarm Message

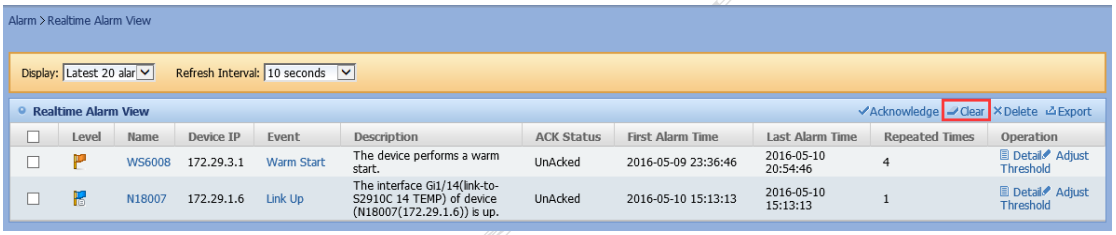
5.10.1 Real Time Alarm

Go to ***Alarm > Real time Alarm Monitor*** then check the alarm information in the alarm list.

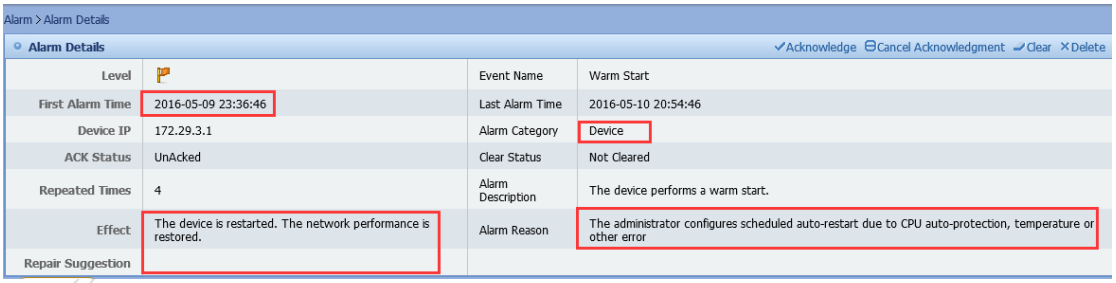


Click "***Acknowledge"*** to change the alarm status.

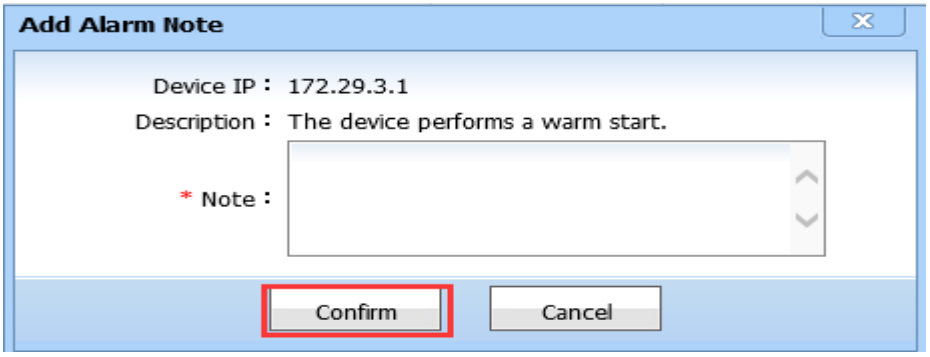
Click on the "***clear"***, to change the alarm level of alert.

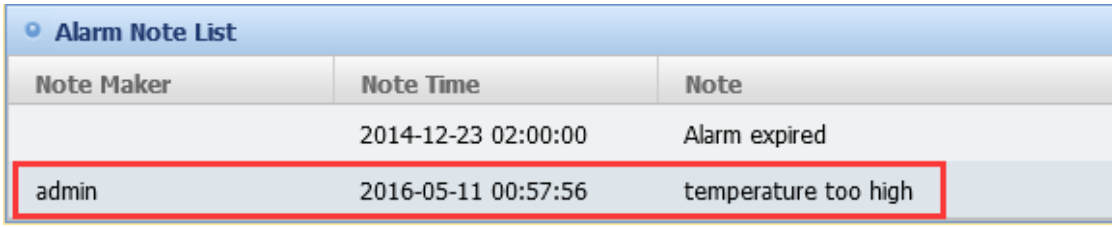


Click on the alarm list Details icon

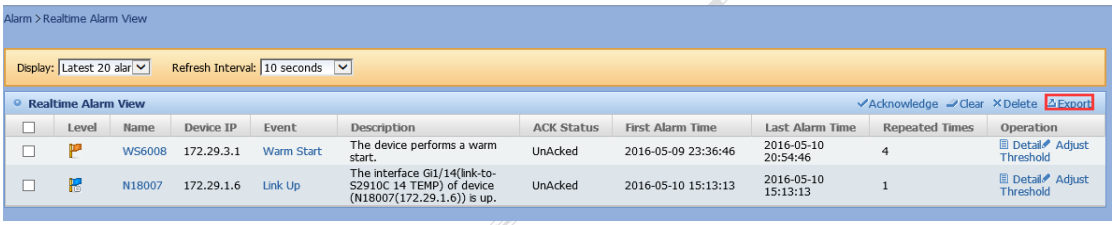


Add warning annotation, Add Alarm Note, and click Confirm. And then see the new addition of comments in the "alarm notes list".

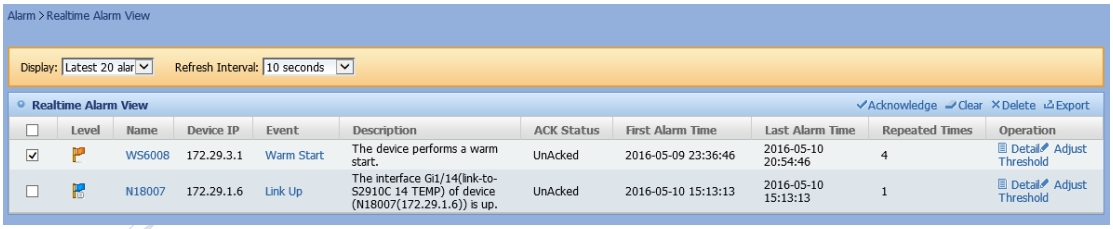




Go to ***Alarm > Realtime Alarm View*** *then* click on the top right corner of the "Export" button.

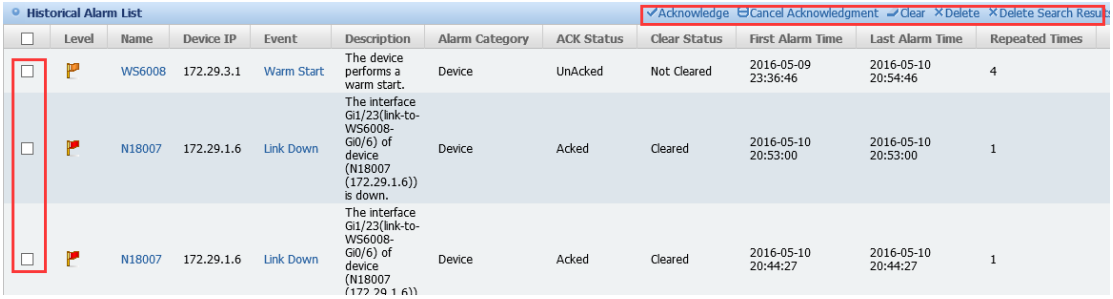


If want to delete alarm, go to ***Alarm > Realtime Alarm View then*** select the check box and click "***delete***".

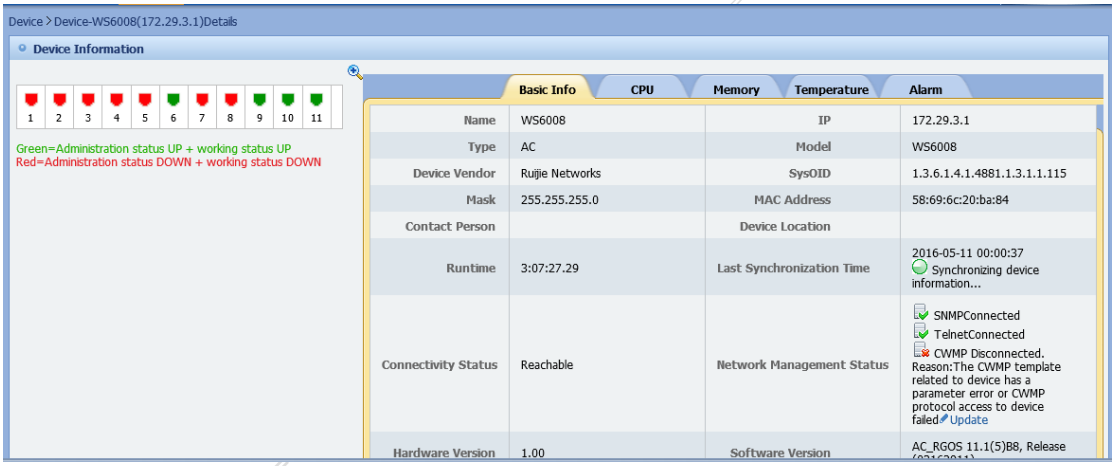


5.10.2 History Alarm

Go to ***Alarm > Historical Alarm*** then Select the check box to confirm the alarm information, click "Acknowledge" / "***Cancel Acknowledgement*** " / "***Clear*** " / "***delete***" Search Result.

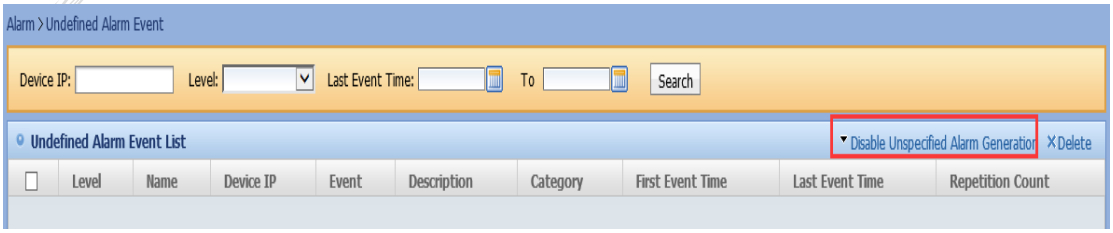


Click on the "***Device Name***" link to view the device information pages, view device details.



5.10.3 Invalid Alarm Message

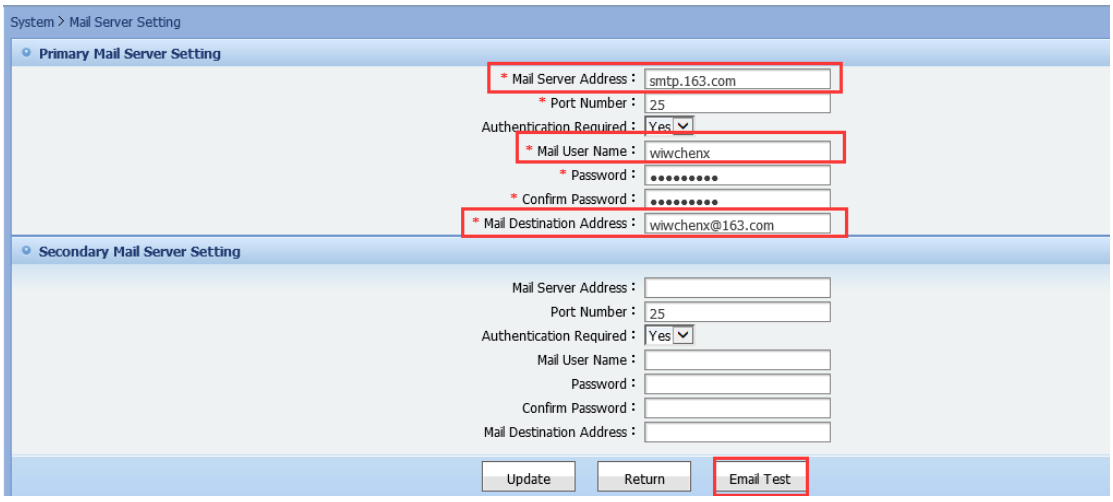
Go to ***Alarm > Undefined Alarm Event*** *then* click "***Disable Uspecified Alarm Generation***" to disable the function.



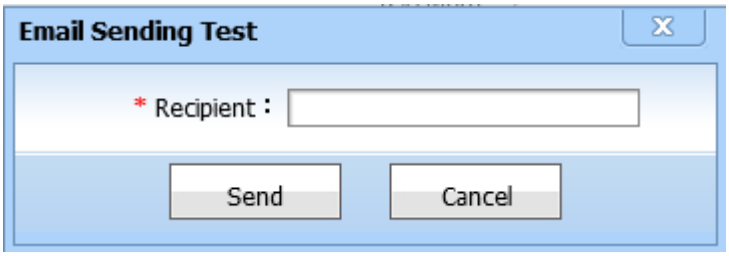
5.11 Alarm Notification

5.11.1 Mail Notification

Go to ***System > Mail server Setting >Update*** *to* set the information of mail server.

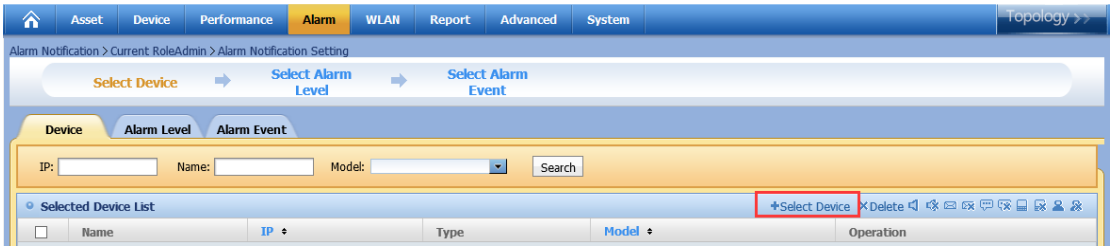


Click the "***Email Test***" to check whether the mail server is configured successfully.

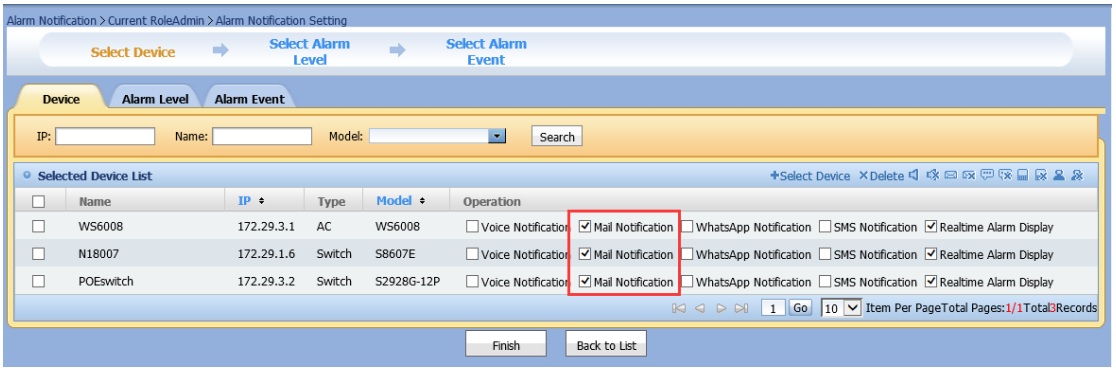


5.11.2 Setting Mail Warning Notification

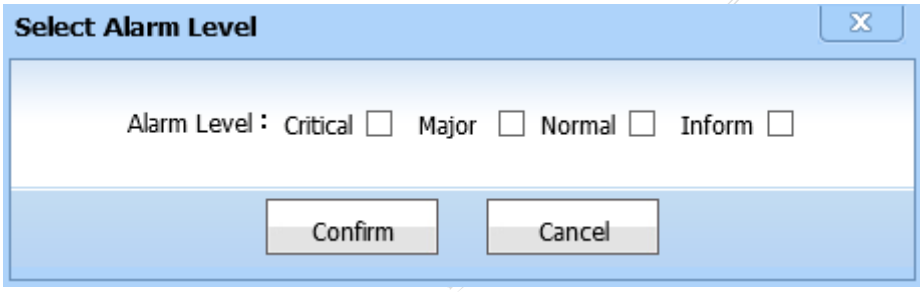
Go to ***Alarm > Alarm Notification >Select Role >Add > Select Device >Select Alarm Level >Select Alarm Event.***



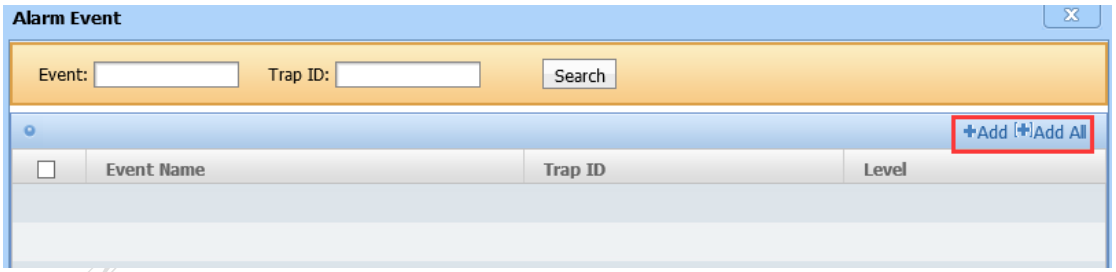
After adding device, check the message alarm to the device.



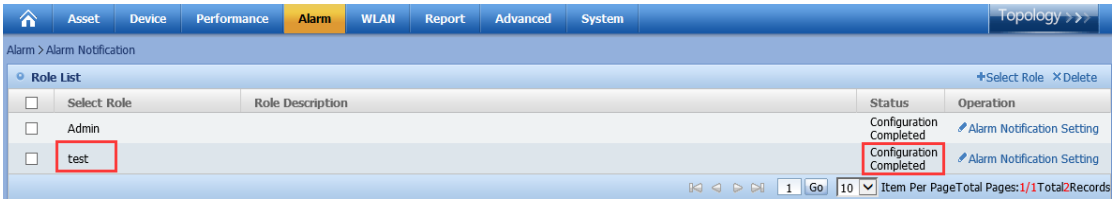
Select according to alarm level:



Select alarm event according to the actual need

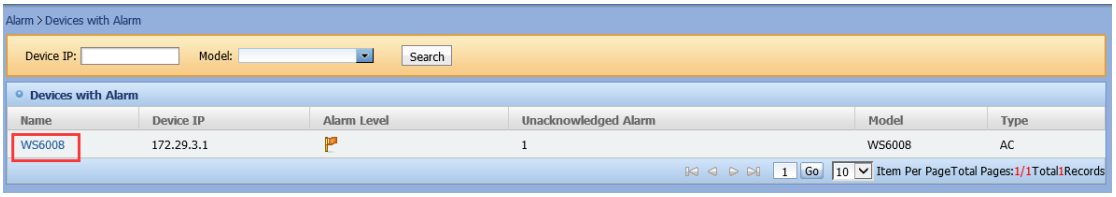


When the configuration is finished, return to the alarm alert notification: view state change from incomplete to complete.



5.11.3 Faulty Device Navigation

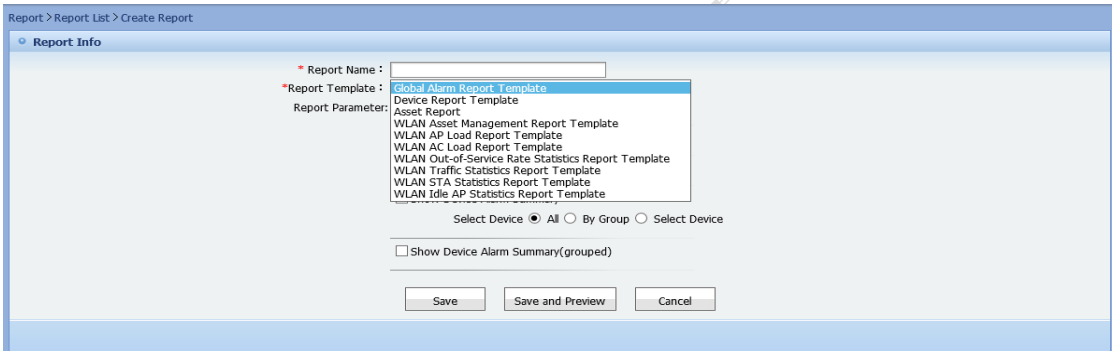
Go to ***Alarm > Devices with Alarm*** then Click on the "Device Name" link to view the device information pages.



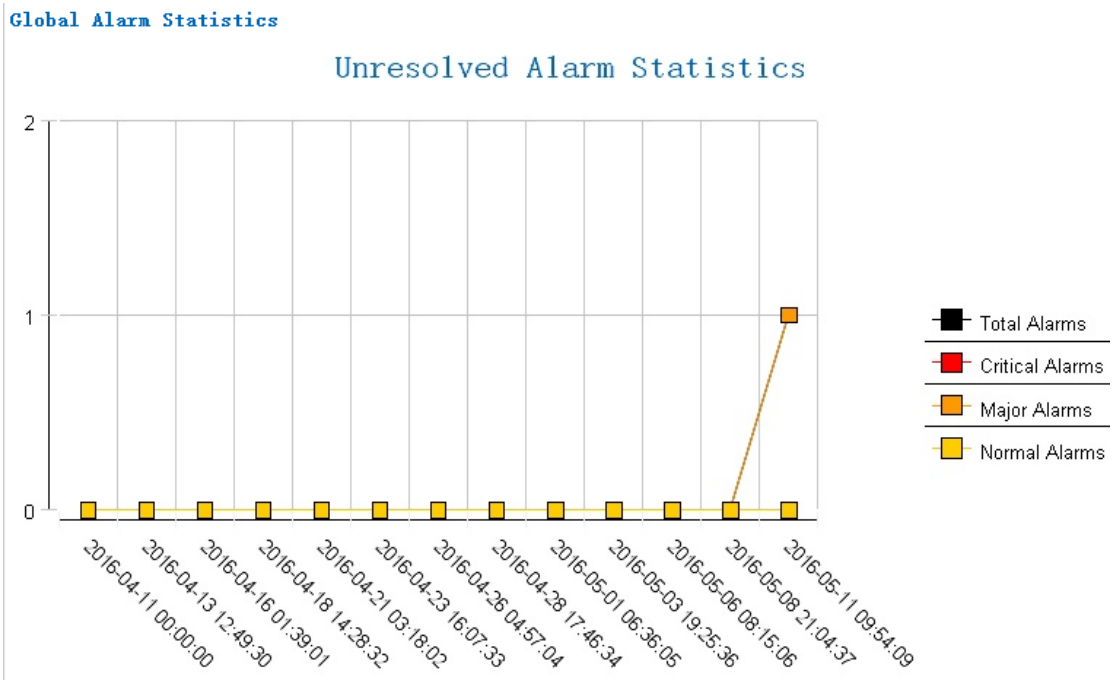
5.12 Report Setting

5.12.1 Report List

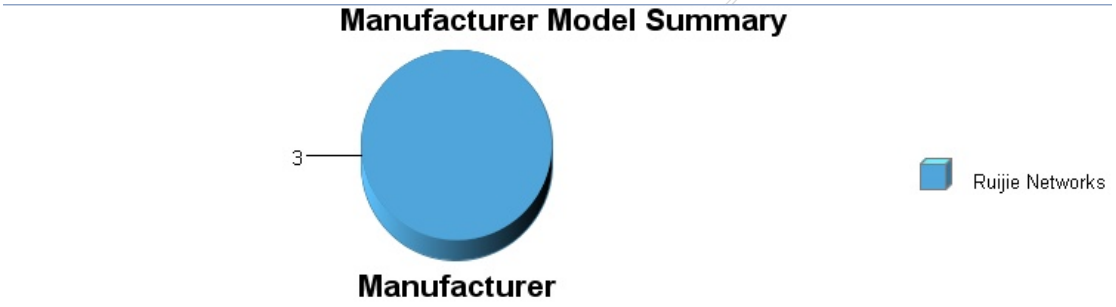
Go to ***Report > Report List >Create Report.***

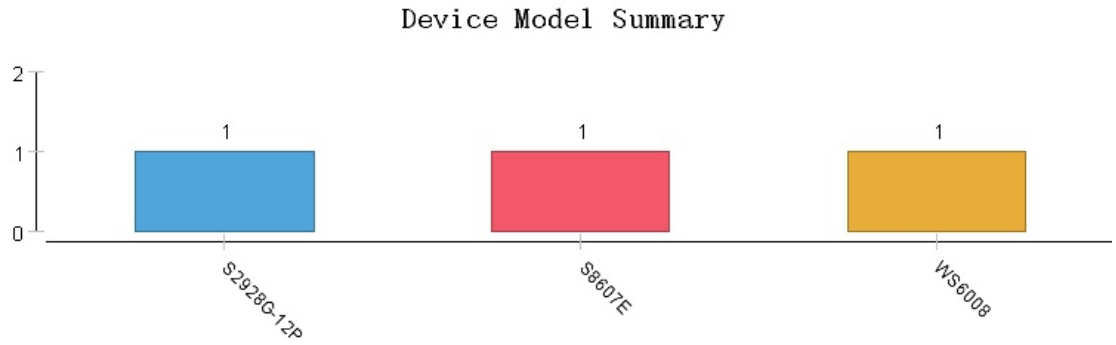


1. View global alarm reports, there are unresolved warning trend statistics (including the total number of alarms, the number of serious alarms, the number of major alarm, general alarm number)



2. Asset management reports (including summary vendors' equipment, model summary, asset management summary, device model summary, etc.)





Device Summary

Device Name	Device IP	Manufacturer	Device Model	SN	Software Version	Hardware Version
POEswitch	172.29.3.2	Ruijie Networks	S2928G-12P	G1HDC82003208	RGOS 10.4(2b12)p2 Release(180357)	1.01
N18007	172.29.1.6	Ruijie Networks	S8607E	G1J90K8000027	N18000_RGOS 11.5 (1)B2, Release (02210901)	1.01
WS6008	172.29.3.1	Ruijie Networks	WS6008	G1JL32R000482	AC_RGOS 11.1(5)B8, Release(03162911)	1.00

Software Version Summary

	AC_RGOS 11.1(5)B8, Release(03162911)	N18000_RGOS 11.5(1)B2, Release(02210901)	RGOS 10.4(2b12)p2 Release(180357)
Device Model	Device NO	Device NO	Device NO
S2928G-12P			1
S8607E		1	
WS6008	1		

Hardware Version Summary

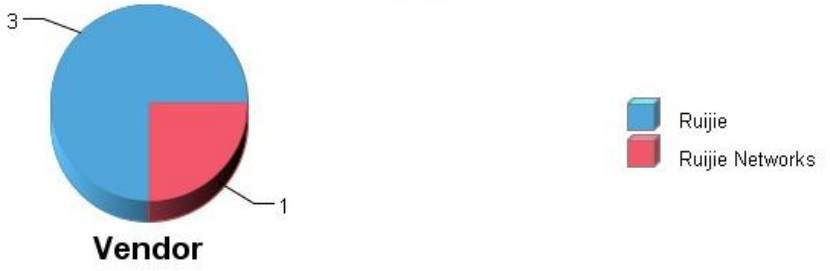
	1.00	1.01
Device Model	Device NO	Device NO
S2928G-12P		1
S8607E		1
WS6008	1	

3. WLAN asset reports (including equipment manufacturers, models, etc.)

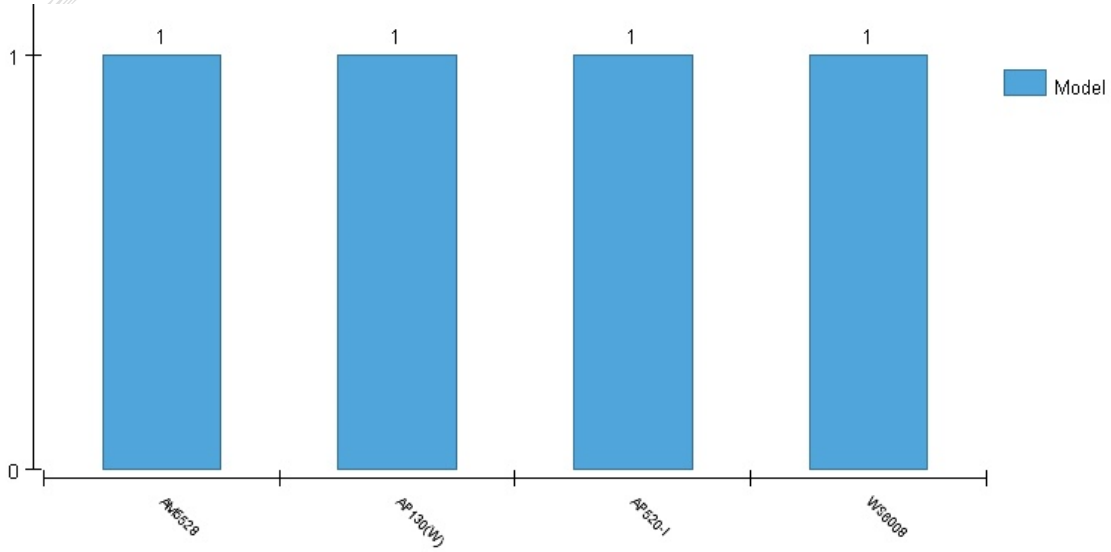
WLAN Asset Report

Vendor Model Summary

Device Vendor Summary



Device Model Summary



WLAN Device Asset List

Device Name	Device IP	Vendor	Device Model	Software Version	Hardware Version	Location	Hotspot Name	Remarks
WS6008	172.29.3.1	Ruijie Networks	WS6008	AC_RGOS 11.1 (5)B8, Release (03162911)	1.00			
ap520	10.10.10.100	Ruijie	AP520-I	AP_RGOS 11.1 (5)B8	1.01			
ap130	10.10.10.101	Ruijie	AP130(W)	AP_RGOS 11.1 (5)B6	2.00			
5869.6c60.a5 11	172.29.3.5	Ruijie	AM5528	AM_RGOS 11.1 (5)B8	1.01			

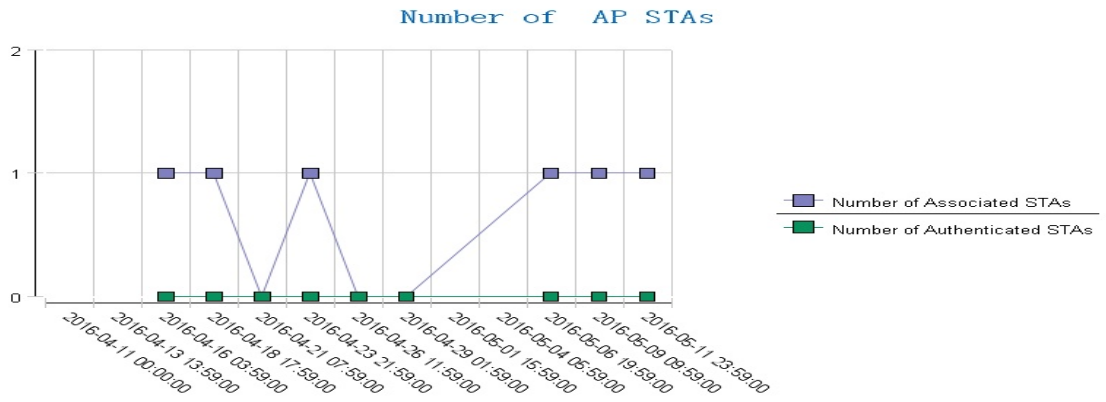
Software Version Summary

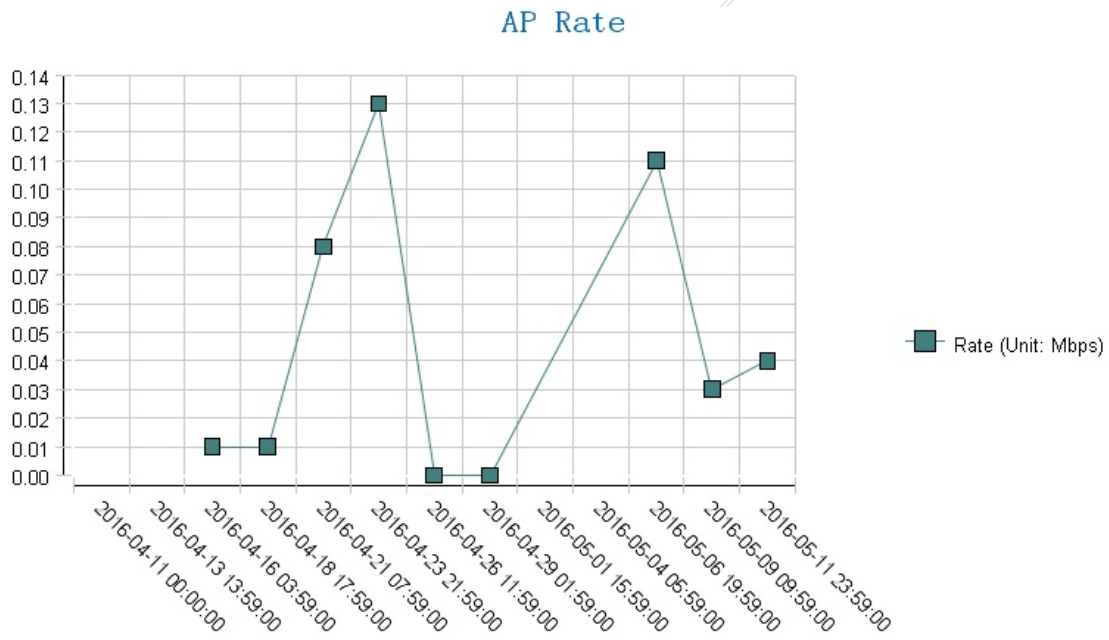
Device Model	AC_RGOS 11.1(5)B8, Release(03162911)	AM_RGOS 11.1(5)B8	AP_RGOS 11.1(5)B6	AP_RGOS 11.1(5)B8
	Number of Devices	Number of Devices	Number of Devices	Number of Devices
AM5528		1		
AP130(W)			1	
AP520-I				1
WS6008	1			

Hardware Version Summary

Device Model	1.00	1.01	2.00
	Number of Devices	Number of Devices	Number of Devices
AM5528		1	
AP130(W)			1
AP520-I		1	
WS6008	1		

4. AP load report:



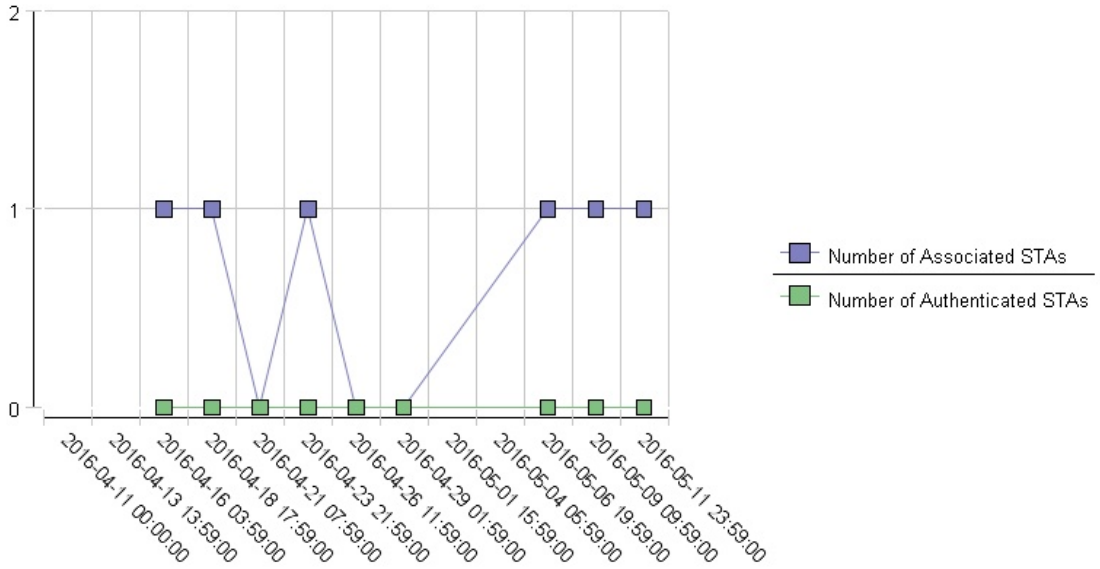


AP Loading List

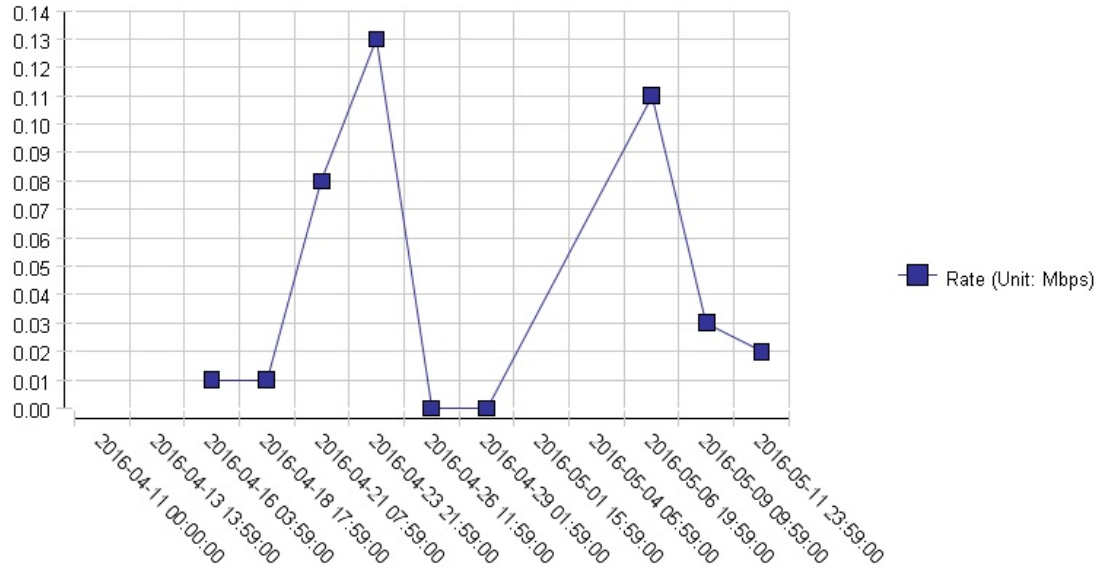
AP Name	IP Address	Vendor	Model	Associate AC	Belonged Hotspot	Number of Associated STAs			Number of Authenticated STAs			Average Rate (Mbps)
						Peak Value	Average Value	Peak Time	Peak Value	Average Value	Peak Time	
ap520	10.10.10.100	Ruijie	AP520-I	WS6008		1	0	2016-05-07 00:00:00	0	0	2016-05-11 00:00:00	0.01
ap130	10.10.10.101	Ruijie	AP130(W)	WS6008		1	1	2016-05-11 00:00:00	0	0	2016-05-11 00:00:00	0.03
5869.6c60.a511	172.29.3.5	Ruijie	AM5528	WS6008		0	0	2016-04-11 00:00:00	0	0	2016-04-11 00:00:00	0.00

5. AC load report:

Number of AC STAs



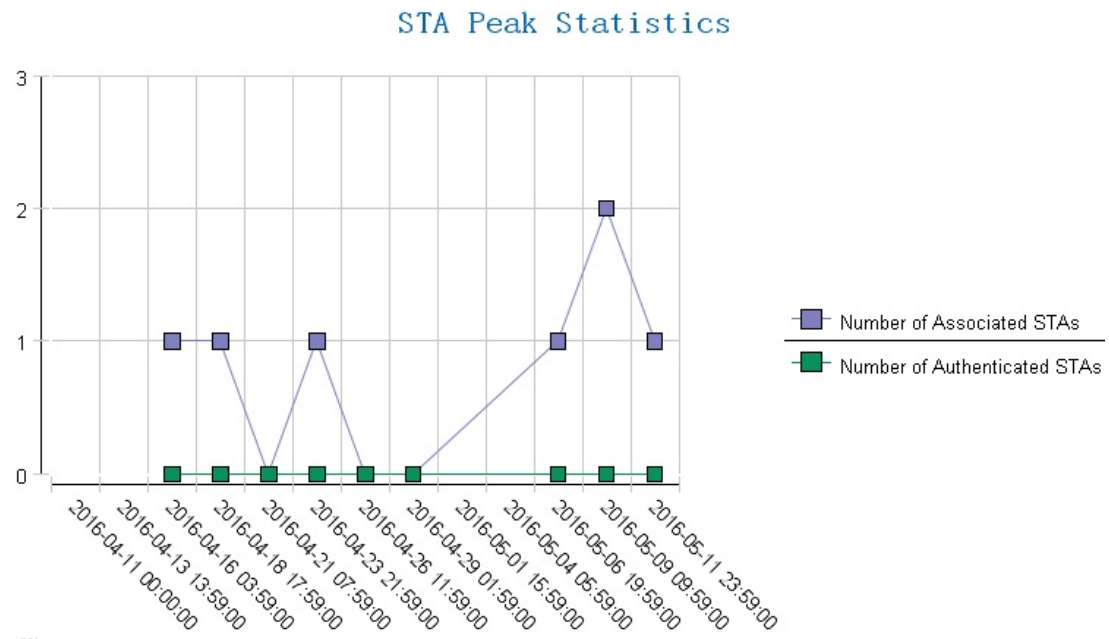
AC Rate



AC Loading List

AC Name	IP Address	Vendor	Model	Number of Associated STAs			Number of Authenticated STAs			Average Rate (Mbps)
				Peak Value	Average Value	Peak Time	Peak Value	Average Value	Peak Time	
WS6008	172.29.3.1	Ruijie Networks	WS6008	2	0	2016-05-07 00:00:00	0	0	2016-05-11 00:00:00	0.02

6. User amount statistical report



Hotspot Name	Hotspot Location	Number of APs	Number of Associated STAs		Number of Authenticated STAs	
			Peak Value	Peak Time	Peak Value	Peak Time
Office		0	0	2016-04-11 00:00:00	0	2016-04-11 00:00:00
Lab		0	0	2016-04-11 00:00:00	0	2016-04-11 00:00:00

7. Rate of AP retreat statistics

Out-of-Service Rate Statistics Report

Global Out-of-Service Rate

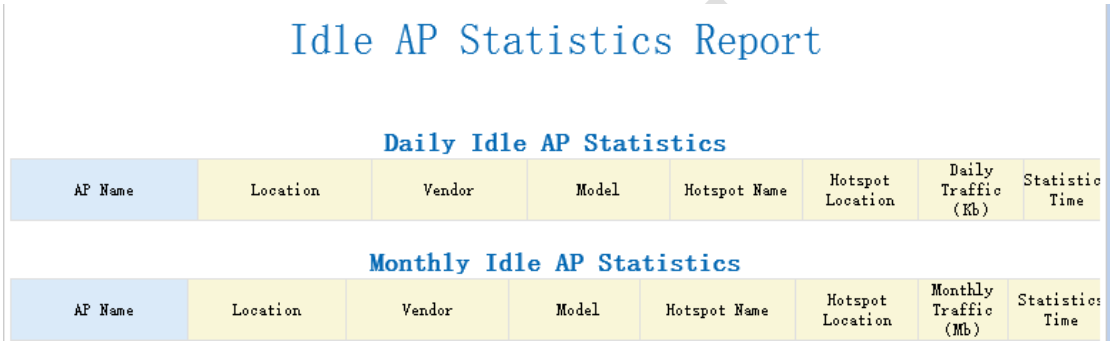
Global Out-of-Service Rate:	14.42%

AP Out-of-Service Rate

AP Name	IP Address	Vendor	Model	Hotspot Name	Out-of-Service Rat (%)
5869.6c60.a511	172.29.3.5	RUIJIE	AM5528		38.59%
ap520	10.10.10.100	RUIJIE	AP520-I		4.66%

Hot Spot Out-of-Service Rate

Hotspot Name	Path	Hotspot Location	Out-of-Service Rate (%)



Idle AP Statistics Report

Daily Idle AP Statistics

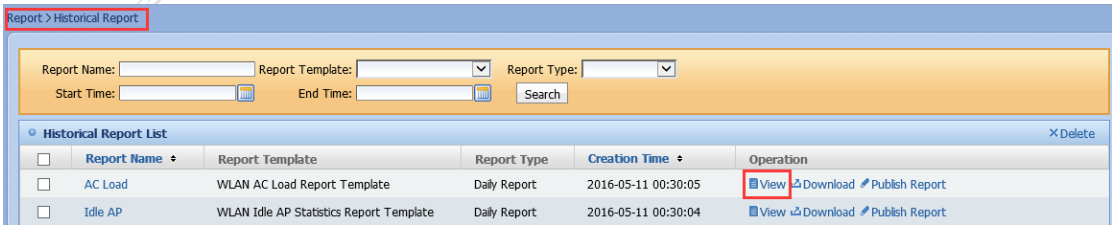
AP Name	Location	Vendor	Model	Hotspot Name	Hotspot Location	Daily Traffic (Kb)	Statistic Time

Monthly Idle AP Statistics

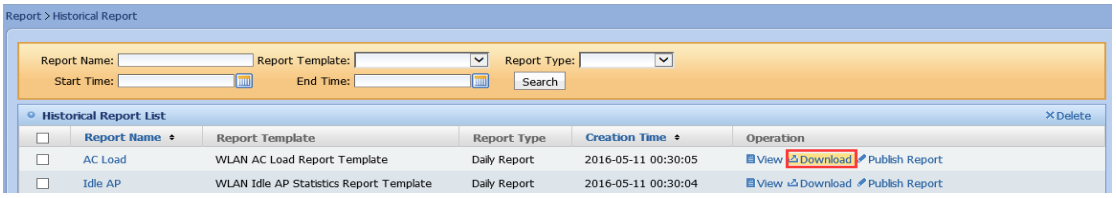
AP Name	Location	Vendor	Model	Hotspot Name	Hotspot Location	Monthly Traffic (Mb)	Statistics Time

5.12.2 History Report

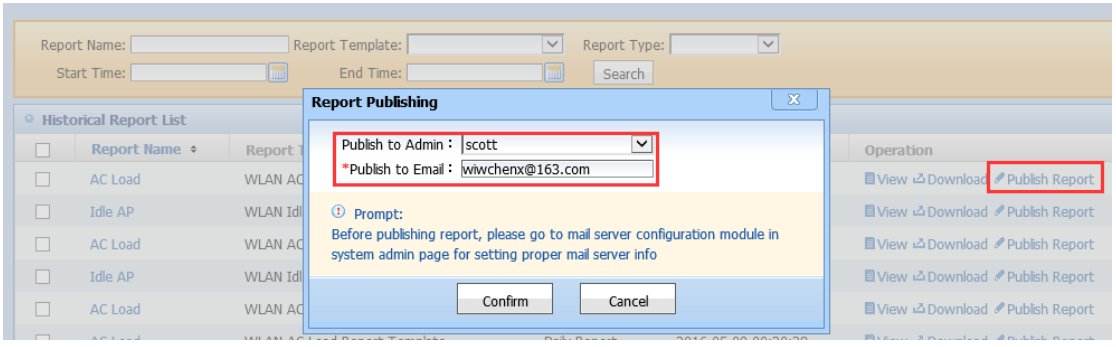
Go to ***Report > History report >View***



Click the ***download*** button to save the report

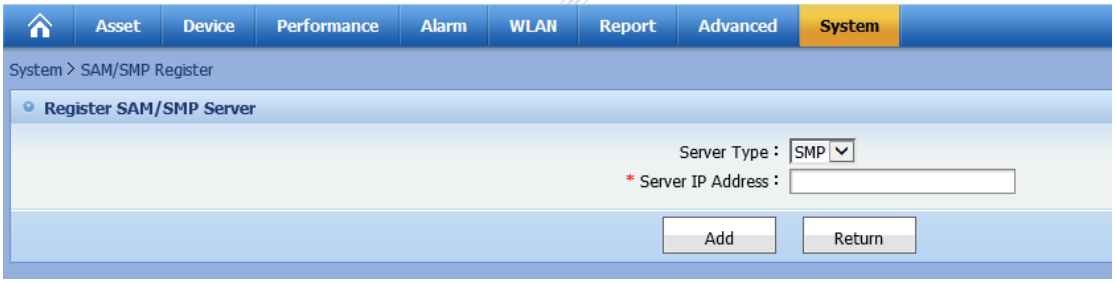


Publish Report。

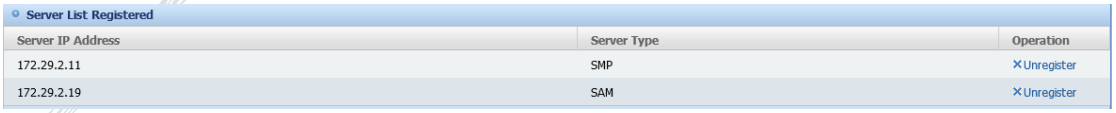


5.13 Association Configuration

Go to ***System > Mail server SAM/SMP Register to*** set the information of mail server.



Depending on the type to make a selection, the SNC configuration needs to add the IP address of the server.



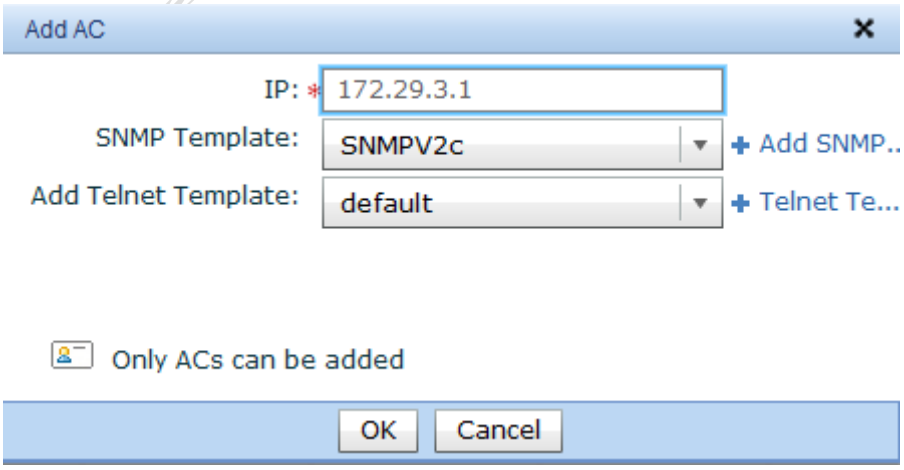
6 WLAN Module Configuration Guide

6.1 Basic Configuration

In order to manage the wireless network by SNC, there are some basic configuration.

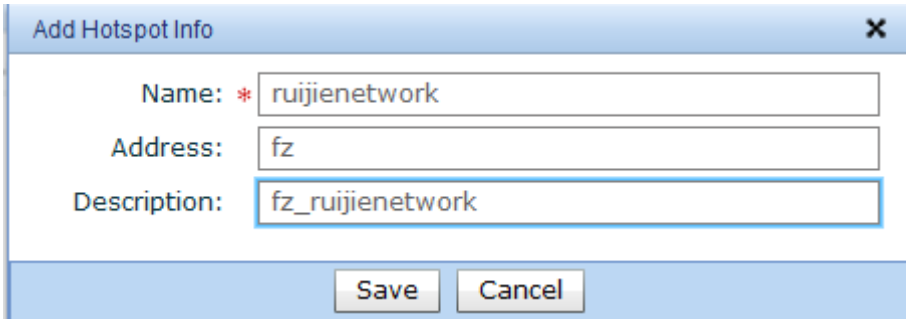
Configure the SNMP and telnet protocols, refer to the basic configuration.

To add wireless devices AC, go to ***WLAN > AC > Add,*** Add the IP address of AC, select the relevant SNMP template and TELNET template.

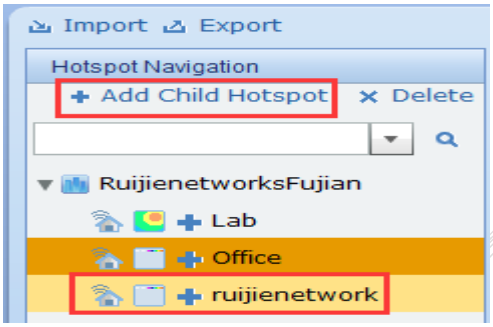


Click "***OK***" when complete setting.

To add hotspot information, go to ***WLAN > Hotspot> Add Child Hotspot,*** Add a hot spot information, click ***save***.

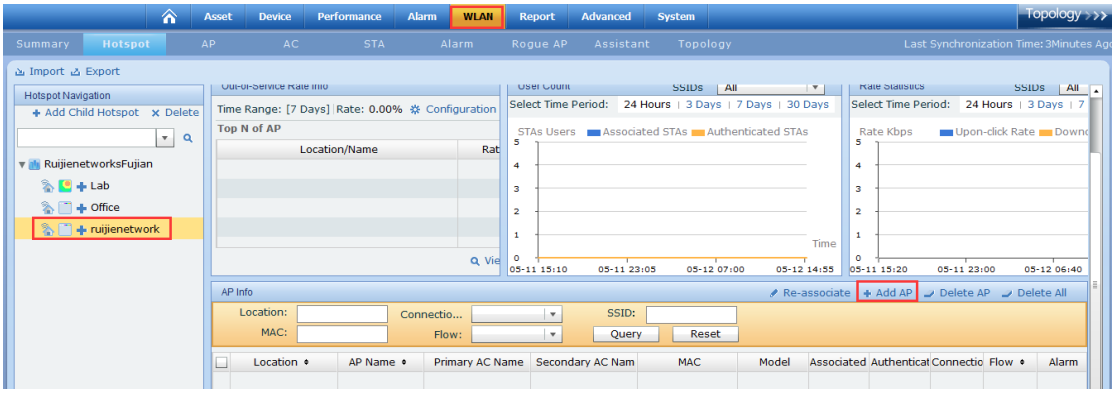


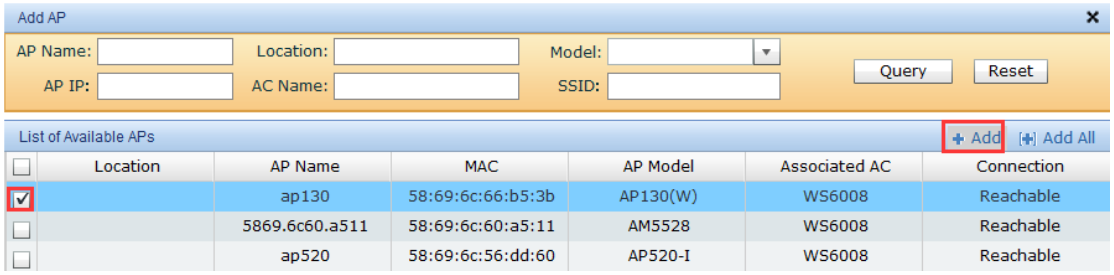
And then on the basis level 1 hot spot, click "***Add Child Hotspot***" to add a lower level of hot.



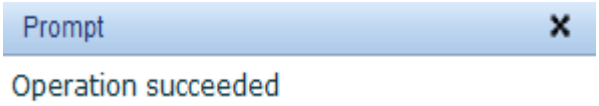
Note: if you need to add much hot information, you can directly import hot information template in the web interface, please refer to the WLAN module configuration guide.

Wireless device AP associated hotspot, go to ***WLAN > Hotspot***, select the hot spot, click "***add AP***"





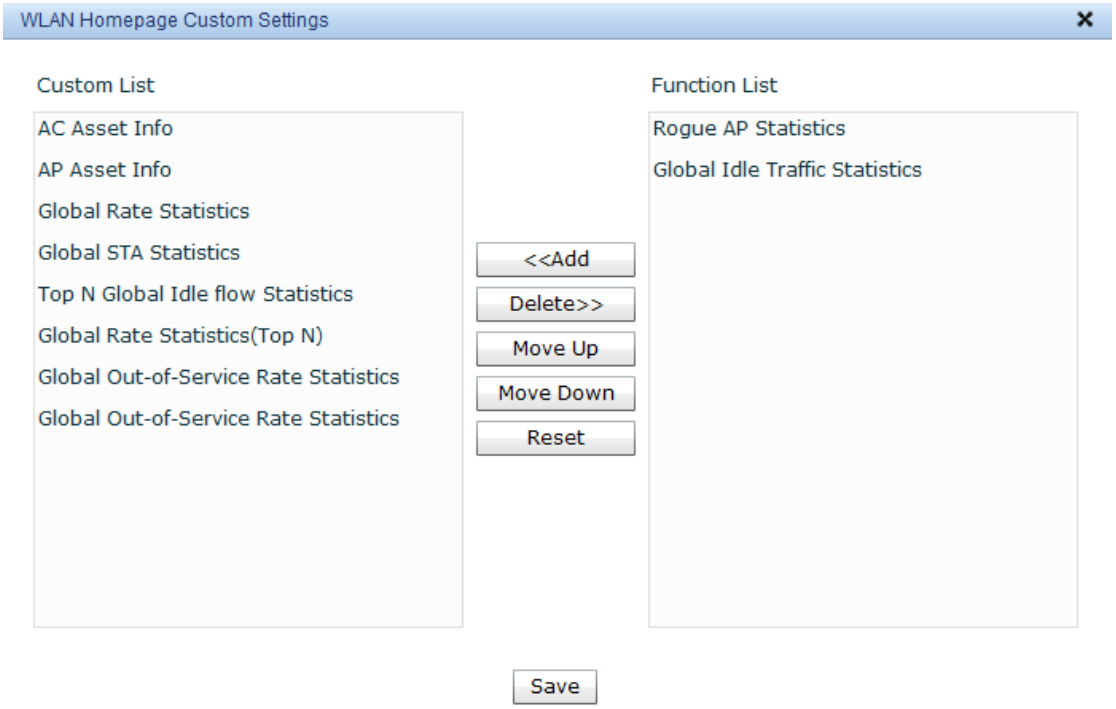
Added successfully, you can find "AP hotspots associated information,"



6.2 Comprehensive

6.2.1 Custom Settings Page

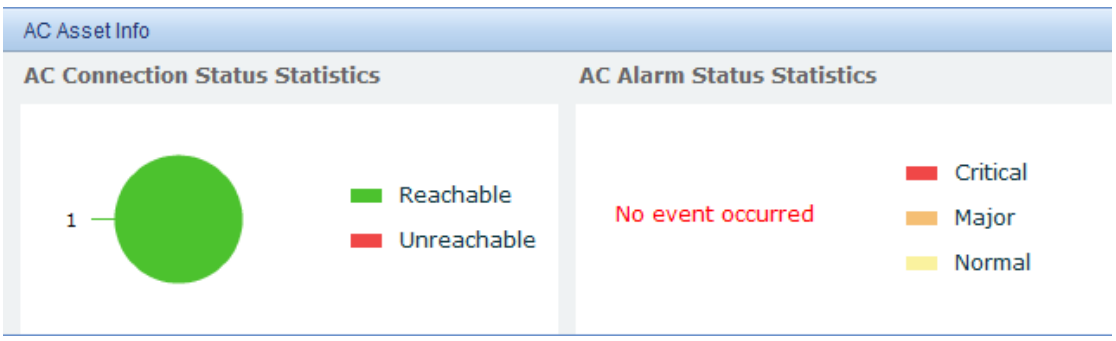
The function is used to customize the comprehensive page statistics. Go to ***WLAN > Summary,*** according to the actual needs of custom to add the function list.

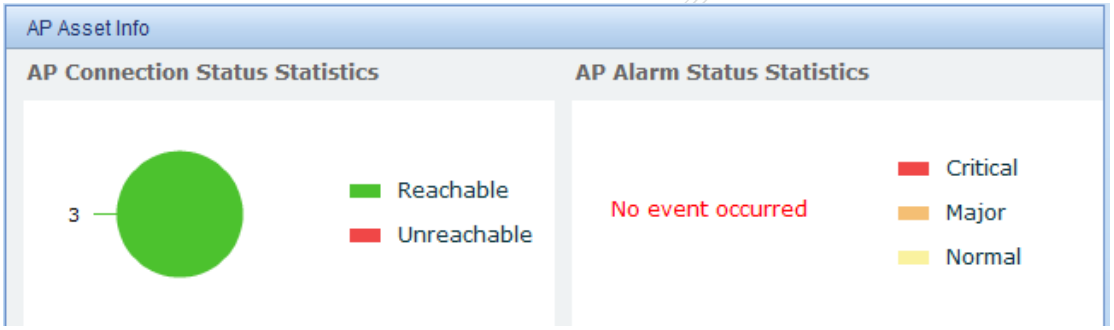


Click "***Save***" when complete setting.

6.2.2 AC、AP Assets Information

The function is used to check the results of the reachability of AC in the system and the results of the AC alarm statistics.. go to ***WLAN > Summary ,*** to see the AC and AP asset information, as shown in the following figure:

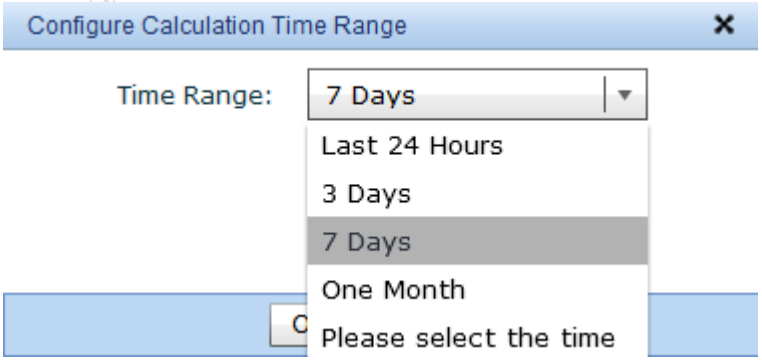




6.2.3 Total Network Availability Rate Statistics(TopN)

The function is used to view the statistics of the hot spot availability rate TopN and AP availability rate TopN..

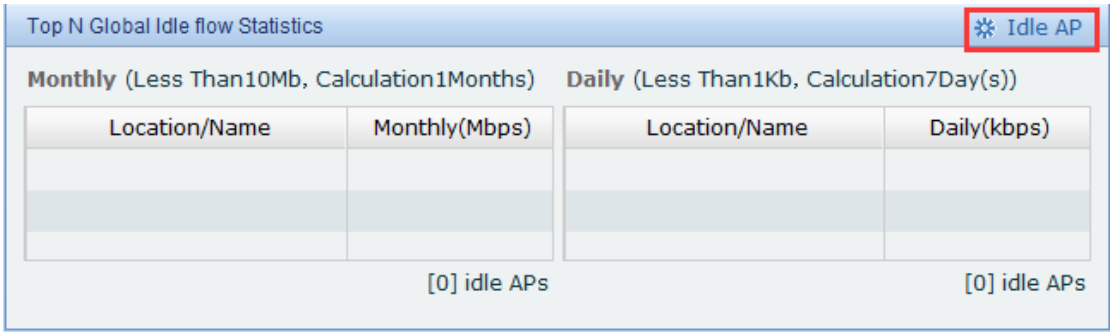
Go to ***WLAN > Summary >Global Out-of-Service Rate >Configuration Time .***

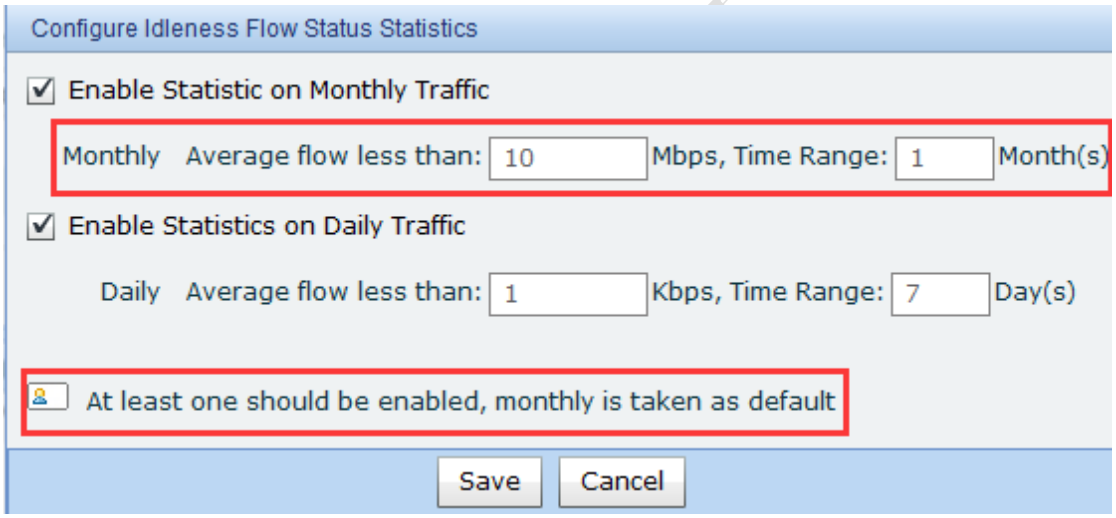


Click "***OK***" when complete setting.

6.2.4 Total Network Idle Traffic Statistics (TopN)

The function is used to view the entire network AP idle traffic TopN. go to ***WLAN > Summary >Top N Global Idle flow Statistic >Idle AP,*** According to the actual need to configure the flow and time of the super idle AP

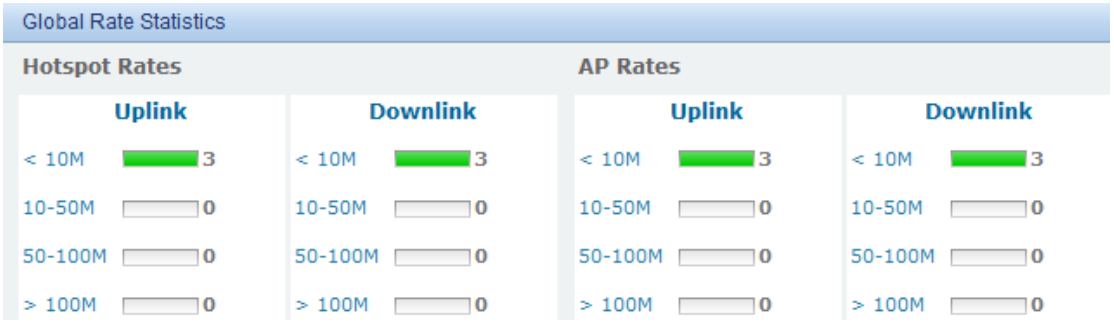


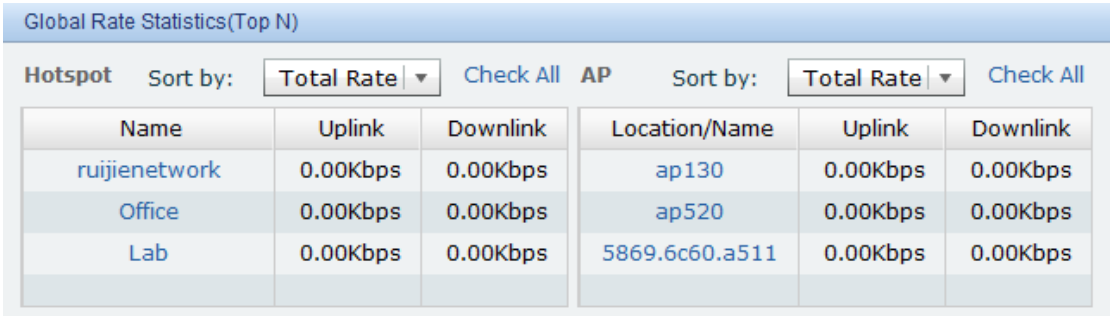


Click "***Save***" when complete setting.

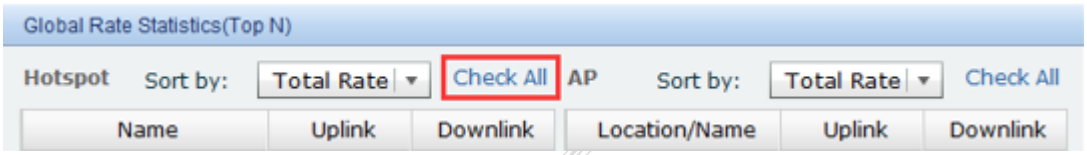
6.2.5 Total Network Rate Statistics (TopN)

The function is used to view the statistics of the hot spot rate TopN and AP rate TopN. Go to ***WLAN > Summary >Global Rate Statistics.***

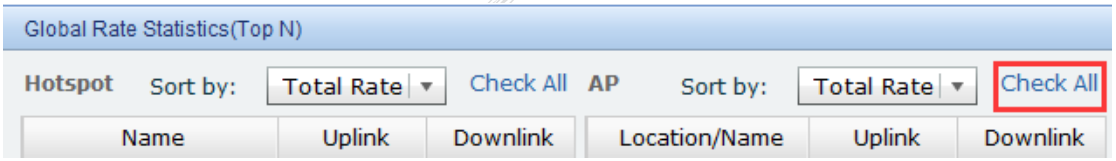




Go to ***WLAN > Summary >Global Rate Statistics (TopN) >Hotspot Check All to*** show all the hot rate statistics



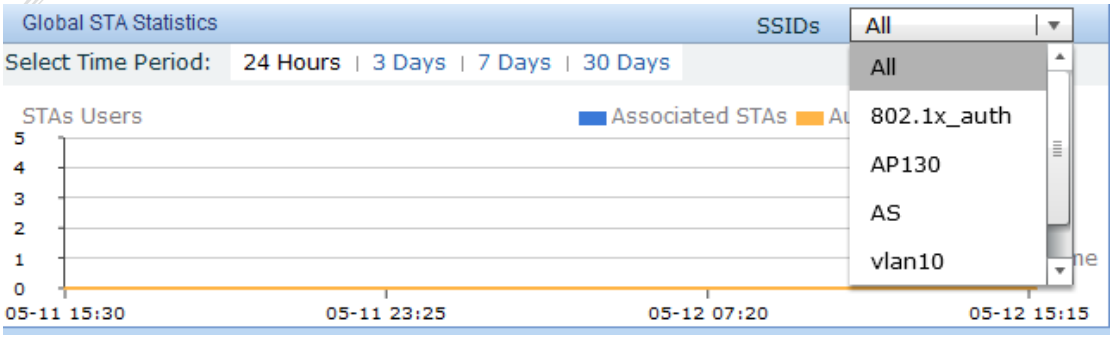
Go to ***WLAN > Summary >Global Rate Statistics (TopN) >AP Check All to*** show all the AP rate statistics



6.2.6 Full Network Users Statistics

The function is used to view the statistical time of the total network AP the number of related users and the number of authentication users.

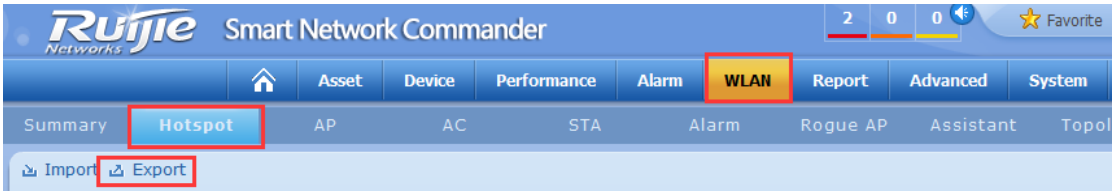
Go to ***WLAN > Summary >Global STA Statistics.*** Then Click on the drop-down menu statistical SSID.



6.3 Hot Spot

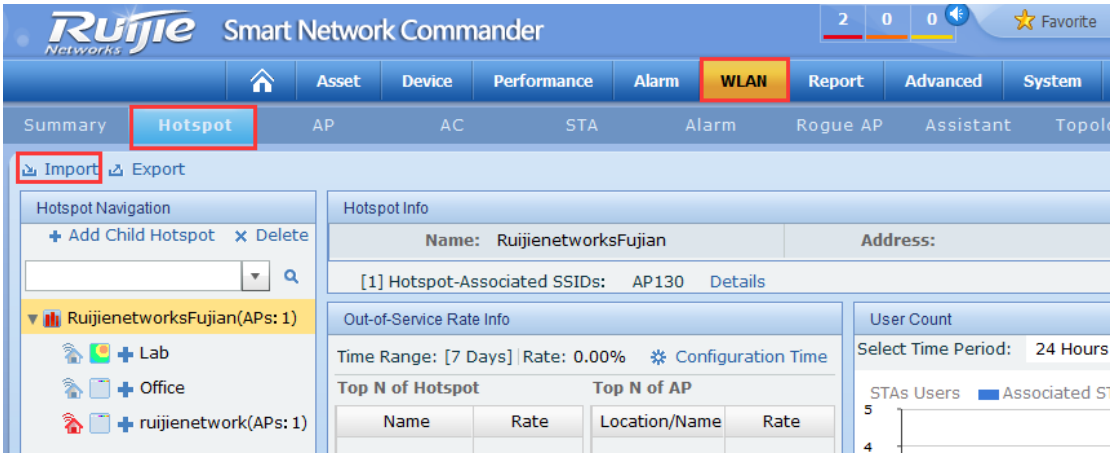
6.3.1 Import and Export Hot Spot

The function is used to import and export hotspot information. Go to ***WLAN > Hotspot >Export,*** to export the hotspot relative files.



Field	Hotspot Name	Parent Hotspot Name	Hotspot Location	Remarks
Mandatory or Optional	Mandatory (The length can be between 1 to 30 characters)	Mandatory (The length can be between 1 to 255 characters)	Mandatory (The length can be between 1 to 255 characters)	(The length can be between 1 to 255 characters)
Description	Hotspot name, for example, building 19 or 19#.	A parent hotspot refers to the hotspot that the current hotspot belongs to (the top hotspot does not belong to any hotspot and the **Parent Hotspot Name** filed is NULL).	A hotspot location must be exact to the building number or floor number.	The remark serves as additional description.
	RuijienetworksFujian			
	Office	RuijienetworksFujian		
	ruijienetwork	RuijienetworksFujian	fz	fz_ruijienetwork
	Lab	RuijienetworksFujian		

Click on the "***import"*** after the hot information excel form is completed.

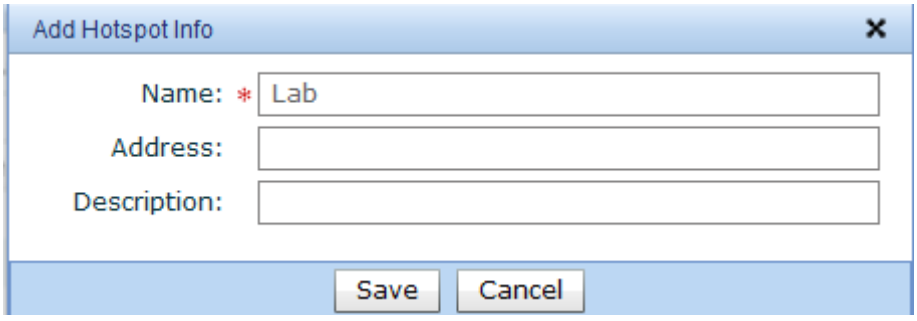


6.3.2 Hot spot information modification

The function is used to modify the hot information, including hot names, hot spots address, and hot description. Go to ***WLAN >***

Hotspot, in the upper right corner click the icon 

, to add Hotspot information.

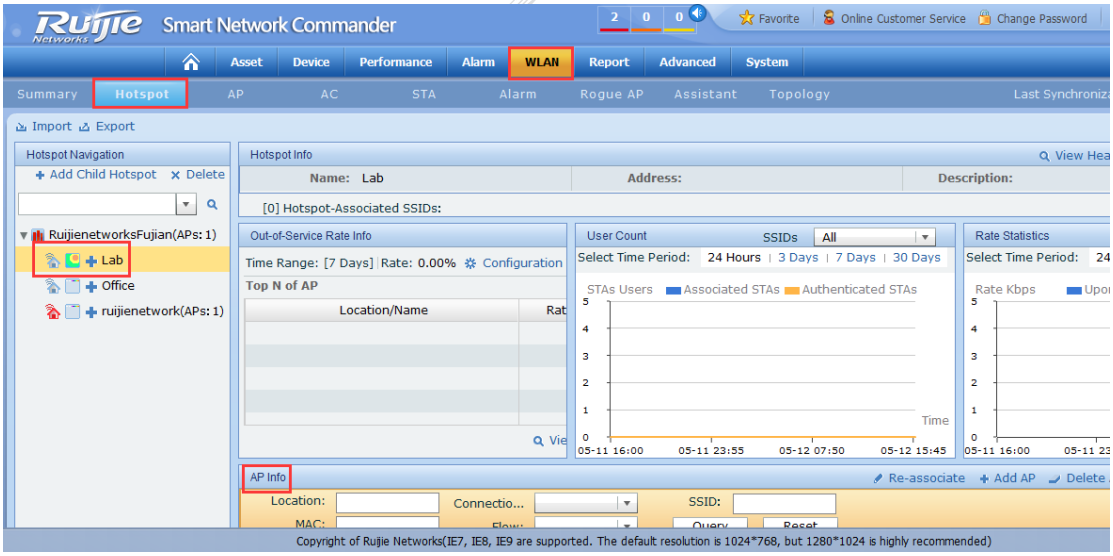


Click "***Save***" when complete setting.

6.3.3 How to view the hot spot related AP information

This feature is used to check the hot spot information. Go to ***WLAN > Hotspot,*** in the upper right corner click the icon 

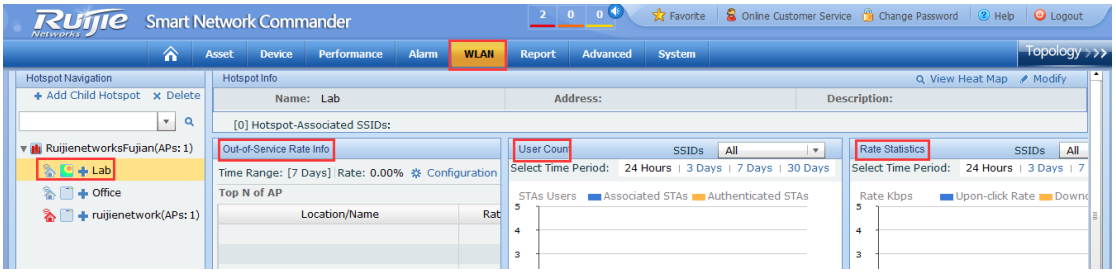
, then click "***AP Info***" to check the hotspot information.



6.3.4 How to view hot spot information statistics

The function is used to check the hot statistical information. Go to ***WLAN > Hotspot,*** in the upper right corner click the icon 

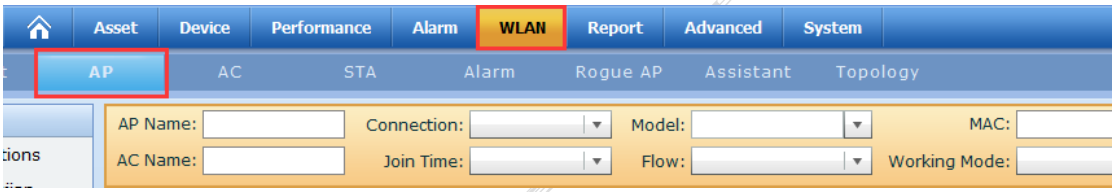
, then click "***Out-of-Service Rate Info***" and ***"User Count"*** to check the hotspot statistical information.



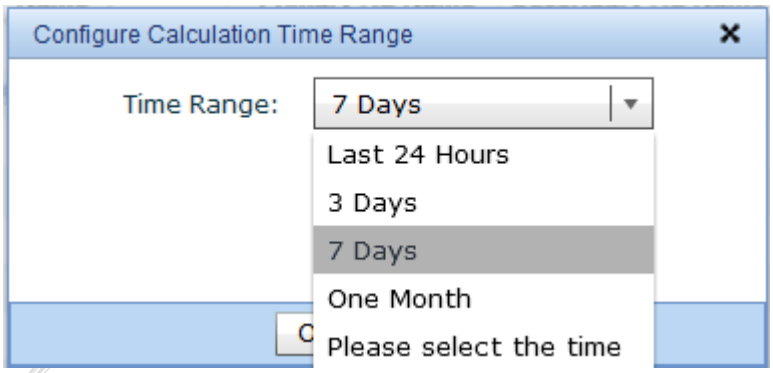
6.4 AP

6.4.1 AP Query Page Configuration

The function is based on query AP conditions, query related AP information. Go to ***WLAN > AP,*** according to the actual needs, you can query terms such as AP, AC, MAC, and SSID.

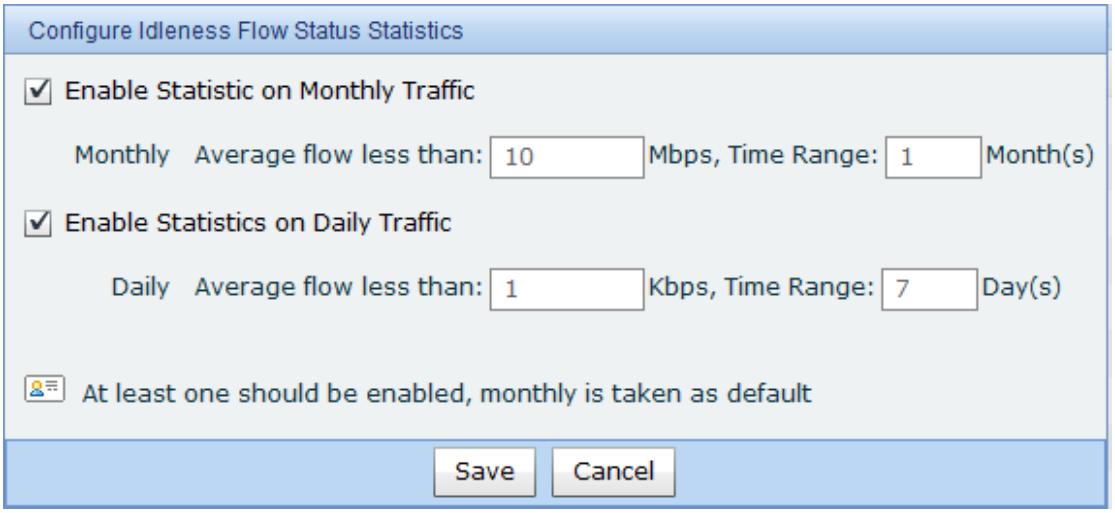


Click "***Out-of-Service Rate***" to set the calculation time range.

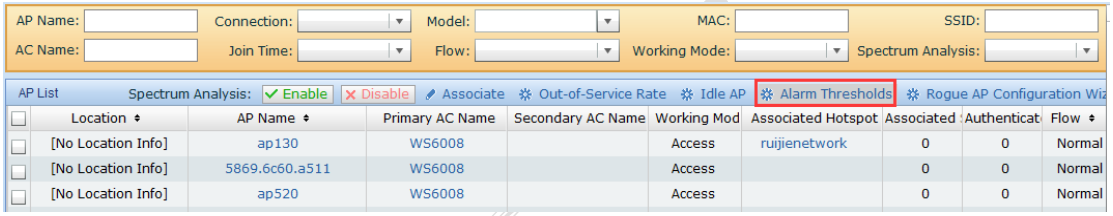


Click "***OK***" when complete setting.

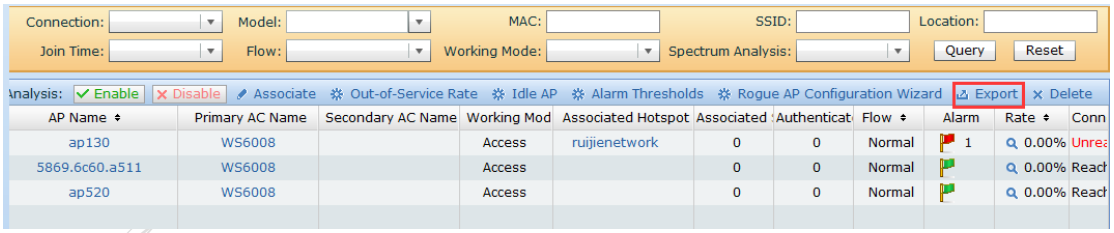
Click "***Idle AP***" and then set configuration parameters about idleness flow status statistics.



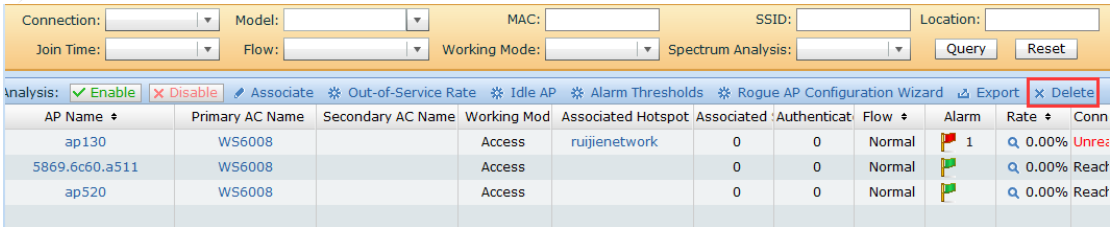
Click "***Alarm Thresholds***" to set the alarm threshold.



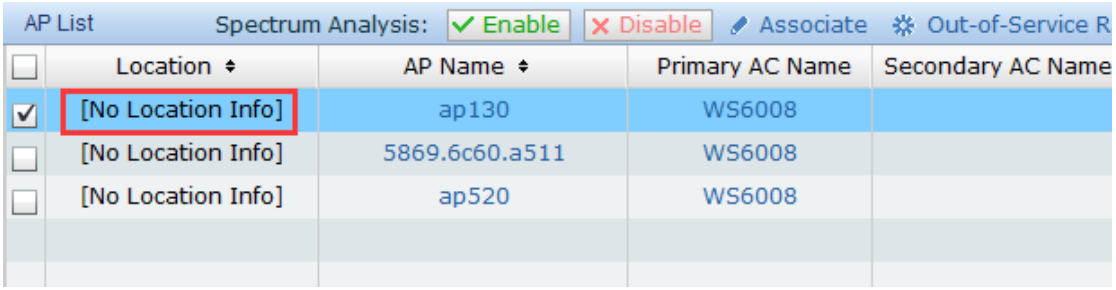
Click "***Export***" to export query results.

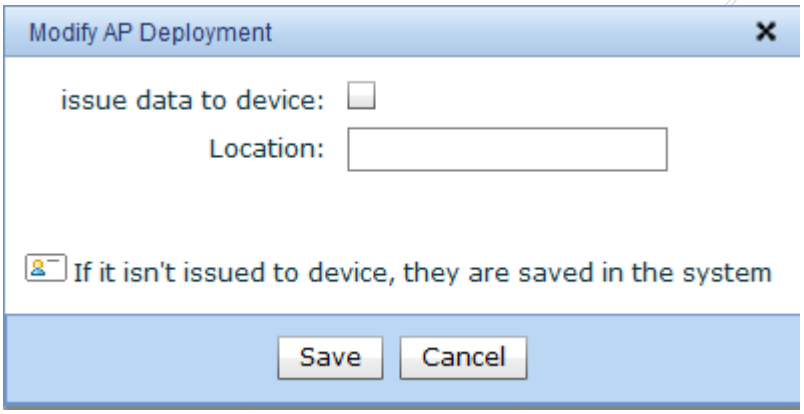


Click "***Delete***" to delete Aps.



Click "***Modify***" to modify the physical location of the AP

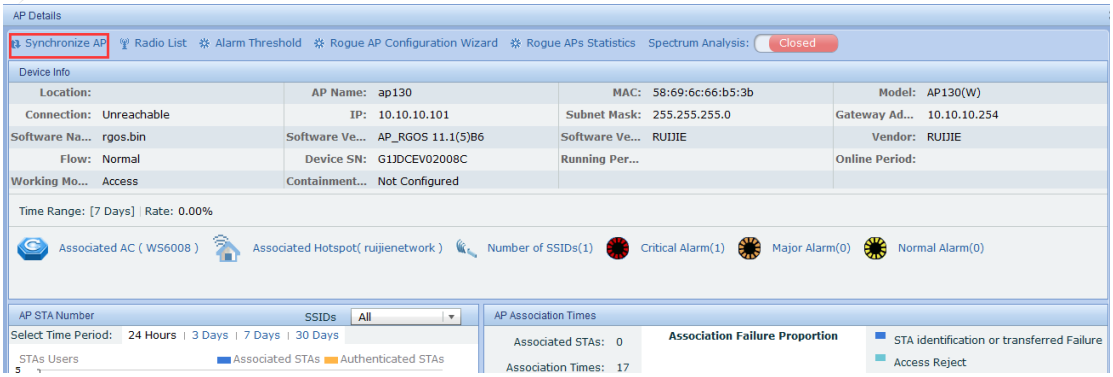




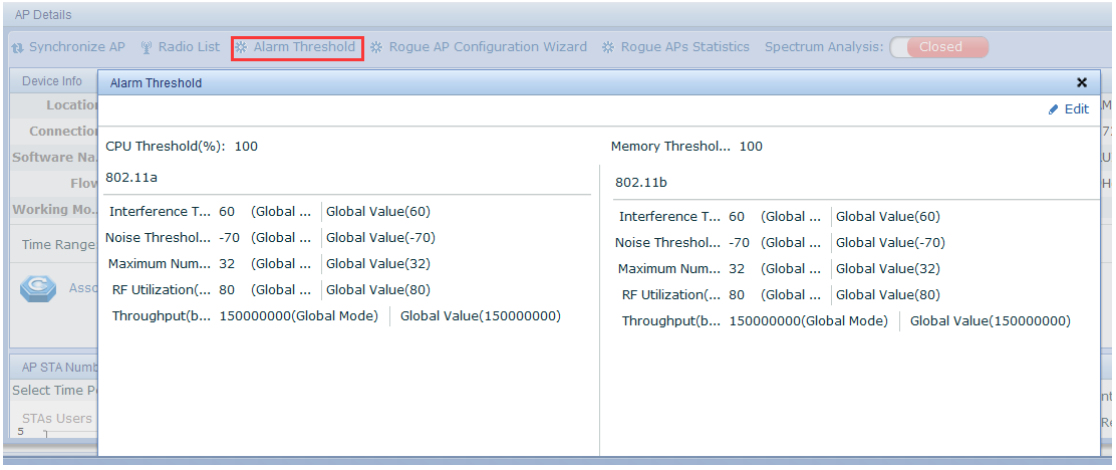
Click “Save” when complete setting.

6.4.2 Operation AP Detailed Page

Go to ***WLAN > AP >AP name >Synchronize AP*** to synchronous AP information.



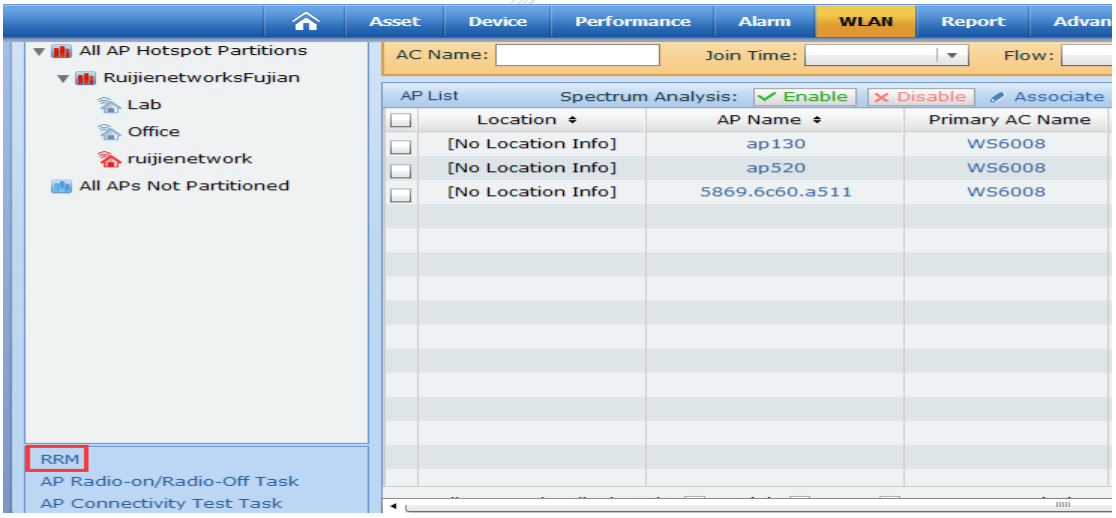
Go to ***WLAN > AP >AP name >Alarm Threshold*** then click Edit to set the alarm threshold.



Click “***Save***” when after completing.

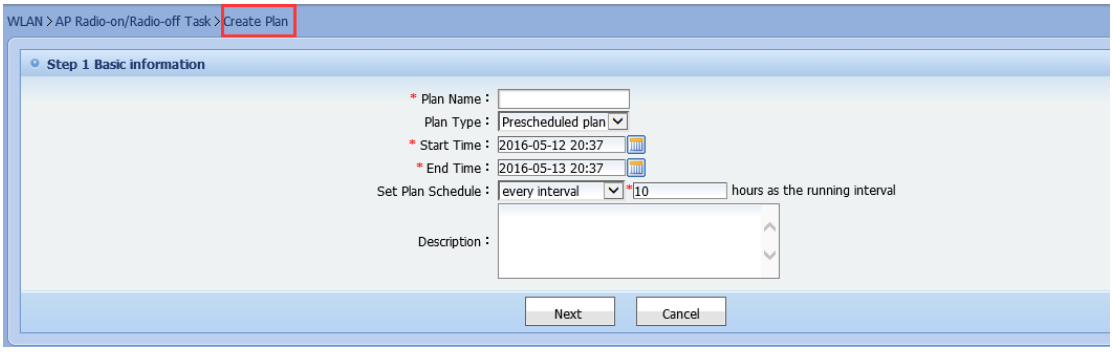
6.4.3 How to view RRM's AP statistics

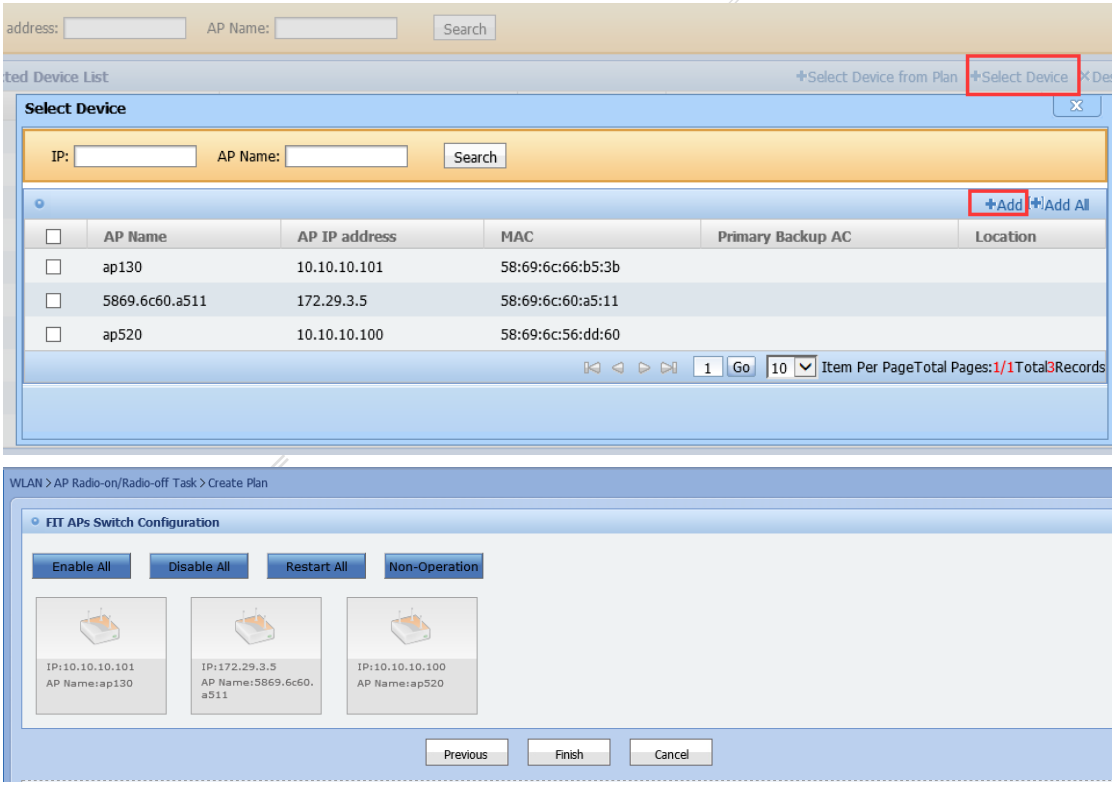
Go to ***WLAN > AP >RRM*** to view the RRM AP statistics.



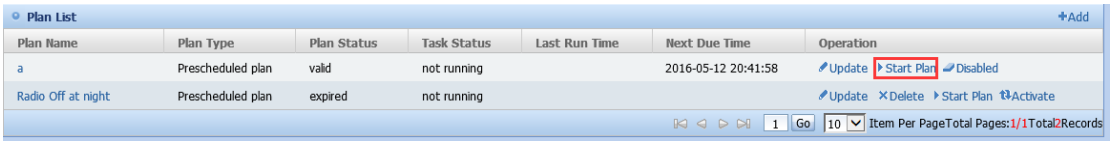
6.4.4 How to configure the AP timer switch

Go to ***WLAN > AP >AP Radio-on/Radio-Off Task >Add*** to add a timer switch AP task., then select device and configure Aps Switch, Click finish, return the AP timer switch task list.

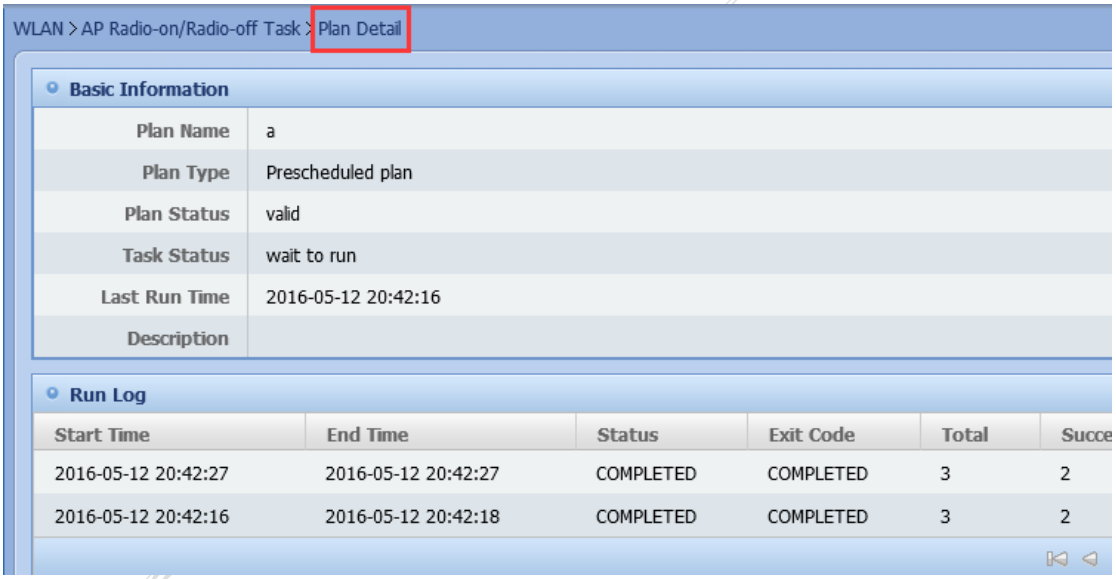




Click “Activate” then start Plan.

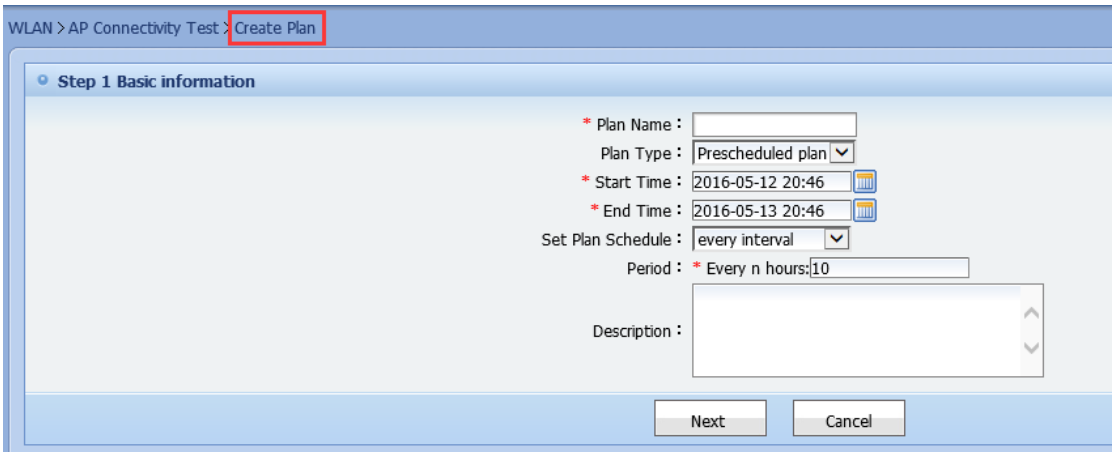


After the implementation of the task plan, click on the name of the project to see the results of the plan, as shown below:

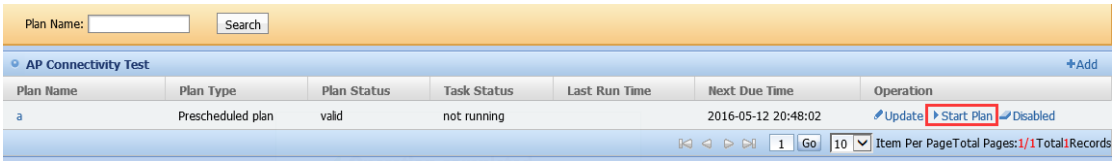


6.4.5 How to configure AP connectivity test tasks

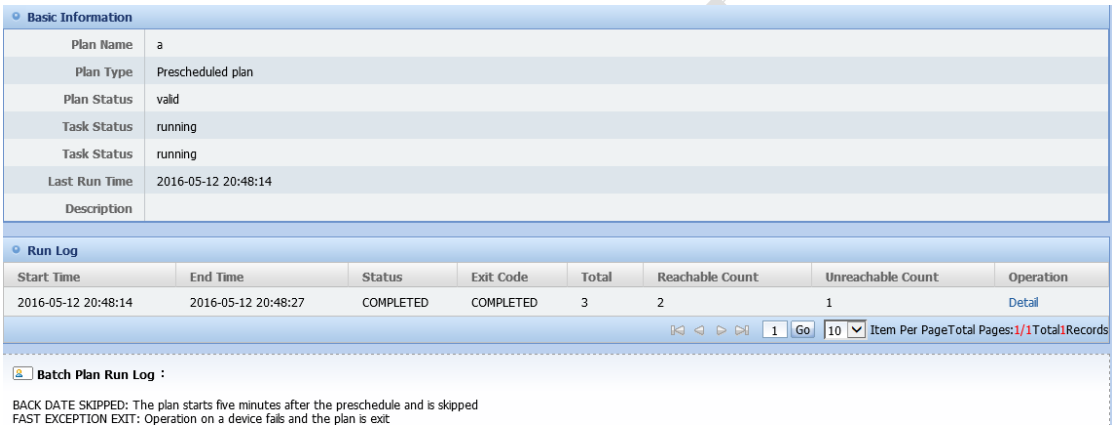
Go to ***WLAN > AP >AP Connectivity Test Task >Add*** to add a connected test task. Then select device.



Click "***finish***", and the system returns the AP connectivity test task list, Click "***Activate***" then start plan.

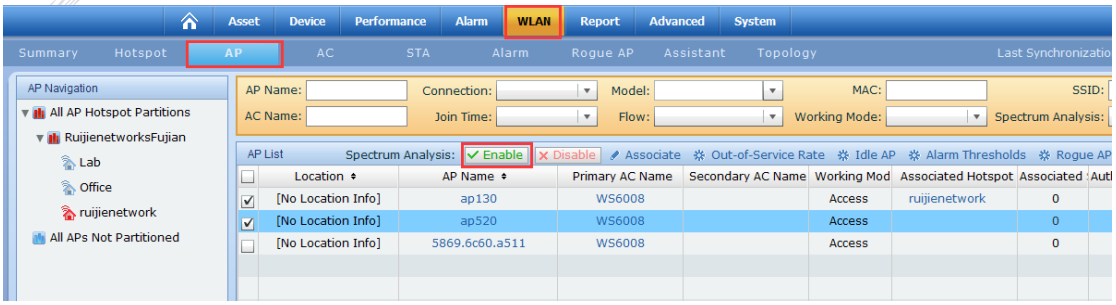


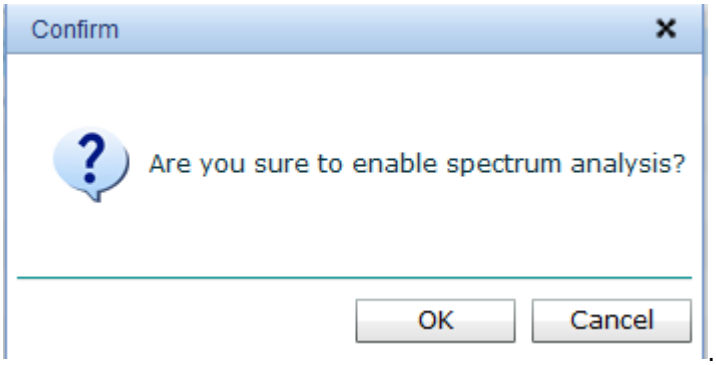
After the implementation of the task plan, click on the name of the project to see the results of the plan, as shown below:



6.4.6 Batch Setting Spectrum Analyzer

Go to ***WLAN > AP*** select APs then click "***Enable***" to enable the spectrum analysis.

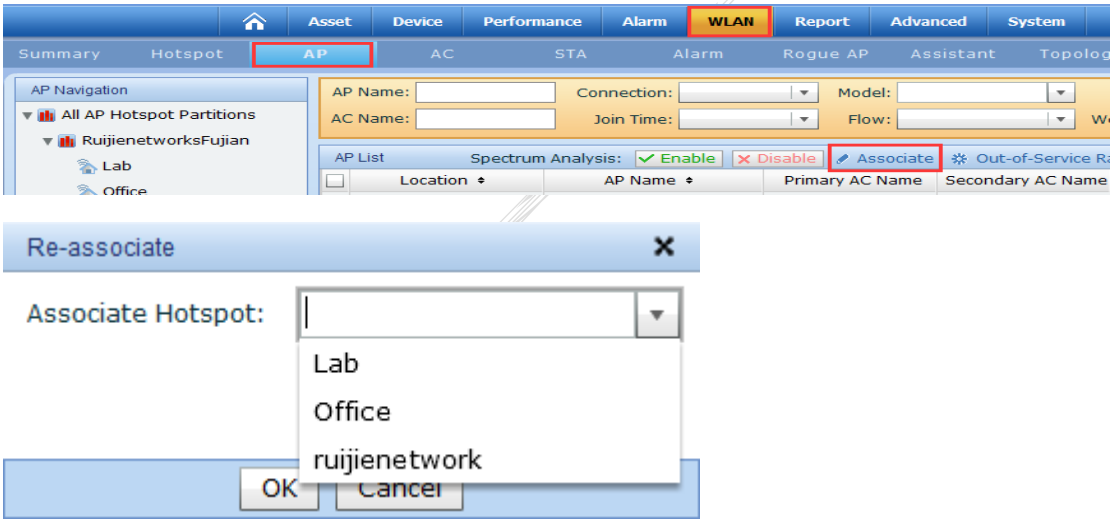




Click "***OK"*** to return to AP List.

6.4.7 How to bulk associate AP to hot spots

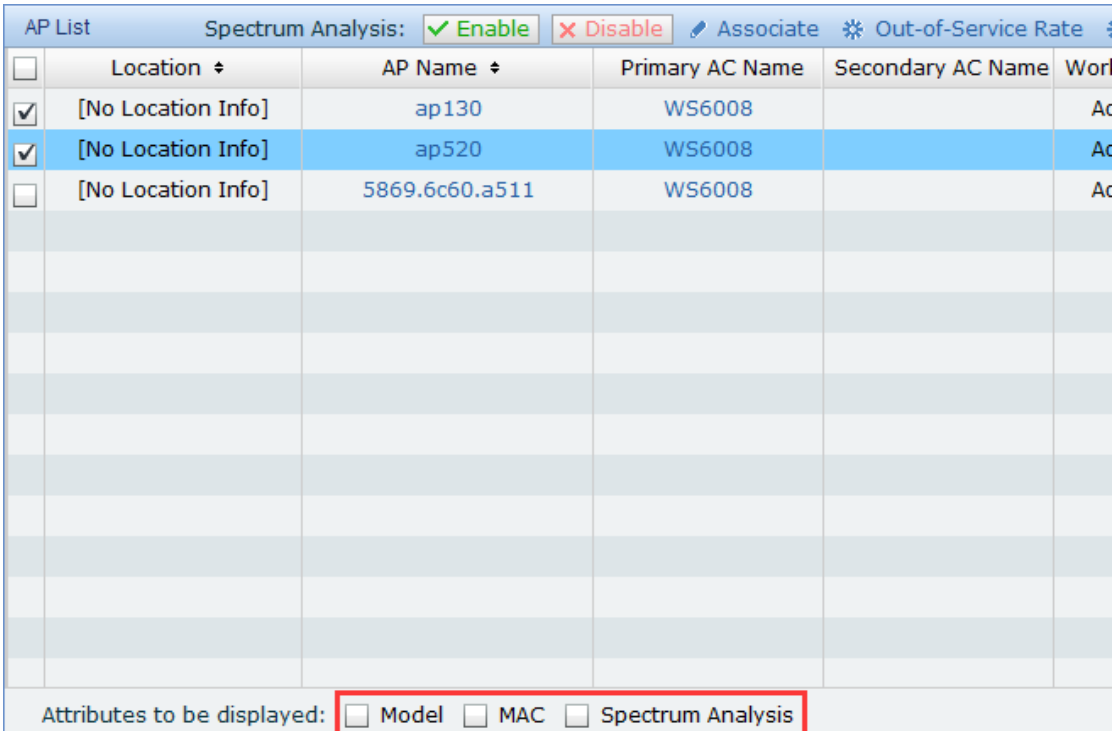
Go to ***WLAN > AP >Associate*** to link the hot spot



Click "***OK***" when complete setting.

6.4.8 Customize AP List

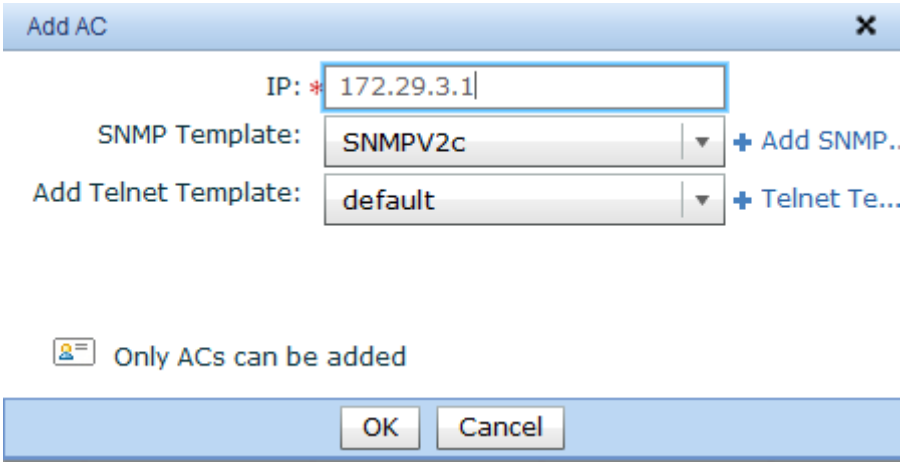
The AP page can choose whether to show more AP fields, as shown in the following figure:



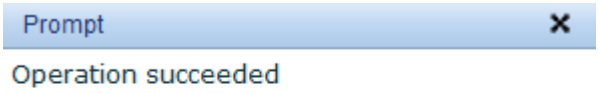
6.5 AC

6.5.1 Add, Query and Delete AC

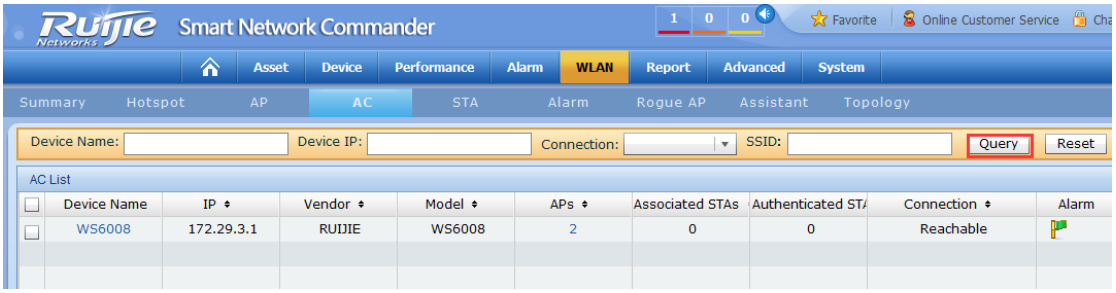
This feature is used to add, query and delete the AC device. Go to ***WLAN > AC >Add,*** add the IP AC address, select the relevant SNMP template and TELNET template



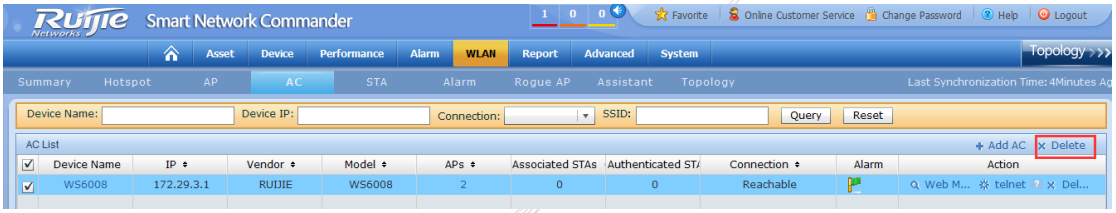
After completion, it will automatically synchronize the associated AP AC



Enter the query terms, click the ***query***.

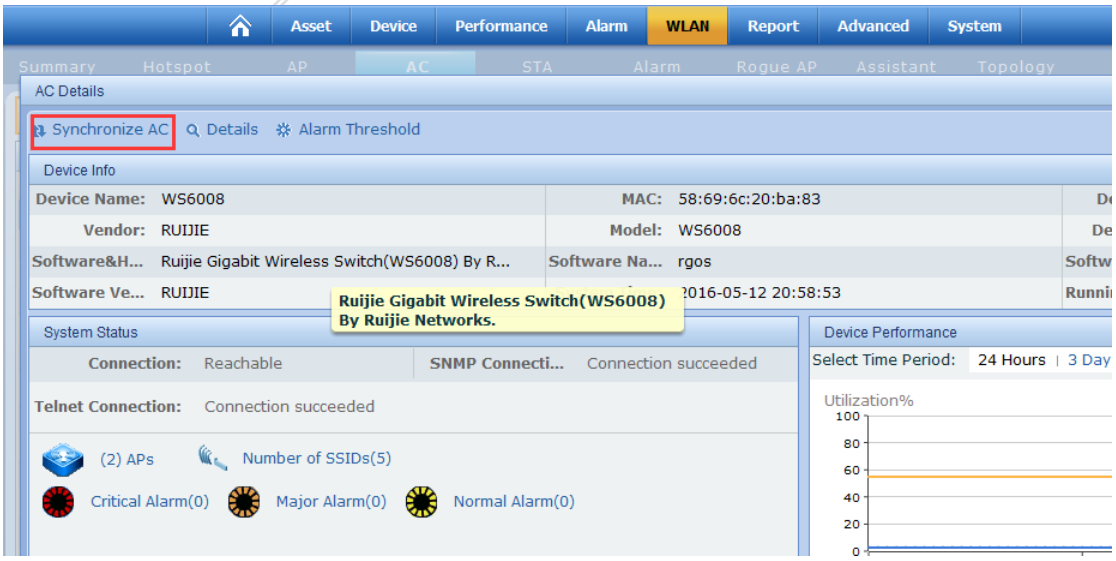


Click "***delete***" to delete AC



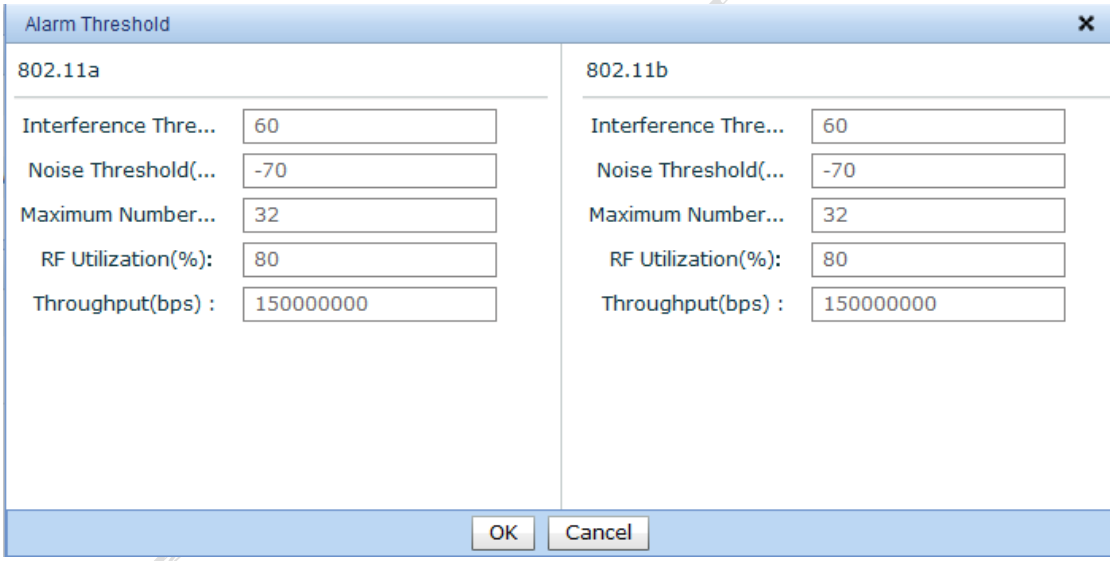
6.5.2 How to synchronize AC information

This feature is used to add, query and delete the AC device. Go to ***WLAN > AC >AC name >Synchronize AC,*** to synchronize AC.



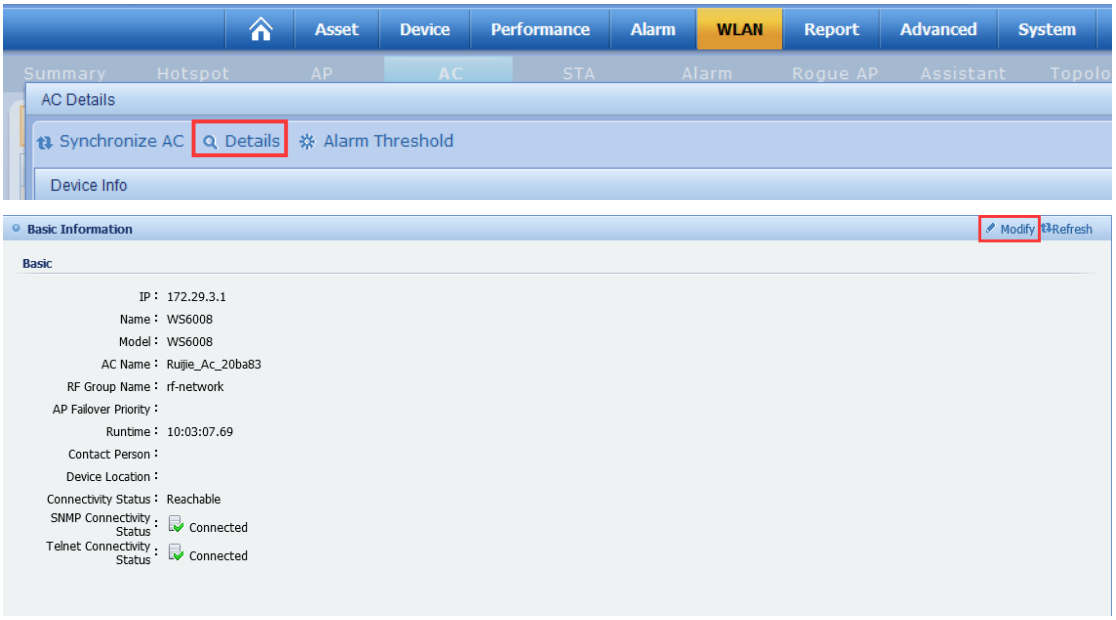
6.5.3 How to set up AC alarm threshold

This feature is used to add, query and delete the AC device. Go to ***WLAN > AC >AC name >Alarm Threshold,*** according to the actual needs, set AC alarm threshold parameters.

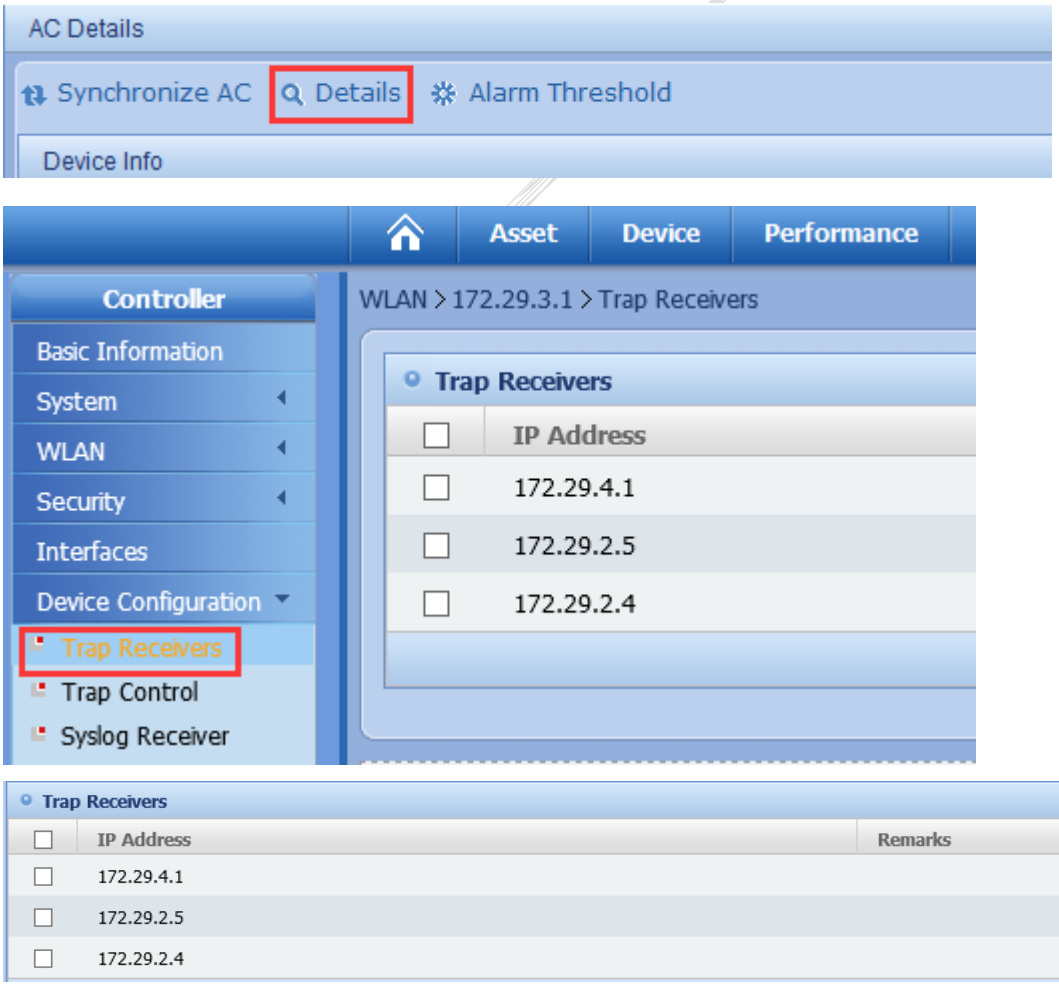


6.5.4 AC device information detailed configuration

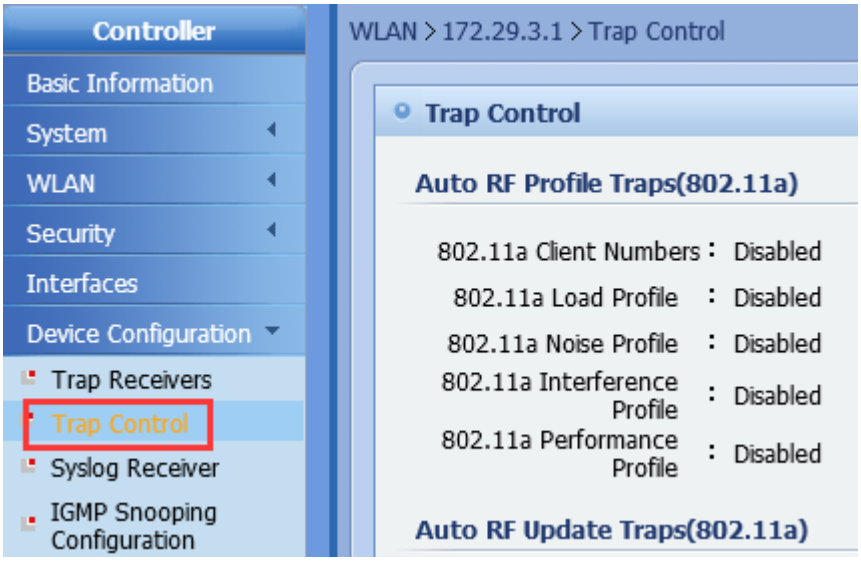
Go to ***WLAN > AC >AC name >Details >Basic Information and then*** modify the general properties of the wireless controller configuration information.

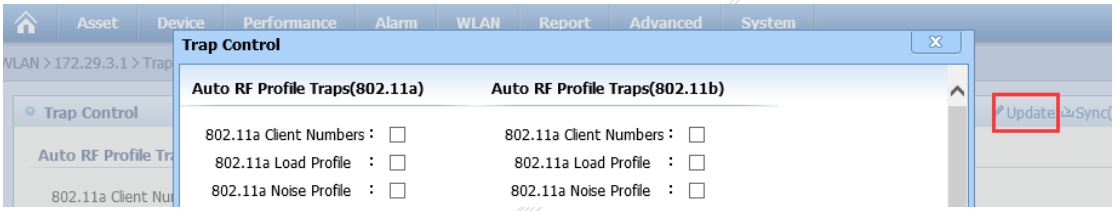


Go to ***WLAN > AC >AC name >Details >Trap Receivers and then*** click "Add" to add the message server which needs to receive traps.

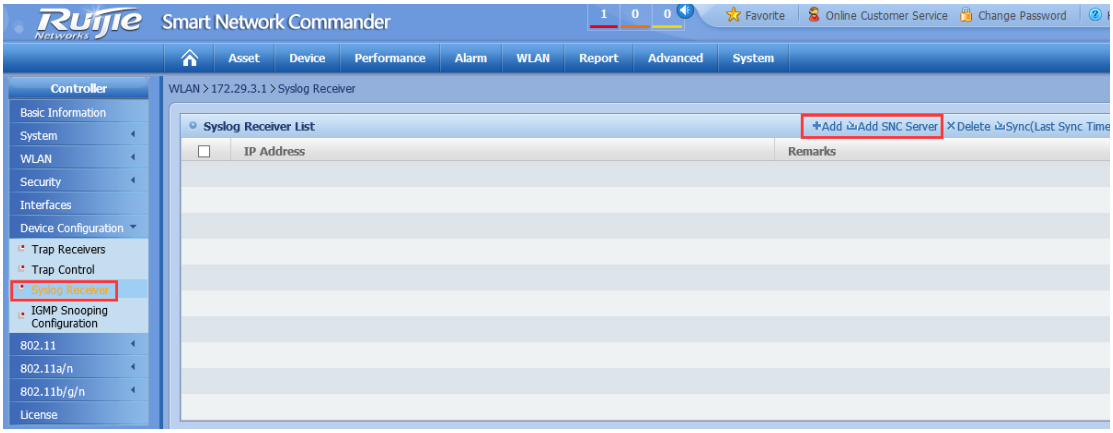


Go to ***WLAN > AC >AC name >Details >Trap Control and then*** click "***Update***" to modify the Trap parameters.





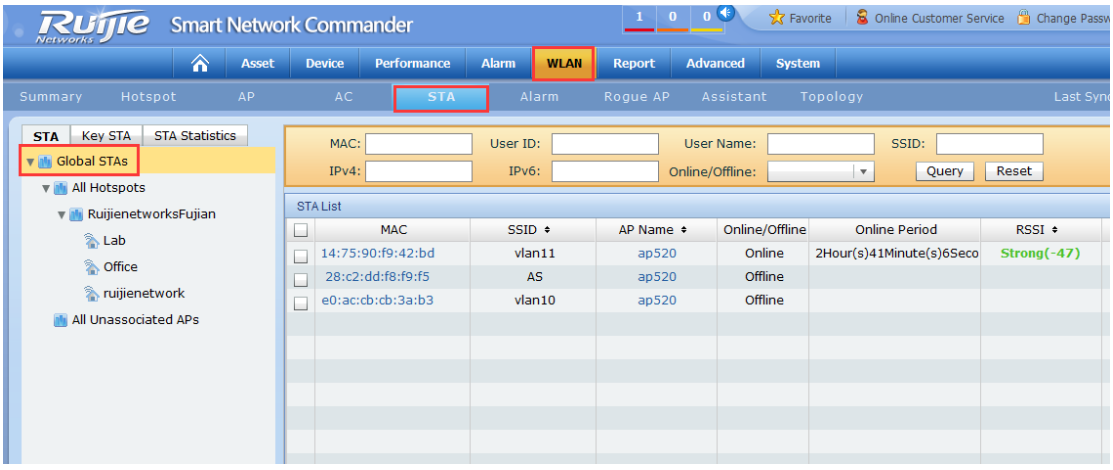
Go to ***WLAN > AC >AC name >Details >Syslog Receiver and then*** Syslog reception can be added, deleted, synchronous operation.



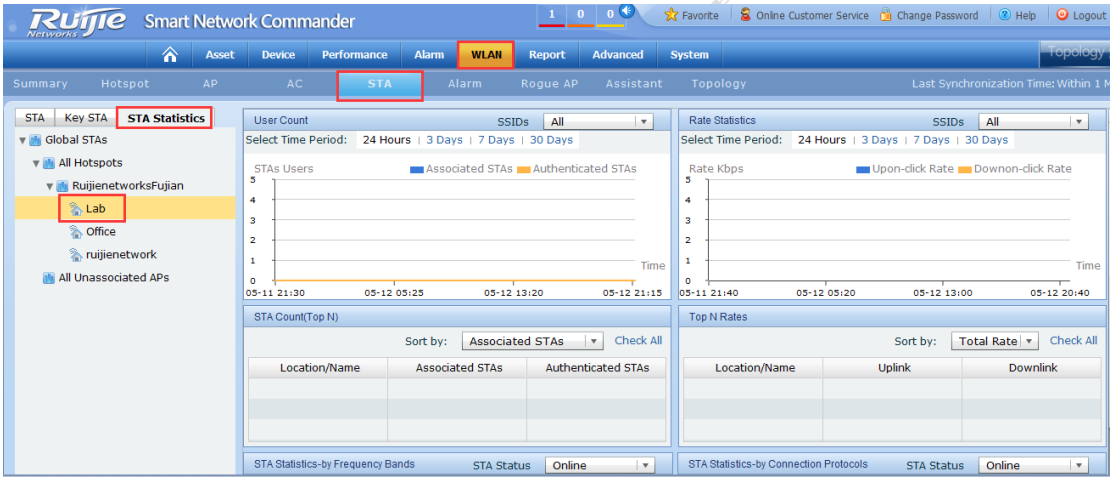
6.6 Users

6.6.1 How to view the entire network of wireless user statistics

Go to ***WLAN > STA >Global STAs ,*** add the view the entire network of wireless user statistics.

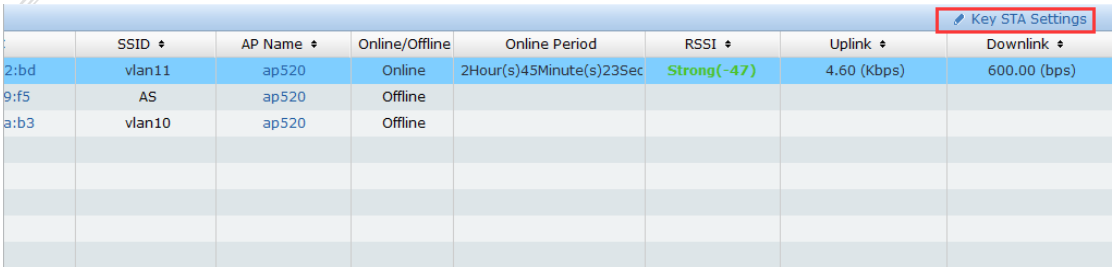


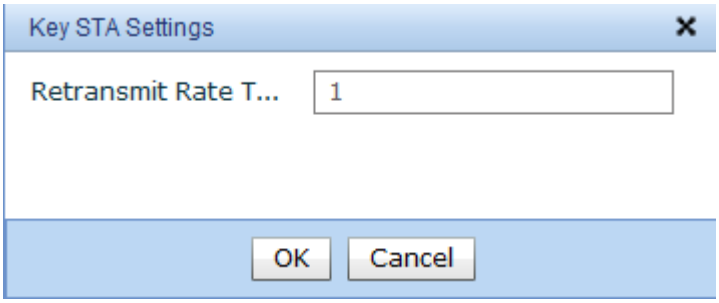
Click ***"STA Statistics***" then select a hot spot to view the STA information.



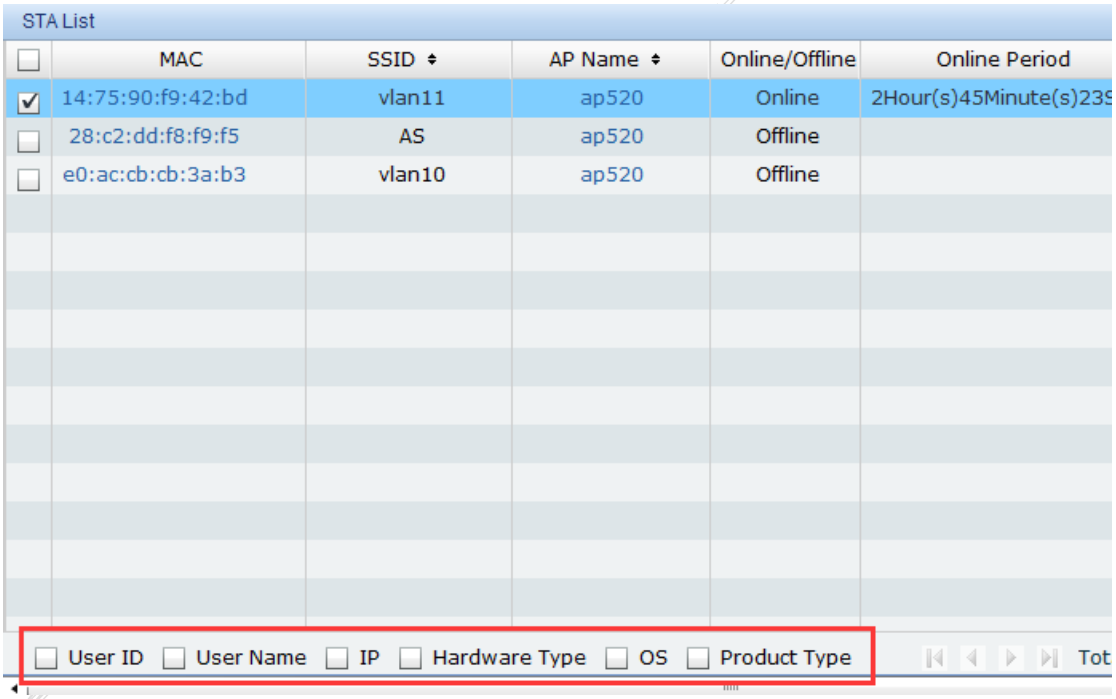
6.6.2 Full Network Users List

Go to ***WLAN > STA >a single hot spot >Key STA Settings,*** to set the threshold for the received packet retransmission rate

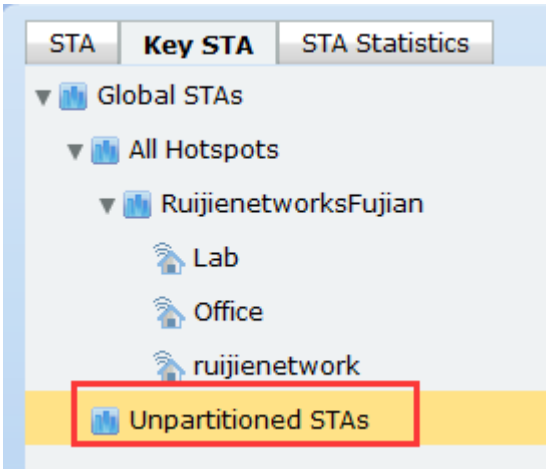


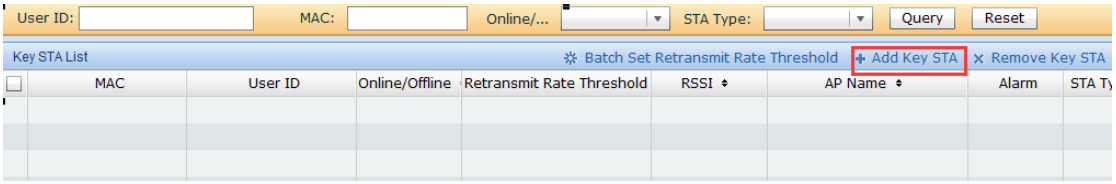


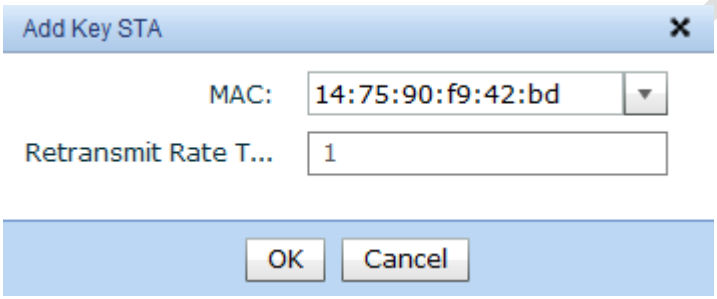
Customize more terminal fields, as shown in the following figure:



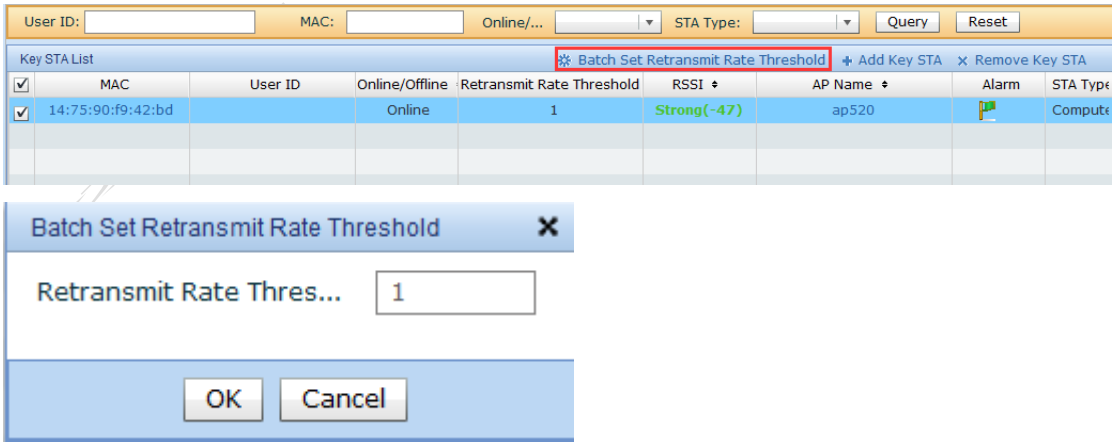
Go to ***WLAN > STA > Key STA,*** then select a single hot port, click "***Add Key STA"*** and set the parameters of STA.



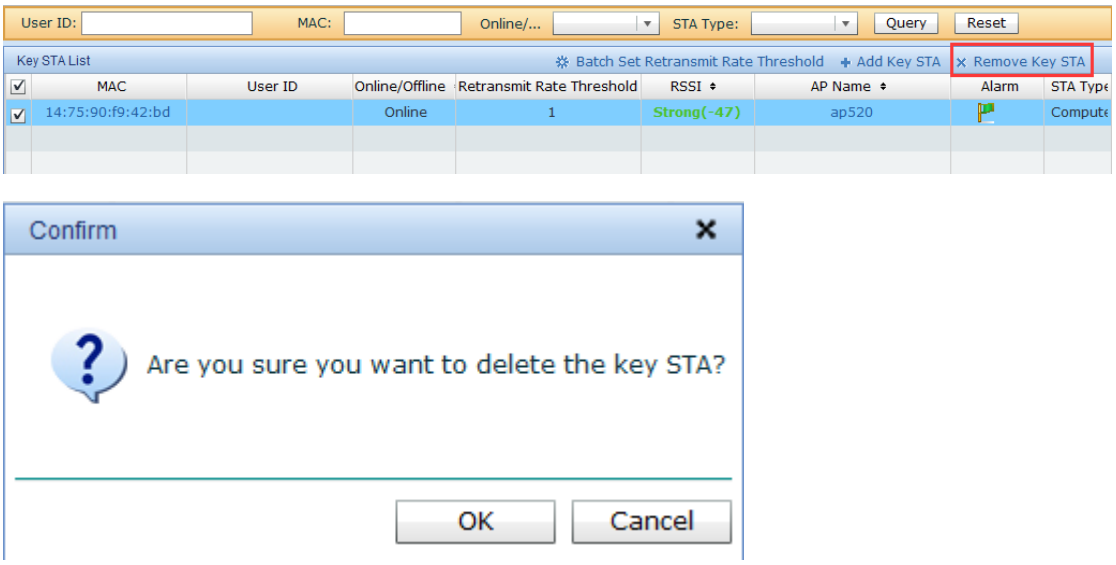




Click "***Batch Set Retransmit Rate Threshold"*** to set the threshold for the received packet retransmission rate.



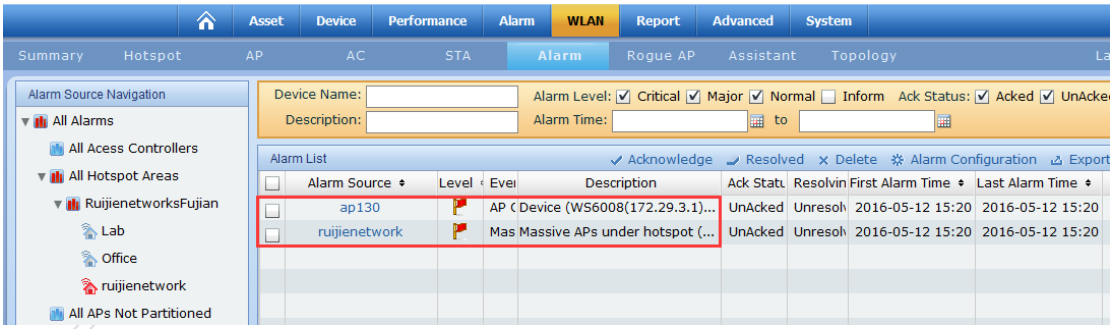
Click "***Remove Key STA***" to delete the Key STA.



6.7 Alarm

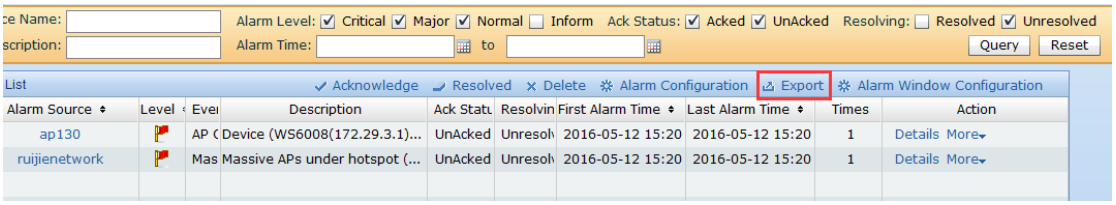
6.7.1 Alarm Source Navigation

Go to ***WLAN > Alarm,*** then click " ▼ ", you can render the associated subordinate navigation. Then click the current alarm source, and the alarm list is presented with the alarm information generated by the device.



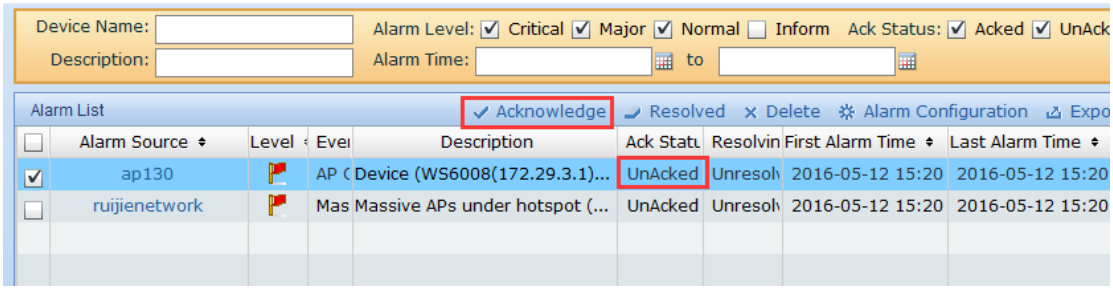
6.7.2 Export Alarm Procedure

Go to ***WLAN > Alarm,*** then click "***Export"*** to export the alarm list.

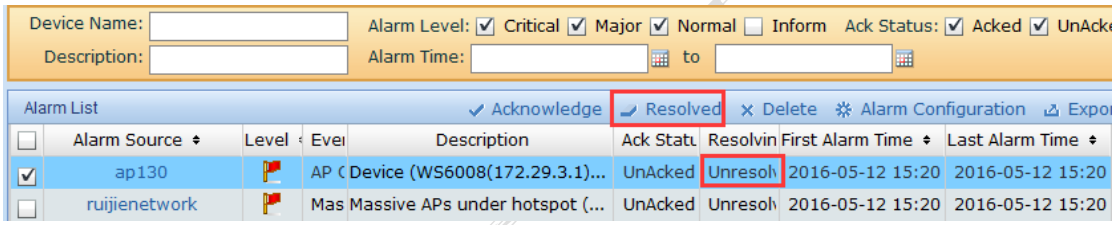


6.7.3 How to deal with alarm information

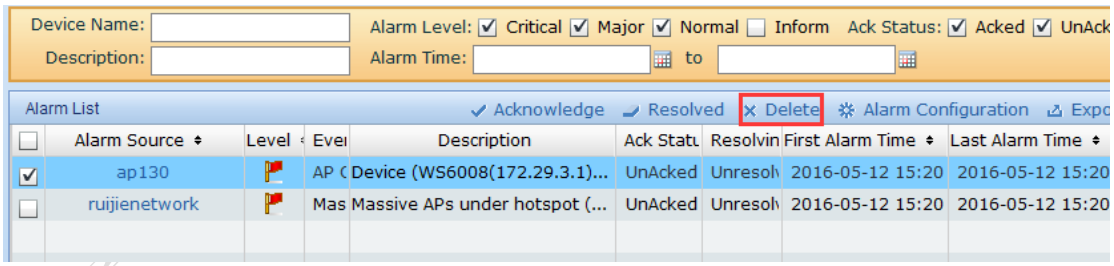
Go to ***WLAN > Alarm***, then Select the check box before the alarm information in the alarm list. Click "***Acknowledge***" then alarm status change to confirmation.



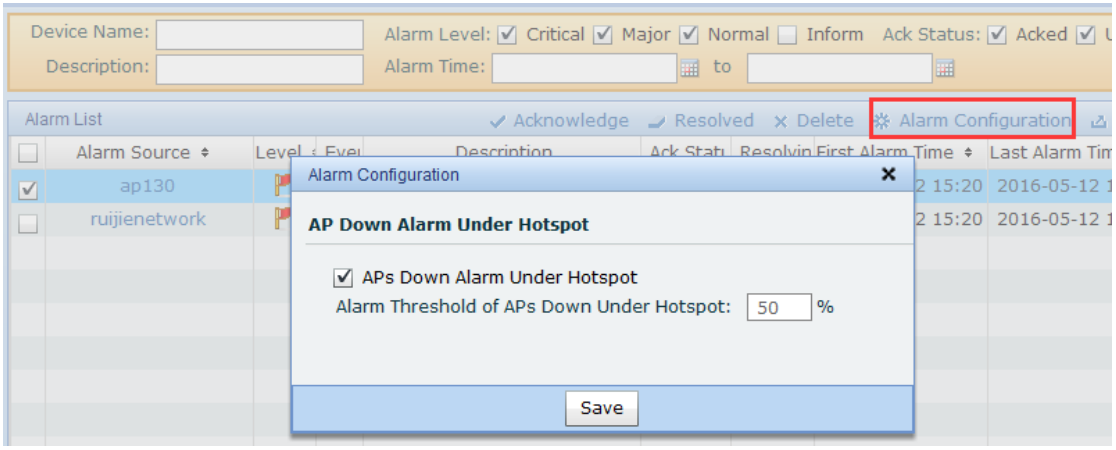
Click ***"Resolved"*** then alarm state to solve has been solved.



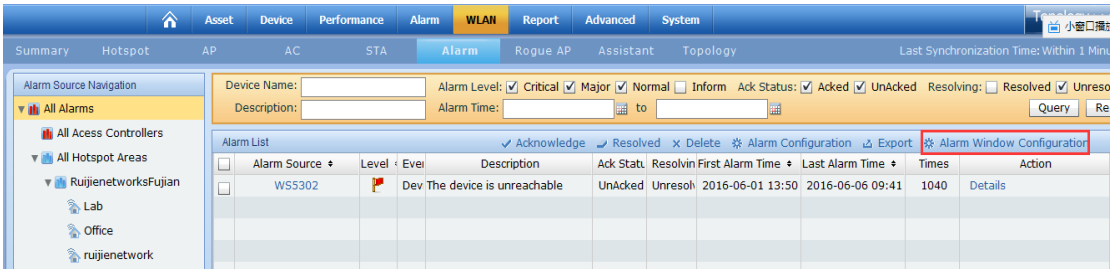
Click the ***"Delete"*** will delete the selected alarm.

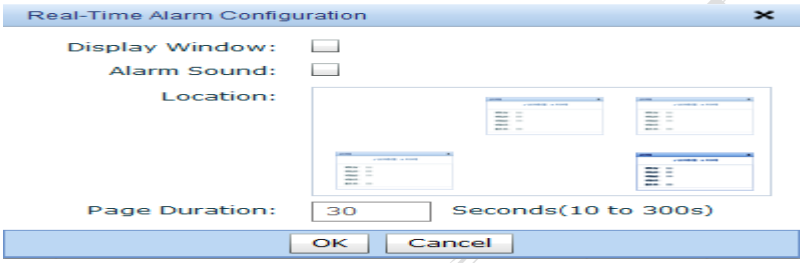


Go to ***WLAN > Alarm > Alarm Configuration,*** then set alarm information.



Go to ***WLAN > Alarm,*** click a single hot port, then click "***Alarm Window Configuration"*** to define whether to enable the pop-up window warning prompt.

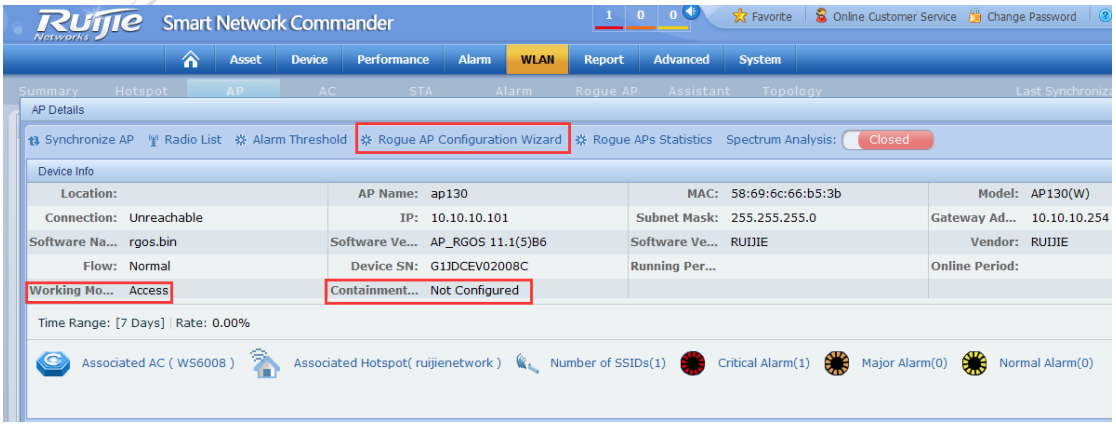




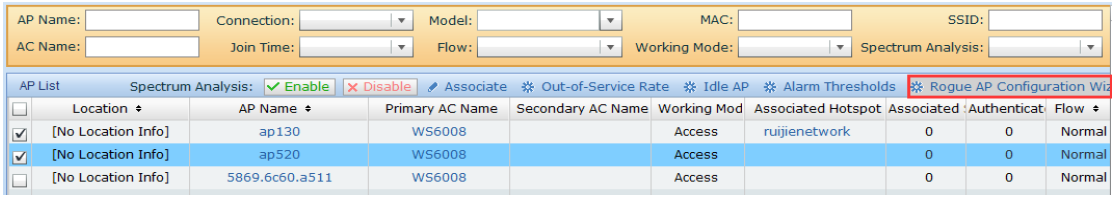
6.8 Illegal AP

6.8.1 Illegal AP Configuration Wizard

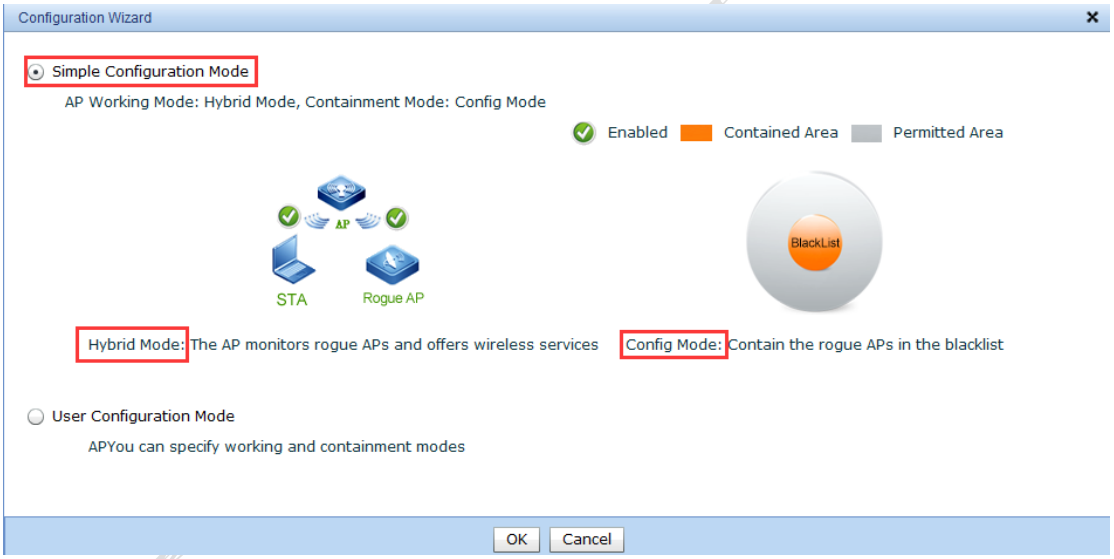
Go to ***WLAN > AP >Rogue AP Configuration Wizard,*** then view the information of illegal AP.



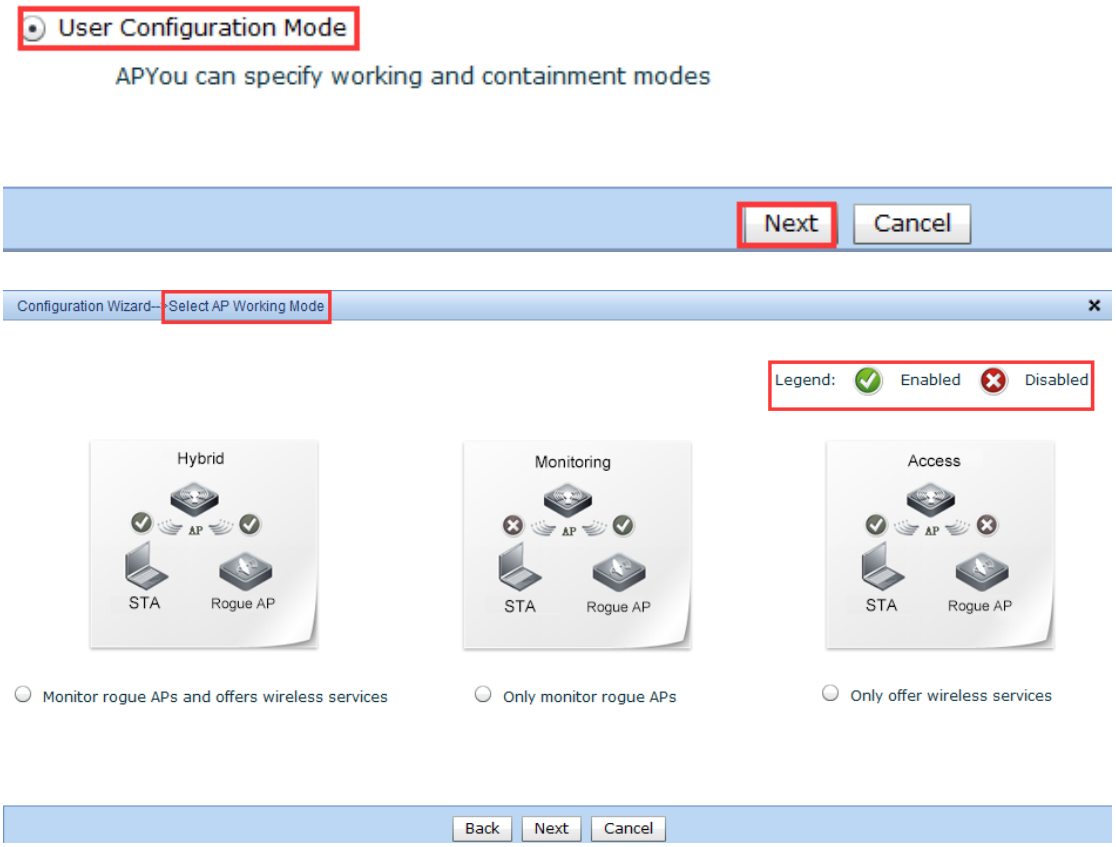
Go to ***WLAN > AP*** select multiple AP, and then click on the "***Rogue AP Configuration Wizard***", then set the illegal AP.



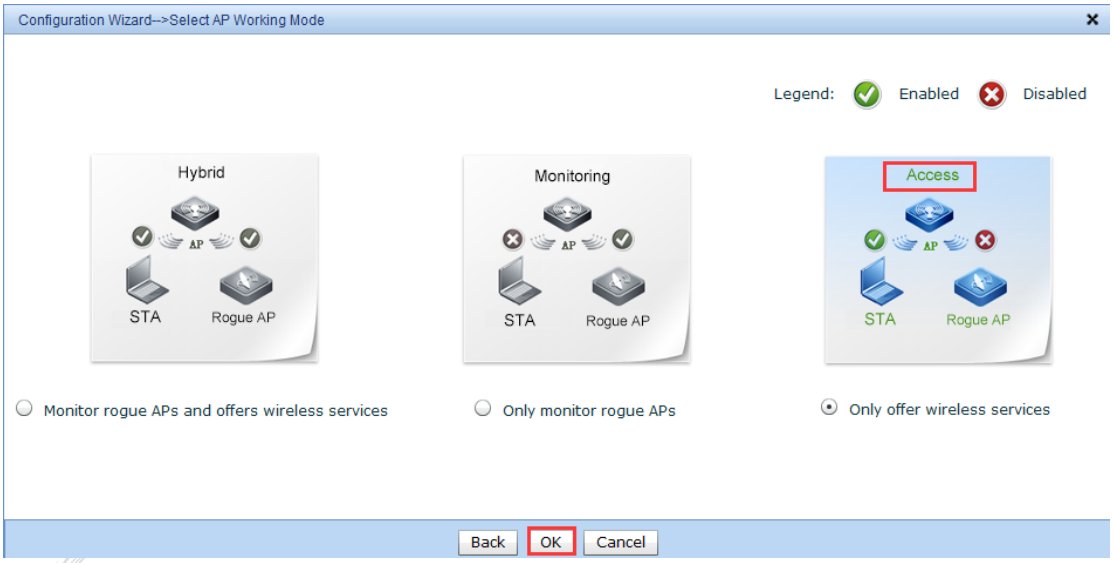
Enter the illegal AP configuration wizard page, you need to select the configuration mode, there are 2 kinds of configuration mode: simple configuration mode and user configuration mode, select the "***simple configuration mode***", the AP work mode will be configured as a mixed mode, the system is configured to config mode; click ***OK*** that is configured to equipment.



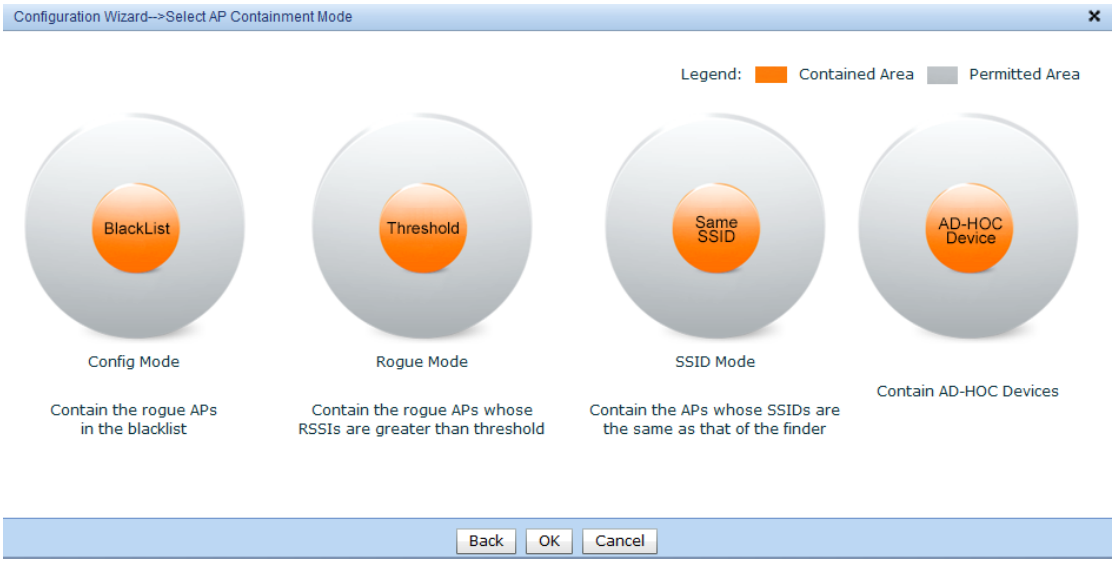
Select "user configuration mode", "OK" button will become "next" button, click "next", enter the configuration AP work mode page.



AP can be configured in 3 kinds of work modes: mixed mode, listening mode, access mode; select "access mode", then click "OK button".

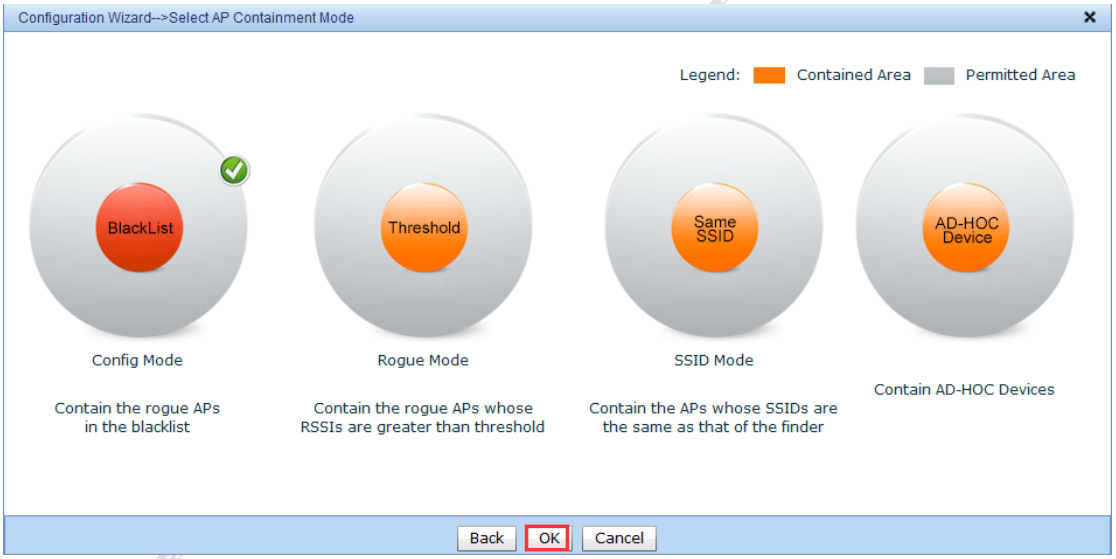


Select the mixed mode or monitor mode, click next, and then enter the AP counter mode page:



After entering the AP counter system mode configuration page, click "OK", meaning that only the AP configuration of the work mode, not to configure the counter model.

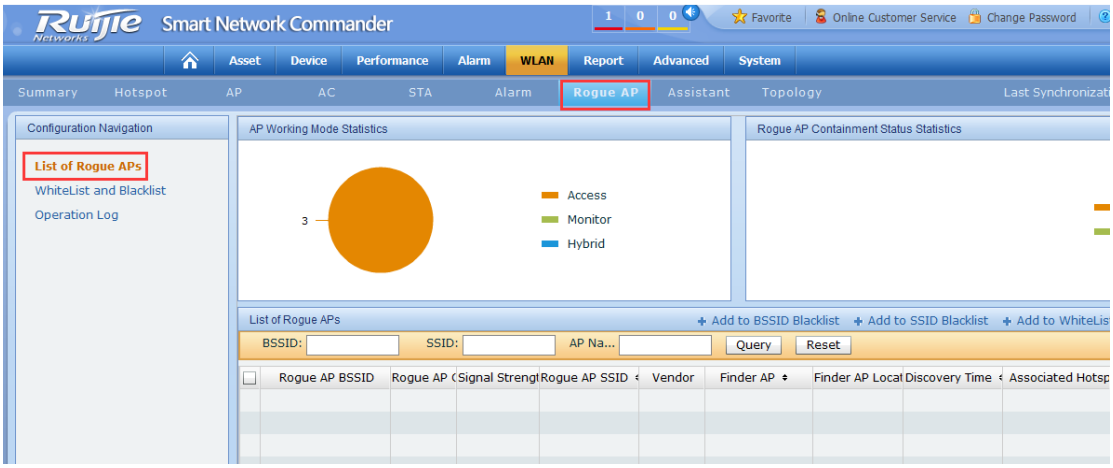
Four optional configure AP counter mode, including: config mode, rogue, SSID, ad-hoc mode; when a certain mode is selected, figure in the upper right corner will tick effect appears, as shown in Figure:



Click "***OK"*** when complete setting.

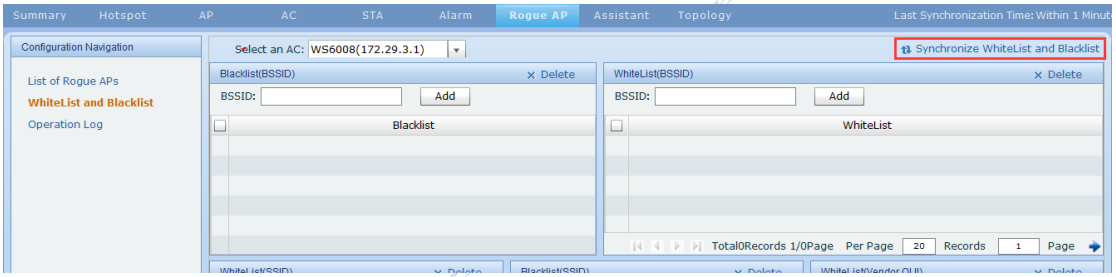
6.8.2 Illegal AP List

Go to ***WLAN > Rogue AP >List of Rogue APs,*** then view the information of illegal AP.

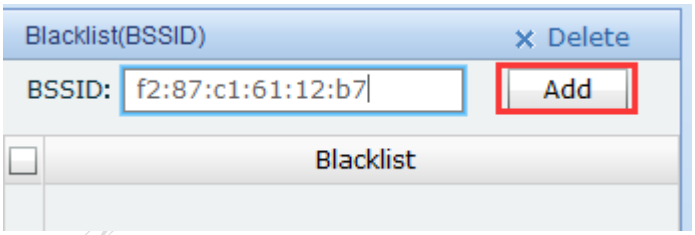


6.8.3 Black and White Lists

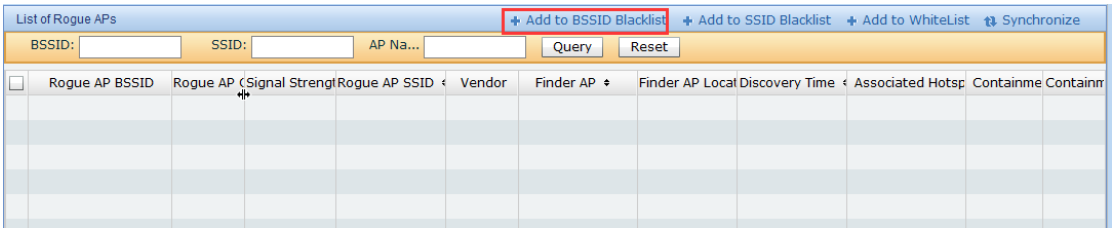
Go to ***WLAN > Rogue AP >WhiteList and Blacklist >Select an AC***, then you can see the black and white list information on the current AC.



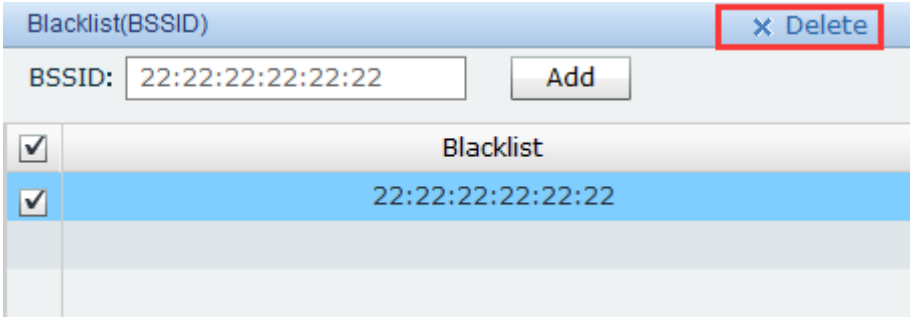
You can manually enter BSSID, click "***add***", as shown below:



Can also be in the last chapter of the illegal AP list in the AP to add the black list,

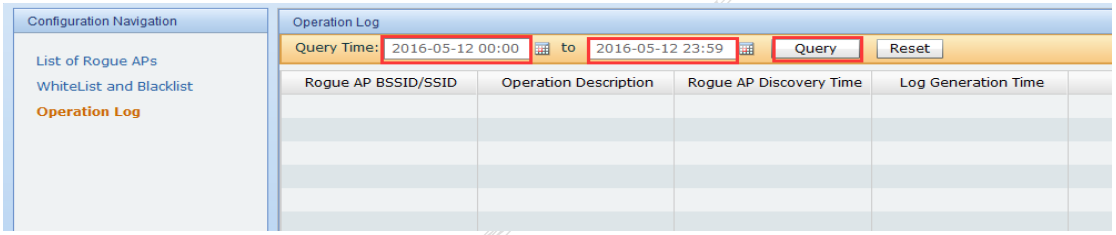


Check the black list and click "***delete***".



6.8.4 Running Log

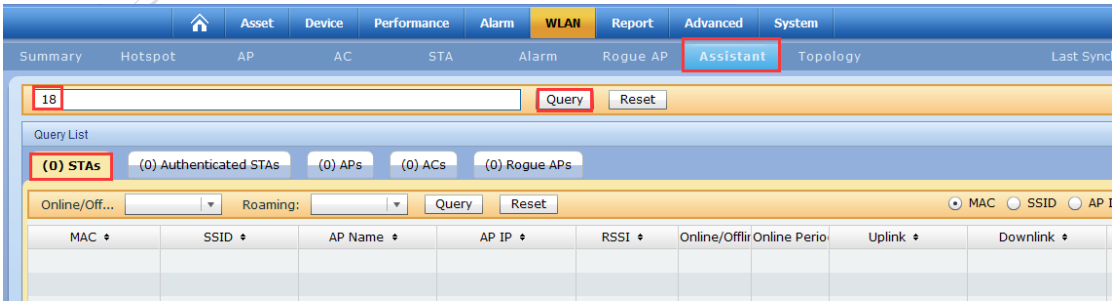
Go to ***WLAN > Rogue AP >Operation Log,*** then Select Query beginning and ending time, click on "***Query"***,



6.9 Troubleshooting Assistant

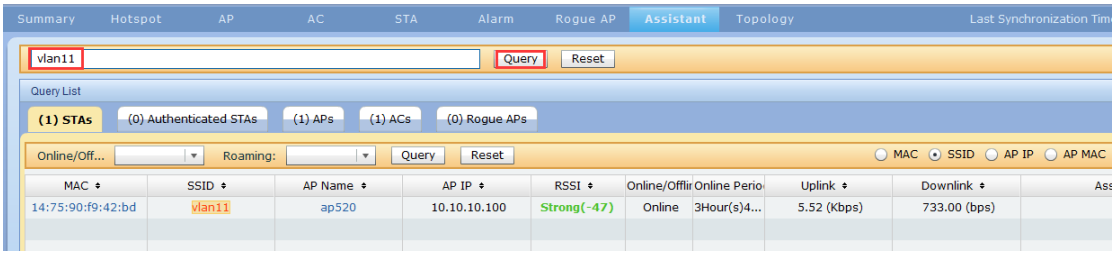
6.9.1 How to search for equipment

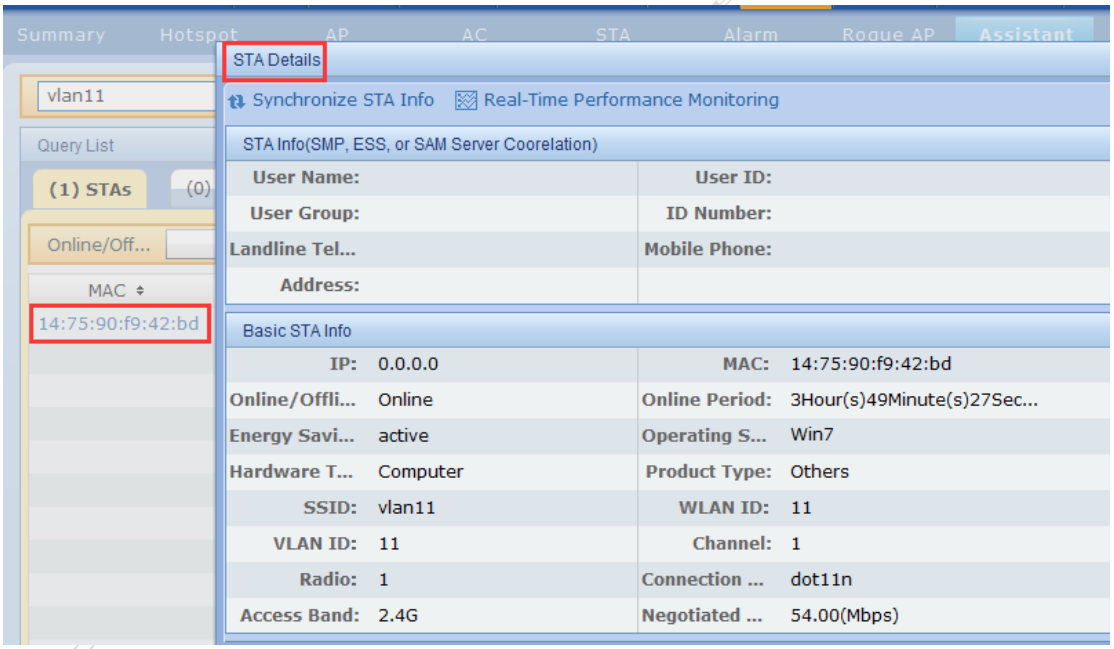
Go to ***WLAN > Assistant,*** then enter search terms, such as "18", click on "***Query***", you can search for the following five aspects with "18".



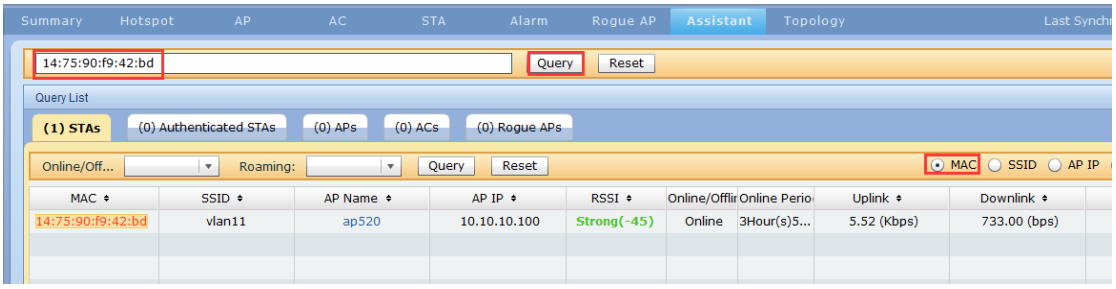
6.9.2 How to instantly search network

Go to ***WLAN > Assistant, then*** enter search terms, such as SSID for the "Vlan11", click on "Query", then see the details of the STA



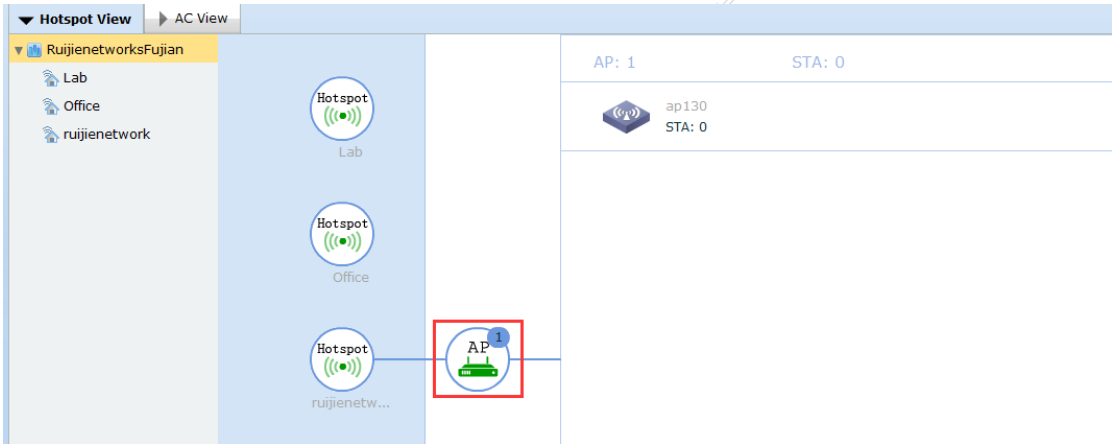


Other real-time query methods, such as user MAC, the input query terms "00:08:ca:54:86:23"

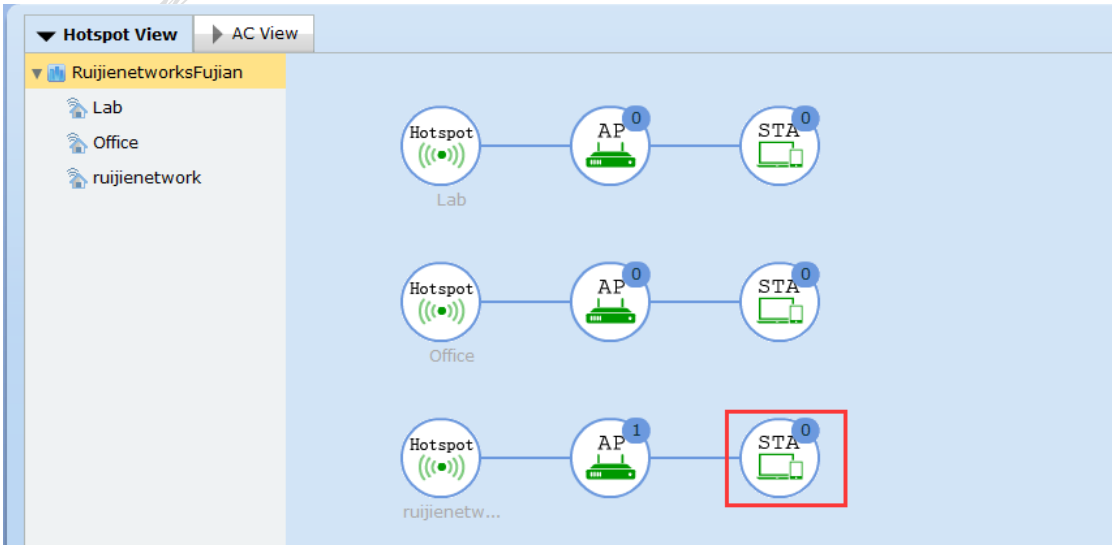


6.10 View Hot Spot

The function is used to view the logical relationship between the wireless network hotspot, AC, AP, and STA. Go to ***WLAN > Topology >Hotspot View,*** click the AP icon to show the hot AP



Click the terminal icon, terminal information may be presented under the hot spot.



Click "***AC View***" to see the logical relationships between AC, AP, and STA,