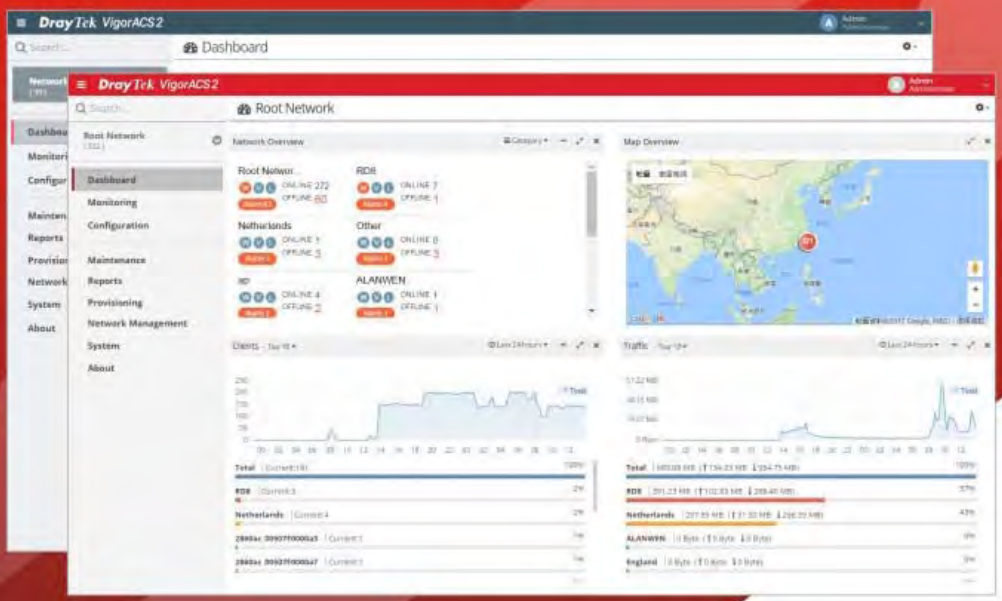
DrayTek

VigorACS 2

Unified Management System

Your reliable networking solutions partner



User's Guide

V1.4

VigorACS 2
Unified Management System
User's Guide

Manual Version: V1.4

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Part I Introduction

Chapter 1 Introduction

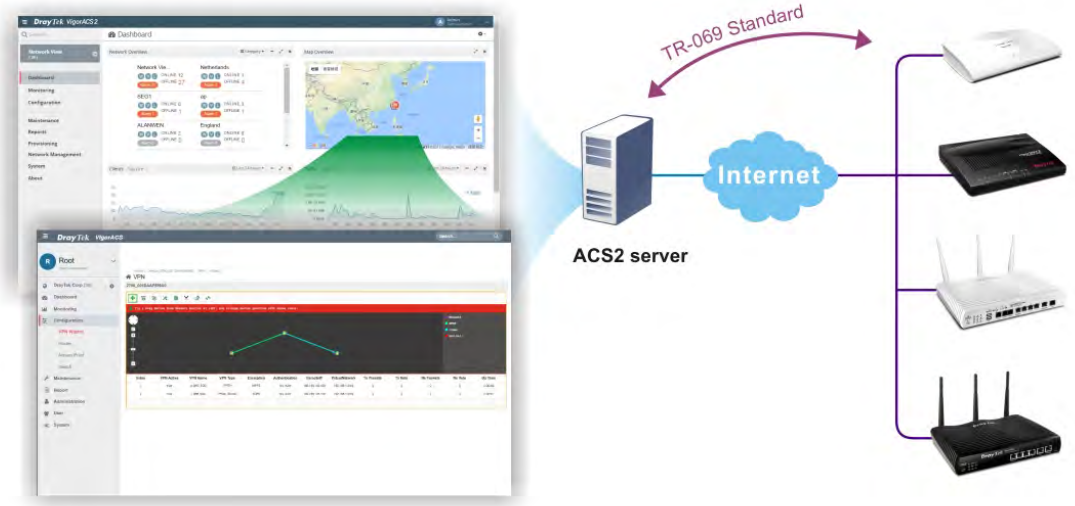
VigorACS 2 is a software which provides centralized device management for TR-069 based CPEs such as broadband gateway, XDSL router, VoIP gateway and wireless AP. VigorACS 2 has device status, monitor status of devices, or perform scheduling tasks such as firmware upgrade, configuration backup/restore and parameter profile for mass deployment of CPE devices. It is easy to use through intuitive Web-based GUI with security management. VigorACS 2 can be installed on different kinds of platform e.g., Windows, Linux and so on.

1.1 Main Features and Benefit

- Manage all kinds of devices complied with TR-069 specification.
- VigorACS 2 server can be installed in Windows and Linux.
- Intuitive Web-based GUI can be executed on all browsers like IE, Firefox, Chrome and so on.
- Support scheduling firmware upgrade, configuration backup/restore and parameter profile deployment.
- Support auto-discovery to survey all TR-069 devices.
- Provide device inform management.
- Support security management.

1.2 System Architecture

The following figure shows an overview for the application between VigorACS 2 and CPE devices. With TR-069 protocol, VigorACS 2 can communicate and manage devices with ease.



1.3 Web Service

Web service is a software system identified by a URI, whose public interfaces and bindings are defined and described using XML. Its definition can be discovered by other software systems. These systems may then interact with the Web service in a manner prescribed by its definition, using XML based messages conveyed by internet protocols.

The basis for Web Services contains: XML, WSDL (Web Services Description Language), SOAP (Simple Object Access Protocol), UDDI(Universal Description, Discovery and Integration). The procedure for the structure of bottom layer: transform Web Service information into XML file format, use WSDL statement to describe the objects for service. The remote end can get required information through such description. It carries out transformation job to search or register from UDDI by means of SOAP communication bottom layer.

- For the designers of Java program: you can write java program to control VigorACS. Also, VigorACS will offer some API for you to write and call it. For example, you can get all the connected CPE devices controlled VigorACS through web service.

  Corresponding files are placed in - *WebServices_TR069API.zip*

  The documentation for web services api is placed in - *WebServices_TR069API/doc/*

  Sample program is placed in - *WebServices_TR069API/example/src/tw/com/draytek/acs/test/TestMain.java*

For the designers with other program language: you can define WSDL to control VigorACS through SOAP(Simple Object Access Protocol)

Chapter 2 Install & Startup

DrayTek VigorACS 2

Please follow the procedure listed below to install VigorACS completely. The installation for different platforms might be different.

Info	VigorACS 2 can be operated only by a host with 64-bit operation system.

2.1 Platform for Windows 7 or 10

To start up the VigorACS, the normal procedure is listed as follows:

(I) Installation for Java,

(II) Installation for MariaDB

(III) Installation for VigorACS 2

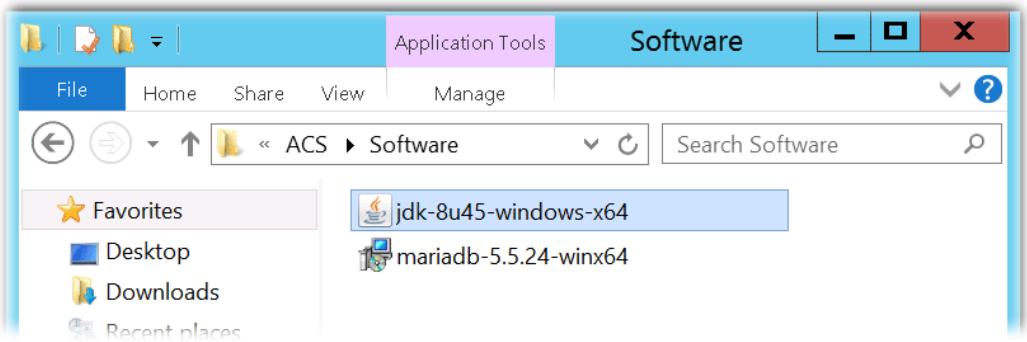
(IV) Start MySQL/MariaDB Database.

(V) Edit VigorACS ip.

(VI) Start VigorACS.

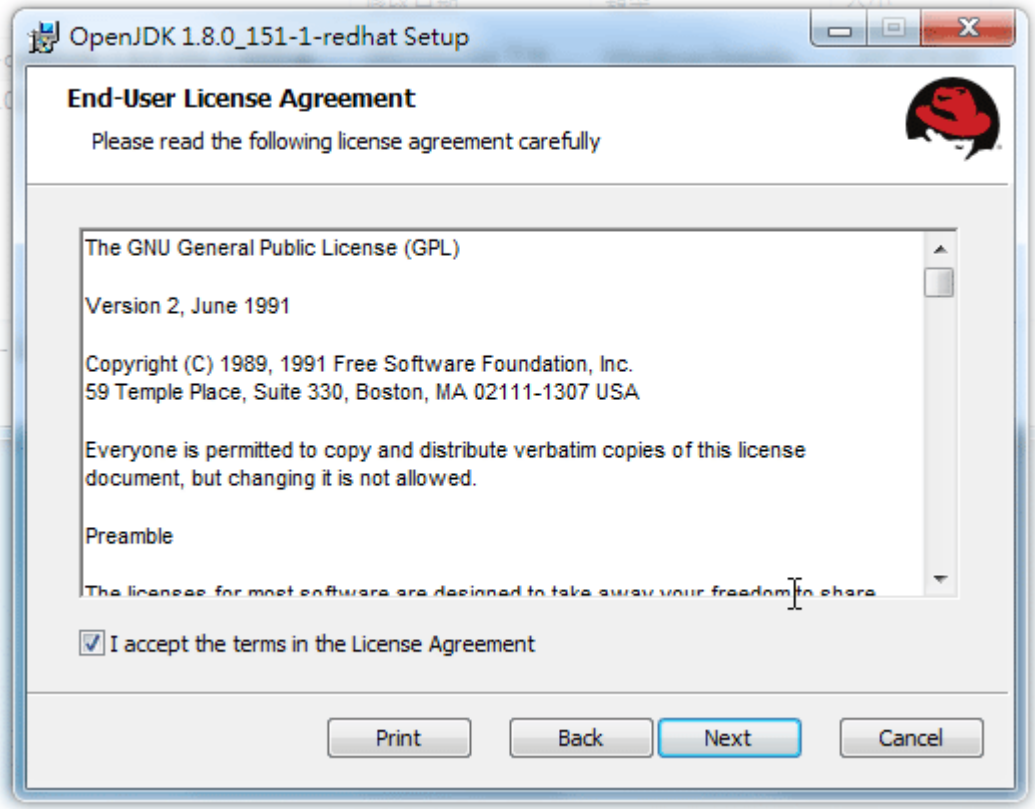
2.1.1 Installation for Java

1. Install Java by clicking "jdk-8u45-windows-x64" it to execute the installation.

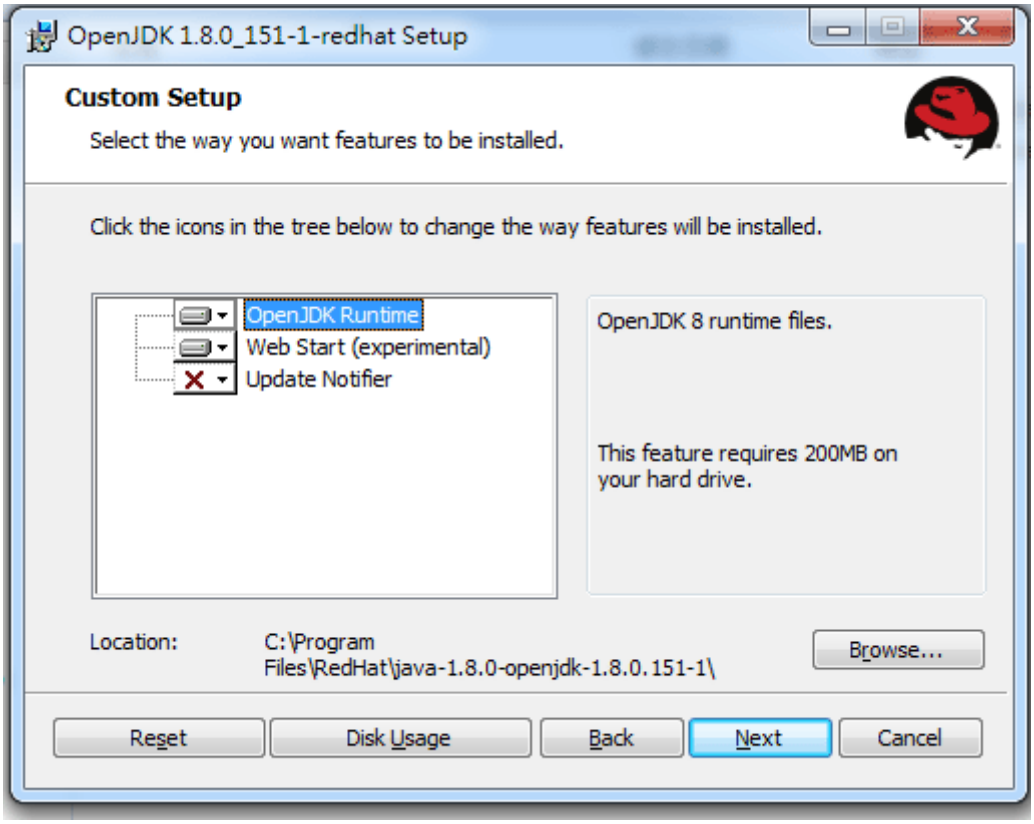


2. The first page will be shown as follows. Click **Next** to get into next page.

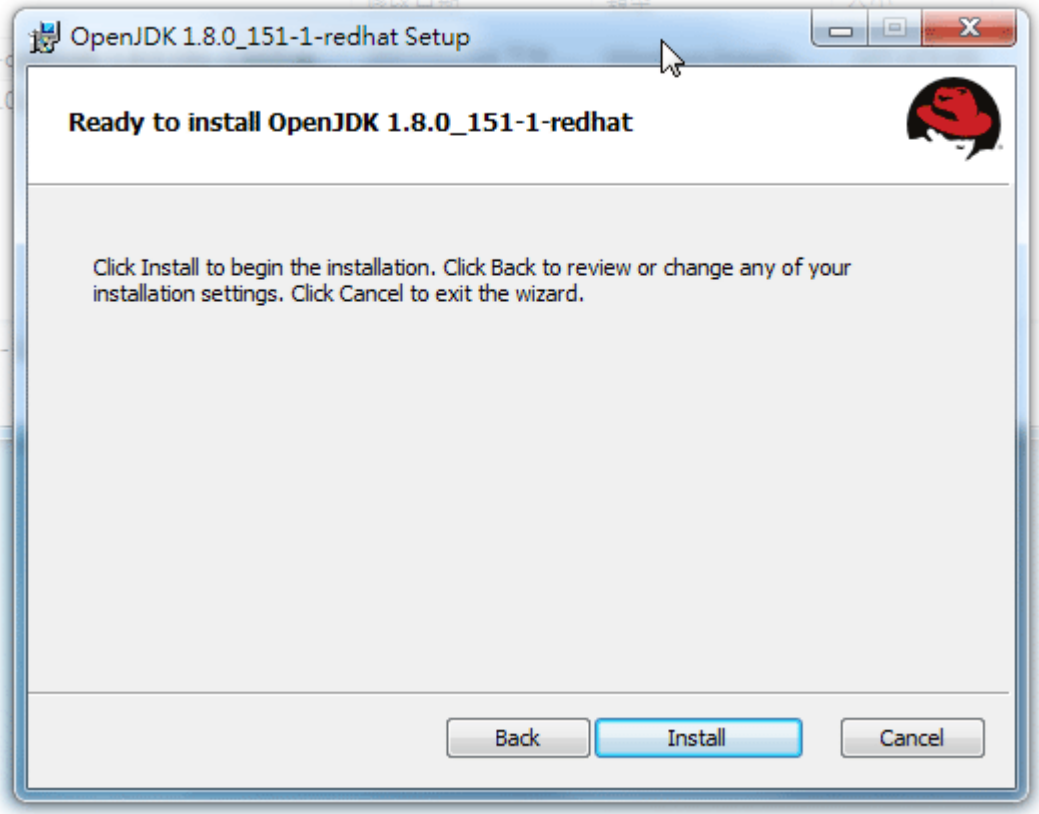
3. Then, check “I accept the terms…” and click the **Next** button.



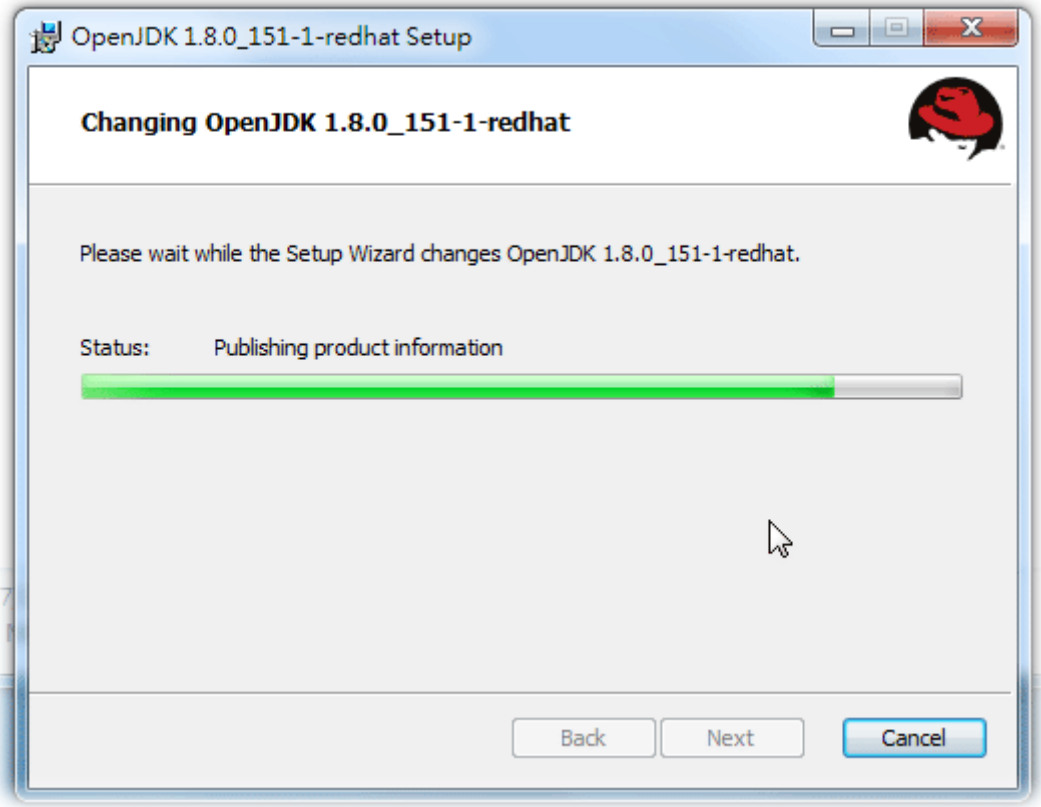
4. In this page, optional features will be listed for you to specify the destination folder for JAVA driver installation. Choose the one you need and click **Next**.



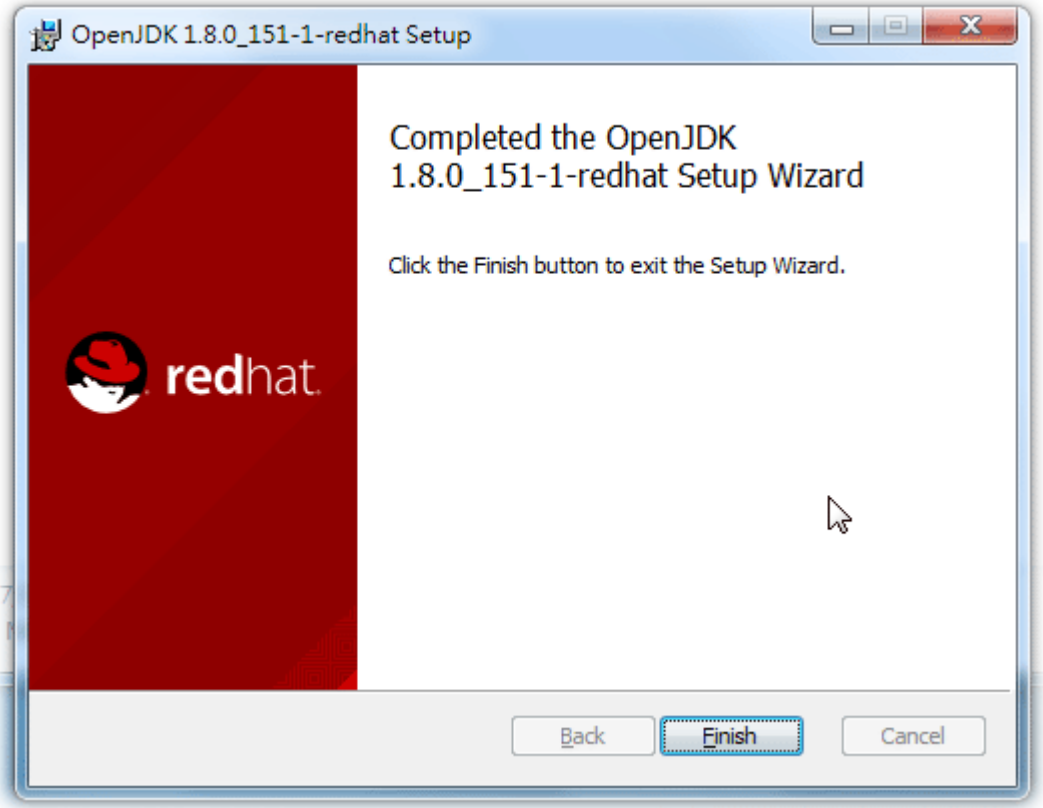
5. In the following page, just click **Install**.



6. Wait for a while to install the required features.

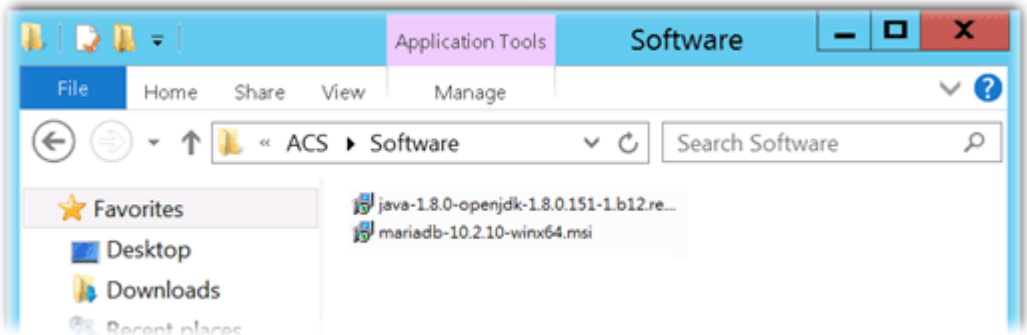


7. When the following page appears, the installation is completed. Click **Close** to exit the installing program.

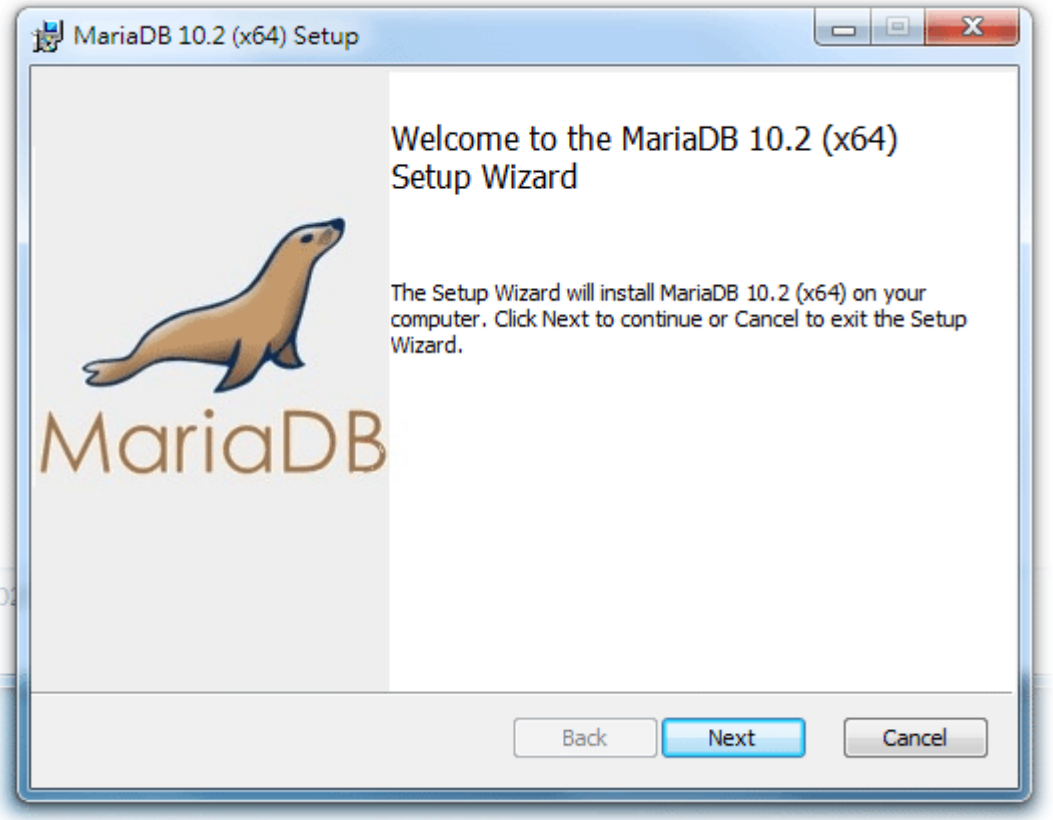


2.1.2 Installation for MariaDB

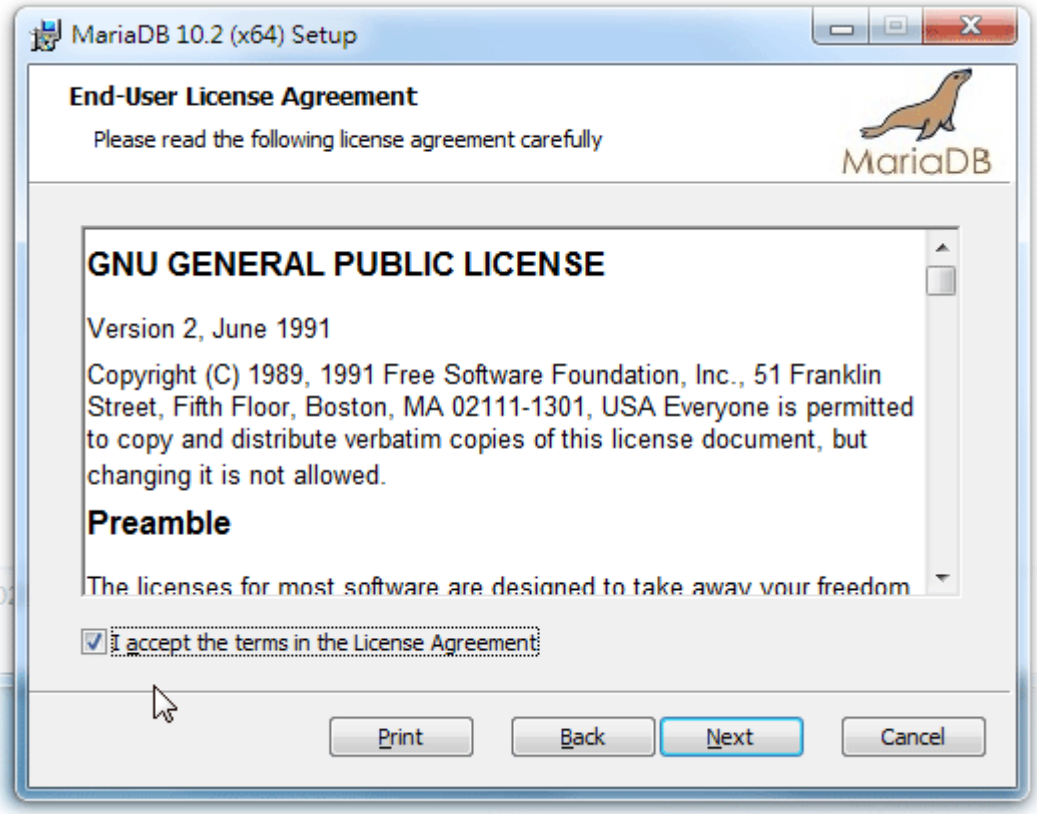
1. Install MariaDB by clicking “mariadb-10.2.10-winx64” (based on your PC condition) it to execute the installation.



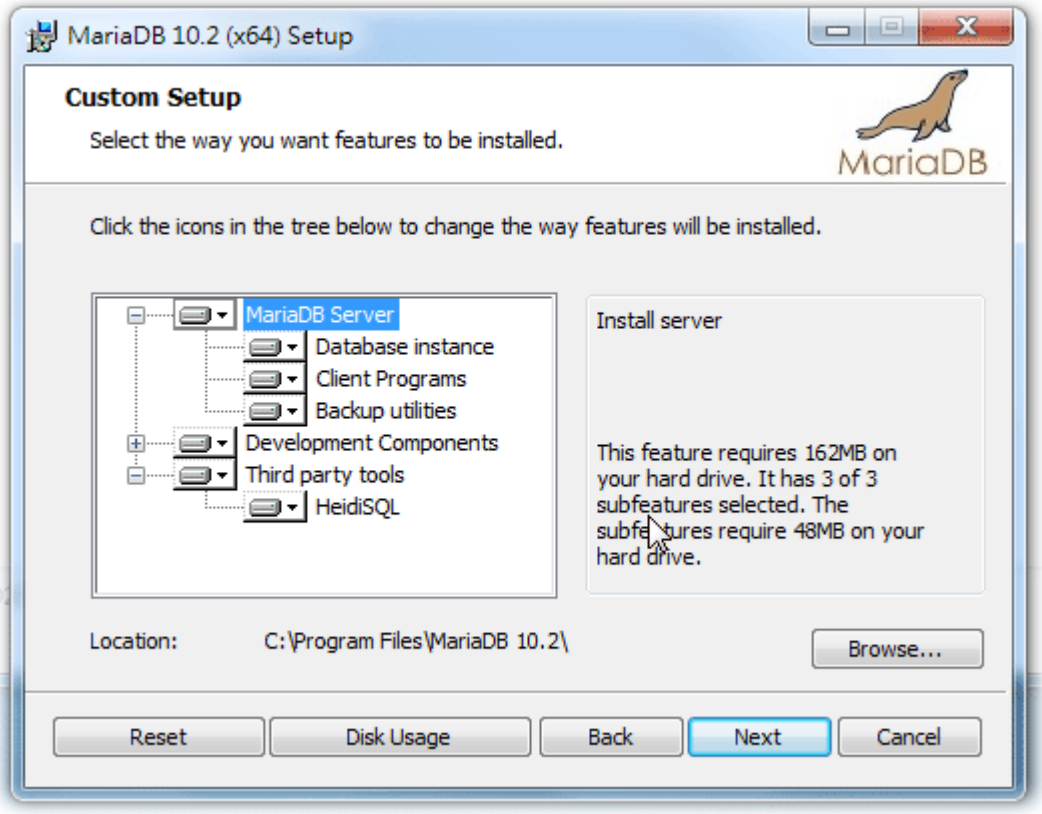
2. When the welcome screen appears, please click **Next** for next step.



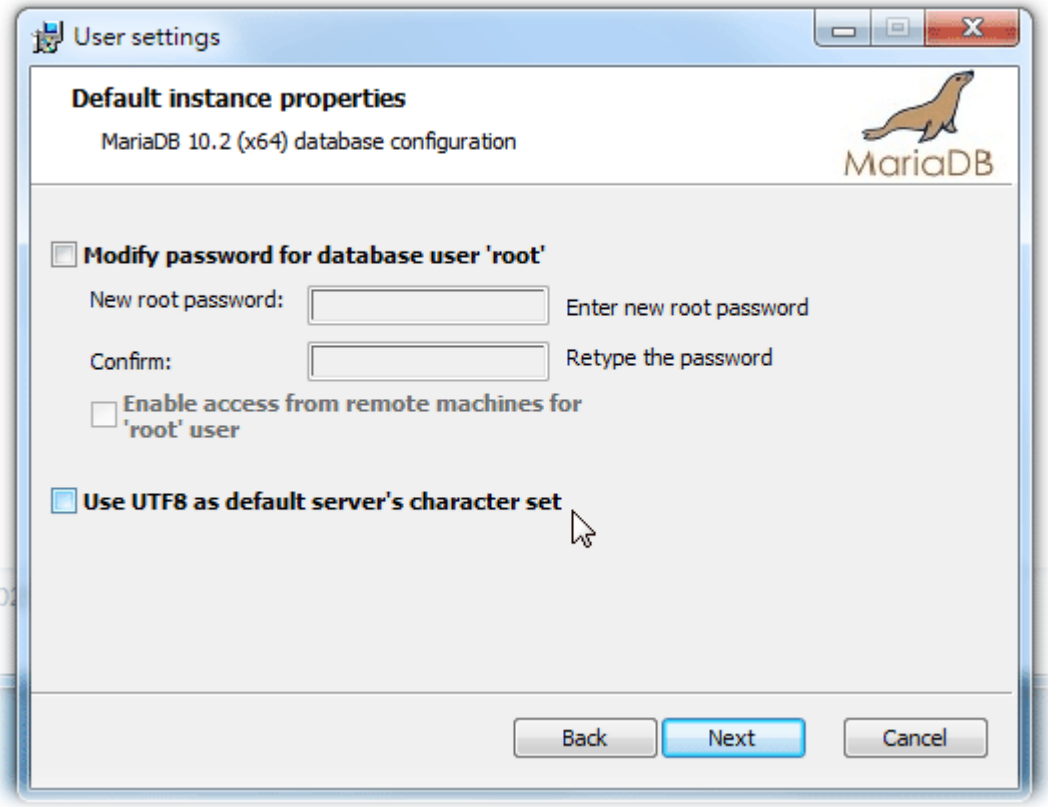
3. On this dialog box, check the box of “I accept the terms….” and click **Next**.



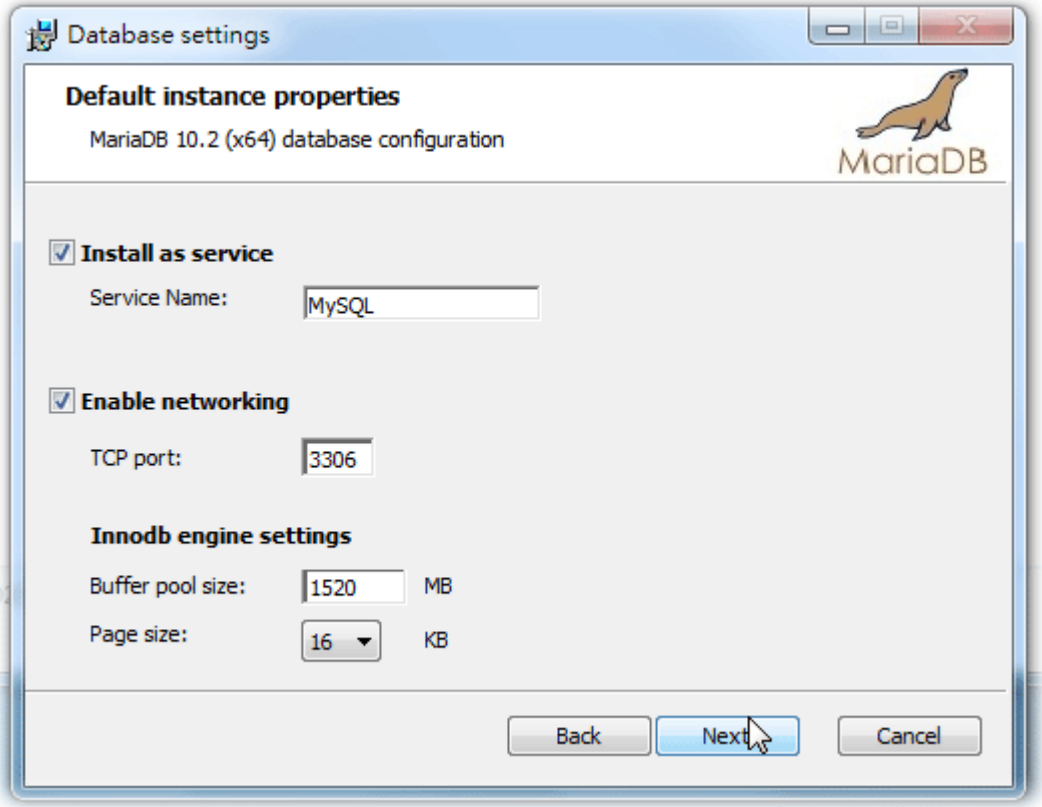
4. Select the way for the features to be installed. Then click **Next**.



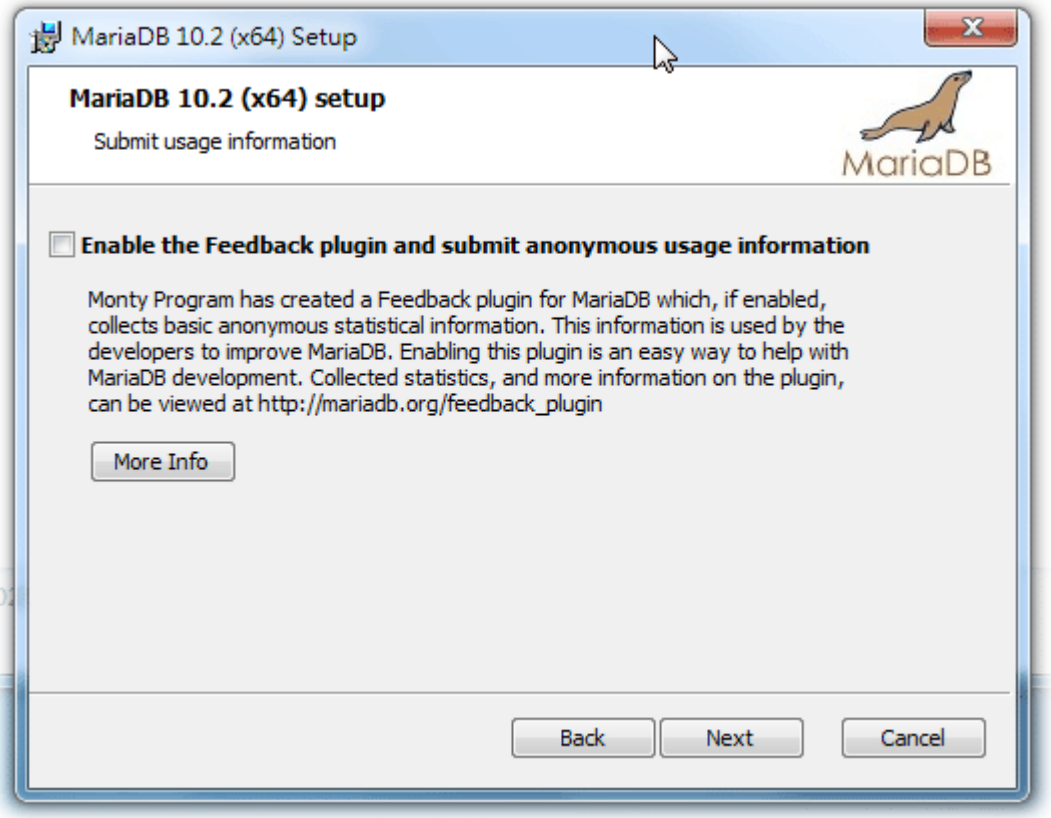
5. If you want to configure password for MariaDB server, please check **Modify password…** and type the password. It depends on your request. Otherwise, simply click **Next**.



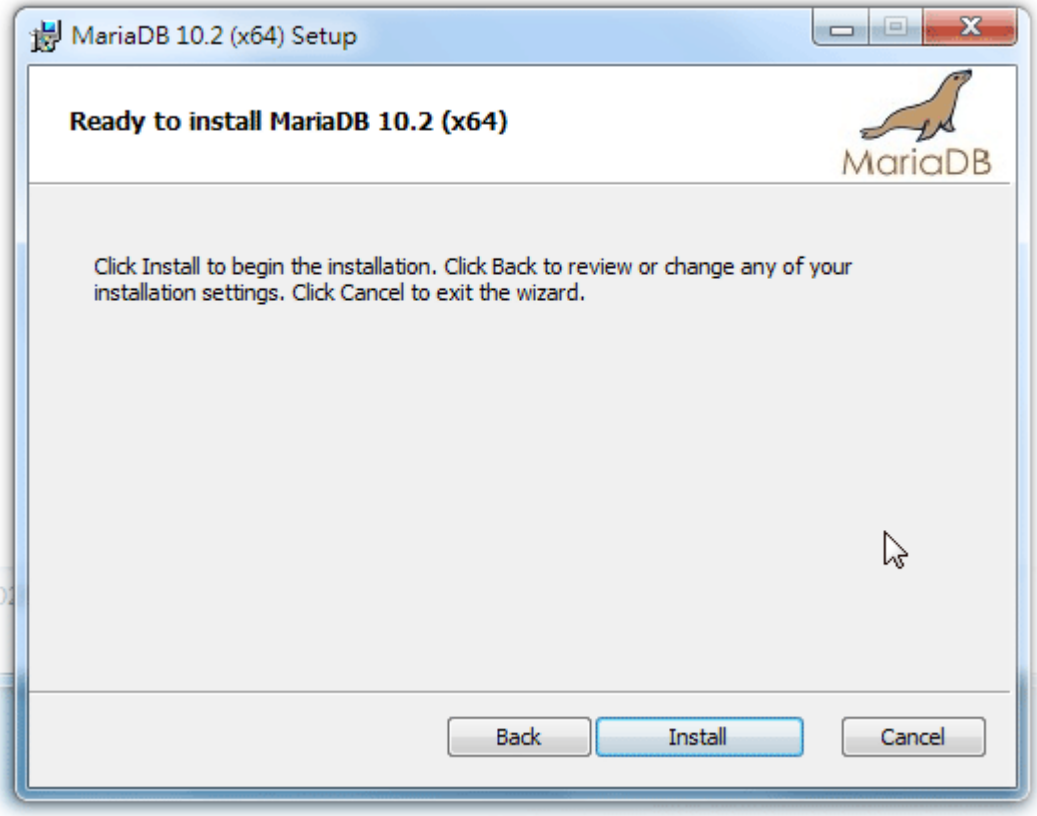
6. Modify the default instance properties if required. Then click **Next**.



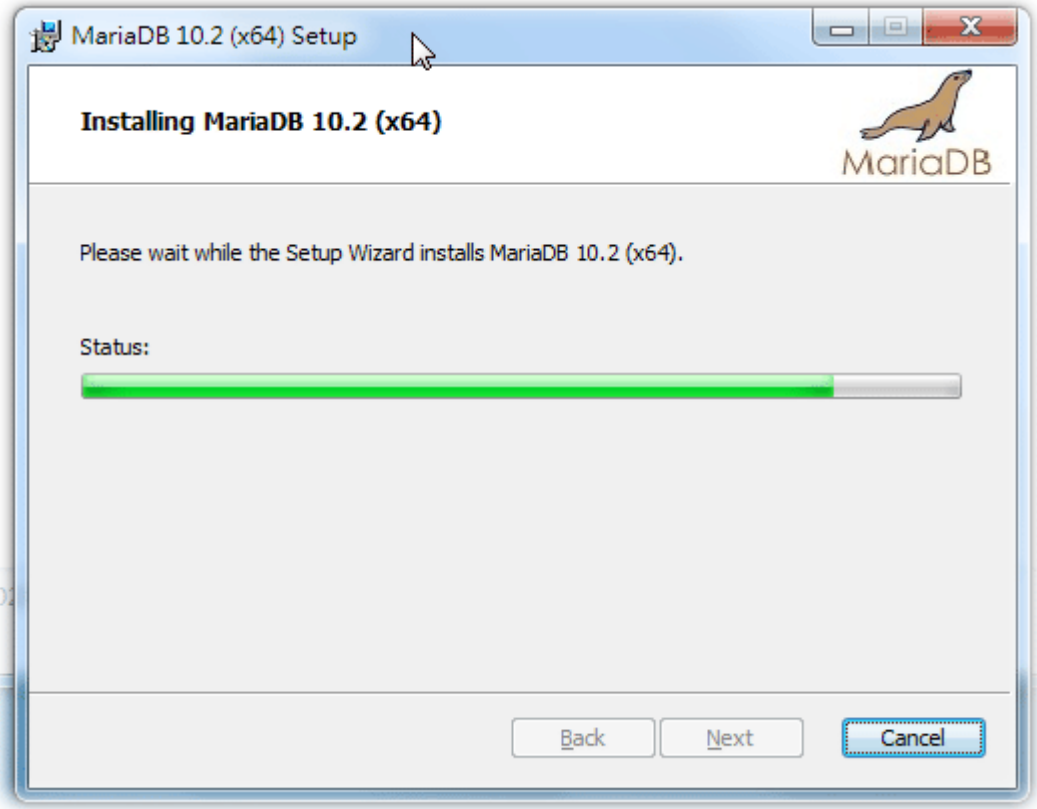
7. On this dialog box, click **Next.**



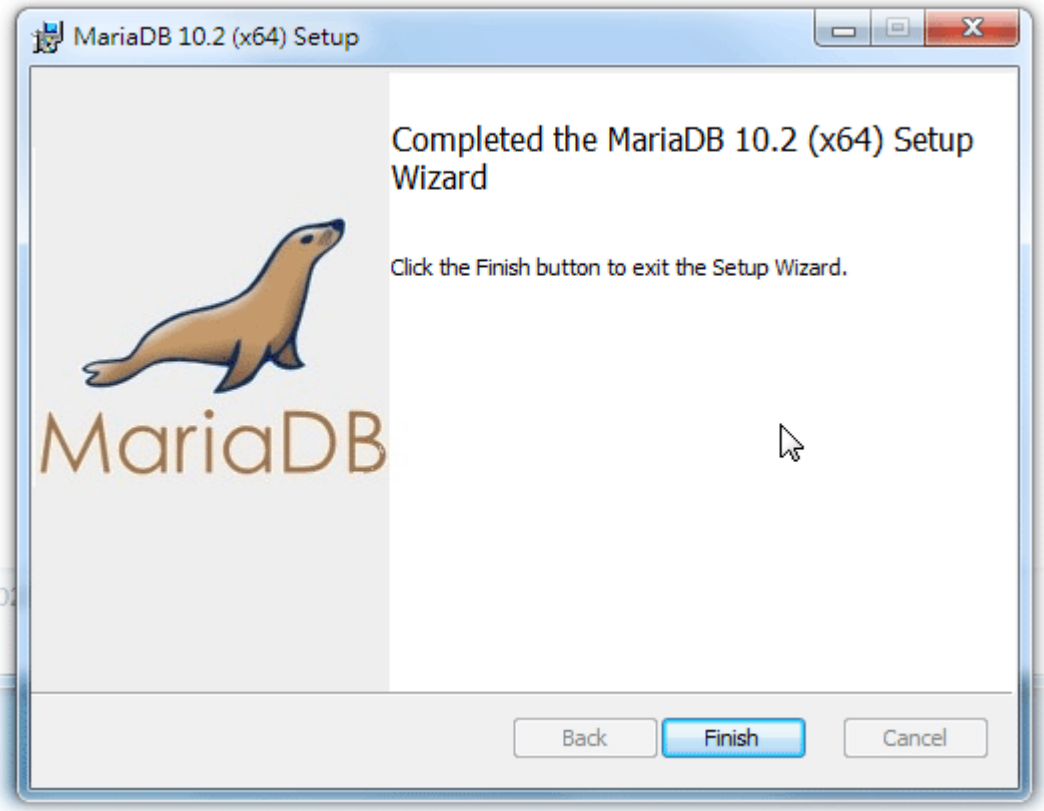
8. On this dialog box, click **Install**.



9. The installation program starts to install required files for MariaDB to your computer. Wait for several seconds.



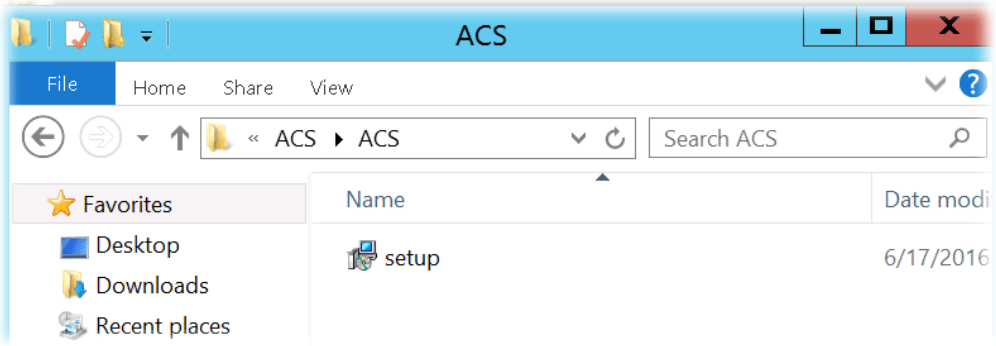
10. After finishing the configuration, please click **Finish** to exit the wizard.



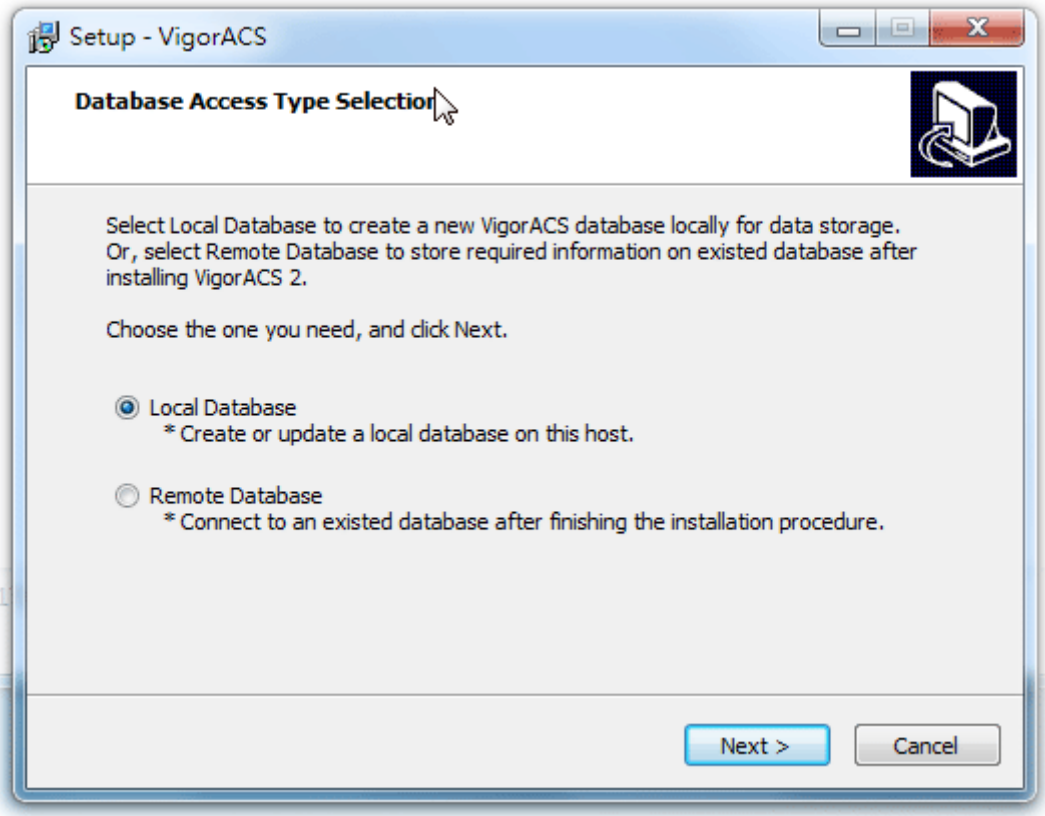
2.1.3 Installation for VigorACS 2

It is time to install VigorACS main program. Follow the steps below.

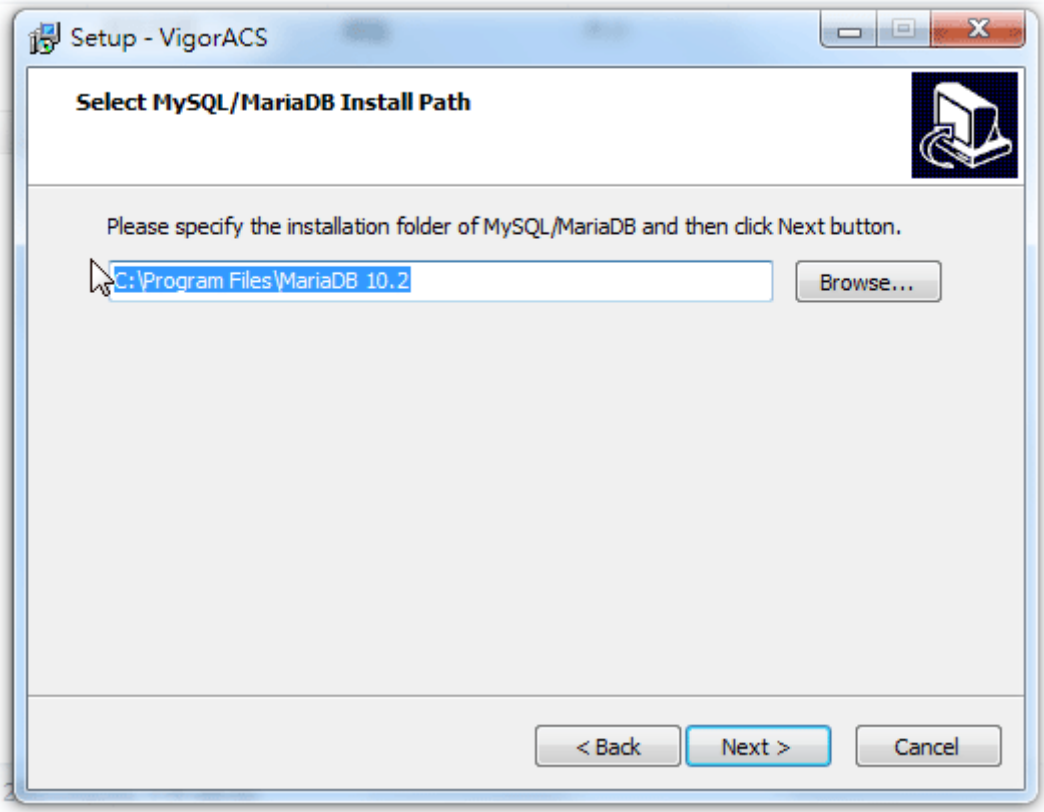
1. Click **Setup** to run VigorACS 2 setup wizard.



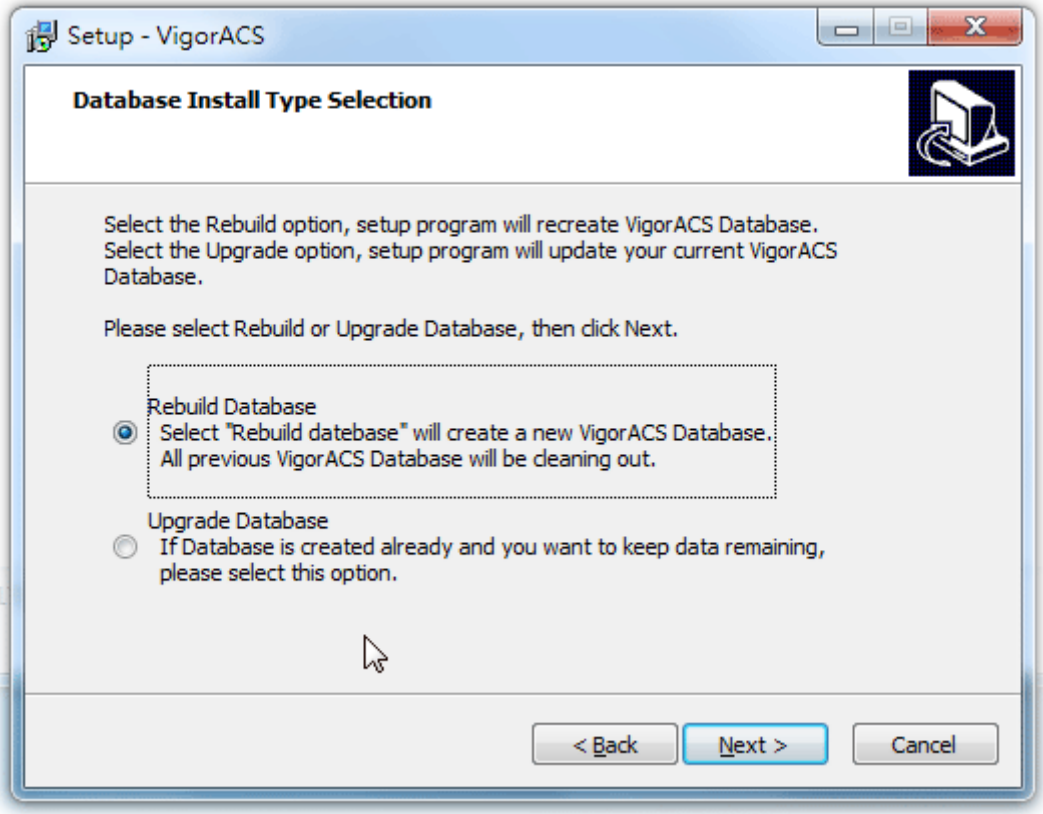
2. When the following dialog appears, choose **Local Database** / **Remote Database** and click **Next**.



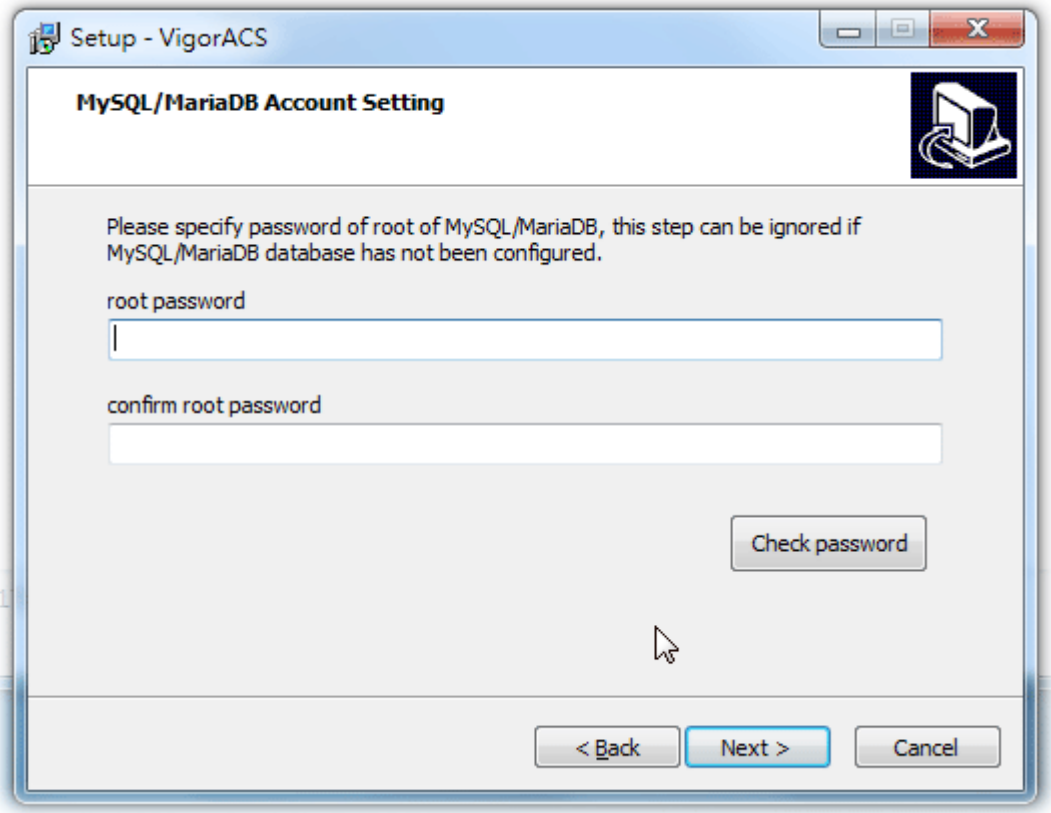
3. Select the directory that MariaDB being installed (done in 2.1.2) and click **Next**



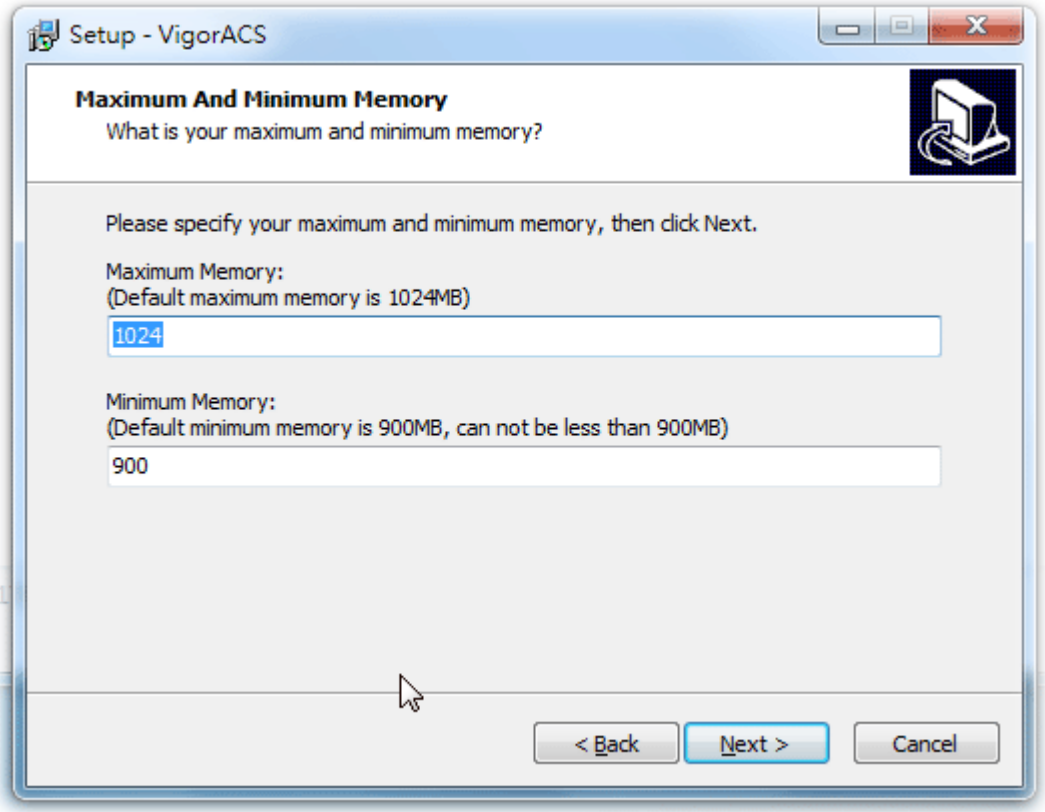
4. In this dialog box, choose **Rebuild Database** (for rebuilding the VigorACS database) or **Upgrade Database** (for upgrading the database). For the first time using, please choose **Rebuild Database**. Then click **Next**.



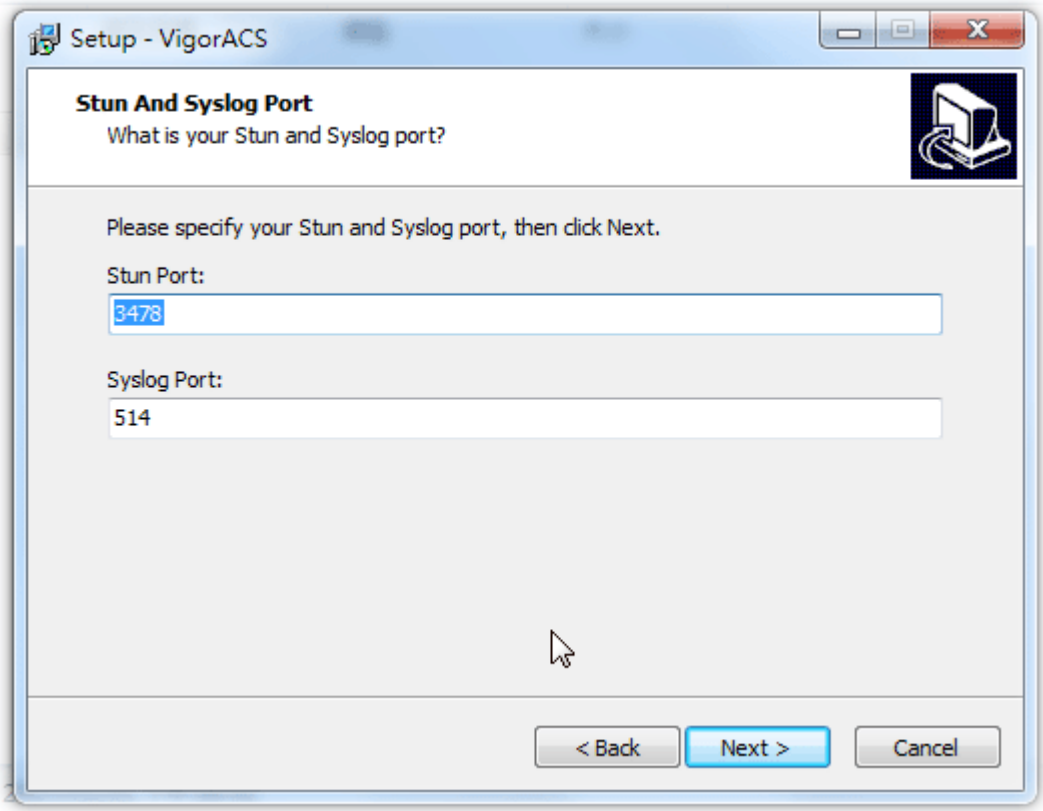
5. Click **Next**. If you have configured MySQL/MariaDB previously and specified password for it, you have to type the password in this page and then click **Next**.



6. Set the maximum memory and minimum memory. Click **Next**.



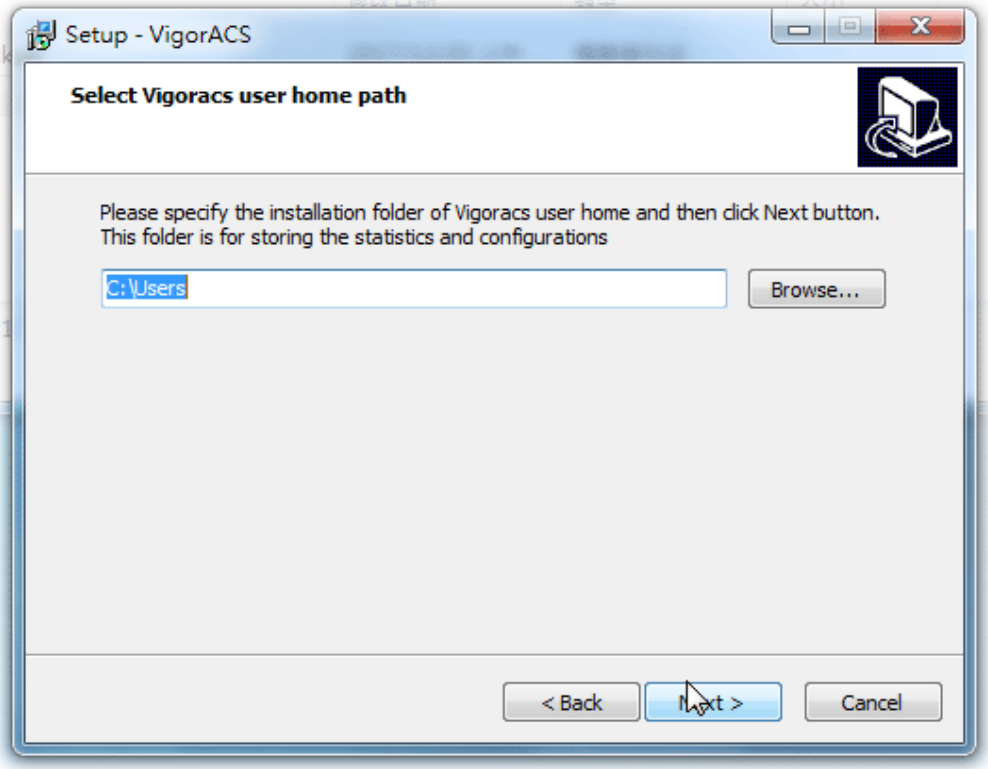
7. Setup ACS HTTP and HTTPS port, we'll suggest using others port instead of default 80 and 443 port to prevent conflict.



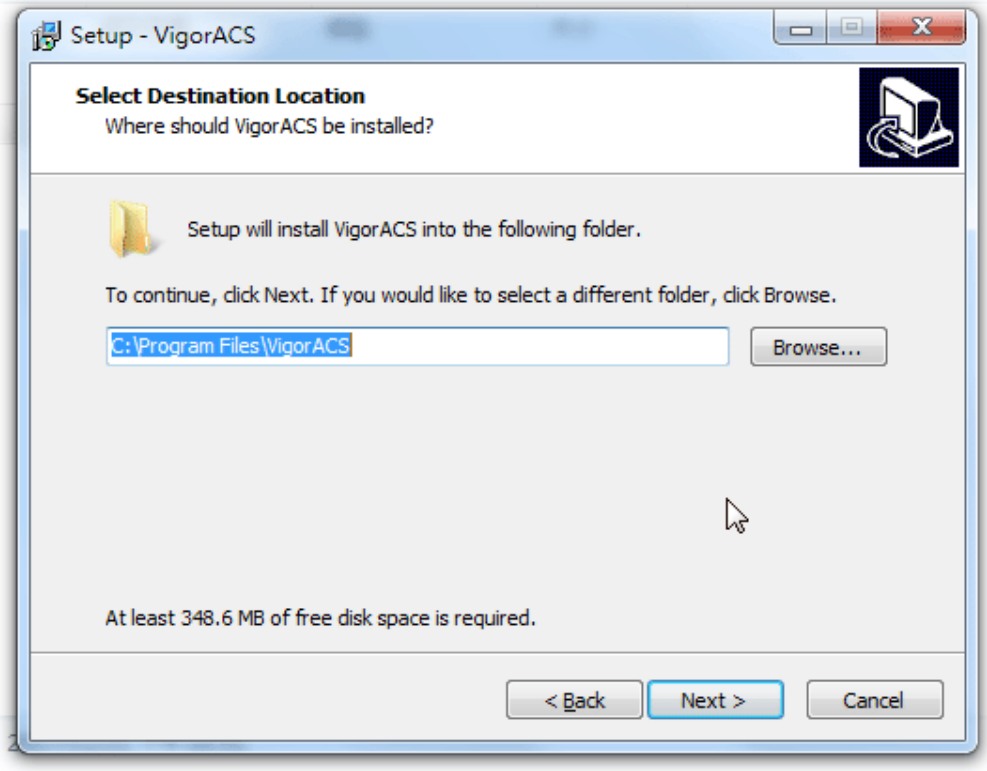
Info

The port number defined here will be used for opening VigorACS later.

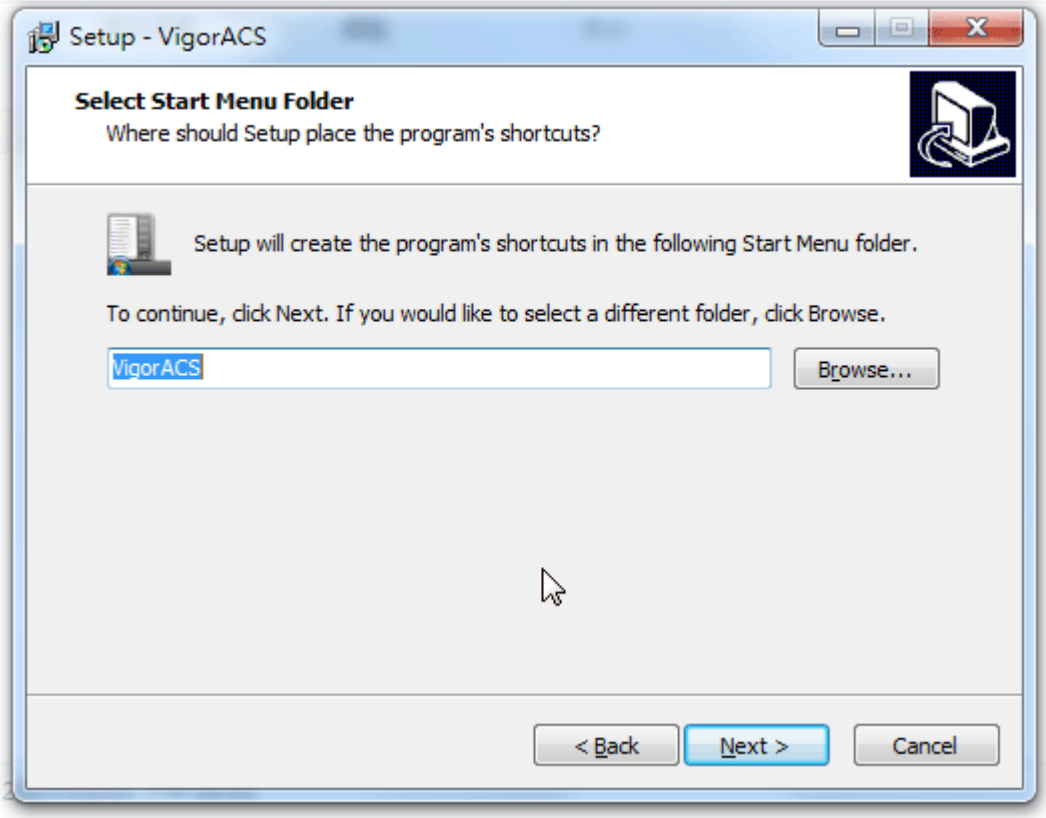
8. Determine the home path and click **Next**. The default directory used by this program is *C:\Users.* You can modify it if you want and please make sure the length of directory is not over 100 characters, otherwise you might encounter problem of VigorACS in installation.



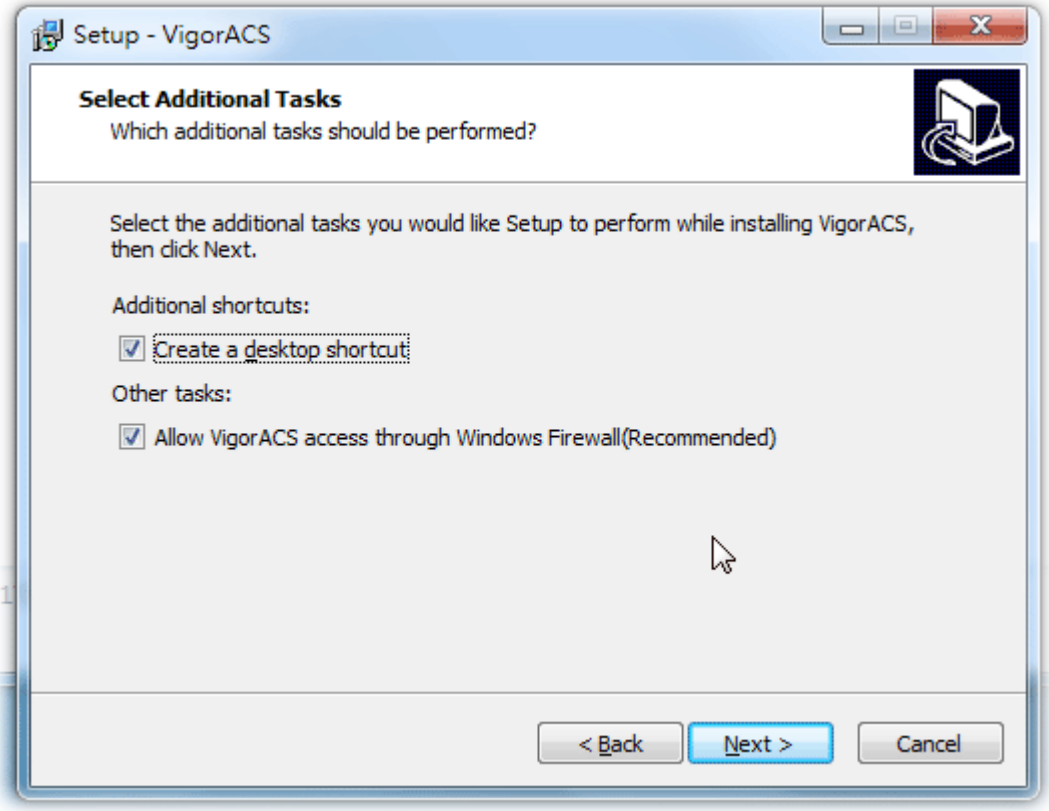
9. Determine the destination folder and click **Next**. The default directory used by this program is *C:\Program Files\VigorACS.* You can modify it if you want and please make sure the length of directory is not over 100 characters, otherwise you might encounter problem of VigorACS in installation.



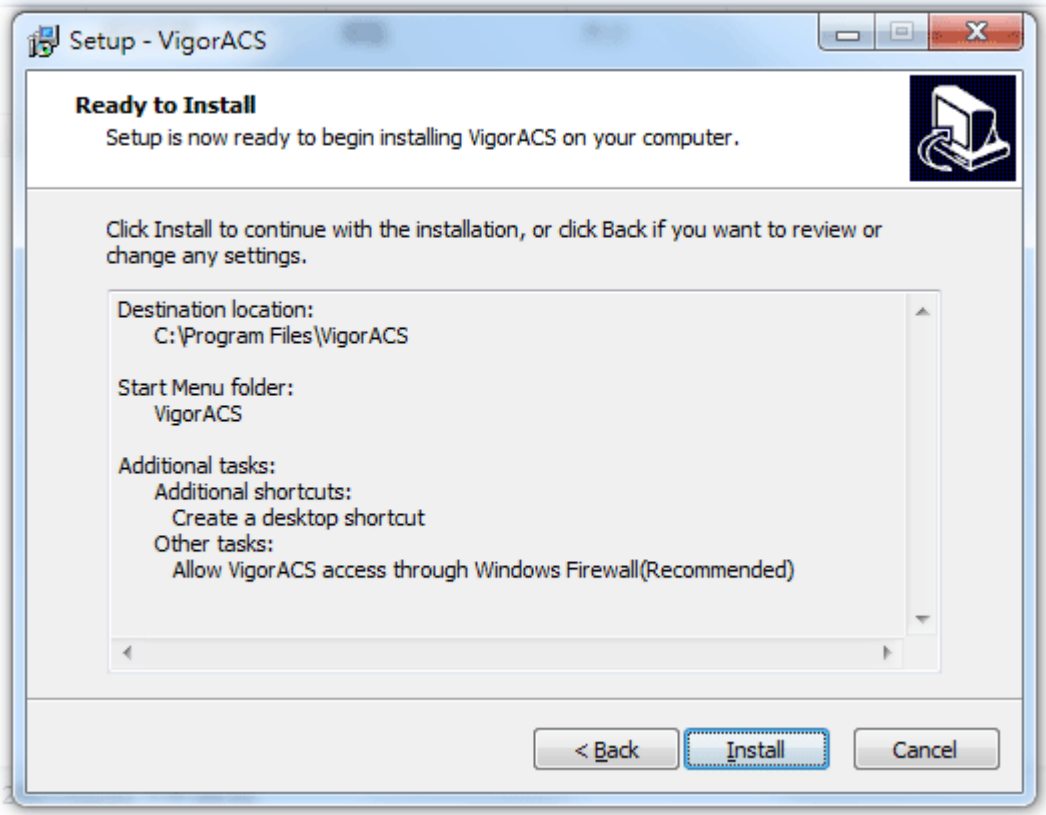
10. Determine the start menu folder and click **Next**. The default directory used by this program is *VigorACS*. You can modify it if you want and please make sure the length of directory is not over 100 characters, otherwise you might encounter problem of VigorACS in installation.



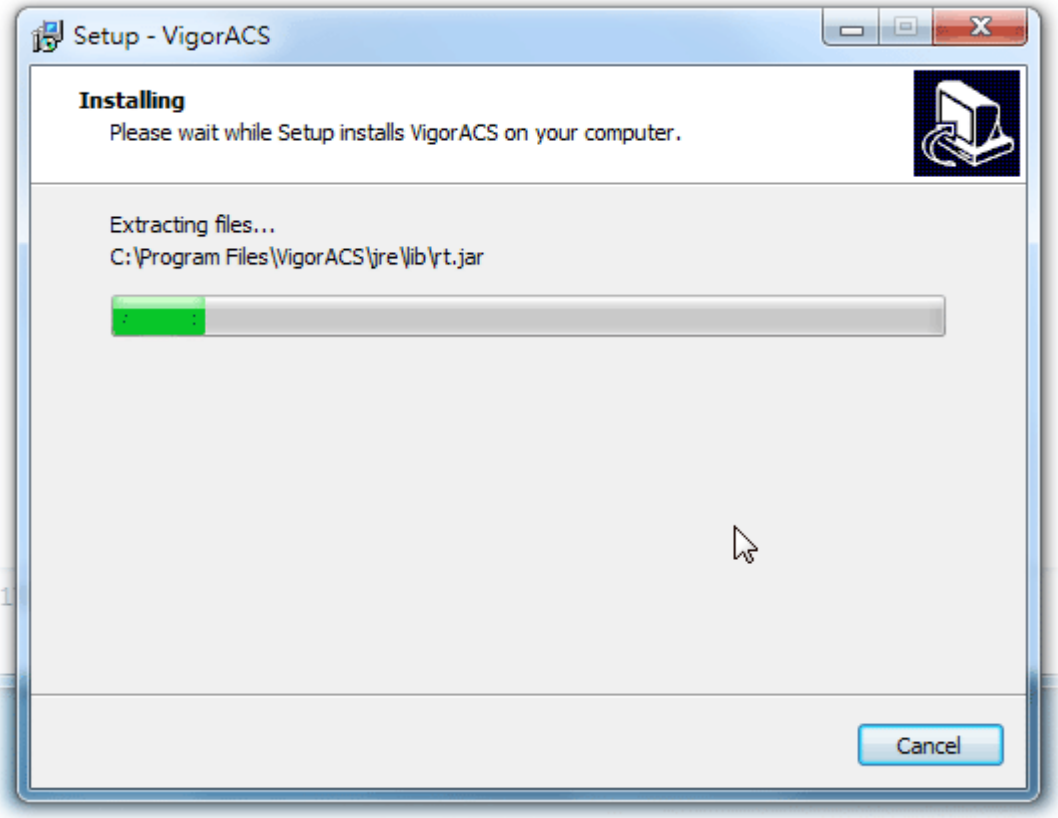
11. In this dialog, check the box of "**Create a desktop shortcut**" for your necessity. Click **Next**.



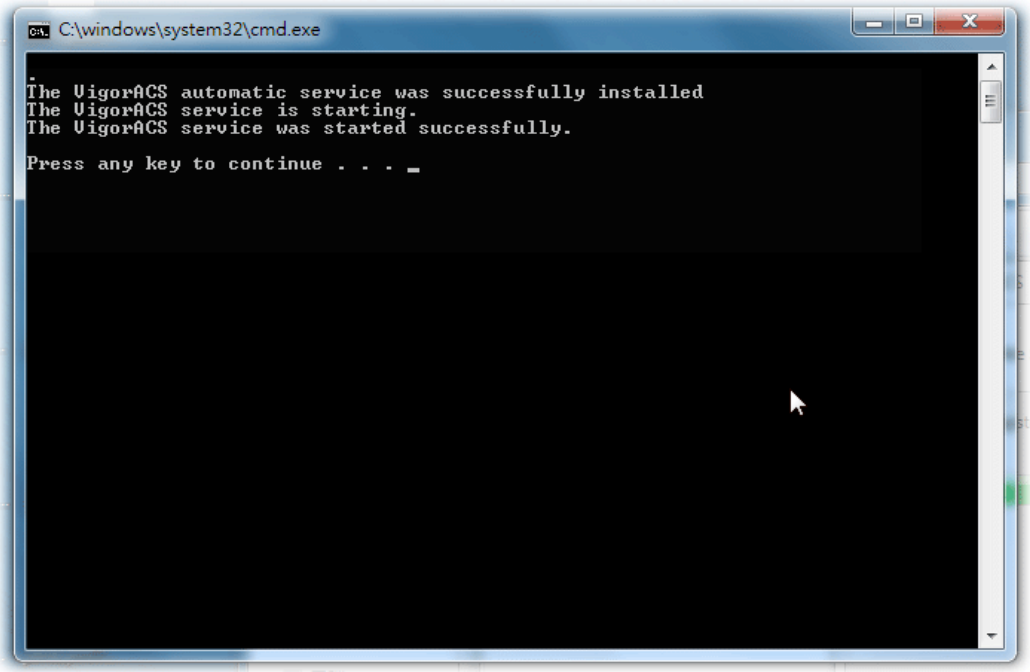
12. Now, the program is ready to install necessary features and files to your computer. Please click **Install** to start.



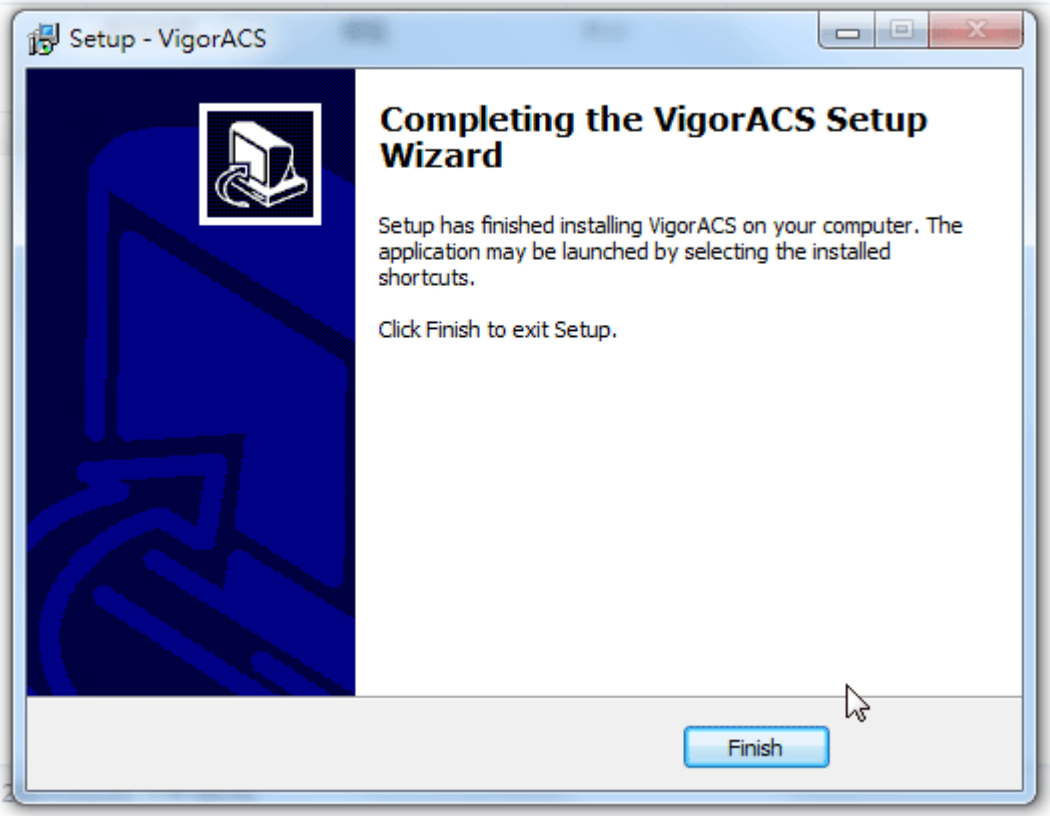
13. Please wait for a while to complete the installation.



14. While installing, the following screen will appear to show that MariaDB has been activated. Please wait for next dialog appearing.



15. Now the program has completed the installation of VigorACS 2. Click **Finish** to exit it.



2.1.4 StartMySQL/MariaDB Databse

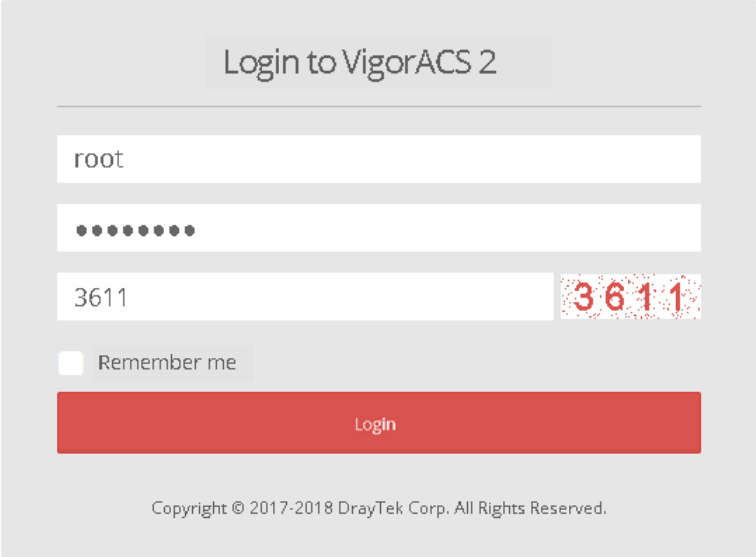
After installing VigorACS, install program will register MySQL/MariaDB to Windows Service. MySQL /MariaDB will startup automatically after installing VigorACS or rebooting system.

Normally, you don't need to worry about this step on Windows. But if you find any problems on VigorACS, you should check mysql/mariadb first. Please go to Windows Service check the MySQL/MariaDB Service starts or not.

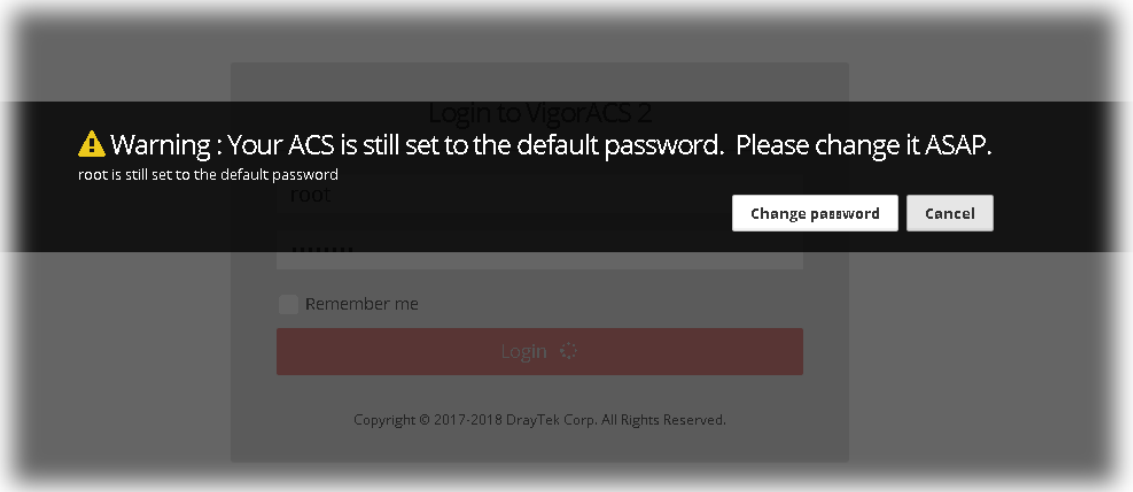
2.1.5 Start VigorACS

1. Login VigorACS. Use a web browser and type *"localhost:portnumber"*. Note that the port number must be the one defined for HTTP and HTTPS port while installing VigorACS. For example, if HTTPS is defined as 8011, then the URL will be *"localhost:8011".*

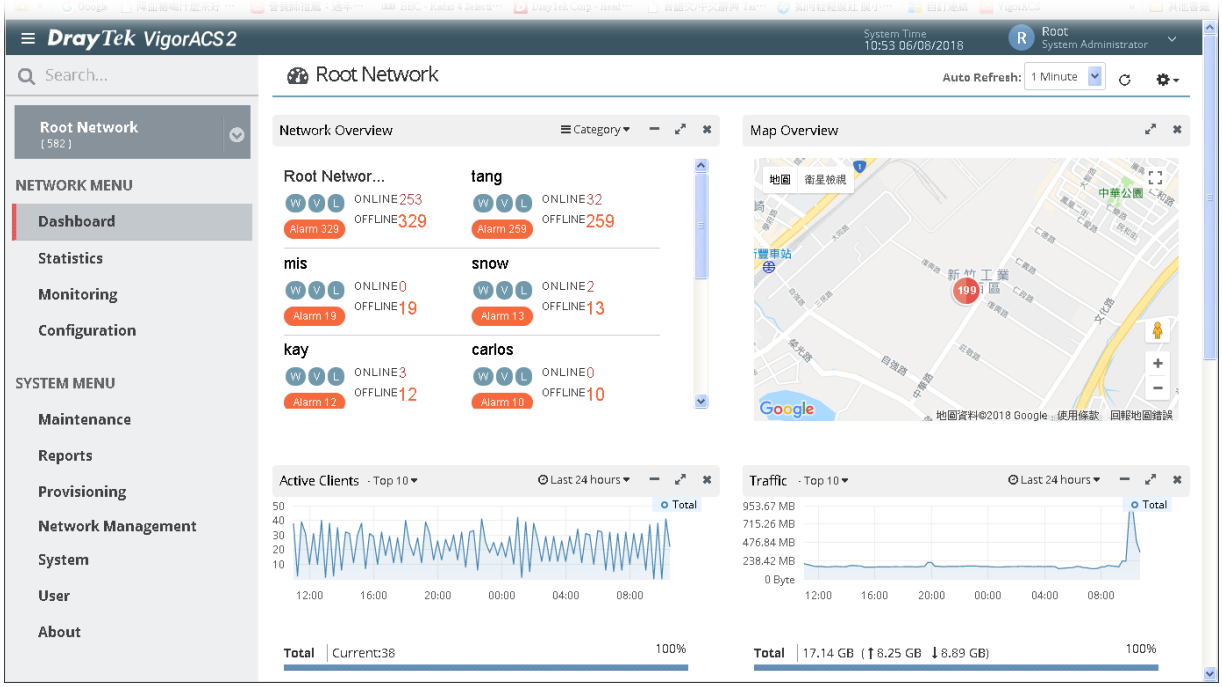
2. The login page of VigorACS will be shown as the following. Please type "**root"** as user name and "**admin123"** as password and type the authentication code. Then click **Login**.



3. For the first time to access into the web user interface, a warning message appears first. Please click the **Change password** button to change the default password for network security. If not, click **Cancel** to access into the web user interface of VigorACS and change the password later.



4. After clicking **Login**, main screen of VigorACS 2 will be shown as below.



Info

If you start it first time, VigorACS will ask you to input the server bind IP. Refer to 2.1.5.

2.2 Platform for Linux / Solaris

VigorACS supports Solaris 8 or 9, please confirm the OS version first.

To start up the VigorACS under Solaris, please execute "/usr/local/vigoracs/VigorACS/bin/vigoracs.sh" instruction. A list of menu items will be shown as follows.

1. Install mysql/mariadb.
2. shutdown mysql/mariadb
3. start VigorACS
4. shutdown VigorACS
5. edit bind ip of VigorACS (please keyin ip or servername)
6. set the MAX and MIN memory value of running java (It will valid after restarting VigorACS)
7. view the MAX and MIN memory value of running java
8. exit

2.2.1 Installation for MariaDB, Java and VigorACS

Follow the steps listed below to install VigorACS under Linux/Solaris:

1. Login Linux with root or the root privilege.
2. Download the ACS installation tar.bz2 package and extract it via below command:

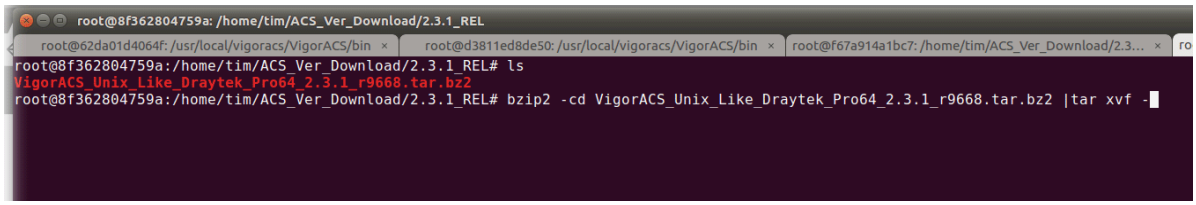
   ```
   #bzip2 -cd VigorACS_Unix_Like_xxxxxx_xxxxx.tar.bz2 | tar xvf -
   ```

   or

   ```
   #tar -jxv -f VigorACS_Unix_Like_xxxxxx_xxxxx.tar.bz2
   ```

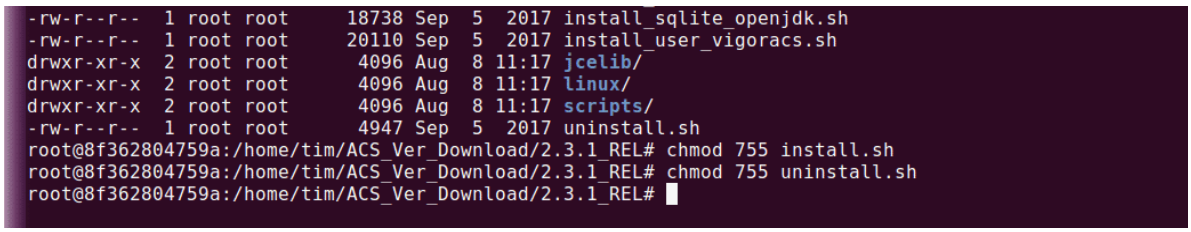
3. Decompress the setup packages

   ```
   bzip2 -cd VigorACS_Unix_Like_xxxxxx_xxxxx.tar.bz2 |tar xvf –
   ```



4. Change the permissions mode of **install.sh** and **uninstall.sh**.

   ```
   chmod 755 ./install.sh
   chmod 755 ./uninstall.sh
   ```



5. Execute ./install.sh installation file.

```
-rw-r--r--  1 root root      4947 Sep  5  2017 uninstall.sh
root@8f362804759a:/home/tim/ACS_Ver_Download/2.3.1_REL# chmod 755 install.sh
root@8f362804759a:/home/tim/ACS_Ver_Download/2.3.1_REL# chmod 755 uninstall.sh
root@8f362804759a:/home/tim/ACS_Ver_Download/2.3.1_REL# ./install.sh
ping IPv4 address success

entering /home/tim/ACS_Ver_Download/2.3.1_REL/linux......
```

Please make sure you have /usr/bin/sh first. If you don't have /usr/bin/sh, please type the command:

```
#ln -s /bin/sh /usr/bin/sh
```

6. The system will ask to create vigoracs, enter “y” to proceed.

```
-rw-r--r--  1 root root      4947 Sep  5  2017 uninstall.sh
root@8f362804759a:/home/tim/ACS_Ver_Download/2.3.1_REL# chmod 755 install.sh
root@8f362804759a:/home/tim/ACS_Ver_Download/2.3.1_REL# chmod 755 uninstall.sh
root@8f362804759a:/home/tim/ACS_Ver_Download/2.3.1_REL# ./install.sh
ping IPv4 address success

entering /home/tim/ACS_Ver_Download/2.3.1_REL/linux......

Please create /usr/local/vigoracs
Create it now? (y/n)
y
```

7. Next, the system will ask you to install xfonts-base and fontconfig, just enter “y” to proceed.

```
root@8f362804759a:/home/tim/ACS_Ver_Download/2.3.1_REL# ./install.sh
ping IPv4 address success

entering /home/tim/ACS_Ver_Download/2.3.1_REL/linux......

Please create /usr/local/vigoracs
Create it now? (y/n)
y

We'll install the following packages for showing captcha (For some Linux version e.g. Ubuntu, Debian):
- xfonts-base
- fontconfig
Install now(y/n)?
```

8. Next, please select the item number which you want to execute. Note that VigorACS supports Linux OS. The program will detect the system you have in your computer.

```
Setting up xfonts-base (1:1.0.4+nmu1) ...
Processing triggers for libc-bin (2.23-0ubuntu9) ...
Processing triggers for systemd (229-4ubuntu19) ...


You must restart this ACS Server manually to finish the installation process

Notice:
    * Installation ACS Server requires root privileges.
    * After installing the ACS server, need to configure the Firewall to Allow HTTP and HTTPS port

[1] Install mysql/mariadb
[2] Change root password and security configuration of mysql/mariadb ( Default root password is blank )
[3] Install or Upgrade java
[4] Install VigorACS ( It will build one mysql/mariadb database : tr069 )
[5] Upgrade VigorACS ( It will upgrade local tr069 database )

***********For Remote Database Only***********
[6] Redirect the database path of VigorACS to remote host ( It will not upgrade remote database )

[7] Exit
input select num :
```

(1) Install mysql/mariadb

(2) Change root password and security configuration of mysql/mariadb

(3) Install or Upgrade java

(4) Install VigorACS

(5) Upgrade VigorACS

(6) Redirect the database path of VigorACS to remote host

(7) Exit

input select num :

Info

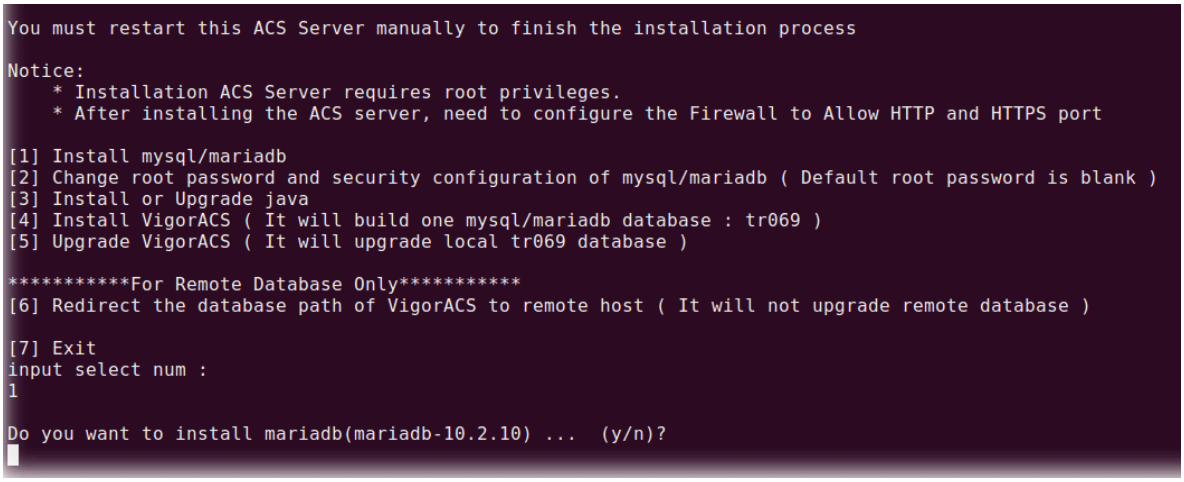
If your computer has installed MariaDB and java previously, ignore the installation of them. Otherwise, install all the required items (MariaDB, Java and VigorACS) for your system. Item number **5** is used to upgrade VigorACS, so it is not necessary for you to execute for the first time of installation.

9. Input 1 to install MariaDB first. Notice that it will setup blank as default password. You can change the password by using the following command.

```
#/usr/local/mysql/bin/mysqladmin
--defaults-file=/usr/local/mysql/my.cnf -u root password 'new password'
```

Info

The password set in this step is used for VigorACS 2 to login database.



Follow the instructions on the screen to finish the MariaDB installation.

10. Later, input 2 to change root password and security configuration of mysql/mariadb.

```
The latest information about MariaDB is available at http://mariadb.org/.
You can find additional information about the MySQL part at:
http://dev.mysql.com
Consider joining MariaDB's strong and vibrant community:
https://mariadb.org/get-involved/

Starting VigorACS MYSQL: [OK]

Notice:
    * Installation ACS Server requires root privileges.
    * After installing the ACS server, need to configure the Firewall to Allow HTTP and HTTPS port

[1] Install mysql/mariadb
[2] Change root password and security configuration of mysql/mariadb ( Default root password is blank )
[3] Install or Upgrade java
[4] Install VigorACS ( It will build one mysql/mariadb database : tr069 )
[5] Upgrade VigorACS ( It will upgrade local tr069 database )

***********For Remote Database Only***********
[6] Redirect the database path of VigorACS to remote host ( It will not upgrade remote database )

[7] Exit
input select num :
2

NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB
      SERVERS IN PRODUCTION USE!  PLEASE READ EACH STEP CAREFULLY!

In order to log into MariaDB to secure it, we'll need the current
password for the root user.  If you've just installed MariaDB, and
you haven't set the root password yet, the password will be blank,
so you should just press enter here.

Enter current password for root (enter for none):
```

Info The password set in this step is used for VigorACS 2 to login database.

11. Input 3 to install Java.

```
You can test the MariaDB daemon with mysql-test-run.pl
cd './mysql-test' ; perl mysql-test-run.pl

Please report any problems at http://mariadb.org/jira

The latest information about MariaDB is available at http://mariadb.org/.
You can find additional information about the MySQL part at:
http://dev.mysql.com
Consider joining MariaDB's strong and vibrant community:
https://mariadb.org/get-involved/

Starting VigorACS MYSQL: [OK]

Notice:
    * Installation ACS Server requires root privileges.
    * After installing the ACS server, need to configure the Firewall to Allow HTTP and HTTPS port

[1] Install mysql/mariadb
[2] Change root password and security configuration of mysql/mariadb ( Default root password is blank )
[3] Install or Upgrade java
[4] Install VigorACS ( It will build one mysql/mariadb database : tr069 )
[5] Upgrade VigorACS ( It will upgrade local tr069 database )

***********For Remote Database Only***********
[6] Redirect the database path of VigorACS to remote host ( It will not upgrade remote database )

[7] Exit
input select num :
3

Do you want to install jdk(openjdk-1.8.0.151) ...  (y/n)?
```

Follow the instructions on the screen to finish the Java installation.

12. Input 4 to install VigorACS. It is suggested to use ACS customized MariaDB database. When asked to enter MariaDB password, press “Enter” if you haven’t changed the password via the command. Then, confirm that TR-069 database has been installed successfully.

```
openjdk-1.8.0.151-linux-x64/lib/jconsole.jar
openjdk-1.8.0.151-linux-x64/lib/jexec
openjdk-1.8.0.151-linux-x64/lib/orb.idl
openjdk-1.8.0.151-linux-x64/lib/sa-jdi.jar
openjdk-1.8.0.151-linux-x64/lib/tools.jar
openjdk-1.8.0.151-linux-x64/src.zip
openjdk-1.8.0.151-linux-x64/tapset/
openjdk-1.8.0.151-linux-x64/tapset/hotspot-1.8.0.151-1.b12.el6_9.x86_64.stp
openjdk-1.8.0.151-linux-x64/tapset/hotspot_gc-1.8.0.151-1.b12.el6_9.x86_64.stp
openjdk-1.8.0.151-linux-x64/tapset/hotspot_jni-1.8.0.151-1.b12.el6_9.x86_64.stp
openjdk-1.8.0.151-linux-x64/tapset/jstack-1.8.0.151-1.b12.el6_9.x86_64.stp

ln -s /usr/local/openjdk-1.8.0.151-linux-x64/ /usr/javase


Notice:
    * Installation ACS Server requires root privileges.
    * After installing the ACS server, need to configure the Firewall to Allow HTTP and HTTPS port

[1] Install mysql/mariadb
[2] Change root password and security configuration of mysql/mariadb ( Default root password is blank )
[3] Install or Upgrade java
[4] Install VigorACS ( It will build one mysql/mariadb database : tr069 )
[5] Upgrade VigorACS ( It will upgrade local tr069 database )

**********For Remote Database Only**********
[6] Redirect the database path of VigorACS to remote host ( It will not upgrade remote database )

[7] Exit
input select num :
4
[Install VigorACS]

[Warning] It will clear the existing ACS database and create a new one.Do you want to continue? (y/n)
```

Wait and follow the instructions on the screen to finish the installation.

```
Notice:
    * Installation ACS Server requires root privileges.
    * After installing the ACS server, need to configure the Firewall to Allow HTTP and HTTPS port

[1] Install mysql/mariadb
[2] Change root password and security configuration of mysql/mariadb ( Default root password is blank )
[3] Install or Upgrade java
[4] Install VigorACS ( It will build one mysql/mariadb database : tr069 )
[5] Upgrade VigorACS ( It will upgrade local tr069 database )

**********For Remote Database Only**********
[6] Redirect the database path of VigorACS to remote host ( It will not upgrade remote database )

[7] Exit
input select num :
4
[Install VigorACS]

[Warning] It will clear the existing ACS database and create a new one.Do you want to continue? (y/n)
y
Do you want to use remote/local database? (1: Local side database, 2: Remote side database, Enter for Local side database)
1
Which Mysql do you want to use ? (1: ACS , 2: OS default, Enter for ACS mysql)
1
MySQL is running!!
Please keyin password of root of MySQL/MariaDB.
```

```
MySQL is running!!
Please keyin password of root of MySQL/MariaDB.

Do you want to test password now ?(y/n)
y

Access Database Success
Start to install VigorACS....
```

```
  inflating: VigorACS/version/vigoracs.6_2.3.0
  inflating: VigorACS/version/vigorapm.db
  inflating: VigorACS/version/vigorapm.sql.1
  inflating: VigorACS/version/vigorapm.sql.2
  inflating: VigorACS/version/vigorapm.sql.all
After installing VigorACS , tr069 will be created automatically.
Start to create tr069 database ....
Drop and Create tr069 database NOW !!
Create tr069 database successfully....
Create tr069 database table....
```

13. Now, input 6 to redirect the database path of VigorACS to remote host. For remote database, please execute such step on remote host.

```
Start to create tr069 database ....
Drop and Create tr069 database NOW !!
Create tr069 database successfully....
Create tr069 database table....
Create tr069 table successfully....
VigorACS  and tr069 install Successfully

Notice:
    * Installation ACS Server requires root privileges.
    * After installing the ACS server, need to configure the Firewall to Allow HTTP and HTTPS port

[1] Install mysql/mariadb
[2] Change root password and security configuration of mysql/mariadb ( Default root password is blank )
[3] Install or Upgrade java
[4] Install VigorACS ( It will build one mysql/mariadb database : tr069 )
[5] Upgrade VigorACS ( It will upgrade local tr069 database )

***********For Remote Database Only***********
[6] Redirect the database path of VigorACS to remote host ( It will not upgrade remote database )

[7] Exit
input select num :
6
Please keyin IP:Port of root of Remote MySQL/MariaDB.
Please keyin IP (default IP: 127.0.0.1) :
```

14. Input 7 to finish and exit the installation.

Info 1	Step 13 is required for establishing remote database only. You can ignore it while building local database.
Info 2	To prevent port conflicts, we'll suggest that using other ports for HTTP and HTTPS instead of default 80 and 443.

2.2.2 StartMySQL/MariaDB Databse

After installing VigorACS, mysql/mariadb daemon has started. You can to see it using "*ps -ef|grep mysql*" instruction. Use the menu item 1 / 2 to start / shutdown mysql/mariadb.

2.2.3 Start VigorACS

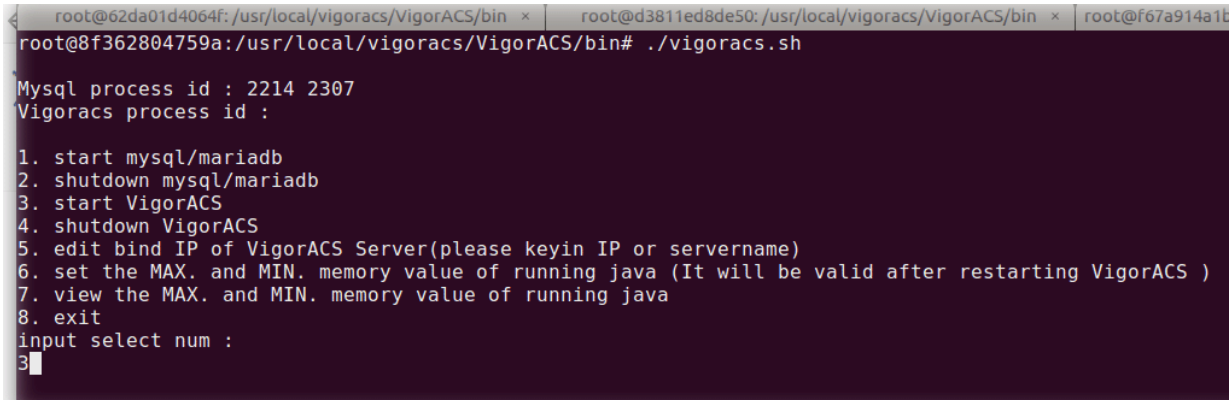
After installing VigorACS, access "/usr/local/vigoracs/VigorACS/bin", execute "./vigoracs.sh".

```
root@62da01d4064f: /usr/local/vigoracs/VigorACS/bin ×  root@d3811ed8de50: /usr/local/vigoracs/VigorACS/bin ×  root@f67a914a1b
root@8f362804759a:/usr/local/vigoracs/VigorACS/bin# ./vigoracs.sh

Mysql process id : 2214 2307
Vigoracs process id :

1. start mysql/mariadb
2. shutdown mysql/mariadb
3. start VigorACS
4. shutdown VigorACS
5. edit bind IP of VigorACS Server(please keyin IP or servername)
6. set the MAX. and MIN. memory value of running java (It will be valid after restarting VigorACS )
7. view the MAX. and MIN. memory value of running java
8. exit
input select num :
```

Select item 3 to start VigorACS.



If you ever reboot the machine after installing VigorACS, just select item 1 to start mysql/mariadb first. Then, select item 3 to start VigorACS.

2.2.4 Edit VigorACS IP

When starting the VigorACS at first time on Solaris or Linux, startup program will ask you input Server IP or input Enter key by using the IP address of the host. Once you input the IP address, VigorACS will keep it on *startway.txt*. Next time, if you want to change it, you can select item 5 to edit *startway.txt* using *vi editor*.

2.3 Registering VigorACS

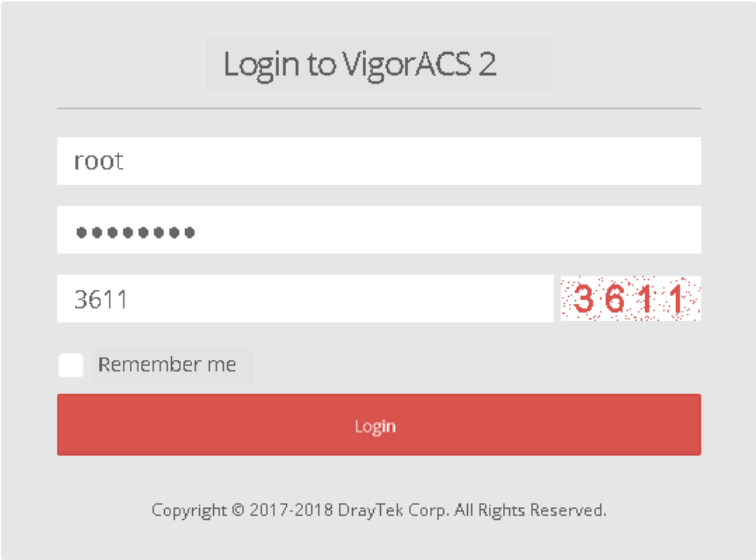
For the first time to activate VigorACS, the system will ask you to register VigorACS onto DrayTek MyVigor server. Refer to the following sections to register VigorACS on different platforms.

Info 1	While installing VigorACS, install program will register MySQL/MariaDB to Windows Service. MySQL/MariaDB will startup automatically after installing VigorACS or rebooting system. Normally, you don't need to worry about this step on Windows. But if you find any problems on VigorACS, you should check mysql/mariadb first. Please go to Windows Service check the MySQL/MariaDB Service starts or not.
Info 2	After installing VigorACS, the software will startup automatically. Normally, you don't need to worry about this step on Windows. But, if you find any problem on VigorACS, you could shut down VigorACS and start VigorACS again.

Registration for VigorACS via Windows Platform

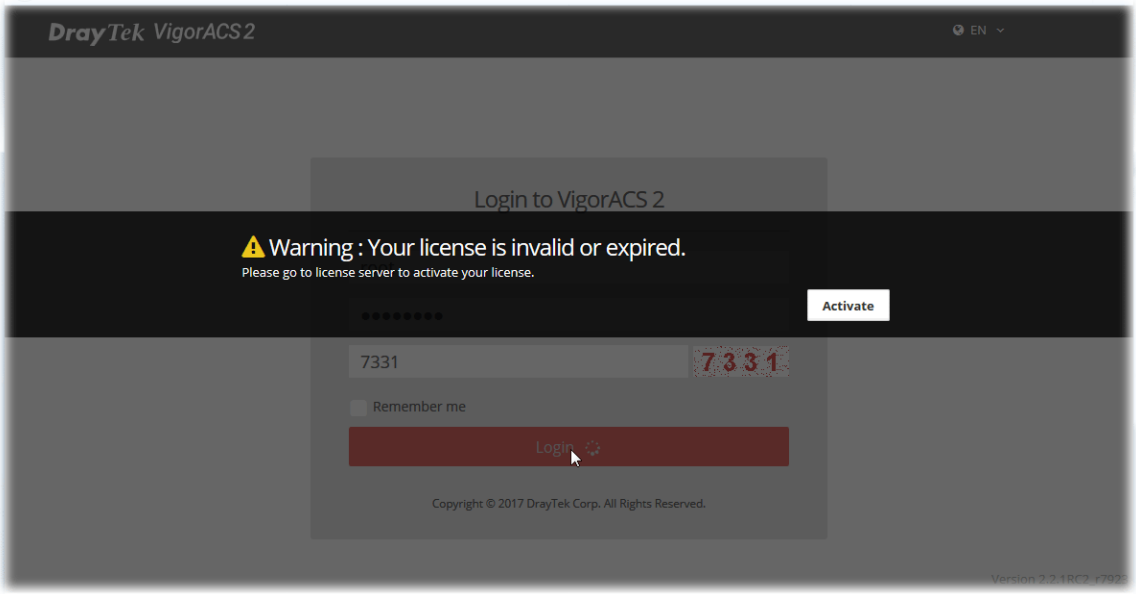
Below shows the steps to register VigorACS:

1. Login VigorACS. Use a web browser and type *"localhost:portnumber"*. Note that the port number must be the one defined for HTTP and HTTPS port while installing VigorACS. For example, if HTTPS is defined as 8011, then the URL will be *"localhost:8011"*.
2. The login page of VigorACS will be shown as the following. Please type "**root"** as user name and "**admin123"** as password and type the authentication code. Then click **Login**.

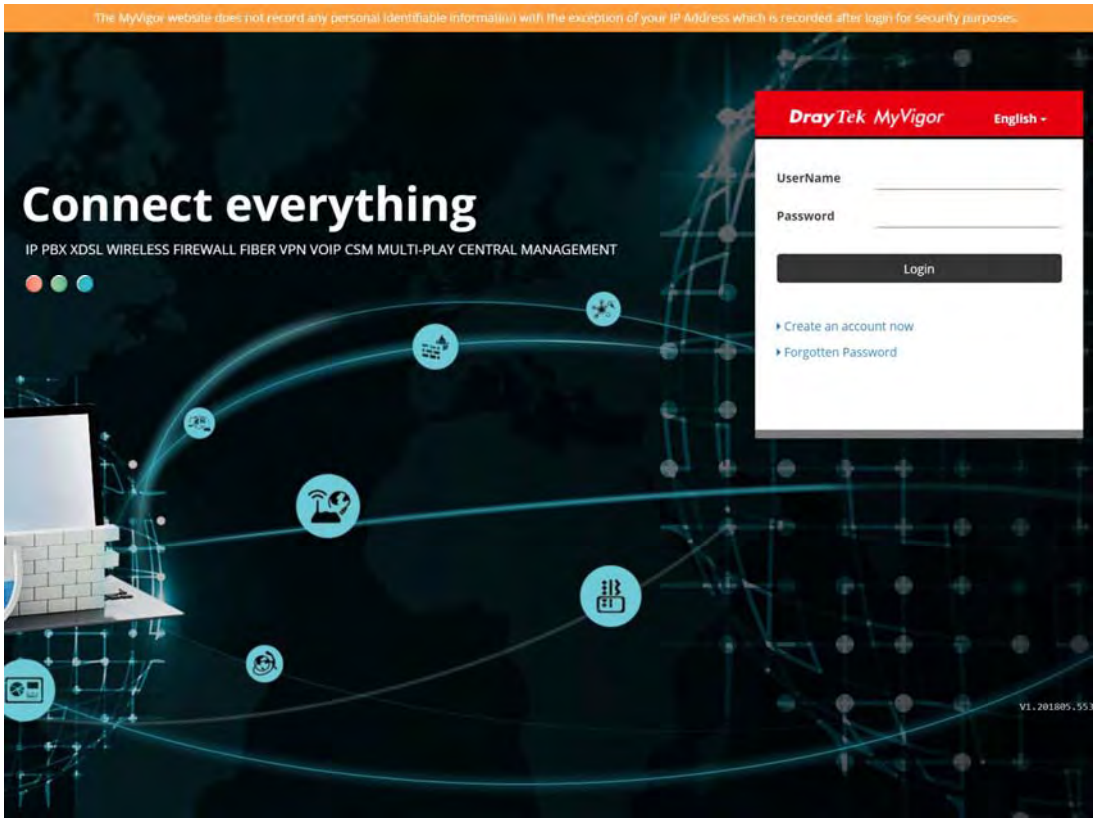


Info "root" and "admin123" are default settings.

3. A License Error dialog appears as follows. Simply click **Active**.



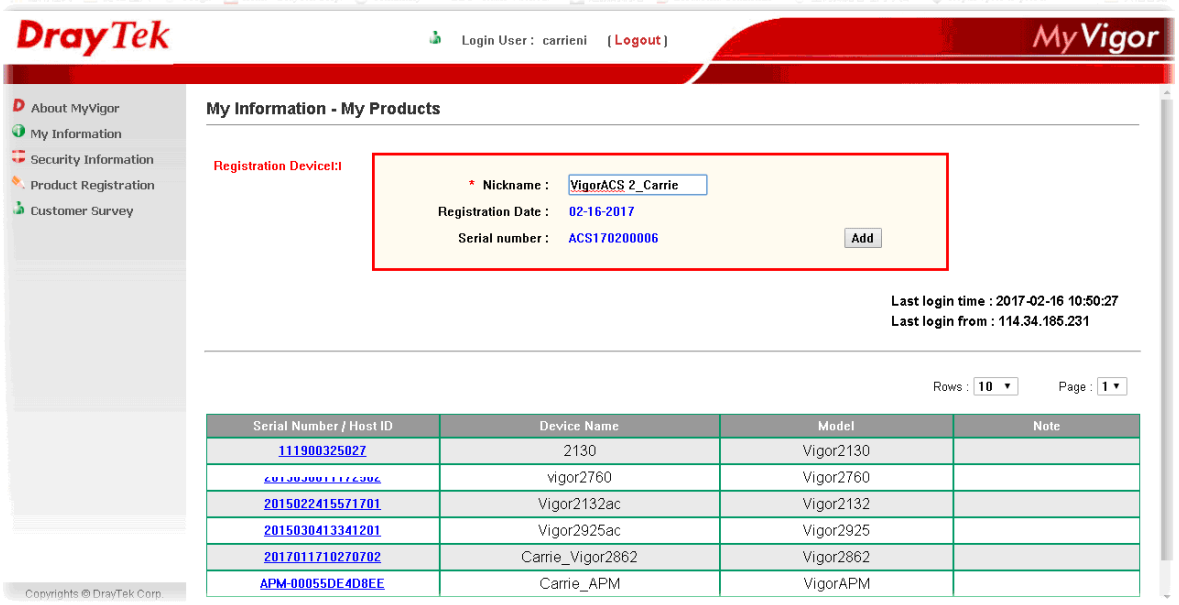
4. A login page for MyVigor web site will be popped up automatically. Type your account (user name) and password in this page. Check the box of "I'm not a robot". Then, click **Login.**



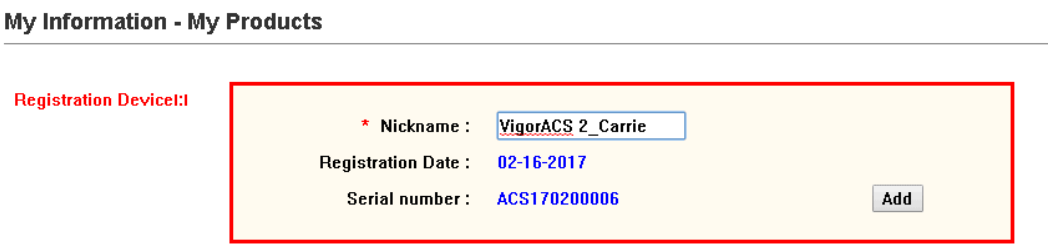
Info

If you do not have any account, simply click Create an account now to create a new one for using the service provided by MyVigor web site.

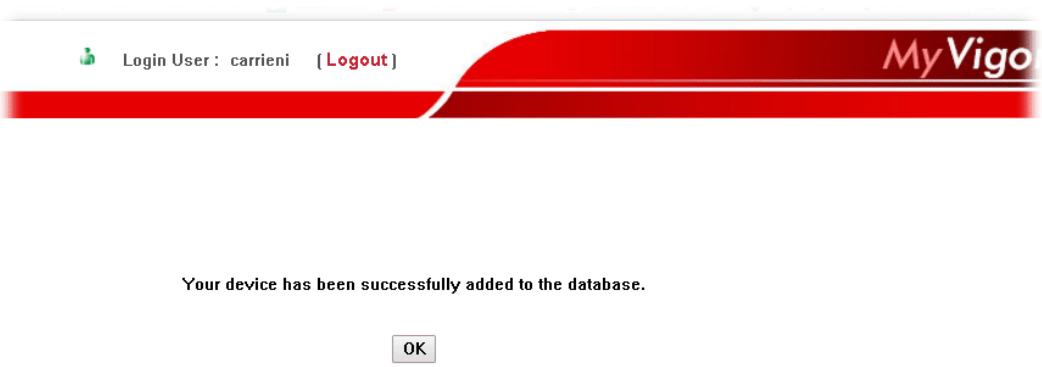
5. MyVigor will verify and authenticate if the user account you typed is allowed to access into the web site. If yes, the following screen will appear.



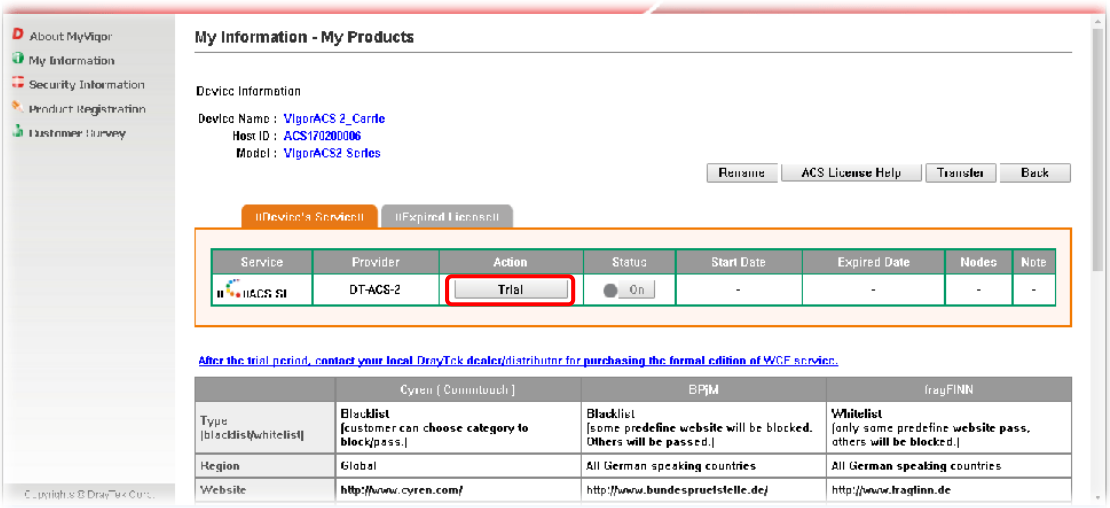
6. Type a nickname for VigorACS and click **Add**.



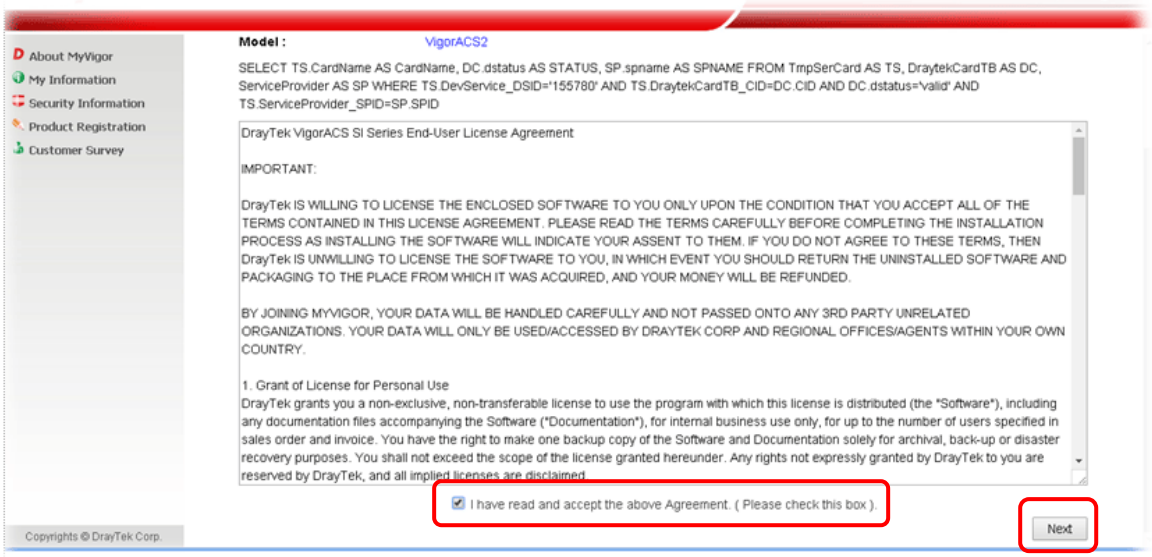
7. After clicking **Add**, you can see the following screen. Click **OK**.



8. You will get a device information page as shown below. If you are the new user of VigorACS, you can get a free charge of 30-day service of VigorACS. Simply click the **Trial** button.

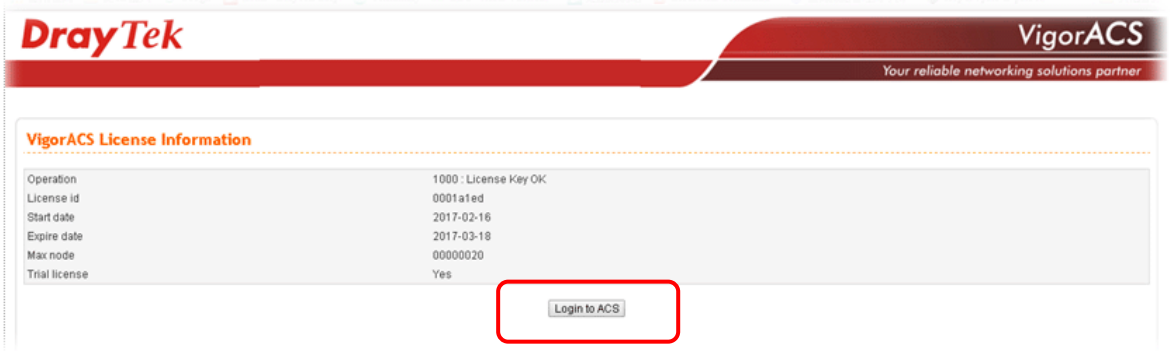


9. From the following screen, check the box of "**I have read and accept the above....**" and click **Next**.

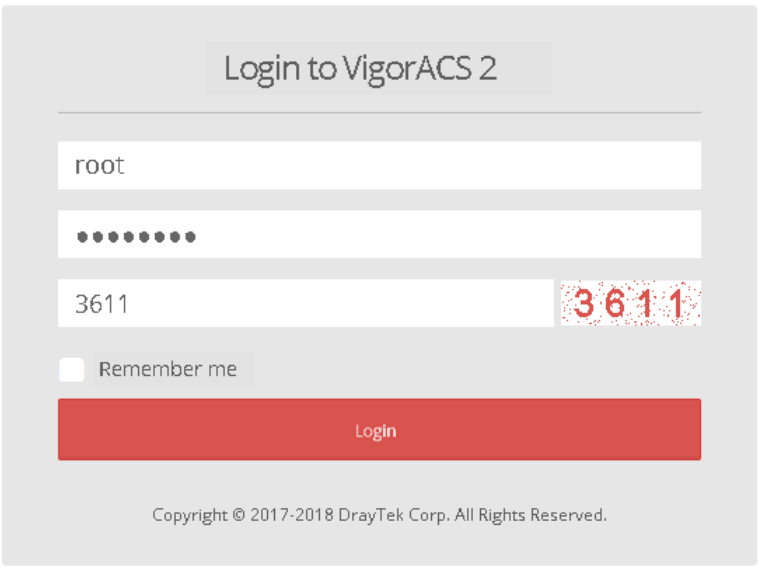


10. In the page below, click **Register**.

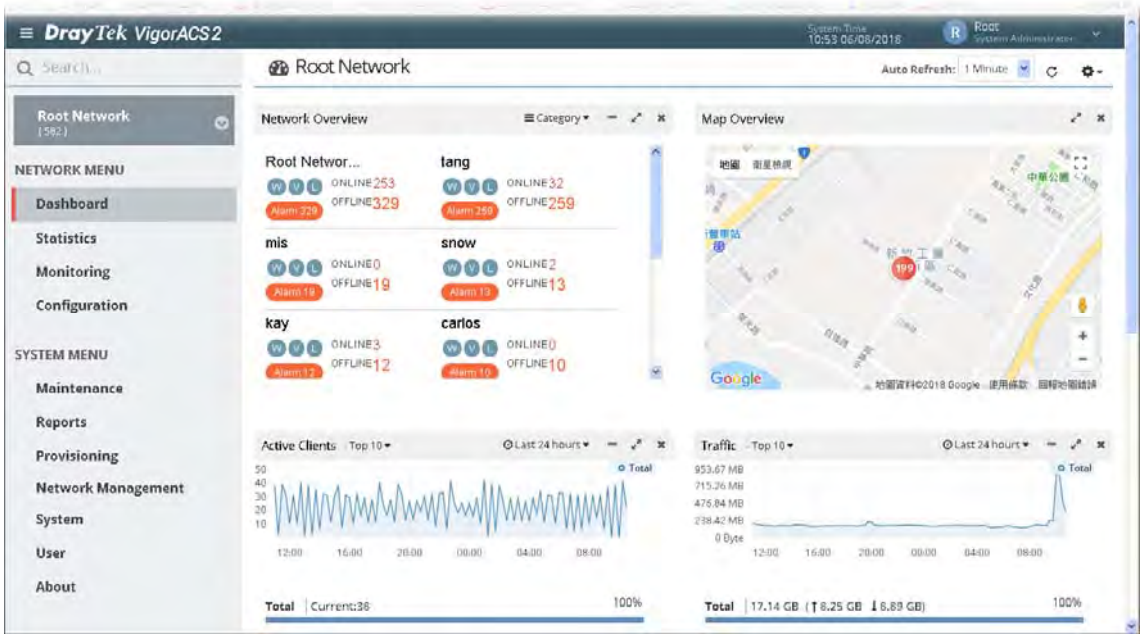
11. When the VigorACS License Information page appears, the service is ready for you to use. Click **Login to ACS** to use VigorACS service.



12. The login page will appear as follows. Type the default settings of User Name (root) and Password (admin123) and type the authentication code. Then, click **Login**.



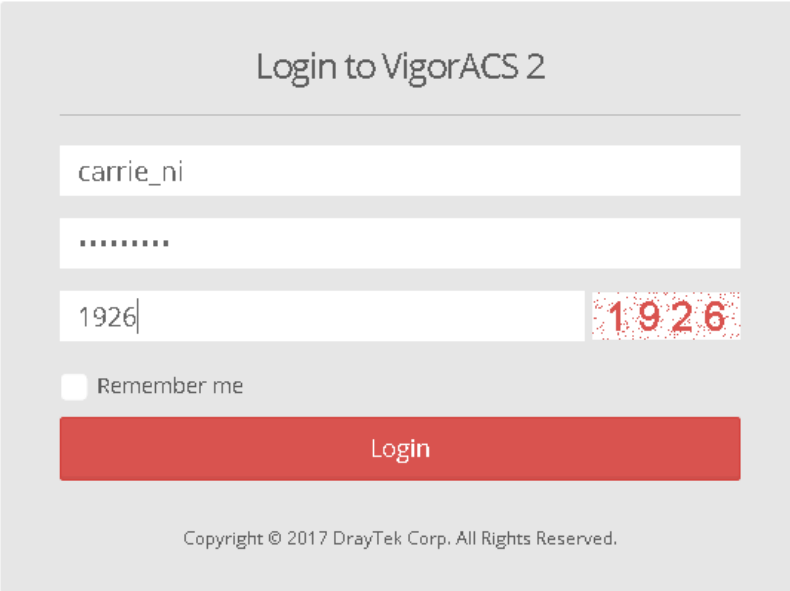
13. Now, the main screen of VigorACS will be shown as follows.



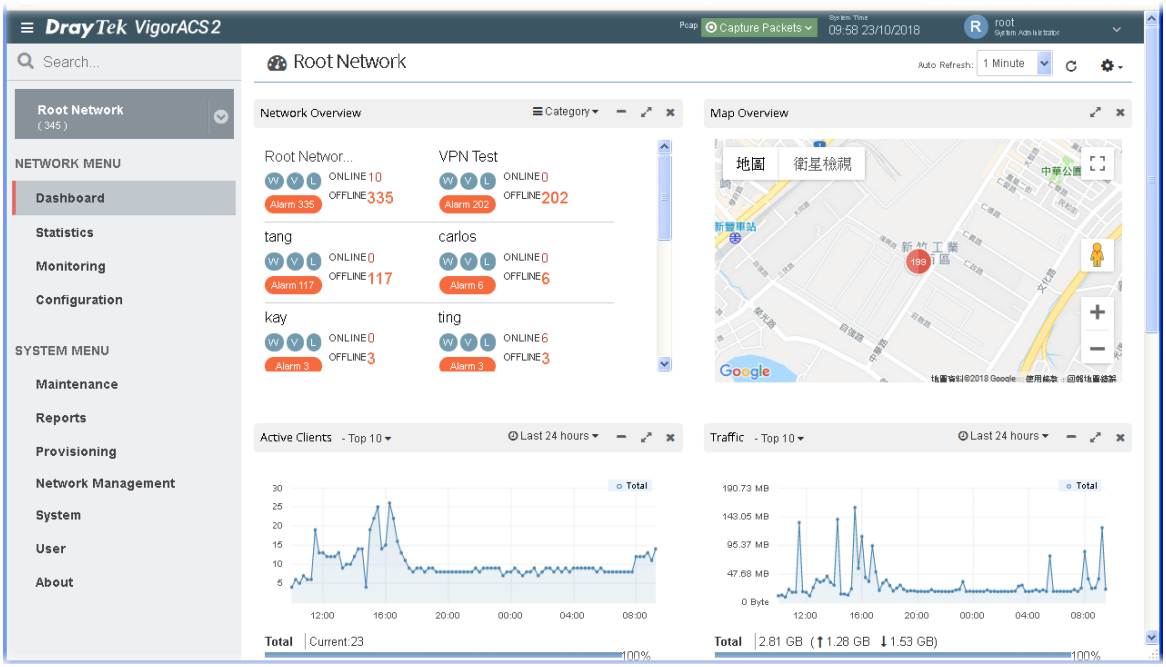
Chapter 3 Getting Started

3.1 Accessing Web Page of VigorACS

1. Login VigorACS. Use a web browser and type *"localhost:portnumber"*. Note that the port number must be the one defined for HTTP and HTTPS port while installing VigorACS. For example, if HTTPS is defined as 8011, then the URL will be *"localhost:8011"*.

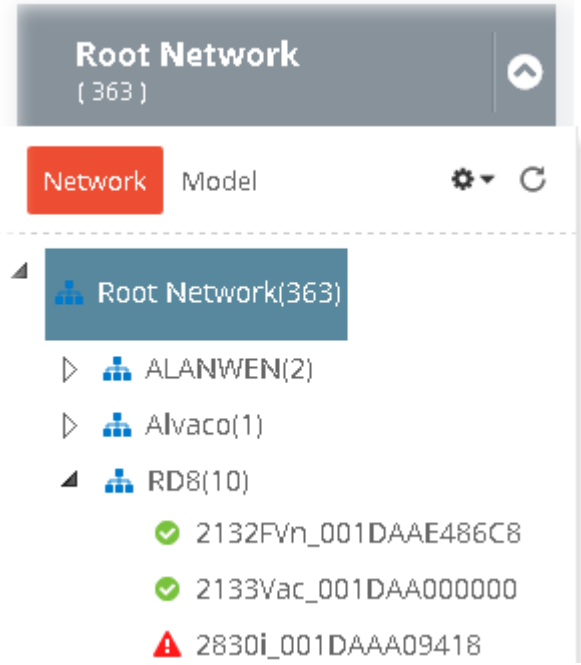


2. After clicking **Login**, main screen of VigorACS 2 will be shown as below.



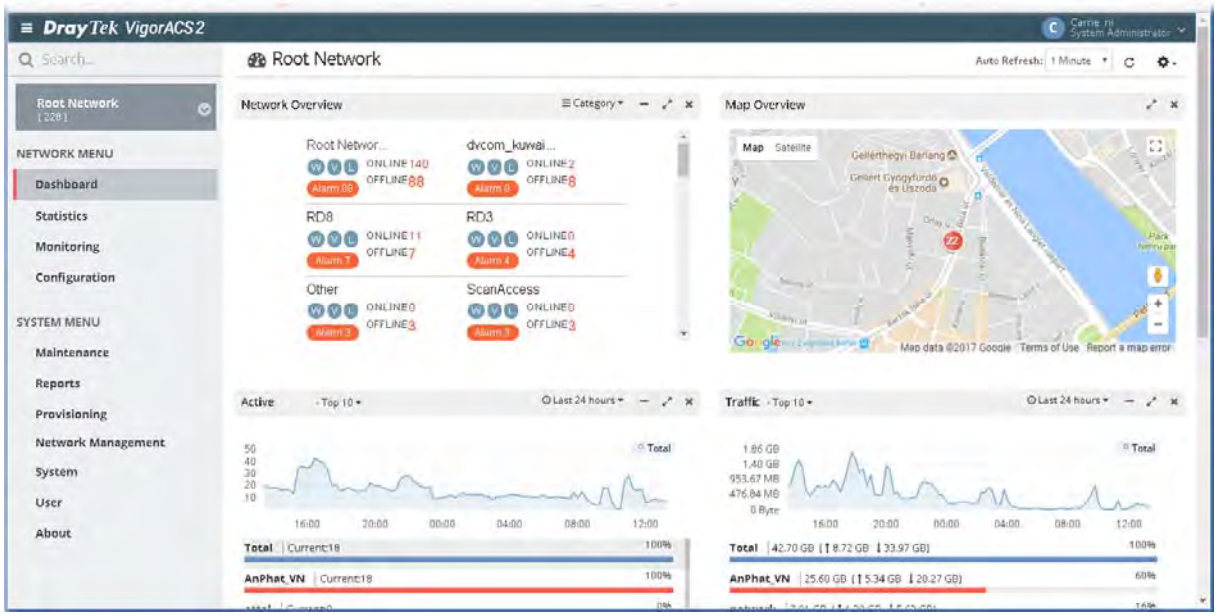
3.2 Dashboard

The information displayed on dashboard will be changed based on the network, group or device selected. To switch the dashboard among network, group and device, simply click **Root Network** on the home page to expand the tree view.



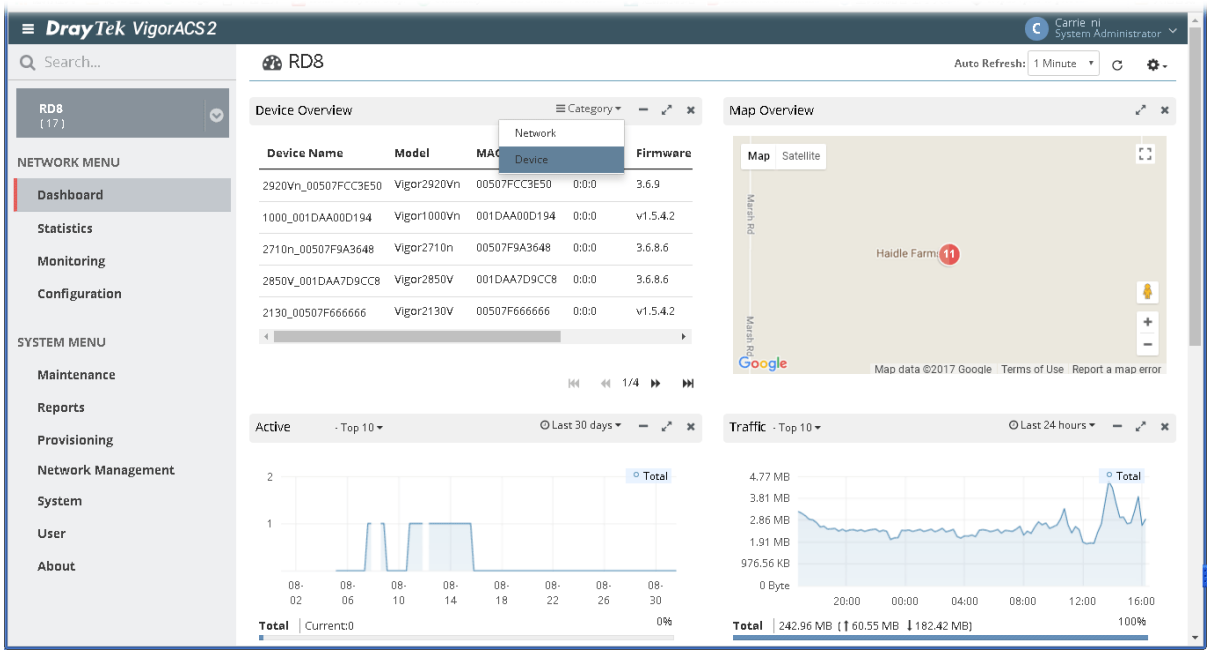
3.2.1 Dashboard for Root Network

The dashboard displays brief and quick overview information for the devices (CPE, Access Point) managed by VigorACS.



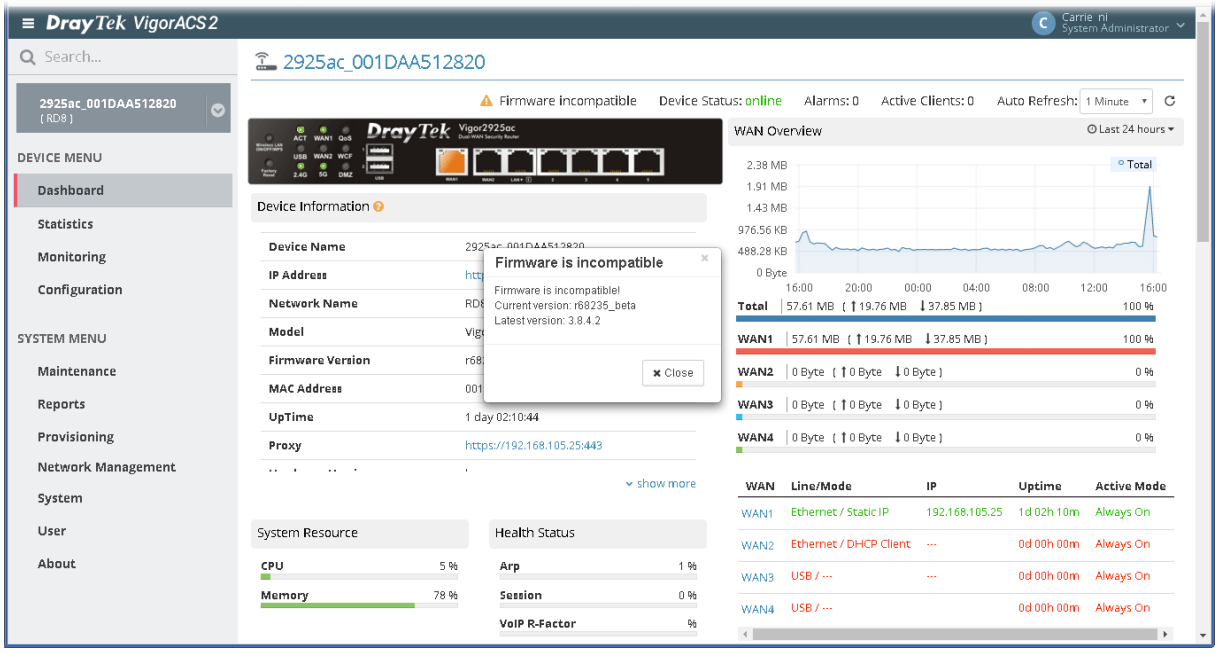
3.2.2 Dashboard for Group

This page offers information about device overview (including device name, model, MAC, up time, firmware version, LAN clients, and VPN), top 10 clients, new devices, map overview, traffic top 10 for the selected group.

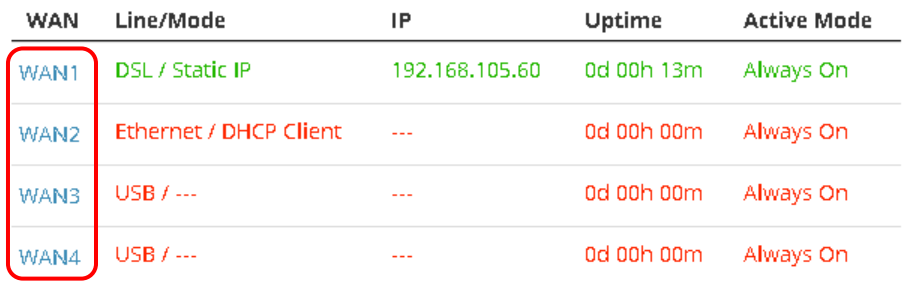


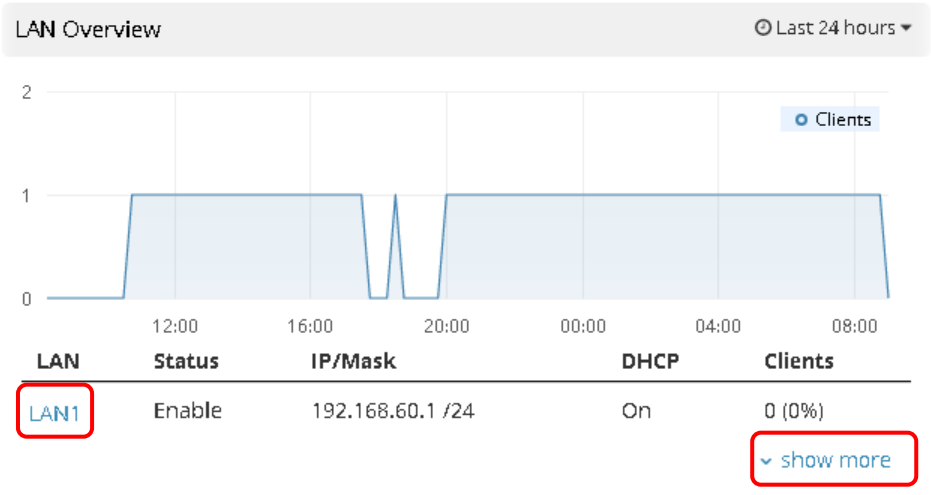
3.2.3 Dashboard for Device (CPE, AP)

This page offers device information such as system resource, connectivity and alerts for such device, wireless LAN configuration, wireless station overview, WAN overview, LAN overview, VPN overview, Map, and Quick Tools for the selected device.



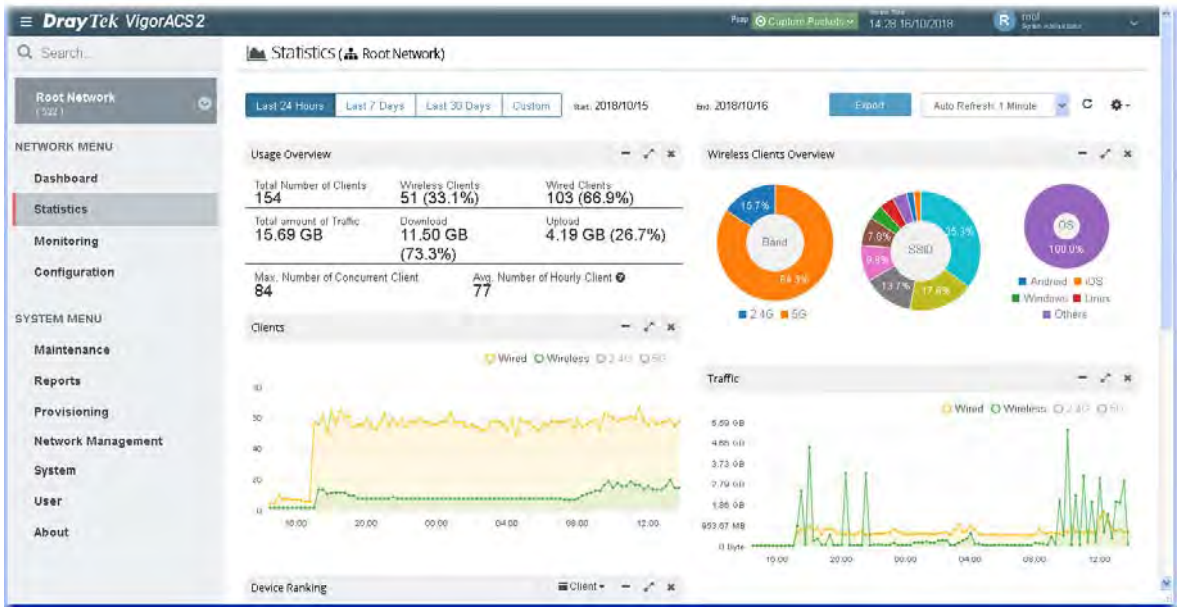
Move the mouse cursor on the dashboard. When the mouse cursor becomes a “hand” on certain place, simply click it to access into the configuration page of that option.





3.2.4 Statistics for Network

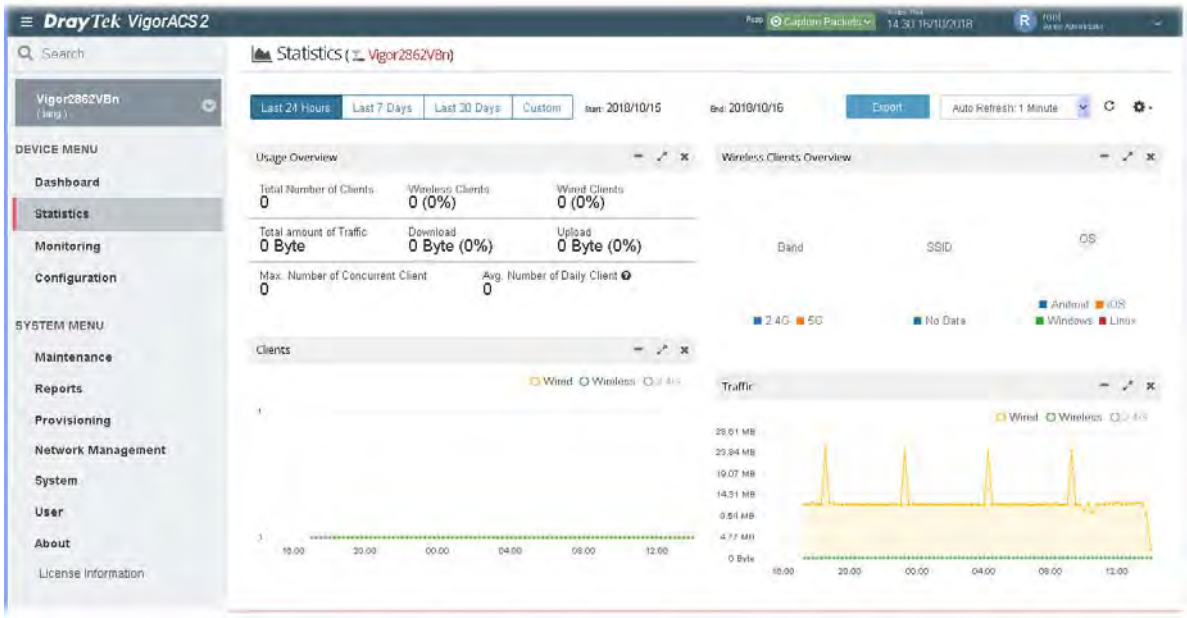
The page offers statistics for all the devices listed under root networks, including usage overview, wireless clients Overview, data traffic, device ranking, and client ranking. By clicking Last 24 Hours, Last 7 Days, Last 30 Days or Custom setting (define the period), the administrator can obtain various statistics within the time period.



In addition, the statistics can be exported as ".XLS" file if you click the **Export** button on the top side.

3.2.5 Statistics for CPE

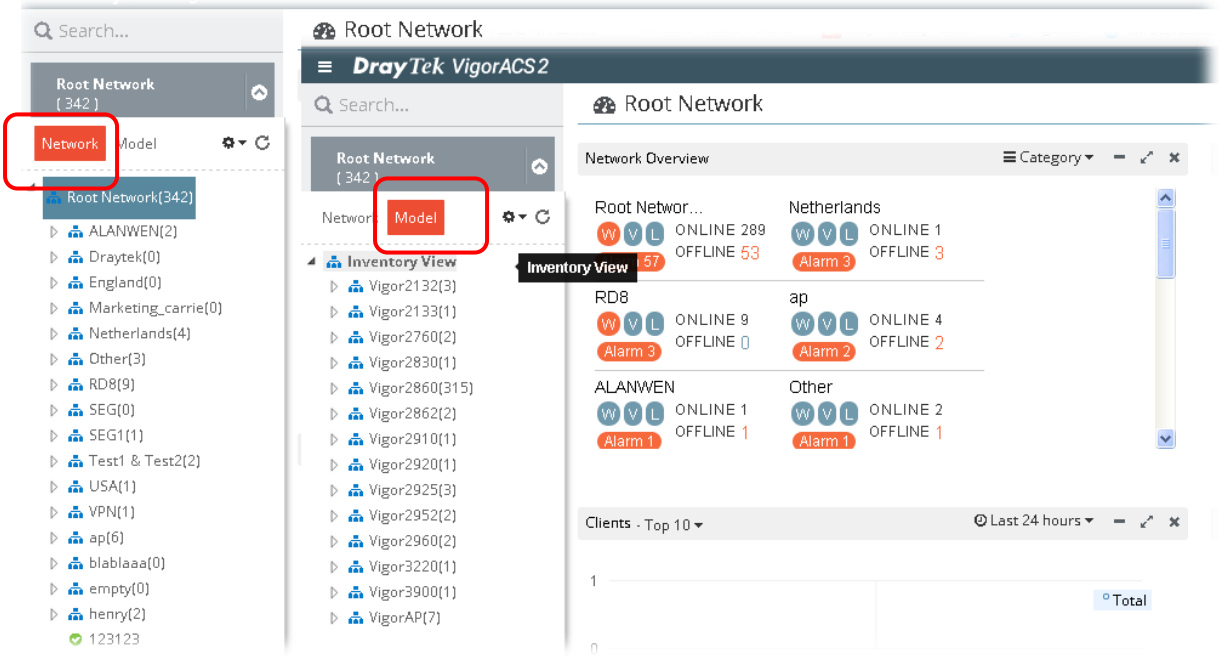
The page offers statistics for the selected device listed under root networks, including usage overview, wireless clients Overview, data traffic, device ranking, and client ranking. By clicking Last 24 Hours, Last 7 Days, Last 30 Days or Custom setting (define the period), the administrator can obtain various statistics within the time period.



In addition, the statistics can be exported as ".XLS" file if you click the **Export** button on the top side.

3.2.6 Root Network and Inventory View

Root Network shows a tree view for all of the managed devices (CPE, Access Point) grouped under different networks. Inventory view allows the devices to be divided and categorized with the model series, such as Vigor2860 series, Vigor3900 series, and so on.

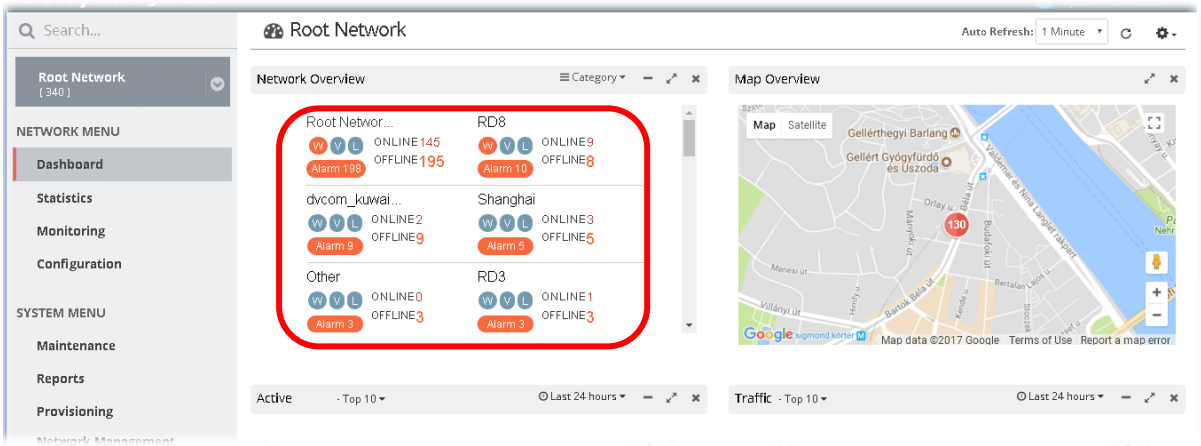


Click **Network** to display Root Network view; click **Model** to display the Inventory view.

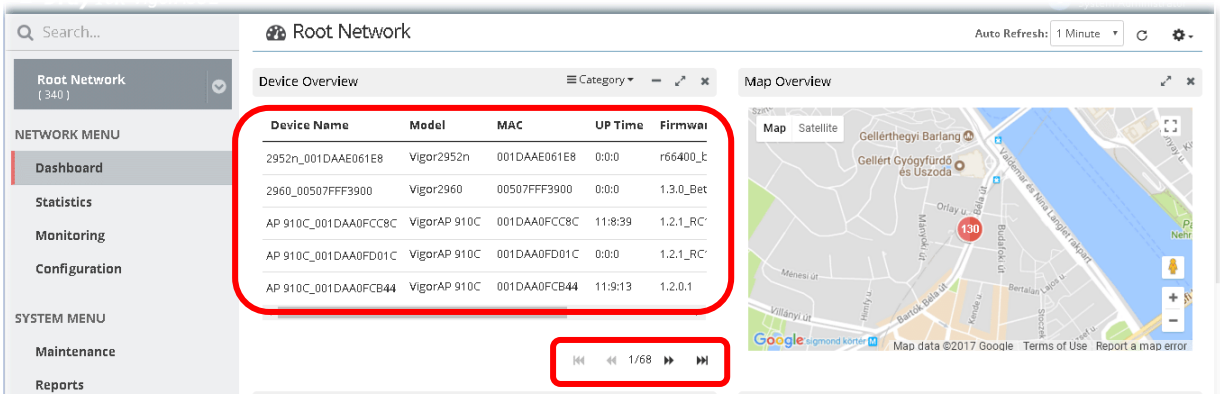
3.2.7 Network Overview

The network overview can be displayed by two methods, the Network Overview and the Device Overview. Click **Category** to switch these two methods.

Under **Network Overview**, all of the networks with names can be seen on this area. Use the scroll bar to view others networks. Icons of W, V and L represent WAN Alarm, VPN Alarm and LAN Alarm. The digit next to the word, Alarm, indicates the number of warning message received by that network. The number next to ONLINE indicates how many devices are active; the number next to OFFLINE indicates how many devices are inactive.



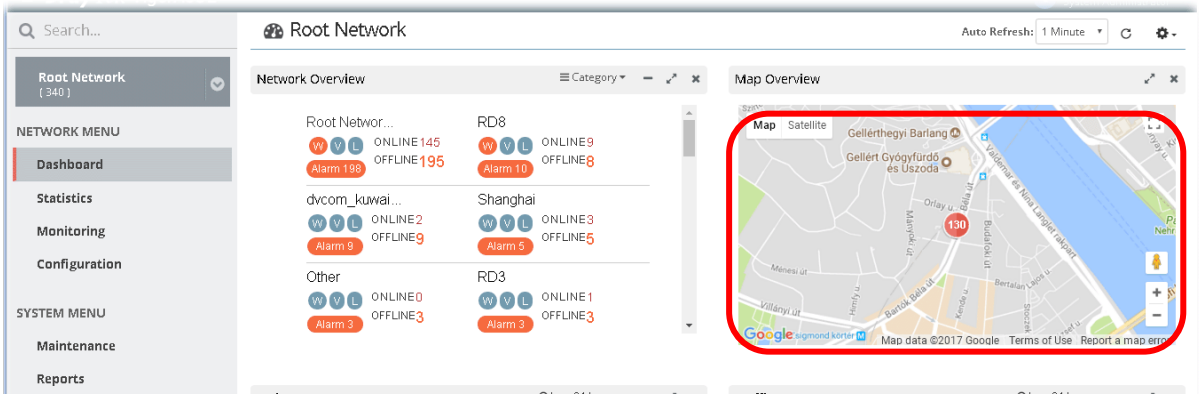
Under **Device Overview**, move the scroll bar left and right to check basic information for each device. Click **>>** (Next) or **<<** (Previous) arrow to display next page for checking information for other devices.



3.2.8 Map Overview

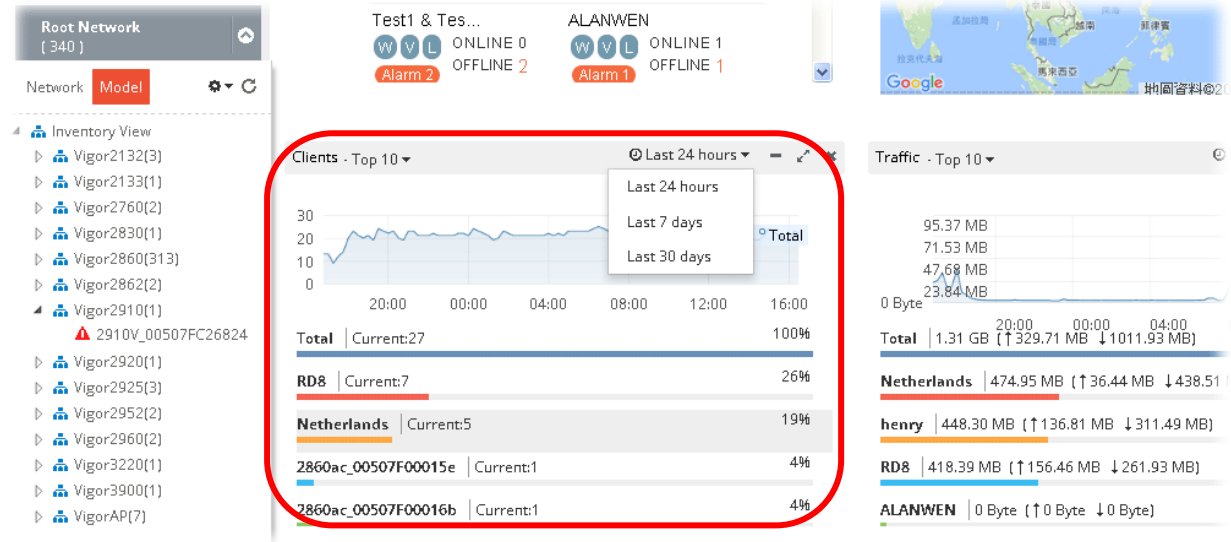
This map displays the location of the devices managed by VigorACS. The number on the map points the quantity of the devices classified under the root network or network group. Move your mouse on the number and click it. The map will be zoomed in with more detailed information.

Map Overview will vary according to the root network or the network group selected.



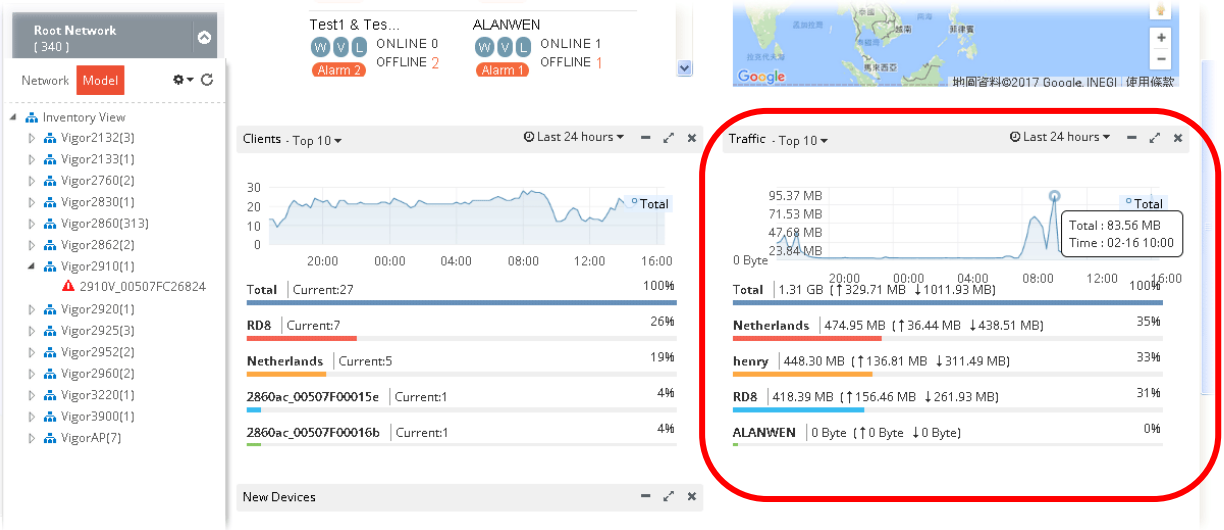
3.2.9 Top 10 for Clients

This area displays the top 10 clients or top 20 clients accessing into VigorACS during the last 24 hours, 7 days or 30 days.



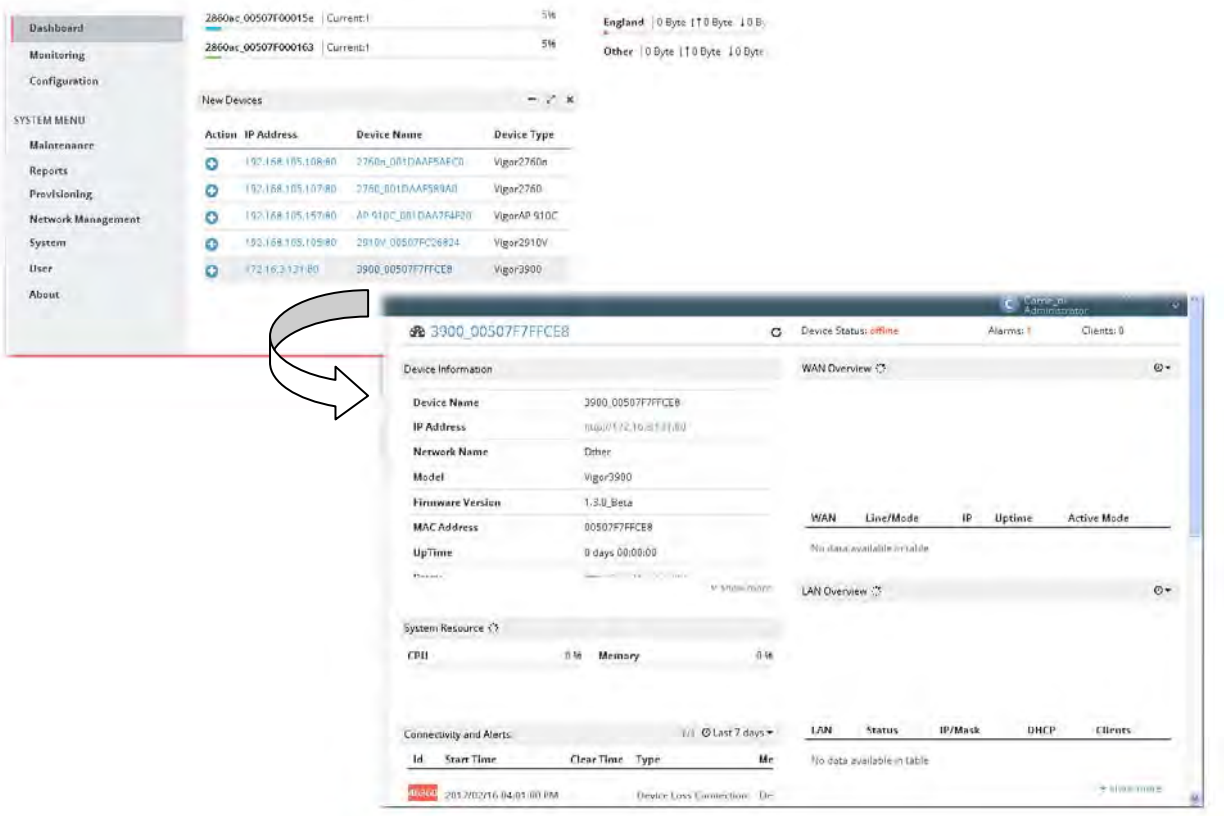
3.2.10 Top 10 for Traffic

The figure displays the traffic for top 10 or 20 groups/devices during the last 24 hours, 7 days or 30 days.

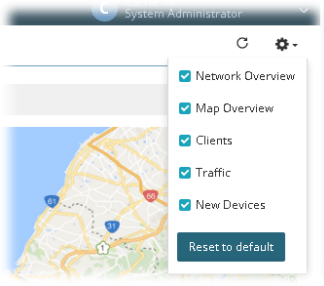


3.2.11 New Added Devices List

New added device(s) can be found on the field of **New Devices**. When you move your mouse on the device name from one of the devices and click on it, a detailed information page for that device will be displayed on the screen.



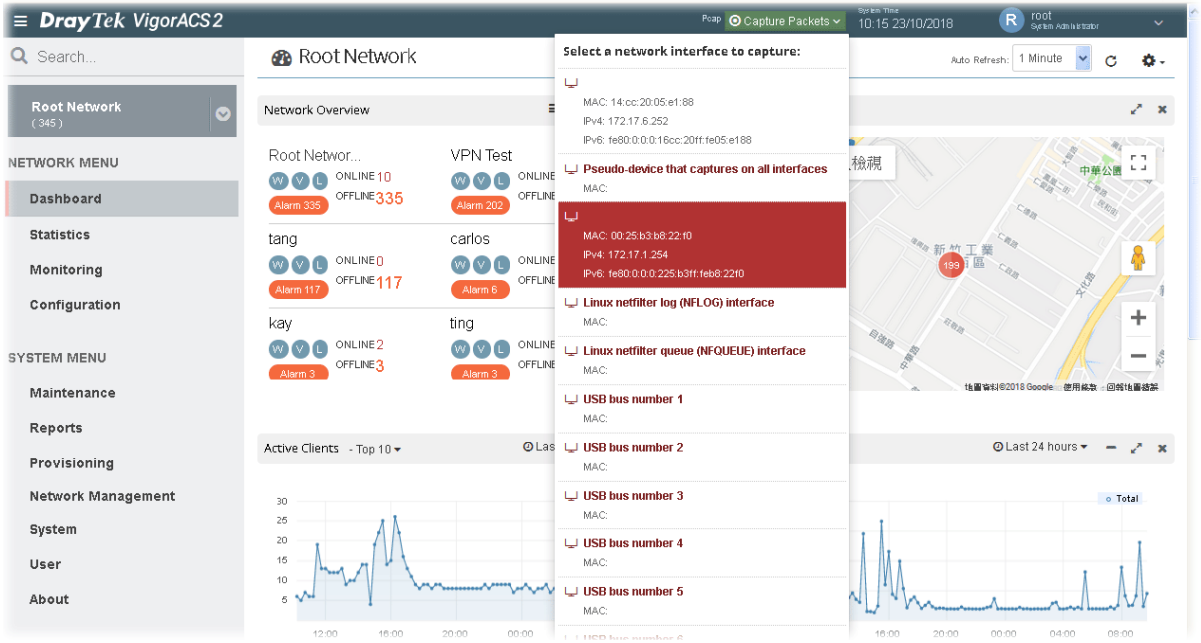
3.2.12 Icons Used in VigorACS 2

Item	Description
+	Add a new device.
− / ⤢	Hide the page / Display the page in fullscreen.
✖	Delete the selected widget.
/	Switch these two icons by click the mouse cursor on it. - means “Enable”. - means “Disable”.
	The type of widget can be chosen on the top-right of VigorACS web user. Check the one(s) you want to display on the web page; or uncheck the one(s) you want to hide on the web page.

3.3 Capture Packets

The system administrator might want to inspect what packets that VigorACS server transmits or receives. He/she can perform the packet capturing by using Wireshark or use the Capture Packets icon on the top-right of VigorACS web page. The captured packets information between VigorACS server and CPE client will be the basis of debugging.

This function can be enabled or disabled on **SYSTEM MENU>>System>>System Parameter**, ID 81 PacketCaptureTool.

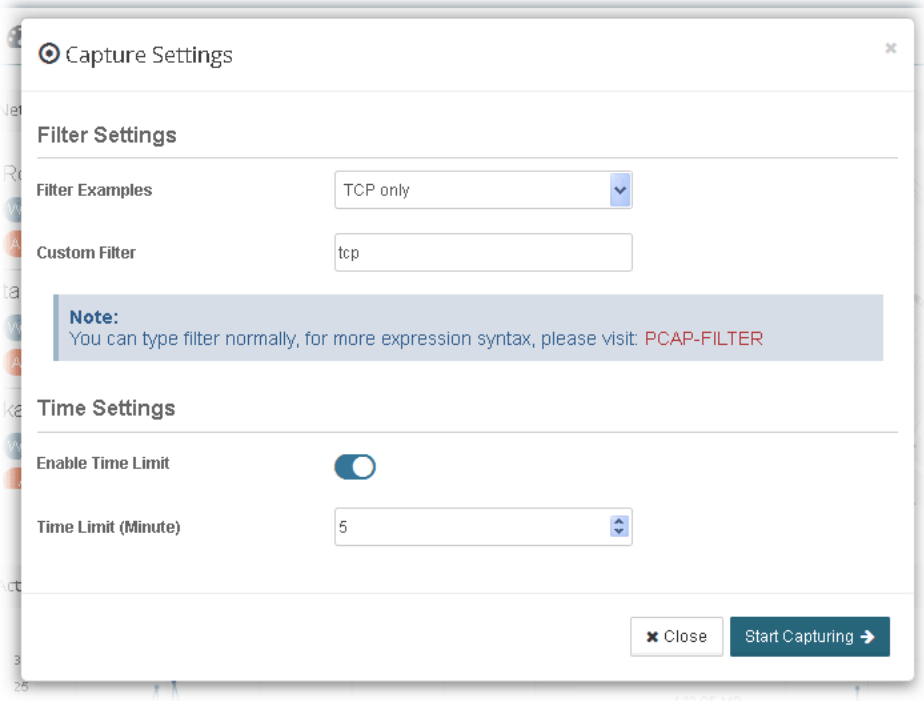


Info

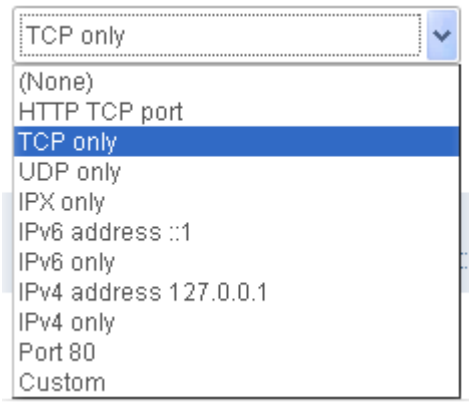
If no WinPcap or Libpcap installed on VigorACS server, the following message will be shown on the screen instead of Capture Packets icon.

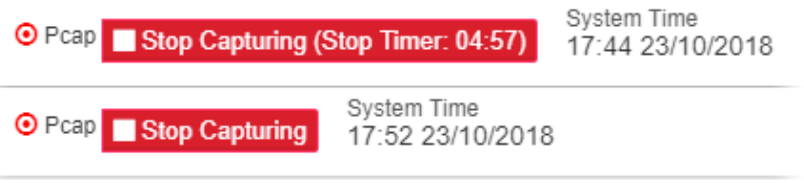
After clicking the Capture Packets icon, all of the network interfaces possessed by VigorACS server will be shown on a drop-down list. Under the network interface, corresponding IP address and MAC address also will be listed.

Click one of the network interfaces to configure settings for and perform the packet capturing.

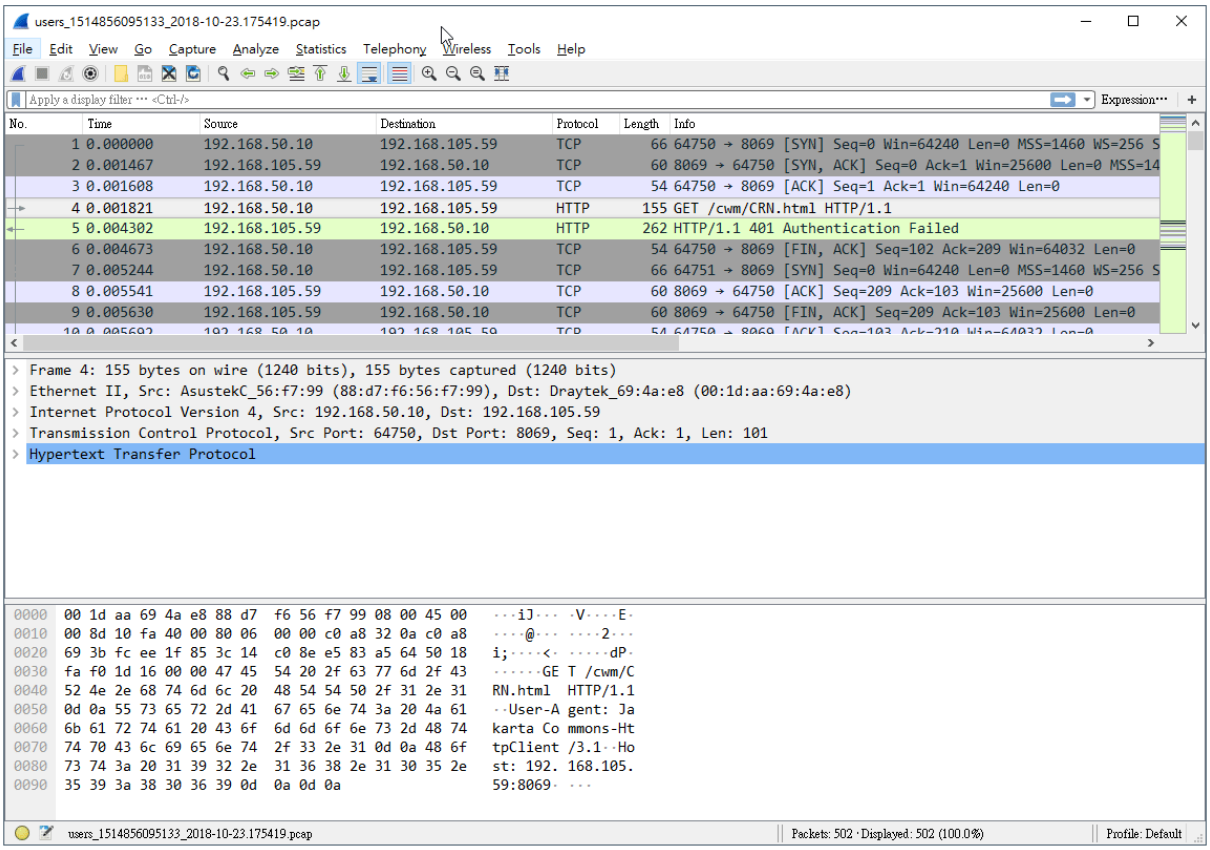


These parameters are explained as follows:

Item	Description
Filter Settings	**Filter Examples** – Choose a filter for filtering the packet corresponding to the type selected.  For example, when TCP Only is selected, only TCP packets will be captured and recorded. When IPv4 address 127.0.0.1 is selected, then

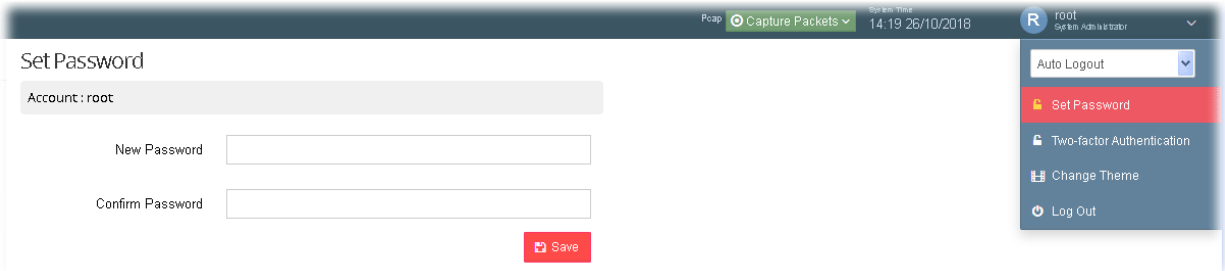
	only the packets coming from/sending to that IP address will be captured and recorded. **Custom Filter** – Variation of Filter Examples will change the setting in Custom Filter. However, the system administrator can define the filter by entering correct syntax (e.g., host 172.16.2.222) if required. Packet capturing will be executed according to Custom Filter setting.
Time Settings	**Enable Time Limit** – If enabled, VigorACS server will capture the packets within the time limit defined below. **Time Limit (Minute)** – Enter a value as a time limit.
Start Capturing	Click it to start packets capturing. ● After clicking it, VigorACS server will continuously capture the packets until time up or manual stop. While capturing, the system administrator can perform any job on VigorACS still. The status of Pcap will be shown as the following figure. If **Time Limit** is disabled, the status bar will not show the timer information.  ● When the time is up or stop the job manually, the status of Pcap will display the icons of Download and Delete and create a new capture. Click Download to store the file on the hard disk. Later, use the tool of Wireshark to check the content of the file. ● After clicking **Delete and create a new capture**, VigorACS server will delete the packets just captured and restore the **Capture Packets** icon for next time using. ● In considering the network security, when someone performs the packet capturing on VigorACS server, other users are not permitted to use **Capture Packets** until the one finishes or stops the job. Only the one who performs the packets capturing can download the Pcap file. Click the **Refresh** button on the right side of Pcap status bar to check if someone else uses Pcap or not.

The default file format of **Pcap** file: user ID_date(YYYY-MM-DD.hhmmss). The following example figure shows the content of pcap file by using Wireshark.



3.4 Set Password

The login password for current user account can be changed simply and easily by using Set Password from the drop down menu on the top-right corner.

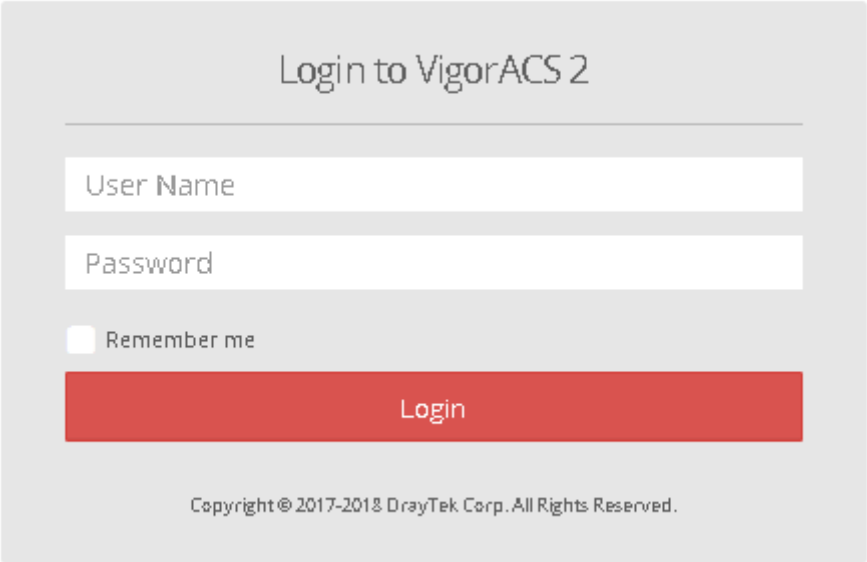


3.5 Two-factor Authentication

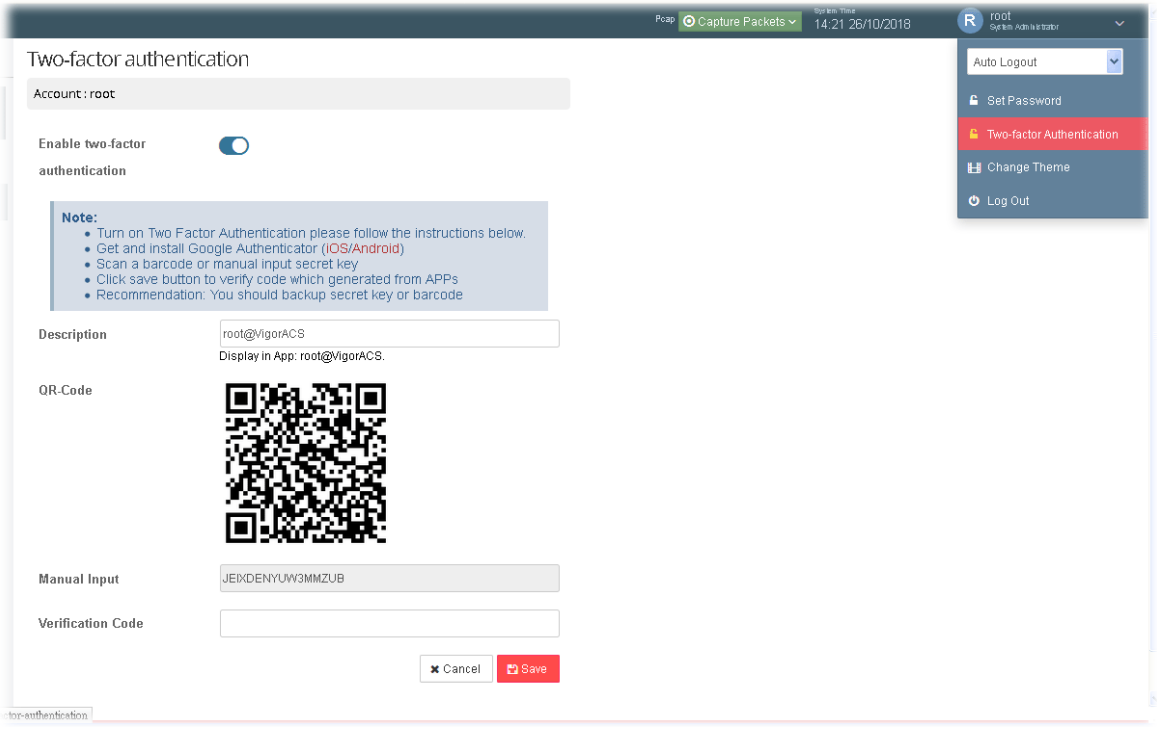
Usually, the system administrator can access into VigorACS by using user account and password. If network security is highly concerned, two-factor authentication will be strongly recommended.

For using two-factor authentication for accessing VigorACS;

1. Get and install **Google Authenticator** (iOS/Android) first.
2. Login VigorACS 2 by using the user account and password.



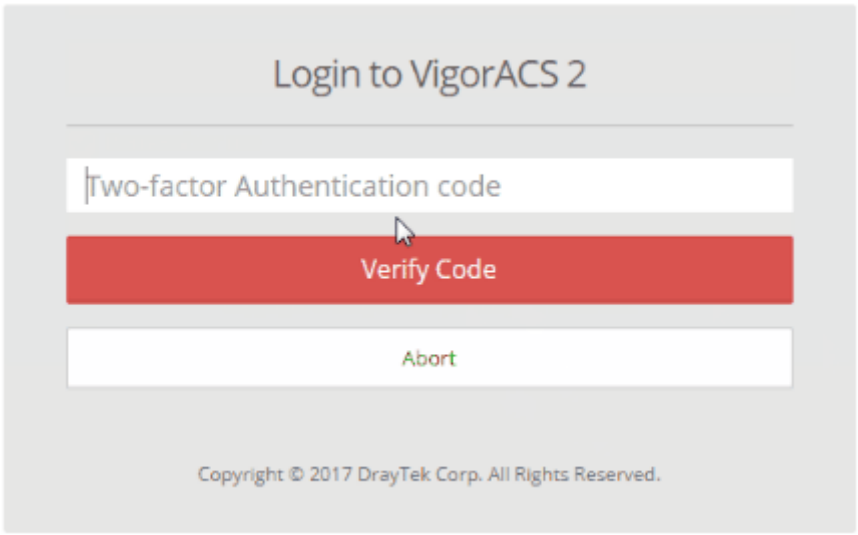
3. Open **Root>>Two-factor Authentication** and enable the button of **Enable two-factor authentication**.



4. Use your cell phone to scan the QR-Code shown on the page or enter the secret key displayed on the box of **Manual Input**.

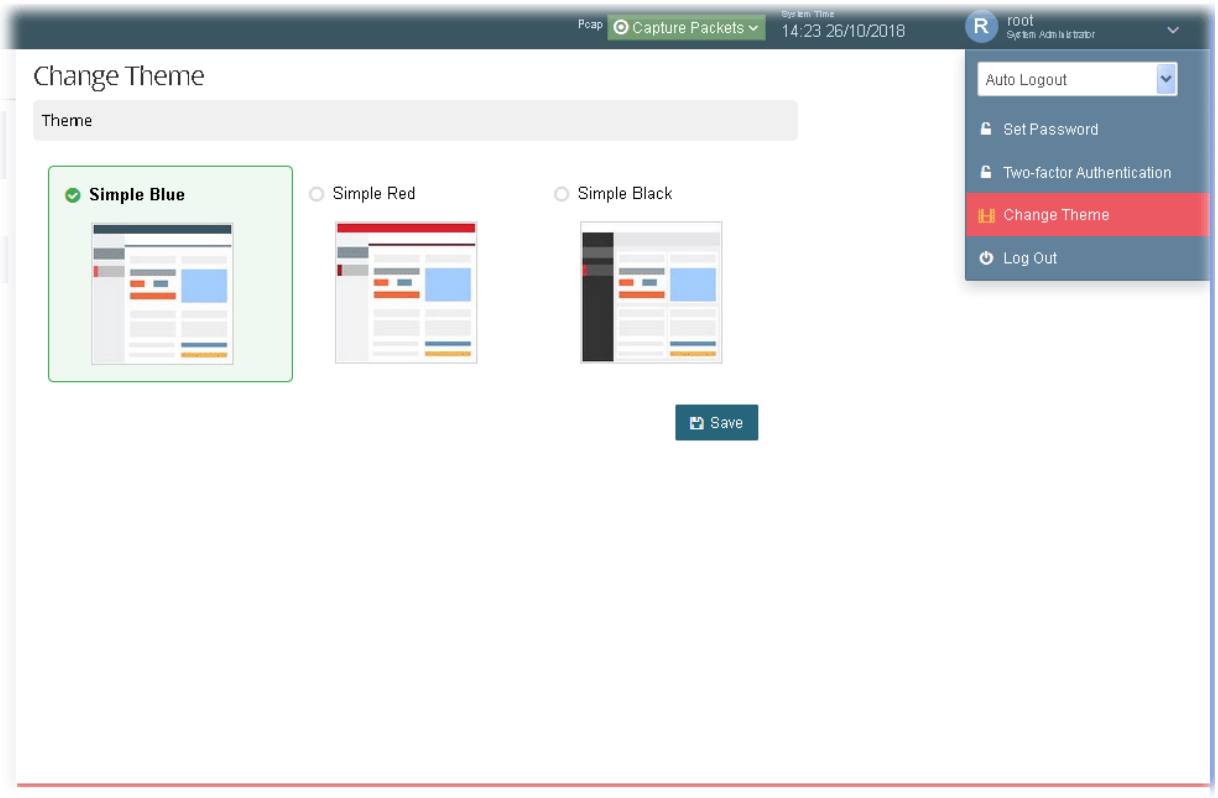
5. A key will be created randomly on the cell phone. Enter that key on the box of Verification Code and click the **Save** button.

6. Logout VigorACS 2.
7. Re-login VigorACS 2. The first login web page requires you to enter the original user account and password. After clicking the Login button, the *second* login web page appears. Please enter the authentication code (created randomly) obtained from the APP (Google Authenticator) on your cell phone and click the Verify Code button.



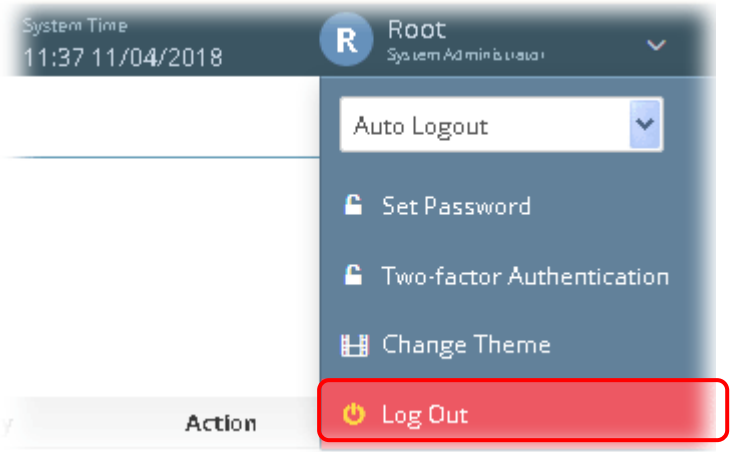
3.6 Change Theme

The theme of VigorACS web user interface can be changed with different color. Choose the color you want and click **Save**.



3.7 Logout VigorACS

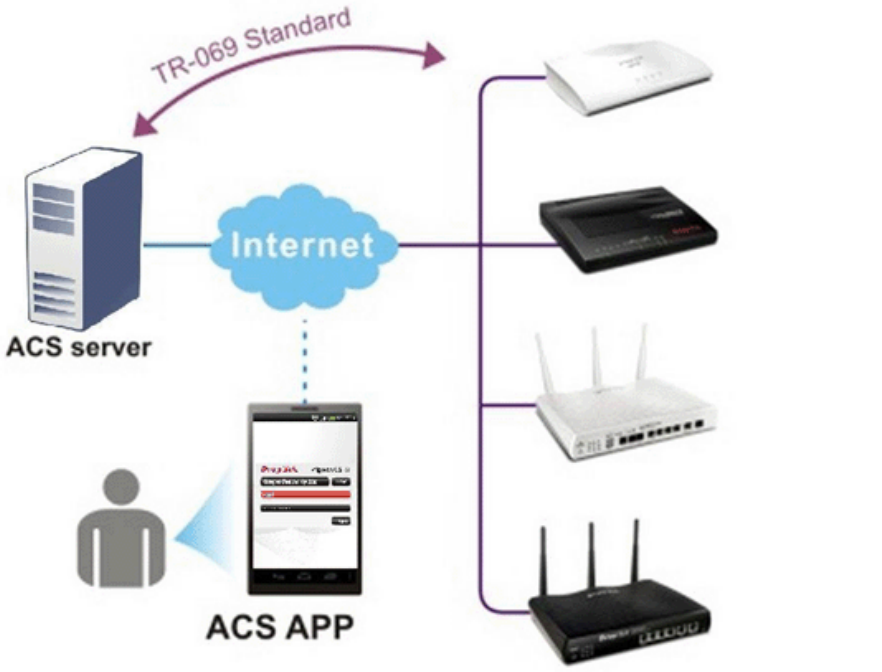
Simply click **Logout** icon to logout VigorACS.



3.8 About VigorACS

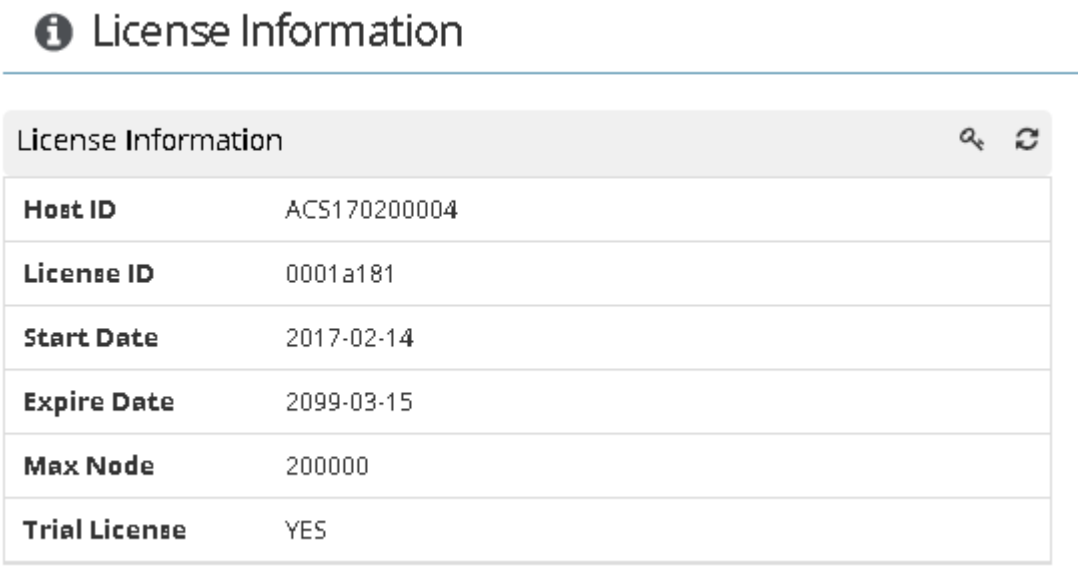
Android APP and software version information for VigorACS will be displayed as follows:

If your mobile phone is supported by Android system, you can use it to scan Android APP or Server Address QR code to connect to VigorACS system.



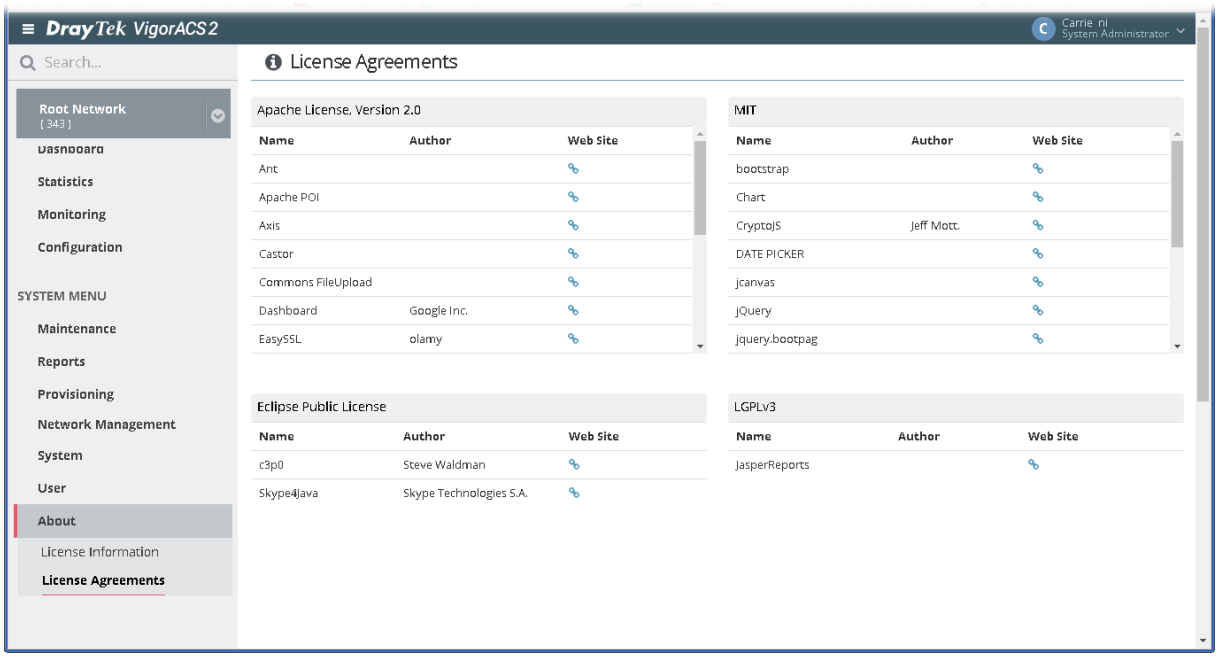
3.8.1 License Key Information

This page displays relational information for license key current used by VigorACS 2. In addition, it offers a channel to new the license key for VigorACS 2 when it is going to be expired.



3.8.2 License Agreements

This page displays relational license information required by VigorACS 2.



3.9 Operation Procedure

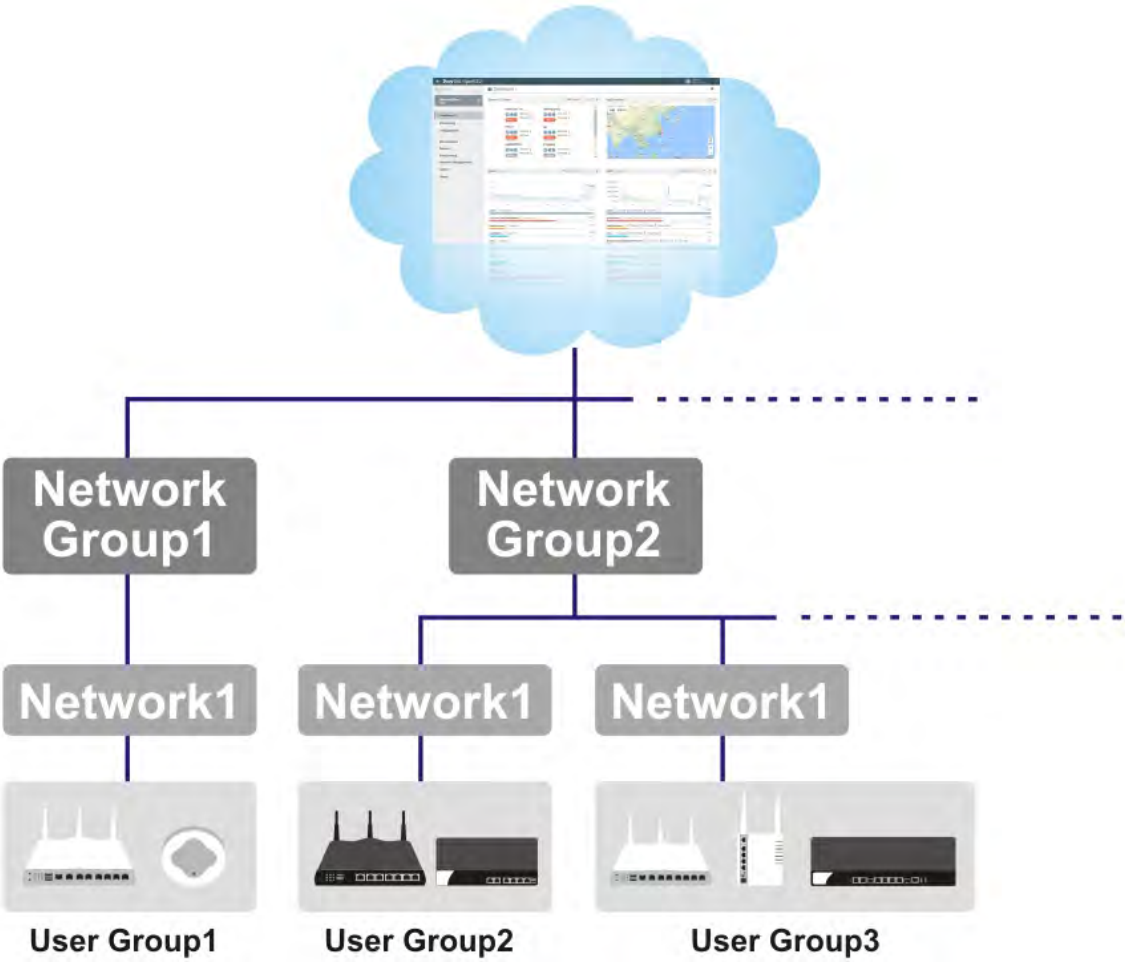
Follow the instruction listed below to operate VigorACS 2:

- Create networks.
- Create users and user groups.

  A user can own several CPE devices; however, each CPE device can be assigned to one “user group” only.

  User shall be assigned under different user groups. **RootGroup** is the default user group.
- Edit and modify the settings for the TR-069 devices.

Below shows a brief illustration to describe the relationships among CPE, user group, network and network group.


Network Group1
Network Group2
Network1
Network1
Network1
User Group1
User Group2
User Group3

Applications

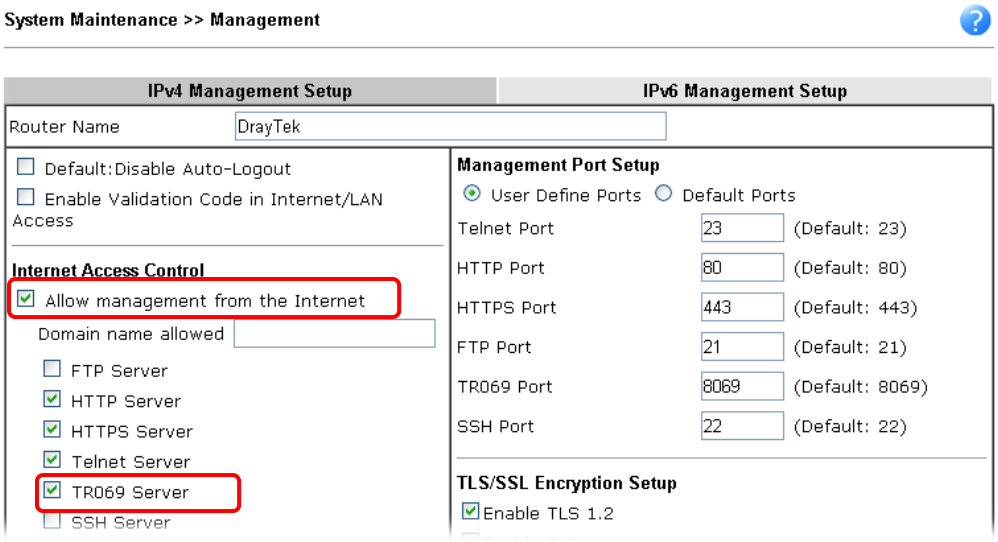
A-1 How to Register a CPE onto VigorACS 2?

This section briefly shows a simple way to register a CPE onto VigorACS 2 with few steps. For detailed information, refer to Chapter 4.

The CPE to be managed by VigorACS 2 must be configured and restarted. Here we take Vigor2925 as an example.

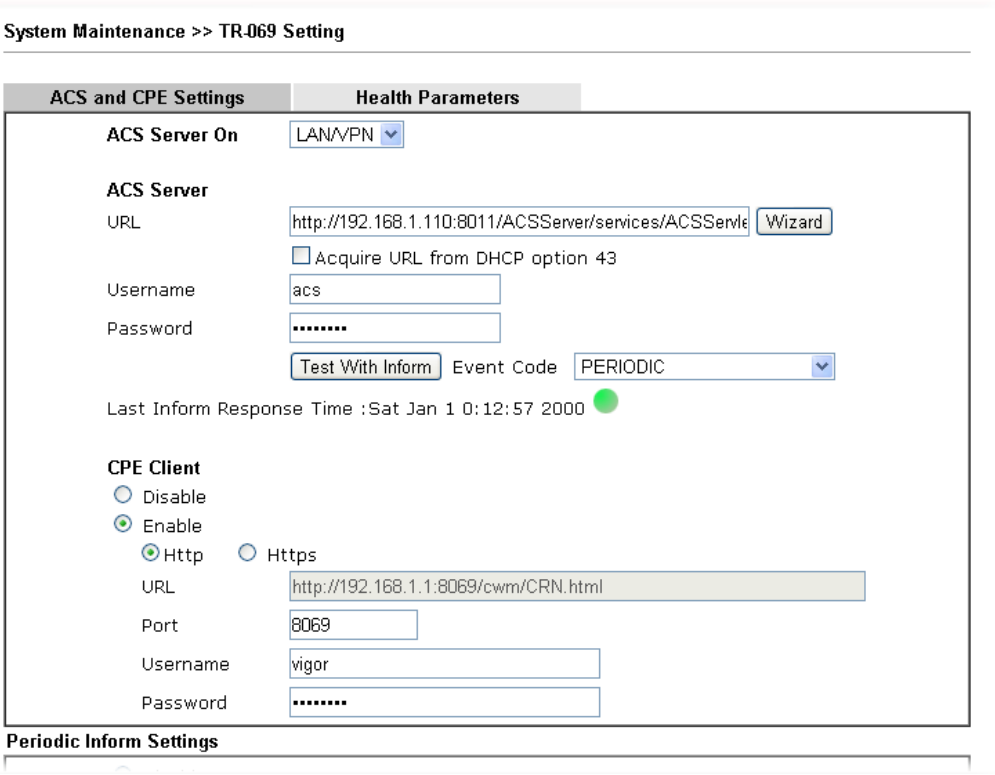
Note that STUN setting is required if CPE is behind a NAT device, for the purpose of keeping the connection between VigorACS 2 and Vigor device up.

1. Access into the web user interface of Vigor router.
2. Open **System Maintenance>>Management.**



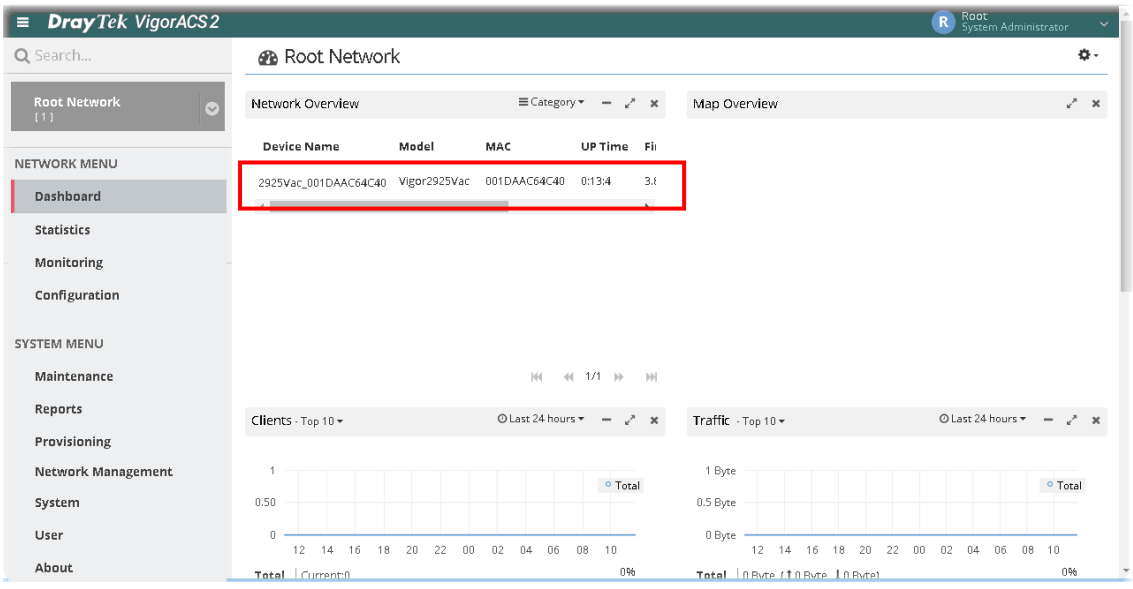
- Allow management from the Internet – Enabled.
- TR-069 Server – Enabled.

3. Open **System Maintenance>>TR-069**.



- Specify the interface for ACS Server On.
- Set URL, username, password for network group.
- Enable CPE Client.

4. Click **OK** and click **Test With Inform**. When the green light appears (on the Last Inform Response Time), the settings on CPE have been configured well.
5. Open the homepage of VigorACS 2.
6. Now, Vigor2925 has been registered onto VigorACS 2 and displayed on the homepage.

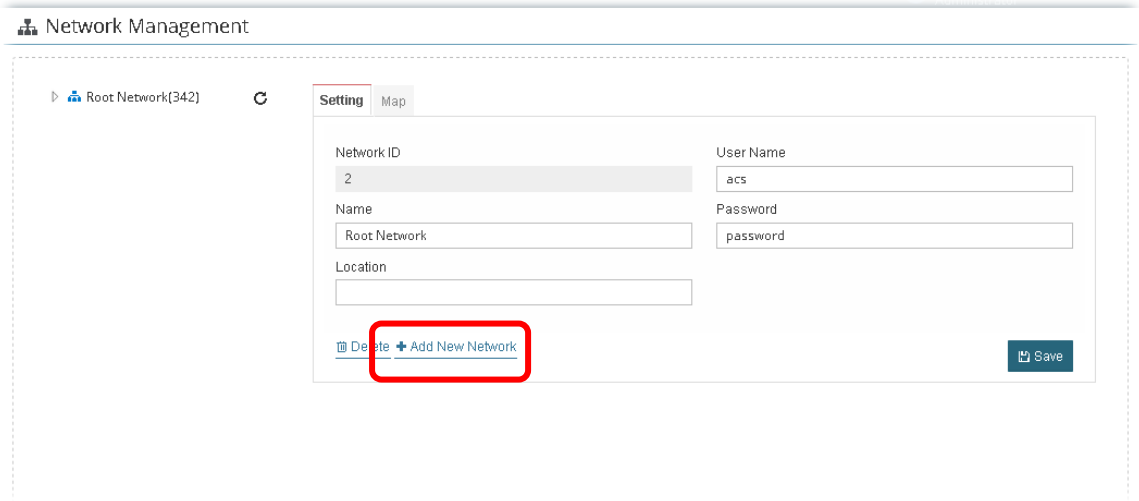


Click the icon to list all the devices.

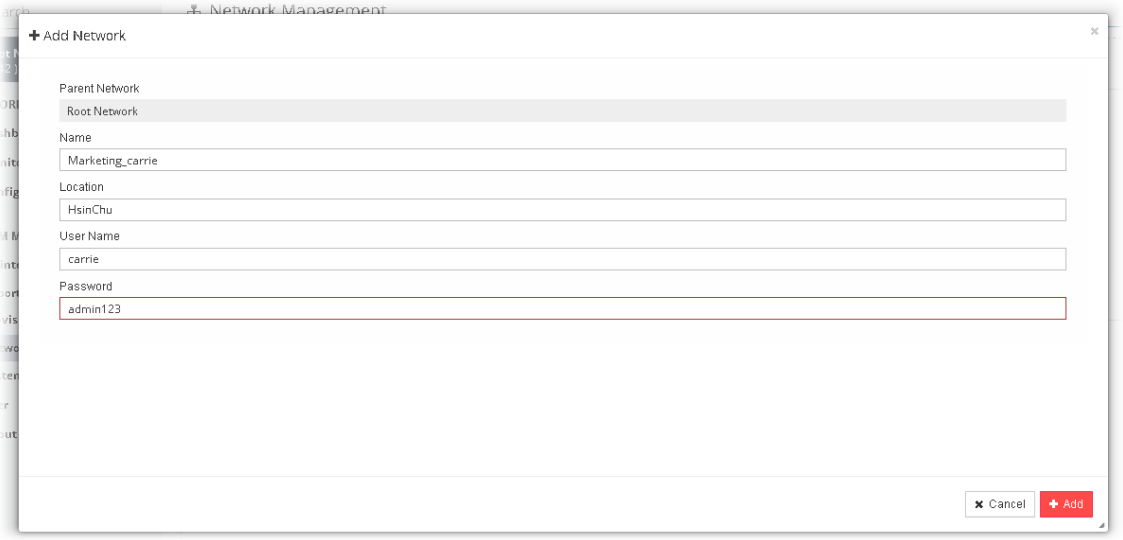
A.2 How to Create a New Network ?

VigorACS allows the administrator to build several networks (and sub-network) for different CPE devices under the *root network*.

1. Only the administrator has the right to create a new user group.
2. From the **SYSTEM MENU**, click **Network Management**.
3. When the following page appears, click the link of **+Add New Network**.

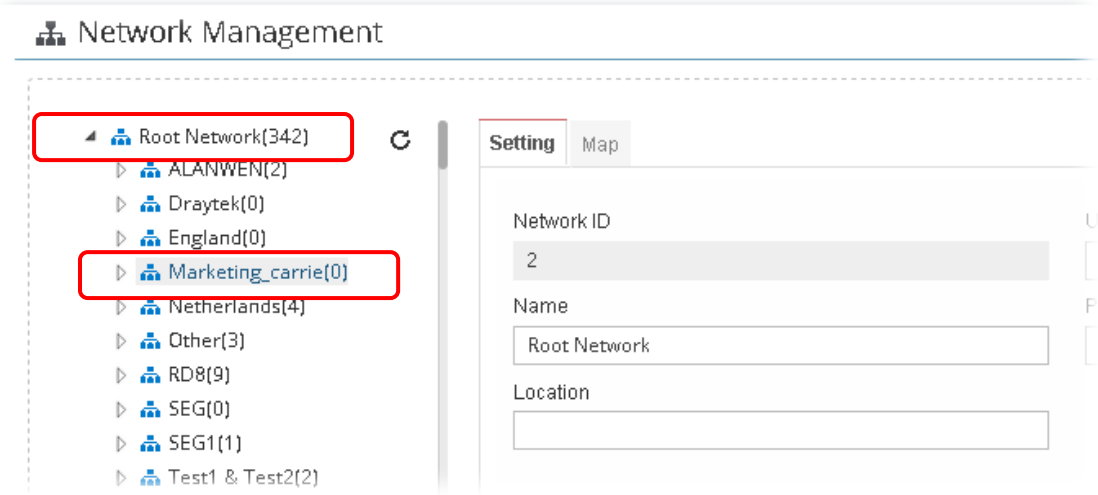


4. A pop-up window appears. Type the required information.

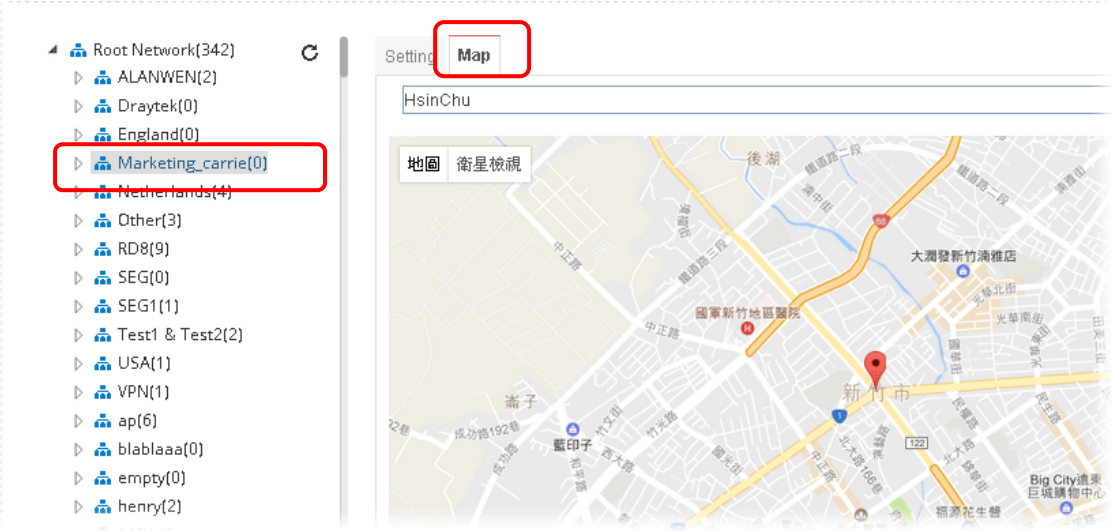


1. **Name** - Type a new name of the network.
2. **Location** – Define the location of such network.
3. **User Name** – Type a user name for such network.
4. **Password** – Type a password for such network.

5. Click **Add** to save the settings. The new created network will be seen under the Root Network.



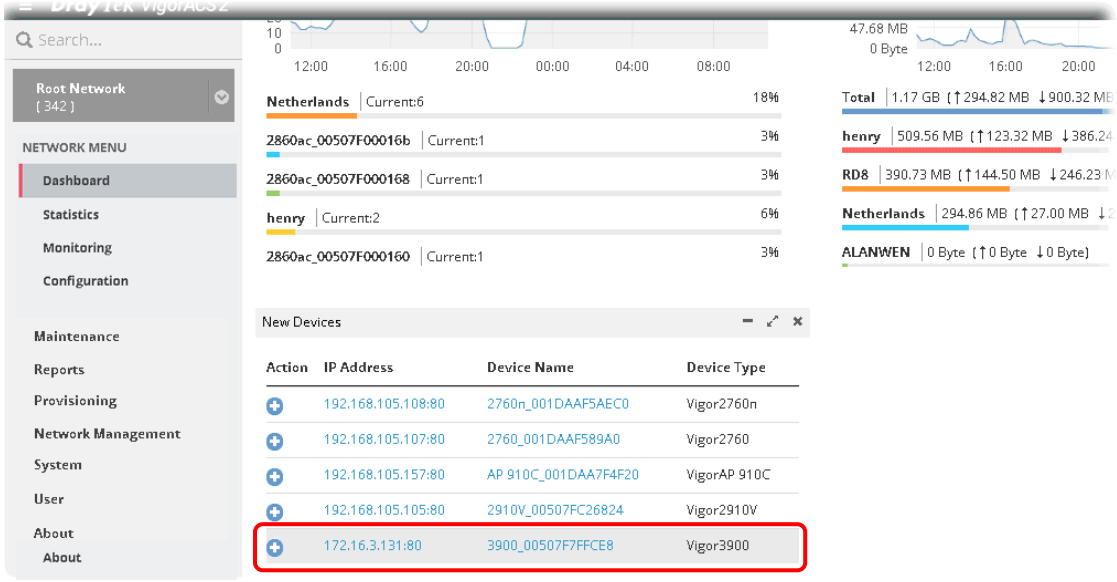
6. Click the **Map** tab. Manually input specific location of the device on the input box; GoogleMap will show the location for the new created network.



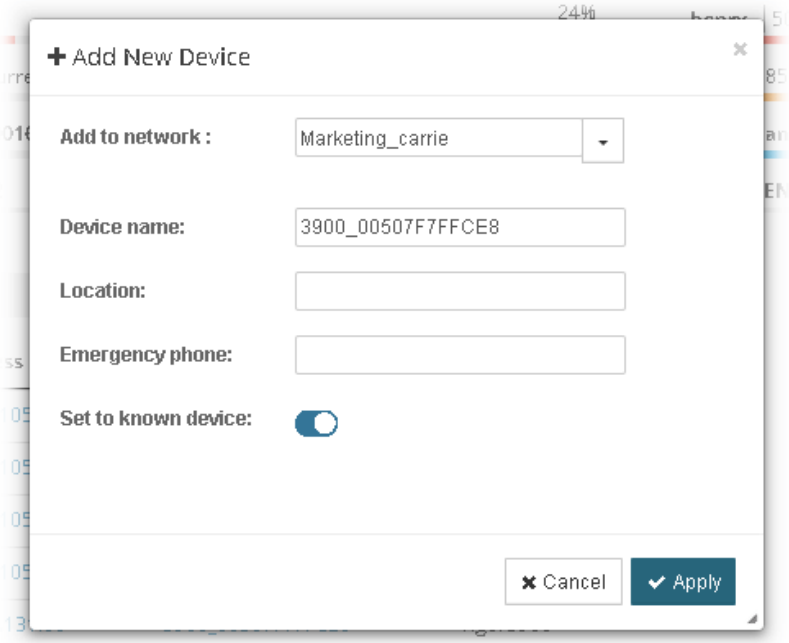
A-3 How to Assign a New Added CPE to a Network?

New added device can be grouped under Network. If no assignment, the new device will be grouped under Root Network in default.

1. On the Dashboard, locate the device from **New Devices**. Here, we take Vigor3900 as an example.



2. Click the add icon (+). The following dialog will appear.



Add to network – Choose the network from the drop down list.

Location – Type the location of the selected device.

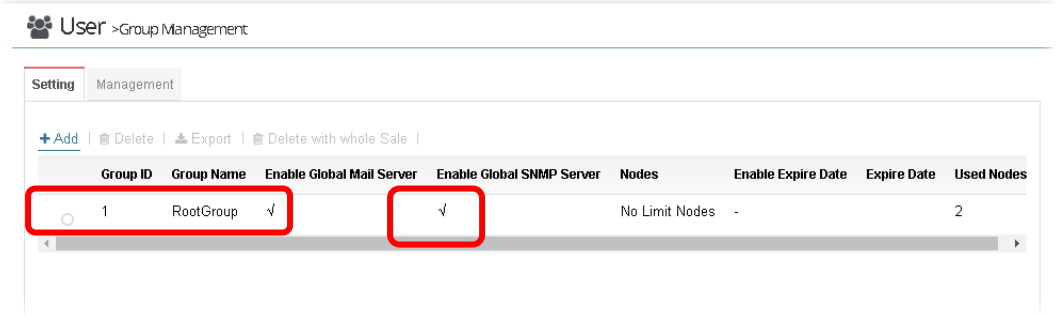
Emergency phone – Type the mobile phone for communication.

Set to known device – Click it to make the device visibly or invisibly.

3. Click **Apply** to save the changes.

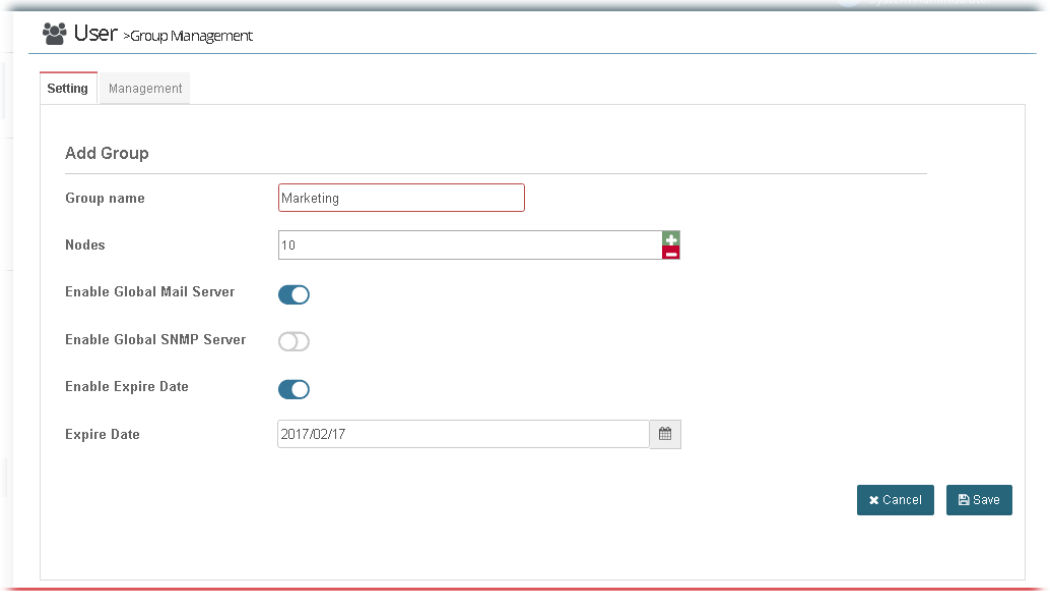
A-4 How to Create a New User Group ?

1. Only the administrator has the right to create a new user group.
2. From the **SYSTEM MENU**, open the **User** menu.
3. Click **Group Management**. The following page will appear.



RootGroup is a default setting.

4. Click **Add** to open the following page for creating a new one.



Group name – Type a new name.

Nodes – Use + or – to add or decrease the number of nodes.

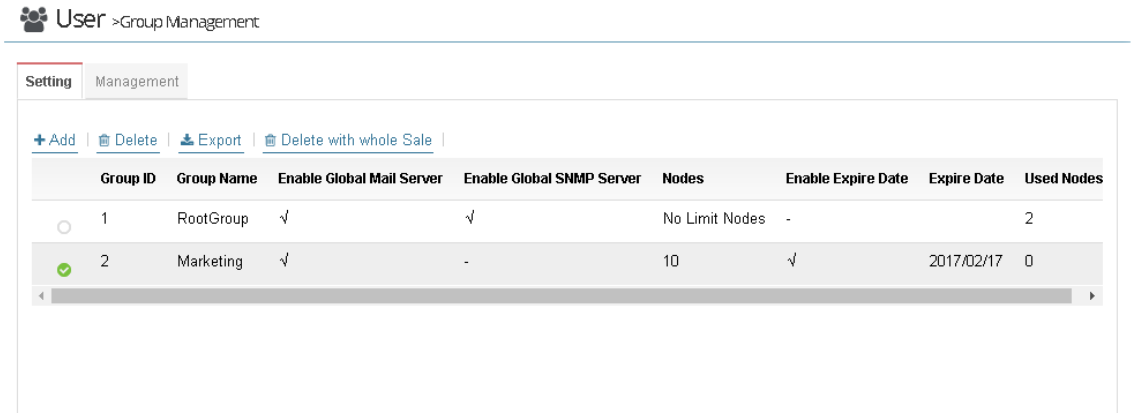
Enable Global Mail Server – Click it to enable or disable the service.

Enable Global SNMP Server - Click it to enable or disable the service.

Enable Expire Date - Click it to enable the Expire Date mechanism.

Expire Date – If it is enabled, click the entry box to choose the date.

5. Click **Save** to save the settings and exit the dialog. The new network group has been created and displayed on the screen.


User >Group Management
Setting
Management
+Add
Delete
Export
Delete with whole Sale
Group ID
Group Name
Enable Global Mail Server
Enable Global SNMP Server
Nodes
Enable Expire Date
Expire Date
Used Nodes
1
RootGroup
√
√
No Limit Nodes
-
2
2
Marketing
√
-
10
√
2017/02/17
0

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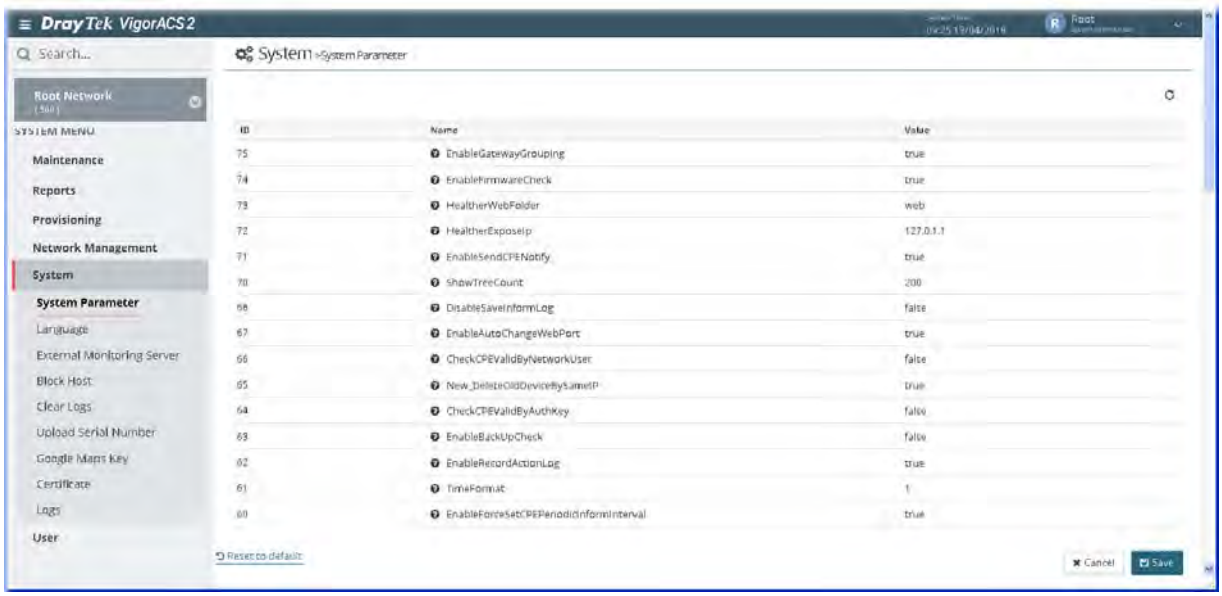
Part II SYSTEM MENU, System and User Settings Management

Chapter 4 System

4.1 System Parameter

Open **SYSTEM MENU>>System** and click **System Parameter** to get the following web page:



These parameters are explained as follows:

ID No.	Description
	Reset to default Click the link to reset all of the system parameters with factory default values.
1	**ProvisionKeepParameter** It can be set with true or false. True – Enable the function of Keep Profile (profile or parameters in provision). False - VigorACS will disable the function of **Keep Profile**.
2	**ProvisionWaitCount** It means how many times VigorACS will compare the parameter values got from CPEs with the parameter values set within profiles. If these values are different from each other (from CPEs and from profiles), VigorACS will increase the count number by one. When the count increases to the value that users defined here, VigorACS will perform Keep Profile function.
3	**ProvisionFactoryResetEnable** True – The function of keep profile will perform immediately for CPE without reaching the value of 'ProvisionWaitCount'.

4	**FirmwareUpgradeCount** The value indicates how many CPEs can perform firmware upgrade at the same time. Set a proper value to prevent hardware from over loading and causing a crash.
5	**ProvisionDeviceAutoEnable** False - The CPE would not be added in Homepage when a profile defines a CPE with different names but with the same serial number. True – The CPE would be added in Homepage when a profile defines a CPE with different names but with the same serial number.
6	**ProvisionChangeDeviceNameEnable** True - If it is set with true and a profile defines a CPE with different name but same MAC address, VigorACS would modify current CPE name with the pre-defined setting in profile. That is, if the device name in profile is not the same as the log recorded in VigorACS database, the system will modify the device name automatically.
7	**SettingProfileSpaceSetEnable** True - Users can use space as character in parameter values. For example, users can use the space character as their password.
8	**ParameterListLongWaitCount** It is a positive integer (ms). After upgrading firmware, VigorACS will scan and get all parameters to restore the parameter backup. The value determines how long the waiting time out is. Multiplying the value with 50 is the maximum waiting time in millisecond. It will take effect after VigorACS restarts. Default is 1200.
12	**GetSetParameterCount** When applying the provision onto CPEs, VigorACS tries to get or set parameter from or onto CPEs. This value determines how many parameter values can be obtained or set at the same time. For example, set the value as 20. That means there are 20 parameters which can be obtained at the same time. Set this value properly to prevent CPEs from crashing or improve the efficiency.
13	**IsDownloadUsedHttps** When a CPE connects to VigorACS with Https, users can enable this parameter (set with true) to let CPE download file from VigorACS via Https.
14	**ProvisionProfileFormat** It can be set with 1, 2, 3 or 4. This value indicates the format of text configured profile. If the value is set with 1, the format is defined as serial number, network_device name, isreboot, and [parameter1, parameter2,.. and so on]. If the value is set with 2 (as the default format), the format is defined as serial number, device name, isreboot, network, and [parameter1, parameter2,.. and so on]. If the value is set with 3, the format is defined as serial number, network_device name, isreboot, address and [parameter1, parameter2,.. and so on]. If the value is set with 4, the format is defined as serial number, network_device name, isreboot, network, address and [parameter1, parameter2,.. and so on].
15	**IsRebootAfterDownload** True- After downloading and upgrading the firmware, reboot the CPE. False - Users must reboot the CPE manually.

16	**KeepProfileUpdateRule** It can be set with is 1, 2 or 3. The value 1 means after uploading profile, keep original Keep Profile settings and add extra parameter settings (if the profile contains more parameter settings). The value 2 means after uploading profile, delete original Keep Profile setting if the device name changed. The value 3 means after uploading profile, delete original Keep Profile settings every time.
17	**IsSetGlobalParameter** False - Disable global parameter configuration function. When it is disabled, even users set global parameters, these parameters won't be applied.
19	**IsTurnOffPeriodicInform** True - If **PeriodicInform interval** (configured in 59. CPEPeriodicInformInterval) is too short, CPE may send too much information to VigorACS and cause the server crash. Set this value true only if the case happened (server crashed). The default interval setting shall be 900 seconds. False - After adjusting the PeriodicInform (configured in 59. CPEPeriodicInformInterval) of CPEs, remember to set this value false.
20	**PollingDeviceCount** The value determines the maximum number of CPEs to poll at one time. If this value is set too small (e.g., 500), it might cause server overload. However, if it is set too big (e.g., 600000), it could make CPE status refresh very slowly. Note: After changing this parameter value, restart VigorACS to apply the change.
21	**DeviceAutoEnable** True - If it is set true, after obtaining the information from CPE, the newly added device would be added in the tree view of Homepage. False – When VigorACS receives information from new added device, it will not display the CPE on the tree view of Homepage until make configuration in SYSTEM MENU>>Network Management.
22	**PollingInterval** Set the polling interval for VigorACS to examine CPE. The unit is milliseconds. Default is 900000.
23	**CPEWebUiPort** Set a port number for VigorACS system accesses into CPE's WUI.
26	**VPNIPSecDefaultSecurity** Set the default security method for establishing VPN based on IPsec.
27	**CheckDeviceStatusCount** Determine how many times shall VigorACS system check the device before the device becomes offline.
28	**VPNChangeEnable** True – If one of the WAN IP addresses changes on both ends of VPN, VigorACS will change the setting automatically to rebuild the VPN tunnel. False – Default value.
29	**WANSeverity** Set the severity (critical, major, minor, warning and normal) for WAN connection.
30	**VPNSeverity** Set the severity (critical, major, minor, warning and normal) for VPN connection.

32	**EnableHttpChunkedMode** True - Use chunked mode (chunked transfer encoding) for HTTP. False – Default value.
33	**CPEWebUiProtocol** Set HTTP (default) or HTTPs as the protocol for accessing CPE's web user interface.
34	**EnableValidateCodeCheck** True – Enable the function of validating code check on the login page. False – Disable the function. It is the default value.
35	**VPNIPSecDefaultMode** Set the default mode for IPSec VPN connection. Main Aggressive
36	**StatisticsStep** Set the time interval (default is 900) for data collection for RRD traffic.
38	**EnableWebServices** True – The third party software can get/set VigorACS functions through web services. False – Default value.
41	**HidePassword** True – Hide the password value on provision page. False – Default value.
43	**VPNEnablePingKeepAlive** True – Enable the function of Enable PING to keep VPN alive for CPE while creating VPN by using the VPN wizard. False – Default value.
44	**CPEDetectMode** Set the CPE detection mode. 0 means TR069; 1 means ping.
46	**EnableRRD** True – Enable the function of data collection (StatisticsStep) for RRD traffic.
47	**AutoDetectRouteName** True – Get CPE's router name. False – Default value.
49	**DefaultSetDeviceKnown** True – Set the new added CPE as a known device. False – Default value.
50	**KeepProfileRebootByBOOTSTRAP** True – VigorACS will ask the CPE to reboot if receiving CPE request including BOOTSTRAP. False – Default value.
51	**DisableAlarmMailByACSReboot** True – VigorACS will not send alarm message within 15 minutes after turning on VigorACS. False – Default value.
52	**DeleteOldDeviceBySameIP** True – If a new CPE with an IP address which is the same as an old device recorded on VigorACS database, VigorACS will delete the information for the old device. False – Default value.

54	**DisablePolling** True – Disable VigorAP to poll CPE. Restart VigorACS after finished the configuration. False – Default value.
55	**DisableAlarmMailByClear** True – Disable the function of sending alarm e-mail when alarm status is clear. It is the default setting. False – VigorACS will send alarm e-mail when alarm status is clear.
56	**UseStunAddressForVpn** True – Remote IP address will use the STUN IP address for VPN connection. False –Default value.
57	**EnableChangeNetworkByNetworkUser** True – Default value. When VigorACS finds that the username and password sent from the CPE changed, it will move the CPE to the network group with the same username and password. False – Disable such function.
58	**FWUpgradeFailInterval** If the firmware upgrade failed, the next firmware upgrade will execute after the time interval configured here. Default value is 86400 seconds.
59	**CPEPeriodicInformInterval** CPE will send general information to VigorACS periodically. The default value is 900 seconds. If required, enter the time interval for the CPE to send general information to VigorACS.
60	**EnableForceSetCPEPeriodicInformInterval** True –Default value. Enable the function of CPEPeriodicInformInterval. False – Disable the function of CPEPeriodicInformInterval.
61	**TimeFormat** Display the time format. 0 means 24-hour clock; 1 means 12-hour clock.
62	**EnableRecordActionLog** True – Enable the function of record action log. It is the default value. False – Disable the function of record action log.
63	**EnableBackupCheck** True – VigorACS will check the parameter value of "InternetGatewayDevice.X_00507F_System.ConfigBak.ConfigChanged" and perform the configuration backup automatically if any change made for CPE's configuration. False – Default value.
64	**CheckCPEValidByAuthKey** True – VigorACS will check if the authentication key informed by CPE is valid or not. False – Default value.
65	**New_DeleteOldDeviceBySameIP** True – If a new CPE with an IP address which is the same as an old device recorded on VigorACS database, VigorACS will delete the information for the old device and write the configuration on the database related to the old CPE onto new CPE. False – Default value.

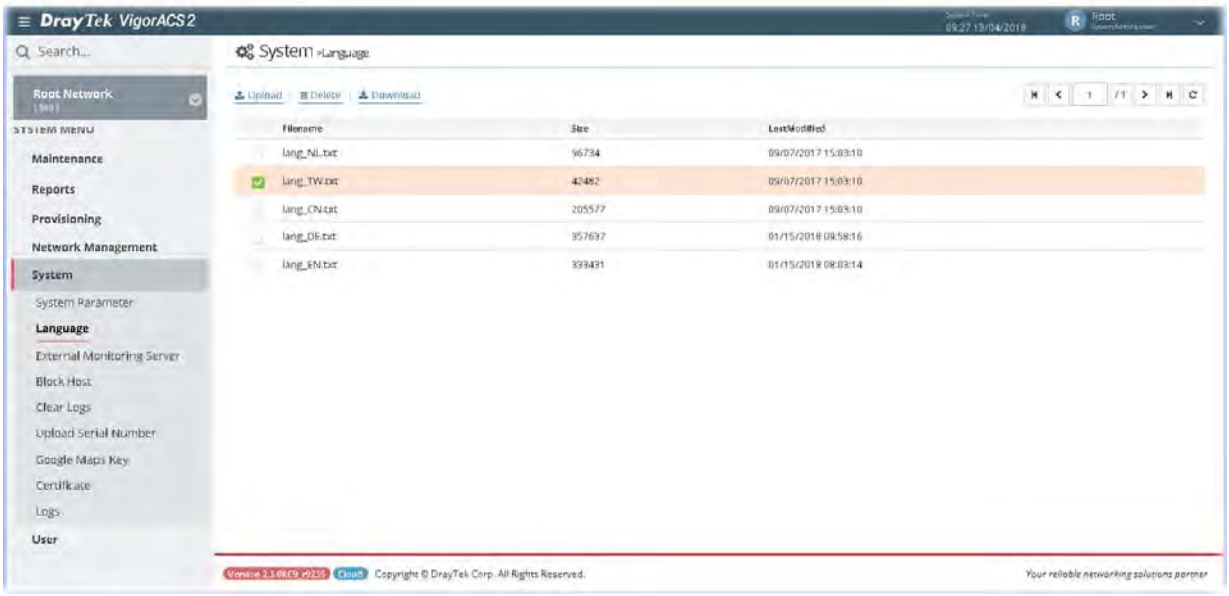
66	**CheckCPEValidByNetworkUser** True **–** Each network can be set with a group of username and password individually. All of the CPEs grouped under the network shall use such username and password for connecting to VigorACS. Such function let VigorACS check if the username and password sent from the CPE match with the settings on the network or not. If not, VigorACS will ignore the CPE request and change the group of the CPE into root network. False – Default value.
67	**EnableAutoChangeWebPort** True – Enable for changing web port automatically. It is the default setting. False – Disable the function.
68	**DisableSaveInformLog** True – Disable the function of Save Inform Log. False – Default value.
70	**ShowTreeCount** Set how many devices will be shown on the home device tree. Default value is 100.
71	**EnableSendCPENotify** True - When the value of parameters for CPE is changed, a notification of 'IntenetGatewayDevice.X_00507F_Notify' will be sent to VigorACS. VigorACS will send the message to the specified user by e-mail, SMS or SNMP. False - When the value of parameters for CPE is changed, a notification of 'IntenetGatewayDevice.X_00507F_Notify' will be sent to VigorACS. VigorACS will not send the message to the specified user.
72	**HealtherExposeIp** It means the exposed IP in Monitoring Server message. Default is one of VigorACS host IP addresses. You can change to any IP without restarting ACS Server.
73	**HealtherWebFolder** It means the folder name of VigorACS in JBoss deployment folder. It is used to create the URL for the device in Monitoring Server message. Default folder name is set as “web”.
74	**EnableFirmwareCheck** True - VigorACS will compare current firmware of the device with the file version detected from DrayTek website. Therefore, while viewing the Firmware Version on the dashboard of the selected device, a pop-up window with current firmware version detected will appear if both firmware versions are different.
75	**EnableGatewayGrouping** True – Enable the function of grouping VigorAP devices by using gateway addresses and displaying AP devices behind the gateway routers. False – Default value.
76	**EnableUIGraph** True – Enable the function of displaying graph of web user interface. It is the default value. False – Disable the function.
77	**ACSHttpsProtocol** Specify the SSL protocol (TLSv1, TLSv1.1 or TLSv1.2) for HTTPS connection. The default is TLSv1.2 for more secure communications.

78	**EnableAuditorActionLog** True – The auditor action will be recorded and displayed on SYSTEM MENU >> System >> Delete Logs Actions. False – Default value. When the auditor deletes logs or protects identity information on clients, the action will NOT be recorded.
79	**EnableAuditorDeletedLog** True – The selected logs will be moved to another table which can be read by auditors. While protecting client identity information, the protected value can be recovered for auditors. False – Default value. The selected logs will be deleted from database permanently. While protecting client identity information, the protected value cannot be recovered for auditors.
80	**HttpProxyPort** It can be set with 0 to 65535, or a port range (e.g. 10000-10005). If the value set to 0, the proxy port number will be automatically allocated. If you start the proxy server before change this value, you have to restart VigorACS Server to apply this change on the current proxy. If the proxy port is only one number large than 0, you can only create one proxy server for each time.
81	**PacketCaptureTool** True – VigorACS will capture the packets automatically and the result will be specified from the drop down list of Capture Packets on the top-right of the screen. False – Default value.
82	**ClientRecordAliveTimeInDays** Set the number of days for reserving the record (about client traffic). When exceeding the day limit, VigorACS will delete the record. Default value is 30(days).
83	**IsDeleteExpiredClientTrafficByTimestamp** True – Enable the function of ClientRecordAliveTimeInDays. False – Default setting.
84	**EnableClientRecord** True – Default value. Enable the function of recording client traffic and displaying related information on NETWORK MENU >> Monitoring >>Clients.

4.2 Language

VigorACS 2 can be displayed and operated with different language texts. Choose the language system from the top-right of the login page. Later, VigorACS will be shown with the language you want.

In general, lang_EN.txt is the default language for VigorACS 2. If necessary, you can download a text file with VigorACS 2 settings; translate/edit the file with the language you want; and upload the edited file onto VigorACS.



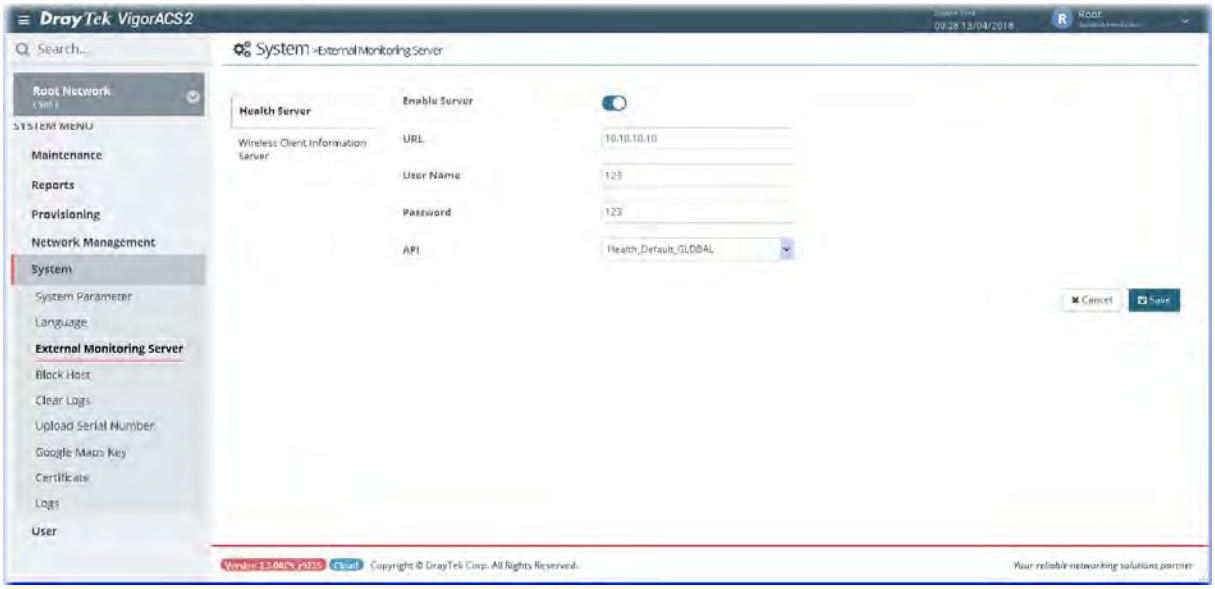
These parameters are explained as follows:

Item	Description
Upload	Click this button to upload a language file from your host to VigorACS.
Delete	Remove the selected language system.
Download	Click this button to download a txt file from VigorACS to your computer. User can edit such text file (containing all of the fields) if required.

4.3 External Monitoring Server

The health information for CPE can be transferred to the server of third party periodically.

4.3.1 Health Server



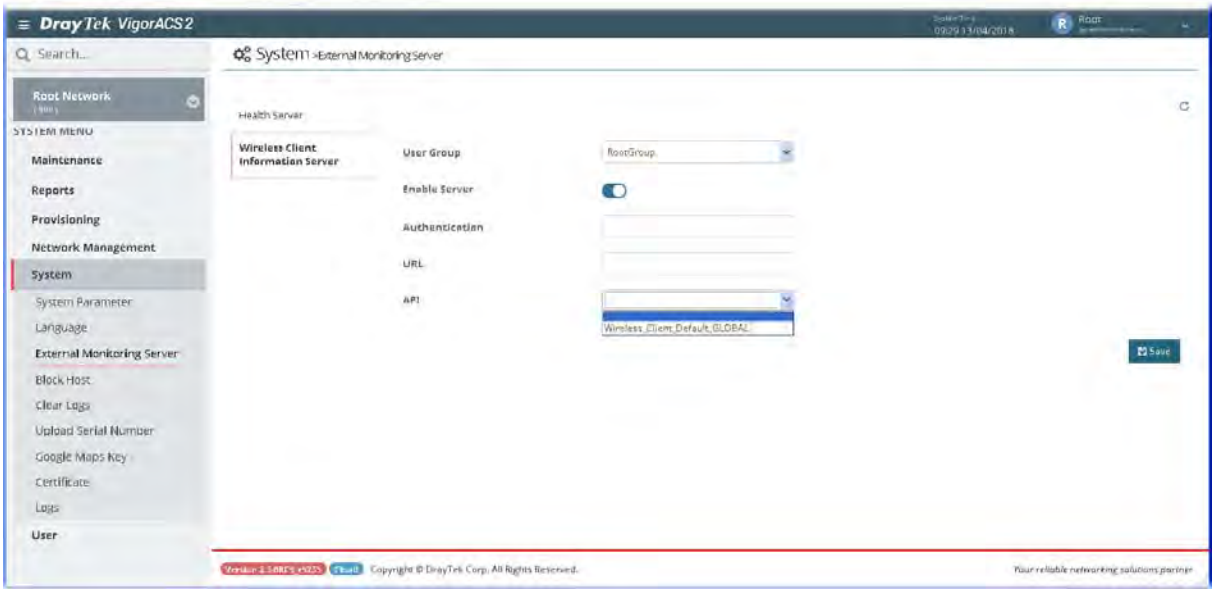
These parameters are explained as follows:

Item	Description
Enable	Click the icon to enable / disable the server.
URL	Enter the URL or IP address of the third party's server.
User Name	Enter the user name for accessing into the third party's server.
Password	Enter the password for accessing into the third party's server.
API	Use the drop down menu to specify the third party's server.
Cancel	Discard current settings and restore the default settings.
Save	Save and activate the current settings.

After finished the above settings, click **Save** to save the change.

4.3.2 Wireless Client Information Server

The sever defined in such page is used to record information for wireless client information periodically.



These parameters are explained as follows:

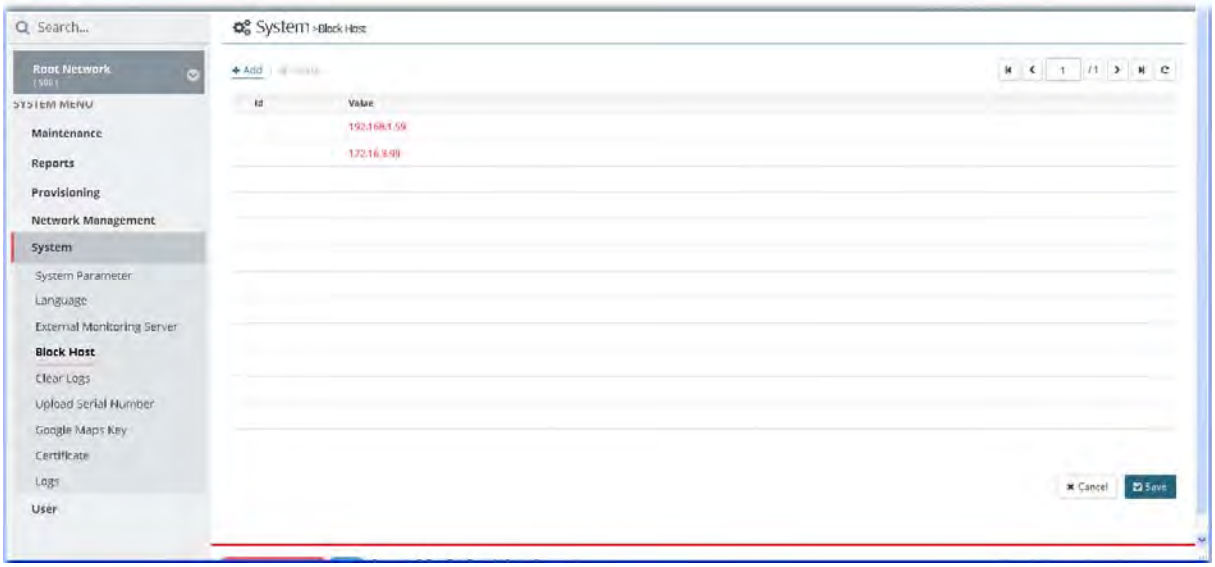
Item	Description
User Group	Use the drop down list to specify a user group. In which, RootGroup contains all of the users with the role of system administrator in default.
Enable Server	Click the icon to enable / disable the server.
Authentication	Enter a string for authentication.
URL	Enter the URL or IP address of the third party's server.
API	Use the drop down menu to specify the third party's server.
Save	Save and activate the current settings.

After finished the above settings, click **Save** to save the change.

4.4 Block Host

Such feature can deny some CPE (with IP address) for connecting to VigorACS or registering to VigorACS due to some reasons (e.g., attacked by someone or device removed).

Due to the limitation of the number of the nodes, if a remote CPE is no longer to be managed by VigorACS, and the TR-069 settings about VigorACS in CPE are unable to be rewritten or cleared, the administrator can remove or block the IP address of such CPE by using this feature. Then VigorACS will not receive any information coming from the CPE periodically and prevent from management troubles.



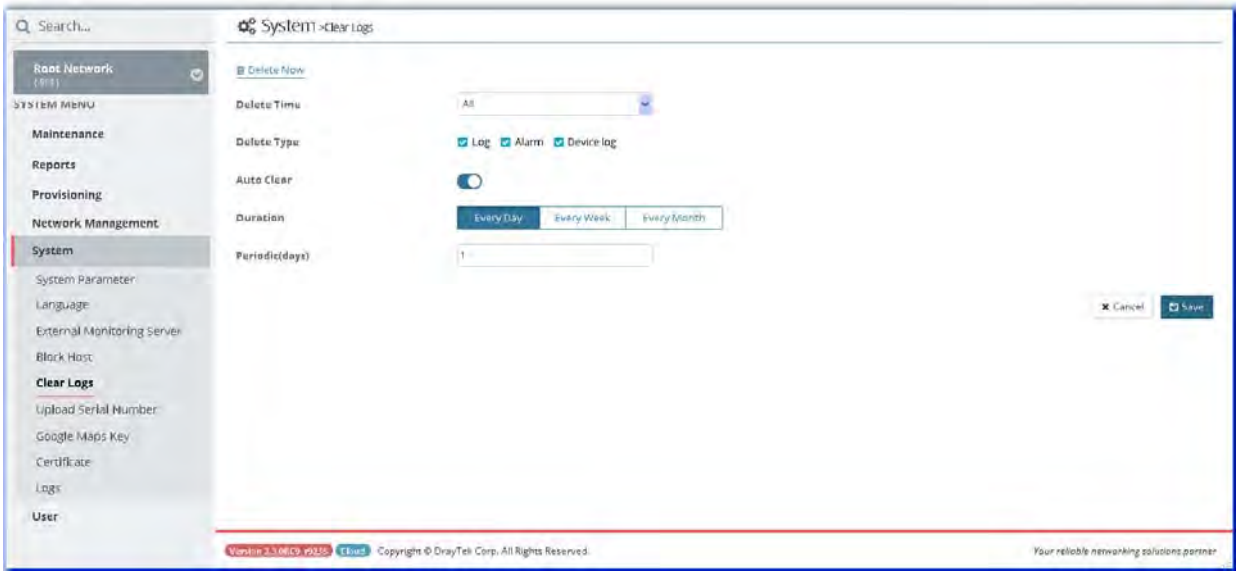
These parameters are explained as follows:

Item	Description
+Add	Click it to add a specified host to be blocked by VigorACS.
Delete	Click it to unblock a host which is listed on the blocked hosts list.
Id	The number appears here is given by VigorACS randomly.
Value	Type an IP address which represents a host.
Cancel	Discard current settings and restore the default settings.
Save	Save and activate the current settings.

After finished the above settings, click **Save** to save the change.

4.5 Clear Logs

VigorACS will keep log until overload the capacity of hard disk. To avoid such trouble, use Clear Logs to delete the log periodically.



These parameters are explained as follows:

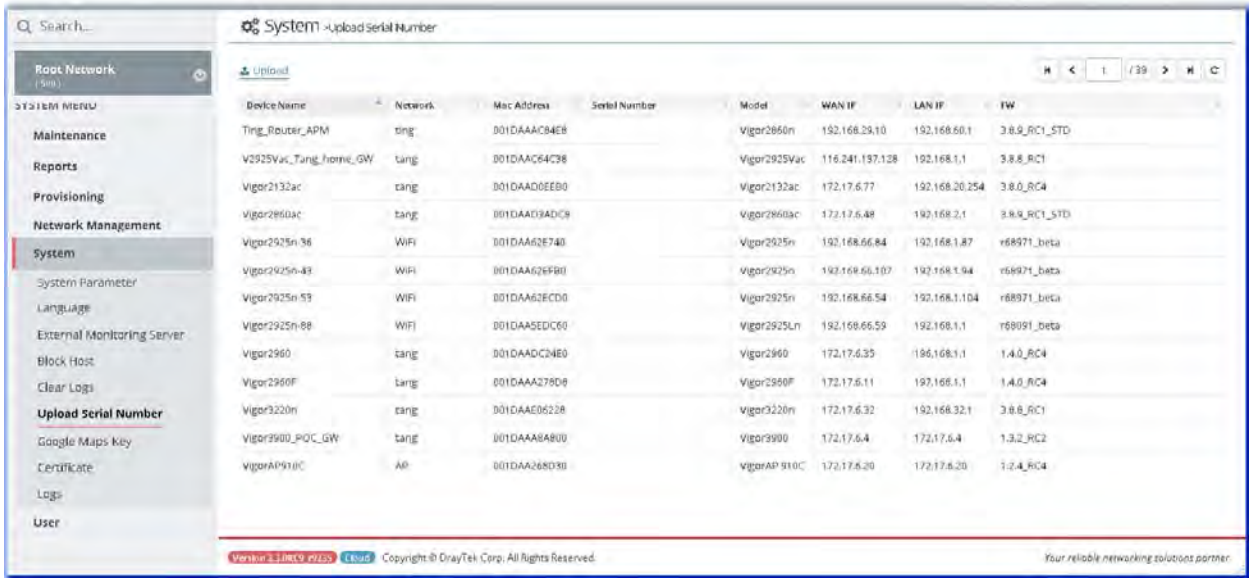
Item	Description
Delete Now	Click it to delete the log information immediately.
Delete Time	Use the drop down list to specify the timing to delete the log. All – All of the logs recorded. Before 1, 3, 6 Month – Log recorded before 1, 3 or 6 month ago. Before 1, 2 Years – Log recorded before 1 or 2 years ago.
Delete Type	At present, there are three types (Log, Alarm, Device log) that corresponding log can be deleted through such feature.
Auto Clear	When it is enabled, VigorACS will periodically delete the logs based on the conditions configured below.
Duration	Every Day – VigorACS deletes the log every day. Every Week – VigorACS deletes the log every week. Every Month – VigorACS deleted the log every month.
Periodic (days / weeks / months)	Remove the log per days, per weeks or per months. For example, type "2" for Periodic (months). That means the system will clear the log every two months.
Day	It is available when **Every Month** is selected as the Duration. Specify the day within a month that VigorACS performs the log deletion. For example, choose 4 means VigoACS will delete the log on the fourth day of every month.
Week	It is available when Every Week is selected as the Duration. Specify Monday, Tuesday, Wednesday, Thursday, Friday, Saturday and Sunday. For example, choose Saturday means VigoACS will delete the log on Saturday every week.
Cancel	Discard current settings and restore the default settings.

Save	Save and activate the current settings.

After finished the above settings, click **Save** to save the change.

4.6 Upload Serial Number

The information for serial number on the rear side / bottom of the CPE or VigorAP can be uploaded onto VigorACS as a reference to be inspected by the administrator.

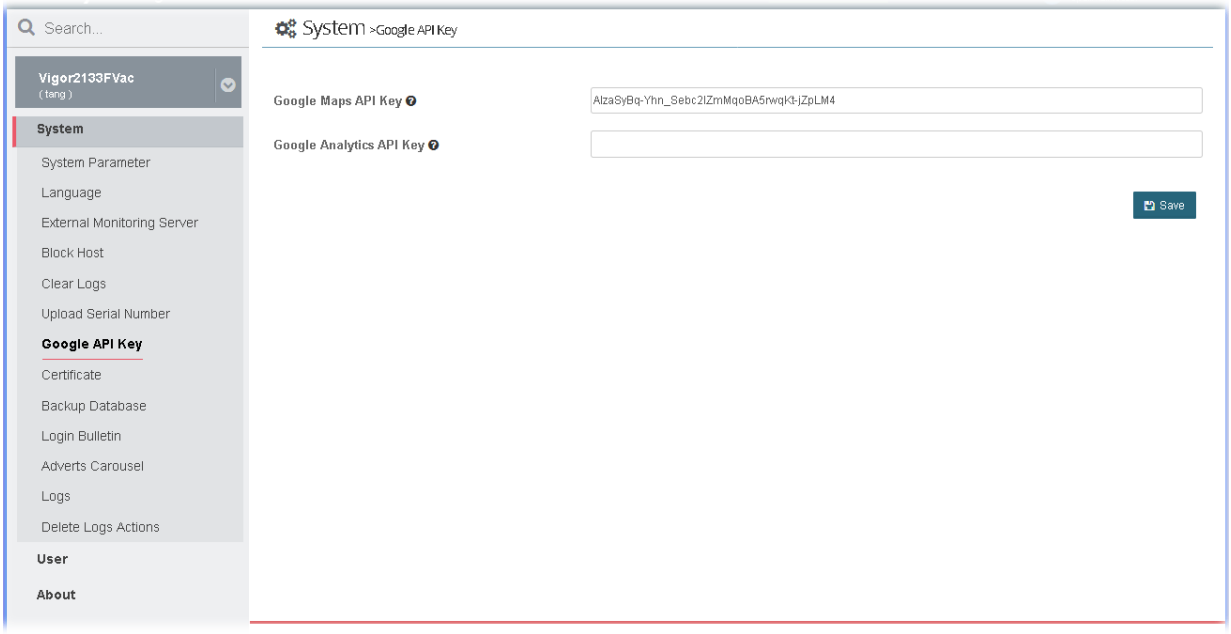


These parameters are explained as follows:

Item	Description
Upload	Click it to upload a ".CSV" file (located on host) to VigorACS. After comparing the MAC address listed on the file with the information of device(s) managed by VigorACS, the result (device name with serial number) will be shown on this page immediately.

4.7 Google API Key

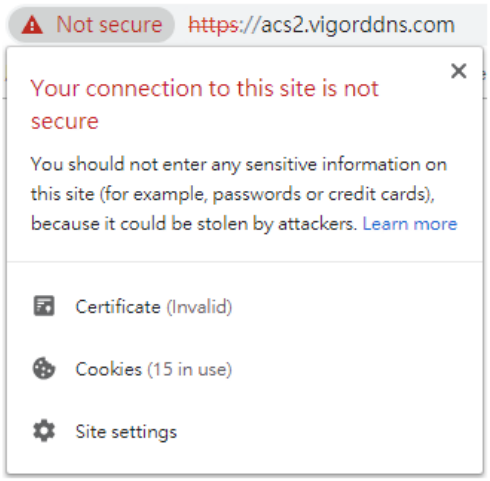
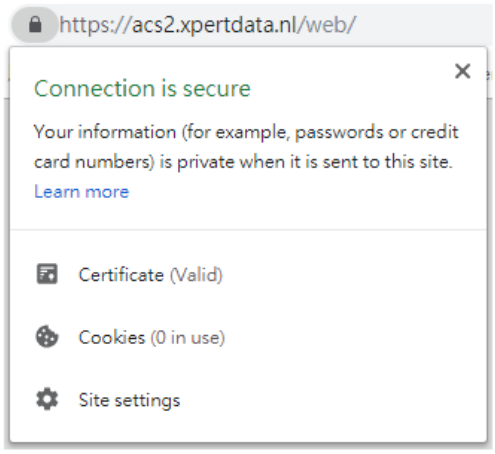
Before using the API of Google Map, it is necessary to apply and get a key from Google. Later, type the key in this page to activate the Google Map. After clicking **Save**, VigorACS will be granted to display the map on the dashboard.



4.8 Certificate

On website browsing, at present, the security offered by HTTP is less than HTTPS.

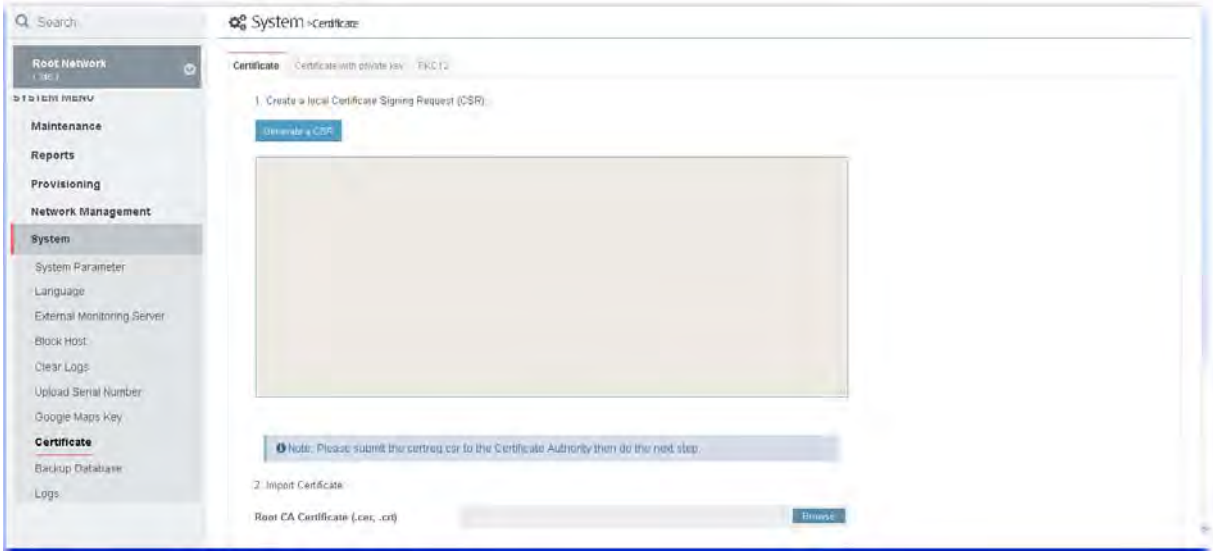
It is suggested to use HTTPS protocol for encrypting the connection between the browser and the web server for every website to prevent private information (such as account, password, personal data, credit number, and others) entered by users from leakage.

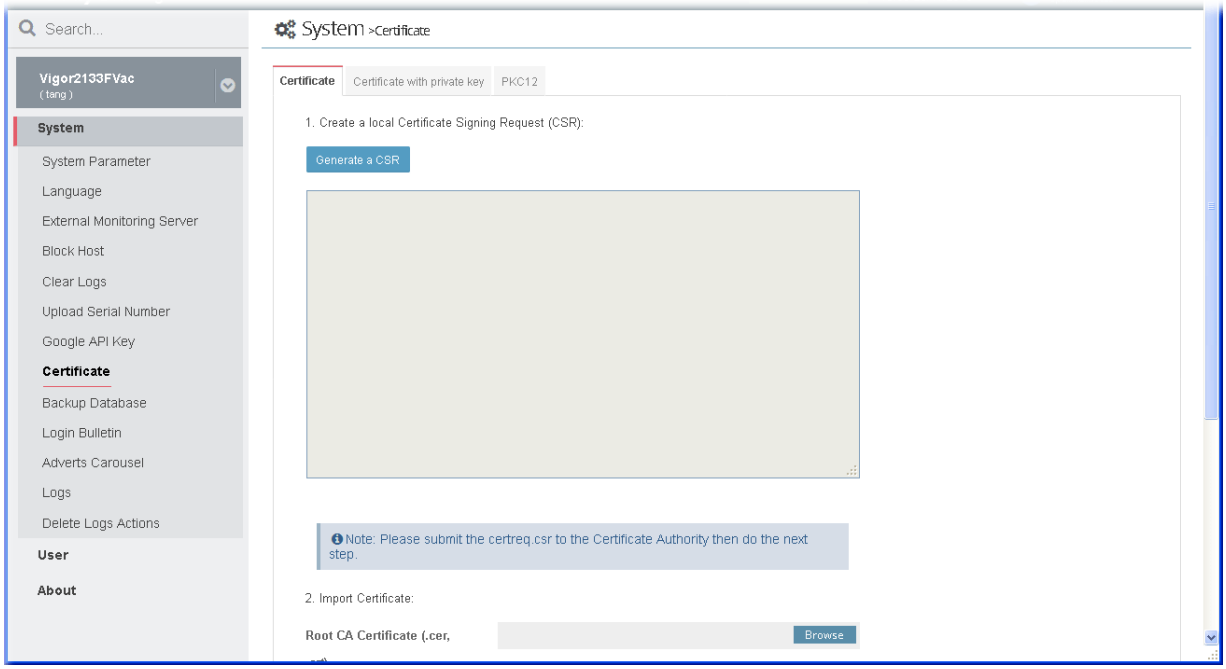
Browsing by Google Chrome A prompt for HTTPS web site encrypted with INVALID certificate	Browsing by Google Chrome A prompt for HTTPS web site encrypted with VALID certificate
	

4.8.1 Certificate

For using HTTPS, it is necessary to prepare a certificate issued by the third-party certificate authority.

This page can generate CSR (certificate signing request) file for certificate signing and import the HTTPS certificate file from third-party certificate authority to VigorACS server. Later, after restarting VigorACS server, Vigor system will apply such HTTPS certificate.



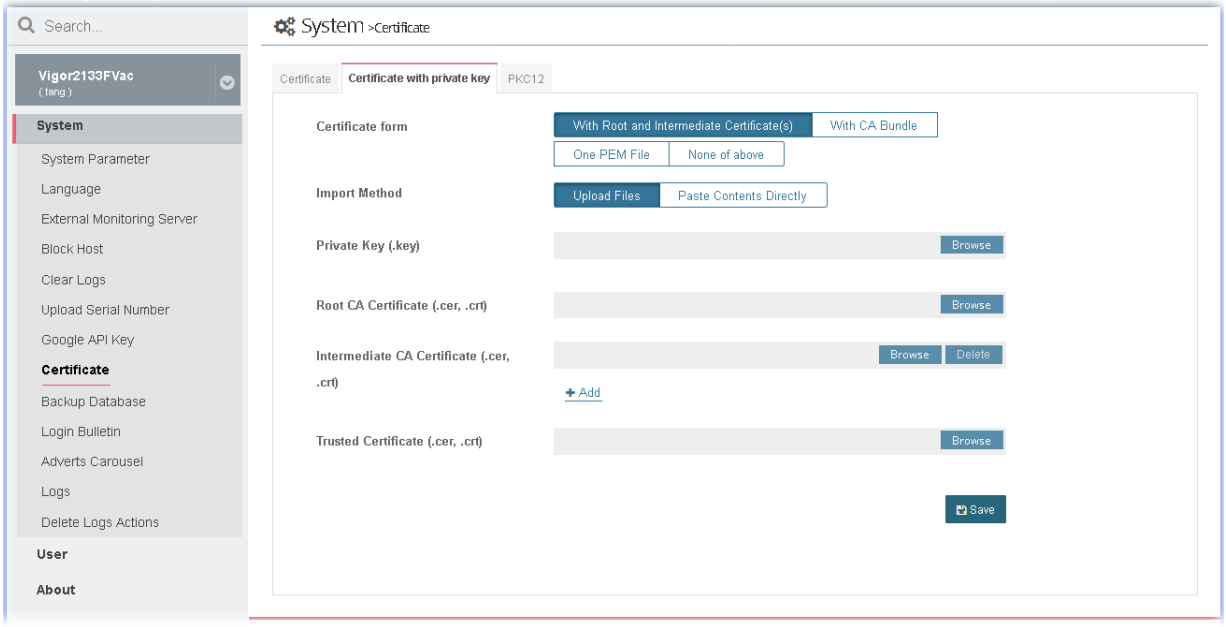


These parameters are explained as follows:

Item	Description
Generate a CSR	Click it to generate a CSR certificate.
Import Certificate	Click the **Browse** button to specify a file to apply the HTTPS certificate. ● Root CA Certificate ● Intermediate CA Certificate ● Trusted Certificate
Save	Save current settings and uploading/pasting the certificate.

4.8.2 Certificate with private key

Some of certificate authority (third-party) does not submit CSR file but generate a private key and sign a certificate (e.g., SSL for free, COMODO, and so on) to be applied by other web site. This page is used for uploading a certificate with private key from a certificate authority (third-party) to VigorACS server.



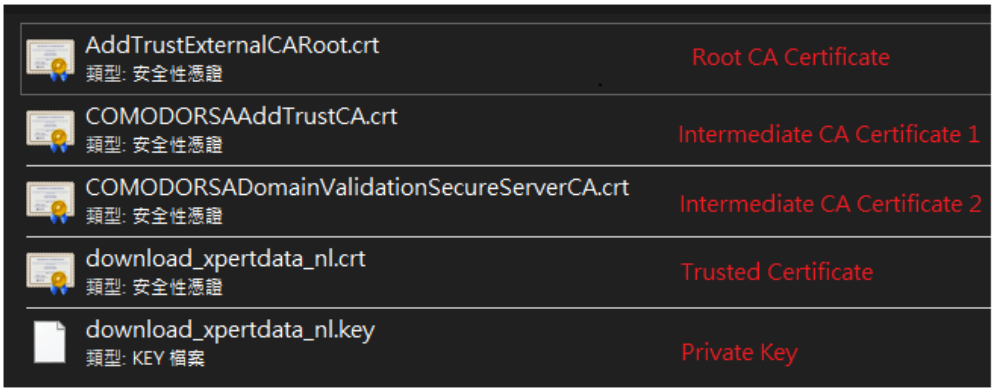
These parameters are explained as follows:

Item	Description
Certificate form	Confirm the file format of the certificate issued by the certificate authority and then select a file with corresponding file format for uploading or pasting on this page directly. ● **With Root and Intermediate Certificate(s)** ● **With CA Bundle** ● **One PEM File** – The certificate issued by the certificate authority contains only one PEM file. ● **None of above** - The certificate issued by the certificate authority contains only one certificate (CRT file) with a private key.
Import Method	**Upload Files** – The content of the certificate / key shall be obtained by uploading a file. **Paste Contents Directly** – The content of the certificate / key shall be pasted from clipboard.
Private Key (.key)	Click the Browse button to select one key file or obtain the content of the key from the clipboard.
Trusted Certificate (.cer, .crt)	Click the Browse button to select one Trusted CA certificate or obtain the content of the certificate from the clipboard.
When With Root and Intermediate Certificate(s) is selected	
Root CA Certificate (.cer, .crt)	Click the Browse button to select one root CA certificate or obtain the content of the certificate from the clipboard.
Intermediate CA Certificate (.cer, .crt)	Enter the name of intermediate CA certificate or Click the Browse button to select one intermediate CA certificate or obtain the content of the certificate from the clipboard. **Add** – If there is more than one intermediate CA certificate file, click it to import more.
When With CA Bundle is selected	

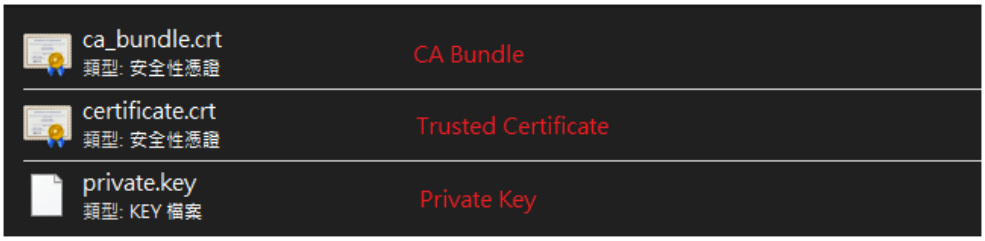
CA Bundle (.cer, .crt)	Click the Browse button to select one certificate or obtain the content of the certificate from the clipboard.
When One PEM File is selected	
PEM File (.pem)	Click the Browse button to select one PEM file.
Save	Save current settings and uploading/pasting the certificate.

Example

The following example shows the file formats of certificates issued by Comodo. It is suitable for "With Root and Intermediate Certificate(s)".



The following example shows the file formats of certificates issued by SSL For Free. It is suitable for "With CA Bundle".



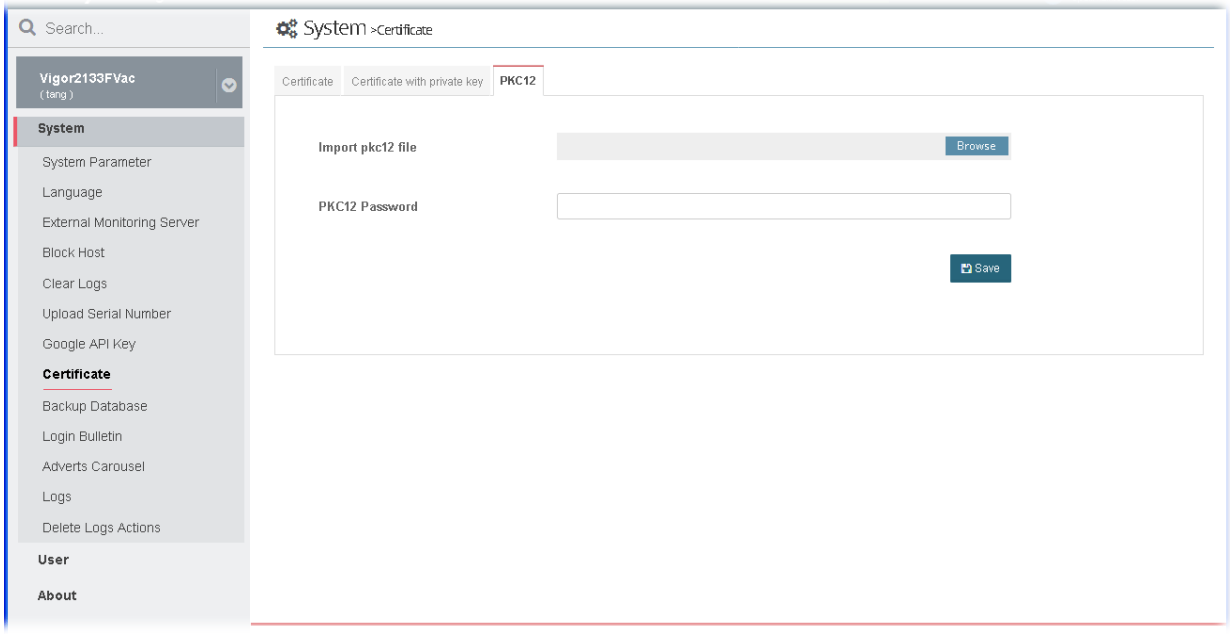
The content of PEM file shall contain at least one group of Private Key and Certificate or one Private Key with multiple certificates. See below:

```
-----BEGIN PRIVATE KEY-----
MIIEkjC....
-----END PRIVATE KEY-----
-----BEGIN CERTIFICATE-----
MIIGDjCCBPag....
-----END CERTIFICATE-----
```

4.8.3 PKC12

PKC 12 file indicates a valid certificate which can be output and protected with a password setting. Also, it means a file which merges the private key with signed certificate by using keytool and protected with a password setting.

This page is used for importing PKC 12 file and applying to VigorACS server with specified password.



These parameters are explained as follows:

Item	Description
Import pkc12 file	Click the Browse button to specify the file.
PKC12 Password	Enter a string as password for PKC12 certificate.
Save	Save and activate the current settings.

4.9 Backup Database

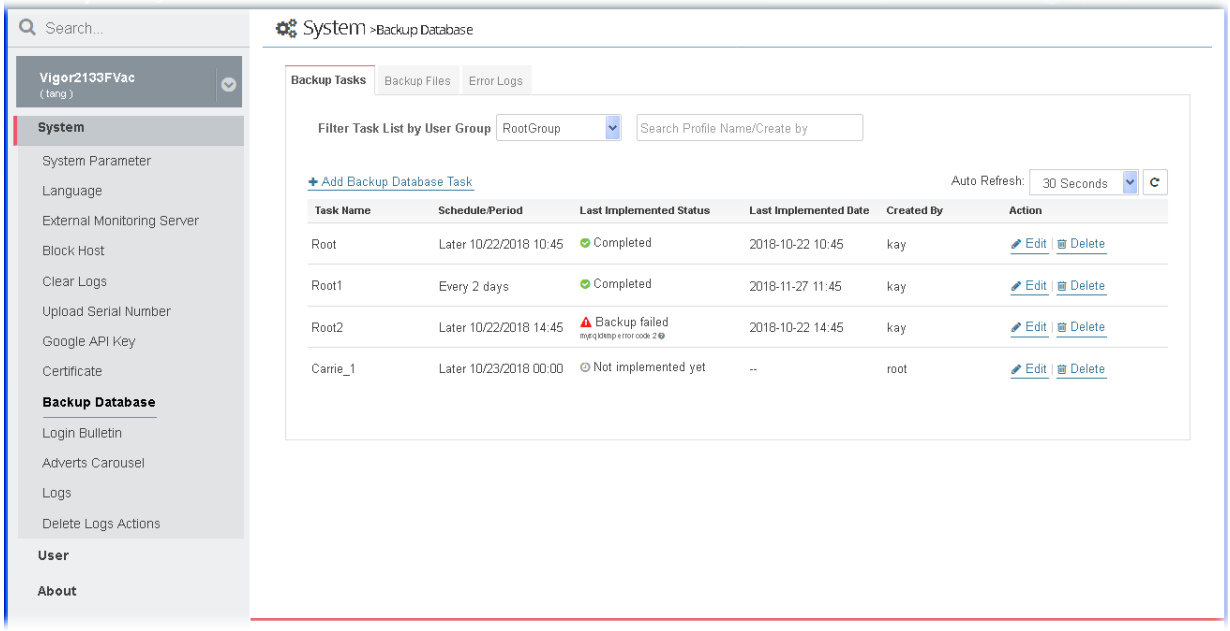
Open **System>>Backup Database** to get the following web pages.

4.9.1 Backup Tasks

VigorACS system will backup database periodically / immediately according to the selected task profile.

The purpose of task profile is to avoid failing to backup database in VigorACS server when transferring VigorACS server from one platform to another one due to damage on the database or hard disk.

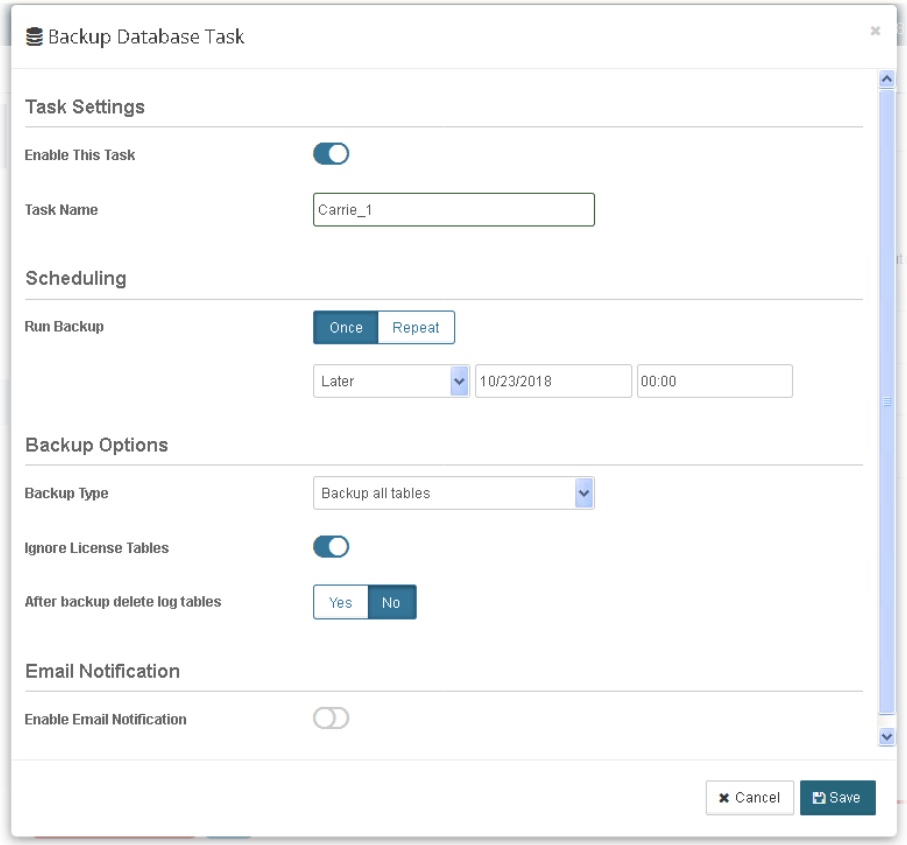
The backup file will be stored on the hard disk of VigorACS Server located.



These parameters are explained as follows:

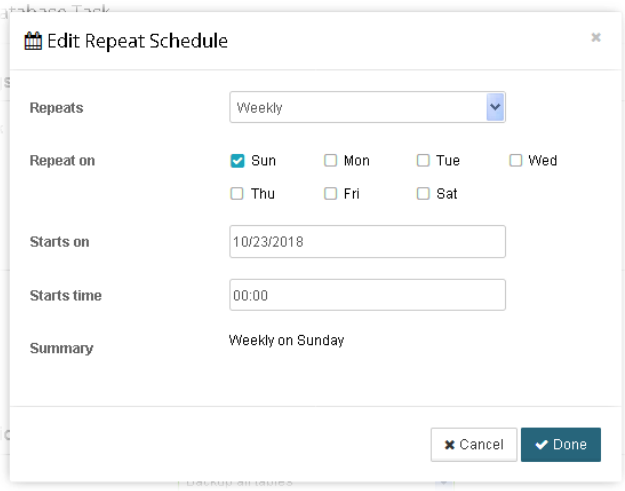
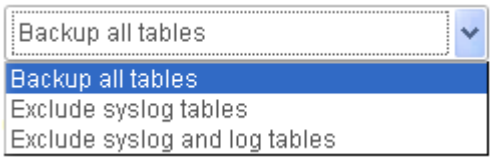
Item	Description
Filter Task List by User Group	Use the drop down list to specify a user group. In which, RootGroup contains all of the users with the role of system administrator in default.
Search Profile Name / Created by	Specify the conditions (type the profile name, creator) for database task searching.
+Add Backup Database Task	Click it to add a backup database task.
Task Name	Display the name of the task.
Schedule/Period	Display the schedule profile or period of time of database backup.
Last Implemented Status	Display the status (completed or backup failed) of database backup.
Last Implemented Date	Display last implemented date of database backup.
Created By	Display the name of the creator of such task.
Action	**Edit** – Click it to modify, change the selected profile. **Delete** - Click it to delete the selected profile.

The following setting page appears when **+Add Backup Database Task** is clicked.



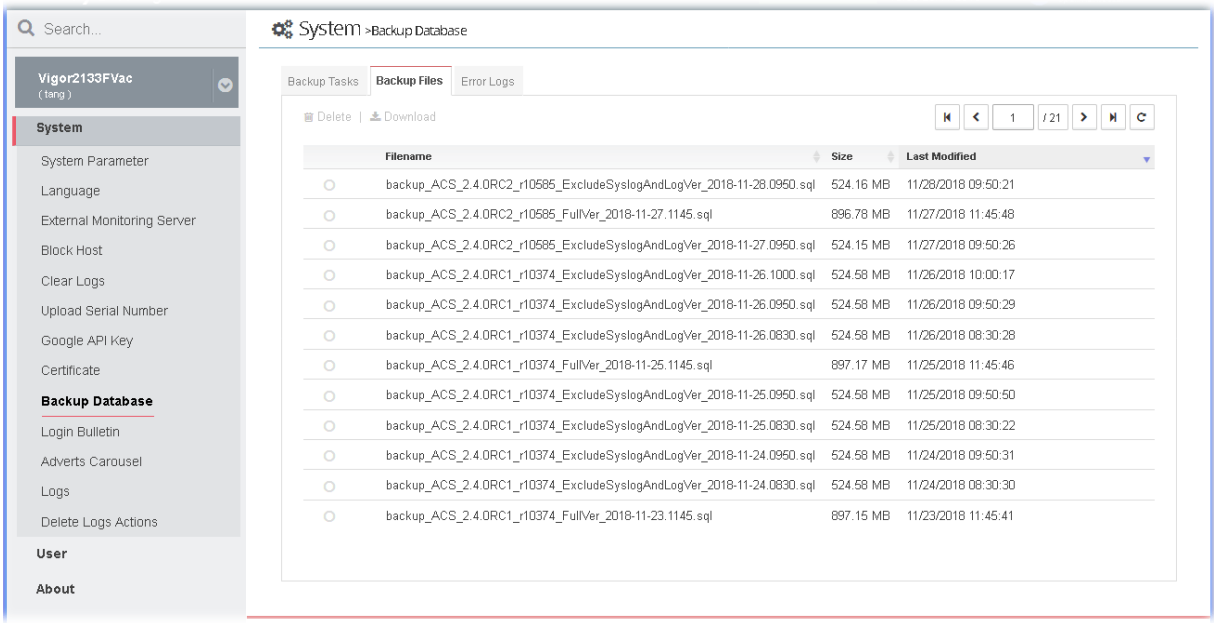
These parameters are explained as follows:

Item	Description
Task Settings	**Enable This Task** - Click it to enable the task. **Task Name** - Type a name for the new task.
Scheduling	**Run Backup** – Choose **Once** to perform the backup immediately or at certain time. Choose **Repeat** to perform the backup periodically. ● **Later / Now** – It is available when Once is selected as Run Backup. ● **Starts on xxxxx** – It is available when Repeat is selected as Run Backup. Click **Edit** to open the following web page for modifying the time setting.

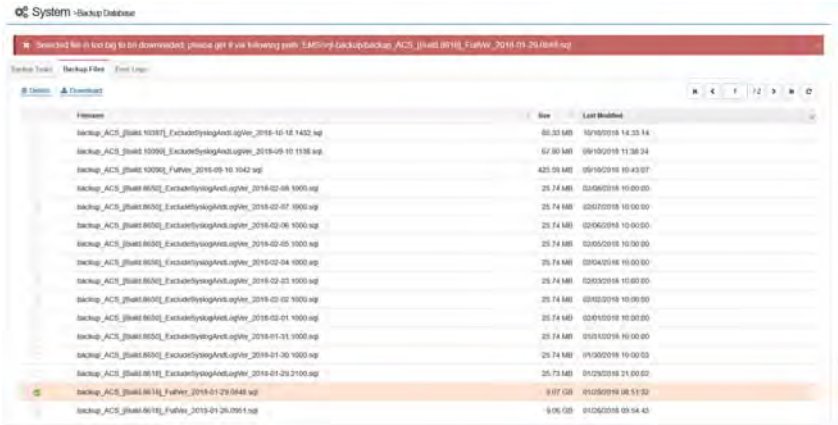
	
Backup Options	**Backup Type** – Choose an option to perform the backup.  **Ignore License Tables** – VigorACS system performs the database backup by ignoring the tables concerning of backup and license (such as syscd, syssn, dslpmid, dslpmshow and etc.,) to prevent from license error while transferring VigorACS server. The default value is "Enabled". **After backup delete log tables** – Delete the log tables immediately when VigorACS server finishes the backup job
Email Notification	**Enable Email Notification** – If enabled, VigorACS server will send a notification email **about database backup** to the recipient. ● **Email Subject** – Enter the subject for the email. ● **Email From** – Enter the email address of the sender/agent/registrar. ● **Email Content** – Enter the content of the email. ● **Email To** – Enter the email address of the recipient. ● **+Add recipient** – Add more recipients to receive the email from VigorACS server.
Cancel	Discard current settings.
Save	Save the current settings and exit the page.

4.9.2 Backup Files

This page shows a list of backup files generated by VigorACS server.



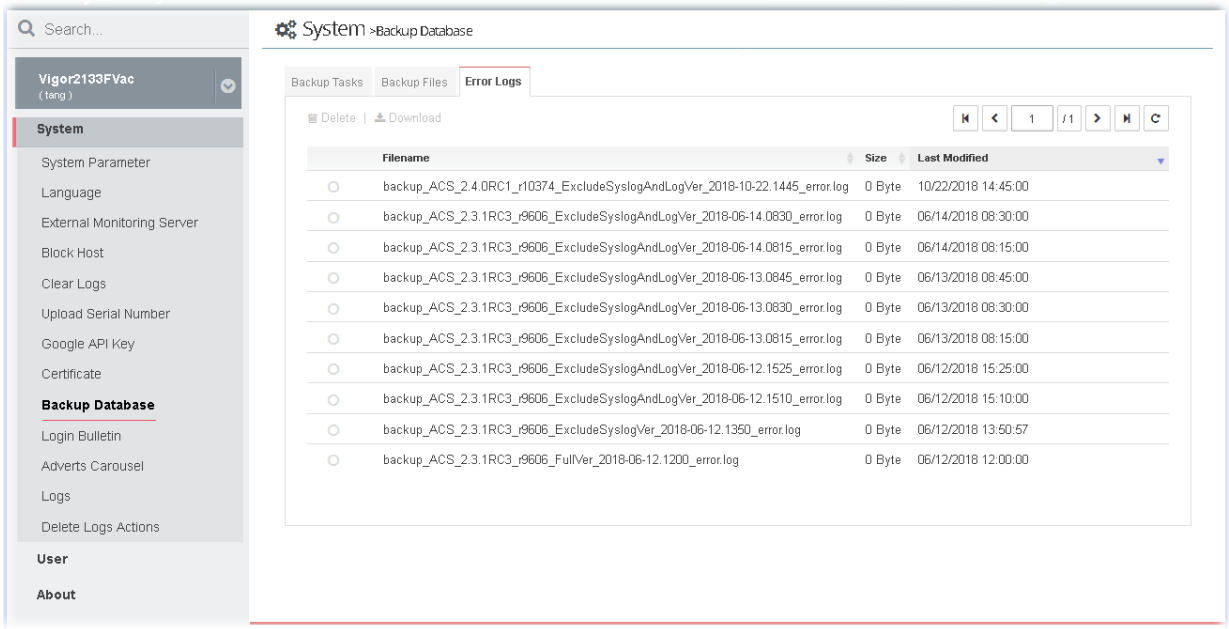
These parameters are explained as follows:

Item	Description
Delete	Click it to remove the selected filename.
Download	Click it to download the file from the hard disk of VigorACS server located for restoration or transferring. At present, only the file with the size less than 1GB can be downloaded. For the size more than 1GB, get that file from the directory of “EMS/sql-backup” in VigorACS server.  The downloaded file can be used for database restoration or transferring. Before restoring the database, turn off the VigorACS server first. After finishing the restoration, turn on the VigorACS server again. The restoration command is, ● mysql -f -u root -Dtr069 < filename.sql If password is required, restoration command shall be, ● mysql -f -u root -Dtr069 -p < filename.sql

Filename	Display the name of the backup file.
Size	Display the size of the backup file.
Last Modified	Display the last modified time.

4.9.3 Error Logs

This page will display logs of the task which failed to back up the database.

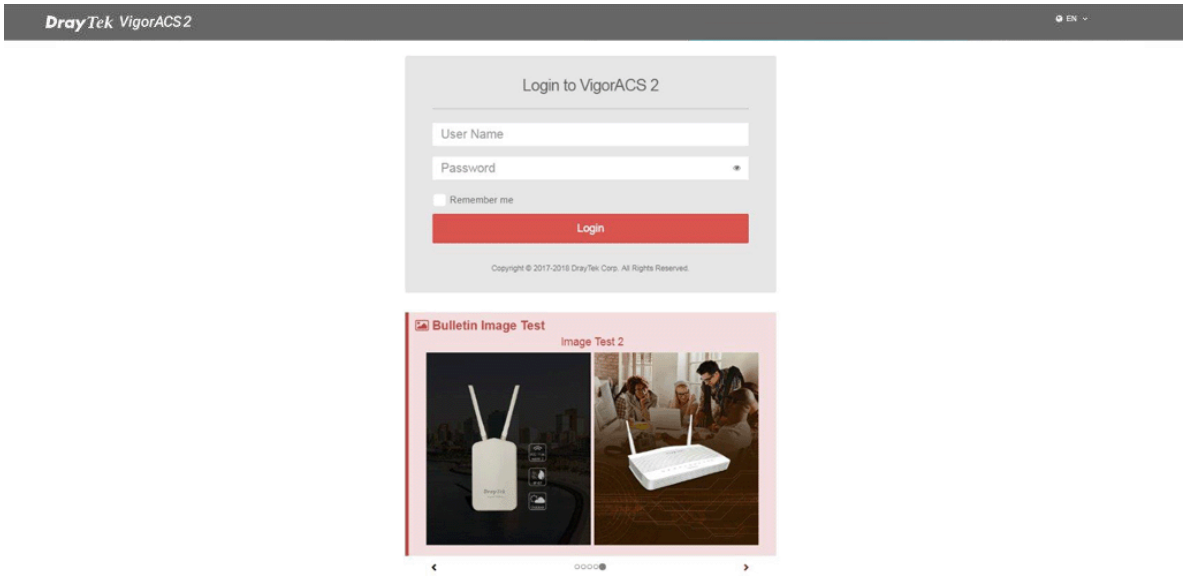


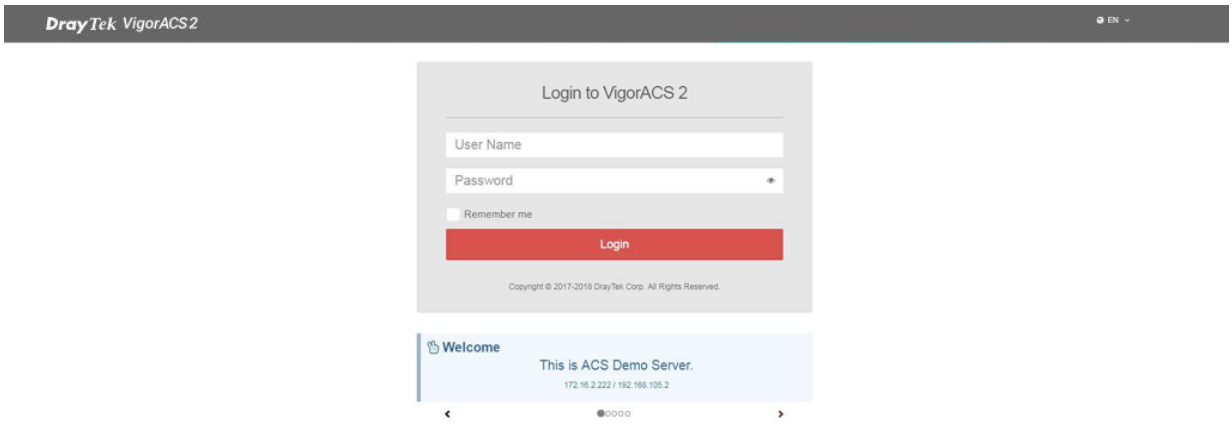
These parameters are explained as follows:

Item	Description
Delete	Click it to remove the selected error log.
Download	Click it to download the selected error log from the hard disk of VigorACS server located. The downloaded log file can be browsed by any text editor. If the content of the log contains the error message output by the program of “mysqldump”, the system administrator can get the reason for backup failure by analyzing the error message. If **Email Notification** is enabled, the error log file will be sent by e-mail to the recipient(s) defined in **System>>Backup Database>>Backup Tasks**.
Filename	Display the name of the error log.
Size	Display the size of the backup file.
Last Modified	Display the time that such error occurred.

4.10 Login Bulletin

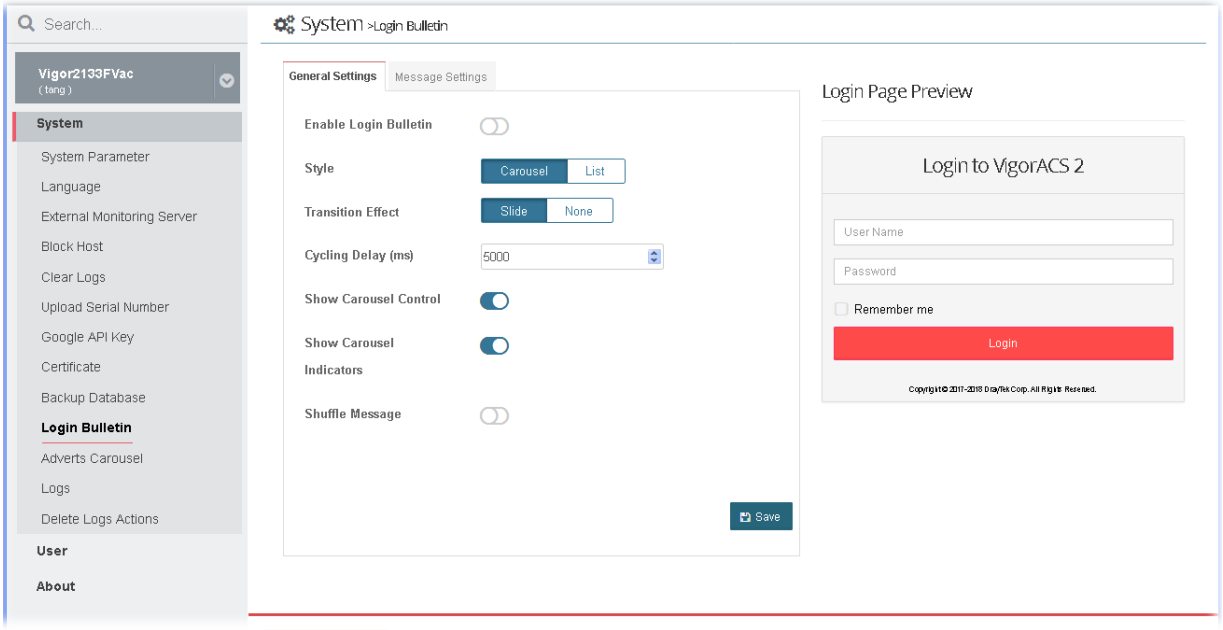
VigorACS server operator can put several important messages on VigorACS login page.



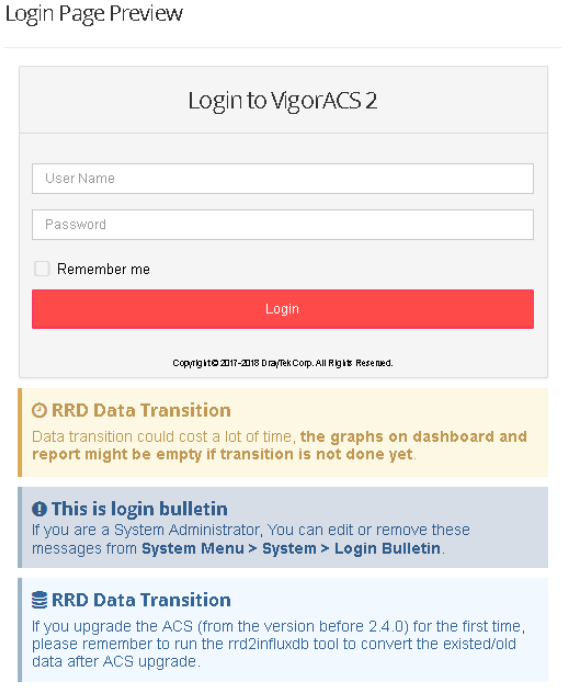


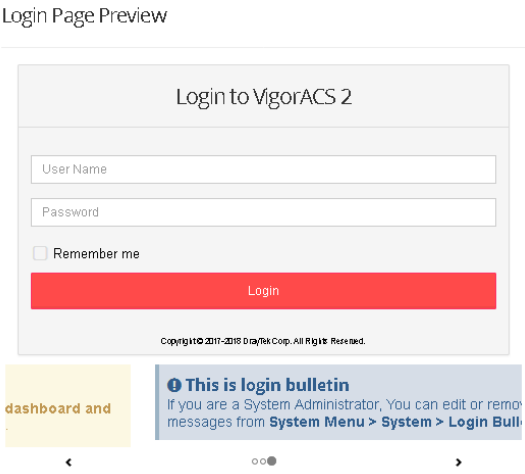
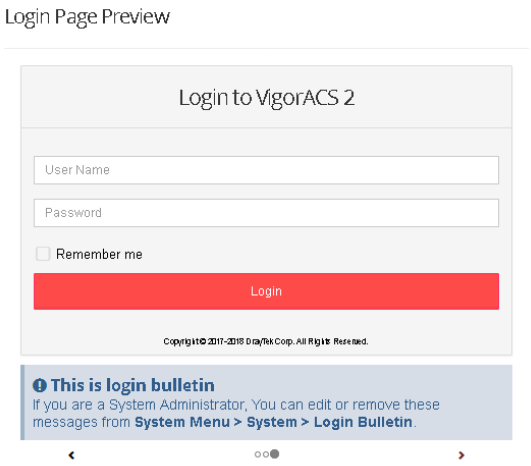
4.10.1 General Settings

Open **System>>Login Bulletin** and click **General Settings** to get the following web page.



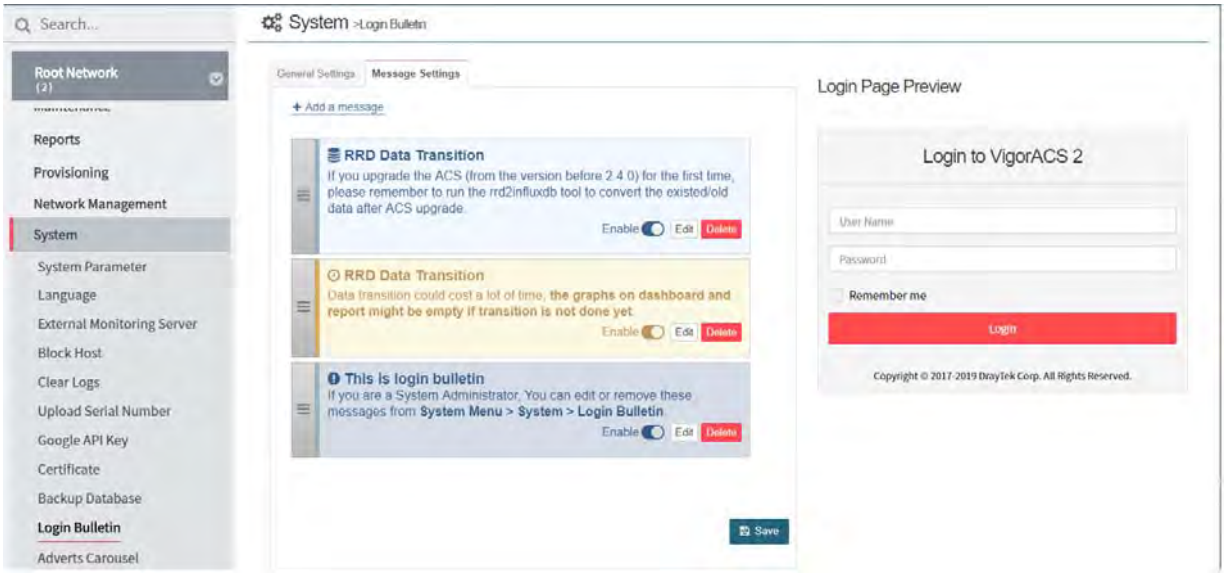
These parameters are explained as follows:

Item	Description
Enable Login Bulletin	If it is enabled, a bulletin with specified content will be shown on the login web page of VigorACS.
Style	The message on the bulletin will be displayed with carousel animation or listed one by one. **Carousel** – Messages in bulletin will be displayed with carousel animation. **List** – All of the messages in bulletin will be listed at one time. 

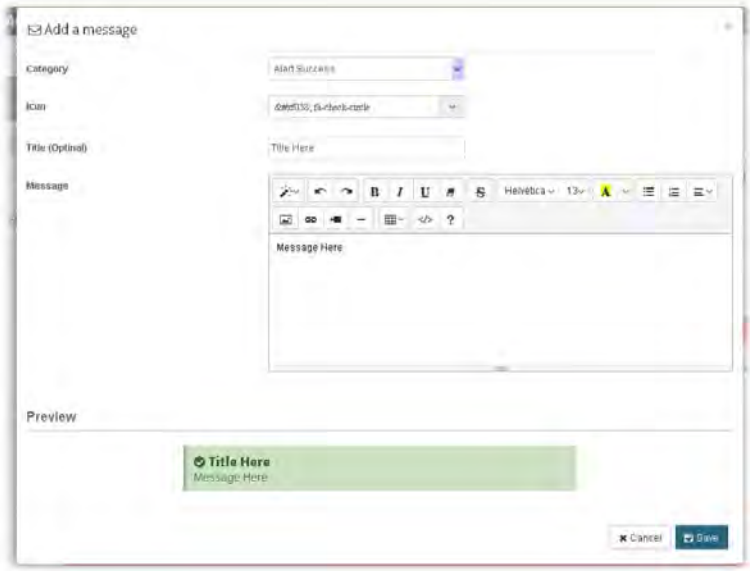
Transition Effect	**Slide** –The messages will appear automatically from left to right or right to left by sliding.  **None** – The message will appear one by one. 
Cycling Delay (ms)	Set the time delay for every bulletin message item. The available range is 1000 to 60000 ms.
Show Carousel Control	Small arrows below the messages will be shown on the page if this function is enabled.
Show Carousel Indicators	Indicators of the slides below the message will be shown on the page if this function is enabled.
Shuffle Message	The messages will appear randomly if this function is enabled.
Save	Save the current settings.
Login Page Preview	After configuring the settings for login bulletin, click **Save** to display the messages in this area.

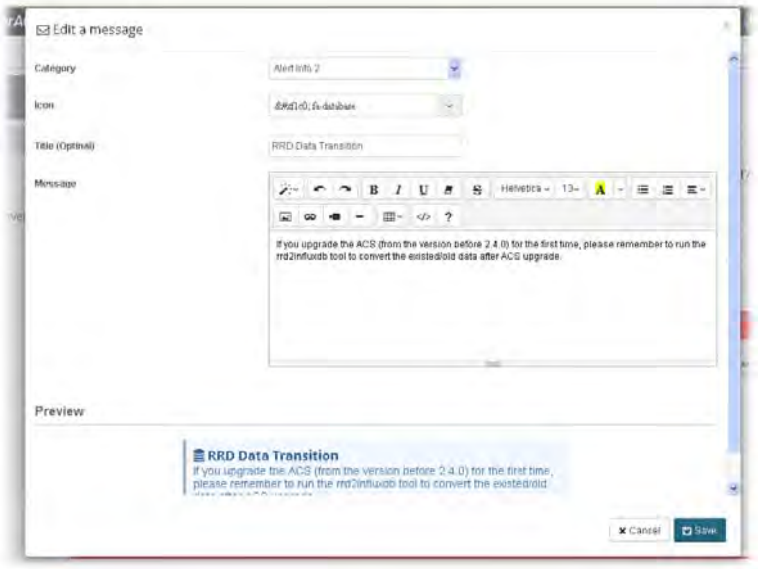
4.10.2 Message Settings

This page is used for creating new message or modifying existing message.



These parameters are explained as follows:

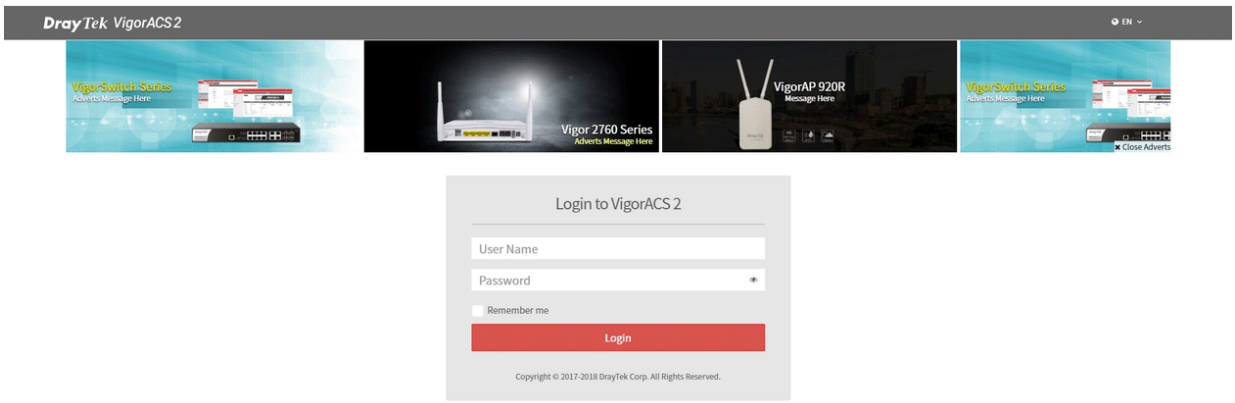
Item	Description
Message Settings Display Area	Display all of the messages. You can change the order of the message by dragging the message up or down.
+Add a message	Create a new message.  **Category** – Specify the attribute for the message. **Icon** – Specify one of the types as the icon in the front of the title. **Title (Optional)** – Enter a string as the heading for the message. **Message** – Enter the content of the message. **Preview** – The changes made above will be shown in this area immediately. **Save** – Save the message and exit the dialog.

Edit	Modify the selected message. 
	Drag this control item to change the sequence of the selected message on the list. After changing, click **Save**. If the option **Shuffle Message** in **System>>Login Bulletin>>General Settings** is enabled, the messages will not be displayed in the order of the list, but will be displayed randomly.
Enable	If enabled, the message will be USED and shown in the login bulletin. If disabled, the message will NOT be used and shown in the login bulletin.
Delete	Remove the selected message.
Save	Save the current settings.

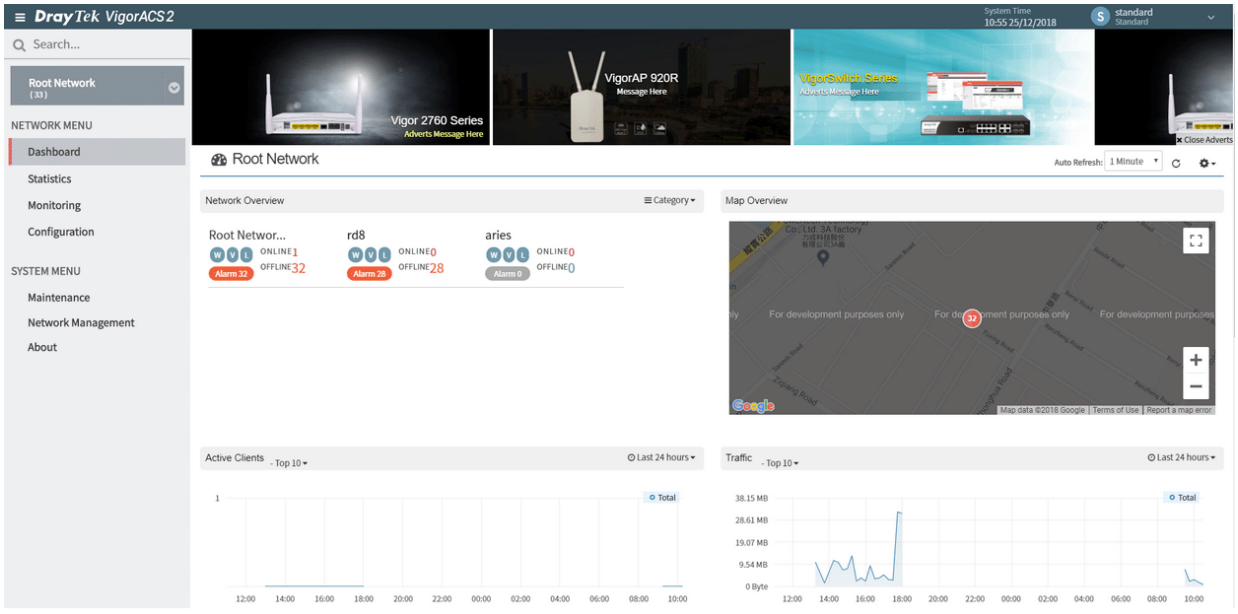
4.11 Adverts Carousel

VigorACS server operator can add adverts which will be shown on the banner of VigorACS login page or the dashboard of VigorACS server.

On login page,



On the dashboard,

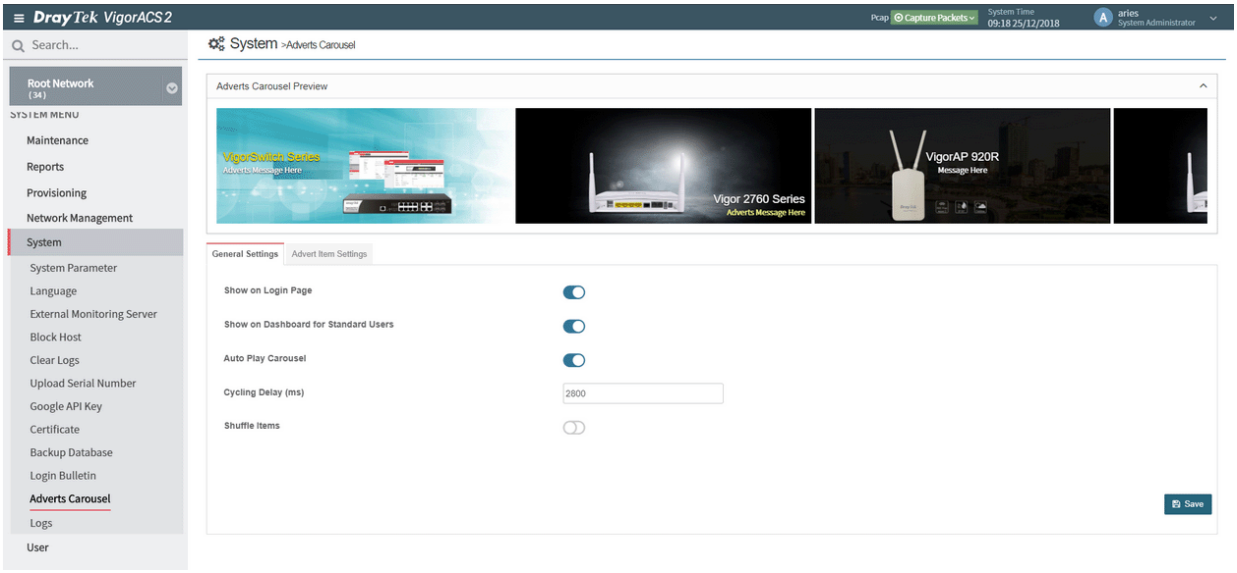


Click the button of Close Adverts on the bottom of the right corner to close the advertisement temporarily. However, the adverts carousel will appear again if switching to other page and returning to this page.

4.11.1 General Settings

Open **System>>Adverts Carousel** to get the following web page.

This page determines if displaying the adverts on the login page or not, enabling the auto play carousel function, selecting cycling delay time and using the shuffle items.

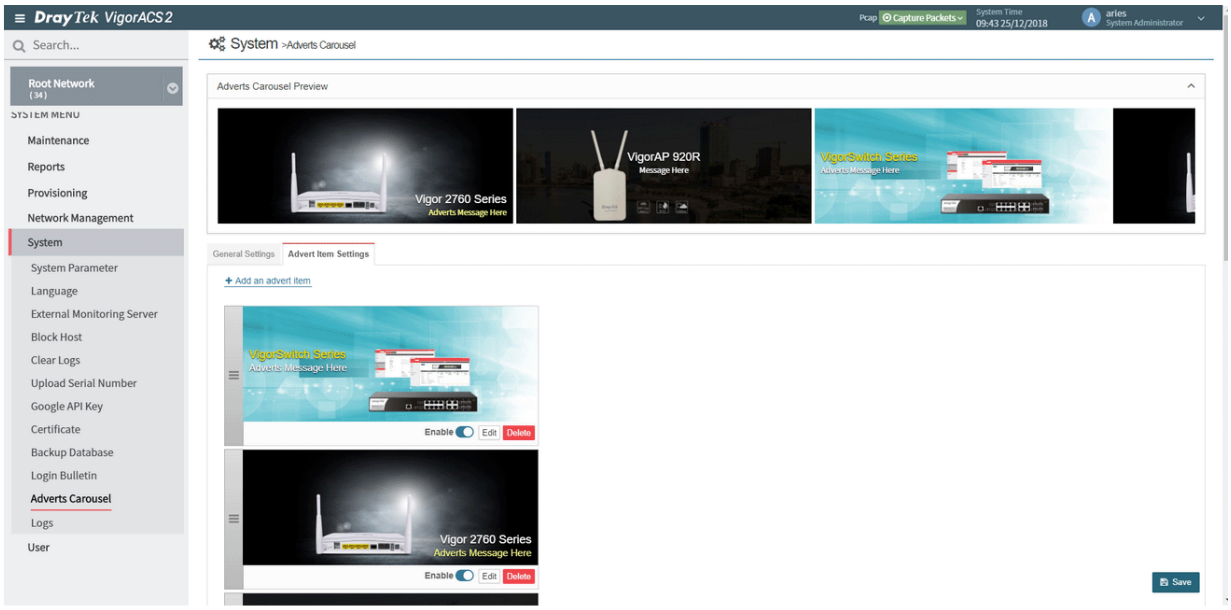


These parameters are explained as follows:

Item	Description
Adverts Carousel Preview	Display a preview of the adverts carousel with specified images. When adding, deleting, enabling or disabling any advert item, or changing any setting configuration, this field will display the content of the modification.
Show on Login Page	If enabled, the adverts carousel will be SEEN on the login page. If disabled, the adverts carousel will NOT be seen on the login page.
Show on Dashboard for Standard Users	It is available only for the VigorACS 2 cloud edition. If enabled, the adverts carousel will be SEEN on the Dashboard. If disabled, the adverts carousel will NOT be seen on the Dashboard.
Auto Play Carousel	If enabled, the adverts carousel will be PLAYED automatically. If disabled, the adverts carousel will NOT be played automatically. When the number of advert item is smaller than 1, the system will not perform the adverts carousel.
Cycling Delay (ms)	Set the time delay for every advert item. The available range is 1000 to 60000 ms.
Shuffle Items	If enabled, the advert items will be played randomly on the adverts carousel.

4.11.2 Advert Items Settings

This page is used to upload a selected image onto VigorACS server and enter words (title, message of the image and color specified) on the image for advertisement.

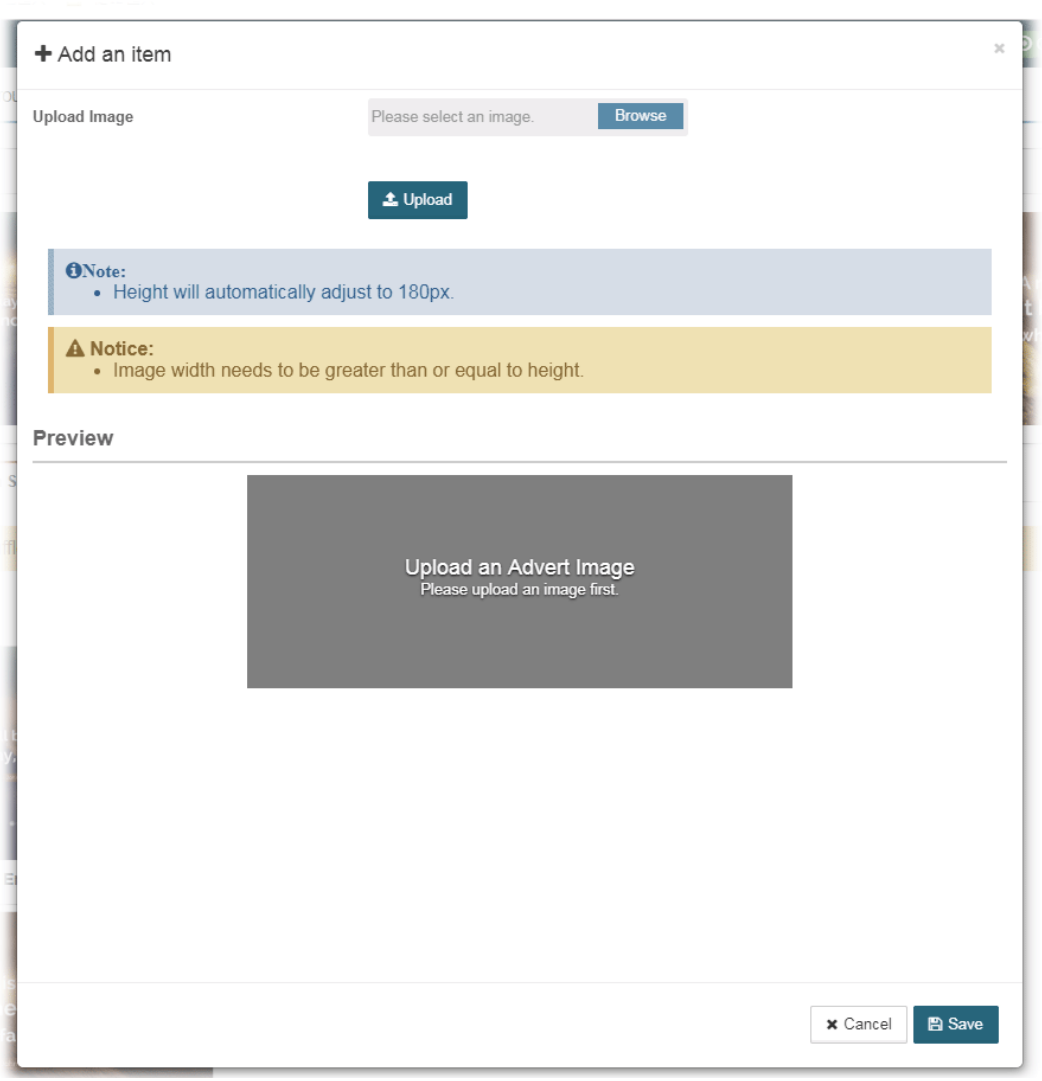


These parameters are explained as follows:

Item	Description
Adverts Carousel Preview	Display a preview of the adverts carousel with specified images. When adding, deleting, enabling or disabling any advert item, or changing any setting configuration, this field will display the content of the modification.
+Add an advert item	Create a new advert item to be used on adverts carousel.

To add an advert item, do the following steps.

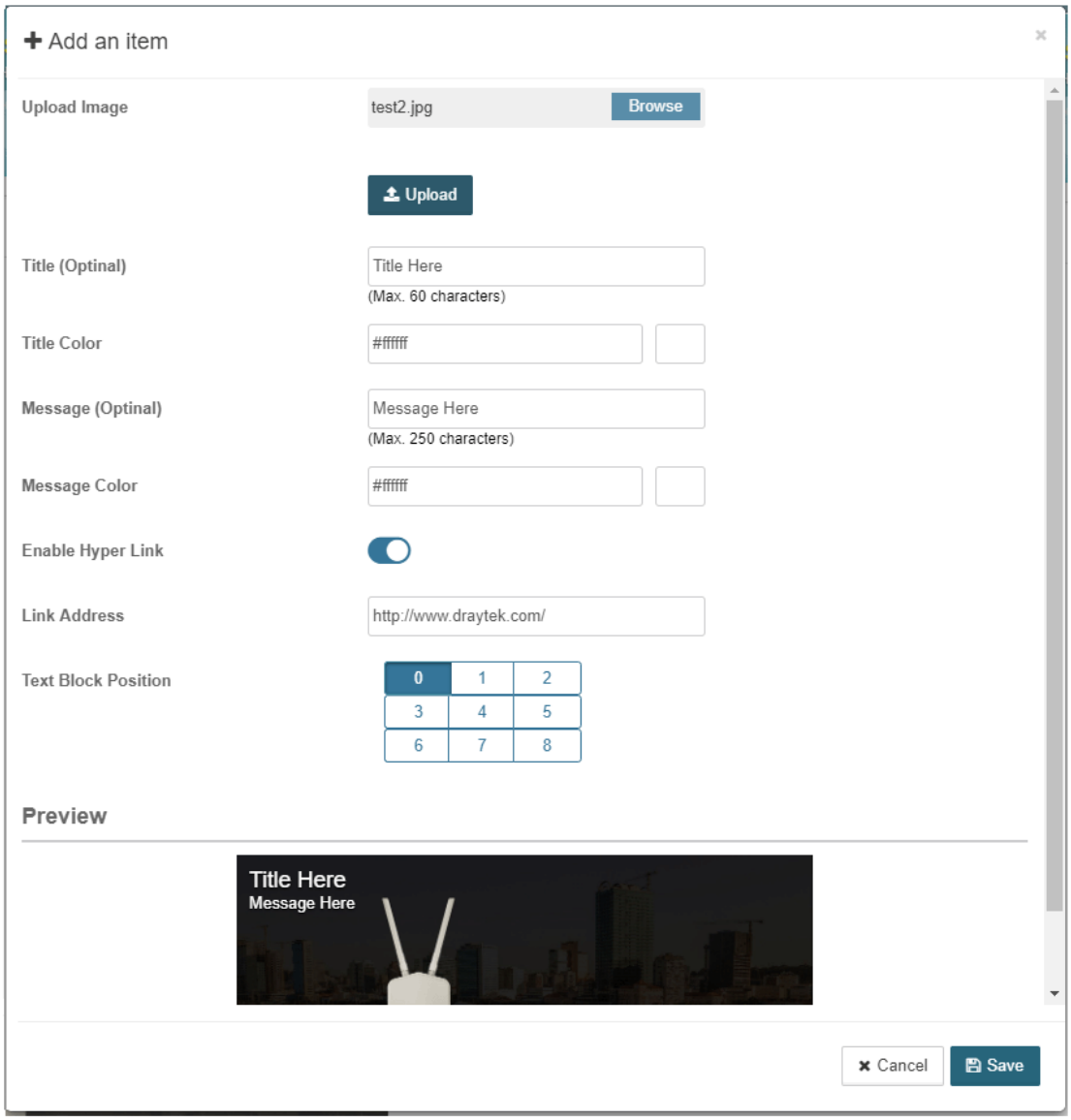
1. Click **+Add an advert item to display t**he following setting page.



Available settings are listed as follows:

Item	Description
Upload Image	Click Browse button to locate the image file (supporting .gif, .jpg, and .png format). After clicking Upload, the images will be stored to the ACS Server. Note that the height of the image will be automatically adjusted to 180 pixel. Image width needs to be greater than or equals to the height. Different adverts can use the same image which is uploaded to VigorACS 2 server.
Upload	Upload the selected image to ACS server as the advert image.

2. After specifying an image file, click the **Upload** button. Later, a page with detailed settings will appear as follows:

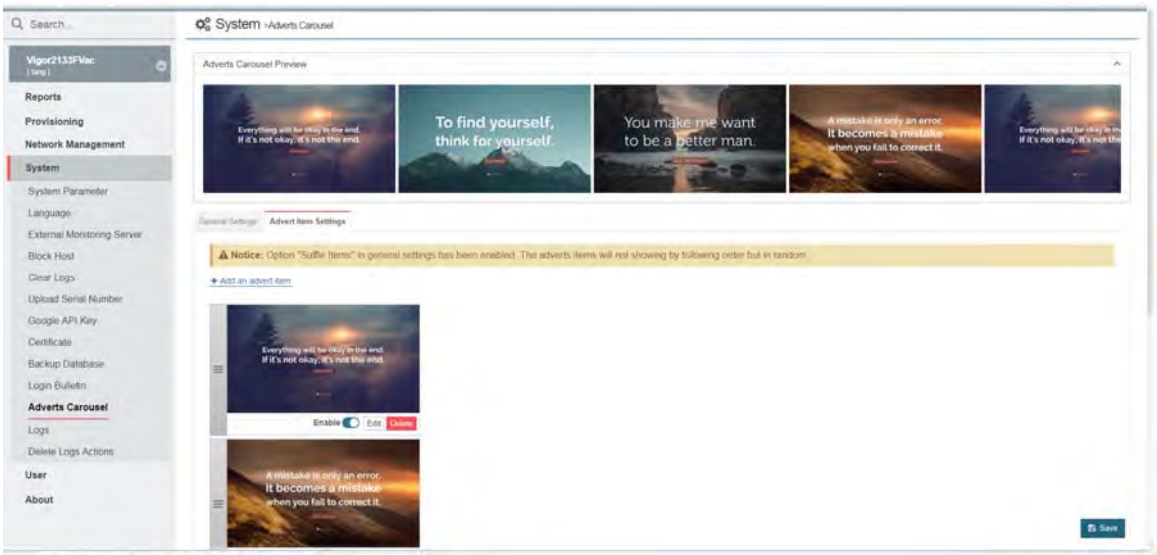


Available settings are listed as follows:

Item	Description
Upload Image	For change the advert image, click Browse button to locate the image file (supporting .gif, .jpg, and .png format). After clicking Upload, the images will be stored to the ACS Server. Note that the height of the image will be automatically adjusted to 180 pixel. Image width needs to be greater than or equals to the height. Different adverts can use the same image which is uploaded to VigorACS server.
Title (Optional)	Enter a string as a title for this image.
Title Color	Assign a color to apply to the title. (Default color is #ffffff).
Message (Optional)	Enter a brief description for the advertisement.
Message Color	Assign a color to apply to the message. (Default color is #ffffff).

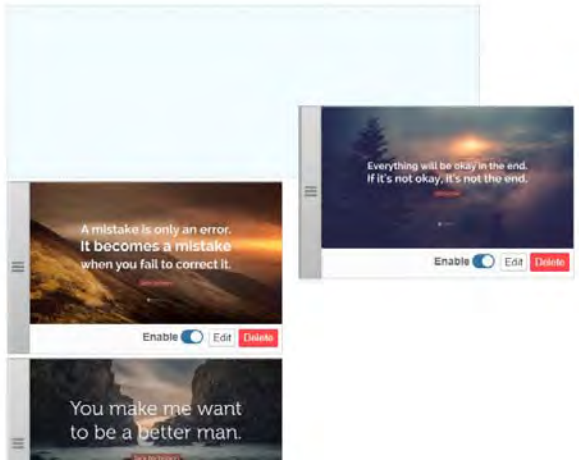
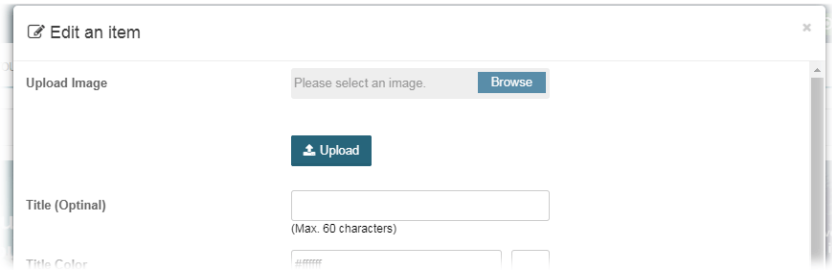
Enable Hyper Link	Choose Enable to activate hyper link for the advertisement.
Link Address	If Enable Hyper Link is enabled, enter the URL of the link.
Text Block Position	Determine the position of the title and message on the advert image.
Preview	Any changes on this setting page will be shown in this field. If the width of the advert image uploaded to VigorACS server is smaller than the advertisement area, the blank space will be filled with repeated advert image.
Cancel	Discard current settings.
Save	Save the current settings and exit the page.

3. Enter the value(s) required for the image, then click **Save**.
4. Now, the selected image has been added and shown on this setting page. If the image width is smaller than the banner width, the advert images will appear repeatedly.



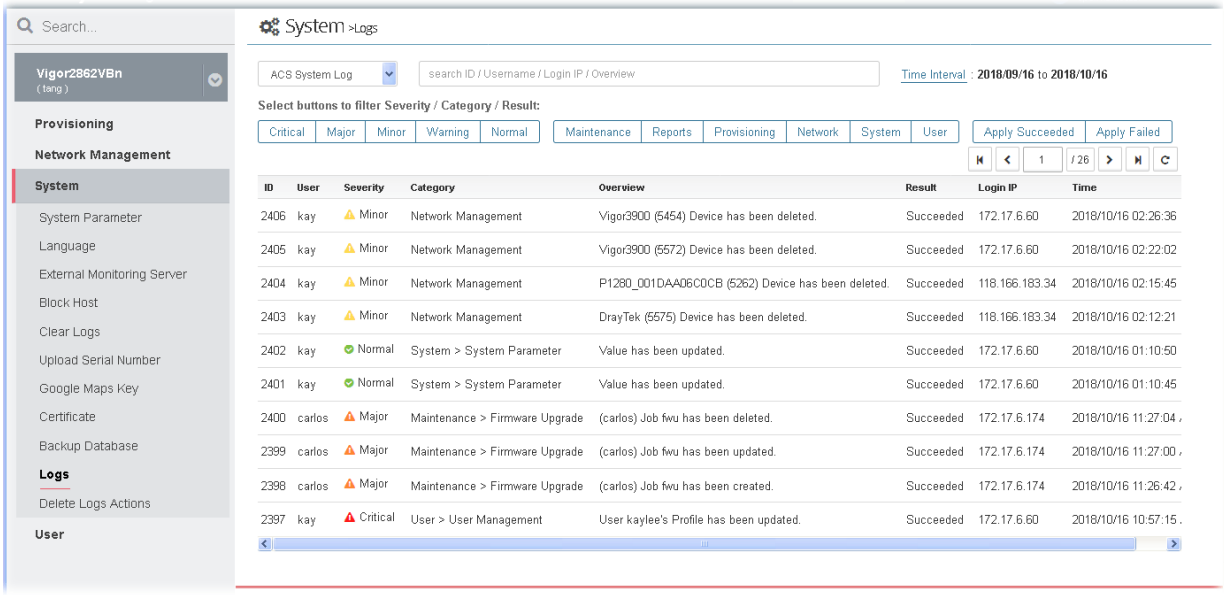
Available settings are listed as follows:

Item	Description
	Drag this control item to change the sequence of the selected advert item on the list. After changing, click **Save**. If the option **Shuffle Items** in **System>>Adverts Carousel>>General Settings** is enabled, the adverts items will not be displayed in the order of the list, but will be displayed randomly.

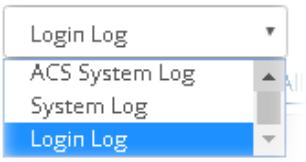
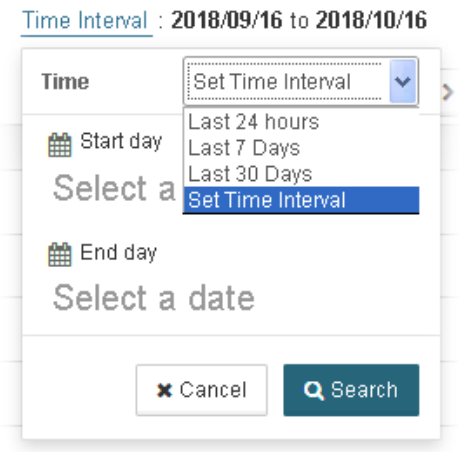
	
Enable	If enabled, the advert item will be USED and shown in the adverts carousel. If disabled, the advert item will NOT be used and shown in the adverts carousel.
Edit	Click it to modify settings for the selected image. 
Delete	Delete the selected advert item.
Save	Save the current settings.

4.12 Logs

Open **System>>Logs** to get the following web page. Information displayed here shall be useful for the administration to viewing the status for user access.



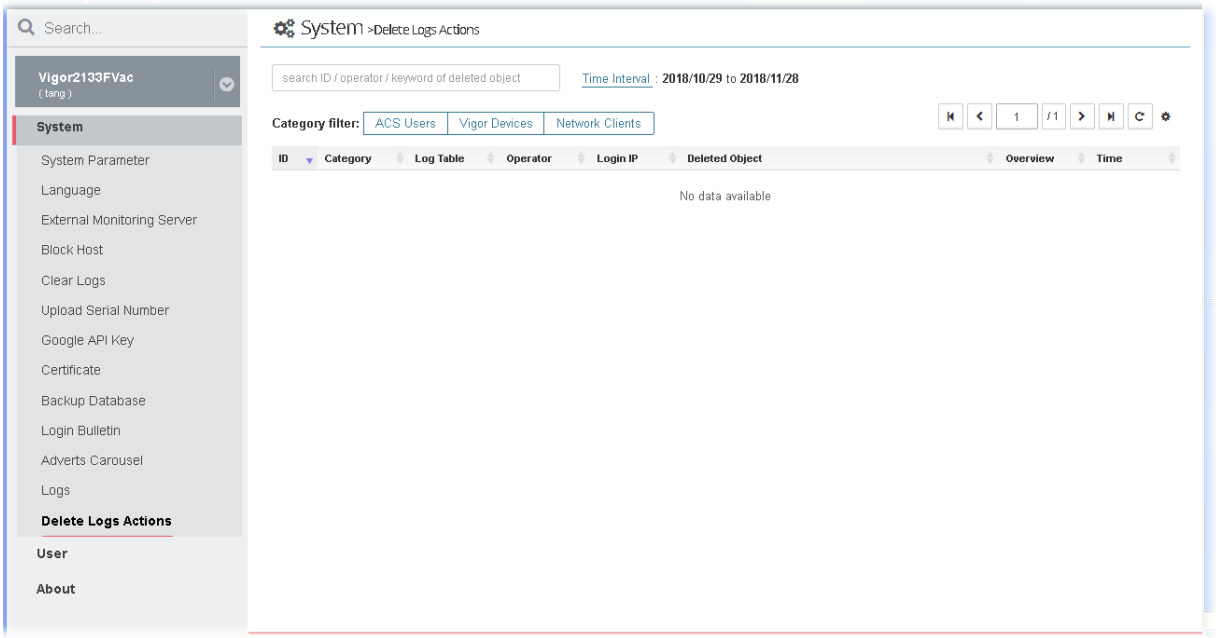
These parameters are explained as follows:

Item	Description
	Use the drop down list to choose one of the types to display log of ACS System, System and Login.
Search ID / Username / Login IP / Overview	Specify the conditions (type the ID number, username, the IP address or overview) for log searching.
Time Interval	Specify a period of time for data searching. 

ACS System Log	Display the ID, username, login IP, category, overview, severity and time for clients accessing into VigorACS. **Select buttons to filter Severity / Category / Result** - ???????????
System Log	Display the ID number, model name with MAC address for the CPE, and the action executed in CPE. **Export All** - Log information can be exported as a file. **Delete All** - Remove the log for the selected record or remove the log for all of the records.
Login Log	Display the log information, including status, username, login IP, login time and logout time for clients accessing into VigorACS. **Export All** - Log information can be exported as a file.

4.13 Delete Logs Actions

Open **System>>Delete Logs Action** to get the following web page.



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Chapter 5 User

DrayTek VigorACS2

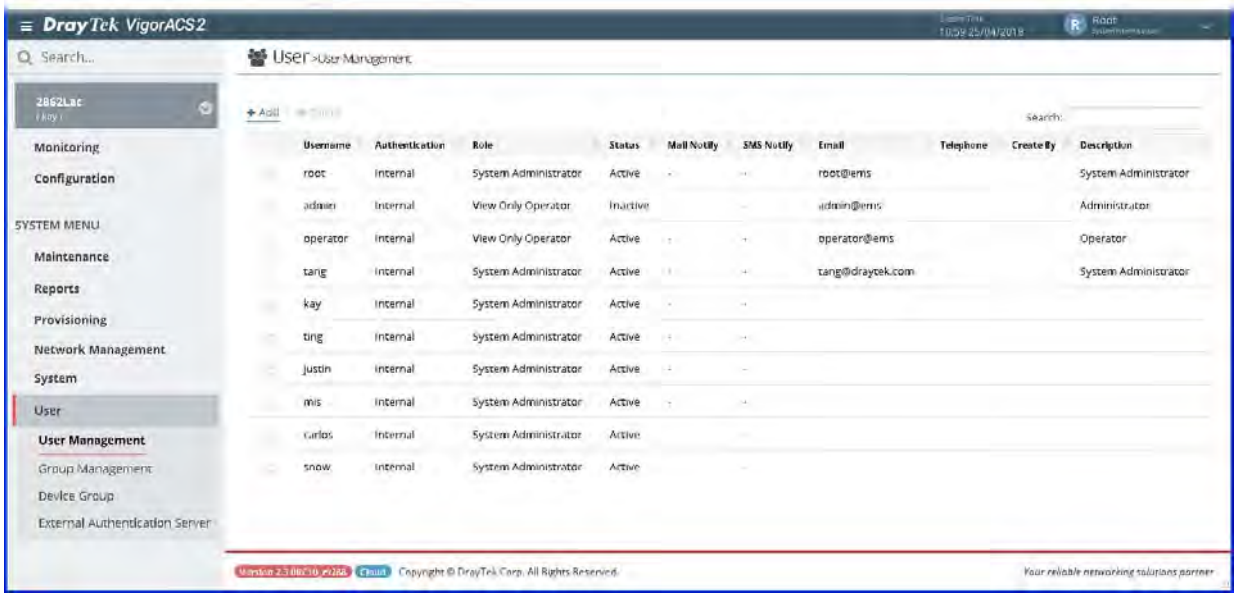
5.1 User Management

VigorACS allows a user to manage CPE/AP devices through VigorACS server. However, the user has to type specific name and password defined in this page. Different users must use different names and passwords for accessing VigorACS.

This chapter will guide you to define users. It can be set with different roles (such as System Administrator, Administrator, Group Administrator, Operator, and etc.); each role has different administration authority.

The user management function allows a user to set name, password, and e-mail address as identification in VigorACS system.

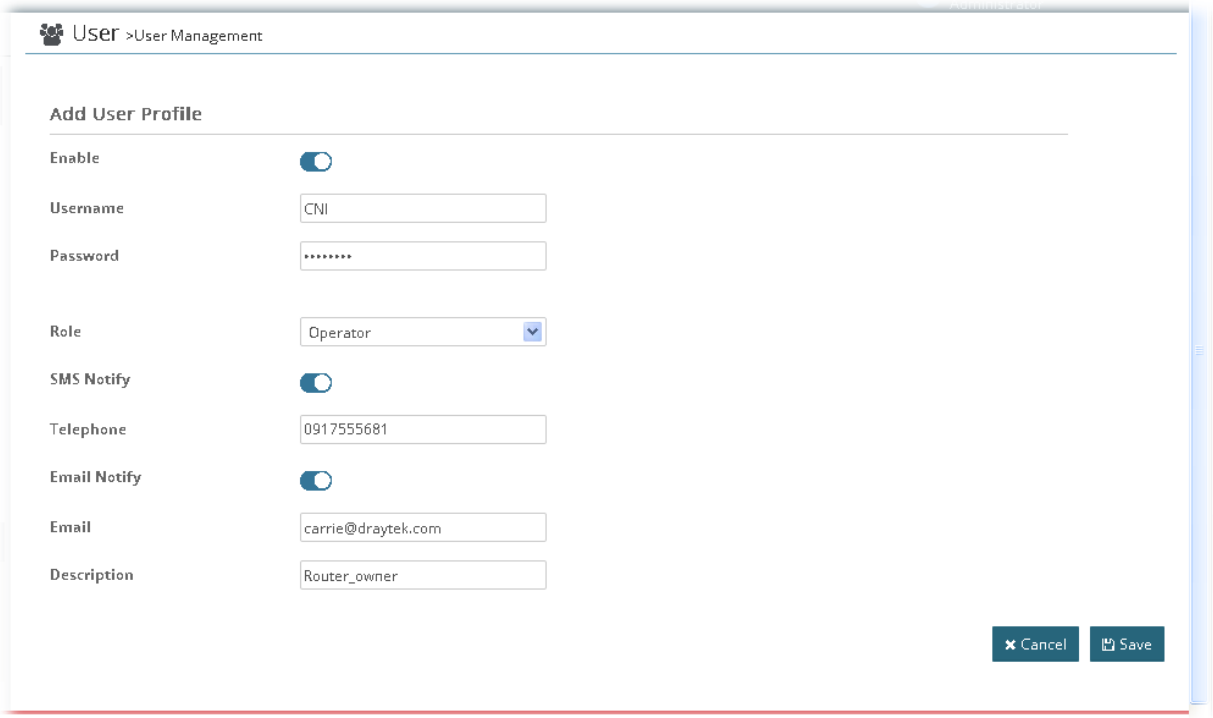
To add, delete a user or check information for a user, open **SYSTEM MENU>>User** and choose **User Management.** This page displays basic information including username, role (system administrator, administrator, group administrator, operator, view only operator), status (active, inactive), mail notify (yes or no), SMS notify (yes or no), email address, telephone number, other description for the user.



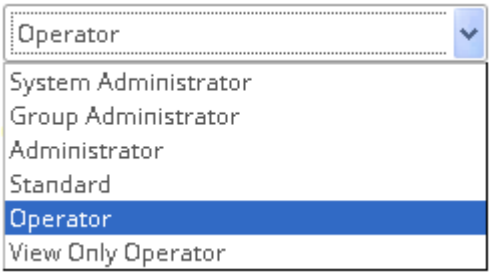
These parameters are explained as follows:

Item	Description
+Add	Click it to add a user.
Delete	Click it to remove the selected user.

The following setting page appears when **+Add** is clicked.



Available settings are listed as follows:

Item	Description
Enable	Click it to enable the user profile.
Username	Type a name for the new user.
Password	Type the password for the user.
Role	Choose the role for the selected **user**. Different role represents different authority that the user group will have. The great the authority is, the more functions the user can have.  **System Administrator** – Have the highest authority. **Group Administrator –** Have the middle authority high than "Administrator". **Administrator** – Have the middle authority. **Standard** – Have the middle authority higher than operator. **Operator** – Have the low authority higher than View Only Operator. **View Only Operator –** Have the lowest authority.
SMS Notify	Click it to enable/disable the function. When it is enabled, an SMS will be sent to the one listed here as a notification when the device gets alarms.
Telephone	Type the telephone number for receiving the SMS notification.

Email Notify	Click it to enable/disable the function. When it is enabled, an email will be sent to the user as a notification when the connected device gets alarms.
Email	Type the email for communication between the user and VigorACS server.
Description	Type a brief description for the user.
Cancel	Discard current settings.
Save	Save the current settings and exit the page.

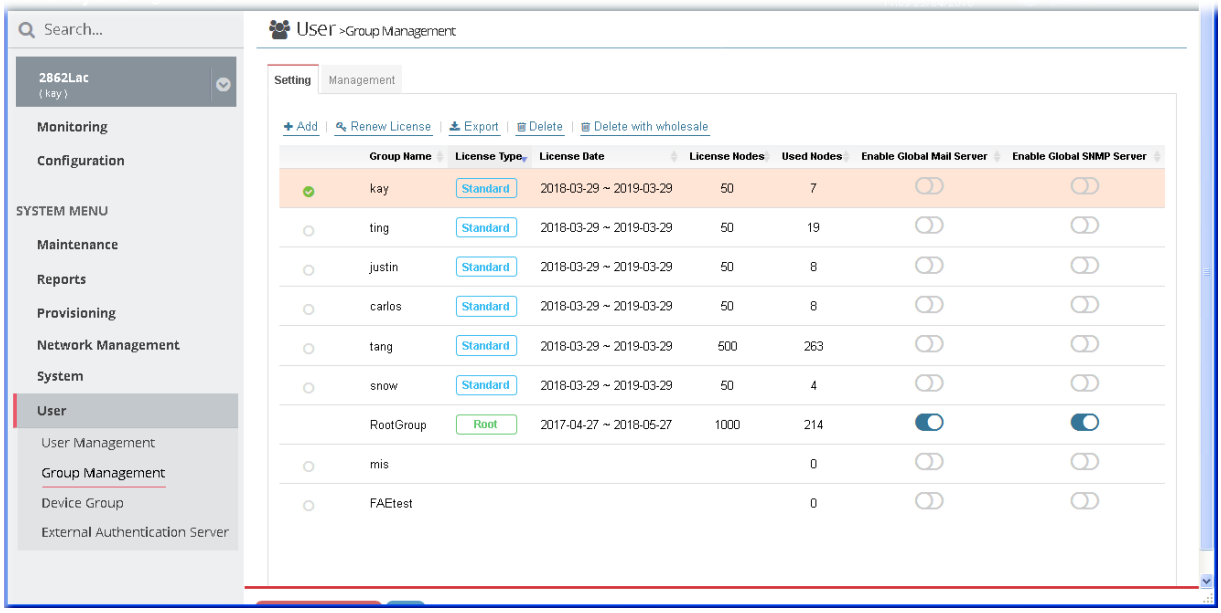
After finished the above settings, click **Save** to save the change.

5.2 Group Management

This page allows you to add a new user group containing with many users (with different roles or authorities). To add, delete a user group or check information for a user group, open **SYSTEM MENU>>User** and choose **Group Management.**

5.2.1 Setting

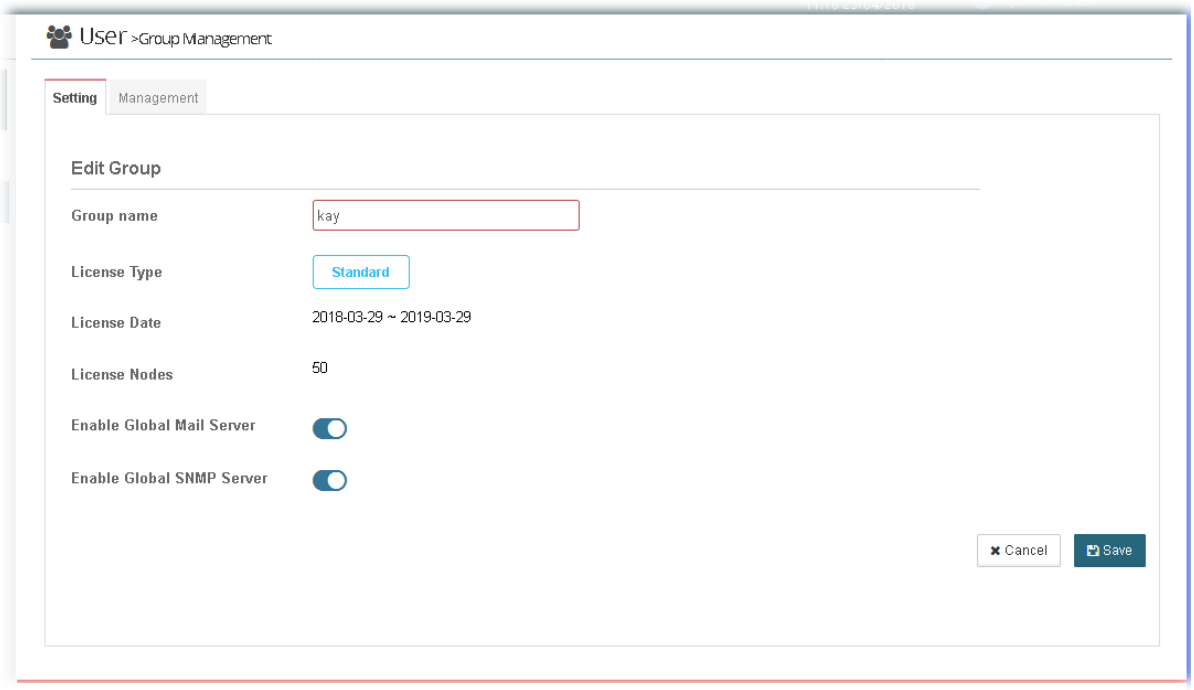
RootGroup is defined in factory and owns the highest authority. You can define new user group(s) to fit your requirement.



These parameters are explained as follows:

Item	Description
+Add	Click it to add a user group.
Renew License	Click it to renew the license for the selected entry.
Export	Click it to open a dialog for typing SQL syntax to export the settings.
Delete	Click it to clear the selected group. Before using such function, check if the group is blank or not by switching to the Management tab. If the selected group still contains any user in it, such group is unable to be deleted. In this case, use Delete with Whole Sale instead.
Export	Click it to open a dialog for typing SQL syntax to export the settings.
Delete with Whole Sale	Click it to delete the selected user group.
Group ID	Display the index number for the user group.

Click any one of the existed entries to access into the configuration page for making modifications. Or, click **+Add** to create a new group.



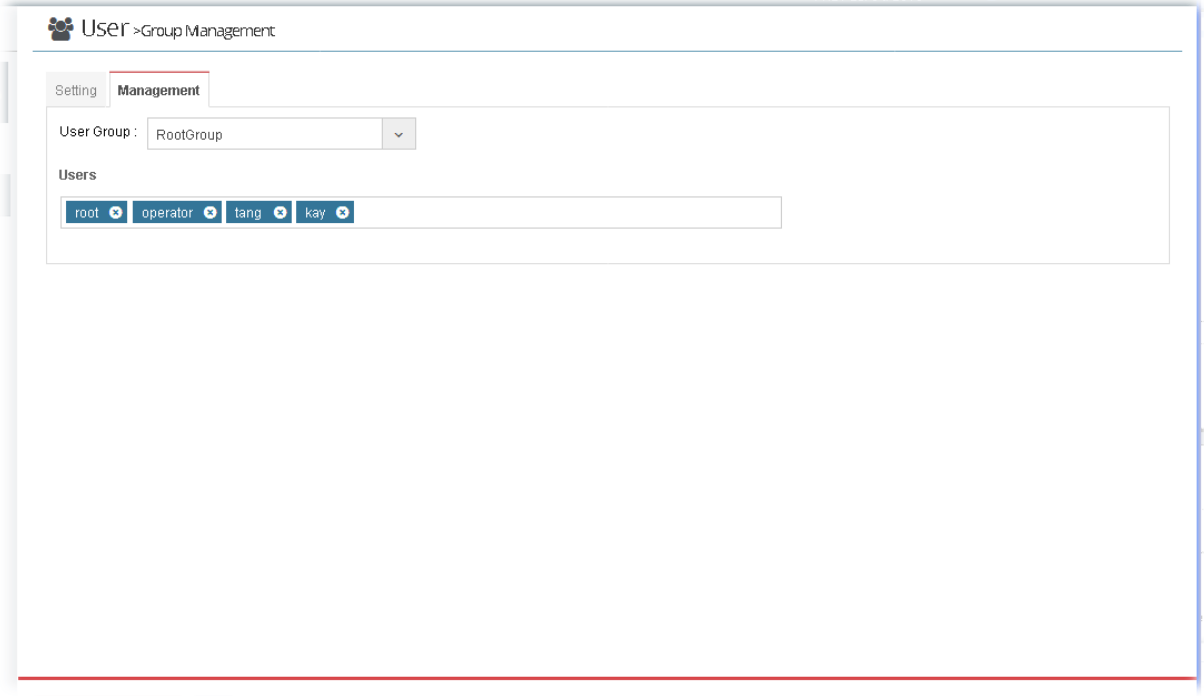
Available settings are listed as follows:

Item	Description
Group Name	Type the name (e.g., Marketing) that can represent the user group.
License Type	Display the type of the license for such group.
License Date	Display the valid date of the license for such group.
License Nodes	Display the number of license nodes for such group.
Enable Global Mail Server	If it is enabled, such group will be allowed to use global mail server.
Enable Global SNMP Server	If it is enabled, such group will be allowed to use global SNMP server.
Cancel	Discard current settings.
Save	Save the current settings and exit the page.

After finished the above settings, click **Save** to save the change.

5.2.2 Management

This page allows you to specify users who want to access VigorACS into different user groups.

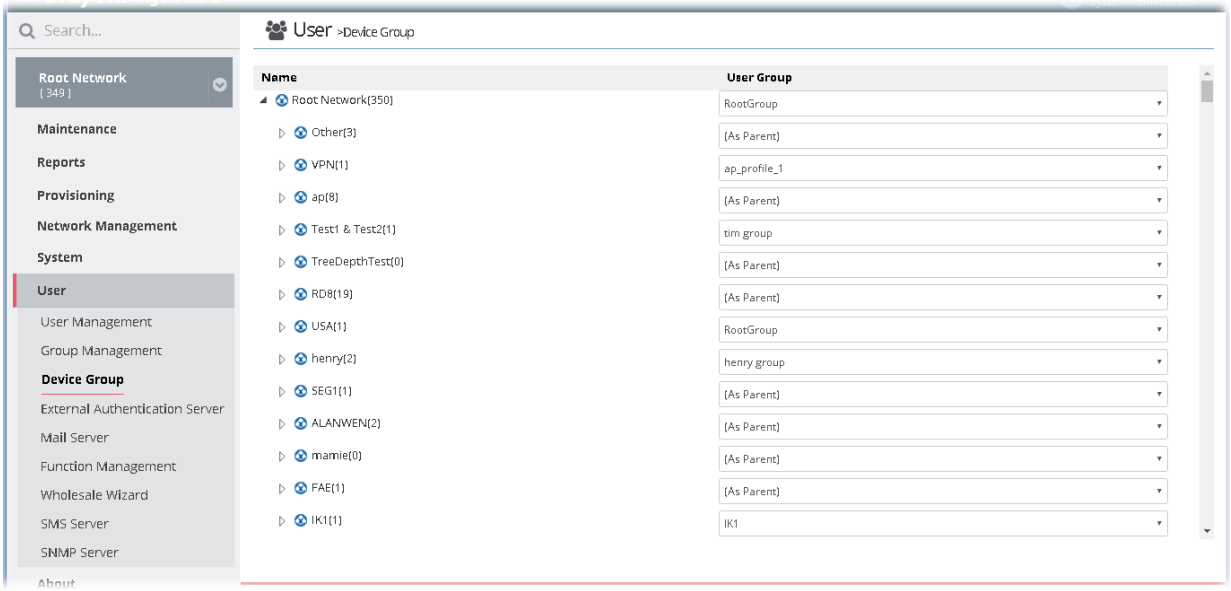


These parameters are explained as follows:

Item	Description
User Group	Use the drop down list to specify a user group. In which, RootGroup contains all of the users with the role of system administrator in default.
Users	Display all of the users belonging to the selected user group. Basically, the user(s) with the highest authority (e.g., system administrator defined as user role) will be shown in this area automatically as selection items. To remove any selection item that you don't want to put in this group, simply click the "x" to delete it.

5.3 Device Group

Though the VigorACS server allows the administrator to create several user groups in the database, yet each device can be assigned to one user group only. Therefore, if the device has been specified in certain user group, it will not be accessed by other users in different user group.

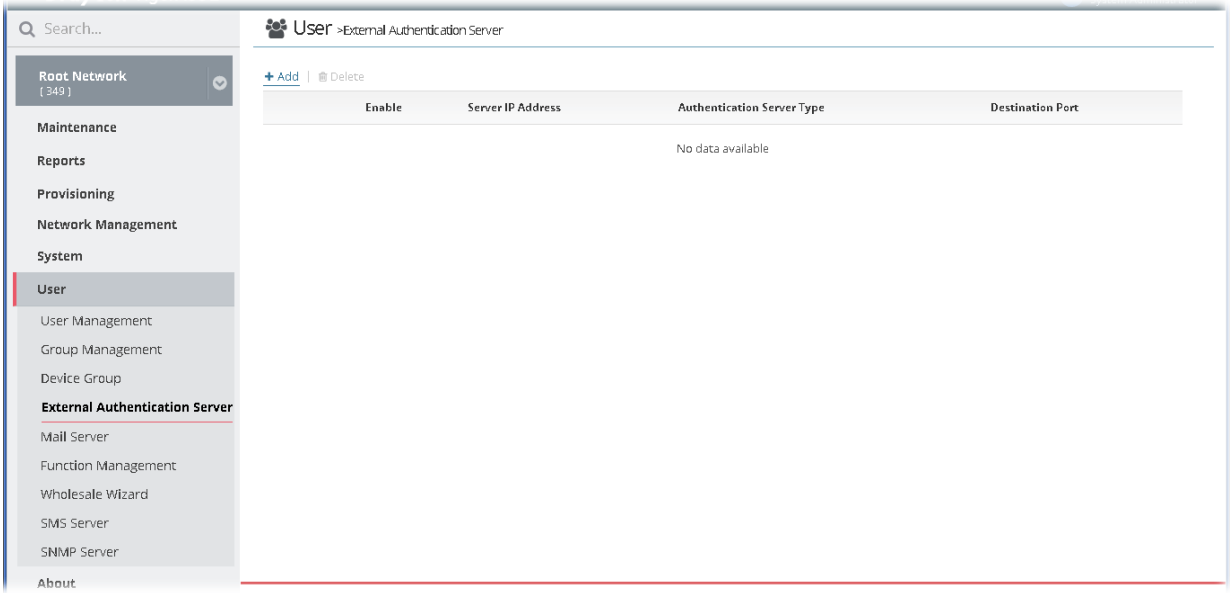


These parameters are explained as follows:

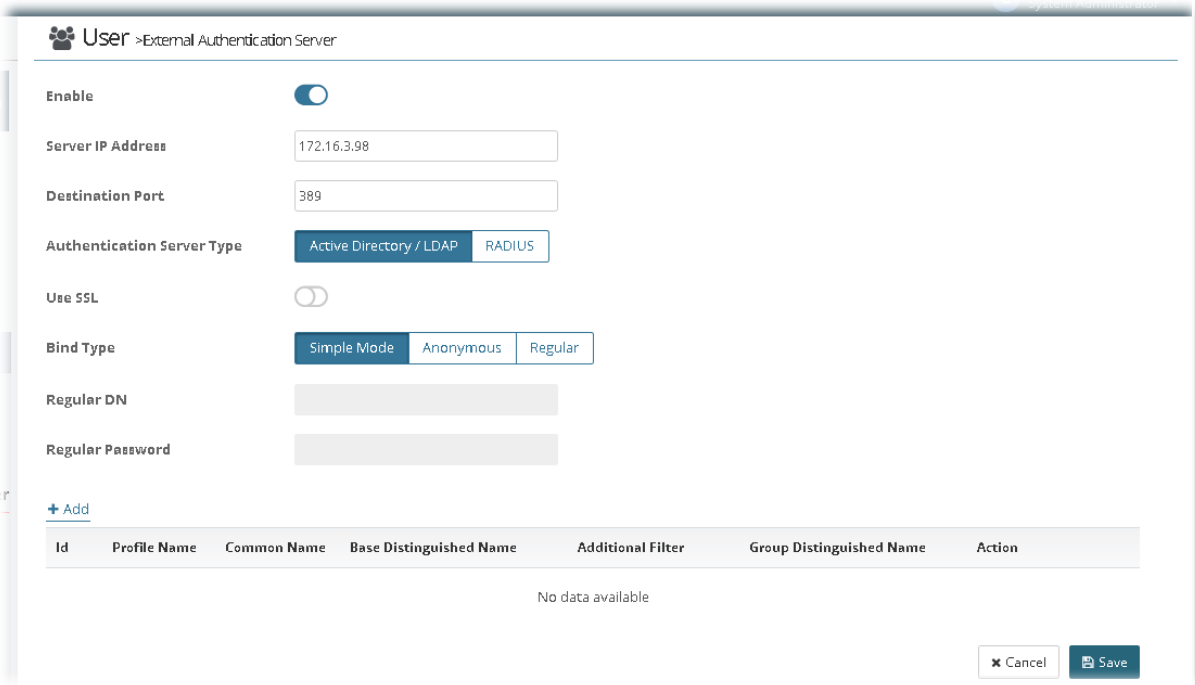
Item	Description
User Group	**As Parent** – Choose the same setting as the previous layer.

5.4 External Authentication Server

The external authentication server includes LDAP and RADIUS server. It is used to authentication the client whenever he/she wants to login VigorACS.



The following setting page appears when **+Add** is clicked.

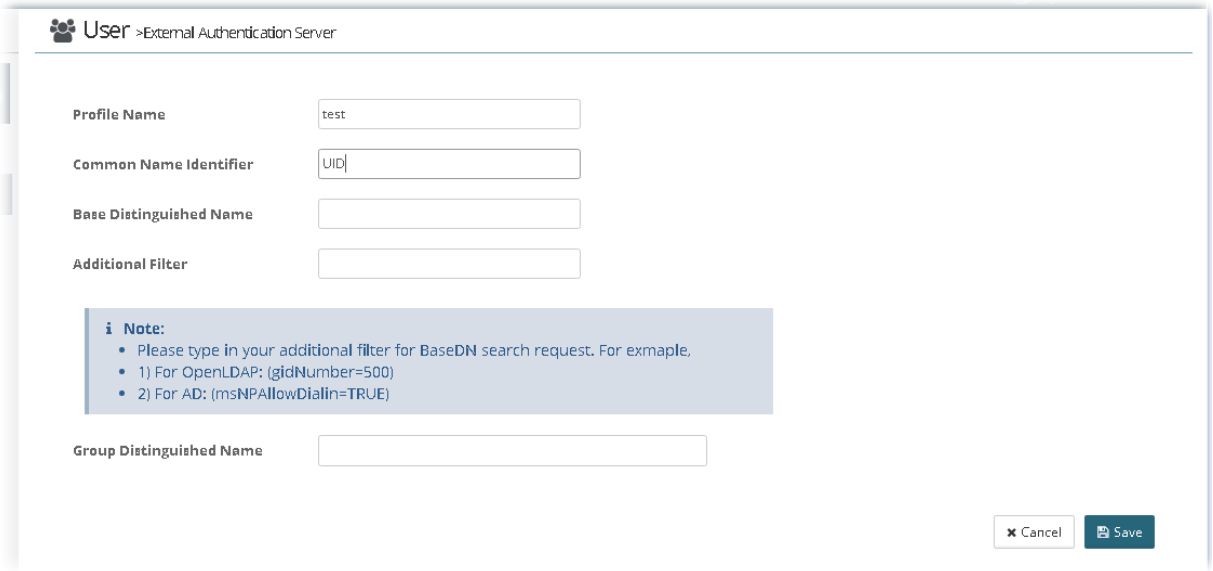


Available settings are listed as follows:

Item	Description
Enable	Click it to enable this function.
Server IP Address	Enter the IP address of LDAP server.
Destination Port	Enter a port number as the destination port for LDAP server.
Authentication Server Type	**Active Directory / LDAP** – ● **Use SSL –** Enable it to use the port number specified for SSL. ● **Bind Type –** There are three types of bind type supported: ◆ **Simple Mode** – Just simply do the bind authentication without any search action. ◆ **Anonymous** – Perform a search action first with Anonymous account then do the bind authentication. ◆ **Regular Mode**– Mostly it is the same with anonymous mode. The different is that, the server will firstly check if you have the search authority. For the regular mode, you'll need to type in the **Regular DN** and **Regular Password**. ● **Regular DN –**Type this setting if **Regular Mode** is selected as **Bind Type.** ● **Regular Password -** Specify a password if **Regular Mode** is selected as **Bind Type.** **RADIUS** – ● **Shared Secret** –The RADIUS server and client share a secret that is used to authenticate the messages sent between them. Both sides must be configured to use the same shared secret. The maximum length of the shared secret you can set is 36 characters. ● **Confirm Shared Secret** - Re-type the Shared Secret for confirmation.

Cancel	Discard current settings.
Save	Save the current settings and exit the page.

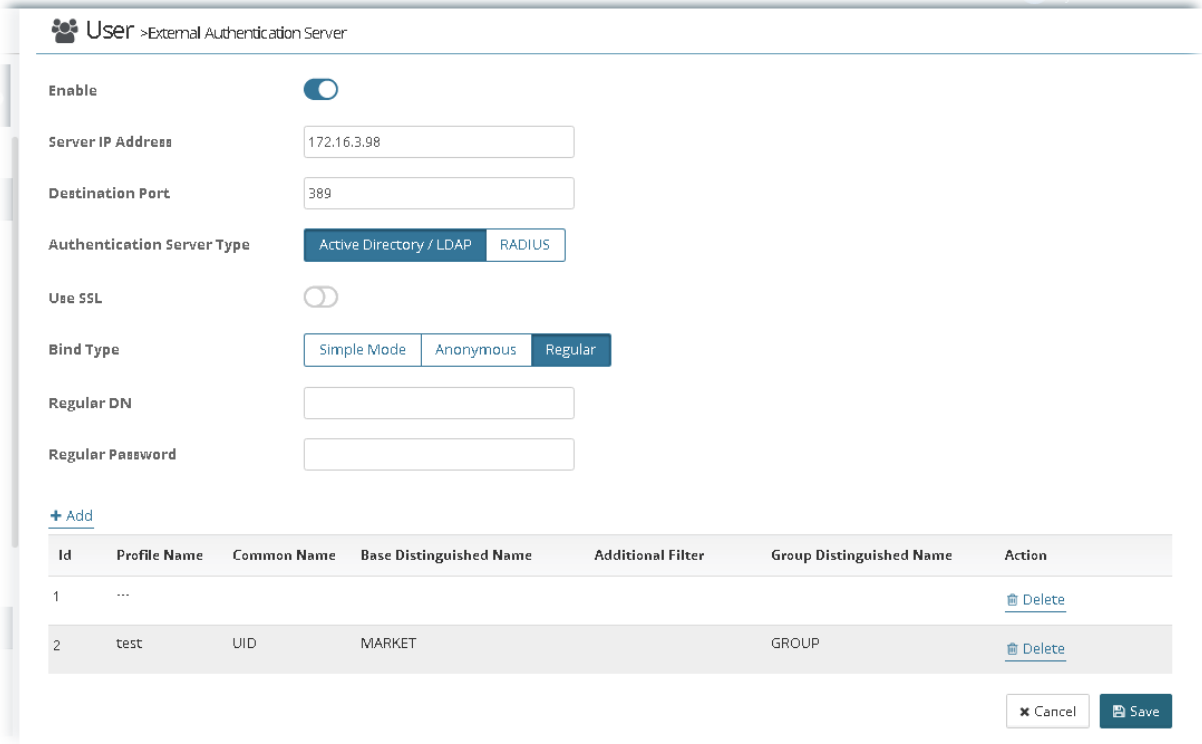
To create an Active Directory / LDAP profile**,** click the **+Add** link in this page to get the following page:



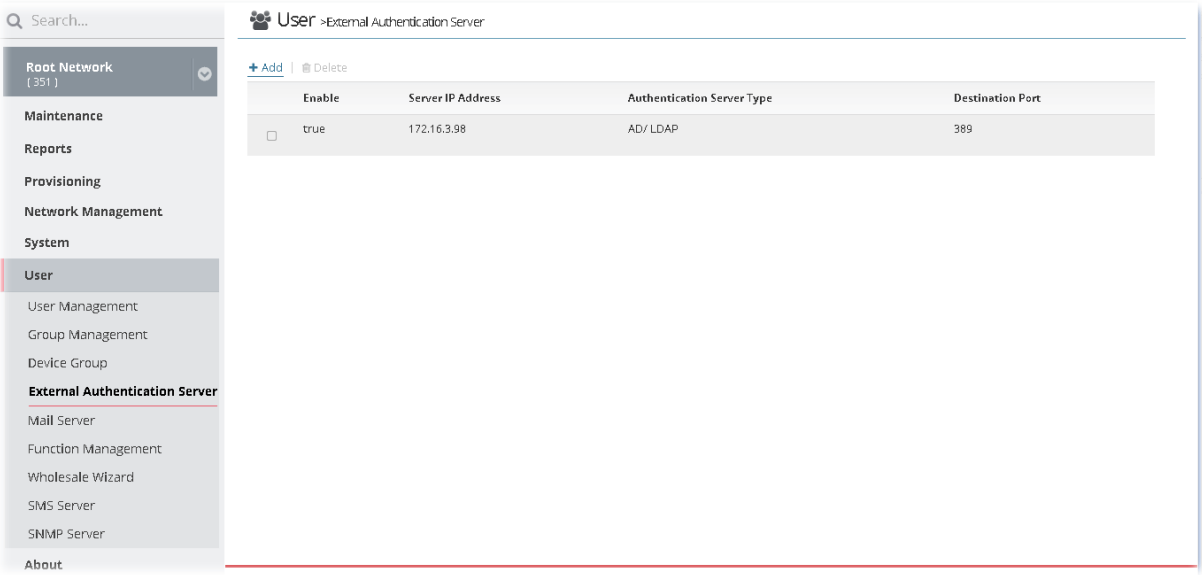
Available settings are listed as follows:

Item	Description
Profile Name	Type a name for such profile.
Common Name Identifier	Type or edit the common name identifier for the LDAP server. The common name identifier for most LDAP server is “cn”.
Base Distinguished Name / Group Distinguished Name	Type or edit the distinguished name used to look up entries on the LDAP server.
Additional Filter	Type the condition for additional filter.

After finished the above settings, click **Save** to save the change and return to previous page. A new Active Directory / LDAP profile will be listed on the bottom of the web page as shown as below.

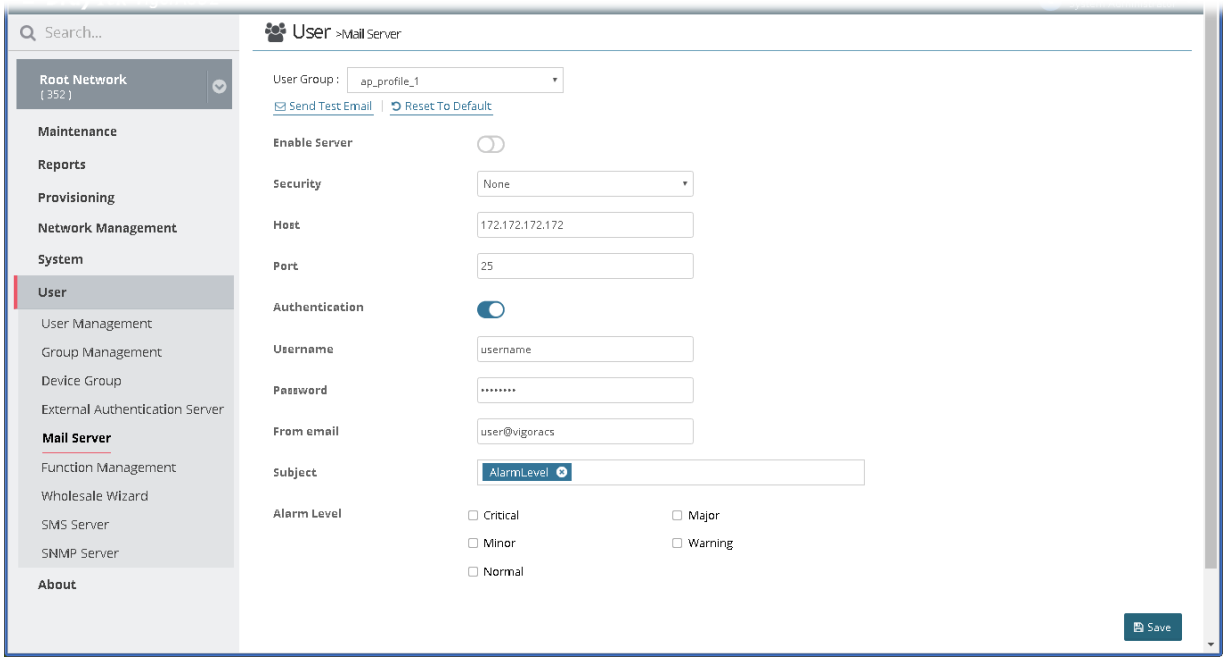


Now, click the **Save** button on the bottom of this page to store the settings. Then, an external authentication server profile just created will be shown on the screen.



5.5 Mail Server

Such feature is used to configure the mail server for sending e-mail. All of the user groups can apply the mail server settings configured in this page.

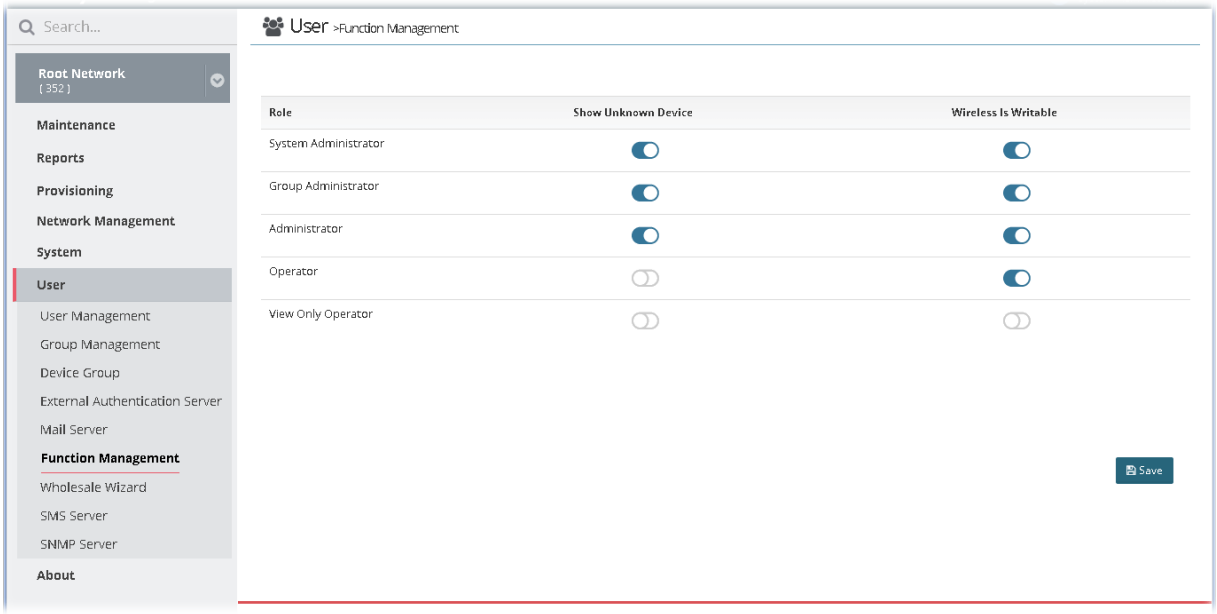


These parameters are explained as follows:

Item	Description
Send Test Email	Click it to make a simple test if the user (receiver) can get the mail or not. Notification mail can be sent to multiple mail addresses after clicking Send Test Email.
Reset To Default	Click it to reset the mail server to default settings.
Enable Server	Click to enable /disable the SMTP server.
Security	Choose None / SSL / TLS for the security of the mail transferring.
Host	Type the IP address of the SMTP server.
Port	Type the port number of the SMTP server.
Authentication	Click it to activate/disable this function while using e-mail application.
Username	Type the user name for authentication.
Password	Type the password for authentication.
From email	Type the e-mail address as the sender.
Subject	At present, there are four objects to be selected for the subject of the email.
Alarm Level	There are five alarm levels (Critical, Major, Minor, Warning and Normal) which determine the timing that VigorACS mail server sends e-mail to the recipient.
Save	Save the current settings.

5.6 Function Management

In addition to specifying the authority for the user, what functions that the user can have also can be specified.



These parameters are explained as follows:

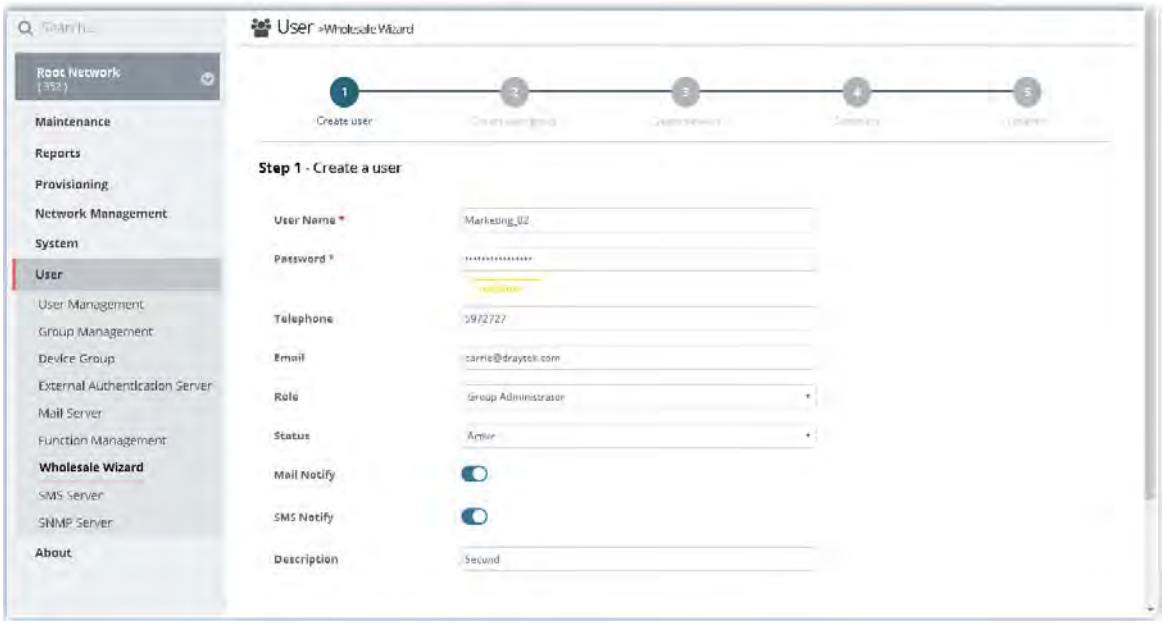
Item	Description
Show Unknown Device	Unknown device can be seen / hidden if it is enabled / disabled.
Wireless is Writable	When it is enabled, settings related to wireless connection are allowed to be configured.

5.7 Wholesale Wizard

This section can guide the administrator to a create user, user group and network profile via a wizard.

Please follow the steps listed below to create:

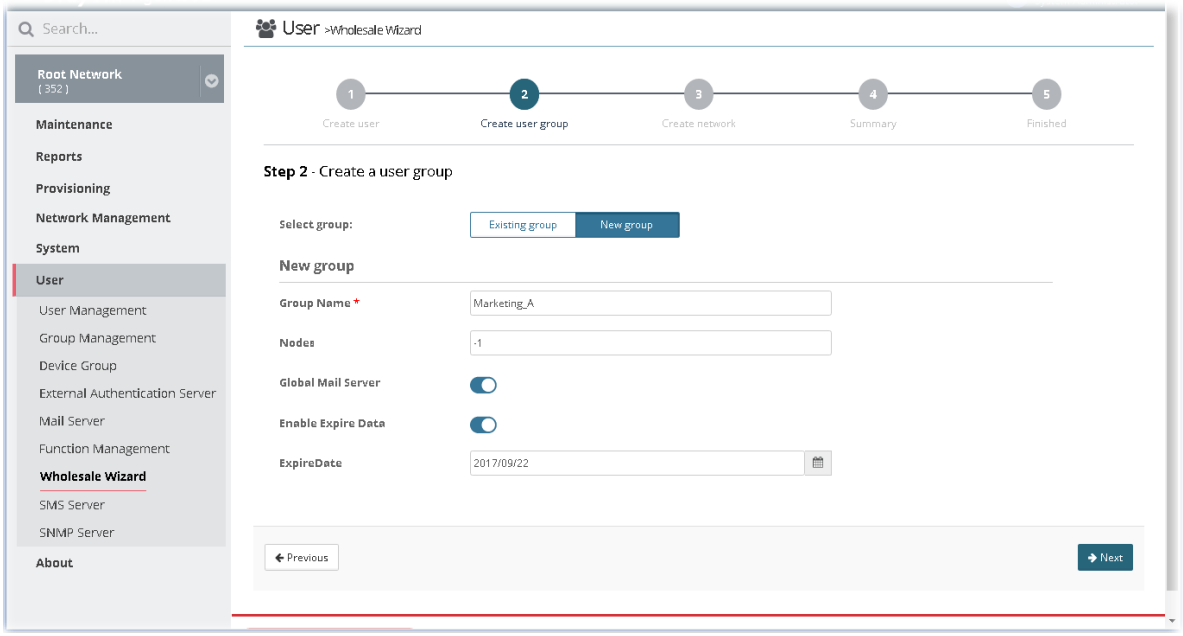
1. Open **SYSTEM MENU>>User** and choose **Wholesale Wizard.**



These parameters are explained as follows:

Item	Description
Username	Type a new name for a new user.
Password	Type a new password.
Telephone	Type the telephone number of such user for receiving the SMS notification.
Email	Type email address of such user for receiving the mail notification.
Role	Assign a Role for such user.
Status	Choose **Active** to make such user being seen on the network.
Mail Notify	When this function is enabled, an e-mail will be sent to the user as a notification when the device gets alarms.
SMS Notify	When this function is enabled, an SMS will be sent to the user as a notification when the device gets alarms.
Description	Give a brief introduction of such user.
Previous	Back to previous configuration page.
Next	Go to next configuration page.

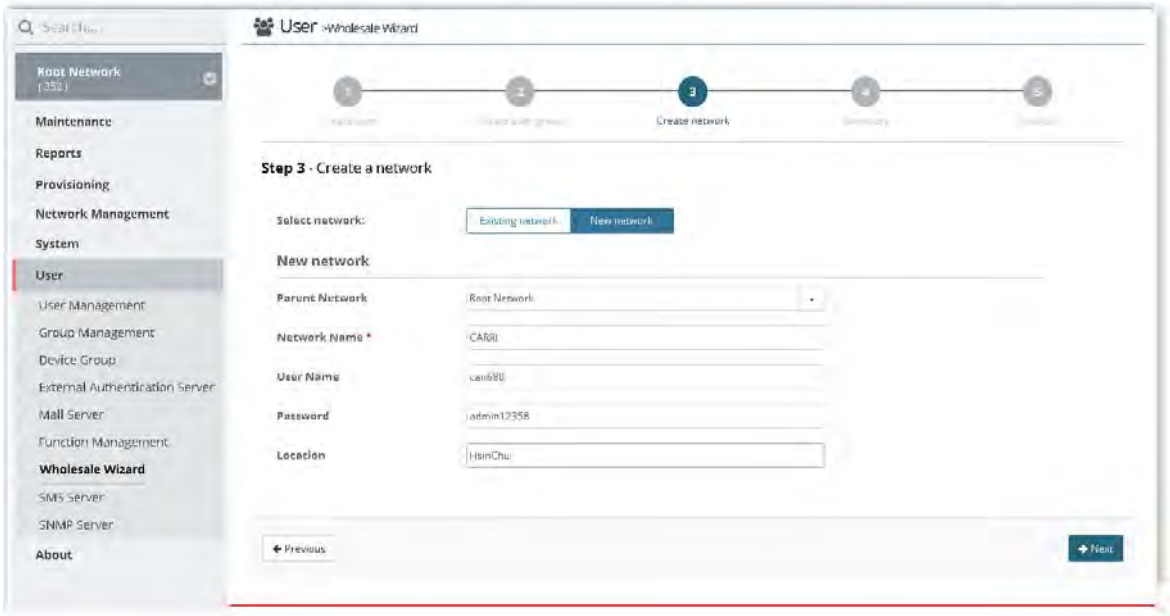
2. When you finished tying the above settings, click **Next** to create a new group or specify an existing user group for such user.



These parameters are explained as follows:

Item	Description
Select group	Determine the group source by choosing **Existing group** or New group.
Existing group	It is available when **Existing group** is selected as **Select group**. **User group** – Use the drop down list to choose the group you want.
New group	It is available when **New group** is selected as **Select group**. **Group Name** – Type the name (e.g., Marketing) that can represent the user group. **Nodes** – Set the number of Nodes for such group. The default number "-1" means there is no limit of the number. **Global Mail Server** –Click it to enable /disable the global mail server. **Enable Expire Data** – Click it to enable /disable the expire date setting. **ExpireDate** - Use to pop-up calendar to specify the expire date.
Previous	Back to previous configuration page.
Next	Go to next configuration page.

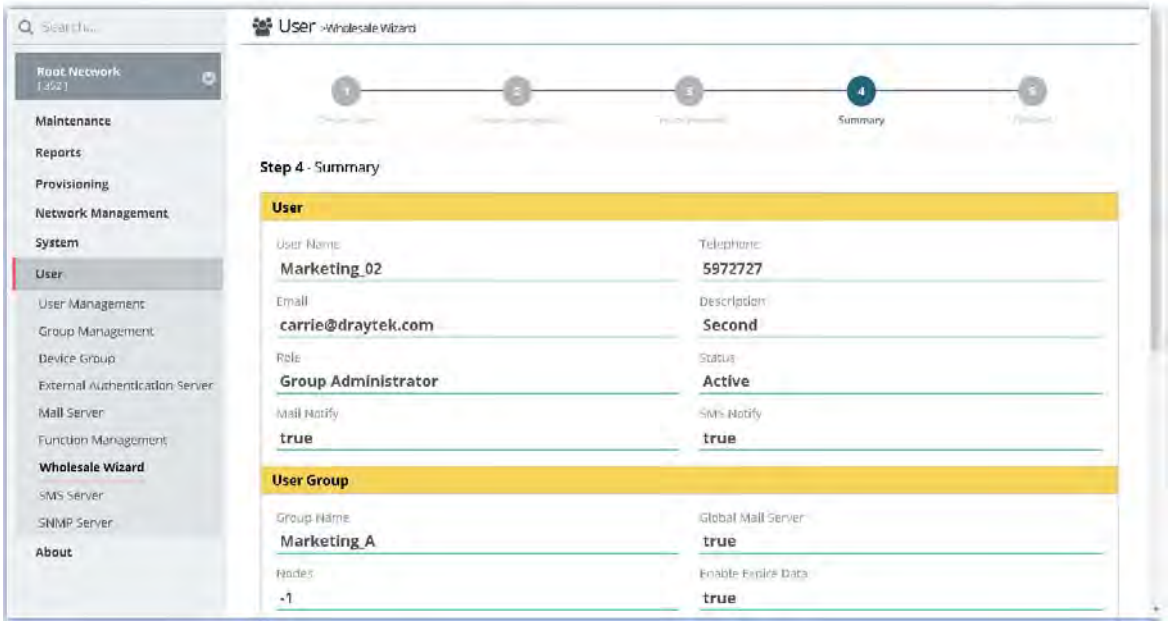
3. When you finished tying the above settings, click **Next** to create or specify an existing network for such user.



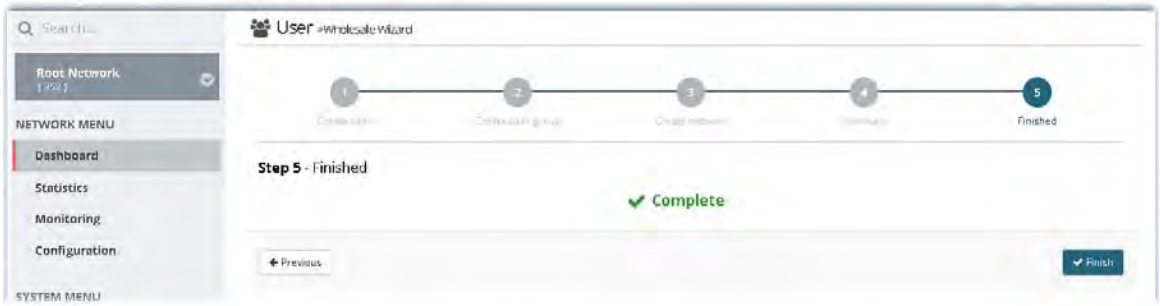
These parameters are explained as follows:

Item	Description
Select network	Determine the group source by choosing **Existing network** or New network.
Existing network	It is available when **Existing network** is selected as **Select network**. **Network** – Use the drop down list to choose the network you want.
New network	It is available when **New network** is selected as **Select network**. **Parent Network -** Choose one of the existing networks as the Parent Network. **Network Name** – Type a name for the new network. **User Name** – Type a name (e.g., market) for the new network. **Password** – Type a password (e.g., market) for such new network. **Location** - Type a brief description for the new network.
Previous	Back to previous configuration page.
Next	Go to next configuration page.

4. When you finished tying the above settings, click **Next** to review the settings. A summary for the new user and network will be displayed as the following figure.



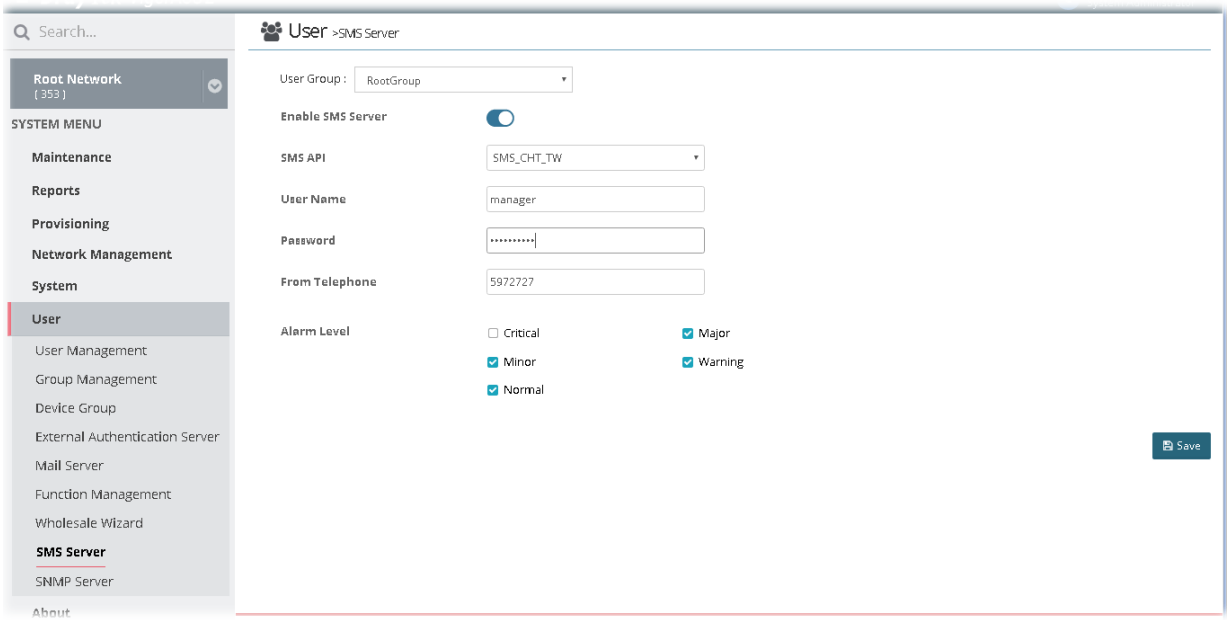
5. If nothing shall be modified, click **Next** to get the following page.



6. Click **Finish** to save the settings.
7. Open **SYSTEM MENU>>User** and choose **User Management**.

5.8 SMS Server

Such feature is used to configure the SMS server for sending notification. When a CPE in a group encounters an event which can be classified as the level defined in this page, a SMS will be sent out for notification.

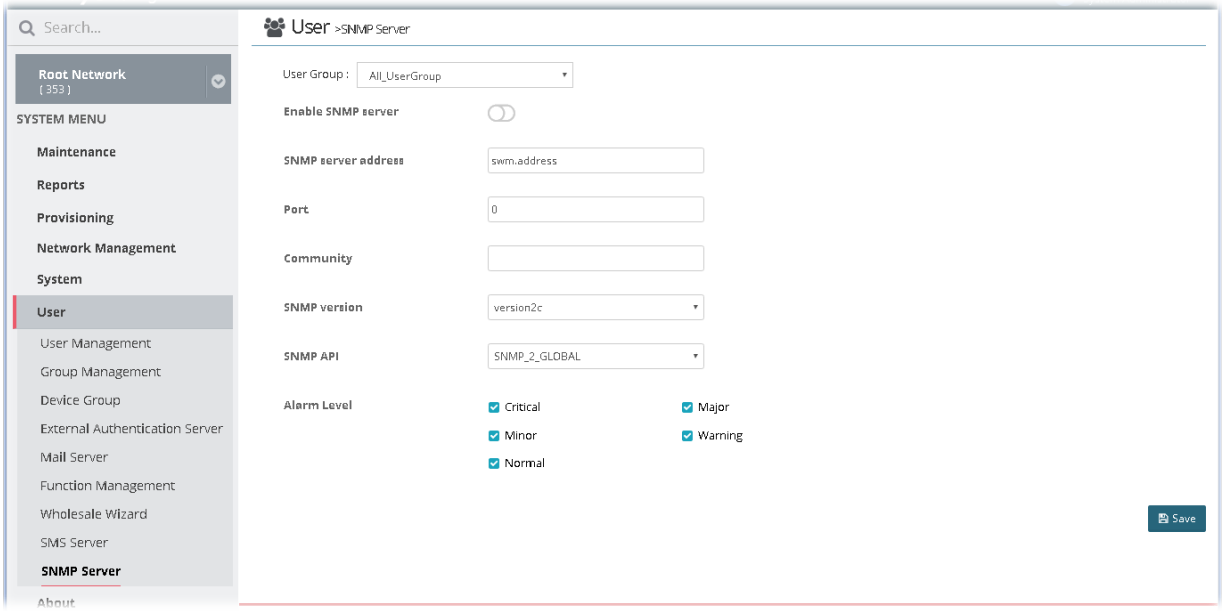


These parameters are explained as follows:

Item	Description
User Group	Specify a user group to apply the SMS server settings.
Enable SMS Server	Click to enable /disable the SMS server.
SMS API	Use the drop down list to choose an ISP for sending SMS.
User Name	Type the user name for authentication.
Password	Type the password for authentication.
From Telephone	Type the phone number of the sender.
Alarm Level	There are five alarm levels (Critical, Major, Minor, Warning and Normal) which determine the timing that VigorACS SMS server sends SMS to the recipient. For example, device loss connection will be treated as “Critical” event.
Save	Save the current settings.

5.9 SNMP Server

Such feature is used to configure the SNMP server for sending notification. All of the user groups can apply the SNMP server settings configured in this page.



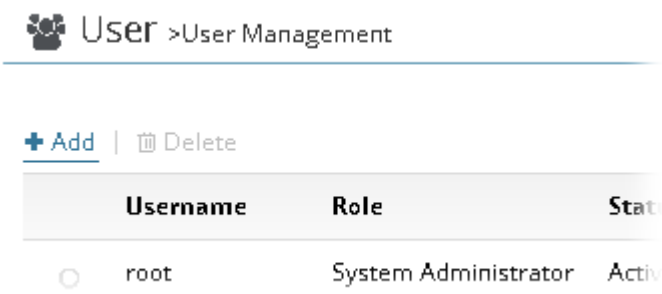
These parameters are explained as follows:

Item	Description
User Group	Specify a user group to apply the SNMP server settings.
Enable SNMP Server	Click to enable /disable the SNMP server.
SNMP server address	Type the IP address of SNMP server.
Port	Type the port number of SNMP server.
Community	Set the name for getting community by typing a proper character. In general, it depends on the setting that SNMP service provider offers. The default setting is **public.**
Enable keep alive	It is available when RootGroup is selected as User Group. Click it to enable / disable keep alive function. VigorACS will notify SNMP server every period of time automatically to proof that it is still alive.
Alive interval (sec)	It is available when RootGroup is selected as User Group. Type an interval value for keeping alive.
SNMP version	Choose the version of the SNMP server that you apply to.
SNMP API	Choose SNMP API from the drop down list.
Alarm Level	There are five alarm levels (Critical, Major, Minor, Warning and Normal) which determine the timing that VigorACS mail server sends e-mail to the recipient. Specify the severity level of the mail.
Save	Save the current settings.

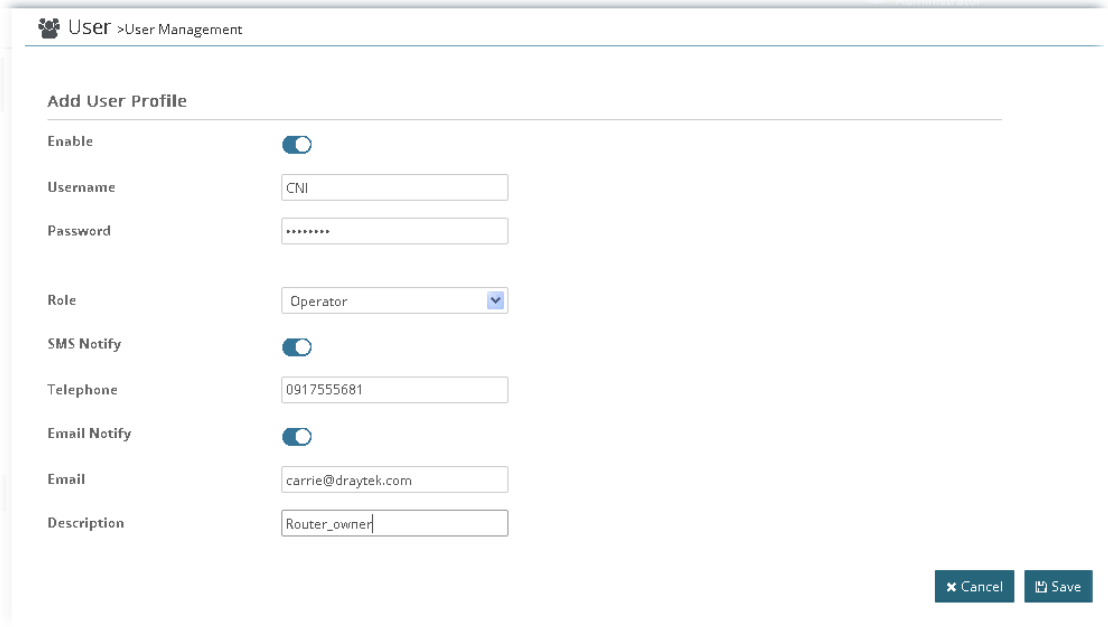
Applications

A-1 How to Add a User?

1. Open **SYSTEM MENU>>User** and choose **User Management.**
2. Click **+Add**.



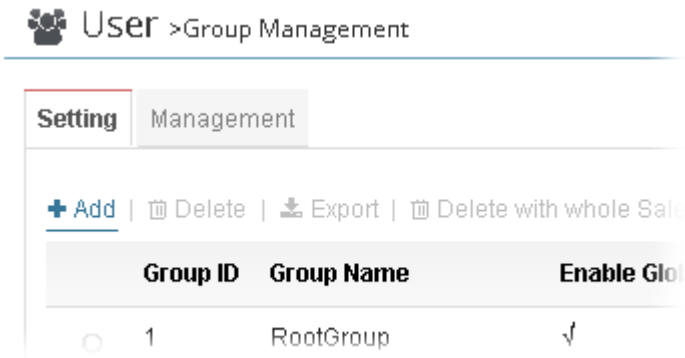
3. In the following page, type required information for the new user.



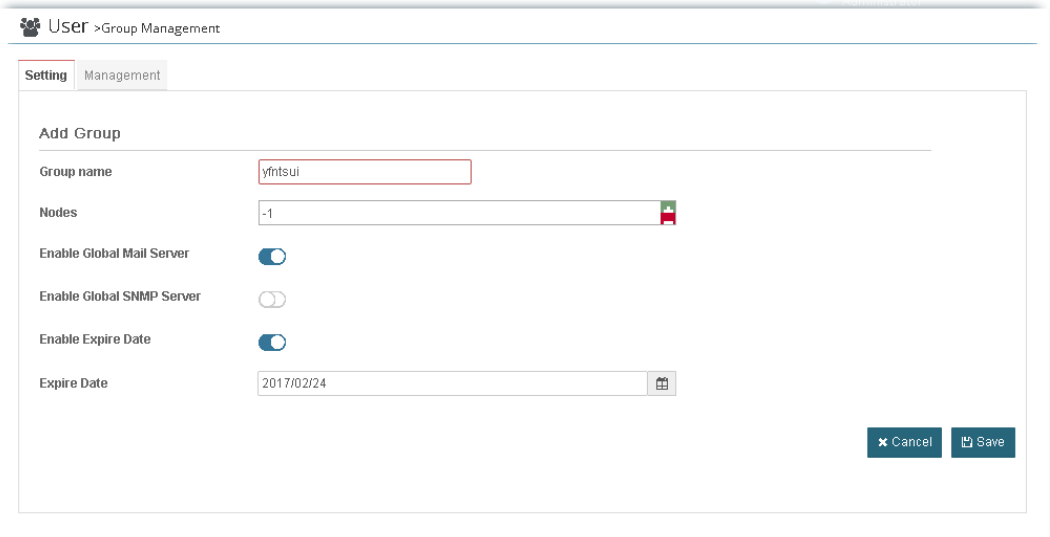
4. Click **Save**.

A-2 How to Add a Group?

1. Open **SYSTEM MENU>>User** and choose **Group Management.**
2. Click **+Add**.

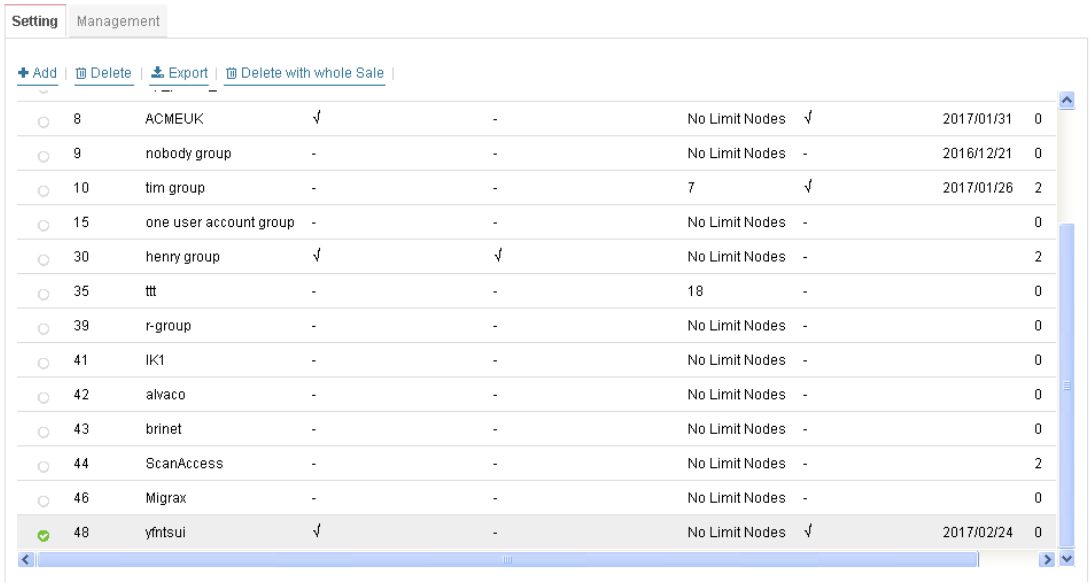


3. In the following page, type required information for the new user group.



1. **Group Name** - Type a new name of the user group.
2. **Nodes** – Define number of node.
3. **Enable Global Mail Server** – Click it to enable /disable global mail server.
4. **Enable Global SNMP Server** – Click it to enable /disable global SNMP server.
5. **Enable Expire Date** – Click it to enable/disable the expire date.
6. **Expire Date** – Choose the expire date for such user group.

4. Click **Save**.



8	ACMEUK	√	-	No Limit Nodes	√	2017/01/31	0
9	nobody group	-	-	No Limit Nodes	-	2016/12/21	0
10	tim group	-	-	7	√	2017/01/26	2
15	one user account group	-	-	No Limit Nodes	-		0
30	henry group	√	√	No Limit Nodes	-		2
35	ttt	-	-	18	-		0
39	r-group	-	-	No Limit Nodes	-		0
41	IK1	-	-	No Limit Nodes	-		0
42	alvaco	-	-	No Limit Nodes	-		0
43	brinet	-	-	No Limit Nodes	-		0
44	ScanAccess	-	-	No Limit Nodes	-		2
46	Migrax	-	-	No Limit Nodes	-		0
48	yfntsui	√	-	No Limit Nodes	√	2017/02/24	0

Part III SYSTEM MENU, General Settings for Managing CPE

Chapter 6 Network Management

DrayTek VigorACS2

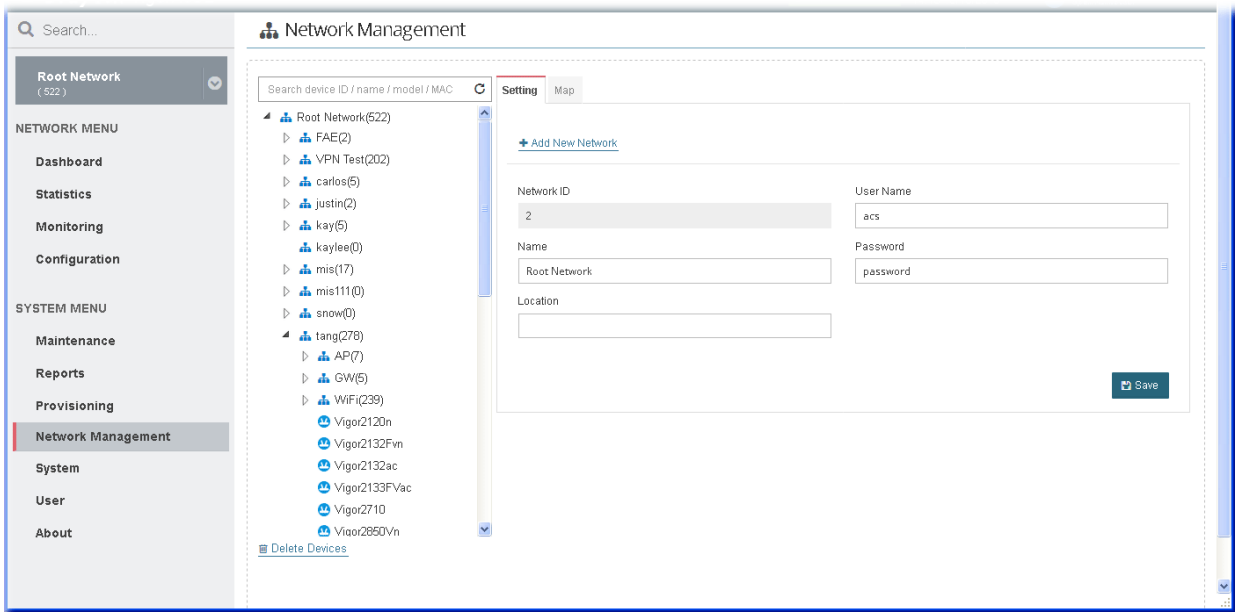
Network Management allows you to modify the information for Networks and Devices.

It can

- Add new network (s) for new client which will be managed by VigorACS.
- Delete existed network if the client will not be managed by VigorACS.
- Modify the name and location of the network for management.

6.1 Settings for Network

To add, change or delete a network, please open **SYSTEM MENU >> Network Management.** Click **Root Network** or sub-network to get the following web page.

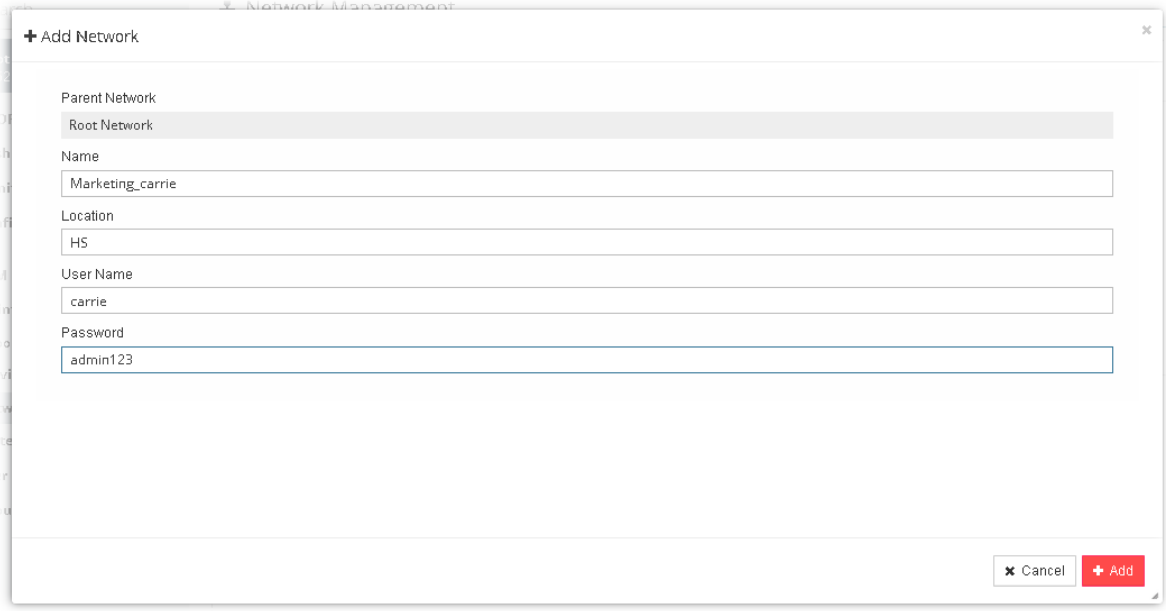


These parameters are explained as follows:

Item	Description
Search device ID/name/model/MAC	Enter the ID, name, model or MAC address of the device you want to locate.
+Add New Network	Click it to add a new network.
Network ID	Display a number which is given by VigorACS randomly for the selected network.
Name	Display the name of the parent network. You can modify it if required.
Location	Type the location (e.g., HsinChu, New York) for such network.
User Name	Display the name of the selected network. Change it if required.
Password	Display the password of the selected network. Change it if required.

Save	Click it to save the change.

The following setting page appears when **+Add New Network** is clicked.



Available settings are listed as follows:

Item	Description
Parent Network	Display the name of the root network. New created network will be the sub-network of the parent network. In default, Root Network is the parent network for any new created network.
Name	Type a name for the new network.
Location	Type the location for the new network. Later, you can locate such network on the web page of **SYSTEM MENU >> Network Management>>Map.**
User Name	Type a login name (e.g., carrie) for the new network which will be used for communication between Vigor device and VigorACS.
Password	Type a password (e.g., admin123) for such new network. If you are going to group several devices under such network, please open **System Maintenance>>TR-069** in the web configuration page of CPE. Then, type the user name and password defined in this page (e.g., in this case, they are *carrie* and *admin123*) in the corresponding fields.
Cancel	Discard current settings.
Save	Save the current settings and exit the page.

After finished the above settings, click **Save** to save the change.

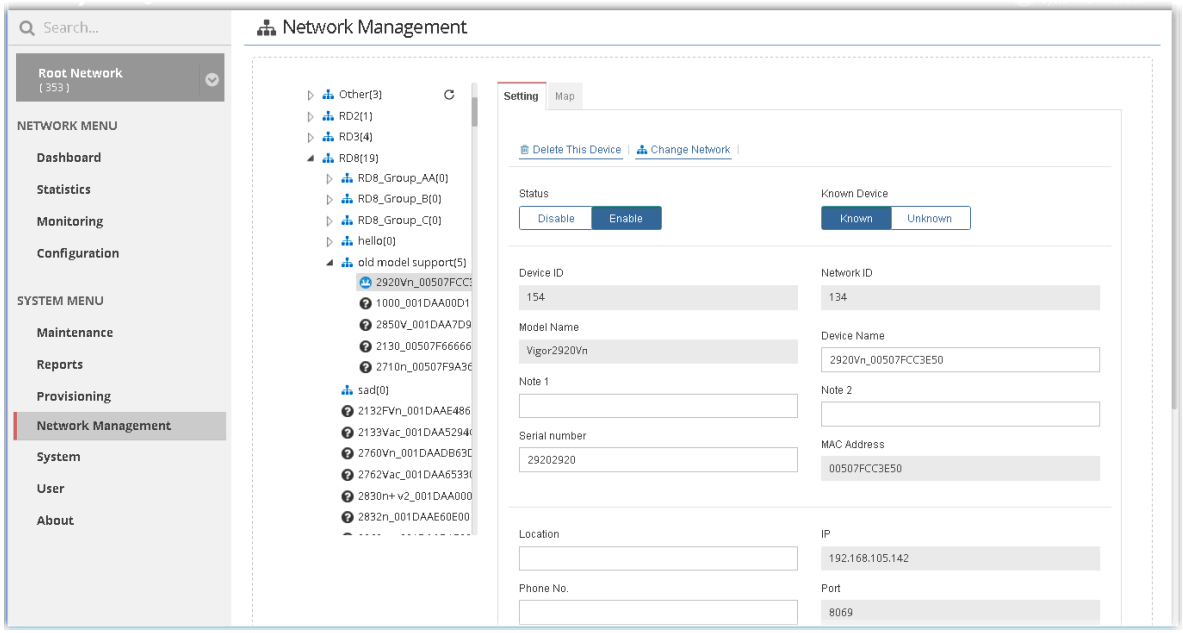
6.2 Settings for Device

The administrator can create several sub networks for different CPEs. Also, the administrator can change the network for the CPEs.

Open **SYSTEM MENU >> Network Management.** This web page allows to:

- Modify the name of the device (CPE) for easy identification and management by VigorACS.
- Modify the location of the device (CPE) easily. It can be identified precisely while using GoogleMap to search it.
- Modify the user name/password of certain device (non-DrayTek CPE) to be managed by VigorACS.
- Enable or disable the management of the device (CPE) for VigorACS.
- Select certain protocol (e.g., TR-069) for the device (CPE) for management.

Choose and click any one of the CPE displayed on **Root Network** tree view to get the following web page.



These parameters are explained as follows:

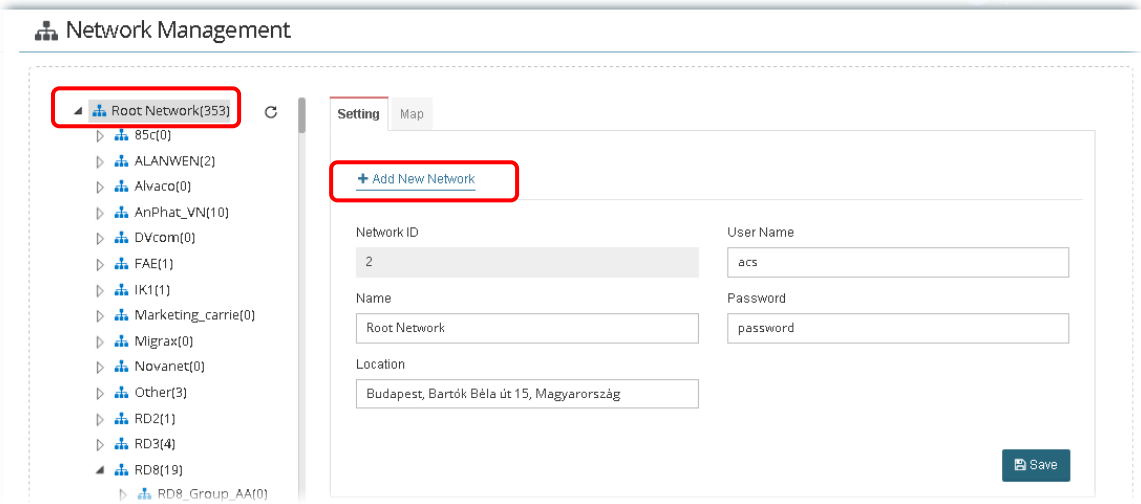
Item	Description
Delete This Device	Click it to remove the selected CPE from current group.
Change Network	Click it to change the network / group for the selected CPE.

	 Move the mouse cursor on the network you want and click **Apply.**
Status	**Disable** – The selected device will be hidden on the tree view. **Enable** – The selected device can be displayed on the tree view.
Known Device	**Known** – The selected CPE is known() to VigorACS 2. **Unknown** – If the selected CPE is new added device, it will be identified as Unknown ().
Device ID / Network ID	**Device ID** – Display the number of that device which is given by VigorACS 2 randomly. **Network ID**- Display the ID number of the network that selected device is grouped under.
Model Name / Device Name	**Model Name** – Display the model name of the selected device. Model name cannot be changed. **Device Name** – Display the name of the device for identification. It can be changed if required.
Note 1 / Note 2	Note 1 – Display brief description for the selected device. Note 2 – Display brief description for the network.
Serial number / MAC Address	**Serial number** – Type a number for identification of the device. **MAC Address** – Display the MAC address of the device.
Location	Display the position of the device.
Phone No.	It is optional and is used to offer additional information for reference. If required, type a phone number for such device.
Domain Name	Type a domain name for a CPE. Later, simply click the domain name to access into the CPE.
Management Port	Type a port number which will be used for accessing into web user interface of the CPE.
Management Protocol	Choose HTTPS or HTTP.
IP / Port / URI	Display the IP address, port number and URI.
User Name / Password	Display the username and password that VigorACS 2 can use to access into such CPE.

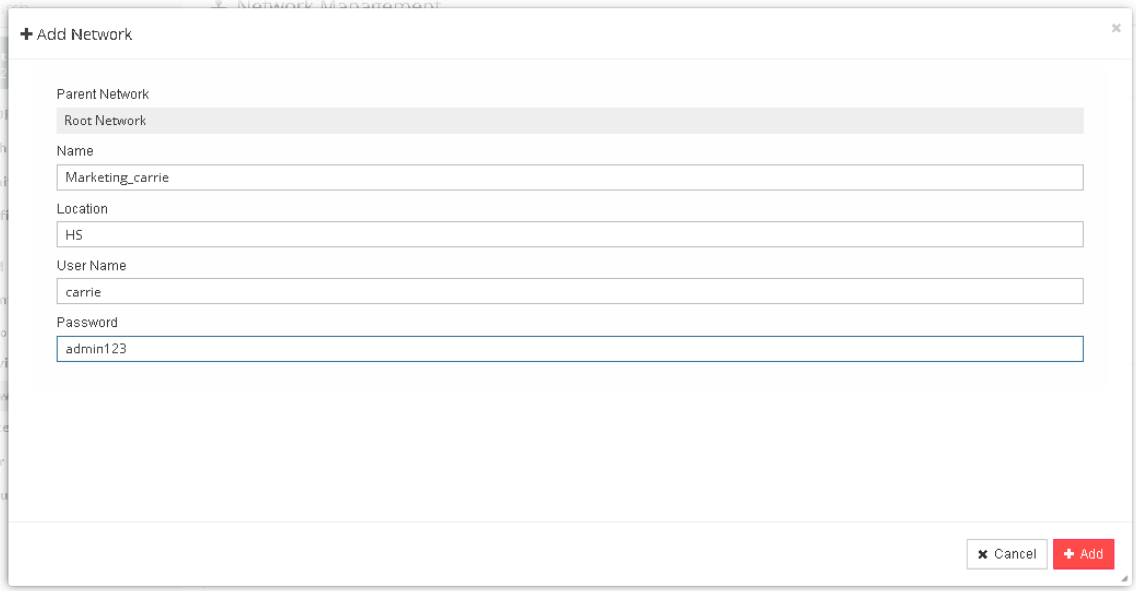
Applications

A.1 How to Create a Network for Managing Devices?

1. Open **SYSTEM MENU>>Network Management** and click **Root Network.**
2. Click **+Add New Network** on the **Setting** page.

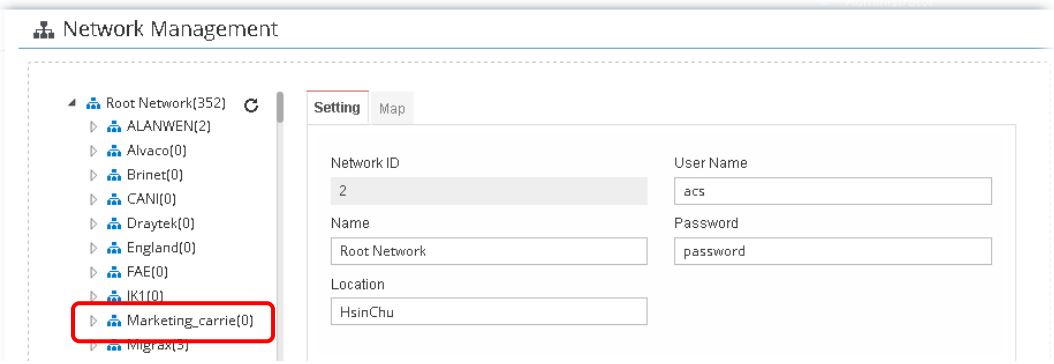


3. In the following page, type required information for the new network.



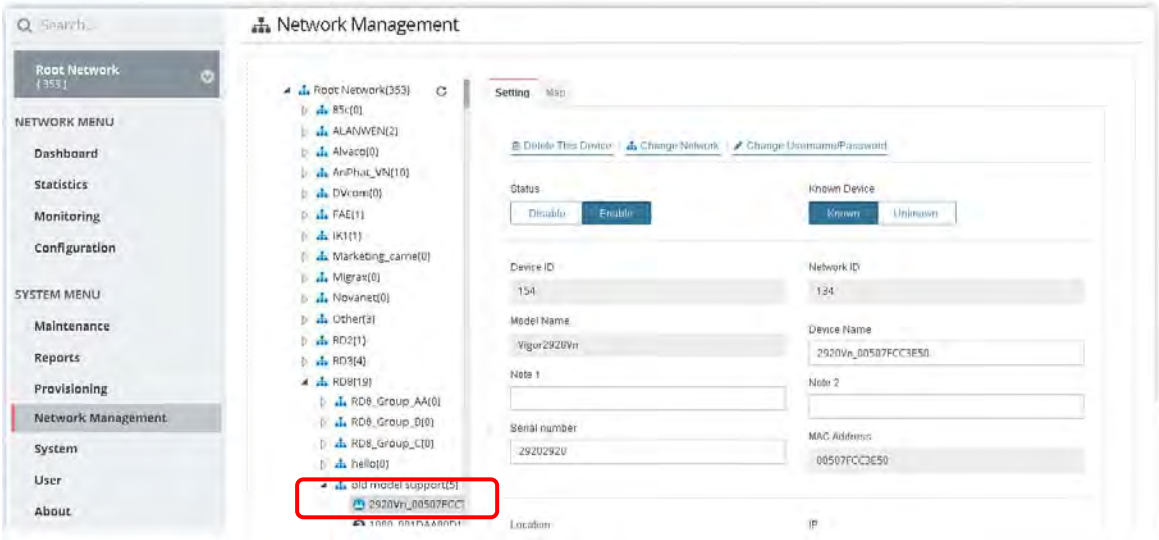
4. Click **Add**.

5. The new network has been created and displayed on the tree view.

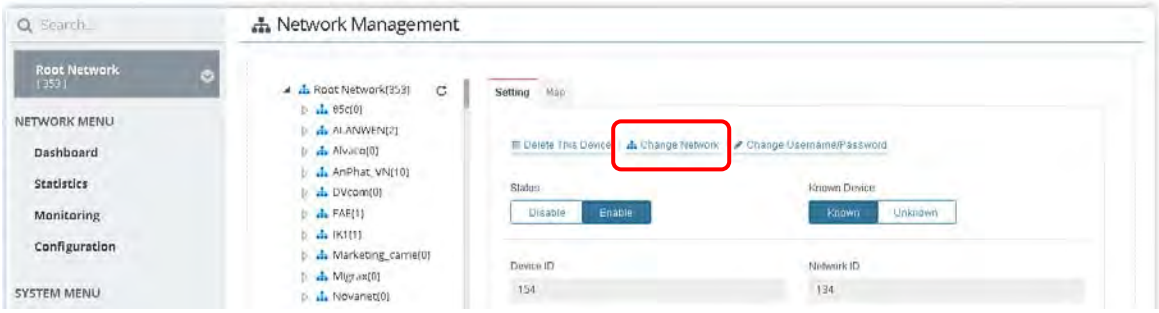


A.2 How to Change the Network of a Device?

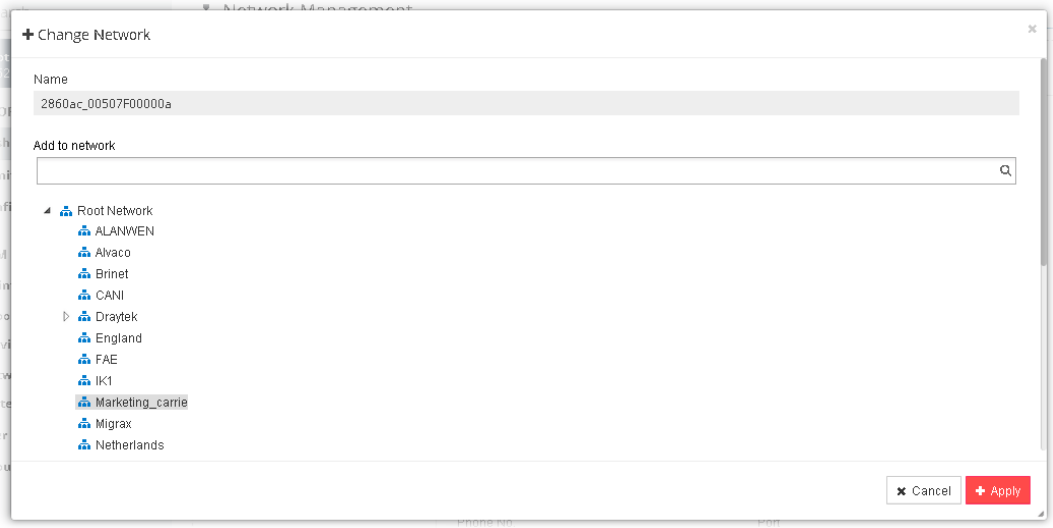
1. Open **SYSTEM MENU>>Network Management**.
2. Choose and click a CPE displayed on **Root Network** tree view.



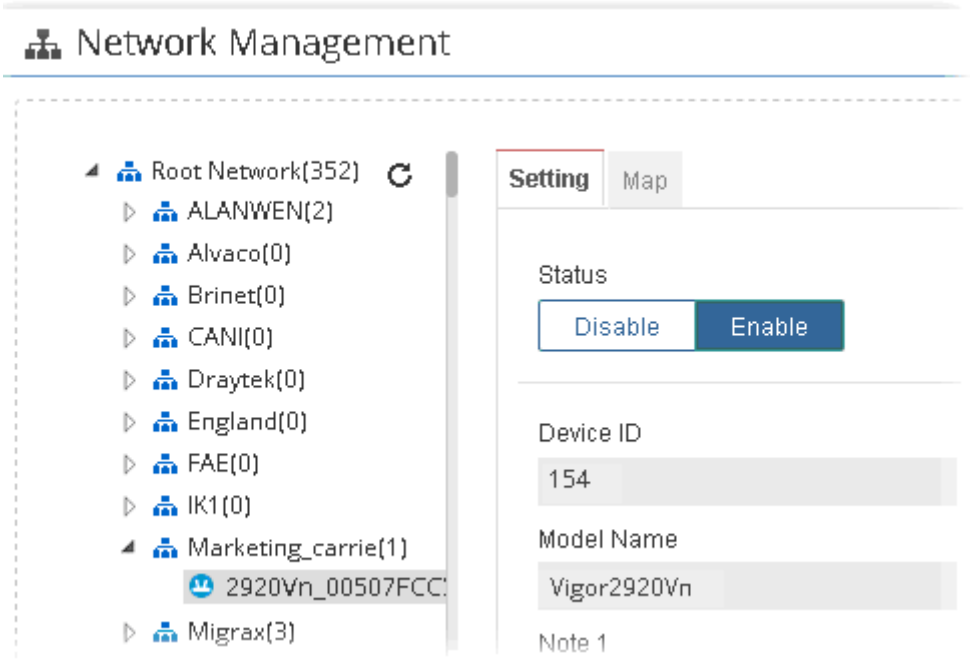
3. Click **Change Network.**



4. Click the network you want from **Root Network** and click **Apply**.



5. The selected device has been grouped under the specified network (Marketing_carrie, in this case).



Chapter 7 Maintenance

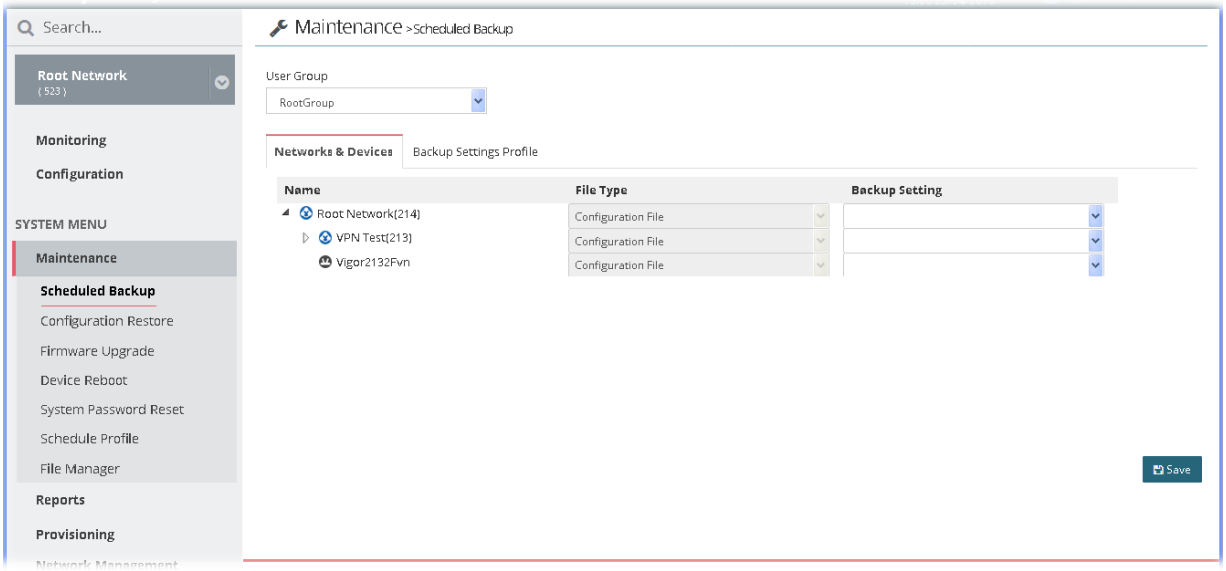
DrayTek VigorACS2

Options in Maintenance are configured and applied onto numerous TR-069 CPEs instead of configuring settings for each CPE one by one.

7.1 Scheduled Backup

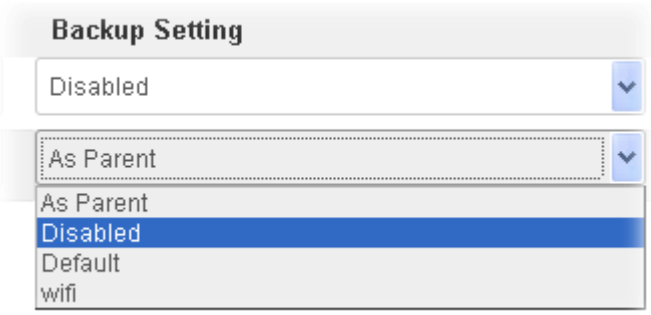
7.1.1 Networks & Devices

Such page is used to specify a backup profile for the device / network. Later, the configuration backup for the device/network will be executed automatically by VigorACS.



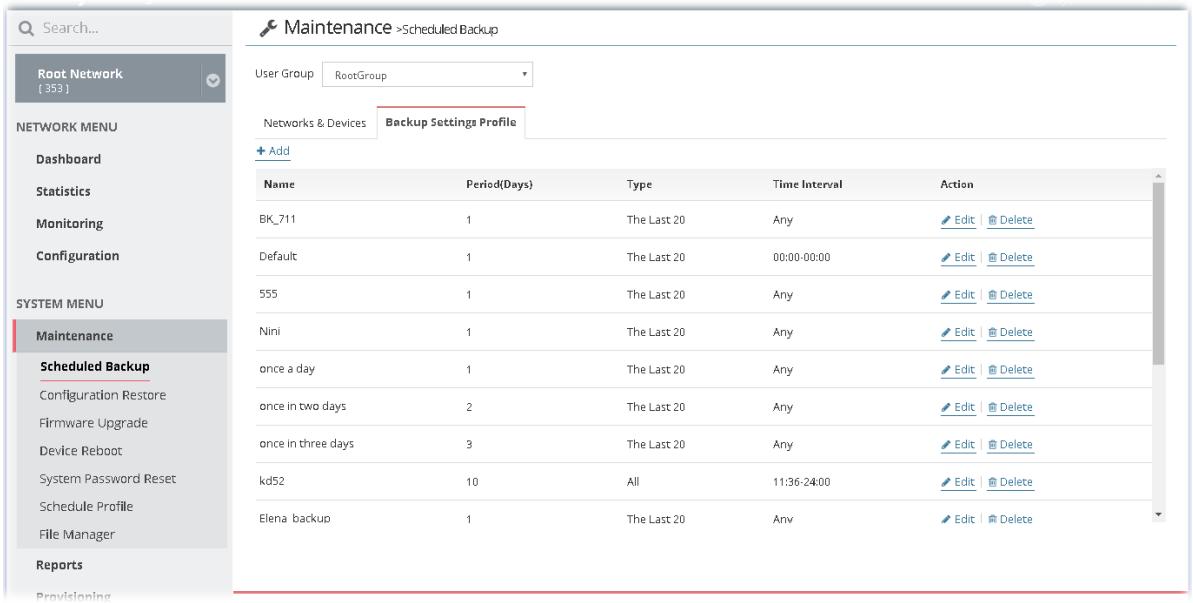
These parameters are explained as follows:

Item	Description
User Group	Specify a user group for applying the backup settings profile. Each user group can be configured with different backup settings profiles.
File Type	Display the file type used for the device.

Backup Setting	Choose a profile defined in **Backup Settings Profile** for applying onto the selected CPE. 
Save	Save the current settings.

7.1.2 Backup Settings Profile

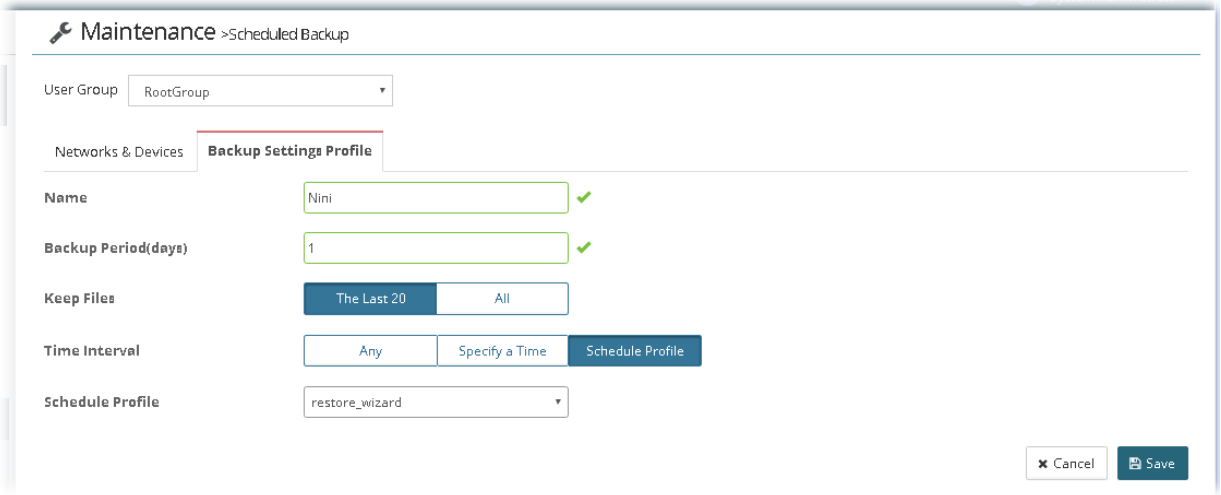
Such page determines the trigger time and method for firmware backup.



These parameters are explained as follows:

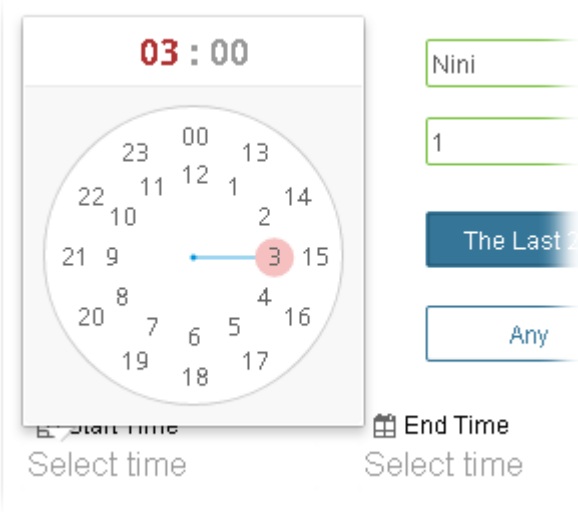
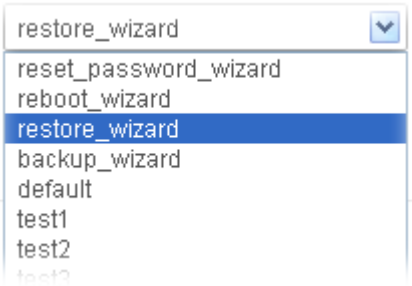
Item	Description
User Group	Specify a user group for applying the backup settings profile. Each user group can be configured with different backup settings profiles.
+Add	Click it to create a new profile.
Edit	Click it to modify, change the selected profile.
Delete	Click it to delete the selected profile.

The following setting page appears when **+Add** is clicked.



Available settings are listed as follows:

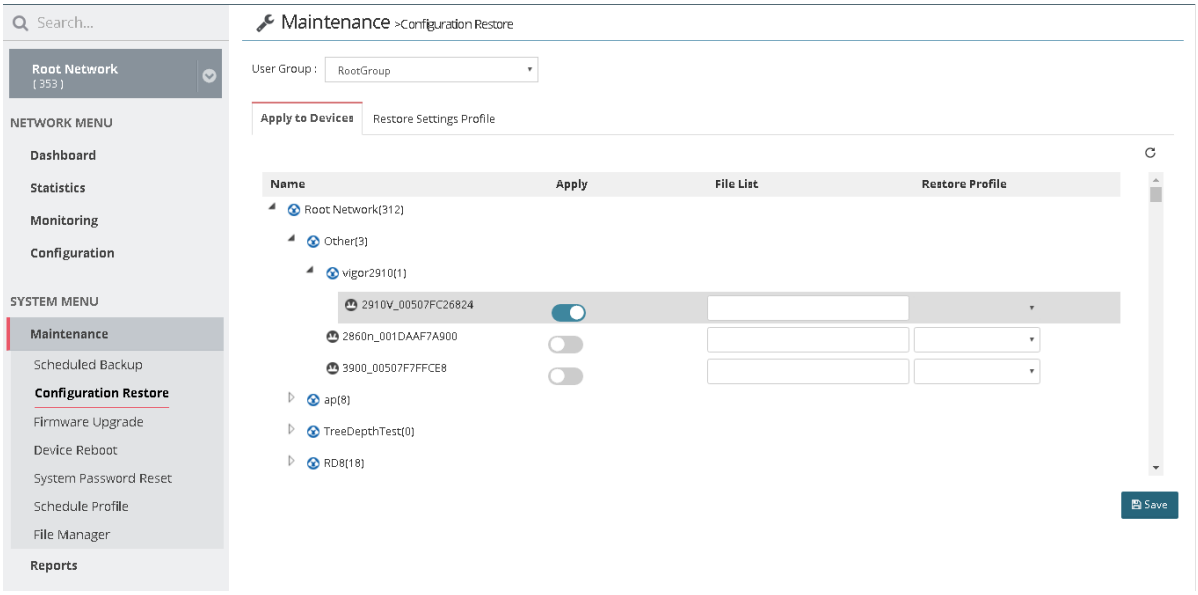
Item	Description

User Group	Specify a user group for applying the backup settings profile. Each user group can be configured with different backup settings profiles.
Name	Type a name of the backup profile.
Backup Period(days)	The number typed here means the interval for the backup executed by VigorACS. The unit is "day". If you type 1, that means the backup will be executed one time by one day.
Keep Files	Choose to keep all of the files (router's configuration files) or the last 20 files.
Backup Time	Set a time interval for executing the backup work for networks and devices. ● **Now** ● **Scheduled** ● **Schedule Profile**
Scheduled	**Start Time / End Time –** Click **Select time** to display a clock. Set the hour and minutes by clicking the number on the clock.  **Specify Start Date** – Click it to enable the time setting. **Date** – Click it to pop up a calendar to choose a date as the starting date.
Schedule Profile	Choose a trigger profile from the drop down list. In which, VigorACS offers default schedule profile. 

7.2 Configuration Restore

7.2.1 Apply to Devices

Such page can determine which device or network will be applied with restore profiles. Later, the configuration restoration for the device/network will be executed automatically by VigorACS.

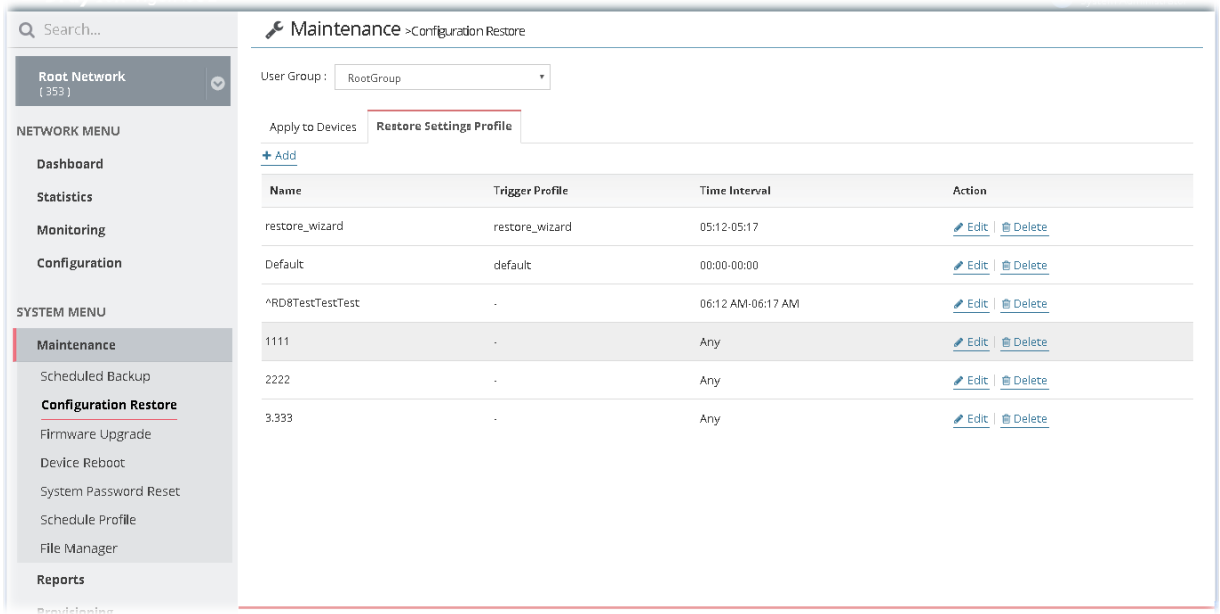


These parameters are explained as follows:

Item	Description
User Group	Specify a user group for applying the restore settings profile. Each user group can be configured with different restore settings profiles.
Apply	Click the icon to enable configuration restoration for the selected CPE.
File List	Use the drop down list to choose one of the files (with the date of the configuration file created) to be applied for the file restoration of the selected CPE.
Restore Profile	Choose a profile defined in **Restore Settings Profile** to be applied to the selected CPE.
Save	Save the current settings.

7.2.2 Restore Settings Profile

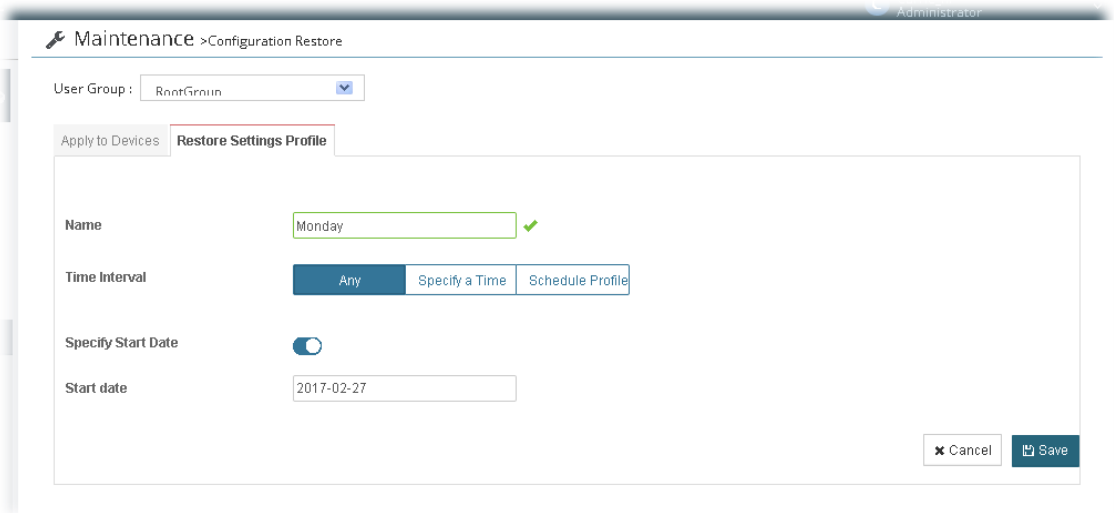
Such page can determine the trigger time and method for firmware restoration.



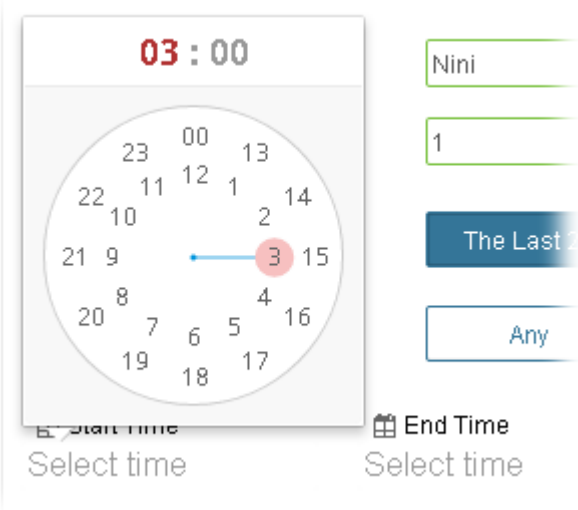
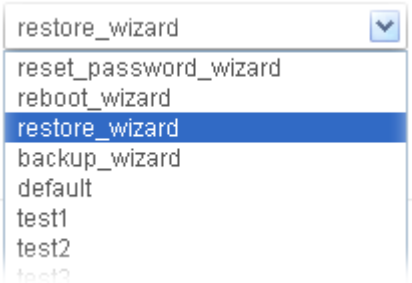
These parameters are explained as follows:

Item	Description
User Group	Specify a user group for applying the configuration restore settings profile. Each user group can be configured with different configuration restore settings profiles.
+Add	Click it to create a new profile.
Edit	Click it to modify, change the selected profile.
Delete	Click it to delete the selected profile.

The following setting page appears when **+Add** is clicked.



Available settings are listed as follows:

Item	Description
User Group	Specify a user group for applying the restore settings profile. Each user group can be configured with different restore settings profiles.
Name	Type a name of the restore setting profile.
Restore Time	Set a time interval for executing the backup work for networks and devices. ● **Now** ● **Scheduled** ● **Schedule Profile**
Any	**Specify Start Date** – Click it to enable the time setting. **Start date** – Click it to pop up a calendar to choose a date as the starting date.
Scheduled	**Start Time / End Time –** Click **Select time** to display a clock. Set the hour and minutes by clicking the number on the clock.  **Specify Start Date** – Click it to enable the time setting. **Date** – Click it to pop up a calendar to choose a date as the starting date.
Schedule Profile	**Trigger Profile –** Choosing a trigger profile from the drop down list. In which, VigorACS offers default schedule profile. 

7.3 Firmware Upgrade

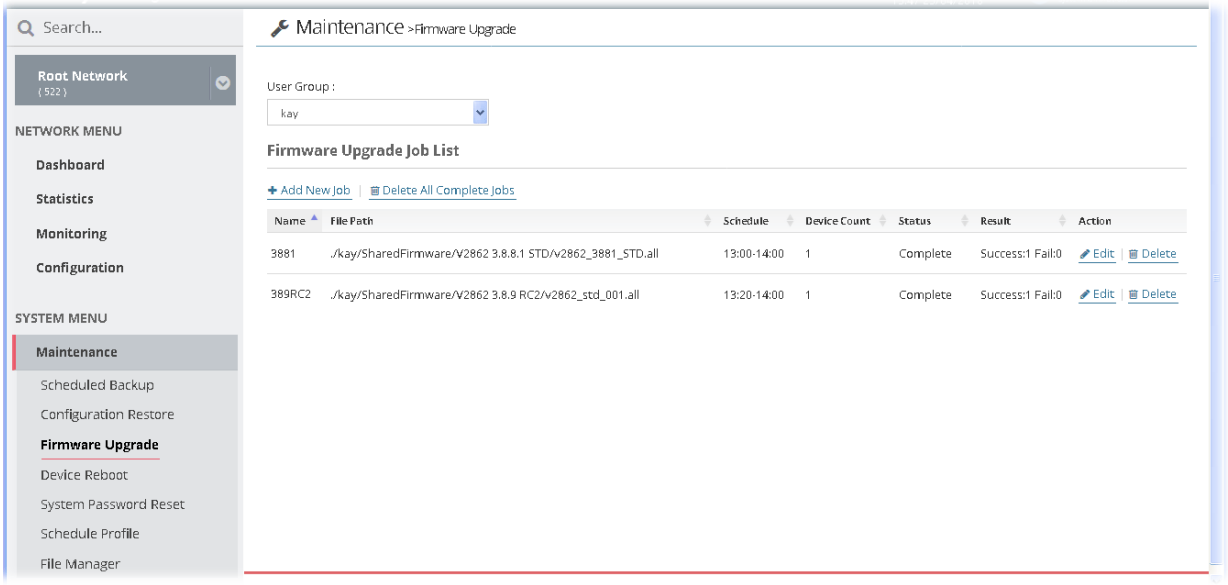
When VigorACS server receives information from CPE about firmware upgrade, it will check if the received model name, modem firmware version, and software version correspond to the information recorded in VigorACS server. If everything can match but software version not, VigorACS will judge that the remote CPE requiring firmware upgrade. Next, VigorACS server will execute firmware upgrade with the file listed in Job List automatically at specified time.

This web page allows you to **specify** required information for matching with the CPE device. The profiles created here will be regarded as a basis that VigorACS server uses to compare information coming from CPE router with the information stored in VigorACS server's database.

Info

The firmware upgrade profile created in such page can be applied to single and selected **devices** (but not applied to the whole network).

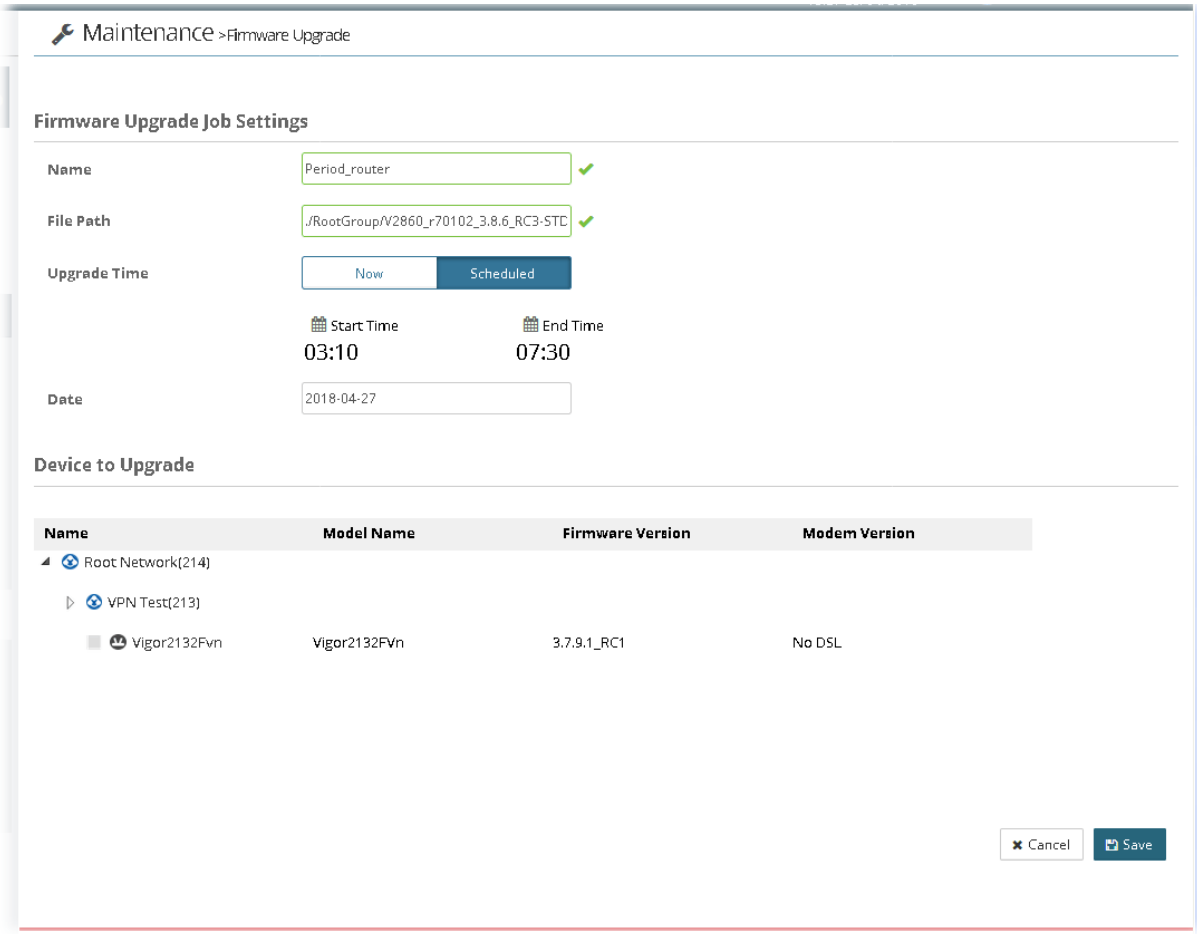
For applying an upgrade provision profile to the whole **network / group**, please go to **Provisioning>>Firmware Upgrade** for more detailed information.



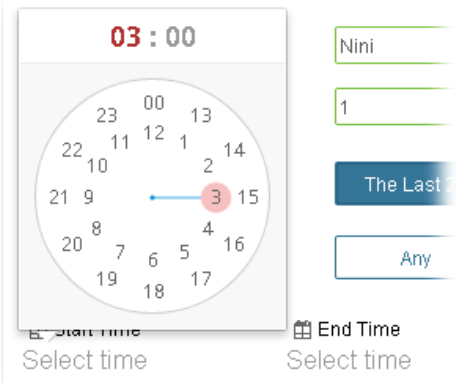
These parameters are explained as follows:

Item	Description
User Group	Specify a user group. The job list under that group will be displayed on this page.
+Add New Job	Click it to create a new job profile.
Delete All Complete Jobs	Click it to delete all profile.
Edit	Click it to edit / modify the settings for the selected profile.
Delete	Click it to delete the selected profile.

The following setting page appears when **+Add** is clicked.



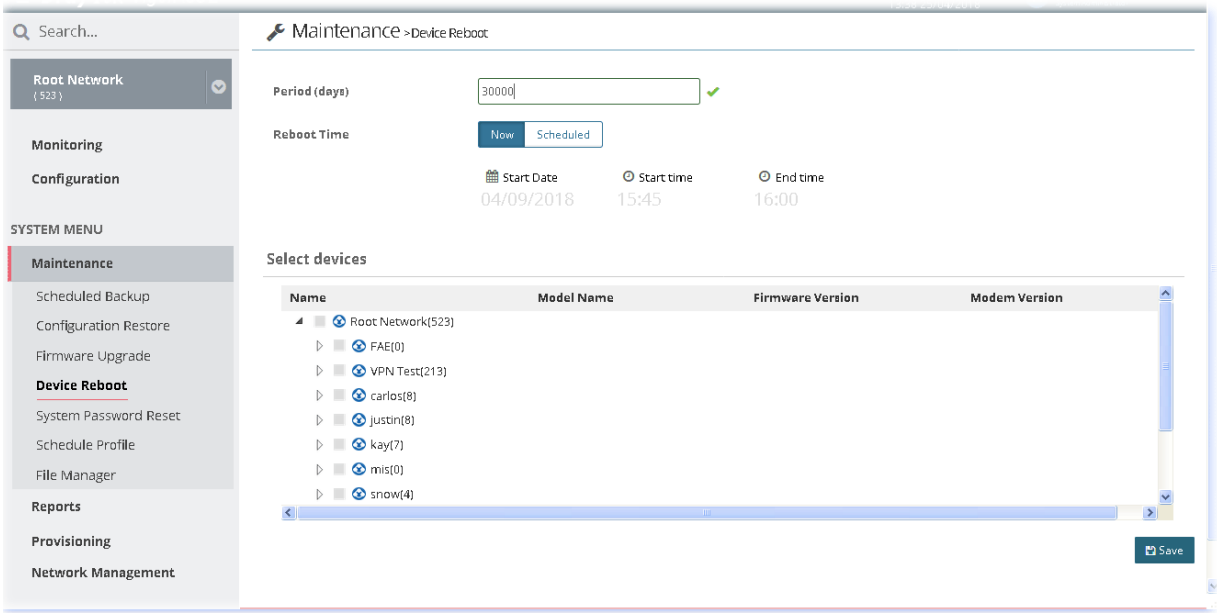
Available settings are listed as follows:

Item	Description
Name	Type a name of the job profile.
File Path	Available file paths from the computer's server will be displayed in this field. They will be different depending on the user groups.
Upgrade Time	Set a time interval for executing the backup work for networks and devices. ● **Now** ● **Scheduled**
Scheduled	**Start Time / End Time -** Click **Select time** to display a clock. Set the hour and minutes by clicking the number on the clock. 

	Date – Click it to pop up a calendar to choose a date as the starting date.
Device to Upgrade	Select one device or more devices to apply such firmware upgrade provision. **Model Name** – Display the model name for identification. **Firmware Version** – Display the firmware version that the model used currently.
Cancel	Discard current settings and return to previous page.
Save	Save the current settings and exit the page.

7.4 Device Reboot

You can define the time schedule for rebooting the selected CPE(s) automatically by VigorACS. Open **SYSTEM MENU>>Maintenance>>Device Reboot** to display the following page.



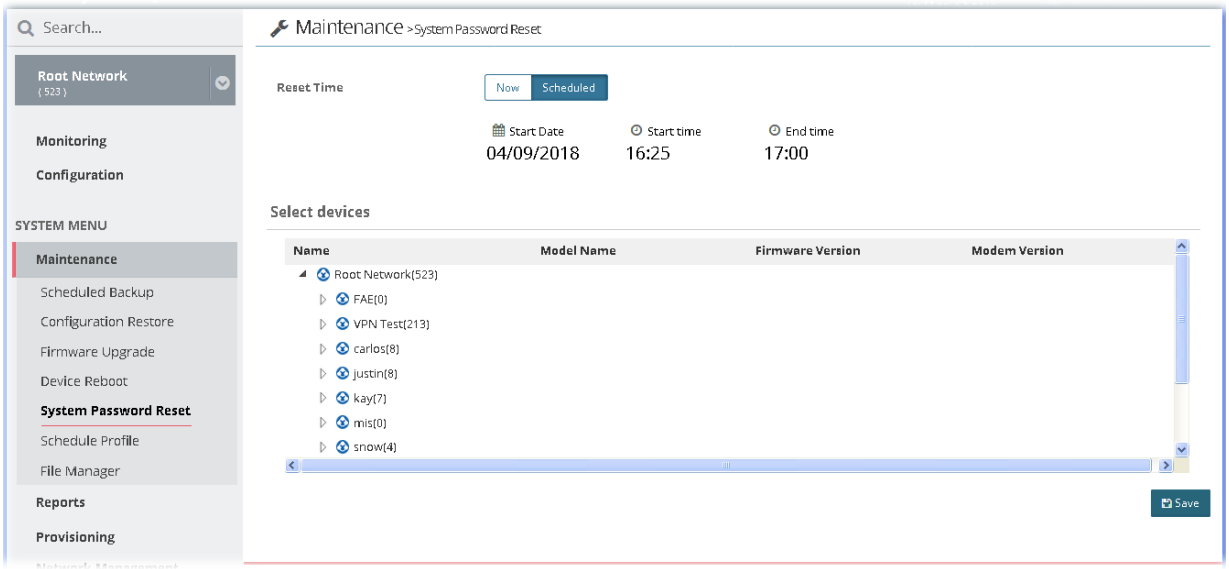
These parameters are explained as follows:

Item	Description
Period(days)	Determine the frequency for the CPE reboot by VigorACS. The default value is 1 day.
Reboot Time	**Now** – Reboot the selected device(s) immediately. **Scheduled** – To specify a certain time to perform the job, choose this one and specify start day, start time and end time respectively. VigorACS will perform the job for the selected CPE (s) according to the schedule set here. ● **Start day** – Use the drop down calendar to specify the day you want to start the operation. ● **Start time** - Use the drop down menu to specify the hour and minutes you want to start the operation. ● **End time** - Use the drop down menu to specify the hour and minutes you want to finish the operation.
Select devices	Choose the device that you want to do device reboot.

Save	Save the current settings.

7.5 System Password Reset

This page is used to reset the default factory password for the administrator of CPE.

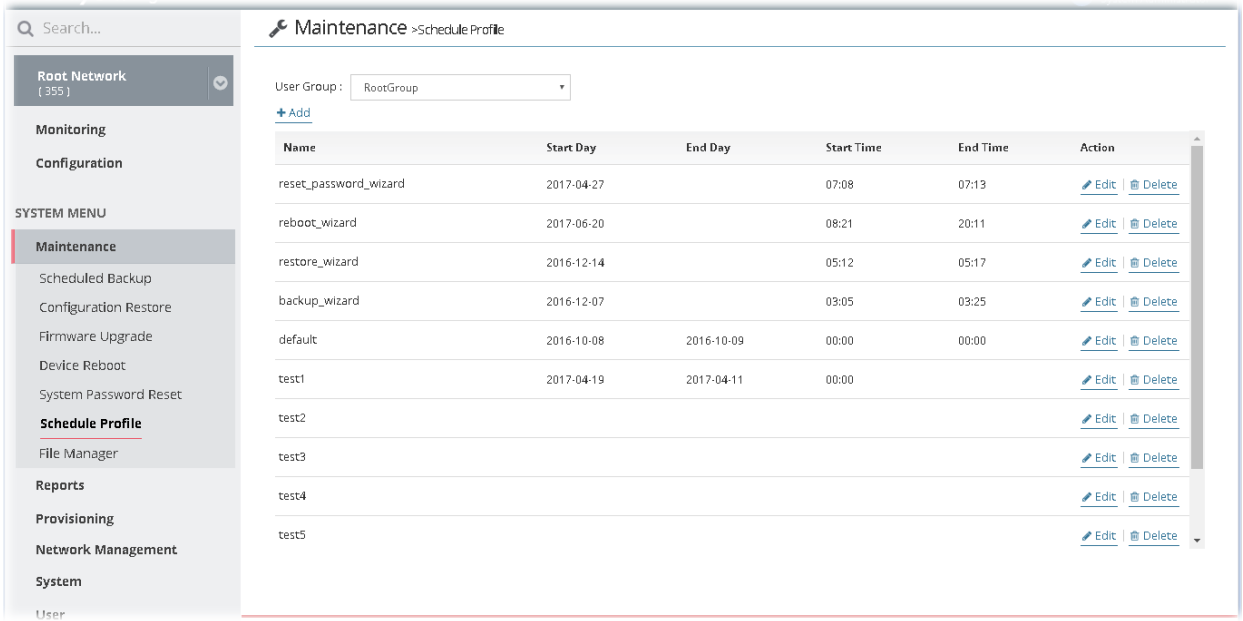


These parameters are explained as follows:

Item	Description
Reset Time	**Now** – Reset the password for the selected device(s) immediately. **Scheduled** – To specify a certain time to perform the job, choose this one and specify start day, start time and end time respectively. VigorACS will perform the job for the selected CPE (s) according to the schedule set here. ● **Start day** – Use the drop down calendar to specify the day you want to start the operation. ● **Start time** - Use the drop down menu to specify the hour and minutes you want to start the operation. ● **End time** - Use the drop down menu to specify the hour and minutes you want to finish the operation.
Select devices	Choose the device that you want to do device reset.
Save	Save the current settings.

7.6 Schedule Profile

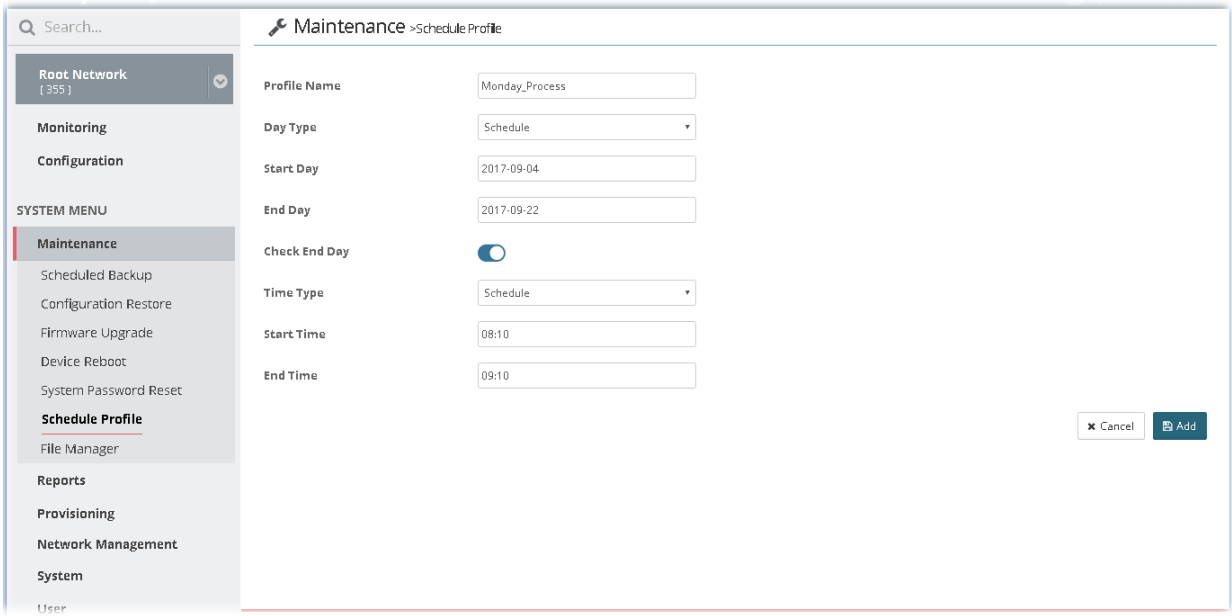
Schedule profiles can be set to apply to devices managed by VigorACS 2. Later, you can not only schedule the router to dialup to the Internet at a specified time, but also restrict Internet access to certain hours so that users can connect to the Internet only during certain hours, say, business hours. The schedule profile is applicable to several functions driven by VigorACS 2.



These parameters are explained as follows:

Item	Description
User Group	Specify a user group. The schedule profiles under that group will be displayed on this page.
+Add	Click it to create a new schedule profile.
Edit	Click it to modify, change the selected profile.
Delete	Click it to delete the selected profile.

The following setting page appears when **+Add** is clicked.

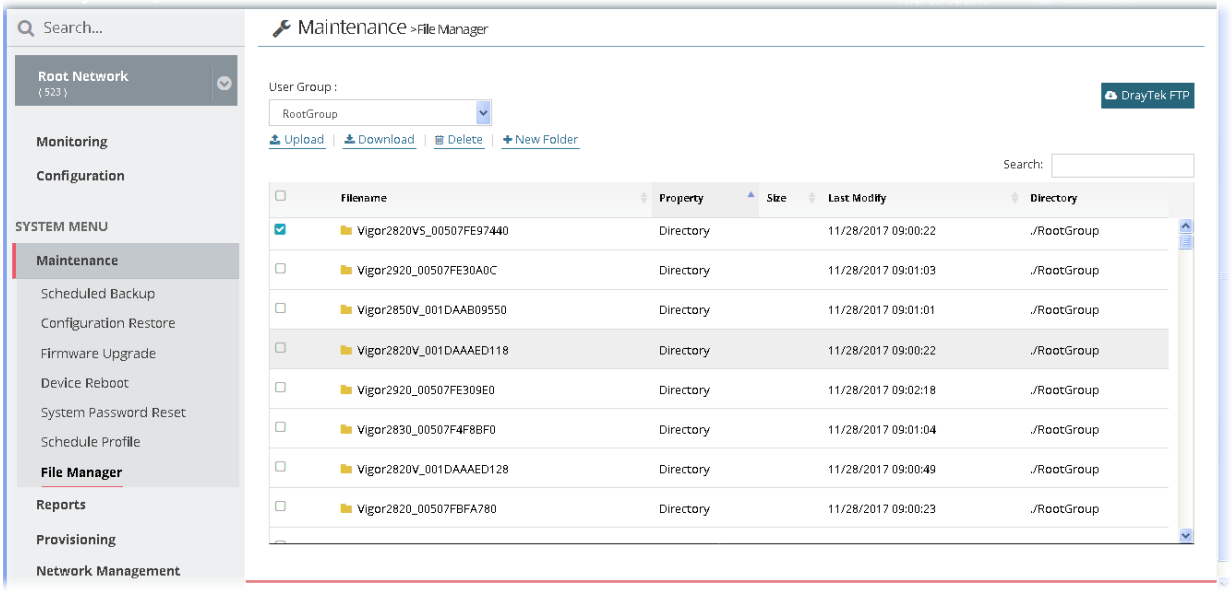


Available settings are listed as follows:

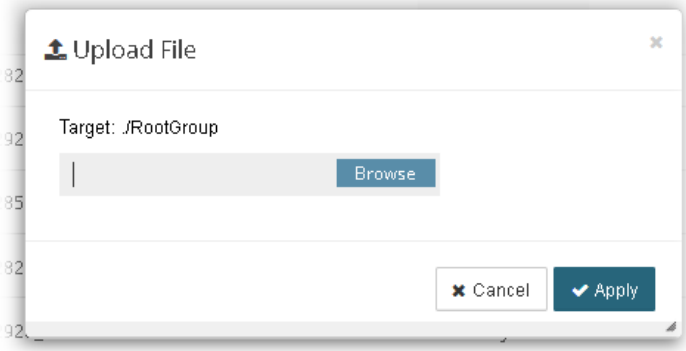
Item	Description
Profile Name	Type a name of the schedule profile.
Day Type	VigorACS 2 will perform the job for the selected CPE (s) according to the schedule set here. **Any** – When CPE meets settings configured in FWUpgradeFailInterval, the job (e.g., upgrade) for the CPE will be performed. **Schedule** – To specify a certain day to perform the job, choose this one and specify start day and end day respectively.
Start Day	Use the drop down calendar to specify the day you want to start the operation.
End Day	Use the drop down calendar to specify the day you want to end the operation.
Check End Day	Click it to check the end day to determine if the job is performed or not. For example, the end day for firmware upgrade is out of date, then the upgrade will not be executed for the selected CPE.
Time Type	**Any** – When CPE meets settings configured in FWUpgradeFailInterval, the job (e.g., upgrade) for the CPE will be performed. **Schedule** – To specify a certain time to perform the job, choose this one and specify start time and end time respectively. VigorACS will perform the job for the selected CPE (s) according to the schedule set here.
Start Time	Use the drop down menu to specify the hour and minutes you want to start the operation.
End Time	Use the drop down menu to specify the hour and minutes you want to finish the operation.
Cancel	Discard current settings and return to previous page.
Add	Save the current settings and create a new profile.

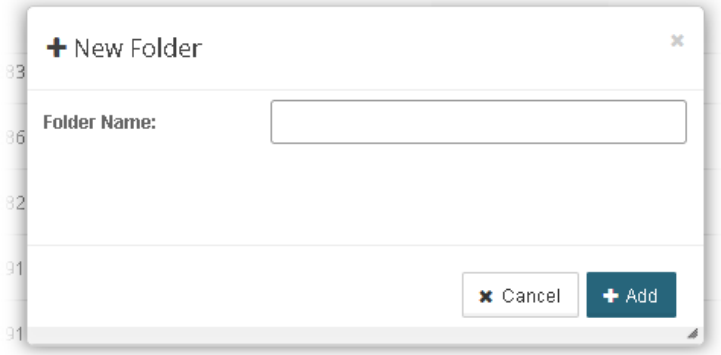
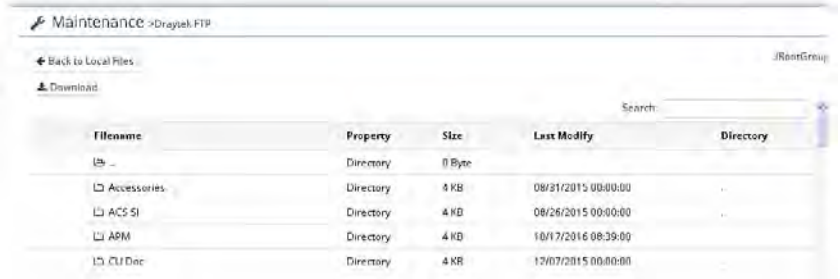
7.7 File Manager

Firmware driver for CPE device can be managed or classified with different folders.



These parameters are explained as follows:

Item	Description
User Group	Specify a user group. The devices (represented with MAC address) under that group will be displayed on this page.
Upload	Click it to upload the file to VigorACS 2 server. 
Download	Download a driver (*.all, *.rst and etc.) related to CPE device from VigorACS 2 server.
Delete	Click it to delete the selected profile.

+New Folder	Create folders for files classification/management. 
DrayTek FTP	After clicking the link, the following page will appear for you to download file from DrayTek FTP directly. 

Chapter 8 Provisioning

DrayTek VigorACS2

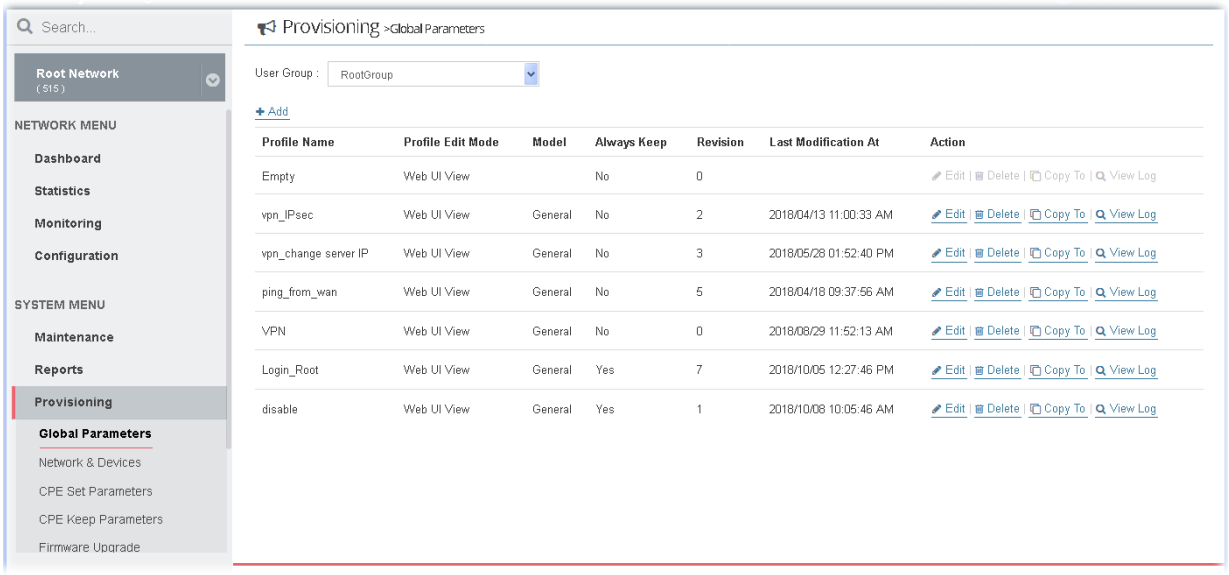
Provision functions allow users to set provision profiles for applying in numerous TR-069 CPEs instead of configuring settings for each CPE one by one.

8.1 Global Parameters

Global Parameters configured in this page can be applied to all of the CPEs/APs at the same time by using VigorACS instead of configuring them one by one.

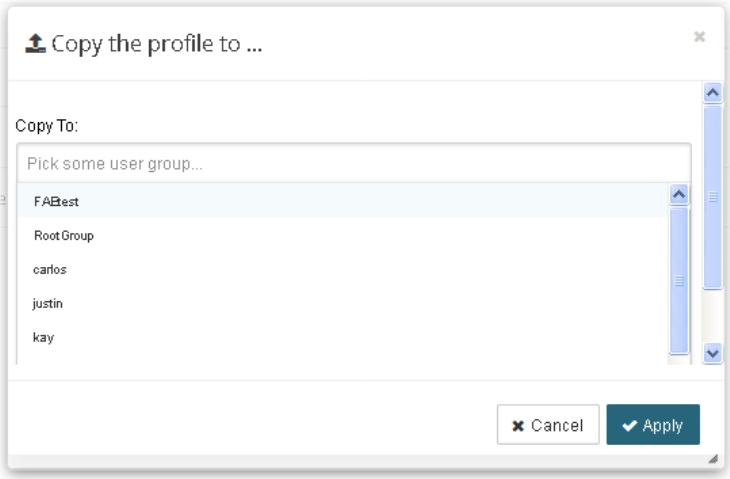
Info It is suitable and convenient when there are several CPE (with the same model) devices required to be configured with the same settings and values.

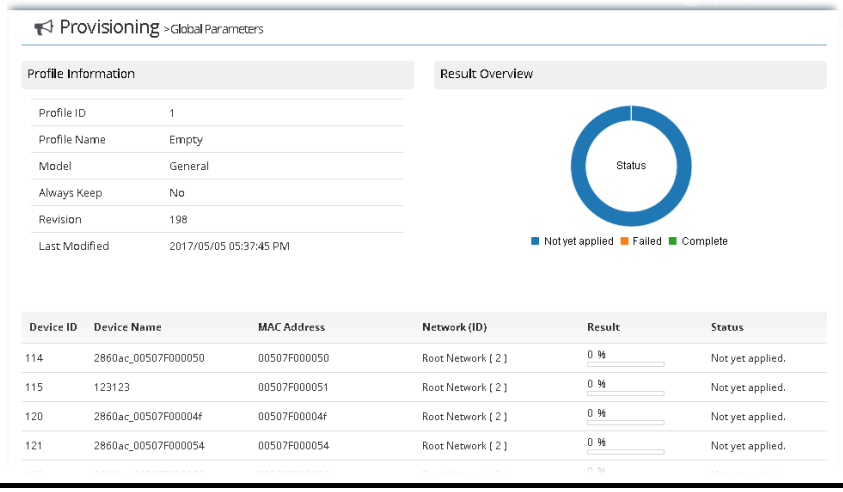
This web page listed the parameters profiles with profile names, model, and the status of the profile to be kept or not.



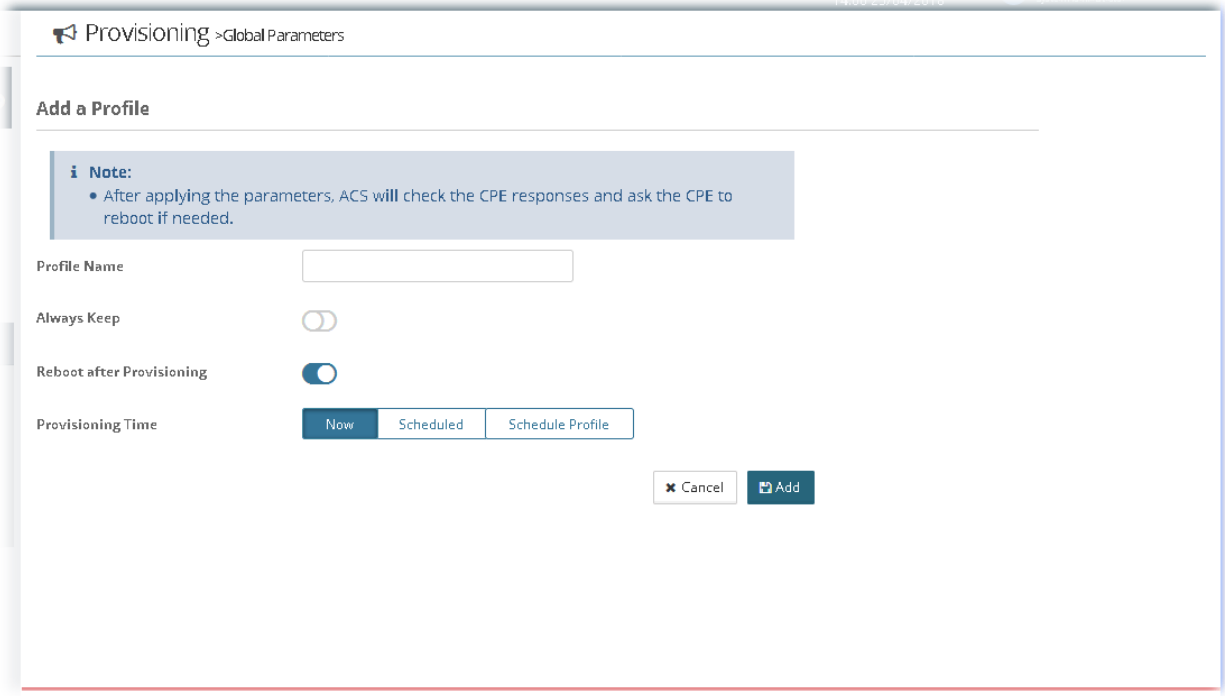
These parameters are explained as follows:

Item	Description
+Add	Click it to create a new provision profile.
+Import XML	Click it to import an existed provision profile.

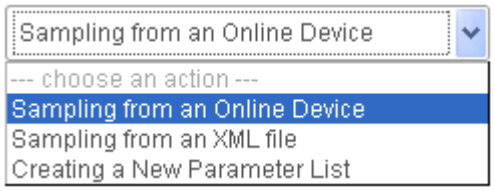
Profile Name	Display the name of the profile.
Model	Display the model name of the device.
Always Keep	**Yes** – Such profile is kept always. **No** – Such profile is not kept always.
Revision	Display the time for last modification.
Last Modification At	Display the time and date of the last modification of the provision.
Action	**Edit –** Click it to configure settings for the selected profile. **Delete –** Click it to delete the profile. **Copy To** – If the administrator wants to apply the provision to certain user group, such action shall be used.  **View Log –** Click it to review detailed information for the selected profile.

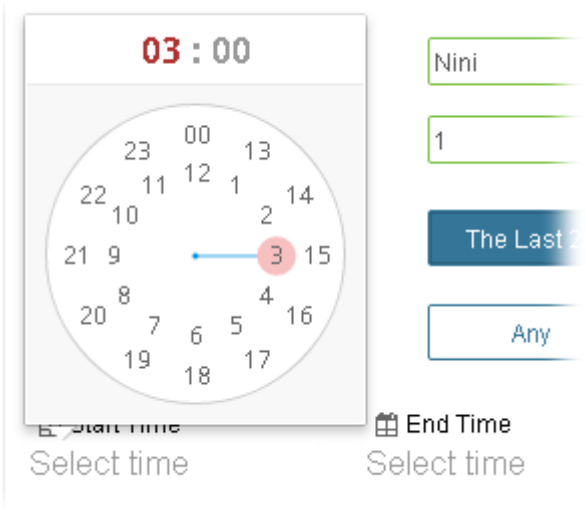


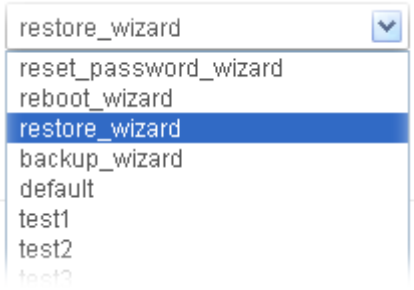
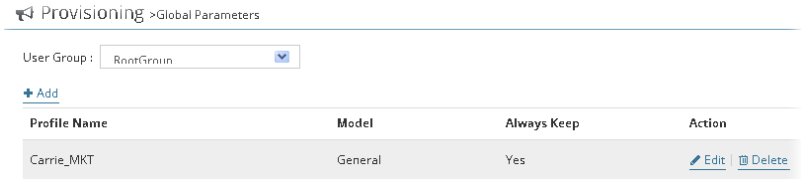
The following setting page appears when **+Add** is clicked.



Available settings are listed as follows:

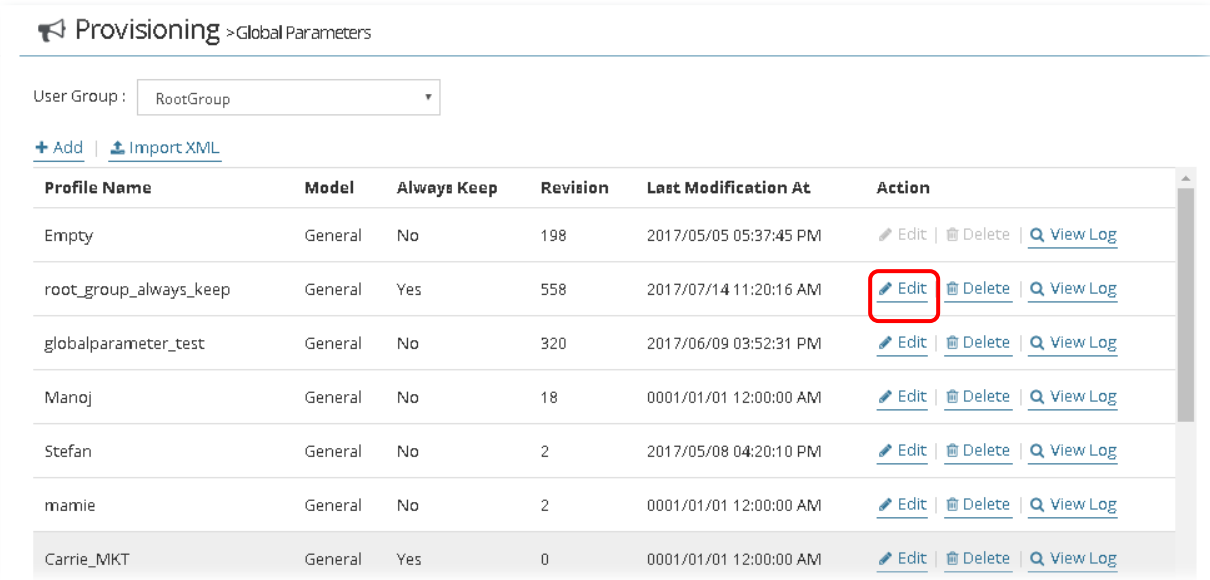
Item	Description
Create Profile by	
Profile Name	It is available when Sampling from an Online Device / Creating a New Parameter List is specified on “Create Profile by”. Type a name for the parameter profile.

Select Device	It is available when Sampling from an Online Device is specified on “Create Profile by”.
Select XML file	It is available when Sampling from an XML file is specified on “Create Profile by”.
Always Keep	Some ISPs do not wish CPE client changing the parameters of CPE device, therefore make the profile being kept is required.
Reboot after provisioning	Enable it to reboot the CPE after the provisioning is applied by certain CPE.
Provisioning Time	Set a time interval for executing the backup work for networks and devices. ● **Now** ● **Scheduled** ● **Schedule Profile**
Scheduled	**Start Time / End Time –** Click **Select time** to display a clock. Set the hour and minutes by clicking the number on the clock.  **Specify Start Date** – Click it to enable the time setting. **Start date** – Click it to pop up a calendar to choose a date as the starting date.

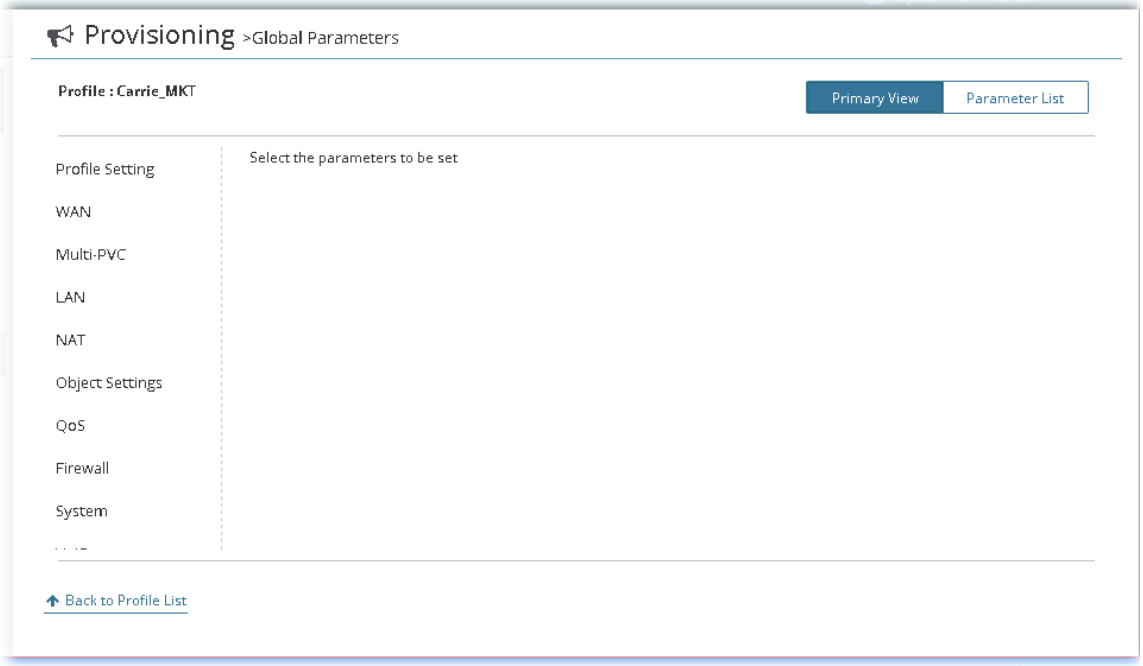
Schedule Profile	**Trigger Profile** - Choose a trigger profile from the drop down list. In which, VigorACS offers default schedule profile. 
Cancel	Discard current settings and restore the default settings.
Add	Save and create the new profile. 

Primary View

Global parameters (including Profile Setting, WAN, Multi-PVC, LAN, NAT, Object Settings, QoS, Firewall, System, VoIP, Routing, Wireless and Applications) for each provision profile can be seen and configured in Primary View.

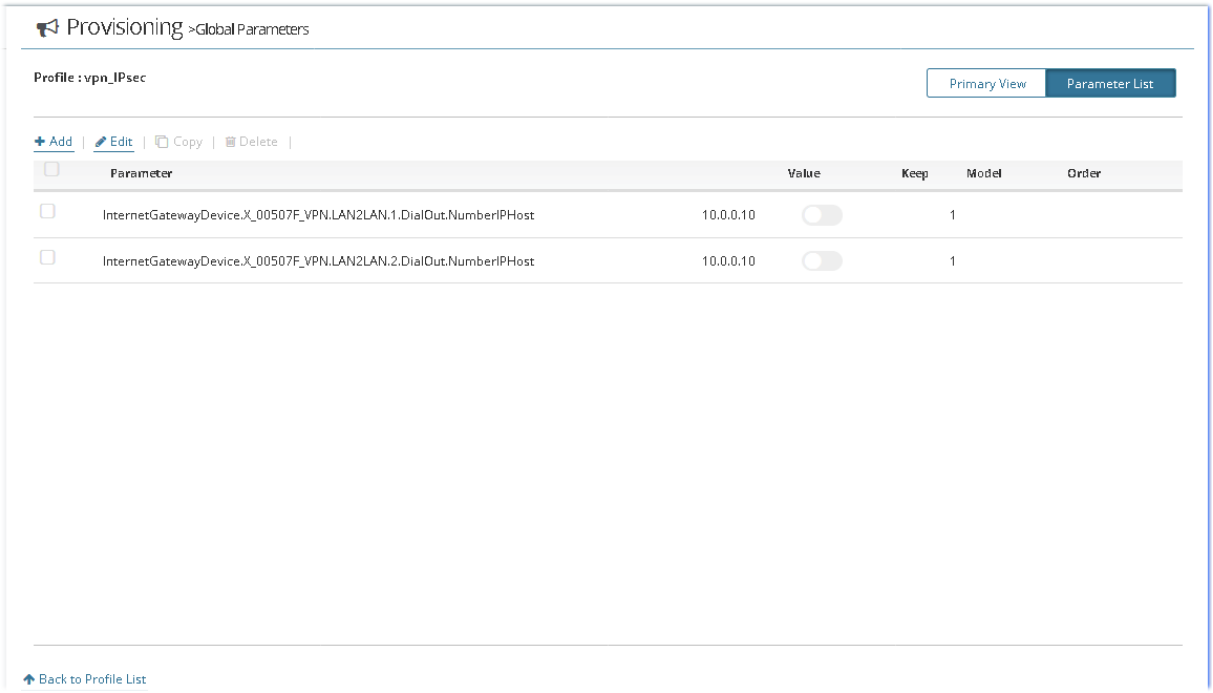


Click the **Edit** link for one of the created profile to get the primary view of the selected provision profile.

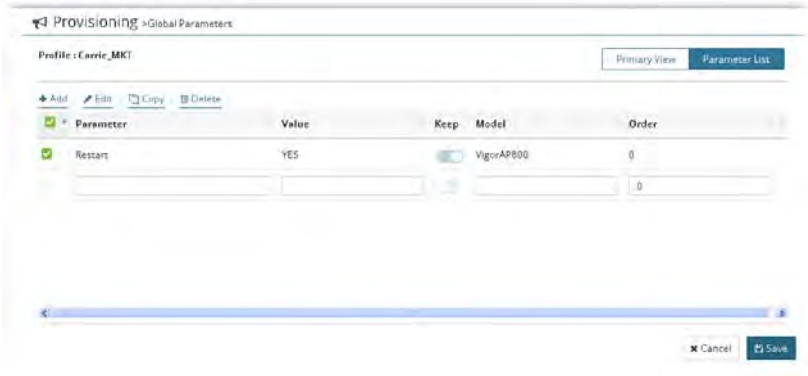


Parameter List

This page displays an overview of settings configured in Primary View. Also, it allows the administrator to set different parameters with specific format.



Available settings are listed as follows:

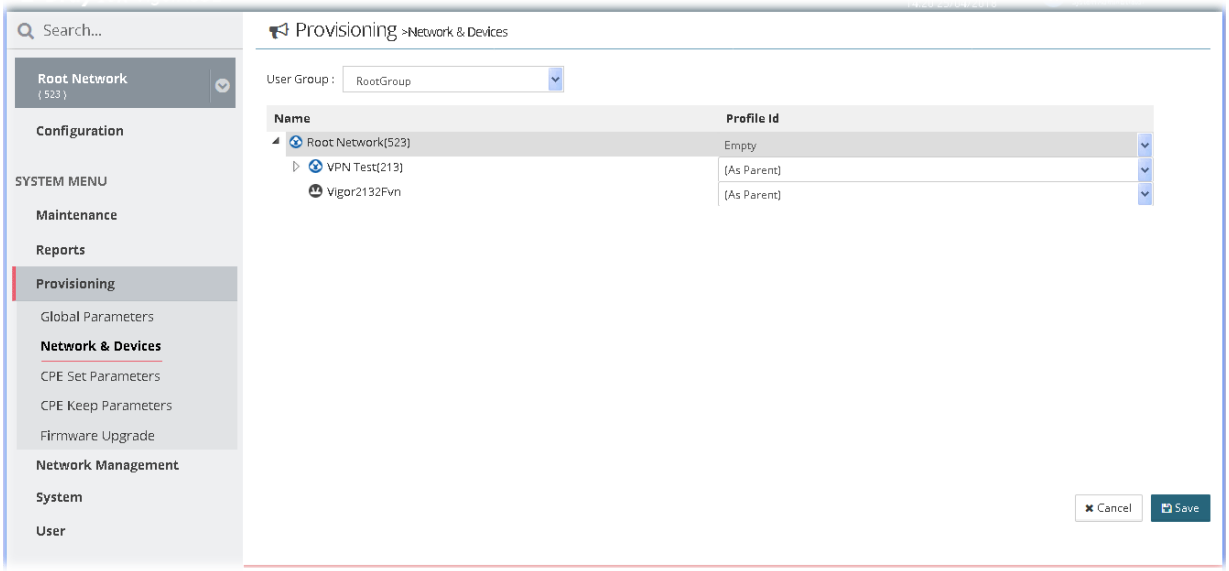
Item	Description
Add / Edit / Copy / Delete	**Add** – Click it to create a new parameter. **Edit** – Modify the existed parameters for making modification. **Copy** – Duplicate the same settings for the selected parameter. **Delete** – Remove a selected parameter. 
Parameter	After clicking **Add/ Edit**, type the script for the parameter you want in this field. For example, you would like to set the priority of the WAN1 interface, just type "InternetGatewayDevice.WANDevice.1.WANEthernetInterfaceConfig. Priority". If you have no idea in typing the correct text, refer to the section "How to Modify Global Parameters for a Provision Profile?" for more detailed information.
Value	After clicking **Add/ Edit**, the number / text shall be typed according to the content of the parameters. If you have no idea in typing the

	correct text, refer to the section “How to Modify Global Parameters for a Provision Profile?” for more detailed information.
Keep	Display if such parameter will be kept or not. Refer to the section “How to Modify Global Parameters for a Provision Profile?” for more detailed information.
Model	Display the model which applied with such provision.
Order	Display the priority of the parameter. After clicking **Add/ Edit**, you can change the priority of each parameter.
Back to Profile List	Return to the Profile List page.

8.2 Network & Devices

Specify certain profile (global parameter) to be applied in selected network, selected CPE/AP by clicking on the tree view structure.

Locate a CPE/AP by unfolding the tree view structure displayed under **Name**. Use the drop down list of **Profile Id** to specify the global parameter profile required for that CPE/AP.



These parameters are explained as follows:

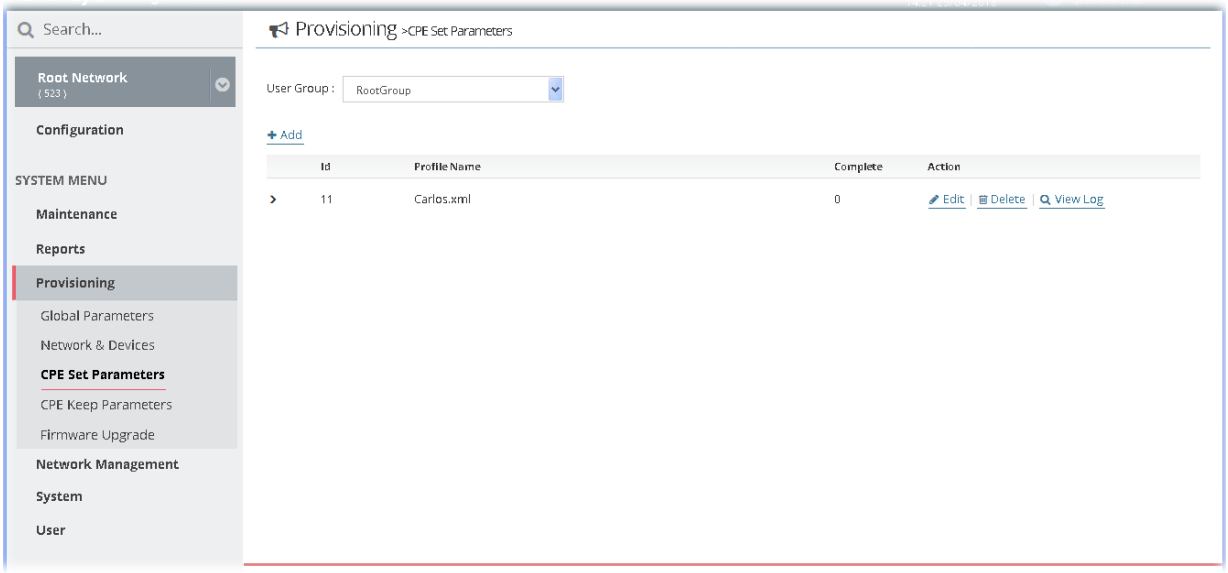
Item	Description
User Group	Specify a user group. The devices under that group will be displayed on this page.
Name	Display the CPE/AP with the authority of the selected group.
Profile Id	Choose a profile (with global settings) defined in **Global Parameters)** to be applied in such selected CPE/AP. **(As Parent)**- Use the same setting as the previous layer.

8.3 CPE Set Parameters

CPE parameters configured here can be applied to all of the CPEs at the same time by using VigorACS instead of configuring them one by one.

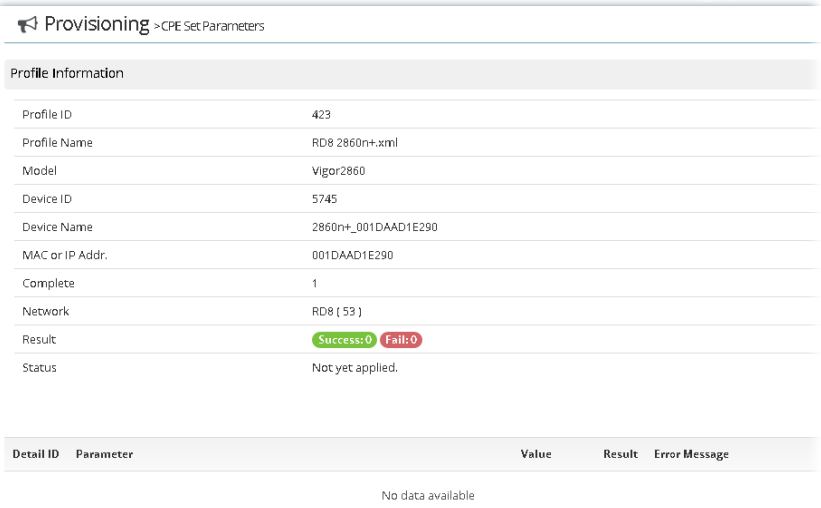
Info	CPE Set Parameters is suitable and convenient when there are several CPE (with the same model) devices required to be configured with **different** settings and values. However, Global Parameters is suitable and convenient when there are several CPE (with the same model) devices required to be configured with the **same** settings and values.

Open **Provisioning>>CPE Set Parameters**, the profile list will be shown as follow:

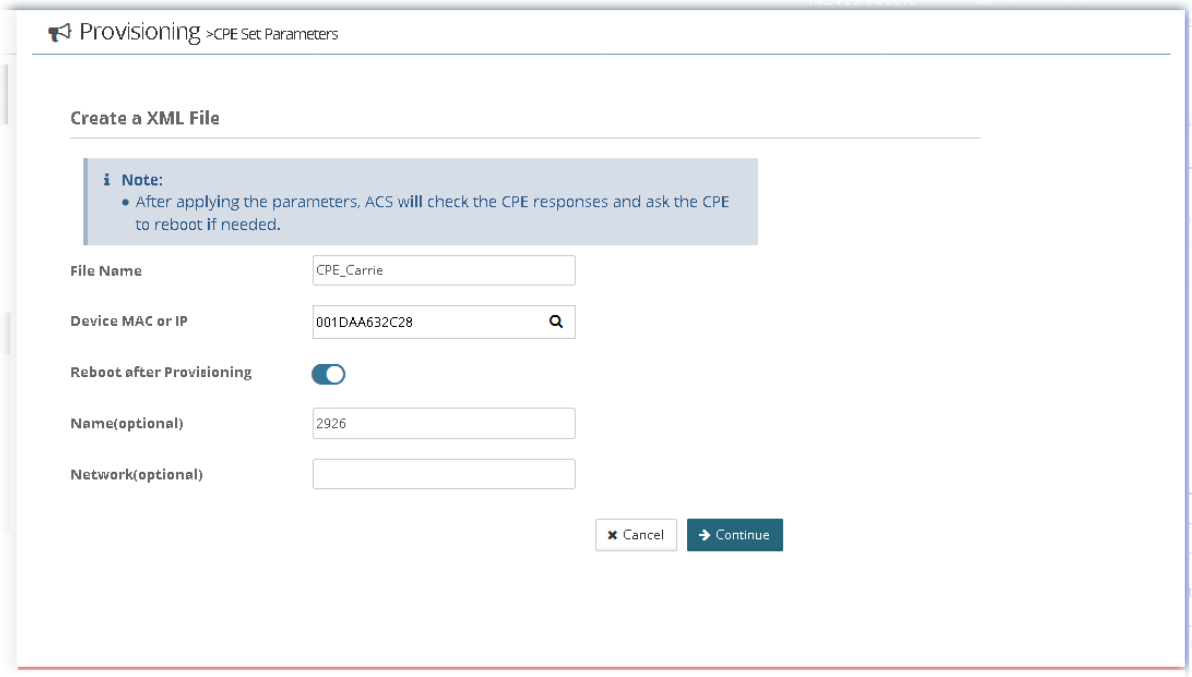


These parameters are explained as follows:

Item	Description
+Add	Click it to create a file saved with the file format of XML.

Action	**Edit -** Click it to configure settings for the selected profile. **Delete -** Click it to delete the profile. **View Log -** Click it to review detailed information for the selected profile. 

The following setting page appears when **+Add** is clicked.

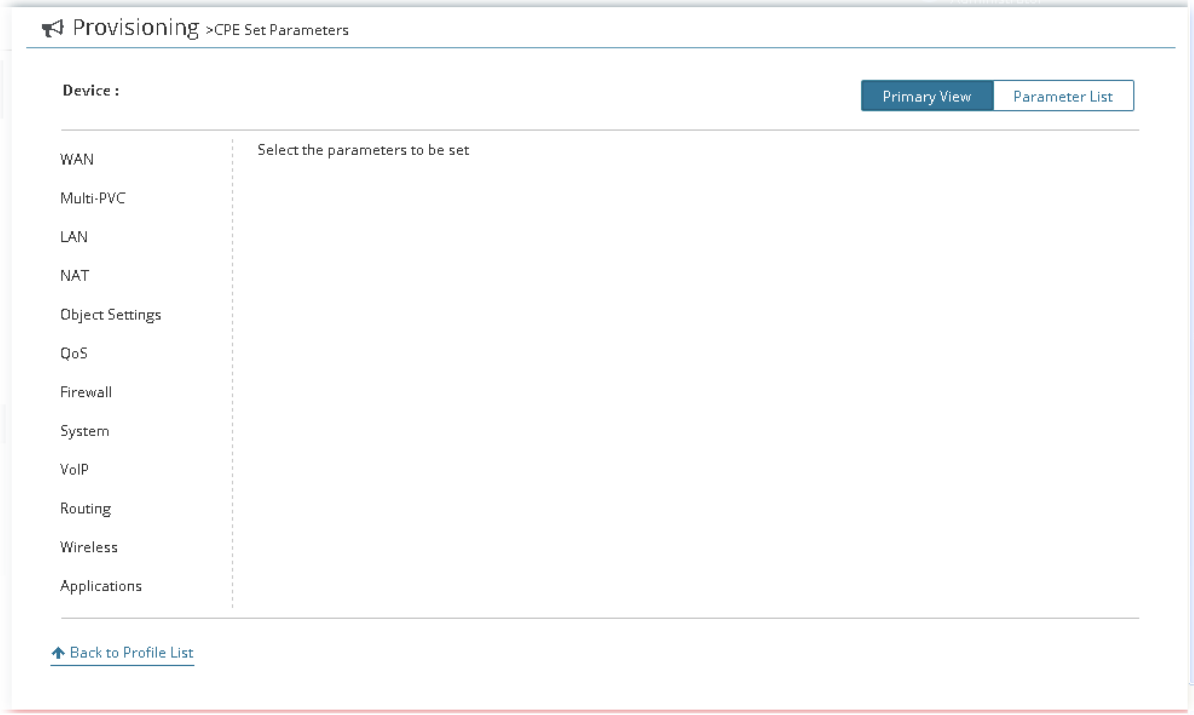


Available settings are listed as follows:

Item	Description
File Name	Type a name for the parameter profile.
Device MAC or IP	Type MAC address or IP address. After typing the address, VigorACS 2 will search from the database and locate the one you specify.
Reboot after provisioning	Enable it to reboot the CPE after the provisioning is applied by certain CPE.

Cancel	Discard current settings.
Continue	Click it to get into next setting page.

The following web page appears after clicking **Continue**.

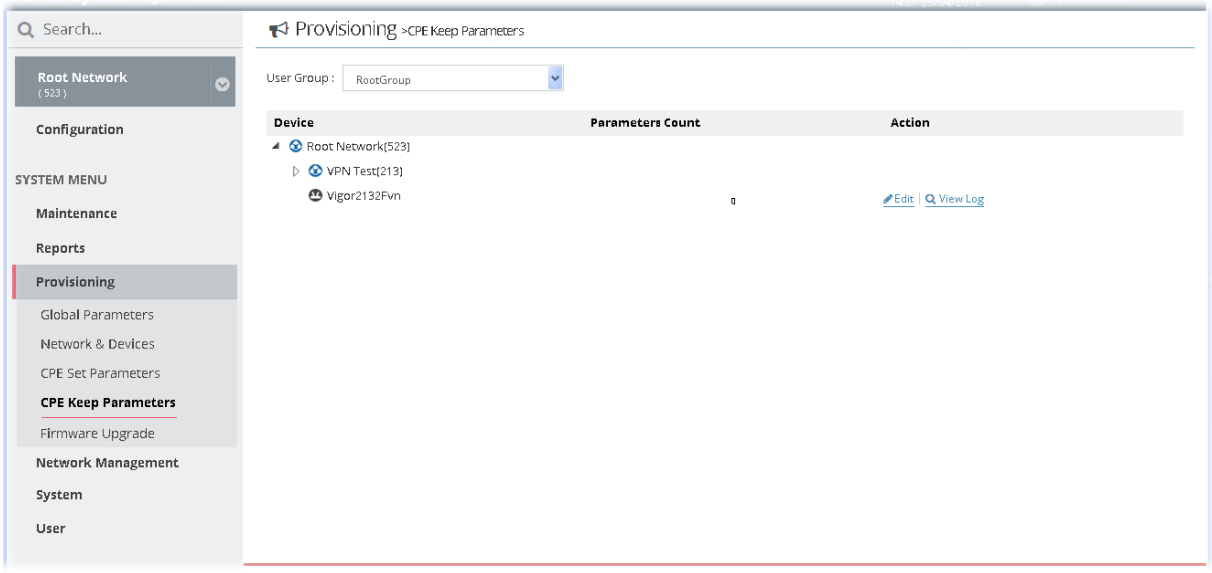


Available settings are listed as follows:

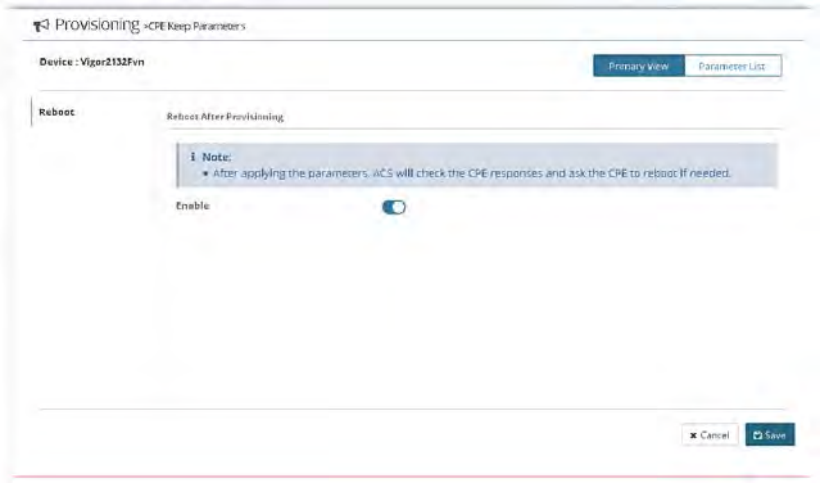
Item	Description
Device	Display the name of the device which will be applied with the parameters configured in this page.
Primary View	Parameters (including WAN, Multi-PVC, LAN, NAT, Object Settings, QoS, Firewall, System, VoIP, Routing, Wireless and Applications) ready for each CPE provision profile can be seen and configured in this page. The setting page for each parameter listed in left side will be displayed on the right side. Simply click the parameter to expand the sub-menu items. Then, choose a sub-menu item and click **+Add** to open setting page. After typing the required information for that menu item, click **Save**.
Parameter List	Display an overview of settings configured in Primary View.
Back to Profile List	Return to Profile List page.

8.4 CPE Keep Parameters

This web page listed the parameters profiles with index number, profile names, and the status of the profile to be kept or not.



These parameters are explained as follows:

Item	Description
Edit	Click it to open the configuration page. 

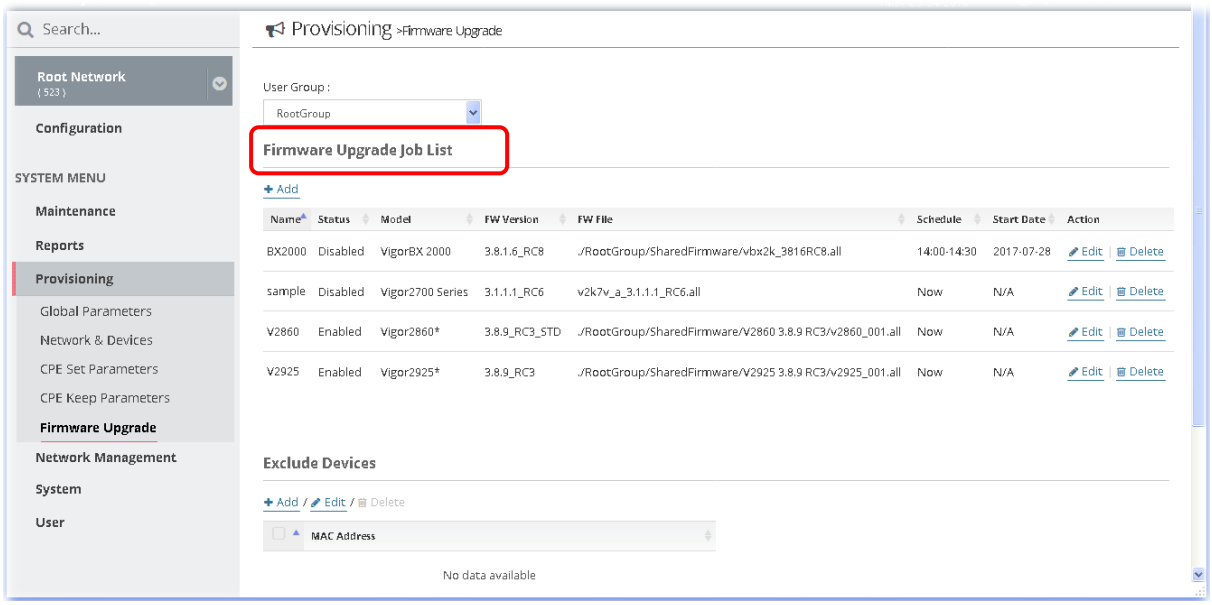
8.5 Firmware Upgrade

When VigorACS server receives information from CPE about firmware upgrade, it will check if the received model name, modem firmware version, and software version correspond to the information recorded in VigorACS server. If everything can match but software version not, VigorACS will judge that the remote CPE requiring firmware upgrade. Next, VigorACS server will execute firmware upgrade with the file listed in Job List automatically at specified time.

Info	The firmware upgrade profile created in such page can be applied to the whole **network / group**. For applying an upgrade provision profile to single and selected **devices** (but not applied to the whole network), please go to **Maintenance>>Firmware Upgrade** for more detailed information.

8.5.1 Firmware Upgrade Job List

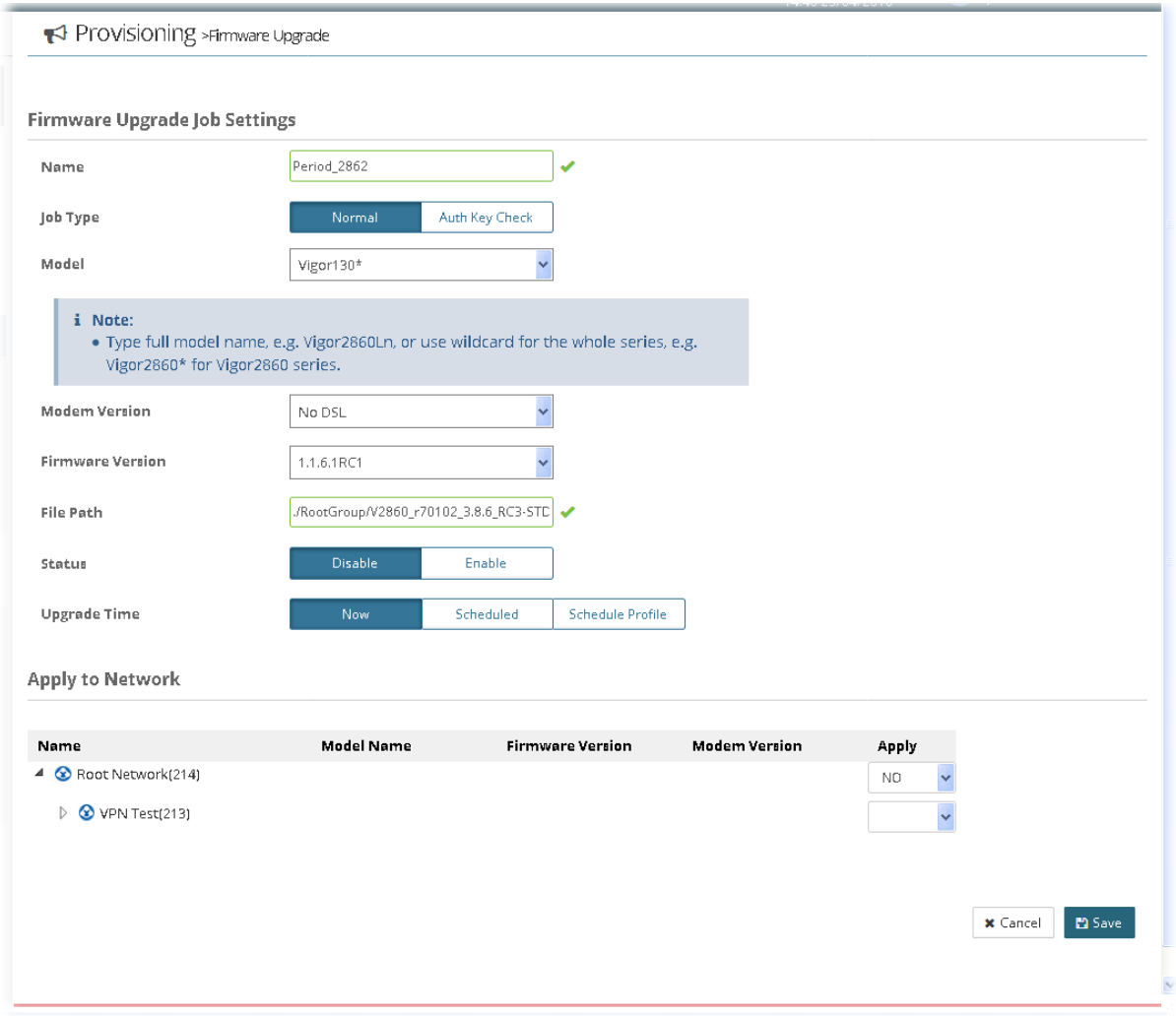
This web page allows you to **specify** required information for matching with the CPE device. The profiles created here will be regarded as a basis that VigorACS server uses to compare information coming from CPE router with the information stored in VigorACS server's database.



These parameters are explained as follows:

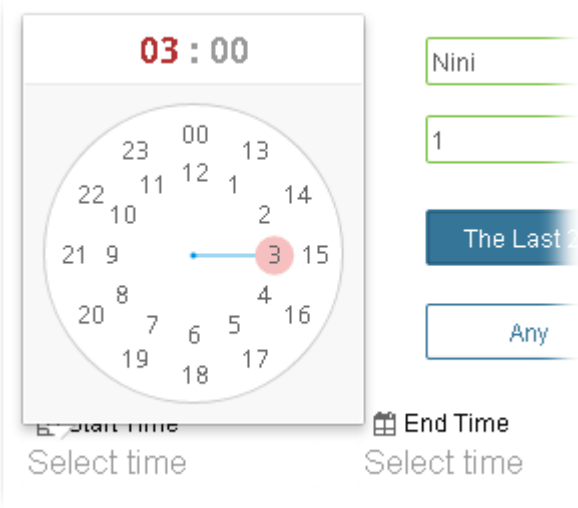
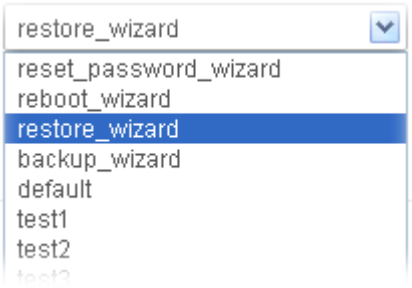
Item	Description
User Group	Specify a user group. The job list under that group will be displayed on this page.
+Add	Click it to create a new job profile.
Edit	Click it to modify, change the selected profile.
Delete	Click it to delete the selected profile.

The following setting page appears when **+Add** is clicked.



Available settings are listed as follows:

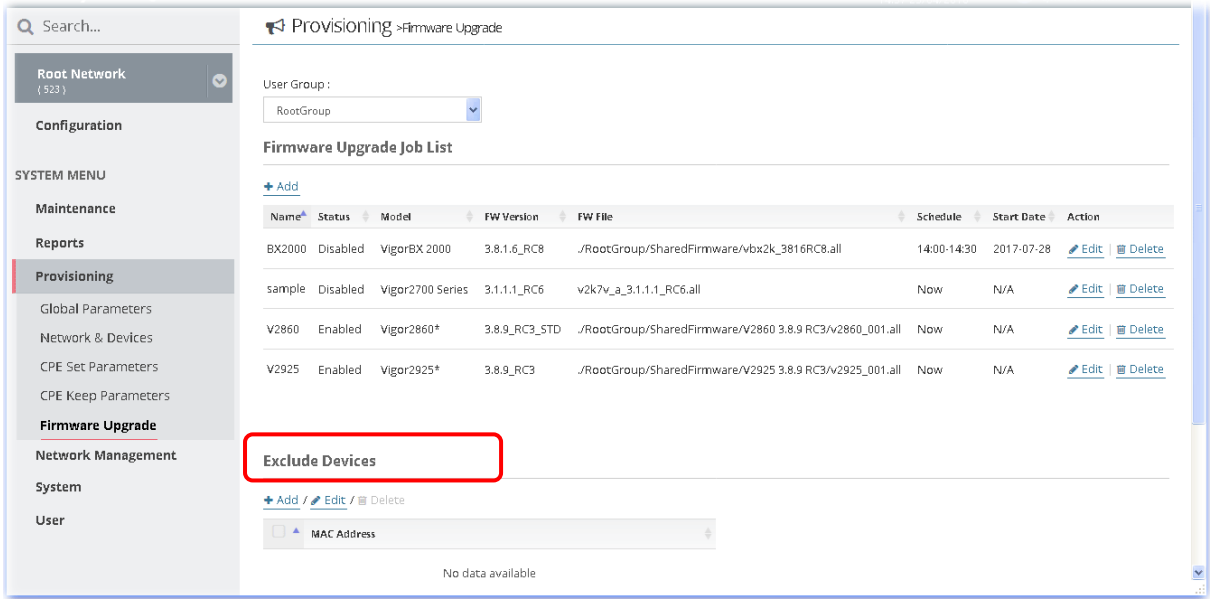
Item	Description
Name	Type a name of the job profile.
Job Type	**Normal** – VigorACS 2 performs firmware upgrade without using any authentication key. **Auth Key Check** – To avoid hacker's attack via Vigor device (router or AP), special authentication key is used for communication between Vigor device and VigorACS 2. That is, VigorACS 2 will verify all of the Vigor devices via authentication key issued by DrayTek to ensure the network security.
Model	Choose a model for firmware upgrade.
Modem Version	Available versions from VigorACS 2 database will be displayed in this field. Choose the correct modem version of the device, e.g., Annex A, Annex B and etc. **Note**: Before performing firmware upgrade for the CPE, VigorACS 2 will check if the received model name, modem firmware version, and software version match with the information recorded in VigorACS 2 server or not. If you type "*" in this filed, the modem version will not be regarded as a comparison condition in the process of firmware upgrade. It will be ignored.

Firmware Version	Available versions from VigorACS 2 database will be displayed in this field. Type the firmware version of the device.
File Path	Available file paths from the computer's server will be displayed in this field. They will be different depending on the user groups.
Status	**Disable** – Firmware upgrade is not allowed for such job profile. **Enable** – Firmware upgrade is allowed for such job profile.
Upgrade Time	Set a time interval for executing the backup work for networks and devices. ● **Now** ● **Scheduled** ● **Schedule Profile**
Scheduled	**Start Time / End Time –** Click **Select time** to display a clock. Set the hour and minutes by clicking the number on the clock.  **Specify Start Date** – Click it to enable the time setting. **Date** – Click it to pop up a calendar to choose a date as the starting date.
Schedule Profile	**Trigger Profile –** Choosing a trigger profile from the drop down list. In which, VigorACS 2 offers default schedule profile. 
Apply to Network	It is available when **Normal** is selected as Job Type. **Model Name** – Display the model name for identification. **Firmware Version** – Display the firmware version that the model used currently. **Apply** – Click **YES** to select the device. Firmware upgrade will be executed for the models with YES selected.

For Auth Key Check	It is available when **Auth Key Check** is selected as Job Type. In general, newest released firmware for DrayTek device contains “Auth Key”. Therefore, the network administrator shall determine which CPE device required to execute firmware upgrade for owing the “Auth Key”. This area is used to specify which CPE device required to execute firmware upgrade for having Auth Key. **Model Name** – Display the model name for identification. **Firmware Version** – Display the firmware version that the model used currently. **Apply** – If the device does not have Auth key, choose **YES** to carry out firmware upgrade for that device automatically when it tries to communicate with VigorACS 2. If the device has Auth key, choose **NO** for it is not necessary to perform firmware upgrade.
Cancel	Discard current settings and return to previous page.
Save	Save the current settings and exit the page.

8.5.2 Exclude Devices

Not all the CPEs controlled by VigorACS 2 need to upgrade firmware at any time. VigorACS 2 provides excluding mechanism for the CPEs that do not need to upgrade firmware. This web page allows you to set excluded CPEs for firmware upgrade. Simply type the MAC address of the CPE on MAC address field and click **Save**. The one will be shown on the list. Next time, if you want to make firmware upgrade for the specified CPE, simple open this page and remove the item.



These parameters are explained as follows:

Item	Description
+Add	Click it to create a new profile.
Edit	Click it to modify, change the selected profile.
Delete	Click it to delete the selected profile.

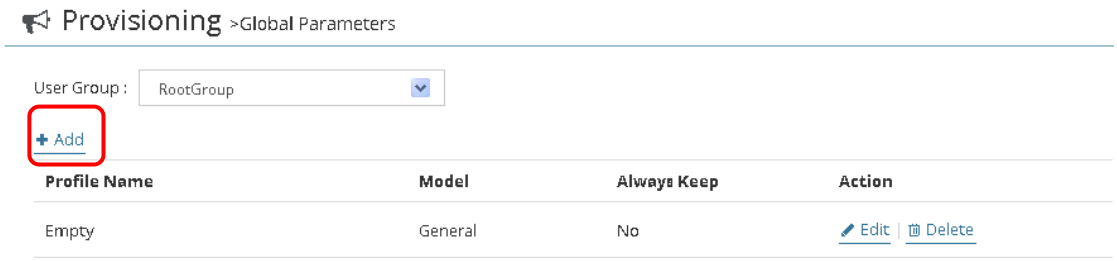
To exclude devices from firmware upgrade, click **+Add** under Exclude Devices field. An input box appears as listed below. Type the MAC address of the device and click **Save**.

Now, firmware upgrade for the devices with MAC addresses listed in the table of **Exclude Devices** will not be executed by VigorACS.

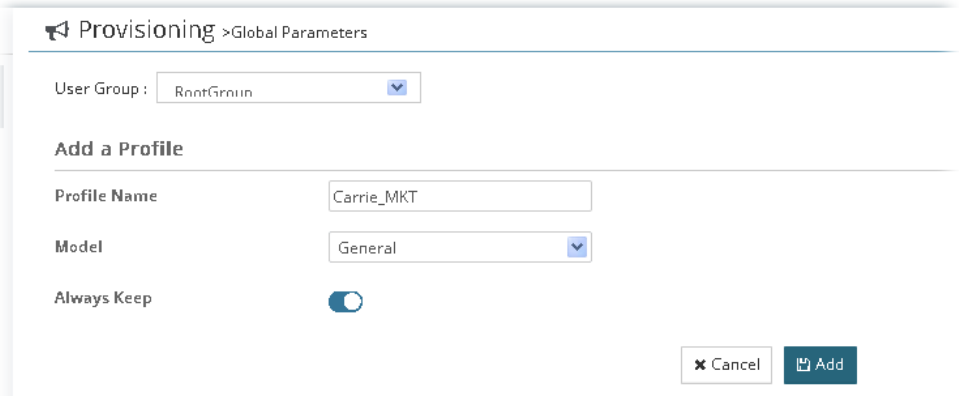
Applications

A.1 How to Create a Provision Profile with Global Parameters?

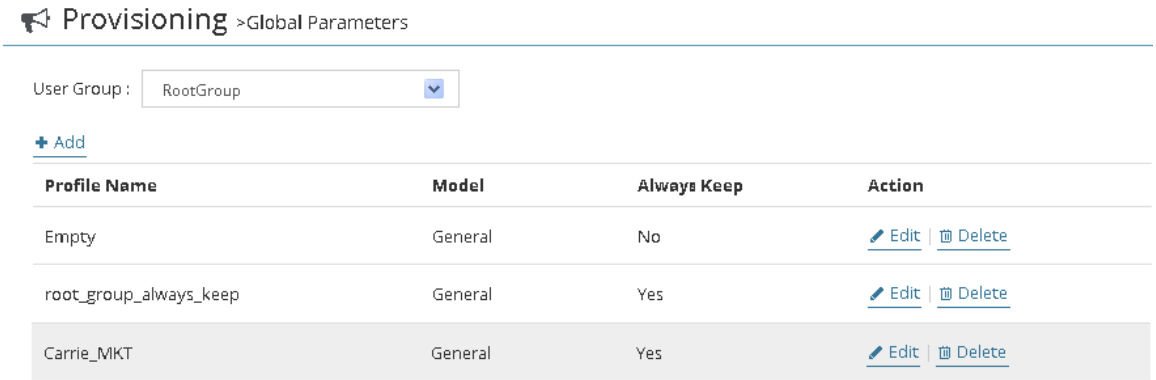
1. Open **SYSTEM MENU>>Provisioning** and choose **Global Parameters**.
2. Click **Add**.



3. From the following window, type the profile name, choose the suitable model and enable the function of keeping the parameters

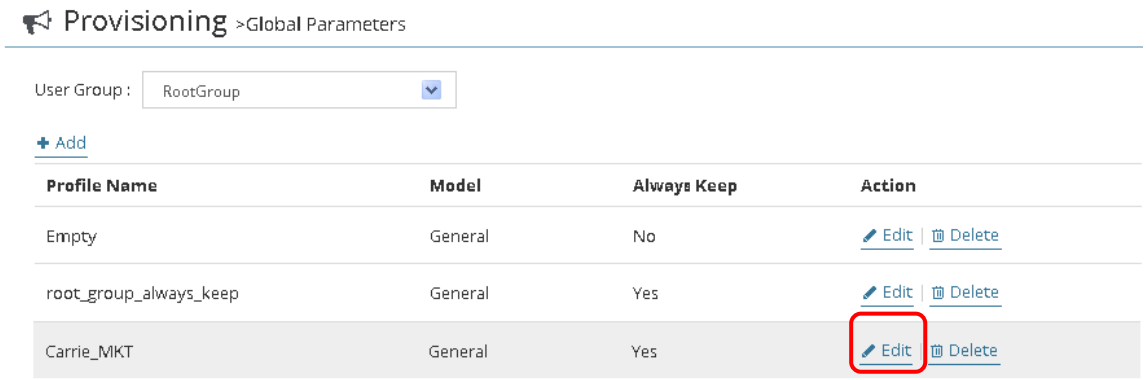


4. After finished the settings, click **Add**. The new profile will be displayed on the web page.

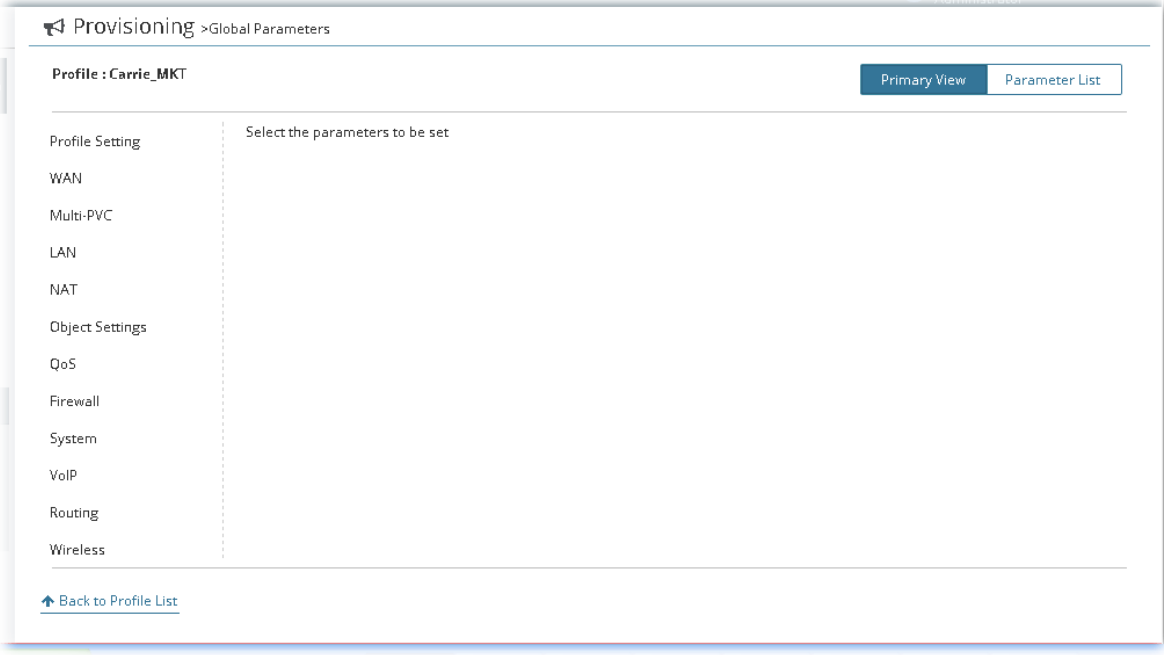


A.2 How to Modify Provision Profile with Global Parameters?

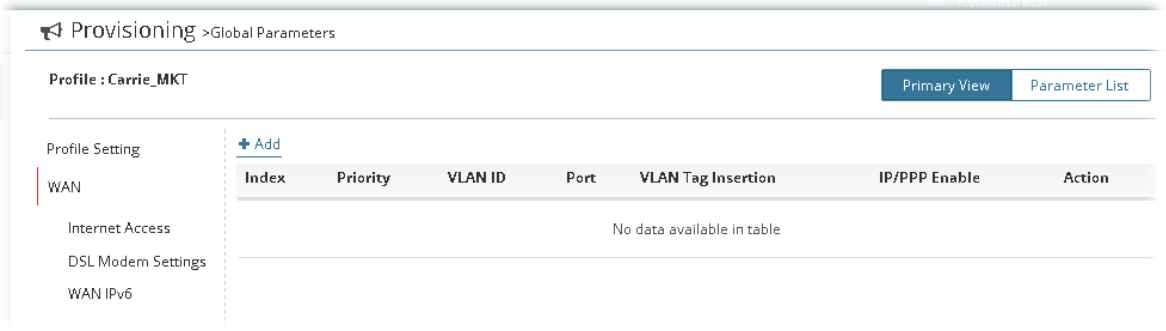
1. Open **SYSTEM MENU>>Provisioning** and choose **Global Parameters**.
2. Choose the profile (e.g., Carrie_MKT) you want to modify and click **Edit.**



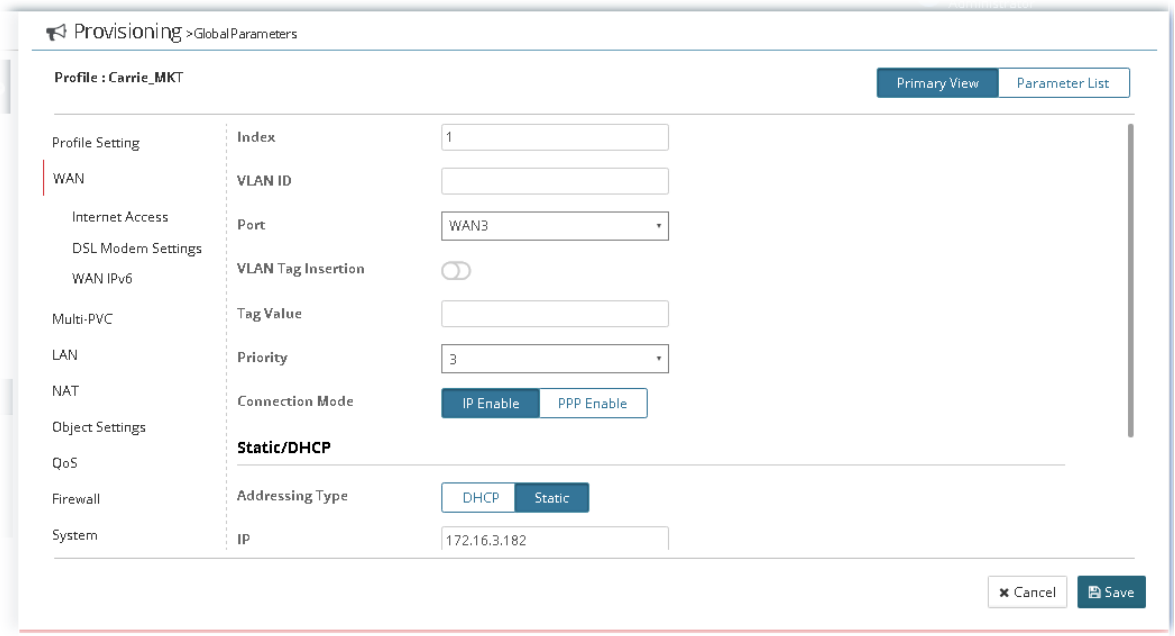
3. The following page displays available parameters for the profile.



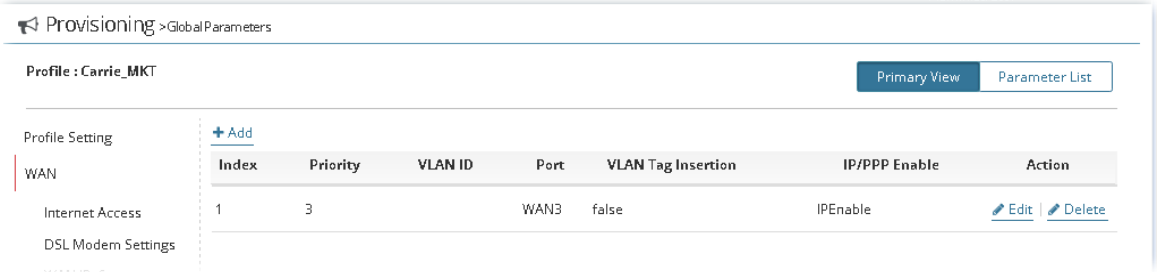
4. Here we take WAN as an example. Click **WAN>>Internet Access**. A setting table will be shown as follows. Click **+Add**.



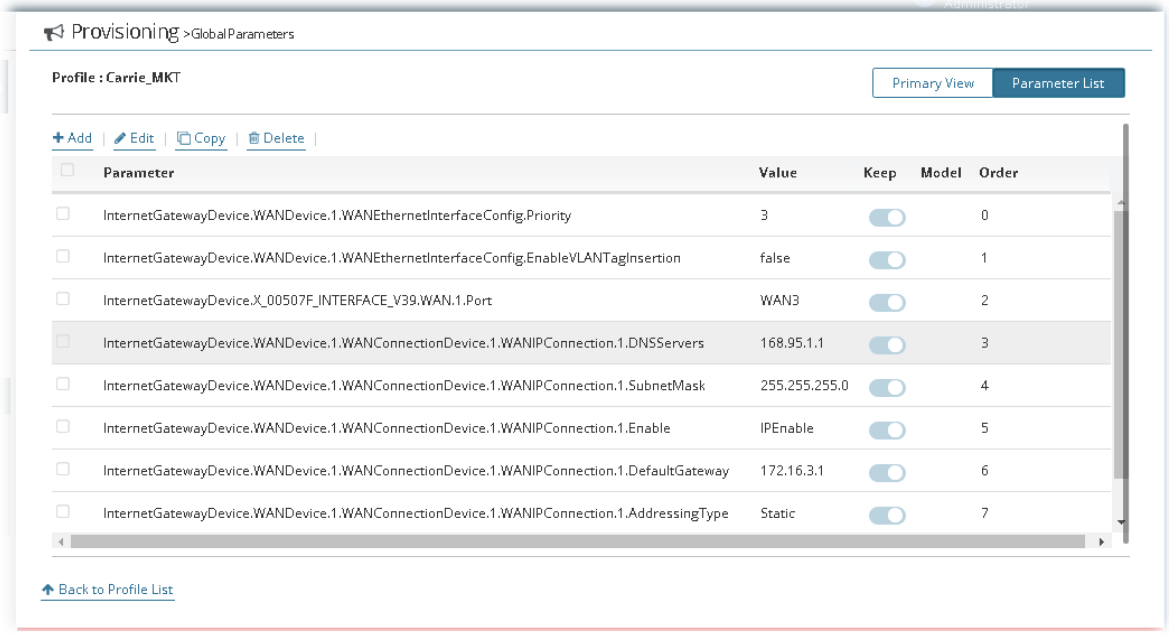
5. Available settings will be shown as below.



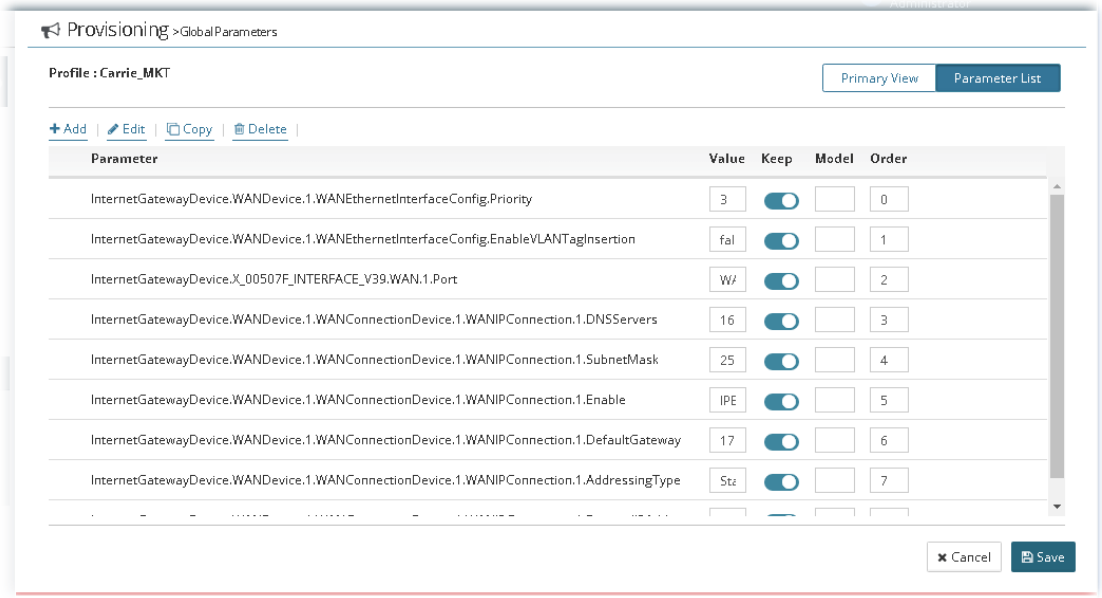
6. After finished the settings, click **Save**. WAN configuration for the CPE parameters has been created.



7. If required, click **Parameter List** to have an overview of settings (e.g., WAN) configured in Primary View.



8. Click the **Edit** link in this page to modify the **Value, Keep status, Model** and **Order** if you are not satisfied with the configuration above and want to make change. After finished the changes, click **Save**.



Info

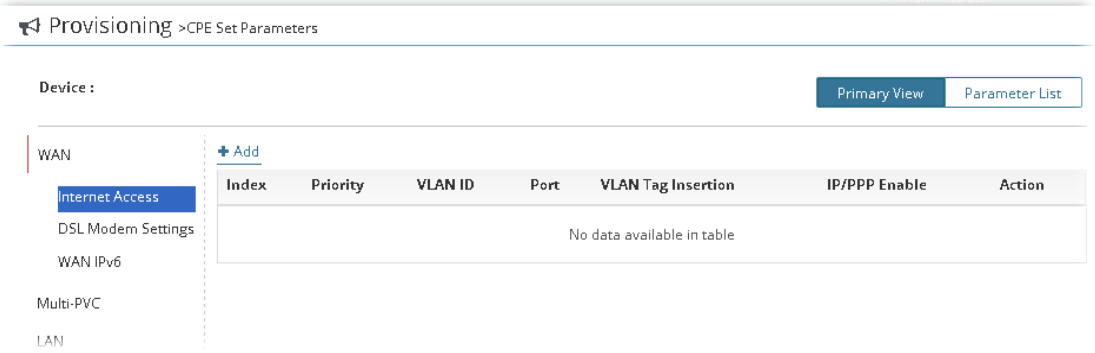
For the detailed information of parameters definition, refer to User's Guide of each device if required.

A.3 How to Modify Provision Profile with CPE Set Parameters?

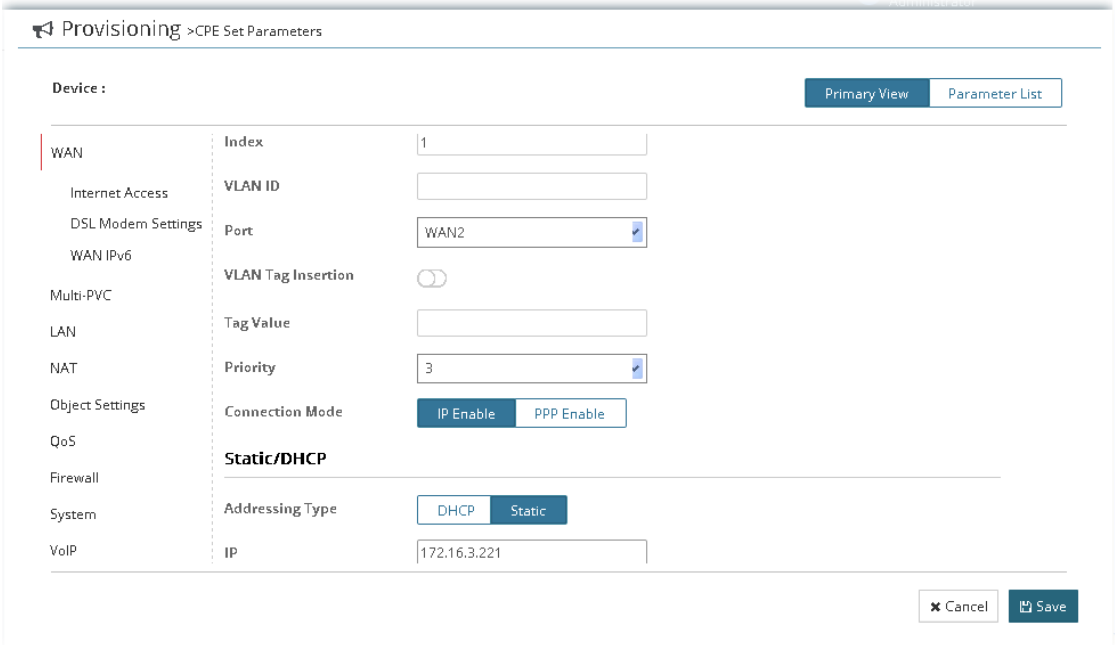
Basically, parameters to be edited in **CPE Set Parameters** are the same as the settings in Vigor CPE/AP device. To the administrator, **CPE Set Parameters** is a convenient tool which can be used to add/edit settings for the devices without accessing into the web page of Vigor CPE/AP device directly.

Here we take **WAN>>Internet Access** as an example.

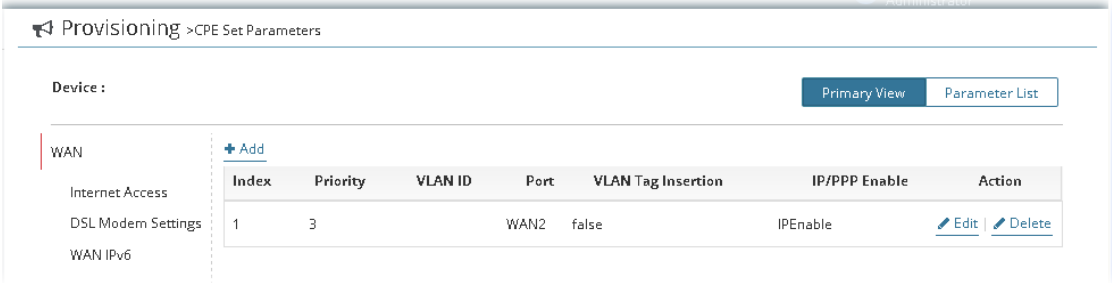
1. Click **WAN>>Internet Access**. A setting table will be shown as follows.



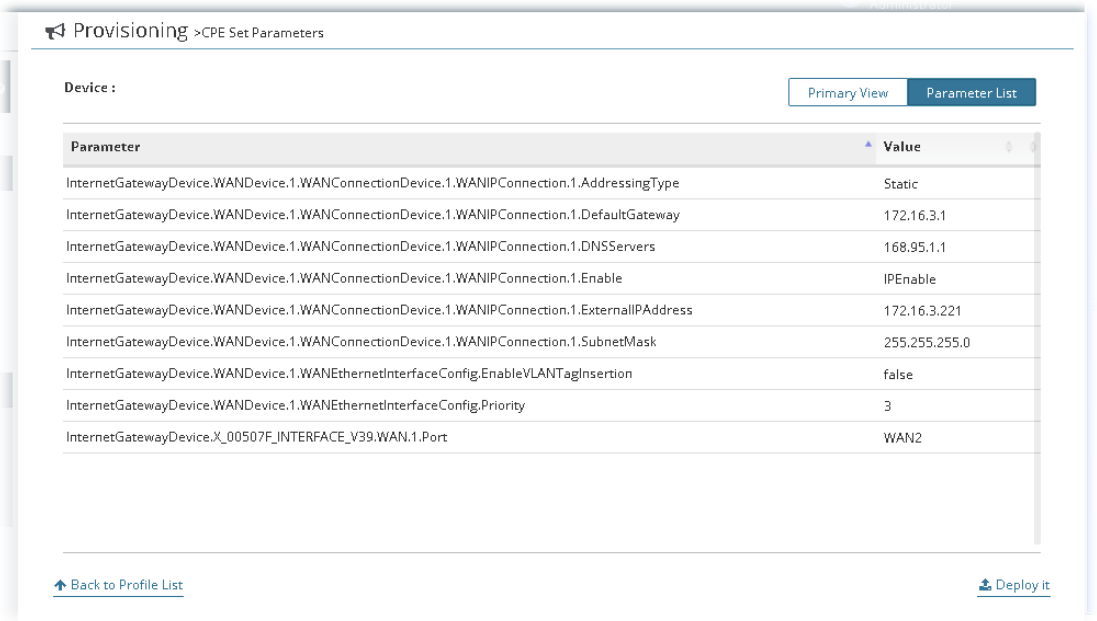
2. Click **+Add**.
3. Available settings will be shown as below.



4. After finished the settings, click **Save**. WAN configuration for the CPE parameters has been created.



5. If required, click **Parameter List** to have an overview of settings (e.g., WAN) configured in Primary View. Click **Deploy it** to save the changes.



Info For the detailed information of parameters definition, refer to User's Guide of each device if required.

Chapter 9 Reports

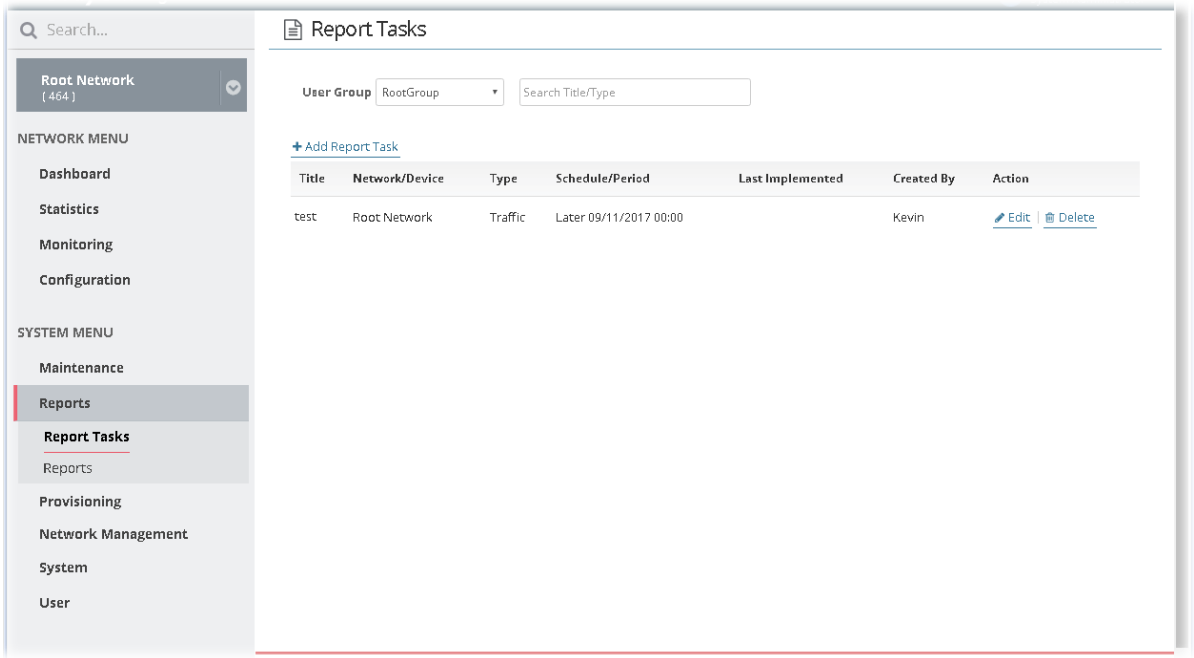
DrayTek VigorACS2

VigorACS allows you to create reports with PDF files.

9.1 Report Tasks

VigorACS will send reports to certain users periodically based on the report task profile defined in this page. The report task profile can be configured what kind of data (e.g., LAN statistics, traffic or firmware used) will be recorded, with different CPE, content of report, time, recipient, and so on.

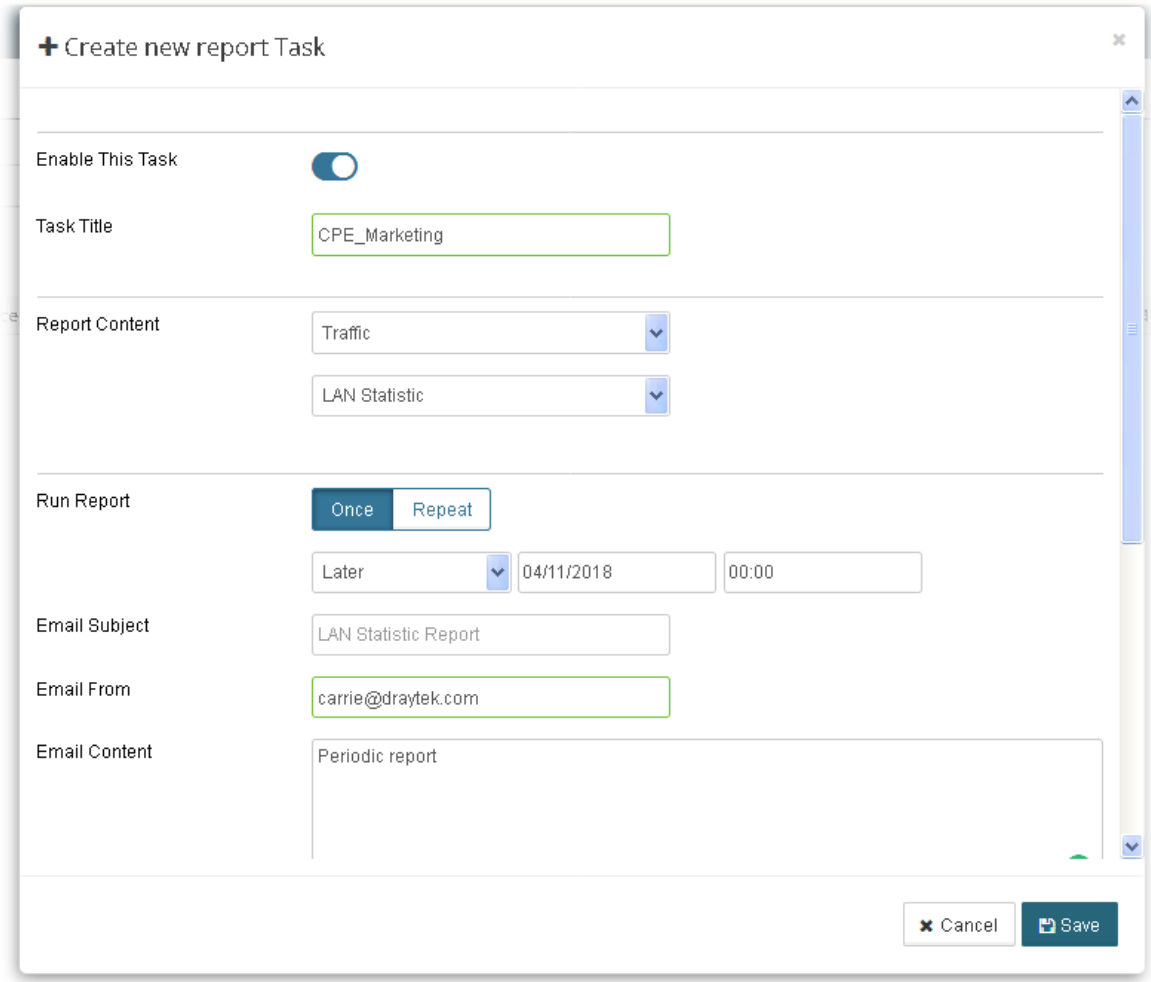
Open **SYSTEM MENU>>Reports>Reports Tasks** to get the following page.



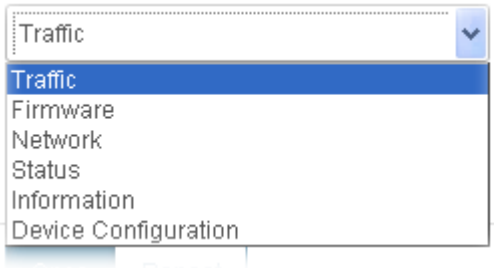
Available settings are listed as follows:

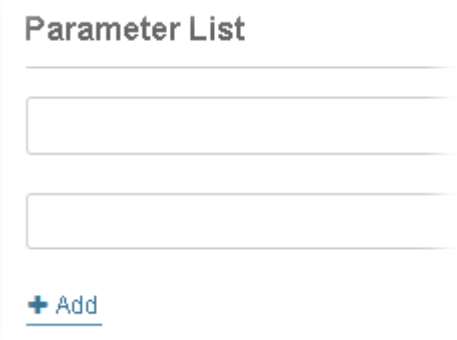
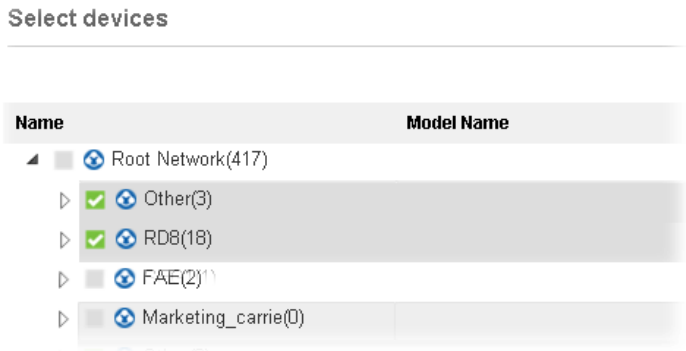
Item	Description
User Group	Use the drop down list to choose a group (e.g., RootGroup). Only the report task profiles defined for the selected user group will be shown on this page. If there is "no" profile displayed for the selected group, you may click the link of **+Add Report Task** to create a new one.
+Add Report Task	Click it to create a new report task for specified CPE.
Action	**Edit** – Click it to modify an existing report task. **Delete** – Click it to remove the selected report task.

The following setting page appears when **+Add Report Task** is clicked.



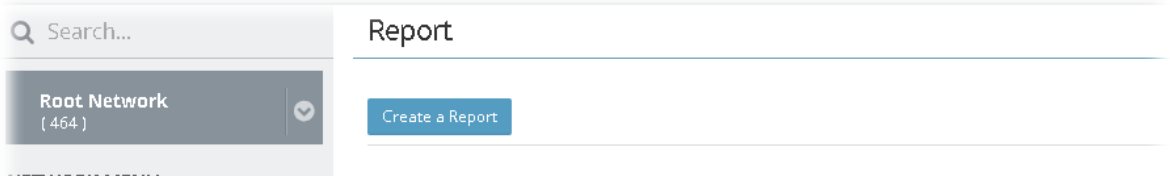
Available settings are listed as follows:

Item	Description
Enable This Task	Enable this feature to make the system send report e-mail to the recipient on schedule.
Task Title	Enter a name for such report task profile.
Report Content	At present, VigorACS offers five types of report, including traffic, firmware, network, status, information and device configuration.  Use the scroll bar to choose the type you want and select an option for that type. Select the way (statistic or graph) to show the report.
File Type	Such option is available when Device Configuration is selected as Report Content. Choose PDF or CSV as the file format for device configuration report.

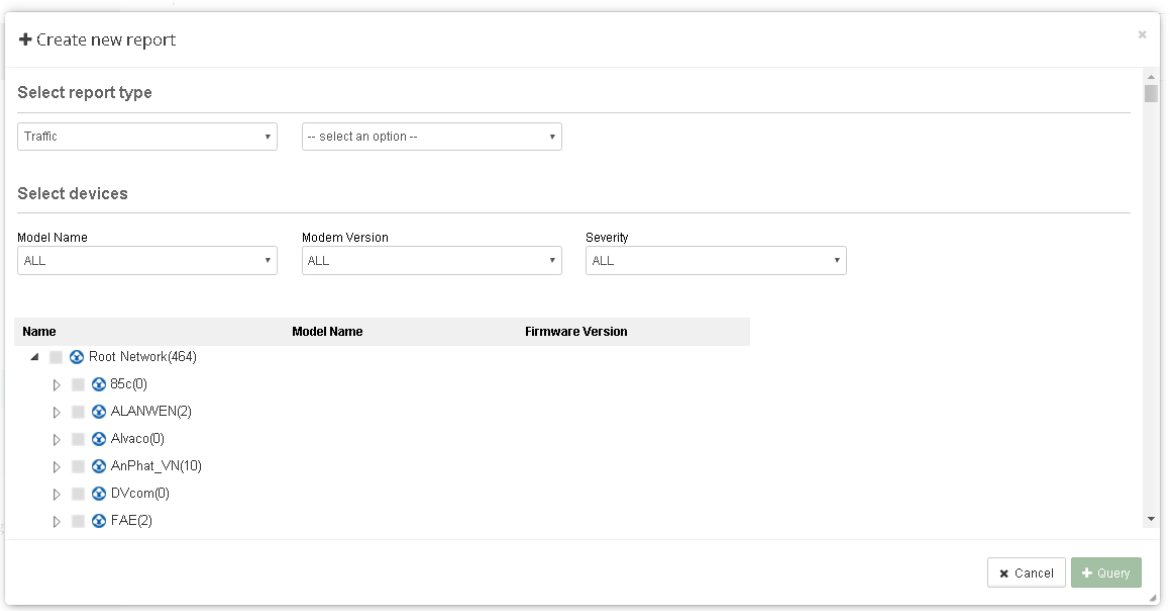
Parameter List	Such option is available when Device Configuration is selected as Report Content. Enter the TR-069 parameter on the entry box and click +Add. Later, the report will be created with the configuration of the specified parameters listed in Parameter List. 
Run Report	Once – The report will be made just for one time. Repeat – The report will be made repeatedly.
Email Subject	Specify the subject for the email.
Email From	Enter the email address of the sender.
Email Content	Enter the content of the email.
Email To	Enter the email address of the recipient. **+Add recipient** – If there is more than one recipient for adding, click such link to have more entry box(es) for adding more recipients.
Select devices	Only the CPEs under the selected User Group (e.g., RootGroup in this case) will be shown in this field. Check the box to the left of the network group to select the device(s) you want to make report. 
Save	Save the settings and return to previous page.

9.2 Reports

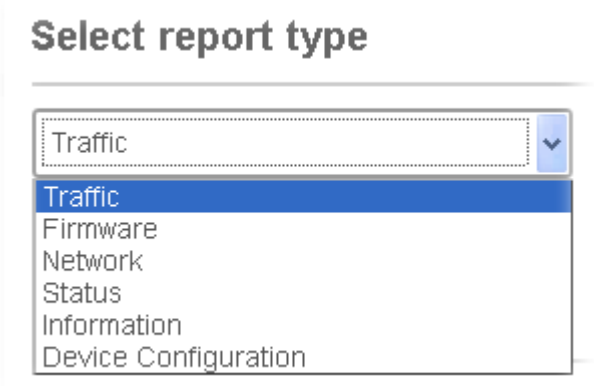
This function can print out VigorACS report based on the settings configured in this web page.



Simply click **Create a Report** to get the following page.



Available settings are listed as follows:

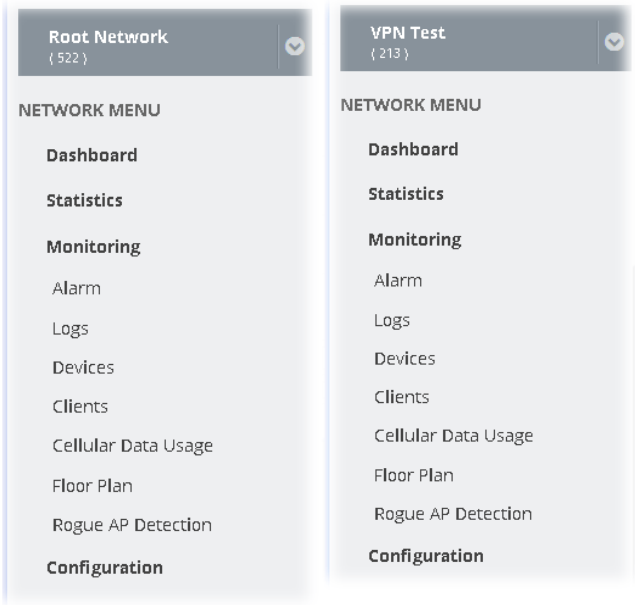
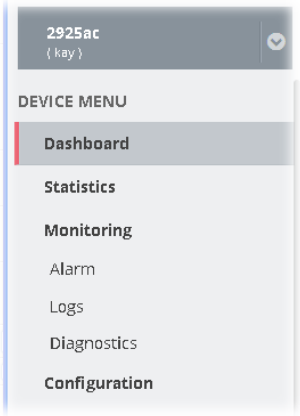
Item	Description
Select report type	At present, VigorACS offers five types of report, including traffic, firmware, network, status, information and device configuration.  Use the scroll bar to choose the type you want and select an option for that type.

Select devices	**Model Name** – All of the model names will be displayed in this field. Select the one you want. The default is "All". All of the model names will be seen on the bottom of this page. **Modem Version** – The default is "All". However, some models do not have modem version, choose "No DSL" instead. **Severity** – Specify the severity of the selected device(s).
Name	The models displayed here depend on the conditions set in **Select devices.**
Query	After specifying the conditions (report type, device selection…), click **Query** to create a new report. **Create a Report** – This button appears after the first report created. If required, click it to create more reports for reference. **Report 1/ Report 2 …** - Each tab represents different reports created.

Part IV NETWORK MENU for Root Network (VPN and AP Management)

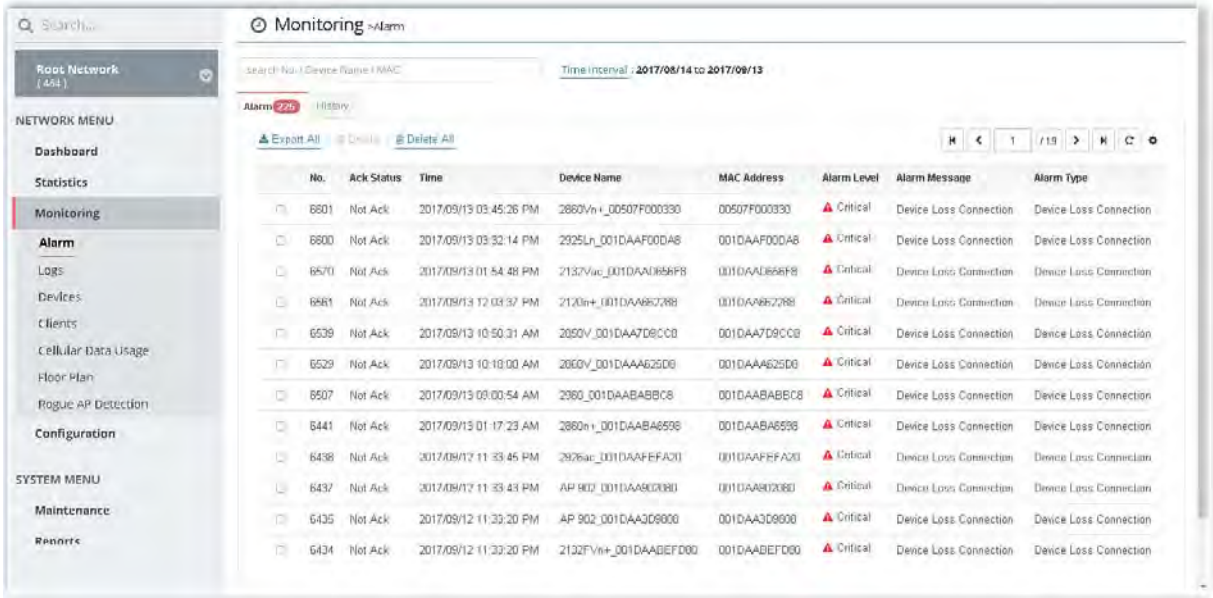
Chapter 10 Monitoring for Network

Monitoring menu offers Alarm, Logs and Diagnostics for monitoring the normal and abnormal actions for CPE. Monitoring settings will vary for NETWORK MENU and DEVICE MENU.

Settings to be configured under Root Network / Group	Settings to be configured when a CPE is selected
	

10.1 Alarm

Alarm message will be recorded on VigorACS 2 server when there is a trouble happened to the device (CPE). Only the users within the same user group will be notified for the message.

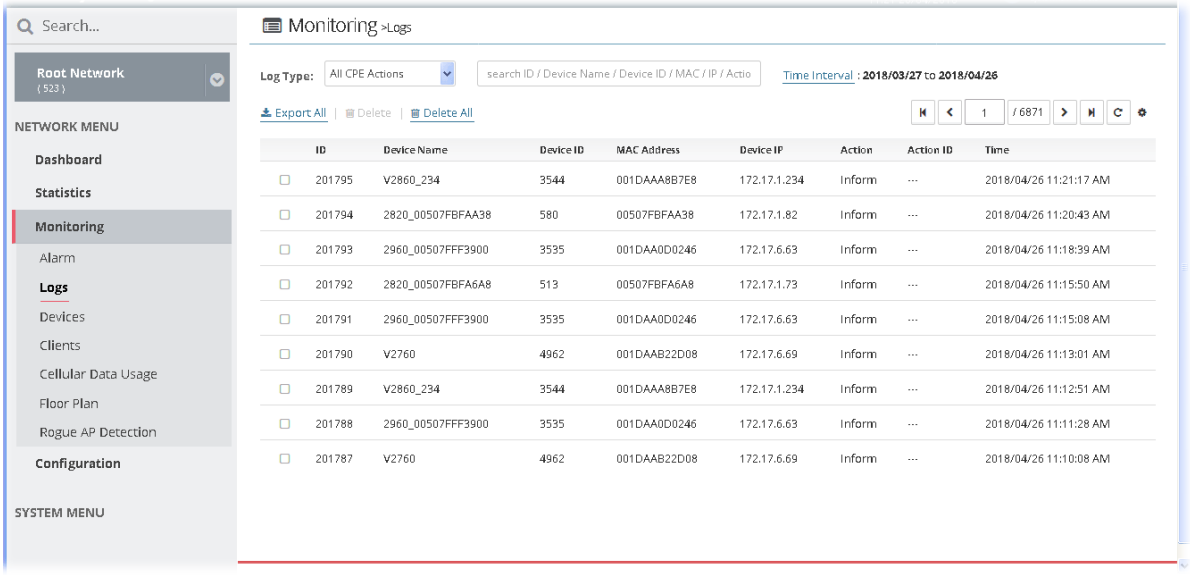


These parameters are explained as follows:

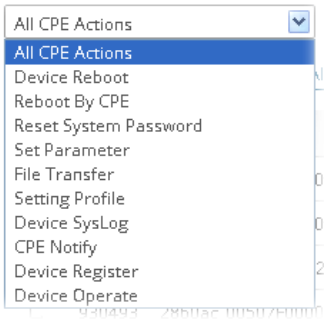
Item	Description
Alarm / History	**Alarm –** Display the alarm records recently. **History –** Display all the alarm records that have been solved and cleared.
Export All	Click this button to save alarm log as a XLS file.
Delete	Clear the alarm record which has been solved by VigorACS 2.
Delete All	Clear all of the alarm records which have been solved by VigorACS 2.
No.	Display the index number of the alarm. It is offered by VigorACS 2 automatically.
Ack Status	Display the status of the records with the type specified here (Not Ack or Acked).
MAC Address	Display the MAC address of the monitored device.
Alarm Level	Display the alarm message with the severity (e.g., Critical) specified.
Alarm Message	Display a brief explanation for the alarm sent by VigorACS 2 automatically.
Alarm Type	Display the alarm message with the type specified.

10.2 Logs

Log provides administrator records for action executed, device name, MAC address, Device IP, CommandKey, and Current Time for CPE device managed and monitored by VigorACS.



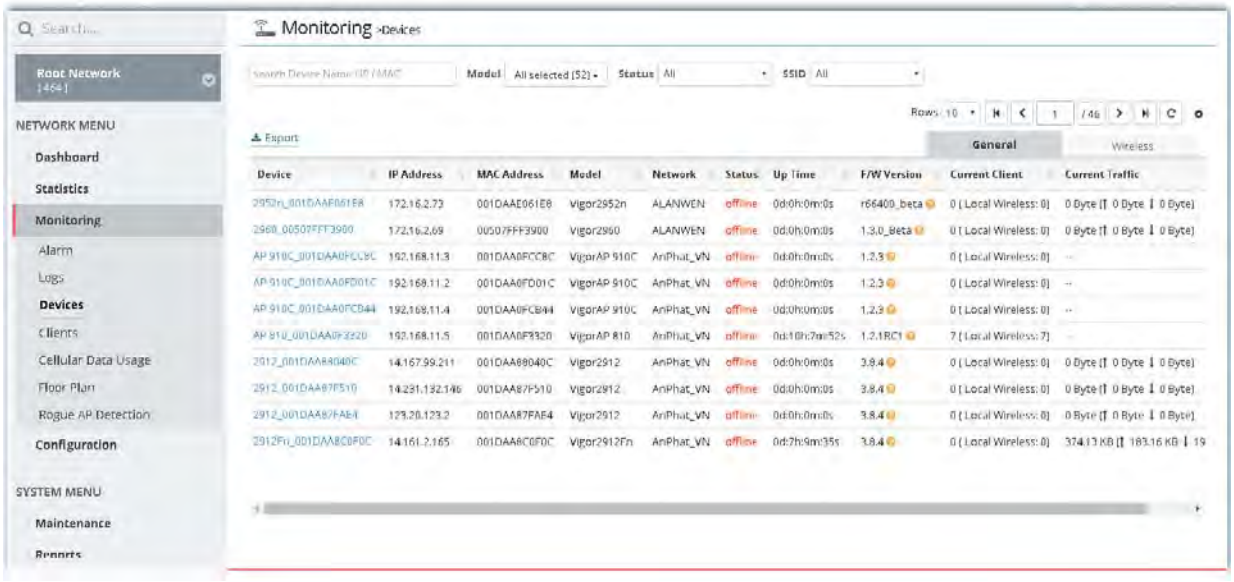
These parameters are explained as follows:

Item	Description
Log Type	Choose one of the conditions to display related log on this page. 
	Enter the condition for VigorACS to search and display relational information.
Export All	Click this button to save alarm log as a XLS file.
Delete	Clear the alarm record which has been solved by VigorACS.
Delete All	Clear all of the alarm records which have been solved by VigorACS.

10.3 Devices

The administrator (user) can check information (such as Device name, IP address, MAC address, model name, network, status, up time, firmware version, number of current connected client, data traffic, and so on) of CPE under the selected network group by this page. The network group (e.g., Root Network in this case) selected on left side is the group to be monitored and information related to this selected network group will be shown on right side.

Simply open NETWORK MENU>>Monitoring>>Devices to get the following page.



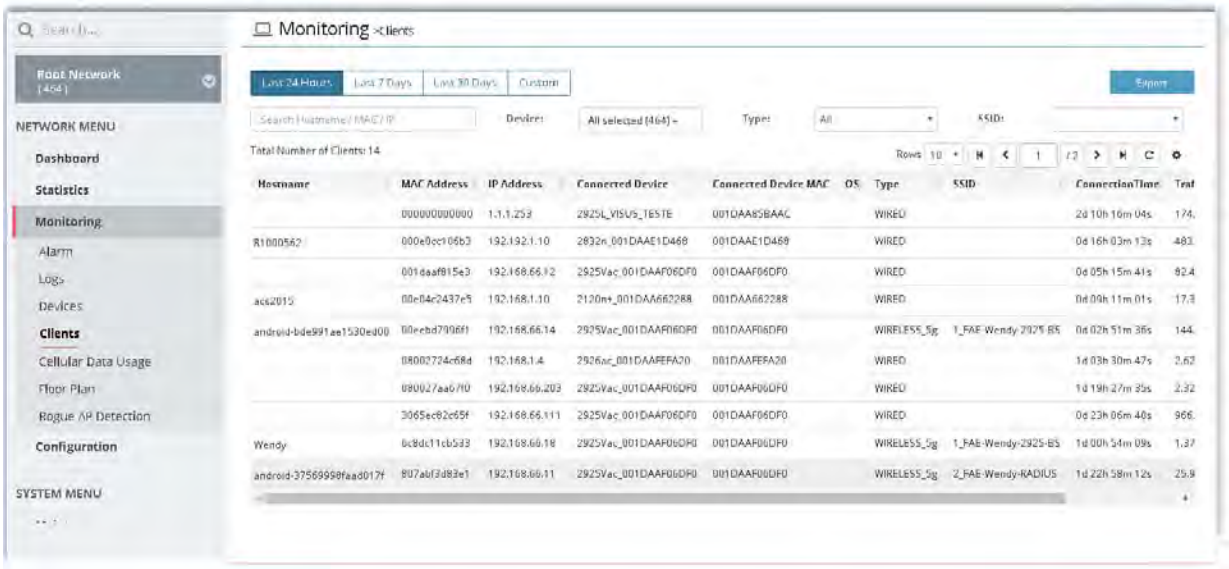
These parameters are explained as follows:

Item	Description
search Device Name / IP / MAC	Enter the condition for VigorACS to search and display relational information.
Model	This area lists all of the devices that monitored by VigorACS. Check **Select all** to display information for all of the devices; or check the name of the device to display the information related to the selected device.
Status	**Online** – This page displays information for the device which is online currently. **Offline** – This page displays information for the device which is offline currently. **All** – This page displays information for all of the devices no matter it is online or offline.
SSID	This area lists information for CPE with wireless features monitored by VigorACS. Check **All** to display all of the devices; or check the name of the device to display the information related to the selected device. **SSID** - SSIDs for CPE with wireless features will be displayed in this drop down list. Choose one of the SSIDs. Information related to the selected SSID will be displayed on this page.
General / Wireless	**General** – List the general information for the CPE under the selected group. **Wireless** – List only the wireless information for the CPE under the selected group.

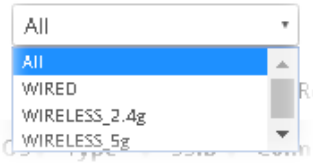
Click the **Export** link to export information for monitored devices as ".xls" file.

10.4 Clients

This page displays general information (such as hostname, MAC address, IP address, name of connected device, type, SSID, connection time, and etc.) for wireless / wired clients which connect to CPEs under the selected network group by this page. The network group (e.g., Root Network in this case) selected on left side is the group to be monitored and information related to this selected network group will be shown on right side.



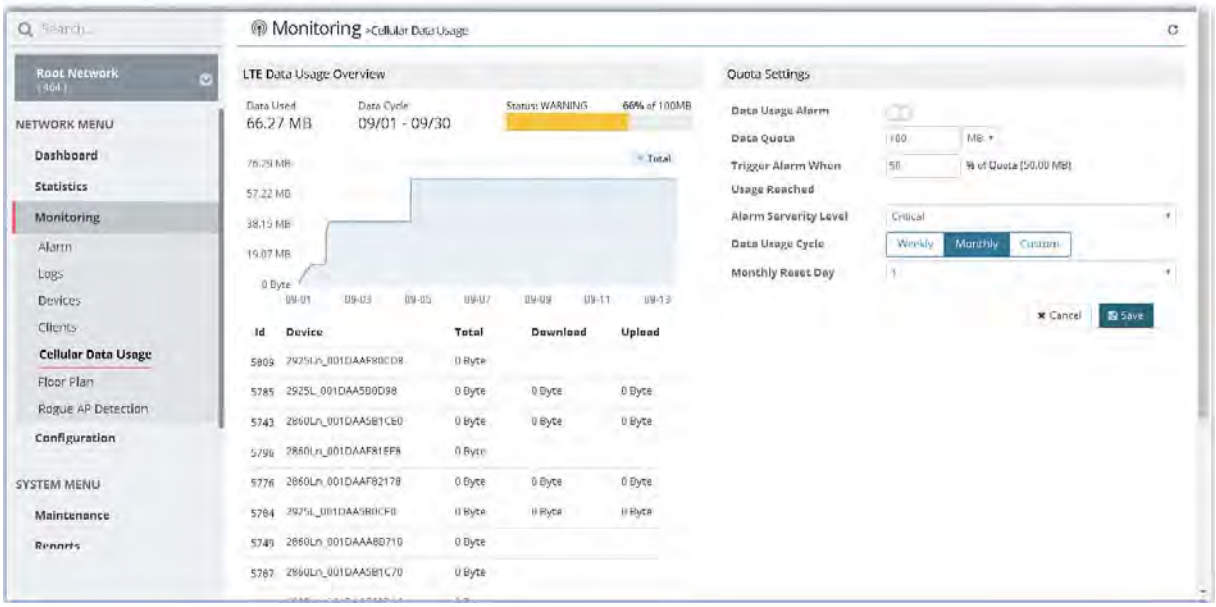
These parameters are explained as follows:

Item	Description
Last 24 Hours / Last 7 Days / Last 30 Days / Custom	Display the clients detected within 24 hours, 7 days, 30 days or user defined days.
search Device Name / IP / MAC	Enter the condition for VigorACS to search and display relational information.
Device	This area lists all of the devices (under the selected network group) that monitored by VigorACS. Check **All selected** to display information for all of the devices; or check the name of the device to display the information related to the selected device.
Type 	Check **All** to display information for all of the devices (including wired and wireless devices). **Wired** – This page displays information for the device without wireless feature. **Wireless_2.4g** – This page displays information for the device with 2.4GHz wireless feature. **Wireless_5g** – This page displays information for the devices with 5GHz wireless feature.
SSID	This area lists information for CPE with wireless features monitored by VigorACS. Check **All** to display all of the devices; or check the name of the device to display the information related to the selected device. **SSID** - SSIDs for CPE with wireless features will be displayed in this

	drop down list. Choose one of the SSIDs. Information related to the selected SSID will be displayed on this page.

10.5 Cellular Data Usage

This page displays traffic information including data used, data cycle, status, percentage, downloaded data, uploaded data for device equipped with LTE features (such as Vigor2925Ln, Vigor2860Ln and so on). The values defined in **Quota Settings** indicate total amount of quota for all LTE devices managed by VigorACS.



These parameters are explained as follows:

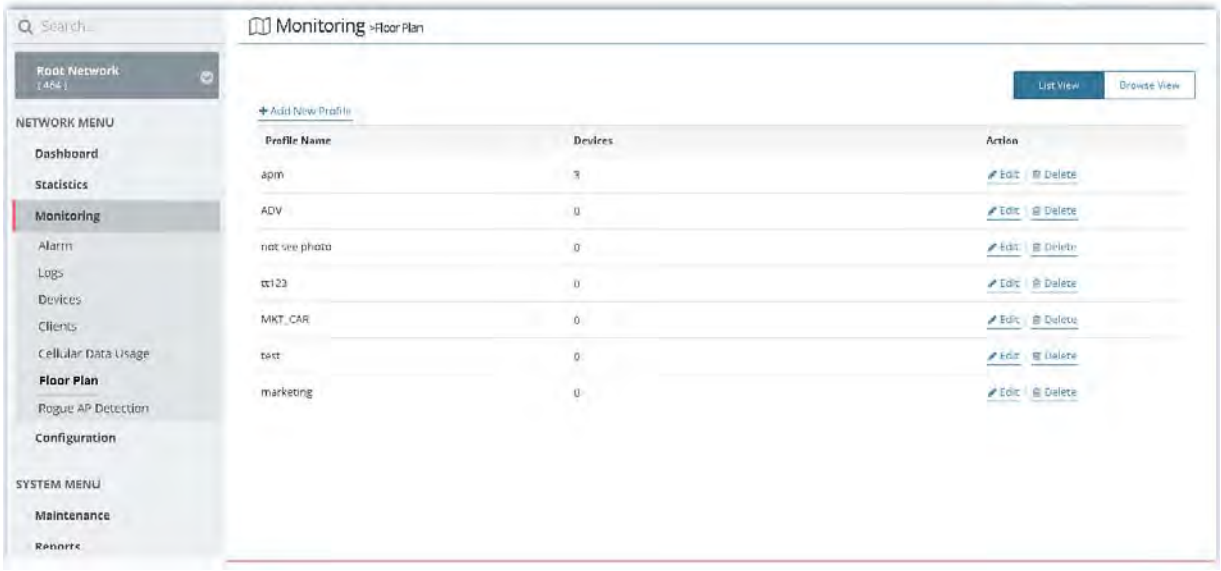
Item	Description
LTE Data Usage Overview	**Status** - The bar chart displays the data usage in yellow, green and grey based on values defined in **Quota Settings**. If data usage for the LTE model exceeds the percentage of quota configured in the field of **Trigger Alarm When Usage Reached** in Q**uota Settings**, the amount of used data will be shown in Yellow; if not, it will be displayed in Green. The rest quota will be shown in gray. In addition, device name, throughput, downloaded data and uploaded data for each LTE can be seen on the table below this page.
Quota Settings	
Data Usage Alarm	When it is enabled, a warning message will be shown in the page of **DEVICE MENU>>Monitoring>>Alarm** once the data usage reaches the threshold defined in **Trigger Alarm When Usage Reached**.
Data Quota	The value (unit is MB/GB) defined here means total amount of data quota available for all LTE devices managed by VigorACS.
Trigger Alarm When Usage Reached	Set a threshold for triggering alarm mechanism.
Alarm Severity Level	Set the alarm severity (critical, major, minor, warning and normal). Such severity will be shown on **DEVICE MENU>>Monitoring>>Alarm** when the data usage for LTE model(s) reaches the threshold.

Data Usage Cycle	Select one of the options (Weekly, Monthly, Custom) as data usage cycle. **Cycle Duration(days) –** When **Custom** is selected, please specify the cycle duration. The data quota for LTE model will be reset after the days configured here. **Cycle Starts On** –When **Custom** is selected, specify one date as a starting point to reset the data quota for LTE model. **Weekly Reset Day** - When **Weekly** is selected as Data Usage Cycle, please use the drop down list to choose one day (Monday to Sunday) for VigorACS to reset the data quota for LTE model. **Monthly Reset Day** - When **Monthly** is selected as Data Usage Cycle, please use the drop down list to choose a date for VigorACS to reset the data quota for LTE model.

10.6 Floor Plan

This function is helpful to determine the best location for VigorAP in a room. A floor plan of a room is required to be uploaded first. By dragging and dropping available VigorAP icon from the list to the floor plan, the placement with the best wireless coverage will be clearly indicated through simulated signal strength.

10.6.1 List View

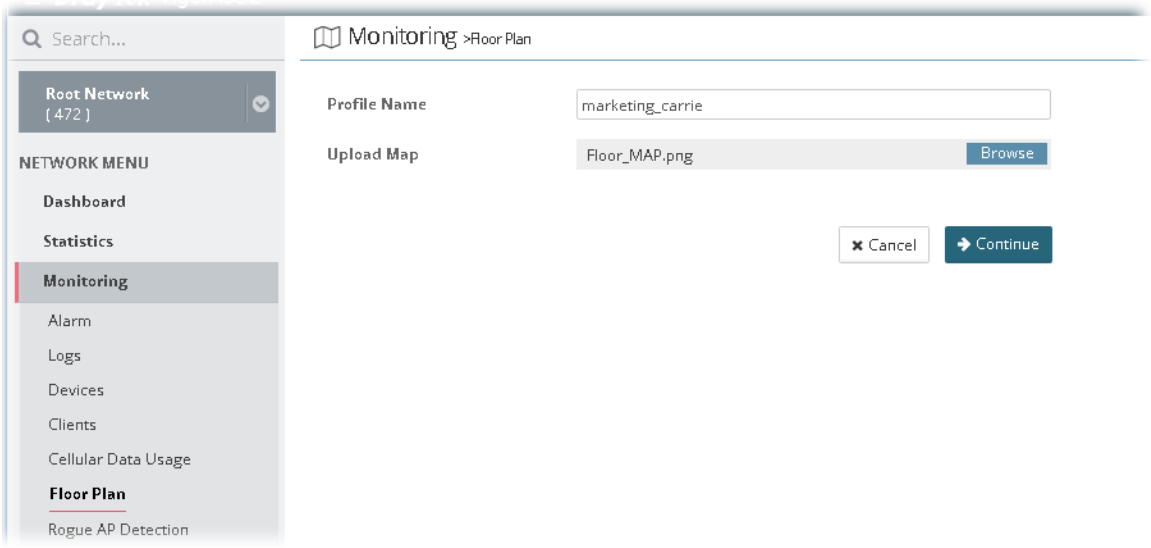


These parameters are explained as follows:

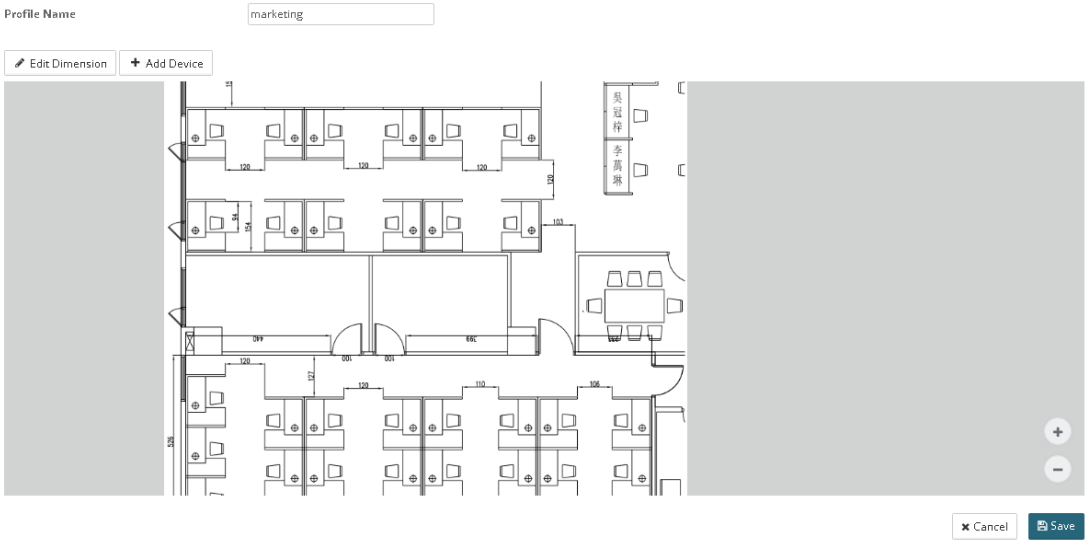
Item	Description
+Add New Profile	Create a new profile.
List View / Browse View	Display the profile with different views.

To create a new profile:

1. Click **Add New Profile**.
2. From the following page, enter profile name (e.g., marketing_carrie) and click Browse to upload a map (e.g., Floor_MAP.png). Click **Continue**.



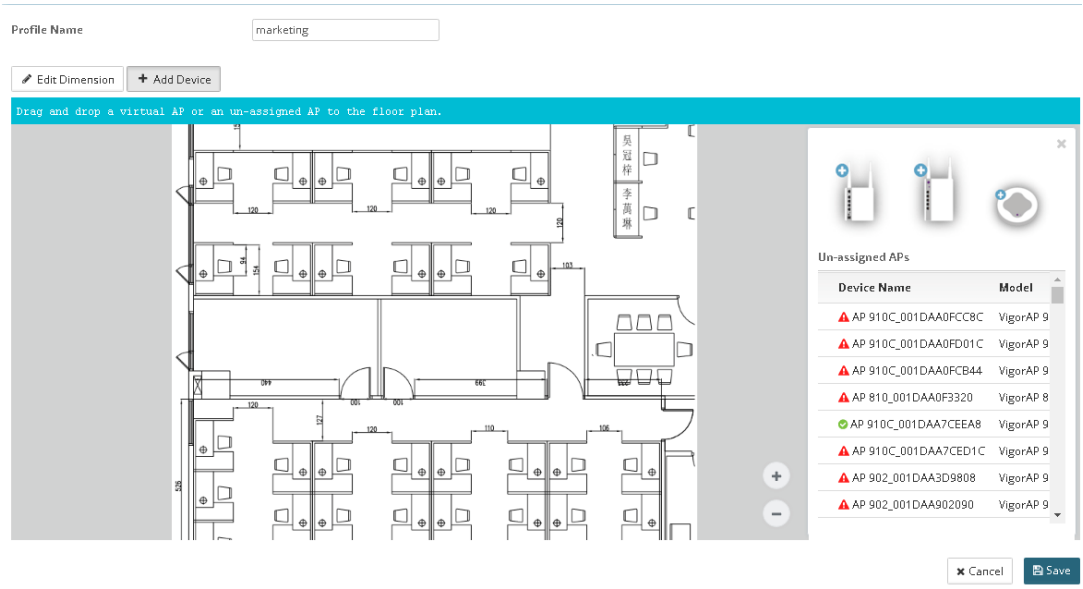
3. A floor map will be displayed on the screen.



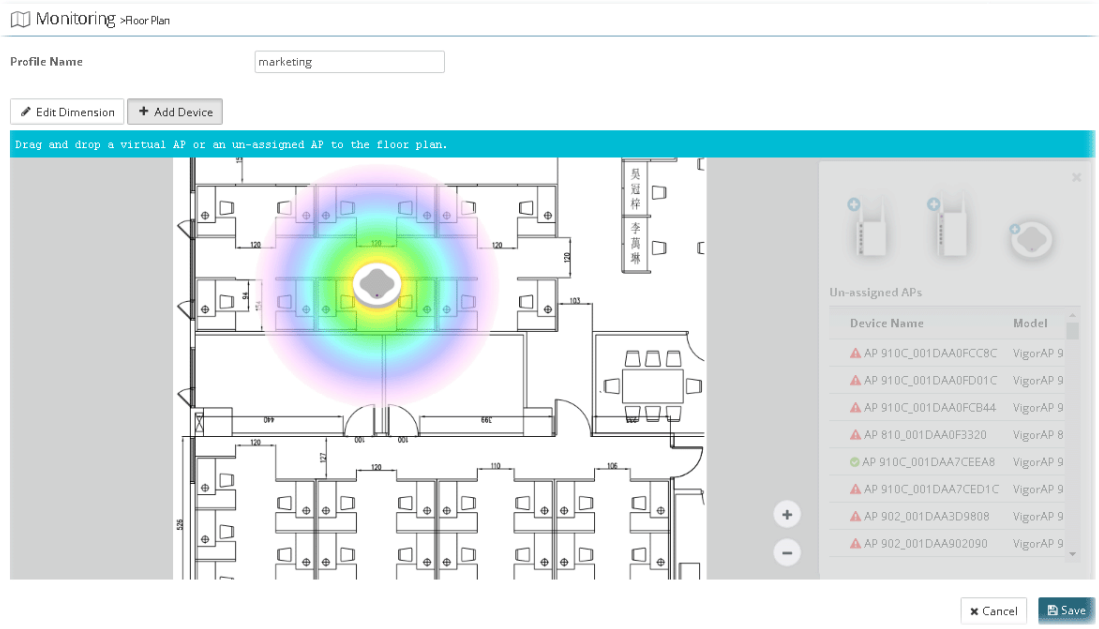
Edit Dimension – Draw a line and enter the distance of length / width of the map.

Add Device – Click it to display available VigorAP to apply it on to the map.

4. Click **+Add Device**. Available VigorAP icons and name list will be displayed on the right side of this page.



5. Select the AP you want (e.g., VigorAP910C icon, in this case) from right side of this page. Drag and drop the icon on the map. Later, an icon with effective signal range will be seen on the screen.

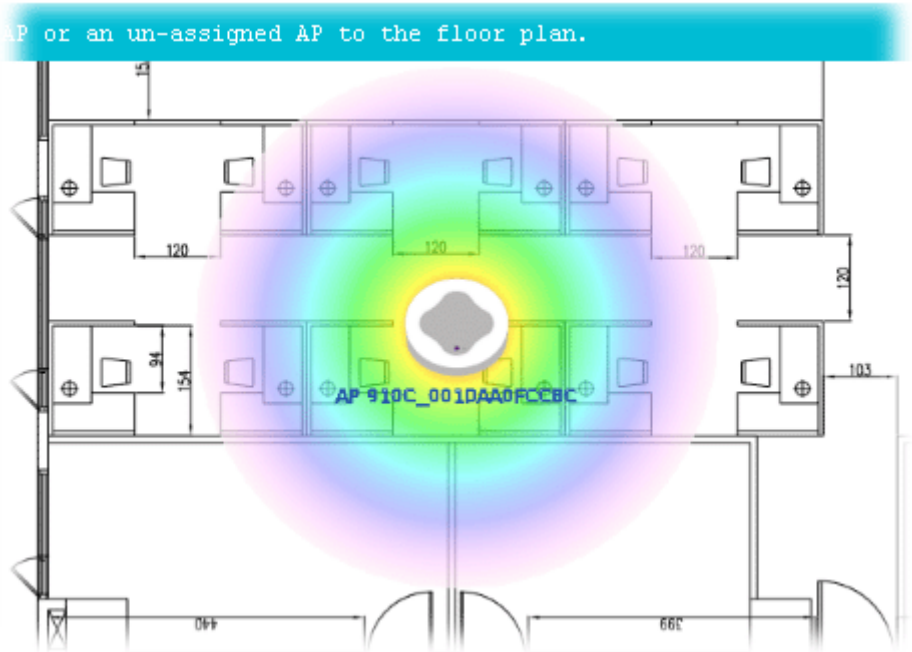


6. Slightly click the AP icon on the map. Two links of **Link to an AP** and **Remove Device** will be shown on the right side.

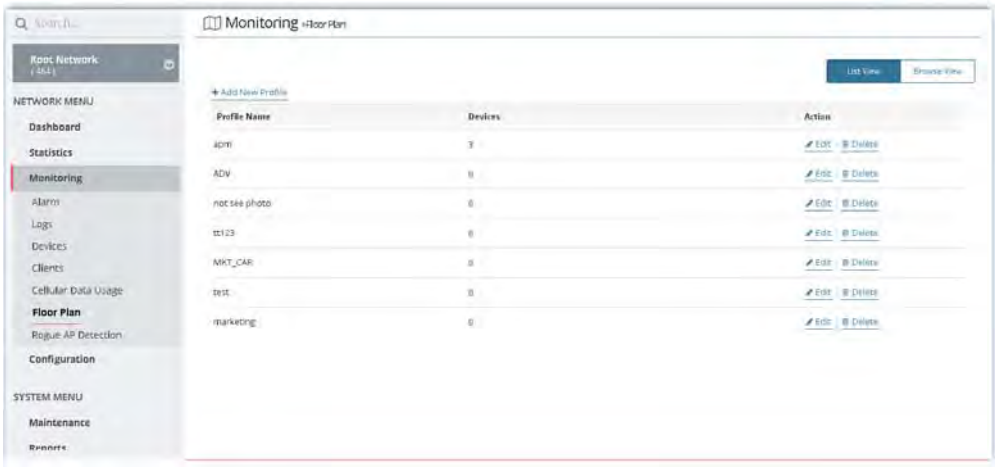
Remove Device – If you do not satisfy the location of AP icon, click this link to remove the AP icon from the map.

Link to an AP – If you satisfy the location of AP icon, click this link to select VigorAP. All of un-assigned AP names will be shown on the list. Choose the one you want and click Apply. Then such map has been connected with the specified AP.

7. Click **Link to an AP** to select the AP you want. Then, the name of the VigorAP will be displayed below the icon on the map.

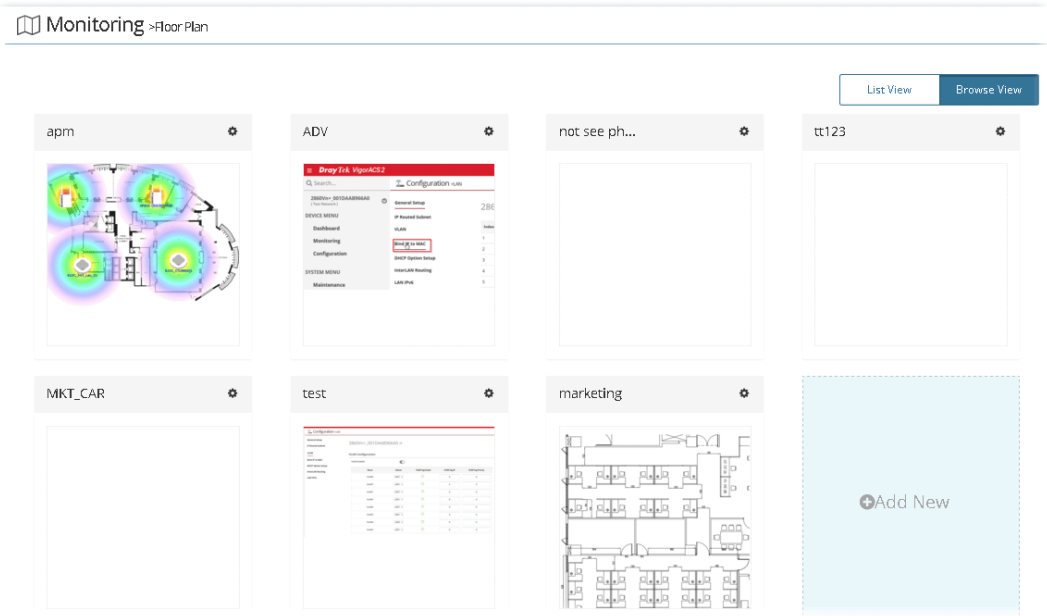


8. Click **Save**. The new created profile will be shown on the page.

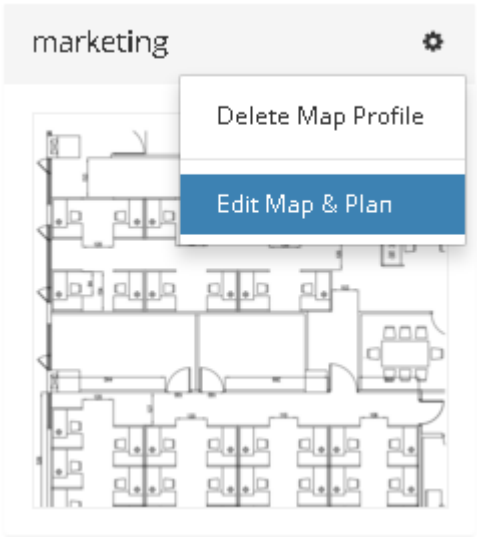


10.6.2 Browse View

This page displays all of the floor plan profiles with the map used.



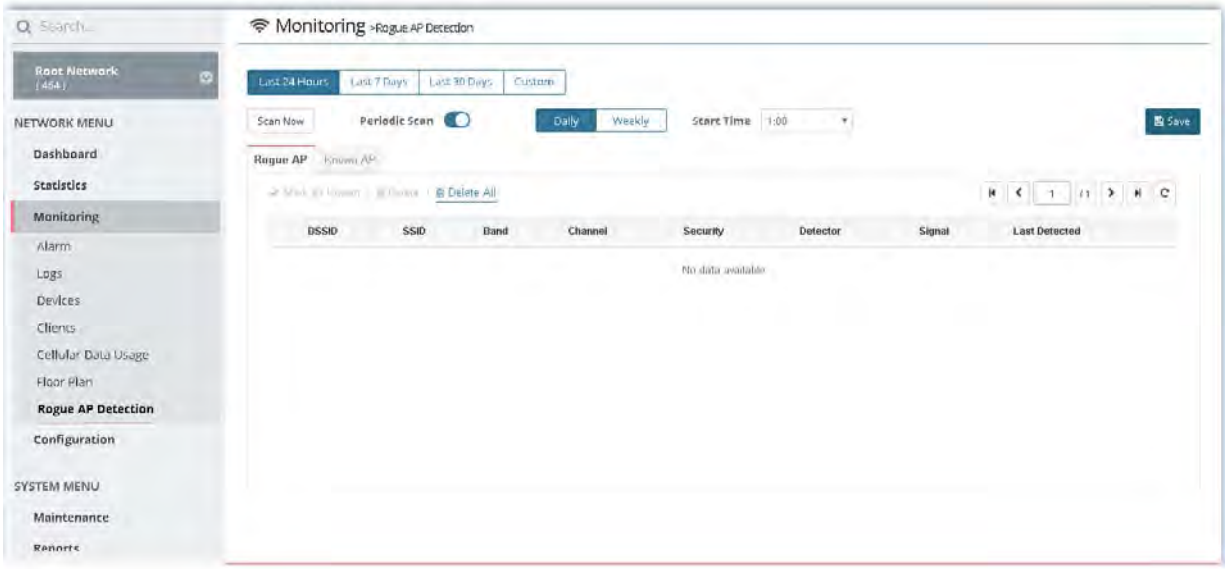
You can click **Add New** on this page to create a new profile. To modify the existed profile, click the icon on the right-top to display a drop down menu. Then click **Edit Map & Plan** to perform the modification, or click **Delete Map Profile** to remove the selected floor plan profile.


marketing
Delete Map Profile
Edit Map & Plan

10.7 Rogue AP Detection

Information detected by VigorAP can be displayed in this page. In which, the APs will be classified with rogue AP and known AP in different colors.

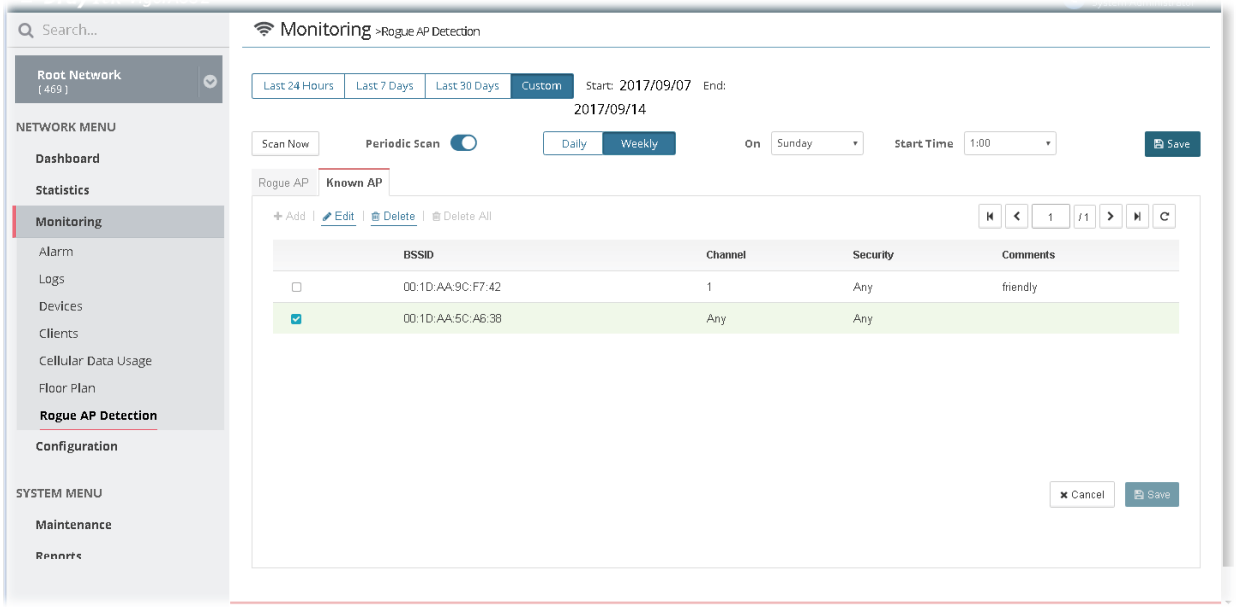
Click the **Rogue AP** tab to display the following page. All the APs detected will be treated as Rogue AP.

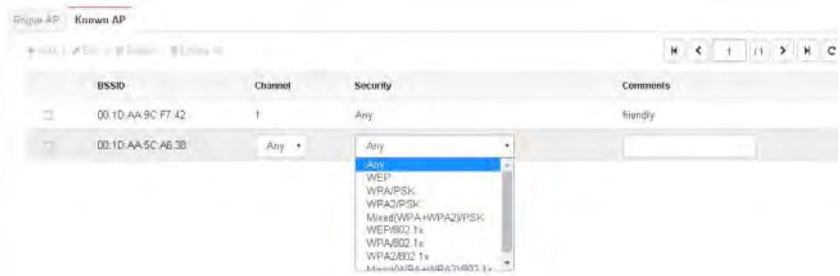


These parameters are explained as follows:

Item	Description
Last 24 Hours / Last 7 Days / Last 30 Days / Custom	Display the access point(s) detected within 24 hours, 7 days, 30 days or user defined days.
Scan Now	Perform device detection immediately.
Periodic Scan	After enabling this feature, access points will be detected periodically based on the setting configured here. **Daily –**VigorACS will detect access point on certain time every day. ● **Start Time** – Specify a time point as starting time for device detection. **Weekly –** VigorACS will detect access point on certain time every week. ● **On** – Choose the day to perform device detection. ● **Start Time** - Specify a time point as starting time for device detection.
Mark as Known	Vigor access points can be detected and be shown in the table under Rogue AP. However, some of them might be known to you and should not be listed here. To solve this problem, simply click the access point and then click **Mark as Known**. The selected access point will be transferred and listed under Known AP.
Delete	Remove the selected access point from the list.
Delete All	Remove all of the access points from the list.

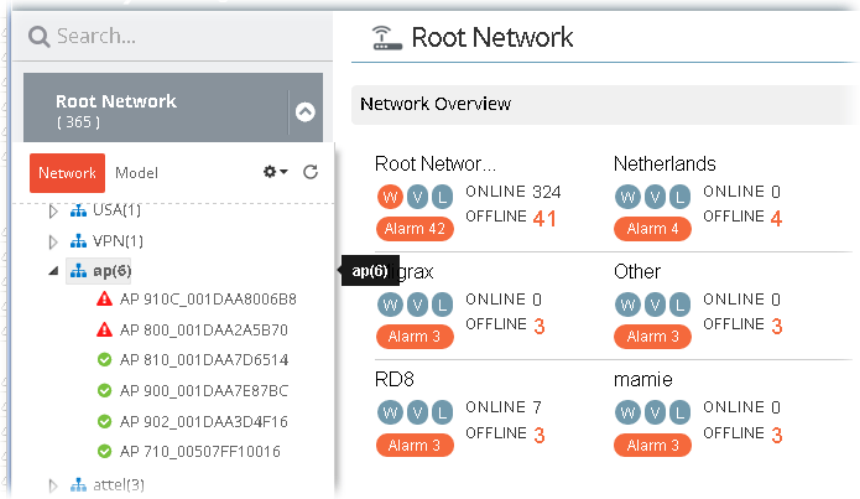
Click **Known AP** to display the following page. All the access points listed under this page will be treated as friendly AP.



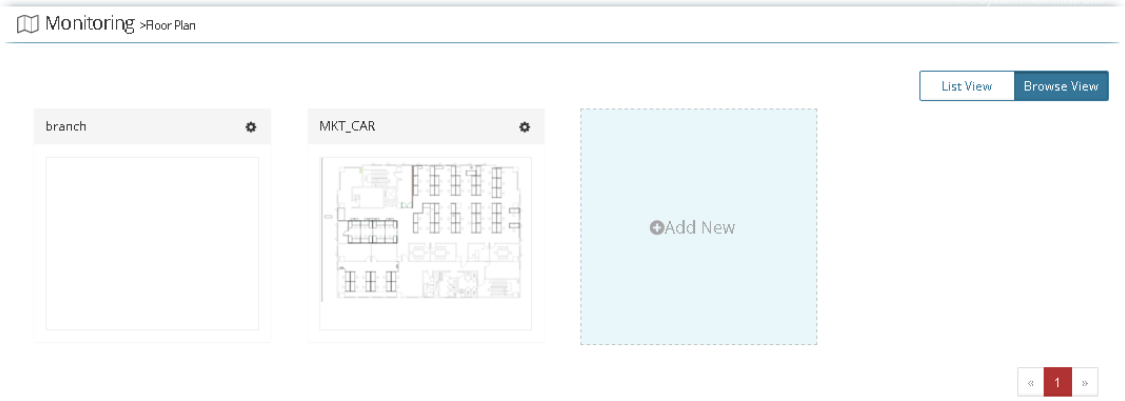
Item	Description
Add	Click it to create a new entry for entering information for access point.
Edit	Change the settings for a selected access point. Select one of the access points. The Edit link will be available for clicking, then. After clicking it, channel, security and comments will be allowed to be modified with different values 
Delete	Remove the selected access point from the list.
Delete All	Remove all of the access points from the list.
BSSID	Display the MAC address of the detected access point.
Channel	Display the channel used by the access point. Check the box of the selected access point and click **Edit**.
Security	Display the security mode used by the access point. It can be changed.
Comments	Display a brief explanation for the access point. It can be changed.
Save	Save the settings.

A.1 How to specify an AP device to an existed Floor Plan Profile?

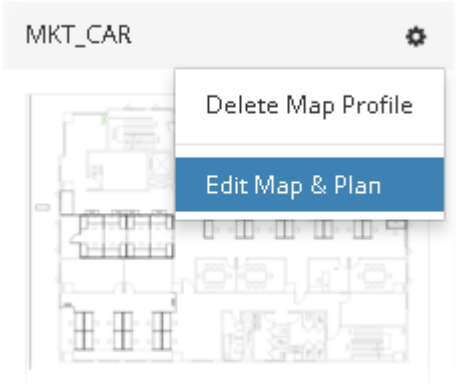
1. From the **Root Network**, locate the access point or the group with access points. In this case, we choose “ap” group.



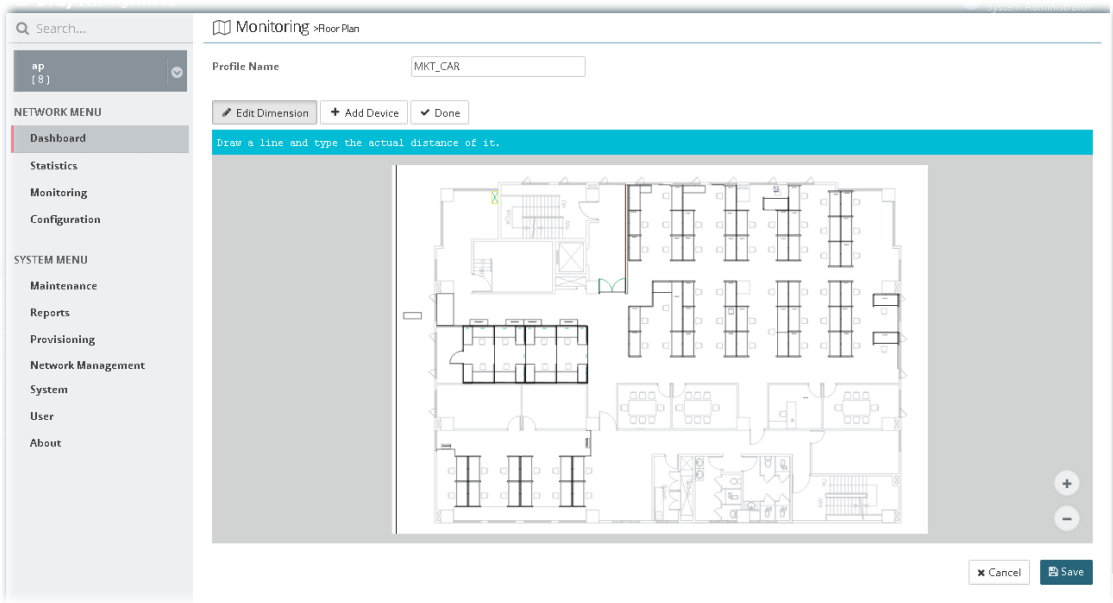
2. Open **NETWORK MENU>>Monitoring>>Floor Plan** and click **Browse View**. Choose one of the AP Map profiles. In this case, we choose “MKT_CAR” as an example.



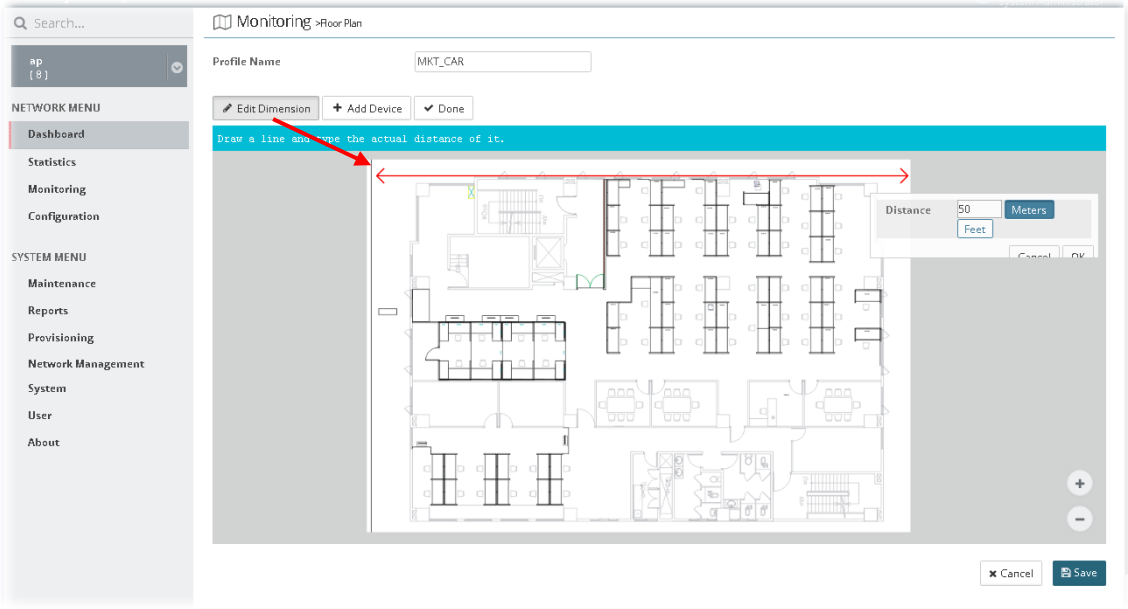
3. Click the button on the top-right to display a drop down menu. Choose **Edit Map & Plan**.



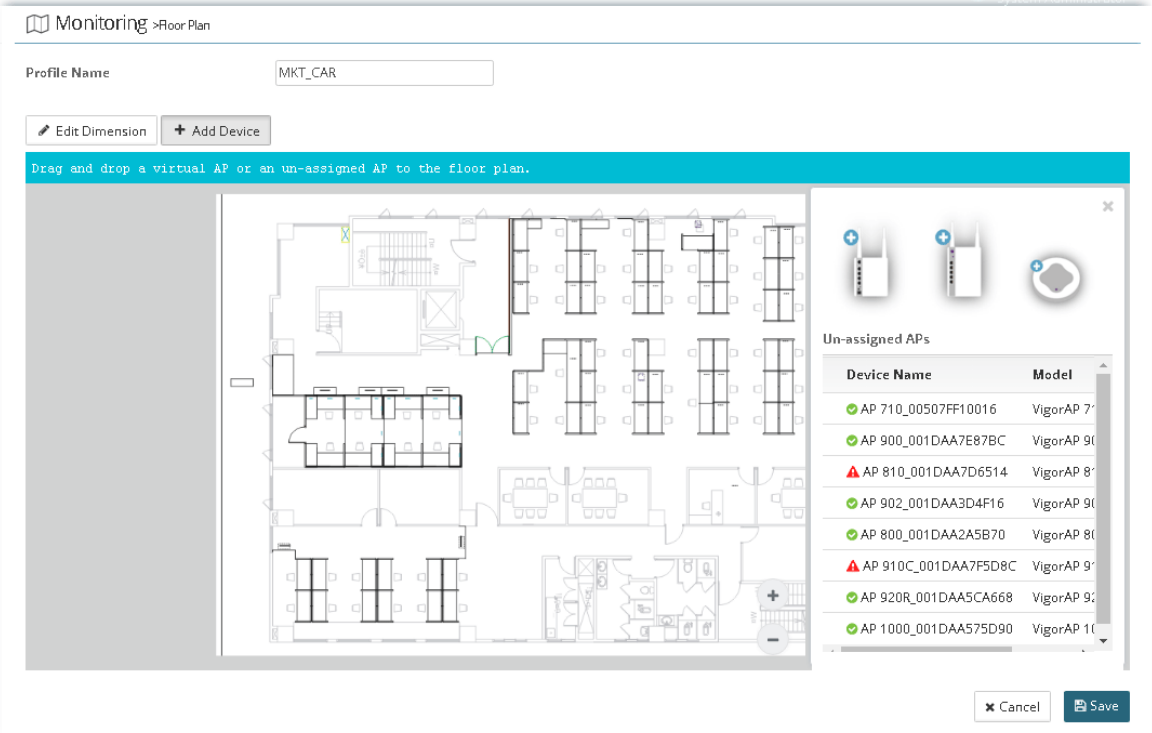
4. In the following web page, click **Edit Dimension** for setting dimension for the map.



5. Click **Edit Dimension** and drag the mouse on the map horizontally / vertically to draw a red line for width /length. Then, type the value on the pop up dialog to determine the real distance and click **OK**.

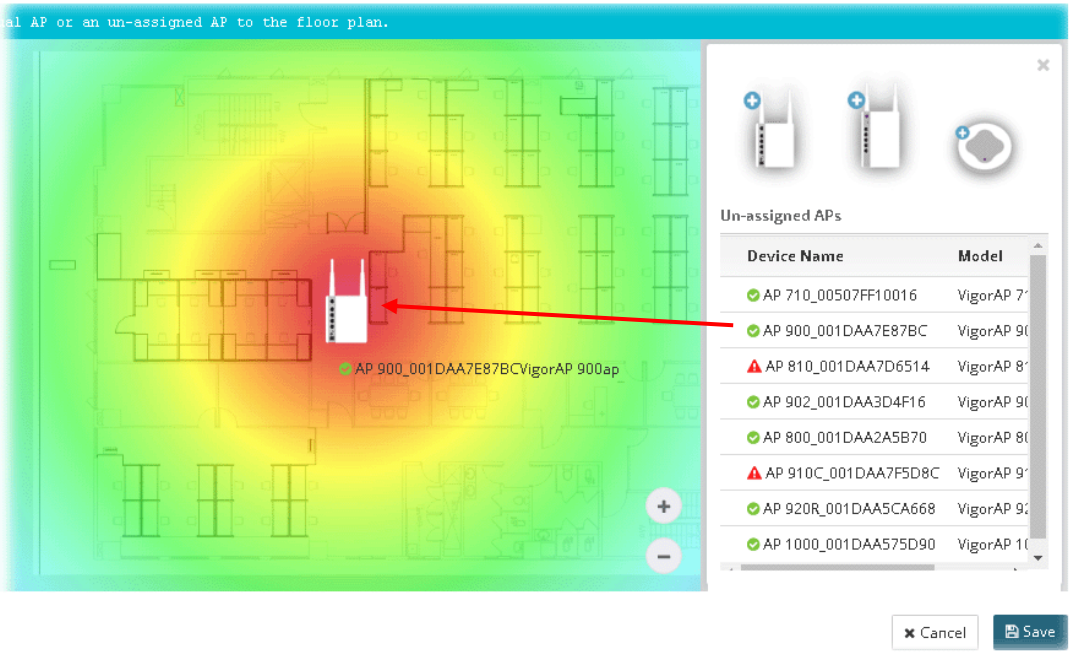


6. Click **Add Device** to display AP icons and available AP list (unassigned APs).

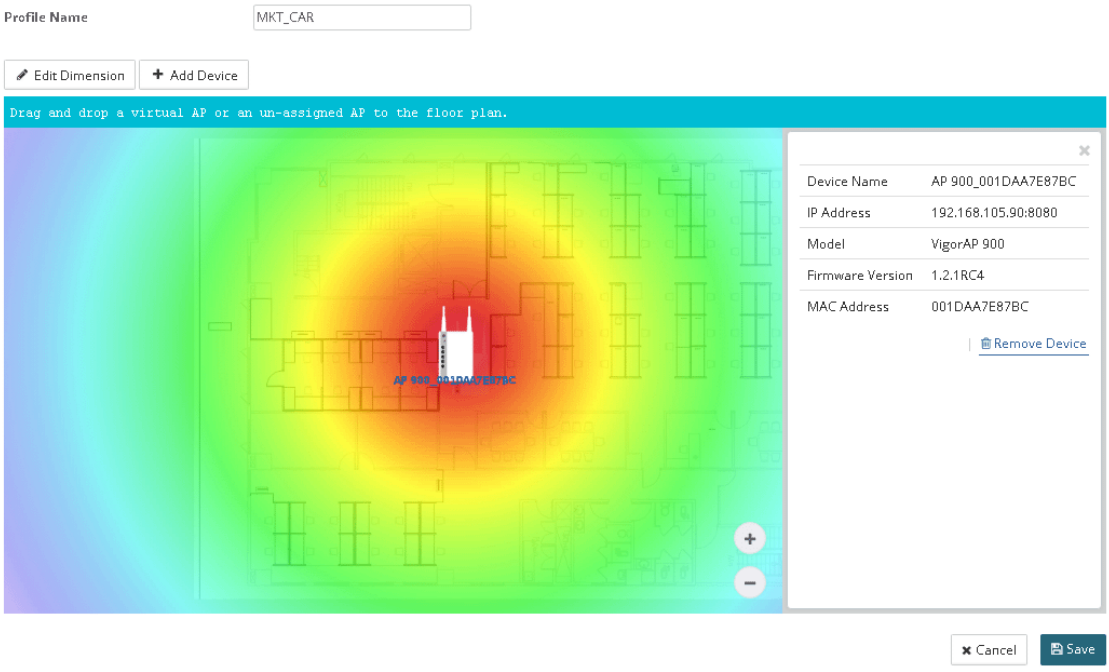


7. Drag an AP icon from right side to the point you want to place the selected AP and drop it.

8. Choose one of device names from the list of Un-assigned APs. Drag the device name to the icon on the left side.



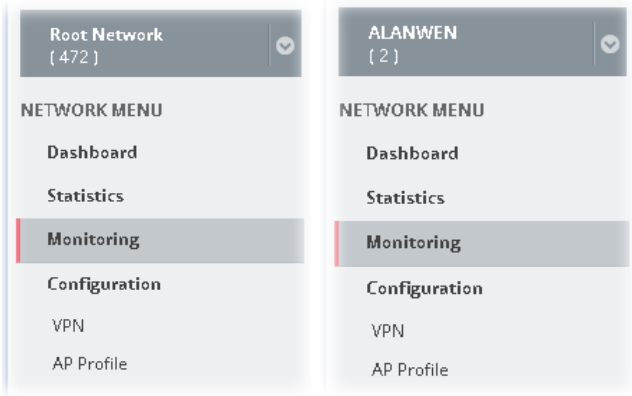
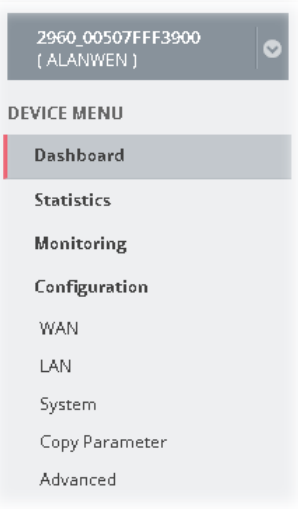
9. Now, VigorAP with device name will be shown on this page. Slightly click the AP icon, brief description for such AP will be shown on the right side of this page.



10. Click **Save**.

Chapter 11 Configuration for Network

Configuration settings will vary for NETWORK MENU and DEVICE MENU.

Settings to be configured under Root Network / Group	Settings to be configured when a CPE is selected
	

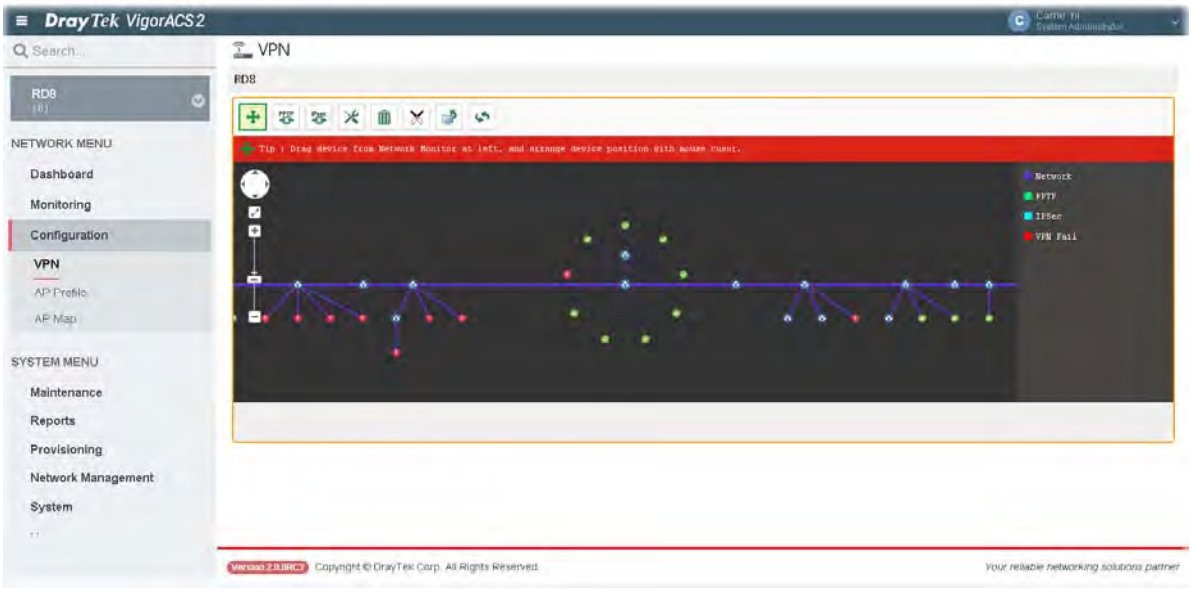
NETWORK MENU is available for Root Network and network group; however, DEVICE MENU is available when a device managed by VigorACS is selected. Configuration menu for root network/group contains VPN, AP Profile and AP MAP. Yet, the menu items for a selected device, basically, are the same as the settings on web user interface of the selected device (CPE, AP and etc.). In other words, it is not necessary for the administrator to access into the web user interface of the selected CPE to make setting changes. If required, the administrator can modify the settings for the selected device through the options displayed under Configuration. The modifications will be applied to the selected device immediately.

11.1 VPN

VigorACS offers an easy method, VPN Wizard, to configure VPN settings for building VPN connection between two CPEs.

11.1.1 VPN under NETWORK MENU

This page displays all the VPN connection status globally for Root Network or the VPN connection status for the network group selected.

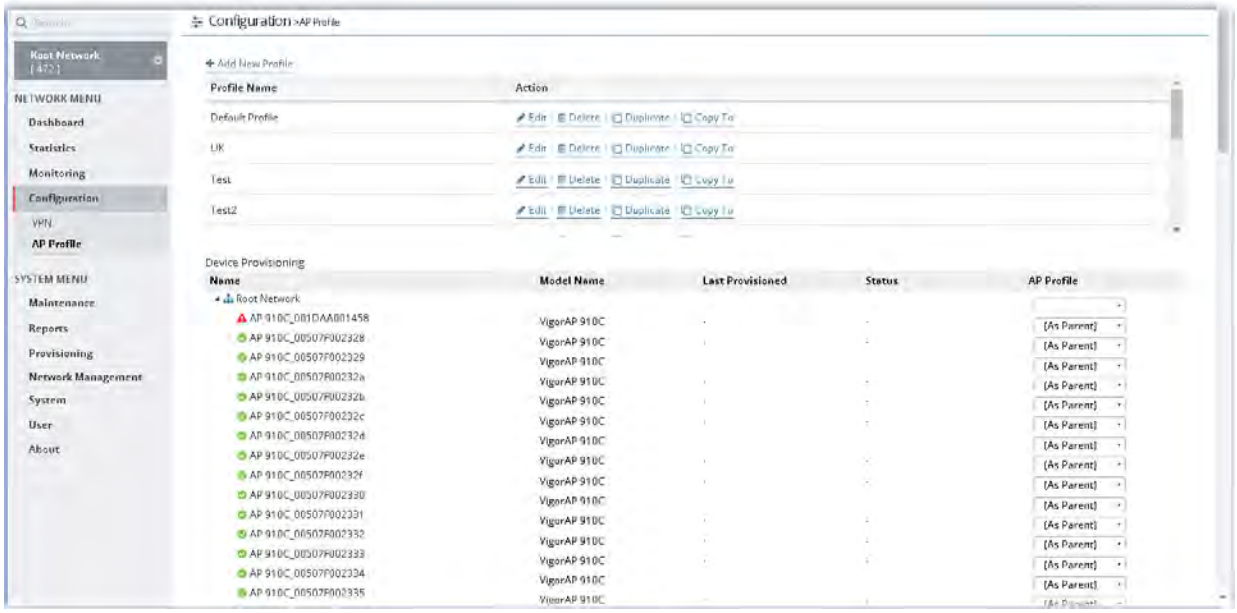


Different colors for arrows represent different protocols used in VPN connections. Purple means Network Group; Green means PPTP mode; Blue means IPSec mode; and Red means the VPN connection is failed.

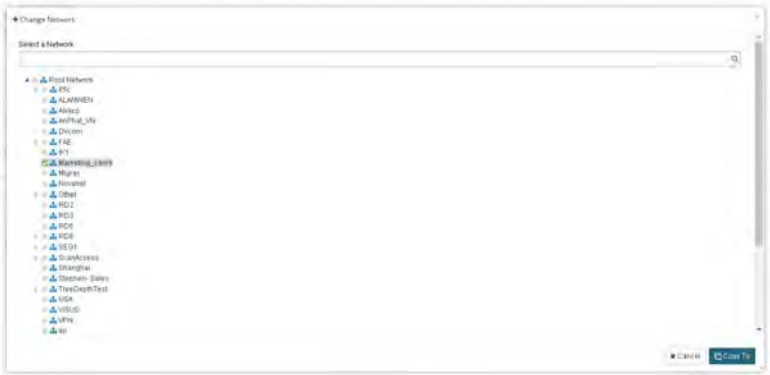
11.2 AP Profile

AP profile is used to apply to a selected access point. It is very convenient for the administrator to configure the setting for access point without opening the web user interface of the access point.

The functions listed in the AP profile in VigorACS contain settings for all of models of VigorAP. When an AP profile is created, it can be used to apply onto any access point managed by VigorACS. If the access point does not have the functions defined in the AP profile, after being applied, only the functions that the selected access point support will be overwritten by the selected AP profile.



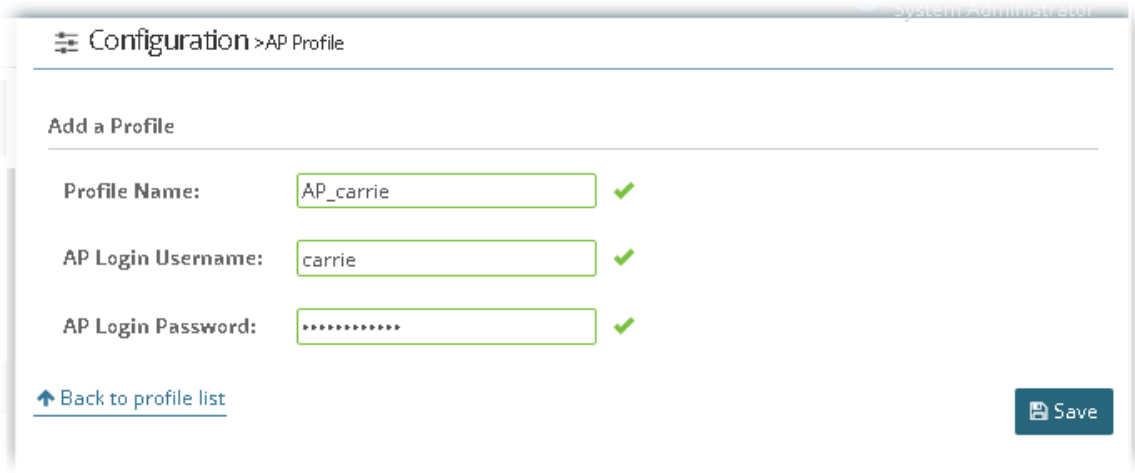
These parameters are explained as follows:

Item	Description
+Add New Profile	Create a new AP profile with basic settings.
Profile	Display the name of AP profile.
Action	**Edit** - Configure detailed settings for the selected AP profile. **Delete** –Delete the selected AP profile. **Duplicate** – Click it to duplicate a new profile (e.g., aaa(1)) based on the selected profile (e.g., aaa). **Copy To** – Click it to open the following page. Then select a network (e.g., Marketing_carrie in this case) from the tree view of Root Network. After clicking the Copy To button, the configuration of selected AP profile will be applied to the selected network (e.g., Marketing_carrie). 

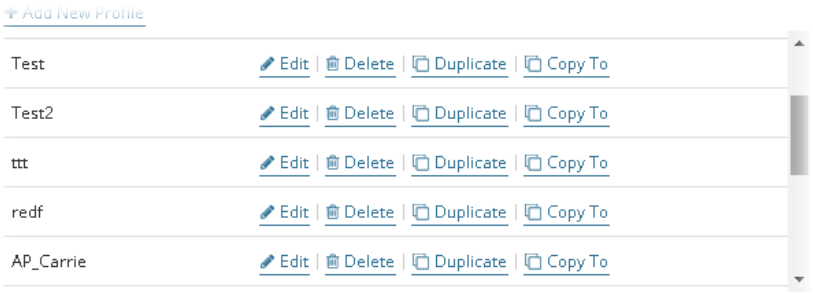
Device Provisioning	Locate the access points for applying suitable AP profile. **Name** – Display a tree view for model managed by VigorACS. **Model Name** – Display the name of the model. **Last Provisioned** – Display the time that AP profile was applied to the selected device. **Status** – Display the status (updating, complete and "-") of the AP. **AP Profile** – Choose an AP profile for applying to the selected AP**.** In which, **"As Parent"** means to apply the profile listed on the top to the selected AP.
Refresh	Refresh current page.
Save	Save the changes in this page.

11.2.1 Add New Profile

The following setting page appears when **+Add New Profile** is clicked.

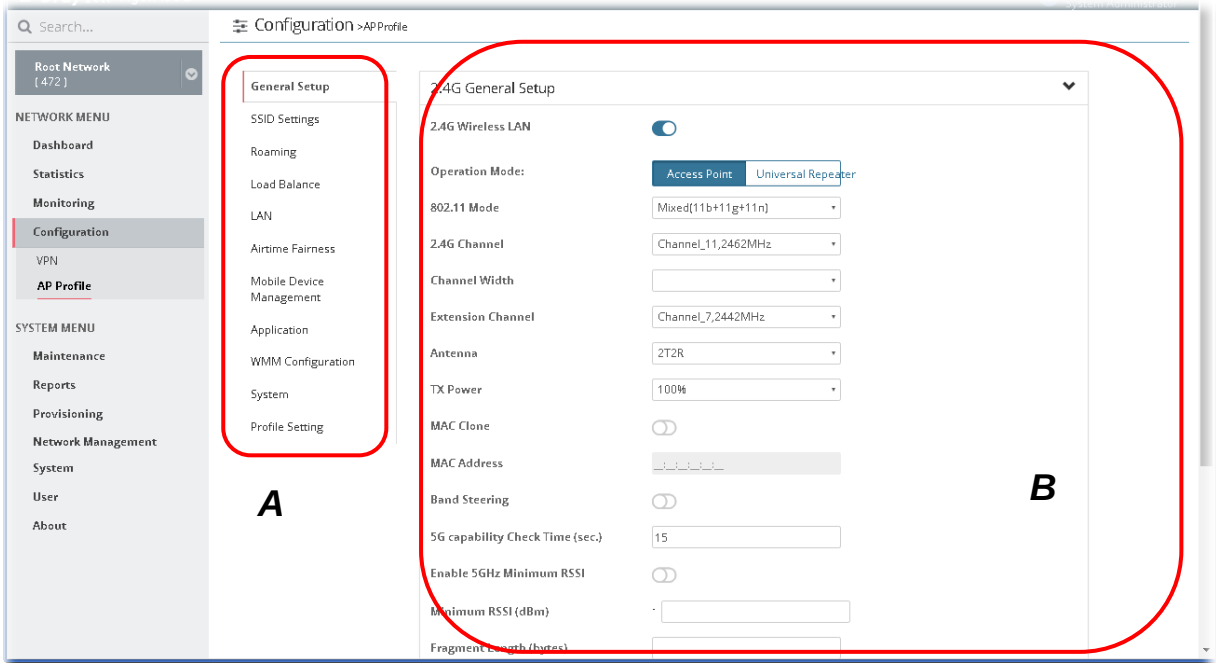


Available settings are listed as follows:

Item	Description
Profile Name	Type a name of the profile.
AP Login Username	Type a username for login the access point.
AP Login Password	Type a password for login the access point.
Back to profile list	Return to previous page, AP profile list.
Save	Save the settings and display the new profile on the AP profile list. 

11.2.2 Edit the AP Profile

To configure detailed settings for each AP profile, click the **Edit** button for the selected profile. The setting page appears as follows:



Available settings are listed as follows:

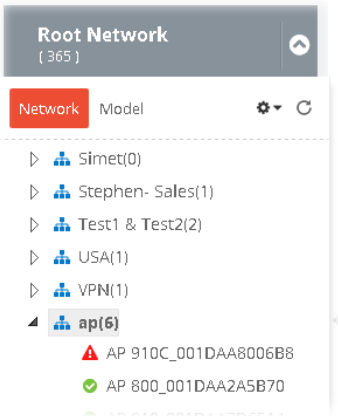
Item	Description
Area A - Menu Item	At present, the available menu items contain, ● General Setup ● SSID Settings ● Roaming ● Load Balance ● LAN ● Airtime Fairness ● Mobile Device Management ● Application ● WMM Configuration ● System ● Profile Setting
Area B - Settings	Such area will vary according to the item selected in Area A - Menu Item.

Info	If required, refer to User's Guide of VigorAP for the detailed information of settings definition.

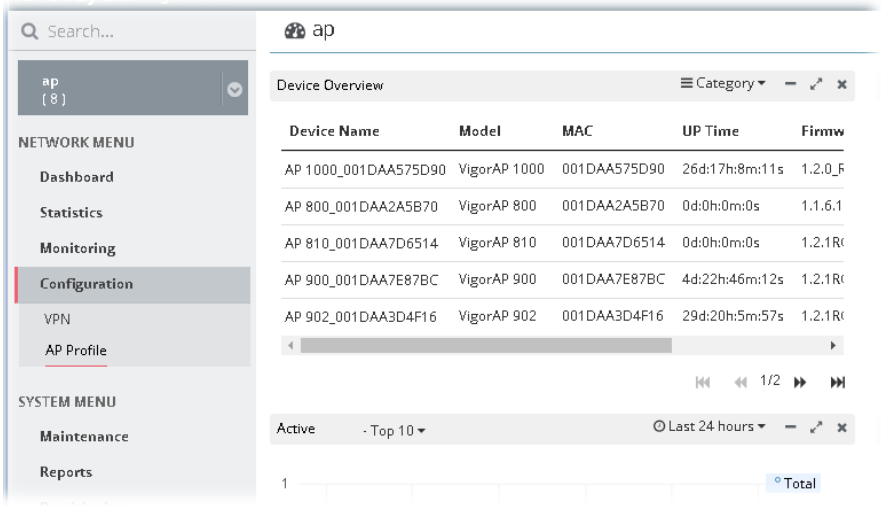
Applications

A.1 How to apply an AP profile to AP device(s)?

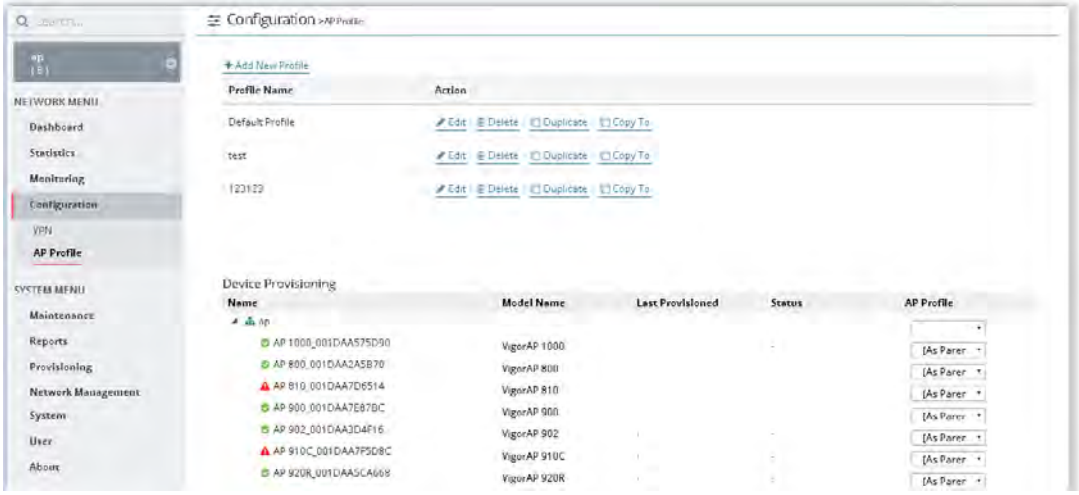
1. Choose a group containing with access points (e.g., “ap” in this case) from Root Network.



2. The dashboard of “ap” group appears as follows.

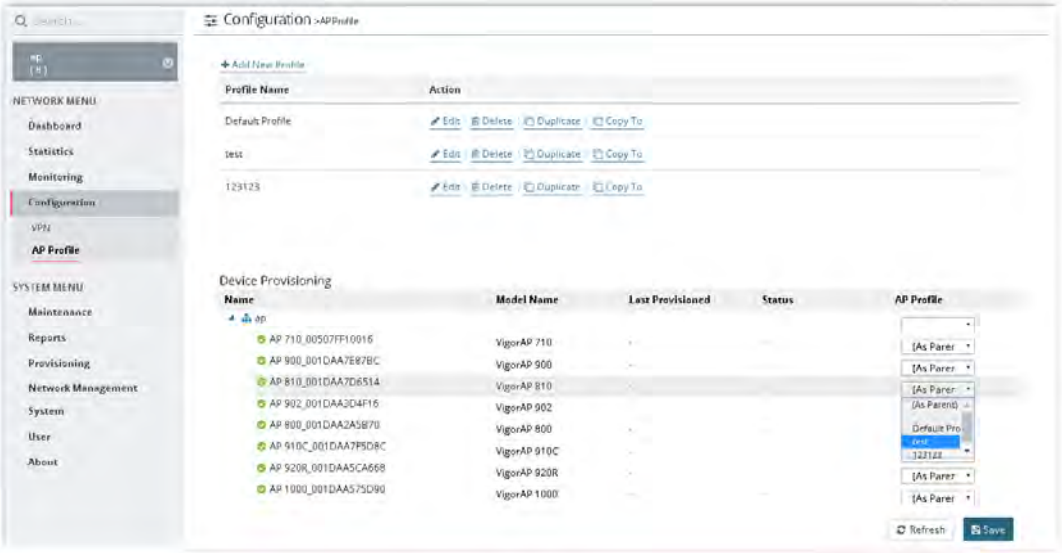


3. Open **NETWORK MENU>>Configuration>>AP Profile**.



In the **Device Provisioning**, all of the access points (e.g., AP 800/ AP810/ AP900 / AP902) grouped under "ap" are displayed under the field of Name.

4. Select the AP (e.g., AP 810 in this case) required to apply new AP profile; and use the drop down list of AP Profile to specify a profile (e.g., test in this case).



Info

You can click **+Add New Profile** to create a new AP profile if there is no AP profile to be chosen or the existed AP profile is not suitable for the AP model.

5. Click **Save**. The settings in web user interface of the selected VigorAP will be overwritten with the settings configured in AP profile immediately.

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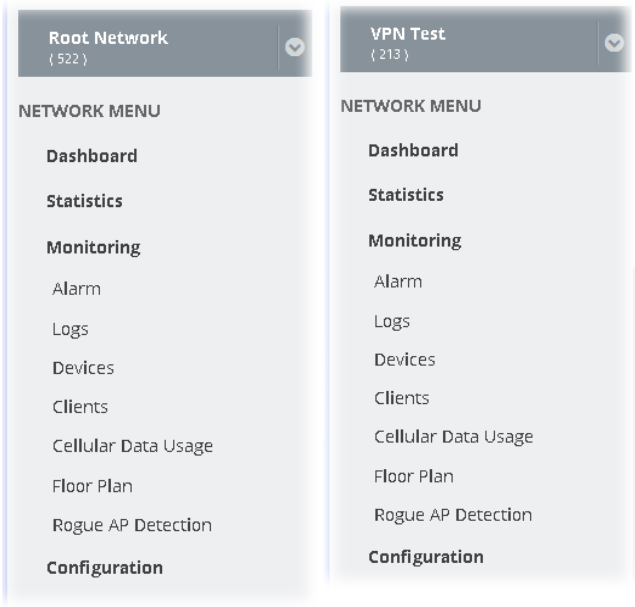
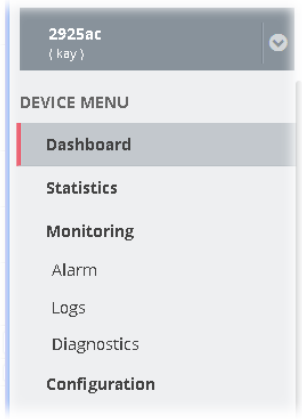
Part V DEVICE MENU for Specified CPE

Chapter 12 Monitoring for CPE

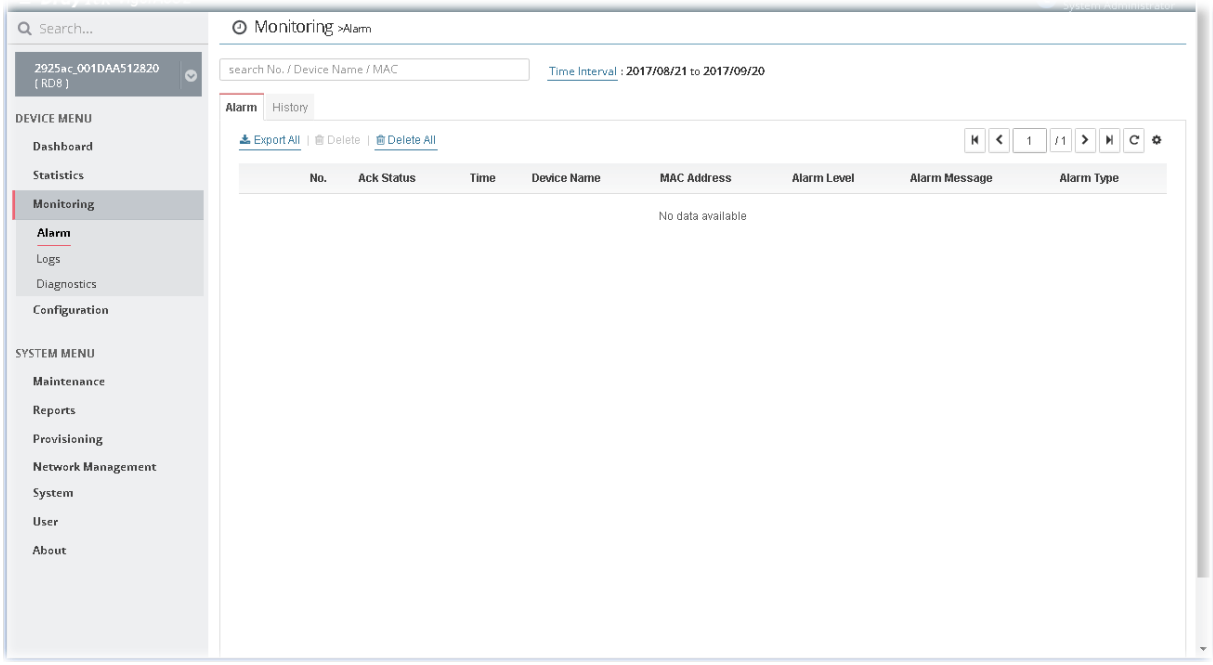
DrayTek VigorACS2

Monitoring menu offers Alarm, Logs and Diagnostics for monitoring the normal and abnormal actions for the specified CPE.

Settings to be configured under Root Network / Group	**Settings to be configured when a CPE is selected**
	

12.1 Alarm

Alarm message will be recorded on VigorACS server when there is a trouble happened to the device (CPE/AP). Only the users within the same user group will be notified with the alarm message.

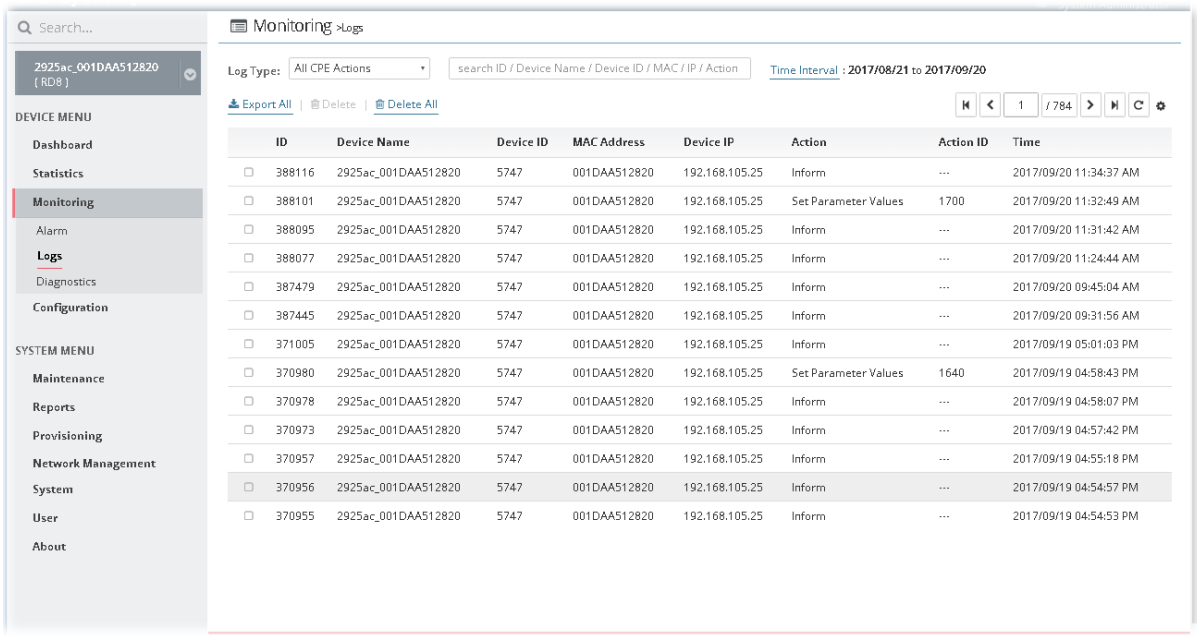


These parameters are explained as follows:

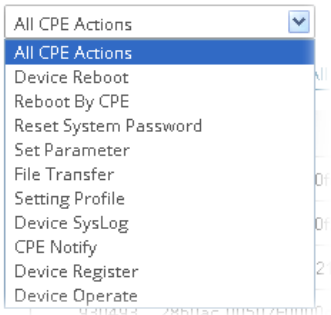
Item	Description
Alarm / History	**Alarm –** Display the alarm records recently. **History –** Display all the alarm records that have been solved and cleared.
Export All	Click this button to save alarm log as a XLS file.
Delete	Clear the alarm record which has been solved by VigorACS.
Delete All	Clear all of the alarm records which have been solved by VigorACS.
No.	Display the index number of the alarm. It is offered by VigorACS automatically.
Ack Status	Display the status of the records with the type specified here (Not Ack or Acked).
Time	Display the time that the alert occurred.
Device Name	Display the name of the device encountering the trouble.
MAC Address	Display the MAC address of the device.
Alarm Level	Display the alarm message with the severity specified.
Alarm Message	Display a brief explanation for the alarm sent by VigorACS automatically.
Alarm Type	Display the alarm message with the type specified.
Alarm Status	Display the status of the records with the type specified here (Alarm or Rearm).
Clear Status	Display the clear status for the alarm records. To view different clear status, use the drop down list to specify the one you want to see on the screen.

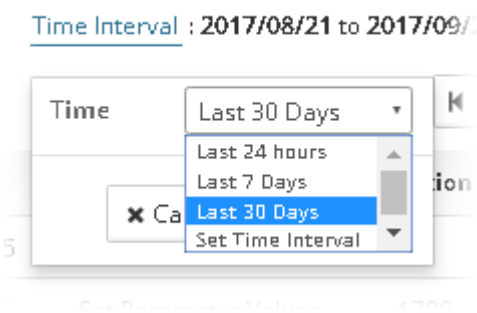
12.2 Logs

Log provides administrator records for action executed, device name, MAC address, Device ID, MAC Address, Device IP, Action, Action ID and Time for the selected CPE device.



These parameters are explained as follows:

Item	Description
Log Type	Choose one of the conditions to display related log on this page. 
	Enter the condition for VigorACS to search and display relational information.
Time Interval	Specify the time interval to display information within that time period.

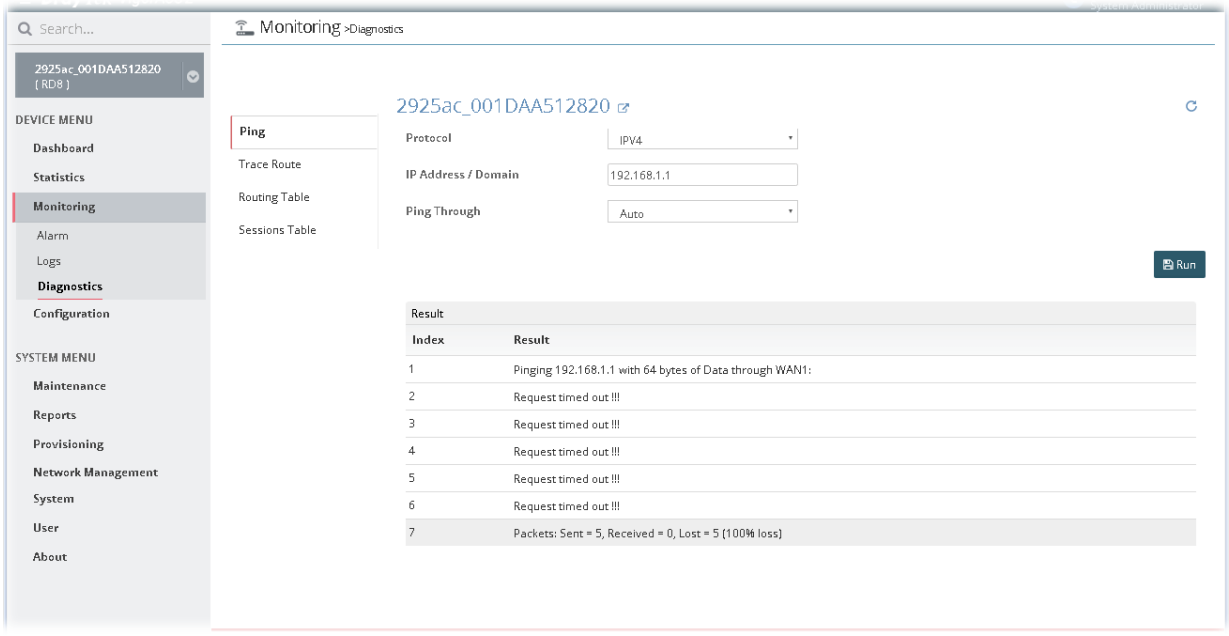
	
Export All	Click this button to save alarm log as a XLS file.
Delete	Clear the alarm record which has been solved by VigorACS.
Delete All	Clear all of the alarm records which have been solved by VigorACS.

12.3 Diagnostics

Menu item under Diagnostics will be different based on the specified CPE.

12.3.1 Ping

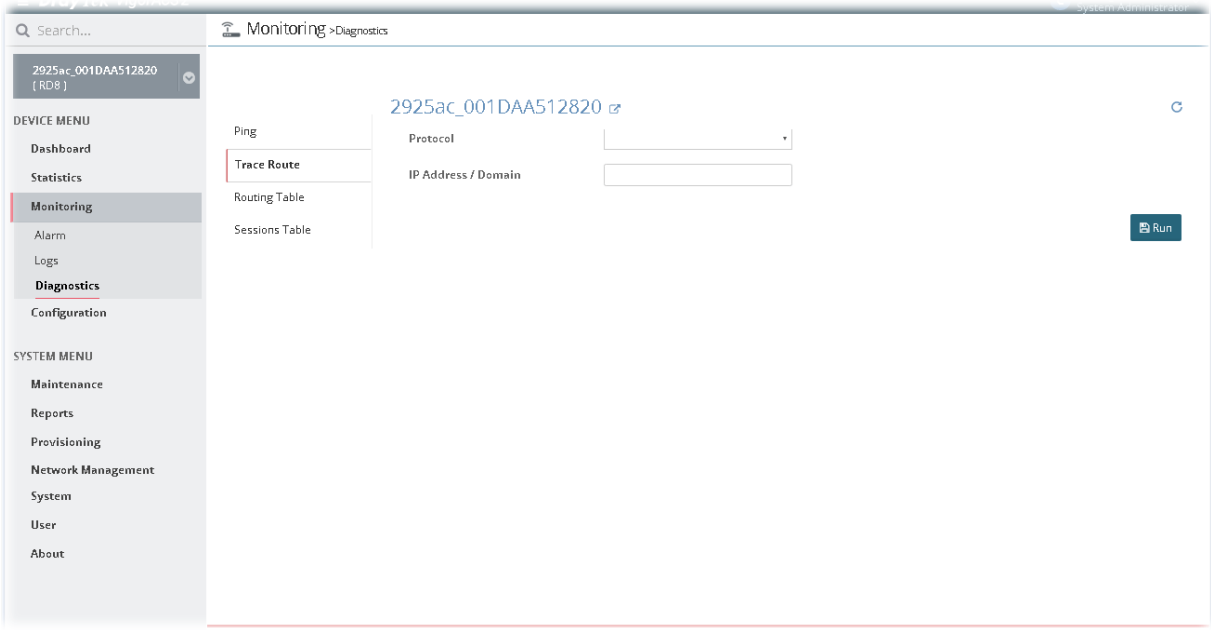
This page allows the system administrator / user to ping a LAN PC (IPv4 or IPv6) through specified WAN interface.



Click the **Run** button to start the ping work. The result will be displayed on the screen.

12.3.2 Trace Route

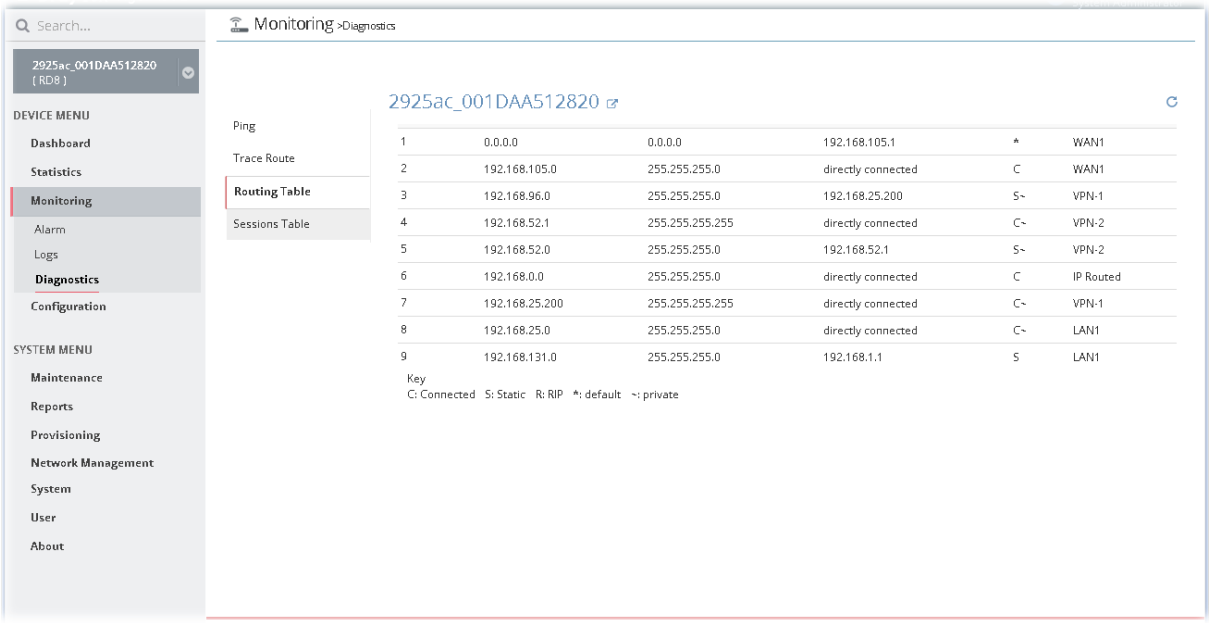
This page allows system administrator / user to trace the routes from router to the host.



Simply type the IP address of the host in the field of IP Address / Domain and click **Run**. The result of route trace will be shown on the screen.

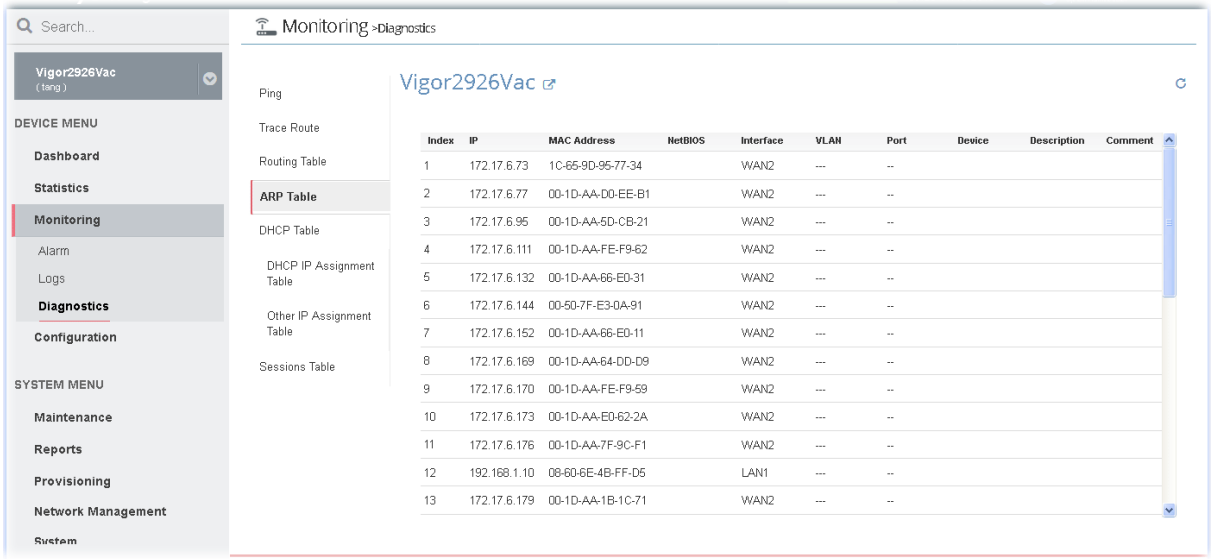
12.3.3 Routing Table

This page displays a reference table for packets routing by Vigor router.



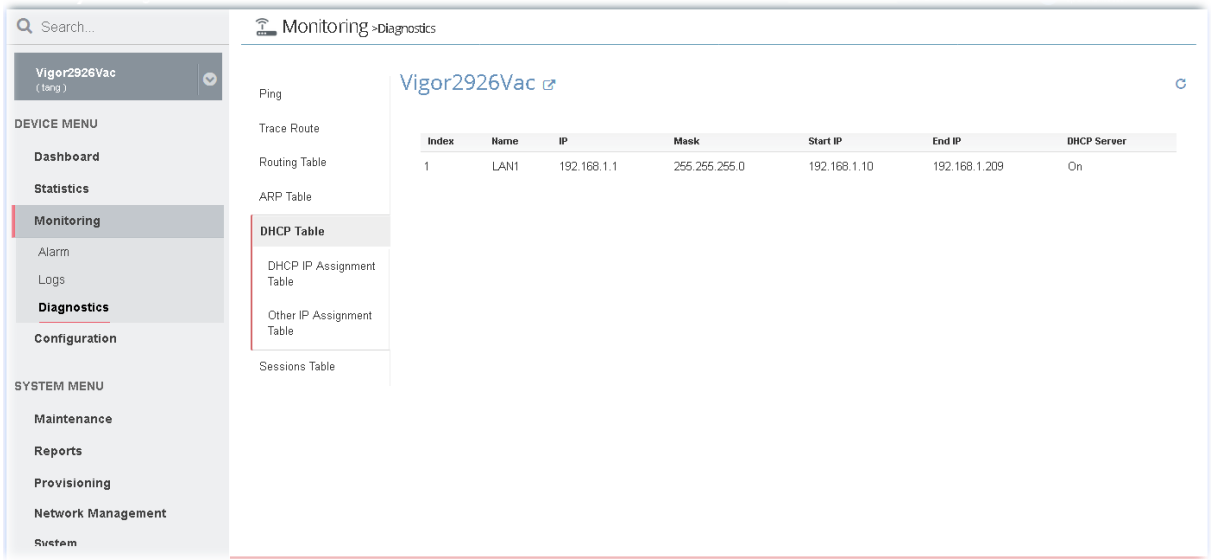
12.3.4 ARP Table

This page shows a list of LAN/WAN IP address sent by the CPE. The information detected in this page is the same as the data displayed on Diagnostics>>View ARP Cache Table of CPE WUI.



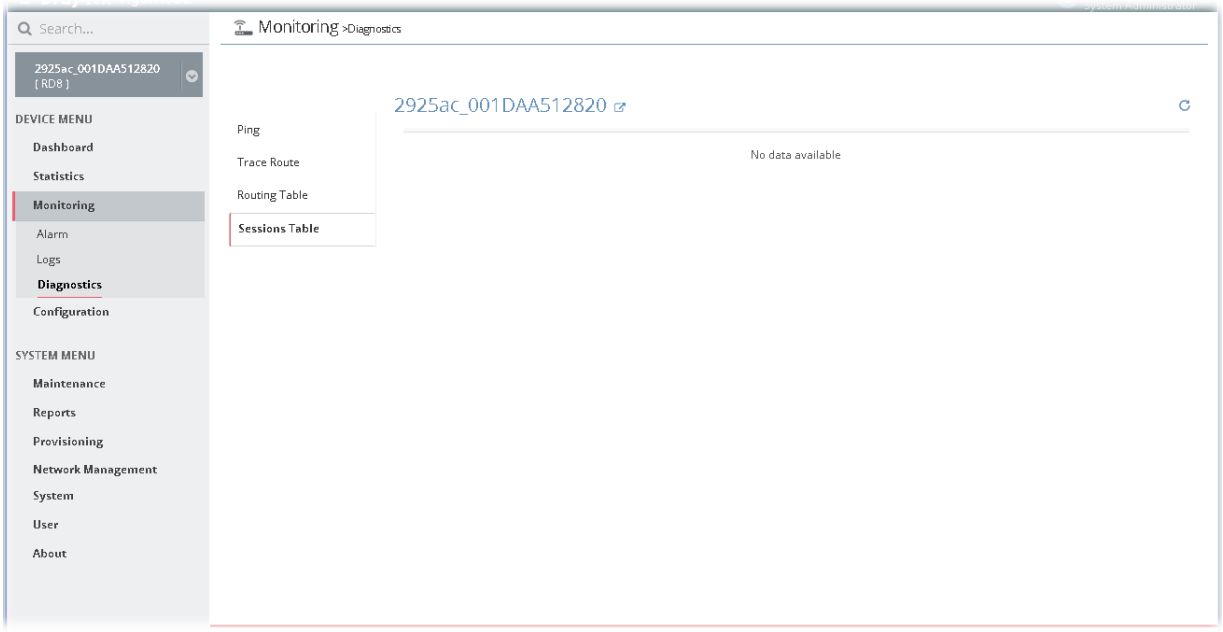
12.3.5 DHCP Table

This page shows a list of DHCP server quantity sent by the CPE. The information detected in this page is the same as the data displayed on Diagnostics>> View DHCP Assigned IP Addresses.



12.3.6 Sessions Table

This page displays a reference table for NAT sessions detected by Vigor router.

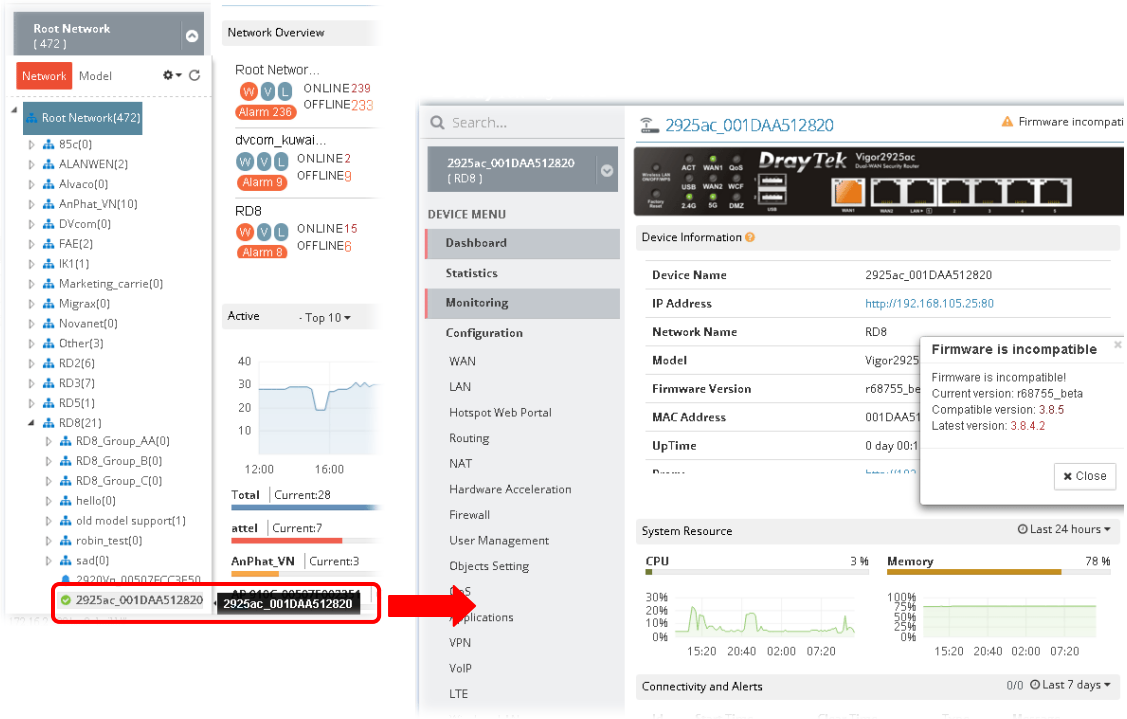


Chapter 13 Configuration for CPE

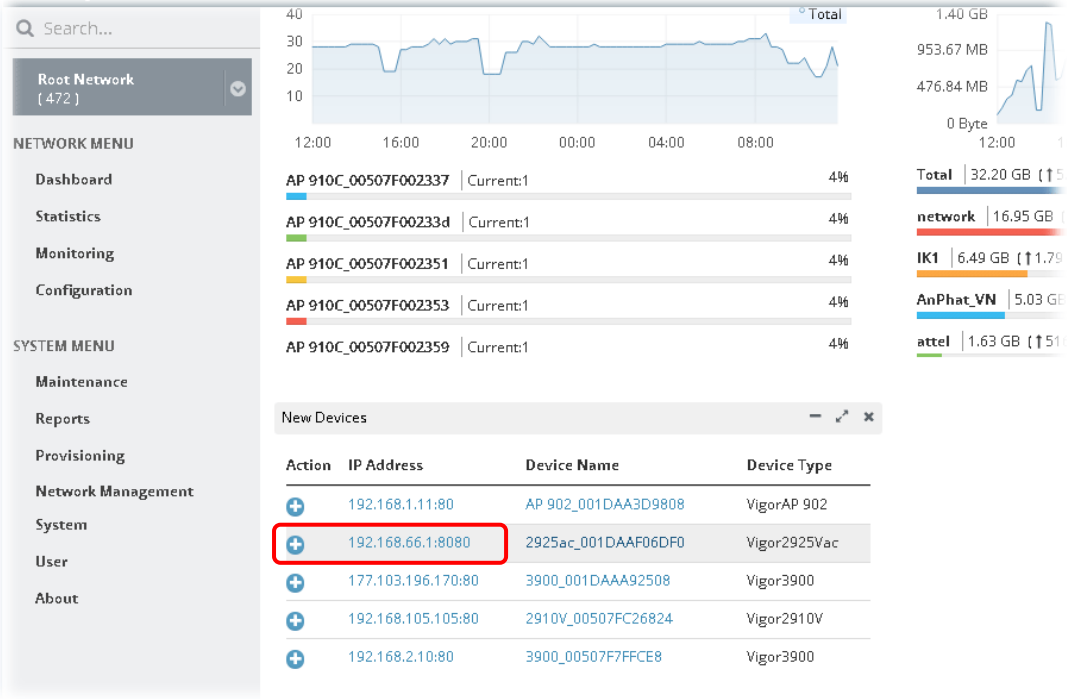
DrayTek VigorACS 2

There are two methods to modify CPE settings via VigorACS, changing the settings from **DEVICE MENU>>Configuration** on VigorACS or click the IP address link of the selected CPE to access into the web user interface of that CPE.

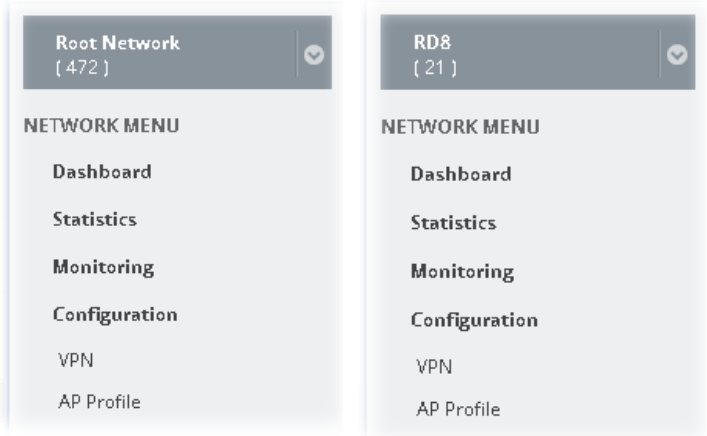
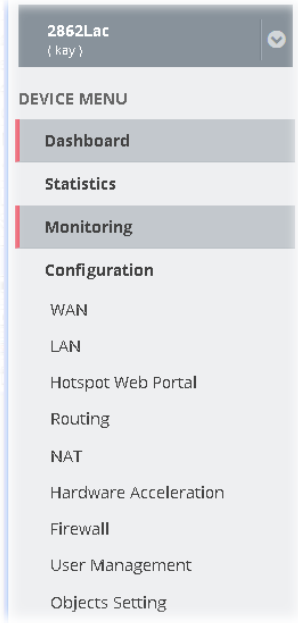
How to select a CPE? On the left side of the home page of VigorACS 2, open Root Network and find out the CPE you want. Then, click the CPE. A page view with settings related to the selected CPE will be shown on the screen.



Or, access into the web user interface of that CPE by clicking IP address link of the selected CPE:



Configuration settings will vary for NETWORK MENU (for network/group) and DEVICE MENU (for CPE).

Settings to be configured under Root Network / Group	Settings to be configured when a CPE (e.g, Vigor2862Lac) is selected
	

NETWORK MENU is available for Root Network and network group; however, DEVICE MENU is available when a device managed by VigorACS 2 is selected.

The menu items for a selected device, basically, are the same as the settings on web user interface of the selected device (CPE, AP and etc.). If required, the administrator can modify the settings for the selected device through the options displayed via VigorACS 2. The modifications will be applied to the selected device immediately.

Info

The menu items listed under Configuration will be changed based on the CPE device / AP device selected. The explanation and usage of the menu items are totally the same as the descriptions stated on User's Guide of each device.

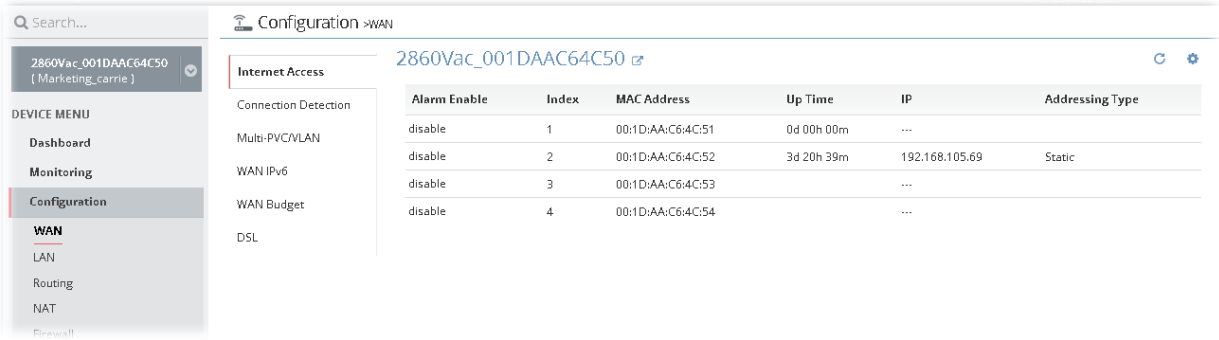
In this chapter, **Vigor2862VBn / Vigor2860Vac** is selected as an example. That is, the menu items displayed under Configuration are based on the menu items used by Vigor2862VBn /Vigor2860Vac.

13.1 Modifying WAN Settings for CPE

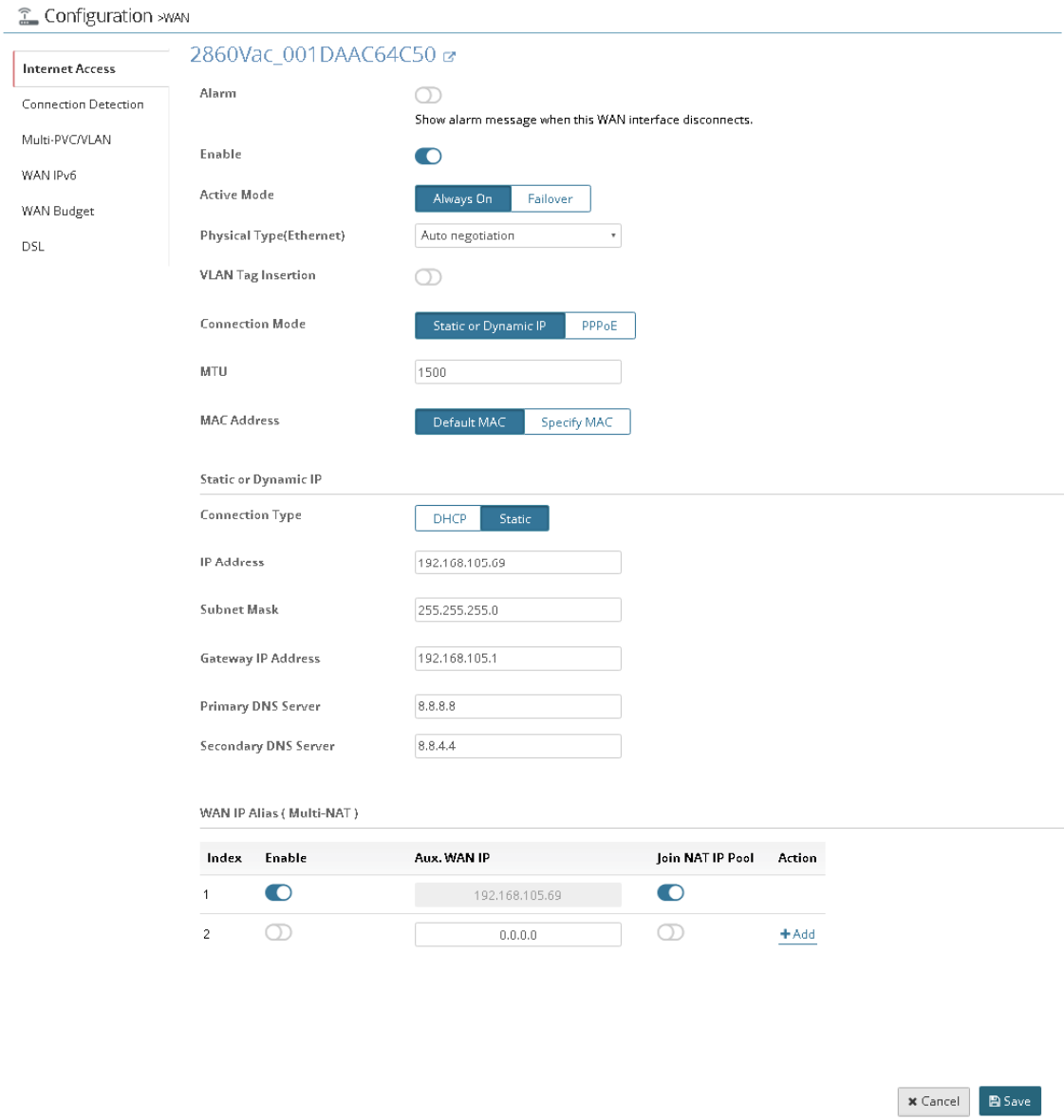
WAN settings relate to access Internet for CPEs. If you want to change WAN settings for specified CPE(s), please choose the device. And, open **DEVICE MENU>>Configuration>>WAN**.

13.1.1 Internet Access – Check WAN Status

Internet Access is convenient for checking WAN status for the selected CPE/group.



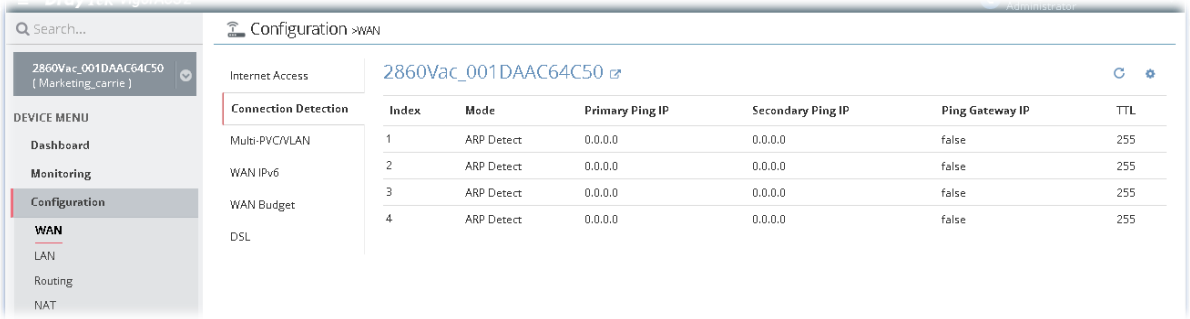
To edit the parameters settings of the selected CPE, move the mouse cursor on the table and click the index number (index 1 ~ index 4 represent WAN 1 ~ WAN 4) to get the following page.



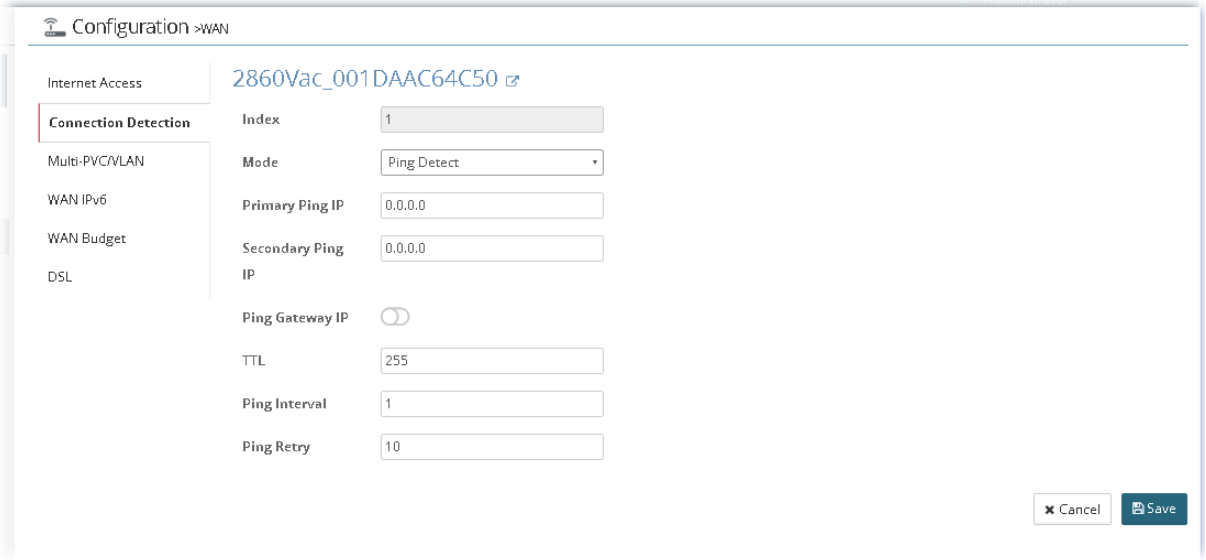
After finished the settings, click **Save**. The modification for the CPE will take effect immediately.

13.1.2 Connection Detection

It allows you to verify whether network connection for the specified CPE is alive or not through ARP Detect or Ping Detect.



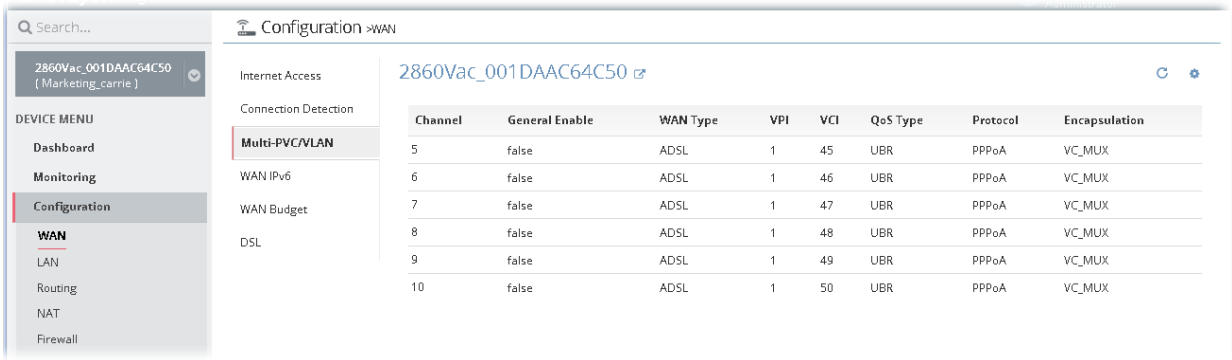
To edit the parameters settings of the selected CPE, move the mouse cursor on the table and click the index number (index 1 ~ index 4 represent WAN 1 ~ WAN 4) to get the following page.



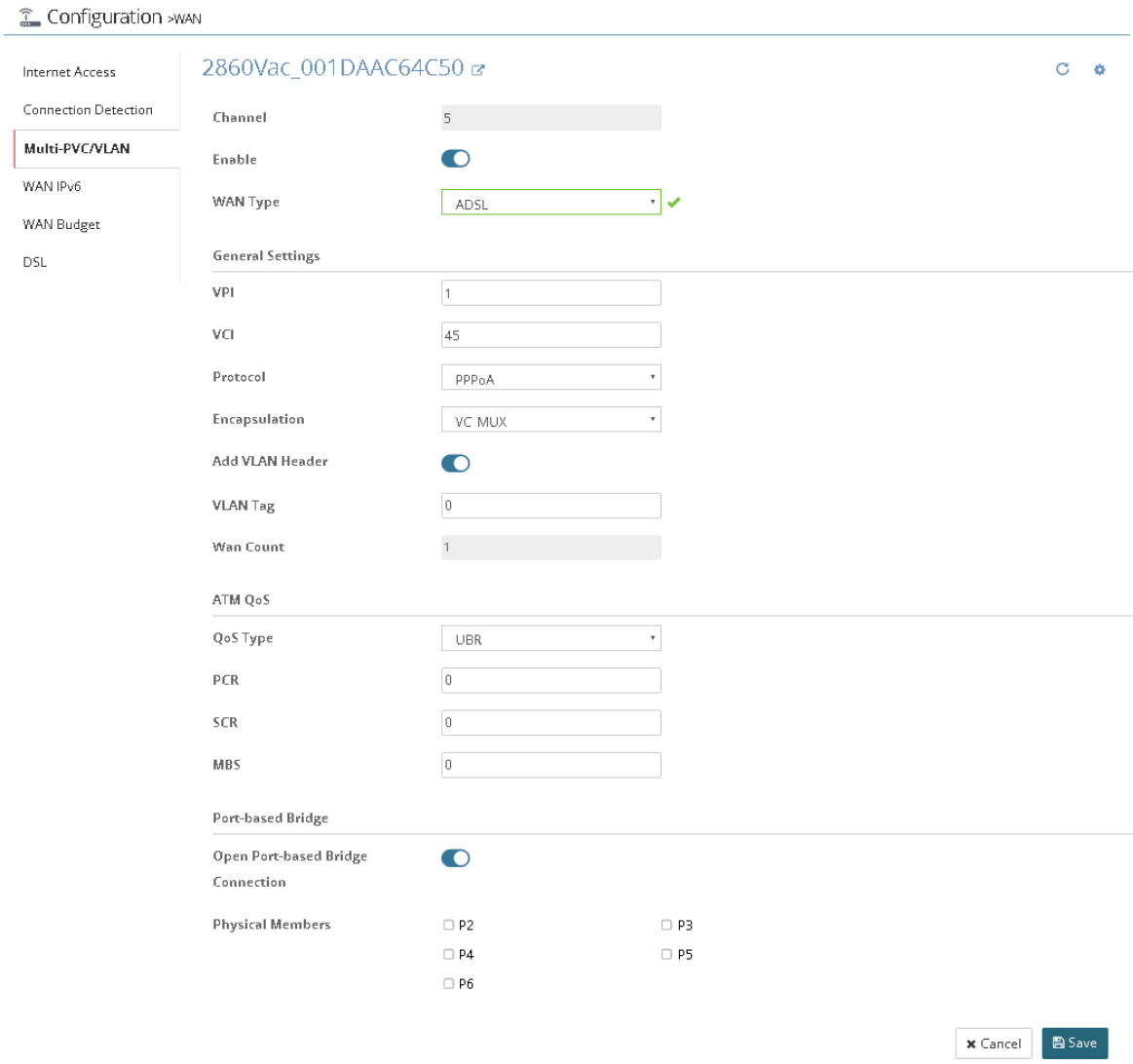
After finished the settings, click **Save**. The modification for the CPE will take effect immediately.

13.1.3 Multi-PVC/VLAN

This page allows you to create multi-PVC for different data transferring for using.



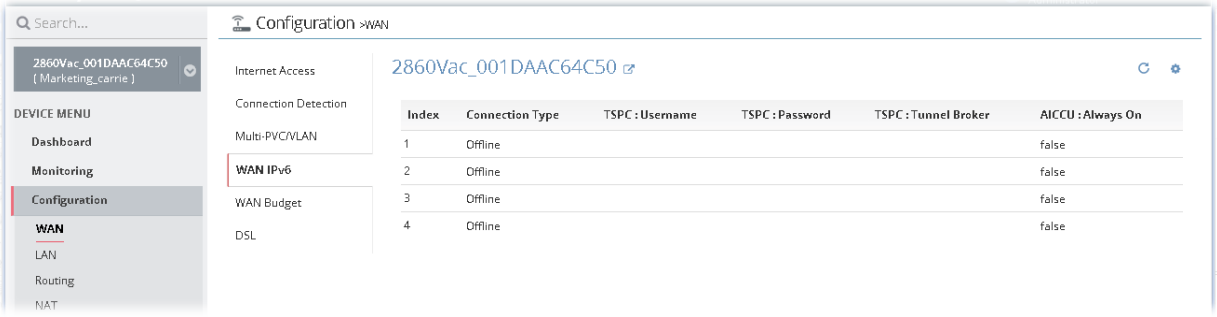
To edit the parameters settings for each channel (5 to 10), move the mouse cursor on the table and click the channel number to get the following page.



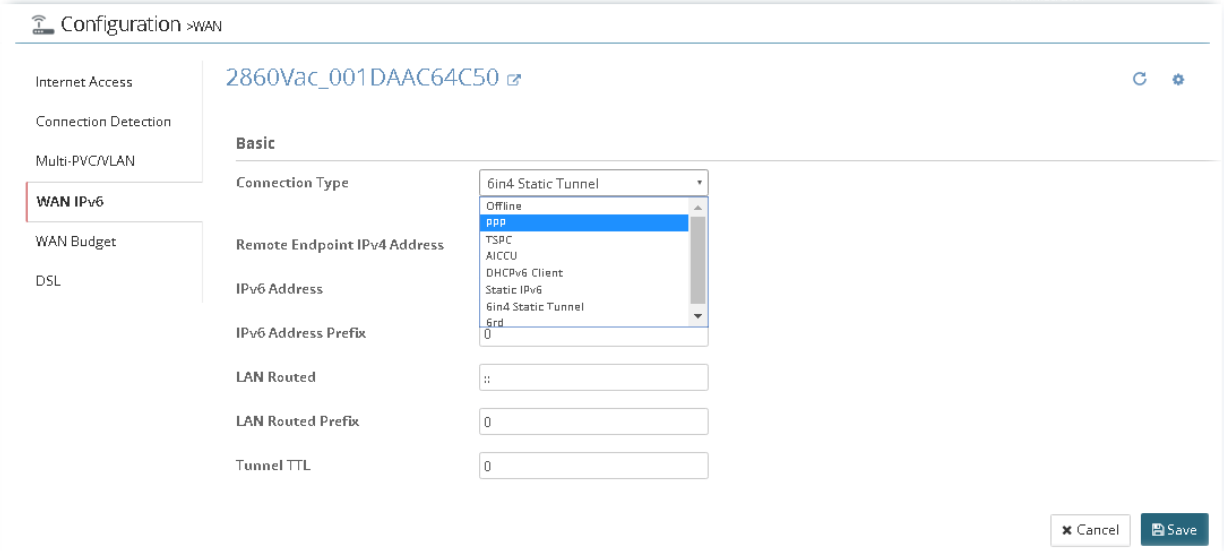
After finished the settings, click **Save**. The modification for the CPE will take effect immediately.

13.1.4 WAN IPv6

All WAN interfaces can be configured with IPv6 addresses.



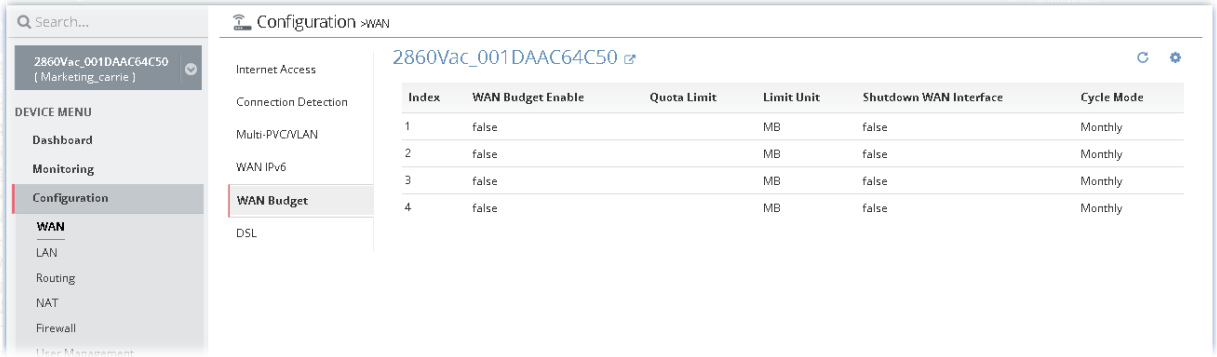
To edit the parameters settings for each WAN interface, move the mouse cursor on the table and click the index number (index 1 ~ index 4 represent WAN 1 ~ WAN 4) to get the following page.



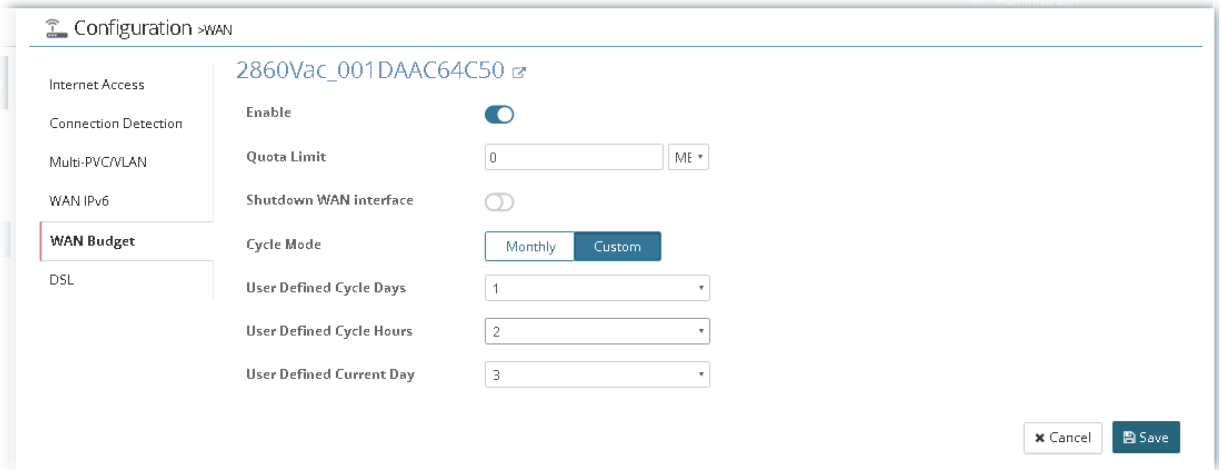
After finished the settings, click **Save**. The modification for the CPE will take effect immediately.

13.1.5 WAN Budget

This function is used to determine the data *traffic volume* for each WAN interface respectively to prevent from overcharges for data transmission by the ISP. Please note that the Quota Limit and Billing cycle day of month settings will need to be configured correctly first in order for some period calculations to be performed correctly.



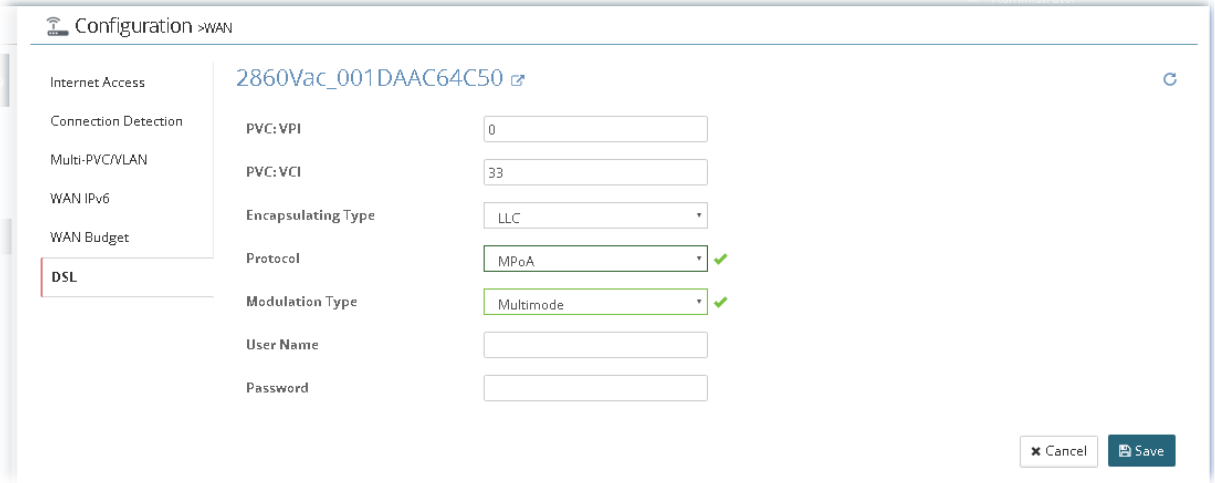
To edit the parameters settings for each WAN interface, move the mouse cursor on the table and click the index number (index 1 ~ index 4 represent WAN 1 ~ WAN 4) to get the following page.



After finished the settings, click **Save**. The modification for the CPE will take effect immediately.

13.1.6 DSL

This page allows you to set up the DSL parameters required by your ISP.



After finished the settings, click **Save**. The modification for the CPE will take effect immediately.

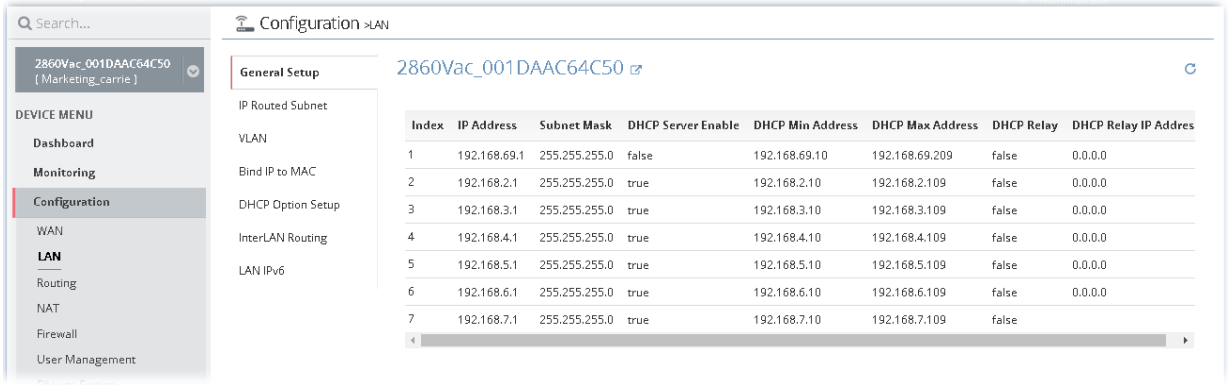
13.2 Modifying LAN Setting for CPE

The administrator can check and edit LAN settings for the selected **CPE** if necessary.

Click **DEVICE MENU>>Configuration>>LAN**. The following screen will appear with all of the LAN settings for the selected CPE.

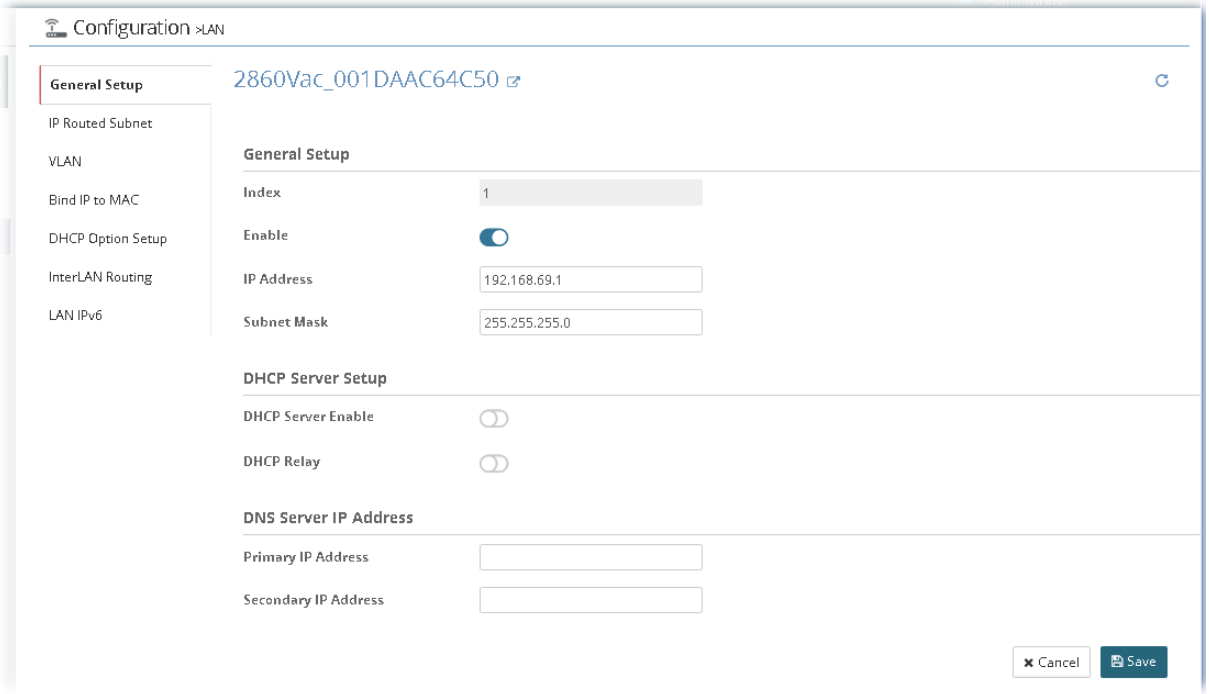
13.2.1 General Setup

This page provides you the general settings for LAN. There are six subnets provided by the router which allow users to divide groups into different subnets (LAN 1 – LAN 7). At present, LAN1 setting is fixed with NAT mode only. LAN 2 – LAN 7 can be operated under **NAT** or **Route** mode. IP Routed Subnet can be operated under Route mode.

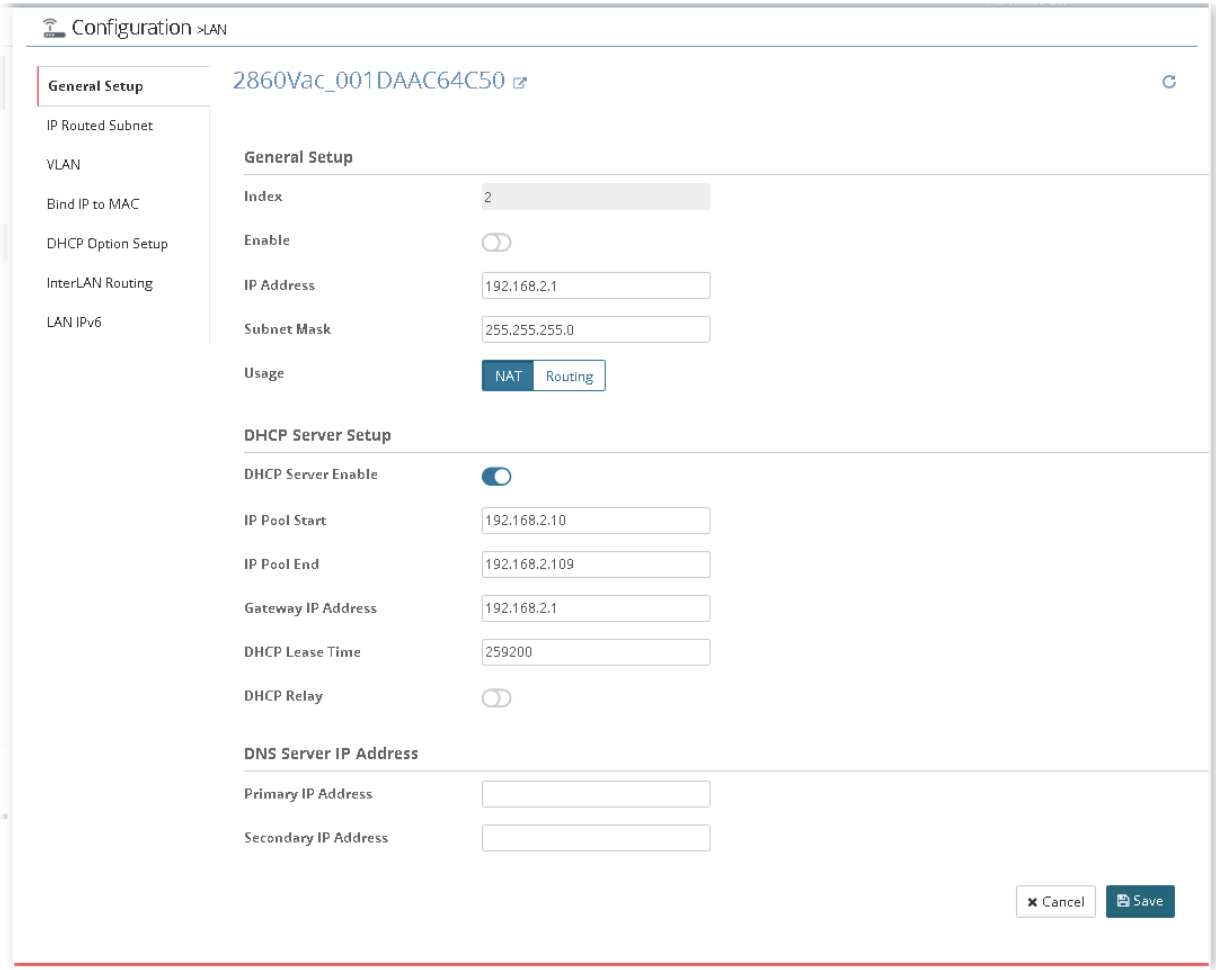


To edit the parameters settings for each LAN interface, move the mouse cursor on the table and click the index number (index 1 ~ index 7 represent LAN interfaces) to get the following page.

Index 1 represents LAN1:

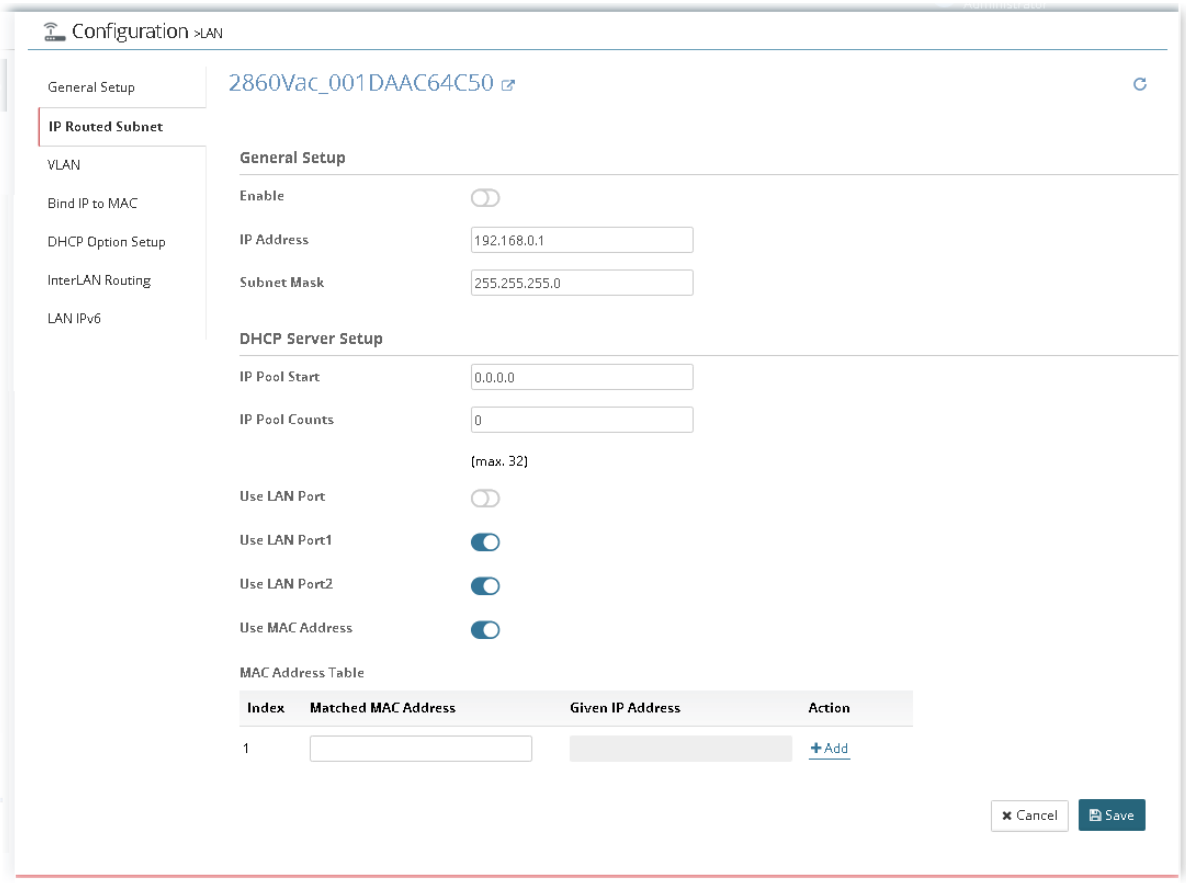


Index 2 to Index 7 represents LAN 2 to LAN 6 and DMZ:



After finished the settings, click **Save**. The modification for the CPE will take effect immediately.

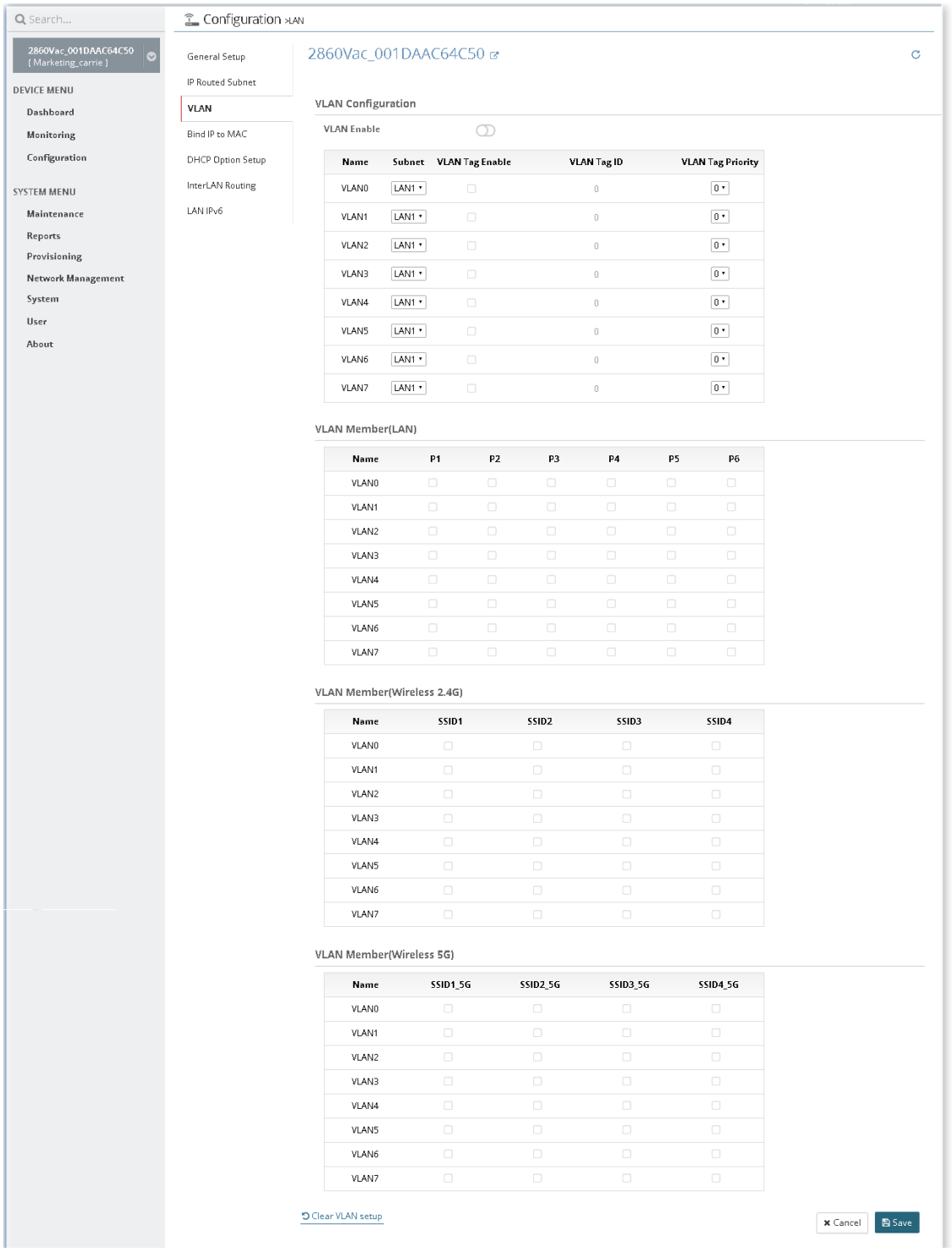
13.2.2 IP Routed Subnet



After finished the settings, click **Save**. The modification for the CPE will take effect immediately.

13.2.3 VLAN

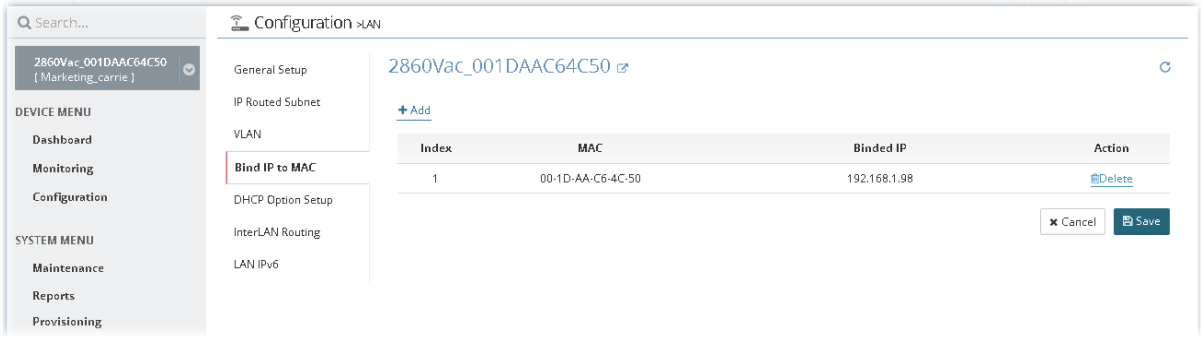
With the 6-port Gigabit switch on the LAN side, Vigor router provides extremely high speed connectivity for the highest speed local data transfer of any server or local PCs. Gigabit LAN ports can be isolated from each other. On the Wireless-equipped models, each of the wireless SSIDs can also be grouped within one of the VLANs.



After finished the settings, click **Save**. The modification for the CPE will take effect immediately.

13.2.4 Bind IP to MAC

This function is used to bind the IP and MAC address in LAN to have a strengthening control in network. When this function is enabled, all the assigned IP and MAC address binding together cannot be changed. If you modified the binding IP or MAC address, it might cause you not access into the Internet.

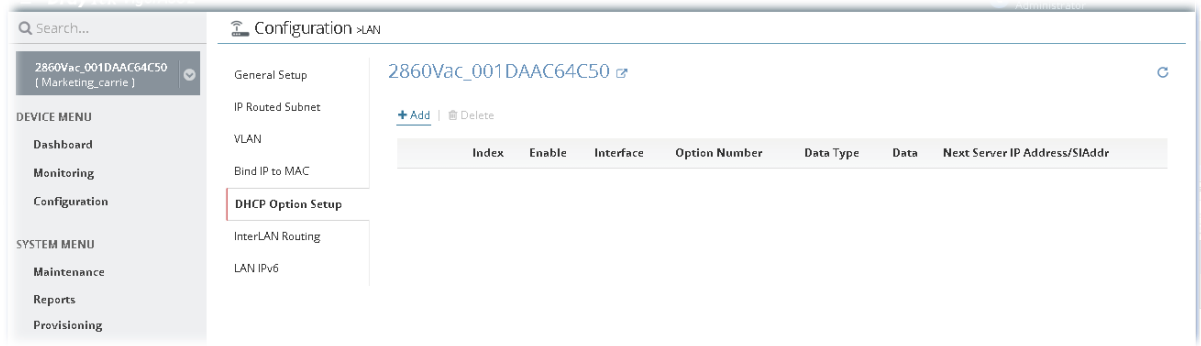


To add the parameters settings for DHCP server, click **+Add** to type the MAC address and an IP address for binding.

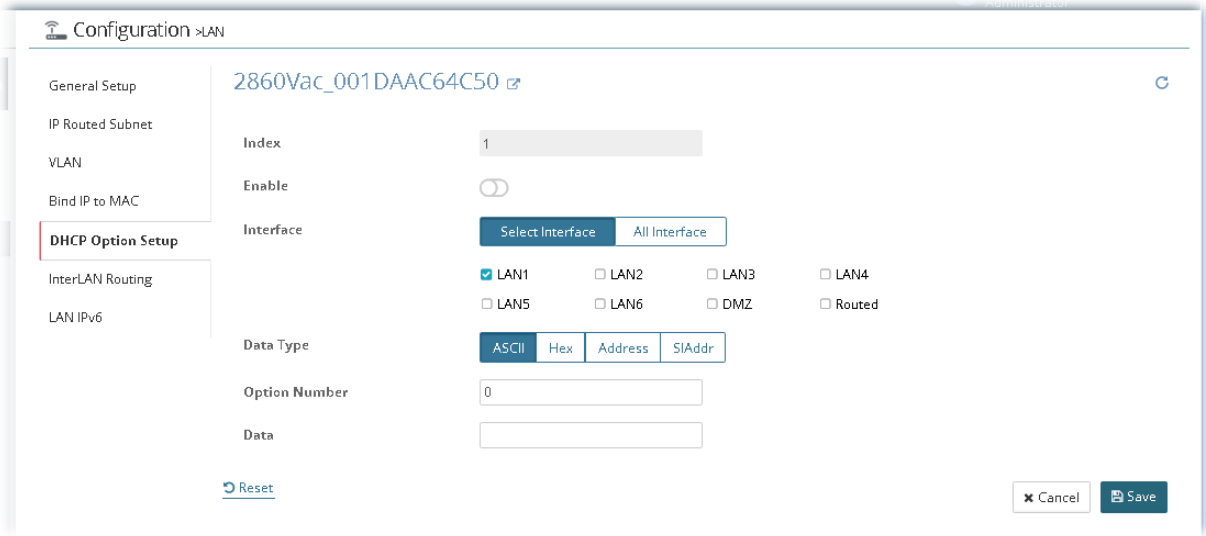
After finished the settings, click **Save**. The modification for the CPE will take effect immediately.

13.2.5 DHCP Option Setup

DHCP packets can be processed by adding option number and data information when such function is enabled.



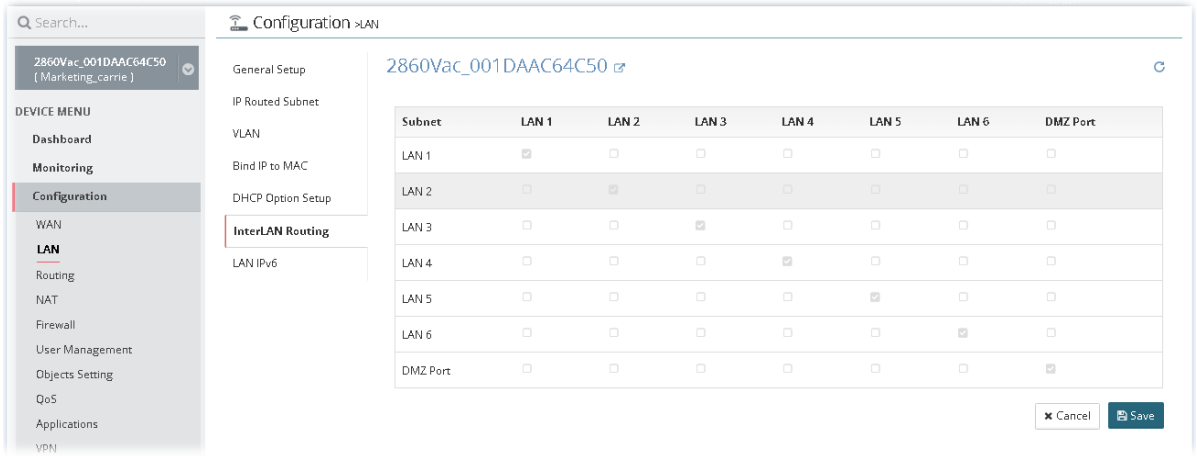
To add the parameters settings for DHCP server, click **+Add** to get the following page.



After finished the settings, click **Save**. The modification for the CPE will take effect immediately.

13.2.6 InterLAN Routing

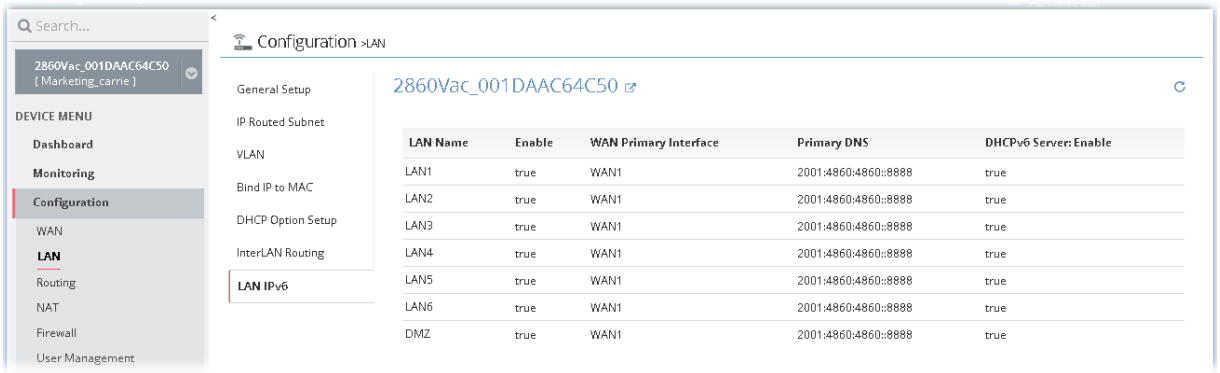
This page is used for linking two or more different subnets (LAN and LAN).



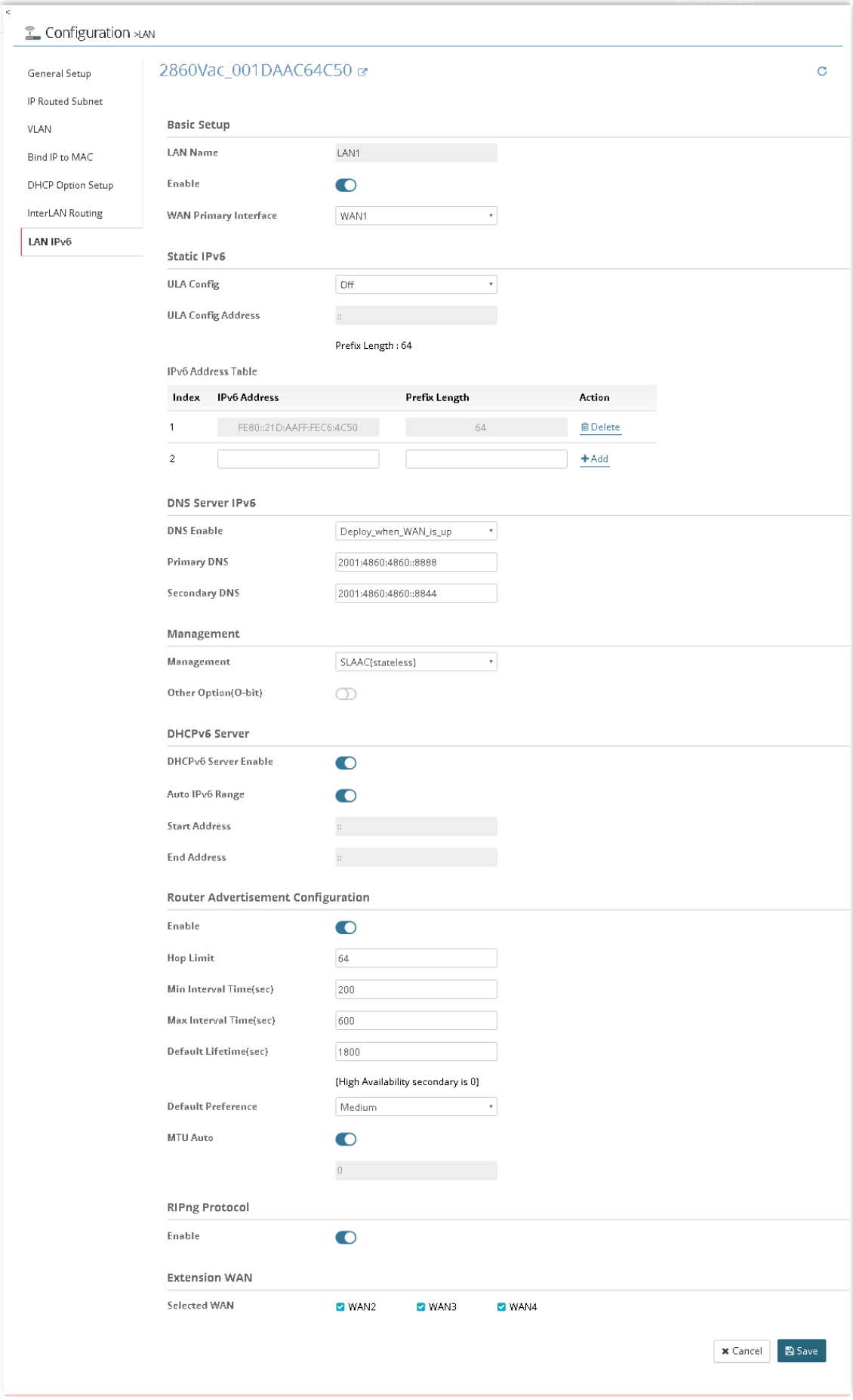
After finished the settings, click **Save**. The modification for the CPE will take effect immediately.

13.2.7 LAN IPv6

There are two configuration pages for LAN1/LAN2/LAN3/LAN4/LAN5/LAN6/DMZ Port, Ethernet TCP/IP and DHCP Setup (based on IPv4) and IPv6 Setup. This page shows configuration for IPv6.



To edit the parameters settings for each LAN interface and DMZ, move the mouse cursor on the table and click any one of the LAN names to get the following page.


Configuration >LAN
General Setup
IP Routed Subnet
VLAN
Bind IP to MAC
DHCP Option Setup
InterLAN Routing
LAN IPv6
2860Vac_001DAAC64C50
Basic Setup
LAN Name
LAN1
Enable
WAN Primary Interface
WAN1
Static IPv6
ULA Config
Off
ULA Config Address
::
Prefix Length : 64
IPv6 Address Table
Index
IPv6 Address
Prefix Length
Action
1
FE80::21D:AAFF:FEC6:4C50
64
Delete
2
Add
DNS Server IPv6
DNS Enable
Deploy_when_WAN_is_up
Primary DNS
2001:4860:4860::8888
Secondary DNS
2001:4860:4860::8844
Management
Management
SLAAC(stateless)
Other Option(O-bit)
DHCPv6 Server
DHCPv6 Server Enable
Auto IPv6 Range
Start Address
::
End Address
::
Router Advertisement Configuration
Enable
Hop Limit
64
Min Interval Time(sec)
200
Max Interval Time(sec)
600
Default Lifetime(sec)
1800
(High Availability secondary is 0)
Default Preference
Medium
MTU Auto
0
RIPng Protocol
Enable
Extension WAN
Selected WAN
WAN2
WAN3
WAN4
Cancel
Save

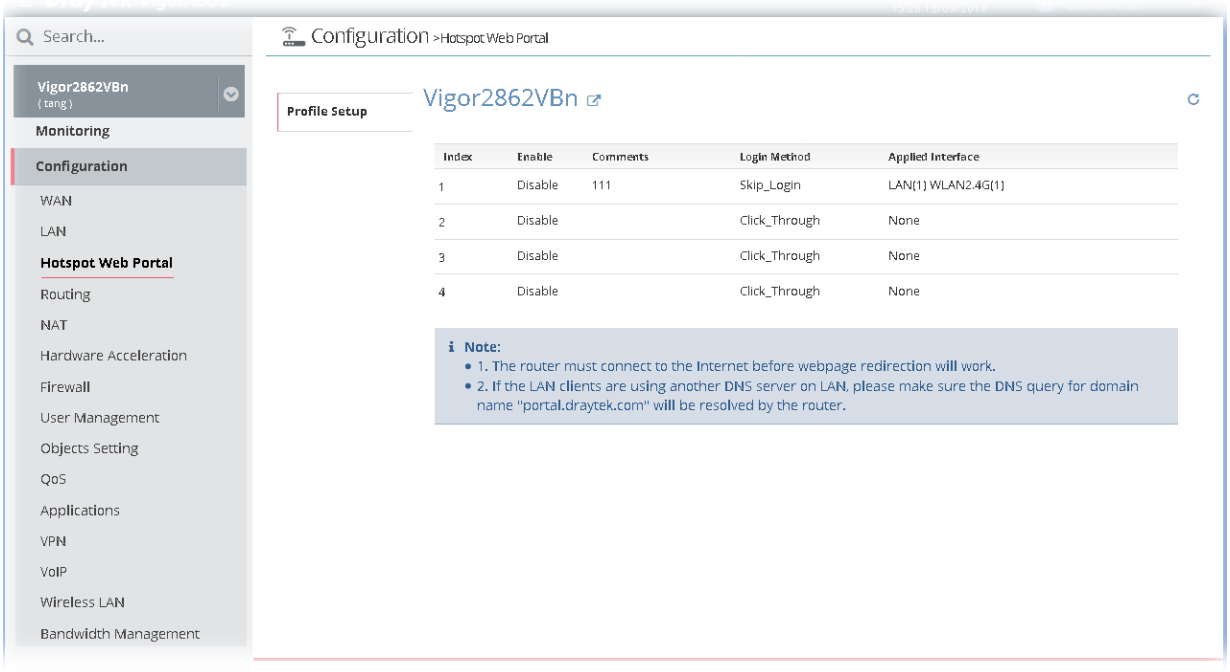
After finished the settings, click **Save**. The modification for the CPE will take effect immediately.

13.3 Hotspot Web Portal for CPE

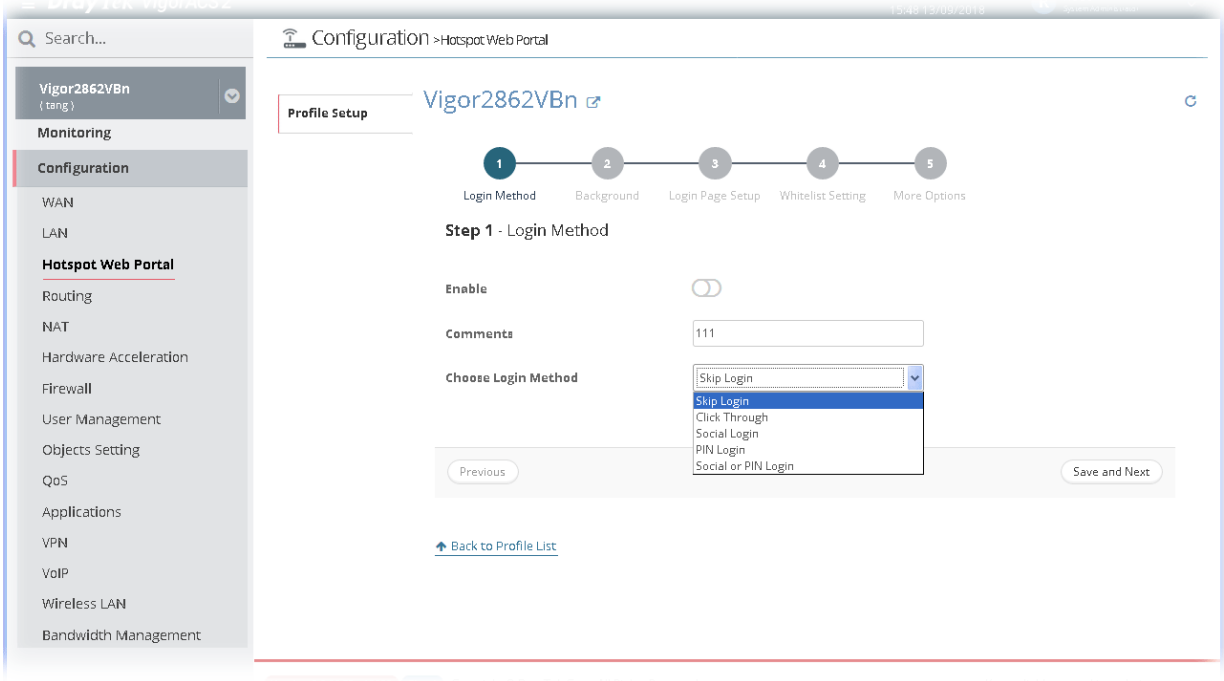
The Hotspot Web Portal feature allows you to set up profiles so that LAN users could either be redirected to specific URLs, or be shown messages when they first connect to the Internet through the router. Users could be required to read and agree to terms and conditions, or authenticate themselves, prior to gaining access to the Internet. Other potential uses include the serving of advertisements and promotional materials, and broadcast of public service announcements.

13.3.1 Profile Setup

Profile Setup is used to create or modify Portal profiles. Up to 4 profiles can be created to meet different requirements according to LAN subnets, WLAN SSIDs, origin and destination IP addresses, etc.



To edit the parameters settings for each profile, move the mouse cursor on the table and click any one of the indexes to get the following page.

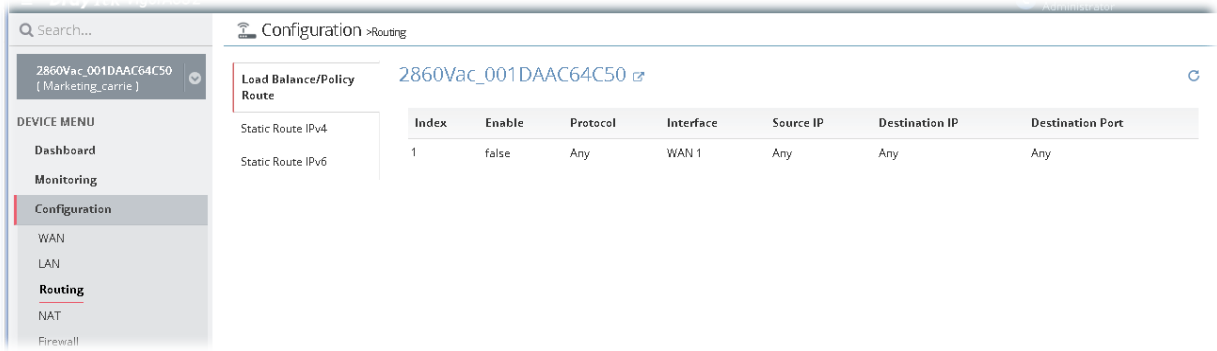


There are five login modes to choose from for authenticating network clients: **Skip Login**, **Click Through**, **Social Login**, **PIN Login**, and **Social or PIN Login**. Each login mode will present a different web page to users when they connect to the network.

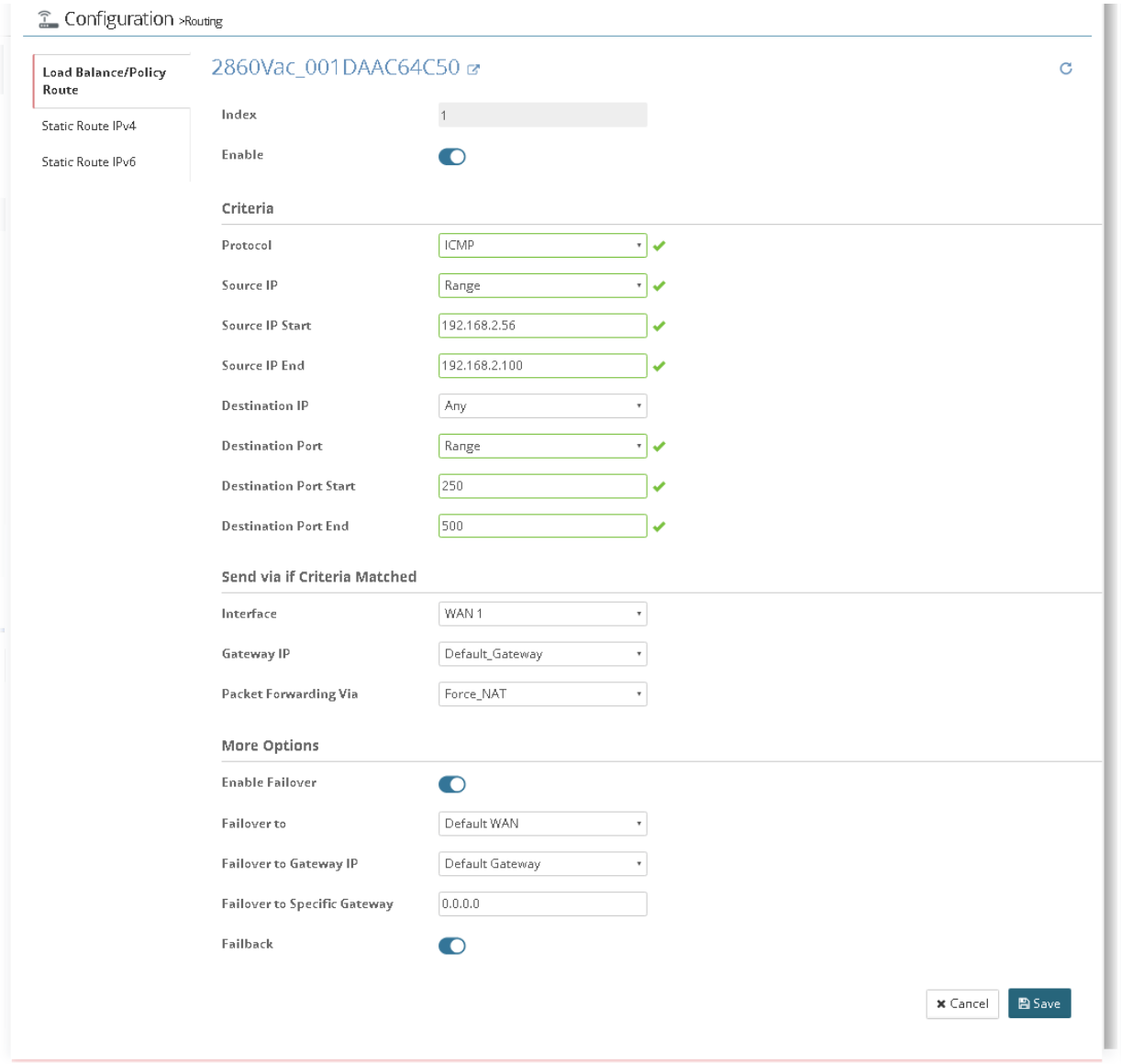
Please follow the on-screen steps for configuring a Web Portal Profile.

13.4 Routing Settings for CPE

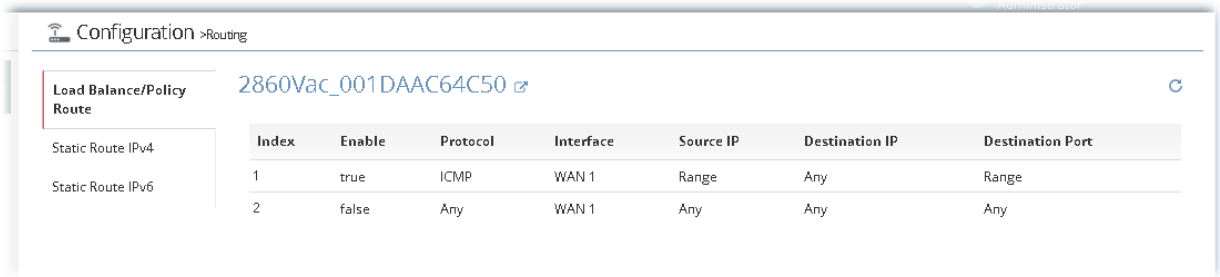
13.4.1 Load Balance/Policy Route



To add a new route policy profile, move the mouse cursor on the table and click the index number #1 to get the following page.



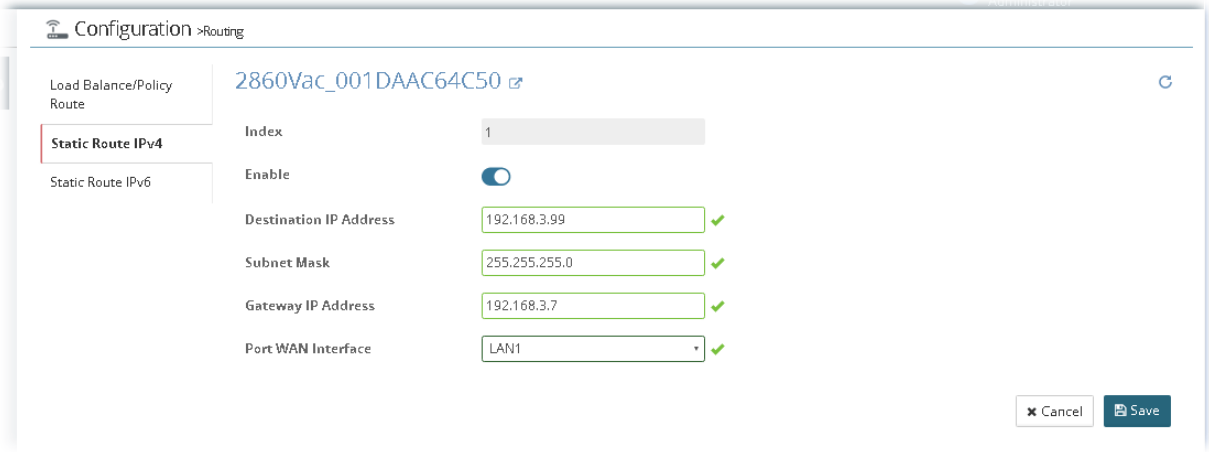
After finished the settings, click **Save**. A new policy route has been created. And, the modification for the CPE will take effect immediately.



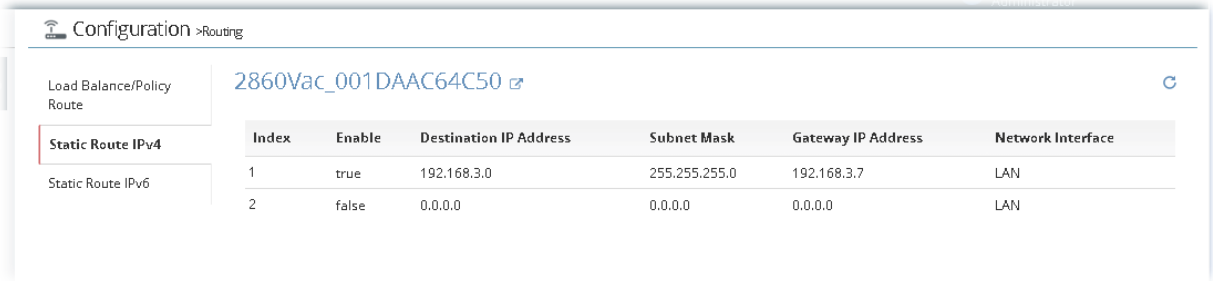
13.4.2 Static Route IPv4 / IPv6

The router offers IPv4 and IPv6 for you to configure the static route. Both protocols bring different web pages.

To add a new static route profile, move the mouse cursor on the table and click the index number #1 (default blank profile) to get the following page.



After finished the settings, click **Save**. A new static route has been created. And, the modification for the CPE will take effect immediately.

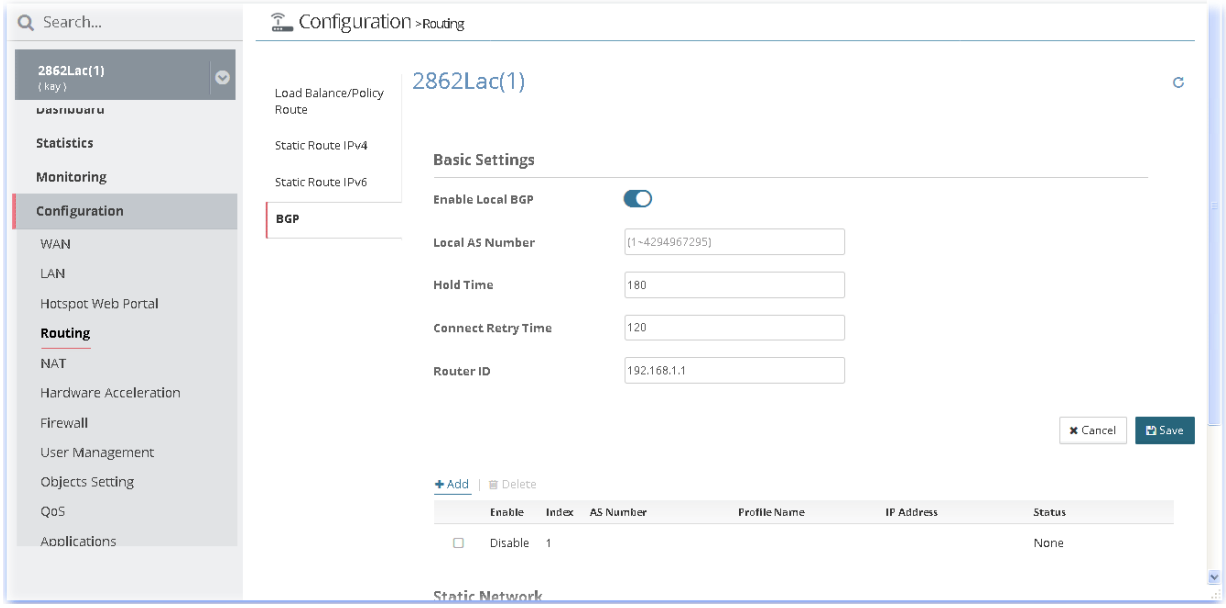


Info

New added profile will be displayed on the top side (index #1) of the page. The default blank profile (index #2) will be moved to the bottom.

13.4.3 BGP

Border Gateway Protocol (BGP) is a standardized protocol designed to exchange routing and reachability information among autonomous systems (AS) on the Internet.



These parameters are explained as follows:

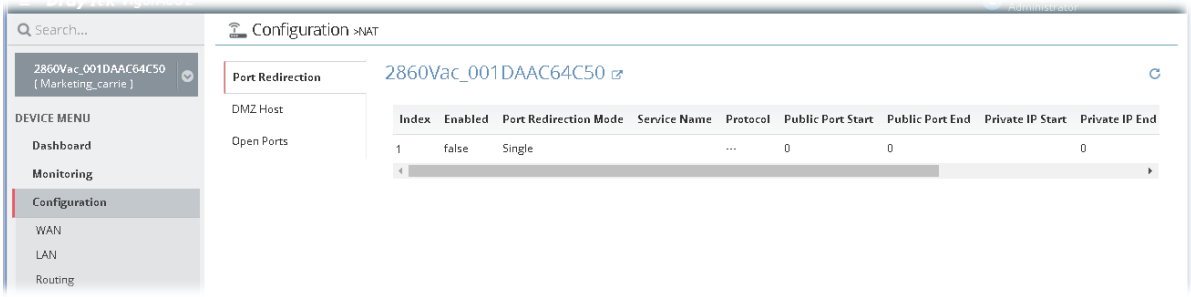
Item	Description
Basic Settings	Set general settings for for local router and neighboring routers. **Enable Local BGP** – Switch the button to enable the function. **Local AS Number** – Dispaly the local AS nubmer. **Hold Time** - Set the time interval (in seconds) to determine the peer is dead when the router is unable to receive any keepalive message from the peer within the time. **Connect Retry Time** - If the router fails to connect to neighboring router, it requires a period of time to reconnect. **Router ID** - Specify the LAN subnet for the router. **+Add -** Add a new neighbor profile. **Save –** Click it to save the configuration.
Cancel	Discard current settings.
Save	Save the current settings and exit the page.

Static Network	**+Add –** Add a new static network profile by giving IP address and subnet mask. **Save –** Click it to save the configuration.

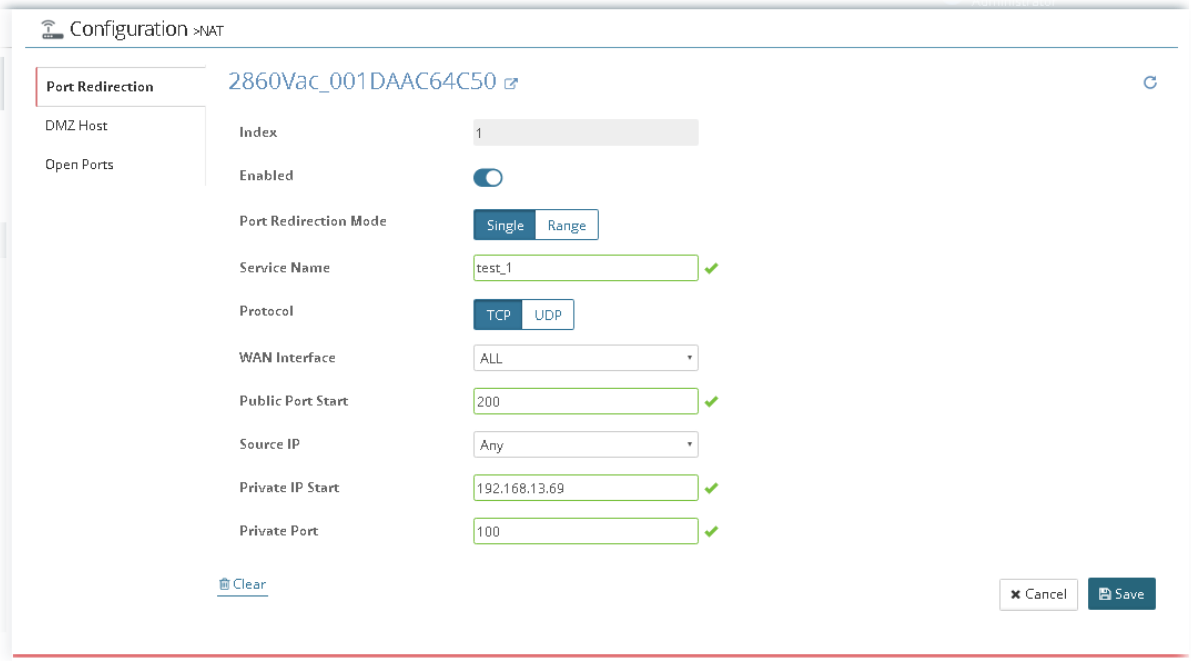
13.5 NAT Settings for CPE

13.5.1 Port Redirection

Port Redirection is usually set up for server related service inside the local network (LAN), such as web servers, FTP servers, E-mail servers etc. It can only apply to incoming traffic.



To add a new port redirection profile, move the mouse cursor on the table and click the index number #1 (default blank profile) to get the following page.

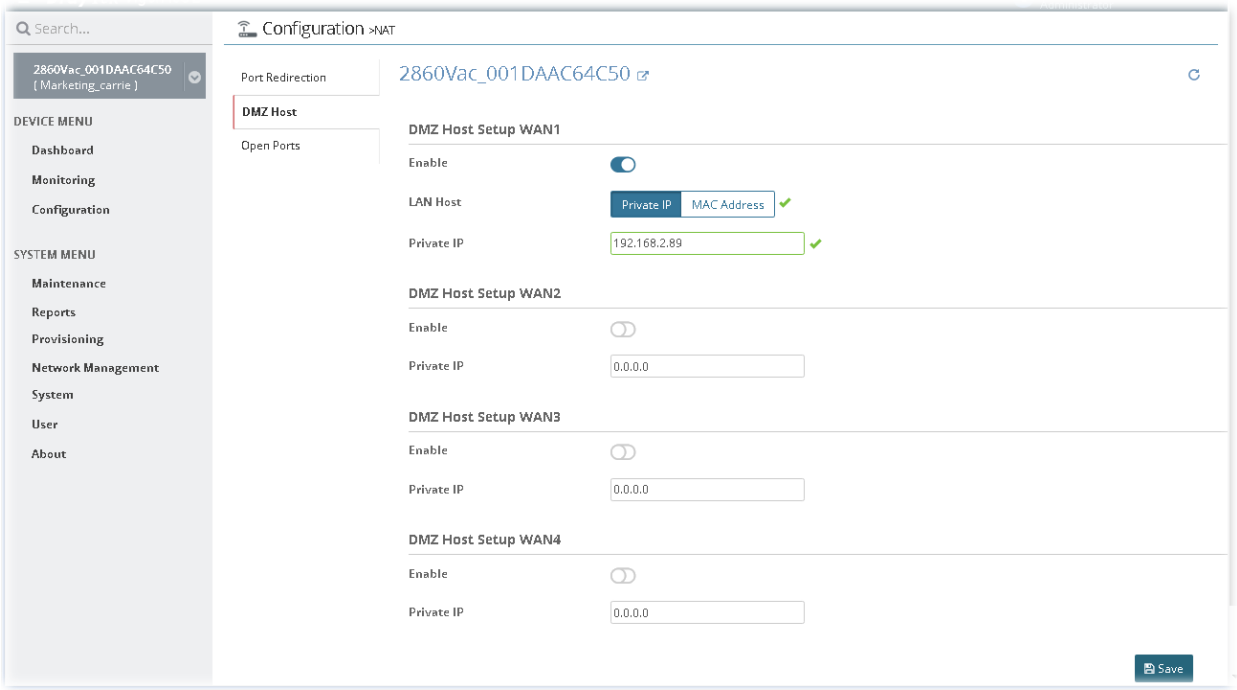


After finished the settings, click **Save**. A new port redirection profile has been created. And, the modification for the CPE will take effect immediately.

Info	New added profile will be displayed on the top side (index #1) of the page. The default blank profile (index #2) will be moved to the bottom.

13.5.2 DMZ Host

Port Redirection can redirect incoming TCP/UDP or other traffic on particular ports to the specific private IP address/port of host in the LAN. However, other IP protocols, for example Protocols 50 (ESP) and 51 (AH), do not travel on a fixed port. Vigor router provides a facility **DMZ Host** that maps ALL unsolicited data on any protocol to a single host in the LAN. Use this function to configure DMZ host for the specified CPE device.

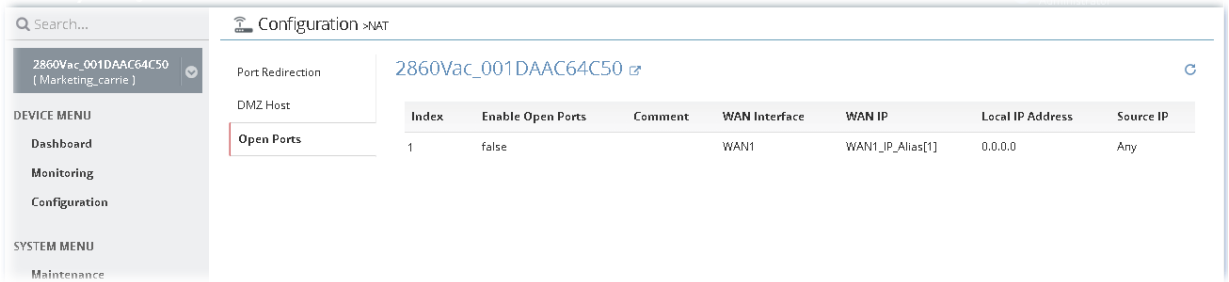


After finished the settings, click **Save**. And, the modification for the CPE will take effect immediately.

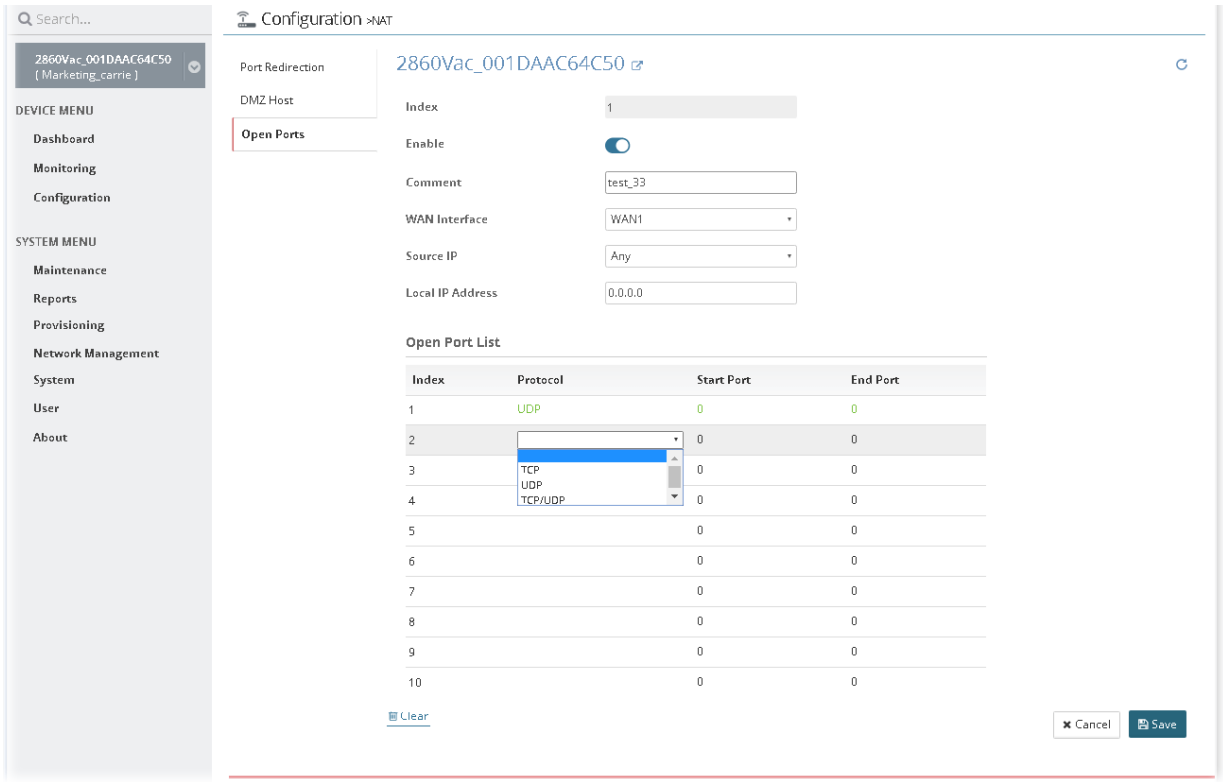
13.5.3 Open Ports

It allows you to open a range of ports for the traffic of special applications.

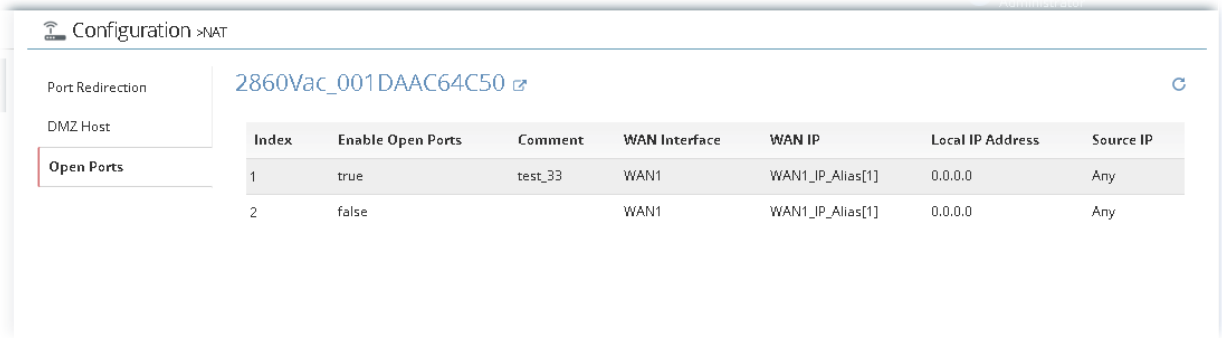
Common application of Open Ports includes P2P application (e.g., BT, KaZaA, Gnutella, WinMX, eMule and others), Internet Camera etc. Ensure that you keep the application involved up-to-date to avoid falling victim to any security exploits.



To add a new open ports profile, move the mouse cursor on the table and click the index number #1 (default blank profile) to get the following page.



After finished the settings, click **Save**. A new profile has been created. And, the modification for the CPE will take effect immediately.

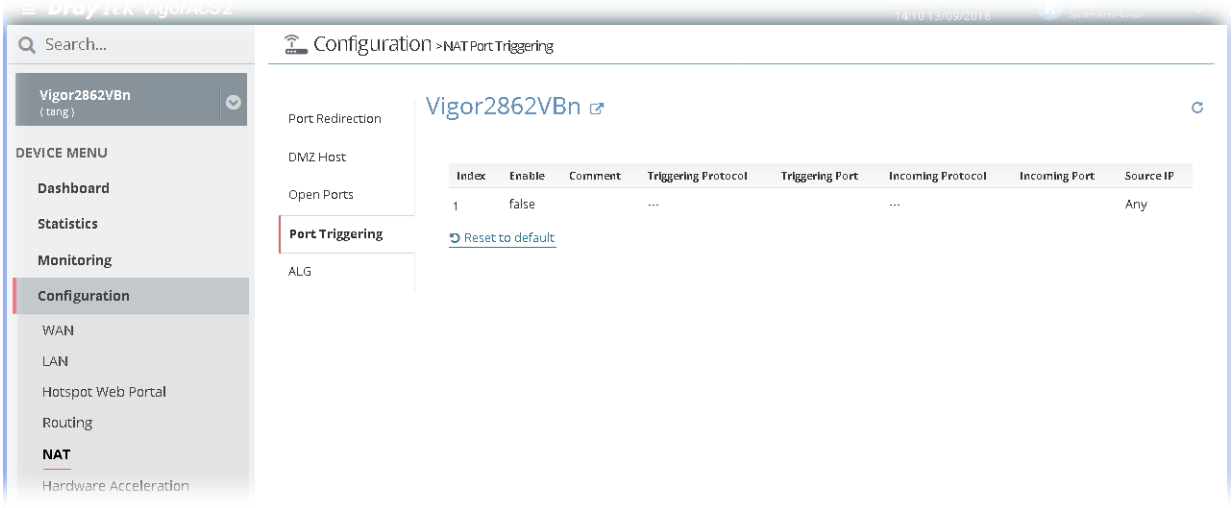


Info

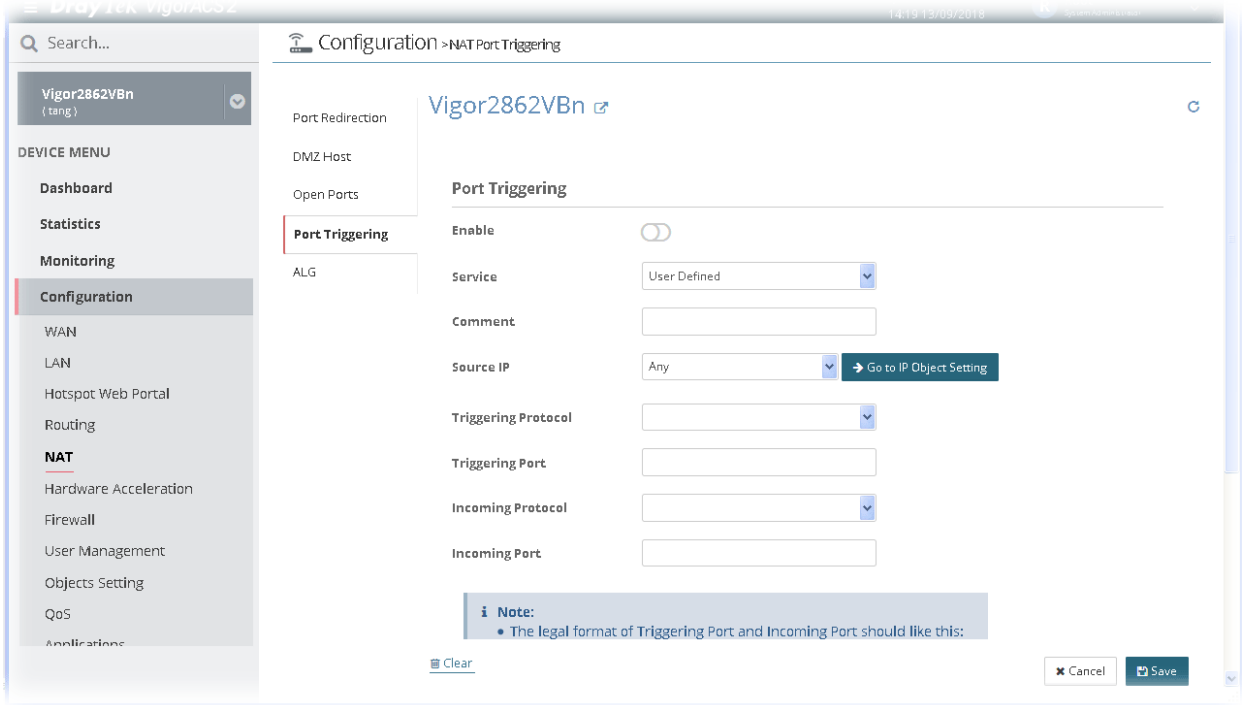
New added profile will be displayed on the top side (index #1) of the page. The default blank profile (index #2) will be moved to the bottom.

13.5.4 Port Triggering

It is a variation of open ports function.



To add a new port triggering profile, move the mouse cursor on the table and click the index number #1 (default blank profile) to get the following page.



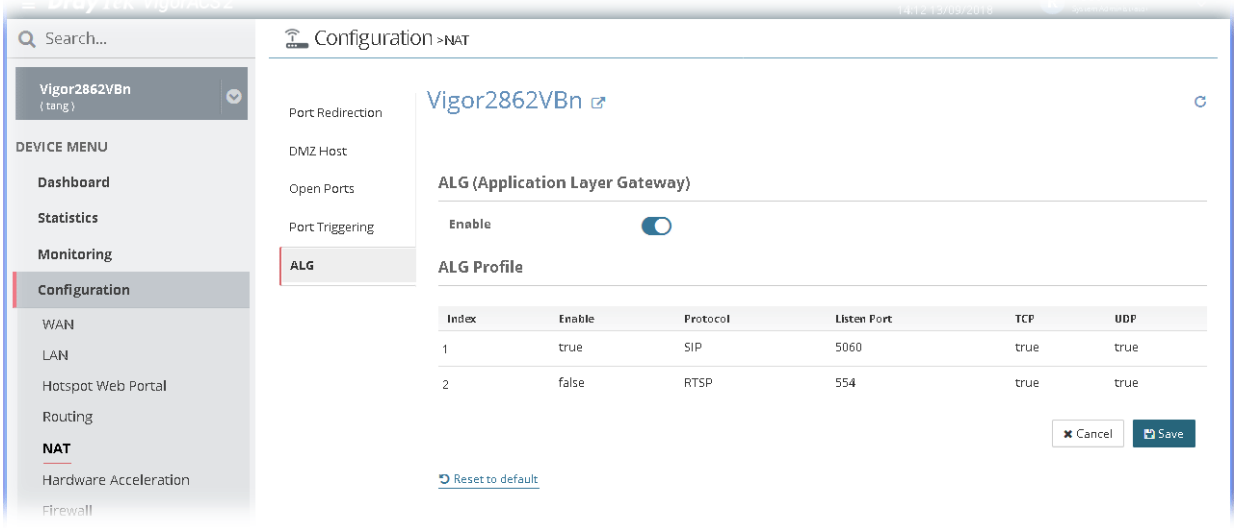
After finished the settings, click **Save**. A new profile has been created. And, the modification for the CPE will take effect immediately.

13.5.5 ALG

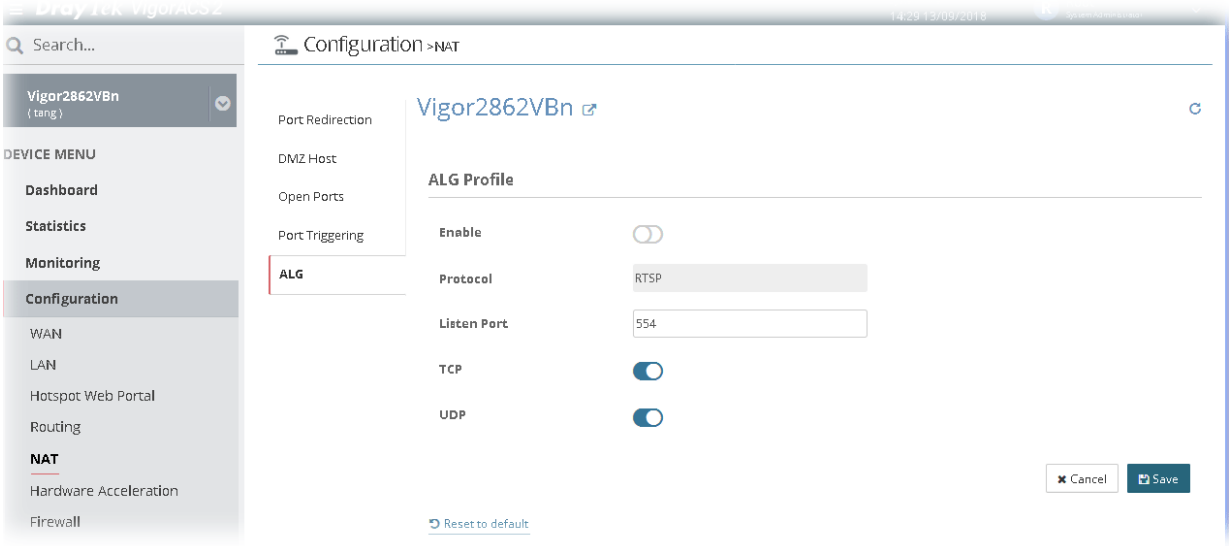
There are two methods provided by Vigor router, RTSP (Real Time Streaming Protocol) ALG and SIP (Session Initiation Protocol) ALG, for processing the packets of voice and video.

RTSP ALG makes RTSP message, RTCP message, and RTP packets of voice and video be transmitted and received correctly via NAT by Vigor router.

However, SIP ALG makes SIP message and RTP packets of voice be transmitted and received correctly via NAT by Vigor router.



To edit ALG profile, move the mouse cursor on the table and click the index number #1 or 2 to get the following page.

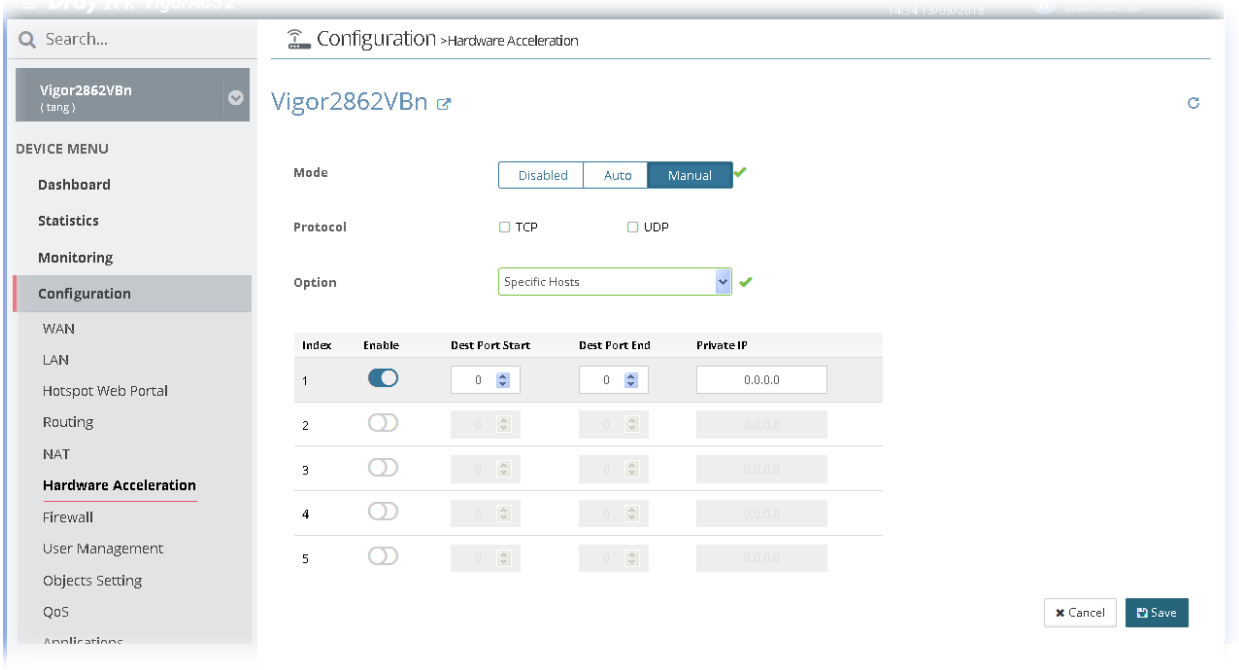


After finished the settings, click **Save**. The modification for the CPE will take effect immediately.

13.6 Hardware Acceleration Settings for CPE

In such section, Vigor2862VBn is selected as an example for displaying hardware acceleration settings.

Hardware Acceleration is also called **PPA** in DrayTek for it is based on **Protocol Processing Engine (PPE)** of Infineon. It can only support 128 sessions for network traffic (IN & OUT) with implementing three kinds of modes - Disable, Auto and Manual.



These parameters are explained as follows:

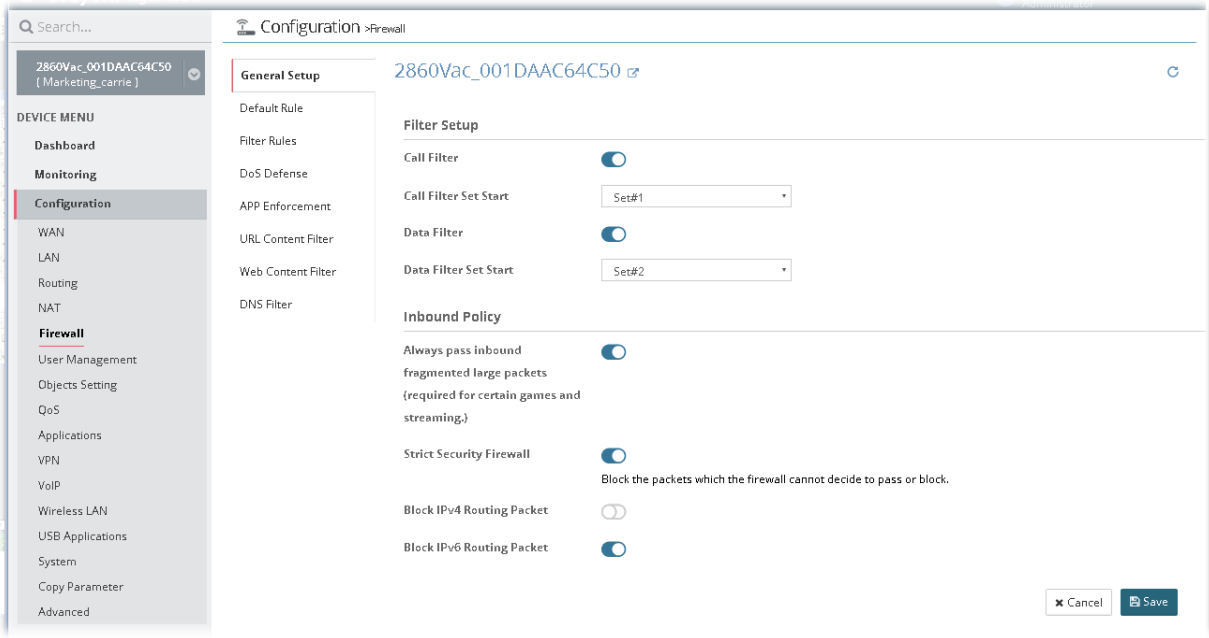
Item	Description
Mode	**Disable –** The default setting. **Auto -** When the hardware acceleration is configured with the **Auto** mode, the sessions with the heaviest loading and the lower latency traffic will be added into PPA. However, the Auto mode does not support UDP protocol by designed. **Manual -** The Manual mode implements three sub-items-- *Accelerate most heavy traffic sessions*, *Apply the Class Rule in Quality of Service*, and *Specific Hosts*. Each of these sub-items can support TCP and UDP protocol.
Protocol	There are two types supported by this function, TCP and UDP.
Option	**Accelerate heaviest traffic sessions** – Such option is available in Auto Mode, too. But the UDP protocol is only supported in this sub-item. **Apply the Class Rule in Quality of Service** – Users can apply the information provided by QoS in this sub-item. **Specific Hosts** – This sub-item provides 5 hosts for adding NAT sessions into the PPA. For the PPA only supports 128 sessions, these hosts will share these sessions. Therefore, the performance will be lower than only one host. Choose this option to specify certain PCs on LAN to apply the hardware acceleration. ● **Enable** – Check the box to make PC(s) specified in the selected index entry to be applied. ● **Dest Port Start** – Type the starting port for the PC(s) in LAN. ● **Dest Port End** – Type the ending port for the PC(s) in LAN. ● **Private IP/Choose PC** – Type the IP address as the selected host. Or click the Choose PC button to specify one IP address from the pop-up window.

After finished the settings, click **Save**. The modification for the CPE will take effect immediately.

13.7 Firewall Settings for CPE

13.7.1 General Setup

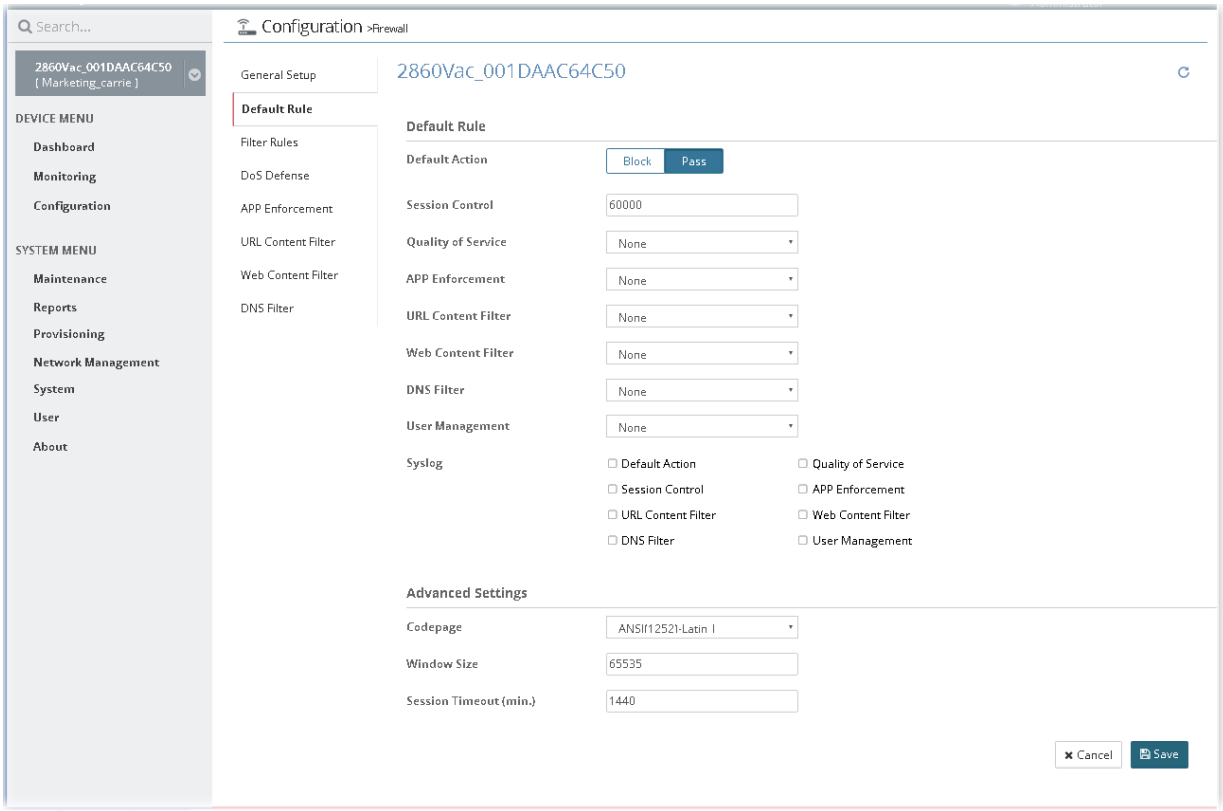
General Setup allows you to adjust settings of IP Filter and common options.



After finished the settings, click **Save**. And, the modification for the CPE will take effect immediately.

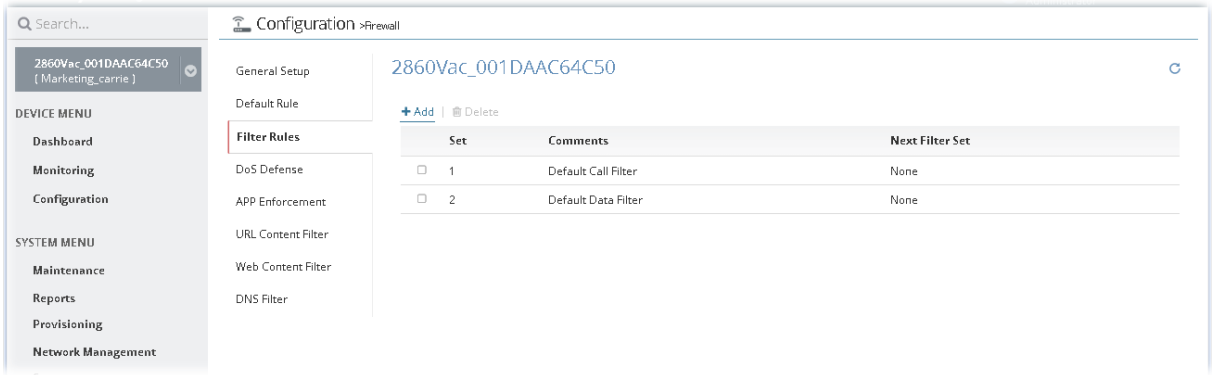
13.7.2 Default Rule

Such page allows you to choose filtering profiles including QoS, Load-Balance policy, WCF, APP Enforcement, URL Content Filter, for data transmission via Vigor router.

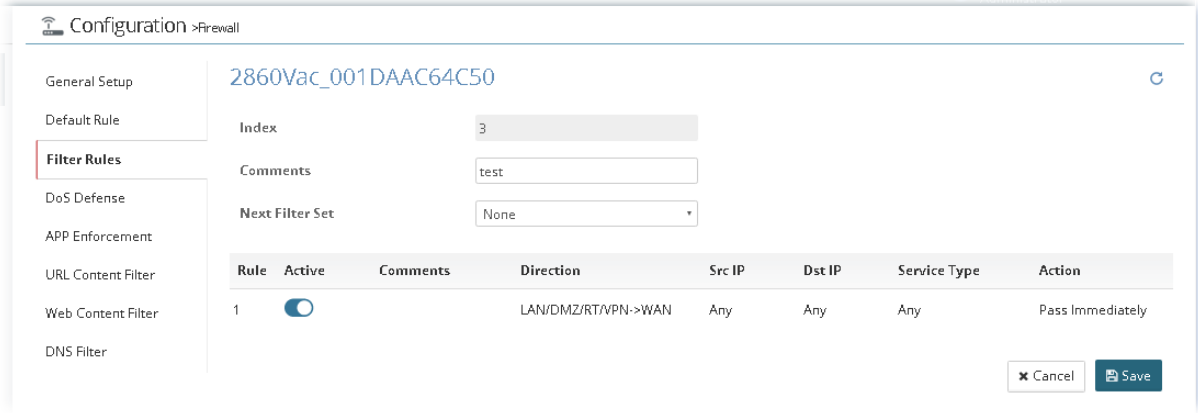


After finished the settings, click **Save**. And, the modification for the CPE will take effect immediately.

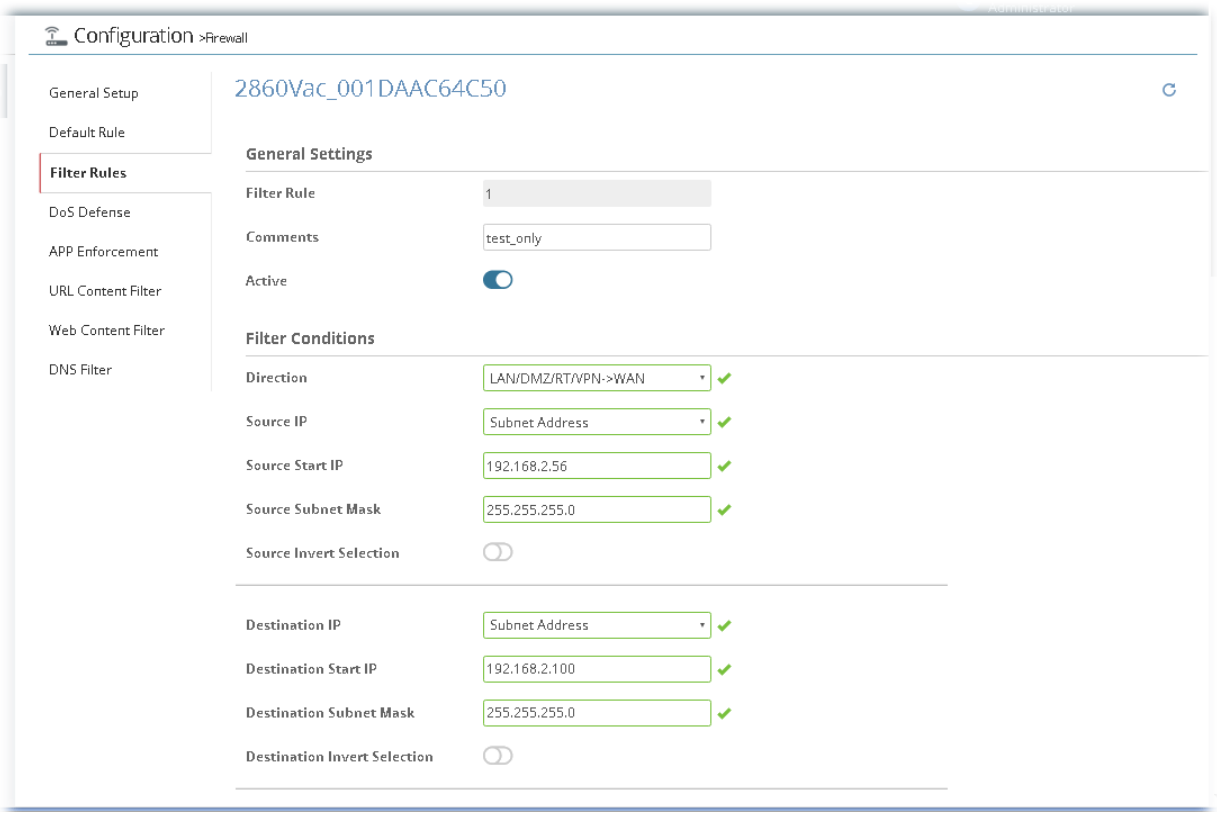
13.7.3 Filter Rules



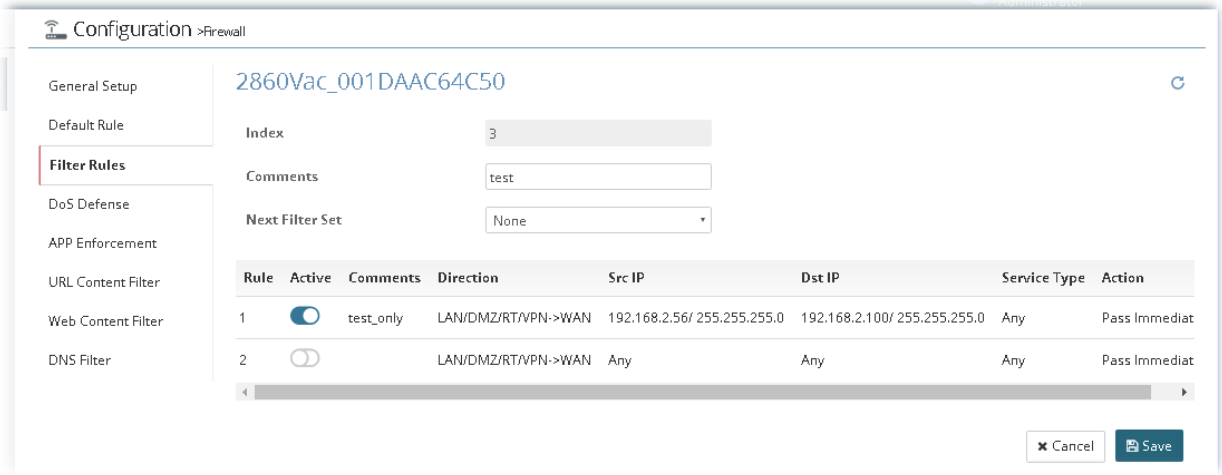
To add a new filter rule profile, click **+Add** to get the following page.



Then, move the mouse cursor on the rule table and click index number #1 to access into next configuration page.



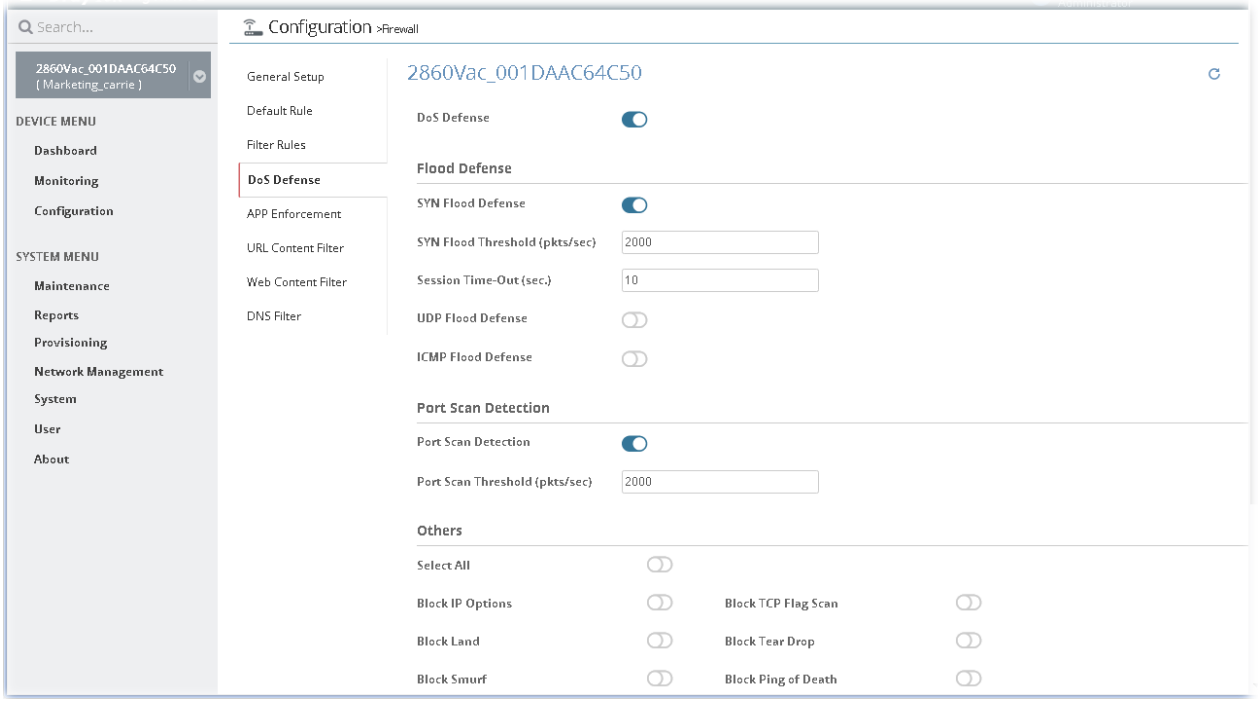
After finished the settings, click **Save**.



And, the modification for the CPE will take effect immediately.

13.7.4 DoS Defense

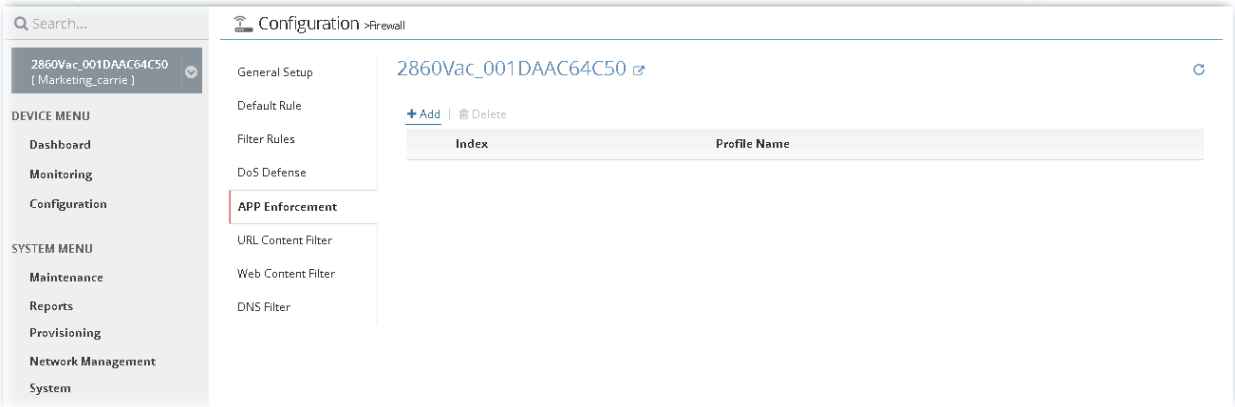
As a sub-functionality of IP Filter/Firewall, there are 15 types of detect/ defense function in the **DoS Defense** setup. In default, the DoS Defense functionality is disabled.



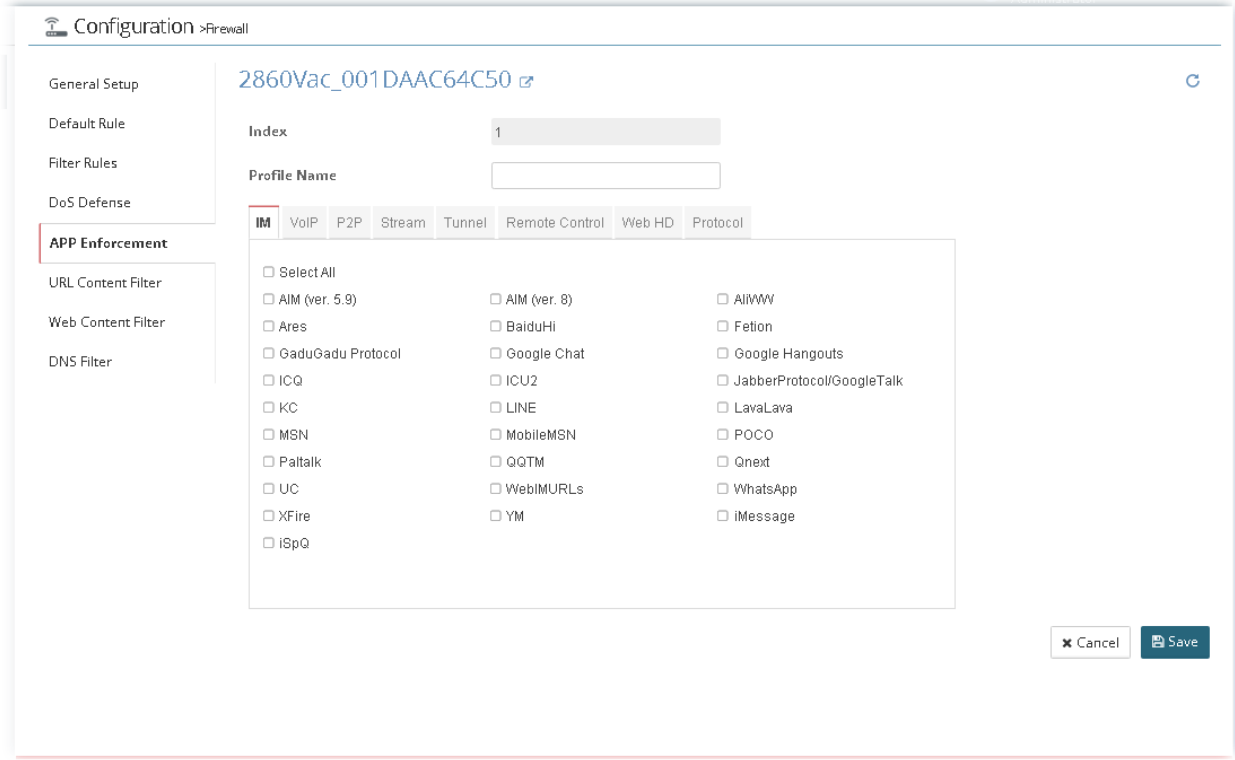
After finished the settings, click **Save**. And, the modification for the CPE will take effect immediately.

13.7.5 APP Enforcement

You can define policy profiles for IM (Instant Messenger)/P2P (Peer to Peer)/Protocol/Misc application.



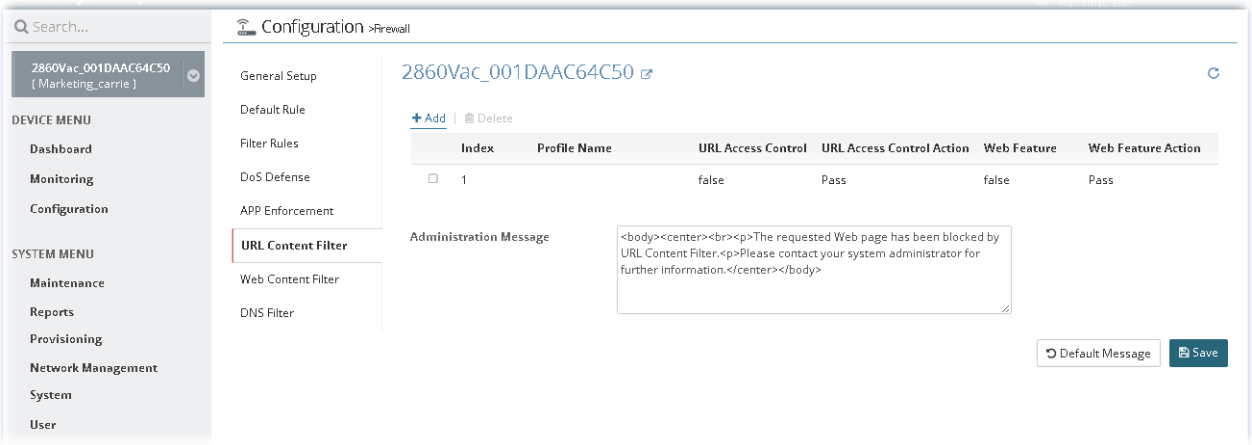
To add a new filter rule profile, click **+Add** to get the following page.



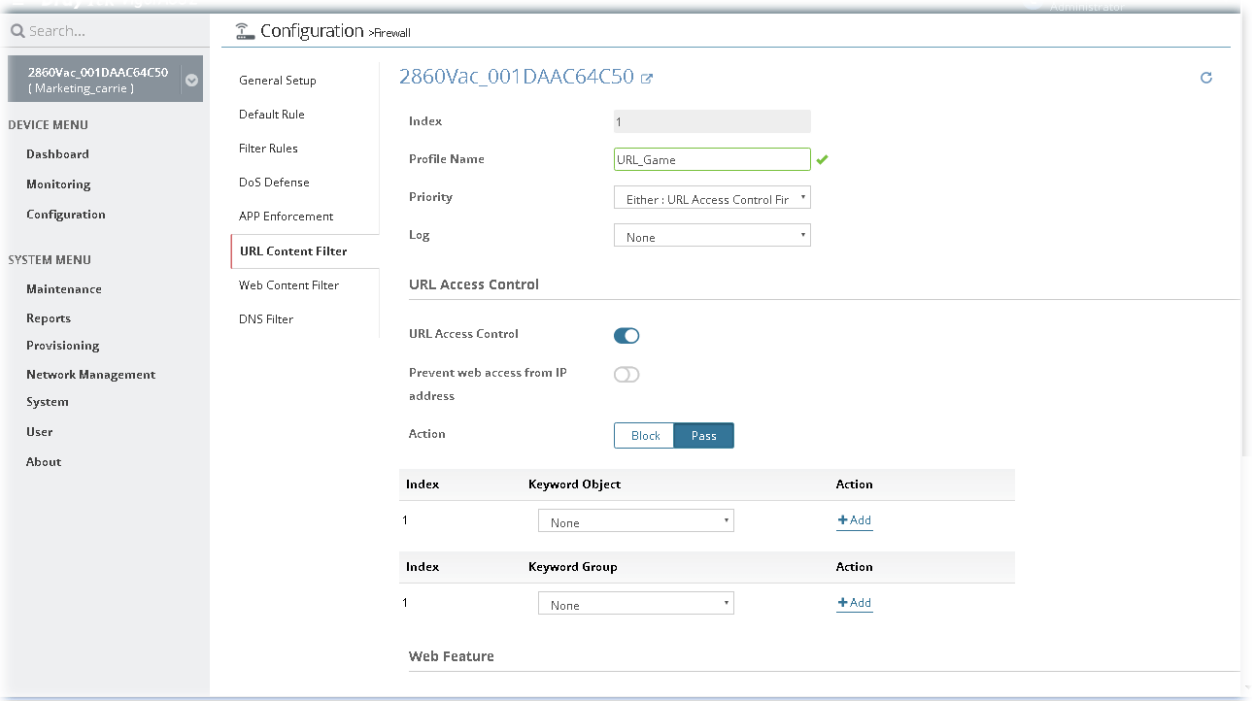
After finished the settings, click **Save**. And, the modification for the CPE will take effect immediately.

13.7.6 URL Content Filter

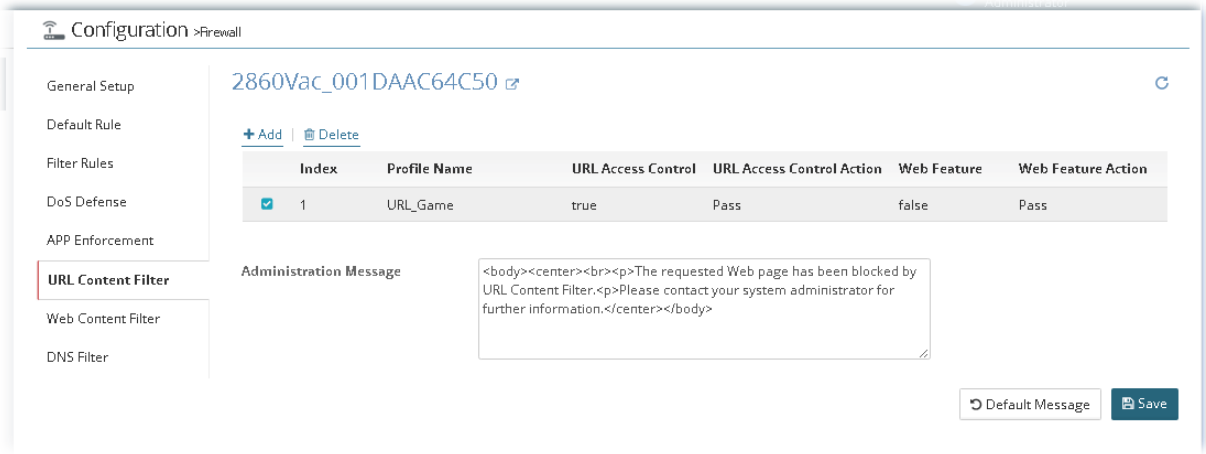
URL Content Filter not only limits illegal traffic from/to the inappropriate web sites but also prohibits other web feature where malicious code may conceal.



To add a new filter rule profile, click **+Add** to get the following page.

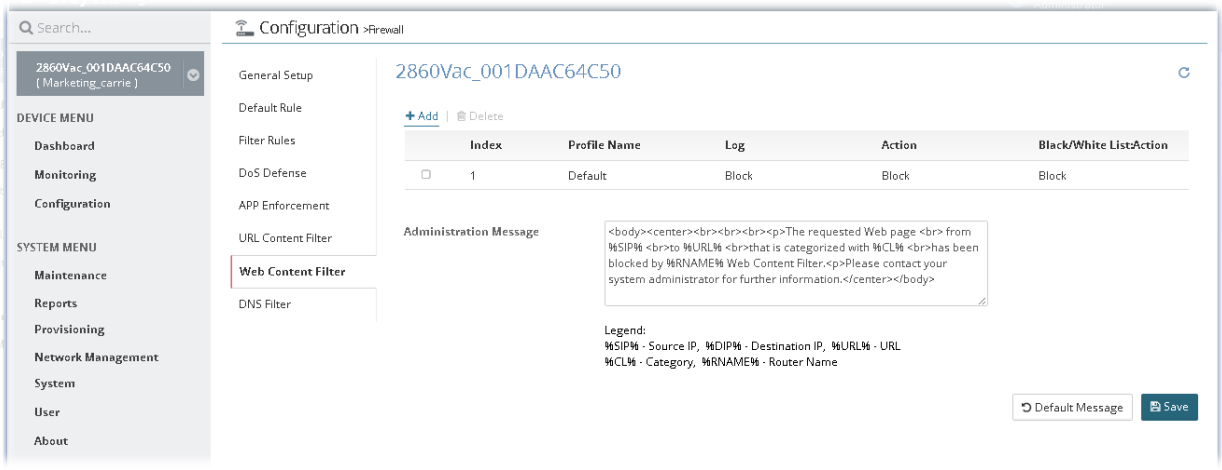


After finished the settings, click **Save**. And, the modification for the CPE will take effect immediately.

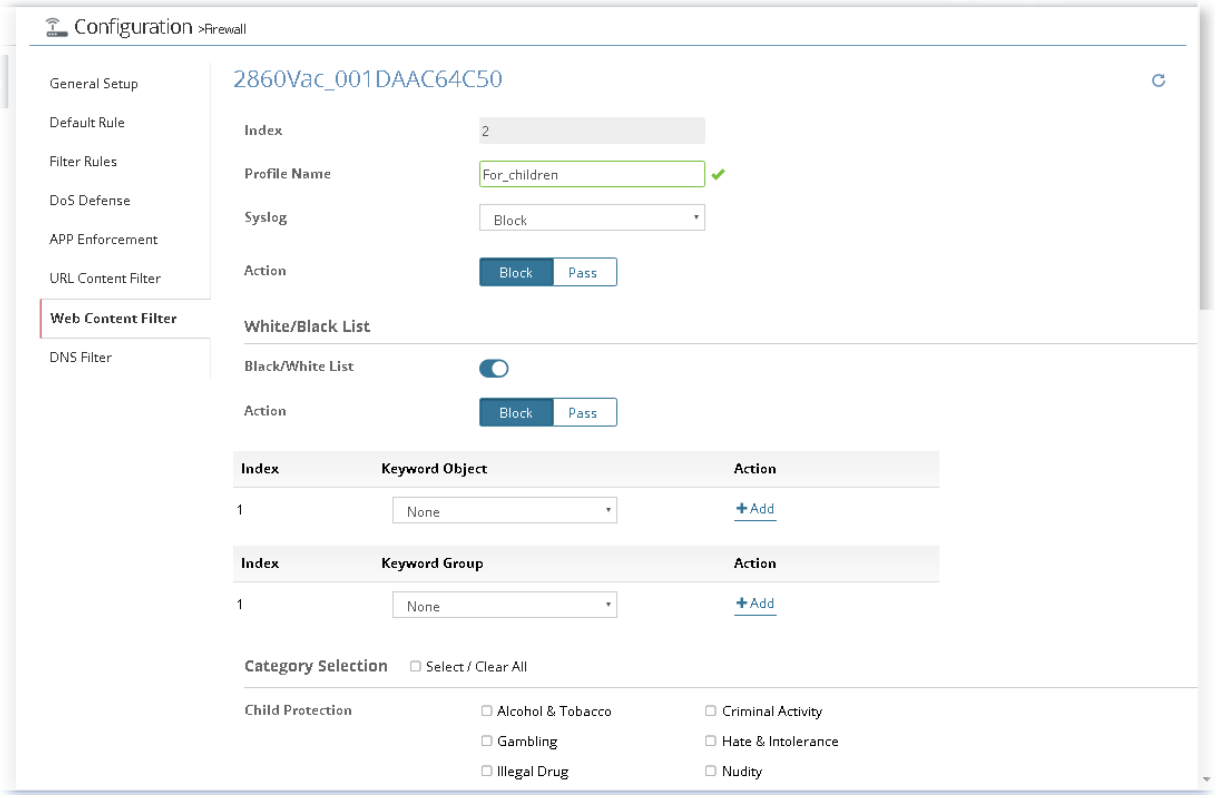


13.7.7 Web Content Filter

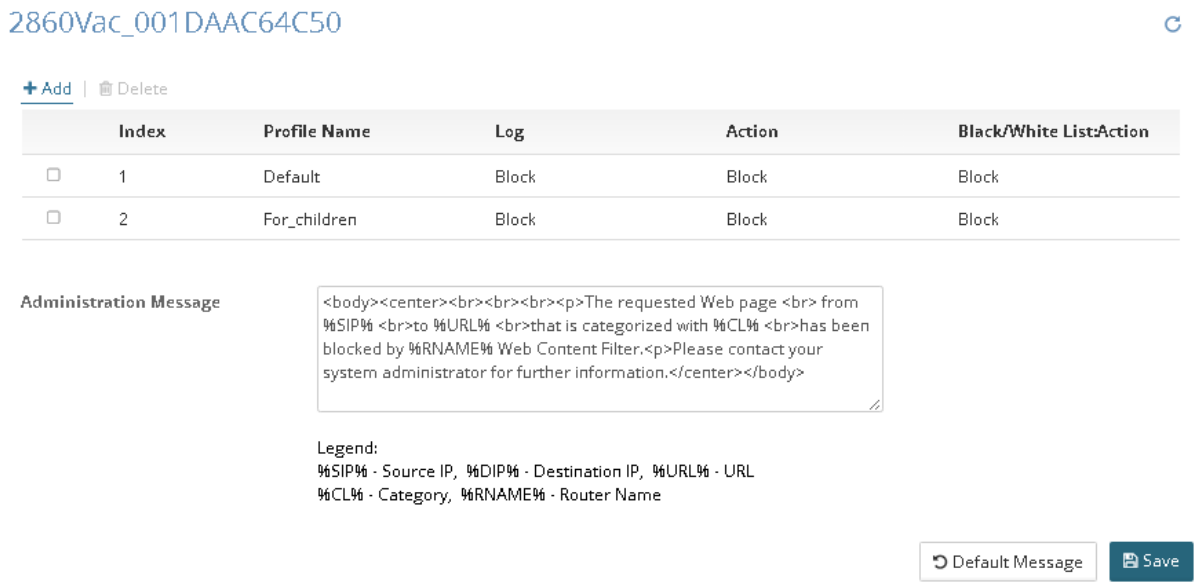
We all know that the content on the Internet just like other types of media may be inappropriate sometimes. As a responsible parent or employer, you should protect those in your trust against the hazards. With Web filtering service of the Vigor router, you can protect your business from common primary threats, such as productivity, legal liability, network and security threats.



To add a new filter rule profile, click **+Add** to get the following page.

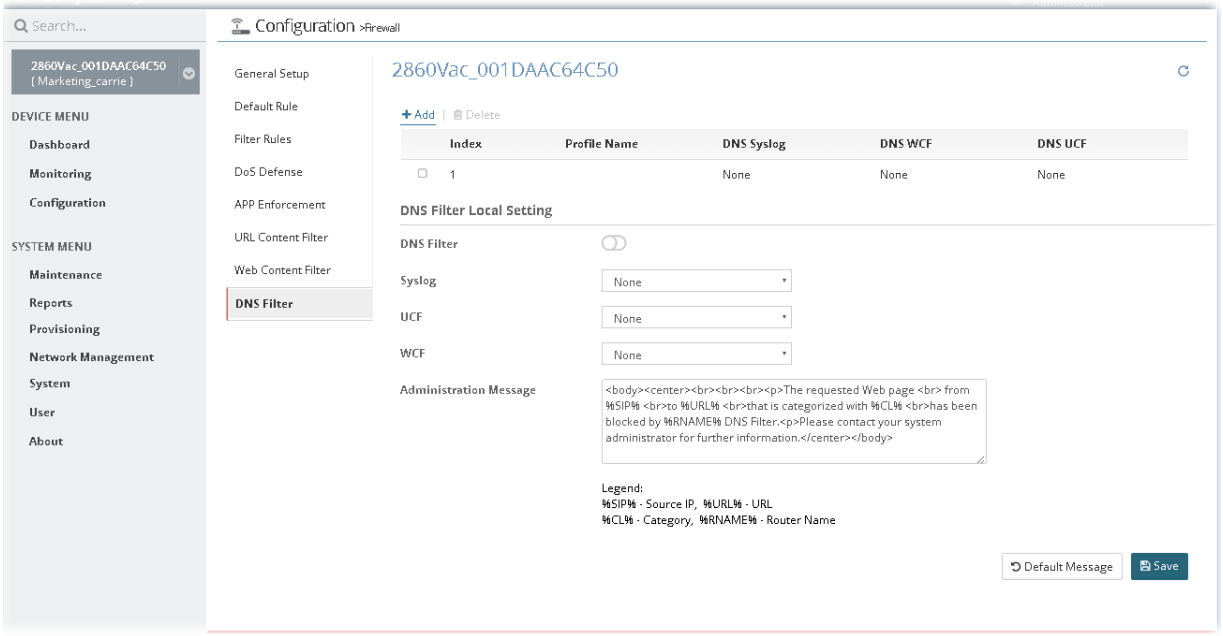


After finished the settings, click **Save**. And, the modification for the CPE will take effect immediately.



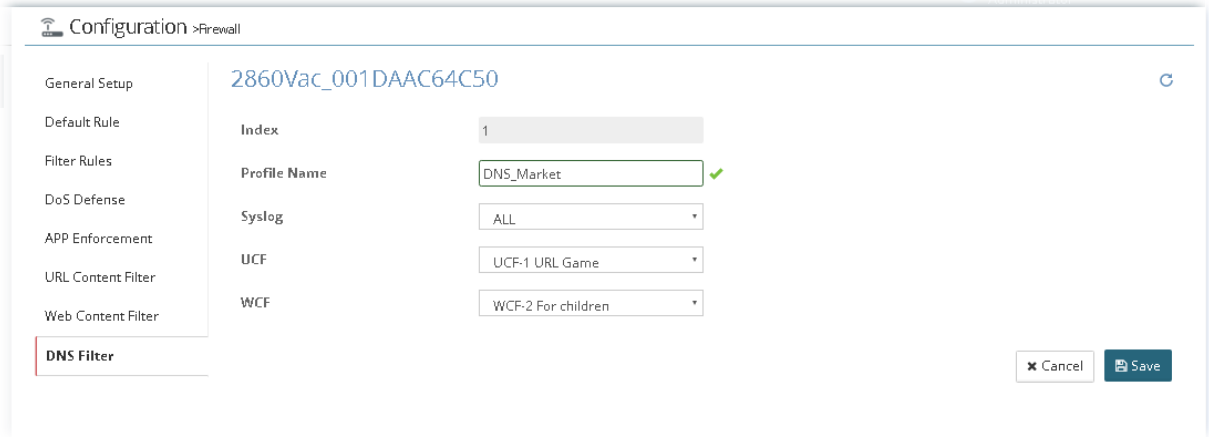
13.7.8 DNS Filter

The DNS Filter monitors DNS queries on UDP port 53 and will pass the DNS query information to the WCF to help with categorizing HTTPS URL's.

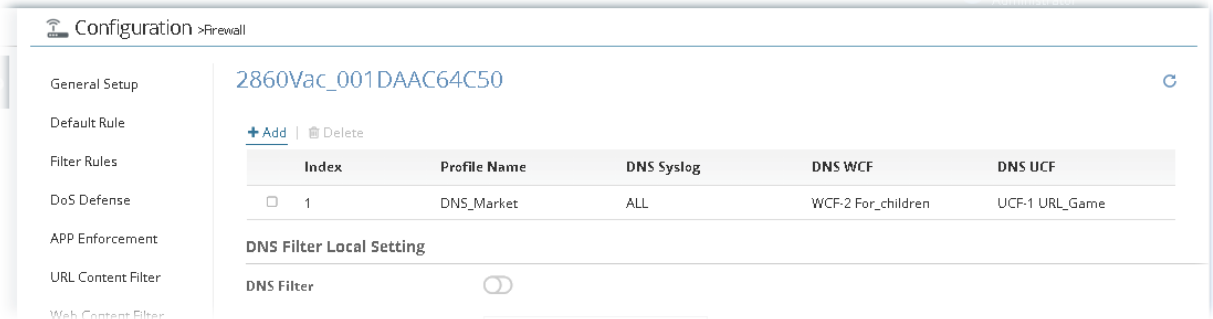


DNS Filter Local Setting will be applied to DNS query from clients on LAN when router's DNS server is used.

To add a new DNS filter rule profile, click **+Add** to get the following page.



After finished the settings, click **Save**. And, the modification for the CPE will take effect immediately.

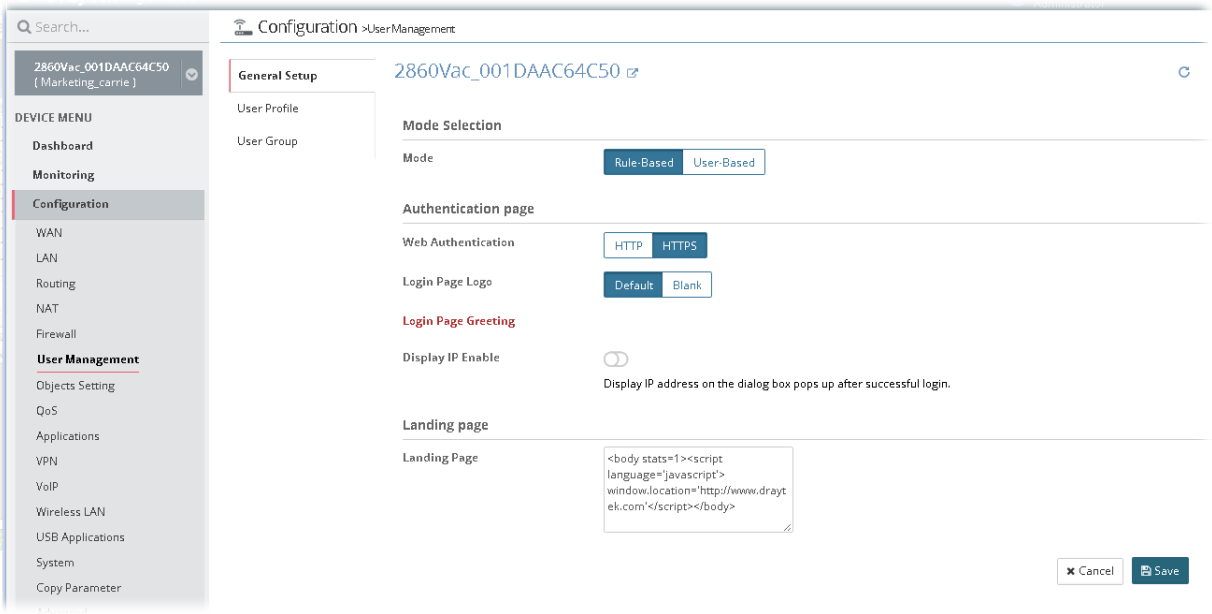


13.8 User Management Settings for CPE

User Management is a security feature which disallows any IP traffic (except DHCP-related packets) from a particular host until that host has correctly supplied a valid username and password. Instead of managing with IP address/MAC address, User Management function manages hosts with user account. Network administrator can give different firewall policies or rules for different hosts with different User Management accounts. This is more flexible and convenient for network management. Not only offering the basic checking for Internet access, User Management also provides additional firewall rules, e.g. CSM checking for protecting hosts.

13.8.1 General Setup

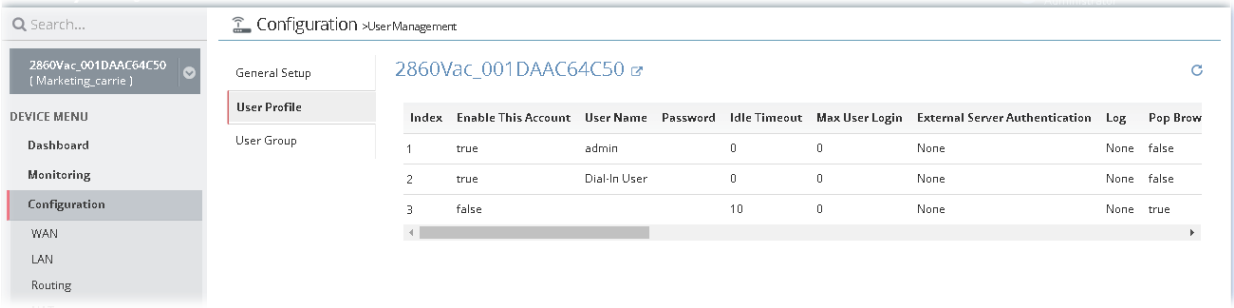
General Setup can determine the standard (rule-based or user-based) for the users controlled by User Management. The mode (standard) selected here will influence the contents of the filter rule(s) applied to every user.



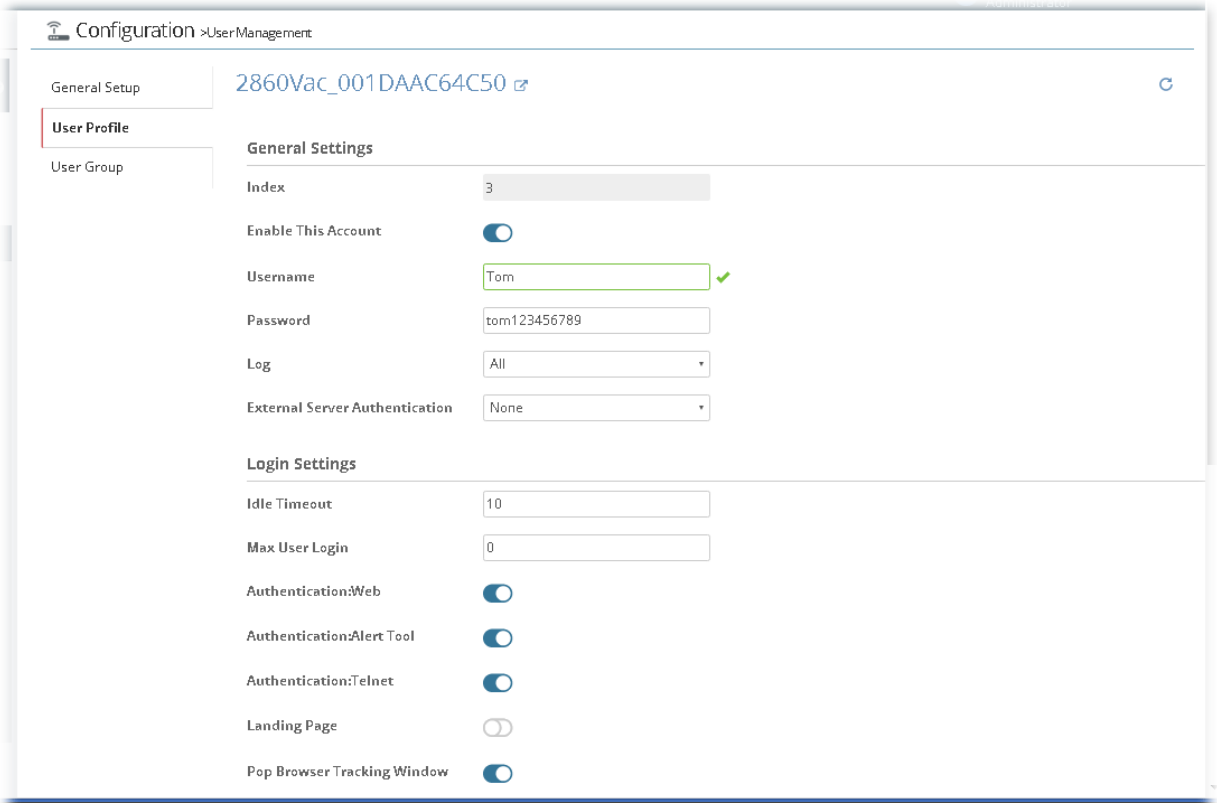
After finished the settings, click **Save**. And, the modification for the CPE will take effect immediately.

13.8.2 User Profile

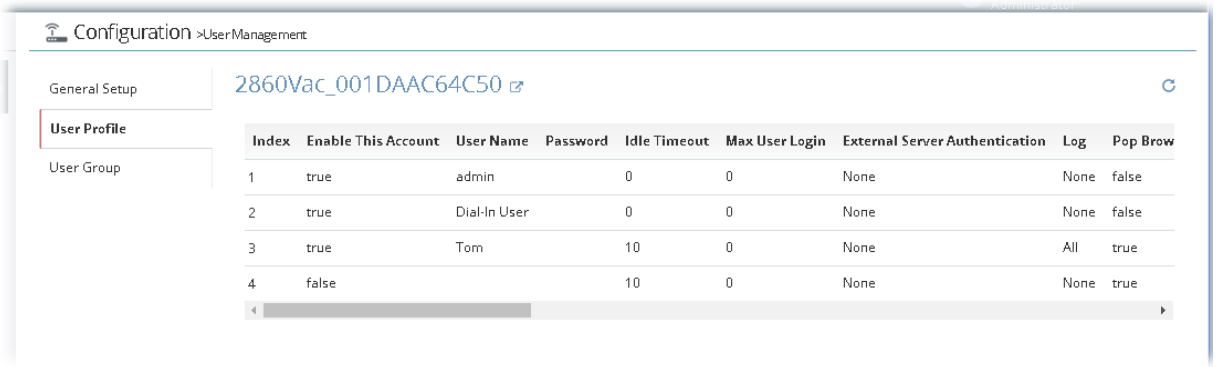
This page allows you to set customized profiles (up to 200) which will be applied for users controlled under **User Management**.



To add a new profile, move the mouse cursor on the table and click the index number #3 (index #1 and index #2 are factory default settings) to get the following page.

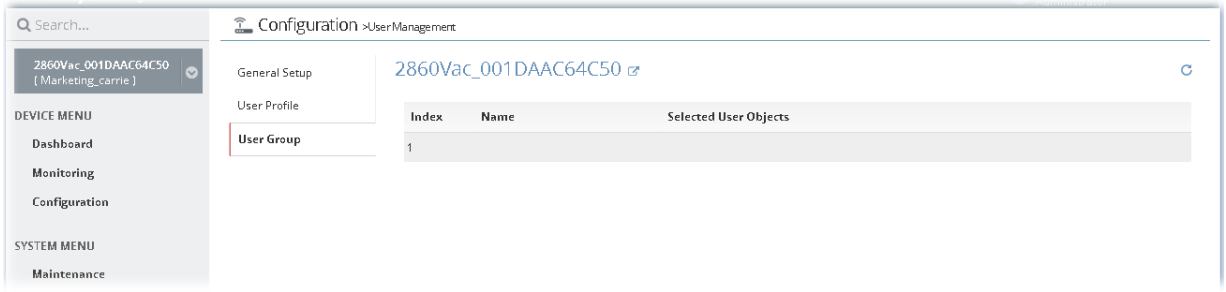


After finished the settings, click **Save**. A new profile has been created. And, the modification for the CPE will take effect immediately.

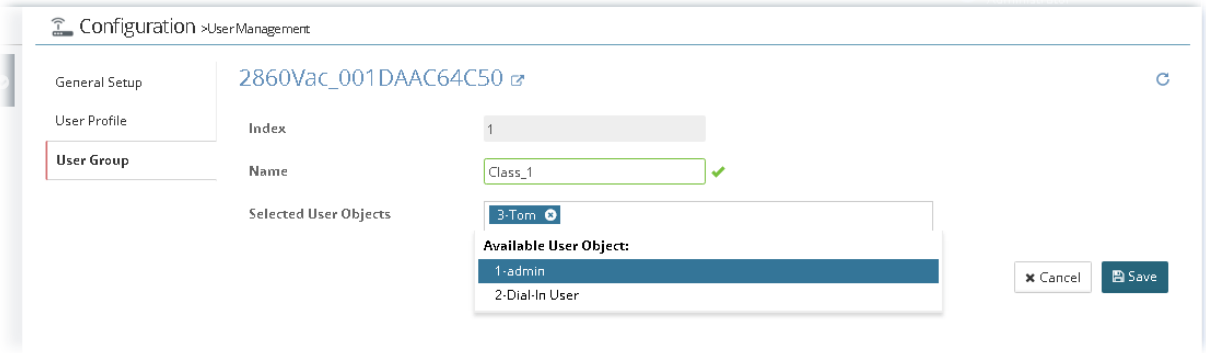


13.8.3 User Group

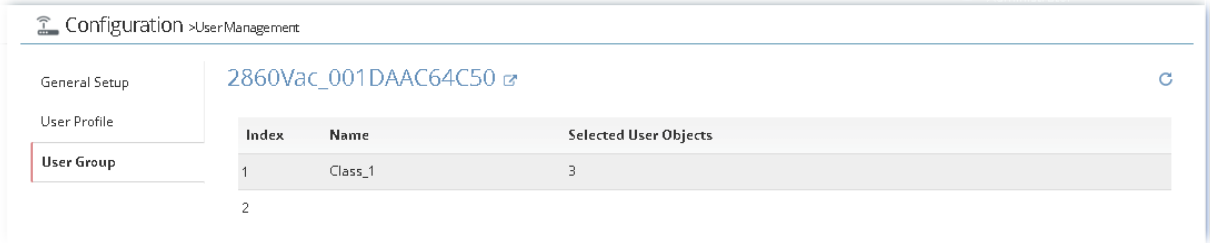
This page allows you to bind several user profiles into one group.



To add a new profile, move the mouse cursor on the table and click the index number #1 to get the following page.



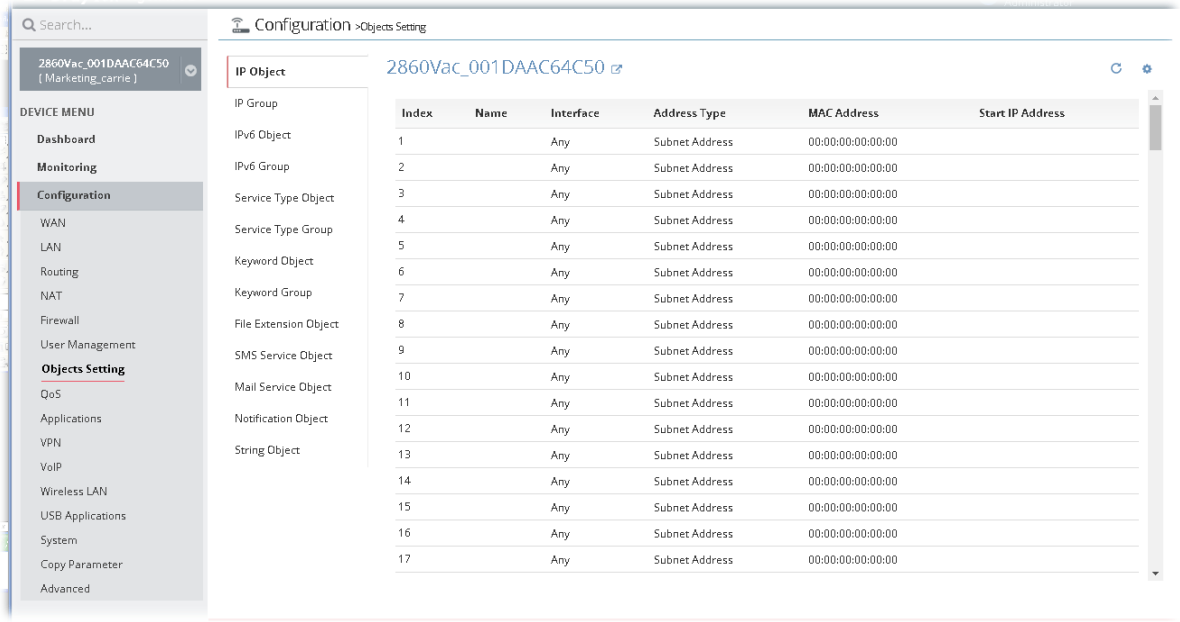
After finished the settings, click **Save**. A new profile has been created. And, the modification for the CPE will take effect immediately.



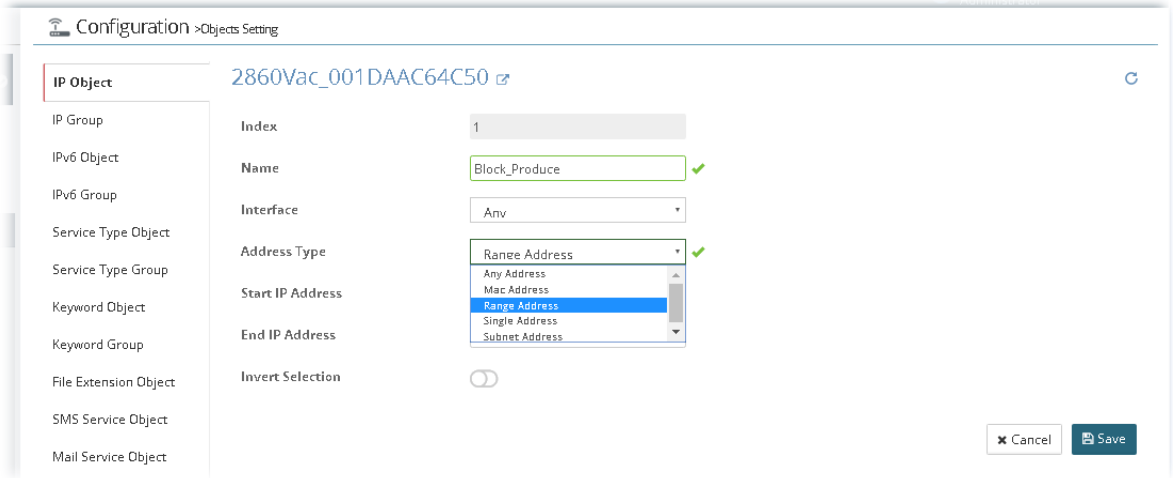
13.9 Modifying Objects Settings for CPE

13.9.1 Create / Edit an IP Object Profile

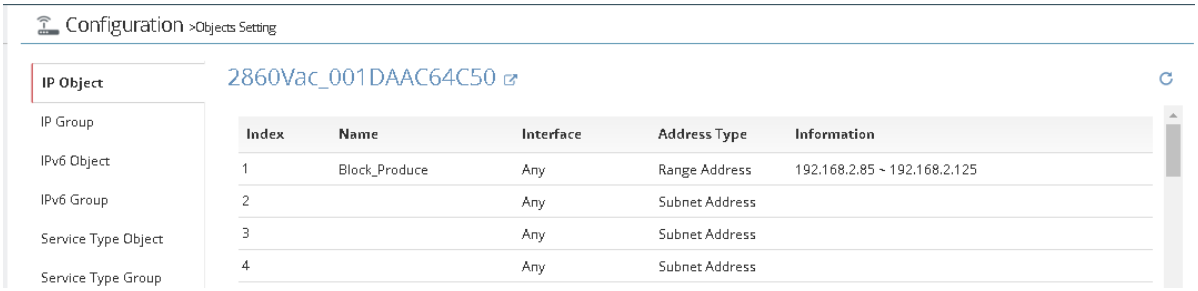
For IPs in a range in a limited range usually will be applied in configuring router's settings, therefore we can define them with *objects* for using conveniently. Later, we can select that object that can apply it.



To add a new profile or edit an existing profile, move the mouse cursor on the table and click the index number to get the following page.

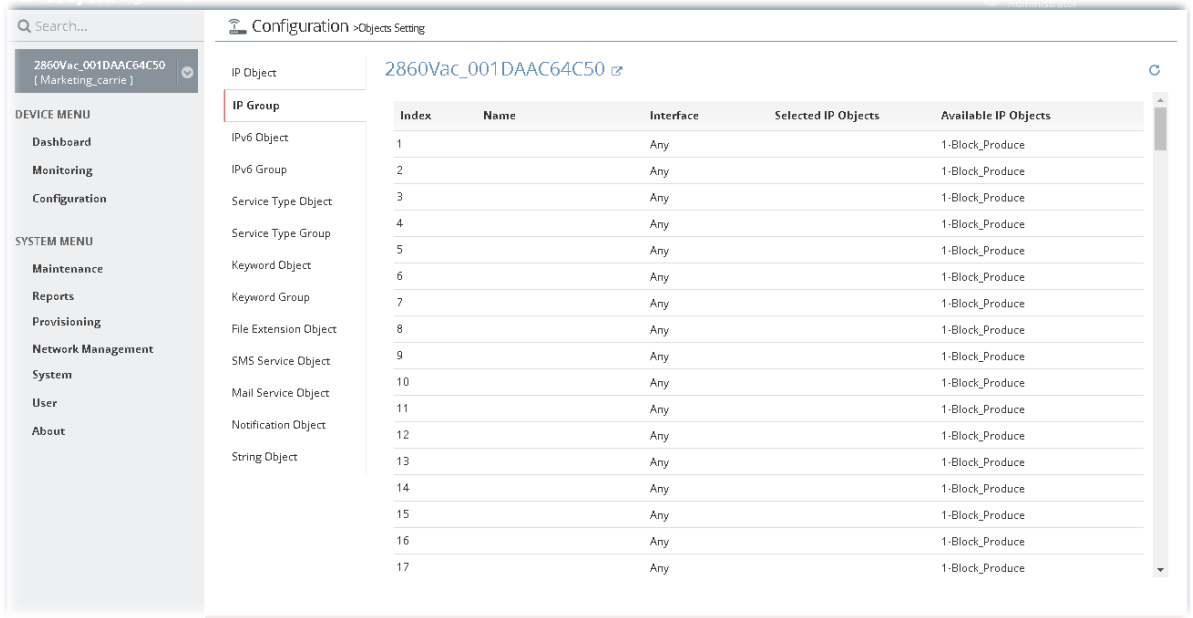


After finished the settings, click **Save**. A new profile has been created. And, the modification for the CPE will take effect immediately.

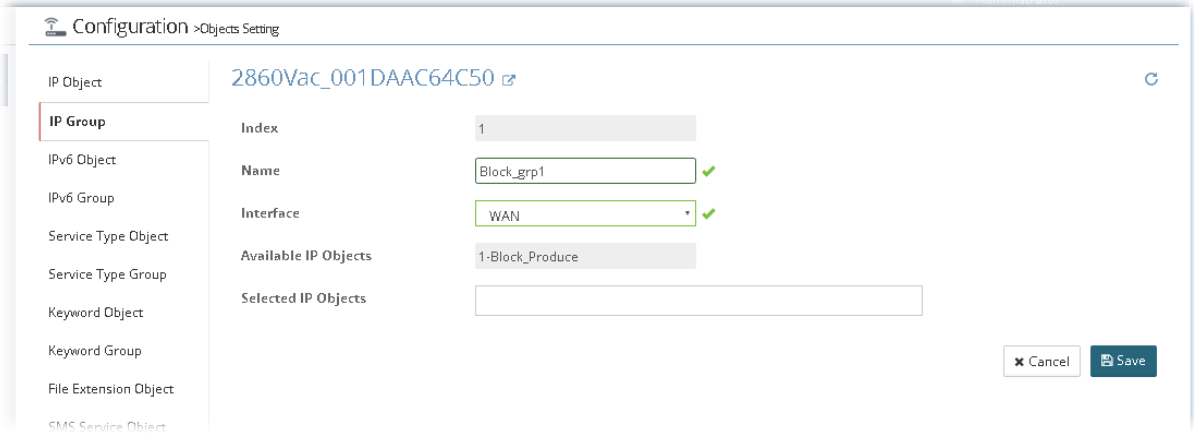


13.9.2 Create / Edit an IP Group Profile

For IPs in a range and service ports in a limited range usually will be applied in configuring router's settings, therefore we can define them with *objects* and bind them with *groups* for using conveniently. Later, we can select that object/group for applying it. For example, all the IPs in the same department can be defined with an IP object (a range of IP address).

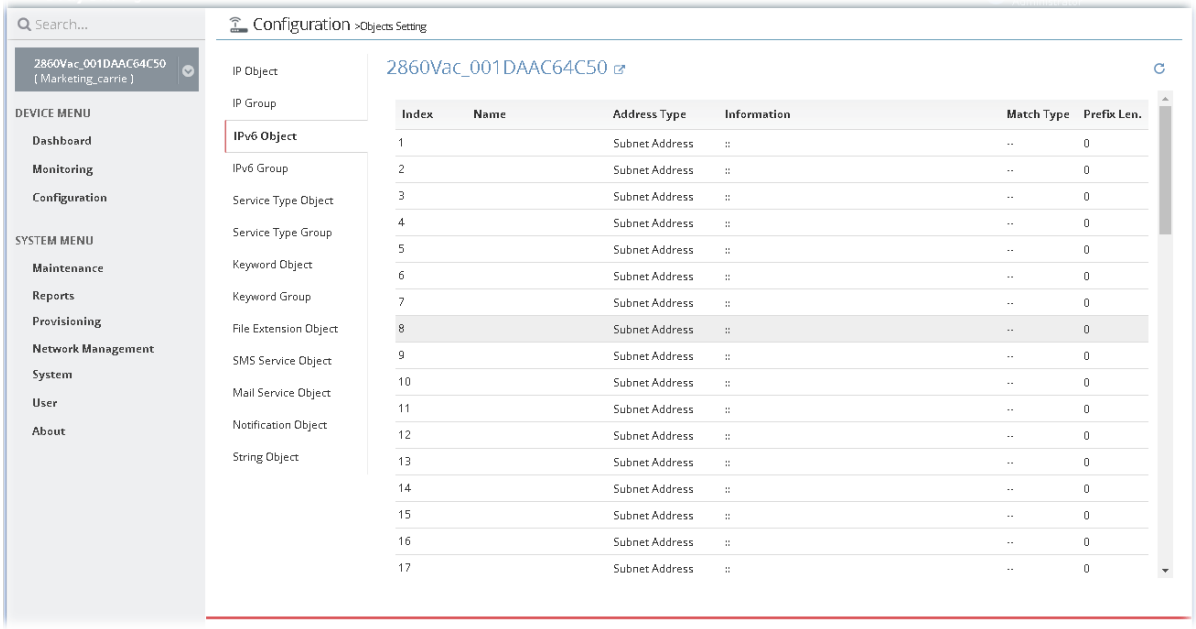


To add a new profile or edit an existing profile, move the mouse cursor on the table and click the index number to get the following page.

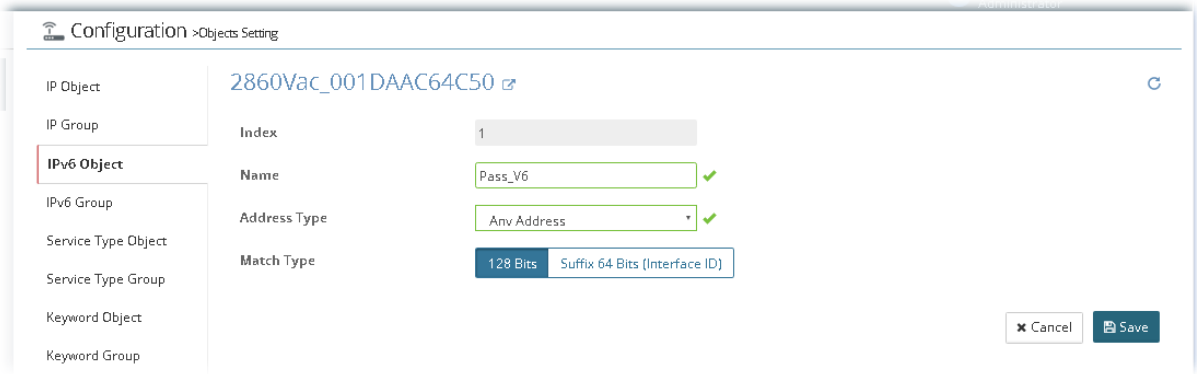


After finished the settings, click **Save**. A new profile has been created. And, the modification for the CPE will take effect immediately.

13.9.3 Create / Edit an IPv6 Object Profile

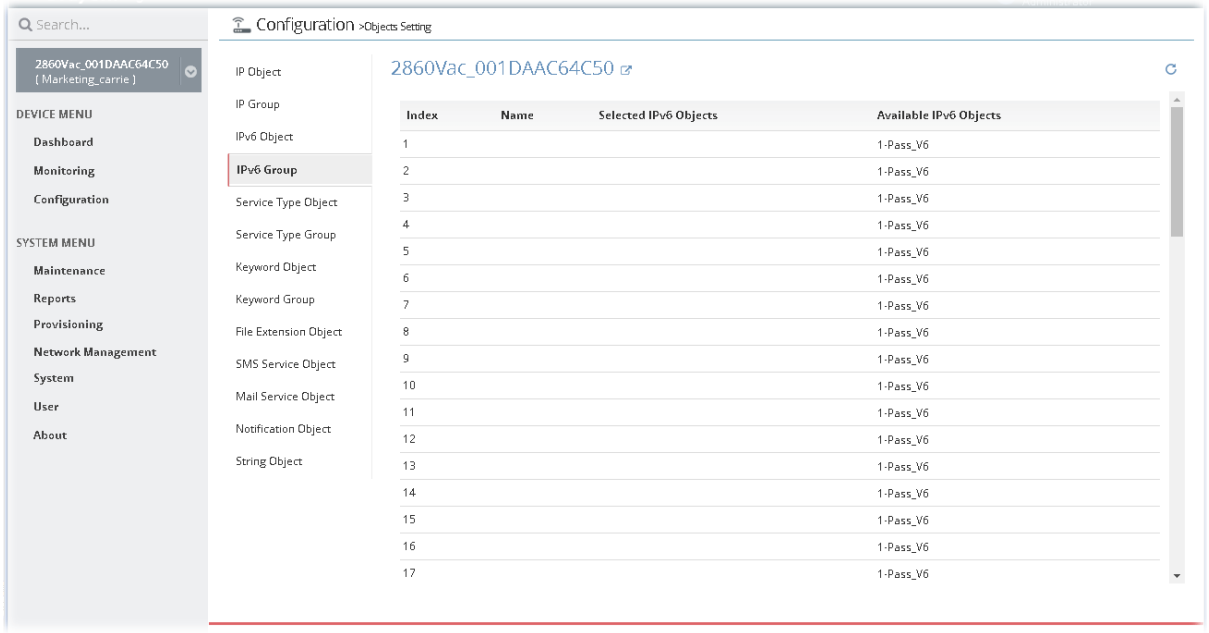


To add a new profile or edit an existing profile, move the mouse cursor on the table and click the index number to get the following page.

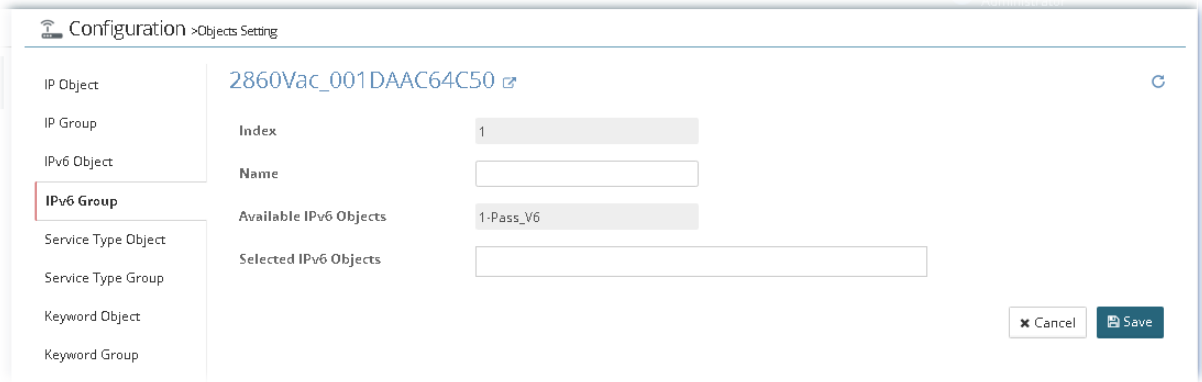


After finished the settings, click **Save**. A new profile has been created. And, the modification for the CPE will take effect immediately.

13.9.4 Create / Edit an IPv6 Group Profile

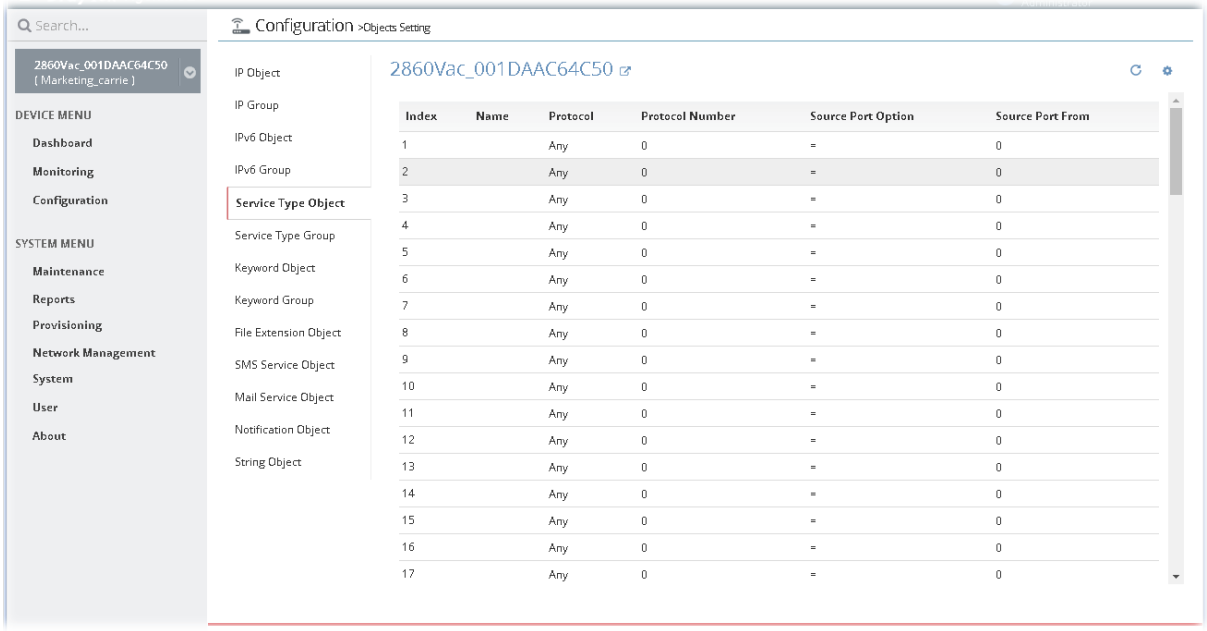


To add a new profile or edit an existing profile, move the mouse cursor on the table and click the index number to get the following page.

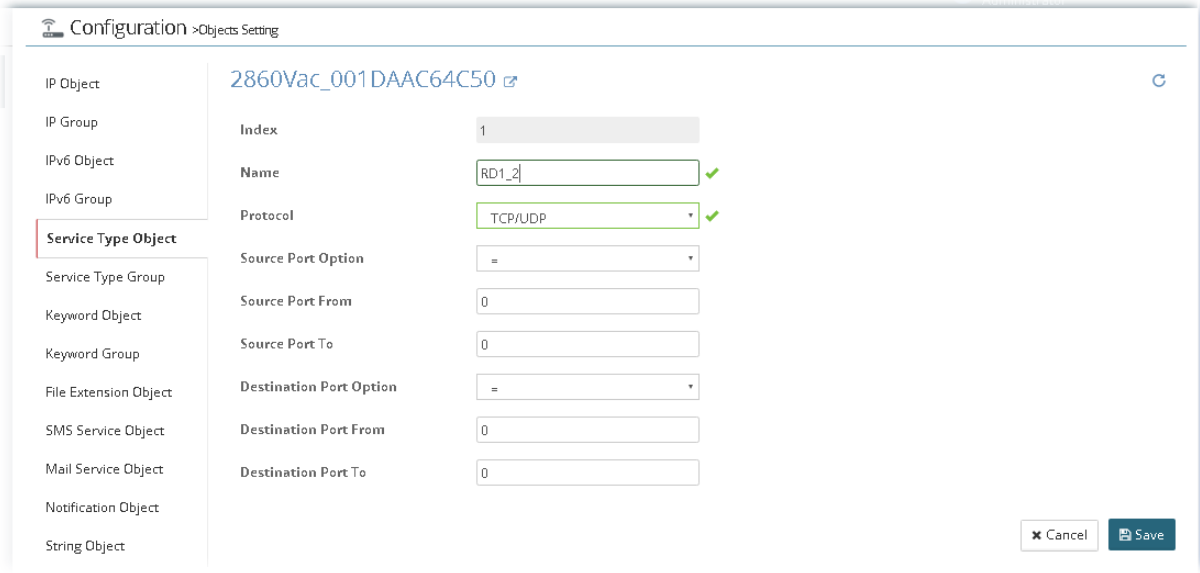


After finished the settings, click **Save**. A new profile has been created. And, the modification for the CPE will take effect immediately.

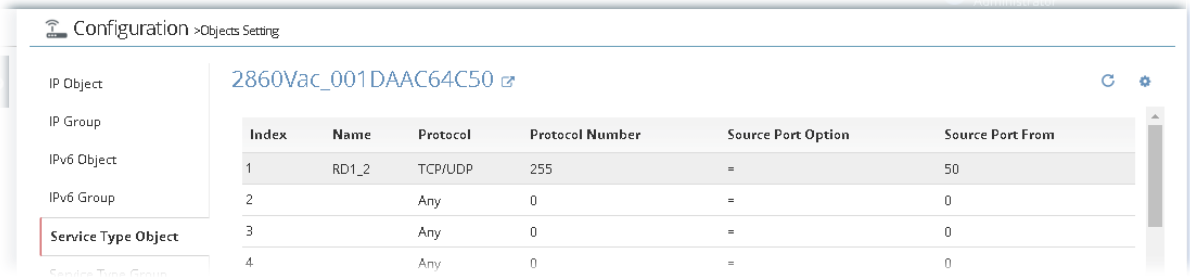
13.9.5 Create / Edit a Service Type Object Profile



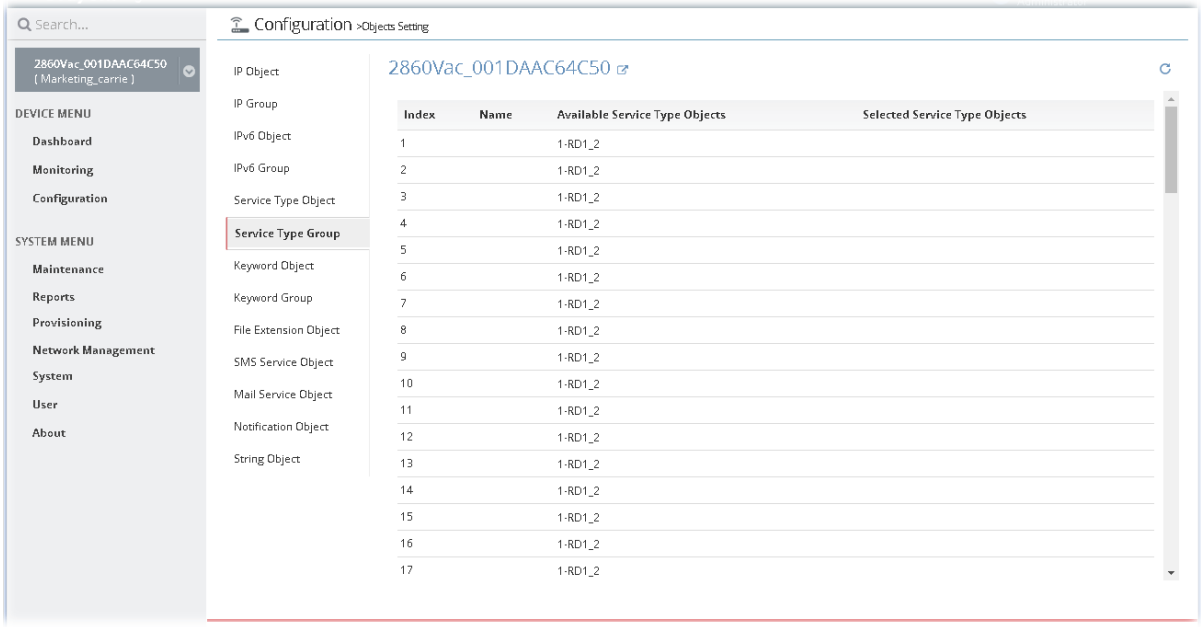
To add a new profile or edit an existing profile, move the mouse cursor on the table and click the index number to get the following page.



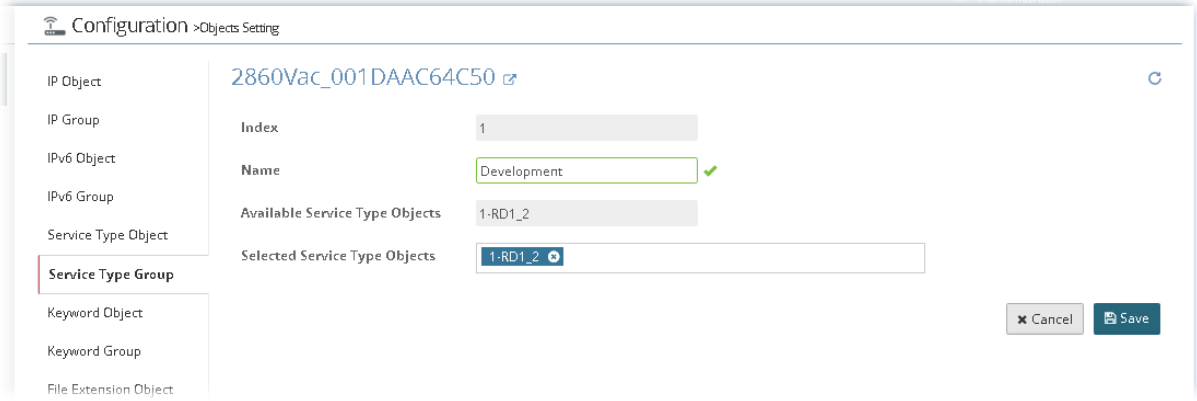
After finished the settings, click **Save**. A new profile has been created. And, the modification for the CPE will take effect immediately.



13.9.6 Create / Edit a Service Type Group Profile

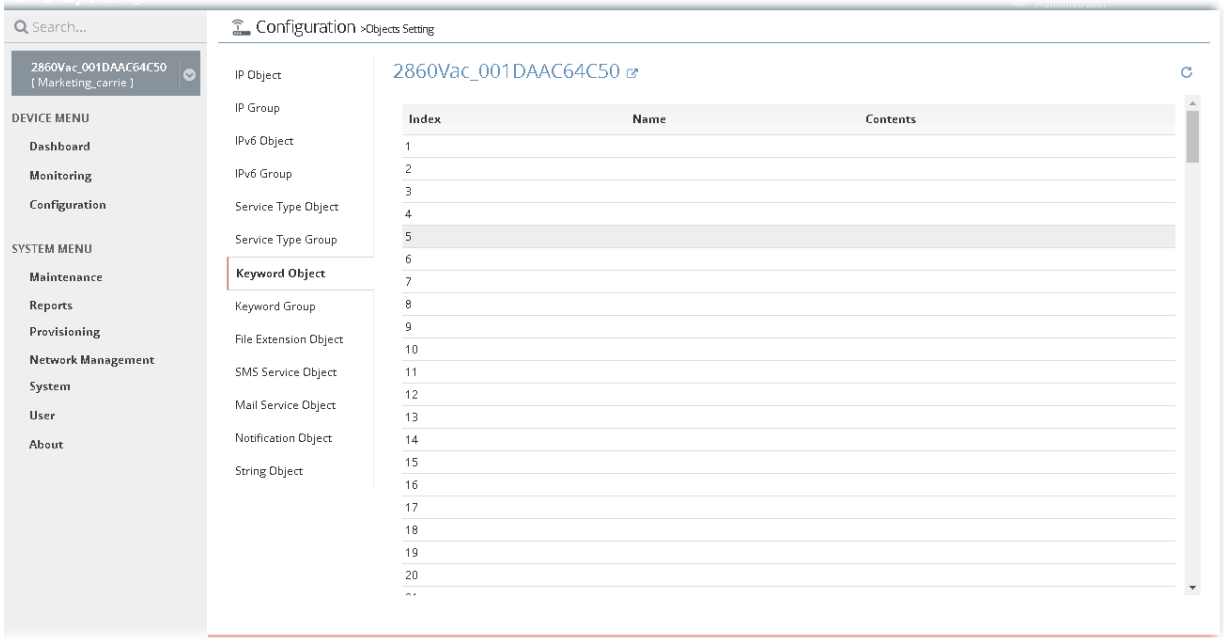


To add a new profile or edit an existing profile, move the mouse cursor on the table and click the index number to get the following page.



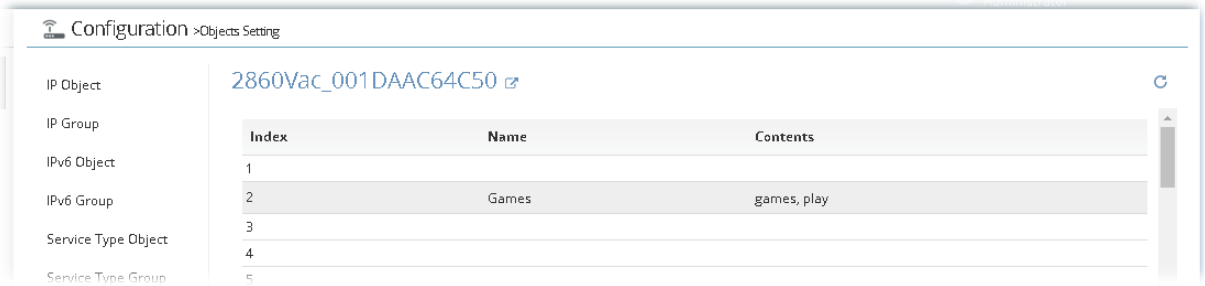
After finished the settings, click **Save**. A new profile has been created. And, the modification for the CPE will take effect immediately.

13.9.7 Create / Edit a Keyword Object Profile

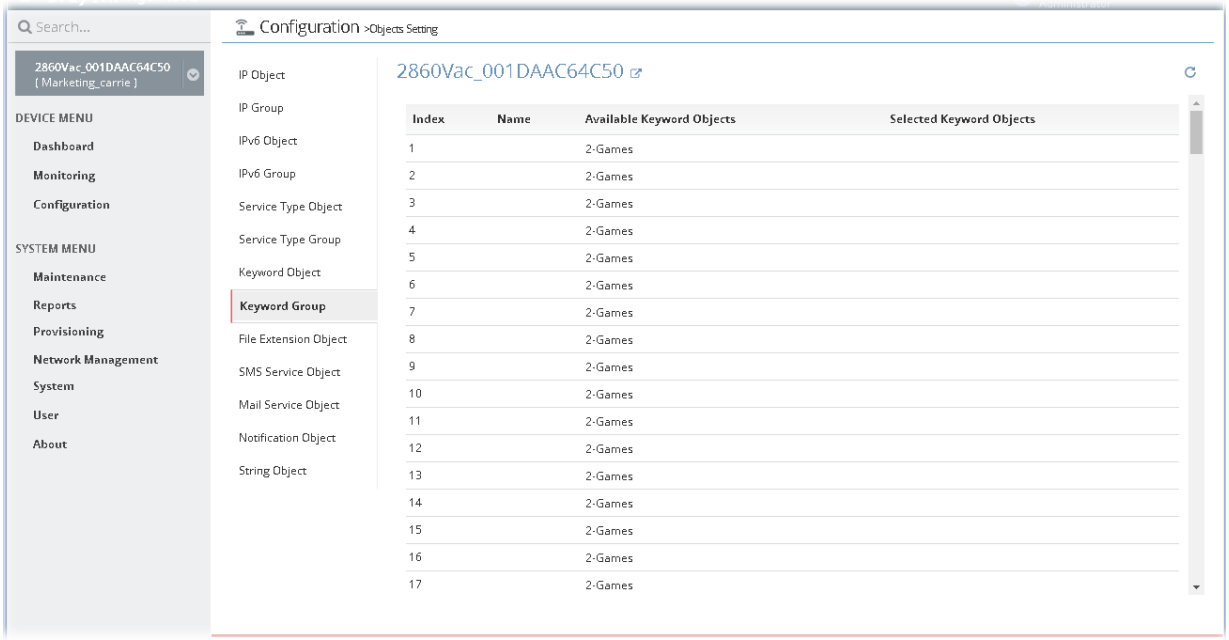


To add a new profile or edit an existing profile, move the mouse cursor on the table and click the index number to get the following page.

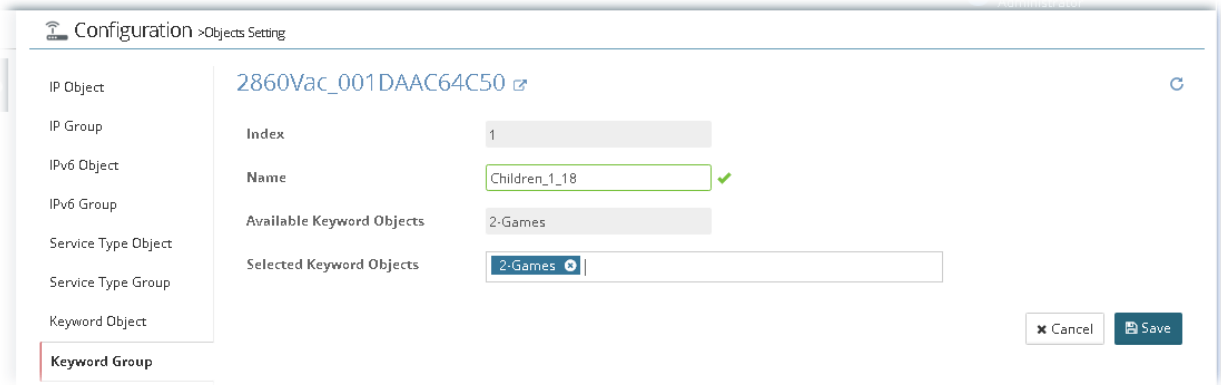
After finished the settings, click **Save**. A new profile has been created. And, the modification for the CPE will take effect immediately.



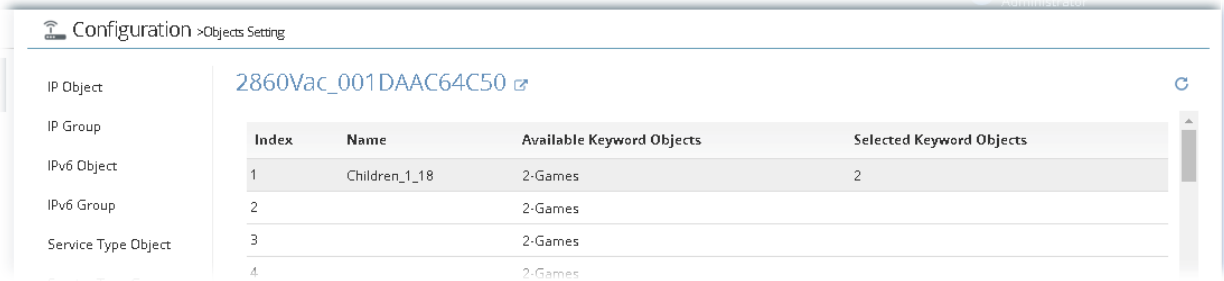
13.9.8 Create / Edit a Keyword Group Profile



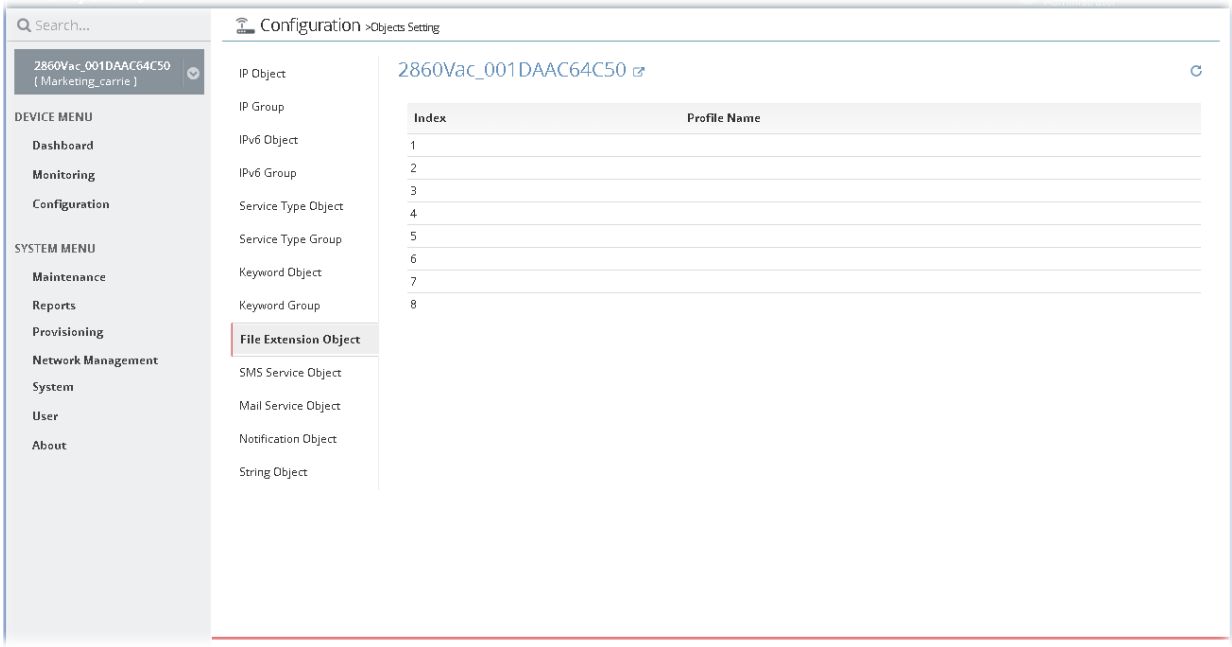
To add a new profile or edit an existing profile, move the mouse cursor on the table and click the index number to get the following page.



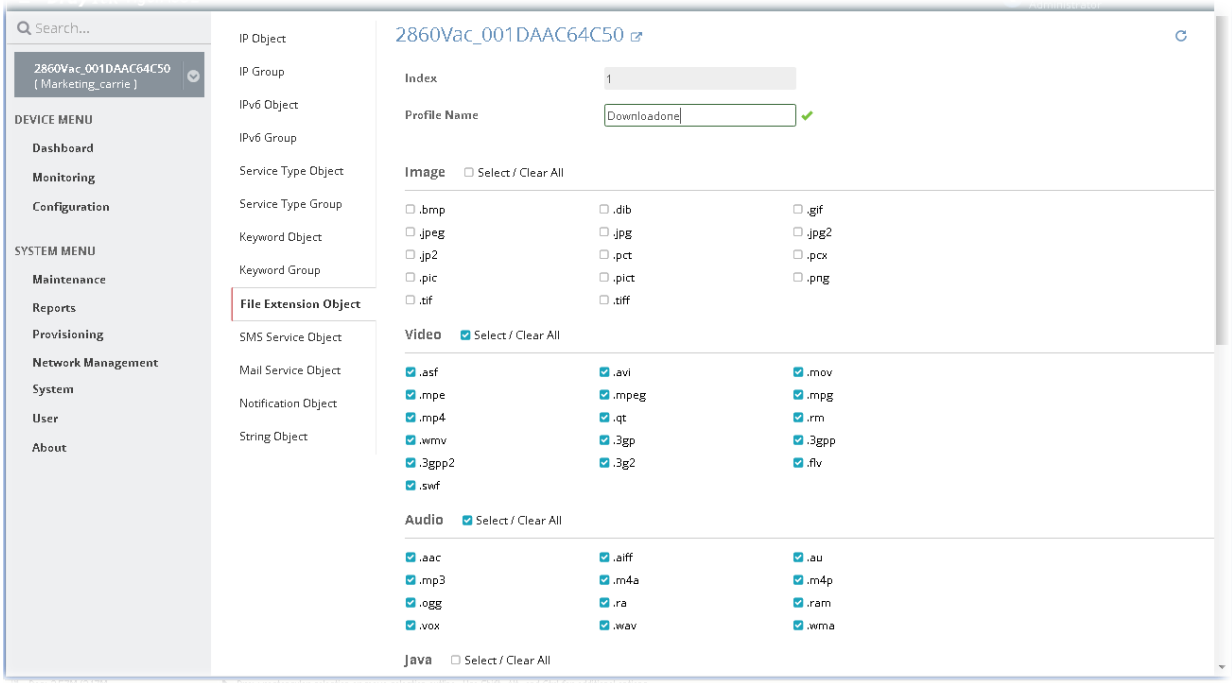
After finished the settings, click **Save**. A new profile has been created. And, the modification for the CPE will take effect immediately.



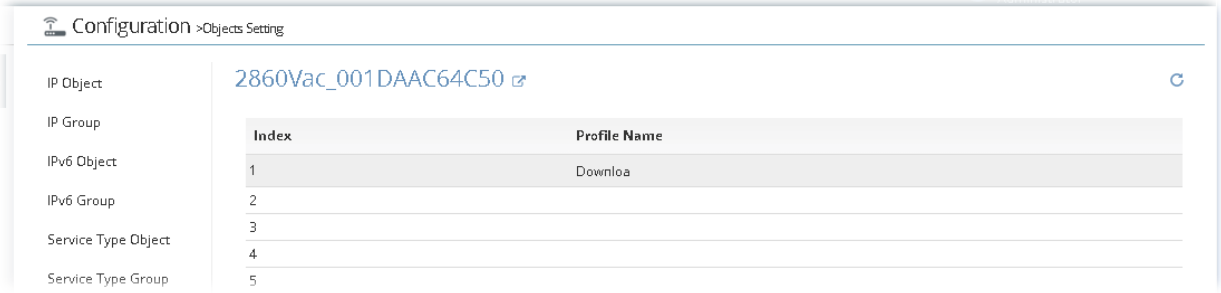
13.9.9 Create / Edit a File Extension Object Profile



To add a new profile or edit an existing profile, move the mouse cursor on the table and click the index number to get the following page.

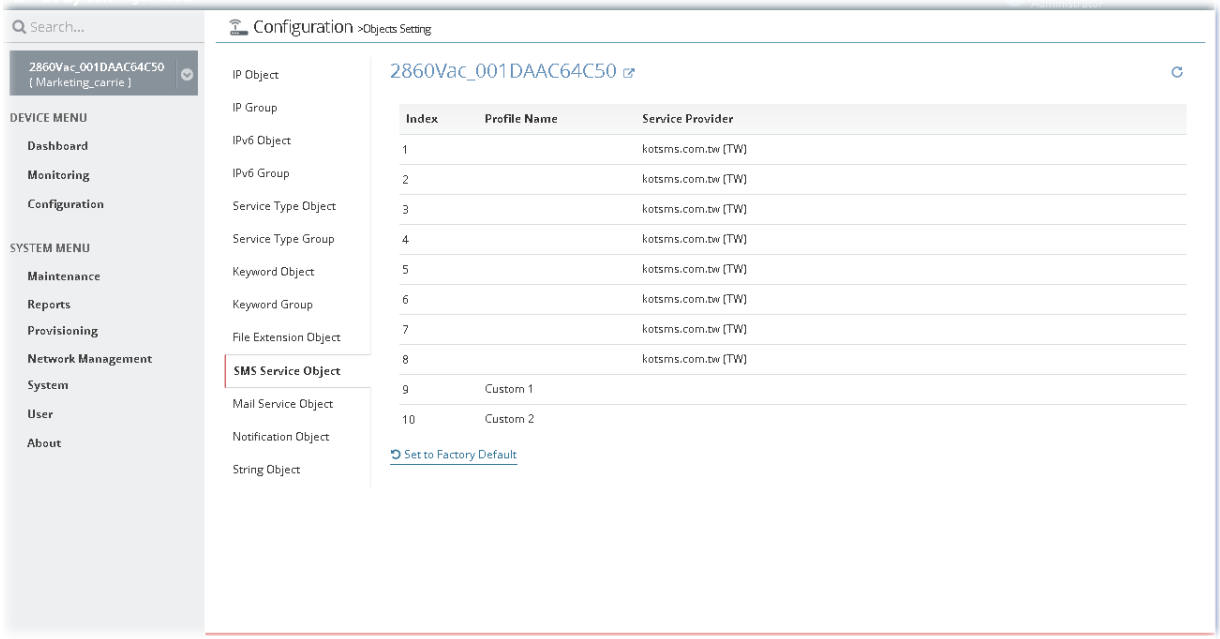


After finished the settings, click **Save**. A new profile has been created. And, the modification for the CPE will take effect immediately.

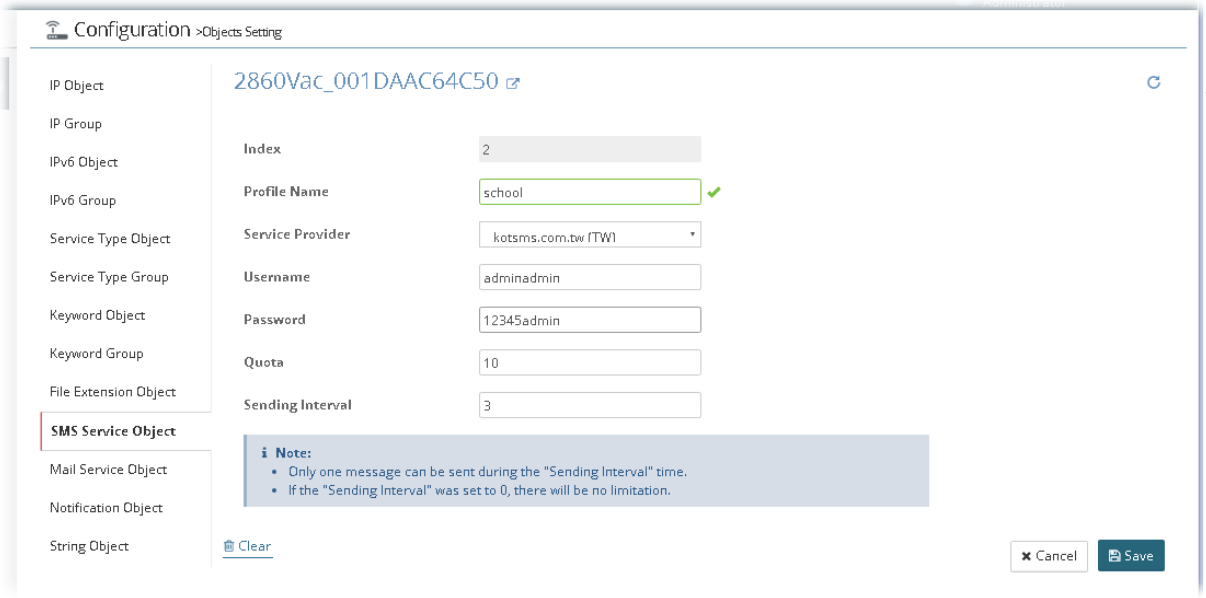


13.9.10 Create / Edit a SMS Service Object Profile

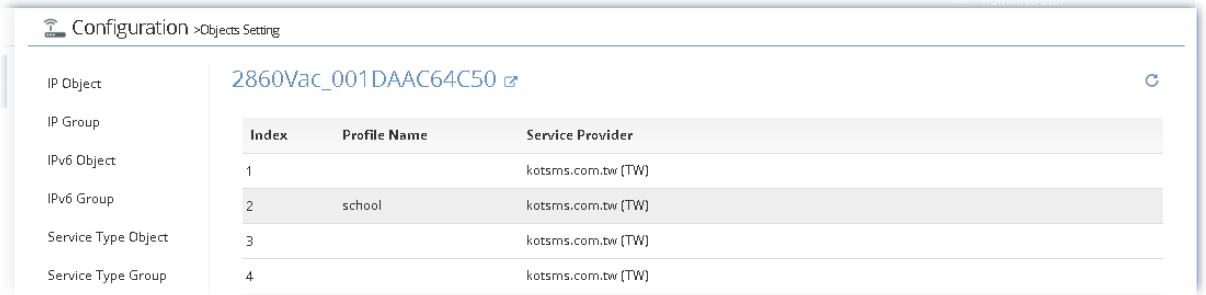
Vigor router offers several SMS service provider to offer the SMS service. However, if your service provider cannot be found from the service provider list, simply use Index 9 and Index 10 to make customized SMS service. The profile name for Index 9 and Index 10 are fixed.



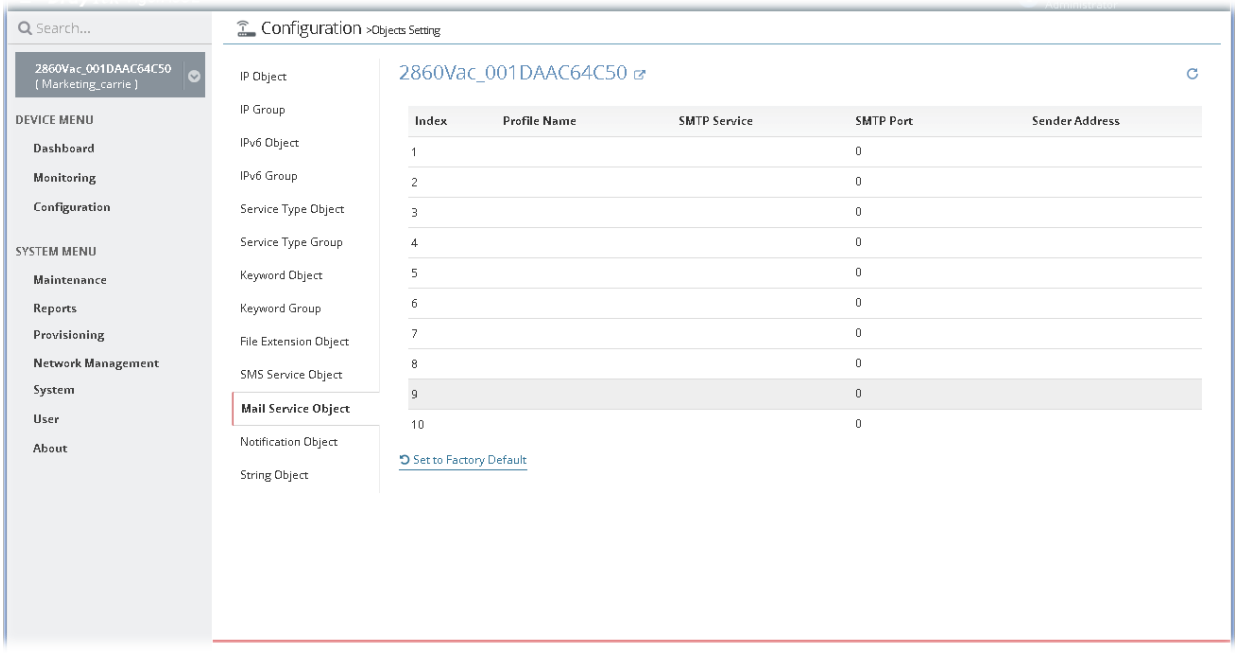
To add a new profile or edit an existing profile, move the mouse cursor on the table and click the index number to get the following page.



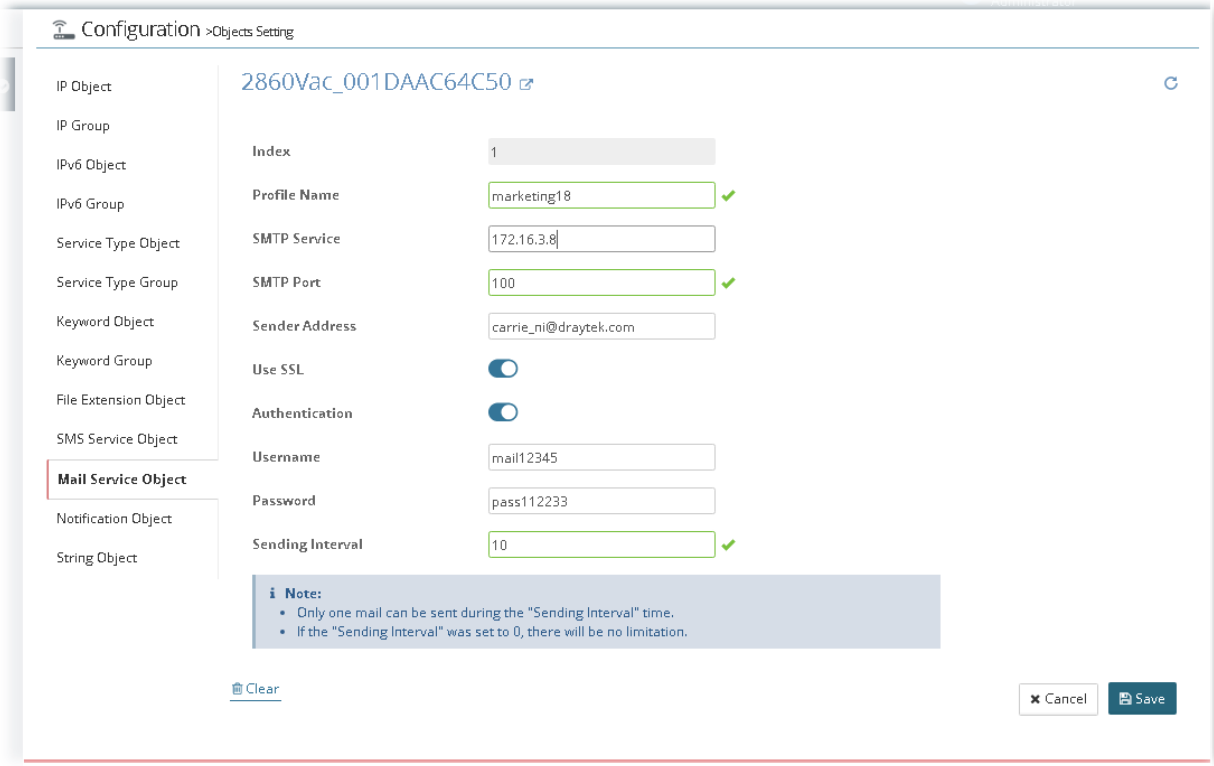
After finished the settings, click **Save**. A new profile has been created. And, the modification for the CPE will take effect immediately.



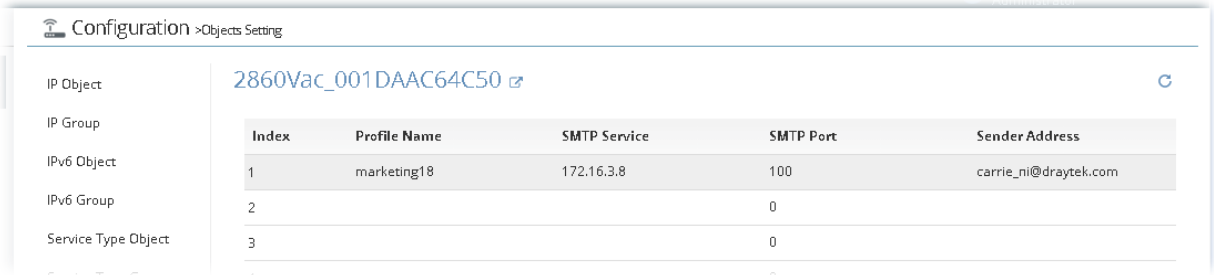
13.9.11 Create / Edit a Mail Service Object Profile



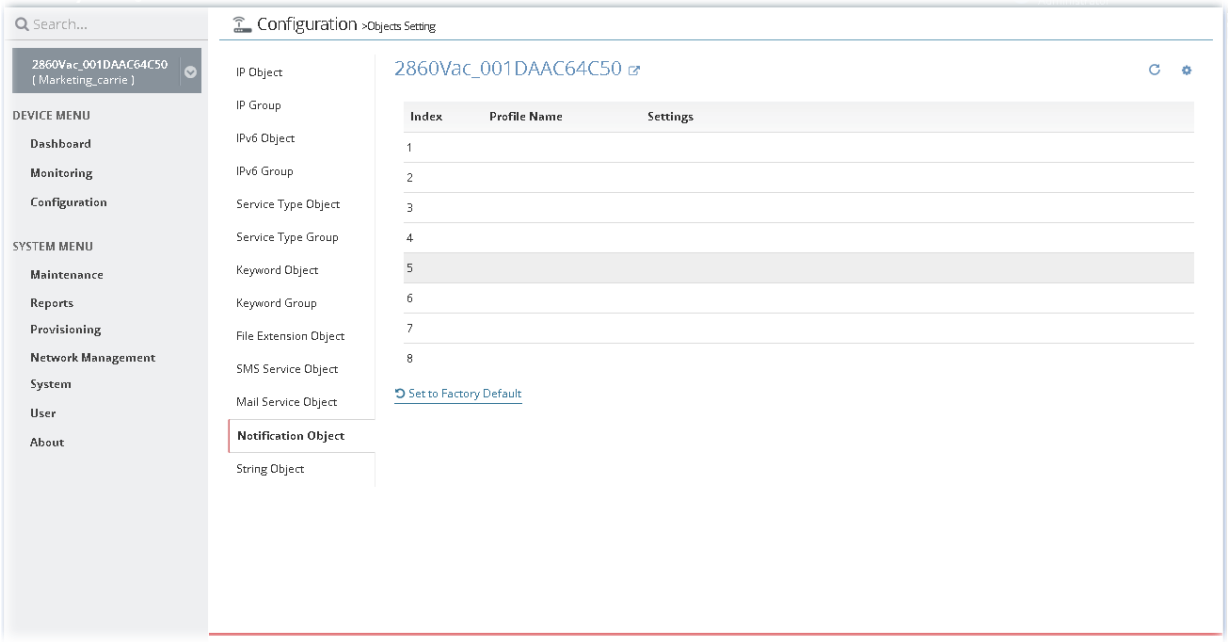
To add a new profile or edit an existing profile, move the mouse cursor on the table and click the index number to get the following page.



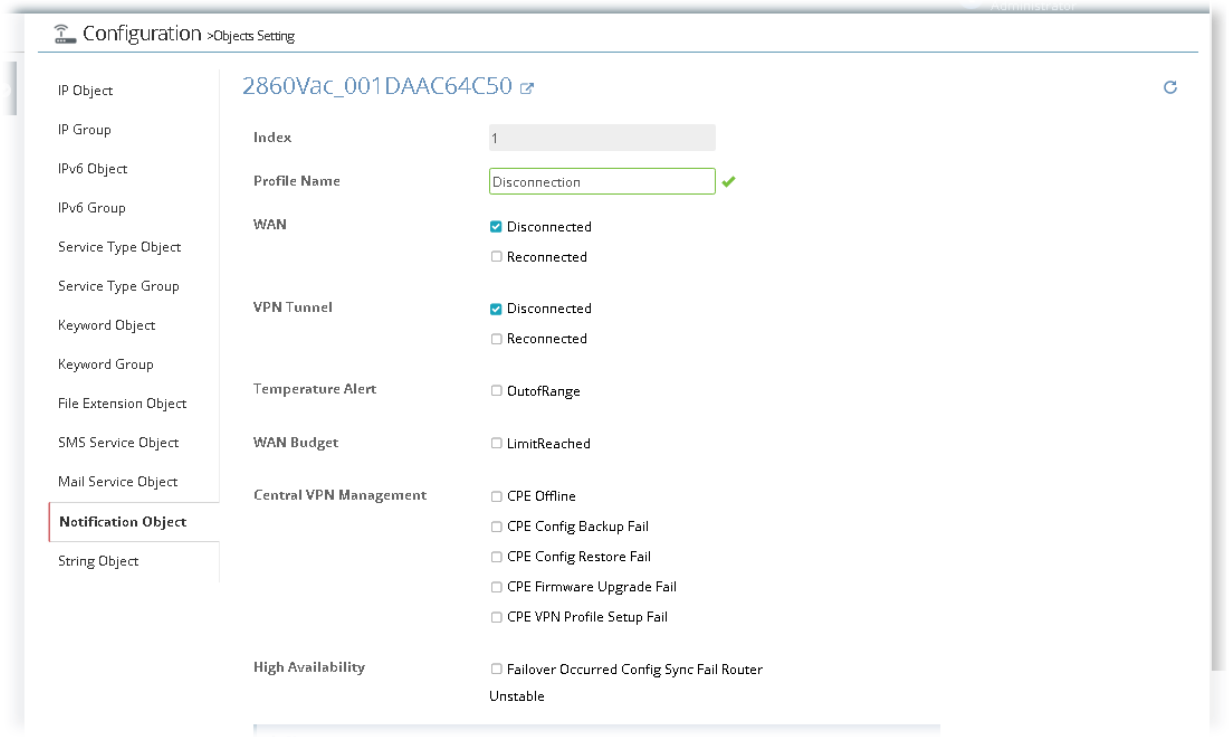
After finished the settings, click **Save**. A new profile has been created. And, the modification for the CPE will take effect immediately.



13.9.12 Create / Edit a Notification Object Profile

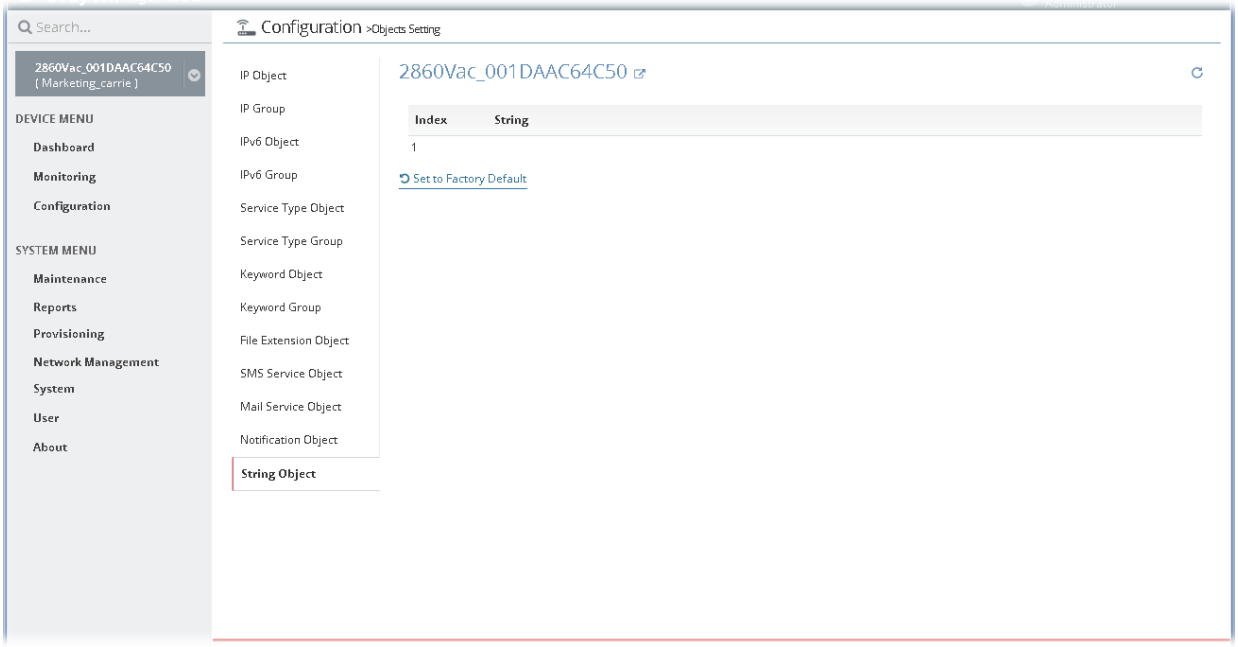


To add a new profile or edit an existing profile, move the mouse cursor on the table and click the index number to get the following page.

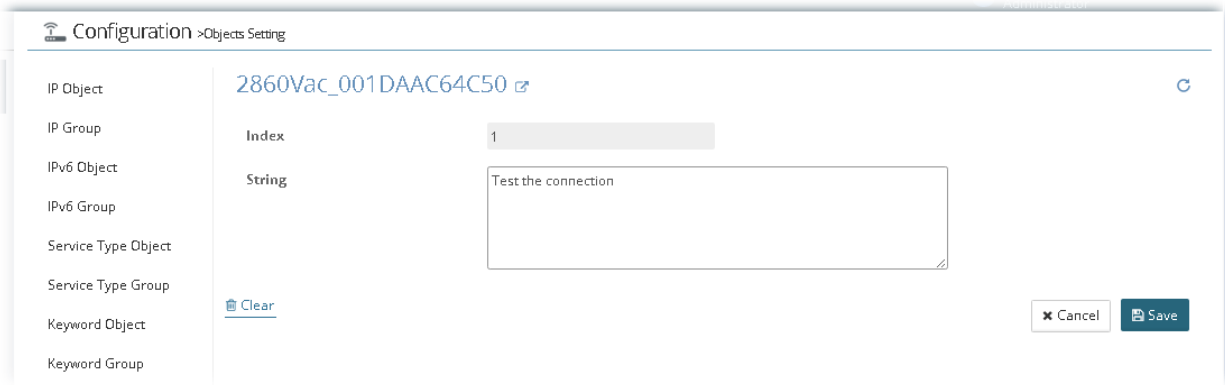


After finished the settings, click **Save**. A new profile has been created. And, the modification for the CPE will take effect immediately.

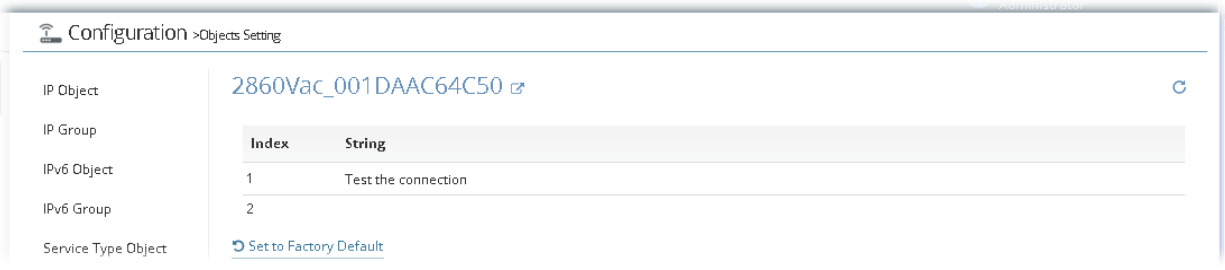
13.9.13 Create / Edit a String Object



To add a new profile or edit an existing profile, move the mouse cursor on the table and click the index number to get the following page.



After finished the settings, click **Save**. A new profile has been created. And, the modification for the CPE will take effect immediately.

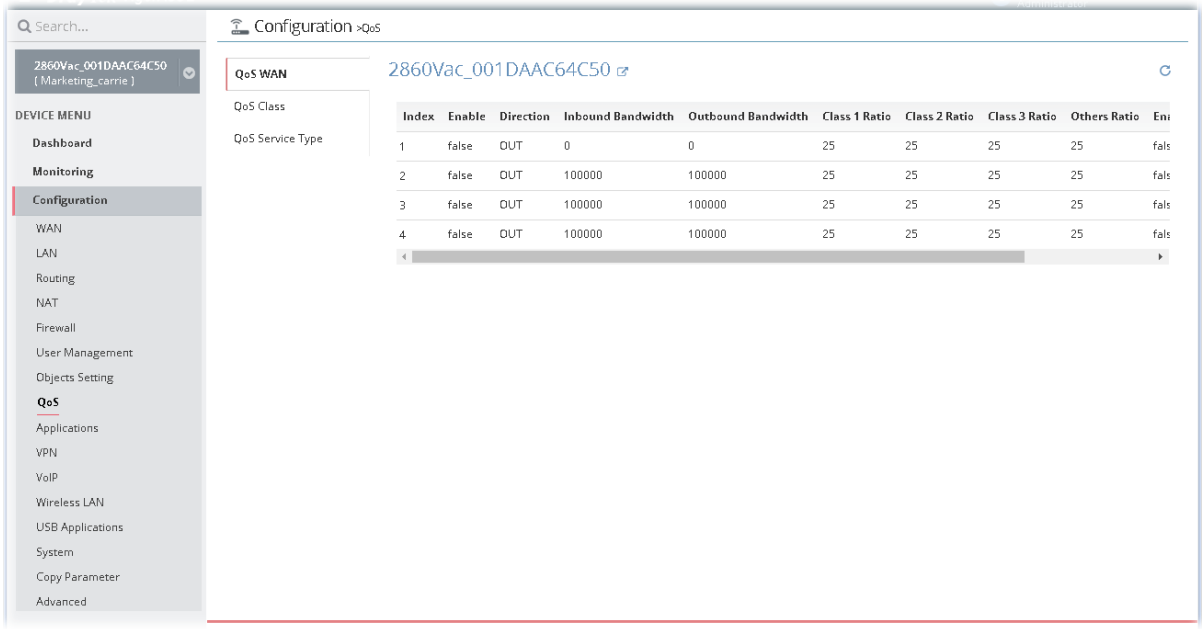


13.10 QoS Settings for CPE

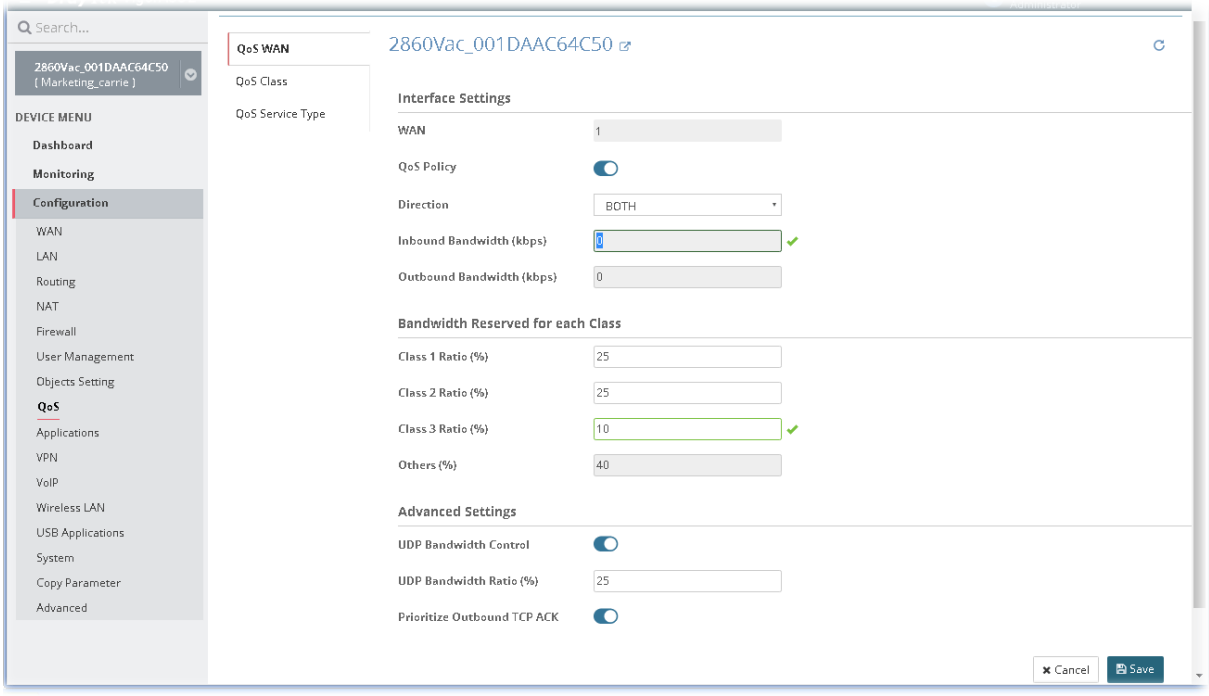
Deploying QoS (Quality of Service) management to guarantee that all applications receive the service levels required and sufficient bandwidth to meet performance expectations is indeed one important aspect of modern enterprise network.

13.10.1 QoS WAN

This page allows you to configure the bandwidth ratio for QoS of the WAN interface. There are four queues allowed for QoS control.



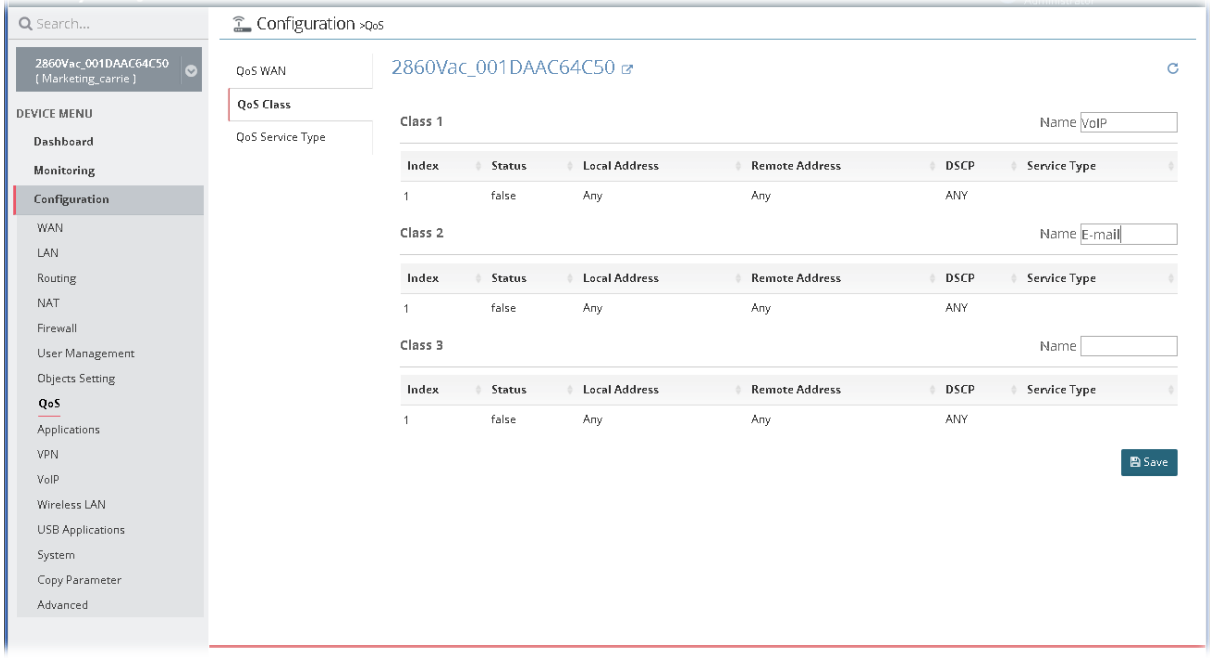
To edit the parameters settings for each WAN (index #1 to 4), move the mouse cursor on the table and click the index number to get the following page.



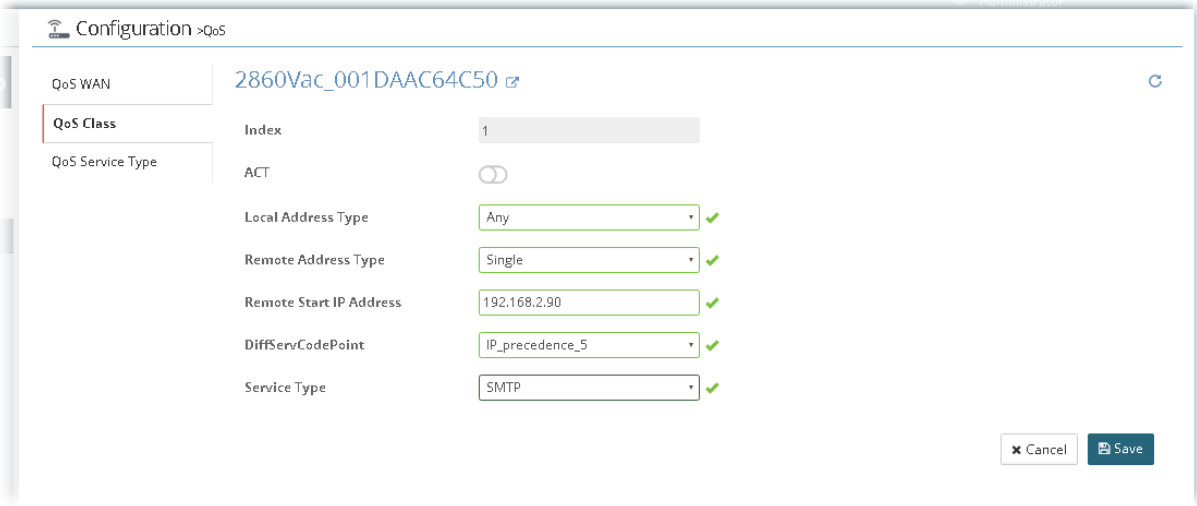
After finished the settings, click **Save**. The modification for the CPE will take effect immediately.

13.10.2 QoS Class

Class rules can be adjusted for your necessity.

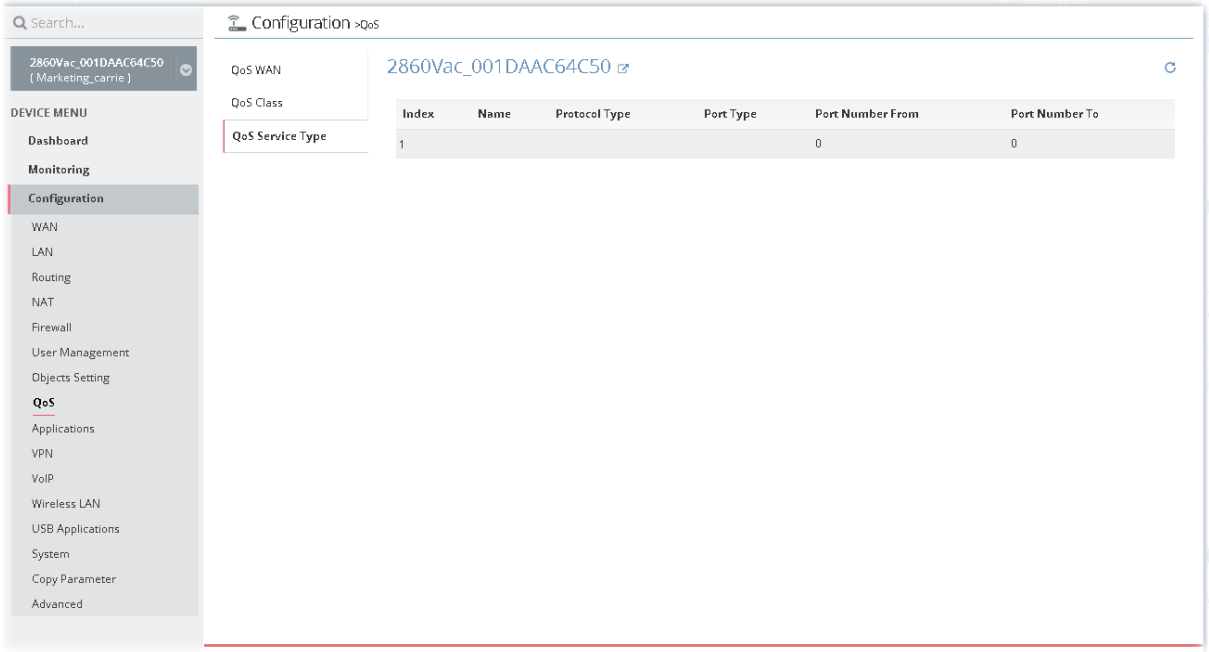


To edit the parameters settings for class rules, move the mouse cursor on the table and click any one of the class rules to get the following page.

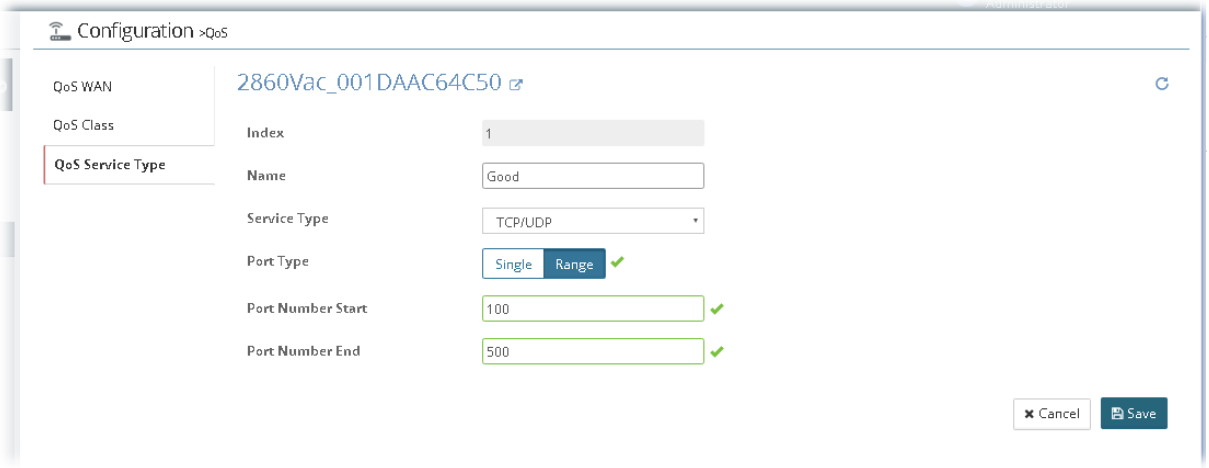


After finished the settings, click **Save**. The modification for the CPE will take effect immediately.

13.10.3 QoS Service Type



To add / edit the parameters settings for service type, move the mouse cursor on the table and click any index number to get the following page.



After finished the settings, click **Save**. The modification for the CPE will take effect immediately.

13.10.4 Others

Such feature is available for certain CPE (e.g., Vigor2133 series) only. It is used for enabling the first priority for VoIP SIP/RTP and configuring port number for SIP UDP.

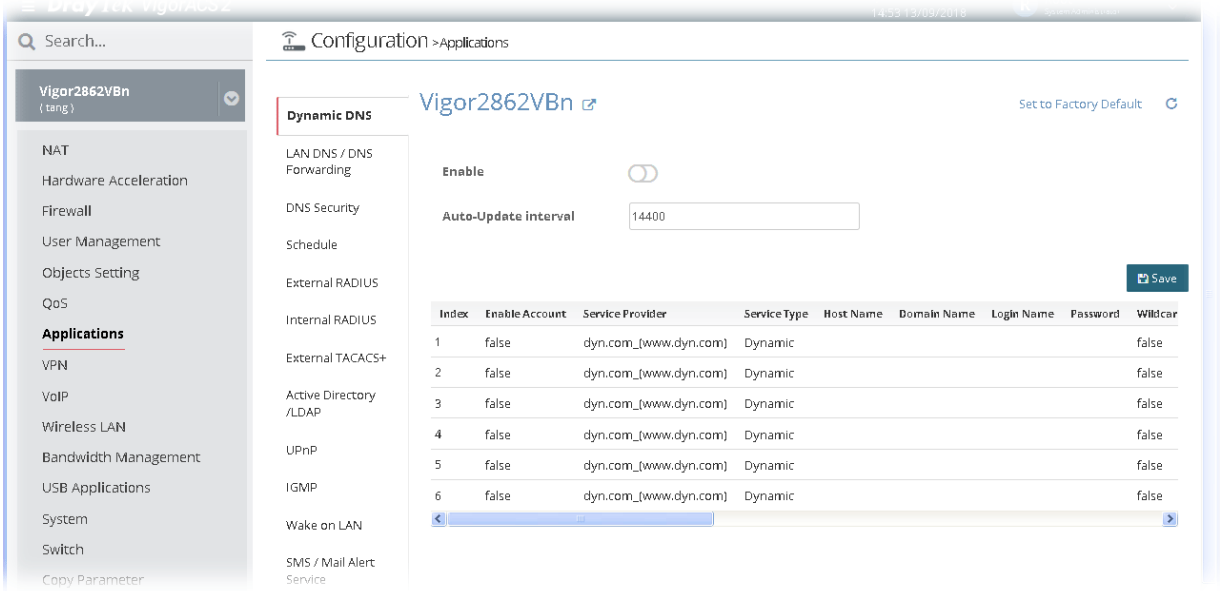
13.11 Applications Settings for CPE

In such section, Vigor2862VBn is selected as an example for displaying Applications settings.

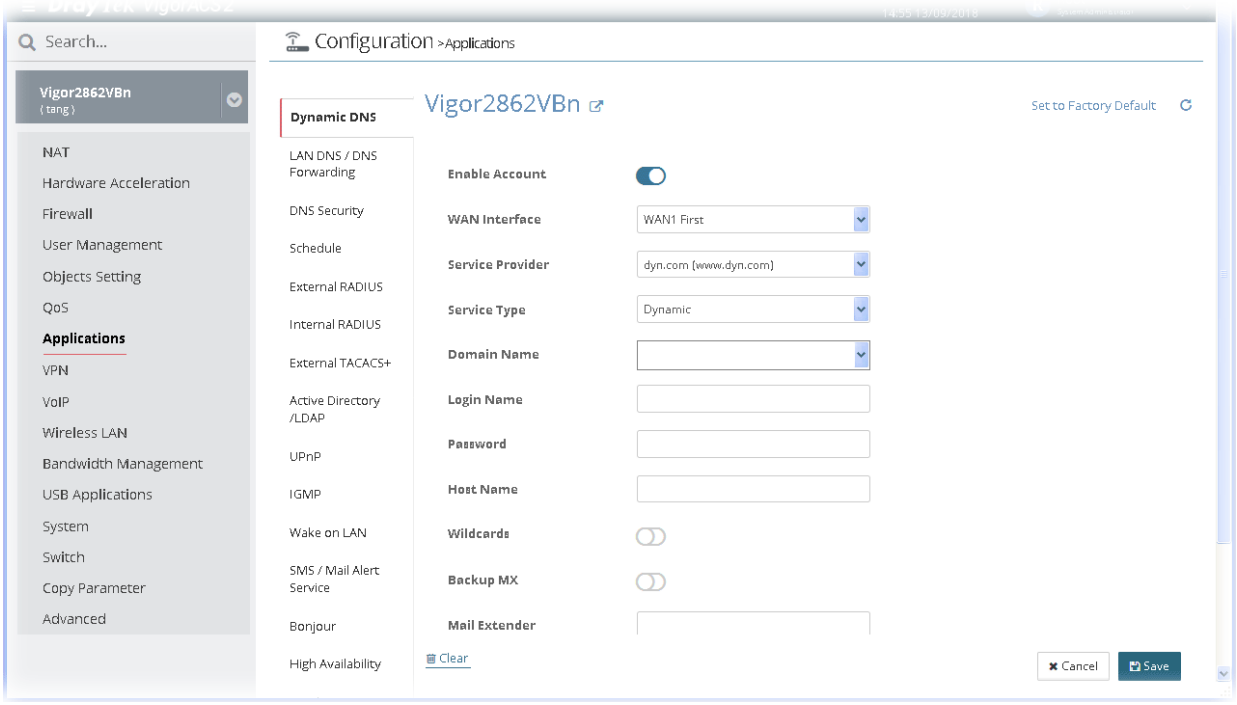
13.11.1 Dynamic DNS

The ISP often provides you with a dynamic IP address when you connect to the Internet via your ISP. It means that the public IP address assigned to your router changes each time you access the Internet. The Dynamic DNS feature lets you assign a domain name to a dynamic WAN IP address. It allows the router to update its online WAN IP address mappings on the specified Dynamic DNS server. Once the router is online, you will be able to use the registered domain name to access the router or internal virtual servers from the Internet. It is particularly helpful if you host a web server, FTP server, or other server behind the router.

Before you use the Dynamic DNS feature, you have to apply for free DDNS service to the DDNS service providers.



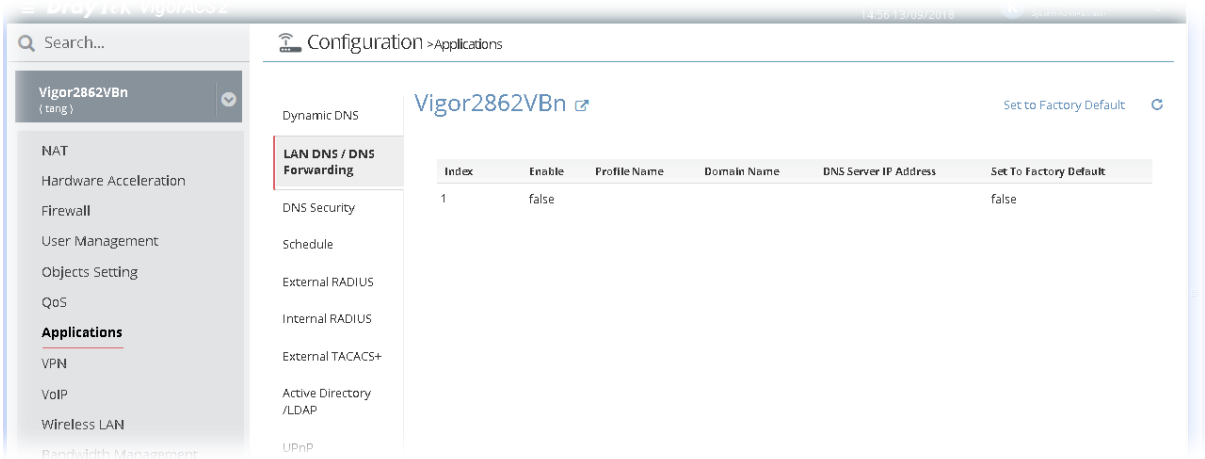
To edit the parameters settings for DDNS service, move the mouse cursor on the table and click any index number to get the following page.



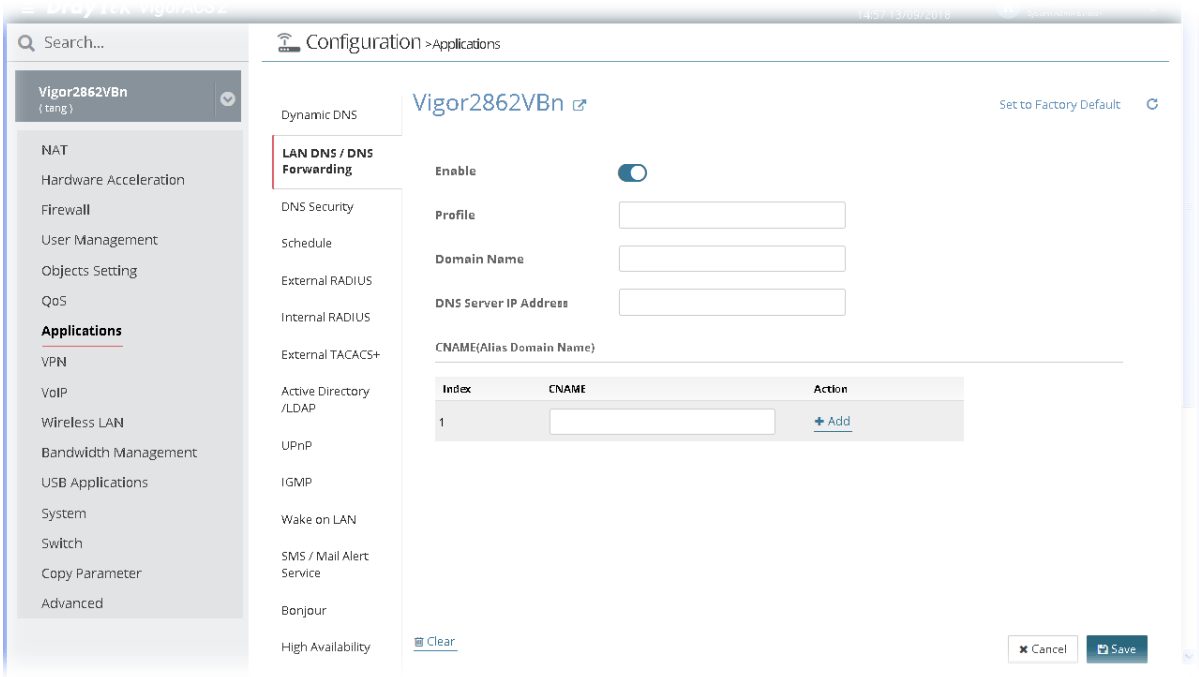
After finished the settings, click **Save**. The modification for the CPE will take effect immediately.

13.11.2 LAN DNS / DNS Forwarding

LAN DNS lets the network administrators host servers with privacy and security. When the network administrators of your office set up FTP, Mail or Web server inside LAN, you can specify specific private IP address (es) to correspondent servers. Thus, even the remote PC is adopting public DNS as the DNS server, the LAN DNS resolution on Vigor router will respond the specified private IP address.

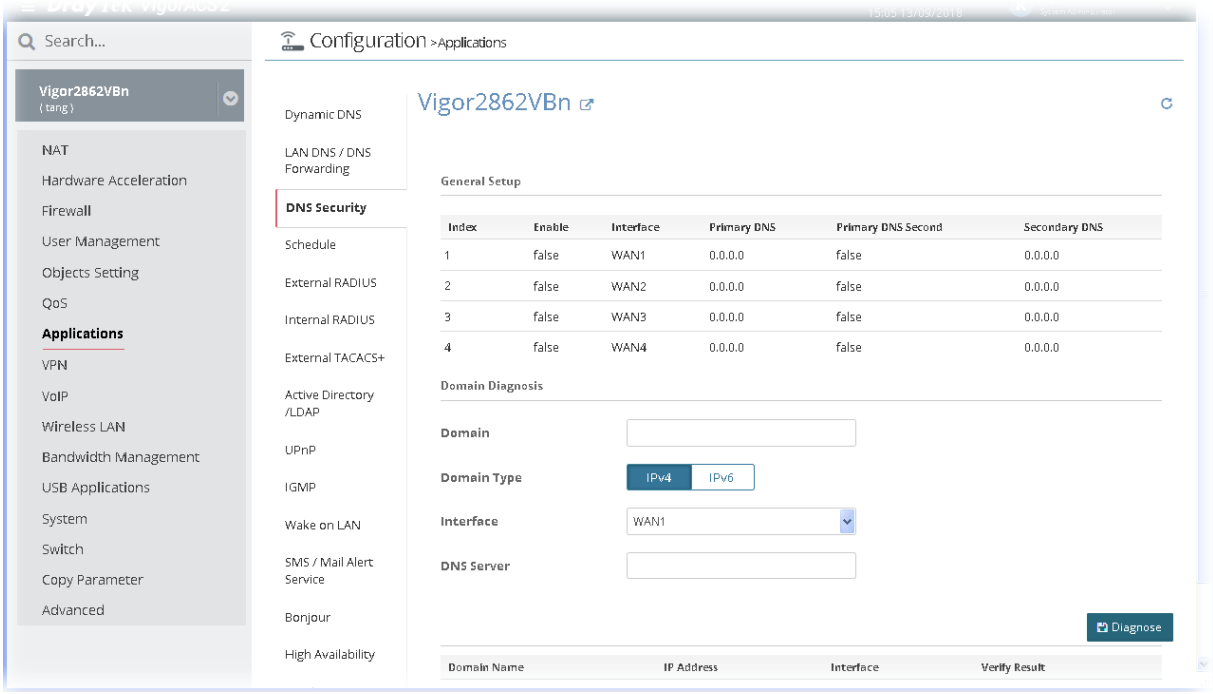


To edit the parameters settings for LAN DNS profile, move the mouse cursor on the table and click any index number to get the following page.

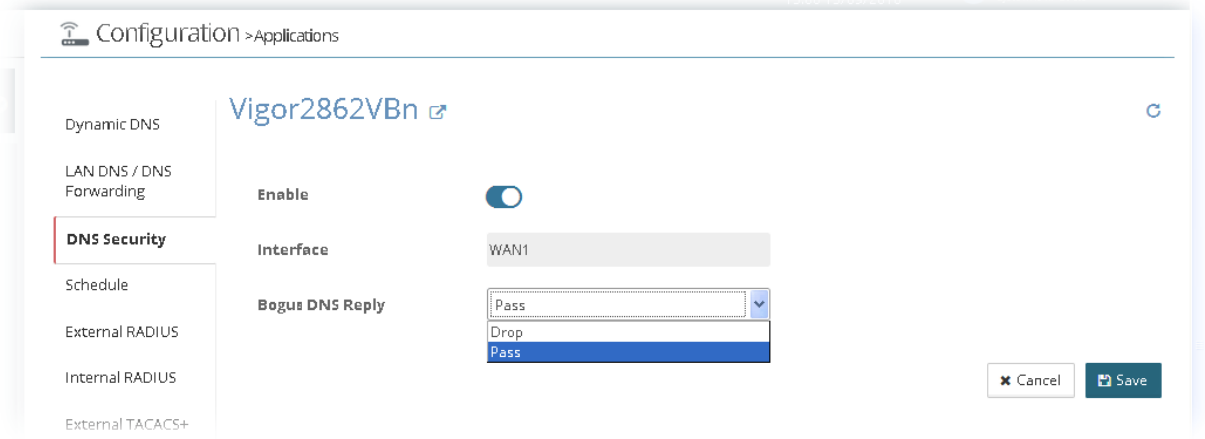


13.11.3 DNS Security

DNS security is able to ensure that the incoming data is not falsified and the source of the data is secure and correct to prevent from DNS attack by someone.



All of WAN interfaces of Vigor router can be configured with DNS Security enabled respectively. To edit the parameters settings for DDNS security, move the mouse cursor on the table and click any index number to get the following page.

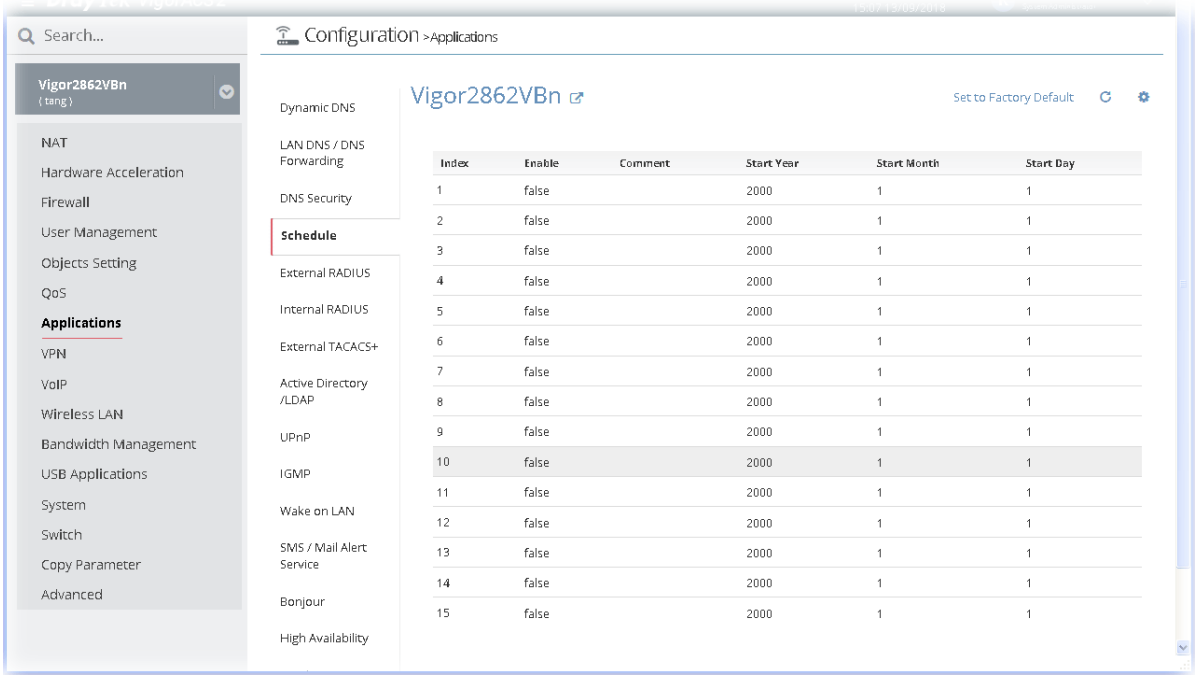


After finished the settings, click **Save**. The modification for the CPE will take effect immediately.

In addition, the button of **Diagnose** is a simple way to manually detect if the domain used for the specified CPE is secure not.

13.11.4 Schedule

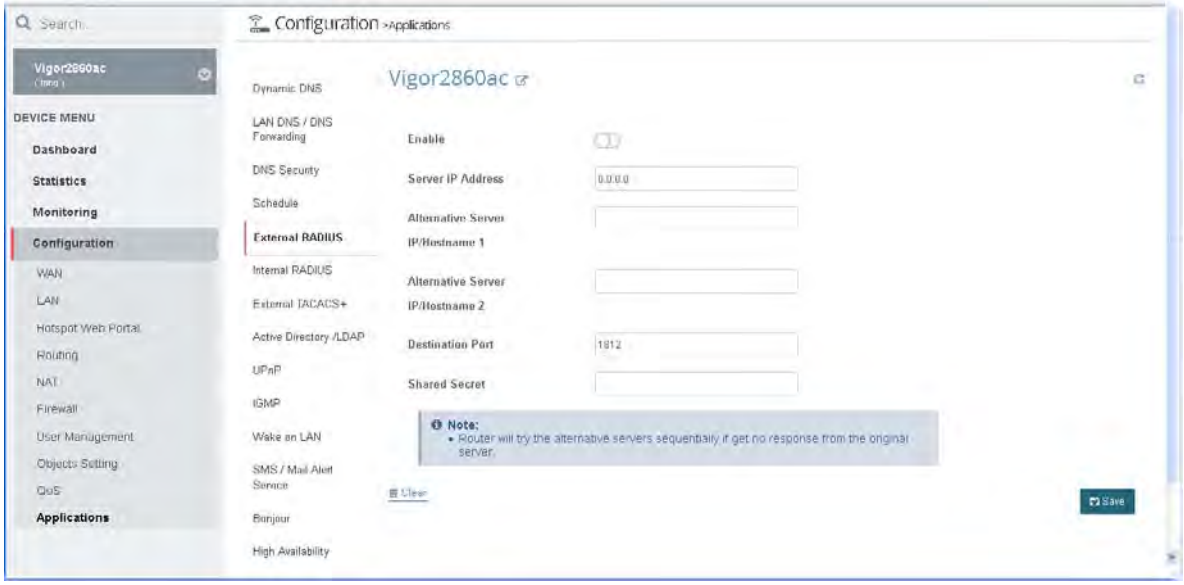
The Vigor router has a built-in clock which can update itself manually or automatically by means of Network Time Protocols (NTP). As a result, you can not only schedule the router to dialup to the Internet at a specified time, but also restrict Internet access to certain hours so that users can connect to the Internet only during certain hours, say, business hours. The schedule is also applicable to other functions.



13.11.5 External RADIUS

Remote Authentication Dial-In User Service (RADIUS) is a security authentication client/server protocol that supports authentication, authorization and accounting, which is widely used by Internet service providers. It is the most common method of authenticating and authorizing dial-up and tunneled network users.

Vigor router can be operated as a RADIUS client. Therefore, this page is used to configure settings for external RADIUS server. Then LAN user of Vigor router will be authenticated by such server for network application.

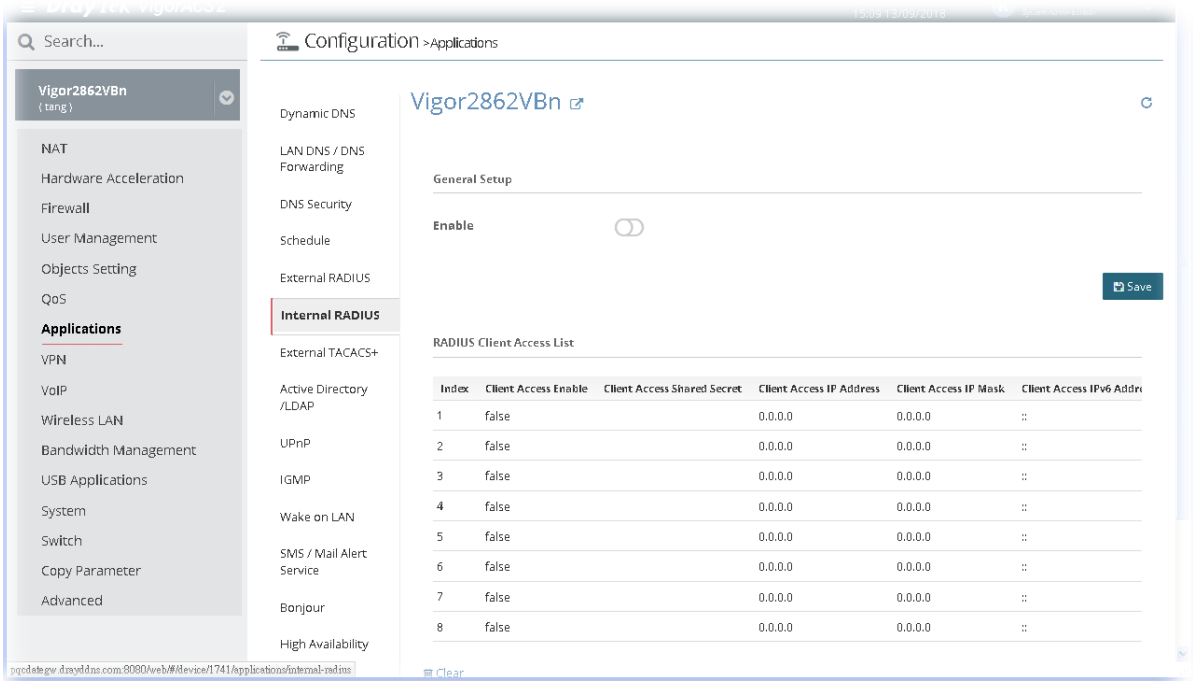


The option of Alternative Server is available for some CPE (e.g., Vigor2860ac).

After finished the settings, click **Save**. The modification for the CPE will take effect immediately.

13.11.6 Internal RADIUS

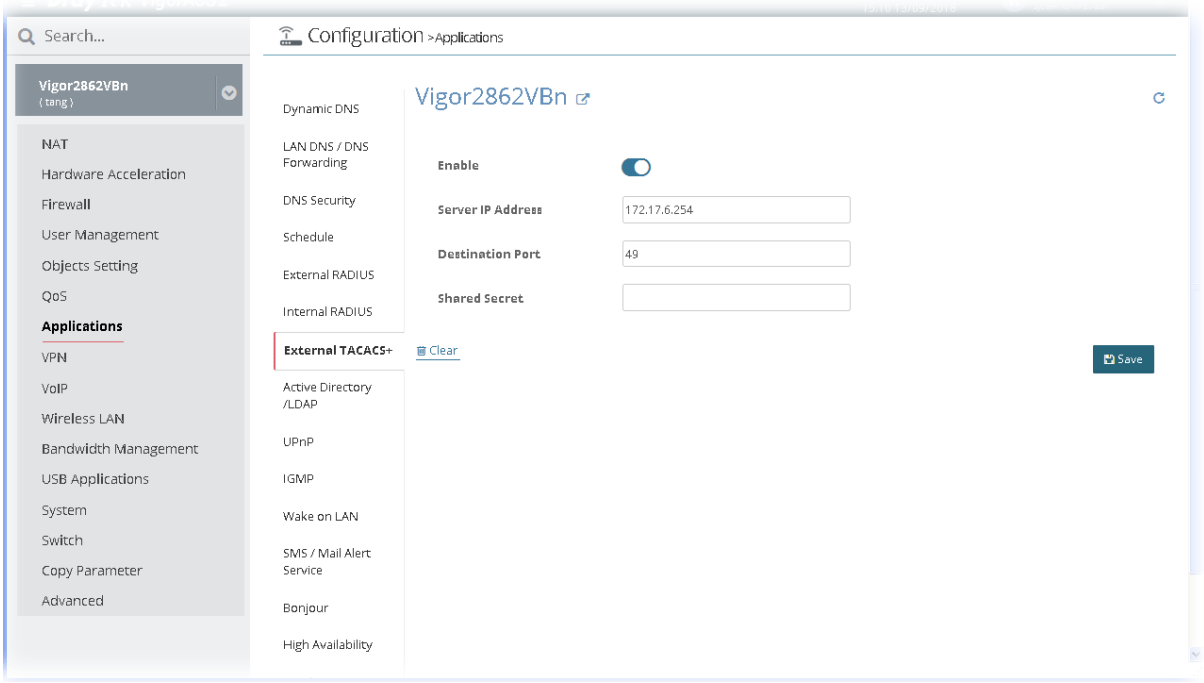
Except for being a built-in RADIUS client, Vigor router also can be operated as a RADIUS server which performs security authentication by itself. This page is used to configure settings for internal RADIUS server. Then LAN user of Vigor router will be authenticated by Vigor router directly.



After finished the settings, click **Save**. The modification for the CPE will take effect immediately.

13.11.7 External TACACS+

TACACS+ means Terminal Access Controller Access-Control System Plus. It works like RADIUS does. The TACACS+ server and client share a secret that is used to authenticate the messages sent between them. Both sides must be configured to use the same shared secret.

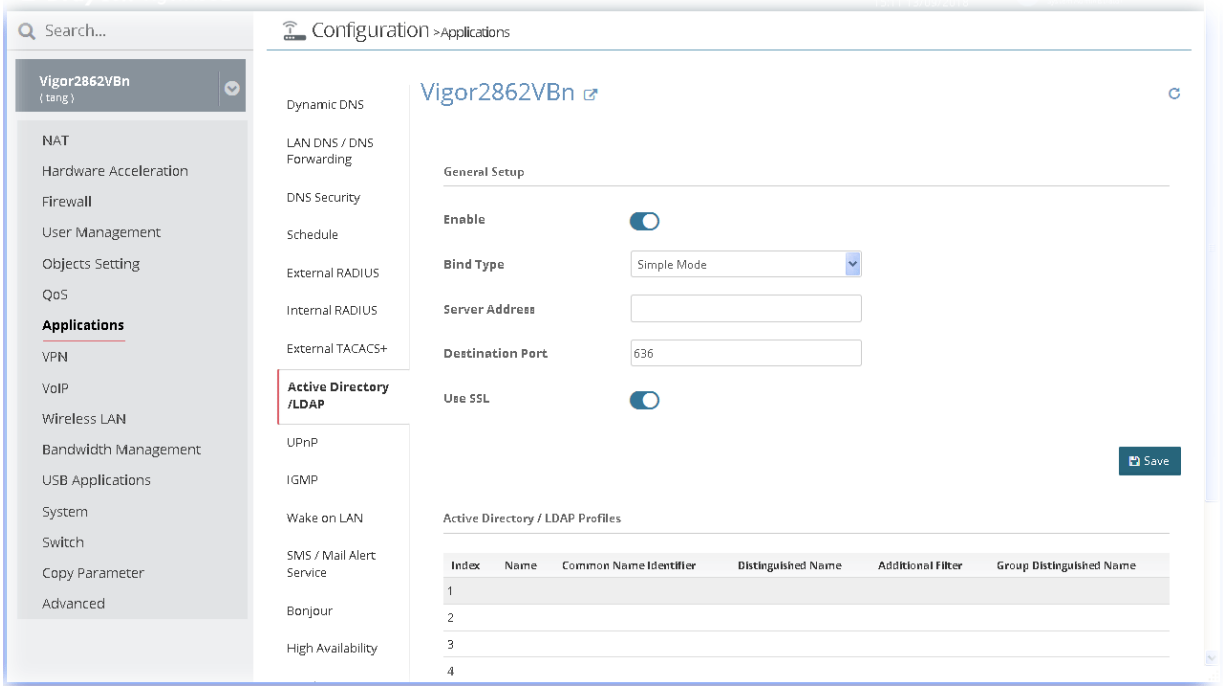


After finished the settings, click **Save**. The modification for the CPE will take effect immediately.

13.11.8 Active Directory/LDAP

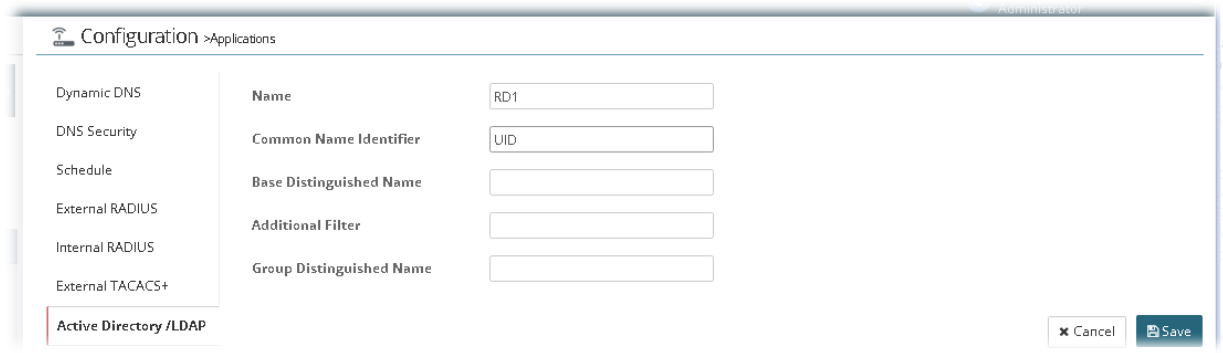
Lightweight Directory Access Protocol (LDAP) is a communication protocol for using in TCP/IP network. It defines the methods to access distributing directory server by clients, work on directory and share the information in the directory by clients. The LDAP standard is established by the work team of Internet Engineering Task Force (IETF).

As the name described, LDAP is designed as an effect way to access directory service without the complexity of other directory service protocols. For LDAP is defined to perform, inquire and modify the information within the directory, and acquire the data in the directory securely, therefore users can apply LDAP to search or list the directory object, inquire or manage the active directory.



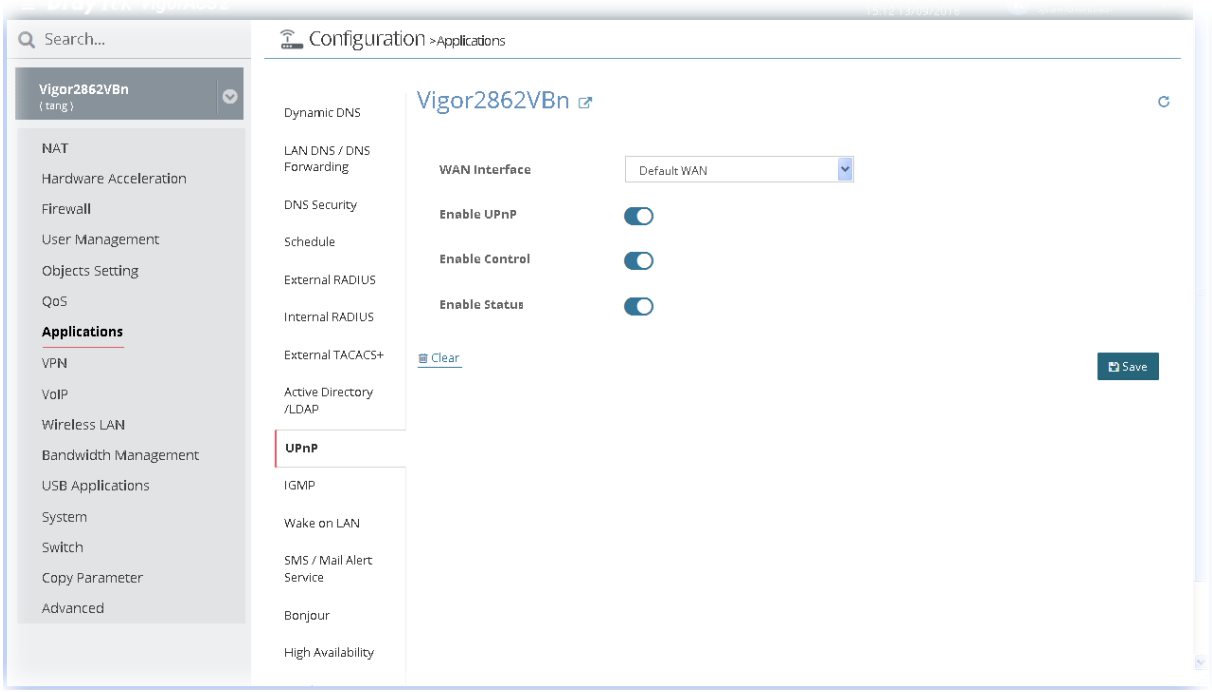
After finished the settings configuration, click **Save**. The modification for the CPE will take effect immediately.

In addition, you can configure eight AD/LDAP profiles. These profiles would be used with User Management for different purposes in management. To edit the parameters settings for AD/LDAP, move the mouse cursor on the table and click any index number (e.g., index number 4) to get the following page.



13.11.9 UPnP

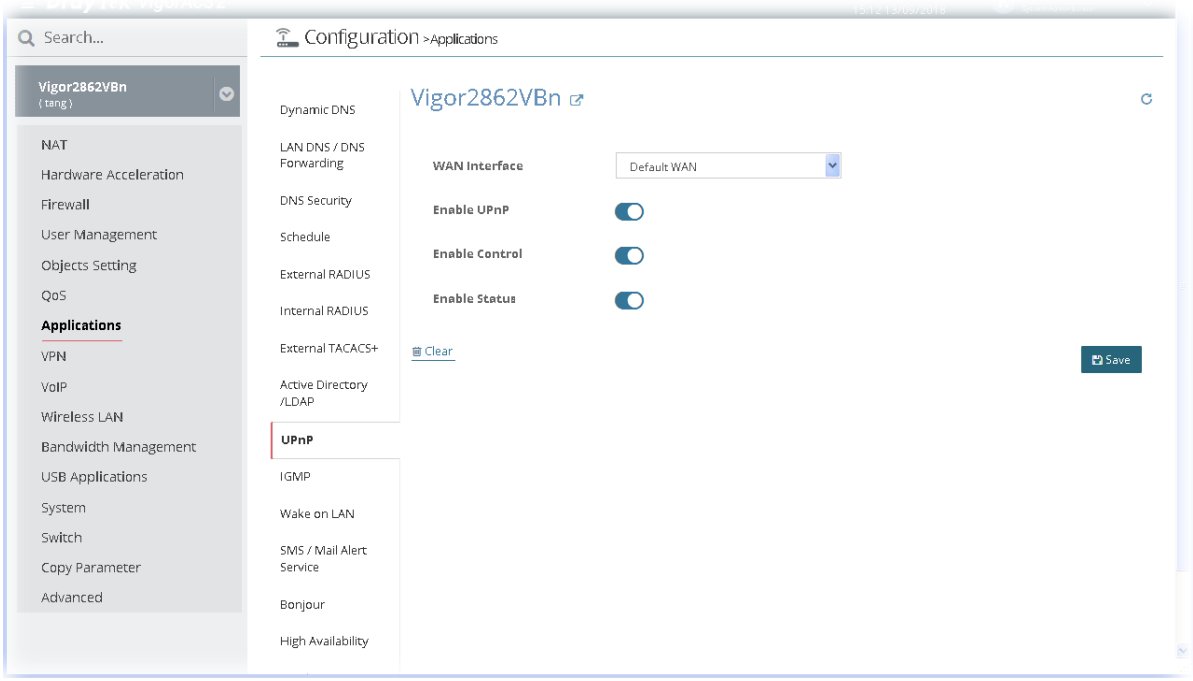
The **UPnP** (Universal Plug and Play) protocol is supported to bring to network connected devices the ease of installation and configuration which is already available for directly connected PC peripherals with the existing Windows 'Plug and Play' system. For NAT routers, the major feature of UPnP on the router is “NAT Traversal”. This enables applications inside the firewall to automatically open the ports that they need to pass through a router.



After finished the settings configuration, click **Save**. The modification for the CPE will take effect immediately.

13.11.10 IGMP

IGMP is the abbreviation of *Internet Group Management Protocol*. It is a communication protocol which is mainly used for managing the membership of Internet Protocol multicast groups.

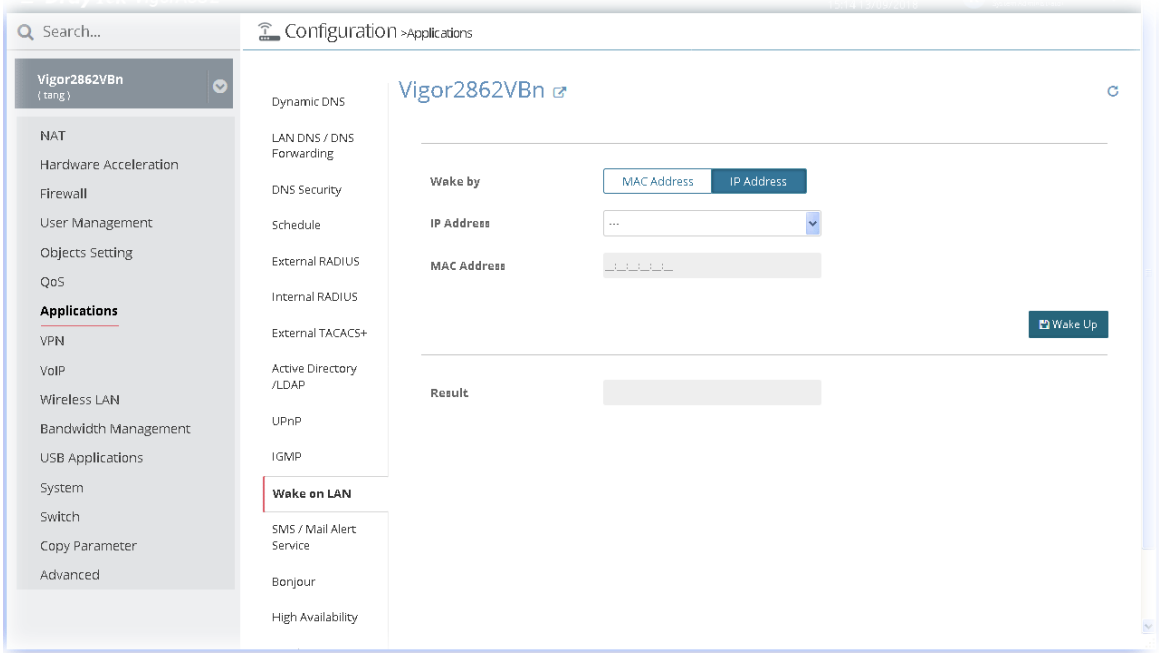


After finished the settings configuration, click **Save**. The modification for the CPE will take effect immediately.

13.11.11 Wake on LAN

A PC client on LAN can be woken up by the router it connects. When a user wants to wake up a specified PC through the router, he/she must type correct MAC address of the specified PC on this web page of **Wake on LAN** (WOL) of this router.

In addition, such PC must have installed a network card supporting WOL function. By the way, WOL function must be set as “Enable” on the BIOS setting.



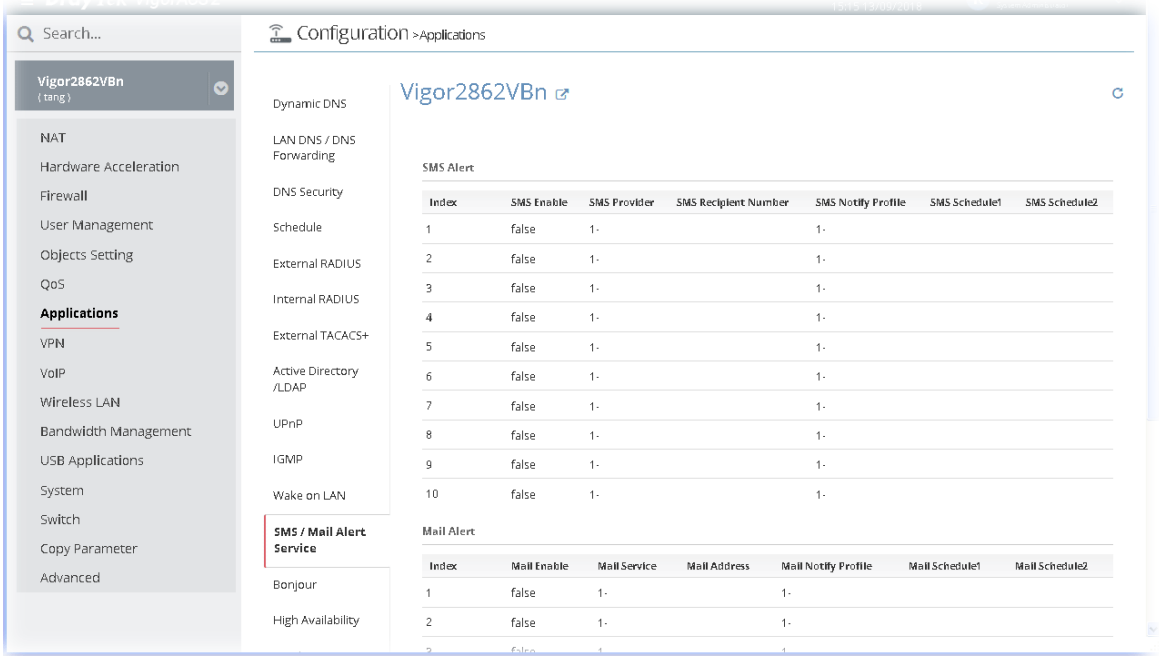
Click **Wake Up** to wake up the selected IP. The result will be shown on the field of Result.

13.11.12 SMS/Mail Alert Service

The function of SMS (Short Message Service)/Mail Alert is that Vigor router sends a message to user's mobile or e-mail box through specified service provider to assist the user knowing the real-time abnormal situations.

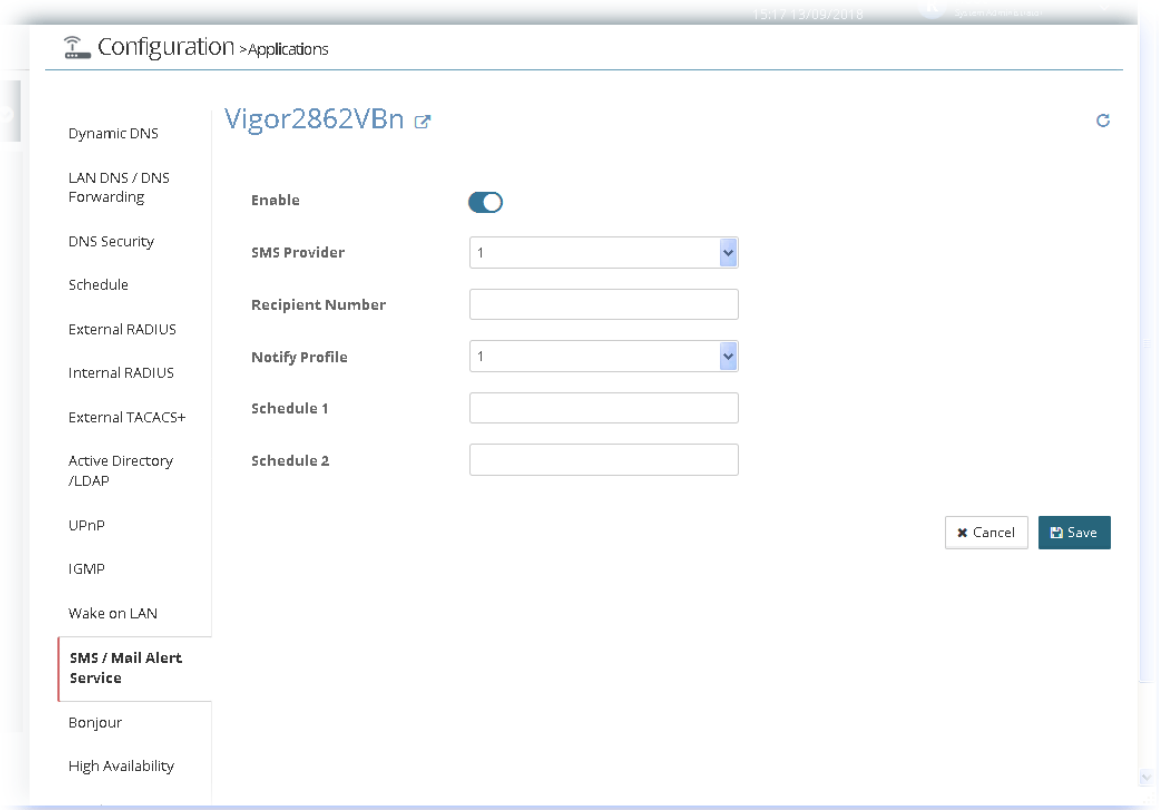
SMS Alert

Vigor router allows you to set up to **10** SMS profiles which will be sent out according to different conditions.



SMS Alert allows you to specify SMS provider, who will get the SMS, what the content is and when the SMS will be sent.

To edit the parameters settings for SMS alert service, move the mouse cursor on the table and click any index number to get the following page.

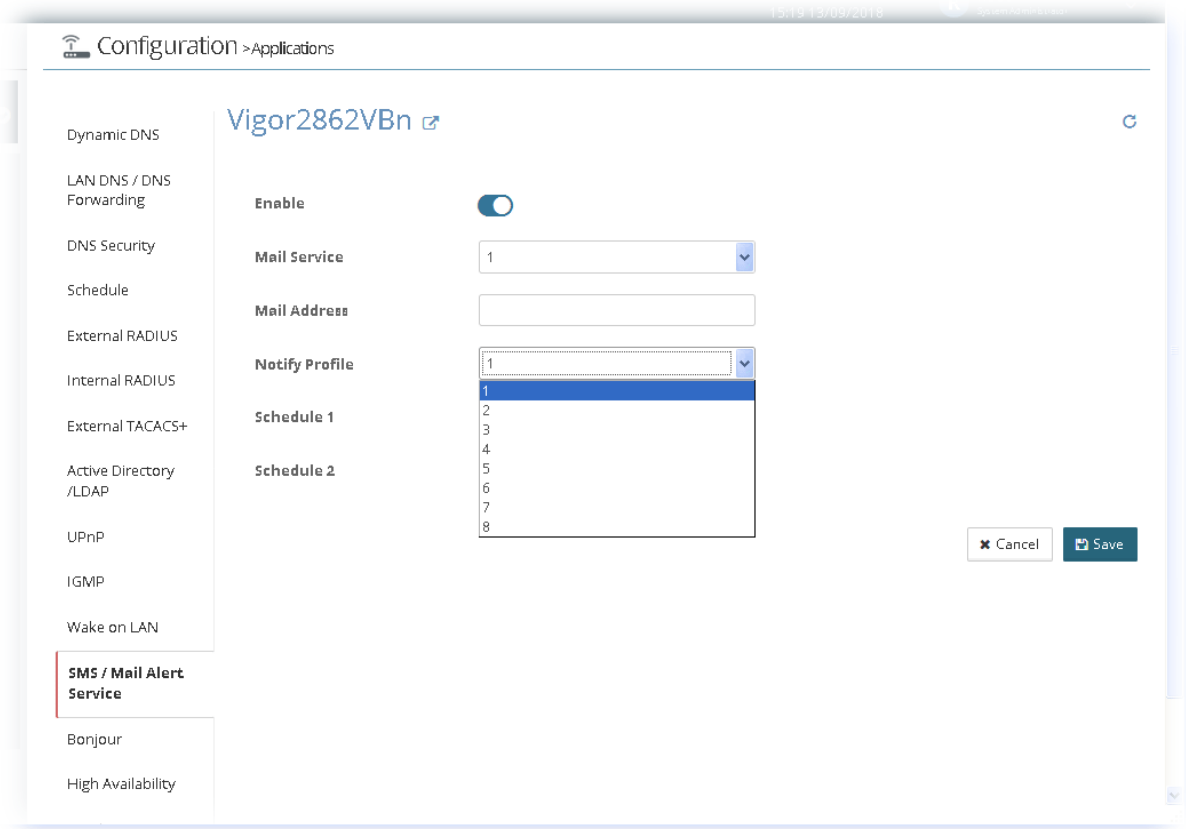


After finished the settings configuration, click **Save**. The modification for the CPE will take effect immediately.

Mail Alert

Mail Alert allows you to specify Mail Server profile, who will get the notification e-mail, what the content is and when the message will be sent.

To edit the parameters settings for mail alert service, move the mouse cursor on the table and click any index number to get the following page.

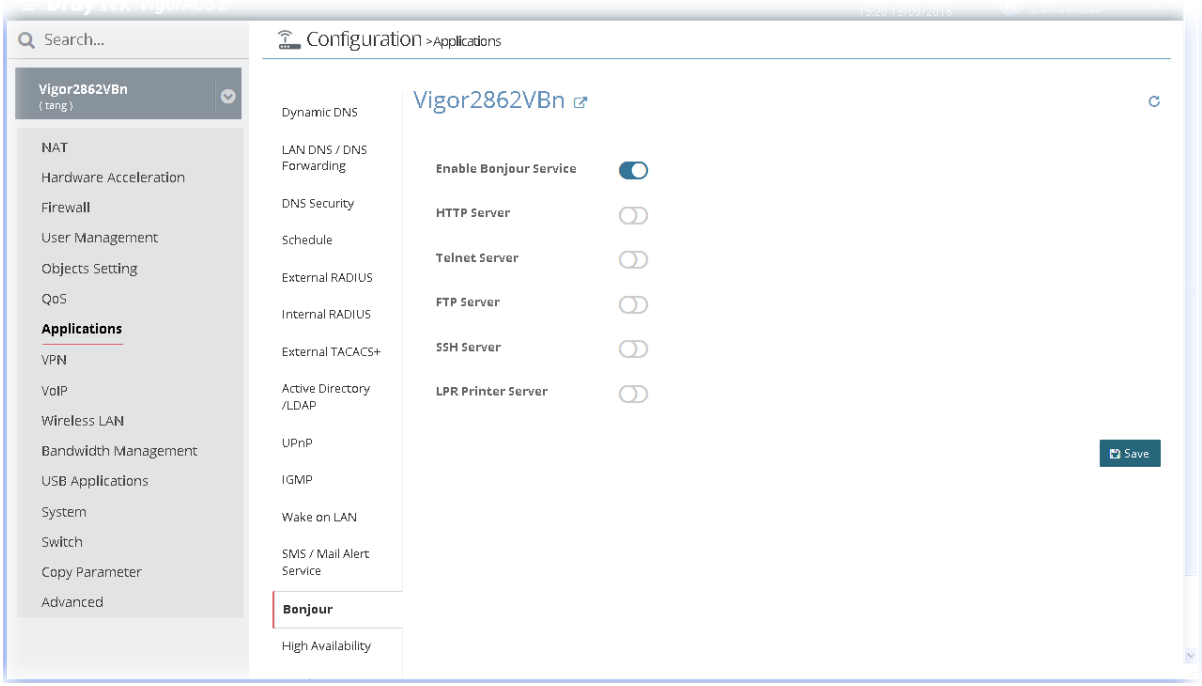


After finished the settings configuration, click **Save**. The modification for the CPE will take effect immediately.

13.11.13 Bonjour

Bonjour is a service discovery protocol which is a built-in service in Mac OS X; for Windows or Linux platform, there is correspondent software to enable this function for free.

Usually, users have to configure the router or personal computers to use above services. Sometimes, the configuration (e.g., IP settings, port number) is complicated and not easy to complete. The purpose of Bonjour is to decrease the settings configuration (e.g., IP setting). If the host and user's computer have the plug-in bonjour driver install, they can utilize the service offered by the router by clicking the router name icon. In short, what the Clients/users need to know is the name of the router only.

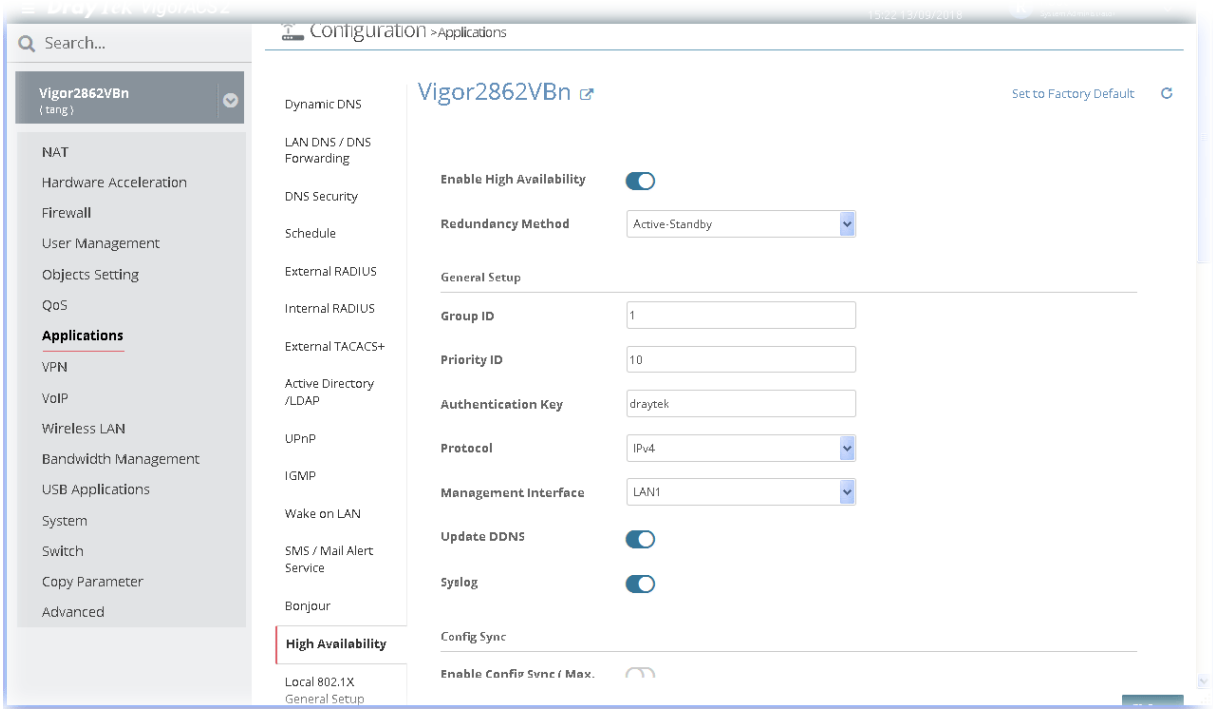


After finished the settings configuration, click **Save**. The modification for the CPE will take effect immediately.

13.11.14 High Availability

The High Availability (HA) feature refers to the awareness of component failure and the availability of backup resources. The complexity of HA is determined by the availability needs and the tolerance of system interruptions. Systems, providing nearly full-time availability, typically have redundant hardware and software that make the system available despite failures.

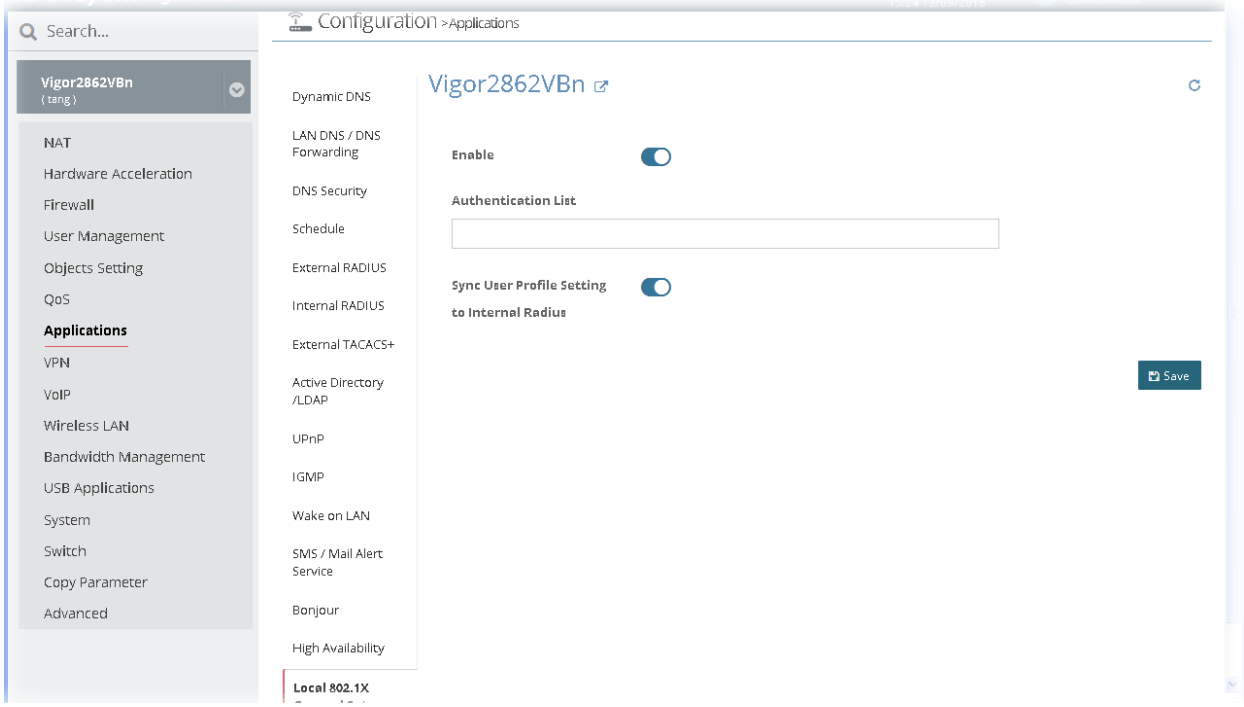
The high availability of the Vigor router is designed to avoid single points-of-failure. When failures occur, the failover process moves processing performed by the failed component (the “primary”) to the backup component (the “secondary”). This process remains system-wide resources, recovers partial of failed transactions, and restores the system to normal within a few seconds.



After finished the settings configuration, click **Save**. The modification for the CPE will take effect immediately.

13.11.15 Local 802.1X General Setup

It allows you to configure general settings for Local 802.1X server built in Vigor router.



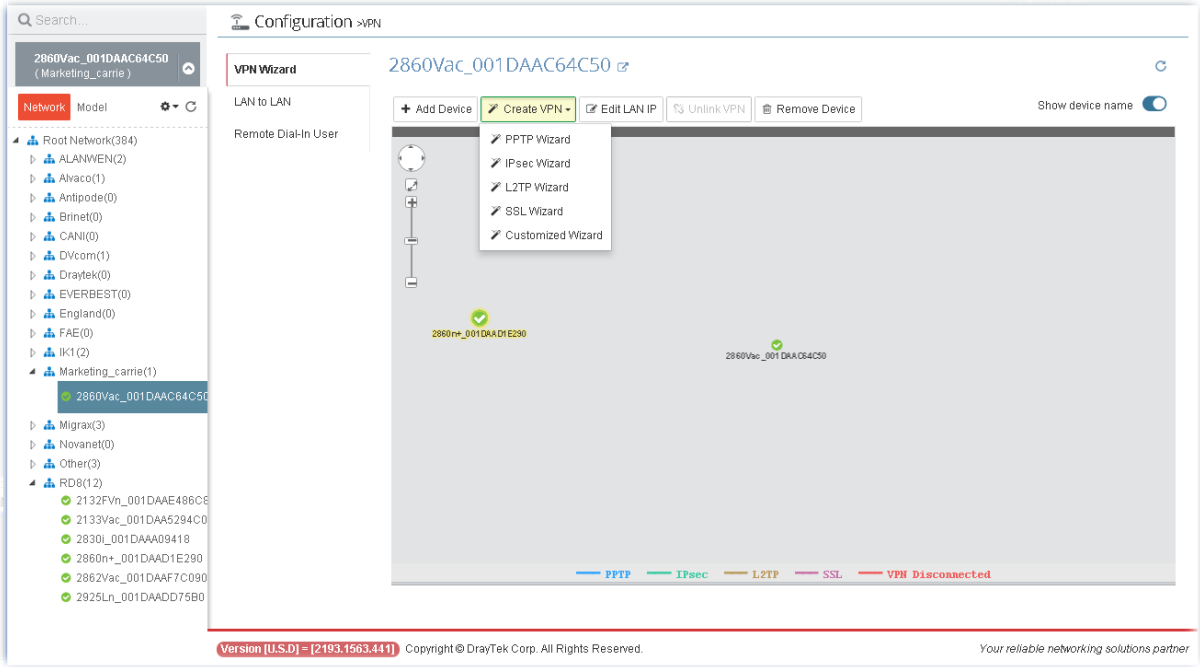
After finished the settings configuration, click **Save**. The modification for the CPE will take effect immediately.

13.12 VPN Settings for CPE

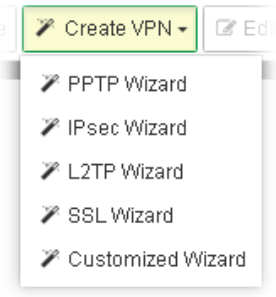
A Virtual Private Network (VPN) is the extension of a private network that encompasses links across shared or public networks like the Internet. In short, by VPN technology, you can send data between two computers across a shared or public network in a manner that emulates the properties of a point-to-point private link.

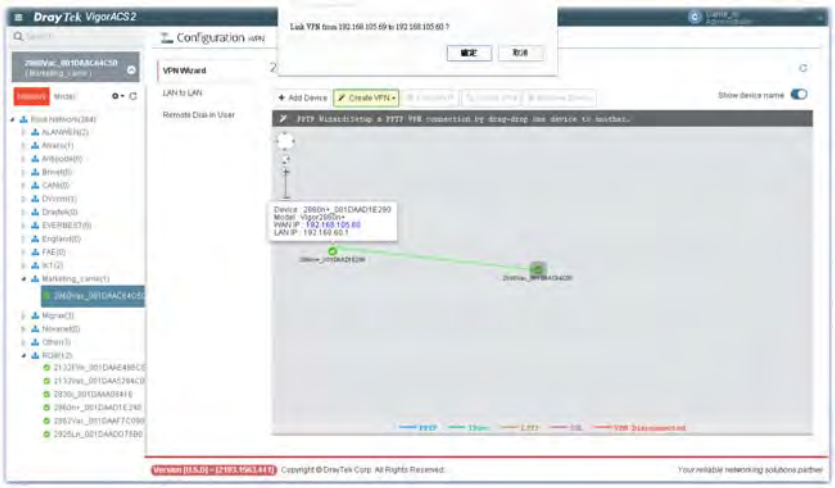
13.12.1 VPN Wizard

This page displays the VPN status related to the specified device.

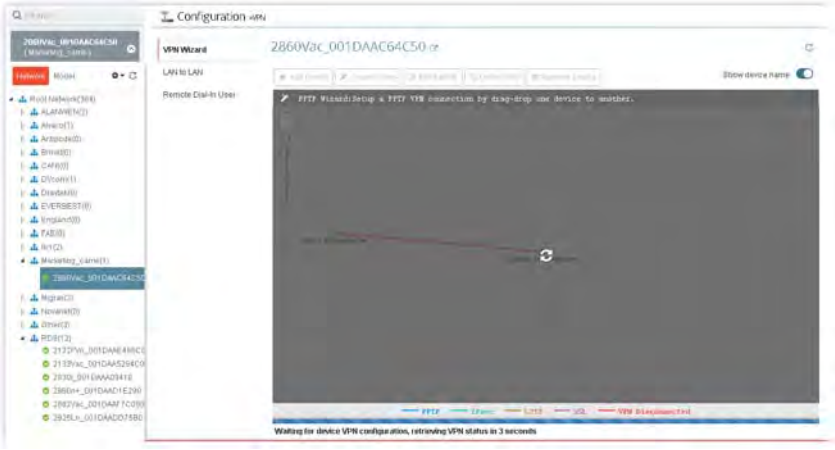


These parameters are explained as follows:

Item	Description
Add Device	Click this button to add a device for building VPN connection. If you do not click this button first, you can not drag any device from **Network** view.
Create VPN 	To build a quick VPN connection with **PPTP/IPsec/L2TP/SSL/customized settings**, simply click this button and choose one of the wizards for establishing VPN. Then, drag and drop one device to another.


DrayTek VigorACS 2
Configuration
VPN Wizard
LAN to LAN
Remote Dial-in User

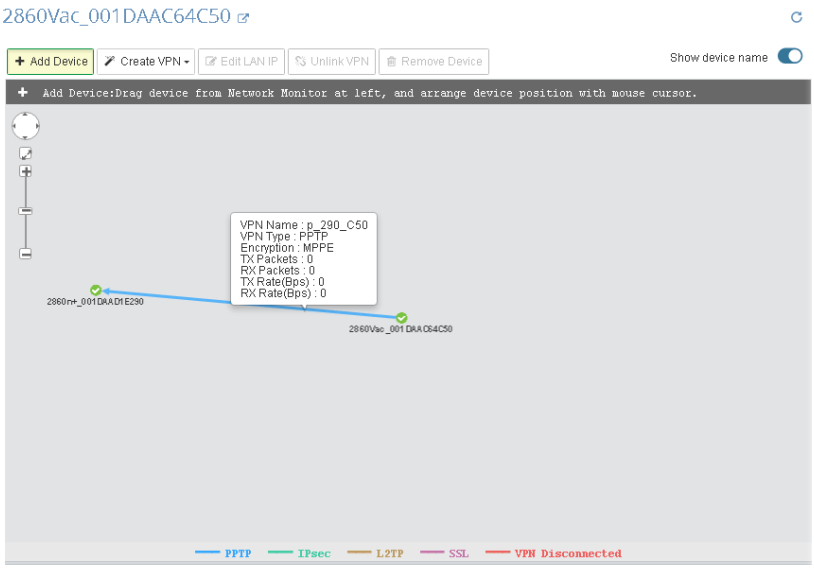
⇩


Configuration
VPN Wizard
LAN to LAN
Remote Dial-in User
2860Vac_001DAAC64C50
Waiting for device VPN configuration, retrieving VPN status in 3 seconds

⇩

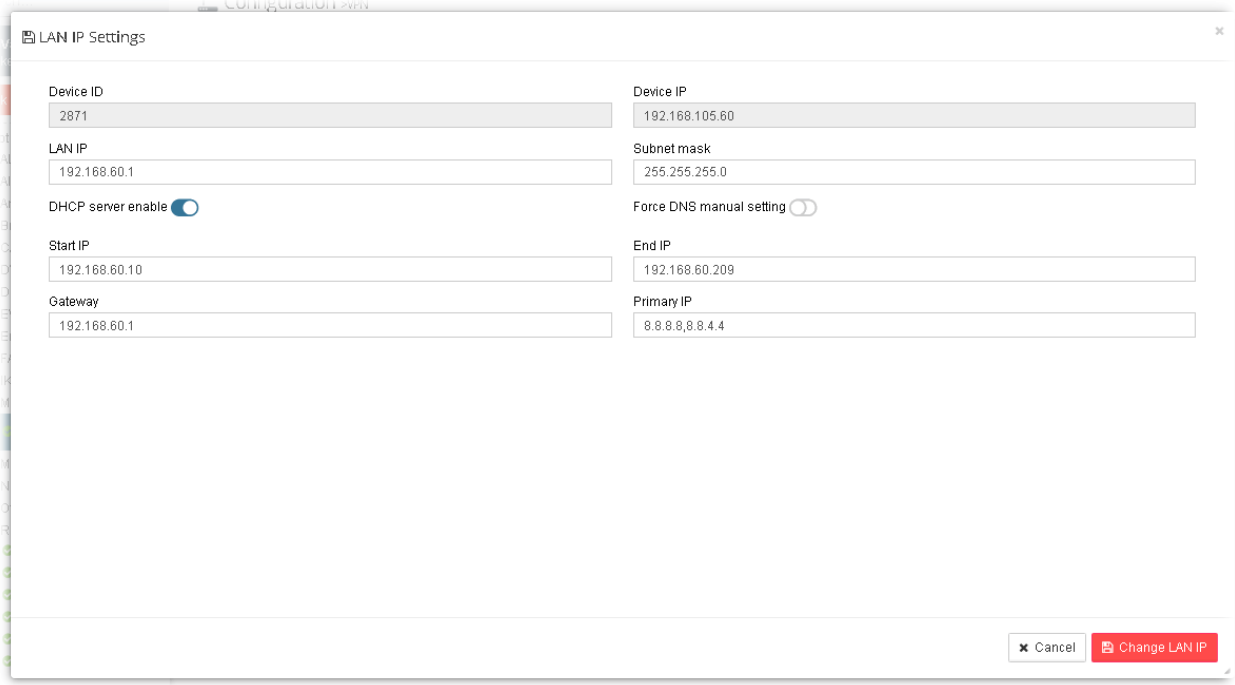
Configuration
VPN Wizard
LAN to LAN
Remote Dial-in User
2860Vac_001DAAC64C50
Add Device

⇩

	
Edit LAN IP	If there is LAN IP segment conflict in VPN connection, please select that device and click this button to change LAN IP setting.
Unlink VPN	To disconnect a VPN connection, Click this button and move the mouse cursor to the VPN connection that you want to disconnect.
Remove Device	Click this button to remove the selected device without VPN connection.
Show device name	Click it to display / hide the name of the device.

Change LAN IP for Selected Device

If there is LAN IP segment conflict in VPN connection, you can change the LAN IP setting for the device and avoid the conflict. Choose the device on the screen and click **Edit LAN IP**. The following dialog will appear.

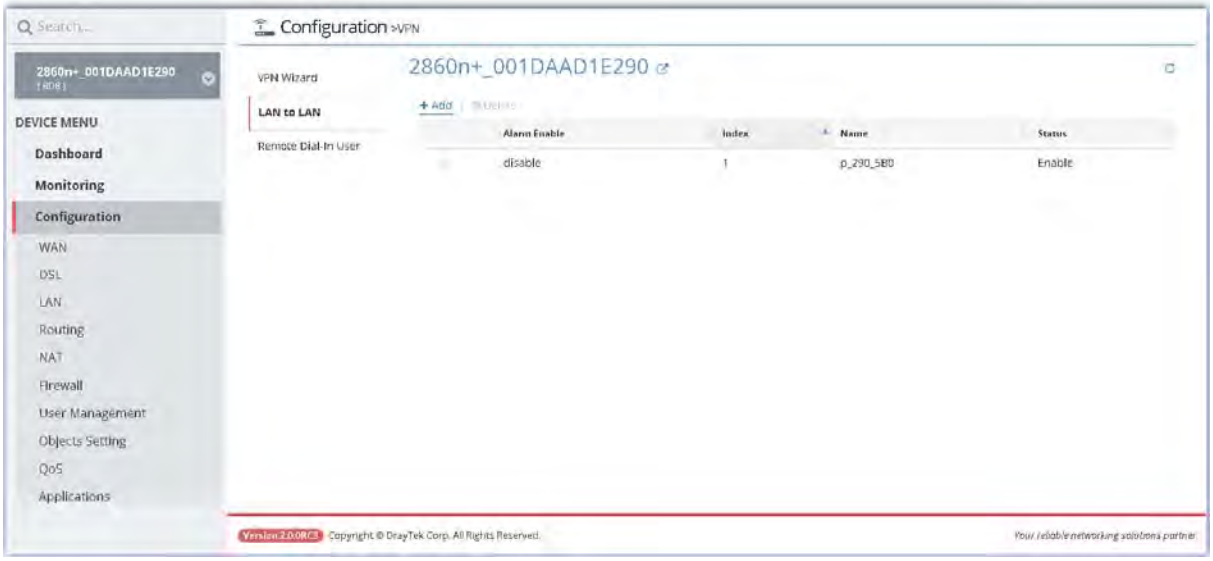


These parameters are explained as follows:

Item	Description
Device ID	Display the identification number of the selected device (CPE).
Device IP	Display the WAN IP address of the selected device (CPE).
LAN IP	Display the LAN IP address of the selected device. You can change it with another IP address to avoid the conflict.
Subnet mask	Display the subnet mask of the selected device. You can change it if required.
DHCP server enable	DHCP server has been activated. If you uncheck this box, you have to specify static IP address for the selected device.
Start IP	Type the starting IP address for the range that DHCP server can utilize.
End IP	Type the ending IP address for the range that DHCP server can utilize.
Gateway	Type the gateway address of the selected device.
Primary IP	Specify a DNS server IP address here for the ISP should provide you with usually more than one DNS Server. If your ISP does not provide it, the router will automatically apply default DNS Server IP address: 194.109.6.66 to this field.

13.12.2 Create LAN to LAN Profile for VPN Connection

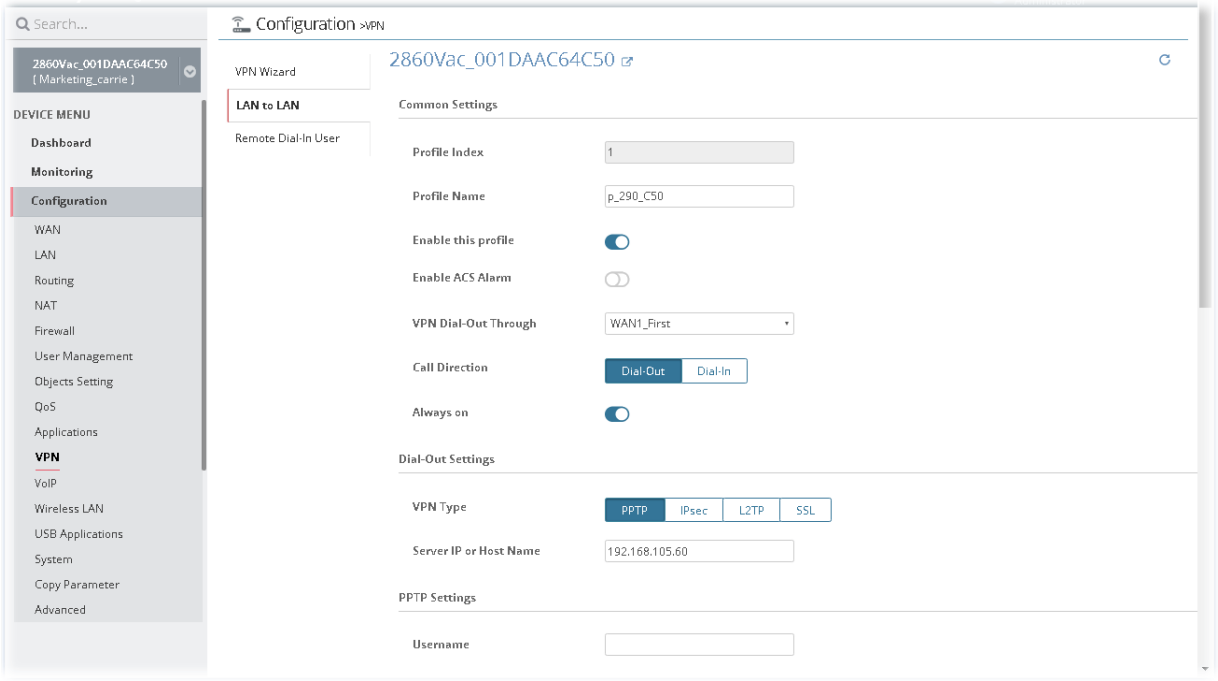
To create a LAN to LAN connection for the selected CPE, choose **LAN to LAN.** You can create up to 32 profiles for such CPE.



These parameters are explained as follows:

Item	Description
Alarm Enable	Display the activation status for alarm mechanism.
Index	VigorACS allows you to create up to 32 index numbers (profiles).
Name	Display the name of the LAN-to-LAN profile.
Status	Display if such profile is enabled or disabled for such CPE.
+Add	Create a new LAN to LAN profile.

The following setting page appears when **+Add** is clicked.



These parameters are explained as follows:

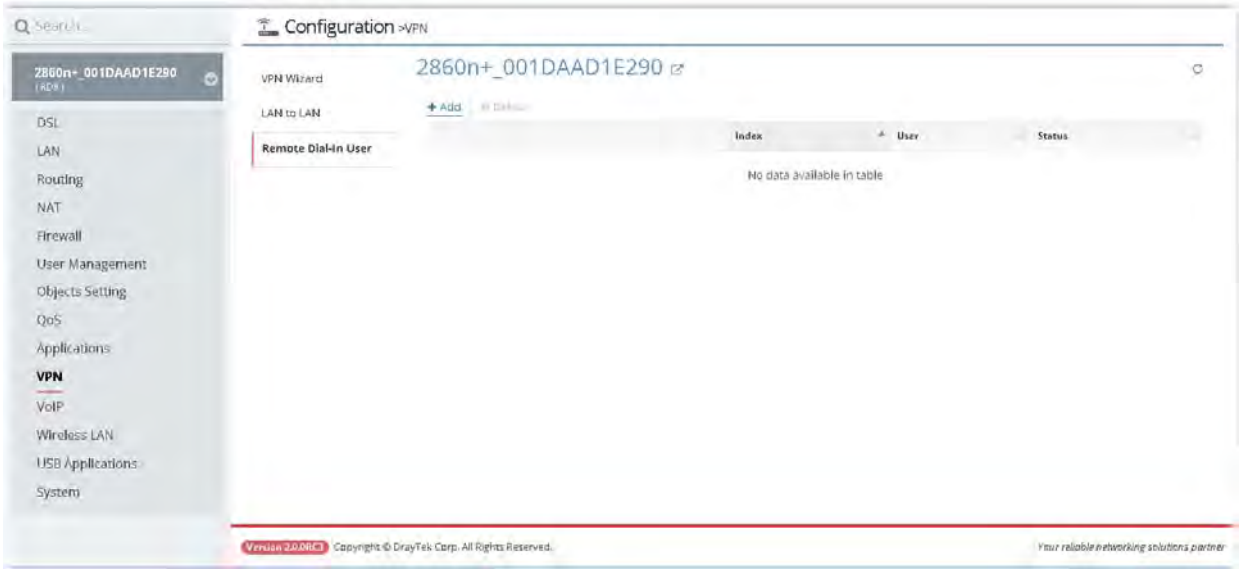
Item	Description
Common Settings	
Profile Name	Display the profile name. Modify it if it is required.
Enable this profile	Click it to enable such profile.
Enable ACS Alarm	Click it to enable the ACS alarm function.
VPN Dial-Out Through	Use the drop down list to choose one way for VPN connection.
Call Direction	Specify which direction that such profile will use Dial-In or Dial-Out.
Dial-Out Settings	
VPN Type	When **PPTP** is selected, you have to fill the username and password, choose PPP Authentication and specify if VJ compression should be on or off for such connection. ● **Server IP or Host Name** - Type the IP address for the server / client or the host name. ● **Username** ● **Password** ● **PPP Authentication** ● **VJ Compression** When **IPsec** is selected, you have to type IKE Pre-Shared Key, and choose IPSec Security Method for such connection. ● **IPsec Tunnel with** ● **Server IP or Host Name** – Type the IP address for the server / client or the host name. ● **IKE Pre-Shared Key** ● **IPsec Security Method**

	When **L2TP** is selected, you have to type required information for the following options. ● **L2TP with IPsec Policy** ● **Server IP or Host Name** – Type the IP address for the server / client or the host name. ● **Username** ● **Password** ● **PPP Authentication** ● **VJ Compression** When **SSL** is selected, you have to type required information for the following options. ● **Server IP or Host Name** – Type the IP address for the server / client or the host name. ● **Server Port (for SSL Tunnel)** ● **Username** ● **Password** ● **PPP Authentication** ● **VJ Compression**
TCP IP Network Settings	**My WAN IP** – Specify the WAN IP address for the selected CPE. **Remote Gateway IP** – Specify the IP address for the remote client. **Remote Network IP** – Specify the IP address for the remote server. **Remote Network Mask –** Specify the network mask for the remote server.
Save	Click it to save the settings and exit the screen.
Cancel	Click it to exit the screen without saving any change.

13.12.3 Create Remote Dial-in User Profile for VPN Connection

The administrator can manage remote access by maintaining a table of remote user profile, so that users can be authenticated to dial-in via VPN connection. The administrator may set parameters including specified connection peer ID, connection type (VPN connection - including PPTP, IPSec Tunnel, and L2TP by itself or over IPSec) and corresponding security methods, etc.

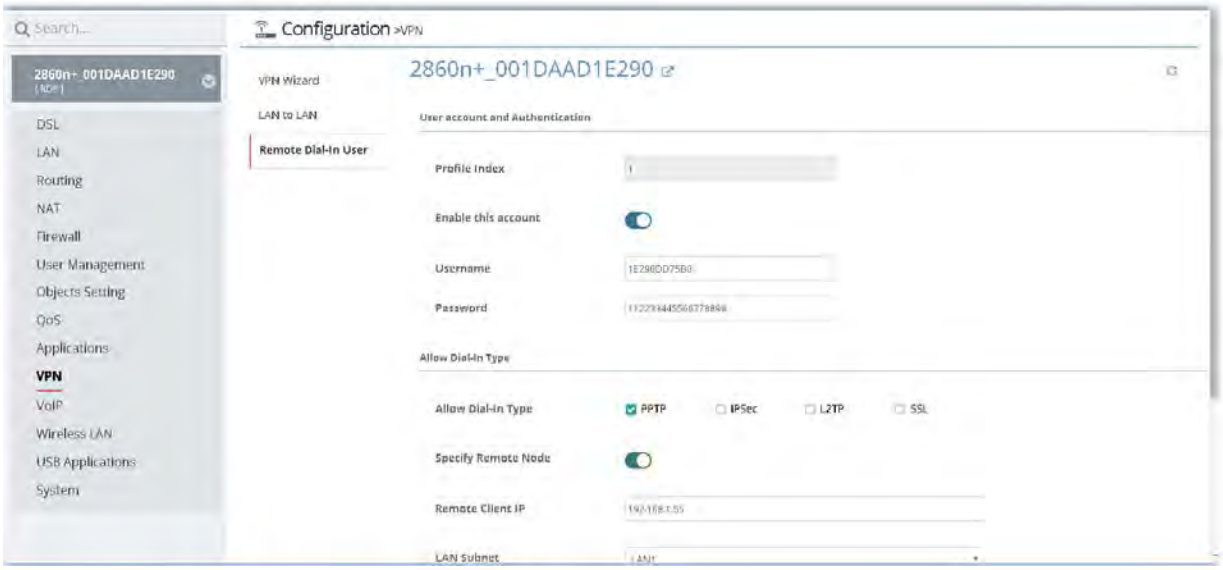
To create a remote dial-in user profile for the selected CPE, click **Remote Dial-in User**, the following screen will appear.



These parameters are explained as follows:

Item	Description
+Add	Create a new LAN to LAN profile.
Index	VigorACS allows you to create up to 32 index numbers (profiles).
User	Display the name of the remote dial-in profile.
Status	Display if such profile is enabled or disabled for such CPE.

The following setting page appears when **+Add** is clicked.



These parameters are explained as follows:

Item	Description
Enable this account	Click it to enable such account.
Username	Type a username for such account which will be used for authentication.
Password	Type a password for such account which will be used for authentication.
Allow Dial-in Type	Allow the remote dial-in user to make a PPTP/IPSec/L2TP/SSL VPN connection through the Internet. You should set the User Name and Password of remote dial-in user below.
Specify Remote Node	You can specify the IP address of the remote dial-in user if you check this box. If you want to build a VPN that all the IP address can connect through the router. Do not check the box.
Remote Client IP	Type the IP address of the remote client that is allowed to pass through VPN connection.
LAN Subnet	Type the subnet address for local CPE.
Assign Static IP Address	Assign an IP address for the client connecting to Vigor device for accessing Internet. Later VigorACS 2 can make security configuration for the specified IP address.
IKE Authentication Method	It is available when **IPsec** is selected as **Allow Dial-In Type.** **IKE Pre-Shared Key** - Type in the required characters (1-63) as the pre-shared key if **IPSec** is selected as **Allow Dial-in Type**.
Save	Click it to save the settings and exit the screen.
Cancel	Click it to exit the screen without saving any change.

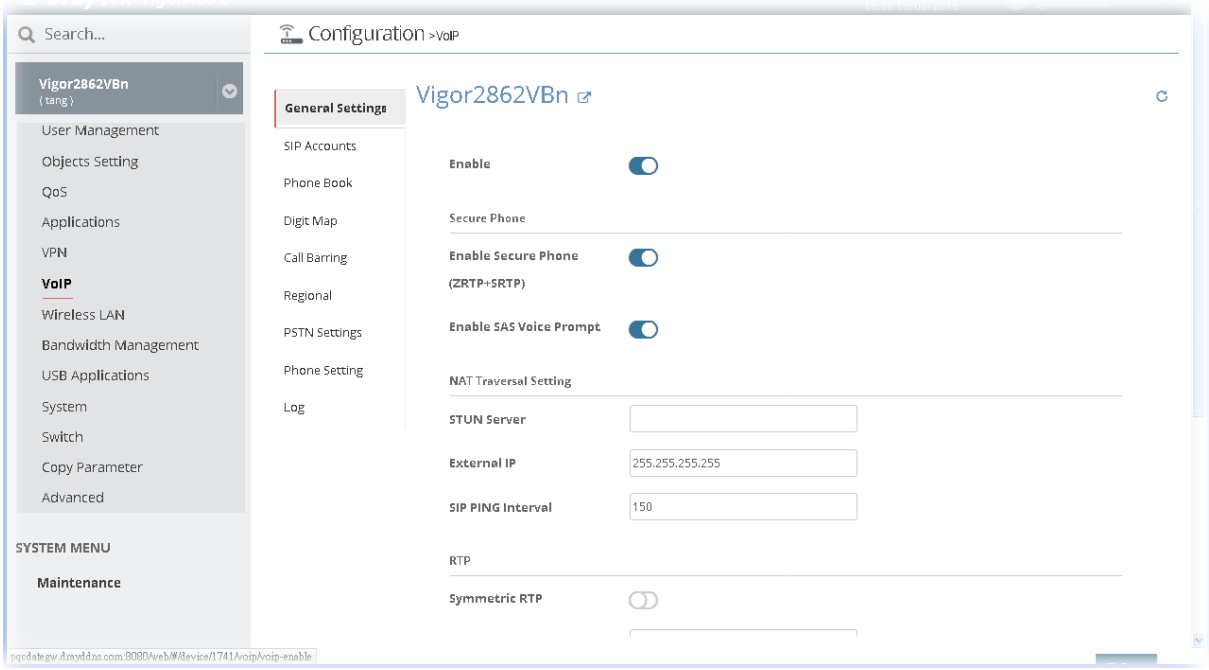
13.13 VoIP Settings for CPE

Voice over IP network (VoIP) enables you to use your broadband Internet connection to make toll quality voice calls over the Internet.

In such section, Vigor2862VBn is selected as an example for displaying VoIP settings.

13.13.1 General Setting

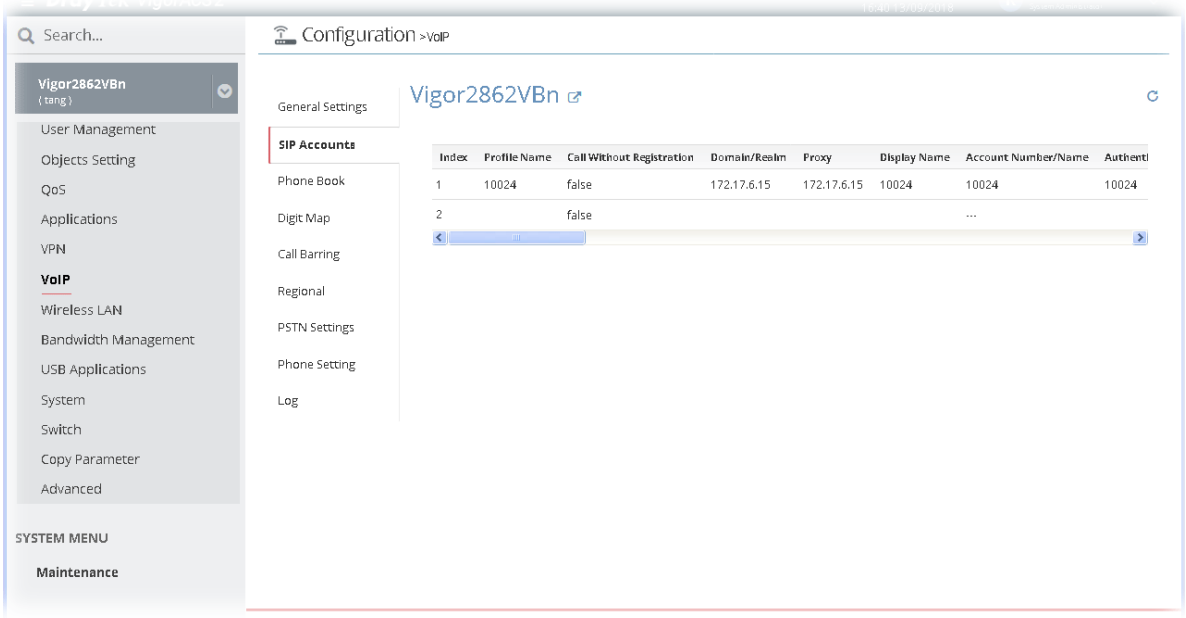
This page allows you to configure secure phone, set NAT Traversal Setting, and RTP for the VoIP function.



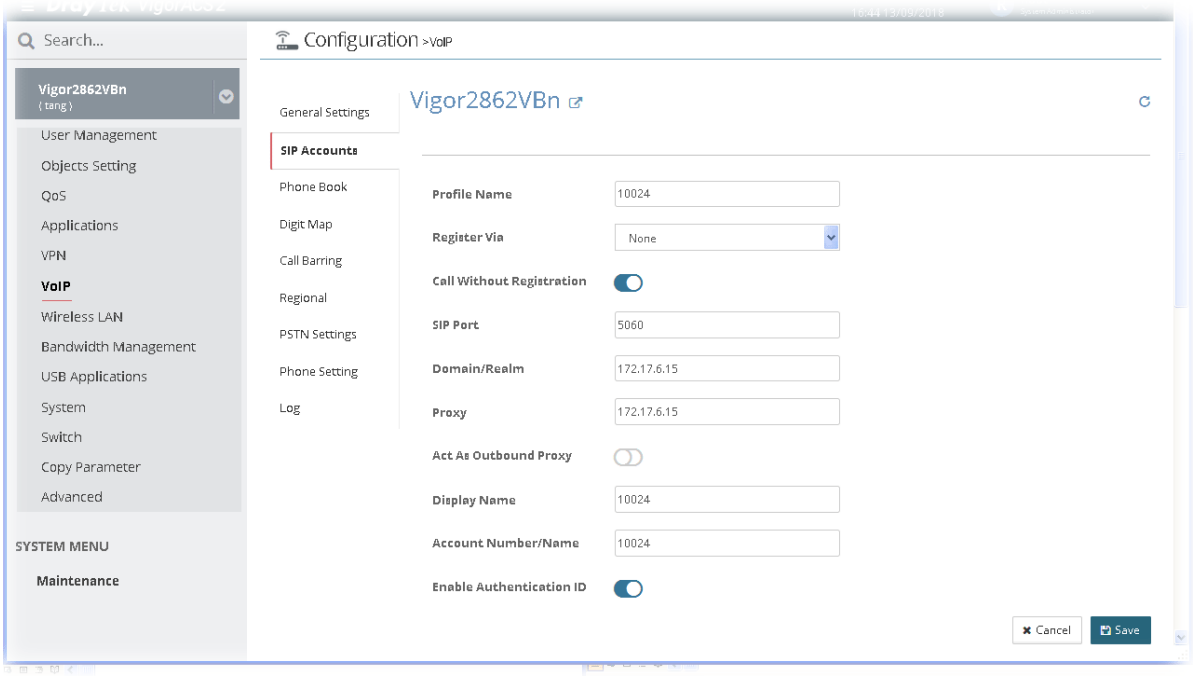
After finished the settings configuration, click **Save**. The modification for the CPE will take effect immediately.

13.13.2 SIP Accounts

When you apply for an account, your SIP service provider will give you an **Account Name** or user name, **SIP Registrar, Proxy,** and **Domain name**. (The last three might be the same in some case). Then you can tell your folks your SIP Address as in **Account Name@ Domain name.**



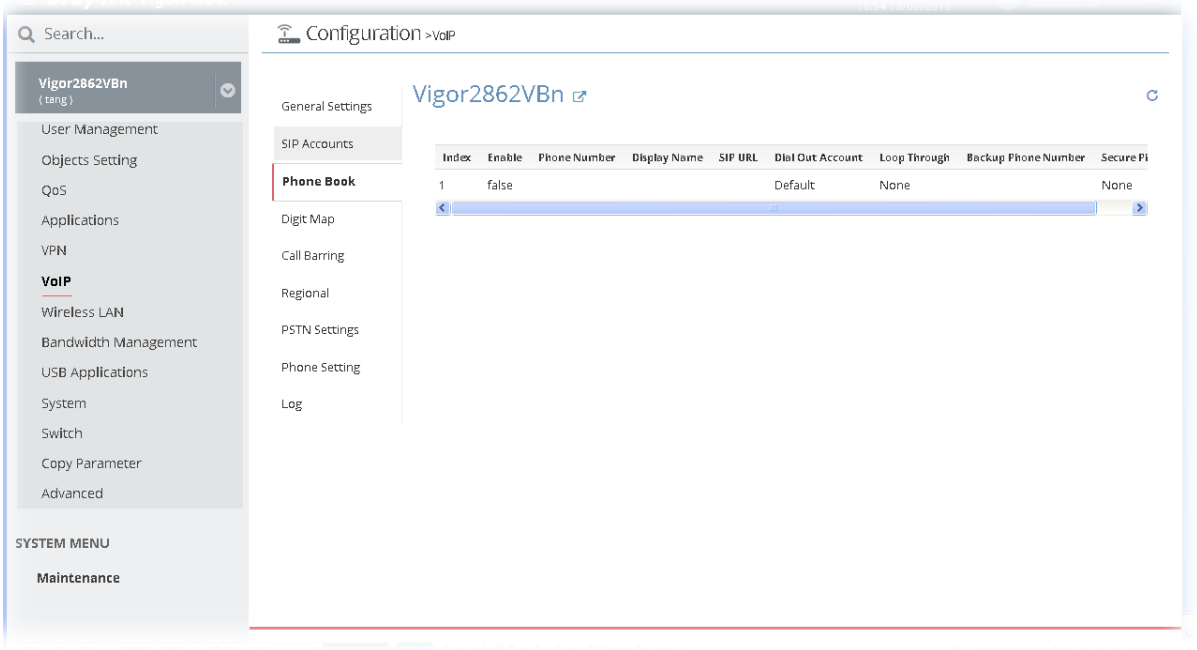
To modify SIP Account profile, move the mouse cursor on the table and click any one of the index number (e.g., #1) to get the following page.



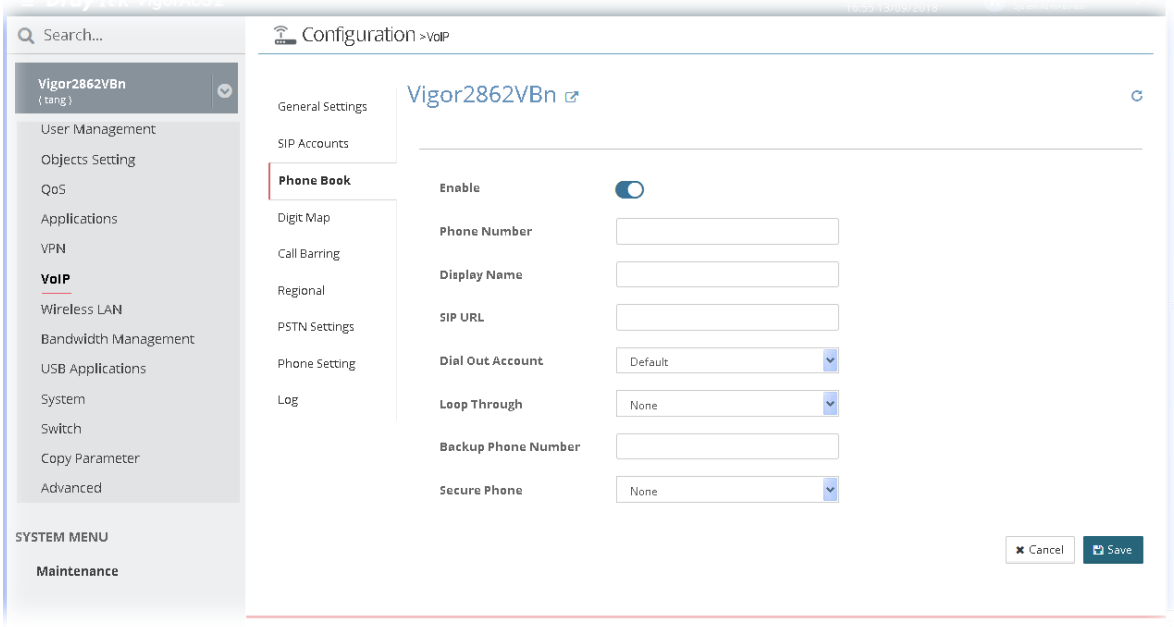
After finished the settings configuration, click **Save**. The modification for the CPE will take effect immediately.

13.13.3 Phone Book

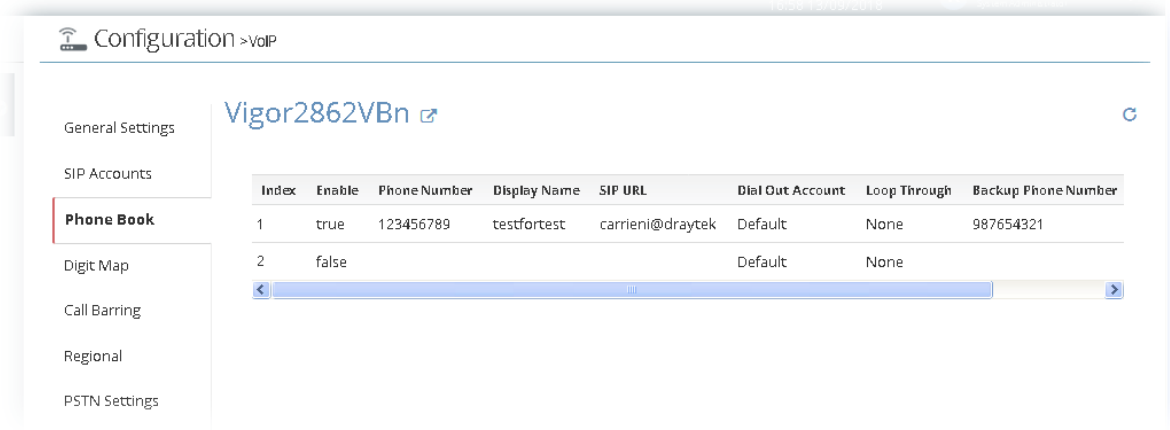
It can help you to make calls quickly and easily by using “speed-dial” **Phone Number**. There are total 60 index entries in the phonebook for you to store all your friends and family members’ SIP addresses.



To create / modify a phone book profile, move the mouse cursor on the table and click any one of the index number (e.g., #1 for a new profile) to get the following page.

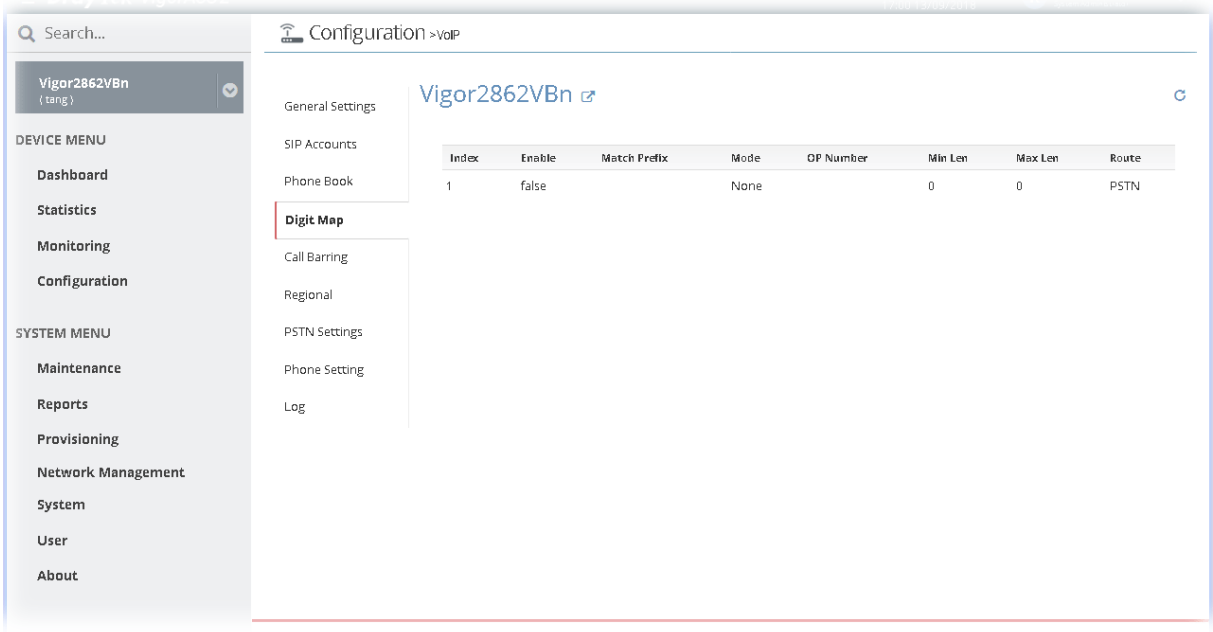


After finished the settings configuration, click **Save**. The modification for the CPE will take effect immediately.

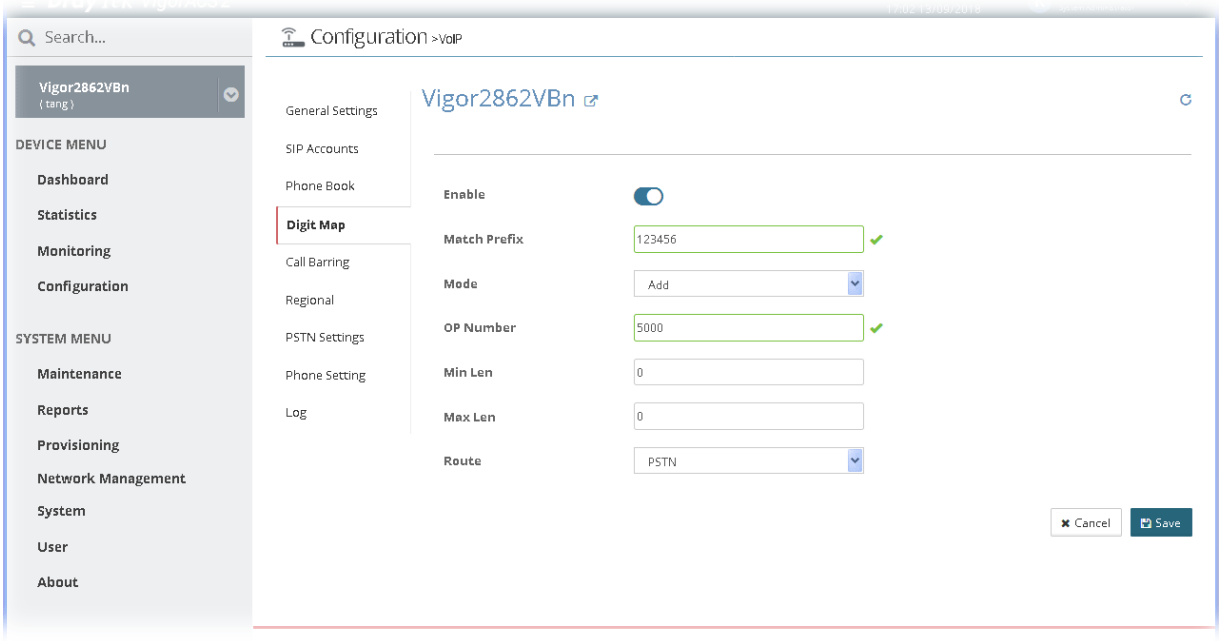


13.13.4 Digit Map

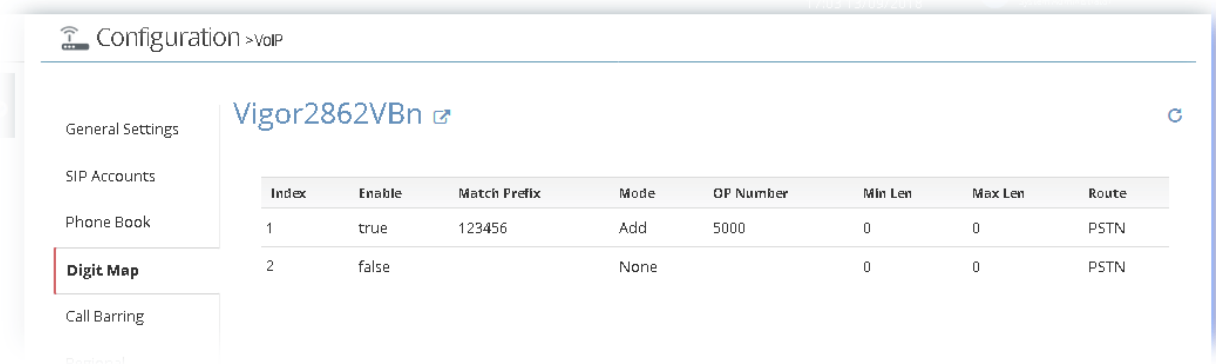
For the convenience of user, this page allows users to edit prefix number for the SIP account with adding number, stripping number or replacing number. It is used to help user have a quick and easy way to dial out through VoIP interface.



To create / modify a digit map profile, move the mouse cursor on the table and click any one of the index number (e.g., #1 for a new profile) to get the following page.

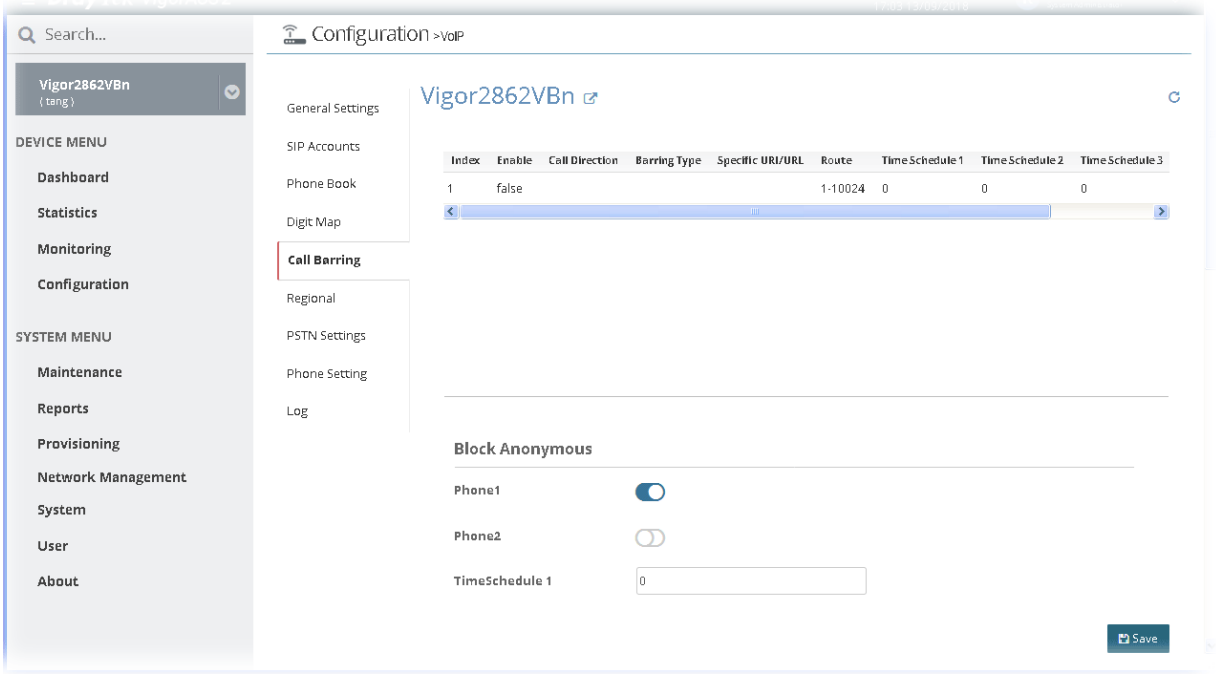


After finished the settings configuration, click **Save**. The modification for the CPE will take effect immediately.

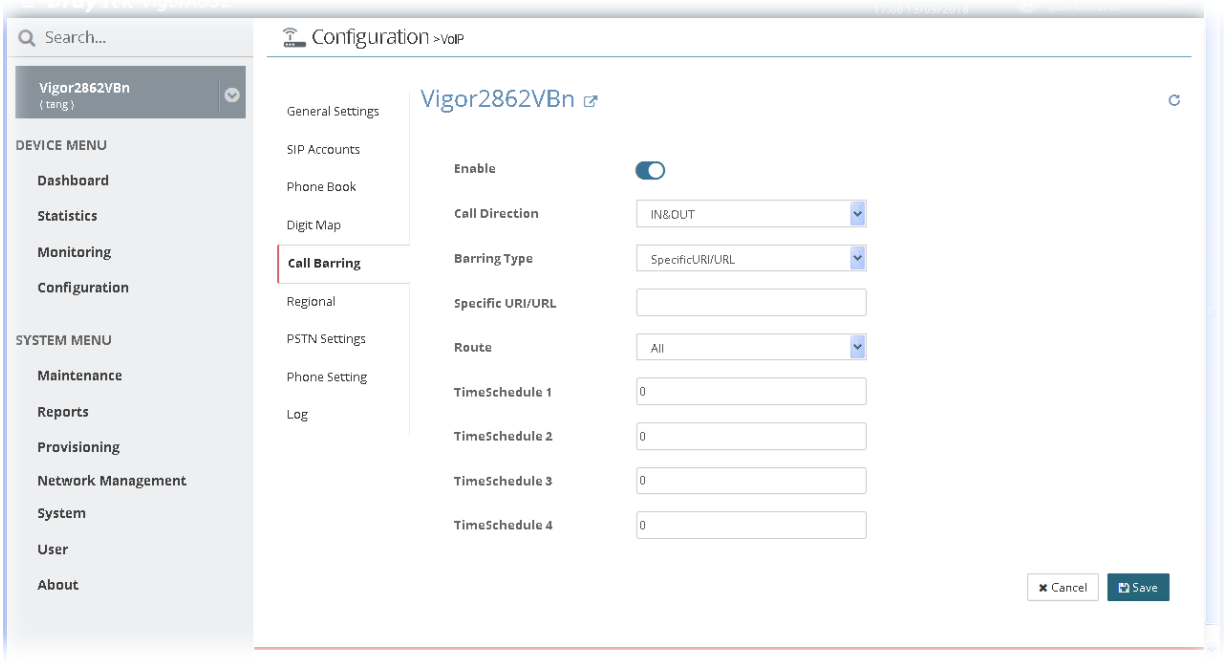


13.13.5 Call Barring

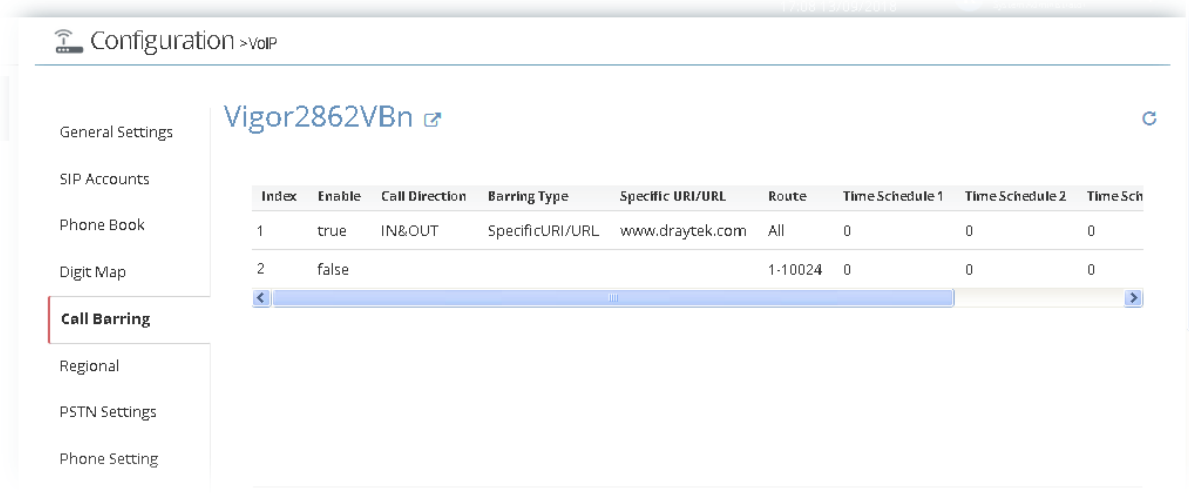
Call barring is used to block phone calls coming from the one that is not welcomed.



To create / modify a call barring profile, move the mouse cursor on the table and click any one of the index number (e.g., #1 for a new profile) to get the following page.

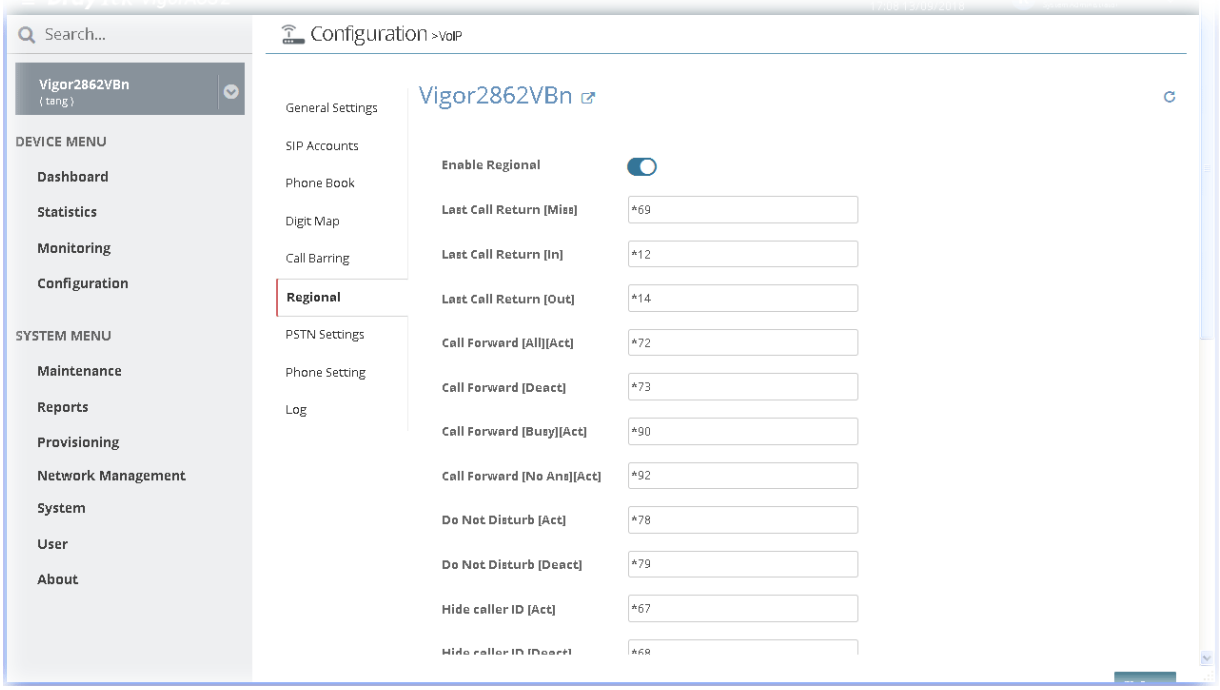


After finished the settings configuration, click **Save**. The modification for the CPE will take effect immediately.



13.13.6 Regional

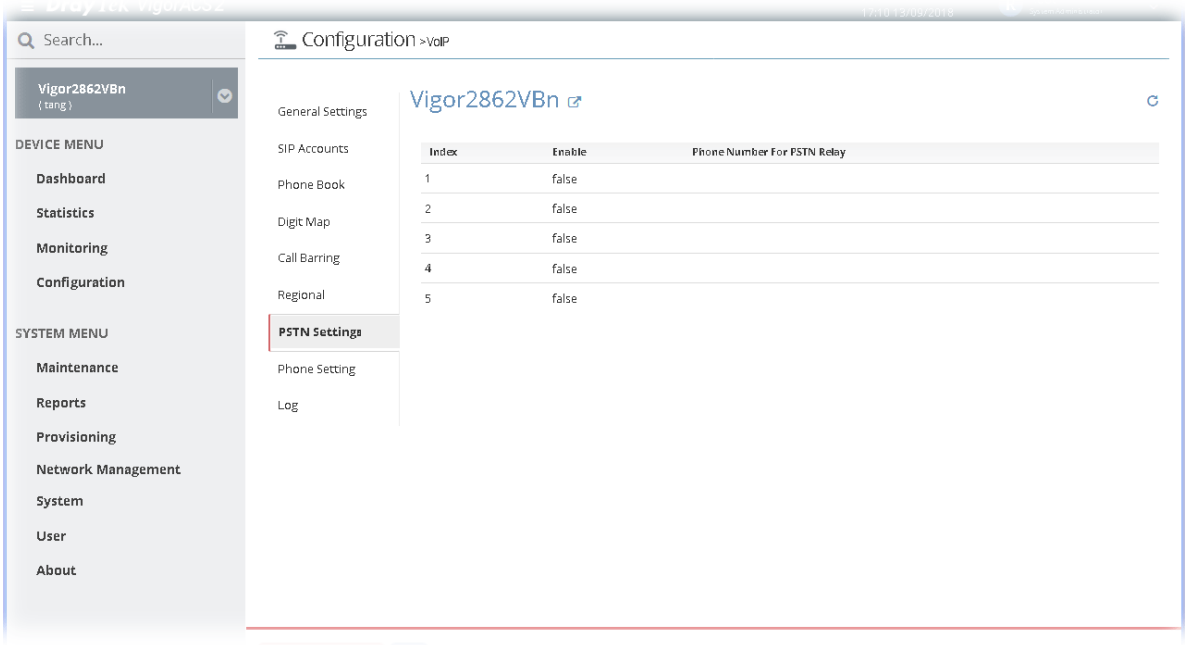
This page allows you to process incoming or outgoing phone calls by regional. Default values (common used in most areas) will be shown on this web page. You *can change* the number based on the region that the router is placed.



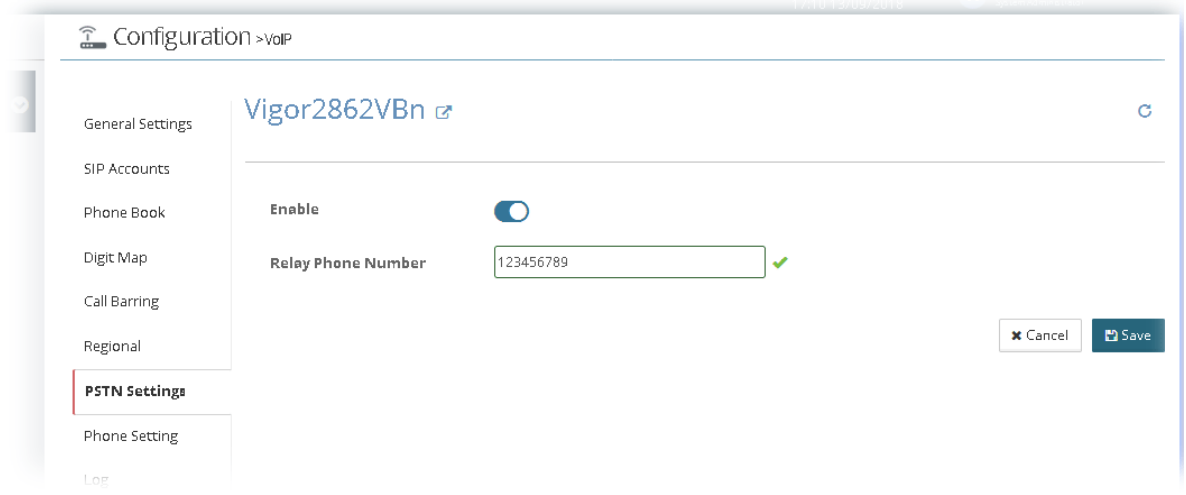
After finished the settings configuration, click **Save**. The modification for the CPE will take effect immediately.

13.13.7 PSTN Settings

Some emergency phone (e.g., 911) or special phone cannot be dialed out by using VoIP and can be called out through PSTN line only. To solve this problem, this page allows you to set five sets of PSTN number for dialing without passing through Internet. Check the **Enable** box to make the PSTN number available for dial whenever you need and type the number in the field of **Phone number for PSTN relay**.



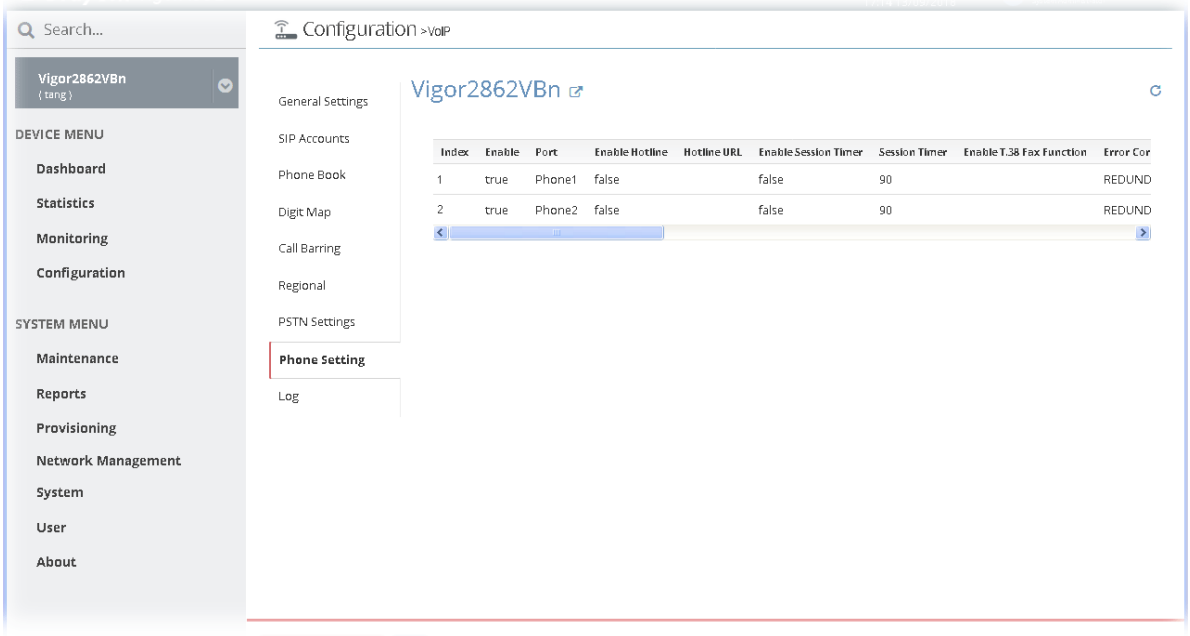
To modify a PSTN profile, move the mouse cursor on the table and click any one of the index number to get the following page.



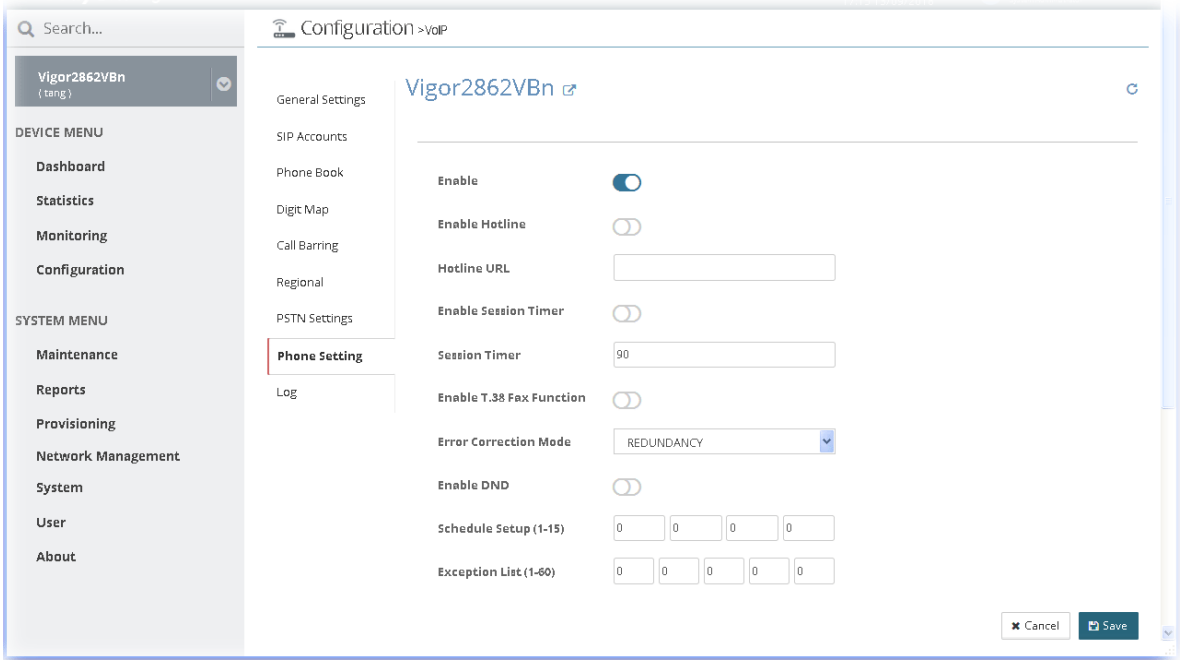
After finished the settings configuration, click **Save**. The modification for the CPE will take effect immediately.

13.13.8 Phone Setting

This page allows user to set phone settings for Phone 1 and Phone 2 respectively. However, it changes slightly according to different model you have.



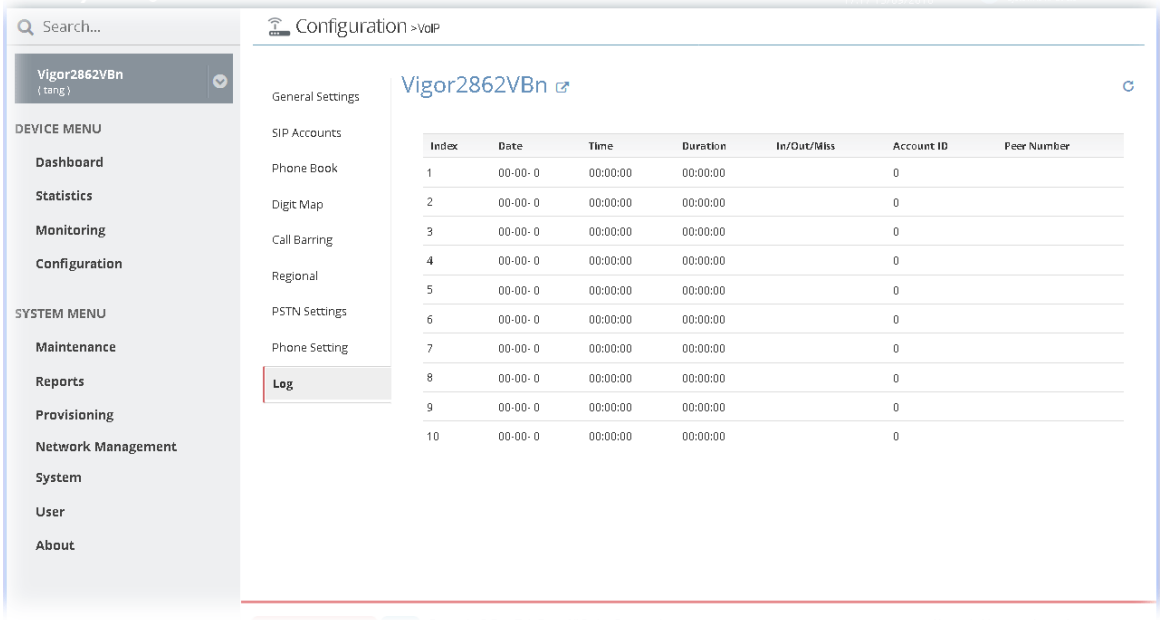
To modify a phone setting profile, move the mouse cursor on the table and click any one of the index number to get the following page.



After finished the settings configuration, click **Save**. The modification for the CPE will take effect immediately.

13.13.9 Log

From this page, you can connection and other important call status for each port.



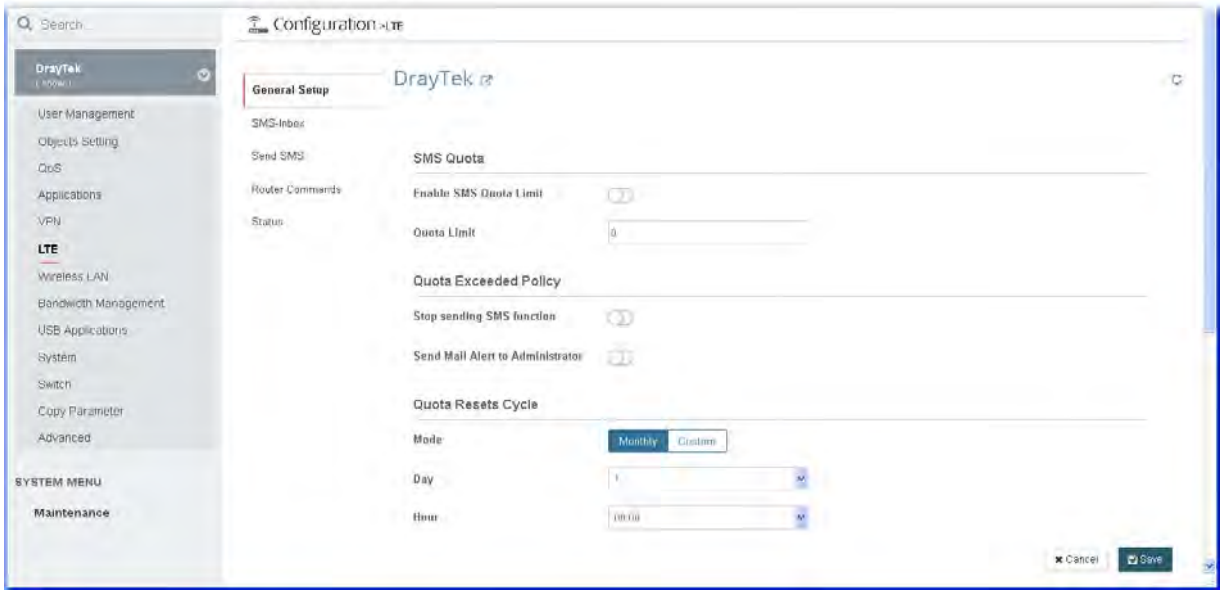
13.14 LTE Settings for CPE

LTE WAN with SIM card can provide convenient Internet access for Vigor router. VigorACS system administrator can configure LTE WAN settings for the selected CPE to perform SMS related operations.

13.14.1 General Setup

VigorACS user (with the privilege above the operator) can configure general settings of LTE router. When SMS Quota Limit is enabled, you can specify the number of SMS quota, actions to perform when quota exceeded, and the period of resetting SMS quota used.

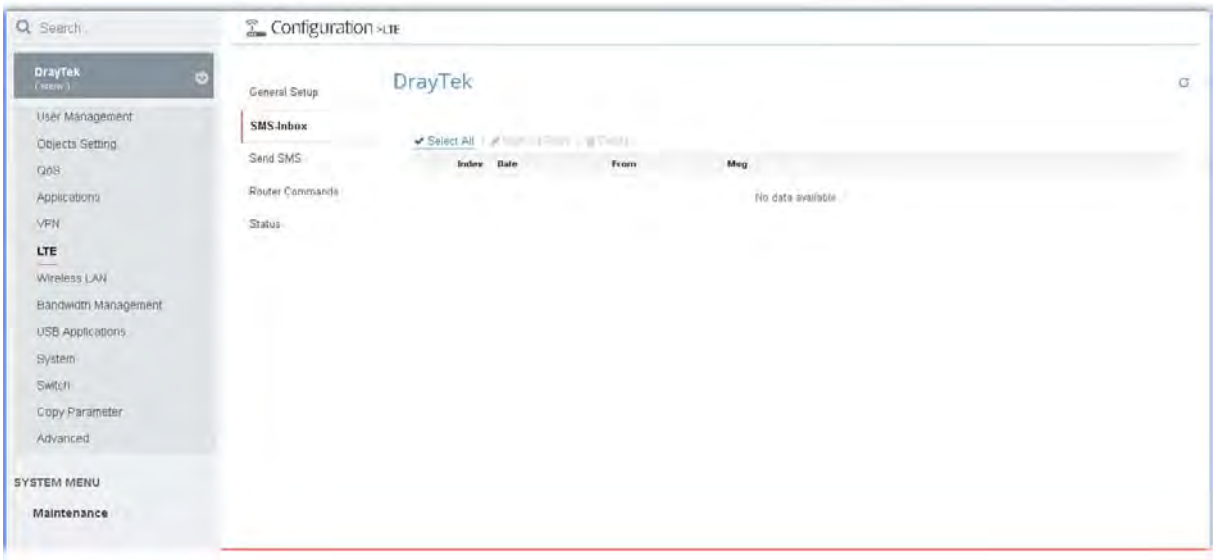
This web page allows you to determine which policy shall be used for SMS inbox/outbox.



After finished the settings configuration, click **Save**. The modification for the CPE will take effect immediately.

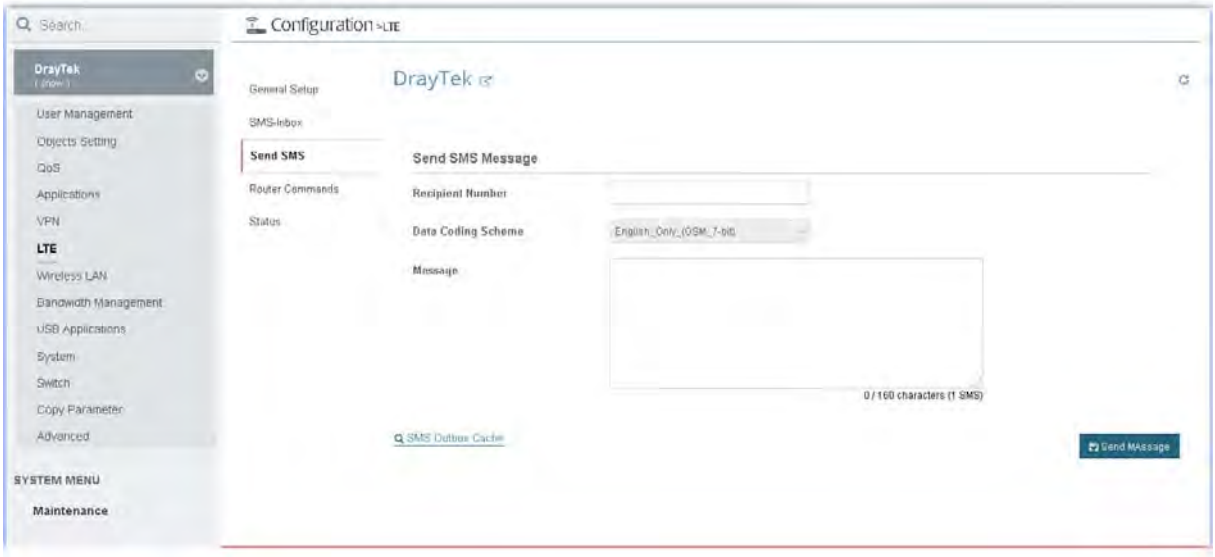
13.14.2 SMS-Inbox

This page will list the received SMS messages in the LTE SIM card. The SMS Inbox table shows the received date, the phone number or sender ID where this message was from, and the beginning of the message content.



13.14.3 Send SMS

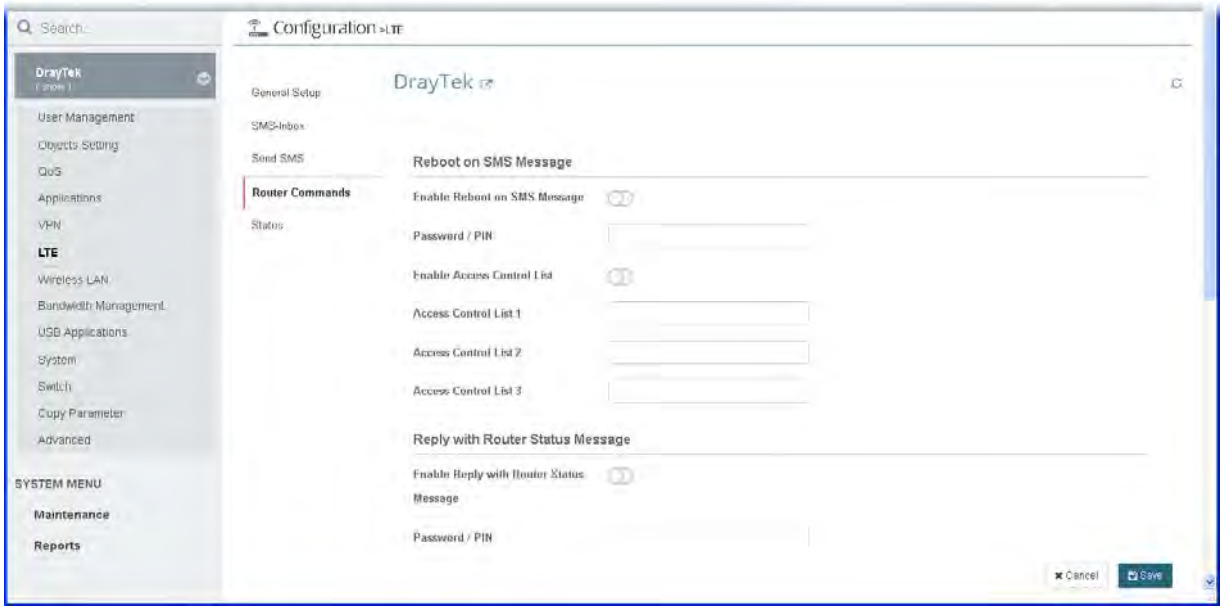
This page is used to send SMS messages by the LTE SIM card. It also displays the number of SMS required to send the message.



After finished the settings configuration, click **Send Message** to send this SMS message to the recipient immediately.

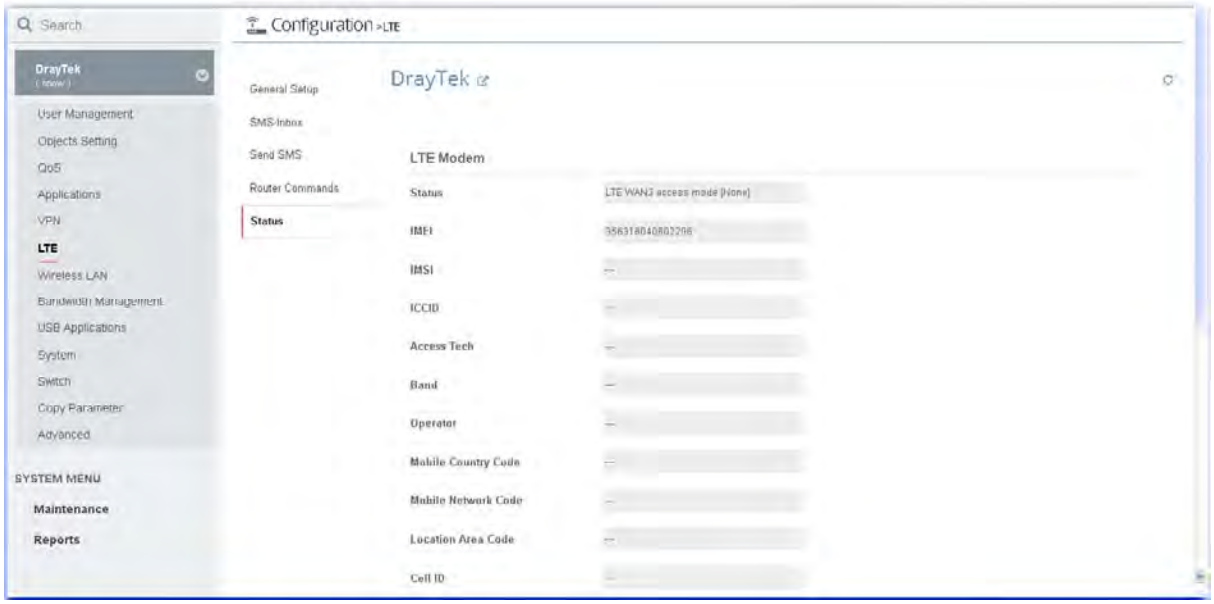
13.14.4 Router Commands

VigorACS system administrator can set functions to reboot Vigor router remotely and get the router status via SMS.



13.14.5 Status

This page can display basic information about the embedded LTE module and the current LTE connection of the selected CPE.

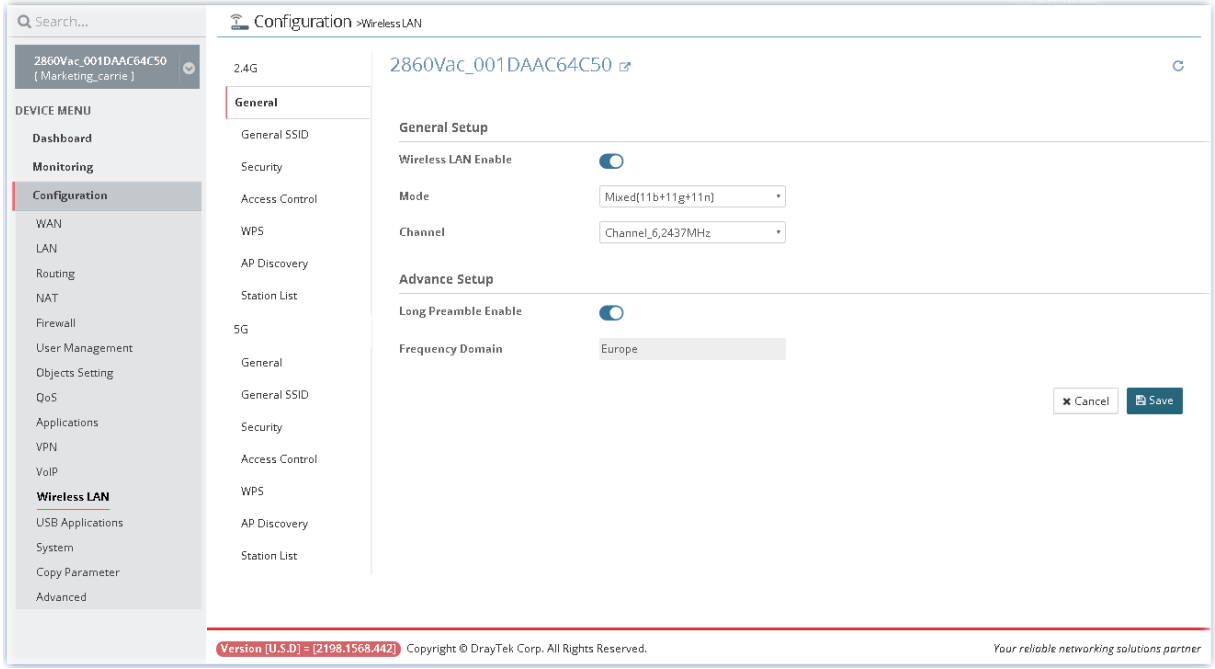


13.15 Wireless LAN Settings for CPE

Wireless LAN enables high mobility so WLAN users can simultaneously access all LAN facilities just like on a wired LAN as well as Internet access.

13.15.1 General Setting for 2.4G/5G

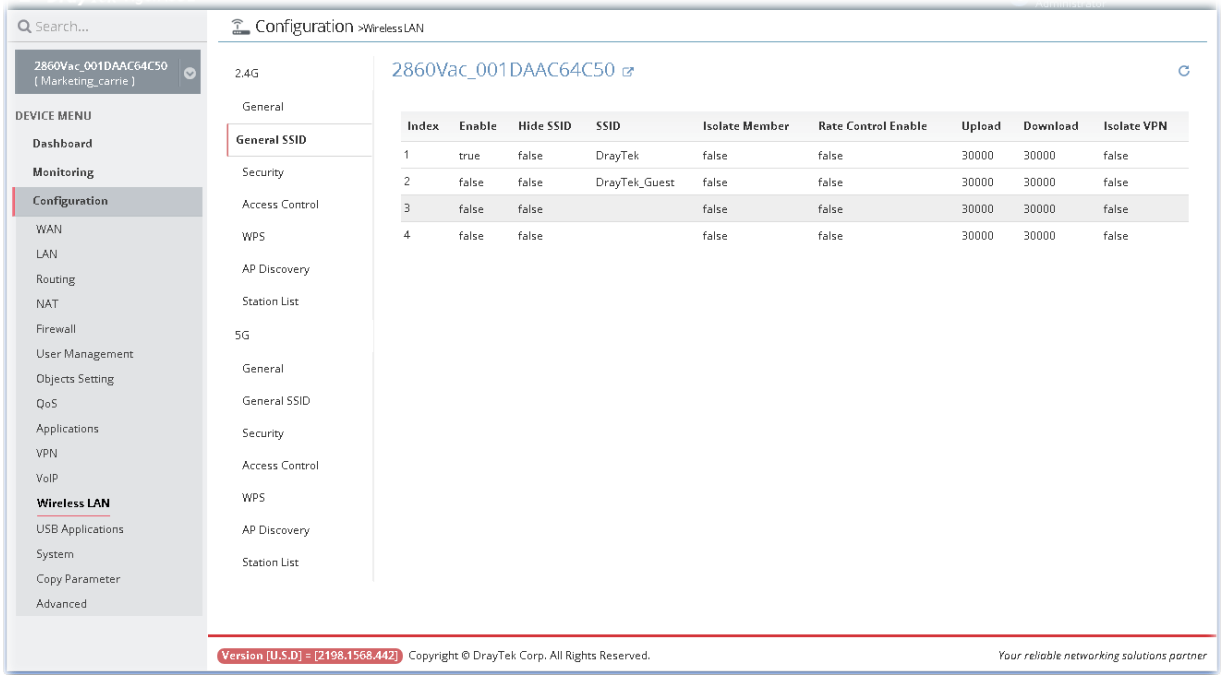
Such page allows system administrator / user to configure the wireless mode, the wireless channel, and enable long preamble (2.4GHz / 5GHz wireless network).



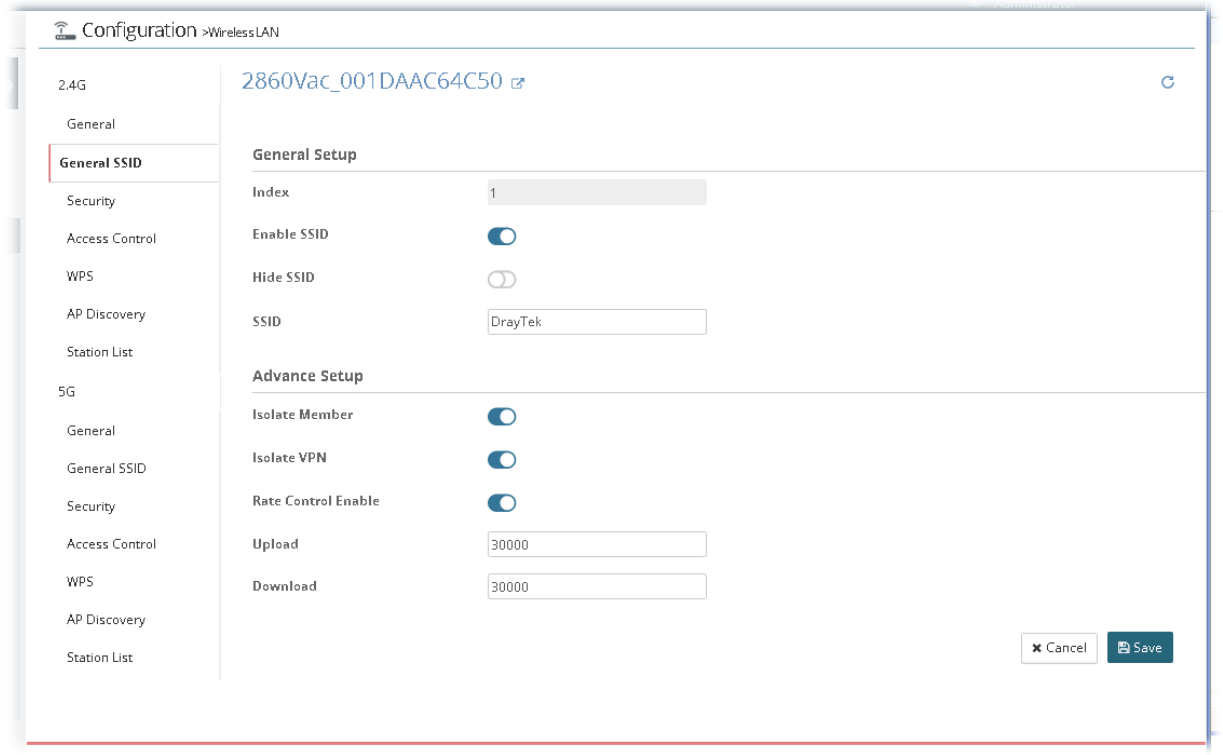
After finished the settings configuration, click **Save**. The modification for the CPE will take effect immediately.

13.15.2 General SSID for 2.4G/5G

Such page allows system administrator / user to configure the SSID, isolate LAN user, isolate VPN, and enable rate control (for 2.4GHz / 5GHz wireless network).



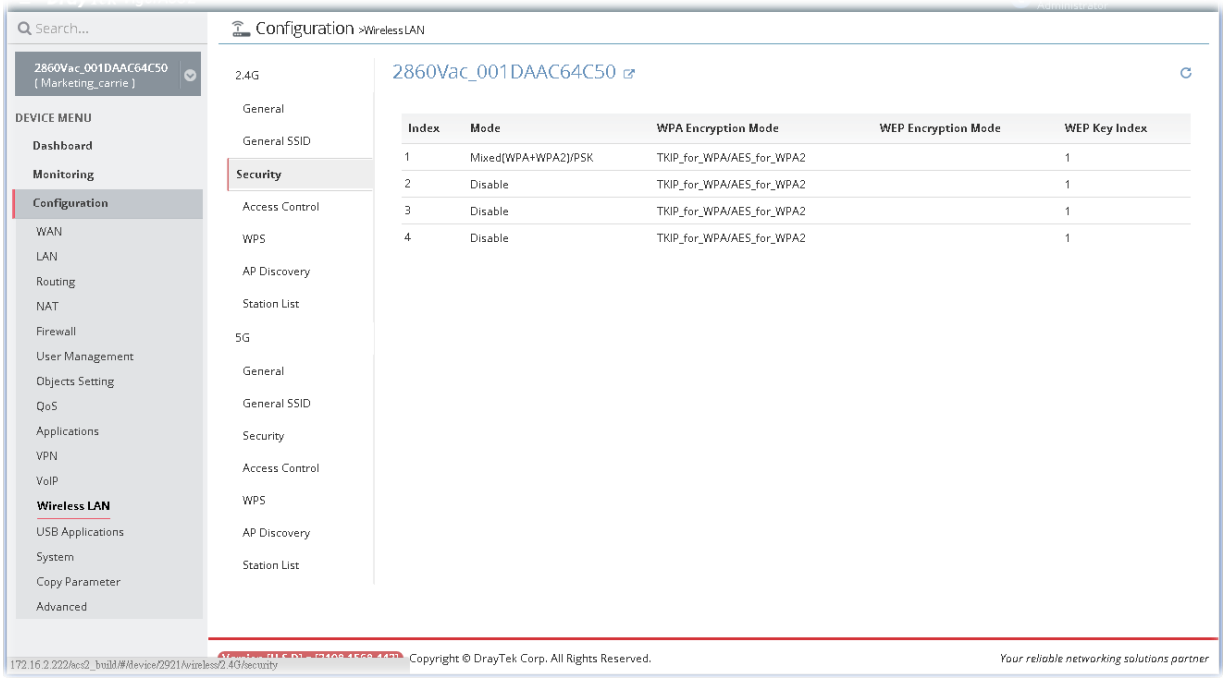
To modify SSID, move the mouse cursor on the table and click any one of the index number (e.g., #1) to get the following page.



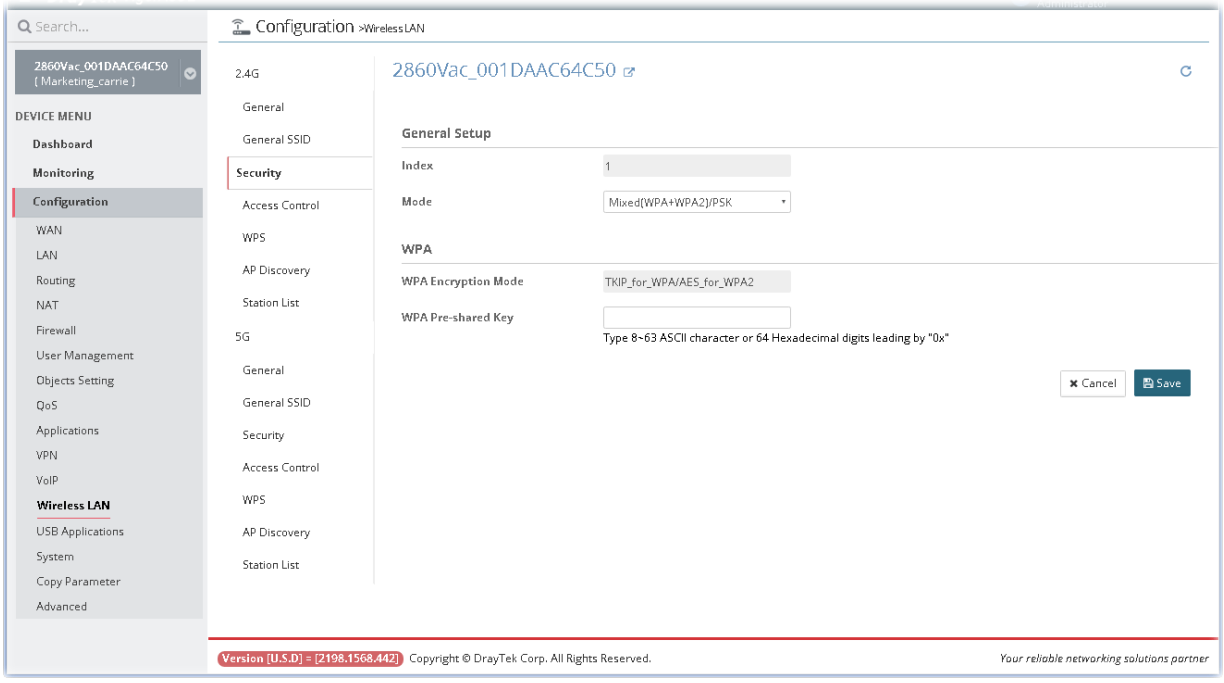
After finished the settings configuration, click **Save**. The modification for the CPE will take effect immediately.

13.15.3 Security for 2.4G/5G

Such page is used for configuring security with different modes for SSID 1, 2, 3 and 4 respectively.



To modify the security profile, move the mouse cursor on the table and click any one of the index number (e.g., #1) to get the following page.



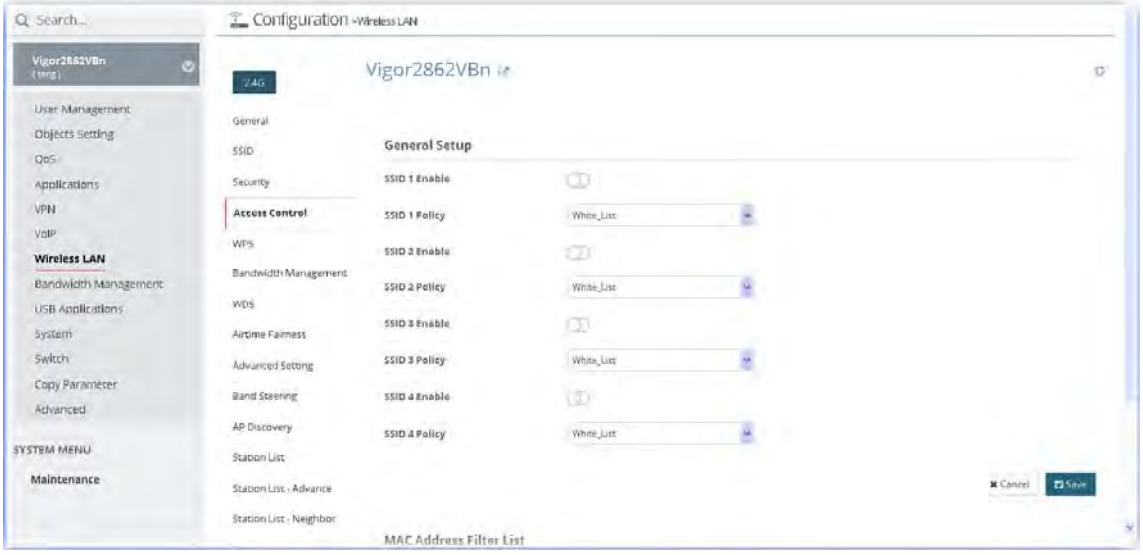
After finished the settings configuration, click **Save**. The modification for the CPE will take effect immediately.

13.15.4 Access Control for 2.4G/5G

Vigor router can restrict wireless connection to certain wireless clients only by locking their MAC address into a black or white list. The user may block wireless clients by inserting their MAC addresses into a black list, or only let them be able to connect by inserting their MAC addresses into a white list.

This page allows the administrator / user to configure access control settings for the router via VigorACS 2.

In such section, Vigor2862VBn is selected as an example for displaying access control settings.

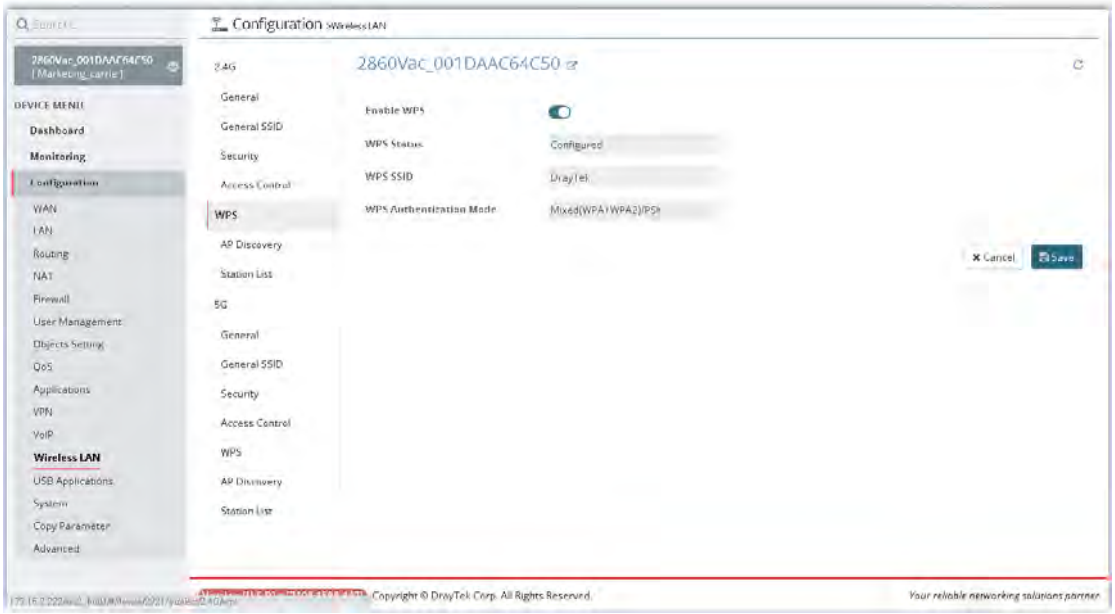


After finished the settings configuration, click **Save**. The modification for the CPE will take effect immediately.

13.15.5 WPS for 2.4G/5G

WPS provides easy procedure to make network connection between wireless station and wireless access point (vigor router) with the encryption of WPA and WPA2.

This page allows the administrator / user to configure WPS settings for the router via VigorACS 2.

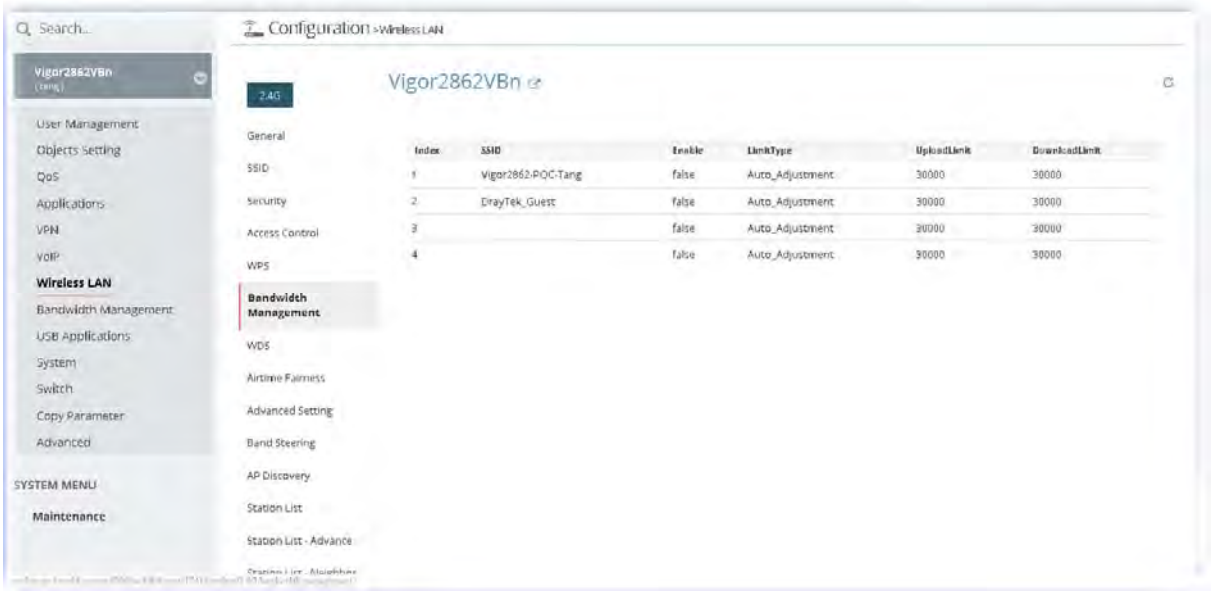


After finished the settings configuration, click **Save**. The modification for the CPE will take effect immediately.

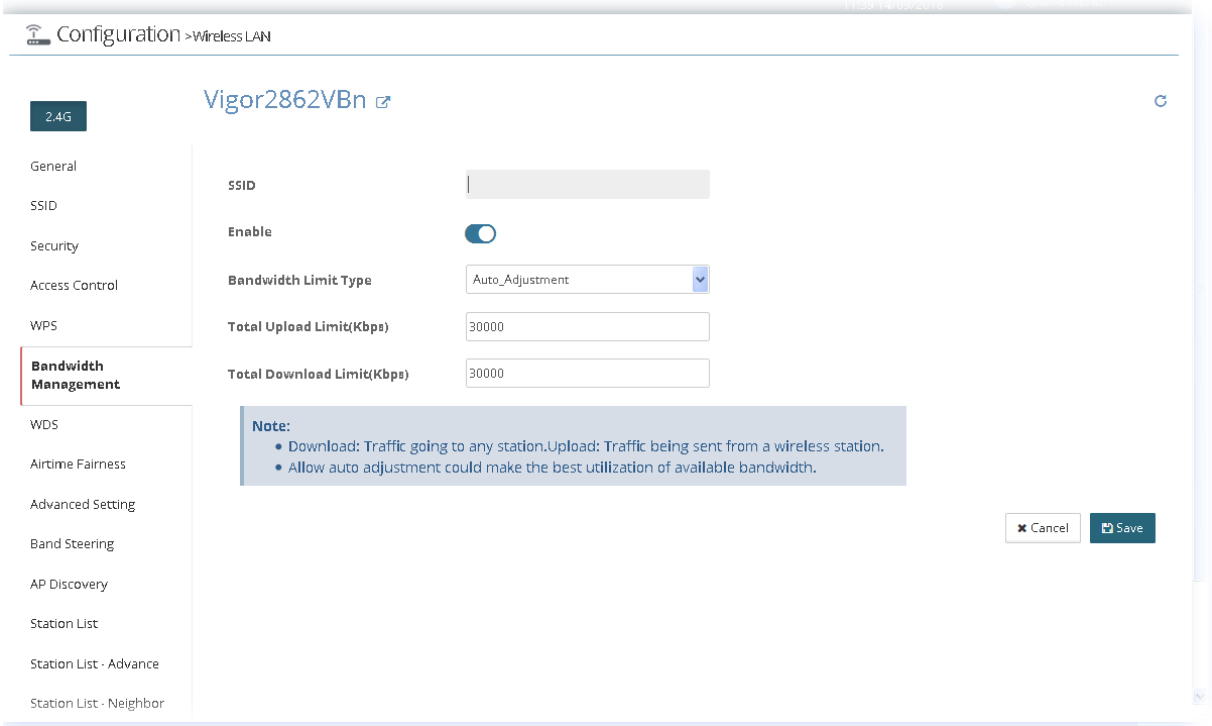
13.15.6 Bandwidth Management for 2.4G/5G

The downstream or upstream from FTP, HTTP or some P2P applications will occupy large of bandwidth and affect the applications for other programs. Please use Bandwidth Management to make the bandwidth usage more efficient.

In such section, Vigor2862VBn is selected as an example for displaying bandwidth management settings.



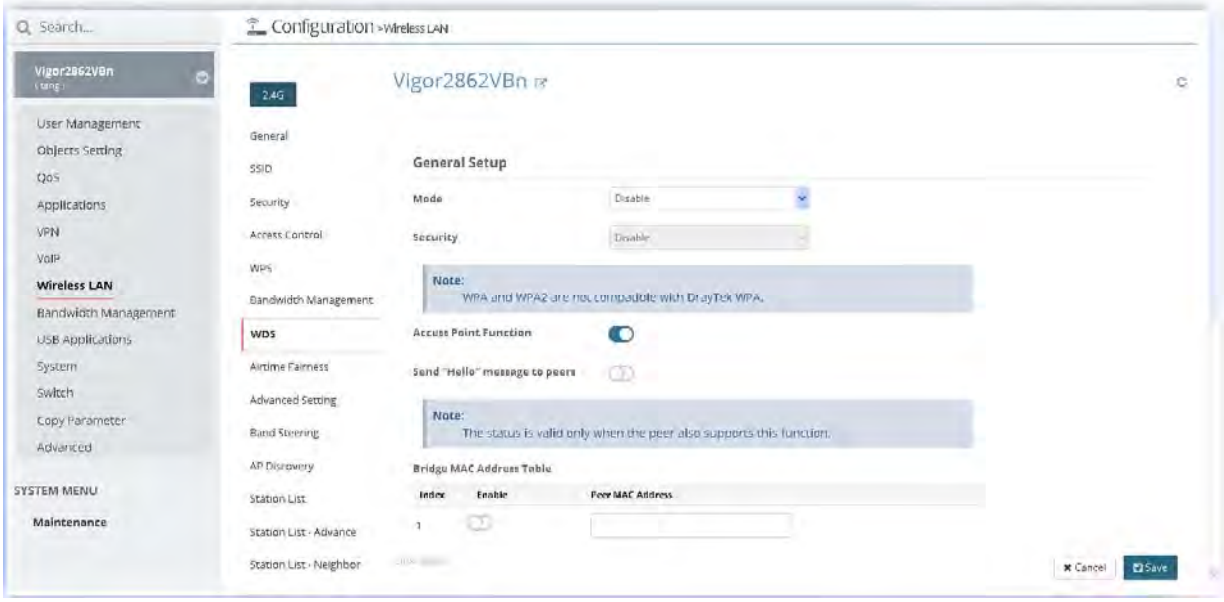
To modify the bandwidth management profile, move the mouse cursor on the table and click any one of the index number (e.g., #1) to get the following page.



After finished the settings configuration, click **Save**. The modification for the CPE will take effect immediately.

13.15.7 WDS for 2.4G/5G

In such section, Vigor2862VBn is selected as an example for displaying WDS settings.



After finished the settings configuration, click **Save**. The modification for the CPE will take effect immediately.

13.15.8 Airtime Fairness for 2.4G/5G

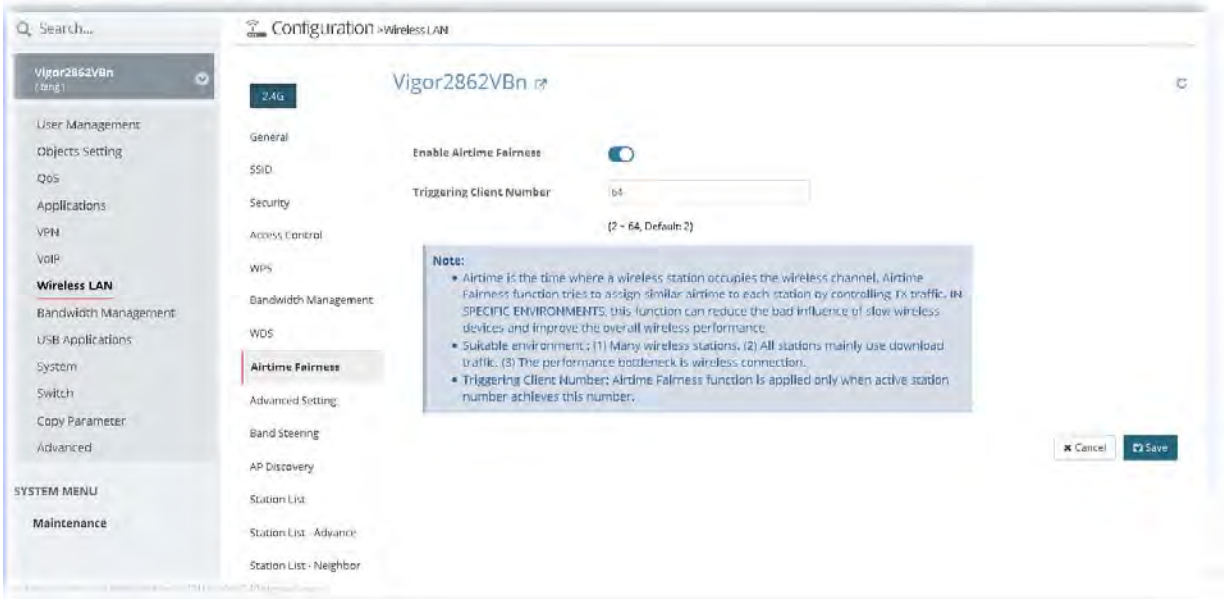
IN SPECIFIC ENVIRONMENTS, airtime fairness can reduce the bad influence of slow wireless devices and improve the overall wireless performance. Suitable environment:

(1) Many wireless stations.

(2) All stations mainly use download traffic.

(3) The performance bottleneck is wireless connection.

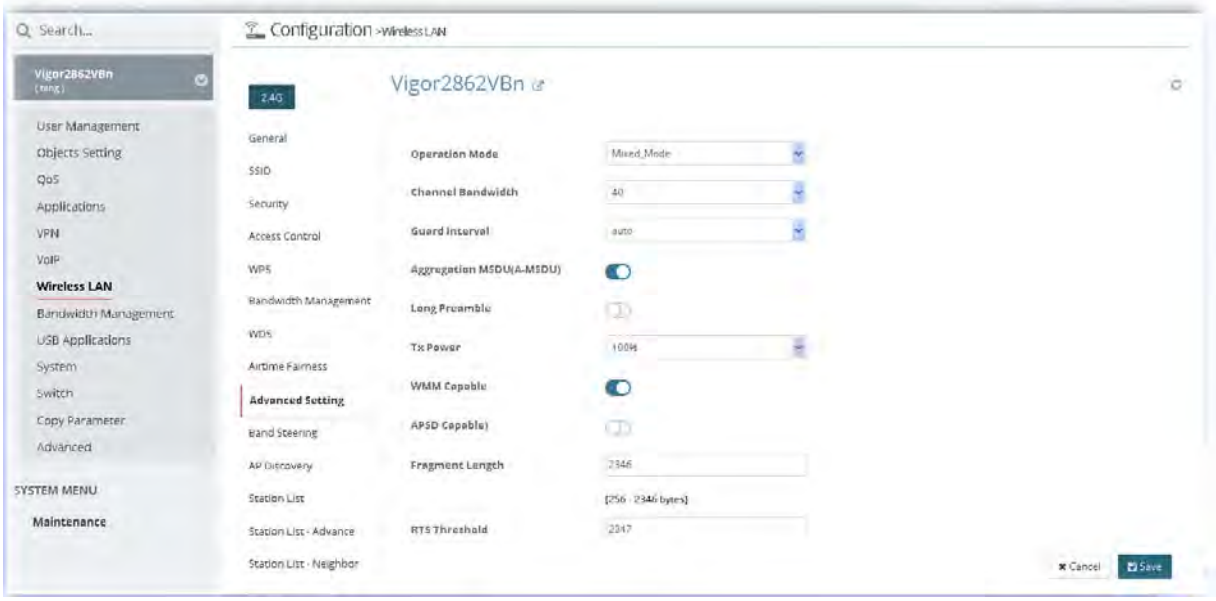
In such section, Vigor2862VBn is selected as an example for displaying airtime fairness settings.



After finished the settings configuration, click **Save**. The modification for the CPE will take effect immediately.

13.15.9 Advanced Setting for 2.4G/5G

In such section, Vigor2862VBn is selected as an example for displaying advanced settings.

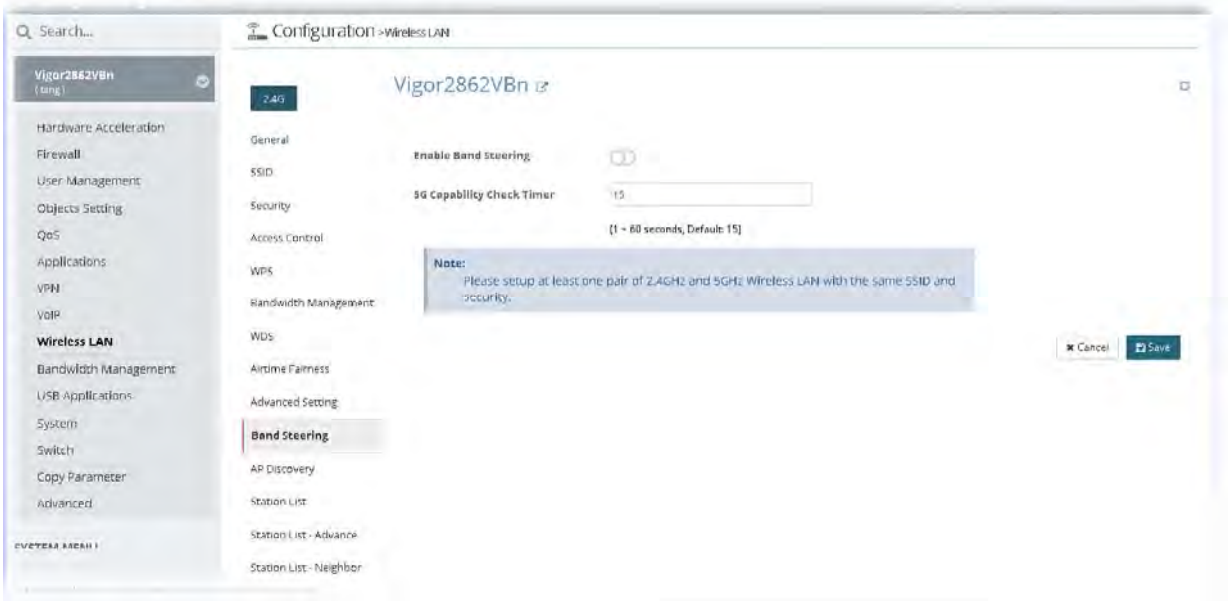


After finished the settings configuration, click **Save**. The modification for the CPE will take effect immediately.

13.15.10 Band Steering for 2.4G/5G

Band Steering detects if the wireless clients are capable of 5GHz operation, and steers them to that frequency. It helps to leave 2.4GHz band available for legacy clients, and improves users experience by reducing channel utilization.

In such section, Vigor2862VBn is selected as an example for displaying band steering settings.

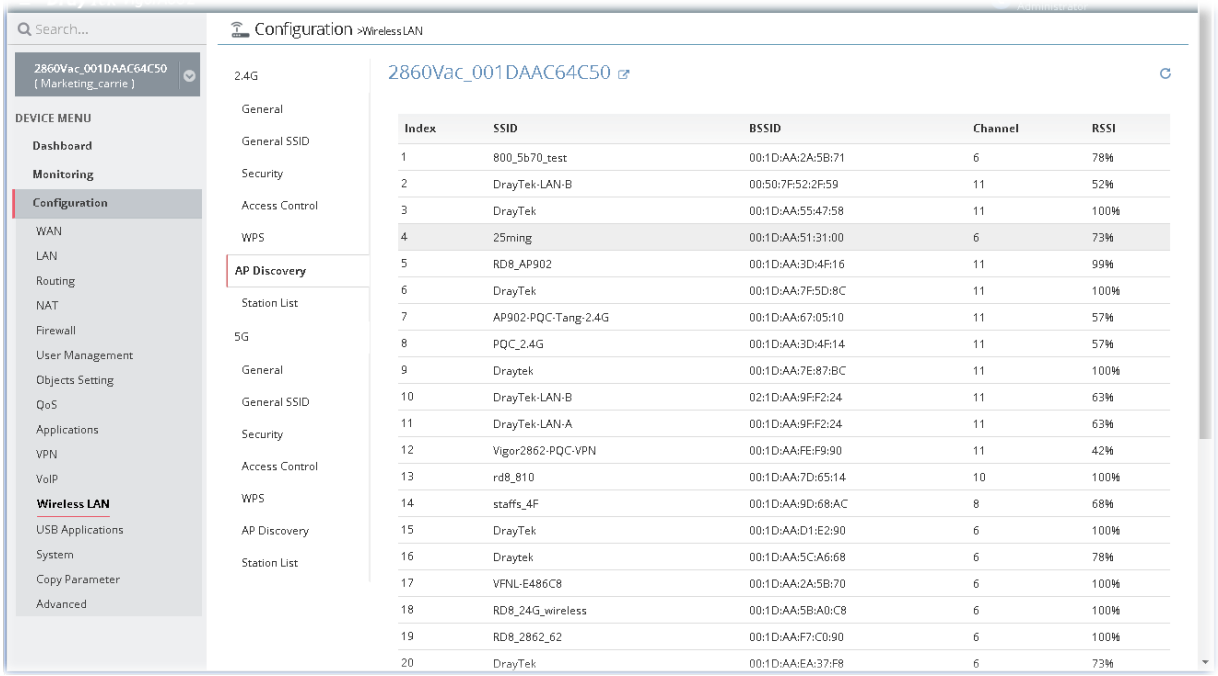


After finished the settings configuration, click **Save**. The modification for the CPE will take effect immediately.

13.15.11 AP Discovery for 2.4G/5G

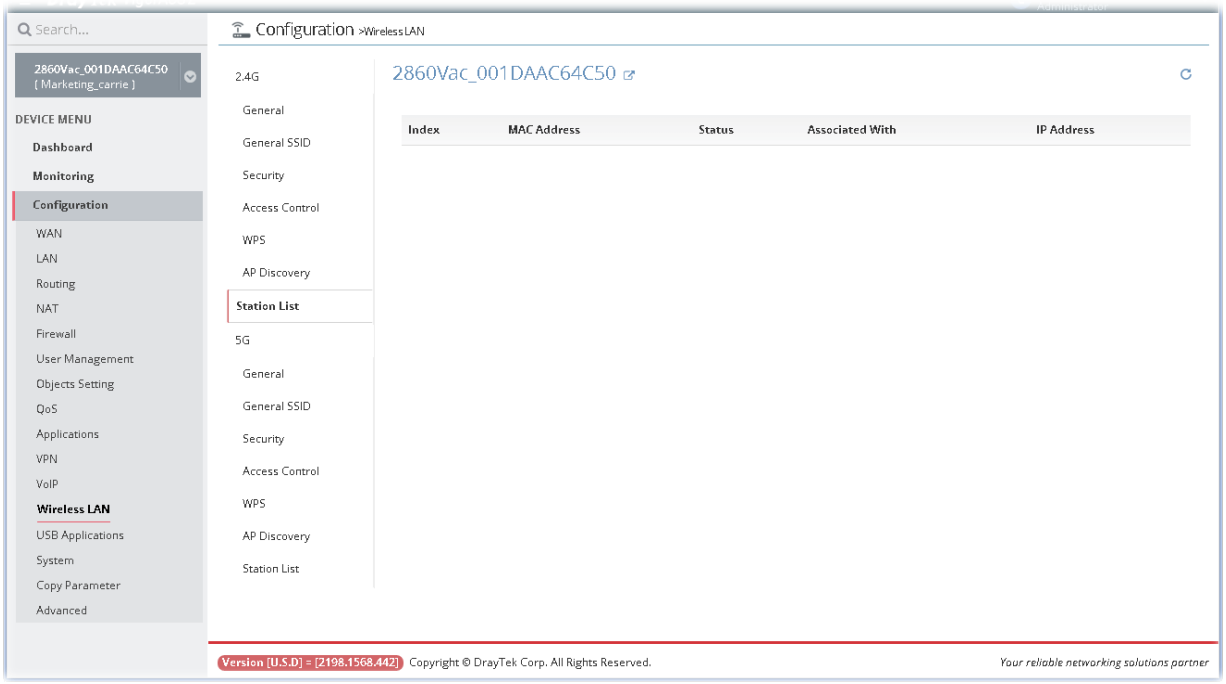
VigorACS 2 can scan all regulatory channels and find working APs in the neighborhood for Vigor router. Based on the scanning result, users will know which channel is clean for usage. Also, it can be used to facilitate finding an AP for a WDS link. Notice that during the scanning process (about 5 seconds), no client is allowed to connect to Vigor router.

This page is used to scan the existence of the APs on the wireless LAN.



13.15.12 Station List for 2.4G/5G

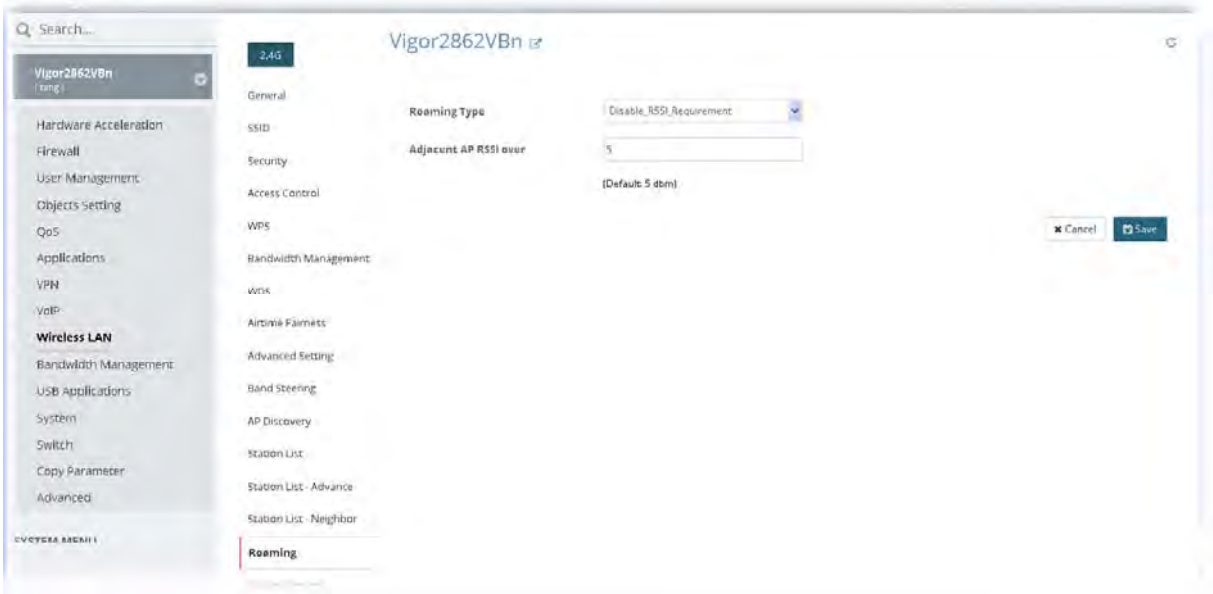
Station List provides the knowledge of connecting wireless clients now along with its status code. Each tab (general, advanced, neighbor) will display different status information (including IP address, MAC address, Associated with, AID, RSSI, Rate, BW, PSM, WMM, PhMd, MCS, Venfor, Approx. Distance, SSID, Visit Time and so on).



13.15.13 Roaming for 2.4G/5G

The access points connecting for each other shall be verified by pre-authentication. This page allows you to enable the roaming feature and the pre-authentication.

In such section, Vigor2862VBn is selected as an example for displaying roaming settings.



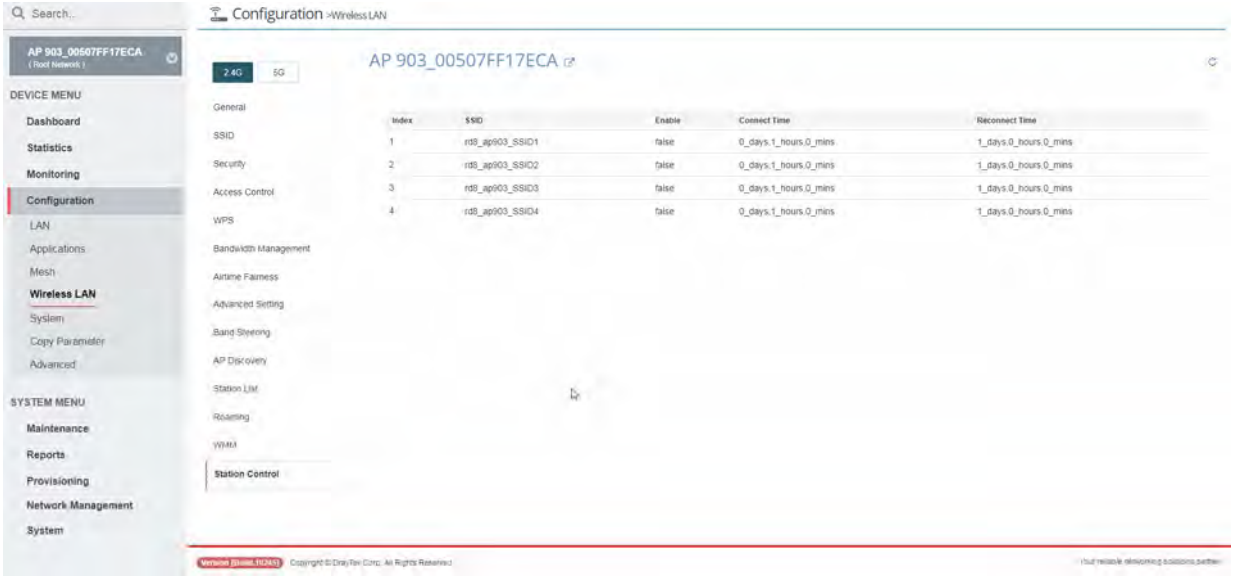
After finished the settings configuration, click **Save**. The modification for the CPE will take effect immediately.

13.15.14 Station Control for 2.4G/5G

Station Control is used to specify the duration for the wireless client to connect and reconnect Vigor router. If such function is not enabled, the wireless client can connect Vigor router until the router shuts down.

Such feature is especially useful for free Wi-Fi service. For example, a coffee shop offers free Wi-Fi service for its guests for one hour every day. Then, the connection time can be set as “1 hour” and reconnection time can be set as “1 day”. Thus, the guest can finish his job within one hour and will not occupy the wireless network for a long time.

In such section, VigorAP 903 is selected as an example for displaying roaming settings.



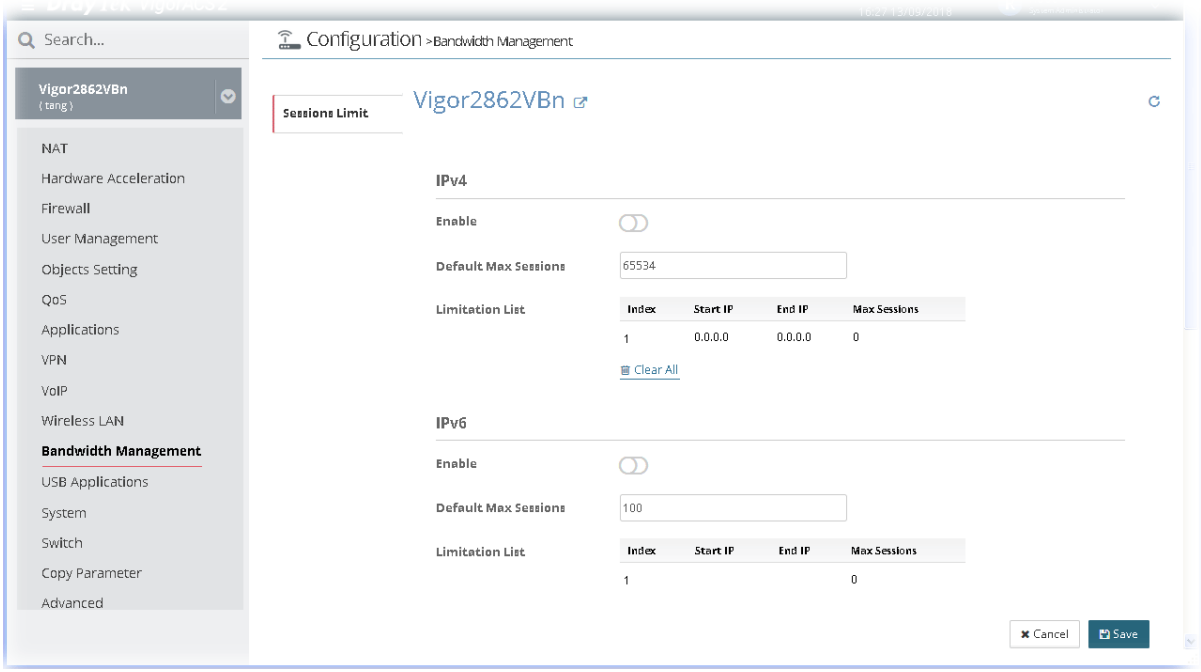
After finished the settings configuration, click **Save**. The modification for the CPE will take effect immediately.

13.16 Bandwidth Management Settings for CPE

In such section, Vigor2862VBn is selected as an example for displaying Bandwidth Management settings.

13.16.1 Sessions Limit

A PC with private IP address can access to the Internet via NAT router. The router will generate the records of NAT sessions for such connection. The P2P (Peer to Peer) applications (e.g., BitTorrent) always need many sessions for procession and also they will occupy over resources which might result in important accesses impacted. To solve the problem, you can use limit session to limit the session procession for specified Hosts.



After finished the settings configuration, click **Save**. The modification for the CPE will take effect immediately.

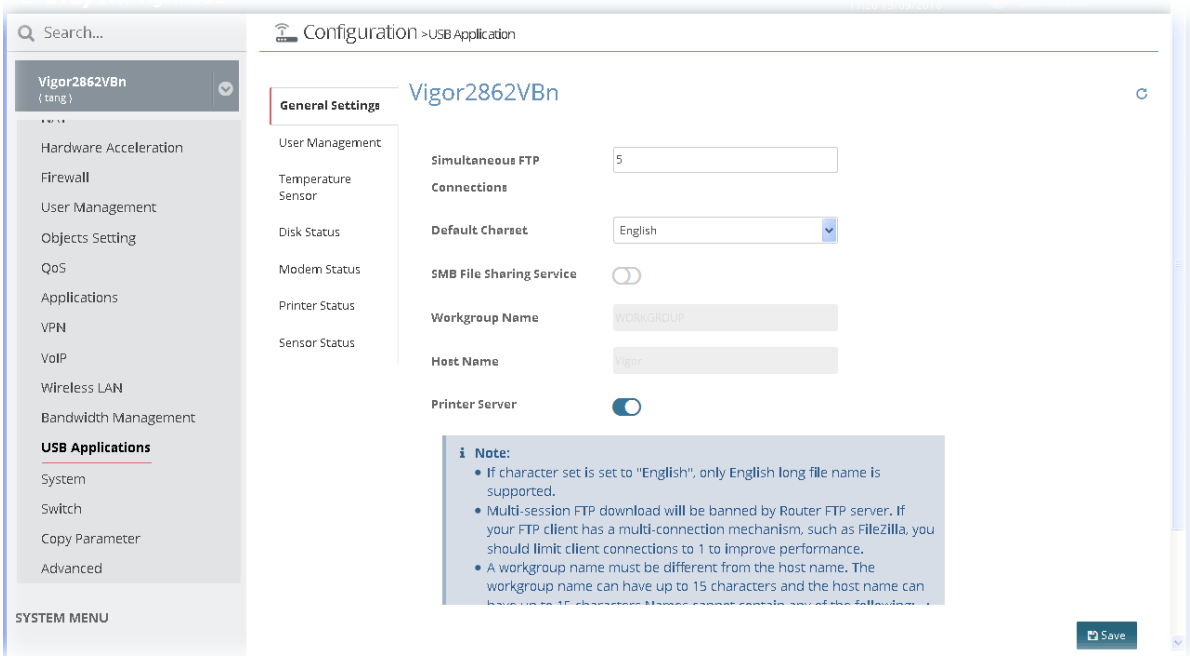
13.17 USB Applications Settings for CPE

In such section, Vigor2862VBn is selected as an example for displaying USB Applications settings.

USB device connected on Vigor router can be regarded as a server or WAN interface. By way of Vigor router, clients on LAN can access, write and read data stored in USB storage disk with different applications. After setting the configuration in **USB Application**, you can type the IP address of the Vigor router and username/password created in **USB Application>>USB User Management** on the client software. Then, the client can use the FTP site (USB storage disk) or share the SMB service through Vigor router.

13.17.1 General Settings

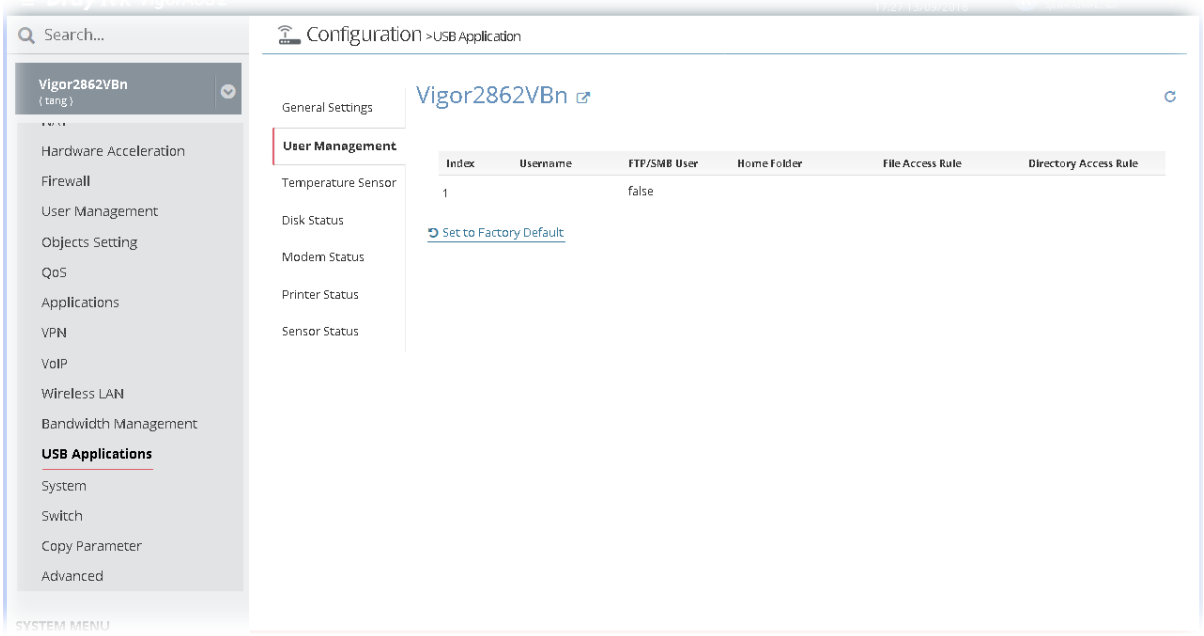
It determines the number of concurrent FTP connection, default charset for FTP server and enable SMB service. At present, the Vigor router can support USB storage disk with formats of FAT16 and FAT32 only. Therefore, before connecting the USB storage disk into the Vigor router, please make sure the memory format for the USB storage disk is FAT16 or FAT32. It is recommended for you to use FAT32 for viewing the filename completely (FAT16 cannot support long filename).



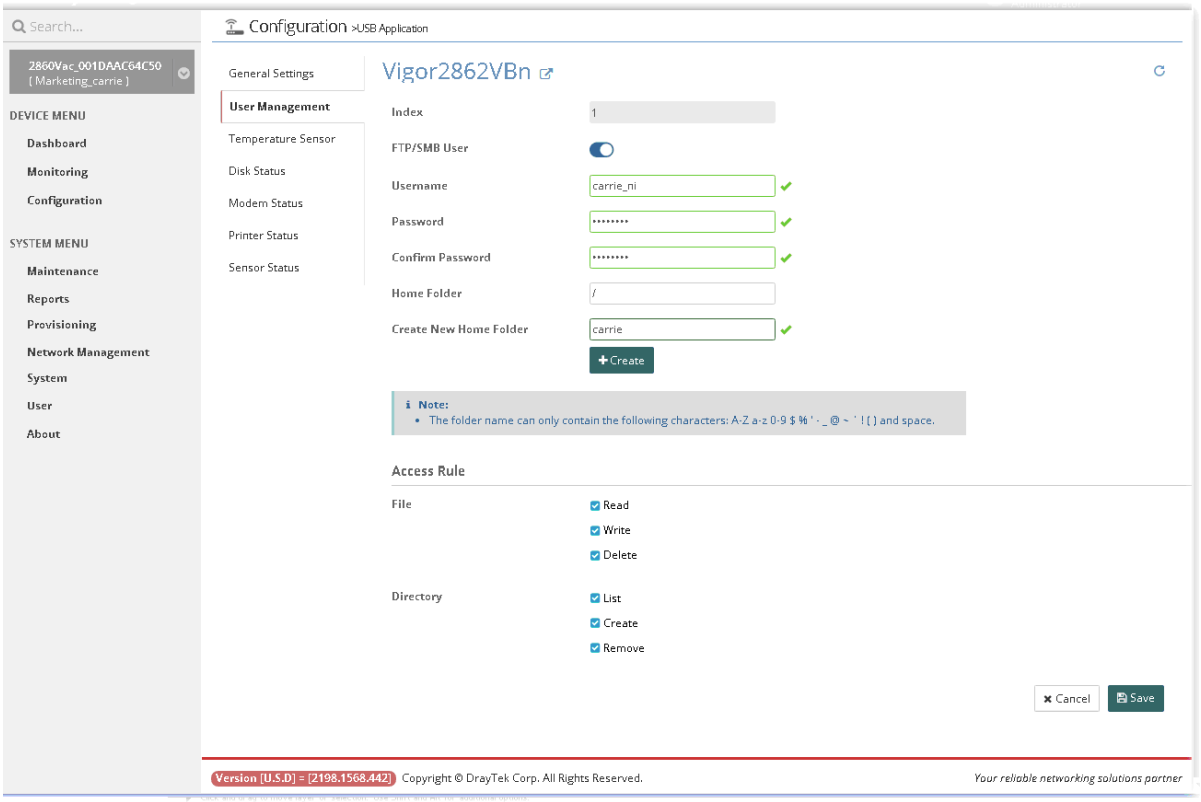
After finished the settings configuration, click **Save**. The modification for the CPE will take effect immediately.

13.17.2 User Management

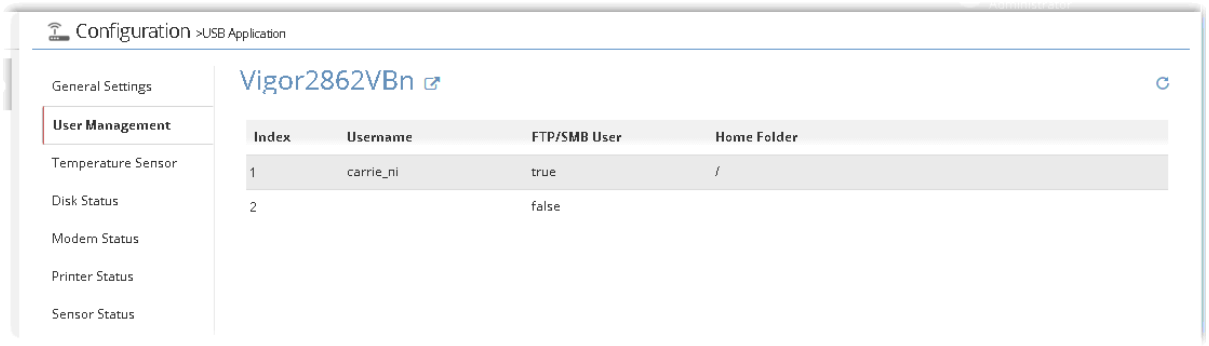
This page allows you to set profiles for FTP/SMB users. Any user who wants to access into the USB storage disk must type the same username and password configured in this page. Before adding or modifying settings in this page, please insert a USB storage disk first. Otherwise, an error message will appear to warn you.



Click the number under index field to access into configuration page.

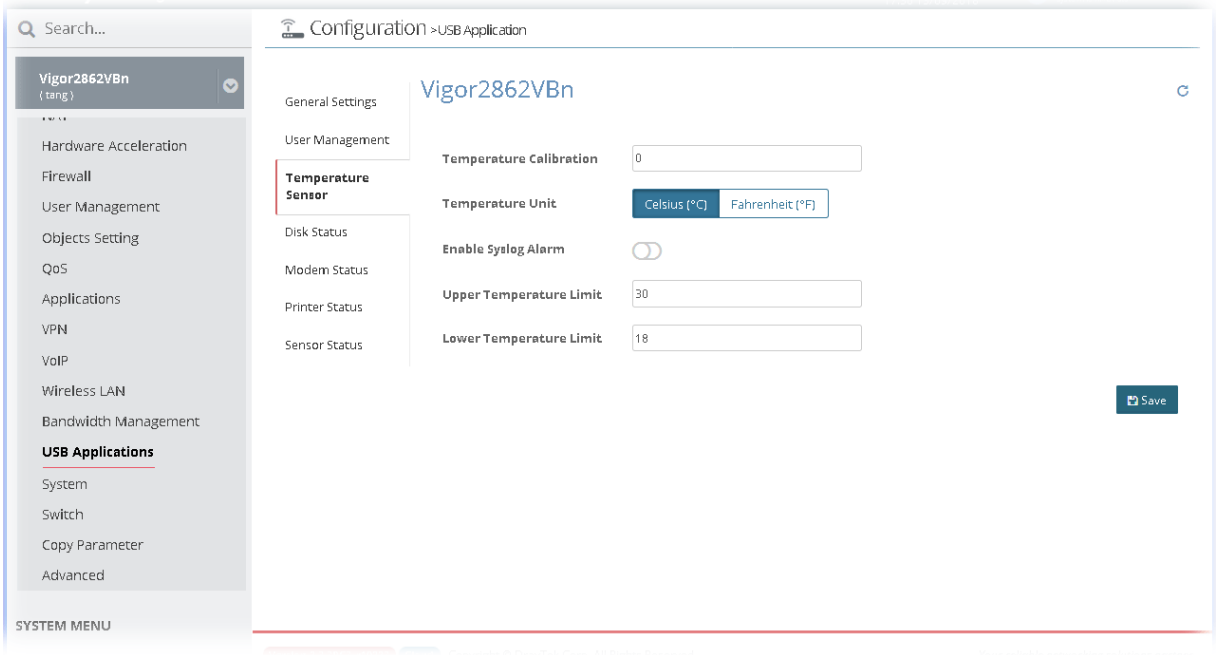


After finished the settings configuration, click **Save**. The modification for the CPE will take effect immediately.



13.17.3 Temperature Sensor

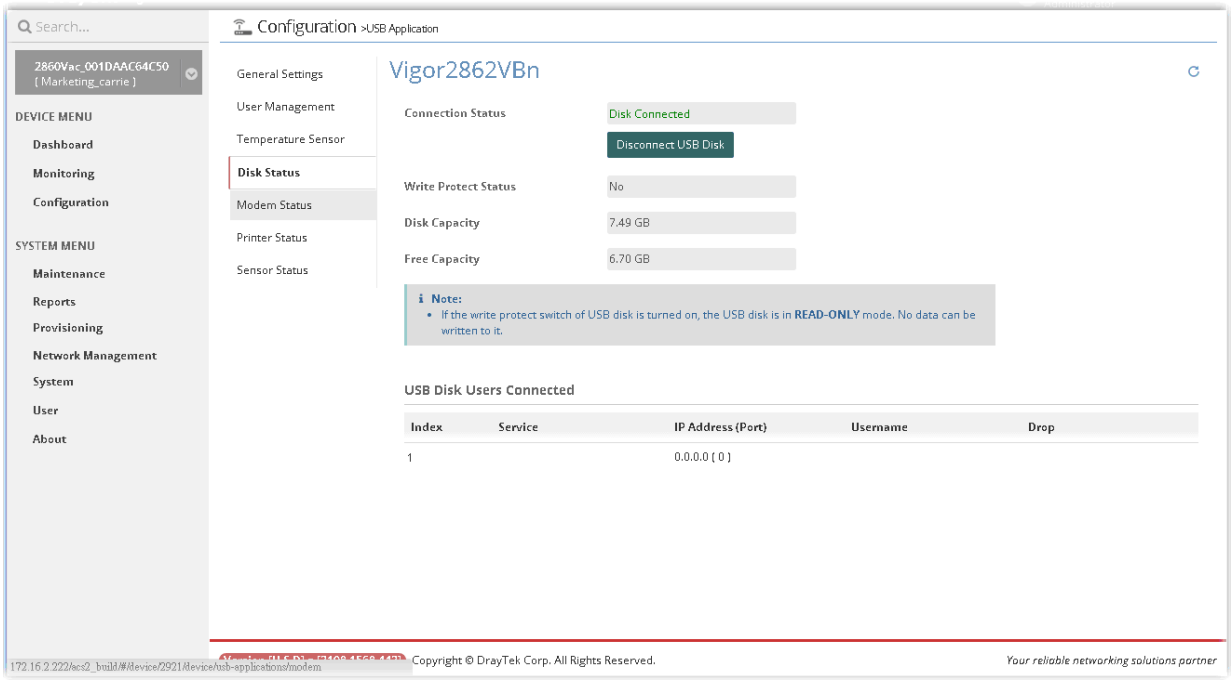
A USB thermometer attached to Vigor router can help monitor the server or data communications for room environment, and notify if the server room or data communications room is overheating.



After finished the settings configuration, click **Save**. The modification for the CPE will take effect immediately.

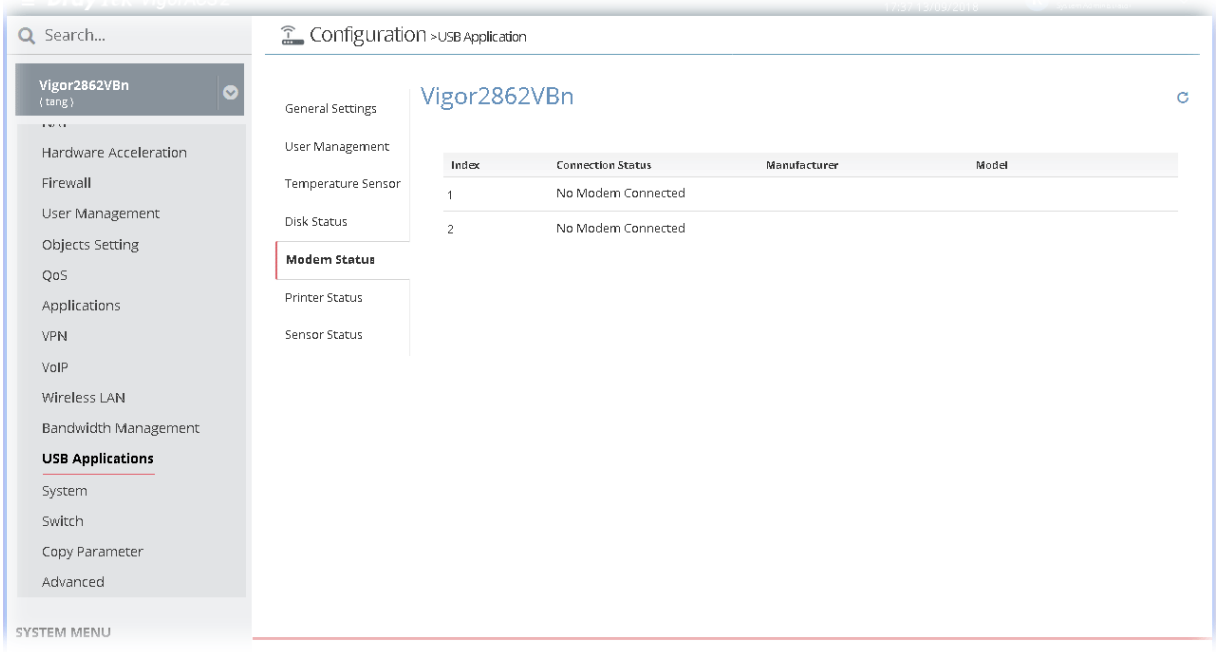
13.17.4 Disk Status

This page allows you to set profiles for FTP/SMB users. Any user who wants to access into the USB storage disk must type the same username and password configured in this page. Before adding or modifying settings in this page, please insert a USB storage disk first. Otherwise, an error message will appear to warn you.

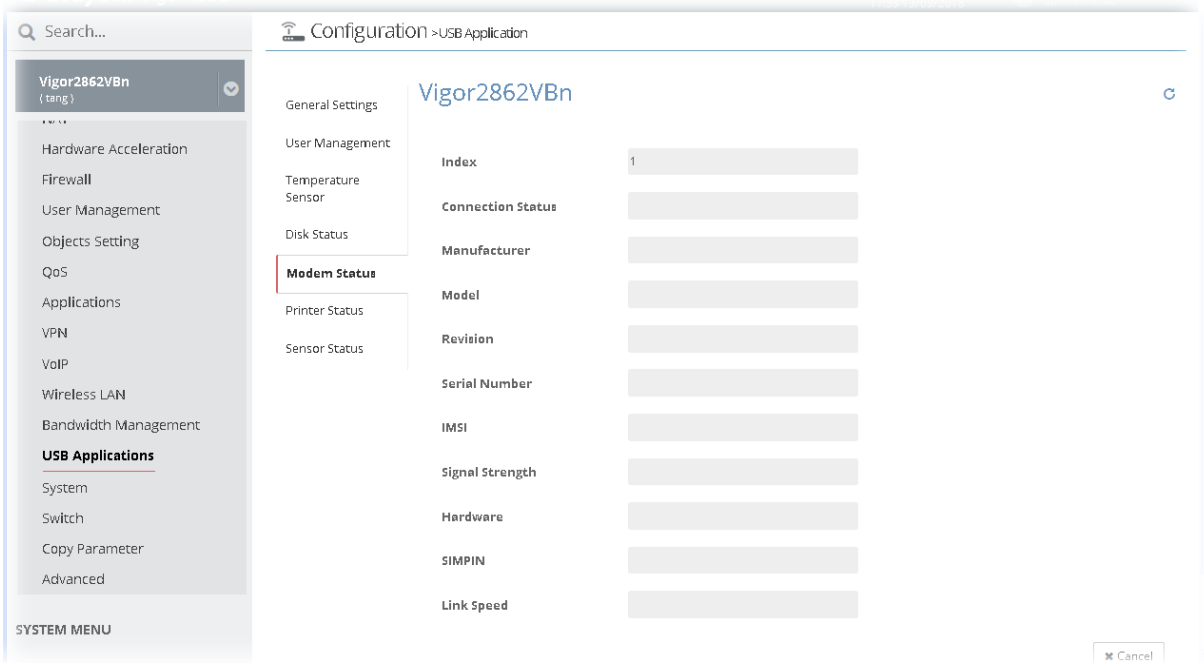


13.17.5 Modem Status

This page displays current status for the USB modem connecting to Vigor router managed by VigorACS 2.

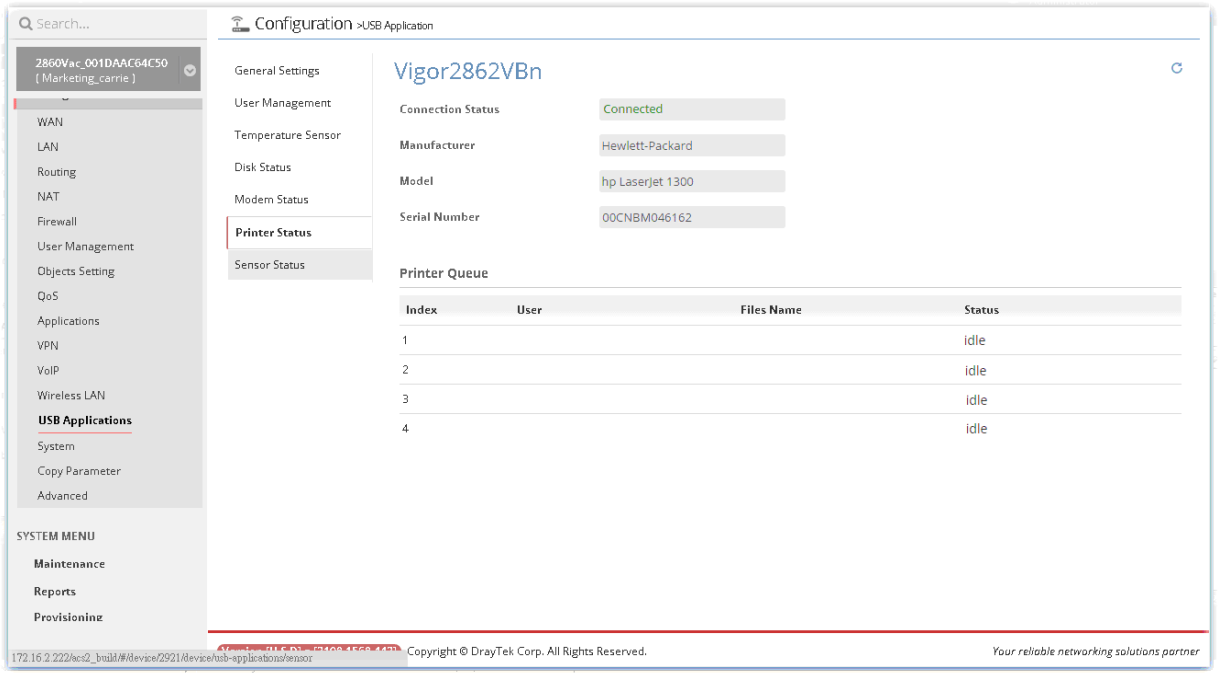


Click the index number to open the following for viewing detailed information for parameter settings.



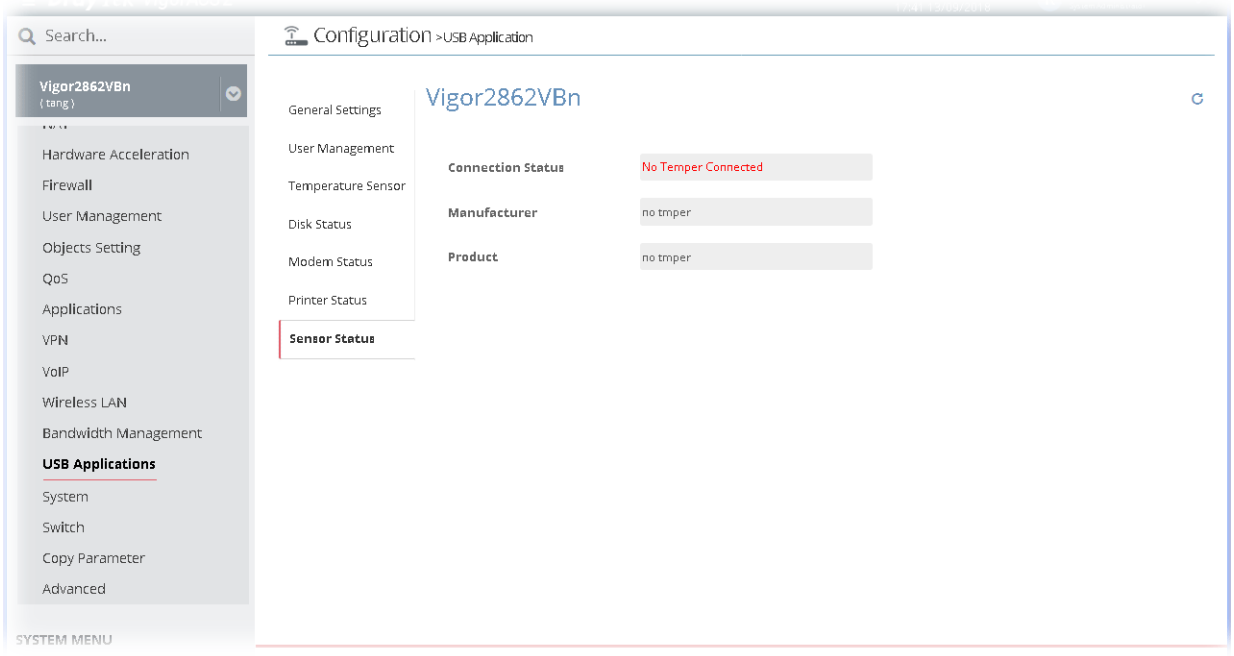
13.17.6 Printer Status

This page displays current status for the USB printer connecting to Vigor router managed by VigorACS 2.



13.17.7 Sensor Status

This page displays current status for the USB thermometer connecting to Vigor router managed by VigorACS 2.

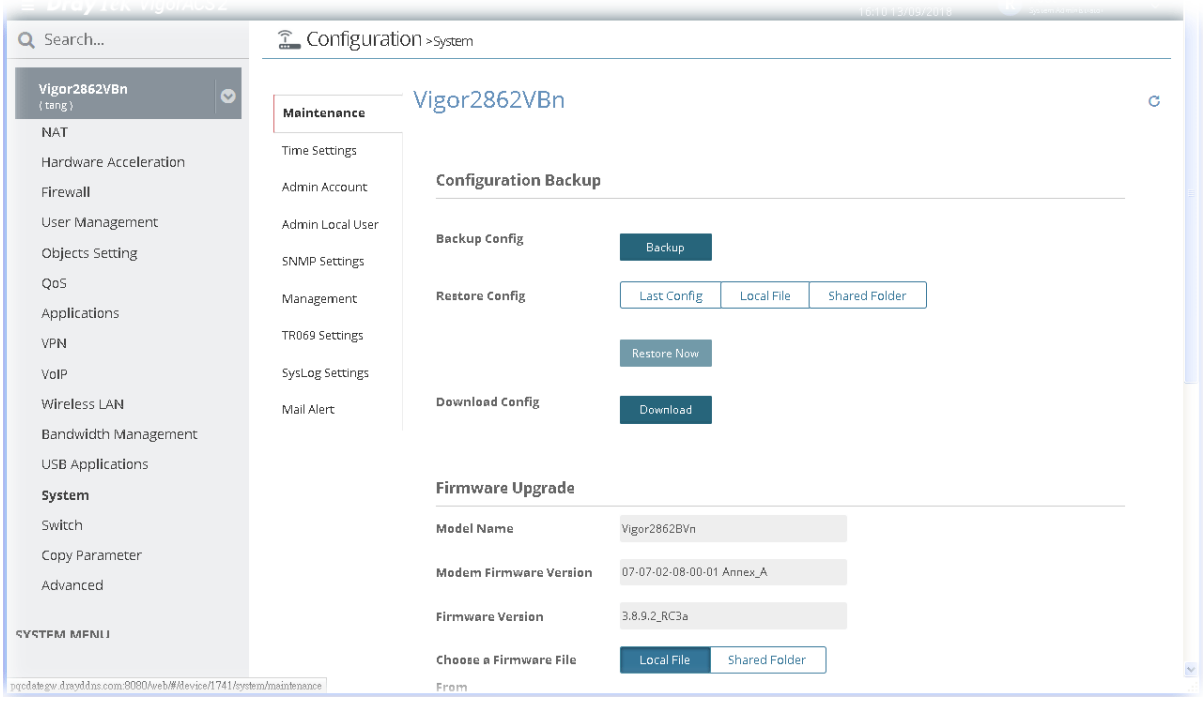


13.18 System Settings for CPE

In such section, Vigor2862VBn is selected as an example for displaying Applications settings.

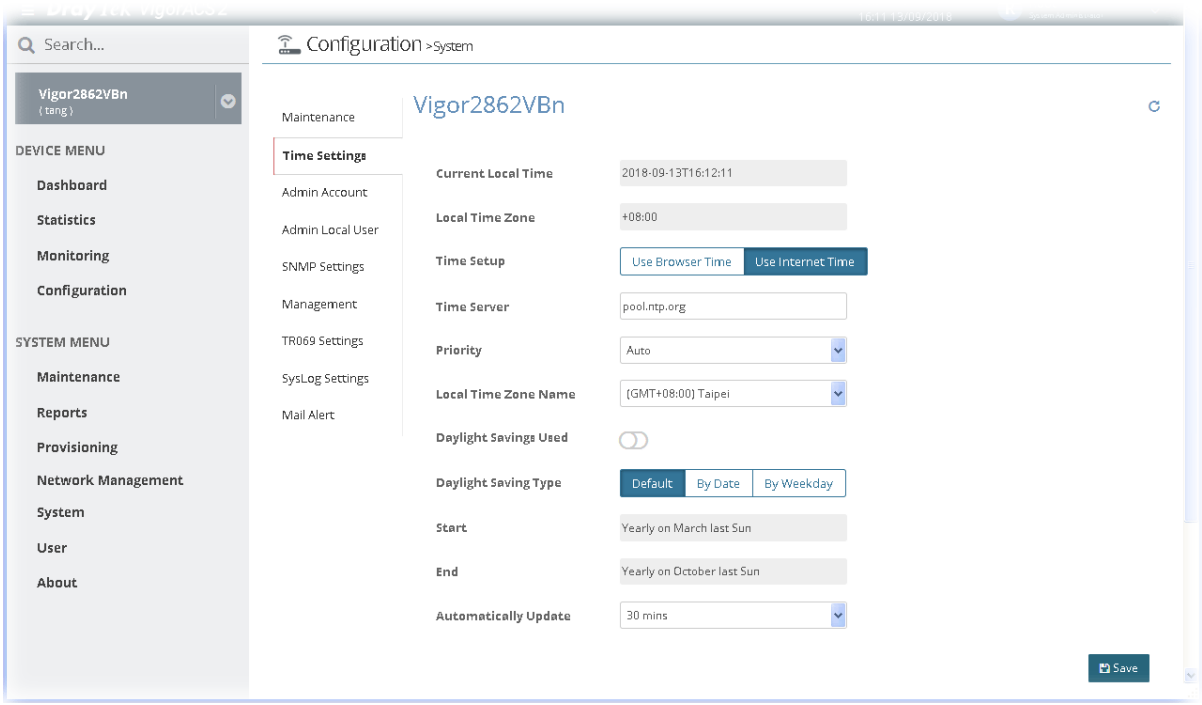
13.18.1 Maintenance

This page can be used for backup configuration for specified CPE, restoring configuration for specified CPE, making firmware upgrade for CPE, and even reboot the specified CPE via VigorACS 2.



13.18.2 Time Settings

It allows you to specify where the time of CPE should be inquired from.

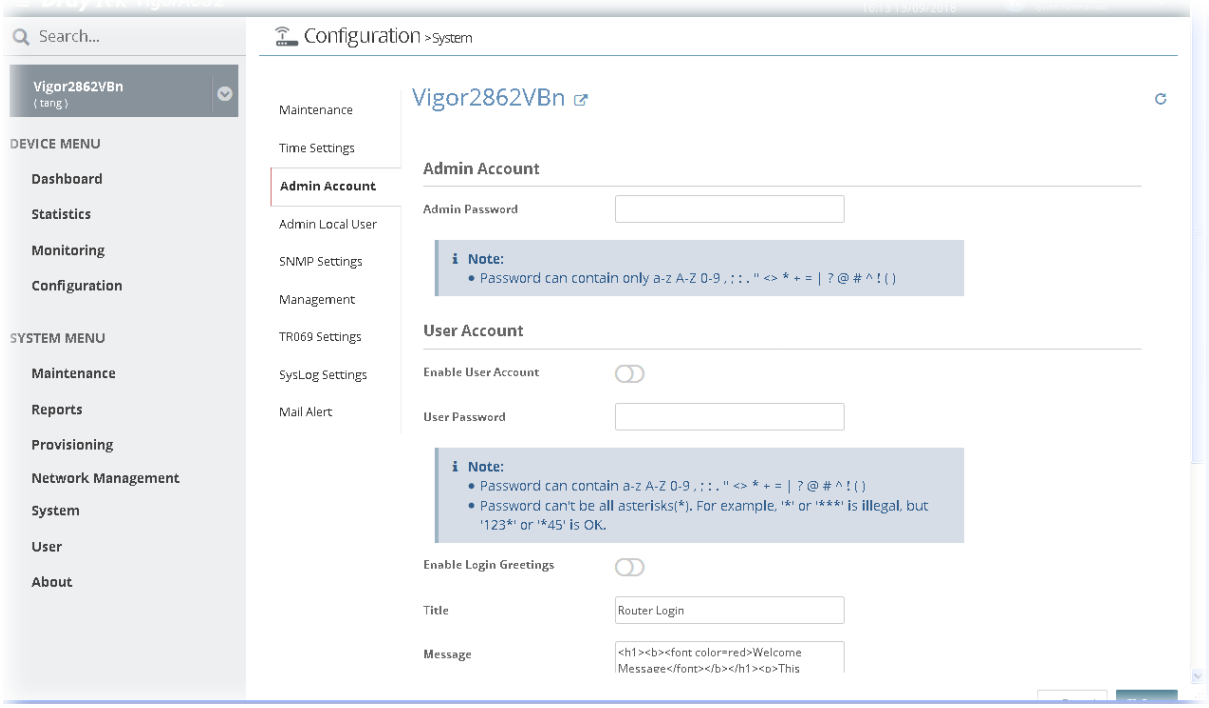


After finished the settings configuration, click **Save**. The modification for the CPE will take effect immediately

13.18.3 Admin Account

To configure the password for system administrator to access into the web user interface of device, open this web page for editing.

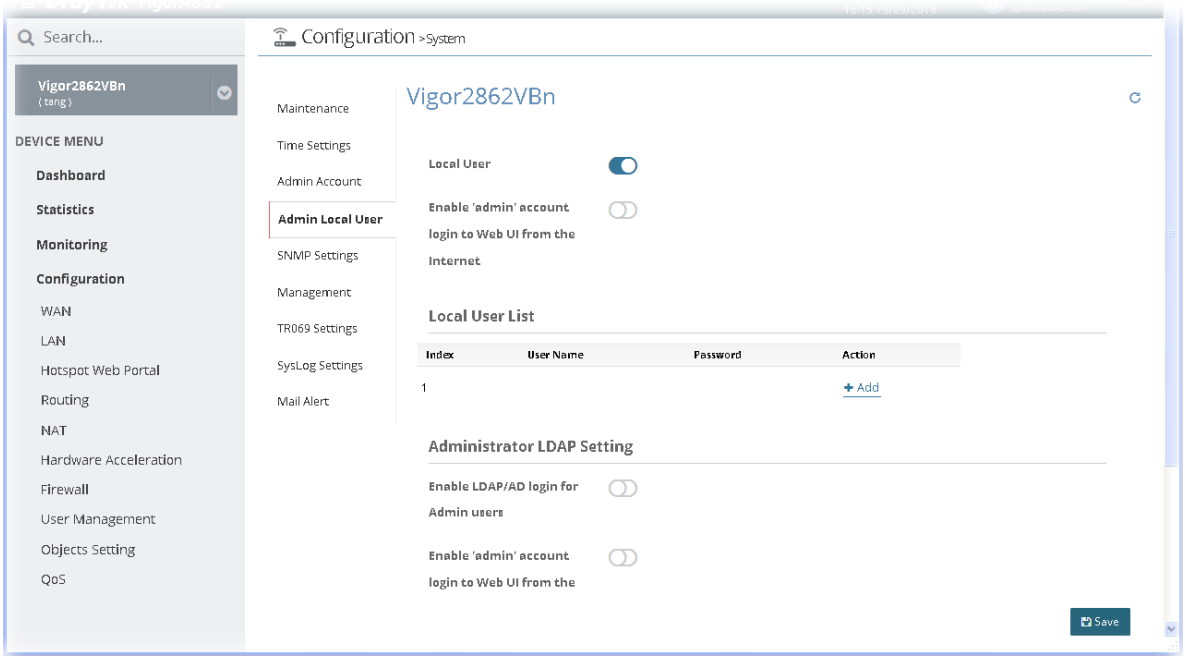
In addition, when you want to access into the web user interface of Vigor router, the system will ask you to offer username and password first. At that moment, the background of the web page is blank and no heading will be displayed on the Login window. Login Greetings field allows you to specify login title on the Login window if you have such requirement.



After finished the settings configuration, click **Save**. The modification for the CPE will take effect immediately.

13.18.4 Admin Local User

The administrator can login web user interface of Vigor router to modify all of the settings to fit the requirements. This feature allows other user in LAN (local user) who can access into the web user interface with the same privilege of the administrator.

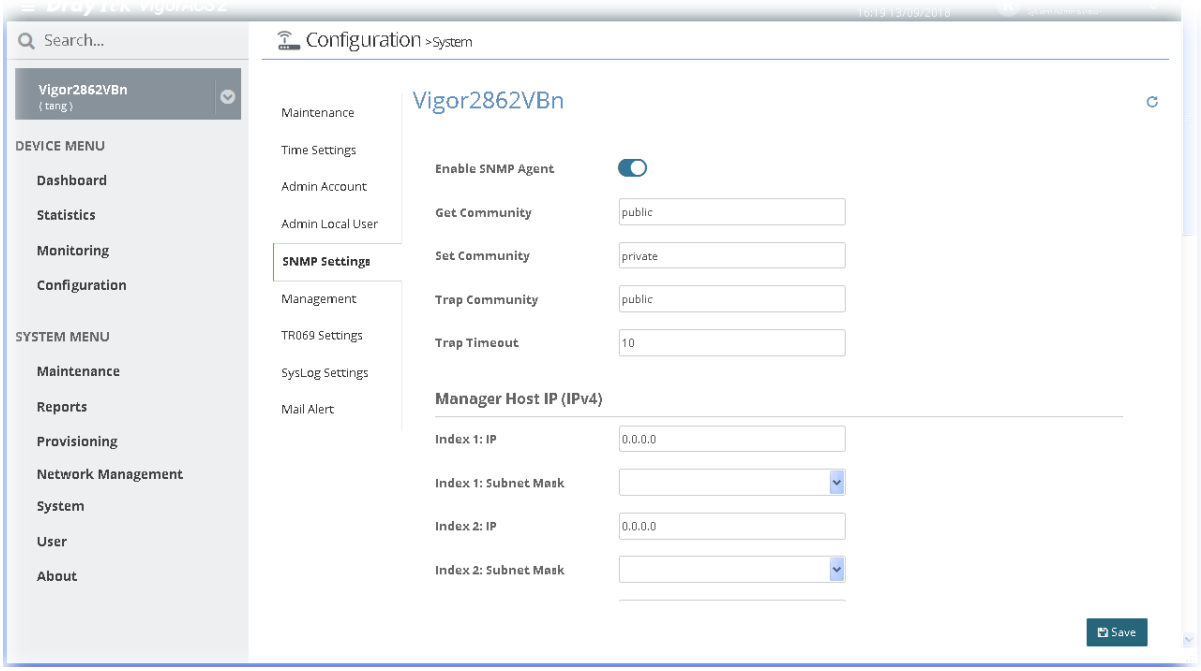


After finished the settings configuration, click **Save**. The modification for the CPE will take effect immediately.

13.18.5 SNMP Settings

This page allows you to configure settings for SNMP and SNMPV3 services.

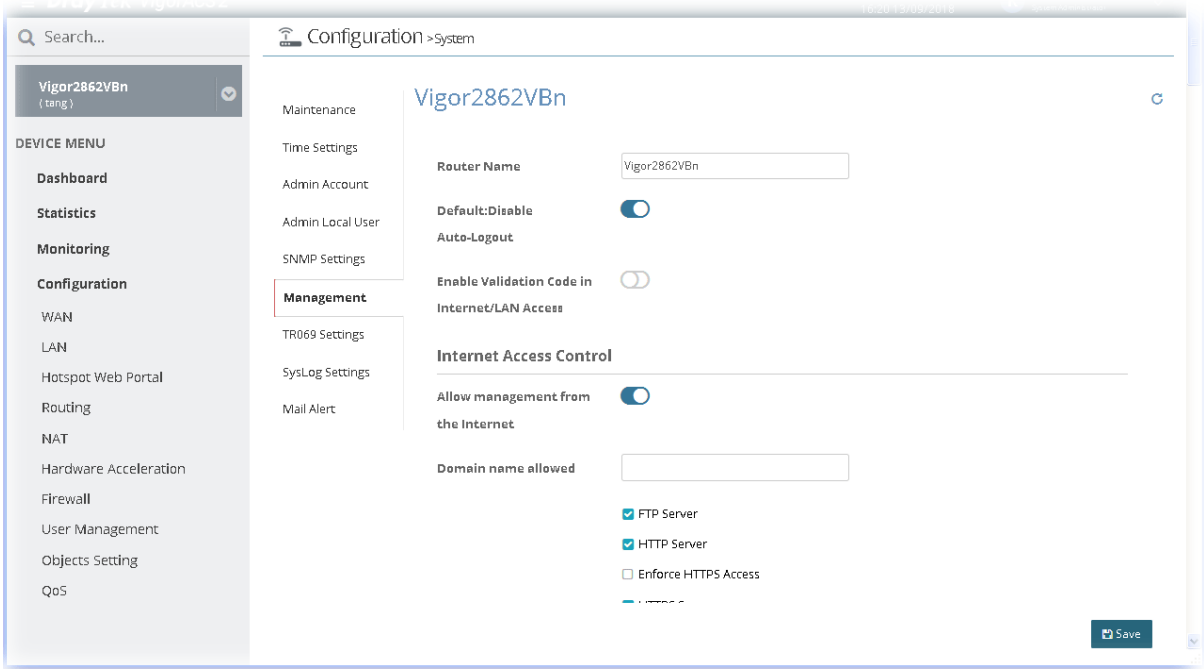
The SNMPv3 is **more secure than** SNMP through the encryption method (support AES and DES) and authentication method (support MD5 and SHA) for the management needs.



After finished the settings configuration, click **Save**. The modification for the CPE will take effect immediately.

13.18.6 Management

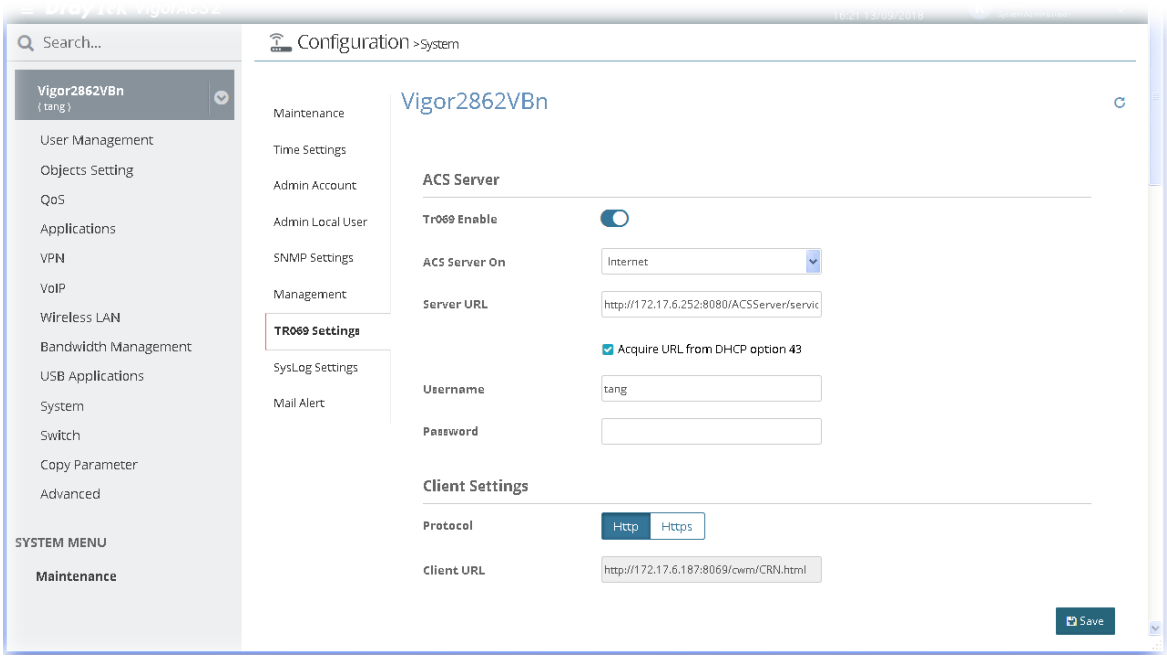
This page allows you to manage the settings for Internet/LAN Access Control, Access List from Internet, and Management Port Setup



After finished the settings configuration, click **Save**. The modification for the CPE will take effect immediately.

13.18.7 TR069 Settings

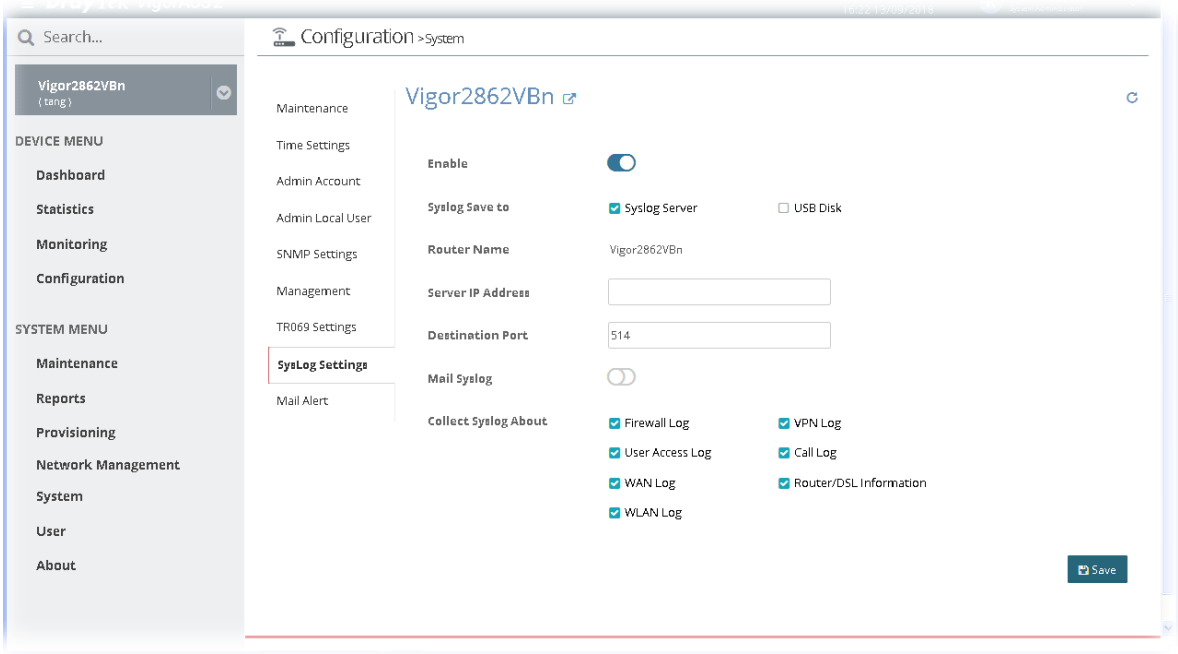
Vigor device supports TR-069 standard. It is very convenient for an administrator to manage a TR-069 device through VigorACS 2.



After finished the settings configuration, click **Save**. The modification for the CPE will take effect immediately.

13.18.8 SysLog Settings

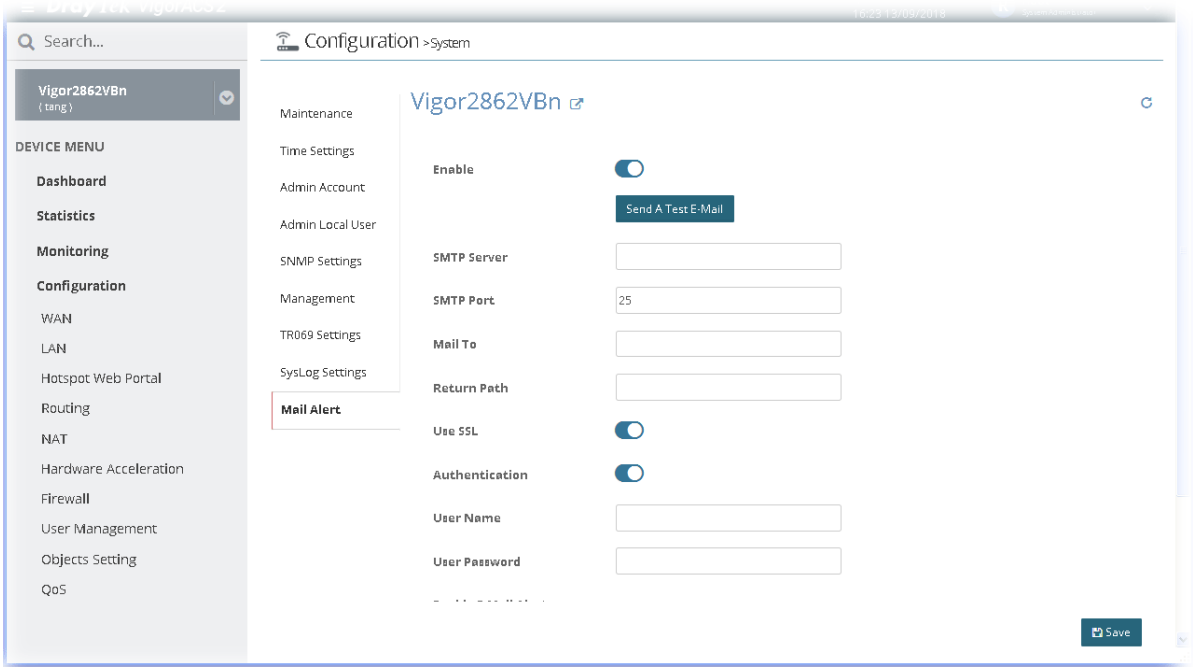
SysLog function is provided for monitoring Vigor router.



After finished the settings configuration, click **Save**. The modification for the CPE will take effect immediately.

13.18.9 Mail Alert

System administrator can make a simple test for the e-mail address specified in this page; send alert message to the e-mail box when Vigor router detects DoS Attack, VPN and/ or APPE event.

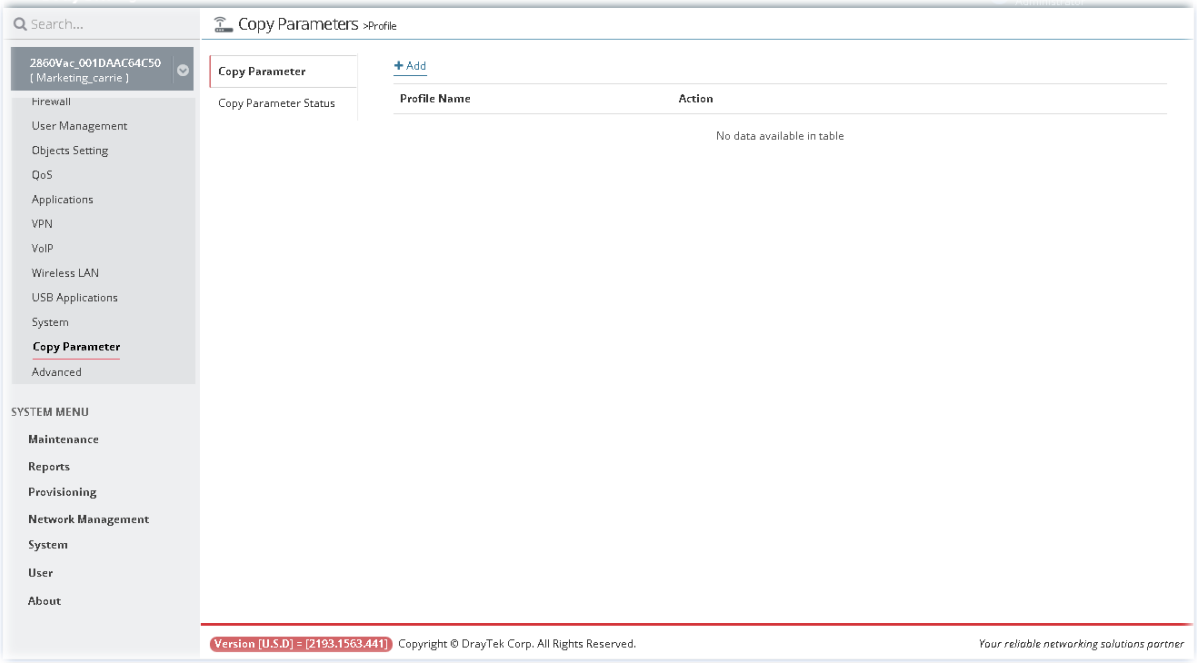


After finished the settings configuration, click **Save**. The modification for the CPE will take effect immediately.

13.19 Copy Parameter for CPE

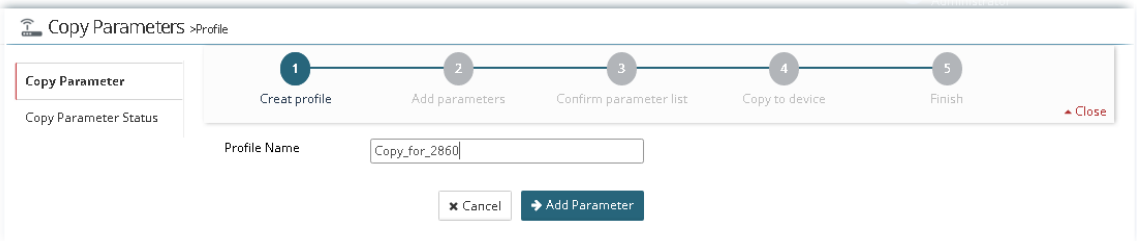
13.19.1 Copy Parameter

VigorACS 2 supports to copy parameters from one of the registered CPE(s) to other CPE(s) with the same model. It is convenience for duplication and configuration with large setting profiles.

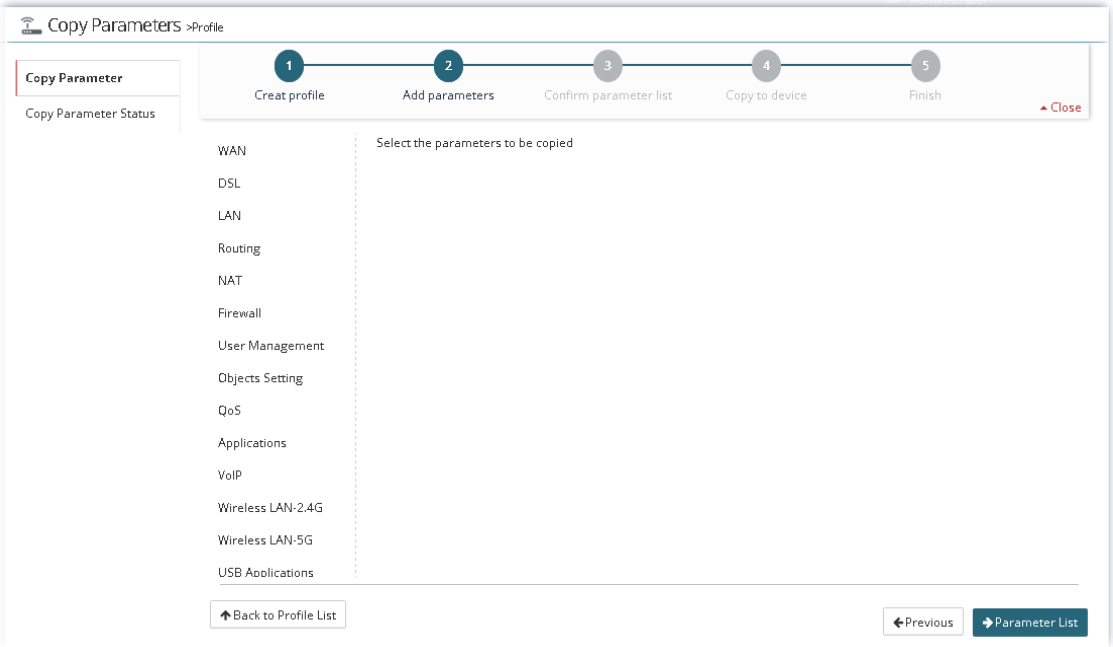


Follow the steps below to perform the operation of **Copy Parameter**.

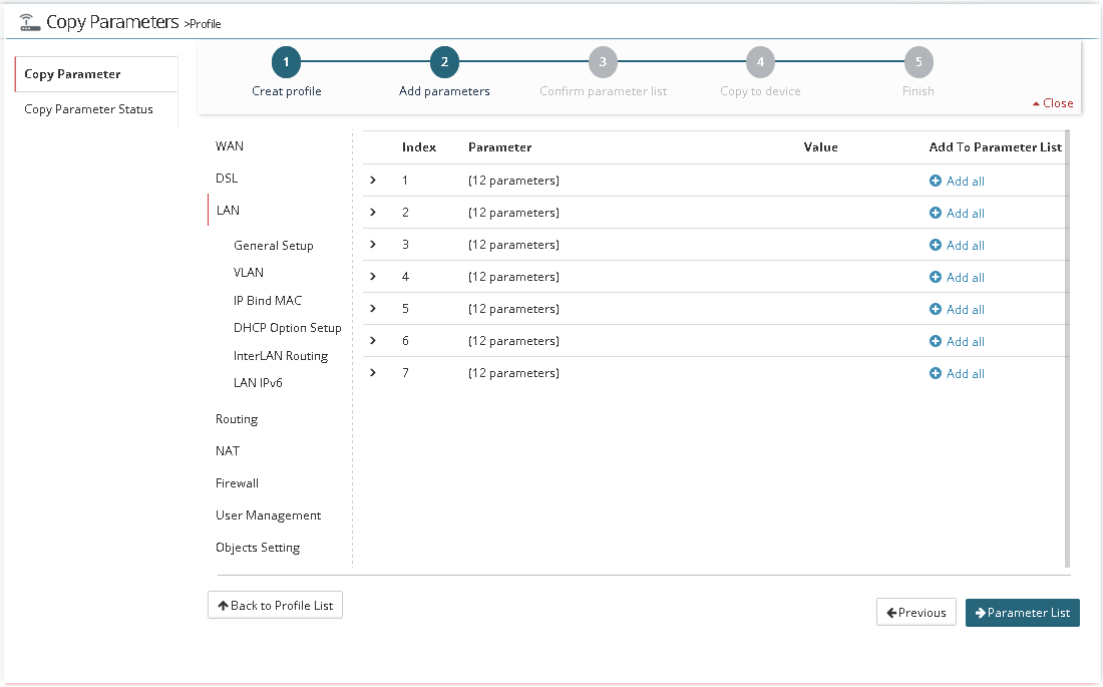
1. Open **Configuration>>Copy Parameter** and click **Add**.
2. On the following page (❶ Create Profile), type a name for the copy parameter profile.



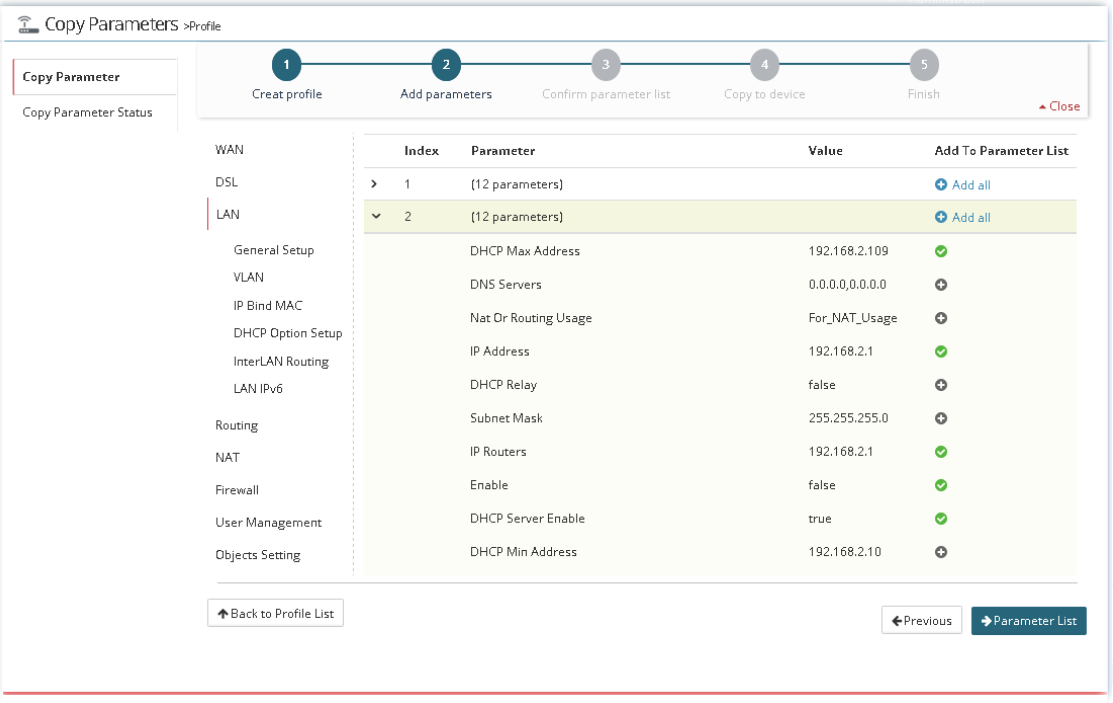
3. Click **Add Parameter** to get the following page (❷ Add Parameter).



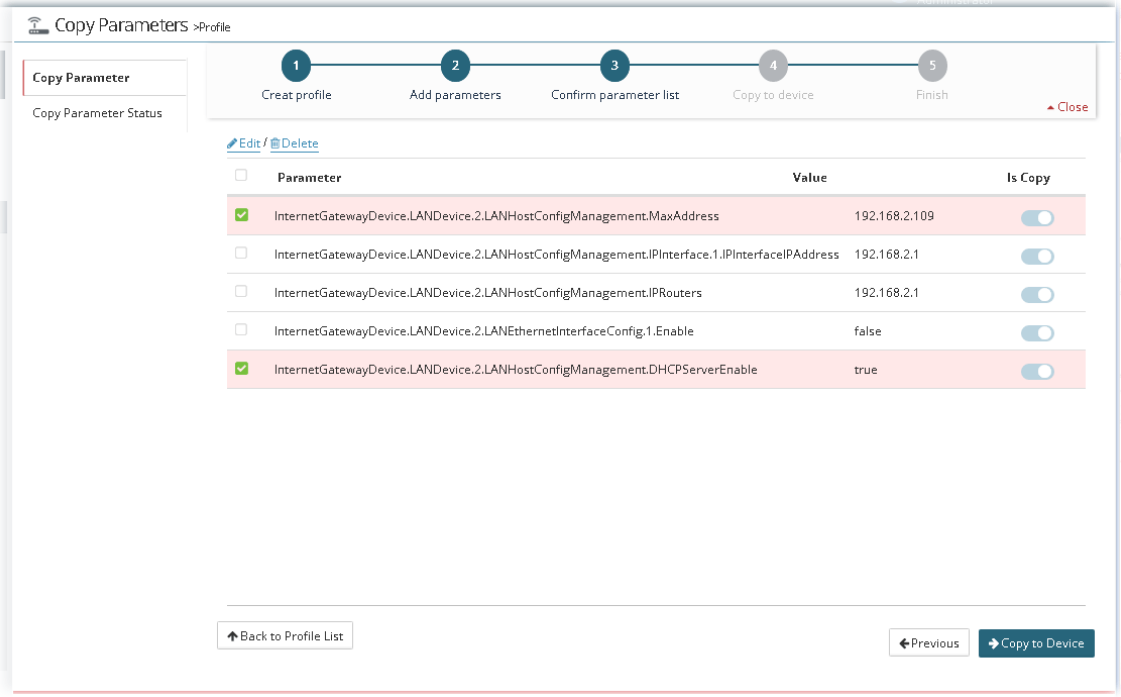
4. Here, we take LAN settings as an example. Move the mouse to **LAN** and click it to display the submenu items. Then, click **General Setup**.



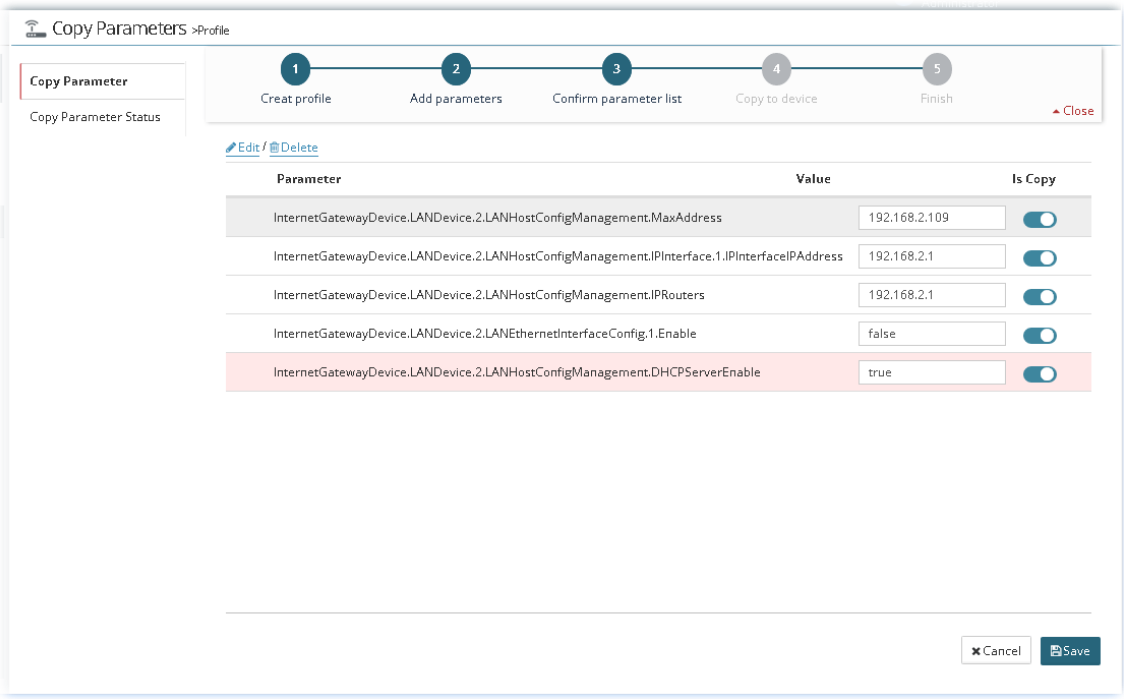
There are 12 parameters available for copying for each index. Choose the parameter you want to copy and click ⊕. When the icon becomes ✔, it means that parameter has been selected for copying.



5. Next, click **Parameter List** to display the following page (❸ Confirm parameter list).

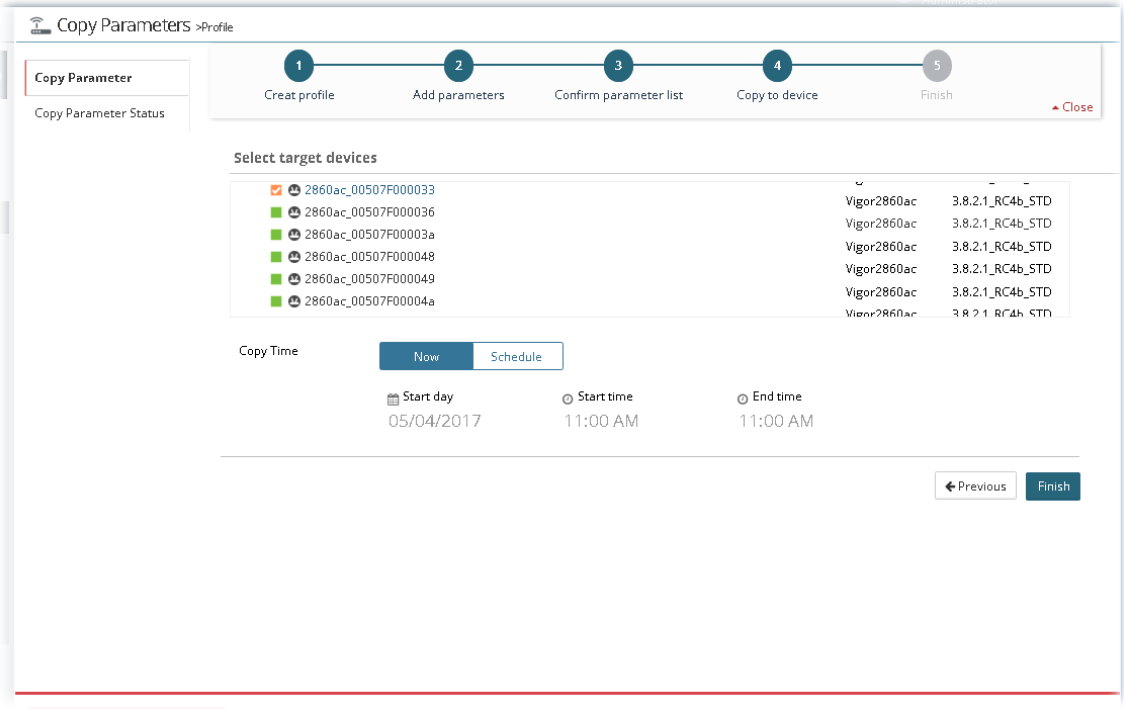


If required, click **Edit** to change the value(s) for parameter(s).

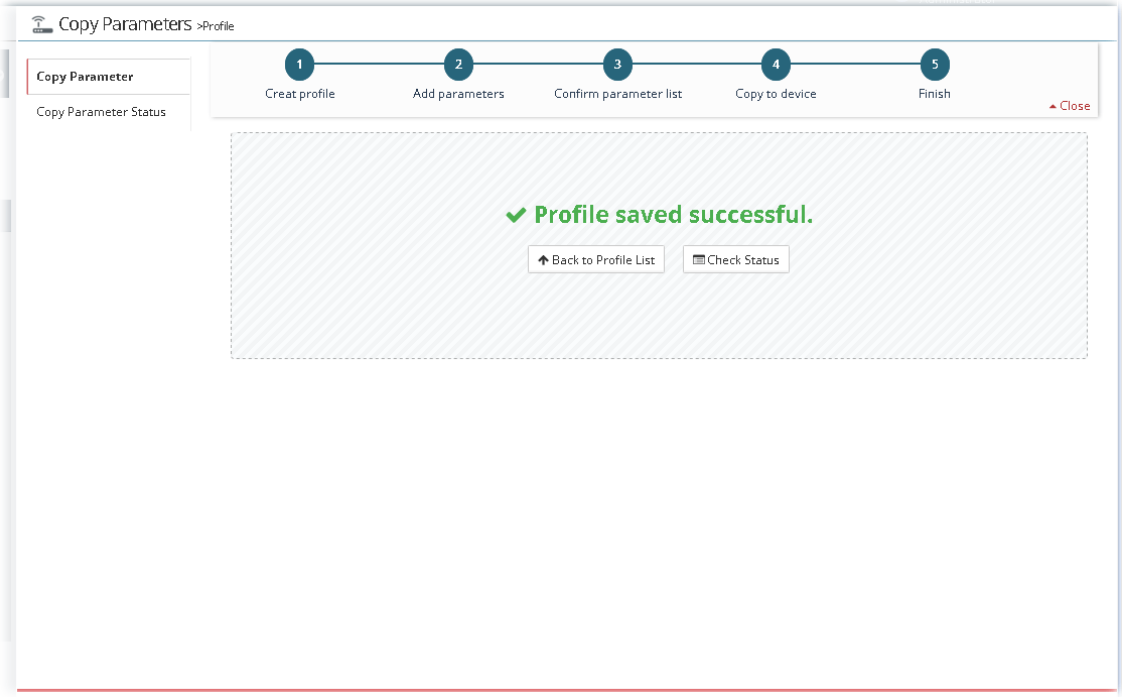


After modifying the parameter, click **Save** to return to previous page.

6. Next, click **Copy to Device** to display the following page (❹ Copy to device). Select the target device by clicking it.



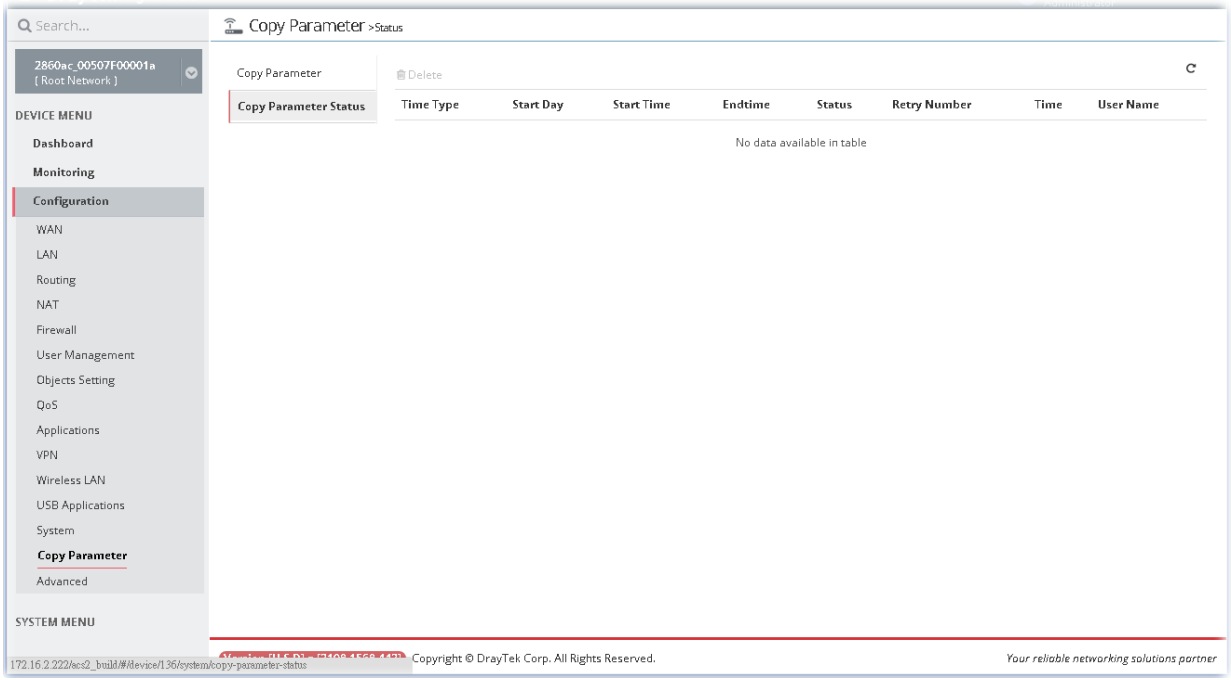
7. Click **Finish**.



8. A Copy Parameter profile has been created. Later, the selected parameters will be copied to the target device immediately or on scheduled time.

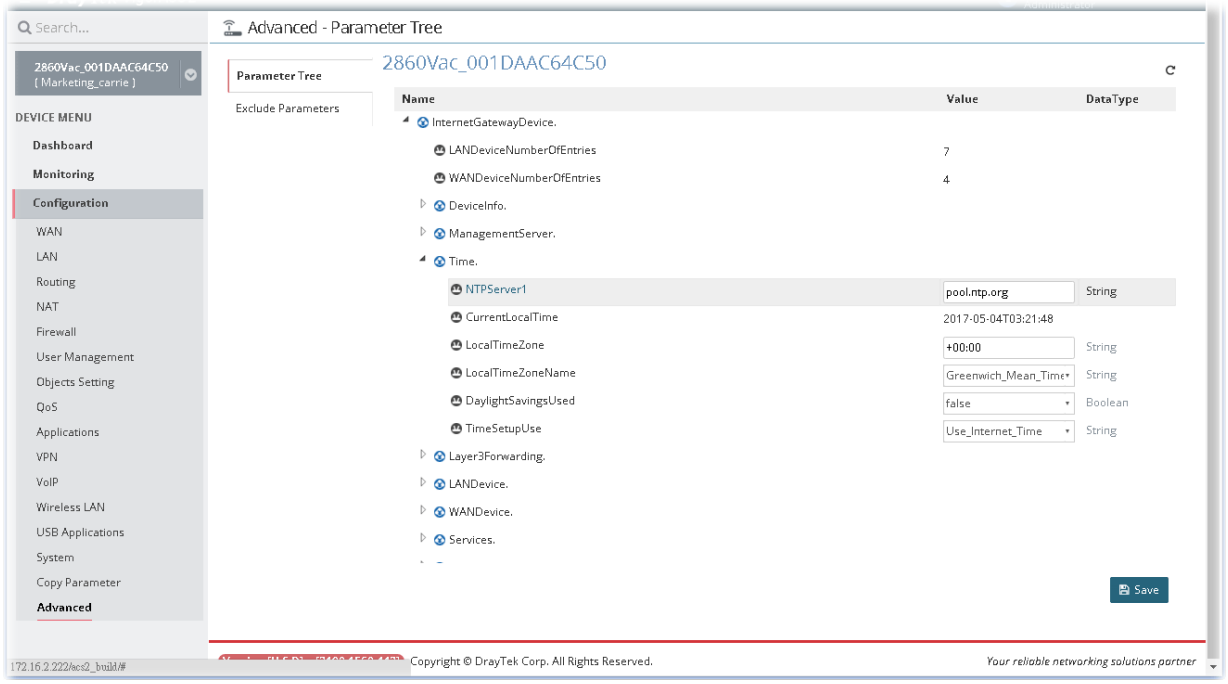
13.19.2 Checking the Copying Parameters Status

Only the operation that failed to copy parameters will be displayed in this page.



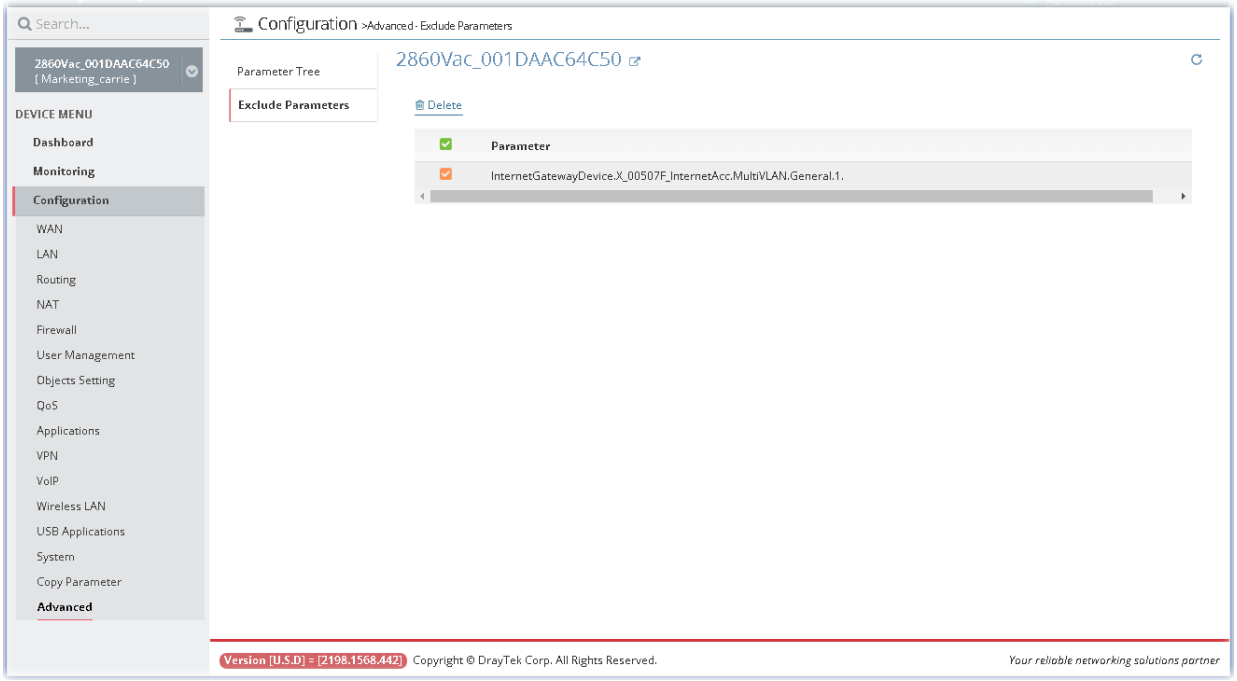
13.20 Advanced Settings for CPE

13.20.1 Parameter Tree



After finished the settings configuration, click **Save**. The modification for the CPE will take effect immediately.

13.20.2 Exclude Parameters



Applications

A.1 How to create a VPN by using VPN Wizard?

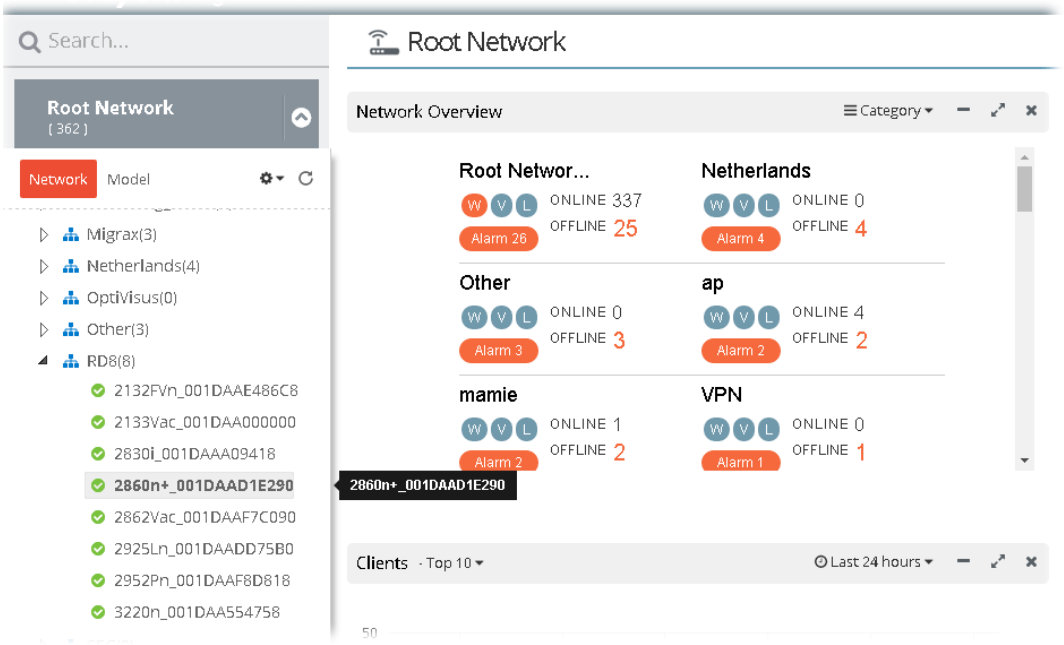
Vigor ACS 2 supports VPN Wizard which provides an easy way to create a LAN to LAN VPN tunnel between two Vigor routers. The following shows an example for PPTP tunnel created between Vigor2860 and Vigor2925.

VPN server => Vigor2860, LAN network: 192.168.82.0/24

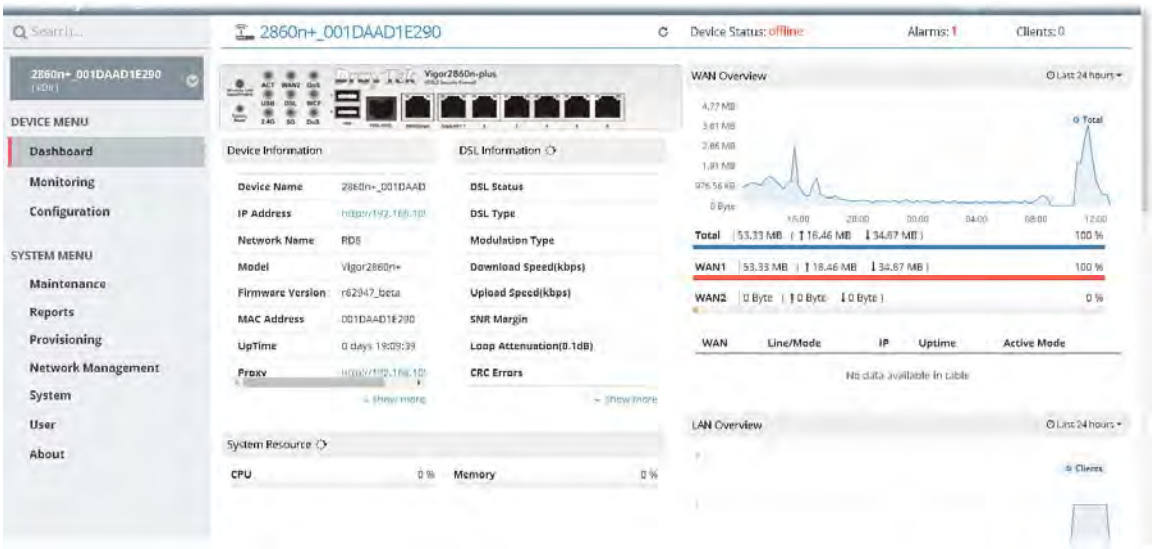
VPN client => Vigor2925, LAN network: 192.168.92.0/24

Info LAN IP address for both routers shall not be the same.

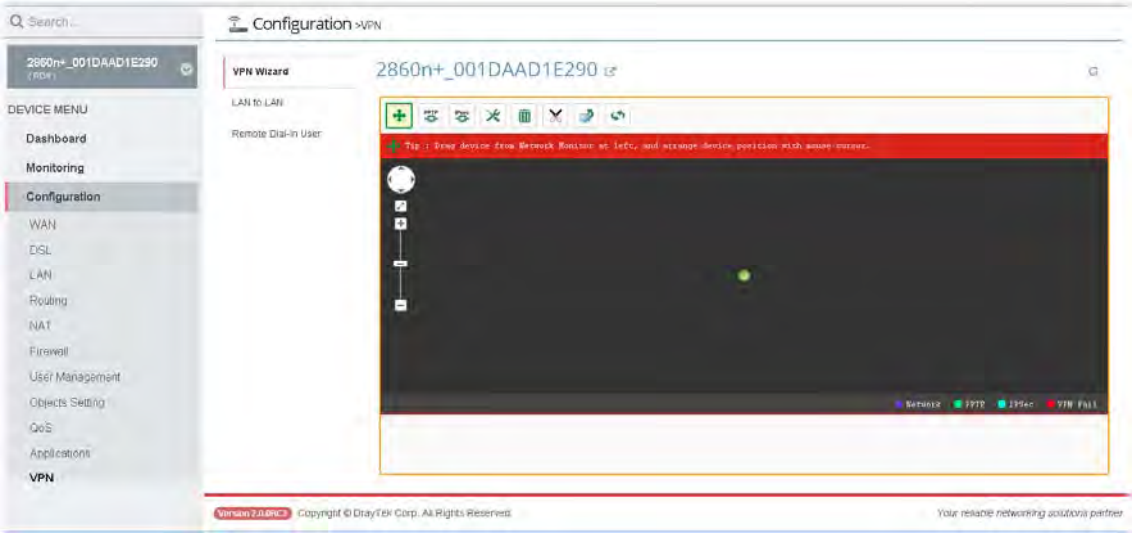
1. Click **Root Network** and display the tree view. Choose Vigor2860 as the VPN server.



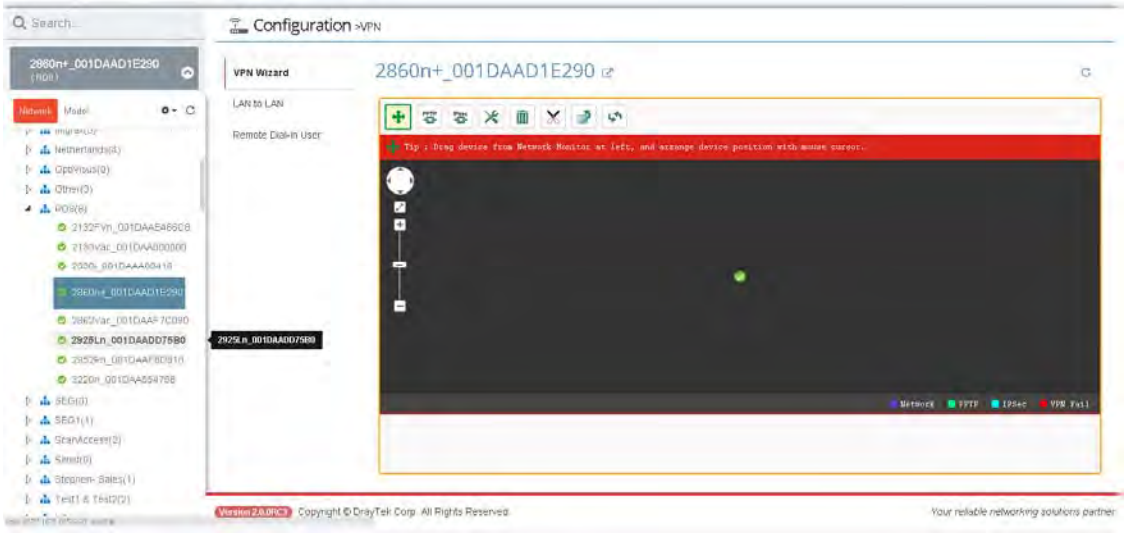
2. The Dashboard for the selected device will be shown as follows.



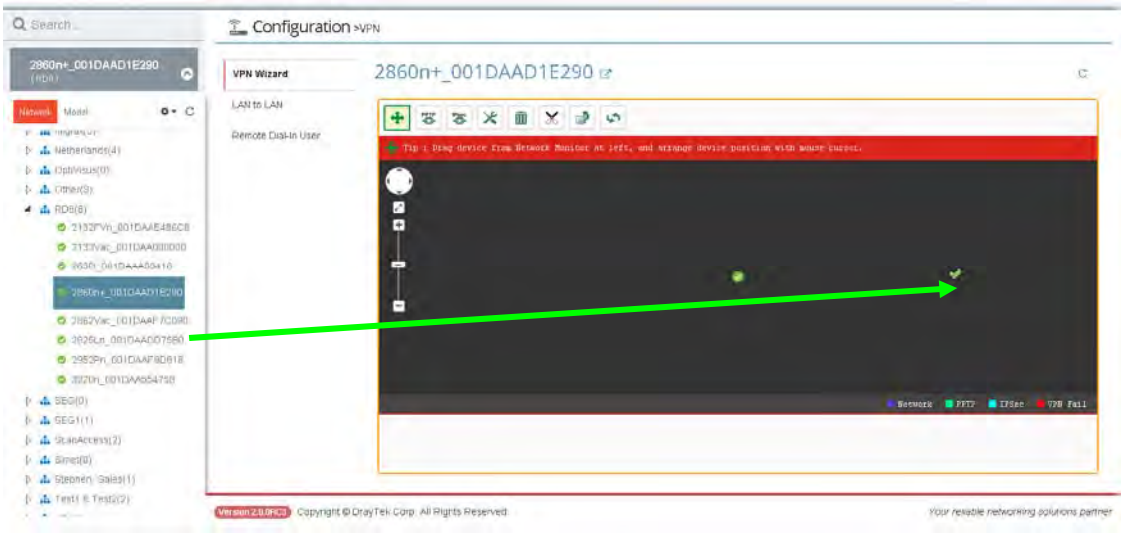
3. Open **DEVICE MENU>>Configuration>> VPN** function on the top menu of VigorACS 2. Then the VPN Wizard web page will appear as the follows:



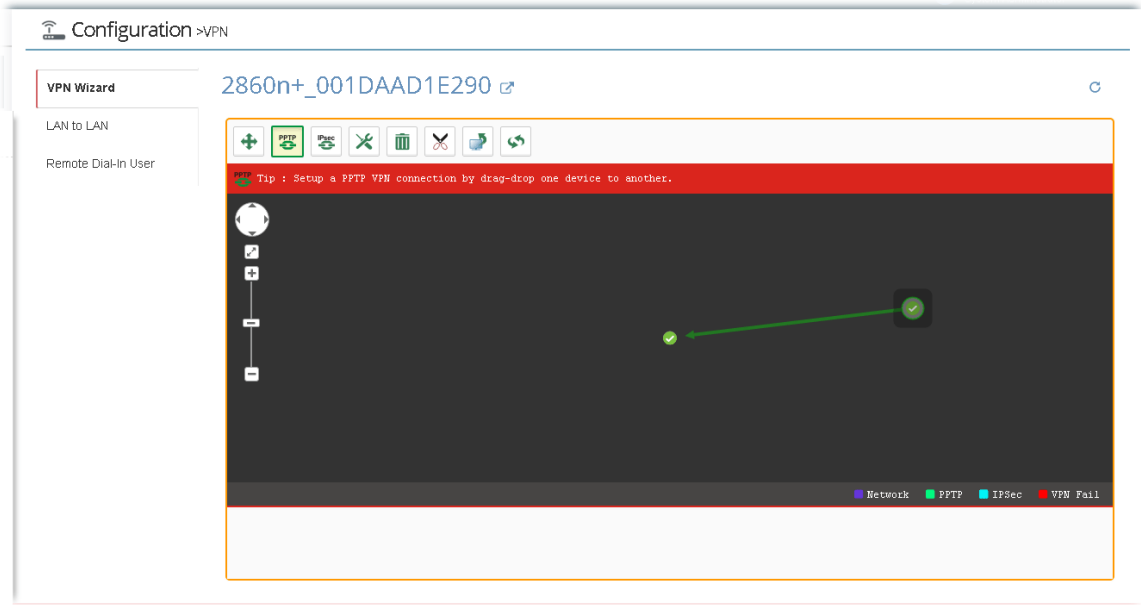
4. Press the **Add device** button, then choose the VPN client (e.g., Vigor2925) at the Network View.



5. Click the VPN client (Vigor2925) and drag it to the black area on the right side. Then release it.

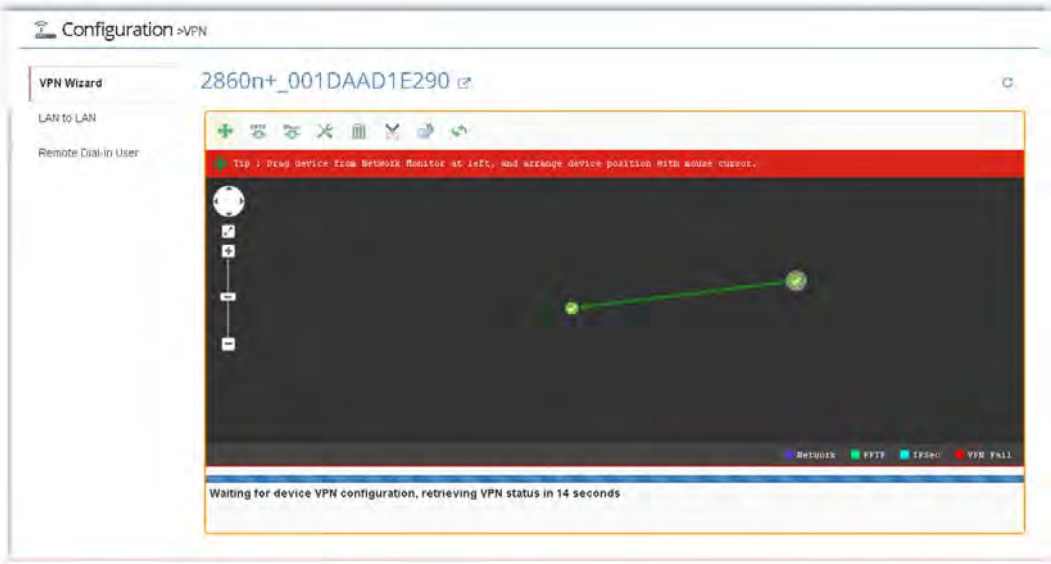


6. Press **PPTP** button, then Press the VPN client icon (Vigor2925) and drag it to the VPN server icon (Vigor2860), release it when you see a yellow ring surrounding the VPN server icon.

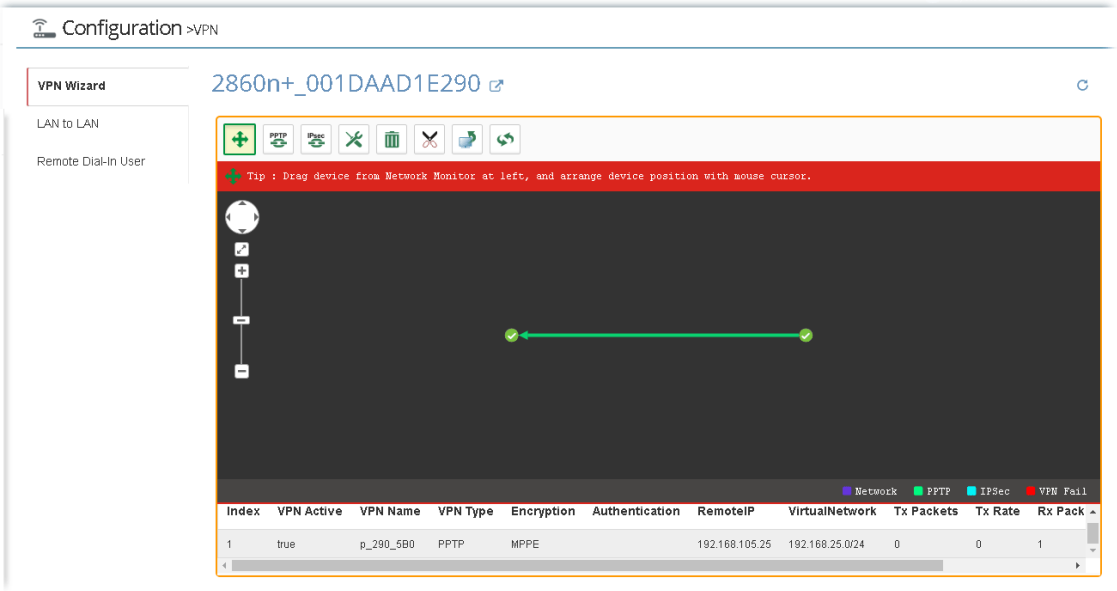


7. VigorACS 2 will pop-up a confirmation window, please click the **OK** button.

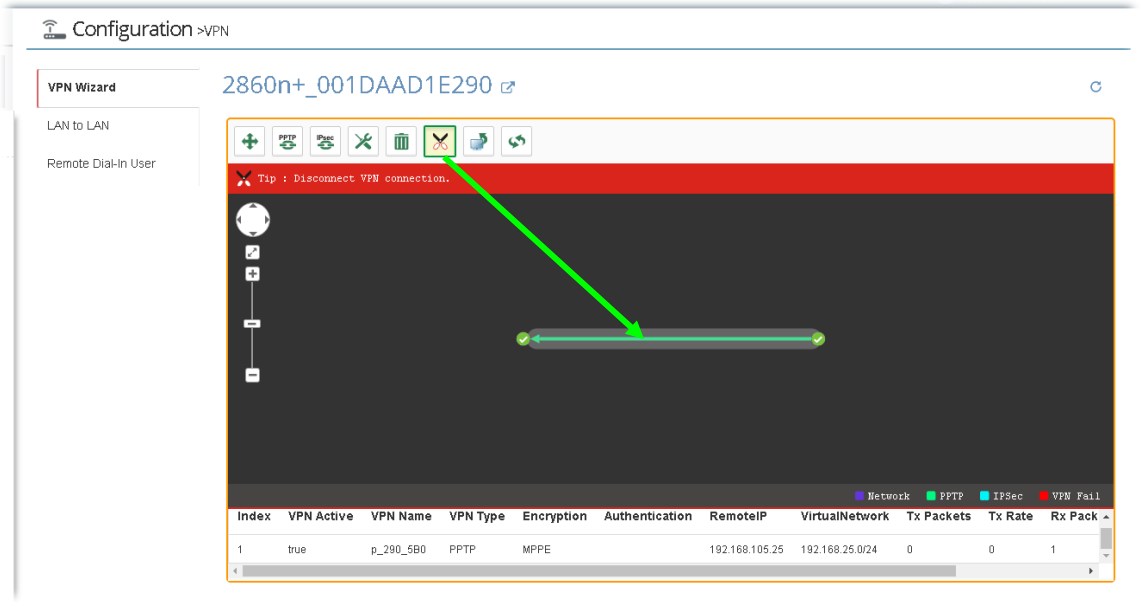
8. Wait for device VPN configuration.



9. After PPTP connection working, there will be a green arrow from VPN client to VPN server, you could check the VPN tunnel status on the bottom of the VigorACS web as well.

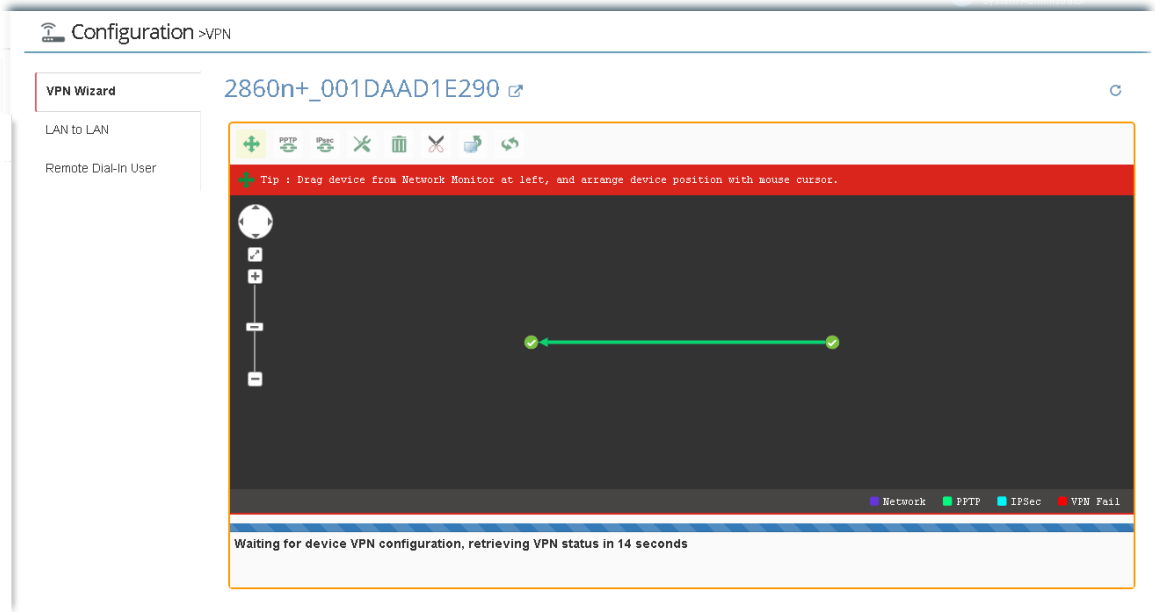


10. If you want to disconnect the VPN tunnel, to press the **Disconnect** button, then there will be a pair of scissors icon on the VPN line, click it.

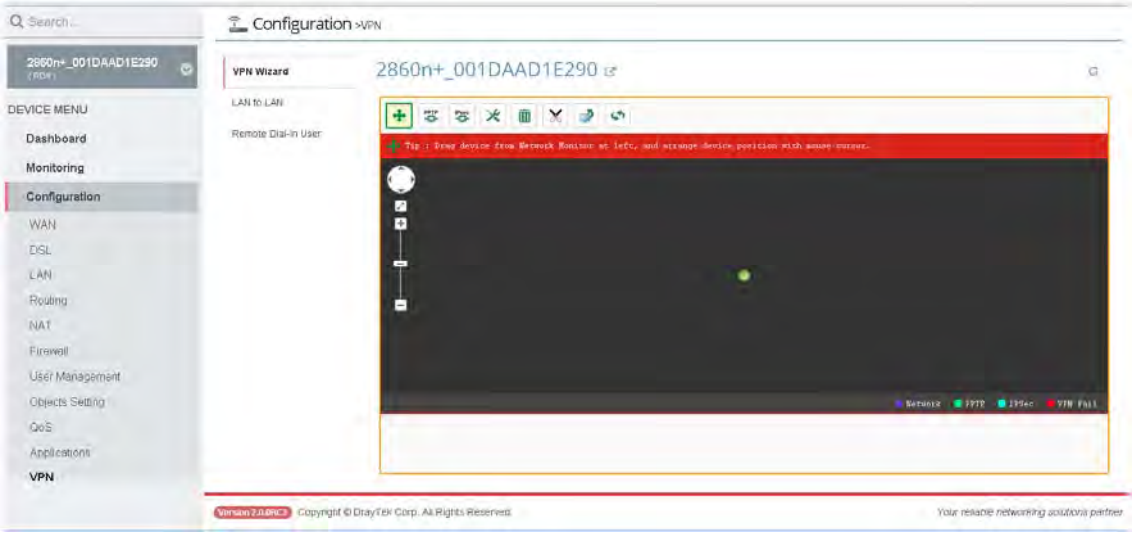


11. VigorACS will pop-up a confirmation window, please click the **Yes** button.

12. Wait for VPN disconnection.



13. After VPN tunnel disconnected, the web page will be shown as follows.


Search...
2860n+_001DAAD1E290
DEVICE MENU
Dashboard
Monitoring
Configuration
WAN
DSL
LAN
Routing
NAT
Firewall
User Management
Objects Setting
QoS
Applications
VPN
Configuration >VPN
VPN Wizard
LAN to LAN
Remote Dial-in User
2860n+_001DAAD1E290
Tip : Drag device from Network Monitor at left, and arrange device position with mouse cursor.
Version 2.0.0RC2
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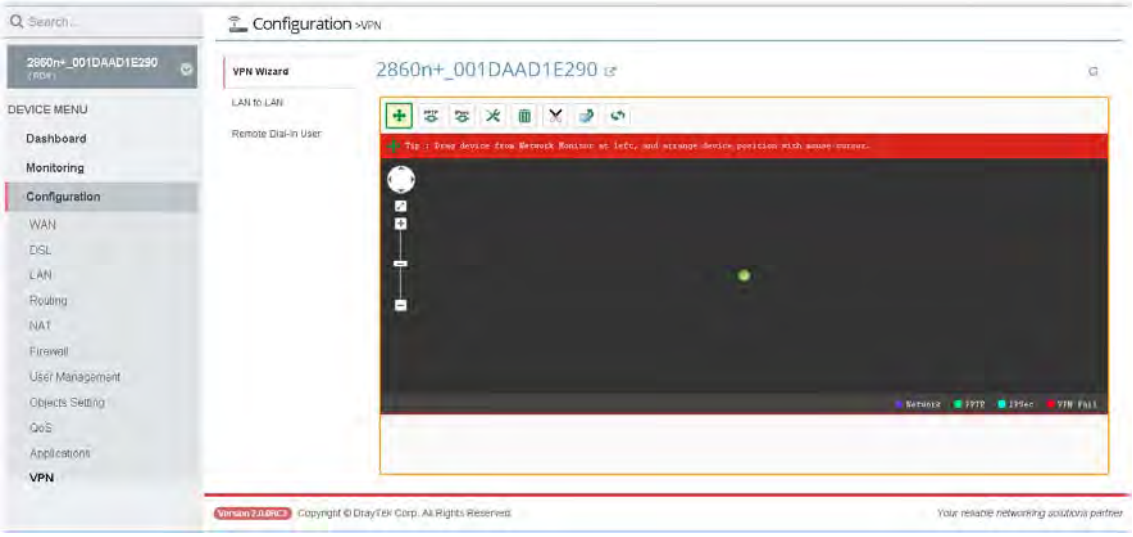
Your reliable networking solutions partner

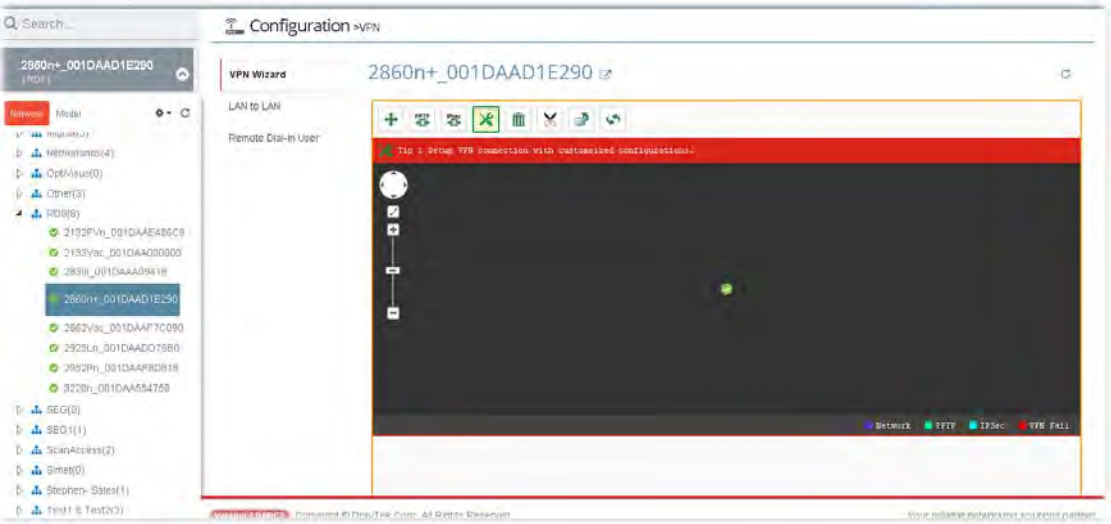
A.2 How to create a VPN Connection with Advanced Settings by using VPN Wizard ?

VPN wizard supports PPTP and IPSec tunnel, the default encryption for PPTP Tunnel is MPPE, for IPSec Tunnel is AH-SHA1. If you want to set more details for VPN connection, you can use **Advance** connection button.

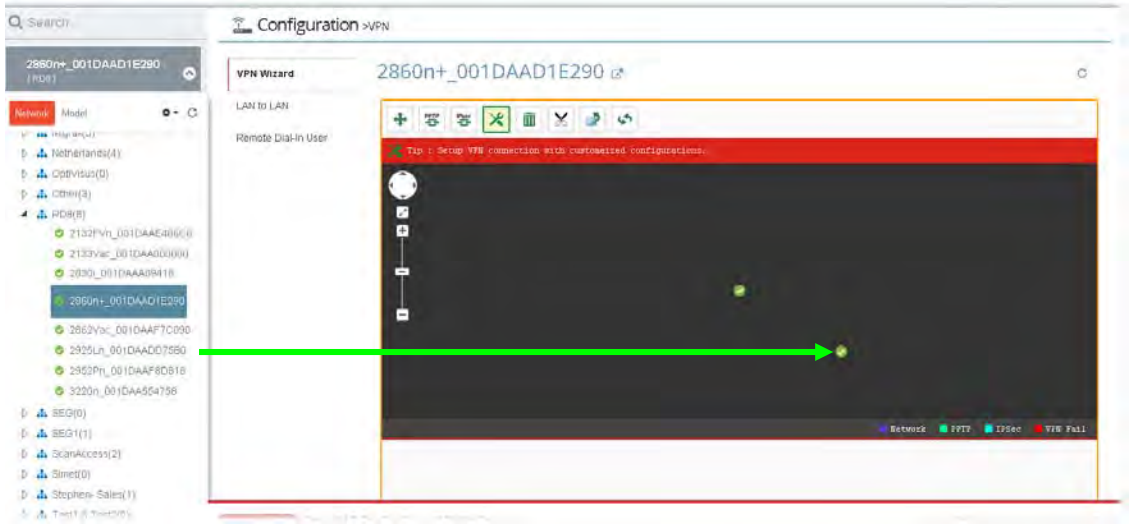
1. Open **DEVICE MENU>>Configuration>> VPN** function on the top menu of VigorACS 2. Then the VPN Wizard web page will appear as the follows:



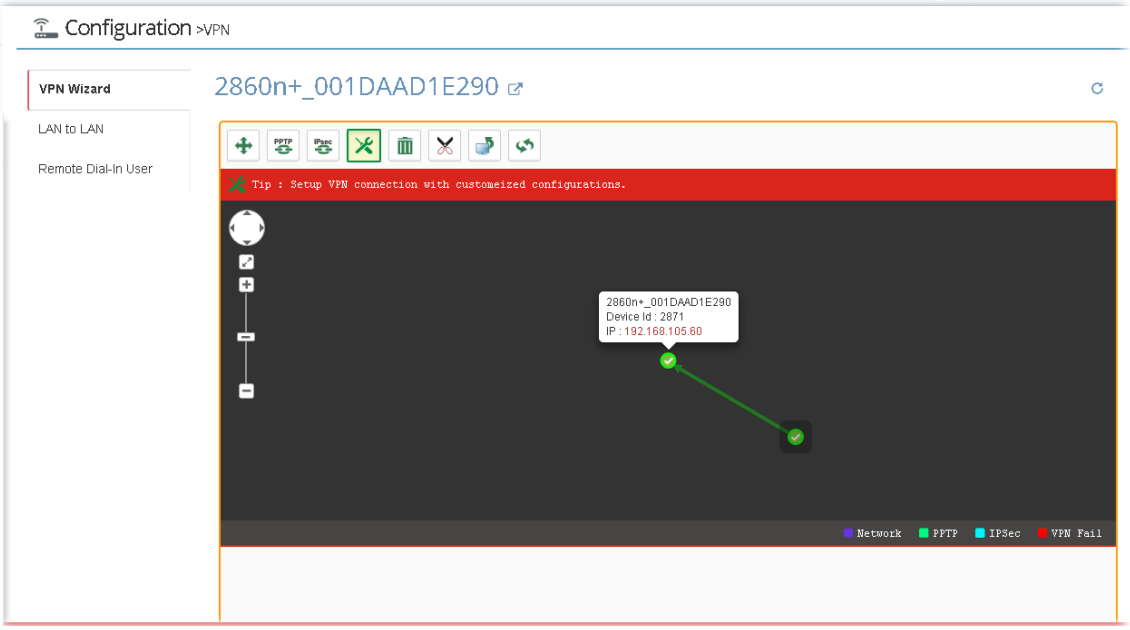
2. Press the **Advance** button, then choose the VPN client (e.g., Vigor2925) at the Network View.



3. Click the VPN client (Vigor2925) and drag it to the black area on the right side. Then release it.

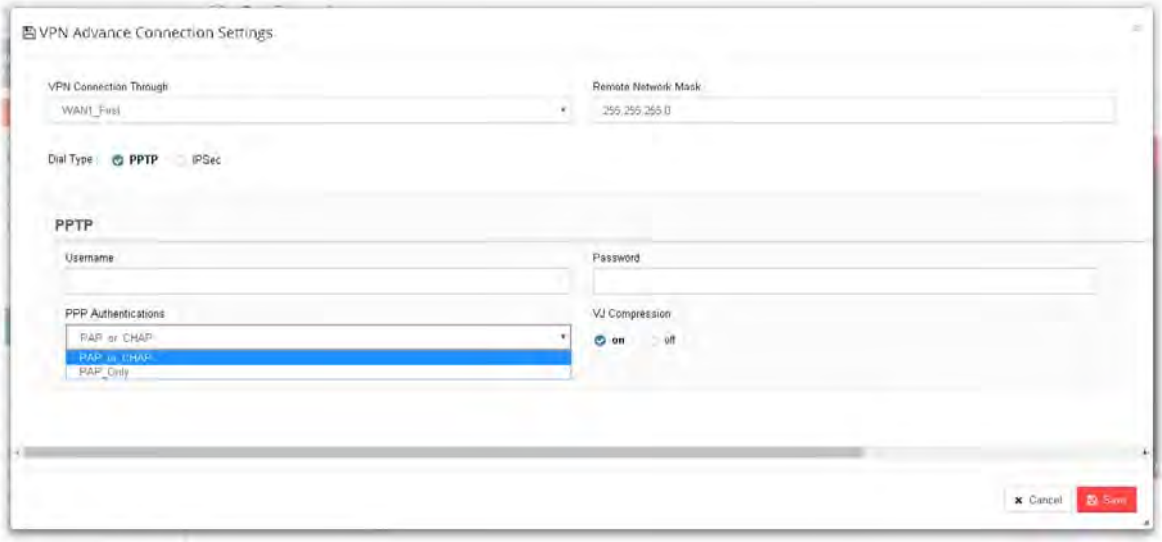


4. Press the VPN client icon (Vigor2925) and drag it to the VPN server icon (Vigor2860), release it when you see a yellow ring surrounding the VPN server icon.

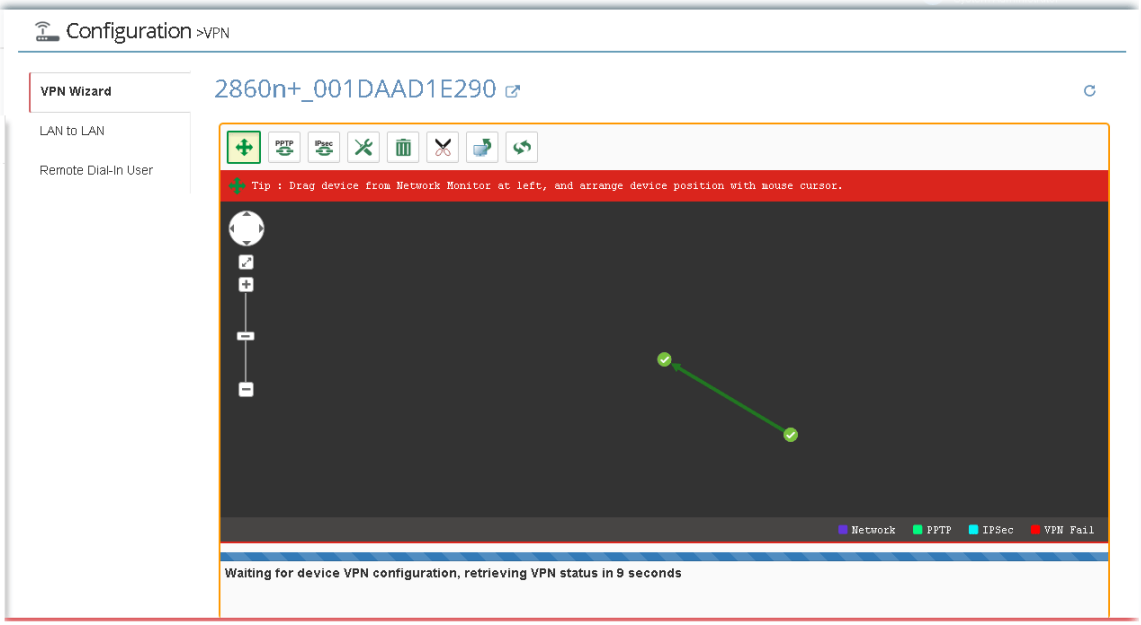


5. VigorACS 2 will pop-up a confirmation window, please click the **OK** button.

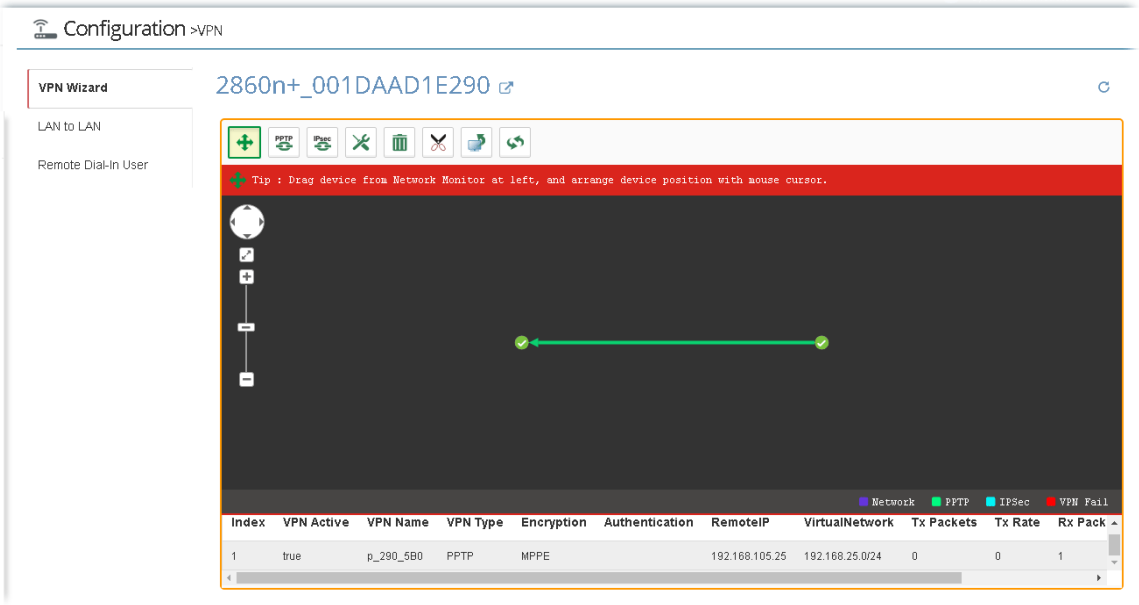
6. A dialog appears as follows. Please set the corresponding parameters and settings manually and click **Save**.



7. Wait for device VPN configuration.



8. There will be a green arrow from VPN client to VPN server, you could check the VPN tunnel status on the bottom of the VigorACS web as well.

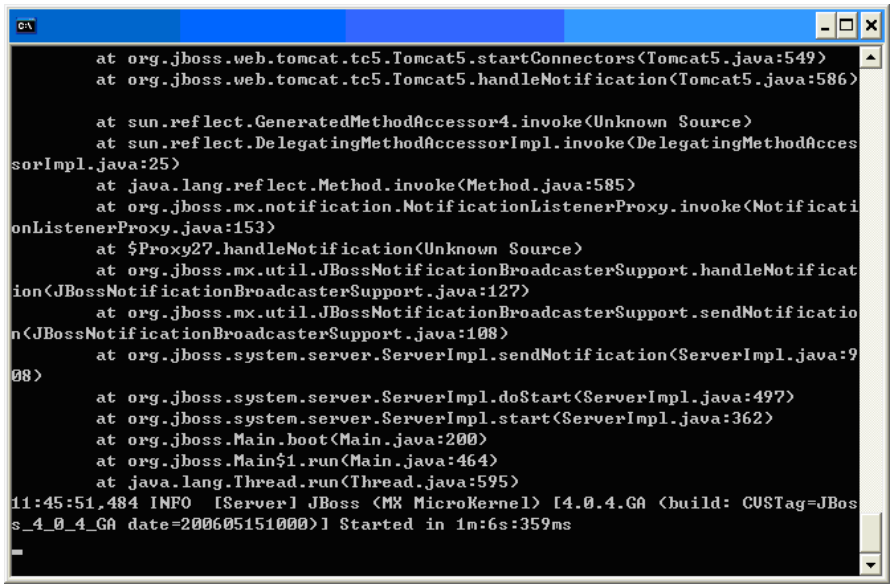


Chapter 14 Trouble Shooting

DrayTek VigorACS 2

This appendix will guide you to solve abnormal situations if you cannot access into the Internet after installing the router and finishing the web configuration. Please follow sections below to check your basic installation status stage by stage.

When you try to invoke VigorACS and get the following error message, please locate the file of "*server.log*" from **C:/Program Files/VigorACS 2/server/default/log** and send the file to your dealer for further assistance.



For Linux system, please locate the file of "*server.log*" from **/usr/local/vigoracs/VigorACS/server/default/log/** and send the file to your dealer for further assistance.

14.1 Contacting DrayTek

If the router still cannot work correctly after trying many efforts, please contact your dealer for further help right away. For any questions, please feel free to send e-mail to support@draytek.com.

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Chapter 15 Reference Information

15.1 For Linux System

Corresponding files on Linux system required for VigorACS will be stored in the following paths:

```
java: /usr/local/jdk1.5.0_07
mysql: /usr/local/mysql
vigoracs: /usr/local/vigoracs/VigorACS/

log: /usr/local/vigoracs/VigorACS/server/default/log/server.log
bind ip: /usr/local/vigoracs/VigorACS/bin/startway.txt
mysql data: /usr/local/mysql/data/tr069
start/stop vigoracs : /usr/local/vigoracs/VigorACS/bin/vigoracs.sh
```

To check the current process of VigorACS, please use the following commands to inquire

```
ps(vigoracs): ps -ef | grep "/usr/javase/bin/java -server" |grep -v grep
ps(mysql): ps -ef | grep safe_mysqld|grep -v grep
or
            ps -ef | grep mysqld_safe|grep -v grep
```

Some link files are required for VigorACS running under Linux system properly. If any one of them is missed, unexpected problems might be happened.

```
ln(java): /usr/javase >> /usr/local/jdk1.5.0_07/
ln(mysql): /usr/local/mysql >> /usr/local/mysql-5.1.41-linux-i686-glibc23
ln(mysql): /tmp/mysql.sock >> /var/lib/mysql/mysql.sock
```

15.2 For Windows XP System

Corresponding files on Windows XP system required for VigorACS will be stored in the following paths:

java: C:\Program Files\Java\jdk1.5.0_07
mysql: C:\mysql
vigoracs: C:\Program Files\VigorACS 2

log: C:\Program Files\VigorACS 2\server\default\log\server.log
license key: C:\Program Files\VigorACS 2 version\license.key
bind ip: C:\Program Files\VigorACS 2\bin\bindip.txt
mysql data: C:\mysql\data\tr069
start vigoracs : C:\Program Files\VigorACS 2\bin\StartVigorACS.bat
stop vigoracs : C:\Program Files\VigorACS 2\bin\ShutdownVigorACS.bat