

# DrayTek

## Vigor2960 Series

Dual-WAN Security Firewall



*Your reliable networking solutions partner*

# User's Guide

**V1.0**

# **Vigor2960**

## **Dual-WAN Security Firewall**

### **User's Guide**

**Version: 1.0**

**Firmware Version: V1.0.5\_RC7**

**(For future update, contact DrayTek)**

**Date: 30/07/2012**

## Copyright Information

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## Safety Instructions and Approval

### Safety Instructions

- Read the installation guide thoroughly before you set up the router.
- The router is a complicated electronic unit that may be repaired only by authorized and qualified personnel. Do not try to open or repair the router yourself.
- Do not place the router in a damp or humid place, e.g. a bathroom.
- The router should be used in a sheltered area, within a temperature range of +5 to +40 Celsius.
- Do not expose the router to direct sunlight or other heat sources. The housing and electronic components may be damaged by direct sunlight or heat sources.
- Do not deploy the cable for LAN connection outdoor to prevent electronic shock hazards.
- Keep the package out of reach of children.
- When you want to dispose of the router, please follow local regulations on conservation of the environment.

### Warranty

We warrant to the original end user (purchaser) that the router will be free from any defects in workmanship or materials for a period of two (2) years from the date of purchase from the dealer. Please keep your purchase receipt in a safe place as it serves as proof of date of purchase. During the warranty period, and upon proof of purchase, should the product have indications of failure due to faulty workmanship and/or materials, we will, at our discretion, repair or replace the defective products or components, without charge for either parts or labor, to whatever extent we deem necessary to restore the product to proper operating condition. Any replacement will consist of a new or re-manufactured functionally equivalent product of equal value, and will be offered solely at our discretion. This warranty will not apply if the product is modified, misused, tampered with, damaged by an act of God, or subjected to abnormal working conditions. The warranty does not cover the bundled or licensed software of other vendors. Defects which do not significantly affect the usability of the product will not be covered by the warranty. We reserve the right to revise the manual and online documentation and to make changes from time to time in the contents hereof without obligation to notify any person of such revision or changes.

### Be a Registered Owner

Web registration is preferred. You can register your Vigor router via <http://www.draytek.com>.

### Firmware & Tools Updates

Due to the continuous evolution of DrayTek technology, all routers will be regularly upgraded. Please consult the DrayTek web site for more information on newest firmware, tools and documents.

<http://www.draytek.com>

## European Community Declarations

Manufacturer: DrayTek Corp.  
Address: No. 26, Fu Shing Road, HuKou Township, HsinChu Industrial Park, Hsin-Chu County, Taiwan  
303  
Product: Vigor2960

DrayTek Corp. declares that Vigor2960 of routers are in compliance with the following essential requirements and other relevant provisions of EC, Directive 2004/108/EC.

The product conforms to the requirements of Electro-Magnetic Compatibility (EMC) Directive 2004/108/EC by complying with the requirements set forth in EN55022/Class A and EN55024/Class A.

The product conforms to the requirements of Low Voltage (LVD) Directive 2006/95/EC by complying with the requirements set forth in EN60950-1.

## Regulatory Information

### Federal Communication Commission Interference Statement

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

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

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

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

Please visit <http://www.draytek.com/user/AboutRegulatory.php>.



## Table of Contents

---

<b>Chapter 1: Preface .....</b>	<b>1</b>
1.1 Web Configuration Buttons Explanation .....	1
1.2 LED Indicators and Connectors .....	1
1.3 Hardware Installation.....	4
1.3.1 Network Connection .....	4
1.3.2 Wall-Mounted Installation .....	5
<hr/>	
<b>Chapter 2: Initial Configuration .....</b>	<b>7</b>
2.1 Changing Password .....	7
2.2 Quick Start Wizard.....	9
2.2.1 Step 1 – Specifying the WAN Profile .....	9
2.2.2 Step 2 - Configuring the Selected Protocol .....	10
2.3 Register Vigor Router.....	17
<hr/>	
<b>Chapter 3: Application and Tutorial.....</b>	<b>21</b>
3.1 How to Build SSL VPN with RDP Service in the Browser via Logging in Router's HTTPS Server? .....	21
3.2 How to Configure OSPF?.....	26
3.3 How to Configure LAN to LAN IPSec Tunnel between Vigor2960 and Other Router.....	32
<hr/>	
<b>Chapter 4: Advanced Configuration.....</b>	<b>35</b>
4.1 WAN .....	35
4.1.1 General Setup.....	36
4.1.2 Default Route.....	49
4.1.3 Load Balance.....	50
4.2 LAN .....	58
4.2.1 General Setup.....	58
4.2.2 IP Routing .....	73
4.2.3 Static Route .....	75
4.2.3 Switch .....	82
4.2.4 Bind IP to MAC .....	85
4.2.5 RIP Configuration .....	87
4.2.6 OSPF Configuration.....	89
4.3 NAT.....	91
4.3.1 Port Redirection .....	91
4.3.2 DMZ Host.....	95
4.3.3 Address Mapping.....	98
4.3.4 SIP ALG .....	101
4.4 Firewall .....	101
4.4.1 Filter Setup .....	102
4.4.2 DoS Defense .....	116
4.4.3 MAC Block .....	118
4.5 Objects Setting .....	120

4.5.1 IP Object .....	121
4.5.2 IP Group .....	124
4.5.3 Service Type Object .....	126
4.5.4 Service Type Group.....	128
4.5.5 Keyword Object .....	131
4.5.6 Keyword Group.....	133
4.5.7 File Extension Object.....	135
4.5.8 IM Object 138	
4.5.9 P2P Object.....	141
4.5.10 Protocol Object .....	143
4.5.11 Web Category Object .....	145
4.5.12 Time Object .....	150
4.5.13 Time Group.....	152
4.6 User Management.....	154
4.6.1 General Setup.....	154
4.6.2 User Profile.....	158
4.6.3 User Group .....	163
4.6.4 RADIUS .....	165
4.6.5 LDAP/Active Directory .....	166
4.7 Application .....	167
4.7.1 Dynamic DNS .....	167
4.7.2 GVRP .....	172
4.7.3 IGMP Proxy .....	173
4.7.4 UPnP .....	173
4.7.5 Wake on LAN.....	176
4.8 VPN and Remote Access.....	177
4.8.1 VPN Client Wizard .....	177
4.8.2 VPN Server Wizard.....	182
4.8.3 Remote Access Control.....	188
4.8.4 PPP General Setup .....	189
4.8.5 IPSec General Setup.....	191
4.8.6 VPN Profiles .....	192
4.8.7 VPN Trunk Management .....	204
4.8.8 Connection Management .....	210
4.9 Certificate Management .....	211
4.9.1 Local Certificate .....	212
4.9.2 Trusted CA Certificate .....	216
4.10 SSL VPN .....	217
4.10.1 SSL Web Proxy .....	217
4.10.2 SSL Application .....	219
4.10.3 Online User Status.....	224
4.11 Bandwidth Management.....	225
4.11.1 Incoming Class .....	225
4.11.2 Incoming Filter .....	229
4.11.3 Outgoing Class .....	232
4.11.4 Outgoing Filter .....	238
4.11.5 Sessions Limit.....	241
4.11.6 Bandwidth Limit .....	243
4.12 System Maintenance.....	246
4.12.1 TR-069 .....	246
4.12.2 Administrator Password.....	247
4.12.3 Configuration Backup .....	248
4.12.4 Syslog / Mail Alert.....	250

4.12.5 Time and Date .....	254
4.12.6 Access Control.....	255
4.12.7 SNMP Setup .....	256
4.12.8 Reboot System .....	257
4.12.9 Firmware Upgrade .....	258
4.13 Diagnostics.....	259
4.13.1 Routing Table .....	259
4.13.2 ARP Cache Table.....	262
4.13.3 DHCP Table.....	265
4.13.4 NAT Session Table.....	266
4.13.5 Traffic Graph.....	267
4.13.6 Web Console .....	269
4.13.7 Ping/Trace Route.....	269
4.13.8 Data Flow Monitor.....	270
4.14 External Devices .....	271
4.15 Product Registration.....	272

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## **Chapter 5: Trouble Shooting..... 273**

5.1 Checking If the Hardware Status Is OK or Not.....	273
5.2 Checking If the Network Connection Settings on Your Computer Is OK or Not .....	274
5.3 Pinging the Router from Your Computer .....	276
5.4 Checking If the ISP Settings are OK or Not .....	277
5.5 Backing to Factory Default Setting If Necessary.....	278
5.6 Contacting Your Dealer .....	279





# Chapter 1: Preface

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The Vigor2960 Series integrates a rich suite of functions, including NAT, firewall, VPN, load balance, and bandwidth management capability. These products are very suitable for providing multi-integrated solutions to SME markets.

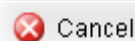
A Virtual Private Network (VPN) is an extension of a private network that encompasses links across shared or public networks like an Intranet. A VPN enables you to send data between two computers across a shared public Internet network in a manner that emulates the properties of a point-to-point private link. The DrayTek Vigor2960 Series VPN router supports Internet-industry standards technology to provide customers with open, interoperable VPN solutions such as X.509, DHCP over Internet Protocol Security (IPSec) up to 500 tunnels, and Point-to-Point Tunneling Protocol (PPTP).

## 1.1 Web Configuration Buttons Explanation

Several main buttons appeared on the web pages are defined as the following:



Save and apply current settings.



Cancel current settings and recover to the previous saved settings, or discard the settings configured in the page.



Go to next page.



Return to the previous page.



Complete the setting configuration.

**Note:** For the other buttons shown on the web pages, please refer to Chapter 4 for detailed explanation.

## 1.2 LED Indicators and Connectors

Before you use the Vigor router, please get acquainted with the LED indicators and connectors first. The displays of LED indicators and connectors for the routers are different slightly.

## Description for LED




LED	Status	Explanation
ACT (Activity)	Blinking	The router is powered on and running normally.
	Off	The router is powered off.
CSM	On	The profile(s) of CSM (Content Security Management) for IM/P2P, URL/Web Content Filter application can be enabled from <b>Firewall &gt;&gt;General Setup</b> . (Such profile must be established under <b>CSM</b> menu).
VPN	On	The VPN tunnel is active.
	Off	No VPN tunnel is active.
DoS	On	The DoS/DDoS function is active.
	Blinking	It will blink while deleting an attack.
WAN1/2	On	The WAN1 or WAN2 connection is ready.
	Blinking	It will blink while transmitting data.
QoS	On	The QoS function is active.
	Off	The QoS function is disabled.
USB1/2	On	The USB device is connected and ready for use.
	Blinking	The data is transmitting.

### LED on Connector

GigaWAN 1/2	Left LED (Green)	On	The port is connected.
		Off	The port is disconnected.
		Blinking	The data is transmitting.
GigaWAN 1/2	Right LED (Green)	On	The port is connected with 1000Mbps.
		Off	The port is connected with 10/100Mbps.
		Blinking	The data is transmitting.
GigaLAN 1/2/3/4	Left LED (Green)	On	The port is connected.
		Off	The port is disconnected.
		Blinking	The data is transmitting.
GigaLAN 1/2/3/4	Right LED (Green)	On	The port is connected with 1000Mbps.
		Off	The port is connected with 10/100Mbps.

## Connectors



Interface	Description
Factory Reset	Restore the default settings. Usage: Turn on the router (ACT LED is blinking). Press the hole and keep for more than 5 seconds. When you see the ACT LED begins to blink rapidly than usual, release the button. Then the router will restart with the factory default configuration.
GigaWAN 1/2	Connecters for remote networked devices.
GigaLAN 1/2/3/4	Connecters for local networked devices.
USB1/2	Connector for Mobile HDD, 3G Modem or printer.
	Connector for a power cord. ON/OFF - Power switch.

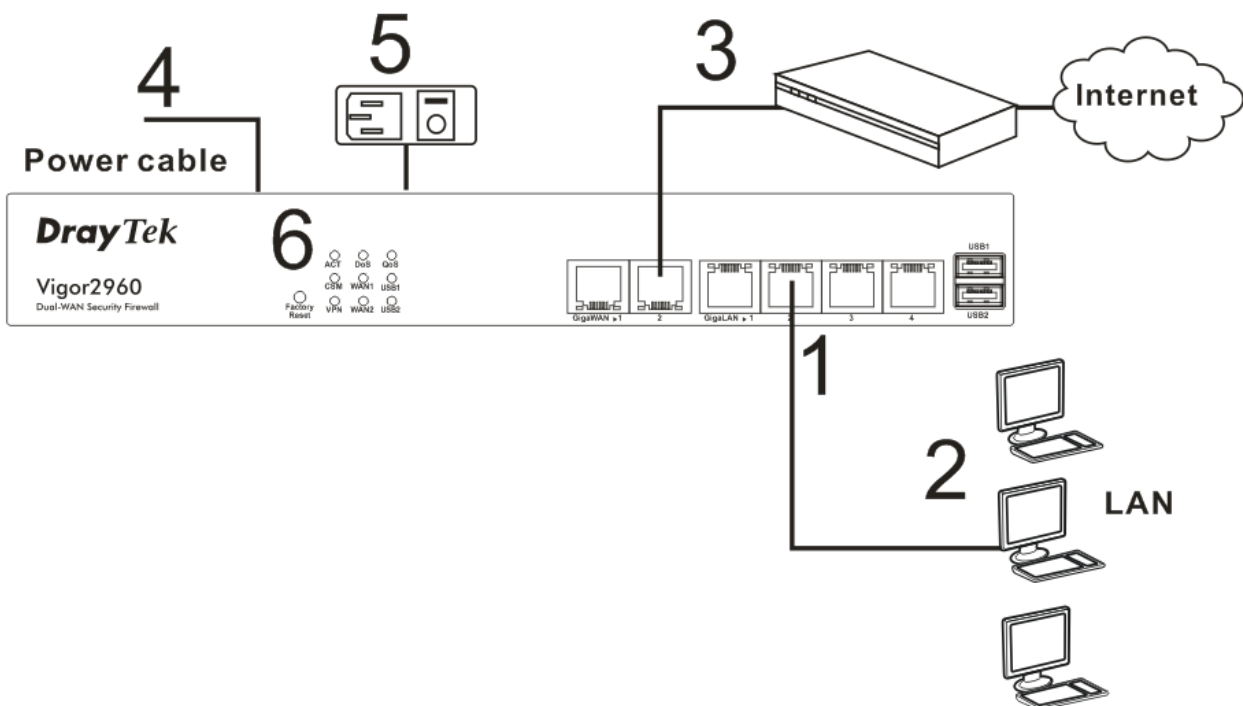
## 1.3 Hardware Installation

### 1.3.1 Network Connection

Before starting to configure the router, you have to connect your devices correctly.

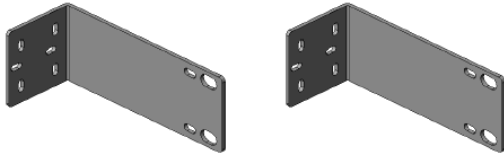
1. Connect one end of an Ethernet cable (RJ-45) to one of the **LAN** ports of Vigor2960s.
2. Connect the other end of the cable (RJ-45) to the Ethernet port on your computer (that device also can connect to other computers to form a small area network). The **LAN** LED for that port on the front panel will light up.
3. Connect the cable Modem/DSL Modem/Media Converter to any WAN port of router with Ethernet cable (RJ-45).
4. Connect the power cord to Vigor2960's power port on the rear panel, and the other side into a wall outlet.
5. Power on the device by pressing down the power switch on the rear panel. The **PWR** LED should be **ON**.
6. The system starts to initiate. After completing the system test, the **ACT** LED will light up and start blinking.

Below shows an outline of the hardware installation for your reference.

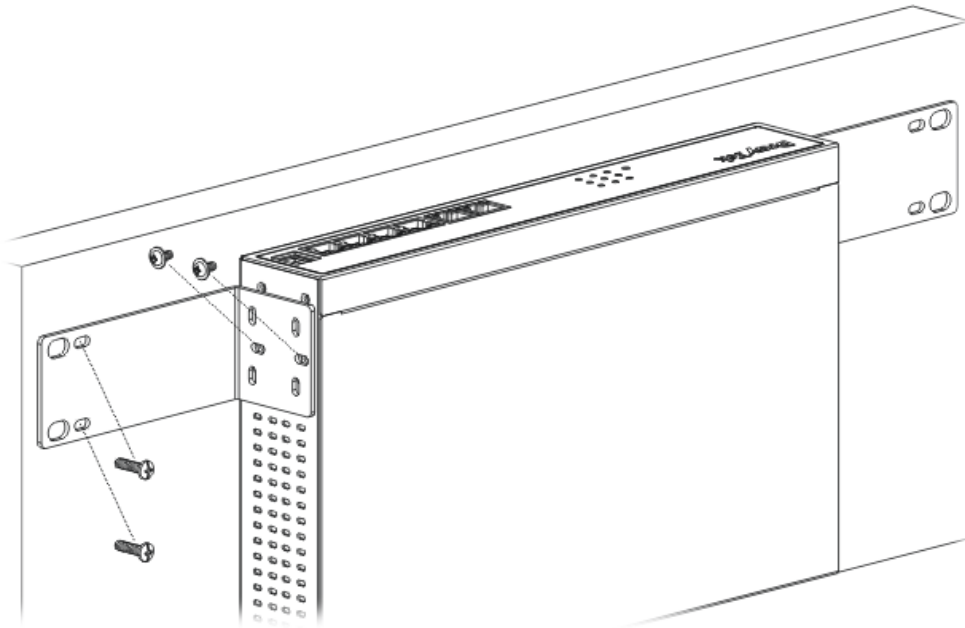


### 1.3.2 Wall-Mounted Installation

The Vigor2960 Series can be mounted on the wall by using standard brackets shown below.



Choose a flat surface (on the wall) which is suitable for placing the router. Make the screw holes on the short side of the bracket aim at the screw holes on the router. Next, fasten both the bracket and the router with two screws; and fasten both the wall and the bracket with another two screws. Refer to the following figure.



Then, continue to fasten the screws on the other side of the router and the wall with other screws.

When you finished about procedure, the router has been mounted on the wall firmly.

This page is left blank.

# Chapter 2: Initial Configuration

---

For use the router properly, it is necessary for you to change the password of web configuration for security and adjust primary basic settings.

This chapter explains how to setup a password for an administrator and how to adjust basic settings for accessing Internet successfully. Be aware that only the administrator can change the router configuration.

## 2.1 Changing Password

To change the password for this device, you have to access into the web browse with default password first.

1. Make sure your computer connects to the router correctly.



**Notice:** You may either simply set up your computer to get IP dynamically from the router or set up the IP address of the computer to be the same subnet as **the default IP address of Vigor router 192.168.1.1**. For the detailed information, please refer to the later section - Trouble Shooting of this guide.

2. Open a web browser on your PC and type **http://192.168.1.1**. A pop-up window will open to ask for username and password. Please type default values on the window for the first time accessing. The default value for user name is **admin** and the password is **admin**. Next, click **Login**.

**DrayTek** **Vigor2960 Series**

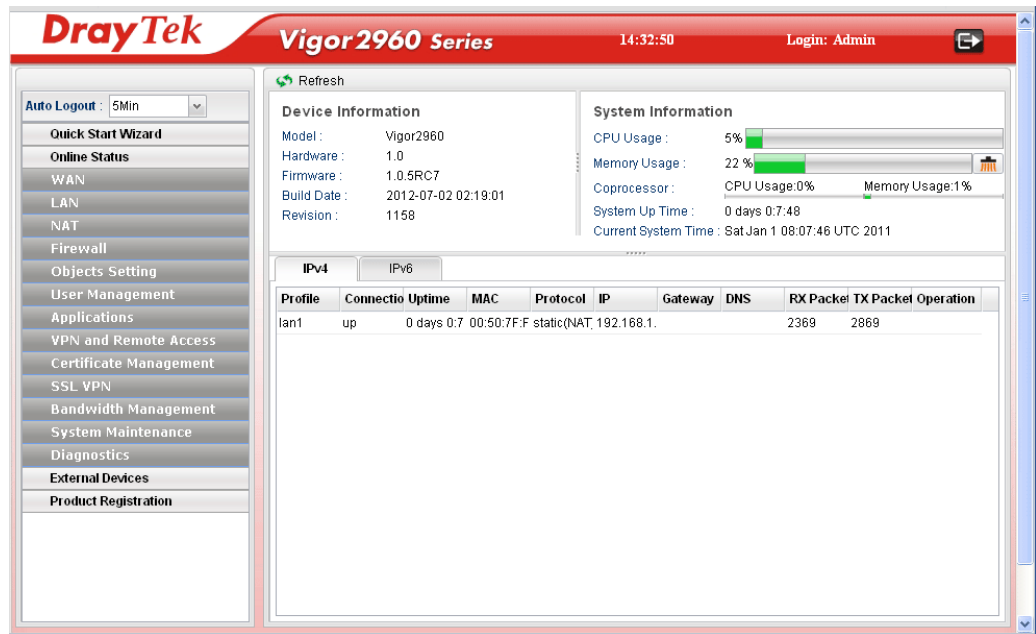
**Login**

User :

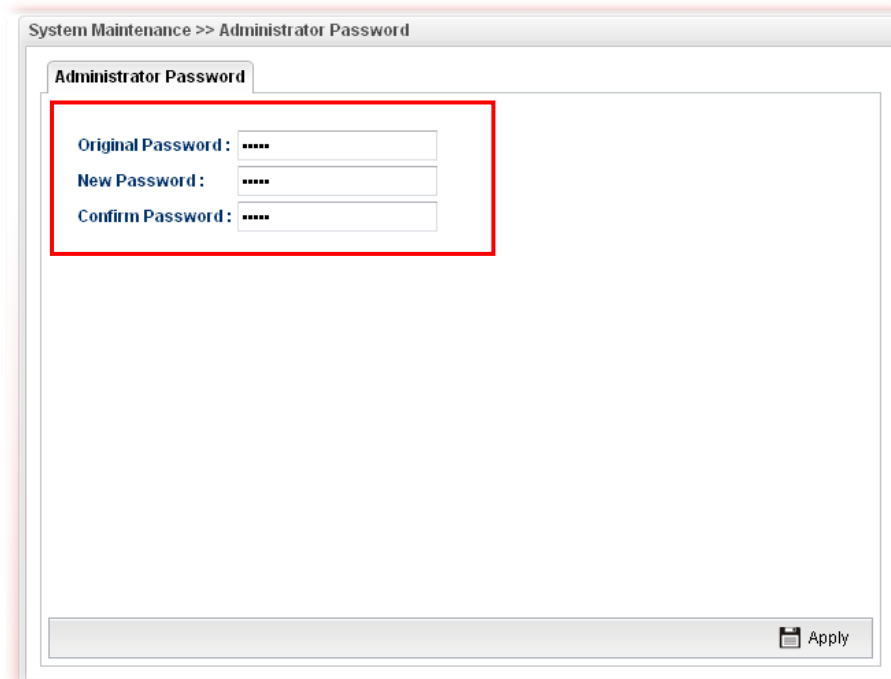
Password :

English

3. Now, the **Main Screen** will pop up.



4. Go to **System Maintenance** page and choose **Administrator Password**.



5. Enter the login password (admin, in default) on the field of **Original Password**. Type a new one in the field of **New Password** and retype it on the field of **Confirm Password**. Then click **Apply** to continue.
6. Now, the password has been changed. Next time, use the new password to access the Web Configurator for this router.



## 2.2 Quick Start Wizard

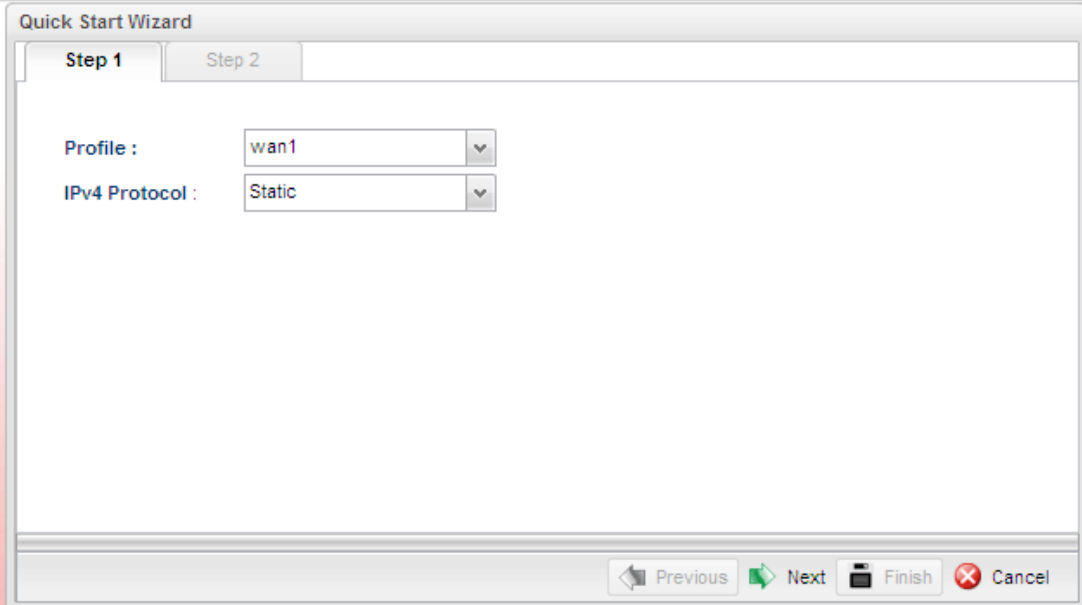
**Quick Start Wizard** is a wizard which is designed for configuring your router accessing Internet with simply steps. In the **Quick Start Wizard** group, you can configure the router to access the Internet with different modes such as Static, DHCP, PPPoE, or PPTP modes.

For most users, Internet access is the primary application. The router supports the Ethernet WAN interface for Internet access.

Click **Quick Start Wizard** from the home page. Quick Start Wizard will guide the user to establish LAN interface profile, WAN interface profile and select proper protocol for connection. The following will explain in more detail for the various broadband access configurations.


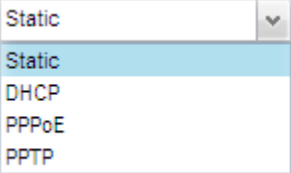
### 2.2.1 Step 1 – Specifying the WAN Profile

In the first page of Quick Start Wizard, please choose a WAN profile and specify IPv4 protocol.



The screenshot shows the 'Quick Start Wizard' window with 'Step 1' selected. It contains two dropdown menus: 'Profile' set to 'wan1' and 'IPv4 Protocol' set to 'Static'. At the bottom, there are navigation buttons: 'Previous', 'Next', 'Finish', and 'Cancel'.

Available parameters are listed as follows:

Item	Description
<b>Profile</b>	Use the drop down list to choose one of the WAN profiles for modifying. 
<b>IPv4 Protocol</b>	Use the drop down list to choose the type for the IPv4 protocol for such profile. 

When you finish the above settings, please click **Next** to go to next page.

## 2.2.2 Step 2 - Configuring the Selected Protocol

This page will be changed according to the **IPv4 Protocol Type** selected on last page.

Quick Start Wizard

Step 1 Step 2

IP Address : 0 . 0 . 0 . 0

Subnet Mask : 255.255.255.0

Gateway IP Address : . . .

+ Add Save

DNS Server IP Address

### If Static is selected

If **Static** is selected, the following screen will appear. You can manually assign a static IP address to the WAN interface and complete the configuration by applying the settings and rebooting your router. Please type in values for **Static IP address, Static Mask, Static Gateway and Static DNS** specified by your ISP, and then click **Next**.

Quick Start Wizard

Step 1 Step 2

IP Address : 0 . 0 . 0 . 0

Subnet Mask : 255.255.255.0

Gateway IP Address : . . . (Optional)

+ Add Save


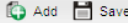




DNS Server IP Address

DNS Server IP Address : No items to show.

Previous Next Finish Cancel

Available parameters are listed as follows:

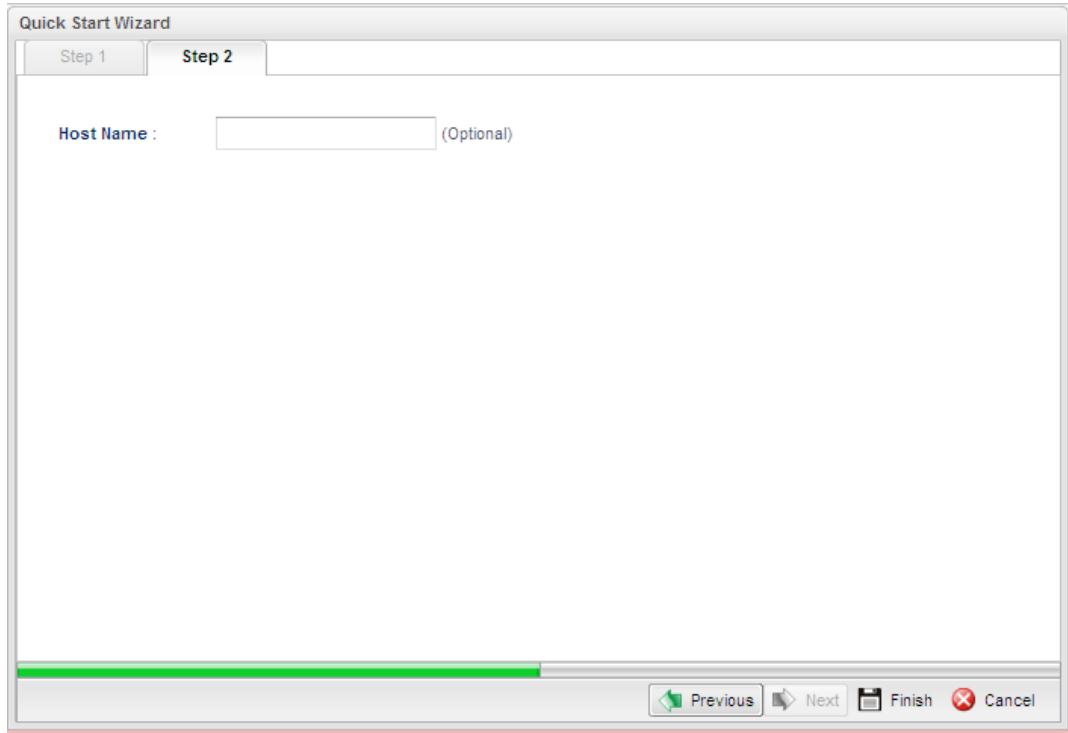
Item	Description
<b>IP Address</b>	Type a public IP address for such WAN profile.
<b>Subnet Mask</b>	Choose the static mask from the drop down list.

<b>Gateway IP Address</b>	<p>Type a public gateway address for such WAN profile.</p> <p> - click it to remove the IP address if you are not satisfied with it.</p>
<b>DNS Server IP Address</b>	<p><b>Add</b> – Click this button to display the IP address field for adding a new IP address. Type the IP address on the tiny boxes one by one.</p> <div style="border: 1px solid #ccc; padding: 5px; margin: 10px 0;">   <b>DNS Server IP Address</b>        DNS Server IP Address: 168 . 95 . 1 . 1  </div> <p><b>Save</b> – After finished the IP address configuration, click Save to save the setting onto the router.</p> <div style="border: 1px solid #ccc; padding: 5px; margin: 10px 0;">   <b>DNS Server IP Address</b>        168.95.1.1  </div> <p> – Click the icon to remove the selected entry.</p>
<b>Previous</b>	Click it to return to previous setting page.
<b>Finish</b>	Click it to finish the configuration.
<b>Cancel</b>	Click it to discard the settings configured in this page.

When you finished the above settings, please click **Finish**.

## If DHCP is selected

DHCP allows a user to obtain an IP address automatically from a DHCP server on the Internet. If you choose **DHCP** mode, the DHCP server of your ISP will assign a dynamic IP address for Vigor2960 automatically. It is not necessary for you to assign any setting. (Host Name is required for some ISPs).

The image shows a screenshot of a web-based configuration window titled "Quick Start Wizard". At the top, there are two tabs: "Step 1" and "Step 2", with "Step 2" being the active tab. Below the tabs, there is a label "Host Name:" followed by a text input field and the word "(Optional)" in parentheses. At the bottom of the window, there is a navigation bar with four buttons: "Previous" (with a left arrow), "Next" (with a right arrow), "Finish" (with a floppy disk icon), and "Cancel" (with a red X icon). A green progress bar is visible at the bottom of the main content area, indicating the current step.

Available parameters are listed as follows:

Item	Description
<b>Host Name (Optional)</b>	Type a name as the host name for identification.
<b>Previous</b>	Click it to return to previous setting page.
<b>Finish</b>	Click it to finish the configuration.
<b>Cancel</b>	Click it to discard the settings configured in this page.

When you finished the above settings, please click **Finish**.

## If PPPoE is selected

PPPoE stands for **Point-to-Point Protocol over Ethernet**. It relies on two widely accepted standards: PPP and Ethernet. It connects users through an Ethernet to the Internet with a common broadband medium, such as a single DSL line, wireless device or cable modem. All the users over the Ethernet can share a common connection.

PPPoE is used for most of DSL modem users. All local users can share one PPPoE connection for accessing the Internet. Your service provider will provide you information about user name, password, and authentication mode.

If your ISP provides you the **PPPoE** (Point-to-Point Protocol over Ethernet) connection, please select **PPPoE** for this router to get the following page. Enter the **username** and **password** provided by your ISP on the web page.

Available parameters are listed as follows:

Item	Description
<b>Username</b>	Type in the username provided by ISP in this field.
<b>Password</b>	Type in the password provided by ISP in this field.
<b>Previous</b>	Click it to return to previous setting page.
<b>Finish</b>	Click it to finish the configuration.
<b>Cancel</b>	Click it to discard the settings configured in this page.

When you finished the above settings, please click **Finish**.

## If PPTP is selected

This mode lets user get the IP group information by a DSL modem with PPTP service from ISP. Your service provider will give you user name, password, and authentication mode for a PPTP setting. Click **PPTP** as the protocol. Type in all the information that your ISP provides for this protocol.

If your ISP offers you **PPTP** (Point-to-Point Tunneling Protocol) mode, please select **PPTP** for this router. Next, enter the settings provided by your ISP on the web page.

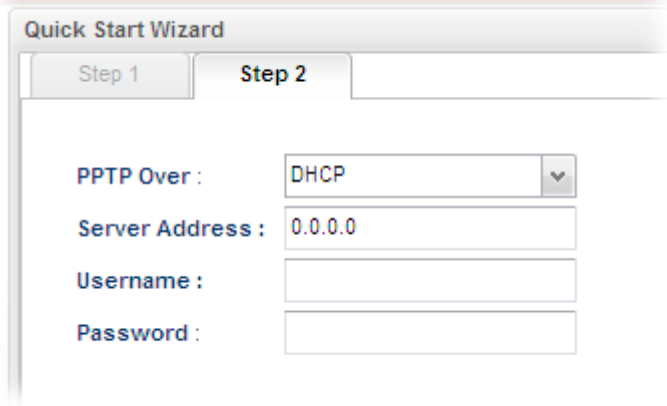

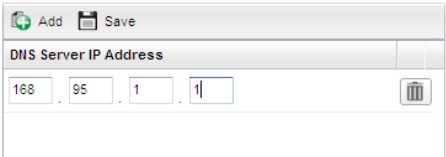
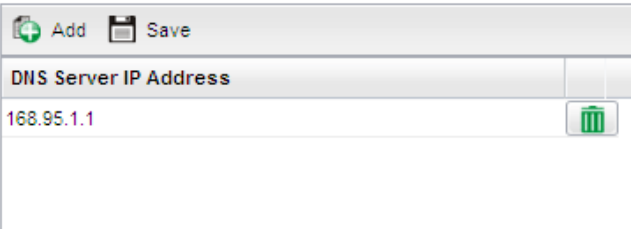

The screenshot shows the 'Quick Start Wizard' interface, specifically 'Step 2'. The configuration fields are as follows:

- PPTP Over:** A dropdown menu set to 'Static'.
- Server Address:** A text input field containing '0.0.0.0'.
- Username:** An empty text input field.
- Password:** An empty text input field.
- IP Address:** Four individual input boxes, each containing '0'.
- Subnet Mask:** A dropdown menu set to '255.255.255.0'.
- Gateway IP Address:** Four individual input boxes, each empty, followed by a router icon and the text '(Optional)'.
- DNS Server IP Address:** A table with one column and one row. The row contains the text 'No items to show.' Above the table are 'Add' and 'Save' buttons.

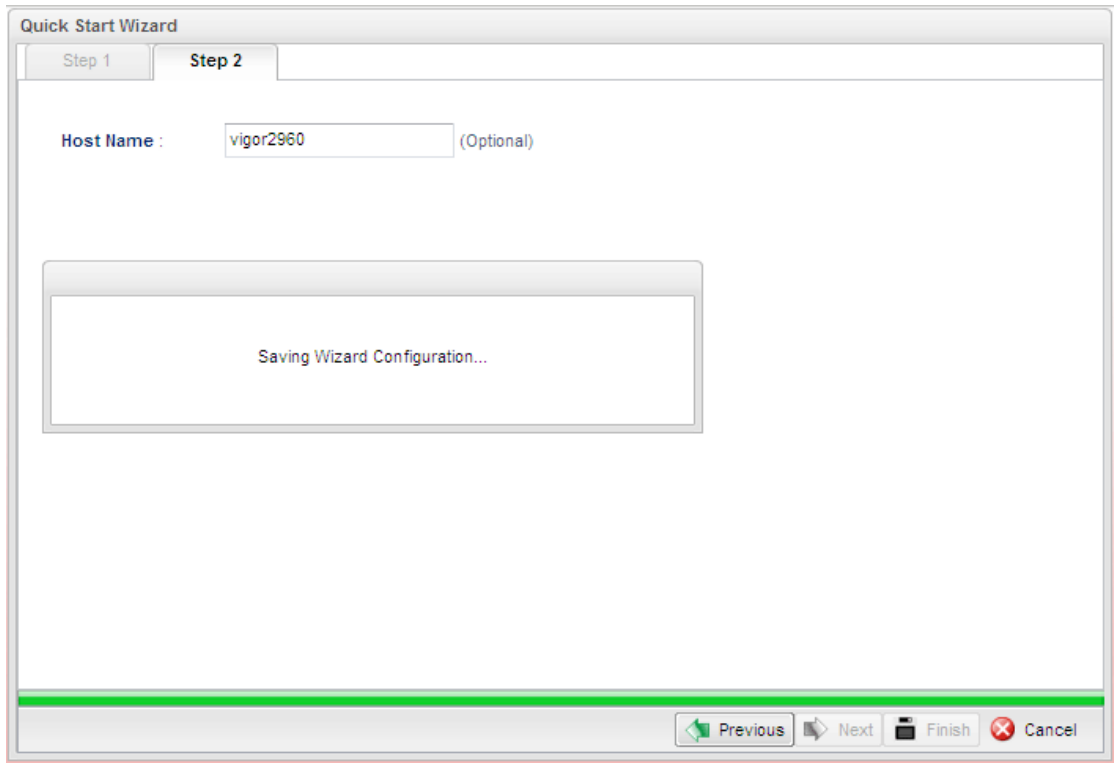
At the bottom of the wizard, there are navigation buttons: 'Previous', 'Next', 'Finish', and 'Cancel'.

Available parameters are listed as follows:

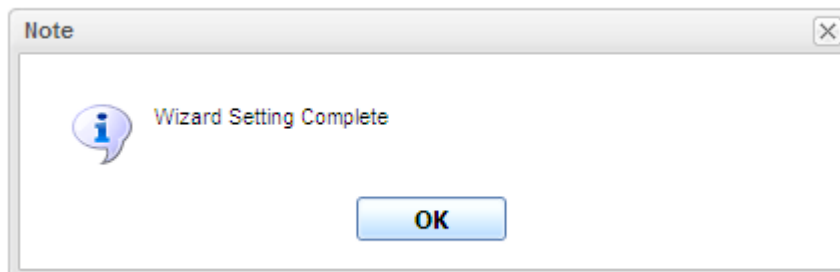
Item	Description
<b>PPTP Over</b>	<p>Usually ISP dynamically assigns IP address to you each time you connect to it and request. In some case, your ISP provides service to always assign you the same IP address whenever you request. In this case, you can fill in this IP address in the Fixed IP field. <b>Please contact your ISP before you want to use this function.</b></p> <div style="border: 1px solid gray; padding: 2px; width: fit-content;"> <p>Static</p> <p>Static</p> <p>DHCP</p> </div> <p><b>Static</b> – specify the IP address.  <b>DHCP</b> - obtain the IP address automatically.</p>

	
<b>Server Address</b>	Type a remote IP address of PPTP server.
<b>Username</b>	Type in the username provided by ISP in this field.
<b>Password</b>	Type in the password provided by ISP in this field.
<b>Previous</b>	Click it to return to previous setting page.
<b>IP Address</b>	Type a public IP address for such WAN profile.
<b>Subnet Mask</b>	Choose the static mask from the drop down list.
<b>Gateway IP Address</b>	Type a public gateway address for such WAN profile.  - click it to remove the IP address if you are not satisfied with it.
<b>DNS Server IP Address</b>	To add a new IP address, simply place the mouse cursor on this field. The following dialog will appear. <div style="text-align: center;">  </div> <p><b>Add</b> – Click this button to display the IP address field for adding a new IP address.</p> <p><b>Save</b> – After finished the IP address configuration, click Save to save the setting onto the router.</p> <div style="text-align: center;">  </div> <p> – Click the icon to remove the selected entry.</p>
<b>Previous</b>	Click it to return to previous setting page.
<b>Finish</b>	Click it to finish the configuration.
<b>Cancel</b>	Click it to discard the settings configured in this page.

When you finished the above settings, please click **Finish**. Later, you can surf the Internet at any time.



When the following screen appears, it means you have finished the Quick Start Wizard configuration.

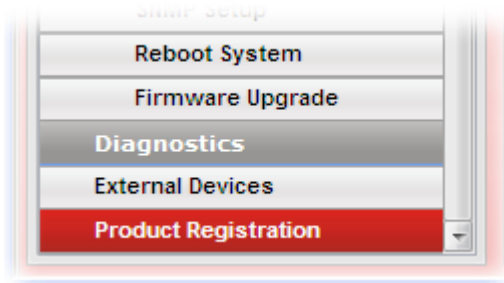




## 2.3 Register Vigor Router

Please follow the steps below to register the router.

- 1 Before using such function, please register your router online first. Log into the web configurator of Vigor2960 and click **Product Registration**.



- 2 A **Login** page will be shown on the screen. Please type the account and password that you created previously. And click **Login**.



Please take a moment to register.

Membership Registration entitles you to upgrade firmware for your purchased product and receive news about upcoming products and services!

LOGIN

UserName :

Password :

Auth Code :  

If you cannot read the word, [click here](#)

[Forgotten password?](#)

---

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

*Become the MyVigor member, you can receive the e-newsletter update.*

- 3 The following page will be displayed after you logging in MyVigor. From this page, please click **Add**.

**DrayTek** MyVigor

Home Search

**My Information**

Welcome, **james\_fae**  
 Last Login Time : 2011-08-24 09:39:13  
 Last Login From : 123.110.144.220  
 Current Login Time : 2011-08-24 23:01:15  
 Current Login From : 114.37.142.184

RowNo : 5 PageNo : 1 **Add**

**Your Device List**

Serial Number / Host ID	Device Name	Model	Note
<a href="#">104001703857</a>	Vigor2710	Vigor2710	-
<a href="#">200807100001</a>	VigorPro5300	VigorPro5300	-
<a href="#">200911030001</a>	ryan	VigorPro5300	-

**Note:** Below the field of **Your Device List**, all the Vigor routers that you have registered to MyVigor website will be displayed in sequence.

- 4 When the following page appears, please type in Nick Name (for the router) and choose the right registration date from the popup calendar (it appears when you click on the box of Registration Date). After adding the basic information for the router, please click **Submit**.

**DrayTek** MyVigor

Home Search GO

**My Product** Search for this site GO

**Registration Device**

Serial number : 2011082214320301

Nickname : \* **vigor2960**

Registration Date : \* 08-24-2011

Usage : - Select -

Product Rating : - Select - ( Your opinion so far )

No. of Employees : - Select - ( In total within your company )

Supplier : [ ] ( Where you bought it from )

Date of Purchase : [ ] ( mm-dd-yyyy )

Internet Connection : \*

Cable  ADSL  VDSL  Fiber  
 3G  WIMAX  LTE

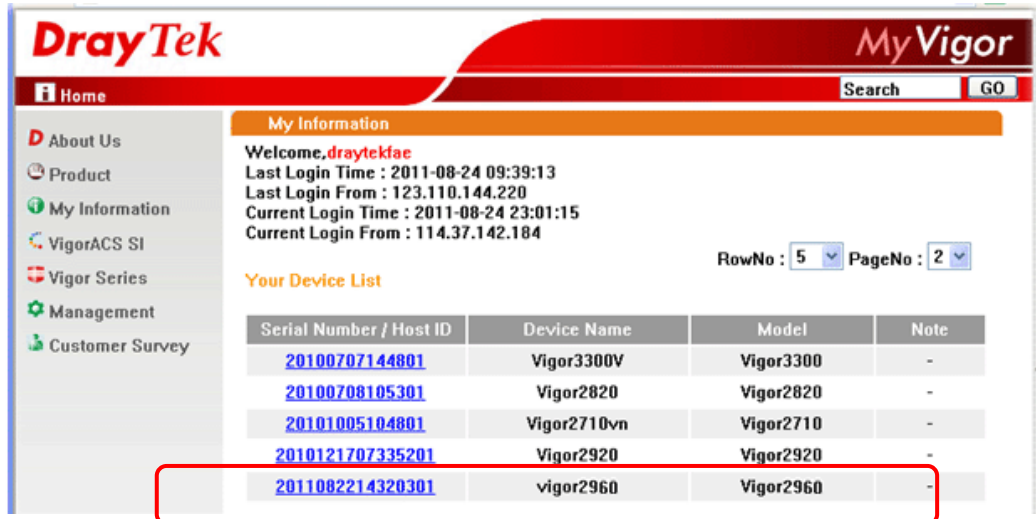
Cancel **Submit**

- 5 Now, your router information has been added to the database. Click **OK** to leave this web page and return to **My Information** web page.

Your device has been successfully added to the database.



- 6 Take a look at the page of My Information, the new added Vigor2960 is listed under **Your Device List**.



The screenshot shows the DrayTek MyVigor web interface. The top navigation bar includes the DrayTek logo, a search bar, and a "GO" button. A sidebar on the left contains menu items: Home, About Us, Product, My Information, VigorACS SI, Vigor Series, Management, and Customer Survey. The main content area is titled "My Information" and displays user details: "Welcome, draytekfae", "Last Login Time : 2011-08-24 09:39:13", "Last Login From : 123.110.144.220", "Current Login Time : 2011-08-24 23:01:15", and "Current Login From : 114.37.142.184". Below this is a "Your Device List" section with a table. The table has columns for "Serial Number / Host ID", "Device Name", "Model", and "Note". The last row of the table, representing the Vigor2960, is highlighted with a red border.

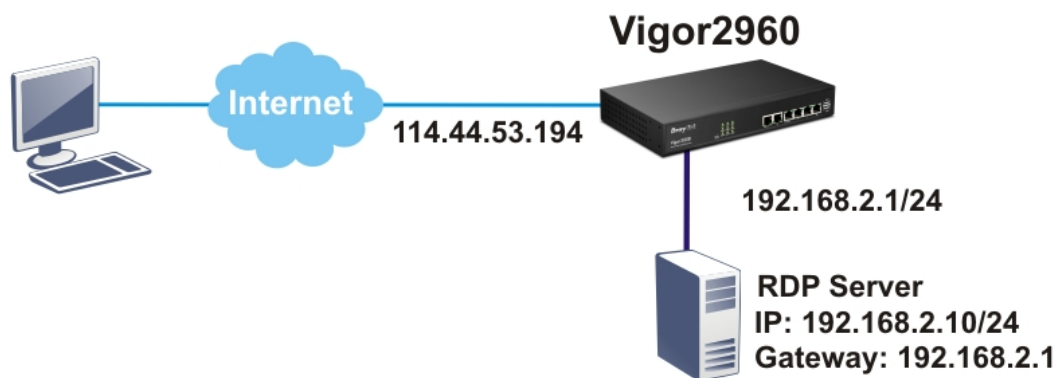
Serial Number / Host ID	Device Name	Model	Note
<a href="#">20100707144801</a>	Vigor3300V	Vigor3300	-
<a href="#">20100708105301</a>	Vigor2820	Vigor2820	-
<a href="#">20101005104801</a>	Vigor2710vn	Vigor2710	-
<a href="#">2010121707335201</a>	Vigor2920	Vigor2920	-
<a href="#">2011082214320301</a>	vigor2960	Vigor2960	-

This page is left blank.

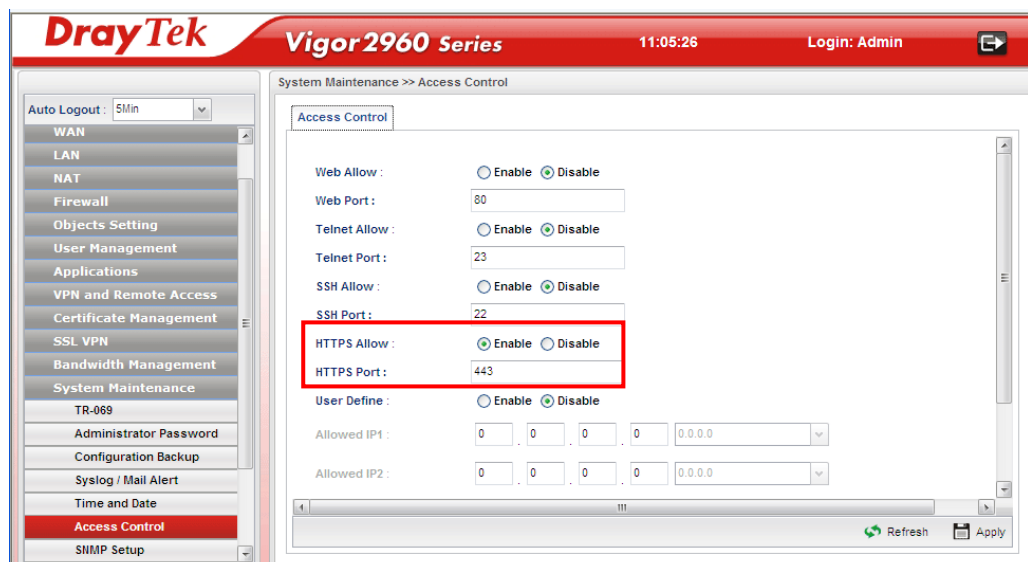
# Chapter 3: Application and Tutorial

## 3.1 How to Build SSL VPN with RDP Service in the Browser via Logging in Router's HTTPS Server?

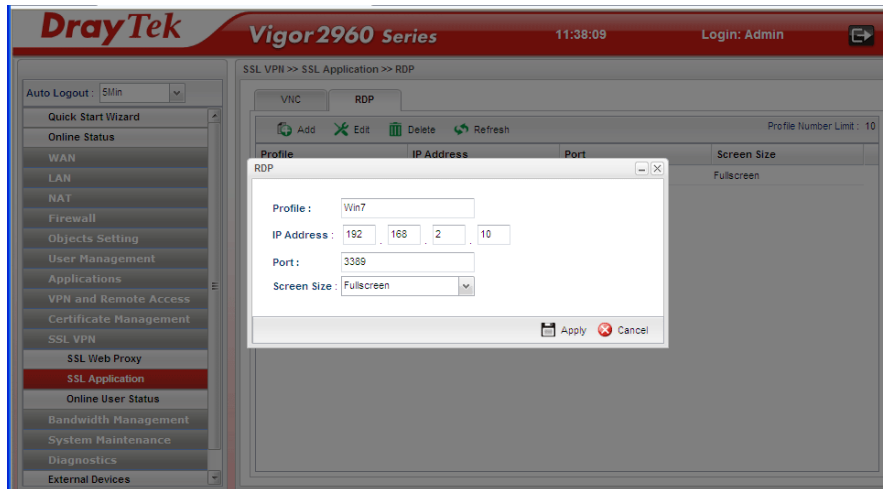
Remote Desktop Protocol (RDP) is a protocol designed for secure communications in networks using Microsoft Terminal Services. An easy way is provided to establish connection between the router and the RDP Server via any browser.



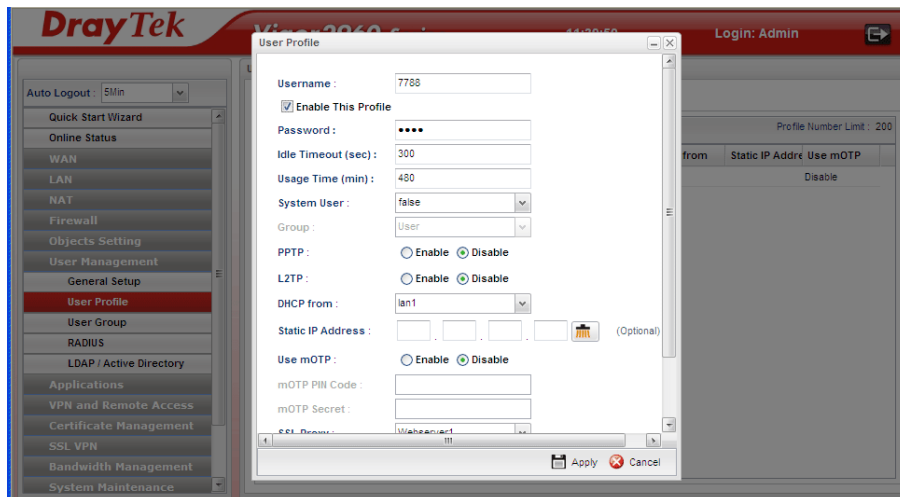
1. Open the web configurator of Vigor2960.
2. Enable the HTTPS service from **System Maintenance >> Access Control** by clicking **Enable** for **HTTPS Allow** and type **443** as the value of **HTTPS Port**.



- Open **SSL VPN >> SSL Application** and click the **RDP** tab to create a profile named “Win7”. Type IP address, Port number, and Screen Size based on the actual RDP server information, then click **Apply** to save the settings.



- Open **User Management >> User Profile** to create a new profile named “7788”. Set the **Password** as 7788 and choose the profile of **Win7** as **SSL Application (RDP)**. Click **Apply**.



- Logout Vigor2960.
- Login Vigor2960 HTTPS Server with 7788 for both Username and Password.



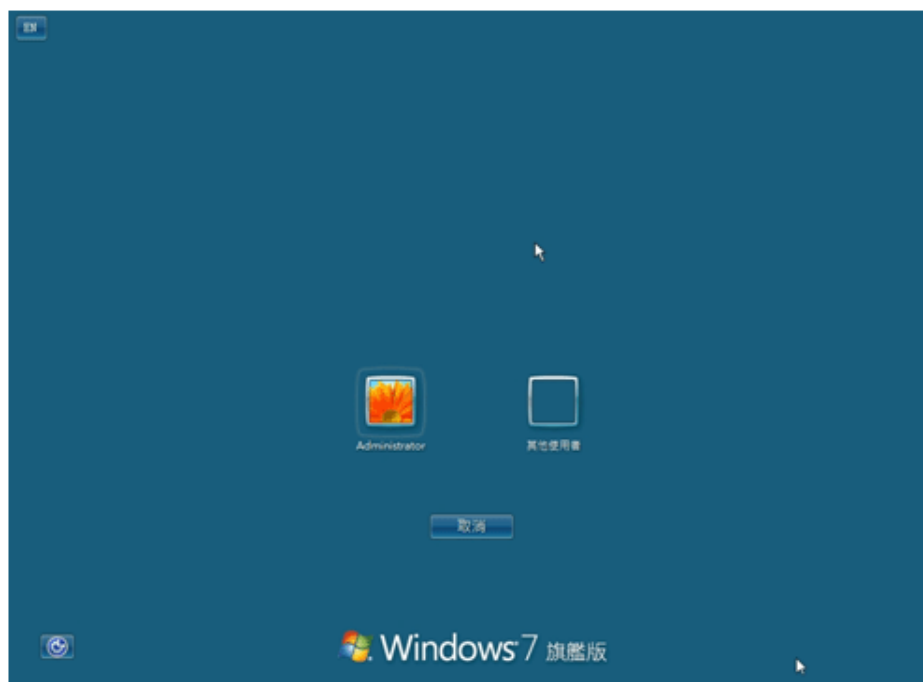
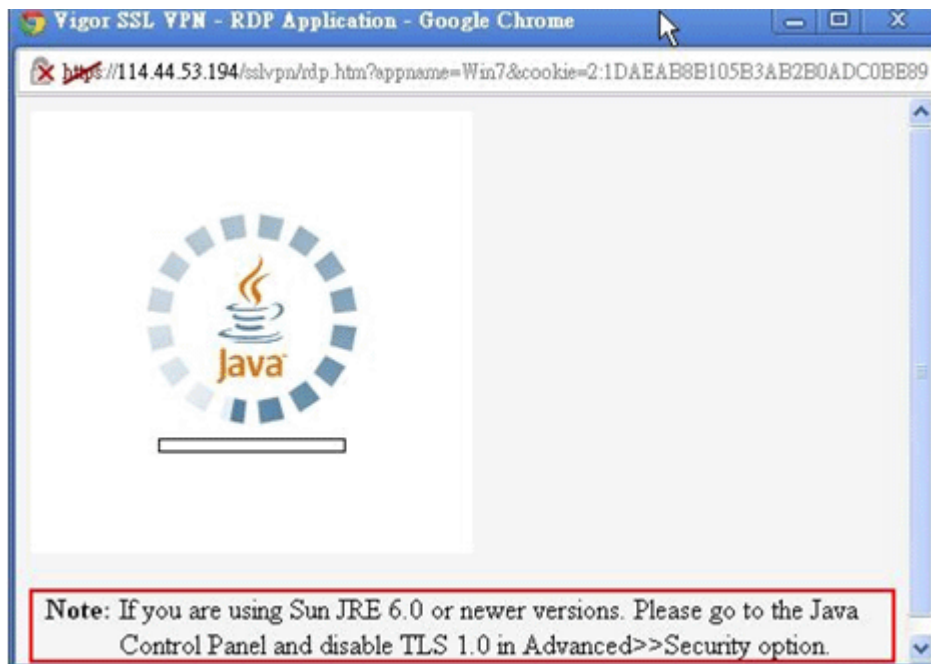
7. A screen like the following figure will appear. Simply click the **SSL Application** link.



8. In the following screen, click **Connect** for connecting to Win7, the RDP server.



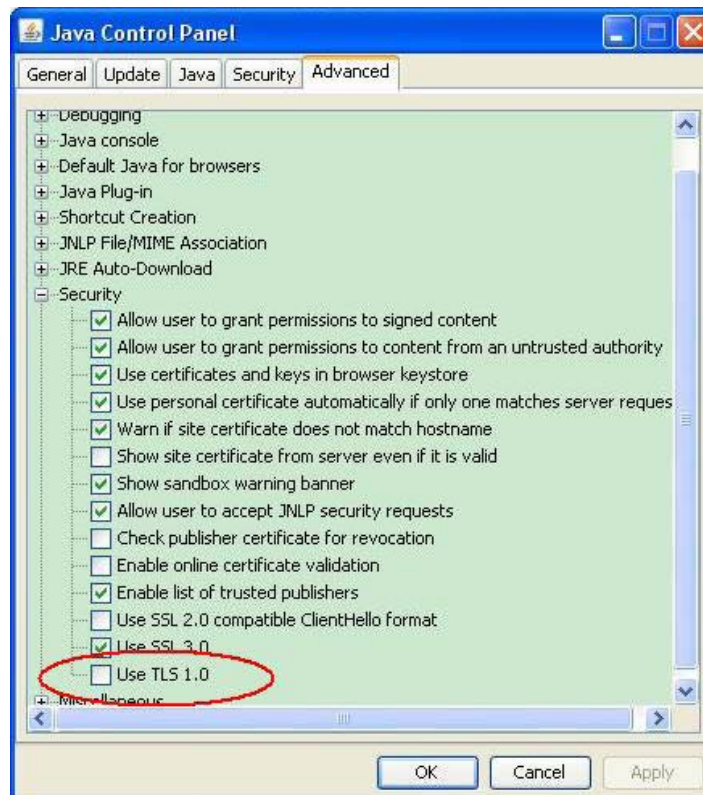
9. After that, you can access into Windows 7 via a browser. Note the message below the window. In which, TLS means Transport Layer Security.





## Troubleshooting

If you have installed Java Runtime Environment edition 6 but still cannot establish the connection, please make sure you have disabled “Use TLS 1.0” in the **Java Control Panel** as figure shown below. Then, try to connect again.



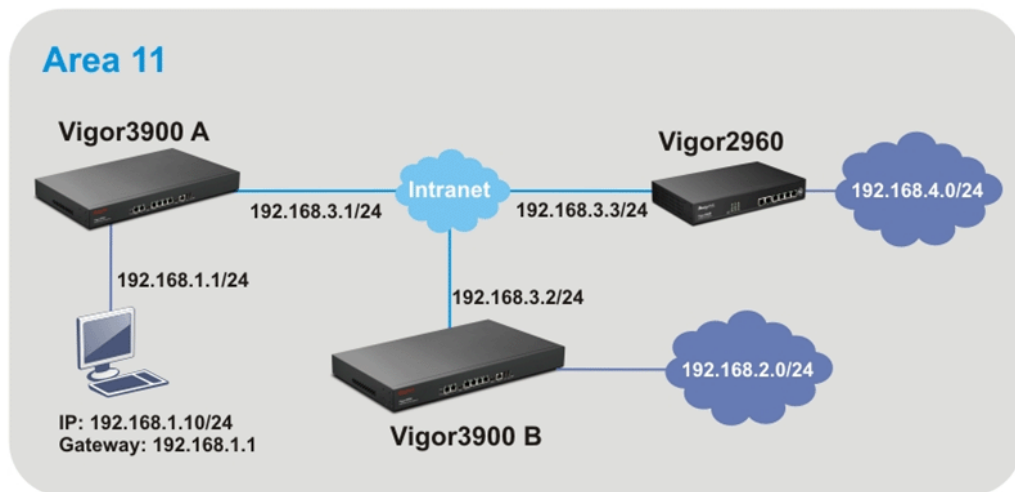
### 3.2 How to Configure OSPF?

OSPF (Open Shortest Path First) uses the algorithm of SPF (Shortest Path First) to calculate the route metric. It is suitable for large network and complicated data exchange. Both Vigor2960 and Vigor3900 support up to OSPF version 2(only for IPv4).

The autonomous system (AS) used in OSPF indicates the largest entity and can be divided into several **areas**. Usually, Area 0 will be used as OSPF backbone which distributing the routing information among areas.

When you need faster convergence than distance vector, want to support much larger networks or want to have less susceptible to bad routing information, you can enable OSPF feature to fit your request. Note that both routers must support OSPF function at the same time to build the OSPF connection.

In the following example, a PC can go 192.168.2.0/24 and 192.168.4.0/24 without setting any Static Route. Refer to the OSPF topology diagram listed below.

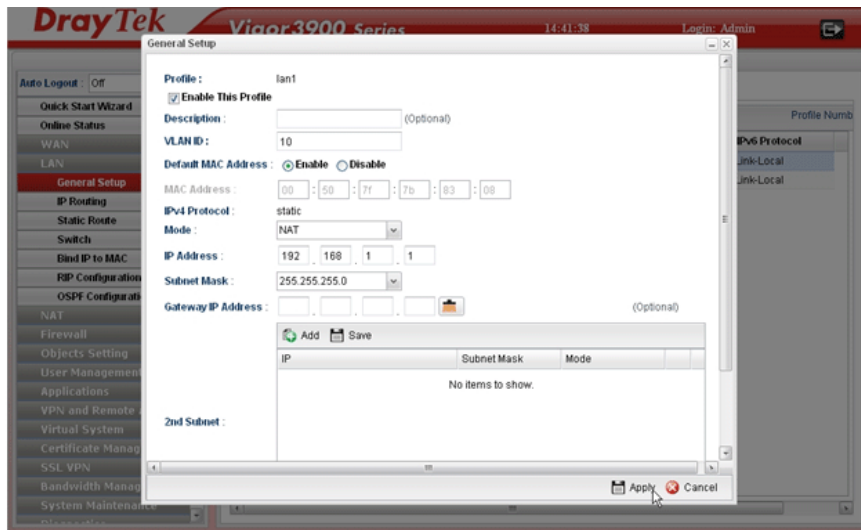


OSPF can place each router (e.g., Vigor3900A, Vigor3900B and Vigor2960 shown above) at the root of a tree and calculate the shortest path to each destination according to the cumulative cost to reach the destination.

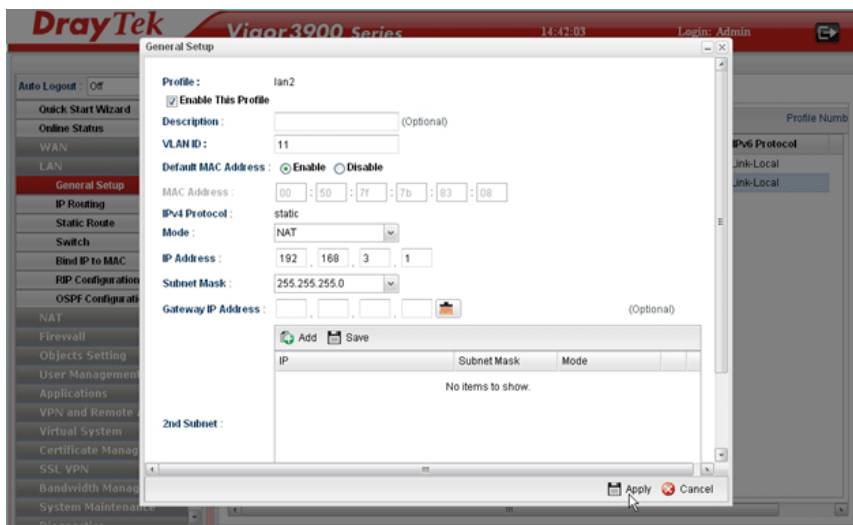
Each router has its own view of the topology and calculates its own SPF tree, even though all the routers build a shortest-path tree using the same link-state database.

## Configuration for Vigor3900 A,

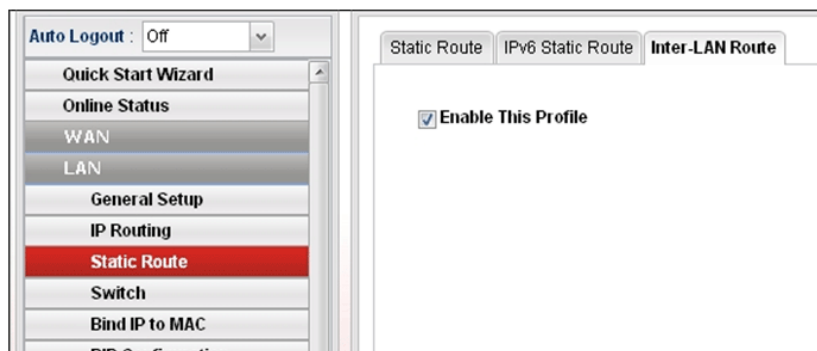
1. Open LAN >> **General Setup** to create a LAN (192.168.1.1/24) profile named lan1 with the settings shown below.



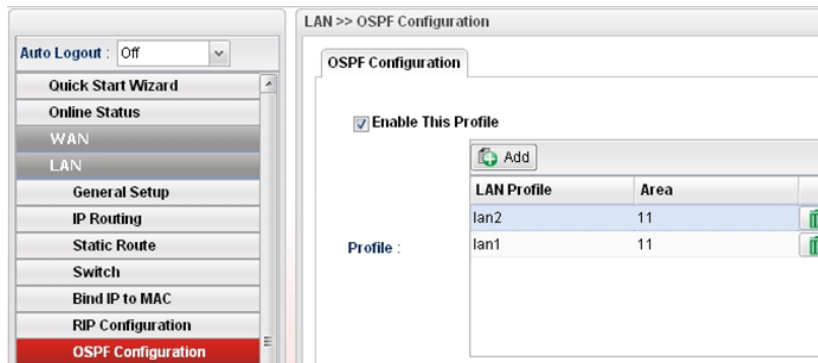
2. Next, continue to create a LAN (192.168.3.1/24) profile named lan2 with the settings shown below.



3. Open LAN >> **Static Route Setup** and click the **Inter-LAN Route** tab to enable this profile.

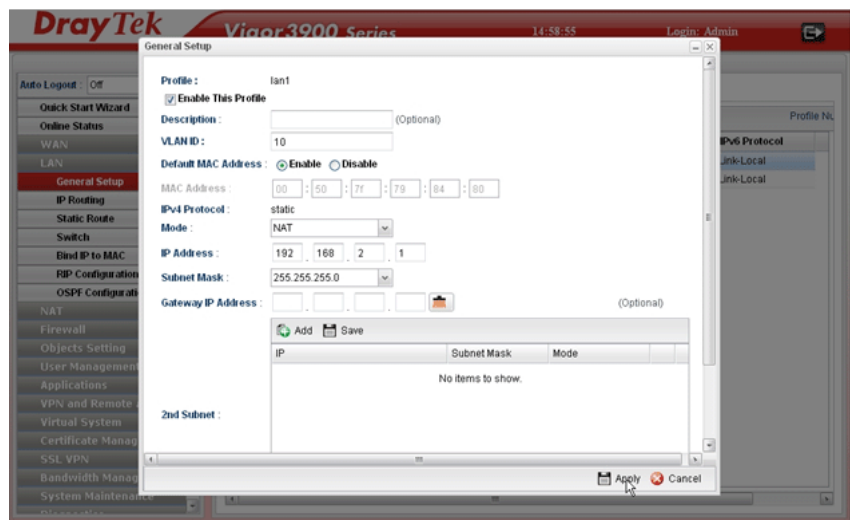


- Open LAN >> **OSPF Configuration** to enable this profile. Click **Add** to make the LAN Profiles lan2 area setting as 11 and lan1 area as 11. (As shown in the topology diagram.)

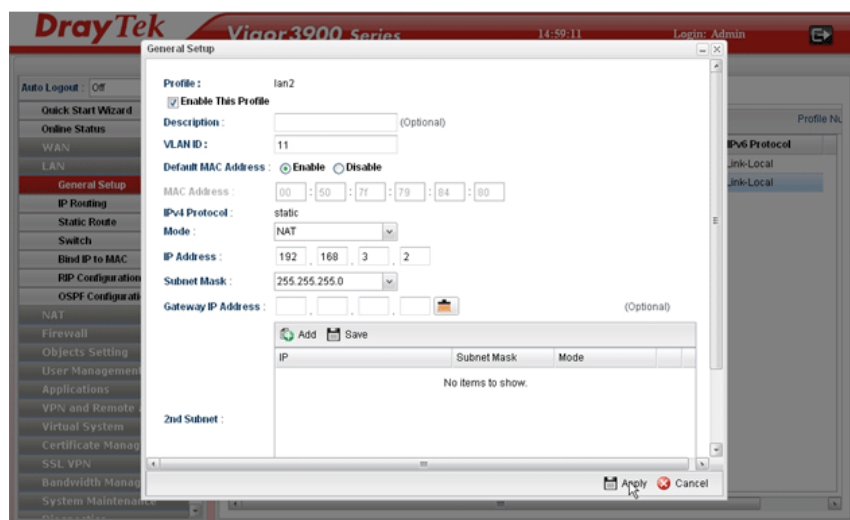


### Configuration for Vigor3900 B,

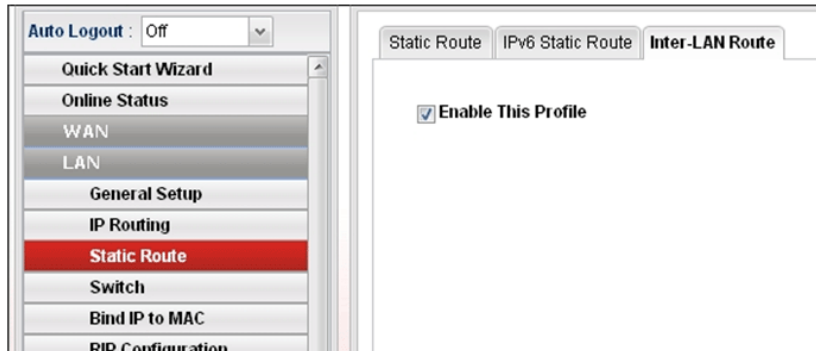
- Open LAN >> **General Setup** to create a LAN (192.168.2.1/24) profile named lan1 with the settings shown below.



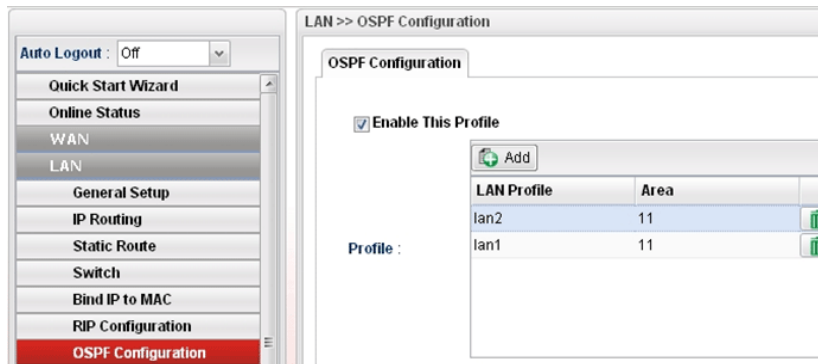
- Next, continue to create a LAN (192.168.3.2/24) profile named lan2 with the settings shown below.



- Open LAN >> **Static Route Setup** and click the **Inter-LAN Route** tab to enable this profile.

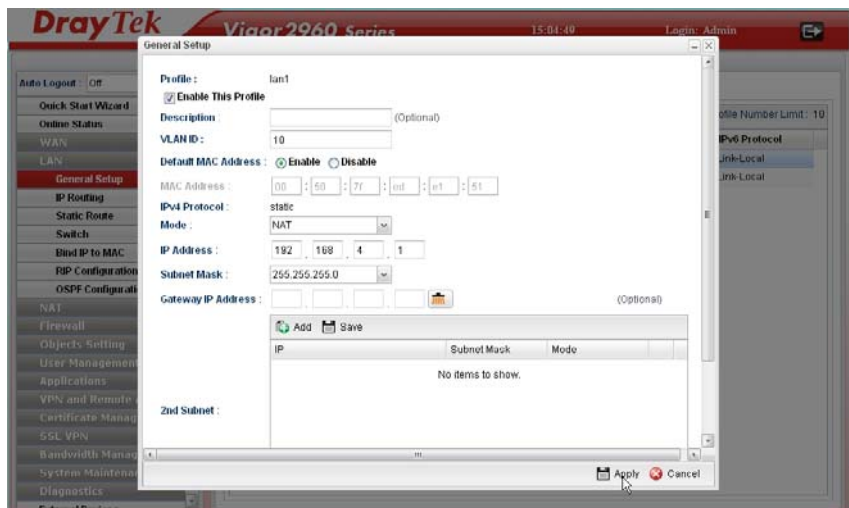


- Open LAN >> **OSPF Configuration** to enable this profile. Click **Add** to make the LAN Profiles lan2 area setting as 11 and lan1 area as 11. (As shown in the topology diagram.)

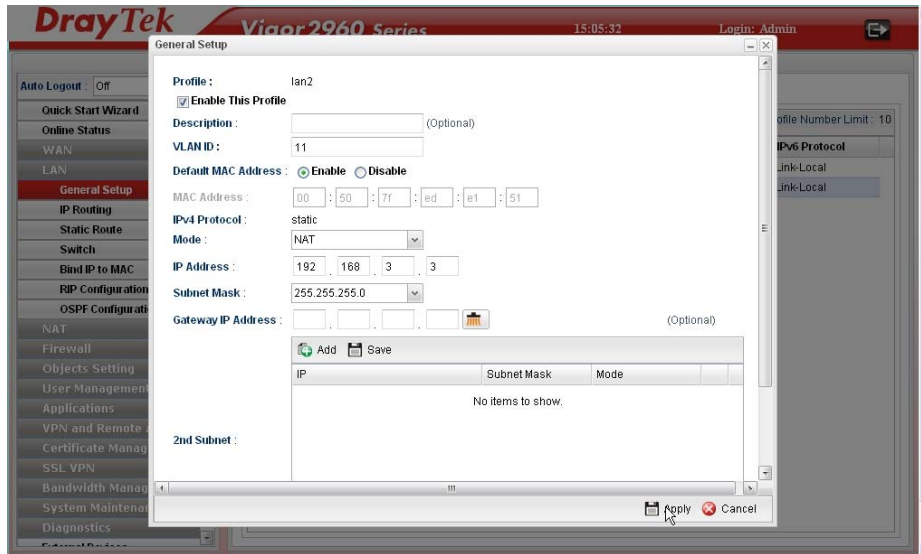


## Configuration for Vigor2960,

- Open LAN >> **General Setup** to create a LAN (192.168.4.1/24) profile named lan1 with the settings shown below.



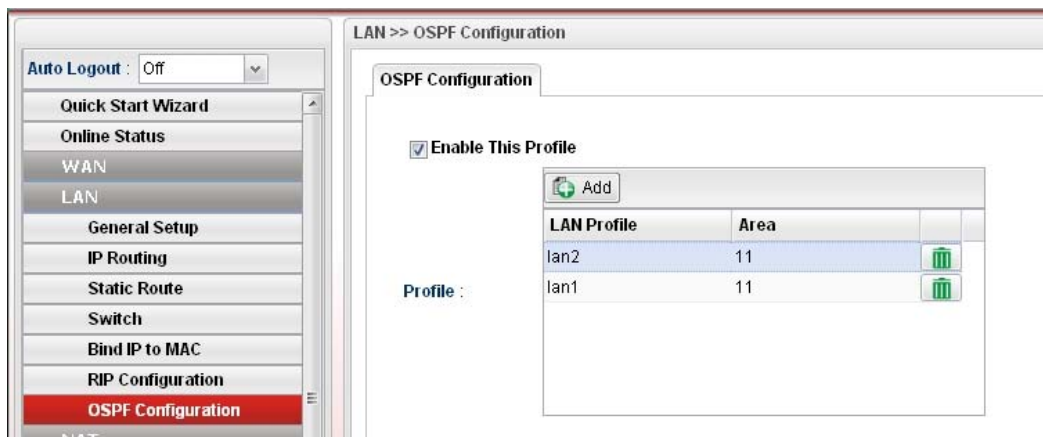
- Next, continue to create a LAN (192.168.3.3/24) profile named lan2 with the settings shown below.



- Open LAN >> **Static Route Setup** and click the **Inter-LAN Route** tab to enable this profile.



- Open LAN >> **OSPF Configuration** to enable this profile. Click **Add** to make the LAN Profiles lan2 area setting as 11 and lan1 area as 11. (As shown in the topology diagram.)



- After setting, check the routing information (marked with red line) which is created by OSPF.

### Routing information for Vigor3900 A

Diagnostics >> Routing Table >> Routing Table

Routing Table IPv6 Routing Table

Refresh

Destination	Gateway	Genmask	Flags	Metric	Iface
192.168.4.0	192.168.3.3	255.255.255.0	UG	20	lan-lan2
192.168.3.0	0.0.0.0	255.255.255.0	U	0	lan-lan2
192.168.2.0	192.168.3.2	255.255.255.0	UG	20	lan-lan2
192.168.1.0	0.0.0.0	255.255.255.0	U	0	lan-lan1

### Routing information for Vigor3900 B

Diagnostics >> Routing Table >> Routing Table

Routing Table IPv6 Routing Table

Refresh

Destination	Gateway	Genmask	Flags	Metric	Iface
192.168.4.0	192.168.3.3	255.255.255.0	UG	20	lan-lan2
192.168.3.0	0.0.0.0	255.255.255.0	U	0	lan-lan2
192.168.2.0	0.0.0.0	255.255.255.0	U	0	lan-lan1
192.168.1.0	192.168.3.1	255.255.255.0	UG	20	lan-lan2

### Routing information for Vigor2960

Diagnostics >> Routing Table >> Routing Table

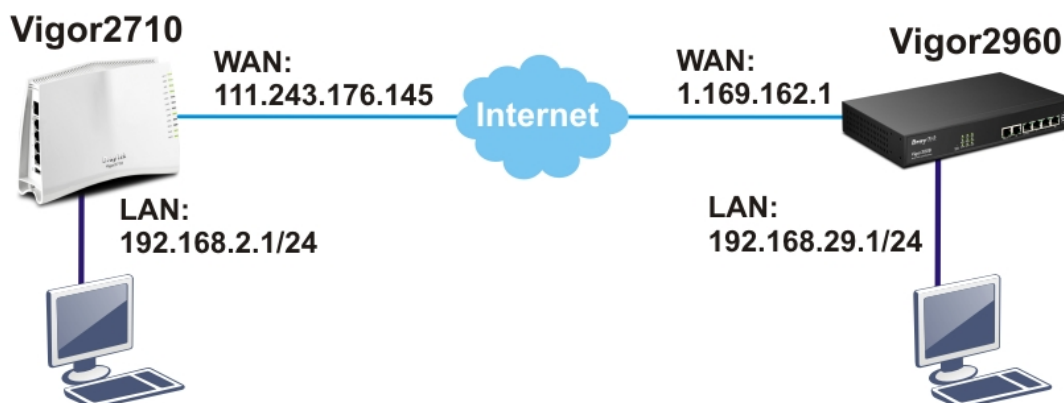
Routing Table IPv6 Routing Table

Refresh

Destination	Gateway	Genmask	Flags	Metric	Iface
192.168.4.0	0.0.0.0	255.255.255.0	U	0	lan-lan1
192.168.3.0	0.0.0.0	255.255.255.0	U	0	lan-lan2
192.168.2.0	192.168.3.2	255.255.255.0	UG	20	lan-lan2
192.168.1.0	192.168.3.1	255.255.255.0	UG	20	lan-lan2

### 3.3 How to Configure LAN to LAN IPSec Tunnel between Vigor2960 and Other Router

Here provides an example about LAN to LAN IPSec tunnel established between Vigor2960 and Vigor2710.



#### Configuring Vigor2960

1. Access into the web configurator of Vigor2960 and open **VPN and Remote Access >> LAN to LAN Profiles** to add a new VPN configuration.

The screenshot shows the 'IPSec' configuration window in the Vigor2960 web configurator. The window has a title bar with 'IPSec' and standard window controls. The 'Profile' is set to '2710'. The 'Enable This Profile' checkbox is checked. The 'Type' is set to 'IPSec', with 'PPTP Dial-Out' and 'PPTP Dial-In' options also visible. There is a button labeled 'Set PPTP Dial-In For User Profile'. Below this are tabs for 'Basic', 'Advanced', 'GRE', 'Proposal', and 'PPTP', with 'Basic' selected. The 'Basic' tab contains the following fields:

- Auth Type: PSK (dropdown)
- Preshared Key: ... (text field)
- Security Protocol: ESP (dropdown)
- WAN Profile: wan1 (dropdown)
- Local IP / Subnet Mask: 192.168.29.0 (IP address) and 255.255.255.0 (subnet mask)
- Local Next Hop: 0.0.0.0 (IP address)
- Remote Host: 111.243.176.145 (IP address)
- Remote IP / Subnet Mask: 192.168.2.0 (IP address) and 255.255.255.0 (subnet mask)

At the bottom right, there are 'Apply' and 'Cancel' buttons.

Type the Pre-shared key and choose a WAN Profile. Specify Local IP/Subnet Mask with 192.168.29.0/24. The Remote Host should be Vigor 2710's WAN IP address; And the Remote IP/Subnet Mask should be 192.168.2.0/24.

2. Click **Apply** to save the settings and return to previous page.



## Configuring Vigor2710

1. In Vigor2710, it is necessary to build two VPN connections (for two WANs) to connect with Vigor2960. Please open the web configurator of Vigor2710 and open **VPN and Remote Access >> LAN to LAN**.

### 1. Common Settings

Profile Name <input type="text" value="2960"/>	Call Direction <input type="radio"/> Both <input checked="" type="radio"/> Dial-Out <input type="radio"/> Dial-in
<input checked="" type="checkbox"/> Enable this profile	<input checked="" type="checkbox"/> Always on
VPN Dial-Out Through <input type="text" value="WAN1 First"/>	Idle Timeout <input type="text" value="-1"/> second(s)
Netbios Naming Packet <input checked="" type="radio"/> Pass <input type="radio"/> Block	<input type="checkbox"/> Enable PING to keep alive
Multicast via VPN <input type="radio"/> Pass <input checked="" type="radio"/> Block <small>(for some IGMP,IP-Camera,DHCP Relay..etc.)</small>	PING to the IP <input type="text"/>

- First, please type the name of such VPN connection in the field of Profile Name (e.g., 2960).
  - Check the box of **Enable this profile**.
  - Choose **Dial-Out** as **Call Direction** and check the box of **Always on**.
2. For **Dial-Out Settings**, please choose **IPSec Tunnel** and type WAN IP address of Vigor2960 in the field of **Server IP/Host Name for VPN** (e.g., 1.169.162.1). Type the same IKE Pre-Shared Key configured in Vigor2960.

### 2. Dial-Out Settings

<b>Type of Server I am calling</b> <input type="radio"/> PPTP <input checked="" type="radio"/> IPsec Tunnel <input type="radio"/> L2TP with IPsec Policy <input type="text" value="None"/>	Username <input type="text" value="???"/> Password <input type="text"/> PPP Authentication <input type="text" value="PAP/CHAP"/> VJ Compression <input checked="" type="radio"/> On <input type="radio"/> Off
Server IP/Host Name for VPN. (such as draytek.com or 123.45.67.89) <input type="text" value="1.169.162.1"/>	<b>IKE Authentication Method</b> <input checked="" type="radio"/> Pre-Shared Key IKE Pre-Shared Key <input type="text" value="....."/> <input type="radio"/> Digital Signature(X.509) Peer ID <input type="text" value="None"/> Local ID <input type="radio"/> Alternative Subject Name First <input type="radio"/> Subject Name First
	<b>IPsec Security Method</b> <input type="radio"/> Medium(AH) <input checked="" type="radio"/> High(ESP) <input type="text" value="3DES without Authentication"/> <input type="button" value="Advanced"/>
	Index(1-15) in <a href="#">Schedule</a> Setup: <input type="text"/> , <input type="text"/> , <input type="text"/> , <input type="text"/>

- For the role of Vigor2710 is dialing-out, please skip Dial-In setting. Type the **Remote Network IP** and **Remote Network Mask** of Vigor2960 to complete configuration.

#### 4. TCP/IP Network Settings

My WAN IP	<input type="text" value="0.0.0.0"/>	RIP Direction	<input type="text" value="Disable"/>
Remote Gateway IP	<input type="text" value="0.0.0.0"/>	From first subnet to remote network, you have to do	
Remote Network IP	<input type="text" value="192.168.29.0"/>	<input type="text" value="Route"/>	
Remote Network Mask	<input type="text" value="255.255.255.0"/>	<input type="checkbox"/> Change default route to this VPN tunnel ( Only single WAN supports this )	
Local Network IP	<input type="text" value="192.168.2.0"/>		
Local Network Mask	<input type="text" value="255.255.255.0"/>		
<input type="button" value="More"/>			

- Please check if the VPN connection is built successfully in both devices respectively. For Vigor2960, open **VPN and Remote Access>>IPSec>>Status** for viewing the result.

VPN and Remote Access >> Connection Management

Connection Management

Profiles:    IPSec  PPTP

VPN	Type	Remote IP	Virtual Network	Up Time	RX(Packets)	TX(Packets)	Dis
2710	IPSec/3DES_No Auth	111.243.176.145	192.168.2.0/24	00:01:06	1	0	<input type="button" value="X"/>

As to Vigor2710, please open **VPN and Remote Access>>Connection Management** to confirm the result.

#### VPN and Remote Access >> Connection Management

##### Dial-out Tool

Refresh Seconds:

##### VPN Connection Status

Current Page: 1

Page No.

VPN	Type	Remote IP	Virtual Network	Tx Pkts	Tx Rate(Bps)	Rx Pkts	Rx Rate(Bps)	UpTime
1 ( 2960 )	IPsec Tunnel 3DES-No Auth	1.169.162.1 via WAN1	192.168.29.0/24	0	0	0	0	0:10:19 <input type="button" value="Drop"/>

xxxxxxx : Data is encrypted.  
xxxxxxx : Data isn't encrypted.

# Chapter 4: Advanced Configuration

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After finished basic configuration of the router, you can access Internet with ease. For the people who want to adjust more setting for suiting his/her request, please refer to this chapter for getting detailed information about the advanced configuration of this router. As for other examples of application, please refer to chapter 3.

## 4.1 WAN

**Quick Start Wizard** offers user an easy method to quick setup the connection mode for the router. Moreover, if you want to adjust more settings for different WAN modes, please go to WAN group and click the **General Setup** link.

### Basics of Internet Protocol (IP) Network

IP means Internet Protocol. Every device in an IP-based Network including routers, print server, and host PCs, needs an IP address to identify its location on the network. To avoid address conflicts, IP addresses are publicly registered with the Network Information Centre (NIC). Having a unique IP address is mandatory for those devices participated in the public network but not in the private TCP/IP local area networks (LANs), such as host PCs under the management of a router since they do not need to be accessed by the public. Hence, the NIC has reserved certain addresses that will never be registered publicly. These are known as *private* IP addresses, and are listed in the following ranges:

**From 10.0.0.0 to 10.255.255.255**

**From 172.16.0.0 to 172.31.255.255**

**From 192.168.0.0 to 192.168.255.255**

### What are Public IP Address and Private IP Address

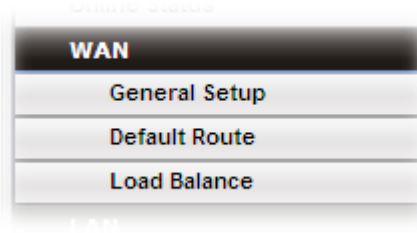
As the router plays a role to manage and further protect its LAN, it interconnects groups of host PCs. Each of them has a private IP address assigned by the built-in DHCP server of the Vigor router. The router itself will also use the default **private IP** address: 192.168.1.1 to communicate with the local hosts. Meanwhile, Vigor router will communicate with other network devices through a **public IP** address. When the data flow passing through, the Network Address Translation (NAT) function of the router will dedicate to translate public/private addresses, and the packets will be delivered to the correct host PC in the local area network. Thus, all the host PCs can share a common Internet connection.

### Get Your Public IP Address from ISP

In ADSL deployment, the PPP (Point to Point)-style authentication and authorization is required for bridging customer premises equipment (CPE). Point to Point Protocol over Ethernet (PPPoE) connects a network of hosts via an access device to a remote access concentrator or aggregation concentrator. This implementation provides users with significant ease of use. Meanwhile it provides access control, billing, and type of service according to user requirement.

When a router begins to connect to your ISP, a serial of discovery process will occur to ask for a connection. Then a session will be created. Your user ID and password is authenticated

via **PAP** or **CHAP** with **RADIUS** authentication system. And your IP address, DNS server, and other related information will usually be assigned by your ISP.



#### 4.1.1 General Setup

This section will introduce some general settings of Internet and explain the connection modes for WAN profiles in details.

This router supports multi-WAN function. It allows users to access Internet and combine the bandwidth of the WAN profiles to speed up the transmission through the network. Each WAN port can connect to different ISPs, even if the ISPs use different technology to provide telecommunication service (such as DSL, Cable modem, etc.). If any connection problem occurred on one of the ISP connections, all the traffic will be guided and switched to the normal communication port for proper operation.



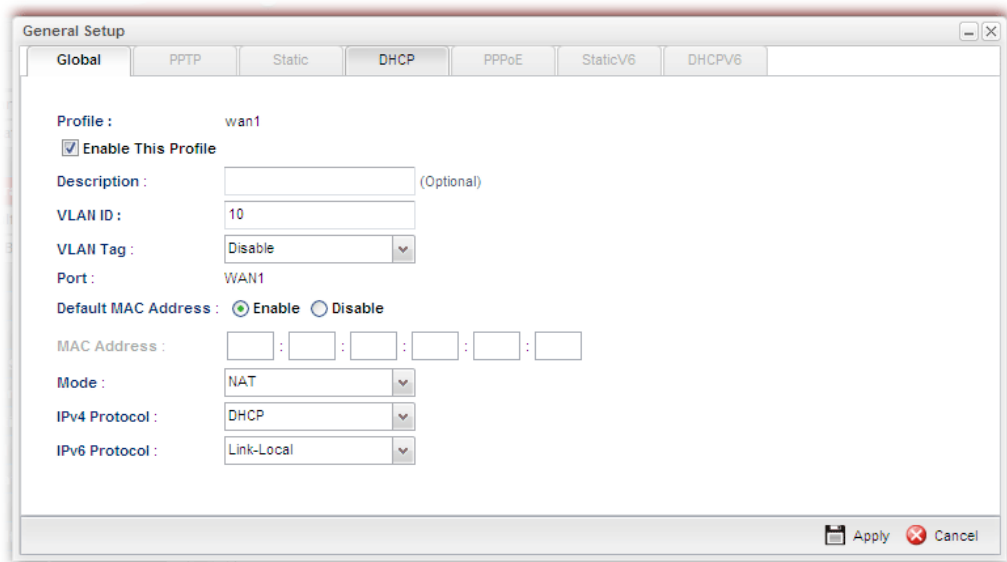
Each item will be explained as follows:

Item	Description
<b>Edit</b>	Modify the selected WAN profile. To edit a profile, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected rule.
<b>Refresh</b>	Renew current web page.
<b>Profile</b>	Display the profile name.
<b>Enable This Profile</b>	Display the status of the profile. False means disabled; True

	means enabled.
<b>Description</b>	Display a brief explanation for such profile.
<b>VLAN ID</b>	Display the VLAN ID of the profile.
<b>VLAN Tag</b>	If the data transmitted with tag, <b>Enable</b> will be displayed in this field. Otherwise, <b>Disable</b> will be shown instead.
<b>Port</b>	Display the physical WAN interface for such profile.
<b>IPv4 Protocol Type</b>	Display the IPv4 protocol selected by the profile.
<b>IPv6 Protocol Type</b>	Display the IPv6 protocol selected by the profile.

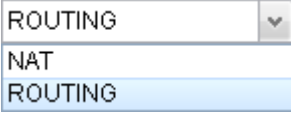
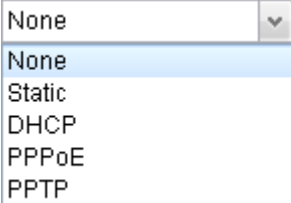
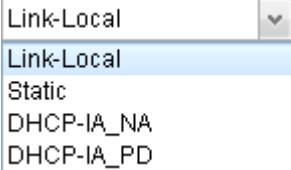
## How to edit the WAN profile

1. Open **WAN>>General Setup**. Choose WAN1 or WAN2 profile and click the **Edit** button to open the following dialog. Only the tab of the protocol specified in **IPv4 Protocol** field will be available for you to modify. If you want to change and specify another connection mode for such WAN profile, remember to choose the mode from the drop down list of **IPv4 Protocol**.



Available parameters for global configuration are listed as follows:

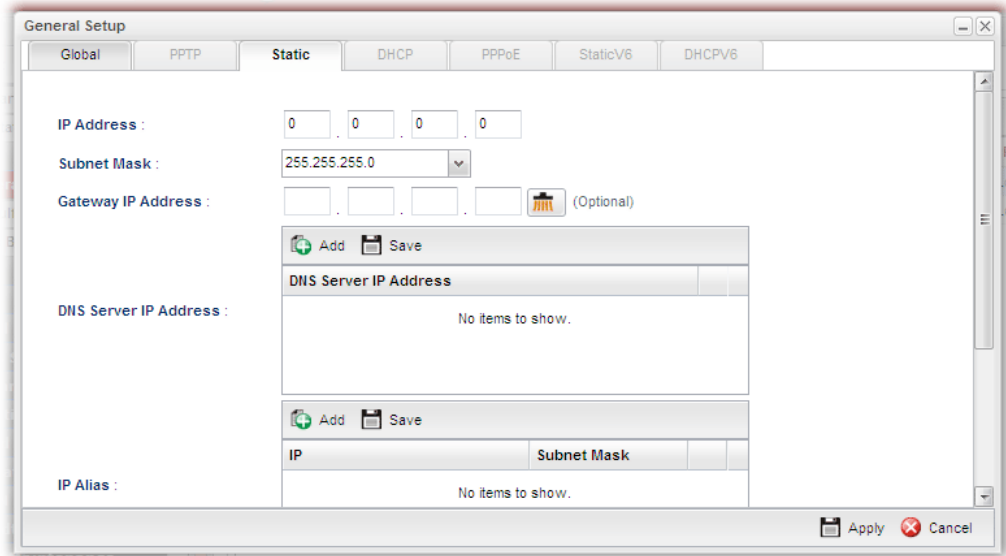
Item	Description
<b>Profile</b>	Type a name for such profile.
<b>Enable This Profile</b>	Check this box to enable such profile.
<b>Description</b>	Give the brief description for such profile.
<b>VLAN ID</b>	Type the VLAN ID number for such profile.
<b>VLAN Tag</b>	<b>Enable</b> – Click it to enable the function of VLAN Tag. Data transmitted through the router will not be tagged with any number. <b>Disable</b> – Click it to disable the function of VLAN Tag. Data transmitted through the router will be tagged with specified number for identification.

<b>Port</b>	Display the physical WAN interface for such profile.
<b>Default MAC Address</b>	<p><b>Enable</b> – Click it to enable the default MAC address for such profile.</p> <p><b>Disable</b> – Click it to type the MAC address manually for such profile.</p> <p><b>MAC Address</b> - Specify the MAC address for such profile if you click <b>Disable</b> for <b>Default MAC address</b>. In default, the system will determine it automatically.</p>
<b>Mode</b>	<p>Determine such profile will be used for NAT or routing.</p> 
<b>IPv4 Protocol Type</b>	<p>There are four connection modes for you to specify for IPv4 protocol type. Each mode will bring up different web page.</p> 
<b>IPv6 Protocol Type</b>	<p>There are four connection modes for you to specify for IPv6 protocol type. Each mode will bring up different web page.</p> 
<b>Apply</b>	Click it to save the configuration and exit the dialog.
<b>Cancel</b>	Click it to exit the dialog without saving the configuration.


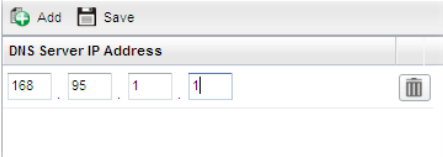
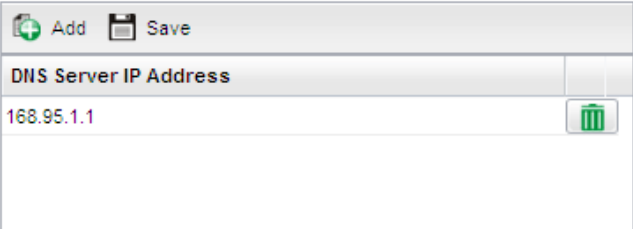
Global configuration allows you to enable the profile, give a brief explanation for such profile, specify the VLAN ID, specify MAC address, choose IPv4 and IPv6 protocol, and specify the mode of the data transmission (**NAT** or **Routing**).


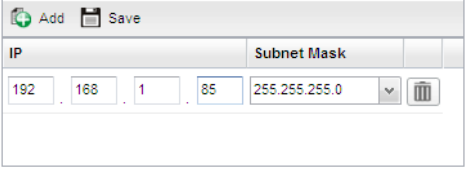
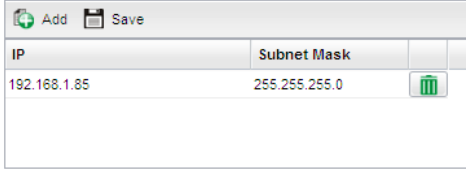

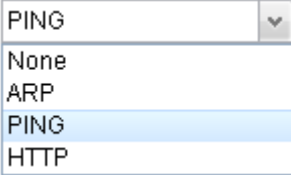
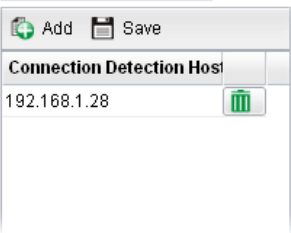
Different IPv4 and IPv6 protocol types specified will bring up different configuration web page.

- **If you choose Static as IPv4 protocol type, click the Static tab to open the following page:**




Available parameters are listed as follows:

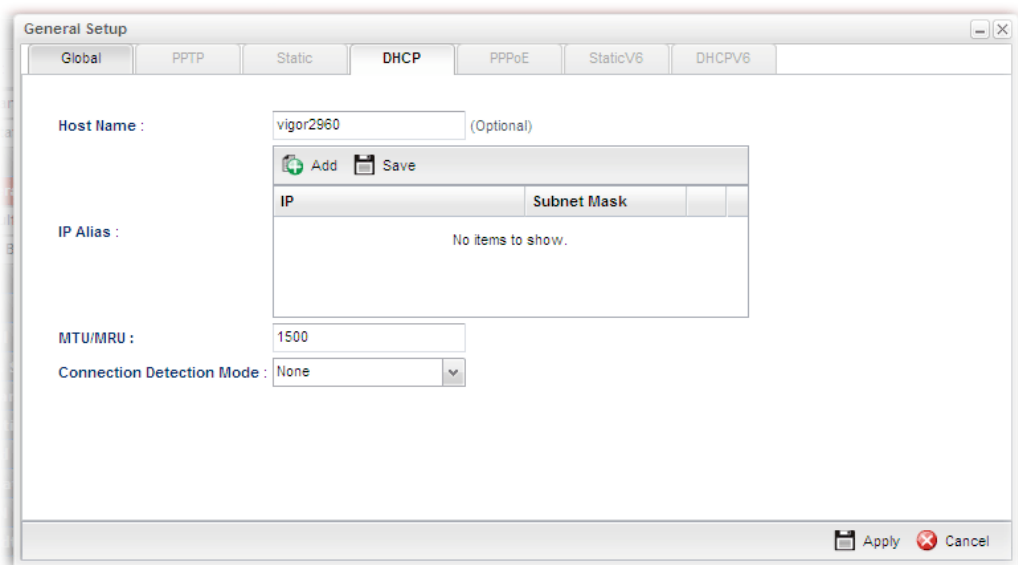
Item	Description
<b>IP Address</b>	Type the IP address specified for such profile.
<b>Subnet Mask</b>	Use the drop down list to choose the subnet mask for such profile.
<b>Gateway IP Address</b>	Type a public gateway address for such WAN profile.  - click it to remove the IP address if you are not satisfied with it.
<b>DNS Server IP Address</b>	<p><b>Add</b> – Click this button to display the IP address field for adding a new IP address. Type the IP address on the tiny boxes one by one.</p>  <p><b>Save</b> – After finished the IP address configuration, click <b>Save</b> to save the setting onto the router.</p> 

	 – Click the icon to remove the selected entry.
<p><b>IP Alias</b></p>	<p>Type other IP addresses to be bound to this interface. This setting is optional. If you have typed addresses here, you can see and choose it in later web page settings (e.g., <b>NAT&gt;&gt;Port Redirection/DMZ Host</b>).</p> <p><b>Add</b> – Click this button to display the IP address field for adding a new IP address. Type the IP address on the tiny boxes one by one.</p>  <p><b>Save</b> – After finished the IP address configuration, click <b>Save</b> to save the setting onto the router.</p>  <p> – Click the icon to remove the selected entry.</p>
<p><b>MTU/MRU</b></p>	<p>Type the value of MTU/MRU. The default value is 1500.</p>
<p><b>Connection Detection Mode</b></p>	<p>Select a detecting mode for this WAN interface. There are three ways <b>ARP</b>, <b>PING</b> and <b>HTTP</b> supported in Vigor router for you to choose to send the request out.</p> 
<p><b>Connection Detection Host</b></p>	<p><b>Add</b> – Click this button to have a field for adding a new IP address. Assign an IP address or Domain name as a destination to be detected whether the host is active (sending reply to the router) or not. If not, the connection of WAN interface will be regarded as breaking down. This function is available when <b>Connection Detection Mode</b> is set with <b>PING</b> or <b>HTTP</b>.</p>  <p><b>Save</b> – click this button to save the setting.</p>



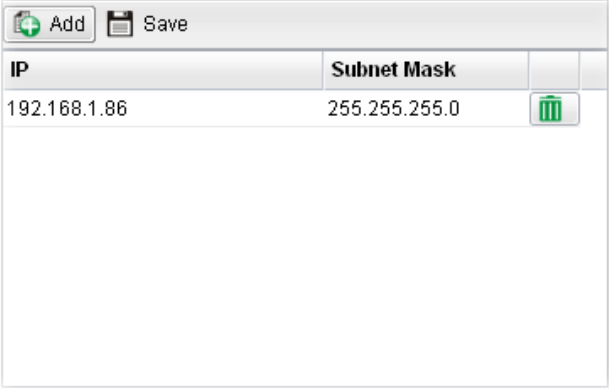

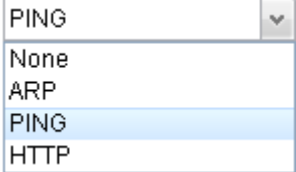
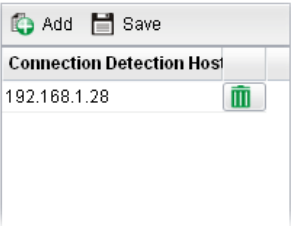

	 – click the icon to remove the selected entry.
<b>Connection Detection Interval</b>	Assign an interval period of time for each detecting.
<b>Connection Detection Retry</b>	Assign detecting times to ensure the connection of the WAN interface. After passing the times you set in this field and no reply received by the router, the connection of WAN interface will be regarded as breaking down.
<b>Apply</b>	Click it to save the configuration and exit the dialog.
<b>Cancel</b>	Click it to exit the dialog without saving the configuration.

- If you choose DHCP as IPv4 protocol type, click the DHCP Tab to open the following page:



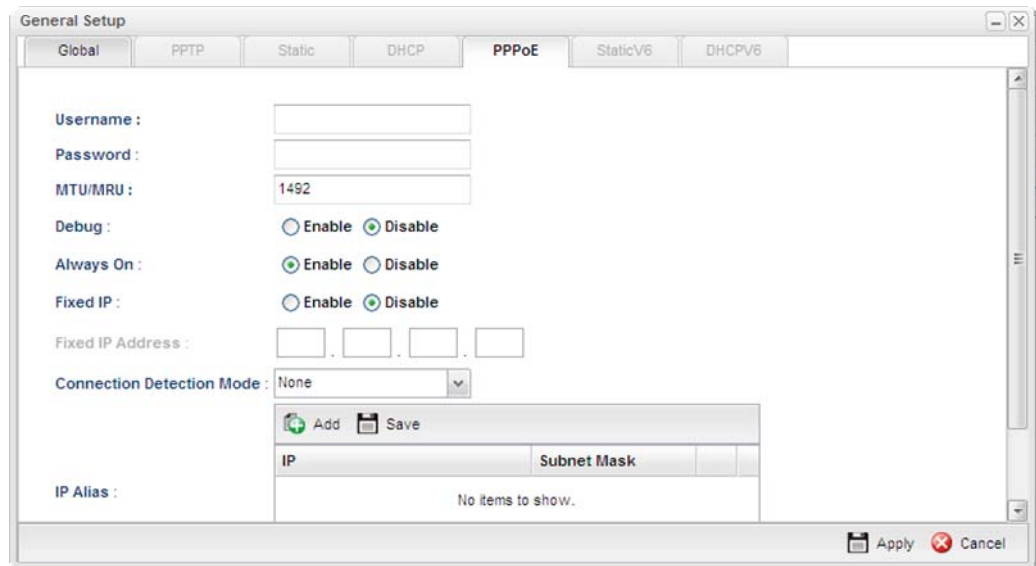
Available parameters are listed as follows:

Item	Description
<b>Host Name (Optional)</b>	Type a name as the host name for identification.
<b>IP Alias</b>	Type other IP addresses to be bound to this interface. This setting is optional. If you have typed addresses here, you can see and choose it in later web page settings (e.g., <b>NAT&gt;&gt;Port Redirection/DMZ Host</b> ). <b>Add</b> – To add a new IP address, click <b>Add</b> . Type the IP address and use the drop down list to specify the subnet mask. Next, click <b>Save</b> . The new one will be added and displayed on the field under the box.

	 <p><b>Save</b> – Click this button to save the setting.</p> <p> – Click the icon to remove the selected entry.</p>
<b>MTU/MRU</b>	It means Max Transmit Unit for packet. The default setting is 1500.
<b>Connection Detection Mode</b>	<p>Select a detecting mode for this WAN interface. There are three ways <b>ARP</b>, <b>PING</b> and <b>HTTP</b> supported in Vigor router for you to choose to send the request out.</p> 
<b>Connection Detection Host</b>	<p><b>Add</b> – click this button to have a field for adding a new IP address. Assign an IP address or Domain name as a destination to be detected whether the host is active (sending reply to the router) or not. If not, the connection of WAN interface will be regarded as breaking down. This function is available when <b>Connection Detection Mode</b> is set with <b>PING</b> or <b>HTTP</b>.</p>  <p><b>Save</b> – Click this button to save the setting.</p> <p> – Click the icon to remove the selected entry.</p>
<b>Connection Detection Interval</b>	Assign an interval period of time for each detecting.
<b>Connection Detection Retry</b>	Assign detecting times to ensure the connection of the WAN interface. After passing the times you set in this field and no reply received by the router, the connection of WAN interface will be regarded as breaking down.

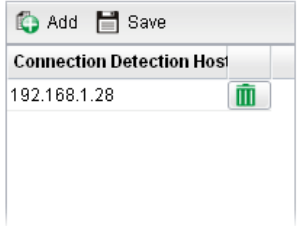

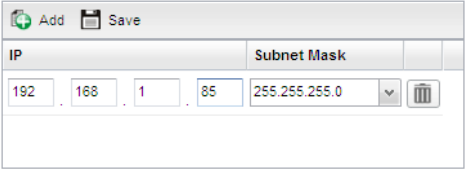
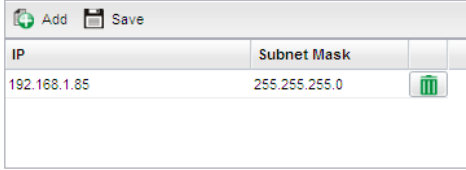

<b>Apply</b>	Click it to save the configuration and exit the dialog.
<b>Cancel</b>	Click it to exit the dialog without saving the configuration.

- If you choose PPPoE as IPv4 protocol type, click the PPPoE Tab to open the following page:



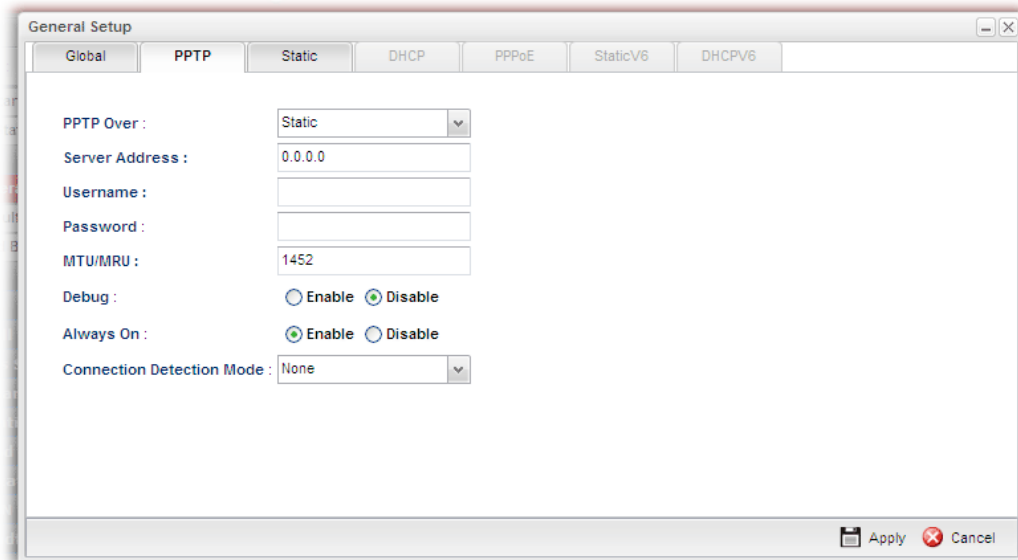
Available parameters are listed as follows:

Item	Description
<b>Username</b>	Type the user name offered by your ISP.
<b>Password</b>	Type the password offered by your ISP.
<b>MTU/MRU</b>	Type the value of MTU/MRU. The default value is 1492.
<b>Debug</b>	Click <b>Enable</b> to display the PPPoE debug message in Syslog. The default setting is <b>Disable</b> .
<b>Always On</b>	<b>Enable</b> – Click it to enable the function of Always On. The router will keep network connection all the time. <b>Disable</b> – Click it to disable the function of Always On.
<b>Fixed IP</b>	<b>Enable</b> – Click it to enable the function of Always On. The router will keep network connection all the time. <b>Disable</b> – Click it to disable the function of Always On. <b>Fixed IP Address</b> – Type an IP address here if you choose <b>Enable</b> for <b>Fixed IP</b> .
<b>Connection Detection Mode</b>	Select a detecting mode for this WAN interface. There are two ways <b>PING</b> and <b>HTTP</b> supported in Vigor router for you to choose to send the request out. <div style="border: 1px solid black; padding: 2px; margin-top: 5px;"> <div style="border-bottom: 1px solid black; padding: 2px;">PING <span style="float: right;">▼</span></div> <div style="padding: 2px;">None</div> <div style="padding: 2px; background-color: #e0f0ff;">PING</div> <div style="padding: 2px;">HTTP</div> </div>

<p><b>Connection Detection Host</b></p>	<p>If you choose PING/HTTP as Connection Detection Mode, you have to specify the detection <b>host address</b> in this field. Use the default setting.</p> <p><b>Add</b> – Click this button to have a field for adding a new IP address. Assign an IP address or Domain name as a destination to be detected whether the host is active (sending reply to the router) or not. If not, the connection of WAN interface will be regarded as breaking down. This function is available when <b>Connection Detection Mode</b> is set with <b>PING</b> or <b>HTTP</b>.</p>  <p><b>Save</b> – Click this button to save the setting.</p> <p> – Click the icon to remove the selected entry.</p>
<p><b>Connection Detection Interval</b></p>	<p>Assign an interval period of time for each detecting.</p>
<p><b>Connection Detection Retry</b></p>	<p>Assign detecting times to ensure the connection of the WAN interface. After passing the times you set in this field and no reply received by the router, the connection of WAN interface will be regarded as breaking down.</p>
<p><b>IP Alias</b></p>	<p>Type other IP addresses to be bound to this interface. This setting is optional. If you have typed addresses here, you can see and choose it in later web page settings (e.g., <b>NAT&gt;&gt;Port Redirection/DMZ Host</b>).</p> <p><b>Add</b> – Click this button to display the IP address field for adding a new IP address. Type the IP address on the tiny boxes one by one.</p>  <p><b>Save</b> – After finished the IP address configuration, click <b>Save</b> to save the setting onto the router.</p>  <p> – Click the icon to remove the selected entry.</p>
<p><b>Apply</b></p>	<p>Click it to save the configuration and exit the dialog.</p>

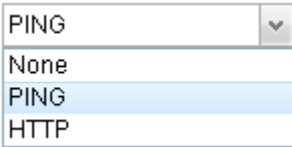


<b>Cancel</b>	Click it to exit the dialog without saving the configuration.
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- If you choose PPTP as IPv4 protocol type, click the PPTP Tab to open the following page:



Available parameters are listed as follows:

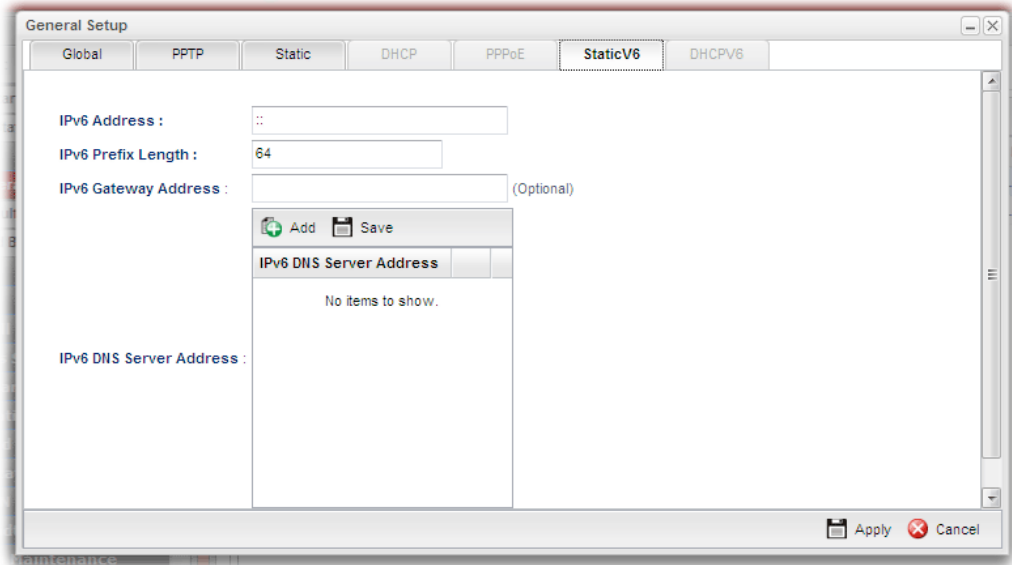
Item	Description
<b>PPTP Over</b>	Usually ISP dynamically assigns IP address to you each time you connect to it and request. In some case, your ISP provides service to always assign you the same IP address whenever you request. In this case, you can fill in this IP address in the Fixed IP field. <b>Please contact your ISP before you want to use this function.</b> Choose a proper protocol, <b>Static</b> or <b>DHCP</b> . After finished the settings in such page, you need to open the Static or DHCP tab for configuring the settings there.
<b>Server Address</b>	Type the IP address of PPTP server offered by your ISP.
<b>Username</b>	Type the user name offered by your ISP.
<b>Password</b>	Type the password offered by your ISP.
<b>MTU/MRU</b>	Type the value of MTU/MRU. The default value is 1452.
<b>Debug</b>	Click <b>Enable</b> to display the PPTP debug message in syslog. The default setting is <b>Disable</b> .
<b>Always On</b>	<b>Enable</b> – Click it to enable the function of Always On. The router will keep network connection all the time. <b>Disable</b> – Click it to disable the function of Always On.
<b>Connection Detection Mode</b>	Select a detecting mode for this WAN interface. There are two ways <b>PING</b> and <b>HTTP</b> supported in Vigor router for you to choose to send the request out.

	
<b>Connection Detection Host</b>	<p>If you choose PING/HTTP as Connection Detection Mode, you have to specify the detection <b>host address</b> in this field. Use the default setting.</p> <p><b>Add</b> – Click this button to have a field for adding a new IP address. Assign an IP address or Domain name as a destination to be detected whether the host is active (sending reply to the router) or not. If not, the connection of WAN interface will be regarded as breaking down. This function is available when <b>Connection Detection Mode</b> is set with <b>PING</b> or <b>HTTP</b>.</p>  <p><b>Save</b> – Click this button to save the setting.</p> <p> – Click the icon to remove the selected entry.</p>
<b>Connection Detection Interval</b>	Assign an interval period of time for each detecting.
<b>Connection Detection Retry</b>	Assign detecting times to ensure the connection of the WAN interface. After passing the times you set in this field and no reply received by the router, the connection of WAN interface will be regarded as breaking down.
<b>Apply</b>	After finished the PPTP configuration, please click <b>Static</b> or <b>DHCP</b> (according to the PPTP Over Protocol setting) to modify the Static/DHCP configuration for such profile. Click it to save the configuration and exit the dialog.
<b>Cancel</b>	Click it to exit the dialog without saving the configuration.

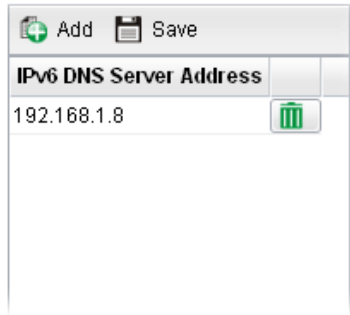

- **If you choose Link-Local as IPv6 protocol type**

Link-Local address is used for communicating with neighbouring nodes on the same link. It is defined by the address prefix **fe80::/64**. You don't need to setup Link-Local address manually for it is generated automatically according to your MAC Address.

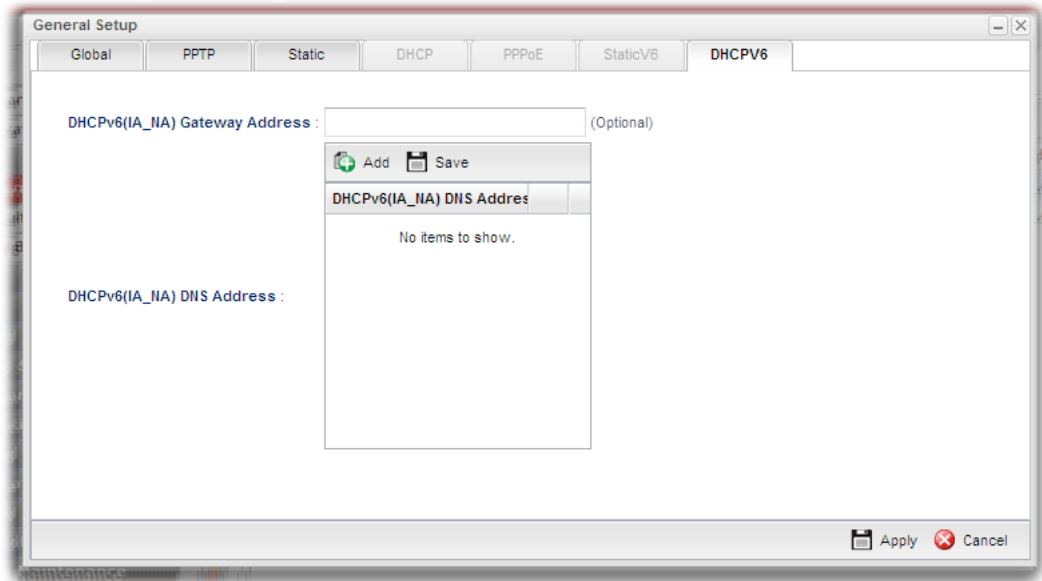
- If you choose Static as IPv6 protocol type, click the StaticV6 tab to open the following page:



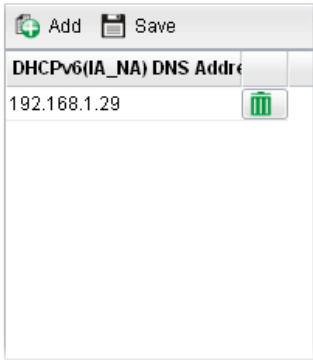

Available parameters are listed as follows:

Item	Description
<b>IPv6 Address</b>	Type the IP address for such protocol.
<b>IPv6 Prefix Length</b>	Type your IPv6 address prefix length.
<b>IPv6 Gateway Address</b>	Type your IPv6 gateway address.
<b>IPv6 DNS Server Address</b>	Type your IPv6 primary DNS Server address.   <p><b>Add</b> – Click this button to have a field for adding a new IP address.</p> <p><b>Save</b> – Click this button to save the setting.</p> <p> – Click the icon to remove the selected entry.</p>
<b>Apply</b>	Click it to save the configuration and exit the dialog.
<b>Cancel</b>	Click it to exit the dialog without saving the configuration.

- If you choose DHCP-IA\_NA as IPv6 protocol type, click the DHCPV6 Tab to open the following page:



Available parameters are listed as follows:

Item	Description
<b>DHCP (IA_NA) Gateway Address</b>	Type the gateway IP address for IPv6 DHCP IA_NA mode.
<b>DHCP (IA_NA) DNS Address</b>	<p><b>Add</b> – Click this button to type primary DNS server address for IPv6.</p>  <p><b>Save</b> – Click this button to save the setting.</p> <p> – Click the icon to remove the selected entry.</p>
<b>Apply</b>	Click it to save the configuration and exit the dialog.
<b>Cancel</b>	Click it to exit the dialog without saving the configuration.

- If you choose DHCP-IA\_PD as IPv6 protocol type

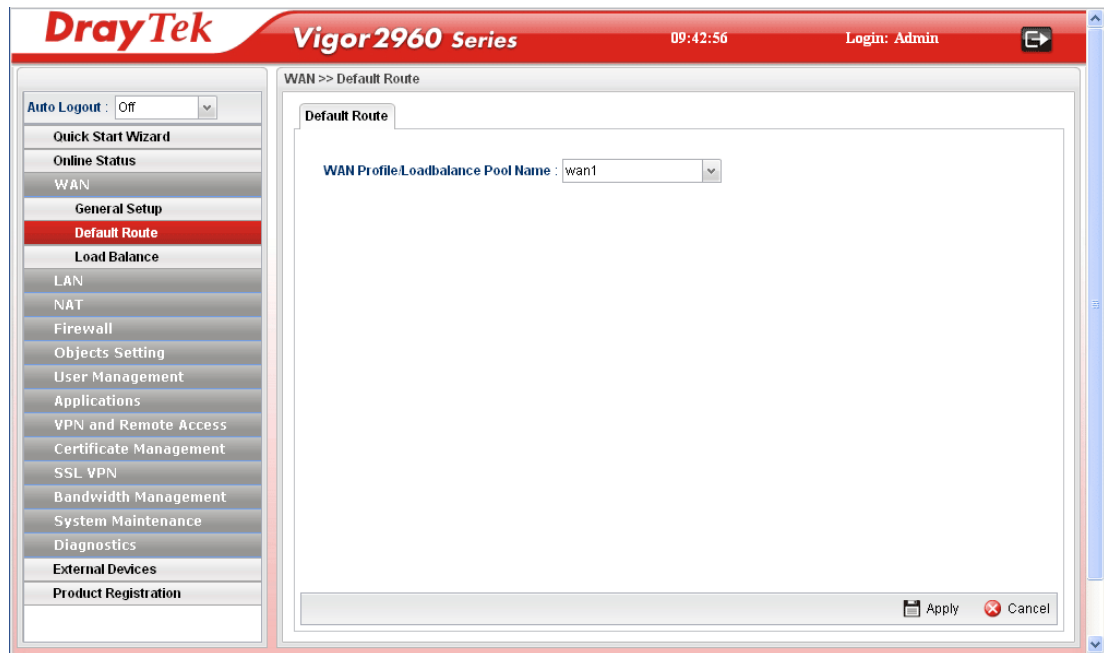
It is not necessary for you to configure any web page.

2. After finished the settings configuration, click **Apply** to save and apply the settings.



## 4.1.2 Default Route

This page allows you to assign a WAN profile as the default route.



Available parameters are listed as follows:

Item	Description
<b>WAN Profile /Load Balance Pool Name</b>	Display the WAN profiles for user to choose as a default route. In which, wan1 to wan2 are factory default settings.
<b>Apply</b>	Click it to save the configuration.
<b>Cancel</b>	Click it to exit the dialog without saving the configuration.

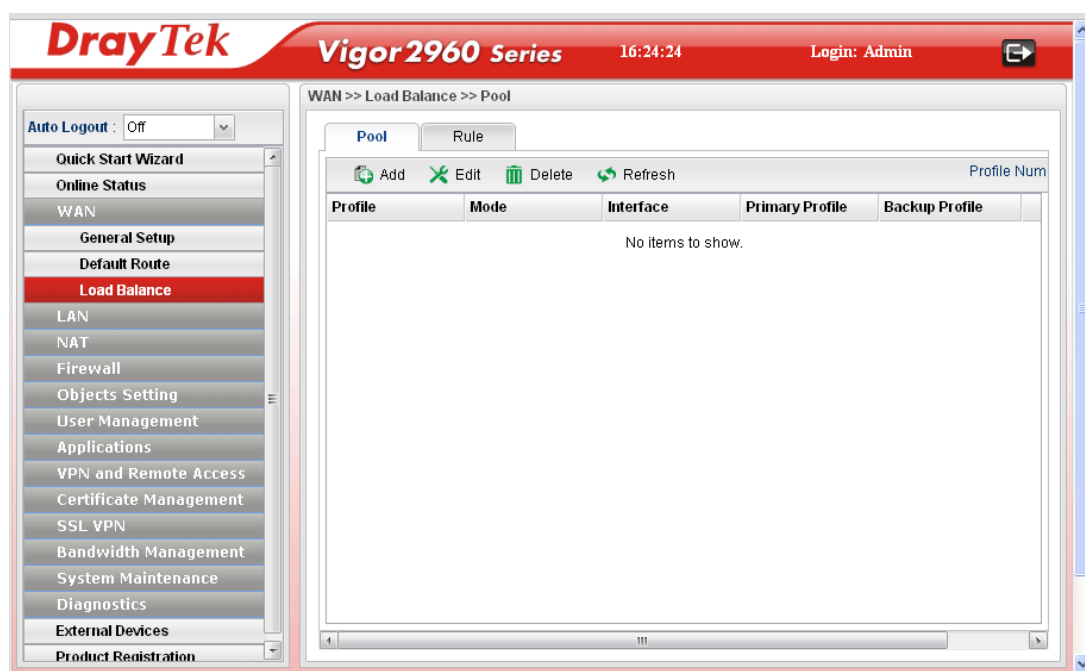
### 4.1.3 Load Balance

Vigor2960 supports a load balancing function. It can assign traffic with protocol type, IP address for specific host, a subnet of hosts, and port range to be allocated in WAN interface. User can assign traffic category and force it to go to dedicate network interface based on the following web page setup.

In the **WAN** group, click the **Load Balance** option.

#### Pool

This page allows the user to integrate **several** WAN profiles as a pool profile specified with the function of load balance or failover. The profiles configured here will be selected in the field of **WAN>>Default Route** page.



Each item will be explained as follows:

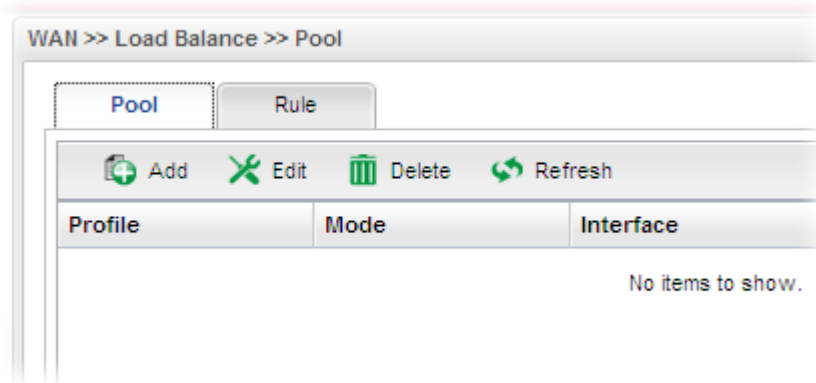
Item	Description
<b>Add</b>	Add a new pool profile.
<b>Edit</b>	Modify the selected pool profile. To edit a profile, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected pool.
<b>Delete</b>	Remove the selected pool profile. To delete a rule, simply select the one you want to delete and click the <b>Delete</b> button.
<b>Refresh</b>	Renew current web page.
<b>Profile</b>	Display the name of the rule.
<b>Mode</b>	Display the protocol of such rule.
<b>Interface</b>	Display the name of the WAN profiles for Load Balance

	rule.
<b>Primary Profile</b>	Display the primary profile configured in Failover page for such profile.
<b>Backup Profile</b>	Display the backup profile configured in Failover page for such profile.

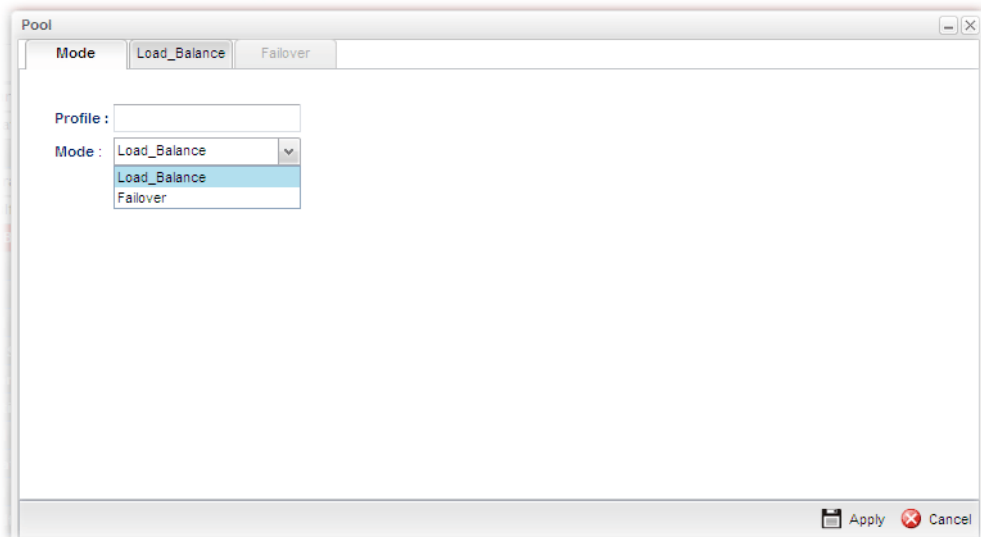
There are two modes, **Load\_Balance** and **Failover**, for you to choose as the **Pool** configuration. If you choose **Load\_Balance**, the tab of **Load\_Balance** will be shown which allows you to configure for different WAN interfaces. If you choose **Failover**, the tab of **Failover** will be displayed which allows you to specify the primary profile and backup profile for such **Pool** setting.

### How to add a pool profile for Load Balance

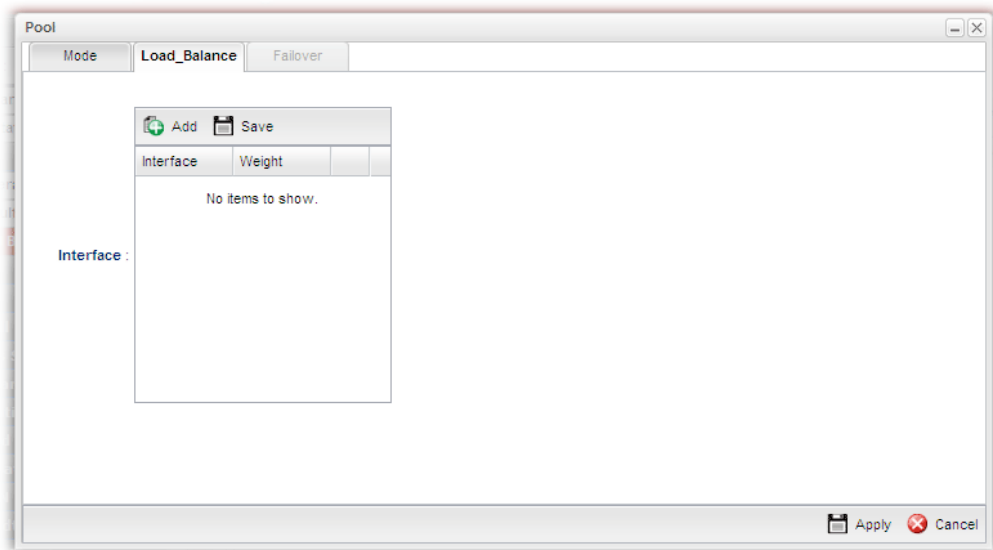
1. Open **WAN>>Load Balance** and click the tab of **Pool**.



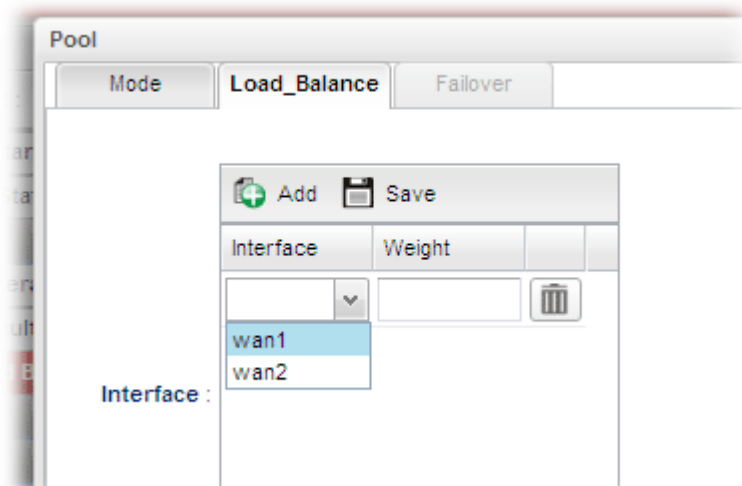
2. Simply click the **Add** button to open the following dialog. Type a name for such profile (e.g., LB\_1). Choose **Load\_Balance** as the **Mode** selection.



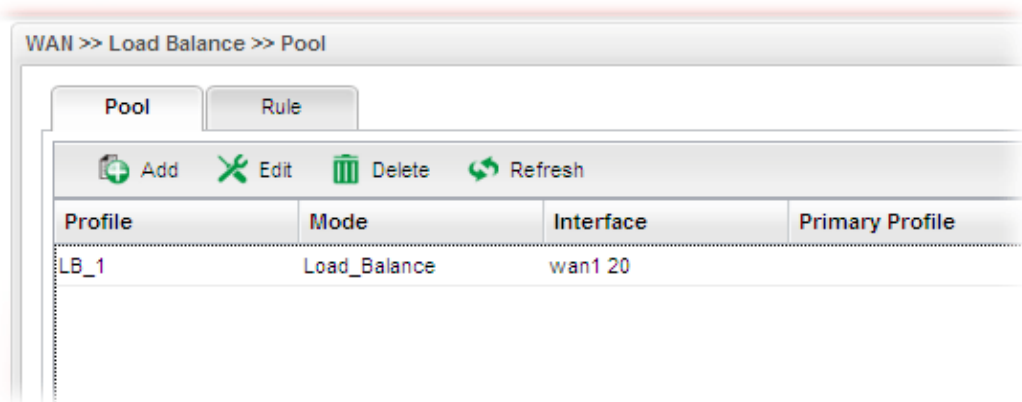
3. Click the **Load\_Balance** Tab.



4. Click **Add**. A new line for adding new entry will appear. Use the drop down list of **Interface** to choose one of the WAN profiles. Type the value (e.g., 20) for **Weight**.



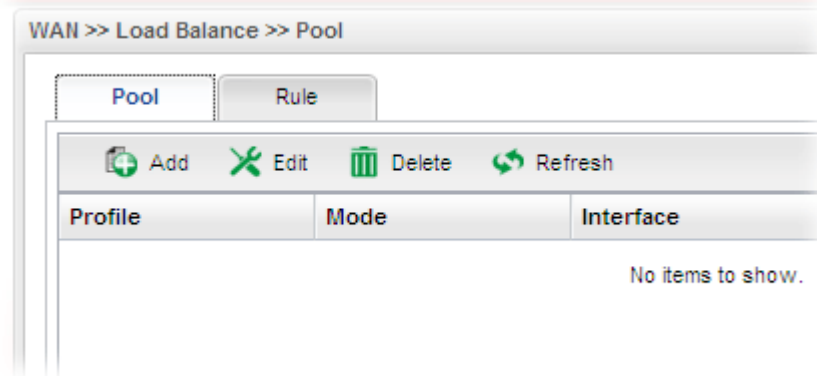
5. Click **Apply**. A new profile will be added on the page.



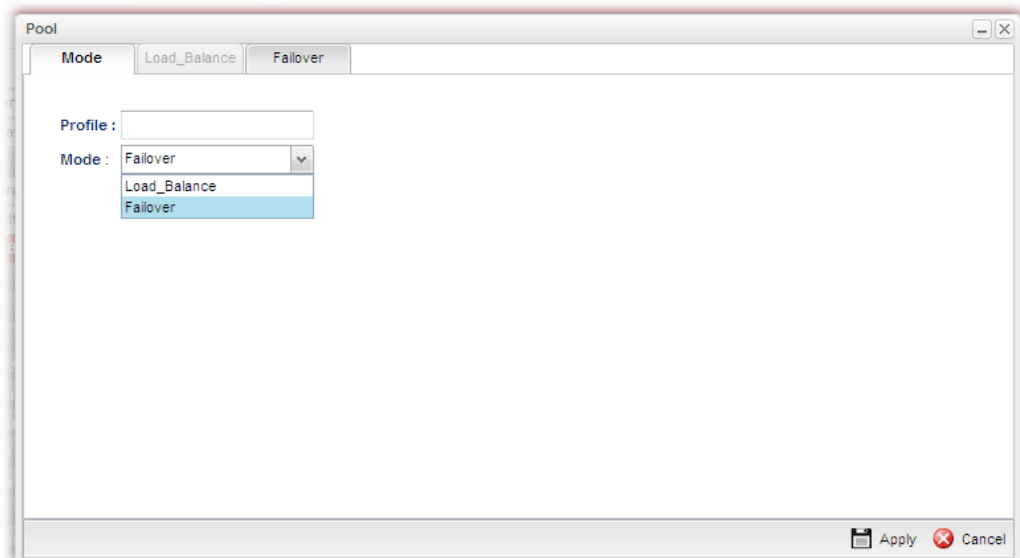
## How to add a Pool profile for Failover

Such page allows you to set a backup profile which will be activated when the primary profile is invalid by any reason.

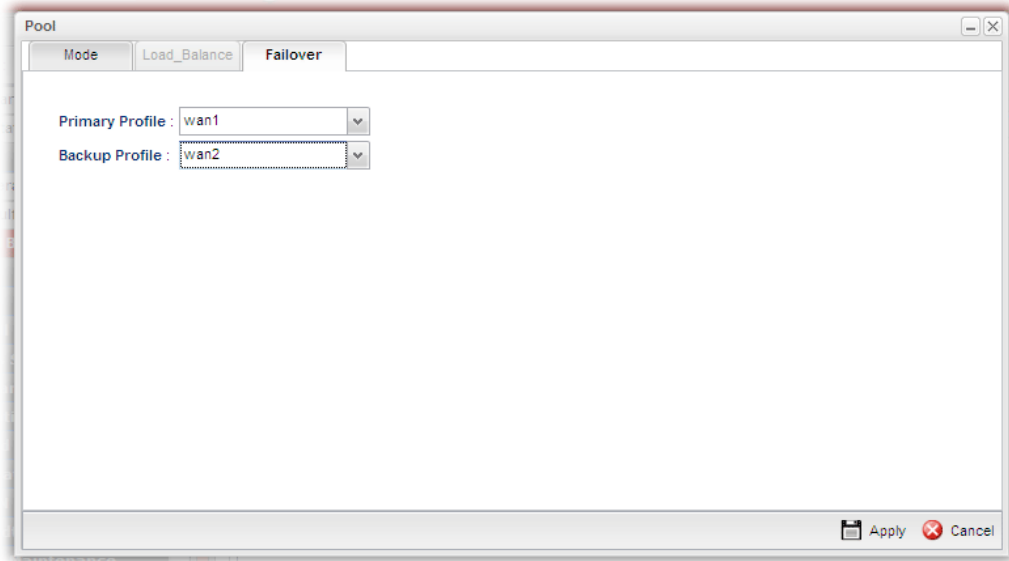
1. Open **WAN>>Load Balance** and click the tab of **Pool**.



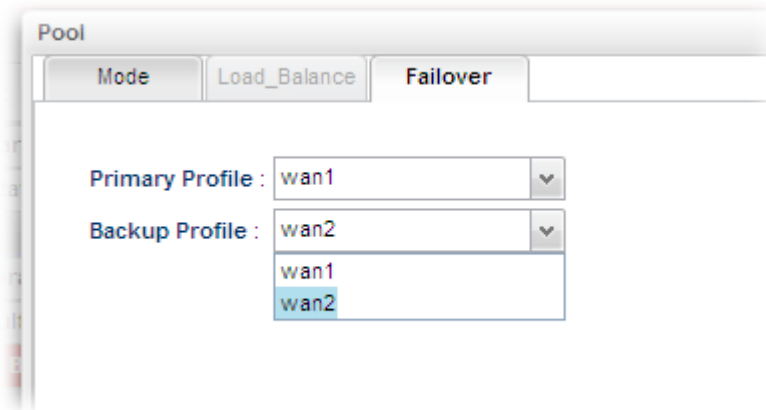
2. Simply click the **Add** button to open the following dialog. Type a name for such profile (e.g., FL\_1). Choose **Failover** as the **Mode** selection.



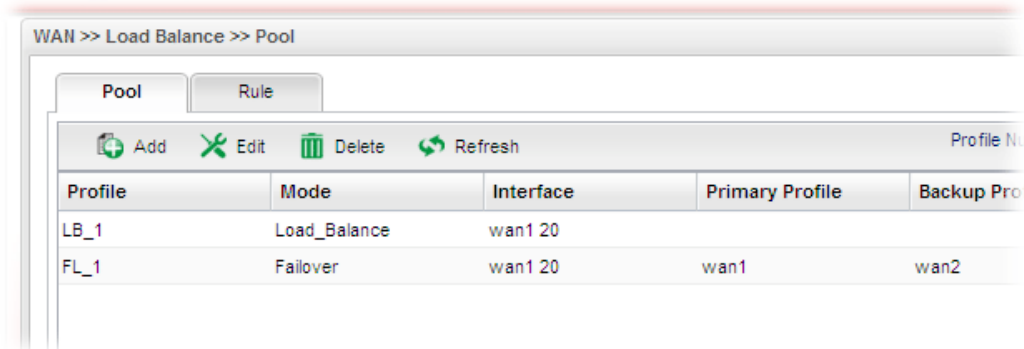
- Click the **Failover** Tab. In default, the system will apply Primary Profile. If Primary Profile cannot be used any more, the Backup Profile will be used instead.



- Use the drop down list to choose the one you need.

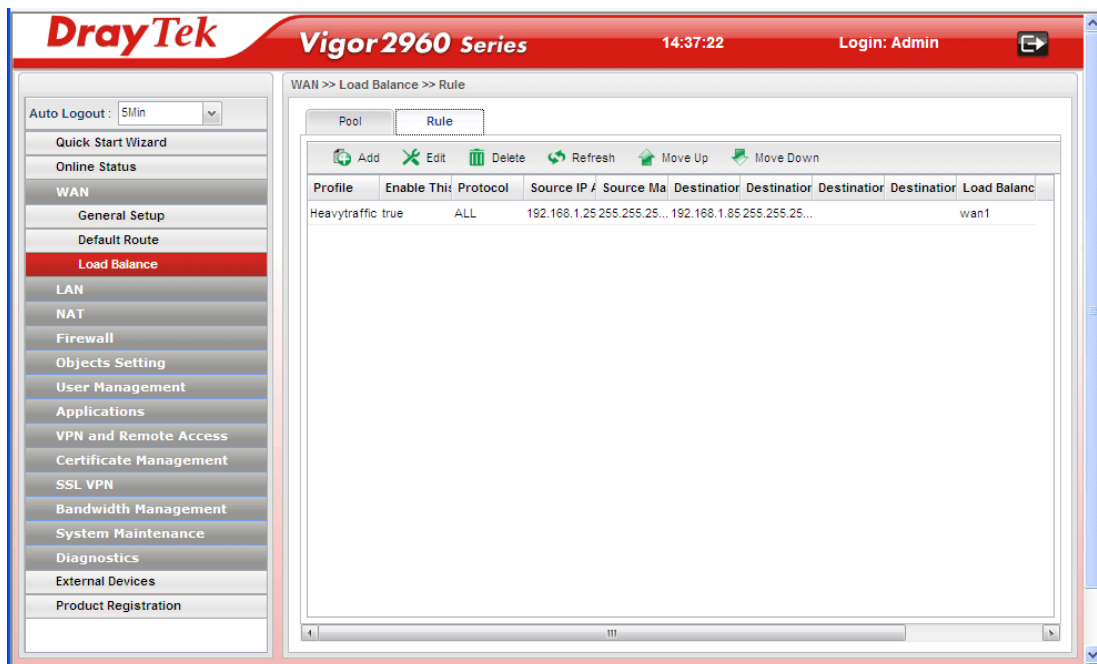


- Click **Apply**. A new profile will be added on the page.



## Rule

This page will make the packets be transmitted with user defined profiles with IP address and protocol that is different with default route.



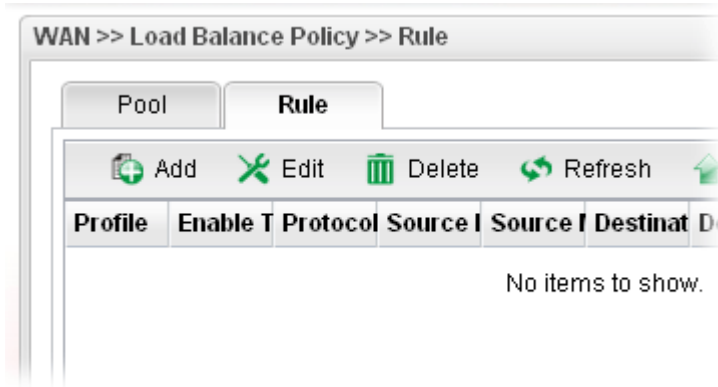
Each item will be explained as follows:

Item	Description
<b>Add</b>	Add a new rule profile.
<b>Edit</b>	Modify the selected rule profile. To edit a profile, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected rule.
<b>Delete</b>	Remove the selected rule profile. To delete a rule, simply select the one you want to delete and click the <b>Delete</b> button.
<b>Refresh</b>	Renew current web page.
<b>Move Up / Move Down</b>	Move the selected profile up or down.
<b>Profile</b>	Display the name of the rule.
<b>Enable This Profile</b>	Display the status of such profile.
<b>Protocol</b>	Display the protocol used for such rule.
<b>Source IP Address</b>	Display the source IP address for such rule.
<b>Source Mask</b>	Display the source Mask for such rule.
<b>Destination IP Address</b>	Display the destination IP address for such rule.
<b>Destination Mask</b>	Display the destination Mask for such rule.
<b>Destination Port Start</b>	Display the destination port starting value for such rule.

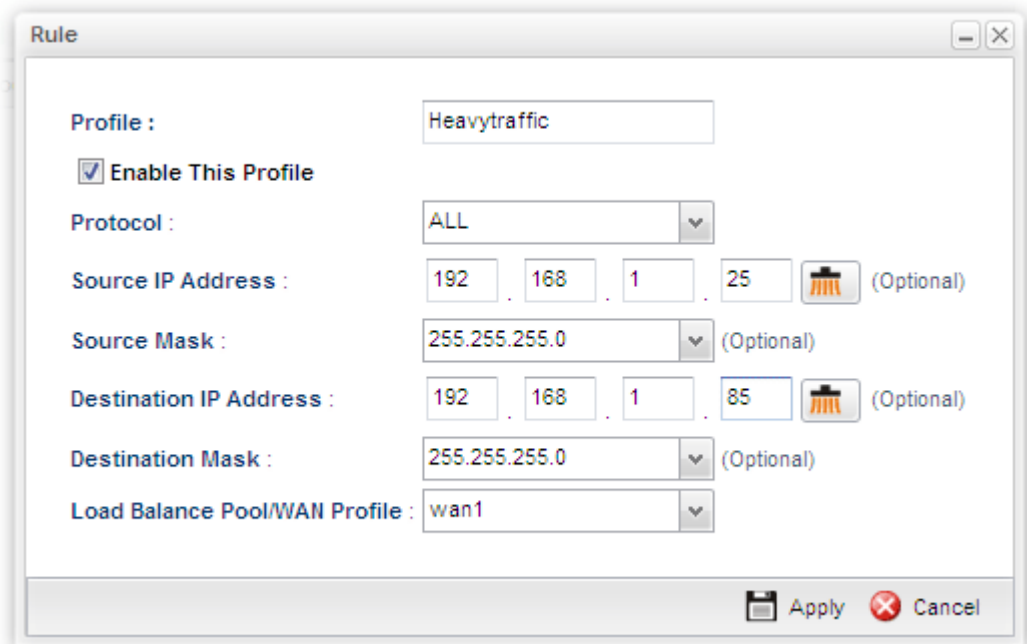
<b>Destination Port End</b>	Display the destination port ending value for such rule.
<b>Load Balance Pool/WAN Profile</b>	Display the profile of load balance applied for such rule.

### How to add a new rule for Load Balance

1. Open **WAN>>Load Balance Policy** and click the tab of **Rule**.
2. Simply click the **Add** button.




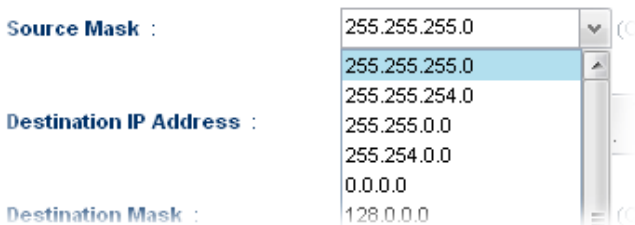

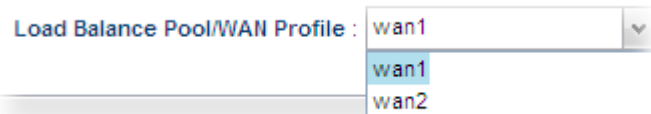
3. The following dialog will appear.



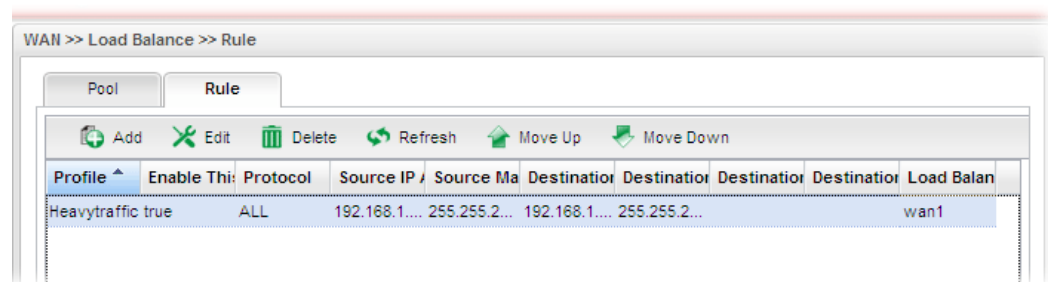
Available parameters are listed as follows:

Item	Description
<b>Profile</b>	Type the name of the rule.
<b>Enable This Profile</b>	Check this box to enable such profile.
<b>Protocol</b>	Choose a protocol (ALL, TCP, UDP, TCP/UDP, ICMP, FTP, TFTP, HTTP, SMTP, POP3) for such rule applied to load balance. <b>All</b> is the default setting.



<b>Source IP Address</b>	Type a WAN IP address here as the source IP address for such rule.  – Click the icon to clear the IP setting.
<b>Source Mask</b>	Use the drop down list on the right to choose a suitable mask for the source.   Source Mask : 255.255.255.0 Destination IP Address : 255.255.254.0 Destination Mask : 255.255.0.0
<b>Destination IP Address</b>	Type a WAN IP address here as the destination IP address for such rule.  – Click the icon to clear the IP setting.
<b>Destination Mask</b>	Use the drop down list on the right to choose a suitable mask for the destination.
<b>Destination Port Start</b>	Type a value as the destination port starting for such rule.
<b>Destination Port End</b>	Type a value as the destination port ending for such rule.
<b>Load Balance Pool /WAN Profile</b>	Choose one of the profiles to be used by such rule. In which, wan1 to wan5 profiles are configured in default. In addition, profiles configured in <b>WAN&gt;&gt;Load Balance Policy&gt;&gt; Pool</b> page also will be displayed here. To have user-defined WAN profile, please refer to <b>WAN&lt;&lt;General Setup</b> for detailed information.   Load Balance Pool/WAN Profile : wan1
<b>Apply</b>	Click it to save the configuration.
<b>Cancel</b>	Click it to return to the factory setting.

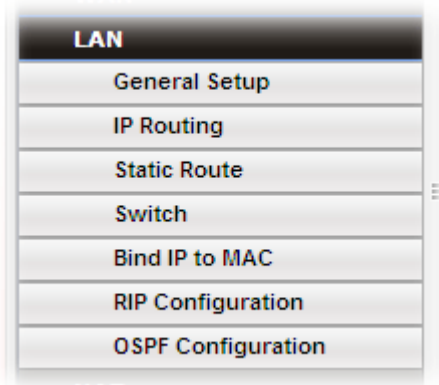
4. Enter all the settings and click **Apply**. The new rule profile will be added on the screen.



## 4.2 LAN

Local Area Network (LAN) is a group of subnets regulated and ruled by router. The design of network structure is related to what type of public IP addresses coming from your ISP.

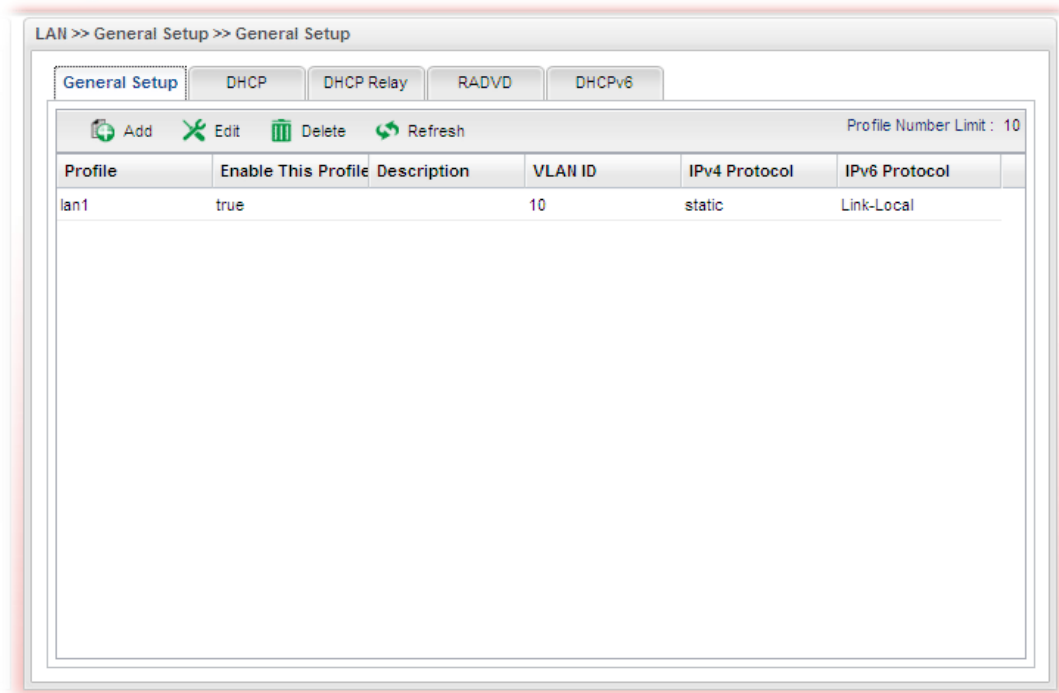
The most generic function of Vigor router is NAT. It creates a private subnet of your own. As mentioned previously, the router will talk to other public hosts on the Internet by using public IP address and talking to local hosts by using its private IP address. What NAT does is to translate the packets from private IP address to public IP address to forward the right packets to the right host and vice versa. Besides, Vigor router has a built-in DHCP server that assigns private IP address to each local host.



### 4.2.1 General Setup

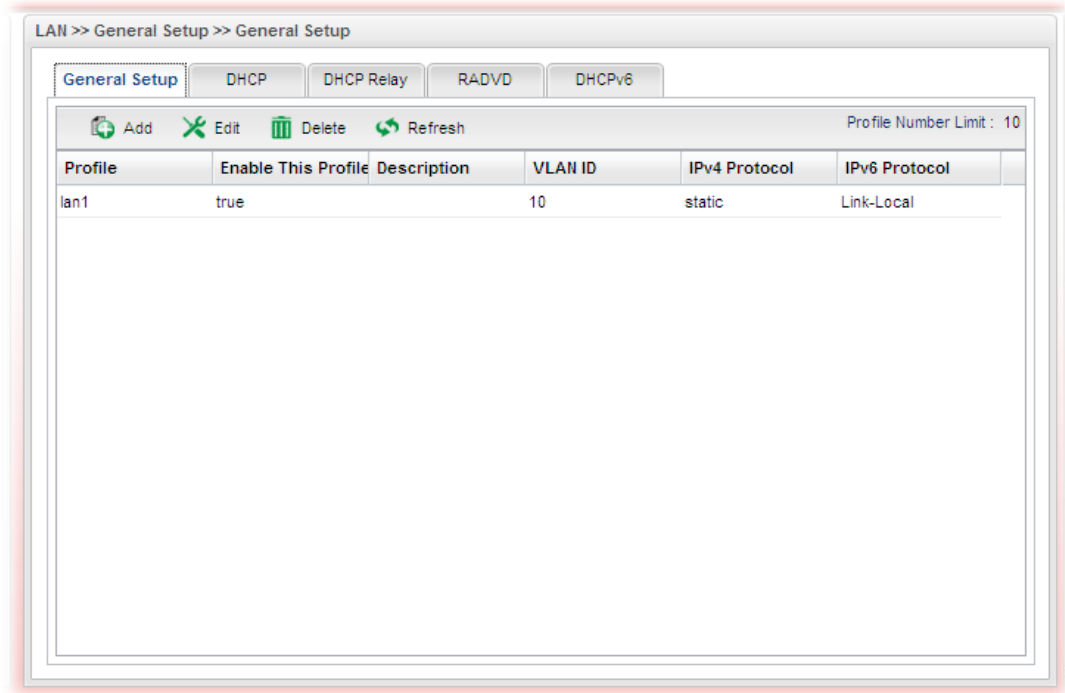
This page allows you to set LAN profiles for PCs in LAN. Settings of DHCP, DHCP Relay, RADVD and DHCPv6 settings are generated automatically by the system when the LAN profile is created. You can edit these settings by switching into each tab individually.

**Note:** One LAN profile shall be enabled at least to keep the normal operation. The default LAN profile named "lan1" shall not be deleted. Otherwise, the system might be damaged. If such file is deleted due to careless, please reset your router to restore the default setting.



## General Setup

This page allows you to enable the profile, give a brief explanation for such profile, specify the VLAN ID, specify MAC address, and choose protocol type for such profile.

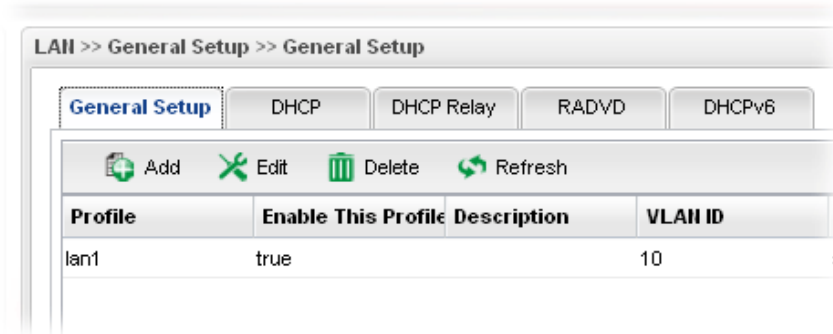


Each item will be explained as follows:

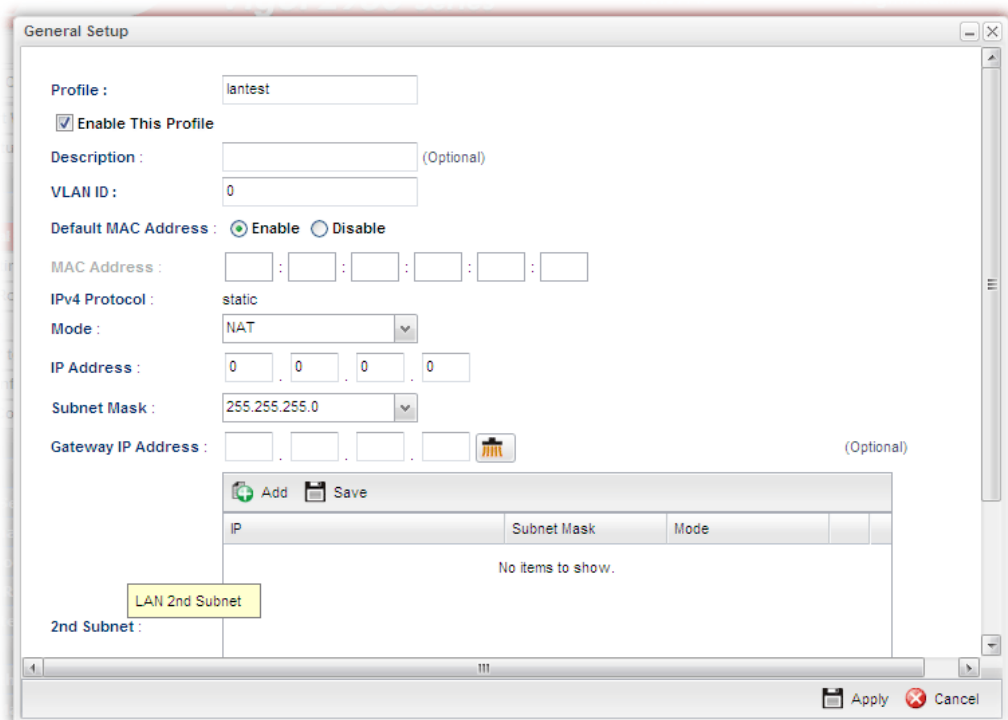
Item	Description
<b>Add</b>	Add a new LAN profile.
<b>Edit</b>	Modify the selected LAN profile.  To edit a profile, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected rule.
<b>Delete</b>	Remove the selected LAN profile.  To delete a rule, simply select the one you want to delete and click the <b>Delete</b> button.
<b>Refresh</b>	Renew current web page.
<b>Profile</b>	Display the name of the LAN profile.
<b>Enable This Profile</b>	Display the status of the profile. False means disabled; True means enabled.
<b>Description</b>	Display the brief explanation for the LAN profile.
<b>VLAN ID</b>	Display the VLAN ID configured for the LAN profile.
<b>IPv4 Protocol Type</b>	Display the IPv4 protocol type for the LAN profile.
<b>IPv6 Protocol Type</b>	Display the IPv6 protocol type for the LAN profile.

## How to add a new LAN profile

1. Open LAN>>General Setup and click the **General Setup** tab.


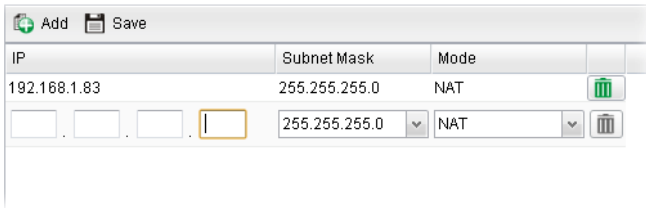



2. Click the **Add** button to open the following dialog. Different protocol type selected will bring up different configuration web page.



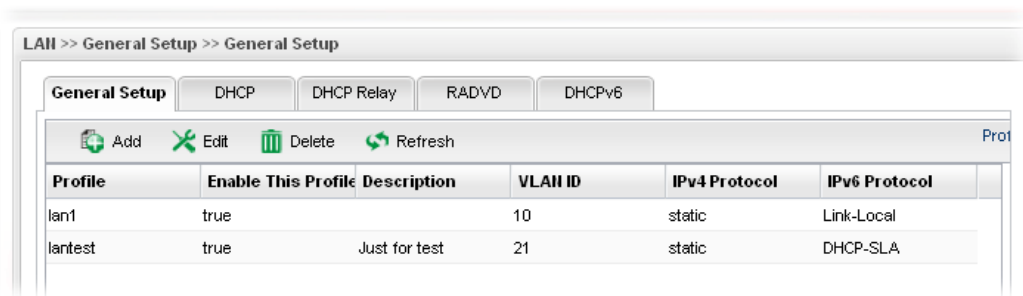
Available parameters are listed as follows:

Item	Description
<b>Profile</b>	Type the name of the LAN profile.
<b>Enable This Profile</b>	Check this box to enable such profile.
<b>Description</b>	Type the description for the new LAN profile.
<b>VLAN ID</b>	Type a number as the VLAN ID to make the data be identified while performing data transmission.
<b>Default MAC Address</b>	<p><b>Enable</b> – Click it to enable the default MAC address for such profile.</p> <p><b>Disable</b> – Click it to type the MAC address manually for such profile.</p>

<b>MAC Address</b>	If Default MAC address is disabled, please specify a MAC address manually.
<b>IPv4 Protocol</b>	Display the fixed type (static) for the IPv4 protocol for such profile.
<b>Mode</b>	Choose <b>NAT</b> or <b>ROUTING</b> as the operation mode for such profile.
<b>IP Address</b>	Type the IP address of the router for the LAN profile.
<b>Subnet Mask</b>	Use the drop down list to choose a suitable mask for the LAN profile.
<b>Gateway IP Address</b>	Such IP address is ready for matching with the function of Virtual System.  – click the icon to clear the IP setting.
<b>2<sup>nd</sup> Subnet</b>	Specify one 2 <sup>nd</sup> subnet which might be needed in the future.  <b>Add</b> – Click it to add a new subnet mask with IP address and specified mode. <b>Save</b> – Click it to save the settings. <b>IP</b> – Type the IP address if you click Add for adding a new entry. <b>Subnet Mask</b> – Use the drop down list to choose the one you want. <b>Mode</b> – Specify NAT or Routing as the mode.  – click the icon to remove the selected entry.
<b>IPv6 Protocol</b>	It defines the IPv6 connection types for LAN interface. Possible types contain Link-Local, Static and DHCP-SLA. Except Link-Local, each type requires different parameter settings. <b>Link-Local</b> - Link-Local address is used for communicating with neighbouring nodes on the same link. It is defined by the address prefix <b>fe80::/10</b> . You don't need to setup Link-Local address manually for it is generated automatically according to your MAC Address. <b>Static</b> –This type allows you to setup static IPv6 address for LAN. <b>DHCP-SLA</b> - DHCPv6 client mode would use IA_NA option of DHCPv6 protocol to obtain IPv6 address from server.
<b>IPv6 Address</b>	If <b>Static</b> is chosen as IPv6 Protocol, please type the IPv6 address in this field.
<b>IPv6 Prefix Length</b>	Type the IPv6 prefix length for IPv6 – Static protocol.

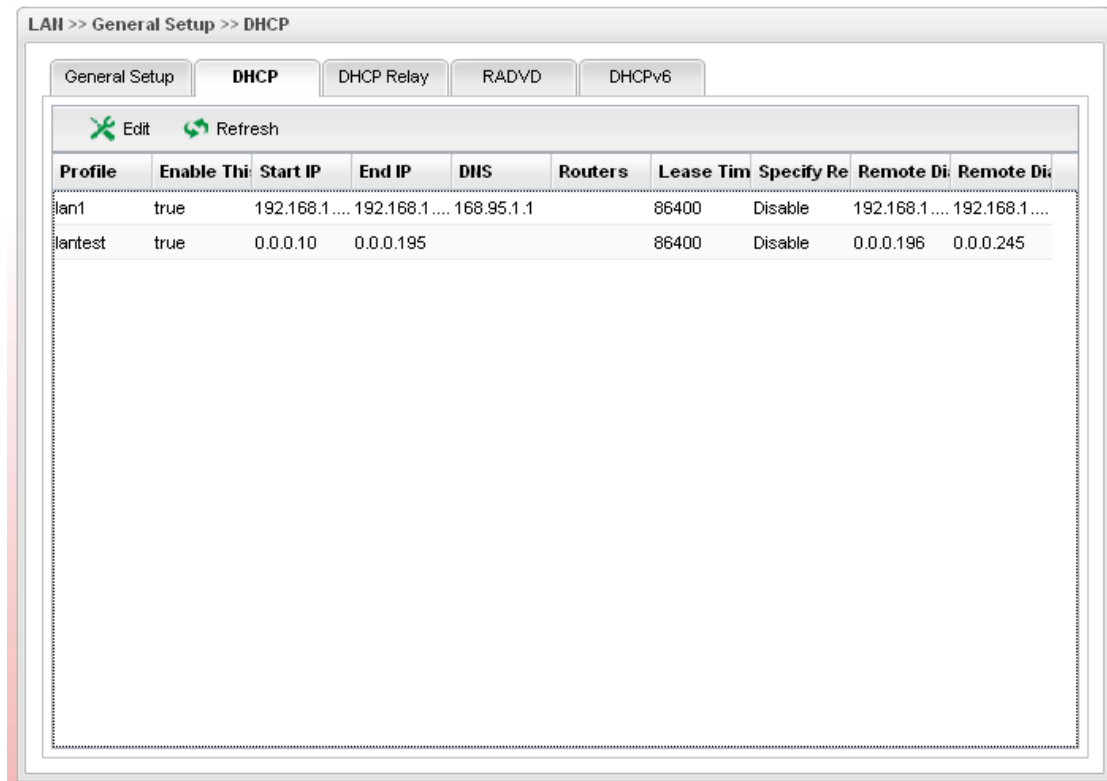
<b>DHCPv6 SLA WAN Interface</b>	If <b>DHCP-SLA</b> is chosen as IPv6 Protocol, please choose one of the WAN profiles in this field.
<b>DHCPv6 SLA ID</b>	The ID number set here is used by an individual organization to create its own local addressing hierarchy and to identify subnets.
<b>Apply</b>	Click it to save and exit the dialog.
<b>Cancel</b>	Click it to exit the dialog without saving anything.

- When you finish the above settings, please click **Apply** to save the configuration and exit the dialog.



## DHCP

In the Vigor2960 router, there are some IP address settings for the LAN interface. The IP address/subnet mask is for private users or NAT users. The IP address of the default gateway on other local PCs should be set as the Vigor2960 server IP address. When the DSL connection between the DSL and the ISP has been established, each local PC can directly route to the Internet. The IP address/subnet mask can also be used to connect to other private users (PCs). On this page you will see the private IP address defined in RFC-1918. Usually we use the 192.168.1.0/24 subnet for the route.



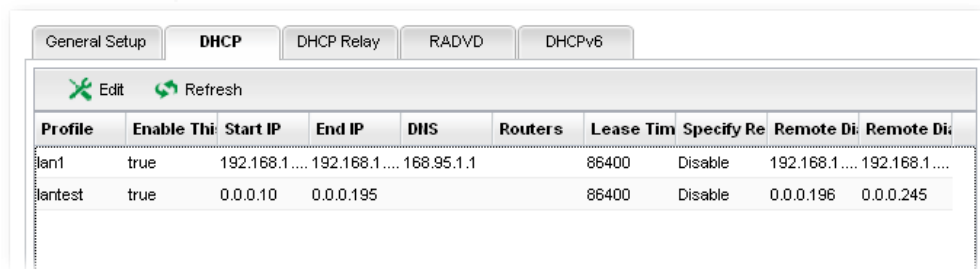
Each item will be explained as follows:

Item	Description
<b>Edit</b>	Modify the selected LAN profile. To edit a profile, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected rule.
<b>Refresh</b>	Renew current web page.
<b>Profile</b>	Display the name of the LAN profile.
<b>Enable This Profile</b>	Display the status of the profile. False means disabled; True means enabled.
<b>Start IP</b>	Display the starting IP address of the IP address pool for DHCP server.
<b>End IP</b>	Display the ending IP address of the IP address pool for DHCP server.

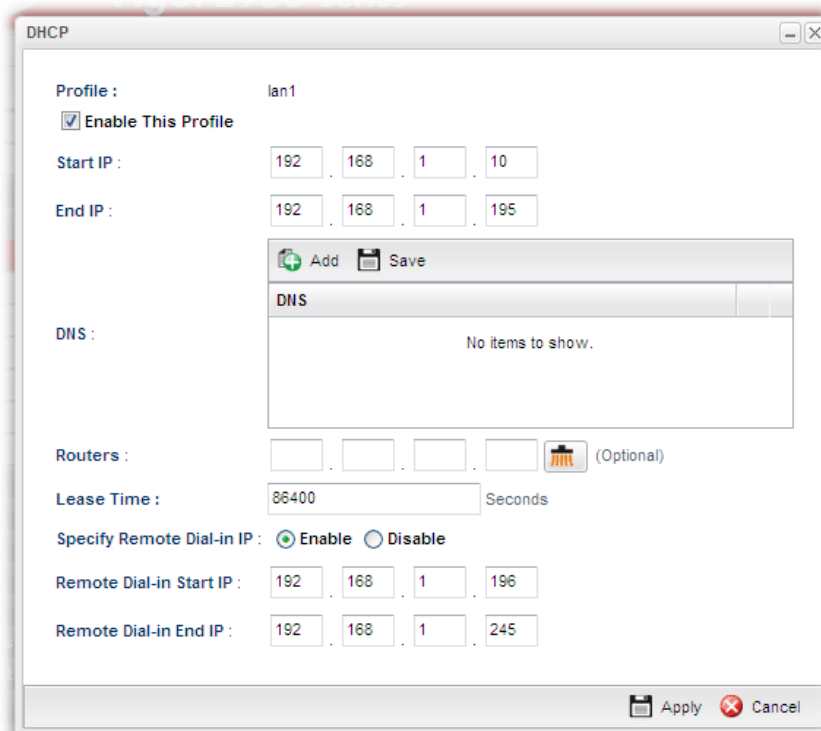
<b>DNS</b>	Display the IP address for DNS.
<b>Routers</b>	In general, this box will be blank. It means Vigor2960 will be regarded as the gateway for the user.
<b>Lease Time</b>	Display the lease time for the DHCP server.
<b>Specify Remote Dial-in IP</b>	Display the status of remote dial-in function. Disable means disabled; Enable means enabled.
<b>Remote Dial-in Start IP</b>	Display the start IP address for an IP range. The DHCP server can assign an IP address for remote dial-in user from such IP range.
<b>Remote Dial-in End IP</b>	Display the end IP address for an IP range. The DHCP server can assign an IP address for remote dial-in user from such IP range.

## How to edit a LAN profile for DHCP

1. Open LAN>>General Setup and click the **DHCP** tab.

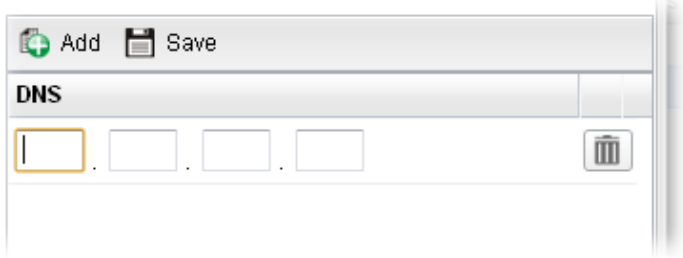



2. Choose one of the LAN profiles by clicking on it and click the **Edit** button to open the following dialog.



Available parameters are listed as follows:

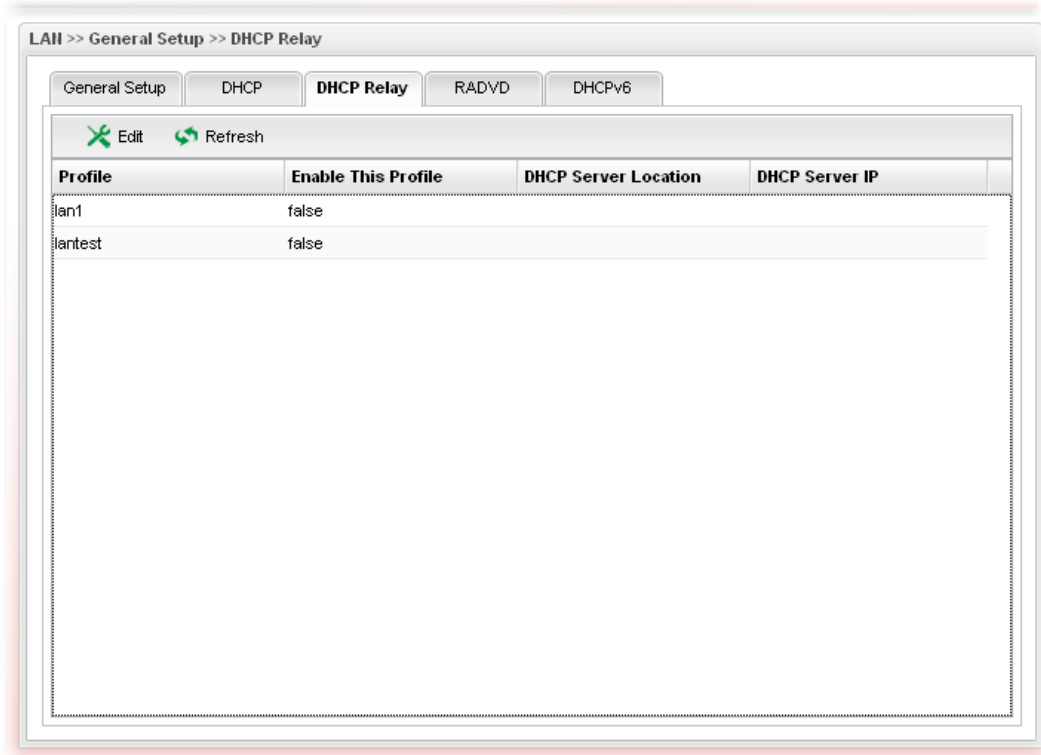


Item	Description
<b>Profile</b>	Display the name of the LAN profile.
<b>Enable This Profile</b>	Check this box to enable this profile.
<b>Start IP</b>	Set the starting IP address of the IP address pool for DHCP server.
<b>End IP</b>	Set the ending IP address of the IP address pool for DHCP server.
<b>DNS</b>	<p>Set the private IP address for DNS server. If this field is blank, users on LAN will treat Vigor2960 as the DNS server.</p>  <p><b>Add</b> – Click it to add a new IP address for DNS server.  <b>Save</b> – Click it to save the setting.   – click the icon to remove the selected entry.</p>
<b>Routers</b>	<p>In general, this box will be blank. It means Vigor2960 will be regarded as the gateway for the user.</p> <p>However, if you want to use other gateway, please assign the IP address in this field.</p>
<b>Lease Time</b>	Set a lease time for the DHCP server. The time unit is minute.
<b>Specify Remote Dial-in IP</b>	<p><b>Enable</b> – Enable this function that remote clients within the range specified below can access into Vigor2960 WUI.</p> <p><b>Disable</b> – Disable this function.</p>
<b>Remote Dial-in Start IP</b>	Specify the start IP address for an IP range. The DHCP server can assign an IP address for remote dial-in user from such IP range.
<b>Remote Dial-in End IP</b>	Specify the end IP address for an IP range. The DHCP server can assign an IP address for remote dial-in user from such IP range
<b>Apply</b>	Click it to save and exit the dialog.
<b>Cancel</b>	Click it to exit the dialog without saving anything.

4. When you finish the above settings, please click **Apply** to save the configuration and exit the dialog.
5. The LAN profile has been edited.

## DHCP Relay

This page allows users to specify which subnet that DHCP server is located that the relay agent should redirect the DHCP request to.

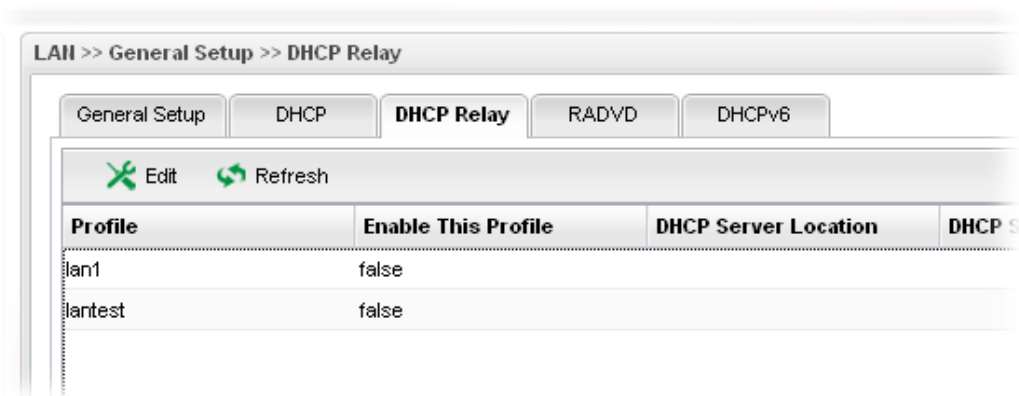


Each item will be explained as follows:

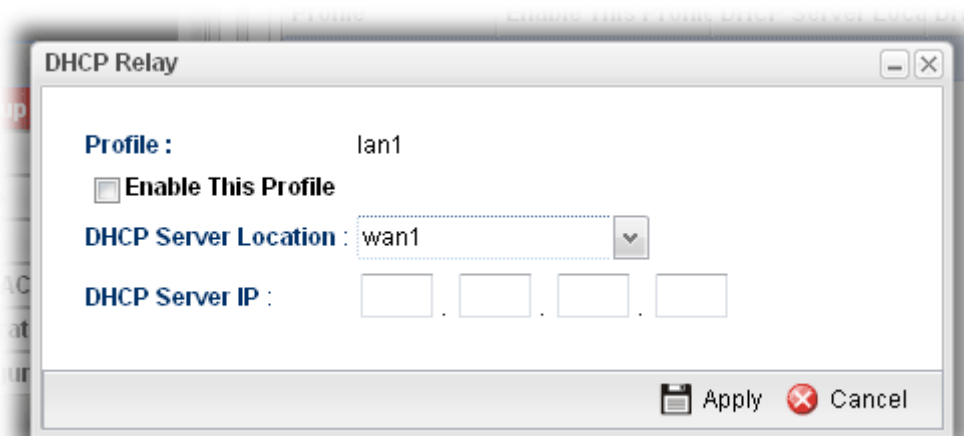
Item	Description
<b>Edit</b>	Modify the selected LAN profile. To edit a profile, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected rule.
<b>Refresh</b>	Renew current web page.
<b>Profile</b>	Display the name of the LAN profile.
<b>Enable This Profile</b>	Display the status of the profile. False means disabled; True means enabled.
<b>DHCP Server Location</b>	Display the LAN or WAN profile for the DHCP server.
<b>DHCP Server IP</b>	Display the IP address of DHCP server.

## How to edit a LAN profile for DHCP Relay

1. Open LAN>>General Setup and click the **DHCP Relay** tab.



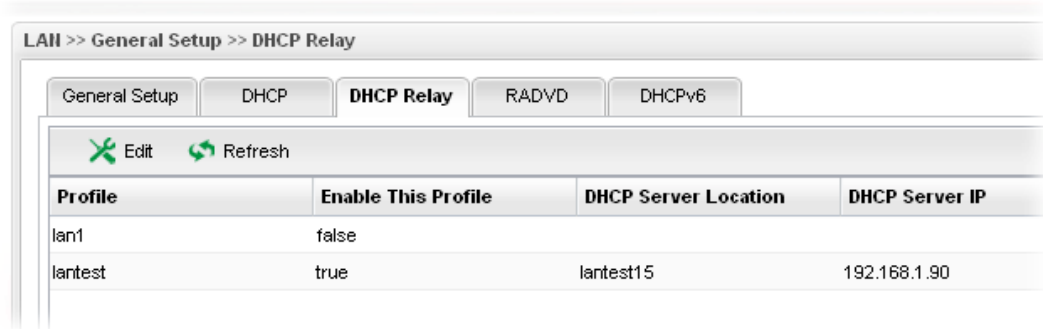
2. Choose one of the LAN profiles by clicking on it and click the **Edit** button to open the following dialog.



Available parameters are listed as follows:

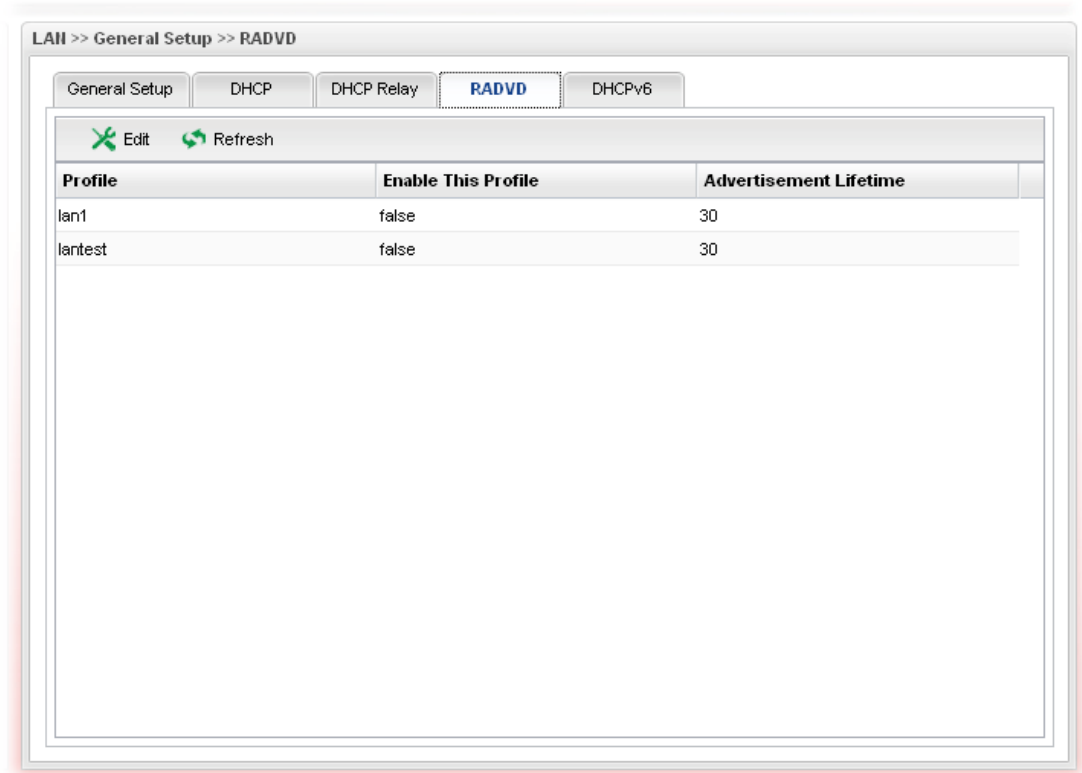
Item	Description
<b>Profile</b>	Display the name of the LAN profile.
<b>Enable This Profile</b>	Check this box to enable this profile.
<b>DHCP Server Location</b>	Specify a WAN profile as the server location.
<b>DHCP Server IP</b>	Type the IP address of DHCP Server.
<b>Apply</b>	Click it to save and exit the dialog.
<b>Cancel</b>	Click it to exit the dialog without saving anything.

3. When you finish the above settings, please click **Apply** to save the configuration and exit the dialog.
4. The LAN profile has been edited.



## RADVD

The router advertisement daemon (radvd) sends Router Advertisement messages, specified by RFC 2461, to a local Ethernet LAN periodically and when requested by a node sending a Router Solicitation message. These messages are required for IPv6 stateless auto-configuration.



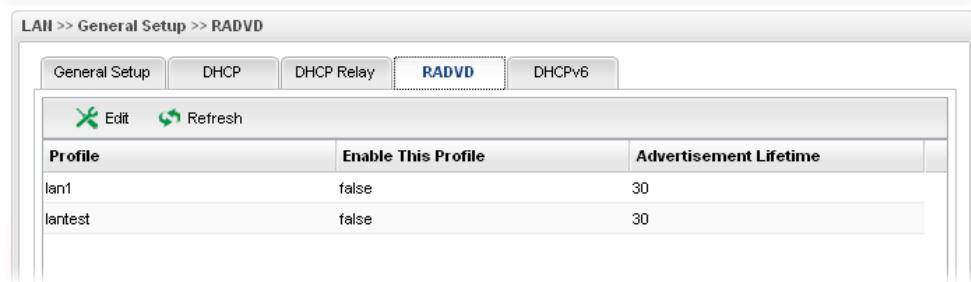
Each item will be explained as follows:

Item	Description
<b>Edit</b>	Modify the selected LAN profile. To edit a profile, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected rule.
<b>Refresh</b>	Renew current web page.
<b>Profile</b>	Display the name of the LAN profile.
<b>Enable This Profile</b>	Display the status of the profile. False means disabled; True

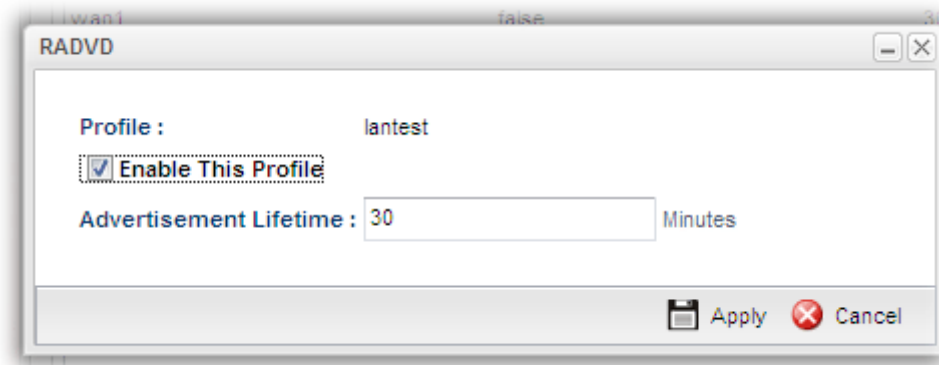
	means enabled.
<b>Advertisement Lifetime</b>	Display the lifetime value. The lifetime associated with the default router in units of minutes, ranging from 10 ~ 150. It is used to control the lifetime of the prefix. A lifetime of 0 indicates that the router is not a default router and should not appear on the default router list.

## How to edit a LAN profile for RADVD

1. Open **LAN>>General Setup** and click the **RADVD** tab.



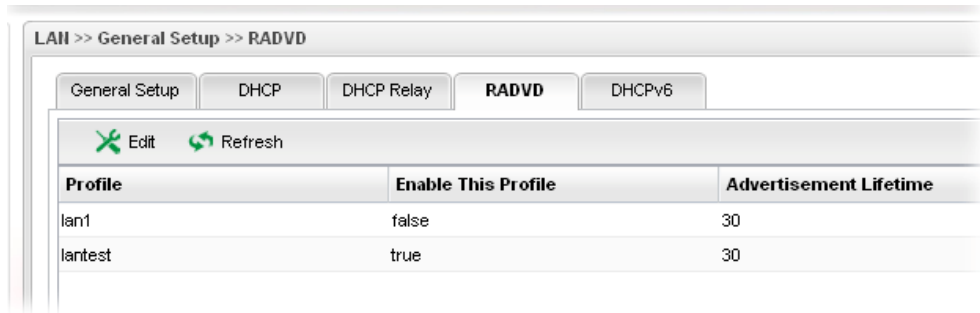
2. Choose one of the LAN profiles by clicking on it and click the **Edit** button to open the following dialog.



Available parameters are listed as follows:

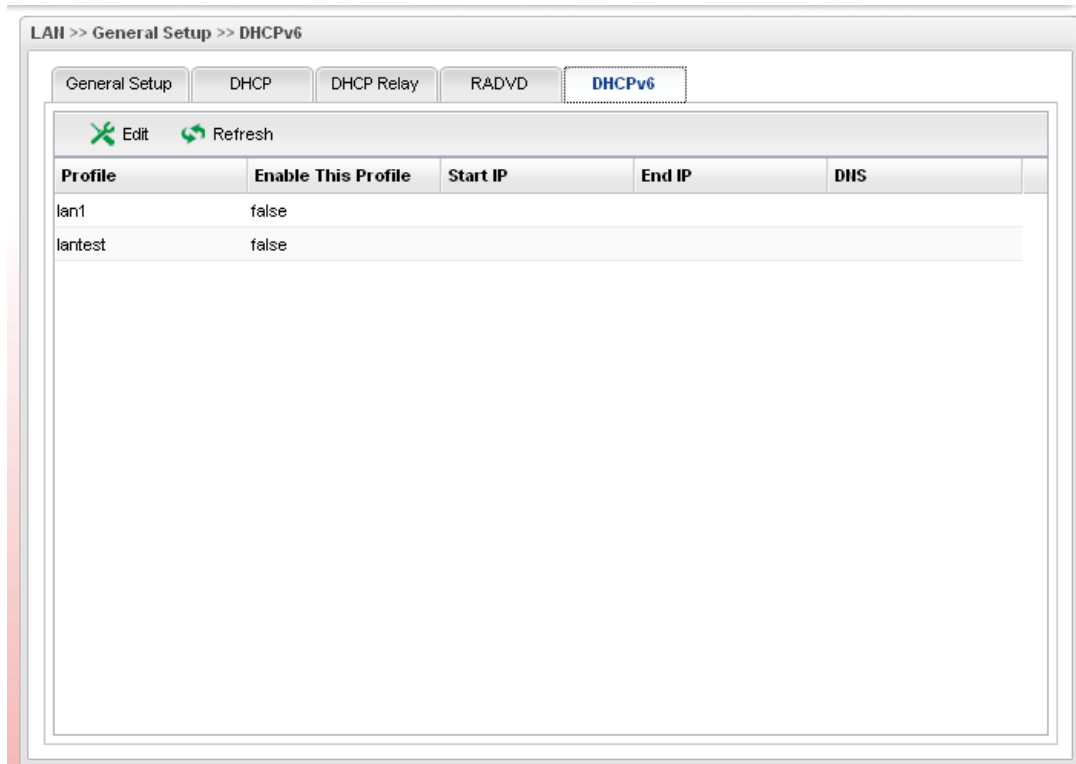
Item	Description
<b>Profile</b>	Display the name of the LAN profile.
<b>Enable This Profile</b>	Check this box to enable this profile.
<b>Advertisement Lifetime</b>	Type a value for advertisement lifetime. The lifetime associated with the default router in units of minutes, ranging from 10 ~ 150. It is used to control the lifetime of the prefix. A lifetime of 0 indicates that the router is not a default router and should not appear on the default router list.
<b>Apply</b>	Click it to save and exit the dialog.
<b>Cancel</b>	Click it to exit the dialog without saving anything.

3. When you finish the above settings, please click **Apply** to save the configuration and exit the dialog.
4. The LAN profile has been edited.



## DHCP6

DHCP6 Server could assign IPv6 address to PC according to the Start/End IPv6 address configuration.



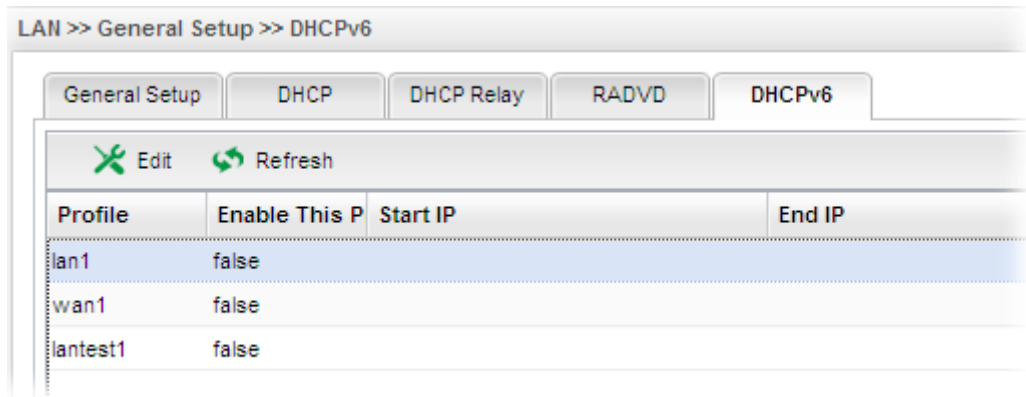
Each item will be explained as follows:

Item	Description
<b>Edit</b>	Modify the selected LAN profile. To edit a profile, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected rule.
<b>Refresh</b>	Renew current web page.
<b>Profile</b>	Display the name of the LAN profile.

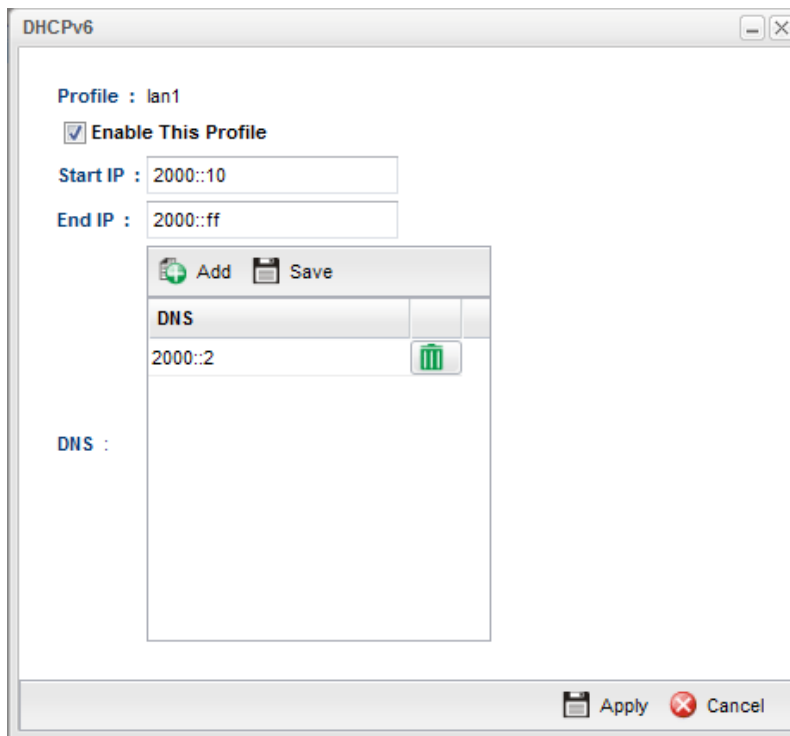
<b>Enable This Profile</b>	Display the status of the profile. False means disabled; True means enabled.
<b>Start IP</b>	Display the starting IP address of the IP address pool for DHCP server.
<b>End IP</b>	Display the ending IP address of the IP address pool for DHCP server.
<b>DNS</b>	Display the private IP address for DNS server.

## How to edit a LAN profile for DHCPv6

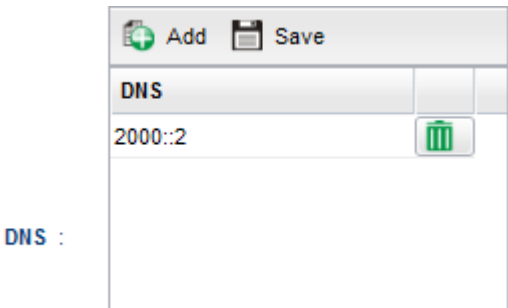

1. Open LAN>>General Setup and click the **DHCPv6** tab.



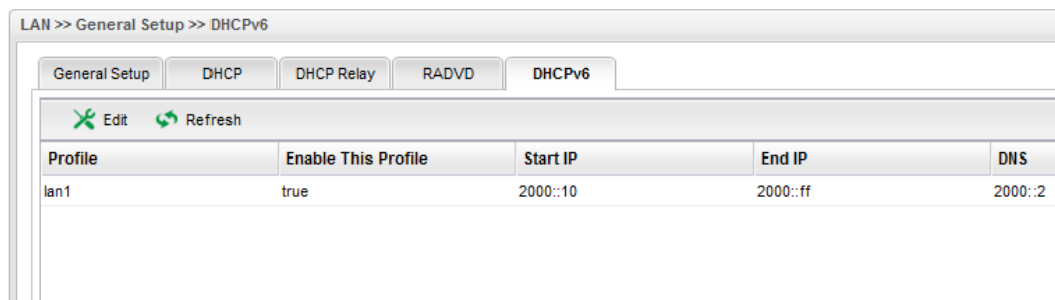
2. Choose one of the LAN profiles by clicking on it and click the **Edit** button to open the following dialog.



Available parameters are listed as follows:

Item	Description
<b>Profile</b>	Display the name of the LAN profile.
<b>Enable This Profile</b>	Check this box to enable this profile.
<b>Start IP</b>	Set the starting IP address of the IP address pool for DHCP server. The format the IP address shall be similar to the following example: 2000:0000:0000:0000:0000:0000:0000:10 or 2000::10.
<b>End IP</b>	Set the ending IP address of the IP address pool for DHCP server. The format the IP address shall be similar to the following example: 2000:0000:0000:0000:0000:0000:0000:10 or 2000::10.
<b>DNS</b>	<p>Set the private IP address for DNS server. If this field is blank, users on LAN will treat Vigor2960 as the DNS server.</p>  <p><b>Add</b> – Click it to add a new IP address for DNS server.  <b>Save</b> – Click it to save the setting.   – click the icon to remove the selected entry.</p>
<b>Apply</b>	Click it to save and exit the dialog.
<b>Cancel</b>	Click it to exit the dialog without saving anything.

- When you finish the above settings, please click **Apply** to save the configuration and exit the dialog.
- The LAN profile has been edited.

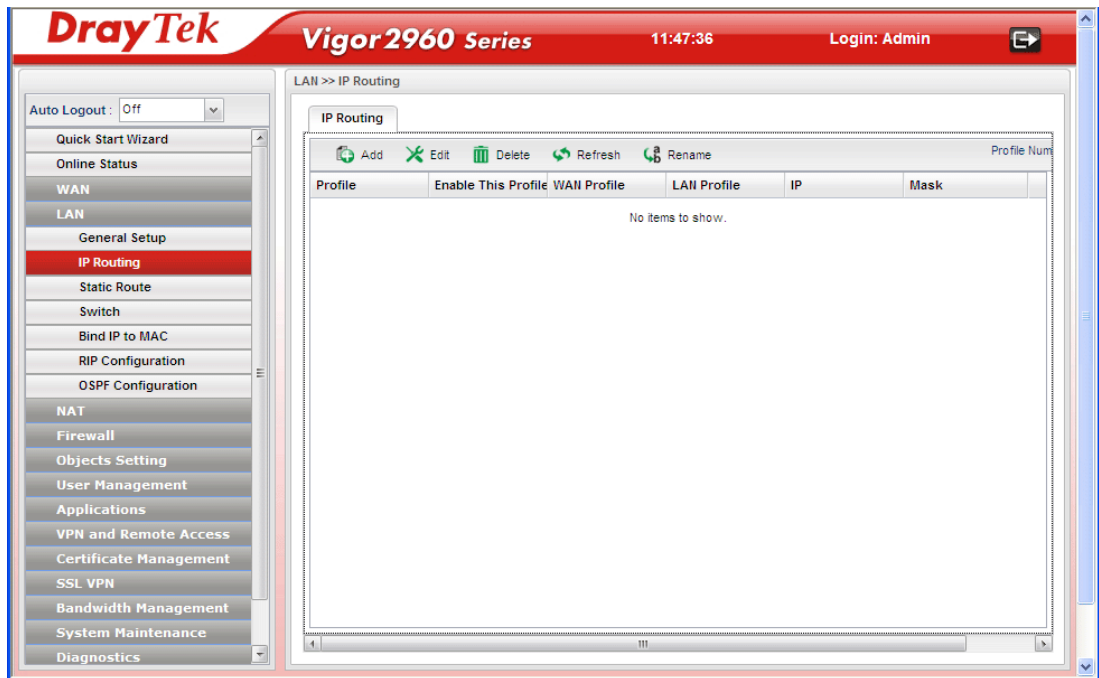




## 4.2.2 IP Routing

To make local device in LAN accessing into external network without passing NAT or let the remote device access into the local device without passing NAT behind the router, please use IP routing function to complete the work.

Usually, the local device might be assigned with a public IP address or an IP address with the same subnet as certain WAN. When the local device tries to transmit the data packets out, Vigor2960 will send it out through that certain WAN interface without passing through NAT. Meanwhile, remote device also can access the local device directly without any difficulty.



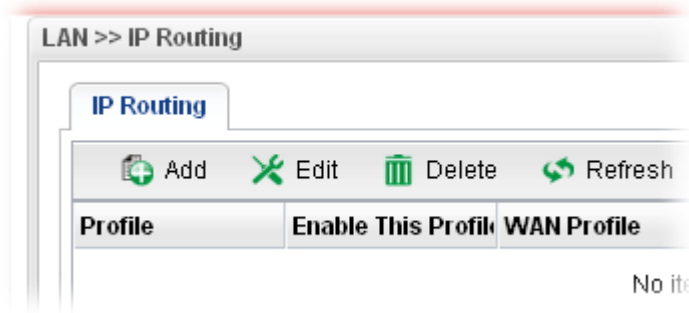
Each item will be explained as follows:

Item	Description
<b>Add</b>	Add a new IP Routing profile.
<b>Edit</b>	Modify the selected IP routing setting. To edit the IP routing setting, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected profile.
<b>Delete</b>	Remove the selected route setting. To delete a static route setting, simply select the one you want to delete and click the <b>Delete</b> button.
<b>Refresh</b>	Renew current web page.
<b>Rename</b>	Allow to modify the selected profile name.
<b>Profile</b>	Display the name of such IP route profile.
<b>Enable This Profile</b>	Display the status of the profile. False means disabled; True means enabled.
<b>WAN Profile</b>	Display which WAN profile used for sending out the data packets.

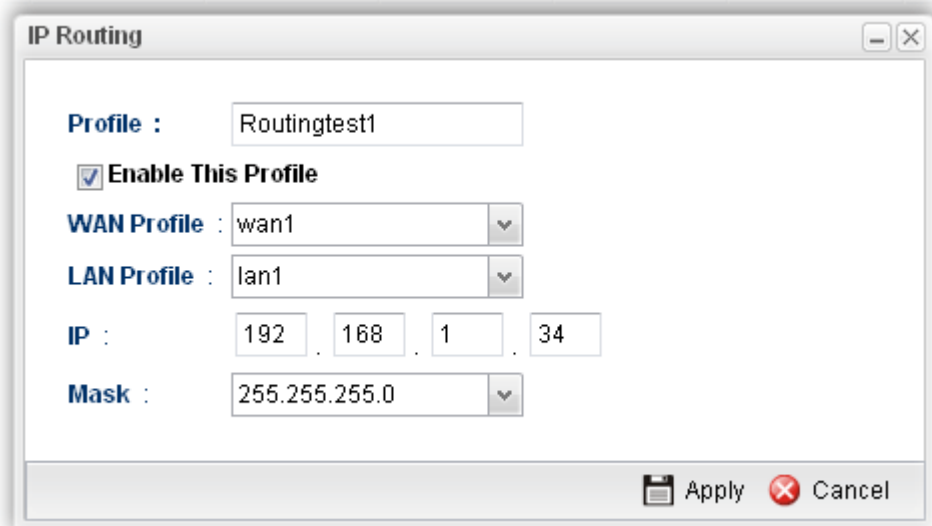
<b>LAN Profile</b>	Display which LAN profile used for the local device.
<b>IP</b>	Display the private IP address for such profile.
<b>Mask</b>	Display the subnet mask for such profile.

### How to add a new IP Routing profile

1. Open LAN>>IP Routing.
2. Click the **Add** button.



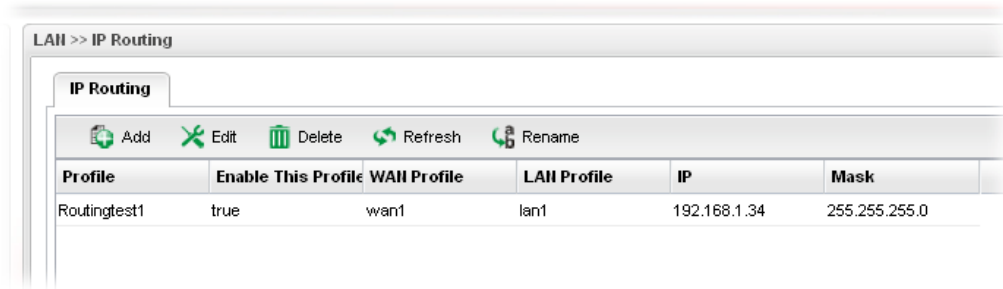
3. The following dialog will appear.



Available parameters are listed as follows:

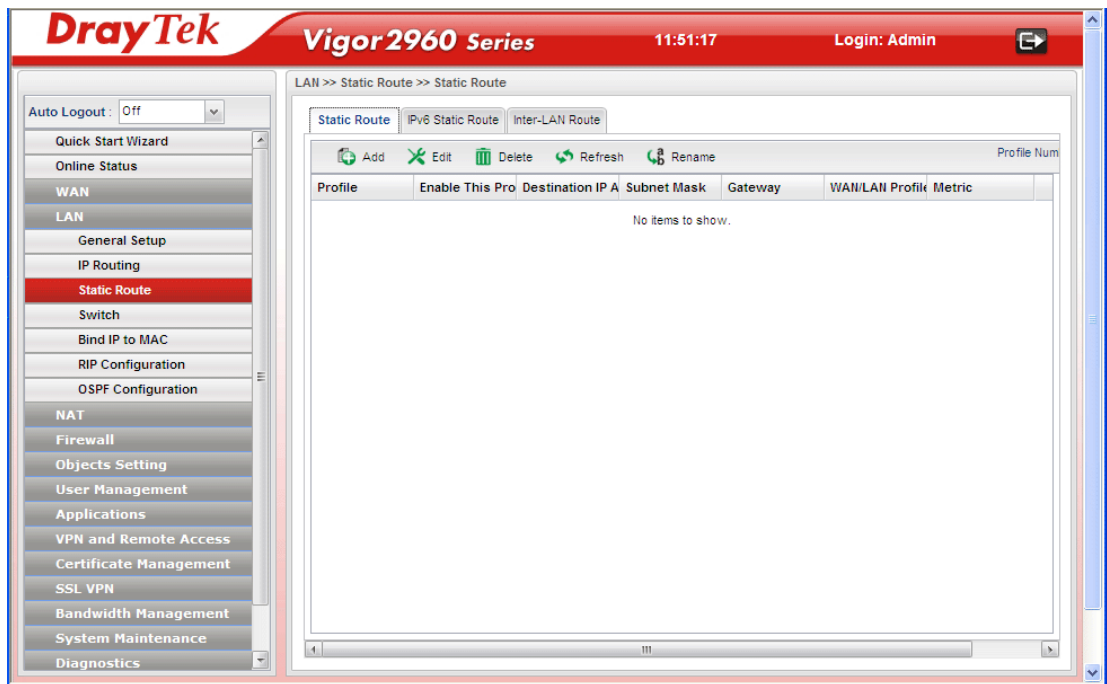
<b>Item</b>	<b>Description</b>
<b>Profile</b>	Type the name of the IP routing profile.
<b>Enable This Profile</b>	Check this box to enable such IP routing profile.
<b>WAN Profile</b>	Choose one of WAN profiles for sending data out.
<b>LAN Profile</b>	Choose one of LAN profiles for the local device.
<b>IP</b>	Type the private IP address for such IP routing profile.
<b>Mask</b>	Use the drop down list to choose the subnet mask for such IP routing profile.

4. Enter all the settings and click **Apply**. The new profile will be added on the screen.

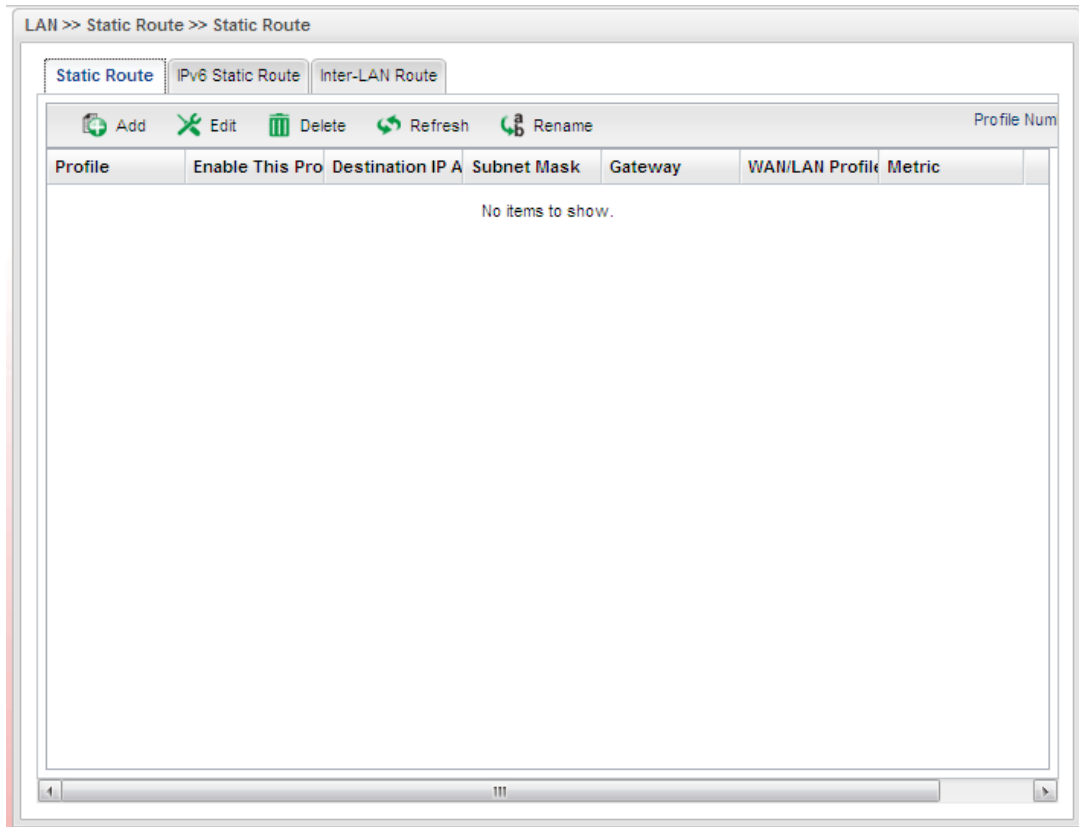


### 4.2.3 Static Route

When there are several subnets in LAN, a more effective and quicker way for connection is static route rather than other methods. Simply set rules to forward data from one specified subnet to another specified subnet.



## Static Route



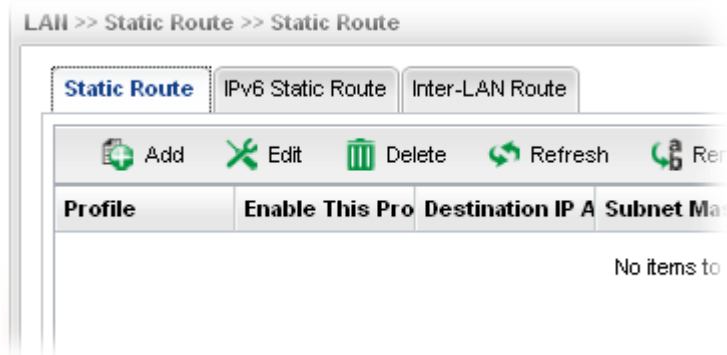
Each item will be explained as follows:

Item	Description
<b>Add</b>	Add a new static route setting.
<b>Edit</b>	Modify the selected static route setting. To edit static route setting, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected rule.
<b>Delete</b>	Remove the selected static route setting. To delete a static route setting, simply select the one you want to delete and click the <b>Delete</b> button.
<b>Refresh</b>	Renew current web page.
<b>Rename</b>	Allow to modify the selected profile name.
<b>Profile</b>	Display the name of such static route.
<b>Enable This Profile</b>	Display the status of the profile. False means disabled; True means enabled.
<b>Destination IP Address</b>	Display the IP address for such static route profile.
<b>Subnet Mask</b>	Display the subnet mask for such static route profile.
<b>Gateway</b>	Display the gateway address for such static route profile.
<b>WAN/LAN Profile</b>	Display the subnet / LAN or WAN profile of the gateway.

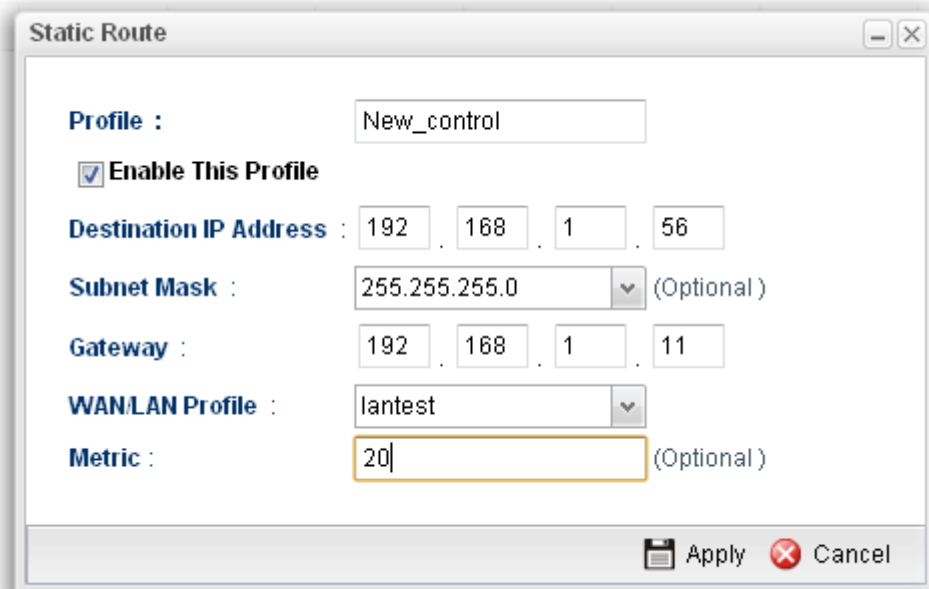
<b>Metric</b>	Display the distance to the target.
---------------	-------------------------------------

### How to add a new Static Route profile

1. Open LAN>>Static Routing and click the **Static Route** tab.
2. Click the **Add** button.



3. The following dialog will appear.

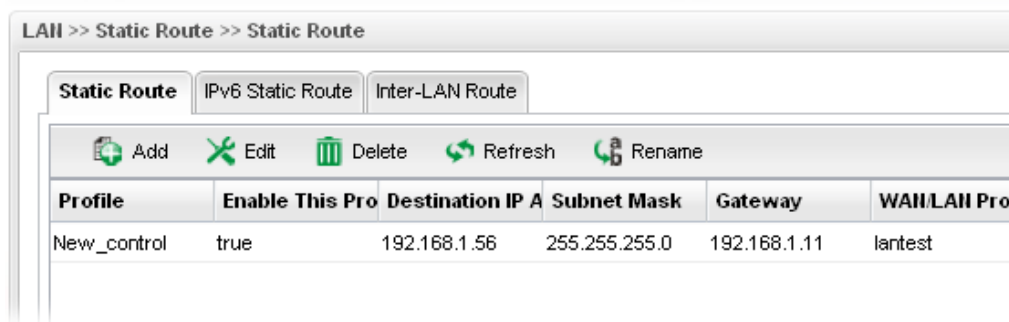


Available parameters are listed as follows:

Item	Description
<b>Profile</b>	Type the name of the static route profile.
<b>Enable This Profile</b>	Check this box to enable such profile.
<b>Destination IP Address</b>	Type the IP address for such static route profile.
<b>Subnet Mask</b>	Use the drop down list to choose the subnet mask for such static route profile.
<b>Gateway</b>	Type the gateway address for such static route profile.
<b>WAN/LAN Profile</b>	Choose one of the LAN/WAN profiles of the gateway for such static route.

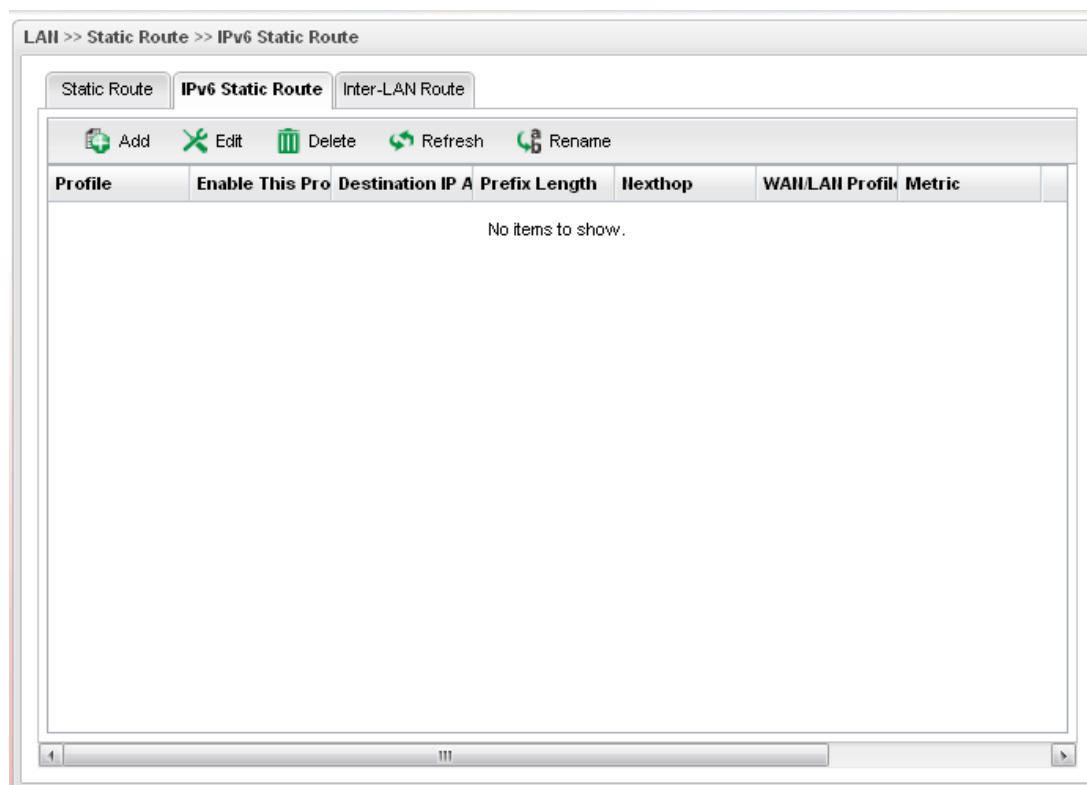
<b>Metric</b>	Type the distance to the target (usually counted in hops).
<b>Apply</b>	Click it to save and exit the dialog.
<b>Cancel</b>	Click it to exit the dialog without saving anything.

5. Enter all the settings and click **Apply**. The new profile will be added on the screen.



## IPv6 Static Route

For IPv6 protocol, click the **IPv6 Static Route** tab to configure detailed settings.



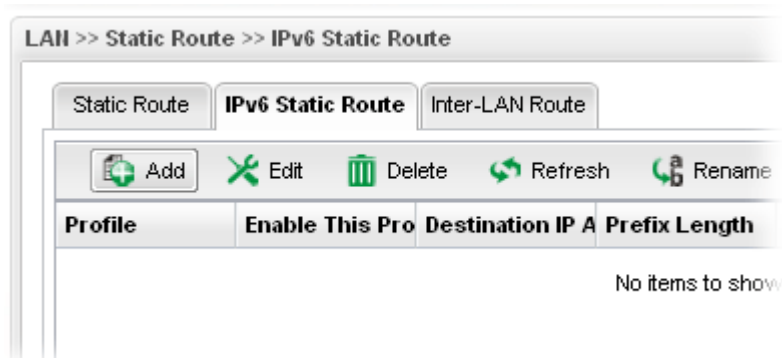
Each item will be explained as follows:

<b>Item</b>	<b>Description</b>
<b>Add</b>	Add a new static route setting.
<b>Edit</b>	Modify the selected static route setting. To edit static route setting, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the

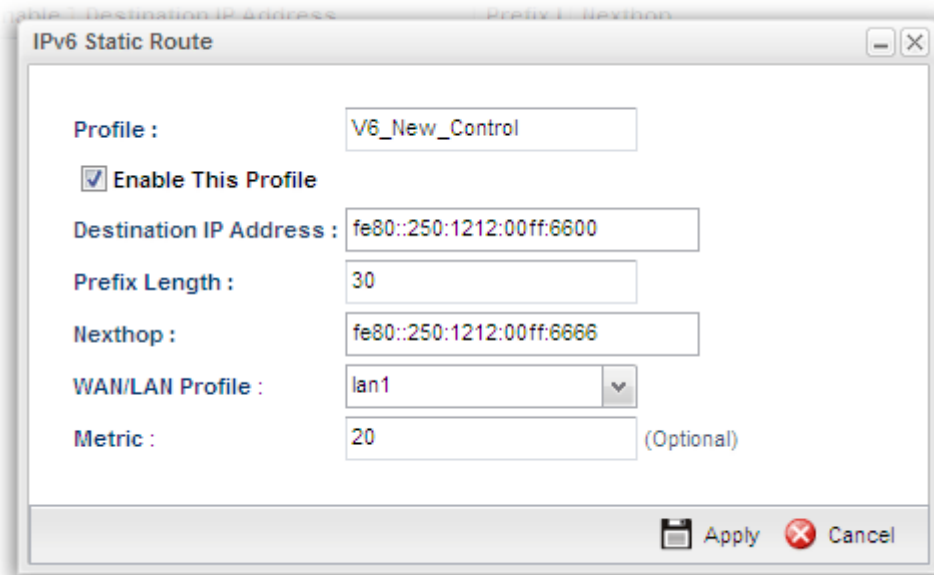
	selected rule.
<b>Delete</b>	Remove the selected static route setting. To delete a static route setting, simply select the one you want to delete and click the <b>Delete</b> button.
<b>Refresh</b>	Renew current web page.
<b>Rename</b>	Allow to modify the selected profile name.
<b>Profile</b>	Display the name of such static route.
<b>Enable This Profile</b>	Display the status of the profile. False means disabled; True means enabled.
<b>Destination IP Address</b>	Display the IP address for such static route profile.
<b>Prefix Length</b>	Display the prefix length of the profile.
<b>Nexthop</b>	Display the nexthop address for such static route profile.
<b>WAN / LAN Profile</b>	Display the subnet LAN or WAN profile of the gateway.
<b>Metric</b>	Display the distance to the target.

### How to add a new IPv6 Static Route profile

1. Open LAN>>Static Route and click the **IPv6 Static Route** tab.
2. Click the **Add** button.



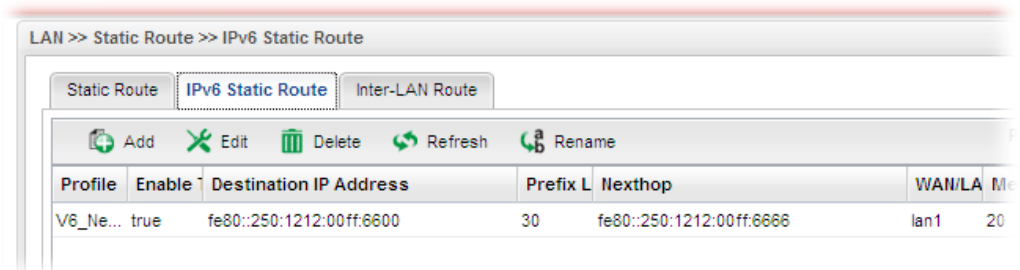
3. The following dialog will appear.



Available parameters are listed as follows:

Item	Description
<b>Profile Name</b>	Type the name of the static route profile.
<b>Enable This Profile</b>	Check this box to enable such profile.
<b>Destination IP Address</b>	Type the IP address for such static route profile.
<b>Prefix Length</b>	Type the prefix length for such profile.
<b>Nexthop</b>	Type the nexthop address for such static route profile.
<b>WAN/LAN Profile</b>	Choose one of the LAN/WAN profiles of the gateway for such static route.
<b>Metric</b>	Type the distance to the target (usually counted in hops).
<b>Apply</b>	Click it to save and exit the dialog.
<b>Cancel</b>	Click it to exit the dialog without saving anything.

4. Enter all the settings and click **Apply**. The new profile will be added on the screen.





## Inter-LAN Route

To make the users in different LAN communicating with each other, please check the box to enable Inter-LAN route function.



### 4.2.3 Switch

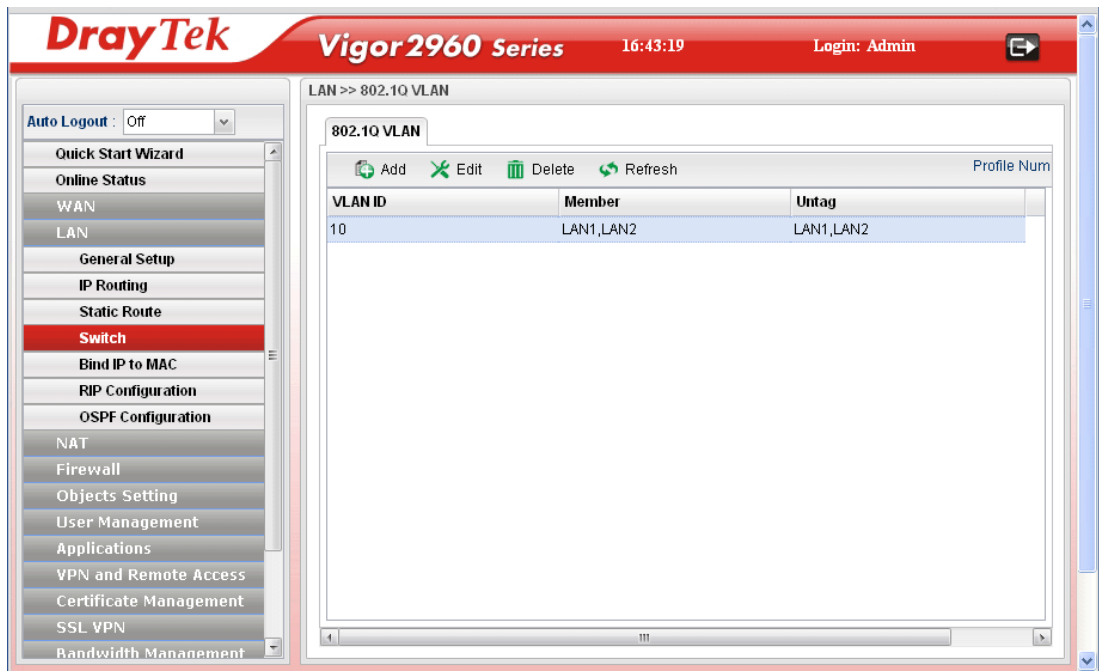
This page allows you to configure Mirroring Port, Mirrored Port, enable/disable LAN interface, and configure 802.1Q VLAN ID for different LAN interfaces, and so on.

#### 802.1Q VLAN

Virtual LANs (VLANs) are logical, independent workgroups within a network. These workgroups communicate as if they had a physical connection to the network. However, VLANs are not limited by the hardware constraints that physically connect traditional LAN segments to a network. As a result, VLANs allow the network manager to segment the network with a logical, hierarchical structure. VLANs can define a network by application or department. For instance, in the enterprise, a company might create one VLAN for multimedia users and another for e-mail users; or a company might have one VLAN for its Engineering Department, another for its Marketing Department, and another for its guest who can only use Internet not Intranet. VLANs can also be set up according to the organization structure within a company. For example, the company president might have his own VLAN, his executive staff might have a different VLAN, and the remaining employees might have yet a different VLAN. VLANs can also set up according to different company in the same building to save the money and reduce the device establishment.

User can select some ports to add into a VLAN group. In one VLAN group, the port number can be single one or more.

The purpose of VLAN is to isolate traffic between different users and it can provide better security application.



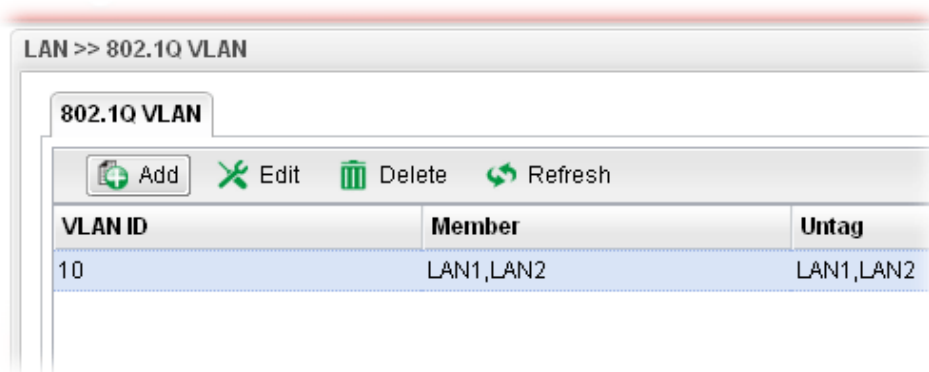
Each item will be explained as follows:

Item	Description
Add	Add a new VLAN ID setting.
Edit	Modify the selected VLAN ID setting. To edit VALN ID setting, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the

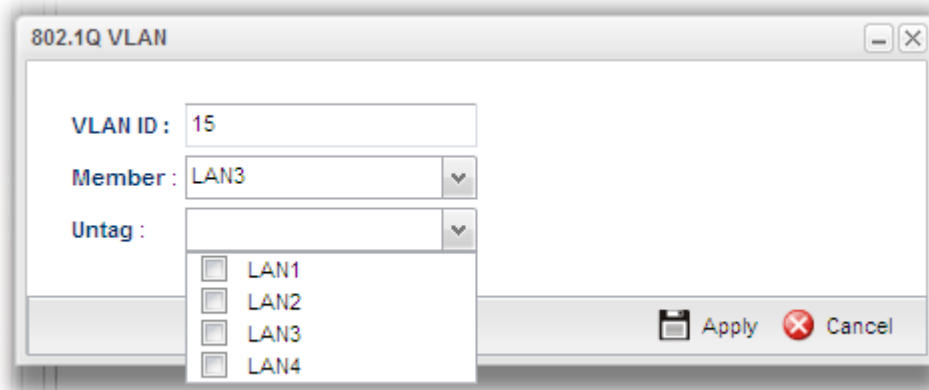
	selected rule.
<b>Delete</b>	Remove the selected VLAN ID setting. To delete a VLAN ID setting, simply select the one you want to delete and click the <b>Delete</b> button.
<b>Refresh</b>	Renew current web page.
<b>VLAN ID</b>	Display the VLAN ID number.
<b>Member</b>	Display the LAN interface that is used to access into Internet for such LAN profile with the VLAN ID number.
<b>Untag</b>	Display the LAN interface that packets transmitted to Internet through such LAN profile with the VLAN ID number is tagged or untagged.

### How to add a new 802.1Q VLAN profile

1. Open **LAN>>Switch** and click the **802.1Q VLAN** tab.
2. Click the **Add** button.



3. The following dialog will appear.

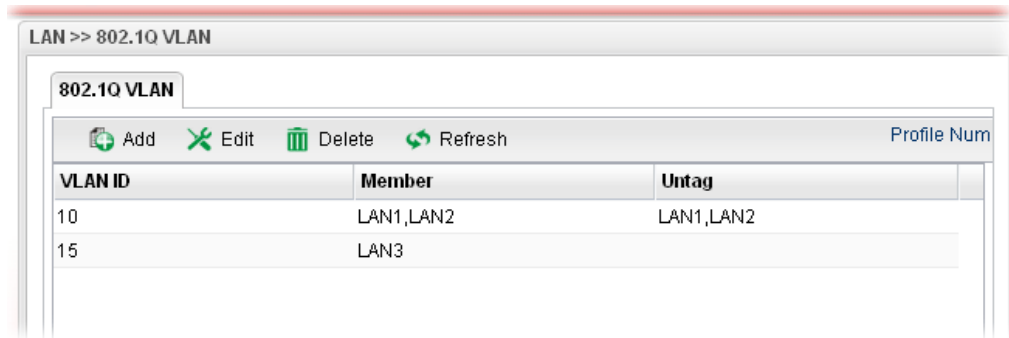


Available parameters are listed as follows:

Item	Description
<b>VLAN ID</b>	Type the number as the VLAN ID. Type a number used for identification on VLAN for your computer. Later, you have to type the same ID number for each PC which wants to be grouped within the same VLAN group.

<b>Member</b>	Determine which LAN interface can be used to access into Internet for such LAN profile with the VLAN ID number.
<b>Untag</b>	Determine if the packets transmitted to Internet through such LAN profile with the VLAN ID number is tagged or not.
<b>Apply</b>	Click it to save and exit the dialog.
<b>Cancel</b>	Click it to exit the dialog without saving anything.

4. Enter all the settings and click **Apply**. The new profile will be added on the screen.



## 4.2.4 Bind IP to MAC

This function is used to bind the IP and MAC address in LAN to have a strengthened 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.

This page allows you to configure related settings for the function of Bind IP to MAC.



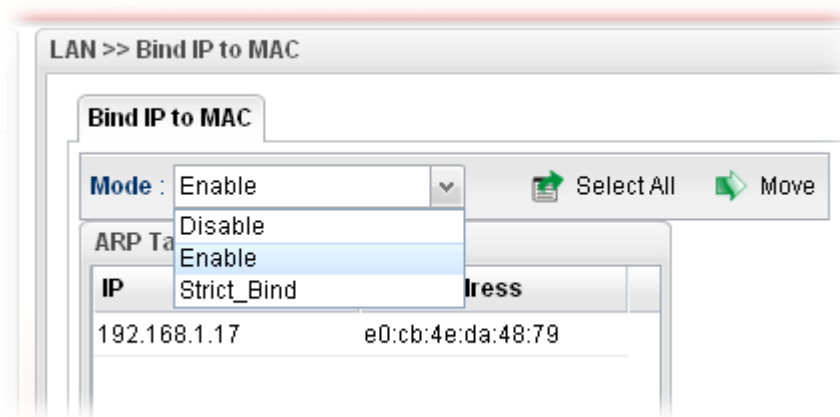
Each item will be explained as follows:

Item	Description
<b>Mode</b>	<p><b>Enable</b> - Choose it to invoke this function. However, IP/MAC which is not listed in IP Bind List also can connect to Internet.</p> <p><b>Disable</b> - Choose it to disable this function. All the settings on this page will be invalid.</p> <p><b>Strict Bind</b> - Choose it to lock the connection of the IP/MAC which is not listed in IP Bind List.</p>
<b>Select All</b>	Allow you to choose all the items listed in ARP Table.
<b>Move</b>	Move the selected item to IP Bind List.
<b>ARP Table</b>	This table is the LAN ARP table of this router. The information for IP and MAC will be displayed in this field. Each pair of IP and MAC address listed in ARP table can be selected and added to IP Bind List by clicking <b>Move</b> on IP Bind List.
<b>IP Address</b>	Display the IP address of one device.
<b>MAC Address</b>	Display the MAC address of the device.
<b>Add</b>	It allows you to add one pair of IP/MAC address and display on the table of <b>IP Bind List</b> .

<b>Edit</b>	It allows you to edit and modify the selected IP address and MAC address that you create before.
<b>Delete</b>	You can remove any item listed in <b>IP Bind List</b> . Simply click and select the one, and click <b>Delete</b> . The selected item will be removed from the <b>IP Bind List</b> .
<b>Select All</b>	Choose all of the selections at one time.
<b>Refresh</b>	It is used to refresh the ARP table. When there is one new PC added to the LAN, you can click this link to obtain the newly ARP table information.
<b>Refresh</b>	Renew current web page.
<b>Bind Table</b>	It displays a list for the IP bind to MAC information.
<b>Profile</b>	Display the name of the profile.
<b>IP Address</b>	Display the IP address specified for the profile.
<b>MAC</b>	Display the MAC address specified for the profile.

## How to configure Bind IP to MAC

1. Open LAN>>Bind IP to MAC.
2. Use the drop down **Mode** menu to specify a suitable mode.



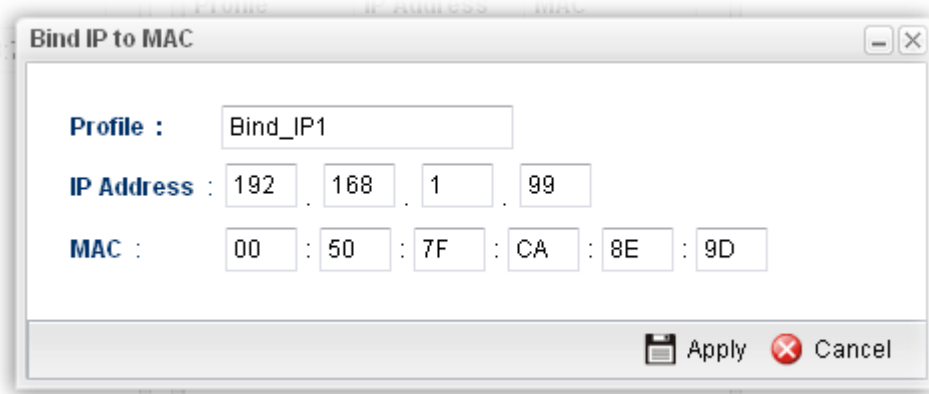
There are three modes offered for you to choose.

**Disable** – The function of Bind IP to MAC is disabled.

**Enable** – Specified IP addresses on the Bind Table will be reserved for the device with bind MAC address. Other devices which are not listed on the Bind Table shall still get the IP address from DHCP server.

**Strict\_Bind** – Only specified IP addresses will be assigned to the device with bind MAC address. Other devices which are not listed on the Bind Table shall still **NOT** get the IP address from DHCP server.

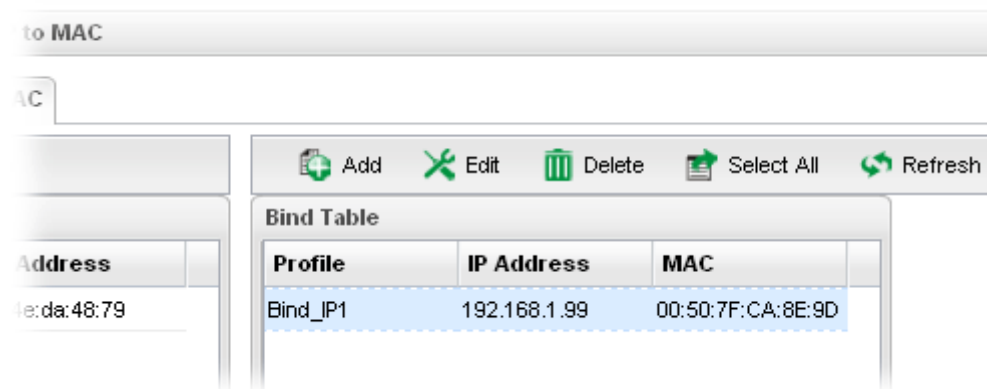
- Click **Add** to open the following dialog.



Available parameters are listed as follows:

Item	Description
<b>Profile</b>	Type the name of the profile.
<b>IP Address</b>	Type the IP address that will be used for the specified MAC address.
<b>MAC</b>	Type the MAC address that is used to bind with the assigned IP address.
<b>Apply</b>	Click it to save and exit the dialog.
<b>Cancel</b>	Click it to exit the dialog without saving anything.

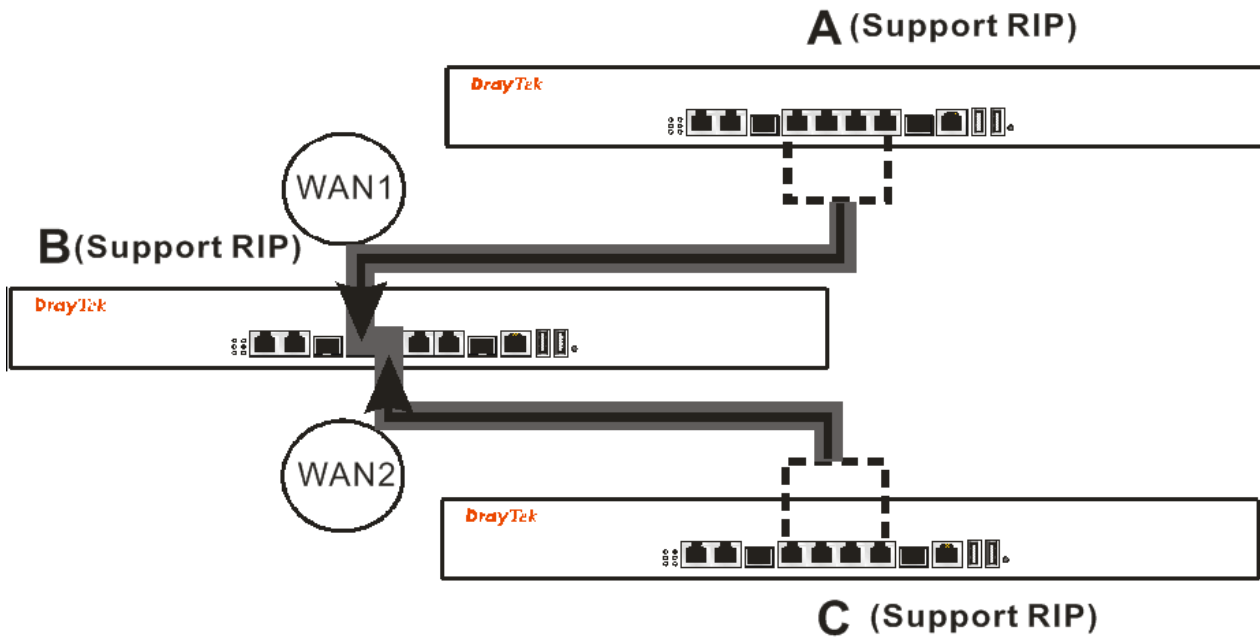
- Enter all the settings and click **Apply**.
- A new profile has been added onto **Bind Table**.



#### 4.2.5 RIP Configuration

The Routing Information Protocol (RIP) is a dynamic routing protocol used in local and wide area networks. The routing information packet will be sent out by web server or router periodically, and can be used to communicate with other routers. It will calculate the number of network nodes on the route to ensure there is no obstruction on the network routine. In addition, it will choose a correct route based on the method of Distance Vector Routing and use the Bellman-Ford algorithm to calculate the routing table.

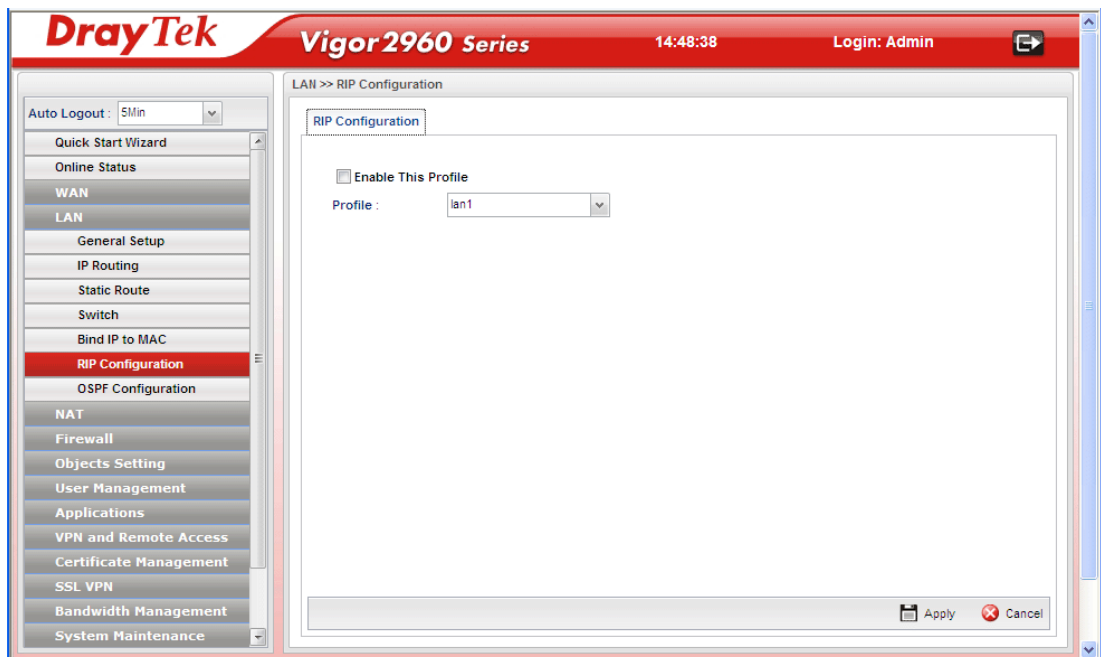
RIP can update the routing table automatically and find a route to send packet. See the following figure as an example:



Suppose A supports RIP on WAN1/WAN2/WAN3/WAN4, B supports RIP on WAN1 and WAN2, and C supports RIP on WAN1/WAN2/WAN3/WAN4.

B will tell A "if you want to send packets to C, please send it to me first", then A will create a routing rule to forward packet that destination is C to B.

In another direction, C will do the same thing.



Available parameters are listed as follows:

Item	Description
Enable This Profile	Check the box to enable the Mirror function for the switch.

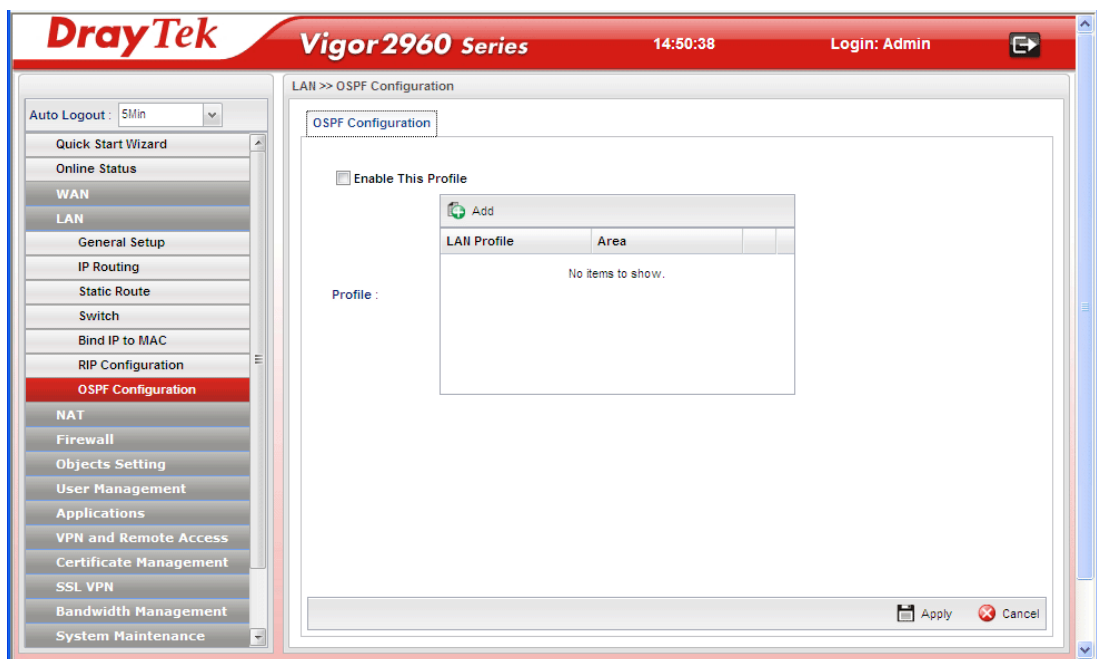


<b>Profile</b>	Choose one of the LAN profiles.
<b>Apply</b>	Click it to save the settings.
<b>Cancel</b>	Click it to exit the dialog without saving anything.

## 4.2.6 OSPF Configuration

OSPF (Open Shortest Path First) uses the algorithm of SPF (Shortest Path First) to calculate the route metric. It is suitable for large network and complicated data exchange.

When you need faster convergence than distance vector, want to support much larger networks or want to have less susceptible to bad routing information, you can enable OSPF feature to fit your request. Note that both routers must support OSPF function at the same time to build the OSPF connection.



Available parameters are listed as follows:

Item	Description
<b>Enable This Profile</b>	Check the box to enable the Mirror function for the switch.
<b>Profile</b>	Create a new profile name.
<b>Apply</b>	Click it to save the settings.
<b>Cancel</b>	Click it to discard the settings configured in this page.

### How to add a new profile

1. Open **LAN>>OSPF Configuration**.
2. Check **Enable This Profile**.
3. Click the space of **Profile**. A pop-up dialog will appear. Click **Add**.


Profile :

Add	
LAN Profile	Area
lan1	
lantest	

- Use the drop down list of LAN Profile to choose the one you need. And specify the value of Area (either 0.0.0.0 ~ 255.255.255.255 or 0 ~ 4294967295) for that profile.

Profile :

Add	
LAN Profile	Area
lantest	30

If you are not satisfied the settings, simply click  to remove the entry, and then re-type the settings.

- Click **Apply** to save the settings and exit the dialog. A new profile is created and displayed on the screen.

OSPF Configuration

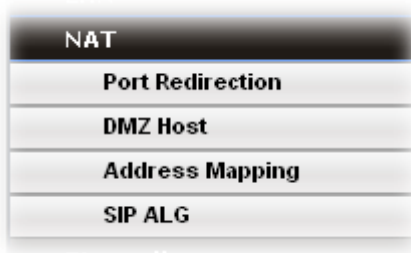
Enable This Profile

Profile :

Add	
LAN Profile	Area
lantest	35

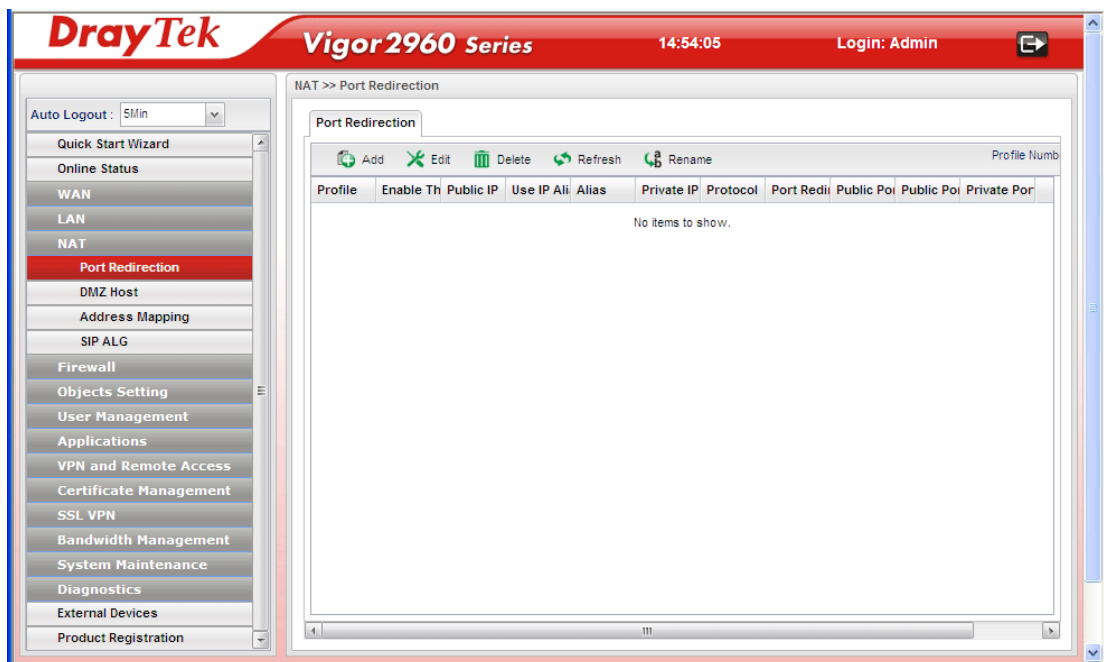
## 4.3 NAT

NAT (Network Address Translation) is a method of mapping one or more IP addresses and/or service ports into different specified services. It allows the internal IP addresses of many computers on a LAN to be translated to one public address to save costs and resources of multiple public IP addresses. It also plays a security role by obscuring the true IP addresses of important machines from potential hackers on the Internet. The Vigor 3900 Series is NAT-enabled by default and gets one globally routable IP addresses from the ISP by Static, PPPoE, or DHCP mechanism. The Vigor2960 Series assigns private network IP addresses according to RFC-1918 protocol and translates the private network addresses to a globally routable IP address so that local hosts can communicate with the router and access the Internet.

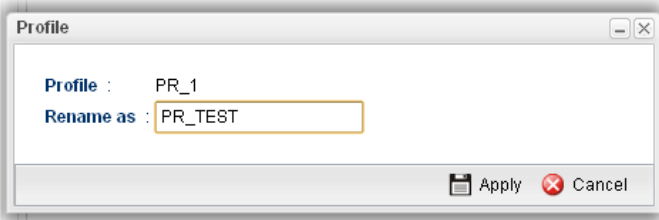


### 4.3.1 Port Redirection

**Port Redirection** means port forwarding. It may be used to expose internal servers to the public domain or open a specific port to internal hosts. Internet hosts can use the WAN IP address to access internal network services, such as FTP, WWW and etc. The internal FTP server is running on the local host addressed as 192.168.1.2. When other users send this type of request to your network through the Internet, the router will direct these requests to an appropriate host inside. A user can also translate the port to another port by configuration. For example, port number with 1024 can be transferred into IP address of 192.168.1.100 of LAN. The packet is forwarded to a specific local host if the port number matches that defined in the table.

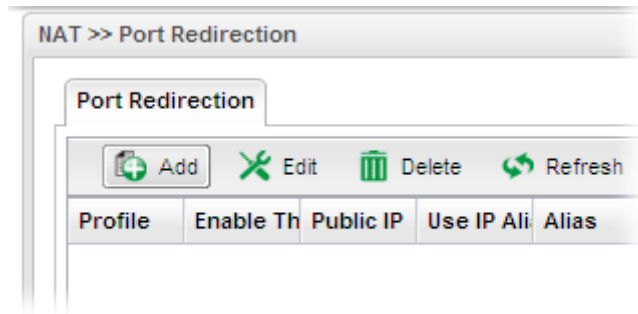


Each item will be explained as follows:

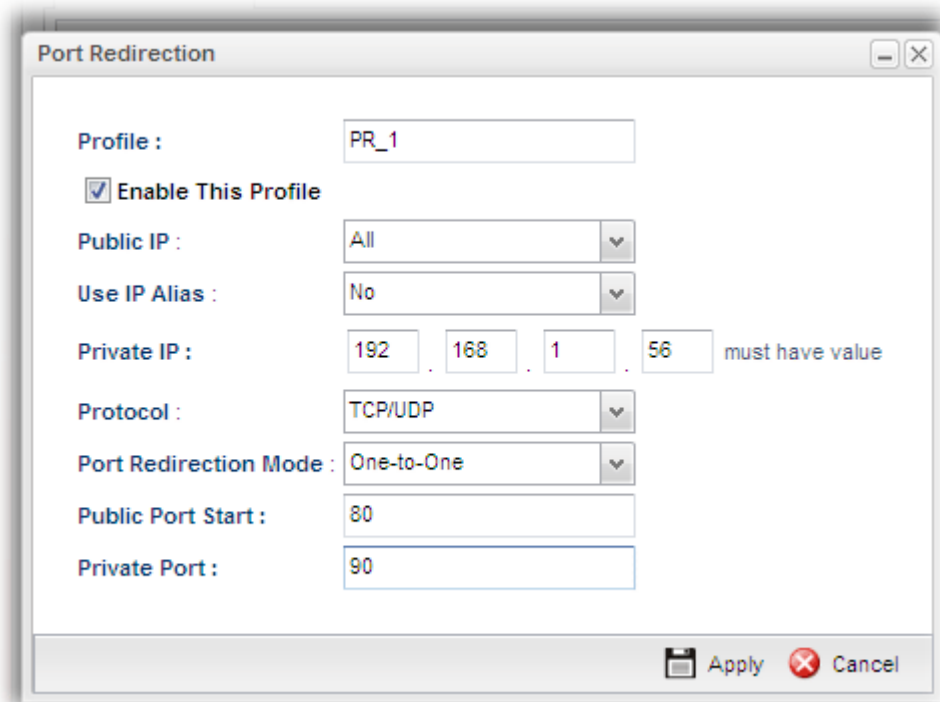
Item	Description
<b>Add</b>	Add a new port redirect profile.
<b>Edit</b>	Modify the selected profile. To edit a profile, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected rule.
<b>Delete</b>	Remove the selected profile. To delete a profile, simply select the one you want to delete and click the <b>Delete</b> button.
<b>Refresh</b>	Renew current web page.
<b>Rename</b>	Allow to modify the selected profile name.  <p>Before using such function, there is one profile existed at least.</p>
<b>Profile</b>	Display the name of the profile.
<b>Enable The Profile</b>	Display the status of the profile. False means disabled; True means enabled.
<b>Public IP</b>	Display the interface used for such profile.
<b>Use IP Alias</b>	Display if IP Alias is enabled or not.
<b>IP Alias</b>	Display the selected WAN IP address.
<b>Private IP</b>	Display the private IP used for this entry.
<b>Protocol</b>	Display the protocol used for the entry.
<b>Port Redirection Mode</b>	Display the setting mode for port redirection.
<b>Public Port Start</b>	Display the starting number of the public port.
<b>Public Port End</b>	Display the ending number of the public port.
<b>Private Port</b>	Display the number of the private port.

### How to add a new Port Redirection profile


1. Open NAT>> **Port Redirection**.
2. Simply click the **Add** button.

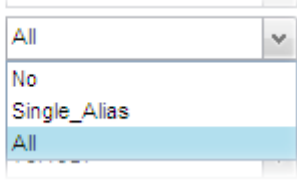
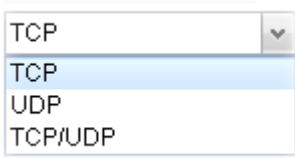
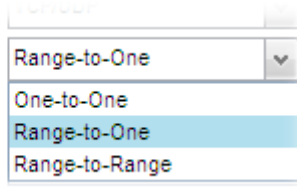


3. The following dialog will appear.

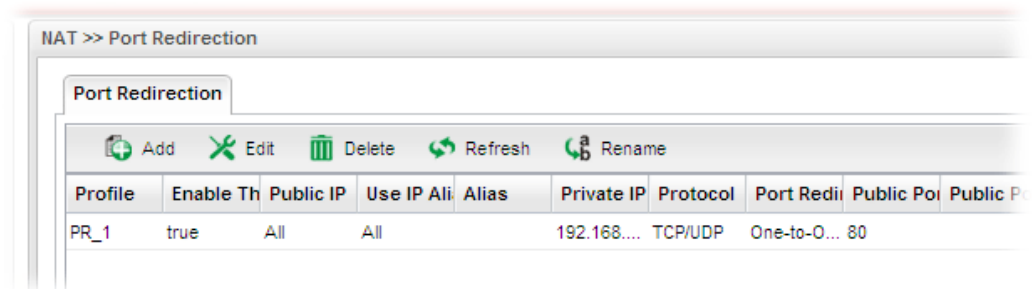


Available parameters are listed as follows:

Item	Description
<b>Profile</b>	Type the name of the profile.
<b>Enable This Profile</b>	Check the box to enable this profile.
<b>Public IP</b>	Specify the WAN interface for such profile. 
<b>Use IP Alias</b>	Use the drop down menu to specify which type of IP Alias you want.

	 <p><b>Single_Alias</b> – You have to type one IP address used for IP Alias.</p> <p><b>All</b> – All the IP address can be treated as IP Alias.</p>
<b>Alias</b>	Type WAN IP address (es).
<b>Private IP</b>	Specify the private IP address of the internal host providing the service. Simply type the private IP used for this entry.
<b>Protocol</b>	Choose the protocol used for the entry. 
<b>Port Redirection Mode</b>	Use the drop down menu to specify which mode you want to use. 
<b>Public Port Start/ Public Port End</b>	Type the starting/ending number of the public port.
<b>Private Port</b>	Type a port number for such profile.
<b>Apply</b>	Click it to save and exit the dialog.
<b>Cancel</b>	Click it to exit the dialog without saving anything.

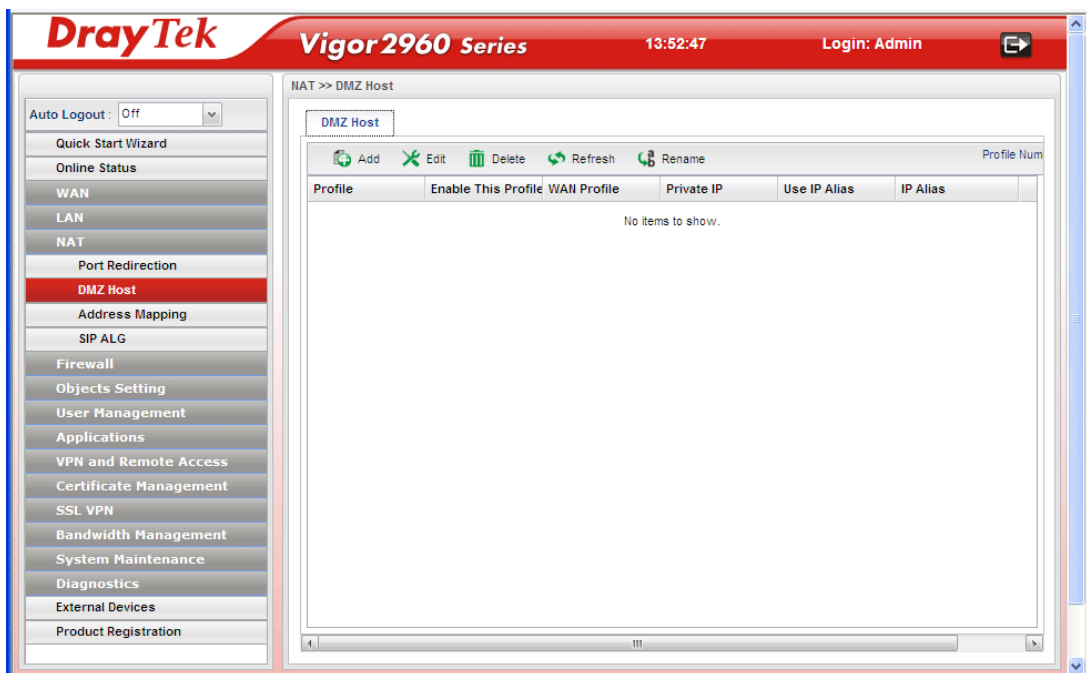
4. Enter all the settings and click **Apply**.
5. A new profile has been added onto **Port Redirection** table.



Profile	Enable Th	Public IP	Use IP Ali	Alias	Private IP	Protocol	Port Redi	Public Poi	Public P
PR_1	true	All	All		192.168....	TCP/UDP	One-to-O...	80	

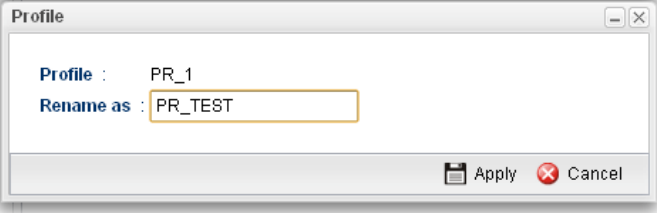
### 4.3.2 DMZ Host

In computer networks, a DMZ (De-Militarized Zone) is a computer host or small network inserted as a neutral zone between a company’s private network and the outside public network. It prevents outside users from getting direct access to company network. A DMZ is an optional and more secure approach to a firewall and effectively acts as a proxy server as well. In a typical DMZ configuration for a small company, a separate computer (or host in network terms) receives requests from users within the private network for access to Web sites or other companies accessible on the public network. The DMZ host then initializes sessions for these requests on the public networks. However, the DMZ host is not able to initiate a session back into the private network. It can only forward packets that have already been requested. Users of the public network outside the company can access only the DMZ host. **The DMZ may typically also have the company’s Web pages so these could be served to the outside world.** If an outside user penetrated the DMZ host’s security, only the Web pages will be corrupted but other company information would not be exposed.



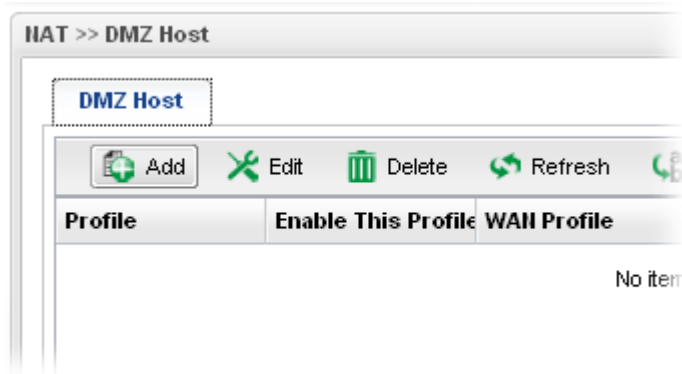
Each item will be explained as follows:

Item	Description
<b>Add</b>	Add a new DMZ host profile.
<b>Edit</b>	Modify the selected profile. To edit a profile, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected rule.
<b>Delete</b>	Remove the selected profile. To delete a profile, simply select the one you want to delete and click the <b>Delete</b> button.
<b>Refresh</b>	Renew current web page.
<b>Rename</b>	Allow to modify the selected profile name.

	 <p>Before using such function, there is one profile existed at least.</p>
<b>Profile</b>	Display the name of the profile.
<b>Enable The Profile</b>	Display the status of the profile. False means disabled; True means enabled.
<b>WAN Profile</b>	Display the WAN profile that such DMZ host profile will be applied to.
<b>Private IP</b>	Display the private IP used for this entry.
<b>Use IP Alias</b>	Display the using status (enabled or disabled) for WAN IP alias.
<b>IP Alias</b>	Display the selected WAN IP address.

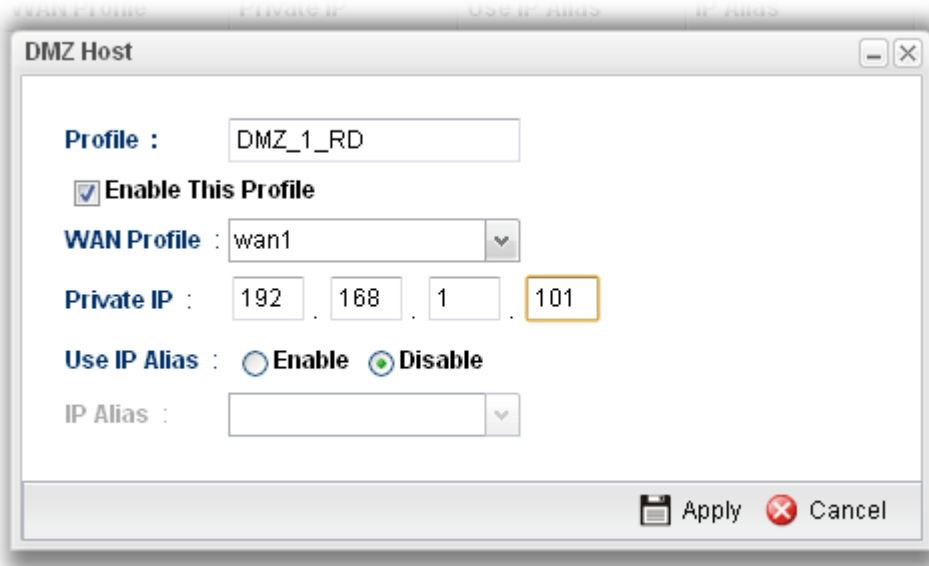
### How to add a new DMZ Host profile

1. Open NAT>> DMZ Host.
2. Simply click the Add button.



3. The following dialog will appear.

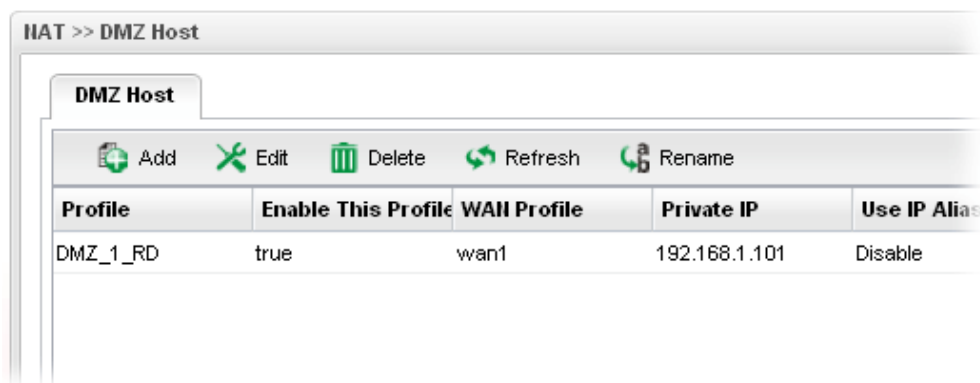




Available parameters are listed as follows:

Item	Description
<b>Profile</b>	Type the name of the profile.
<b>Enable This Profile</b>	Check the box to enable the DMZ Host profile.
<b>WAN Profile</b>	Choose a WAN profile for such entry.
<b>Private IP</b>	Type the private IP used for this entry.
<b>Use IP Alias</b>	Click <b>Enable</b> to invoke IP Alias function.
<b>IP Alias</b>	IP alias that can be selected and used for port redirection. Before using it, please go to <b>WAN&gt;&gt;General Setup</b> and enable the <b>wan1</b> profile. Add several IP addresses under <b>Static</b> mode for wan1.
<b>Apply</b>	Click it to save and exit the dialog.
<b>Cancel</b>	Click it to exit the dialog without saving anything.

4. Enter all the settings and click **Apply**.
5. A new profile has been added onto **DMZ Host** table.

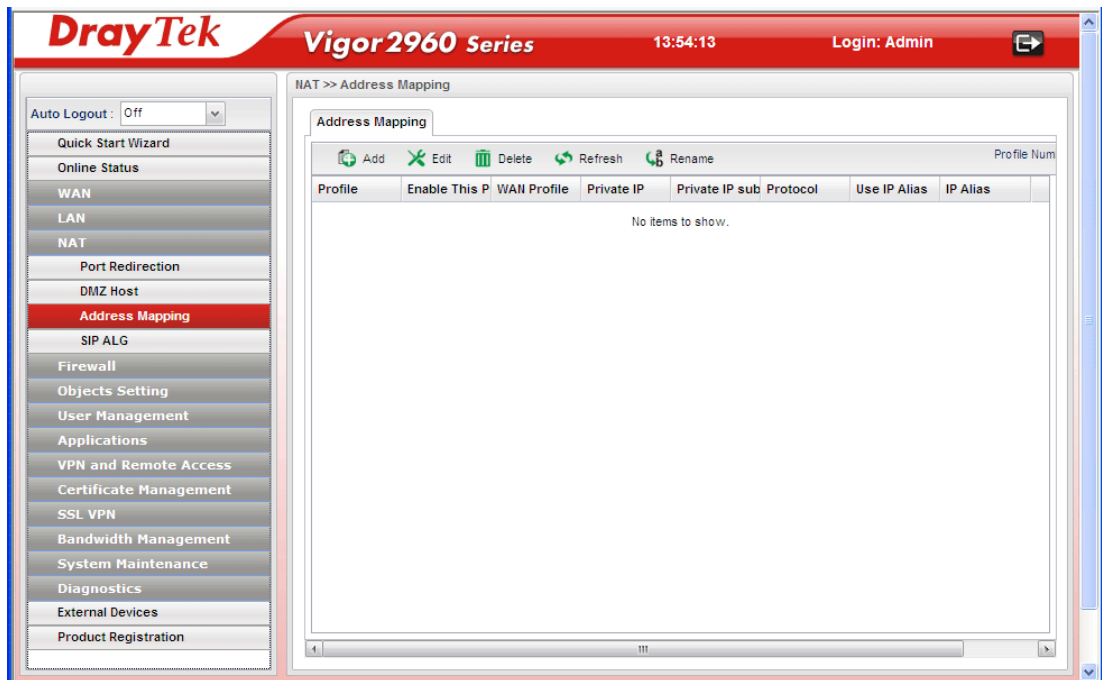


### 4.3.3 Address Mapping

This page is used to map specific private IP to specific WAN IP alias.

If you have "a group of IP Addresses" and want to apply to the router, please use WAN IP alias function to record these IPs first. Then, use address mapping function to map specific private IP to specific WAN IP alias.

For example, you have IP addresses ranging from 86.123.123.1 ~ 86.123.123.8. However, your router uses 86.123.123.1, and the rest of the IPs are recorded in WAN IP alias. You want that private IP 192.168.1.10 can use 86.123.123.2 as source IP when it sends packet out to Internet. You can use address mapping function to achieve this demand. Simply type 192.168.1.10 as the Private IP; and type 86.123.123.2 as the WAN IP.



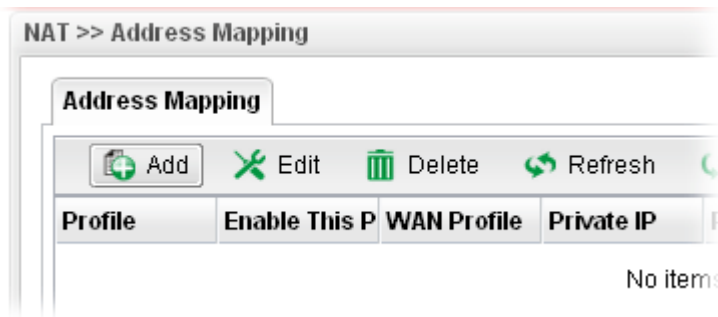
Each item will be explained as follows:

Item	Description
<b>Add</b>	Add a new DMZ host profile.
<b>Edit</b>	Modify the selected profile. To edit a profile, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected rule.
<b>Delete</b>	Remove the selected profile. To delete a profile, simply select the one you want to delete and click the <b>Delete</b> button.
<b>Refresh</b>	Renew current web page.
<b>Rename</b>	Allow to modify the selected profile name. Before using such function, there is one profile existed at least.
<b>Profile</b>	Display the name of the profile.
<b>Enable The Profile</b>	Display the status of the profile. False means disabled; True

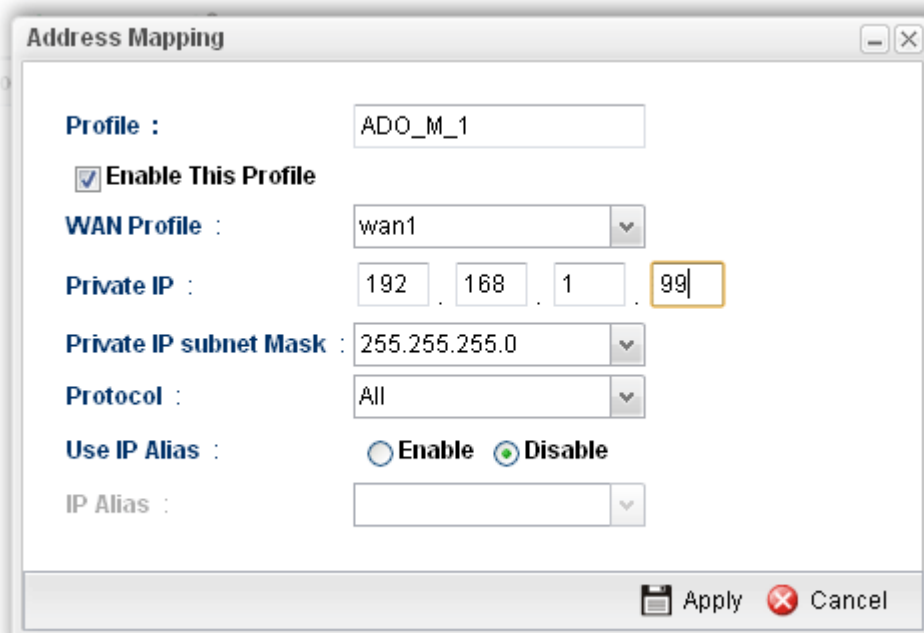
	means enabled.
<b>WAN Profile</b>	Display the WAN profile that such address mapping profile will be applied to.
<b>Private IP</b>	Display the private IP used for this entry.
<b>Private IP Subnet Mask</b>	Display the subnet mask used for this entry.
<b>Protocol</b>	Display the protocol used for the entry.
<b>Use IP Alias</b>	Display the using status (enabled or disabled) for WAN IP alias.
<b>IP Alias</b>	Display the selected WAN IP address.

### How to add a new Address Mapping profile

1. Open NAT>> Address Mapping.
2. Simply click the Add button.

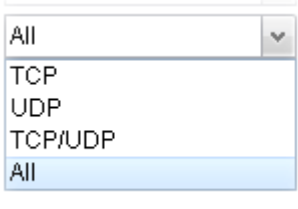


3. The following dialog will appear.

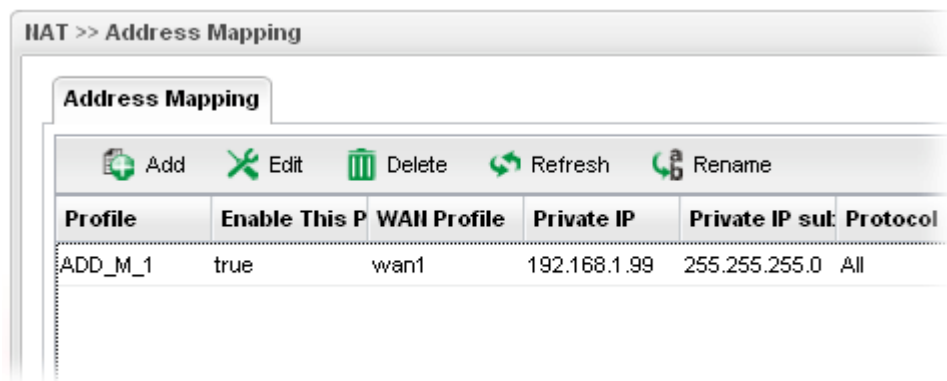


Available parameters are listed as follows:

Item	Description
<b>Profile</b>	Type the name of the profile.

<b>Enable This Profile</b>	Check the box to enable the Address Mapping profile.
<b>WAN Profile</b>	Choose a WAN profile for such entry.
<b>Private IP</b>	Type the private IP used for this entry.
<b>Private IP subnet Mask</b>	Type the subnet mask used for this entry.
<b>Protocol</b>	Choose the protocol used for the entry. 
<b>Use IP Alias</b>	Click <b>Enable</b> to invoke IP Alias function.
<b>IP Alias</b>	IP alias that can be selected and used for port redirection. Before using it, please go to <b>WAN&gt;&gt;General Setup</b> and enable the <b>wan1</b> profile. Add several IP addresses under <b>Static</b> mode for wan1.
<b>Apply</b>	Click it to save and exit the dialog.
<b>Cancel</b>	Click it to exit the dialog without saving anything.

4. Enter all the settings and click **Apply**.
5. A new profile has been added onto **Address Mapping** table.



Profile	Enable This P	WAN Profile	Private IP	Private IP sub	Protocol
ADD_M_1	true	wan1	192.168.1.99	255.255.255.0	All

### 4.3.4 SIP ALG

SIP ALG means **Session Initiation Protocol, Application Layer Gateway**. This page allows you to choose LAN and WAN profiles to make SIP message and RTP packets of voice being transmitting and receiving correctly via NAT by Vigor router.



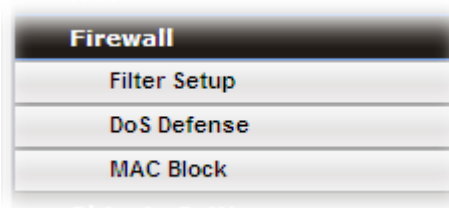
Available parameters are listed as follows:

Item	Description
<b>Enable This Profile</b>	Check the box to enable the Mirror function for the switch.
<b>LAN Interface</b>	Choose one of the LAN profiles.
<b>WAN Interface</b>	Choose one of the WAN profiles.
<b>Apply</b>	Click it to save the settings.
<b>Cancel</b>	Click it to discard the settings configured in this page.

## 4.4 Firewall

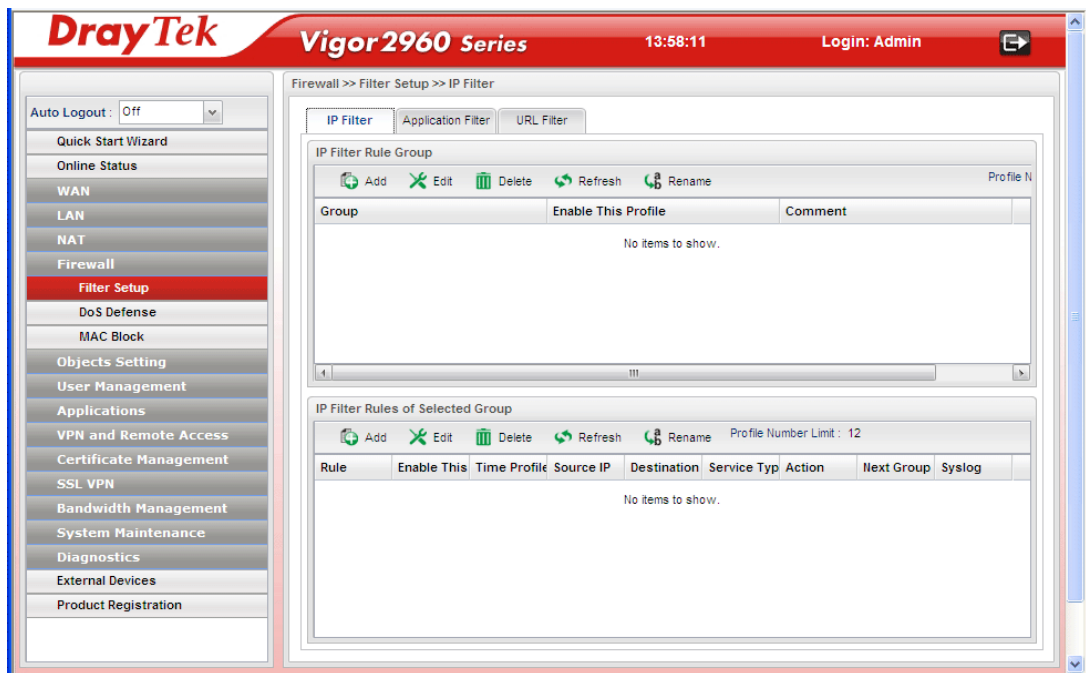
The firewall controls the allowance and denial of packets through the router. The **Firewall Setup** in the Vigor2960 Series mainly consists of packet filtering, Denial of Service (DoS) and URL (Universal Resource Locator) content filtering facilities. These firewall filters help to protect your local network against attack from outsiders. A firewall also provides a way of restricting users on the local network from accessing inappropriate Internet content and can filter out specific packets, which may trigger unexpected outgoing connection such as a Trojan.

The following sections will explain how to configure the **Firewall**. Users can select **IP Filter**, **DoS Defense**, **MAC Block** and **Port Block** options from **Firewall** menu. The **DoS Defense** facility can detect and mitigate the DoS attacks.



#### 4.4.1 Filter Setup

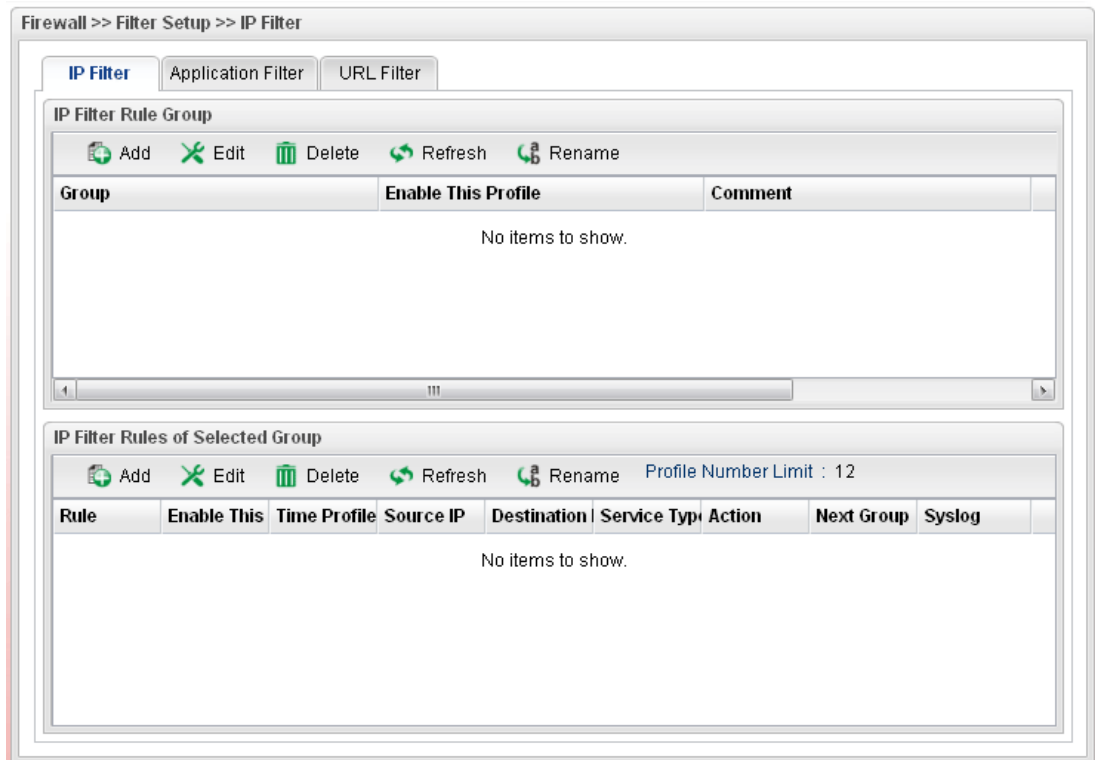
Vigor firewall will filter the packets based on the settings, including IP Filter, Application Filter and URL Filter configured under **Firewall>>Filter Setup**. These filters will group certain objects (e.g., IP Object, Service Object, Keyword Object, File Extension Object, IM Object, P2P Object, P2P Object, Protocol Object, Web Category Object, Time Object, and etc.) and form a powerful firewall to protect your computer.



#### IP Filter

This page allows you to create new IP filter rule(s) and group them for your request. The upper part displays the information of IP Filter Group(s); the lower part displays the information of IP Filter Rule(s).

You should create at least one IP filter rule and one group profile. The following will explain **IP Filter** functions with details.



Each item will be explained as follows:

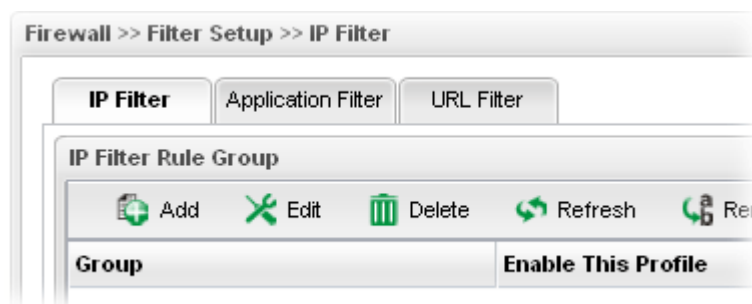
Item	Description
<b>IP Filter Rule Group</b>	
<b>Add</b>	Add a new group profile for IP filter.
<b>Edit</b>	Modify the selected profile. To edit a profile, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected rule.
<b>Delete</b>	Remove the selected profile. To delete a rule, simply select the one you want to delete and click the <b>Delete</b> button.
<b>Refresh</b>	Renew current web page.
<b>Rename</b>	Allow to modify the selected profile name.
<b>Group</b>	Display the name of the <b>IP filter group</b> profile.
<b>Enable The Profile</b>	Display the status of the profile. False means disabled; True means enabled.
<b>Comment</b>	Display the description for such profile.
<b>IP Filter Rule Group of Selected Group</b>	
<b>Add</b>	Add a new IP filter rule profile. Before you create an IP filter rule, you have to create an IP filter group first. Otherwise, you are not allowed to add any IP filter rule here.
<b>Edit</b>	Modify the selected profile.

Item	Description
	To edit a profile, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected rule.
<b>Delete</b>	Remove the selected profile. To delete a rule, simply select the one you want to delete and click the <b>Delete</b> button.
<b>Refresh</b>	Renew current web page.
<b>Rename</b>	Allow to modify the selected profile name.
<b>Rule</b>	Display the name of the IP filter rule.
<b>Enable The Profile</b>	Display the status of the profile. False means disabled; True means enabled.
<b>Time Profile</b>	If no time schedule is set, <b>None</b> will be shown in this field.
<b>Source IP</b>	Display the source IP object profile selected for each rule.
<b>Destination IP</b>	Display the destination IP object profile selected for each rule.
<b>Service Type</b>	Display the service type object profile selected for each rule.
<b>Action</b>	Display the action (pass or block) of such rule will use.
<b>Next Group</b>	Display the name for next group selected. If no group is chosen, <b>None</b> will be shown instead.
<b>Syslog</b>	Display the status (enable or disable) of the <b>Syslog</b> function.

## How to create an IP Filter group

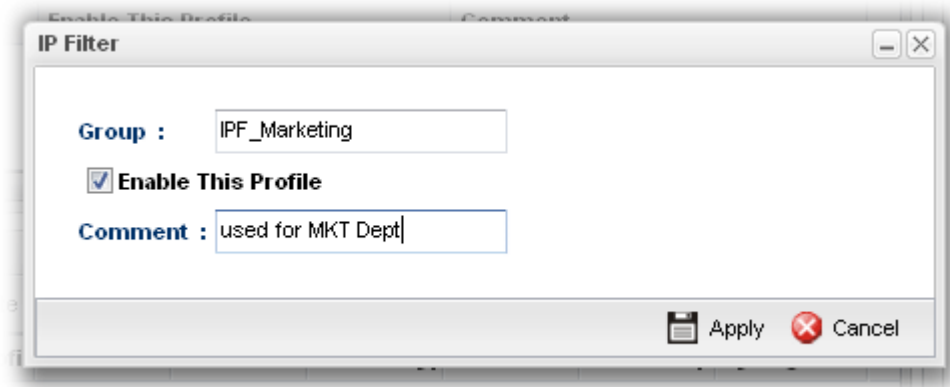
To build an IP group containing IP filter rules, please follow the steps:

1. Open **Firewall>>Filter Setup** and click the **IP Filter** tab.
2. Simply click the **Add** button.





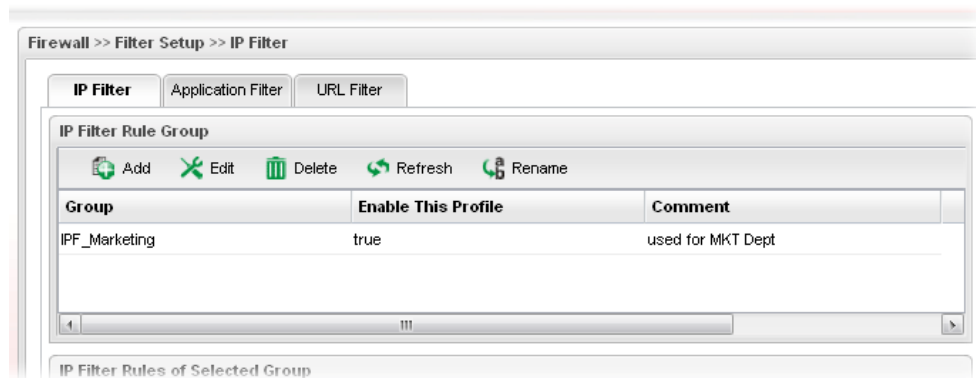
- The following dialog will appear.



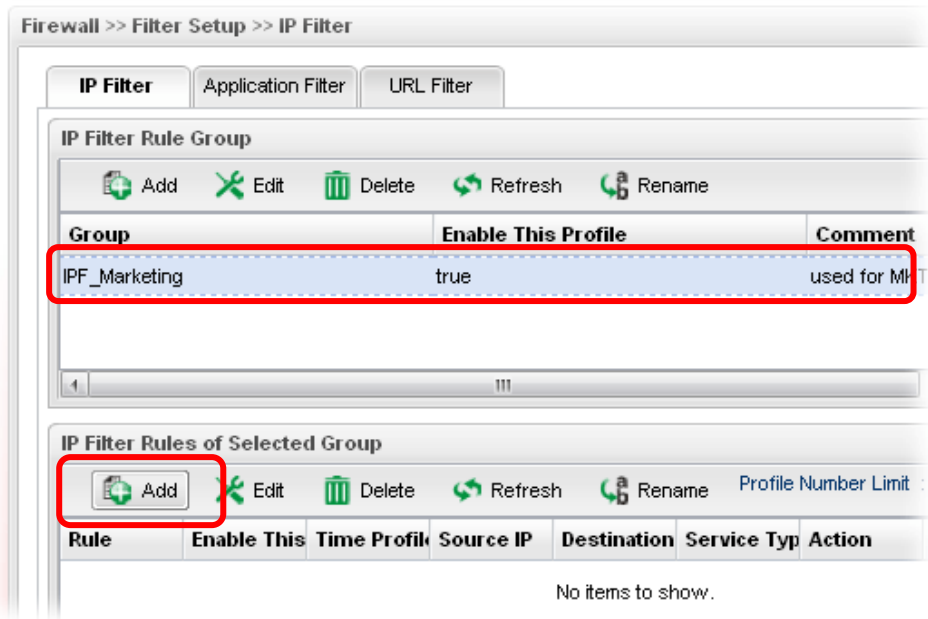
Available parameters are listed as follows:

Item	Description
<b>Group</b>	Type the name of the IP filter group.
<b>Enable This Profile</b>	Check the box to enable this profile.
<b>Comment</b>	Give a brief description for the profile.
<b>Apply</b>	Click it to save and exit the dialog.
<b>Cancel</b>	Click it to exit the dialog without saving anything.

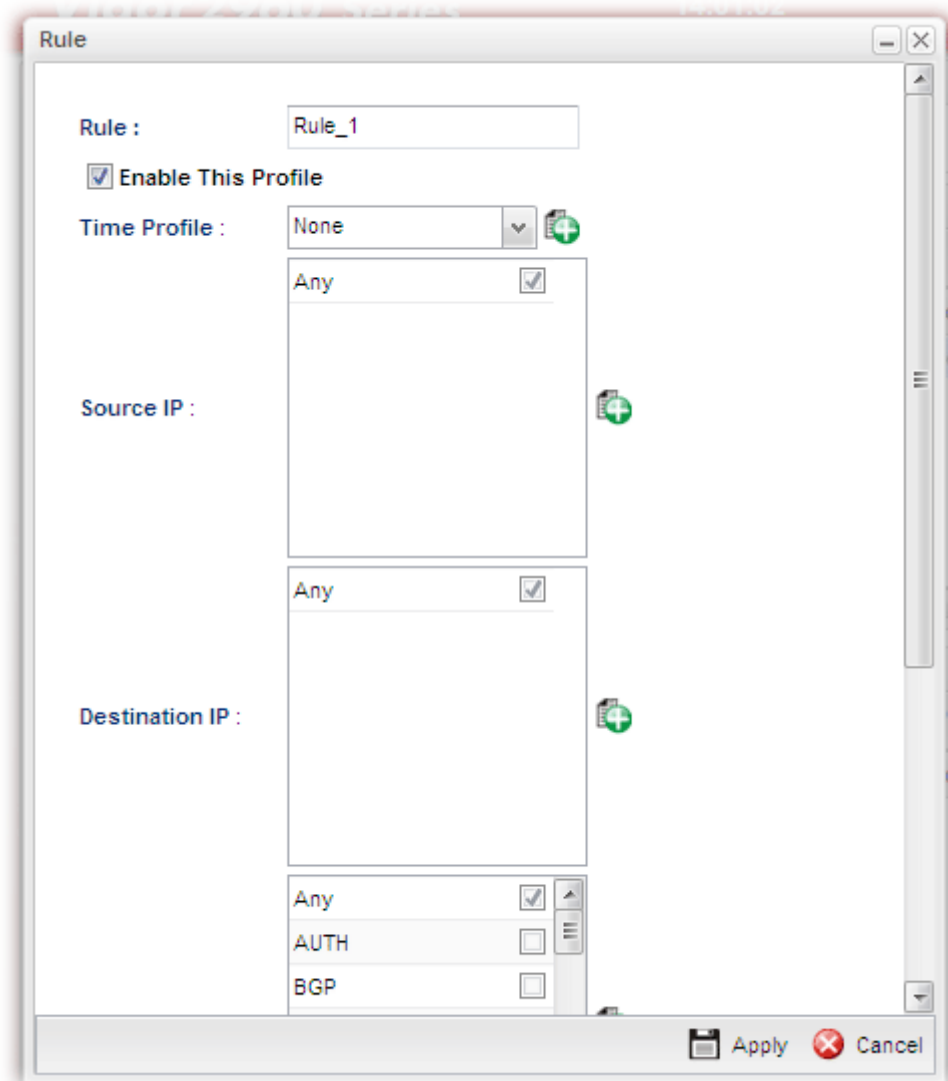
- Enter all the settings and click **Apply**.
- A new filter group has been added onto **Address Mapping** table.







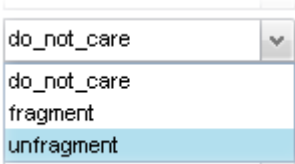
- Choose the IP filter group first and then click the **Add** tab (the lower one in this page).



7. The following page for configuration will appear.



Available parameters are listed as follows:

Item	Description
<b>Rule</b>	Type the name of the IP filter rule.
<b>Enable This Profile</b>	Check the box to enable this profile.
<b>Time Profile</b>	Choose a schedule profile to be applied on such rule. You can click  to create another new time object profile.
<b>Source IP</b>	Choose one or more IP object profiles from the drop down list. The selected profile will be treated as source IP. You can click  to create another new IP object profile.
<b>Destination IP</b>	Choose one or more IP object profiles from the drop down list. The selected profile will be treated as destination IP. You can click  to create another new IP object profile.
<b>Service Type</b>	Choose one or more service type object profiles from the drop down list. The selected profile will be treated as service type. You can click  to create another new service type object profile.
<b>Input Interface</b>	Choose one of the LAN or WAN profiles as data receiving interface.
<b>Output Interface</b>	Choose one of the LAN or WAN profiles as data transmitting interface.
<b>Fragments</b>	Specify the action for fragmented packets.  <b>do_not_care</b> -No action will be taken towards fragmented packets. <b>unfragment</b> - Apply the rule to unfragmented packets. <b>fragment</b> - Apply the rule to fragmented packets.
<b>Action</b>	The action to be taken when packets match the rule. <b>Block</b> - Packets matching the rule will be dropped immediately <b>Pass</b> - Packets matching the rule will be passed immediately. <b>Block_If_No_Further_Match</b> - A packet matching the rule, and that does not match further rules, will be dropped. <b>Pass_If_No_Further_Match</b> - A packet matching the rule, and that does not match further rules, will be passed through.
<b>Syslog</b>	Click <b>Enable</b> to make the history of firewall actions appearing on the <b>System Maintenance &gt;&gt; Syslog/Mail Alert &gt;&gt; Syslog File</b> .

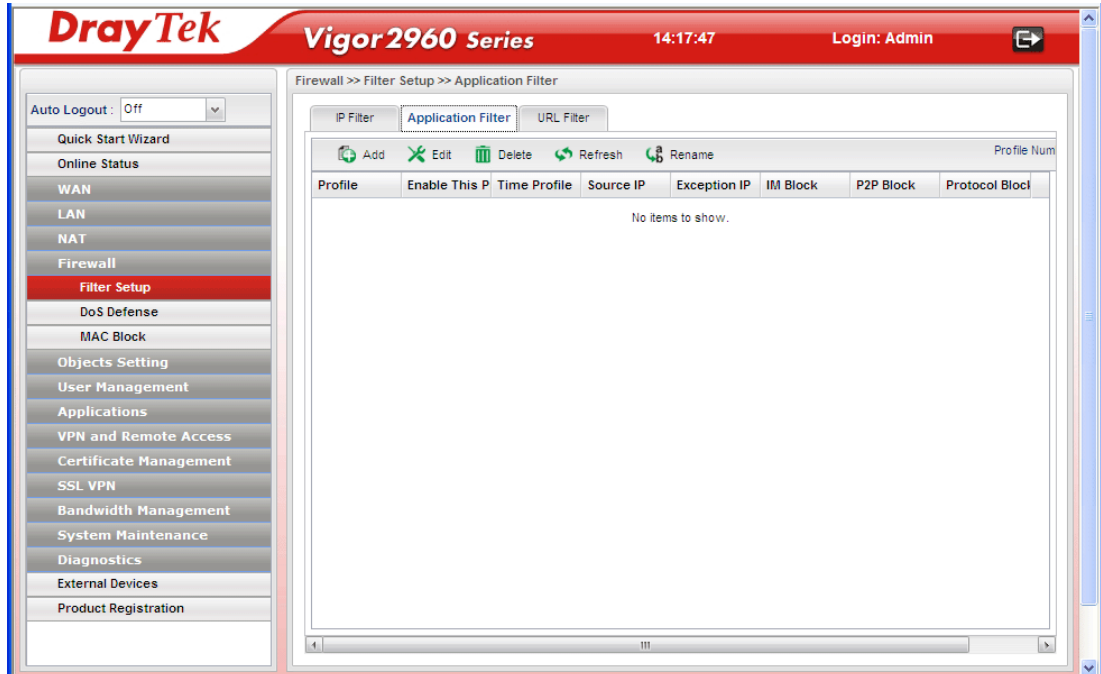
<b>Apply</b>	Click it to save and exit the dialog.
<b>Cancel</b>	Click it to exit the dialog without saving anything.

8. Enter all the settings and click **Apply**.
9. A new IP filter rule has been added onto **IP Filter Rules of Selected Group** table.

**Note:** You can create multiple IP filter groups. Each **IP Filter Rules of Selected Group** belongs to an **IP Filter Rule Group**. Click an **IP Filter Rule Group** to show its members in the lower display window.

## Application Filter

Application Filter can integrate several application objects within one profile for restricting the usage of application. For example, it can block people defined in IP object profile not using IM application, not using P2P for file sharing, and not downloading files via certain protocol.



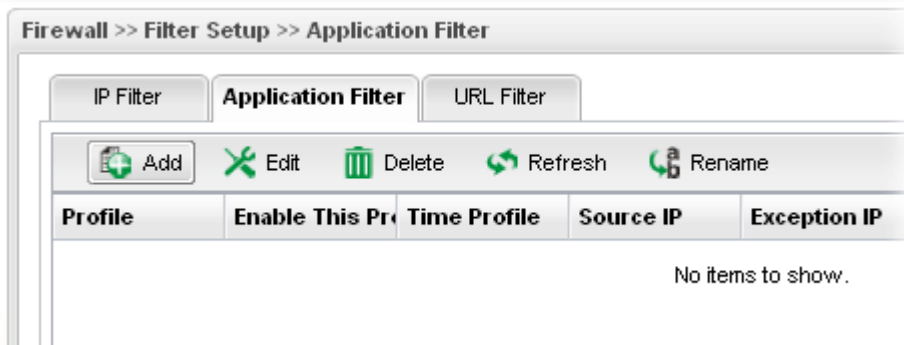
Each item will be explained as follows:

Item	Description
<b>Add</b>	Add a new group profile for Application filter.
<b>Edit</b>	Modify the selected profile. To edit a profile, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected rule.
<b>Delete</b>	Remove the selected profile. To delete a rule, simply select the one you want to delete and click the <b>Delete</b> button.
<b>Refresh</b>	Renew current web page.
<b>Rename</b>	Allow to modify the selected profile name.
<b>Profile</b>	Display the name of the application filter profile.
<b>Enable The Profile</b>	Display the status of the profile. False means disabled; True means enabled.
<b>Time Profile</b>	If no time schedule is set, <b>None</b> will be shown in this field.
<b>Source IP</b>	Display the source IP object profile selected for such group.
<b>Exception IP</b>	Display the IP object profile which will not be filtered by the router for such group.

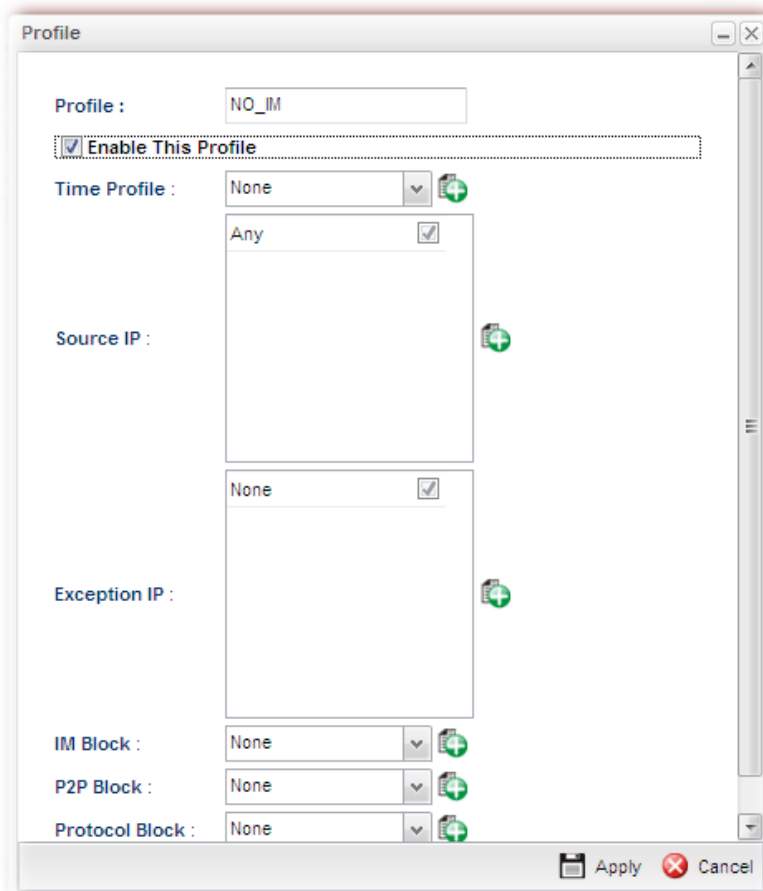
Item	Description
IM Block	Display the IM object profile selected for such application profile.
P2P Block	Display the P2P object profile selected for such application profile.
Protocol Block	Display the protocol object profile selected for such application profile.

## How to create an Application Filter profile







1. Open **Firewall>>Filter Setup** and click the **Application Filter** tab.
2. Simply click the **Add** button.



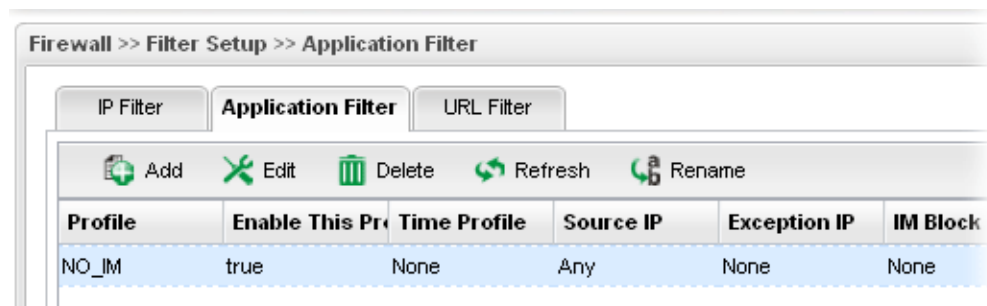
3. The following dialog will appear.



Available parameters are listed as follows:

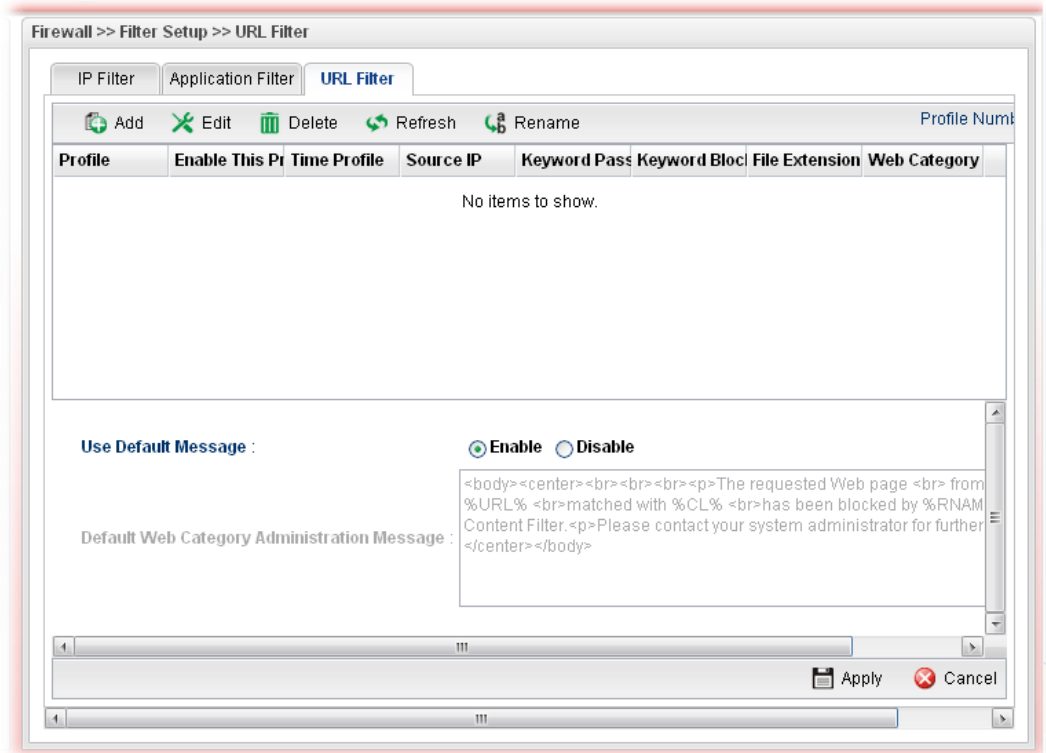
Item	Description
<b>Profile</b>	Type the name of the Application filter profile.
<b>Enable This Profile</b>	Check the box to enable this profile.
<b>Time Profile</b>	Choose a schedule profile to be applied on such rule. You can click  to create another new time object profile.
<b>Source IP</b>	Choose one or more IP object profiles from the drop down list. The selected profile will be treated as source IP. You can click  to create another new IP object profile.
<b>Exception IP</b>	Choose one or more IP object profiles from the drop down list. The selected profile will be treated as exception IP which will not be filtered by the router for such group. You can click  to create another new IP object profile.
<b>IM Block</b>	Choose one or more IM object profiles from the drop down list which will not be allowed to pass through the router. You can click  to create another new IM object profile.
<b>P2P Block</b>	Choose one or more P2P object profiles from the drop down list which will not be allowed to pass through the router. You can click  to create another new P2P object profile.
<b>Protocol Block</b>	Choose one or more Protocol object profiles from the drop down list which will not be allowed to pass through the router. You can click  to create another new protocol object profile.
<b>Apply</b>	Click it to save and exit the dialog.
<b>Cancel</b>	Click it to exit the dialog without saving anything.

4. Enter all the settings and click **Apply**.
5. A new Application filter profile has been added.



## URL Filter

URL Filter can integrate URL, Keyword, File extension and WCF object profiles within one profile for restricting certain people accessing into Internet.



Each item will be explained as follows:

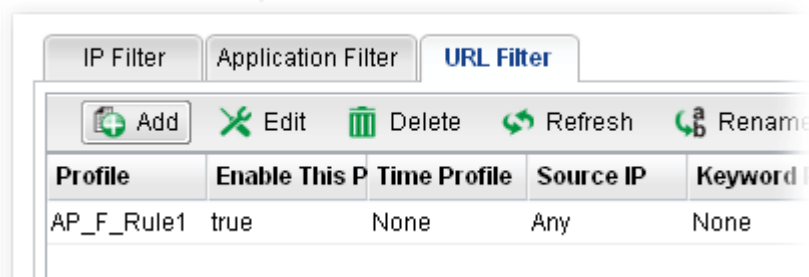
Item	Description
<b>Add</b>	Add a new group profile for URL filter.
<b>Edit</b>	Modify the selected profile. To edit a profile, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected rule.
<b>Delete</b>	Remove the selected profile. To delete a rule, simply select the one you want to delete and click the <b>Delete</b> button.
<b>Refresh</b>	Renew current web page.
<b>Rename</b>	Allow to modify the selected profile name.
<b>Profile</b>	Display the name of the application filter profile.
<b>Enable The Profile</b>	Display the status of the profile. False means disabled; True means enabled.
<b>Time Profile</b>	If no time schedule is set, <b>None</b> will be shown in this field.
<b>Source IP</b>	Display the source IP object profile selected for each rule.
<b>Keyword Pass</b>	Display the keyword object profile selected for each rule which is allowed to pass through the router.



Item	Description
<b>Keyword Block</b>	Display the keyword object profile selected for each rule which is not allowed to pass through the router.
<b>File Extension Block</b>	Display the file extension object profile selected for each rule which is not allowed to pass through the router.
<b>Web Category Block</b>	Display the web category object profile selected for each rule which is not allowed to pass through the router.
<b>Web Category Administration Message</b>	The message will display on the user's browser when he/she tries to access the blocked web page.
<b>Apply</b>	Click it to save the configuration.
<b>Cancel</b>	Click it to discard the settings configured in this page.






### How to create a URL Filter profile


1. Open **Firewall>>Filter Setup** and click the **URL Filter** tab.
2. Simply click the **Add** button.



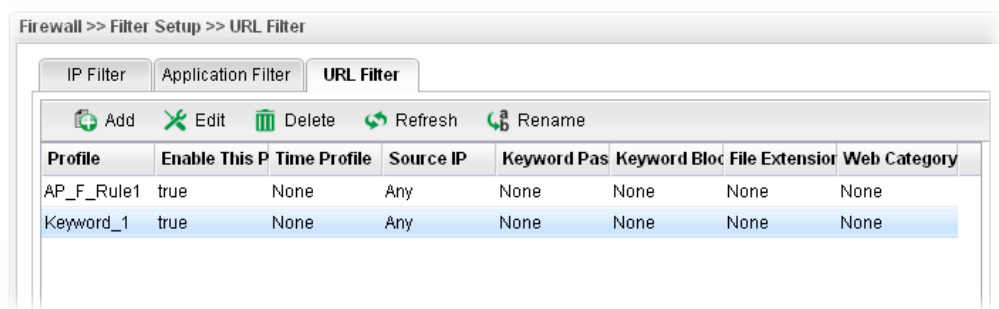
3. The following dialog will appear.

Available parameters are listed as follows:

Item	Description
<b>Profile</b>	Type the name of the URL filter profile.
<b>Enable This Profile</b>	Check the box to enable this profile.
<b>Time Profile</b>	Choose a schedule profile to be applied on such rule. You can click  to create another new time object profile.
<b>Source IP</b>	Choose one or more IP object profiles from the drop down list. The selected profile will be treated as source IP. You can click  to create another new IP object profile.
<b>Keyword Pass</b>	Choose one or more keyword object profiles from the drop down list which will be allowed to pass through the router. You can click  to create another new keyword object profile.
<b>Keyword Block</b>	Choose one or more keyword object profiles from the drop down list which will not be allowed to pass through the router. You can click  to create another new keyword object profile.
<b>File Extension Block</b>	Choose one or more P2P object profiles from the drop down list which will not be allowed to pass through the router. You can click  to create another new file extension object profile.

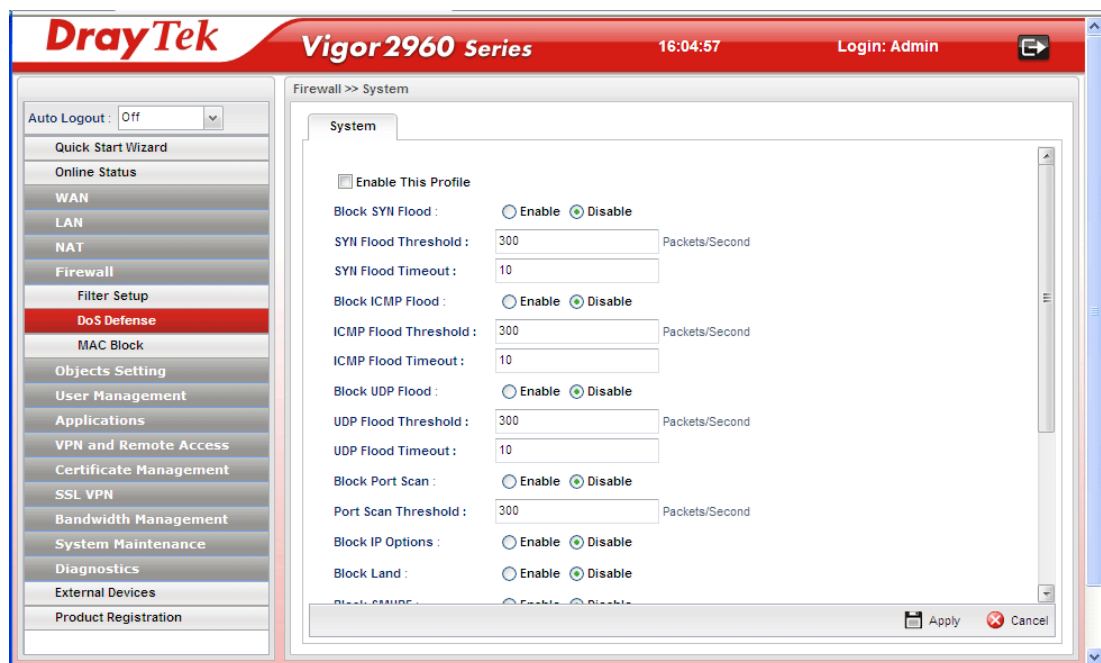
Item	Description
<b>Web Category Block</b>	Choose one or more WCF object profiles from the drop down list which will not be allowed to pass through the router. You can click  to create another new WCF object profile.
<b>Apply</b>	Click it to save and exit the dialog.
<b>Cancel</b>	Click it to exit the dialog without saving anything.

4. Enter all the settings and click **Apply**.
5. A new URL filter profile has been added.



## 4.4.2 DoS Defense

The DoS function helps to detect and mitigates DoS attacks. These include flooding-type attacks and vulnerability attacks. Flooding-type attacks attempt to use up all your system's resources while vulnerability attacks try to paralyze the system by offending the vulnerabilities of the protocol or operation system.



The DoS Defense Engine inspects each incoming packet against the attack signature database. Any packet that may paralyze the host in the security zone is blocked. The DoS Defense Engine also monitors traffic behavior. Any anomalous situation violating the DoS configuration is reported and the attack is mitigated.

Available parameters are listed as follows:

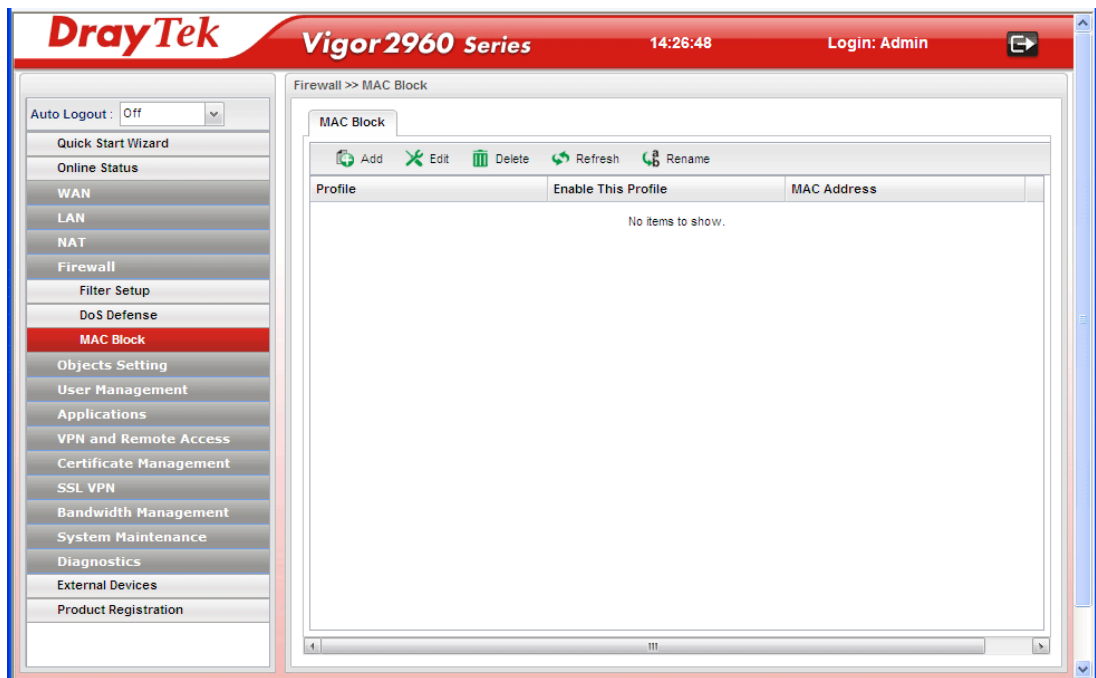
Item	Description
<b>Enable This Profile</b>	Check the box to enable this profile.
<b>Block SYN Flood</b>	Click <b>Enable</b> to activate the SYN flood defense function. If the amount of TCP SYN packets from the Internet exceeds the user-defined threshold value, the router will be forced to randomly discard the subsequent TCP SYN packets within the user-defined timeout period.
<b>SYN Flood Threshold</b>	The default setting for threshold is <b>300</b> packets per second.
<b>SYN Flood Timeout</b>	The default setting for timeout is <b>10</b> seconds.
<b>Block ICMP Flood</b>	Click <b>Enable</b> to activate the ICMP flood defense function. If the amount of ICMP echo requests from the Internet exceeds the user-defined threshold value, the router will discard the subsequent echo requests within the user-defined timeout period.
<b>ICMP Flood Threshold</b>	The default setting for threshold is <b>300</b> packets per second.
<b>ICMP Flood Timeout</b>	The default setting for timeout is <b>10</b> seconds.
<b>Block UDP Flood</b>	Click <b>Enable</b> to activate the UDP flood defense function.

<b>Item</b>	<b>Description</b>
	If the amount of UDP packets from the Internet exceeds the user-defined threshold value, the router will be forced to randomly discard the subsequent UDP packets within the user-defined timeout period.
<b>UDP Flood Threshold</b>	The default setting for threshold is <b>300</b> packets per second.
<b>UDP Flood Timeout</b>	The default setting for timeout is <b>10</b> seconds.
<b>Block Port Scan</b>	Click <b>Enable</b> to activate the Port Scan detection function. Port scan sends packets with different port numbers to find available services, which respond. The router will identify it and report a warning message if the port scanning rate in packets per second exceeds the user-defined threshold value.
<b>Port Scan Threshold</b>	The default threshold is <b>300</b> pps (packets per second).
<b>Block IP Options</b>	Click <b>Enable</b> to activate the Block IP options function. The router will ignore any IP packets with IP option field appearing in the datagram header.
<b>Block Land</b>	Click <b>Enable</b> to activate the Block Land function. A Land attack occurs when an attacker sends spoofed SYN packets with identical source address, destination addresses and port number as those of the victim.
<b>Block SMURF</b>	Click <b>Enable</b> to activate the Block Smurf function. The router will reject any ICMP echo request destined for the broadcast address.
<b>Block Trace Route</b>	Click <b>Enable</b> to activate the Block Trace Route function.
<b>Block SYN Fragment</b>	Click <b>Enable</b> to activate the Block SYN fragment function. Any packets having the SYN flag and fragmented bit sets will be dropped.
<b>Block Fraggle</b>	Click <b>Enable</b> to activate the Block fraggle Attack function. Any broadcast UDP packets received from the Internet are blocked.
<b>Block Tear Drop</b>	Click <b>Enable</b> to activate the Block Tear Drop function. This attack involves the perpetrator sending overlapping packets to the target hosts so that target host will hang once they re-construct the packets. The routers will block any packets resembling this attacking activity.
<b>Block Ping of Death</b>	Click <b>Enable</b> to activate the Block Ping of Death function. Many machines may crash when receiving an ICMP datagram that exceeds the maximum length. The router will block any fragmented ICMP packets with a length greater than 1024 octets.
<b>Block ICMP Fragment</b>	Click <b>Enable</b> to activate the Block ICMP fragment function. Any ICMP packets with fragmented bit sets are dropped.
<b>Block Unknown Protocol</b>	Click <b>Enable</b> to activate the Block Unknown Protocol function. The router will block any packets with unknown protocol types.

Item	Description
<b>Apply</b>	Click it to save the configuration.
<b>Cancel</b>	Click it to discard the settings configured in this page.

### 4.4.3 MAC Block

MAC Block allows you to set lots of proprietary MAC Address. Packets will be dropped if the source or destination MAC Address of packets is matched with these assigned MAC Addresses. The advantage of MAC Block is that it can filter some unnecessary packets or attacking packets on LAN network.



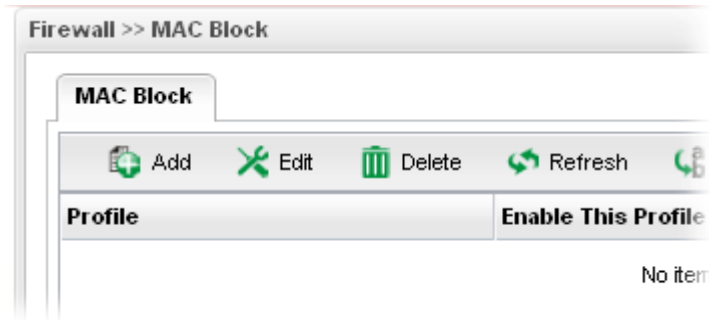
Each item will be explained as follows:

Item	Description
<b>Add</b>	Add a new profile.
<b>Edit</b>	Modify the selected profile. To edit a profile, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected rule.
<b>Delete</b>	Remove the selected profile. To delete a rule, simply select the one you want to delete and click the <b>Delete</b> button.
<b>Refresh</b>	Renew current web page.
<b>Rename</b>	Allow to modify the selected profile name.
<b>Profile</b>	Display the name of the profile.
<b>Enable The Profile</b>	Display the status of the profile. False means disabled; True means enabled.

Item	Description
MAC Address	Display the MAC address for such profile.

### How to create a new MAC Block profile

1. Open **Firewall>>MAC Block**.
2. Simply click the **Add** button.



3. The following dialog will appear.

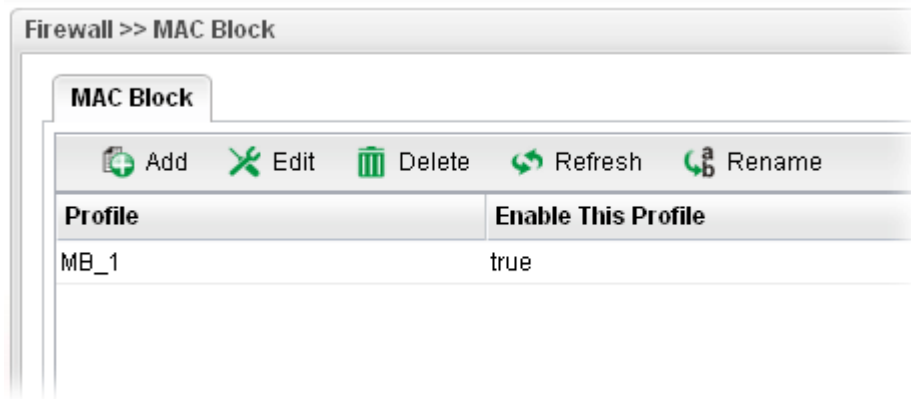


Available parameters are listed as follows:

Item	Description
<b>Profile</b>	Type the name which can briefly describe the reason of the MAC block of such profile.
<b>Enable This Profile</b>	Check the box to enable this profile.
<b>MAC Address</b>	Type the MAC address which will be blocked by the system for such profile.
<b>Apply</b>	Click it to save and exit the dialog.
<b>Cancel</b>	Click it to exit the dialog without saving anything.

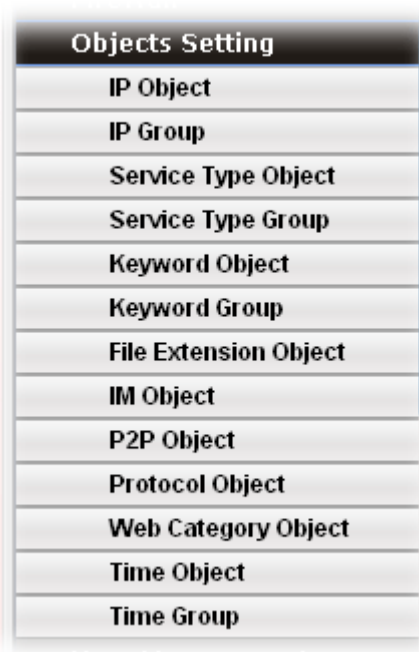
4. Enter all the settings and click **Apply**.

5. A new MAC Block profile has been created.



## 4.5 Objects Setting

Vigor2960 allows users to set different filter profiles based on IP, service type, keyword, file extension, instant message application, P2P application, protocol application, web category and time setting. These objects setting profiles can be applied in **Firewall**.

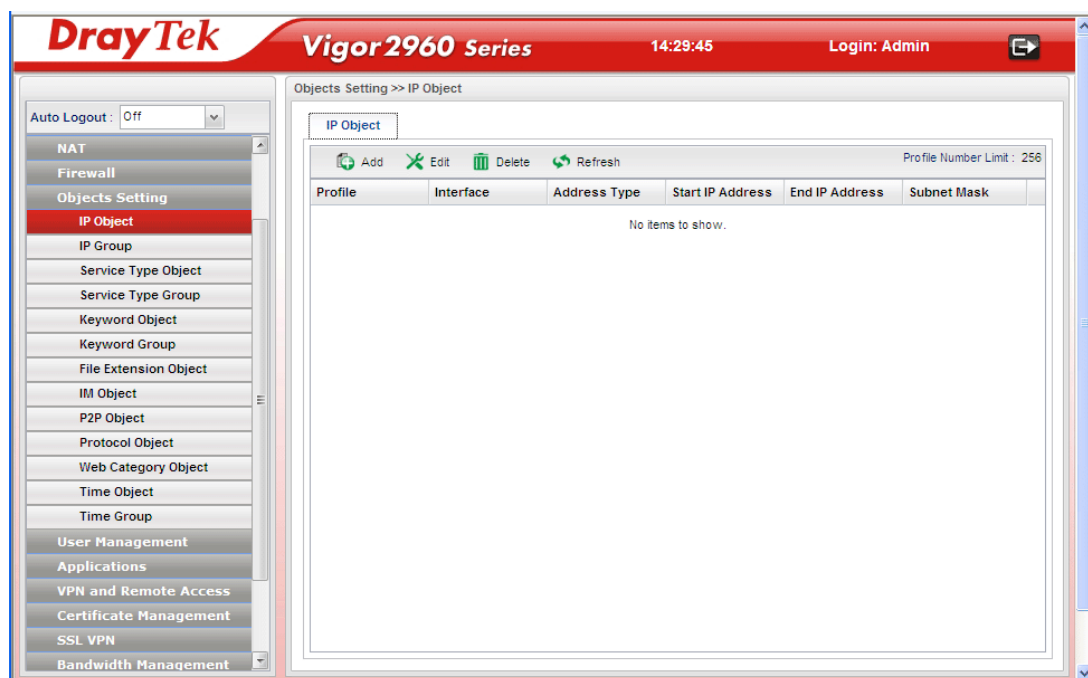




## 4.5.1 IP Object

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

This page allows you to specify certain IP address, range of IP addresses or subnet mask as an object which will be applied in **Firewall**.



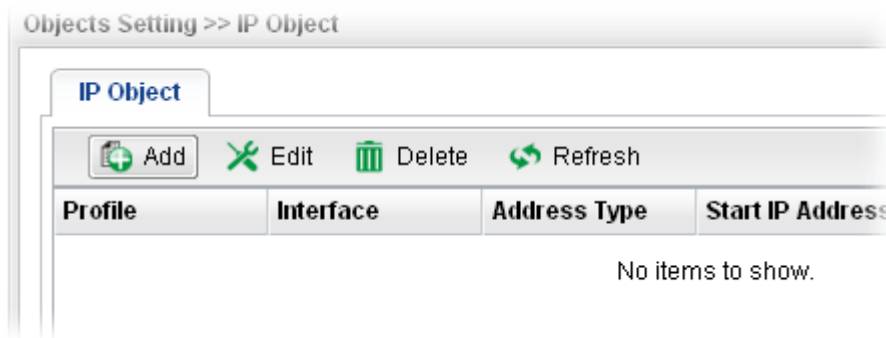
Each item will be explained as follows:

Item	Description
<b>Add</b>	Add a new profile.
<b>Edit</b>	Modify the selected profile. To edit a profile, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected rule.
<b>Delete</b>	Remove the selected profile. To delete a rule, simply select the one you want to delete and click the <b>Delete</b> button.
<b>Refresh</b>	Renew current web page.
<b>Profile Number Limit</b>	Display the total number (256) of the object profiles to be created.
<b>Profile</b>	Display the name of the profile.
<b>Interface</b>	Display the interface of the IP Object.
<b>Address Type</b>	Display the address type (single, range or subnet) for such profile.
<b>Start IP Address</b>	Display the IP address of the starting point for such profile.

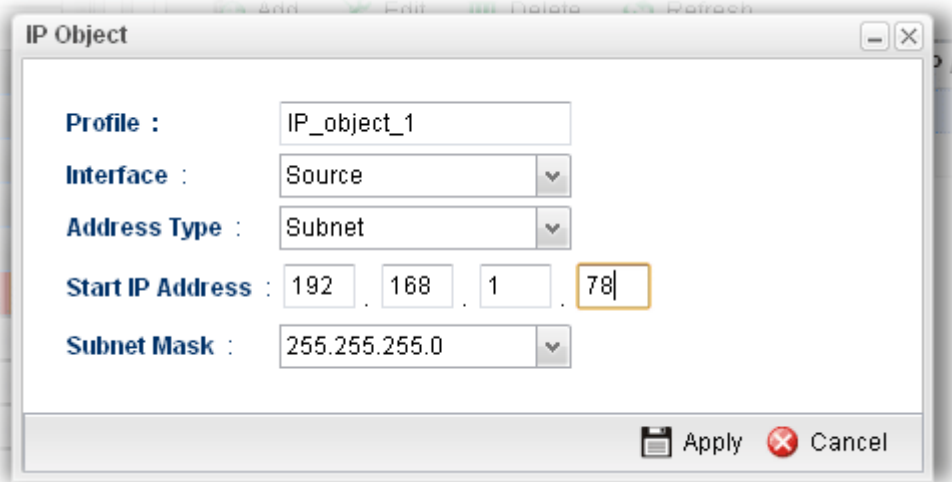
Item	Description
<b>End IP Address</b>	Display the IP address of the ending point for such profile. It will be joint with <b>Start IP Address</b> only when you choose <b>Range</b> as the <b>Address Type</b> .
<b>Subnet Mask</b>	Display the subnet mask for such profile.

### How to create a new IP Object profile

1. Open **Objects Setting>>IP Object**.
2. Simply click the **Add** button.

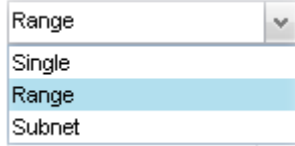


3. The following dialog will appear.

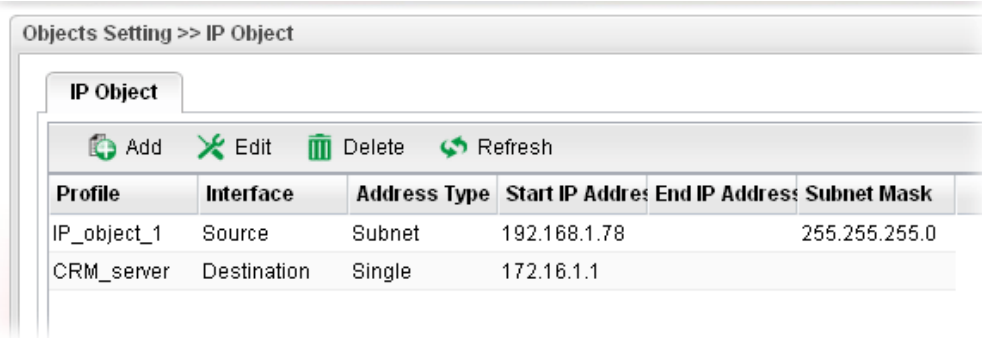






Available parameters are listed as follows:

Item	Description
<b>Profile</b>	Type the name of such profile.
<b>Interface</b>	Determine the category (any, source or destination) of this IP object. If an IP object is set to <b>Source</b> , it will only appear in the field of <b>Source IP</b> on <b>Firewall&gt;&gt;IP Filter Rule</b> .  <div style="border: 1px solid gray; padding: 5px; width: fit-content;"> Source  Any  Source  Destination </div>

Item	Description
<b>Address Type</b>	Choose the address type (Single / Range /Subnet) for such profile. 
<b>Start IP Address</b>	Type the IP address of the starting point for such profile.
<b>End IP Address</b>	Type the IP address of the ending point for such profile if you choose <b>Range</b> as <b>Address Type</b> .
<b>Subnet Mask</b>	Use the drop down list to choose the subnet mask for such profile if you choose <b>Subnet</b> as <b>Address Type</b> .
<b>Apply</b>	Click it to save and exit the dialog.
<b>Cancel</b>	Click it to exit the dialog without saving anything.

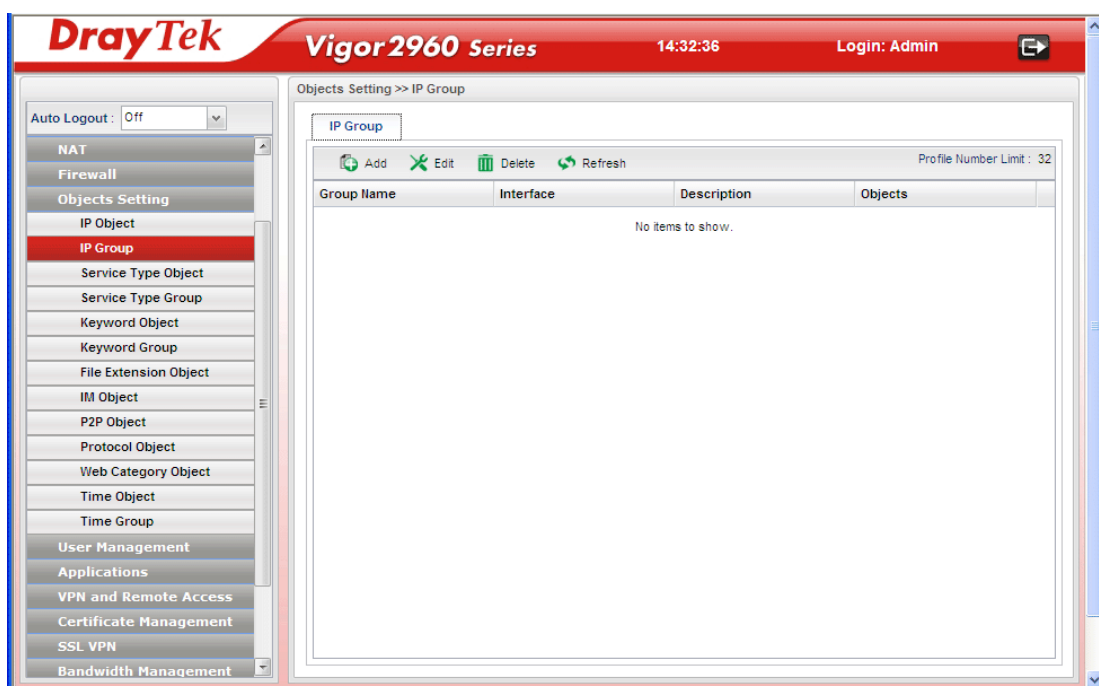
4. Enter all the settings and click **Apply**.
5. A new IP object profile has been created.



Objects Setting >> IP Object					
IP Object					
 Add  Edit  Delete  Refresh					
Profile	Interface	Address Type	Start IP Address	End IP Address	Subnet Mask
IP_object_1	Source	Subnet	192.168.1.78		255.255.255.0
CRM_server	Destination	Single	172.16.1.1		

## 4.5.2 IP Group

To manage conveniently, several IP object profiles can be grouped under a group. Different IP group can contain different IP object profiles.

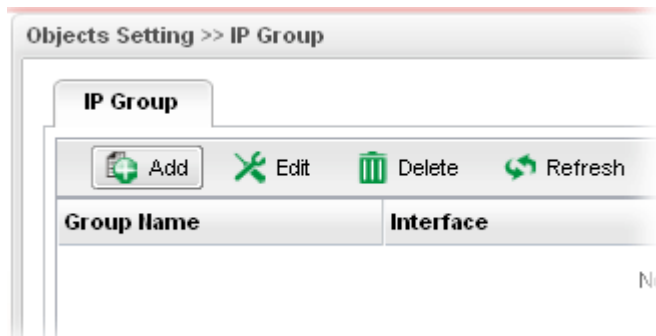


Each item will be explained as follows:

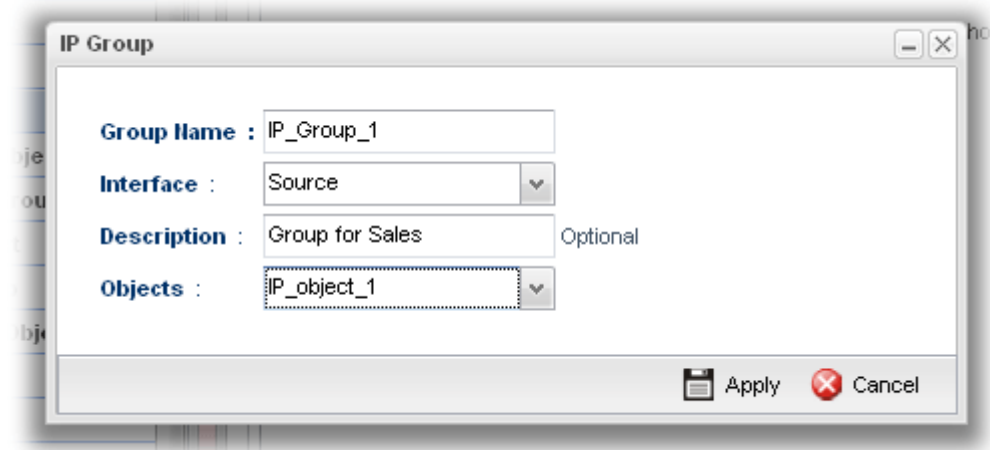
Item	Description
<b>Add</b>	Add a new profile.
<b>Edit</b>	Modify the selected profile. To edit a profile, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected rule.
<b>Delete</b>	Remove the selected profile. To delete a rule, simply select the one you want to delete and click the <b>Delete</b> button.
<b>Refresh</b>	Renew current web page.
<b>Profile Number Limit</b>	Display the total number (32) of the object profiles to be created.
<b>Group Name</b>	Display the name of the object group.
<b>Interface</b>	Display the interface of the object group.
<b>Description</b>	Display the description for such profile.
<b>Objects</b>	Display the object profiles grouped under such group.

### How to create a new IP Group profile

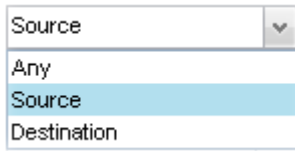
1. Open **Objects Setting>>IP Group**.
2. Simply click the **Add** button.



- The following dialog will appear.



Available parameters are listed as follows:

Item	Description
<b>Group Name</b>	Type the name of the object group. The number of the characters allowed to be typed here is 20.
<b>Interface</b>	Determine the category (any, source or destination) of this IP object. If an IP object is set to <b>Source</b> , it will only appear in the field of <b>Source IP</b> on <b>Firewall&gt;&gt;IP Filter Rule</b> . 
<b>Description</b>	Make a brief explanation for such profile if the group name is set not clearly.
<b>Objects</b>	Use the drop down list to check the IP object profiles under such group. All the available IP objects that you have added on <b>Objects Setting&gt;&gt;IP Object</b> will be seen here.
<b>Apply</b>	Click it to save the configuration.
<b>Cancel</b>	Click it to exit the dialog without saving anything.

- Enter all the settings and click **Apply**.

5. A new IP Group profile has been created.

Group Name	Interface	Description	Objects
IP_Group_1	Source	Group for Sales	IP_object_1

### 4.5.3 Service Type Object

TCP and UDP service with specified port range can be saved with different service type object profiles. Later, it can be applied to Firewall as a filter rule.

In default, common used service type object profiles have been created in this page.

Profile	Protocol	Source Port Start	Source Port End	Destination Port Start	Destination Port End
AUTH	TCP	1	65535	113	113
BGP	TCP	1	65535	179	179
BOOTPCLENT	UDP	1	65535	68	68
BOOTPSERVER	UDP	1	65535	67	67
CU_SEEME_HI	TCP/UDP	1	65535	24032	24032
CU_SEEME_LO	TCP/UDP	1	65535	7648	7648
DNS	TCP/UDP	1	65535	53	53
FINGER	TCP	1	65535	79	79
FTP	TCP	1	65535	20	21
H_323	TCP	1	65535	1720	1720
HTTP	TCP	1	65535	80	80
HTTPS	TCP	1	65535	443	443
IKE	UDP	1	65535	500	500
IRC	TCP/UDP	1	65535	6667	6667
L2TP	UDP	1	65535	1701	1701
NEWS	TCP	1	65535	144	144
NFS	UDP	1	65535	2049	2049
NNTP	TCP	1	65535	119	119

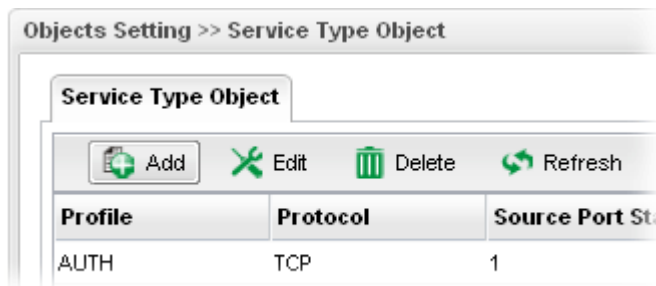
Each item will be explained as follows:

Item	Description
<b>Add</b>	Add a new profile.
<b>Edit</b>	Modify the selected profile. To edit a profile, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected rule.
<b>Delete</b>	Remove the selected profile. To delete a rule, simply select the one you want to delete and click the <b>Delete</b> button.
<b>Refresh</b>	Renew current web page.
<b>Profile Number Limit</b>	Display the total number (96) of the object profiles to be created.
<b>Profile</b>	Display the name of the service type object profile.

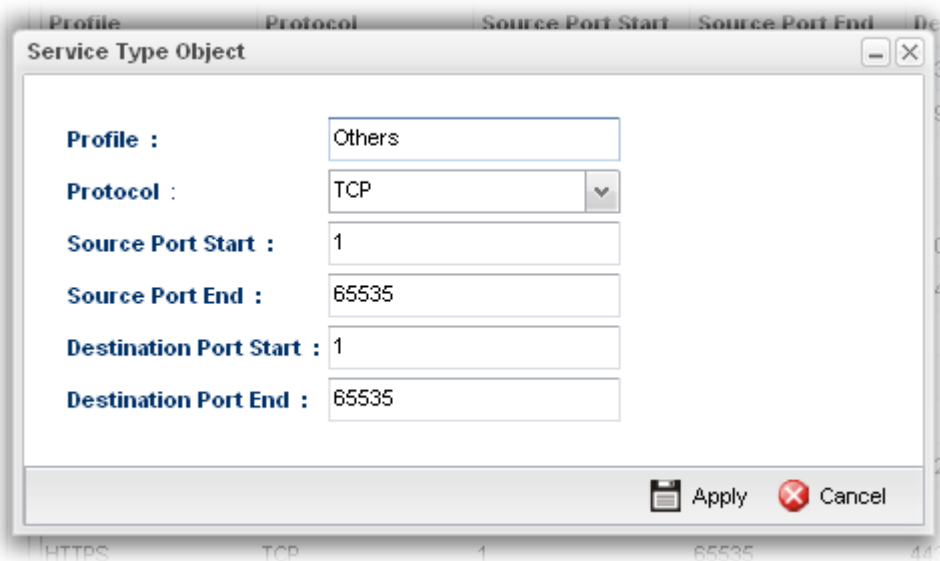
Item	Description
<b>Protocol</b>	Display the protocol selected for such profile.
<b>Source Port Start</b>	Display the starting source port for such profile.
<b>Source Port End</b>	Display the ending source port for such profile.
<b>Destination Port Start</b>	Display the starting destination port for such profile.
<b>Destination Port End</b>	Display the ending destination port for such profile.

## How to create a new Service Type Object profile

1. Open **Objects Setting>> Service Type Object**.
2. Simply click the **Add** button.



3. The following dialog will appear.



Available parameters are listed as follows:

Item	Description
<b>Profile</b>	Type a name for such profile. The number of the characters allowed to be typed here is 10.
<b>Protocol</b>	Specify one of the protocols for such profile.
<b>Source Port Start</b>	It is available for TCP/UDP protocol. It can be ignored for ICMP. Type a port number (0 – 65535) as the starting source port.

Item	Description
<b>Source Port End</b>	It is available for TCP/UDP protocol. It can be ignored for ICMP. Type a port number (0 – 65535) as the ending source port.
<b>Destination Port Start</b>	It is available for TCP/UDP protocol. It can be ignored for ICMP. Type a port number (0 – 65535) as the starting destination port.
<b>Destination Port End</b>	It is available for TCP/UDP protocol. It can be ignored for ICMP. Type a port number (0 – 65535) as the ending destination port.
<b>Apply</b>	Click it to save the configuration.
<b>Cancel</b>	Click it to exit the dialog without saving anything.

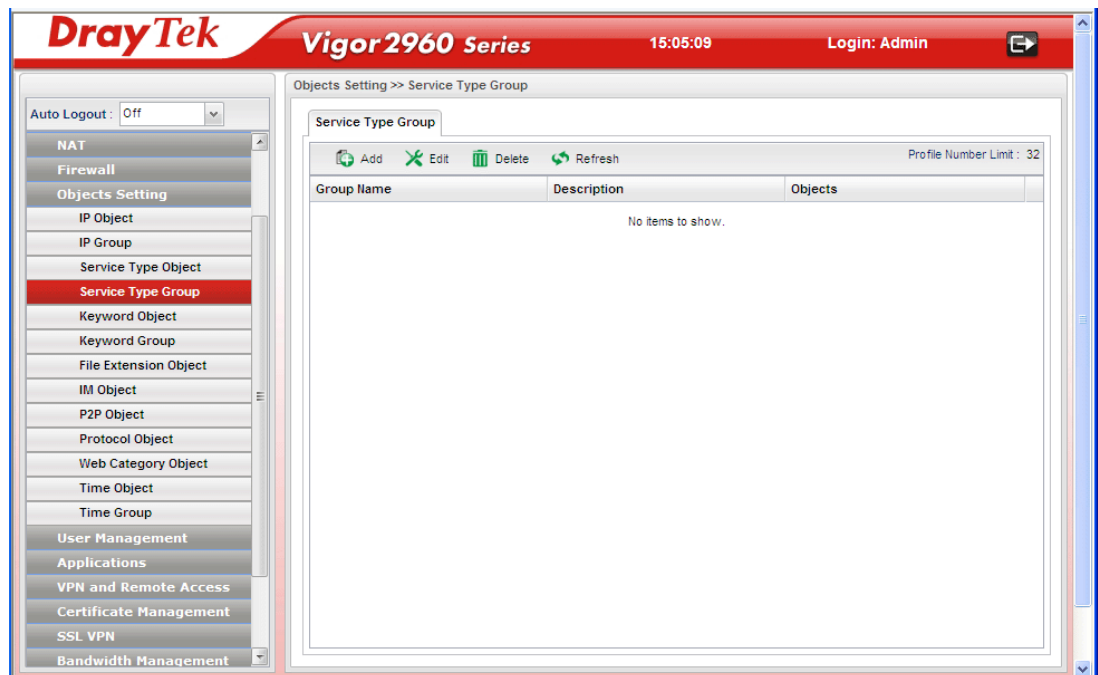
4. Enter all the settings and click **Apply**.
5. A new Service Type Object profile has been created.

Service Type	Protocol	Priority	Start Port	End Port	Action
SSH	TCP/UDP	1	65535	22	22
SYSLOG	UDP	1	65535	514	514
TELNET	TCP	1	65535	23	23
TFTP	UDP	1	65535	69	69
Others	TCP	1	65535	1	65535

#### 4.5.4 Service Type Group

This page allows you to bind several service types into one group.

To manage conveniently, several service type profiles can be grouped under a service type group. Different service type group can contain different service type profiles.



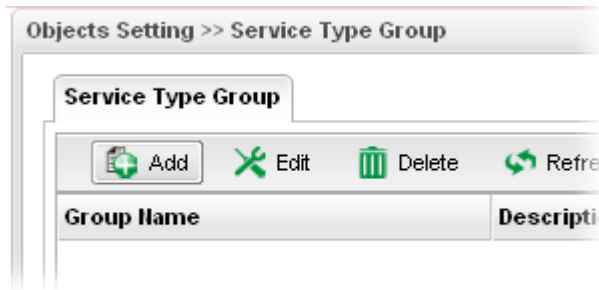
Each item will be explained as follows:



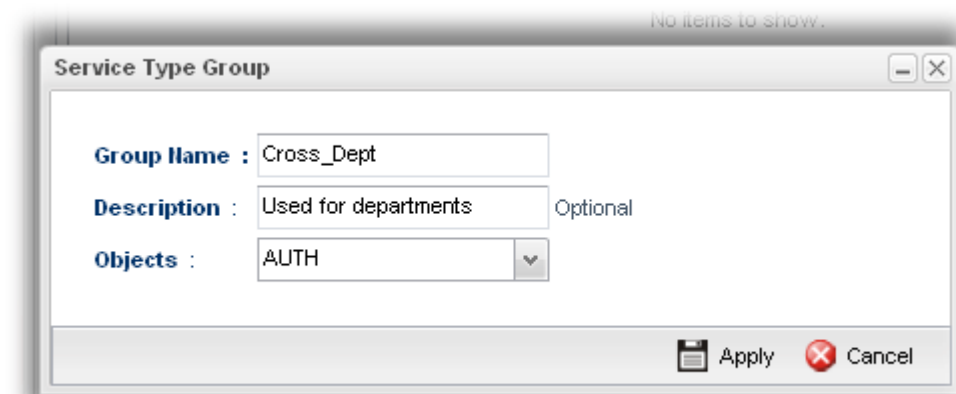
Item	Description
<b>Add</b>	Add a new profile.
<b>Edit</b>	Modify the selected profile. To edit a profile, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected rule.
<b>Delete</b>	Remove the selected profile. To delete a rule, simply select the one you want to delete and click the <b>Delete</b> button.
<b>Refresh</b>	Renew current web page.
<b>Profile Number Limit</b>	Display the total number (32) of the object profiles to be created.
<b>Group Name</b>	Display the name of the service type group.
<b>Description</b>	Display the description for such profile.
<b>Objects</b>	Display the service type object profiles grouped under such group.

### How to create a new Service Type Group profile

1. Open **Objects Setting >> Service Type Group**.
2. Simply click the **Add** button.



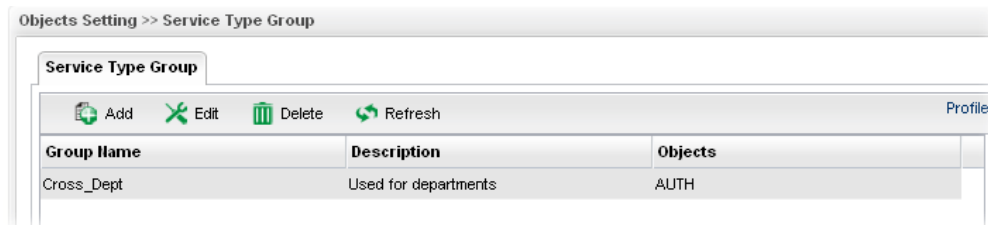
3. The following dialog will appear.



Available parameters are listed as follows:

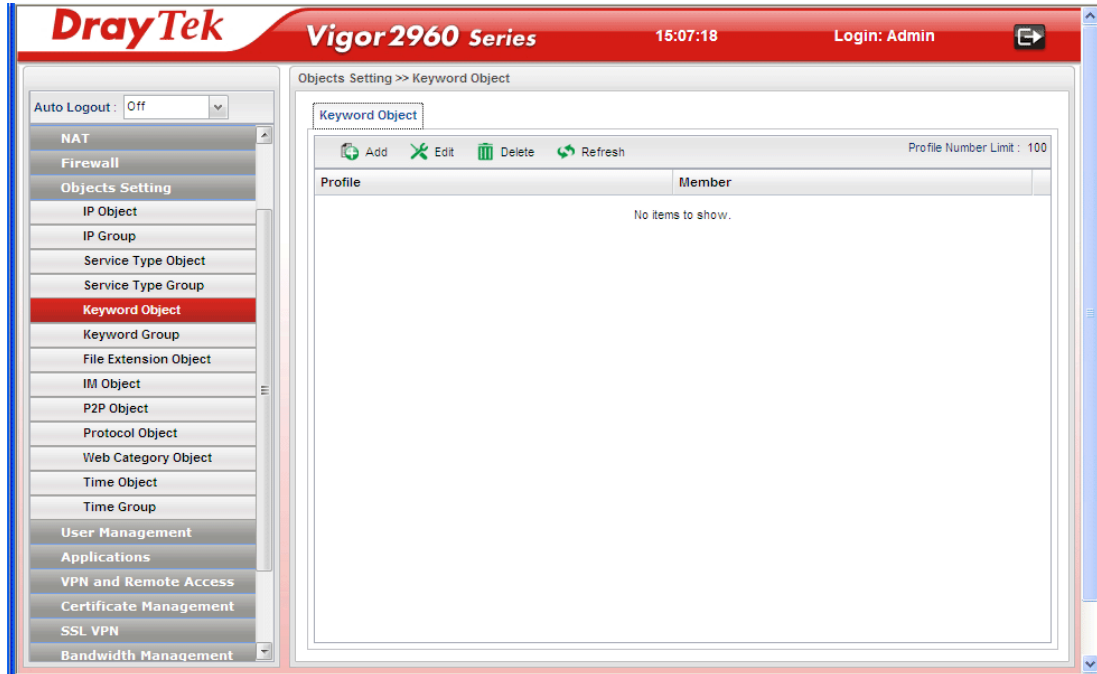
Item	Description
<b>Group Name</b>	Type the name of the service type object group. The number of the characters allowed to be typed here is 20.
<b>Group Name</b>	Type the name of the service type object group. The number of the characters allowed to be typed here is 20.
<b>Objects</b>	Use the drop down list to check the service type object profiles under such group. All the available service type objects that you have added on <b>Objects Setting&gt;&gt;Service Type Object</b> will be seen here.
<b>Apply</b>	Click it to save the configuration.
<b>Cancel</b>	Click it to exit the dialog without saving the configuration.

4. Enter all the settings and click **Apply**.
5. A new Service Type Group profile has been created.



## 4.5.5 Keyword Object

Keyword can be set as a filter rule to be applied in Firewall. Vigor2960 allows users to set keyword profile with several keywords. Even, it allows users to group several keyword profiles within a keyword group.

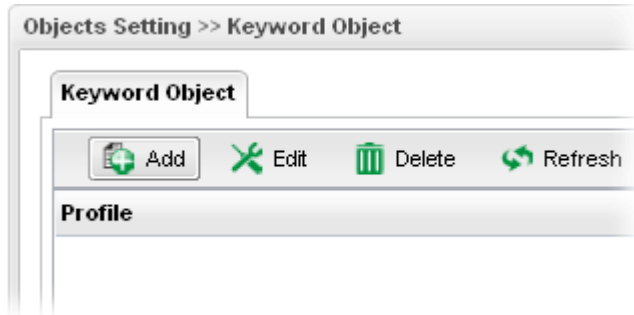


Each item will be explained as follows:

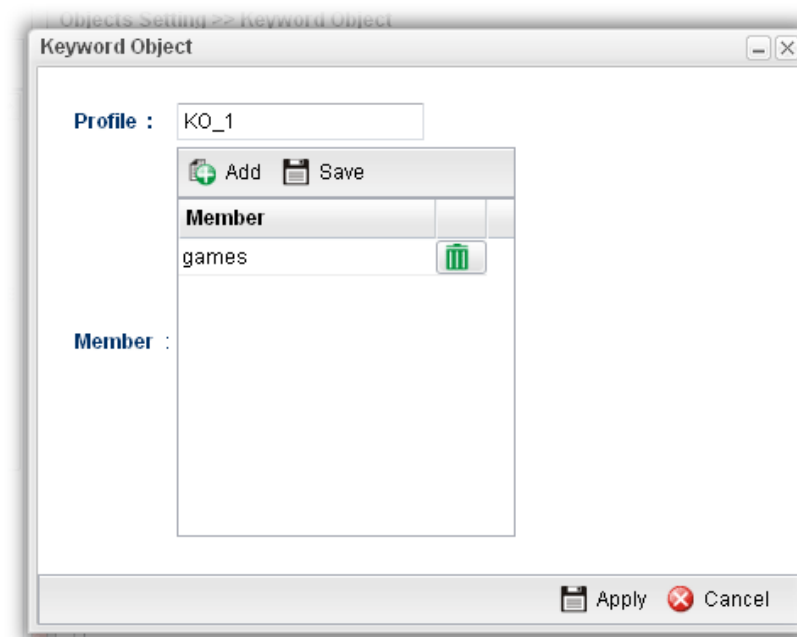
Item	Description
<b>Add</b>	Add a new profile.
<b>Edit</b>	Modify the selected profile. To edit a profile, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected rule.
<b>Delete</b>	Remove the selected profile. To delete a rule, simply select the one you want to delete and click the <b>Delete</b> button.
<b>Refresh</b>	Renew current web page.
<b>Profile Number Limit</b>	Display the total number (100) of the object profiles to be created.
<b>Profile</b>	Display the name of the keyword object profile.
<b>Member</b>	Display the words specified in such profile.

## How to create a new Keyword Object profile


1. Open **Objects Setting >> Keyword Object**.
2. Simply click the **Add** button.



3. The following dialog will appear.



Available parameters are listed as follows:

Item	Description
<b>Profile</b>	Type the name of the service type object group. The number of the characters allowed to be typed here is 10.
<b>Member</b>	Type the content for such profile. For example, type <i>gambling</i> as Contents. When you browse the webpage, the page with gambling information will be watched out and be passed/blocked based on the configuration on Firewall settings. <b>Add</b> – Type the word in the box of Member and click this button to add the new word as keyword object. <b>Save</b> – Click it to save the setting.  – click the icon to remove the selected entry.
<b>Apply</b>	Click it to save the configuration.

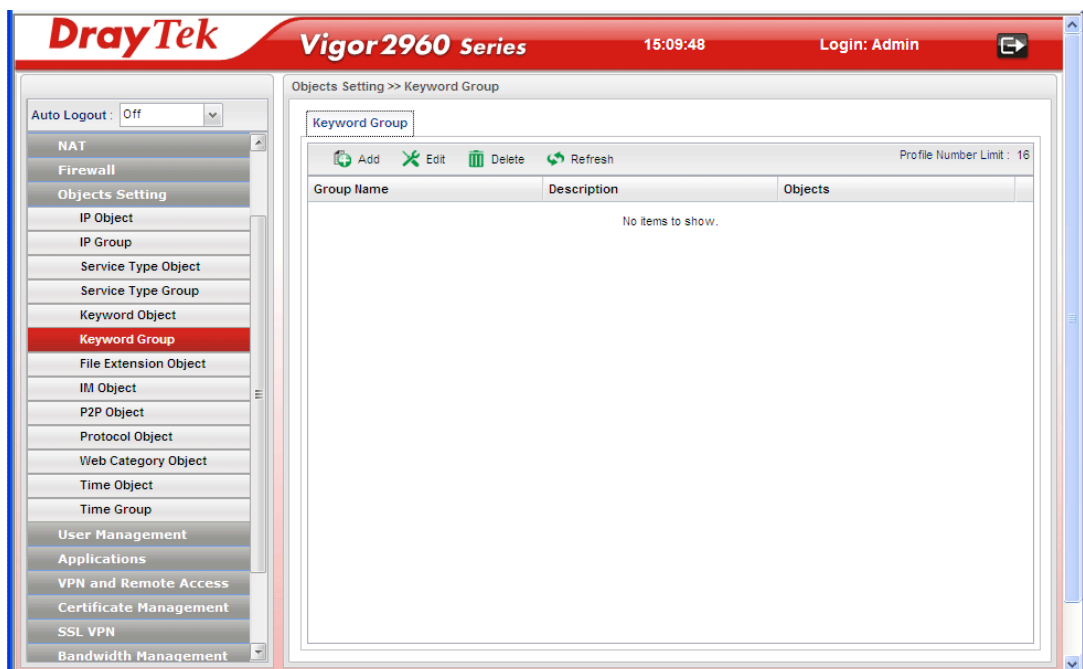
Item	Description
<b>Cancel</b>	Click it to exit the dialog without saving the configuration.

4. Enter all the settings and click **Apply**.
5. A new **Keyword Object** profile has been created.



#### 4.5.6 Keyword Group

To manage conveniently, several keyword profiles can be grouped under a keyword group. Different keyword group can contain different keyword profiles.



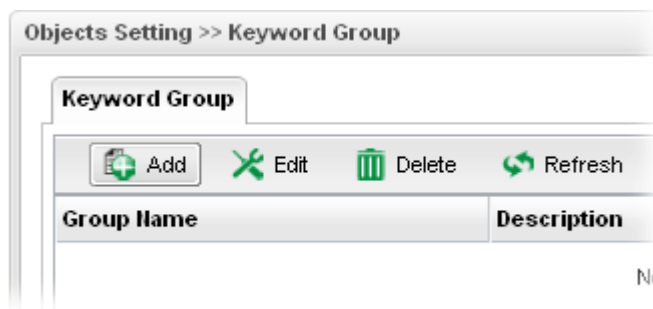
Each item will be explained as follows:

Item	Description
<b>Add</b>	Add a new profile.
<b>Edit</b>	Modify the selected profile. To edit a profile, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected rule.
<b>Delete</b>	Remove the selected profile. To delete a rule, simply select the one you want to delete and click the <b>Delete</b> button.
<b>Refresh</b>	Renew current web page.

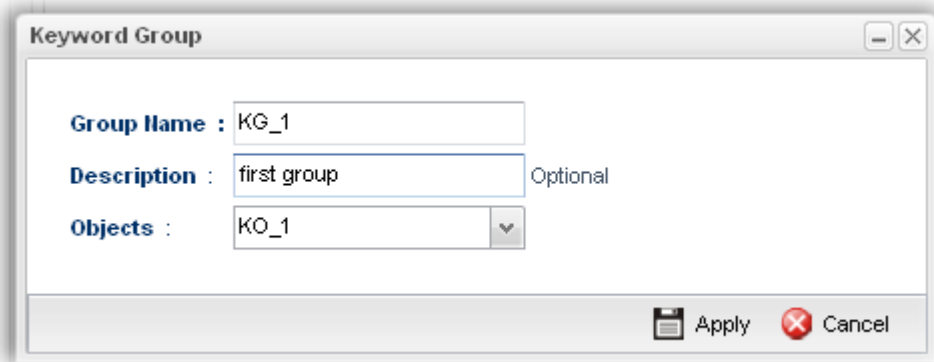
Item	Description
<b>Profile Number Limit</b>	Display the total number (16) of the object profiles to be created.
<b>Group Name</b>	Display the name of the service type group.
<b>Description</b>	Display the brief explanation for such profile.
<b>Objects</b>	Display the keyword object profiles grouped under such group.

### How to create a new Keyword Group Profile

1. Open **Objects Setting>> Keyword Group**.
2. Simply click the **Add** button.



3. The following dialog will appear.

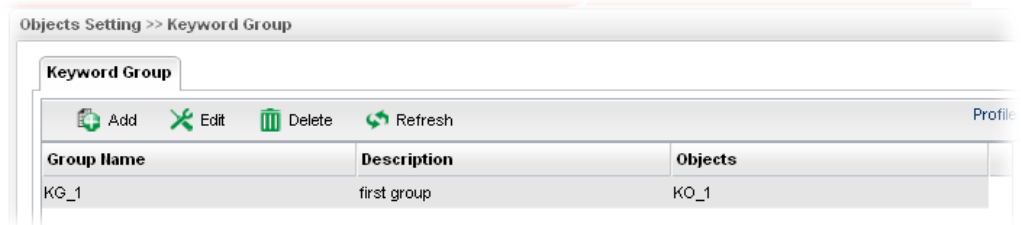


Available parameters are listed as follows:

Item	Description
<b>Group Name</b>	Type the name of the service type object group. The number of the characters allowed to be typed here is 20.
<b>Description</b>	Make a brief explanation for such profile if the group name is set not clearly.
<b>Objects</b>	Use the drop down list to check the keyword object profiles under such group. All the available keyword objects that you have added on <b>Objects Setting&gt;&gt;Keyword Object</b> will be seen here.
<b>Apply</b>	Click it to save the configuration.

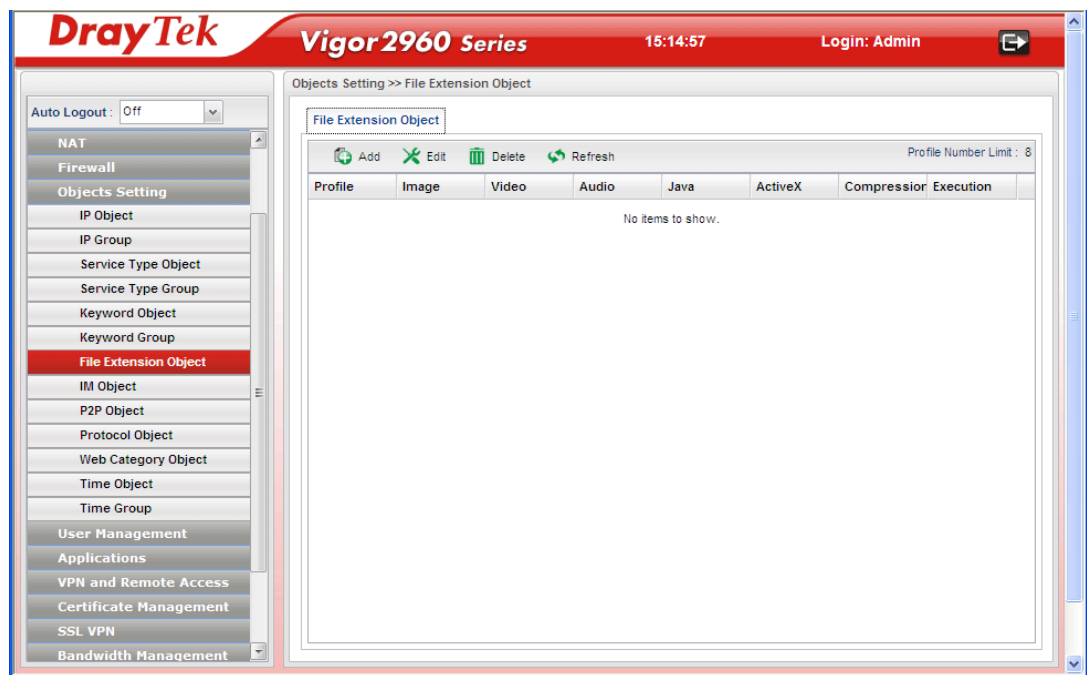
Item	Description
<b>Cancel</b>	Click it to exit the dialog without saving the configuration.

4. Enter all the settings and click **Apply**.
5. A new Keyword Group profile has been created.



#### 4.5.7 File Extension Object

This page allows you to set file extension profiles which will be applied in **Firewall**. All the files with the extension names specified in these profiles will be processed according to the chosen action.



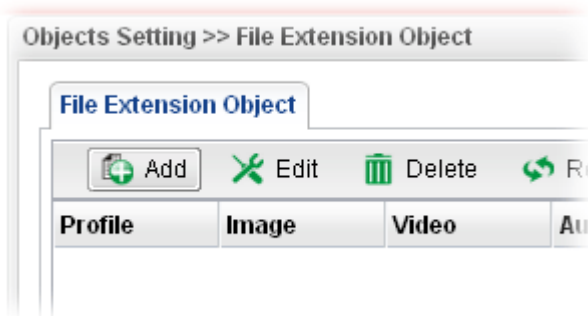
Each item will be explained as follows:

Item	Description
<b>Add</b>	Add a new profile.
<b>Edit</b>	Modify the selected profile. To edit a profile, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected rule.
<b>Delete</b>	Remove the selected profile. To delete a rule, simply select the one you want to delete and click the <b>Delete</b> button.

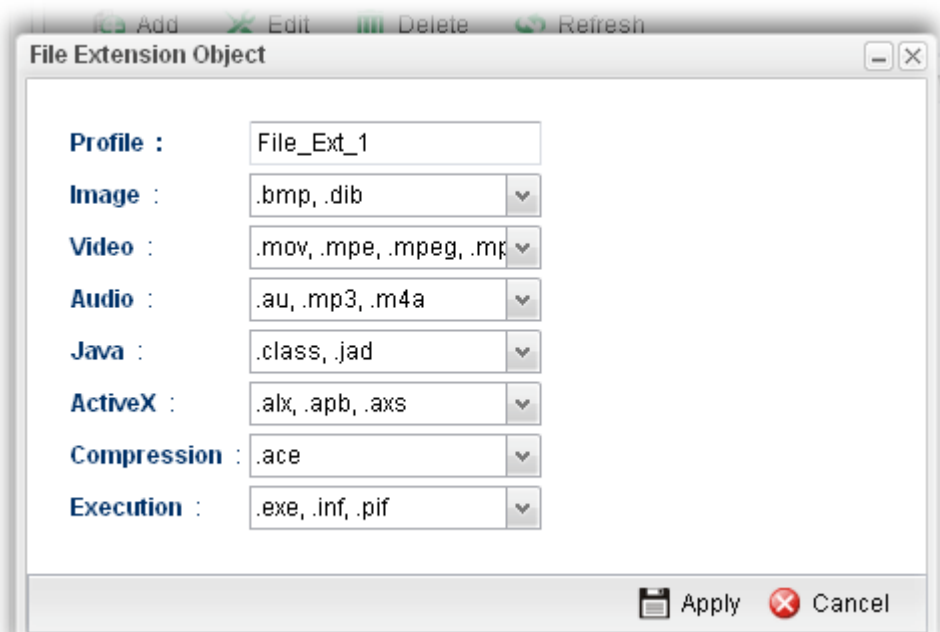
Item	Description
Refresh	Renew current web page.
Profile Number Limit	Display the total number (8) of the object profiles to be created.
Profile	Display the name of the profile.
Image	Display the selected file extension of image.
Video	Display the selected file extension of video.
Audio	Display the selected file extension of audio.
Java	Display the selected file extension of java.
ActiveX	Display the selected file extension of activeX.
Compression	Display the selected file extension of compression.
Execution	Display the selected file extension of execution.

### How to create a new File Extension Object Profile

1. Open **Objects Setting>>File Extension Object**.
2. Simply click the **Add** button.



3. The following dialog will appear.





Available parameters are listed as follows:

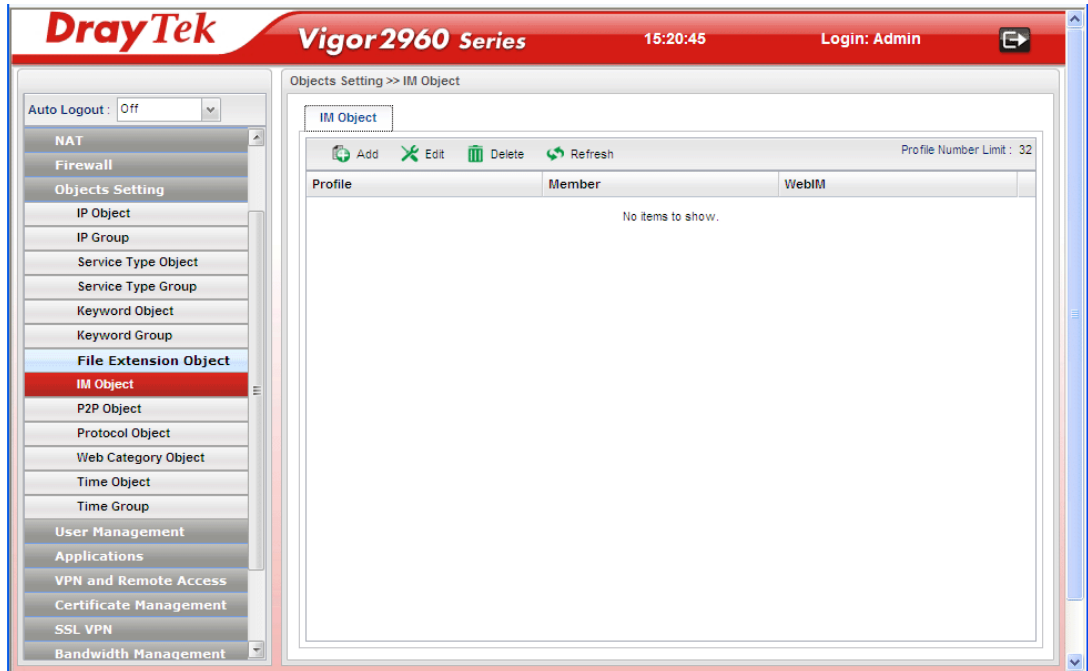
Item	Description
<b>Profile</b>	Type the name of the File Extension Object group. The number of the characters allowed to be typed here is 10.
<b>Image</b>	Several file extensions for Image offered for you to choose. Use the drop down list to check the box (es) to select the file extension you need.
<b>Video</b>	Several file extensions for Video offered for you to choose. Use the drop down list to check the box (es) to select the file extension you need.
<b>Audio</b>	Several file extensions for Audio offered for you to choose. Use the drop down list to check the box (es) to select the file extension you need.
<b>Java</b>	Several file extensions for Java offered for you to choose. Use the drop down list to check the box (es) to select the file extension you need.
<b>ActiveX</b>	Several file extensions for ActiveX offered for you to choose. Use the drop down list to check the box (es) to select the file extension you need.
<b>Compression</b>	Several file extensions for compression offered for you to choose. Use the drop down list to check the box (es) to select the file extension you need.
<b>Execution</b>	Several file extensions for execution offered for you to choose. Use the drop down list to check the box (es) to select the file extension you need.
<b>Apply</b>	Click it to save the configuration.
<b>Cancel</b>	Click it to exit the dialog without saving the configuration.

4. Enter all the settings and click **Apply**.
5. A new File Extension Object profile has been created.



## 4.5.8 IM Object

People like to use Instant Message to communication with friends on line just for fun or just because it is easy and convenient. However, it might reduce the productivity of employees to a company. Therefore, a tool to block or limit the usage of IM application is important to a company. IM object setting lists all of the popular instant message application for you to choose to block. Choose the one(s) you want to block and save as an IM Object profile. Later, it can be applied to Firewall as a filter rule and reach the purpose of block.

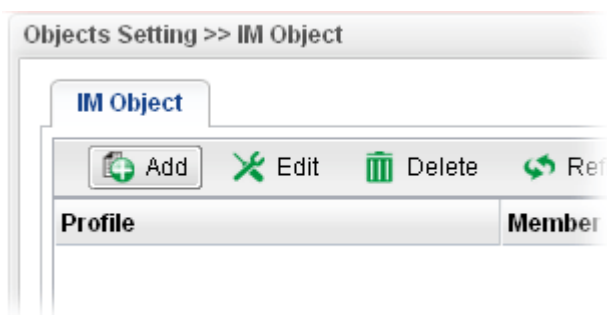


Each item will be explained as follows:

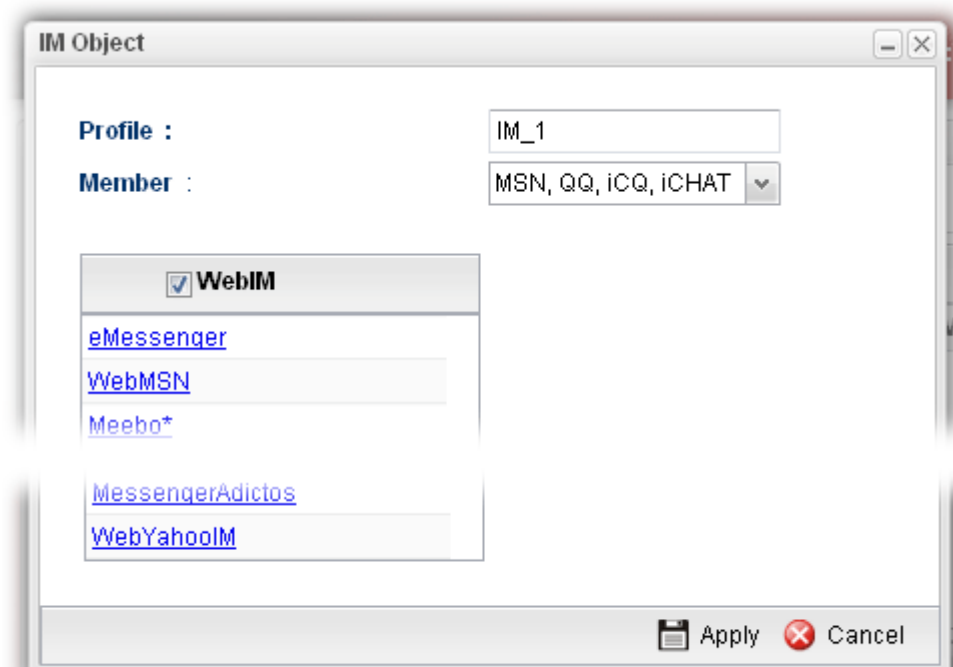
Item	Description
<b>Add</b>	Add a new profile.
<b>Edit</b>	Modify the selected profile. To edit a profile, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected rule.
<b>Delete</b>	Remove the selected profile. To delete a rule, simply select the one you want to delete and click the <b>Delete</b> button.
<b>Refresh</b>	Renew current web page.
<b>Profile Number Limit</b>	Display the total number (32) of the object profiles to be created.
<b>Profile</b>	Display the name of the IM object profile.
<b>Member</b>	Display the IM application specified in such profile.
<b>WebIM</b>	Display the status of IM object whether including the specified set of web IM or not.

## How to create a new IM Object Profile

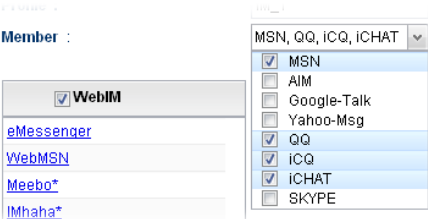
1. Open **Objects Setting>>IM Object**.
2. Simply click the **Add** button.



3. The following dialog will appear.

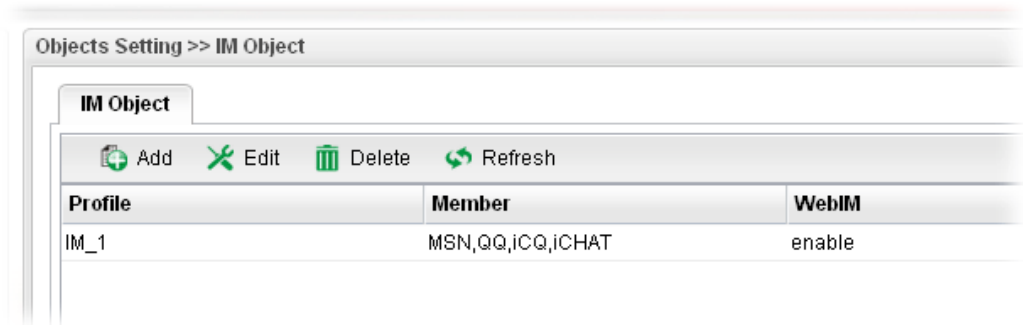


Available parameters are listed as follows:

Item	Description
<b>Profile</b>	Type the name of the IM object group. The number of the characters allowed to be typed here is 10.
<b>Member</b>	Several IM applications offered for you to choose. Check the one(s) you want to add for such profile. 

Item	Description
<b>WebIM</b>	It lists a package of IM application based on web page. You may check the box to include all of them.
<b>Apply</b>	Click it to save the configuration.
<b>Cancel</b>	Click it to exit the dialog without saving the configuration.

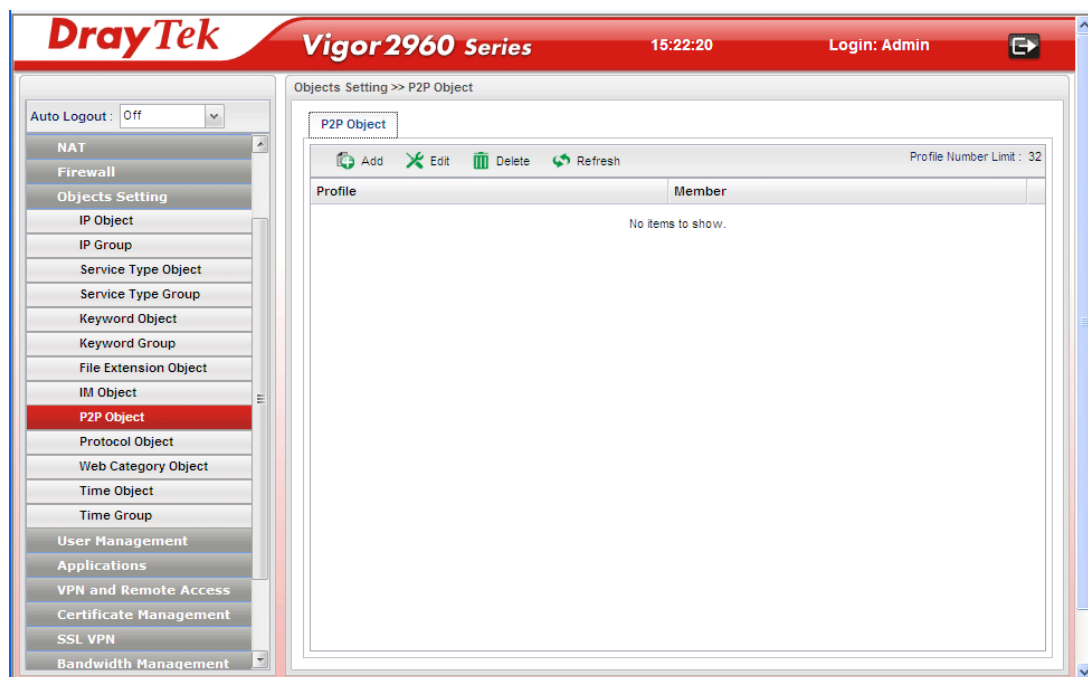
4. Enter all the settings and click **Apply**.
5. A new IM Object profile has been created.



## 4.5.9 P2P Object

Vigor2960 can block P2P application for users, especially for the ones who always upload or download improper files to Internet.

P2P object setting lists all of the point to point application for you to choose to block. Choose the one(s) you want to block and save as a P2P Object profile. Later, it can be applied to Firewall as a filter rule and reach the purpose of block.

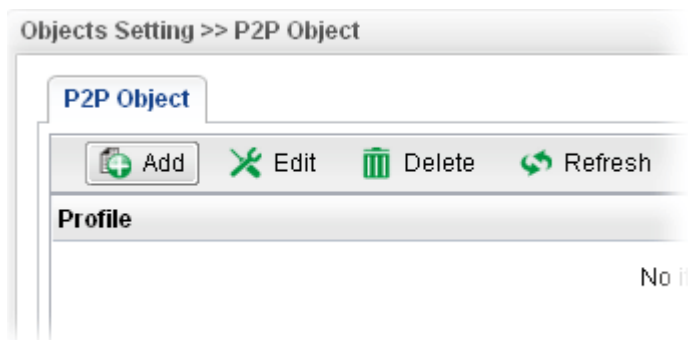


Each item will be explained as follows:

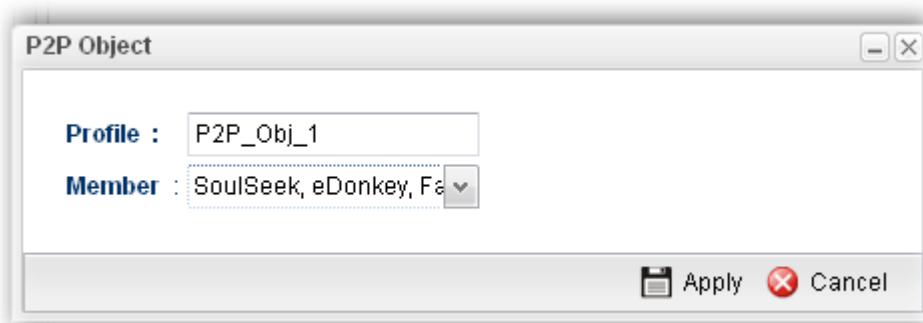
Item	Description
<b>Add</b>	Add a new profile.
<b>Edit</b>	Modify the selected profile. To edit a profile, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected rule.
<b>Delete</b>	Remove the selected profile. To delete a rule, simply select the one you want to delete and click the <b>Delete</b> button.
<b>Refresh</b>	Renew current web page.
<b>Profile Number Limit</b>	Display the total number (32) of the object profiles to be created.
<b>Profile</b>	Display the name of the IM object profile.
<b>Member</b>	Display the P2P application specified in such profile.

## How to create a new P2P Object Profile

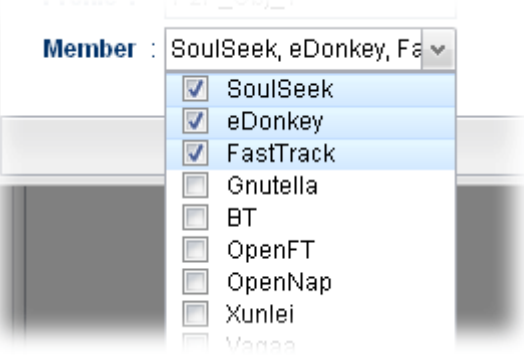
1. Open **Objects Setting>>P2P Object**.
2. Simply click the **Add** button.



3. The following dialog will appear.

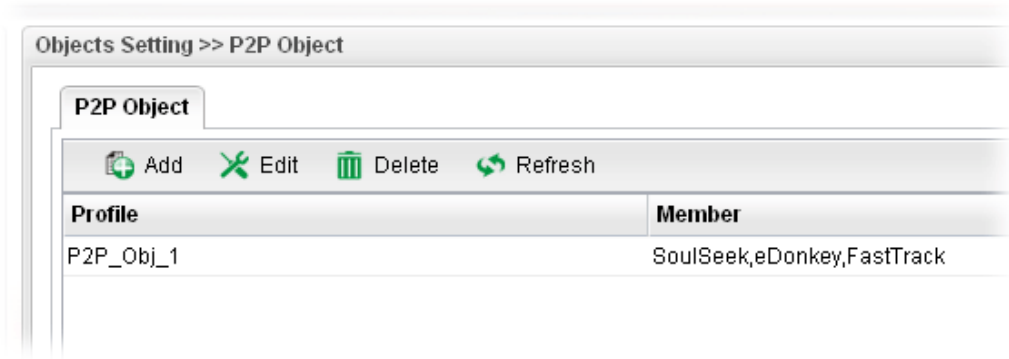


Available parameters are listed as follows:

Item	Description
<b>Profile</b>	Type the name of the IM object group. The number of the characters allowed to be typed here is 10.
<b>Member</b>	Several P2P applications offered for you to choose. Check the one(s) you want to add for such profile. 
<b>Apply</b>	Click it to save the configuration.
<b>Cancel</b>	Click it to exit the dialog without saving the configuration.

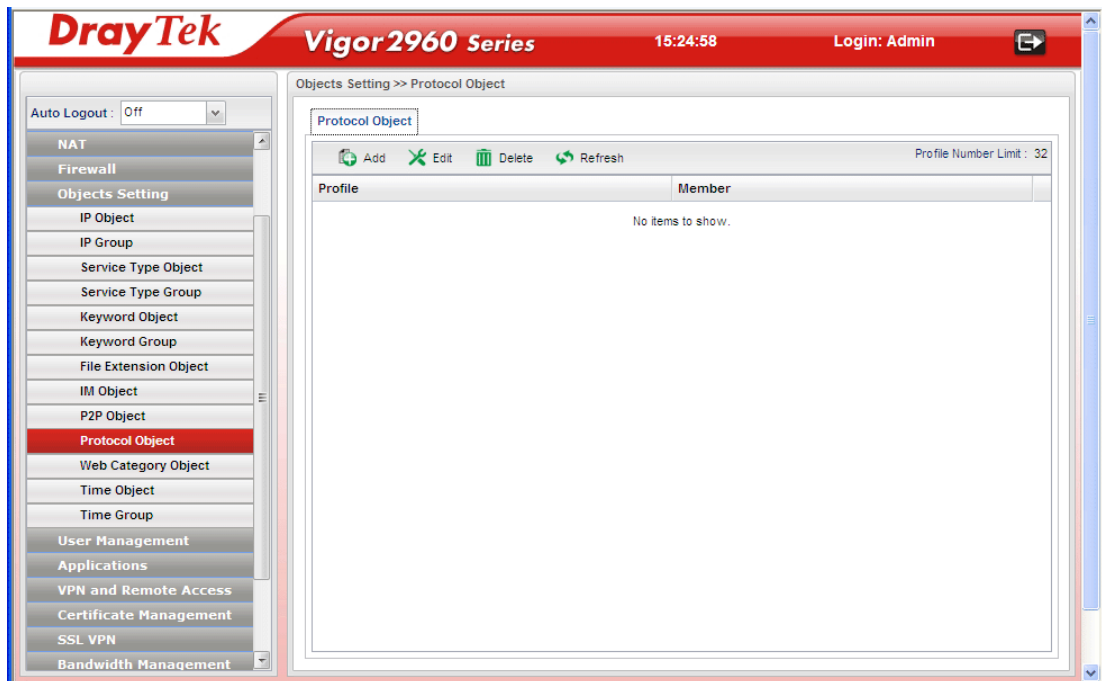
4. Enter all the settings and click **Apply**.

- A new P2P Object profile has been created.



#### 4.5.10 Protocol Object

Network services, e.g., DNS, FTP, HTTP, POP3, for LAN users can be blocked by Vigor2960. Common services will be listed in this function and can be selected to be blocked by the router.



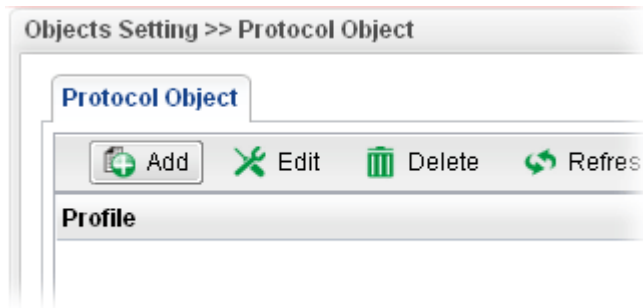
Each item will be explained as follows:

Item	Description
<b>Add</b>	Add a new profile.
<b>Edit</b>	Modify the selected profile. To edit a profile, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected rule.
<b>Delete</b>	Remove the selected profile. To delete a rule, simply select the one you want to delete and click the <b>Delete</b> button.
<b>Refresh</b>	Renew current web page.

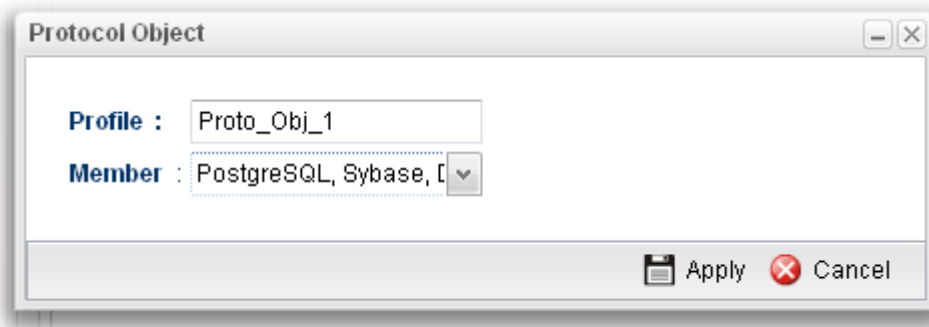
Item	Description
<b>Profile Number Limit</b>	Display the total number (32) of the object profiles to be created.
<b>Profile</b>	Display the name of the IM object profile.
<b>Member</b>	Display the protocol application specified in such profile.

### How to create a new Protocol Object Profile

1. Open **Objects Setting>>Protocol Object**.
2. Simply click the **Add** button.



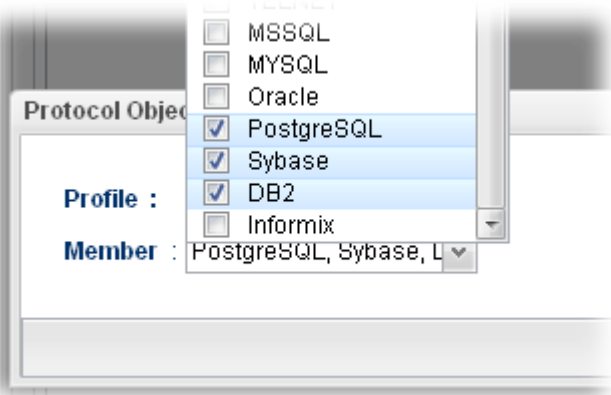
3. The following dialog will appear.



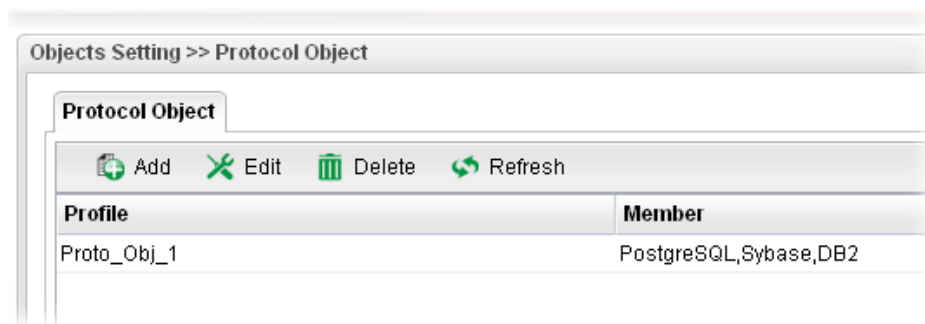
Available parameters are listed as follows:

Item	Description
<b>Profile</b>	Type the name of the protocol object profile. The number of the characters allowed to be typed here is 10.



<b>Member</b>	<p>Several protocols offered for you to choose. Check the one (s) you want to add for such profile.</p> 
<b>Apply</b>	Click it to save the configuration.
<b>Cancel</b>	Click it to exit the dialog without saving the configuration.

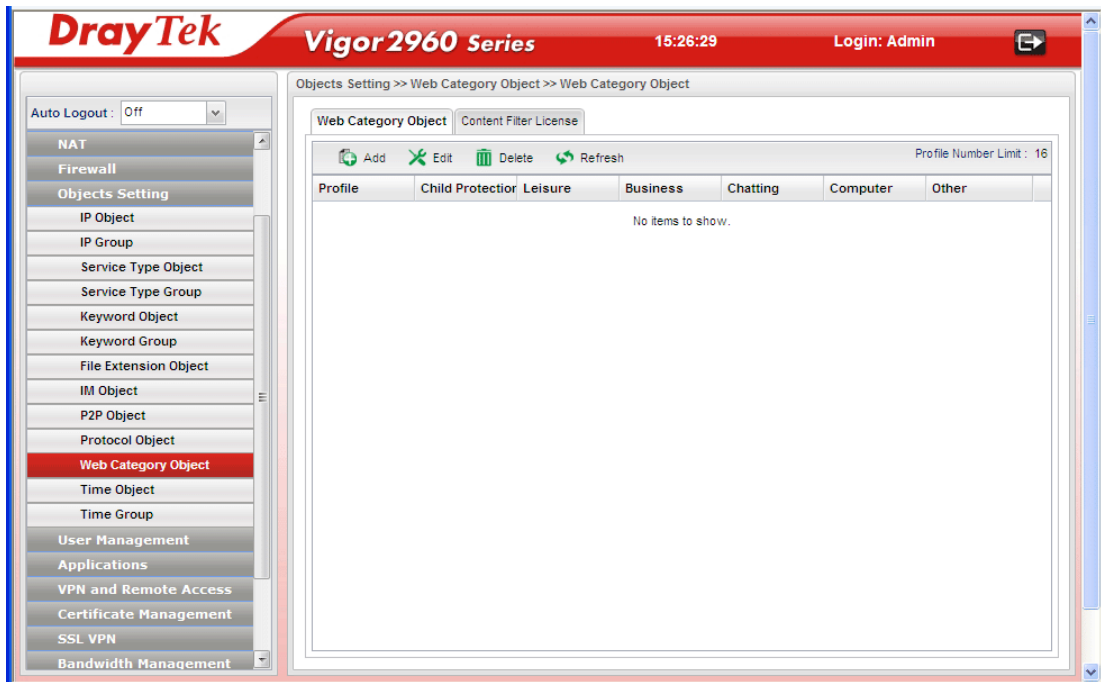
4. Enter all the settings and click **Apply**.
5. A new P2P Object profile has been created.



#### 4.5.11 Web Category Object

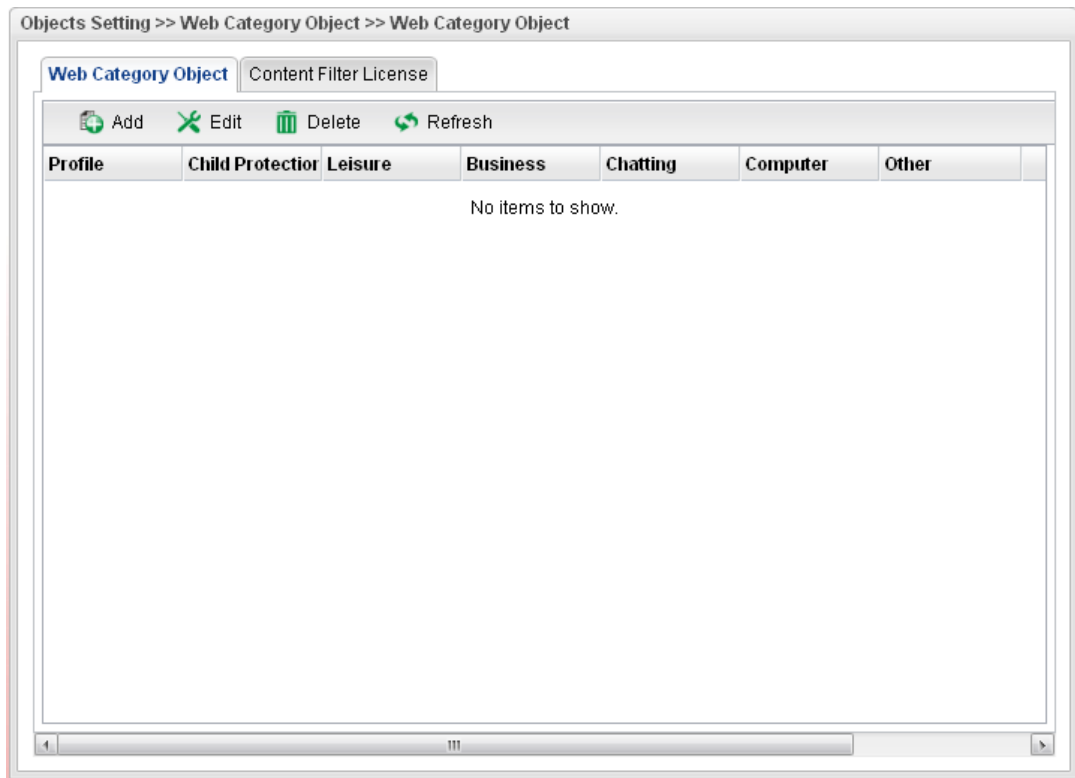
We all know that the content on the Internet just like other types of media may be inappropriate sometimes. As a responsible parent or employer, you should protect those in your trust against the hazards. With web category filtering service of the Vigor router, you can protect your business from common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

WCF adopts the mechanism developed and offered by certain service provider. No matter activating WCF feature or getting a new license for web content filter, you have to click **Activate URL** to satisfy your request. Note that service provider matching with Vigor router currently offers a period of time for trial version for users to experiment. If you want to purchase a formal edition, simply contact with your DrayTek dealer.



**Note:** Web Content Filter (WCF) is not a built-in service of Vigor router but a service powered by **Commtouch**. If you want to use such service (trial or formal edition), you have to perform the procedure of activation first. For the service of formal edition, please contact with your dealer/distributor for detailed information.

## Web Category Object

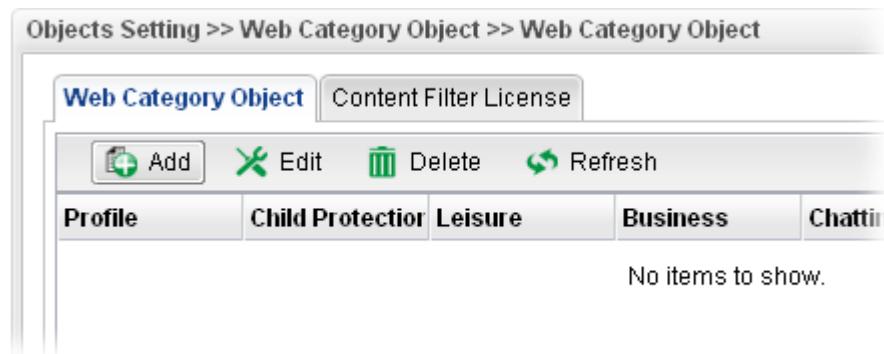


Each item will be explained as follows:

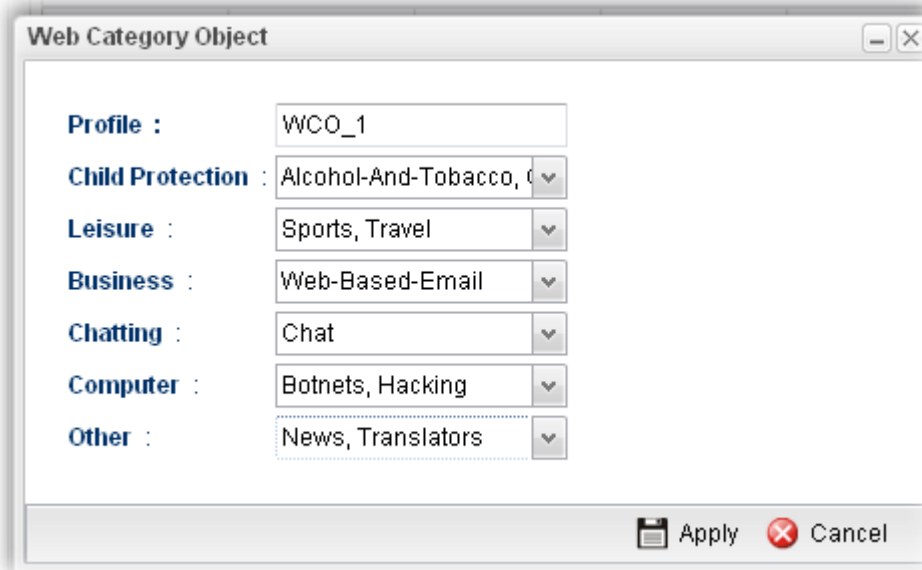
Item	Description
<b>Add</b>	Add a new profile.
<b>Edit</b>	Modify the selected profile. To edit a profile, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected rule.
<b>Delete</b>	Remove the selected profile. To delete a rule, simply select the one you want to delete and click the <b>Delete</b> button.
<b>Refresh</b>	Renew current web page.
<b>Profile Number Limit</b>	Display the total number (16) of the object profiles to be created.
<b>Profile</b>	Display the name of the object profile.
<b>Child Protection</b>	Display the items under certain category that you choose to block for protecting the children.
<b>Leisure</b>	Display the items under certain category that you choose to block.
<b>Business</b>	Display the items under certain category that you choose to block.
<b>Chatting</b>	Display the items under certain category that you choose to block.
<b>Computer</b>	Display the items under certain category that you choose to block.
<b>Other</b>	Display the items under certain category that you choose to block.

### How to create a new Web Category Object Profile

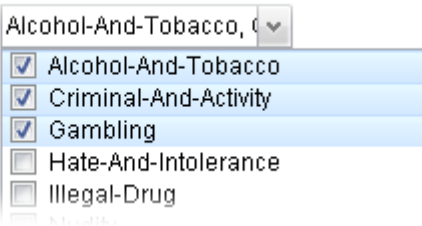
1. Open **Objects Setting >> Web Category Object** and click the **Web Category Object** tab.
2. Simply click the **Add** button.



3. The following dialog will appear.

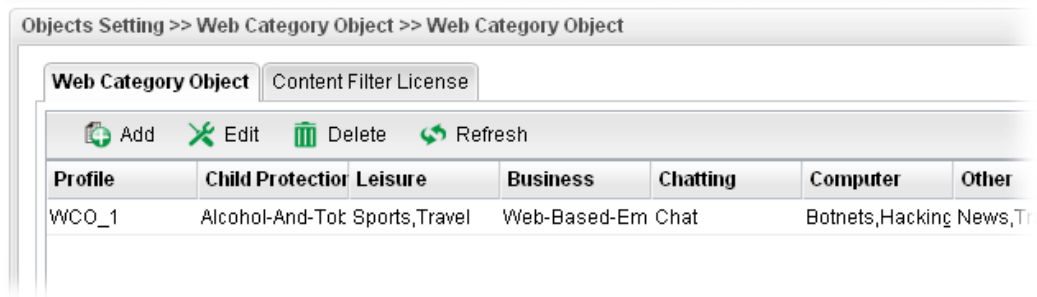


Available parameters are listed as follows:

Item	Description
<b>Profile</b>	Type the name of the web category object profile. The number of the characters allowed to be typed here is 10.
<b>Child Protection</b>	The web pages which are not suitable for children will be classified into different categories. Simply check the one(s) that you don't want the children to visit.  
<b>Leisure</b>	Simply check the one(s) that you don't want the user to visit.
<b>Business</b>	Simply check the one(s) that you don't want the user to visit.
<b>Chatting</b>	Simply check the one(s) that you don't want the user to use for gossip with remote people.
<b>Computer</b>	Simply check the one(s) that you don't want the user to visit.
<b>Other</b>	Simply check the one(s) that you don't want the user to visit.
<b>Apply</b>	Click it to save the configuration.
<b>Cancel</b>	Click it to exit the dialog without saving the configuration.

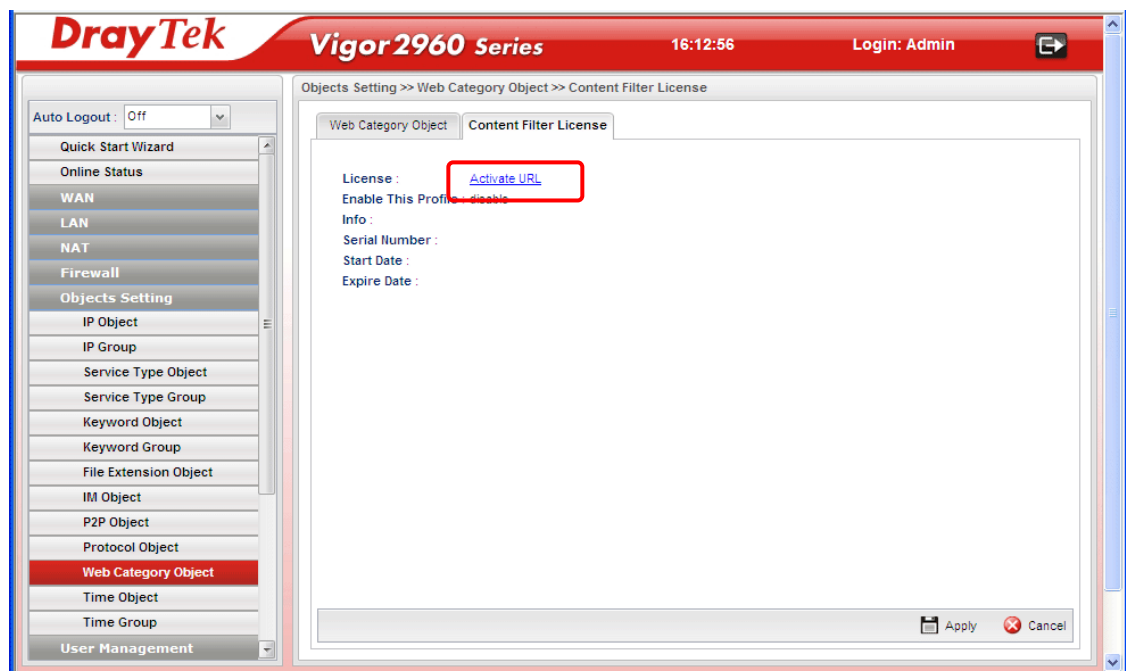
4. Enter all the settings and click **Apply**.

5. A new Web Category Object profile has been created.



## Content Filter License

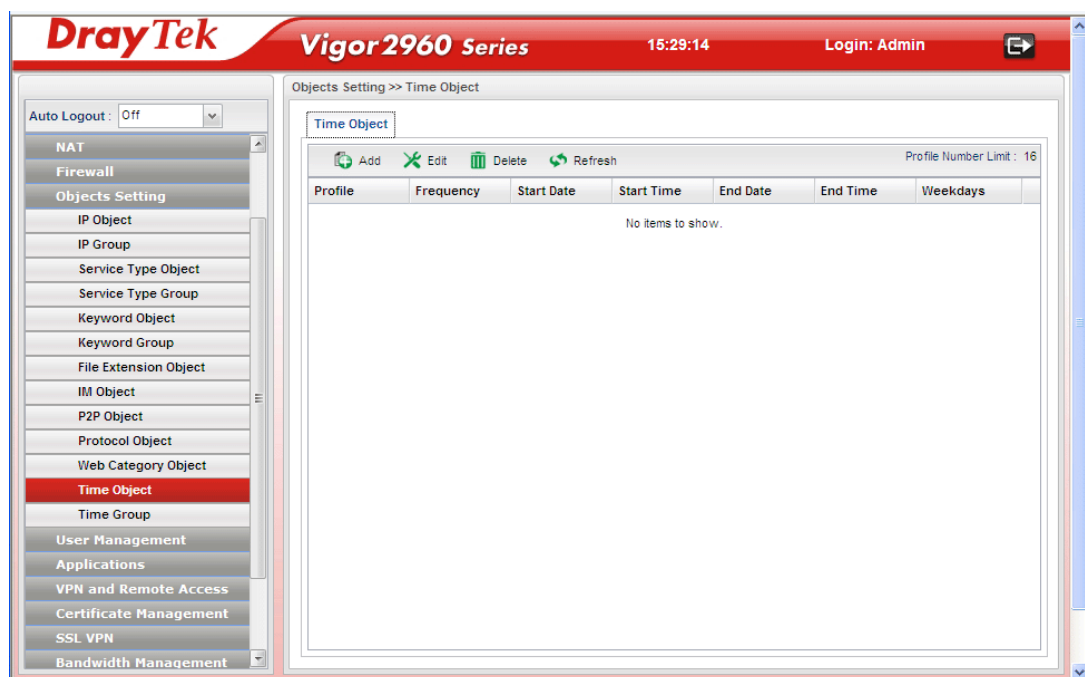
Move your mouse to the link of **Activate URL** and click it. The system will guide you to access into MyVigor website.



After finishing the activation for the trial version of WCF, remember to purchase “Silver Card” for WCF service from your DrayTek dealer or distributor.

## 4.5.12 Time Object

You 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, e.g., Firewall.



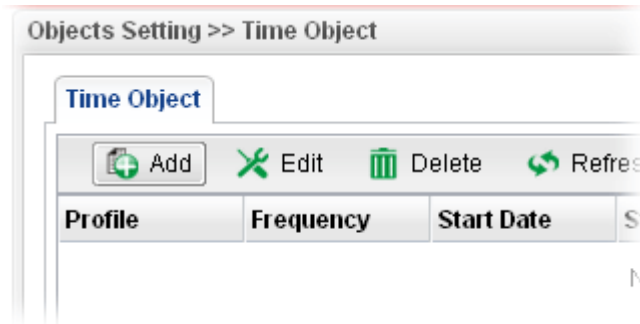
Each item will be explained as follows:

Item	Description
<b>Add</b>	Add a new profile.
<b>Edit</b>	Modify the selected profile. To edit a profile, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected rule.
<b>Delete</b>	Remove the selected profile. To delete a rule, simply select the one you want to delete and click the <b>Delete</b> button.
<b>Refresh</b>	Renew current web page.
<b>Profile Number Limit</b>	Display the total number (16) of the object profiles to be created.
<b>Profile</b>	Display the name of the time object profile.
<b>Frequency</b>	Display the duration (or period) of the time object profile.
<b>Start Date</b>	Display the starting date of the time object profile.
<b>Start Time</b>	Display the starting time of the time object profile.
<b>End Date</b>	Display the ending date of the time object profile.
<b>End Time</b>	Display the ending time of the time object profile.

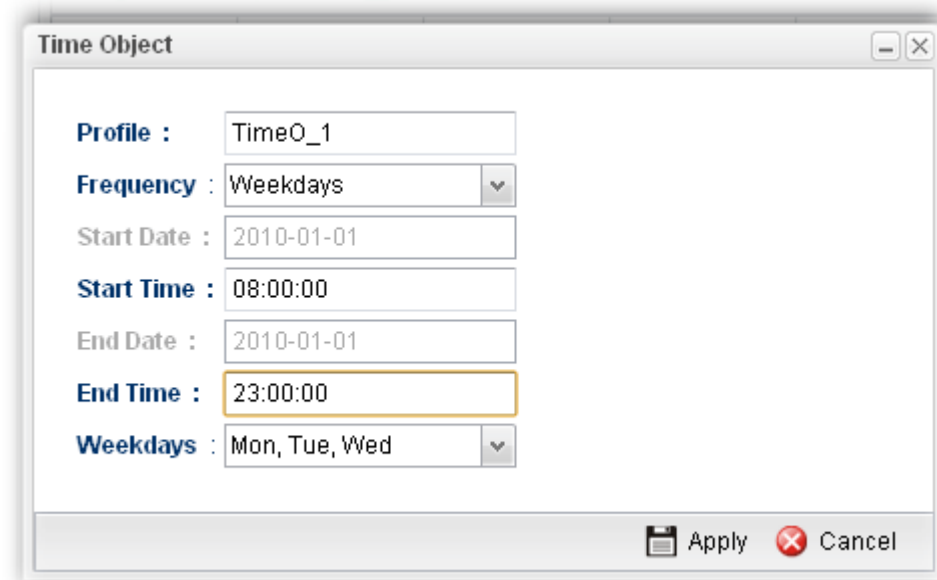
Item	Description
Weekdays	Display the frequency of such time object profile.

### How to create a new Time Object Profile

1. Open **Objects Setting>> Time Object**.
2. Simply click the **Add** button.

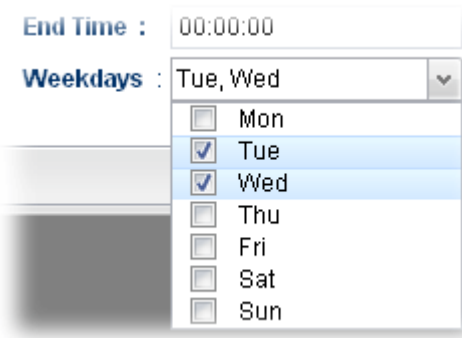


3. The following dialog will appear.

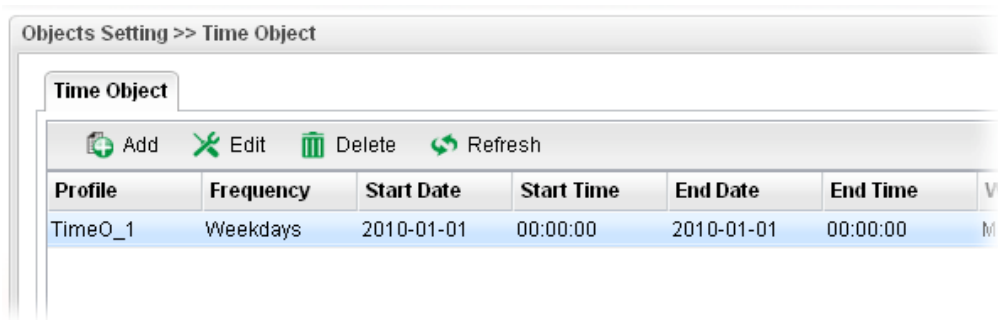


Available parameters are listed as follows:

Item	Description
<b>Profile</b>	Type the name of the time object profile. The number of the characters allowed to be typed here is 10.
<b>Frequency</b>	Specify how often (Weekdays or Once) the schedule will be applied.
<b>Start Date</b>	Specify the starting date of the time object profile.
<b>Start Time</b>	Specify the starting time of the time object profile.
<b>End Date</b>	Specify the ending date of the time object profile.
<b>End Time</b>	Specify the ending time of the time object profile.

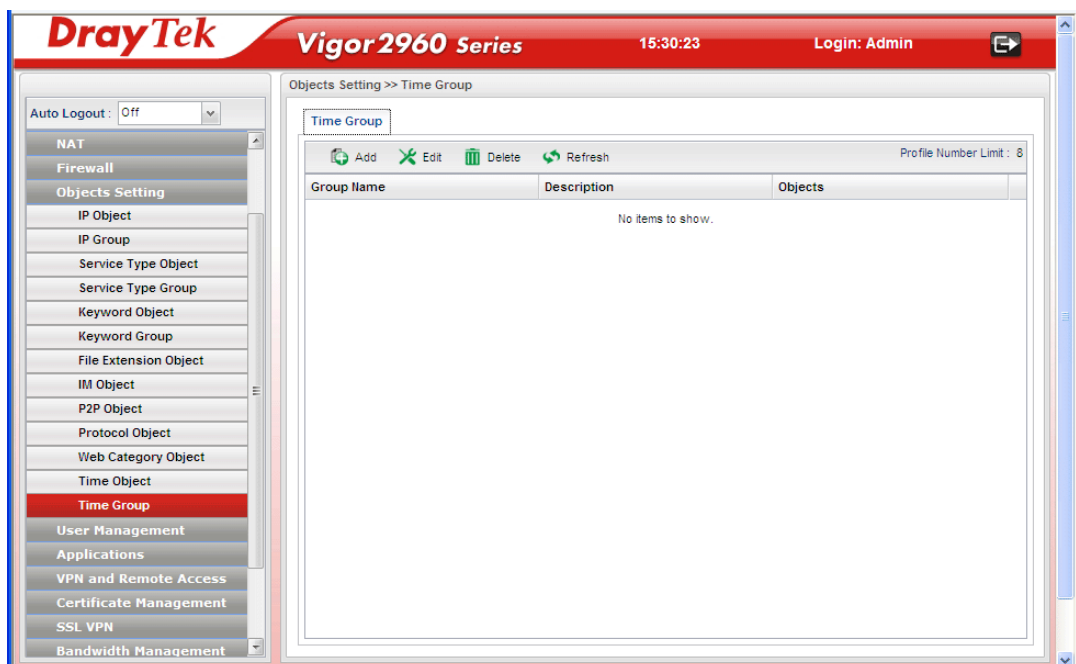
<b>Weekdays</b>	<p>Specify which days in one week should perform the schedule.</p> <p><b>End Time :</b> 00:00:00</p> <p><b>Weekdays :</b> Tue, Wed</p> 
<b>Apply</b>	Click it to save the configuration.
<b>Cancel</b>	Click it to exit the dialog without saving the configuration.

4. Enter all the settings and click **Apply**.
5. A new Time Object profile has been created.



### 4.5.13 Time Group

This page allows you to group several time object profiles.



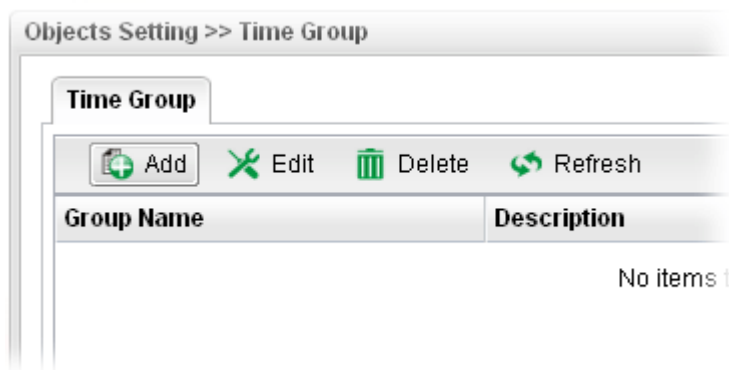


Each item will be explained as follows:

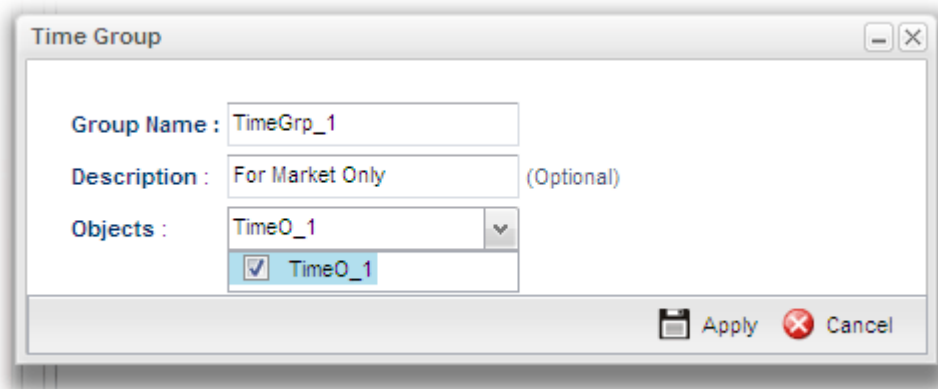
Item	Description
<b>Add</b>	Add a new profile.
<b>Edit</b>	Modify the selected profile. To edit a profile, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected rule.
<b>Delete</b>	Remove the selected profile. To delete a rule, simply select the one you want to delete and click the <b>Delete</b> button.
<b>Refresh</b>	Renew current web page.
<b>Profile Number Limit</b>	Display the total number (8) of the object profiles to be created.
<b>Group Name</b>	Display the name of the group.
<b>Description</b>	Display the brief explanation for such group.
<b>Objects</b>	Display the time objects selected by such group.

### How to create a new Time Group Profile

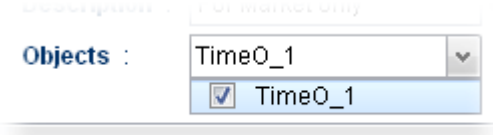
1. Open **Objects Setting >> Time Group**.
2. Simply click the **Add** button.



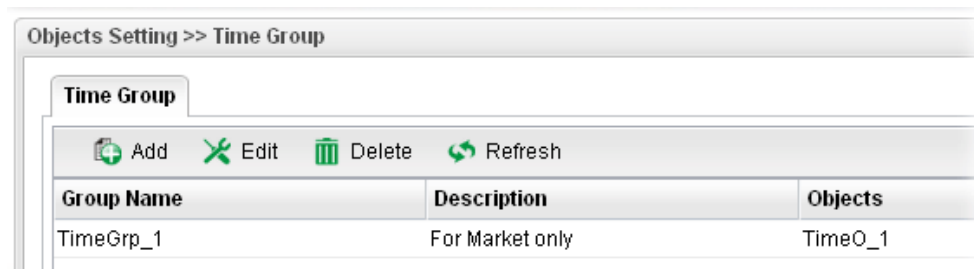
3. The following dialog will appear.



Available parameters are listed as follows:

Item	Description
<b>Profile</b>	Type the name of the time group. The number of the characters allowed to be typed here is 10.
<b>Description</b>	Make a brief explanation for such profile if the group name is set not clearly.
<b>Objects</b>	Use the drop down list to check the time object profiles under such group. All the available time objects that you have added on <b>Objects Setting&gt;&gt;Time Object</b> will be seen here. 
<b>Apply</b>	Click it to save the configuration.
<b>Cancel</b>	Click it to exit the dialog without saving the configuration.

4. Enter all the settings and click **Apply**.
5. A new Web Category Object profile has been created.



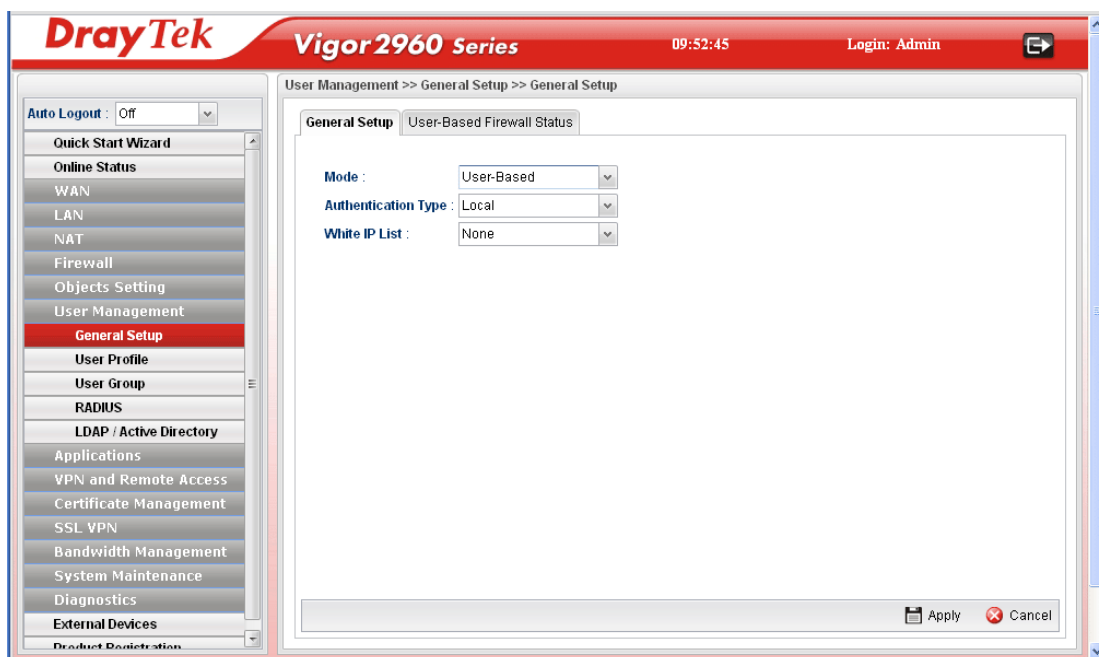
## 4.6 User Management

User Management can manage all the accounts (user profiles) to connect to Internet via different protocols.

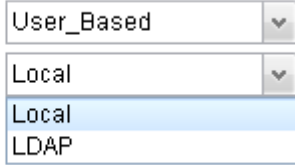
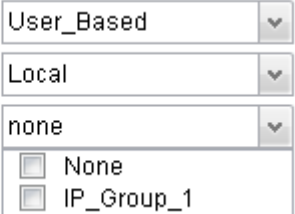


### 4.6.1 General Setup

**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.



Available parameters will be explained as follows:

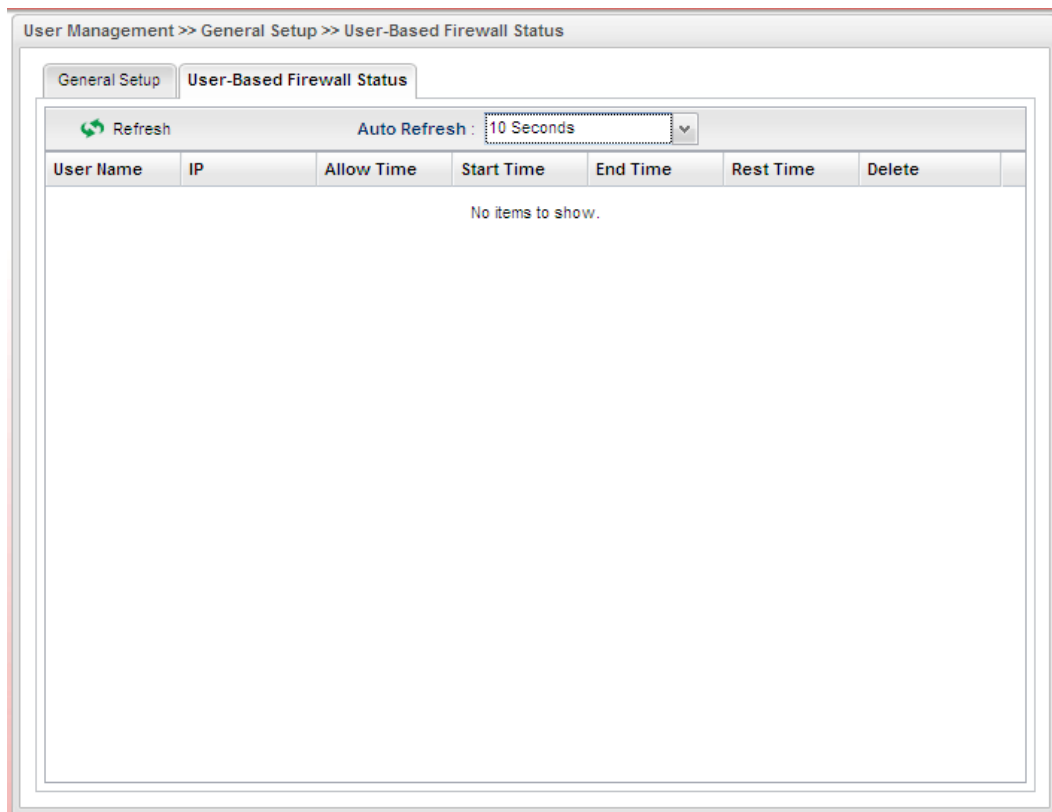
Item	Description
<b>Mode</b>	<p>There are two modes offered here for you to choose. Each mode will bring different filtering effect to the users involved.</p> <p><b>User-Based</b> - If you choose such mode, the router will apply the filter rules configured in <b>User Management&gt;&gt;User Profile</b> to the users.</p> <p><b>Rule-Based</b> –If you choose such mode, the router will apply the filter rules configured in <b>Firewall&gt;&gt;General Setup</b> and <b>Filter Rule</b> to the users.</p>
<b>Authentication Type</b>	<p>Under <b>User_Based</b> mode, please specify the authentication type.</p> <p>  </p>
<b>White IP List</b>	<p>Under <b>User_Based</b> mode, use the drop down list to choose IP object and/or IP group profiles.</p> <p>  </p>
<b>Apply</b>	Click it to save the configuration.

Item	Description
Cancel	Click it to discard the settings configured in this page.

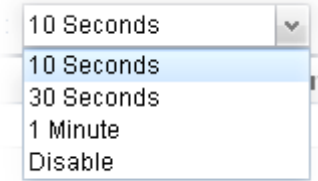
## User-Based Firewall Status



The **User-Based Firewall Status** is a monitoring tool which only works after you choose **User\_Based** as the **Mode** setting on **User Management>>General Setup**.

User authentication setup will launch if the router is running in **User\_Based** mode. The **User-based Firewall Status** will start to record each authentication event of specified users including authentication failure or success, user's IP, when or how much time the user uses, and how much rest time for the user.



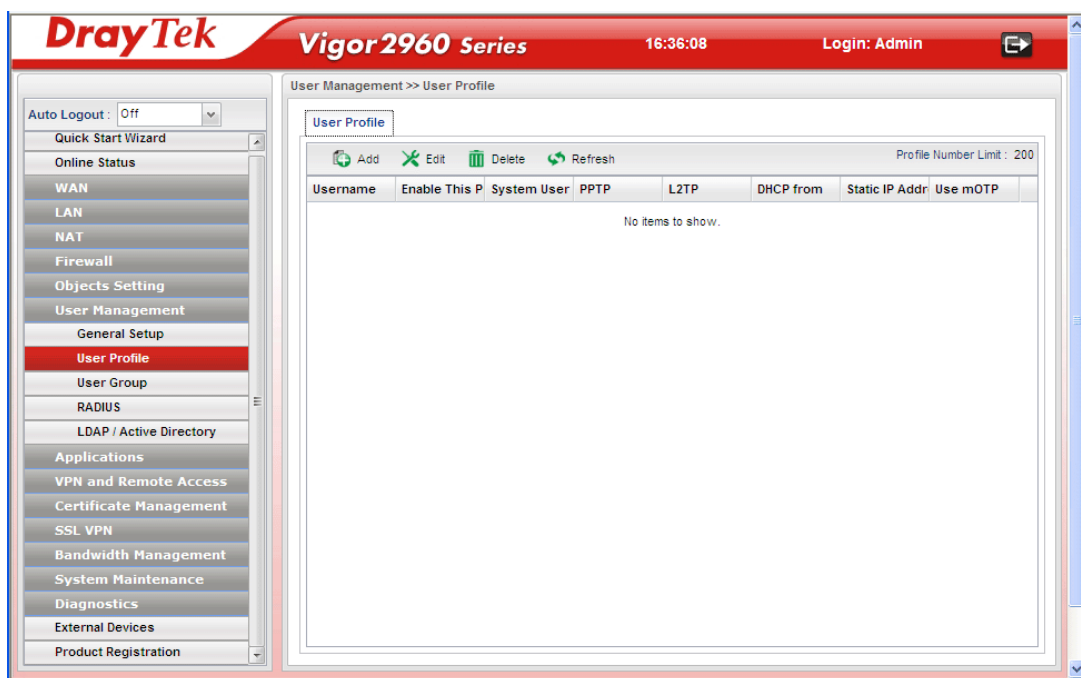
Available parameters will be explained as follows:

Item	Description
<b>Refresh</b>	Renew current web page.
<b>Auto Refresh</b>	Specify the interval of refresh time to obtain the latest status. The information will update immediately when the <b>Refresh</b> button is clicked. 
<b>User Name</b>	Display the name information for the user who logs into the WUI of Vigor2960.

Item	Description
IP	Display the IP address of the user who logs into the WUI of Vigor2960.
Allow Time	Display the total network connection time allowed for the log-in user.
Start Time	Display the starting time of the network connection.
End Time	Display the ending time of the network connection.
Rest Time	Display the rest time for the wireless station to browse the Internet.
Delete	<p> – It is available for the administrator to turn off a specific user's connection immediately.</p> 

## 4.6.2 User Profile

This function allows to configure all accounts (user profiles) in Vigor2960, including PPTP/L2TP, System user, and so on.



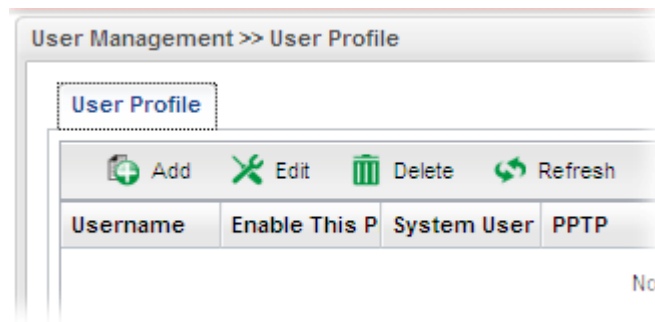
Each item will be explained as follows:

Item	Description
<b>Add</b>	Add a new profile.
<b>Edit</b>	Modify the selected profile. To edit a profile, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected rule.
<b>Delete</b>	Remove the selected profile. To delete a rule, simply select the one you want to delete and click the <b>Delete</b> button.
<b>Refresh</b>	Renew current web page.
<b>Profile Number Limit</b>	Display the total number (200) of the object profiles to be created.
<b>Username</b>	Display the name of the user.
<b>Enable This Profile</b>	Display the status of the profile. False means disabled; True means enabled.
<b>System User</b>	Display the status of the System User. False means disabled; True means enabled.
<b>PPTP</b>	Display the status of PPTP/L2TP connection for such user profile.
<b>L2TP</b>	Display the LAN profile that such profile belongs to.

Item	Description
DHCP from	Display the LAN profile that DHCP server used for assigning IP address(es).
Static IP Address	Display the IP address for such user profile which accesses Internet with PPTP/L2TP connection.
Use mOTP	Display if mOTP is activated (enable or disable) or not.

### How to create a new User Profile

1. Open **User Management>>User Profile**.
2. Simply click the **Add** button.

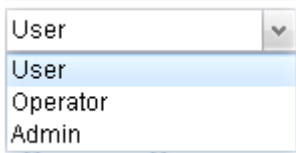


3. The following dialog will appear.

Available parameters are listed as follows:

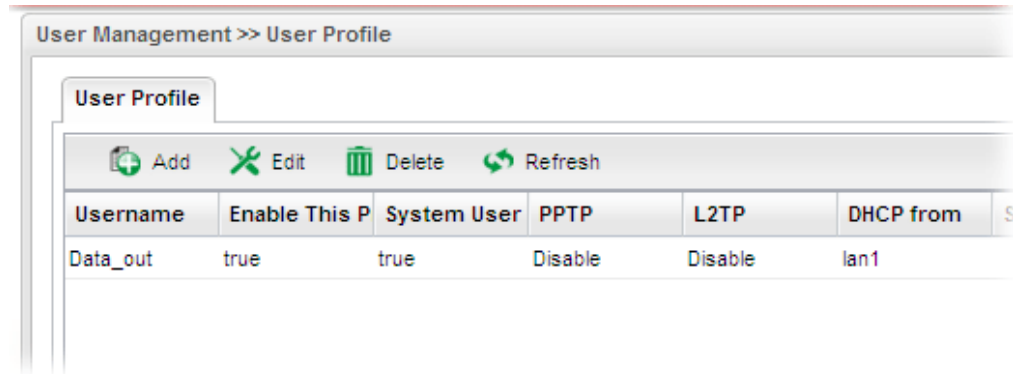
Item	Description
<b>Username</b>	Type a name for such user profile (e.g., <i>LAN_User_Group_1</i> , <i>WLAN_User_Group_A</i> , <i>WLAN_User_Group_B</i> , etc). When a user tries to access Internet through this router, an authentication step must be performed first. The user has to type the Username specified here to pass the authentication. When the user passes the authentication, he/she can access Internet via this router. However the accessing operation will be restricted with the conditions configured in this user profile.
<b>Enable This Profile</b>	Check this box to enable such profile.



<b>Password</b>	Type a password for such profile (e.g., <i>lug123</i> , <i>wug123</i> , <i>wug456</i> , etc). When a user tries to access Internet through this router, an authentication step must be performed first. The user has to type the password specified here to pass the authentication. When the user passes the authentication, he/she can access Internet via this router with the limitation configured in this user profile.
<b>Idle Timeout</b>	If the user is idle over the limitation of the timer, the <b>network connection will be stopped for such user</b> . By default, the Idle Timeout is set to 300 seconds.
<b>Usage Time (min)</b>	It means the maximum usage duration for the user. By default, the Usage Time is 480 minutes.
<b>System User</b>	Choose <b>True</b> to allow the user accessing into WUI of Vigor2960 via the username and password above. If you choose <b>False</b> , you can set SSL for such profile.
<b>Group</b>	<p>Choose the level for such profile from the drop down list.</p>  <p><b>User</b> – the user that accessing into the web configurator of Vigor2960 can see limited settings.</p> <p><b>Operator</b> – the user that accessing into the web configurator of Vigor2960 can see most of the settings.</p> <p><b>Admin</b> – the user that accessing into the web configurator of Vigor2960 can see all of the settings. Such level owns the highest authority.</p>
<b>PPTP/L2TP</b>	Click <b>Enable</b> to make network connection through PPTP/L2TP protocol for users who access into Internet via such profile.
<b>DHCP from</b>	Choose a LAN profile for DHCP server.
<b>Static IP Address</b>	Type an IP address for such user profile which accesses Internet with PPTP/L2TP connection.
<b>Use mOTP</b>	Click <b>Enable</b> to make the authentication with mOTP function.
<b>mOTP PIN Code</b>	Type the code for authentication (e.g, 1234).
<b>mOTP secret</b>	Use the 32 digit-secret number generated by mOTP in the mobile phone (e.g., e759bb6f0e94c7ab4fe6).
<b>SSL Proxy</b>	It is available when <b>System User</b> is set with <b>false</b> . The web proxy over SSL will be applied for VPN.
<b>SSL Application (VNC)</b>	It is available when <b>System User</b> is set with <b>false</b> . Choose one of the SSL Application profiles (VNC) for applying into this profile.

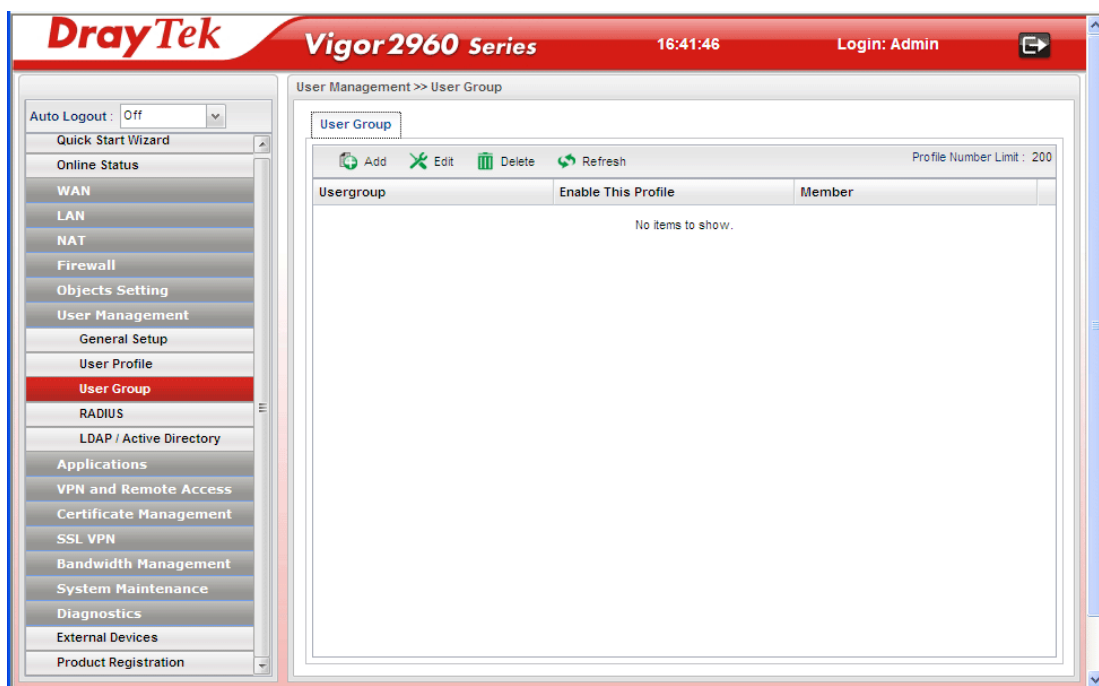
<b>SSL Application (RDP)</b>	It is available when <b>System User</b> is set with <b>false</b> . Choose one of the SSL Application profiles (RDP) for applying into this profile.
<b>Apply</b>	Click it to save the configuration.
<b>Cancel</b>	Click it to exit the dialog without saving the configuration.

4. Enter all the settings and click **Apply**.
5. A new User Profile has been created.



### 4.6.3 User Group

The **User Group** can consist of several user profiles, which help the administrator to manage a large number of users conveniently.

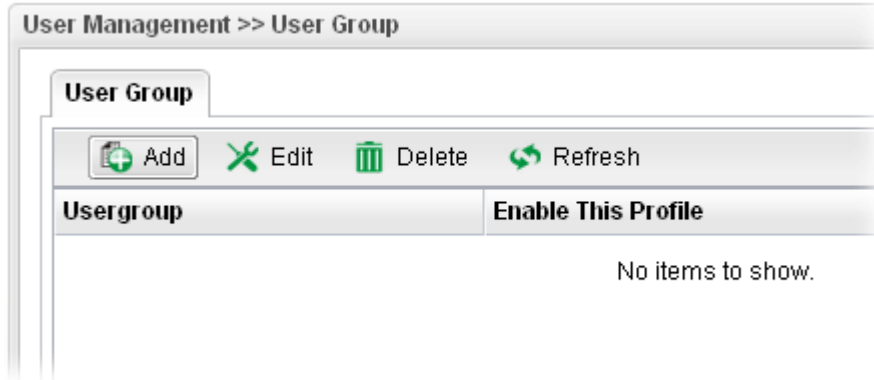


Each item will be explained as follows:

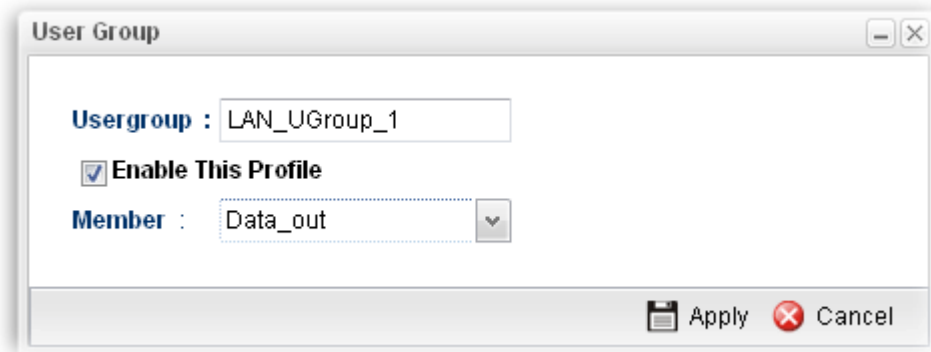
Item	Description
<b>Add</b>	Add a new profile.
<b>Edit</b>	Modify the selected profile. To edit a profile, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected rule.
<b>Delete</b>	Remove the selected profile. To delete a rule, simply select the one you want to delete and click the <b>Delete</b> button.
<b>Refresh</b>	Renew current web page.
<b>Profile Number Limit</b>	Display the total number (200) of the object profiles to be created.
<b>Usergroup</b>	Display the name of the user group.
<b>Enable This Profile</b>	Display the status of the profile. False means disabled; True means enabled.
<b>Member</b>	Display the user profiles under such group.

## How to create a new User Group Profile

1. Open **User Management >> User Group**.
2. Simply click the **Add** button.



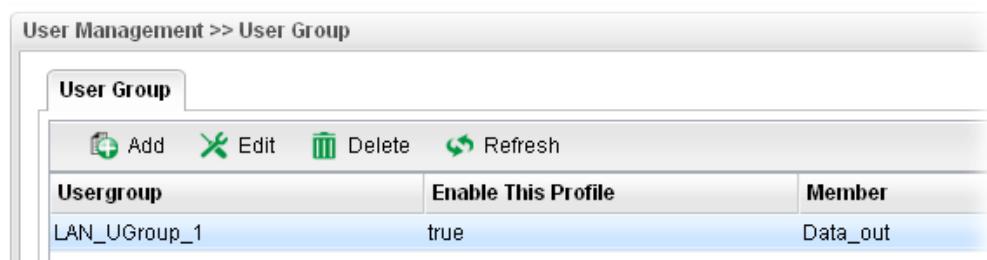
3. The following dialog will appear.



Available parameters are listed as follows:

Item	Description
<b>Usergroup</b>	Type the name of such profile.
<b>Enable This Profile</b>	Check this box to enable such profile.
<b>Member</b>	Use the drop down list to check the user profile(s) under such group.
<b>Apply</b>	Click it to save the configuration.
<b>Cancel</b>	Click it to exit the dialog without saving the configuration.

4. Enter all the settings and click **Apply**.
5. A new User Profile has been created.



## 4.6.4 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.

The built-in RADIUS client feature enables the router to assist the remote dial-in user or a wireless station and the RADIUS server in performing mutual authentication. It enables centralized remote access authentication for network management.



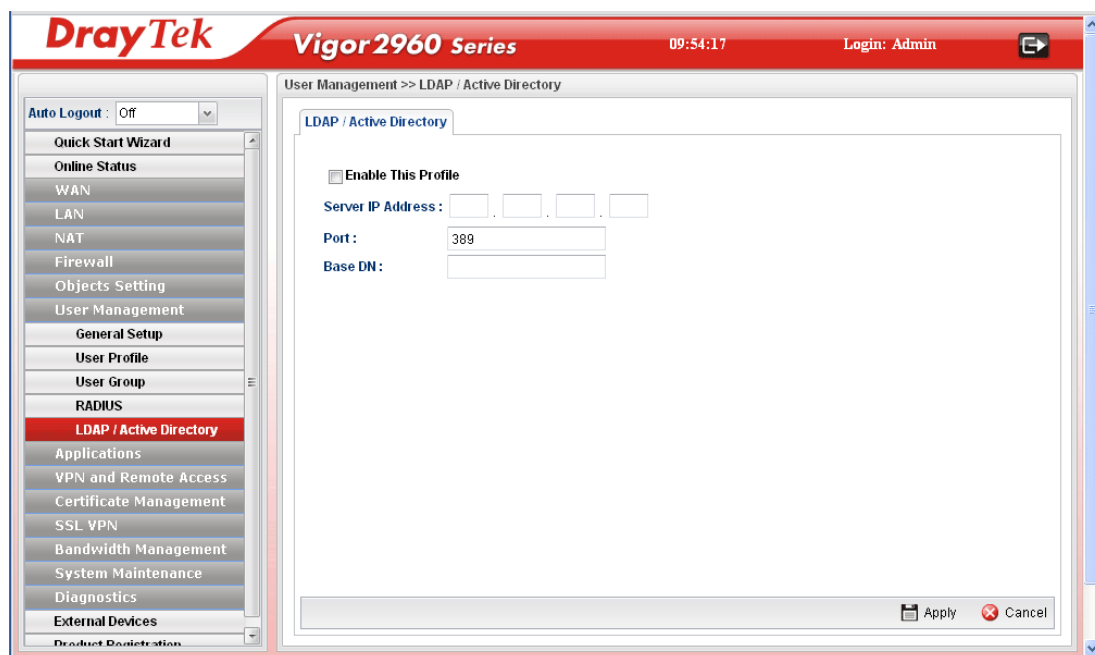
Available parameters are listed as follows:

Item	Description
<b>Enable This Profile</b>	Check this box to enable such profile.
<b>Server IP Address</b>	Enter the IP address of RADIUS server.
<b>Destination Port</b>	The UDP port number that the RADIUS server is using. The default value is 1812, based on RFC 2138.
<b>Shared Secret</b>	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.
<b>Refresh</b>	Renew current web page.
<b>Apply</b>	Click it to save the configuration.
<b>Cancel</b>	Click it to discard the settings configured in this page.

## 4.6.5 LDAP/Active Directory

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.

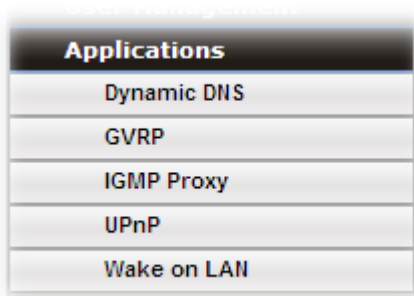


Available parameters are listed as follows:

Item	Description
<b>Enable This Profile</b>	Check this box to enable such profile.
<b>Server IP Address</b>	Enter the IP address of RADIUS server.
<b>Port</b>	It means the port on TCP for establishing an LDAP session between clients and LDAP server. The default value is 389.
<b>Base DN</b>	It means “ <b>Base Distinguished Name</b> ”. Type or edit the distinguished name used to look up entries on the LDAP server.
<b>Apply</b>	Click it to save the configuration.
<b>Cancel</b>	Click it to discard the settings configured in this page.

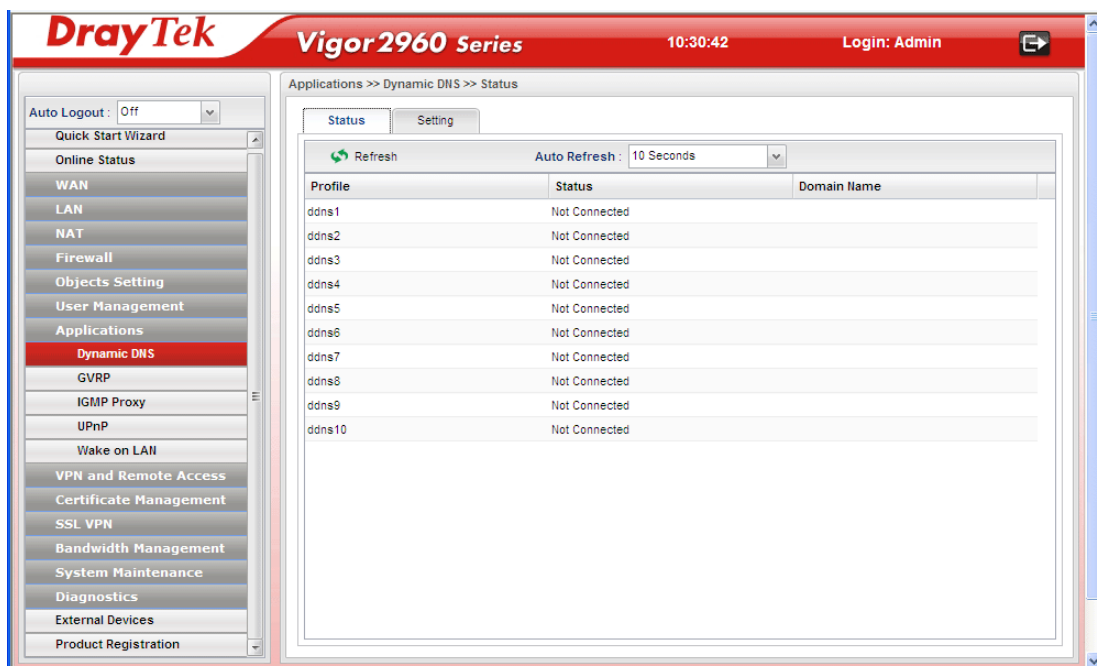
## 4.7 Application

Below shows the menu items for Applications.



### 4.7.1 Dynamic DNS

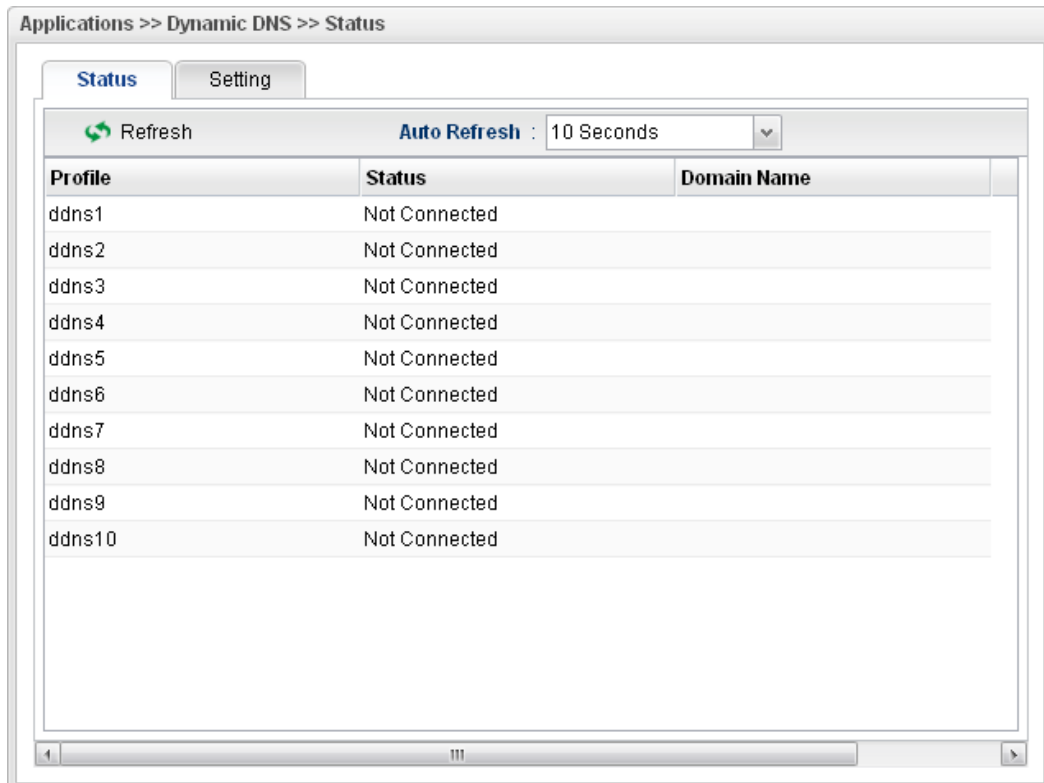
The ISP often provides you with a dynamic IP address when you connect to the Internet via your ISP. It means that the public IP address assigned to your router changes each time you access the Internet. The Dynamic DNS feature lets you assign a domain name to a dynamic WAN IP address. It allows the router 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.



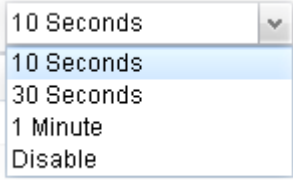
Before you use the Dynamic DNS feature, you have to apply for free DDNS service to the DDNS service providers. The router provides up to ten accounts from eight different DDNS service providers. Basically, Vigor routers are compatible with the DDNS services supplied by most popular DDNS service providers such as [www.dyndns.org](http://www.dyndns.org), [www.no-ip.com](http://www.no-ip.com), [www.dtdns.com](http://www.dtdns.com), [www.changeip.com](http://www.changeip.com), [www.dynamic-nameserver.com](http://www.dynamic-nameserver.com). You should visit their websites to register your own domain name for the router.

## Status

This page displays all the available DDNS profiles.



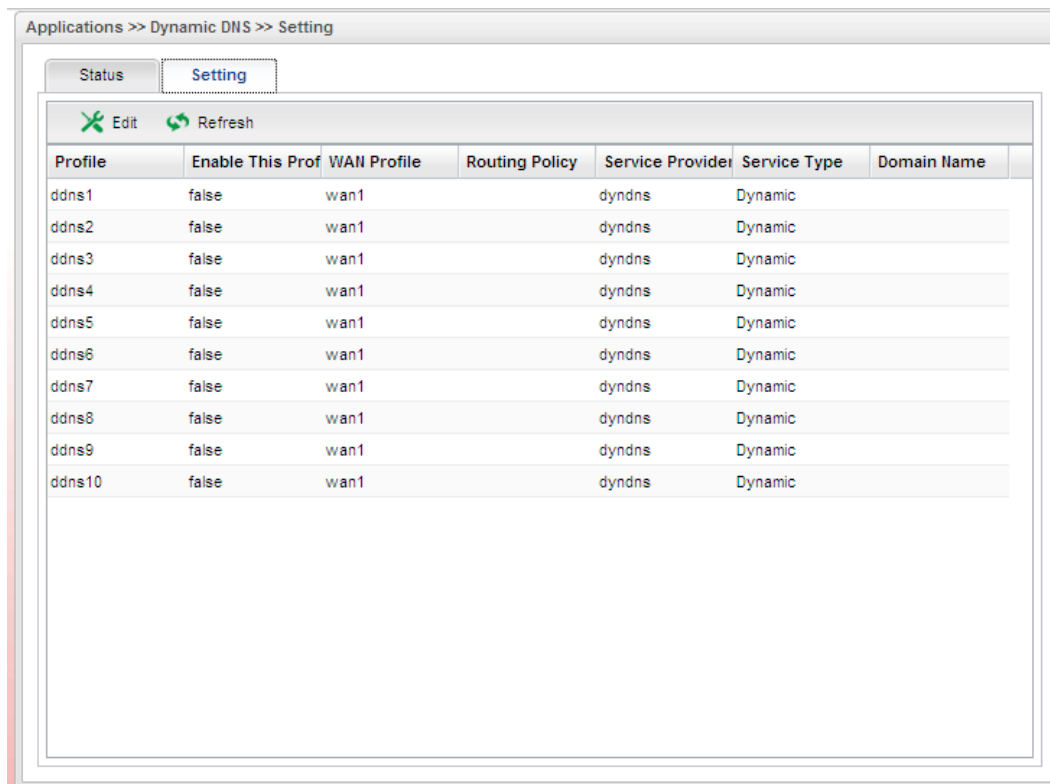
Each item will be explained as follows:

Item	Description
<b>Refresh</b>	Renew current web page.
<b>Auto Refresh</b>	Specify the interval of refresh time to obtain the latest status. The information will update immediately when the Refresh button is clicked. 
<b>Profile</b>	Display the name of the DDNS.
<b>Status</b>	Display the connection status of the DDNS server.
<b>Domain Name</b>	Display the domain name for the DDNS server.



## Setting

This page allows you to configure DDNS server for your request.



Each item will be explained as follows:

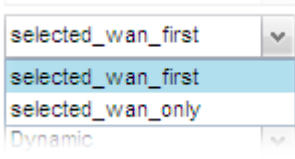
Item	Description
<b>Edit</b>	Modify the selected profile. To edit a profile, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected rule.
<b>Refresh</b>	Renew current web page.
<b>Profile</b>	Display the name of the profile.
<b>Enable This Profile</b>	Display the status of the profile. False means disabled; True means enabled.
<b>WAN Profile</b>	Display current WAN profile used by such DDNS profile.
<b>Routing Policy</b>	Display the routing policy used for such DDNS profile.
<b>Service Provider</b>	Display the name of service provider used by such profile.
<b>Service Type</b>	Display the type for such profile.
<b>Domain Name</b>	Display the domain name of such profile.

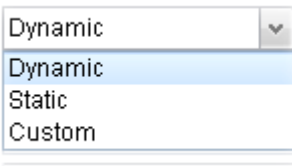
## How to edit an existing DDNS Profile

There are 10 sets of DDNS server offered for you to modify and configure. Please choose any one of them and click **Edit** to open the following page for modification.

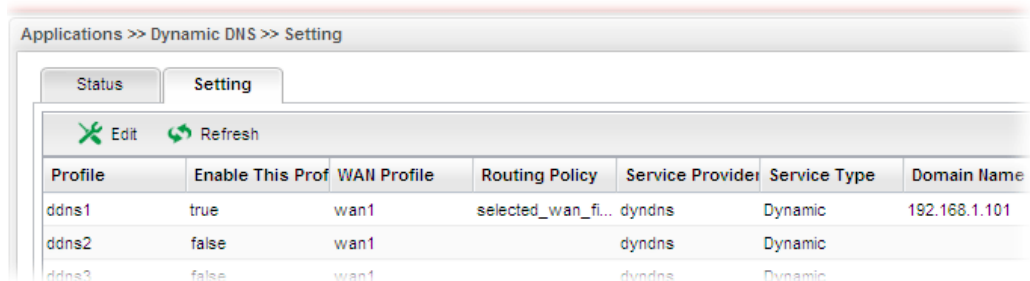
1. Open **Applications>>Dynamic DNS** and click the **Setting** tab.
2. Choose the one you want to edit and click the **Edit** button on the top.

Available parameters are listed as follows:

Item	Description
<b>Profile</b>	Display the name of the profile.
<b>Enable This Profile</b>	Check this box to enable such profile.
<b>WAN Profile</b>	Choose a WAN profile that such profile will apply to.
<b>Routing Policy</b>	<p>Choose the routing policy of such profile.</p> <p><b>Selected_wan_first</b> – Choose it to make such profile being applied by the selected WAN interface only first.</p> <p><b>Selected_wan_only</b> – Choose it to make such profile being applied by the selected WAN interface only.</p> 
<b>Service Provider</b>	Select the service provider for the DDNS account.

<b>Service Type</b>	Select a service type (Dynamic, Custom or Static). If you choose Custom, you can modify the domain that is chosen in the Domain Name field. 
<b>Domain Name</b>	Type in one domain name that you applied previously. Use the drop down list to choose the desired domain.
<b>User Login Name</b>	Type in the login name that you set for applying domain.
<b>Password</b>	Type in the password that you set for applying domain.
<b>Wildcard and Backup MX</b>	The Wildcard and Backup MX features are not supported for all Dynamic DNS providers. You could get more detailed information from their websites.
<b>Mail Extender</b>	Type the IP/Domain name of the mail server.
<b>Apply</b>	Click it to save the configuration.
<b>Cancel</b>	Click it to exit the dialog without saving the configuration.

3. Enter all the settings and click **Apply**.
4. The DDNS Profile has been modified.



Applications >> Dynamic DNS >> Setting

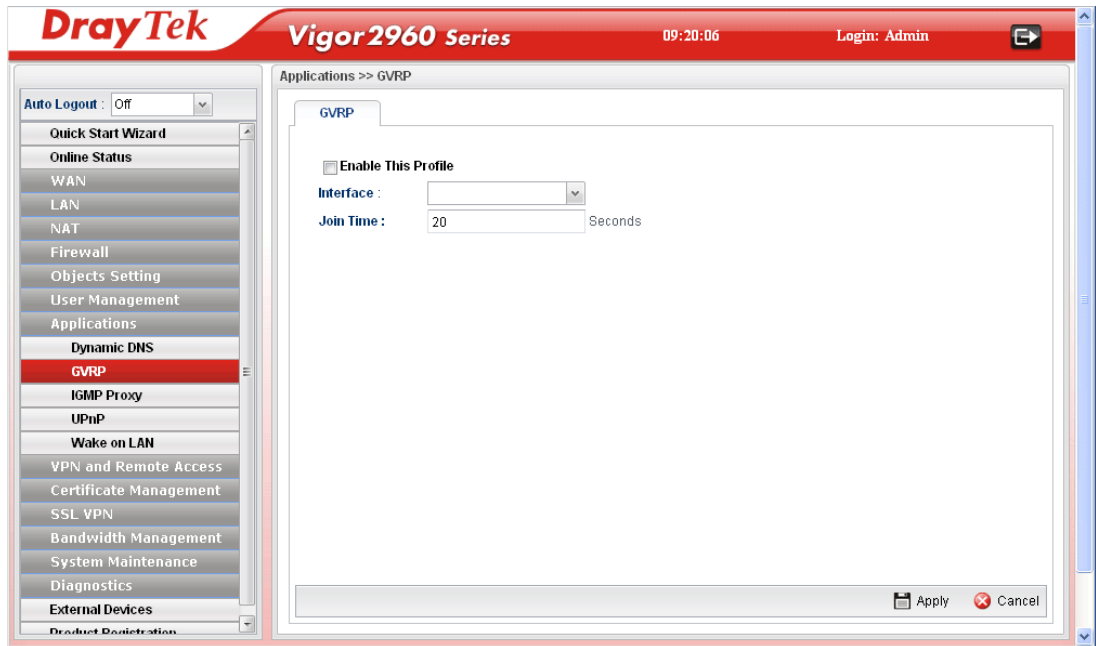
Status Setting

Edit Refresh

Profile	Enable This Prof	WAN Profile	Routing Policy	Service Provider	Service Type	Domain Name
ddns1	true	wan1	selected_wan_fi...	dyndns	Dynamic	192.168.1.101
ddns2	false	wan1		dyndns	Dynamic	
ddns3	false	wan1		dyndns	Dynamic	

## 4.7.2 GVRP

This function can define the method for the changing the VLAN information among devices. With supporting GVRP, the device can receive the VLAN information coming from other devices.

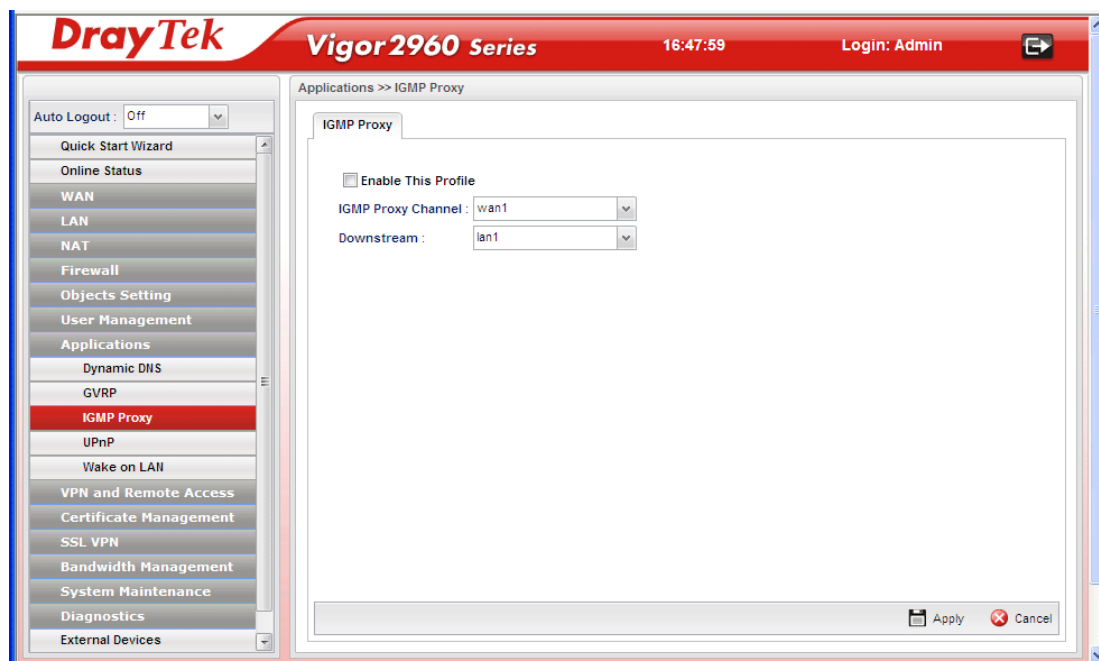


Available parameters are listed as follows:

Item	Description
<b>Enable This Profile</b>	Check this box to enable GVRP function.
<b>Interface</b>	Choose a LAN or WAN profile.
<b>Join Time</b>	Define the time for the system to send GVRP packet to other device. The unit is second.
<b>Apply</b>	Click it to save the configuration.
<b>Cancel</b>	Click it to discard the settings configured in this page.

### 4.7.3 IGMP Proxy

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.

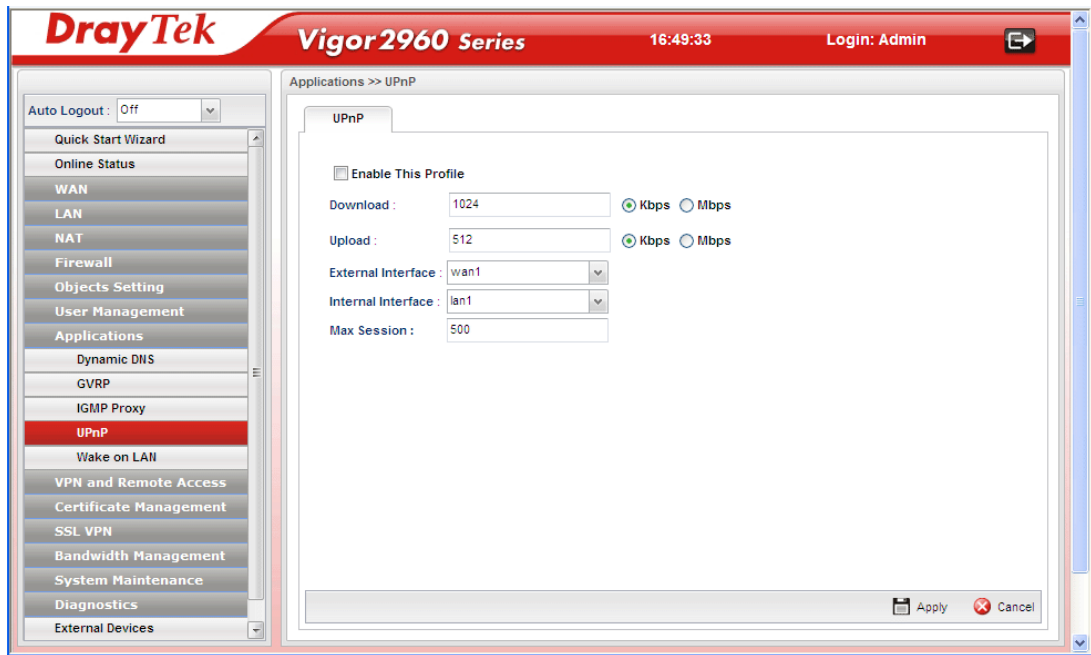


Available parameters are listed as follows:

Item	Description
<b>Enable This Profile</b>	Check this box to enable GVRP function.
<b>Interface</b>	Choose a channel for IGMP.
<b>Downstream</b>	Choose a profile for use while downloading data from Internet.
<b>Apply</b>	Click it to save the configuration.
<b>Cancel</b>	Click it to discard the settings configured in this page.

### 4.7.4 UPnP

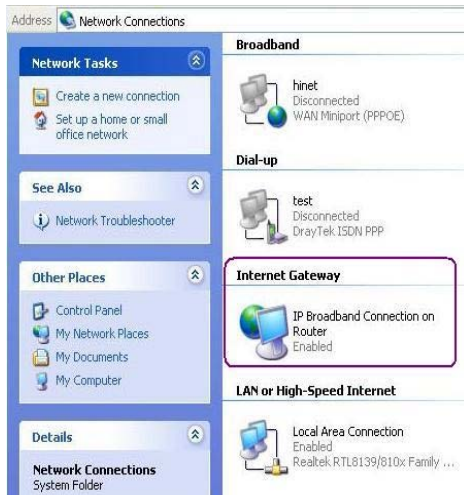
The **UPnP** (Universal Plug and Play) protocol is supported to bring to network connected devices the ease of installation and configuration which is already available for directly connected PC peripherals with the existing Windows 'Plug and Play' system. For NAT routers, the major feature of UPnP on the router is "NAT Traversal". This enables applications inside the firewall to automatically open the ports that they need to pass through a router. It is more reliable than requiring a router to work out by itself which ports need to be opened. Further, the user does not have to manually set up port mappings or a DMZ. **UPnP is available on Windows XP** and the router provide the associated support for MSN Messenger to allow full use of the voice, video and messaging features.



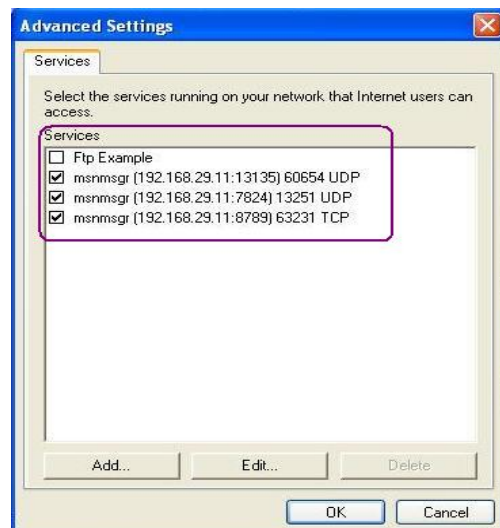
Available parameters are listed as follows:

Item	Description
<b>Enable This Profile</b>	Check this box to enable UPnP function.
<b>Download</b>	Enter the maximum sustained WAN download speed in kilobits/second. Such information can be requested by UPnP clients.
<b>Upload</b>	Enter the maximum sustained WAN upload speed in kilobits/second. Such information can be requested by UPnP clients.
<b>External Interface</b>	Select a WAN profile for UPnP protocol.
<b>Internal Interface</b>	Select a LAN profile for UPnP protocol.
<b>Max Session</b>	Determine the maximum session number for UPnP function.
<b>Apply</b>	Click it to save the configuration.
<b>Cancel</b>	Click it to discard the settings configured in this page.

After **enabling UPnP** service setting, an icon of **IP Broadband Connection on Router** on Windows XP/Network Connections will appear. The connection status and control status will be able to be activated. The NAT Traversal of UPnP enables the multimedia features of your applications to operate. This has to manually set up port mappings or use other similar methods. The screenshots below show examples of this facility.



The UPnP facility on the router enables UPnP aware applications such as MSN Messenger to discover what are behind a NAT router. The application will also learn the external IP address and configure port mappings on the router. Subsequently, such a facility forwards packets from the external ports of the router to the internal ports used by the application.



The reminder as regards concern about Firewall and UPnP

**Can't work with Firewall Software**  
 Enabling firewall applications on your PC may cause the UPnP function not working properly. This is because these applications will block the accessing ability of some network ports.

**Security Considerations**  
 Activating the UPnP function on your network may incur some security threats. You should consider carefully these risks before activating the UPnP function.

- Some Microsoft operating systems have found out the UPnP weaknesses and hence you need to ensure that you have applied the latest service packs and patches.
- Non-privileged users can control some router functions, including removing and adding port mappings.

The UPnP function dynamically adds port mappings on behalf of some UPnP-aware applications. When the applications terminate abnormally, these mappings may not be removed.

#### 4.7.5 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** 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.



Available parameters are listed as follows:

Item	Description
<b>Wake by</b>	Two types provide for you to wake up the binded IP. If you choose Wake by MAC Address, you have to type the correct MAC address of the host in MAC Address boxes. If you choose Wake by IP Address, you have to choose the correct IP address.
<b>IP Address</b>	The IP addresses that have been configured in <b>Firewall&gt;&gt;Bind IP to MAC</b> will be shown in this drop down list. Choose the IP address from the drop down list that you want to wake up.
<b>MAC Address</b>	Type any one of the MAC address of the binded PCs.
<b>Wake Up</b>	Click this button to wake up the selected IP. See the following figure. The result will be shown on the box.
<b>Delete</b>	Click this button to remove the result.



## 4.8 VPN and Remote Access

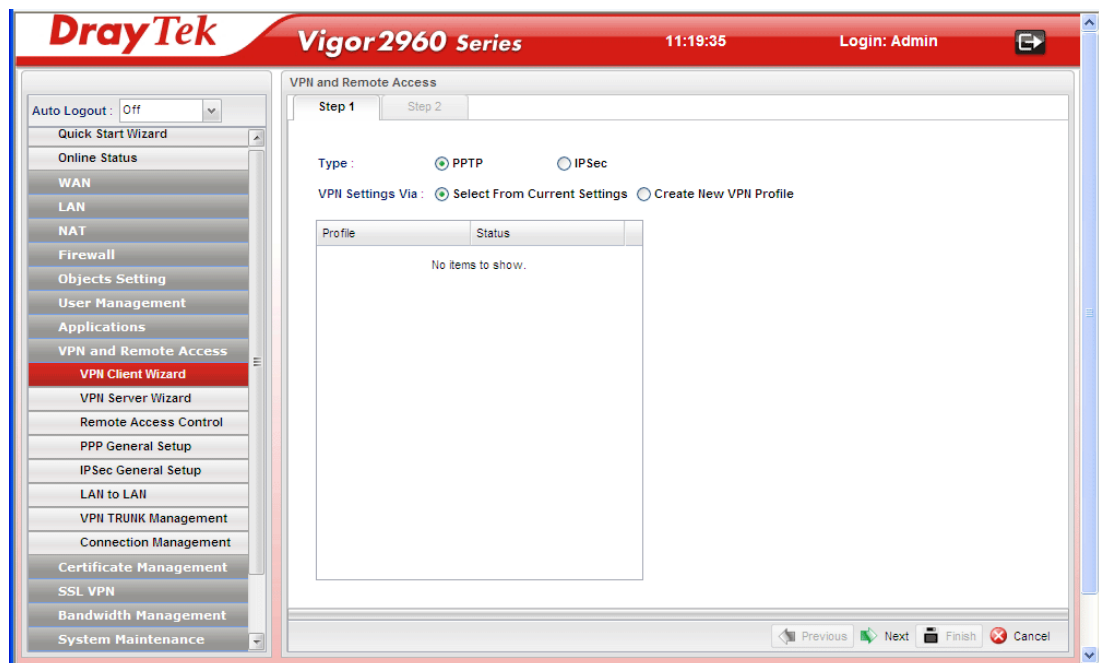
A Virtual Private Network (VPN) is the extension of a private network that encompasses links across shared or public networks like the Internet. In short, by VPN technology, you can send data between two computers across a shared or public network in a manner that emulates the properties of a point-to-point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

Below shows the menu items for VPN and Remote Access.



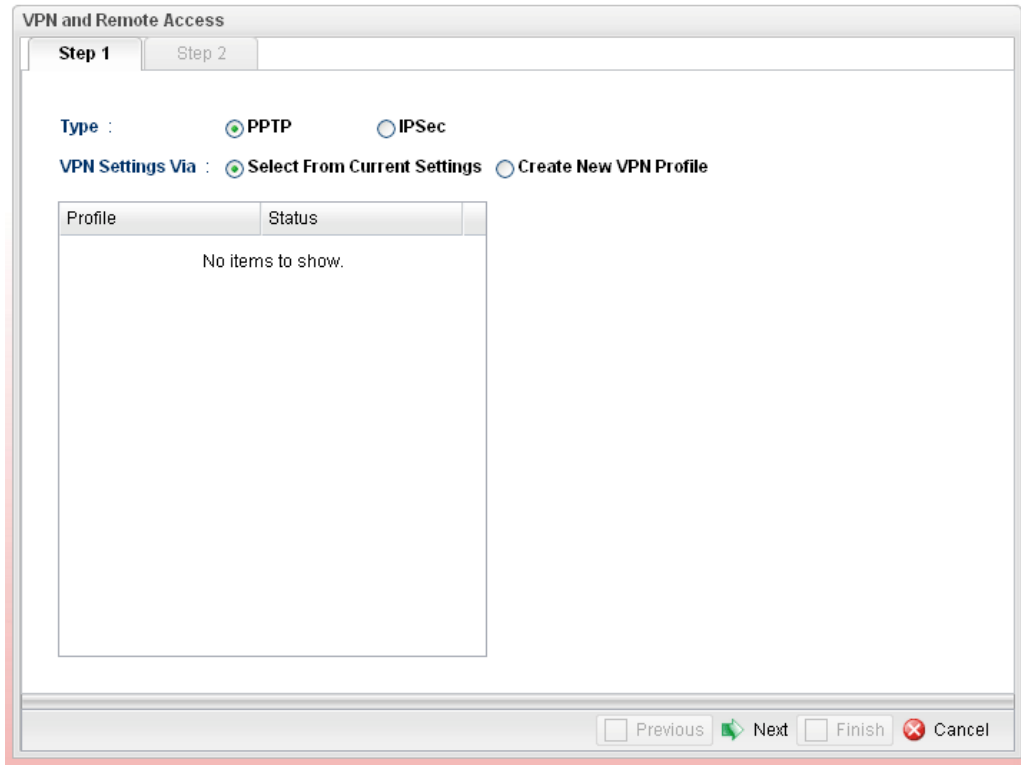
### 4.8.1 VPN Client Wizard

Such wizard is used to configure VPN settings for VPN client. Such wizard will guide to set the LAN-to-LAN profile for VPN dial out connection (from server to client) step by step.



## How to create LAN-to-LAN profile for VPN client (dial-out)

1. Open **VPN and Remote Access >> VPN Client Wizard**.
2. The following dialog will appear.



Available parameters are listed as follows:

Item	Description
Type	Specify which protocol ( <b>PPTP</b> or <b>IPSec</b> ) will be used for such VPN profile.
VPN Settings Via	<b>Select From Current Settings</b> - Current VPN LAN to LAN profiles will be listed below such setting. Choose the one you need. <b>Create New VPN Profile</b> – It allows you to create a new VPN LAN to LAN profile. Simply type the name in the field of <b>Profile Name</b> . The field of Profile Name is available only when you click this setting.

- Specify the type. Click **Create New VPN Profile** and type the name of the profile. Then, click **Next**.

The screenshot shows the 'VPN and Remote Access' configuration window at Step 1. The 'Type' is set to PPTP. The 'VPN Settings Via' is set to 'Create New VPN Profile'. The 'Profile Name' is 'VPN\_CLI\_1'. The 'Previous' button is disabled, and the 'Next' button is active.

- If you choose **PPTP** as the Type, you will get the following screen:

The screenshot shows the 'VPN and Remote Access' configuration window at Step 2. The profile is 'VPN\_CLI\_1'. It is enabled. 'Always On' is set to 'Enable'. 'Server IP Address' is 172.16.1.10. 'PPTP User Name' is 'pptp\_user'. 'PPTP Password' is masked. 'Local IP / Subnet Mask' is 192.168.3.55. A table shows 'IP' 172.6.3.98 and 'Subnet Mask' 255.255.255.0. The 'Previous' button is active, and the 'Next' button is disabled.

Available parameters are listed as follows:

Item	Description
<b>Profile</b>	Display the name of the VPN profile.

<b>Enable This Profile</b>	Check this box to enable such profile.
<b>Always On</b>	Click Enable to make router always keeping connection.
<b>Server IP Address</b>	Type the IP address of PPTP server.
<b>PPTP User Name</b>	Type a user name for authentication in PPTP connection.
<b>PPTP Password</b>	Type a password for authentication in PPTP connection.
<b>Local IP/Subnet Mask</b>	Type the IP address and subnet mask of local host.
<b>Remote IP/Subnet Mask</b>	Type the LAN IP address and LAN subnet mask for the remote host.

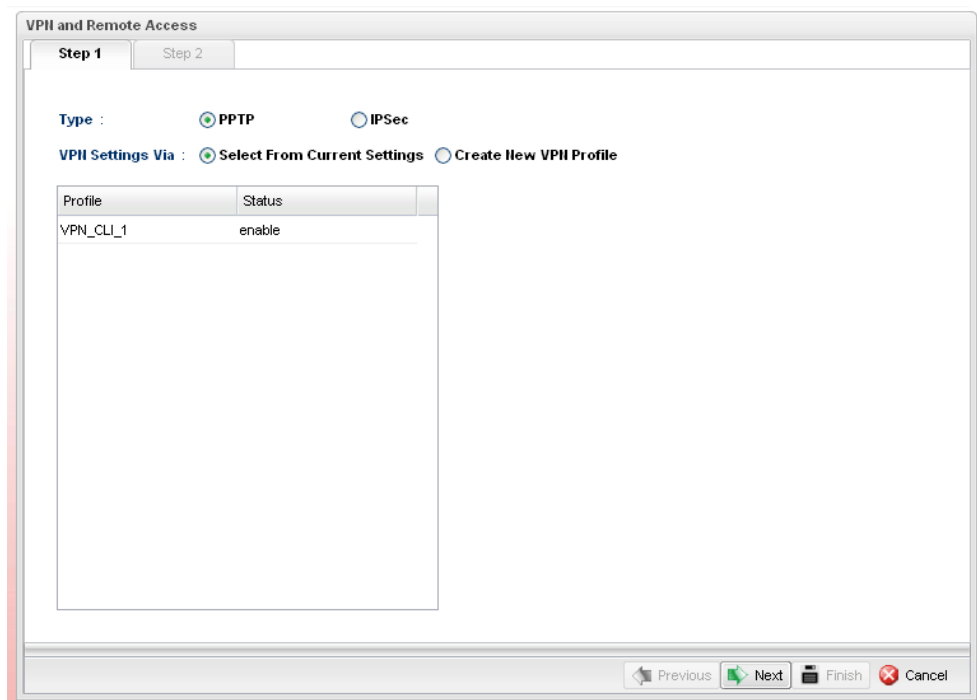
If you choose **IPSec** as the Type, you will get the following screen:

Available parameters are listed as follows:

Item	Description
<b>Profile</b>	Display the name of the VPN profile.
<b>Enable This Profile</b>	Check this box to enable such profile.
<b>Auth Type</b>	The authentication to be used by Pre-Shared Key or RSA Signature. Choose <b>PSK</b> or <b>RSA</b> for such profile.
<b>Certificate</b>	Choose a local certificate from the drop down list.
<b>Preshared Key</b>	Type a pre-shared key for authentication if PSK is selected as Auth Type.
<b>Security Protocol</b>	Choose <b>ESP</b> to specify the IPSec protocol for the Encapsulating Security Payload protocol. The data will be encrypted and authenticated. Choose <b>AH</b> to specify the IPSec protocol for the Authentication Header protocol. The

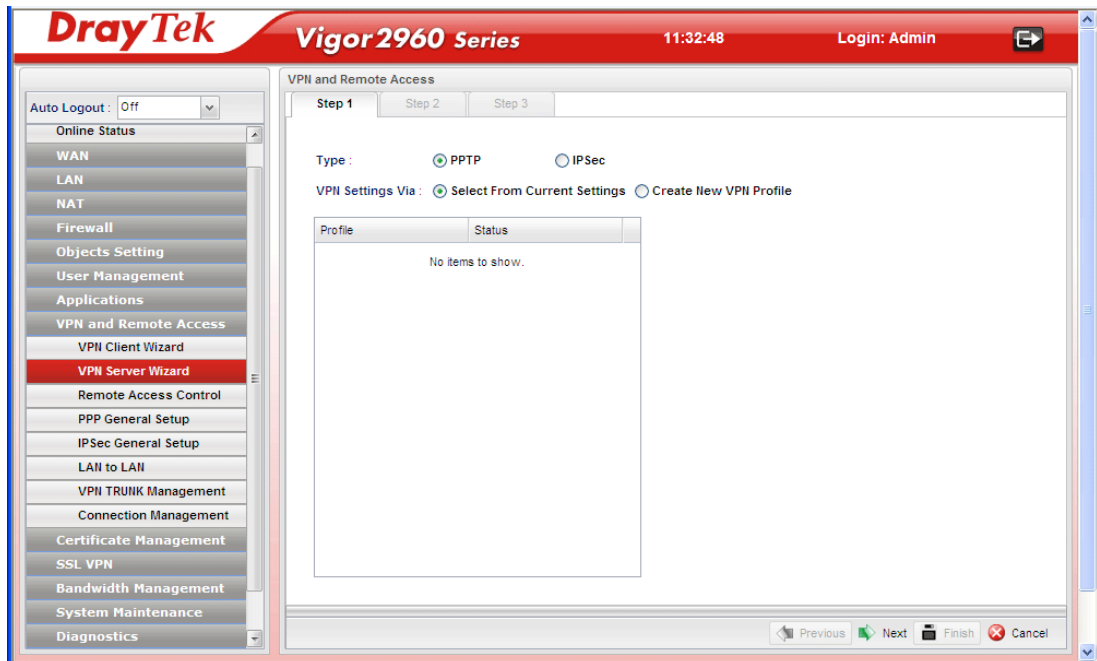
	data will be authenticated but not be encrypted.
<b>WAN Profile</b>	Choose a wan profile to be used by such profile.
<b>Local IP/Subnet Mask</b>	Type the IP address and subnet mask of local host.
<b>Local Next Hop</b>	Specify the gateway for WAN interface. Usually, use the default setting (leave it in blank).
<b>Remote Host</b>	Type the WAN IP address for the remote host.
<b>Remote IP / Subnet Mask</b>	Type the LAN IP address and LAN subnet mask for the remote host.
<b>More Remote Subnet</b>	Add more remote subnet in this field if required.
<b>Local GRE IP</b>	The virtual IP address of the router, specified for this tunnel.
<b>Remote GRE IP</b>	The virtual IP address of the remote client, specified for this tunnel.

5. Fill in the required information on this page and click **Finish**. Later, a new profile has been created.



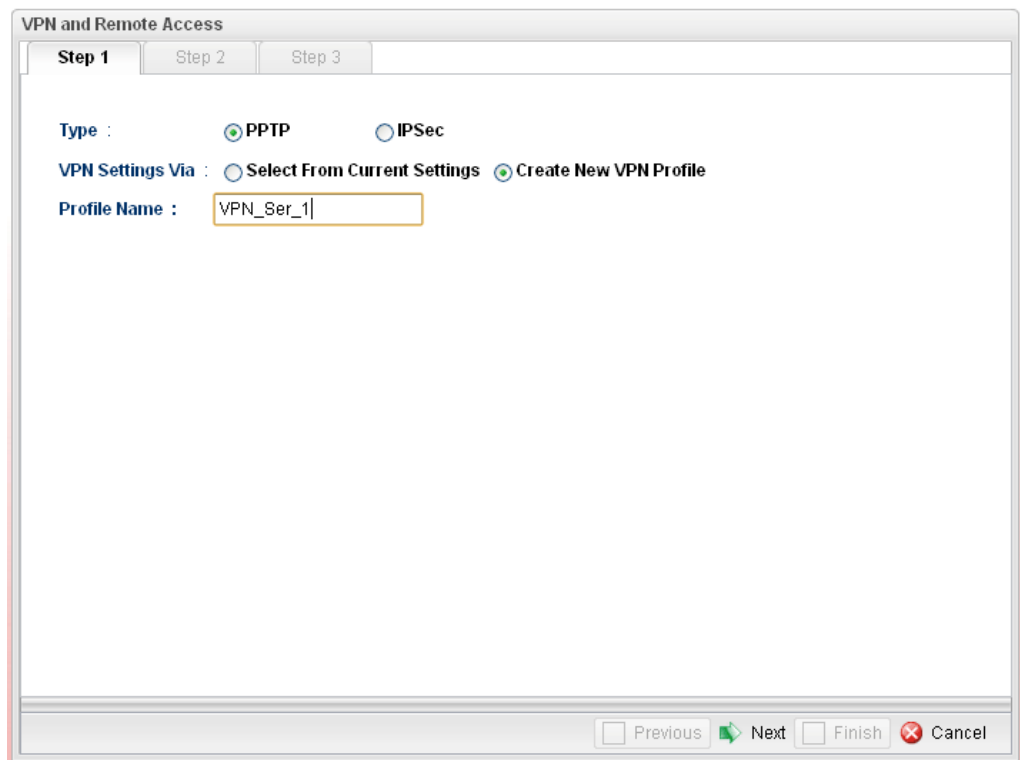
## 4.8.2 VPN Server Wizard

Such wizard is used to configure VPN settings for VPN server. Such wizard will guide to set the LAN-to-LAN profile for VPN dial in connection (from client to server) step by step.



### How to create LAN-to-LAN profile for VPN server

1. Open **VPN and Remote Access >> VPN Server Wizard**. The following dialog will appear.



Available parameters are listed as follows:

Item	Description
<b>Type</b>	Specify which protocol ( <b>PPTP</b> or <b>IPSec</b> ) will be used for such VPN profile.
<b>VPN Settings Via</b>	<b>Select From Current Settings</b> - Current VPN LAN to LAN profiles will be listed below such setting. Choose the one you need. <b>Create New VPN Profile</b> – It allows you to create a new VPN LAN to LAN profile. Simply type the name in the field of <b>Profile Name</b> . The field of Profile Name is available only when you click this setting.
<b>Profile Name</b>	Type a new name for such profile.
<b>Next</b>	Go to next page.
<b>Cancel</b>	Cancel the configuration and return to the home page of such function.

- Fill in the required information on this page and click **Next**. If you choose **IPSec** as the **Type**, you will get the following screen:

The screenshot shows the 'VPN and Remote Access' configuration window at Step 3. The profile is named 'VPN\_Ser\_1'. The 'Enable This Profile' checkbox is unchecked. The authentication method is set to 'PSK' with a 'None' certificate. The security protocol is 'ESP' and the WAN profile is 'wan1'. The local network is 192.168.1.0 with a 255.255.255.0 mask. The remote host is 0.0.0.0 and the remote network is 0.0.0.0 with a 255.255.255.255 mask. A table for 'More Remote Subnet' is present but empty.

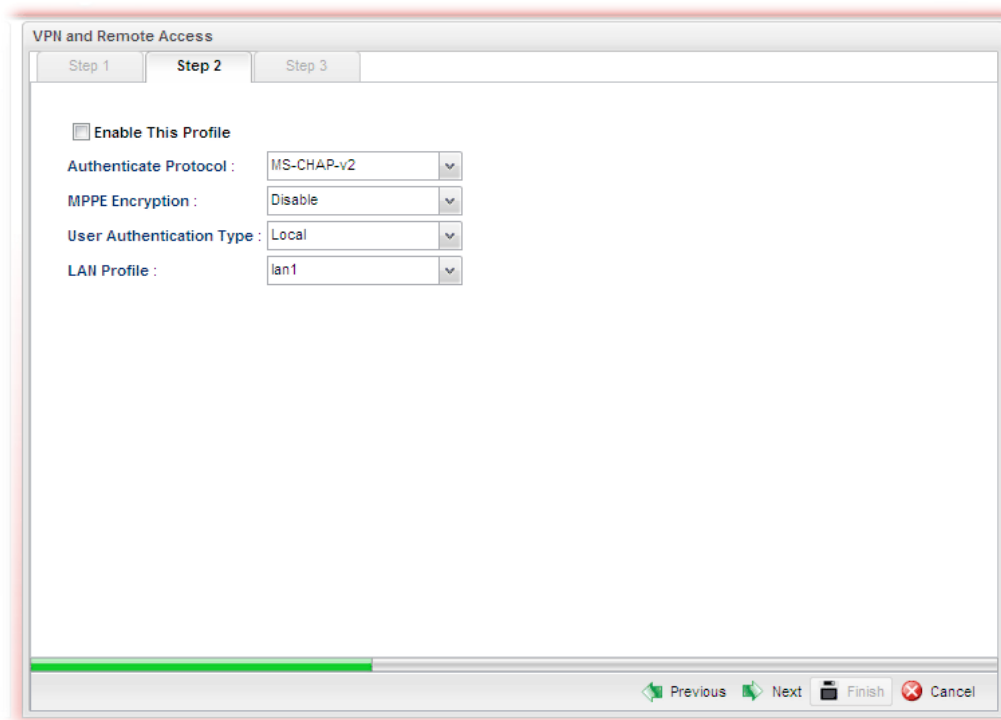
Available parameters are listed as follows:

Item	Description
<b>Profile</b>	Display the name of such profile.
<b>Enable This Profile</b>	Check this box to enable such profile.
<b>Auth Type</b>	The authentication to be used by Pre-Shared Key or RSA Signature. Choose <b>PSK</b> or <b>RSA</b> for such profile.

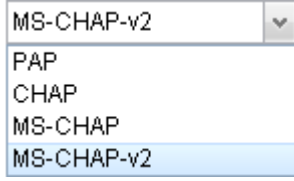
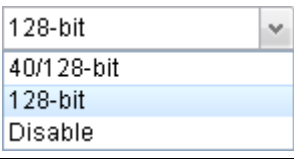
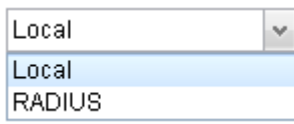
<b>Certificate</b>	Choose a local certificate from the drop down list.
<b>Presared Key</b>	Type a pre-shared key for authentication if PSK is selected as Auth Type.
<b>Security Protocol</b>	Choose <b>ESP</b> to specify the IPSec protocol for the Encapsulating Security Payload protocol. The data will be encrypted and authenticated. Choose <b>AH</b> to specify the IPSec protocol for the Authentication Header protocol. The data will be authenticated but not be encrypted.
<b>WAN Profile</b>	Choose a wan profile to be used by such profile.
<b>Local IP / Subnet Mask</b>	Type the IP address and subnet mask of local host.
<b>Local Next Hop</b>	Specify the gateway for WAN interface. Usually, use the default setting (leave it in blank).
<b>Remote Host</b>	Type the WAN IP address for the remote host.
<b>Remote IP/Subnet Mask</b>	Type the LAN IP address and LAN subnet mask for the remote host.
<b>More Remote Subnet</b>	Add more remote subnet in this field if required.
<b>Local GRE IP</b>	The virtual IP address of the router, specified for this tunnel.
<b>Remote GRE IP</b>	The virtual IP address of the remote client, specified for this tunnel.
<b>Previous</b>	Back to the previous page.
<b>Finish</b>	Save the configuration and return to the home page of such function.
<b>Cancel</b>	Cancel the configuration and return to the home page of such function.

However, if you choose **PPTP** as the **Type**, then you will get the following screen:





Available parameters are listed as follows:

Item	Description
<b>Enable This Profile</b>	Check this box to enable such profile.
<b>Authentication Protocol</b>	<p>The router will authenticate the dial-in user with the protocol selected here.</p>  <p><b>PAP</b> - It means the router will attempt to authenticate dial-in users with the PAP protocol.</p> <p><b>CHAP</b> - It means the router will attempt to authenticate dial-in users with the CHAP protocol.</p>
<b>MPPE Encryption</b>	<p>Specify one of the encryptions for such server.</p> 
<b>User Authentication Type</b>	<p>Set user authentication to <b>Local</b> server or <b>RADIUS</b> server.</p> 
<b>LAN Profile</b>	Choose a LAN profile for PPTP Server if <b>Local</b> is selected as user authentication type.

3. Fill in the required information on this page and click **Next** to go to next page.

The screenshot shows the 'VPN and Remote Access' configuration window at Step 3. The profile is named 'VPN\_Ser\_1'. The 'Enable This Profile' checkbox is checked. The 'PPTP User Name' field is empty. The 'Local IP / Subnet Mask' is set to 192.168.1.57 with a subnet mask of 255.255.255.0. The 'Remote IP / Subnet Mask' is set to 192.168.1.62 with a subnet mask of 255.255.255.0. Navigation buttons for Previous, Next, Finish, and Cancel are at the bottom.

Available parameters are listed as follows:

Item	Description
<b>Profile</b>	Display the name of the profile.
<b>Enable This Profile</b>	Check this box to enable such profile.
<b>PPTP User Name</b>	Type a user name for authentication in PPTP connection. Such profile shall be created in <b>User Management&gt;&gt;User Profile</b> previously. Otherwise, there are no selections displayed here.
<b>Local IP / Subnet Mask</b>	Type the IP address and subnet mask of local host.
<b>Remote IP / Subnet Mask</b>	Type the LAN IP address and LAN subnet mask for the remote host.

5. Fill in the required information on this page and click **Finish**. Later, the new added VPN server profile will be displayed on the screen.

VPN and Remote Access

Step 1   Step 2   Step 3

Type :    PPTP    IPSec

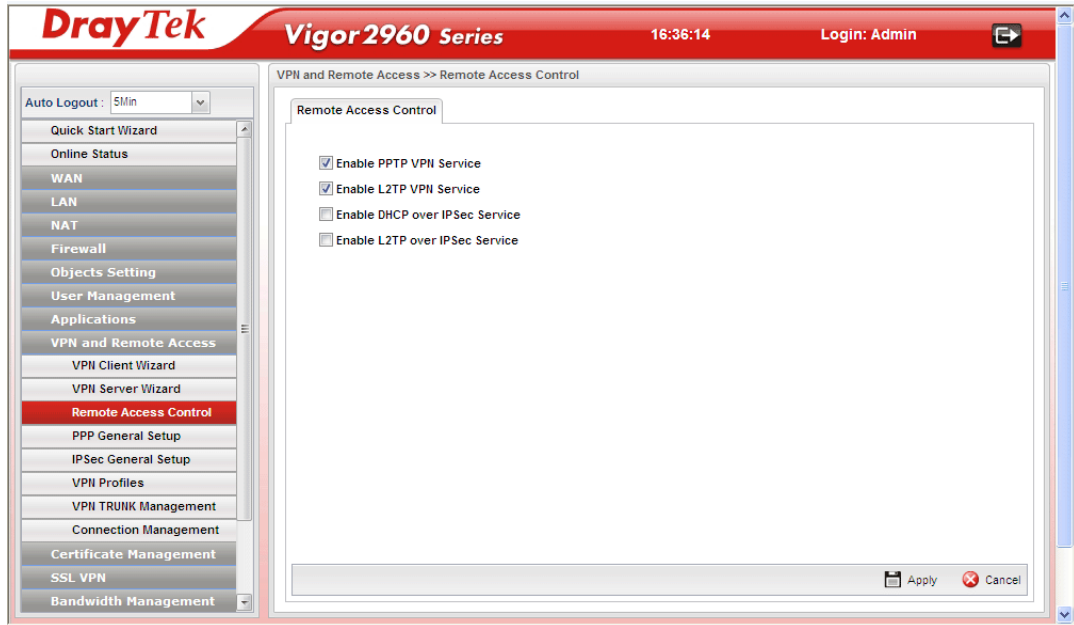
VPN Settings Via :    Select From Current Settings    Create New VPN Profile

Profile	Status
VPN_Ser_1	enable

Previous   Next   Finish   Cancel

### 4.8.3 Remote Access Control

Enable the necessary VPN service as you need. If you intend to run a VPN server inside your LAN, you should disable the VPN service (e.g., PPTP VPN, IPSec VPN, L2TP VPN, SSL VPN, etc.) of Vigor Router to allow VPN tunnel pass through.



Available parameters are listed as follows:

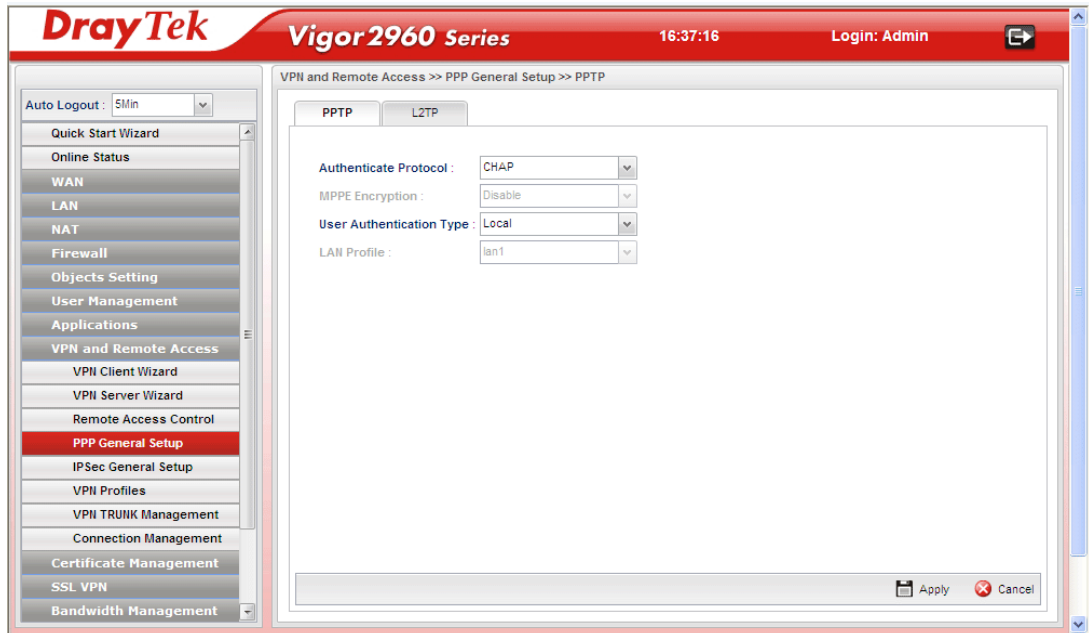
Item	Description
<b>Enable PPTP VPN Service / L2TP VPN Service/DHCP over IPsec Service/L2TP over IPsec Service</b>	Check the box(es) to enable the service.
<b>Apply</b>	Click it to save the configuration.
<b>Cancel</b>	Click it to discard the settings configured in this page.

## 4.8.4 PPP General Setup

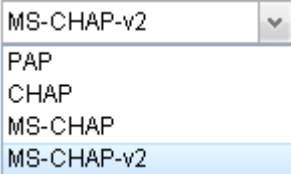
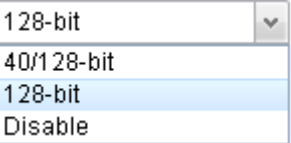
Remote users can connect to the site, host, server and etc. via VPN connection built between the router and the users by authentication procedure.

### PPTP

This page display current status for VPN tunnel built with PPTP protocol.



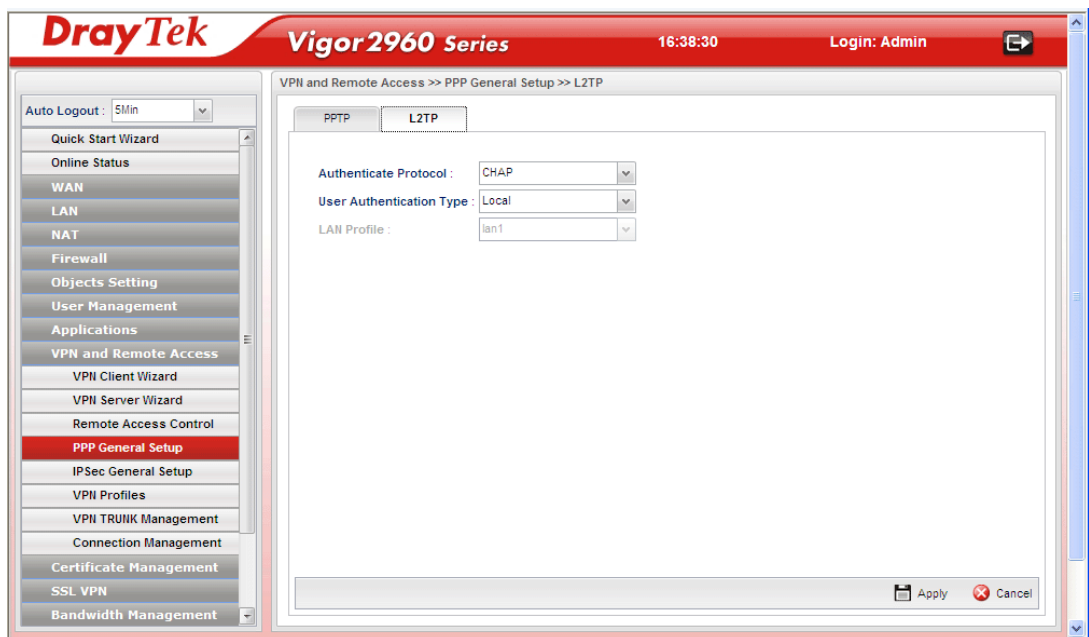
Available parameters are listed as follows:

Item	Description
<b>Authenticate Protocol</b>	<p>The router will authenticate the dial-in user with the protocol selected here.</p>  <p><b>PAP</b> - It means the router will attempt to authenticate dial-in users with the PAP protocol.  <b>CHAP</b> - It means the router will attempt to authenticate dial-in users with the CHAP protocol.</p>
<b>MPPE Encryption</b>	<p>Specify one of the encryptions for such server. It is available only when MS-CHAP or MS-CHAP_v2 is selected.</p> 
<b>User Authentication Type</b>	<p>Set user authentication to <b>Local</b> server or <b>RADIUS</b> server.</p>

	<div style="border: 1px solid gray; padding: 2px;"> Local <span style="float: right;">▼</span>  Local  RADIUS </div>
<b>LAN Profile</b>	Choose a LAN profile for PPTP Server if <b>RADIUS</b> is selected as user authentication type.
<b>Apply</b>	Click it to save the configuration.
<b>Cancel</b>	Click it to discard the settings configured in this page.

## L2TP

This page display current status for VPN tunnel built with L2TP protocol.



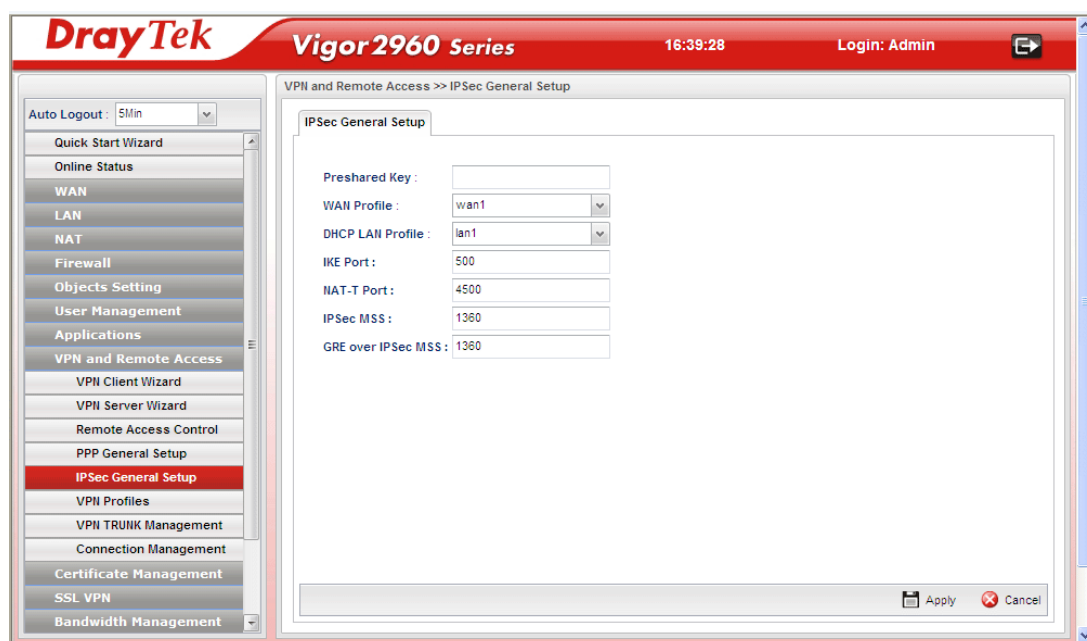
Available parameters are listed as follows:

Item	Description
<b>Authenticate Protocol</b>	<p>The router will authenticate the dial-in user with the protocol selected here.</p> <div style="border: 1px solid gray; padding: 2px;"> CHAP <span style="float: right;">▼</span>  PAP  CHAP </div> <p><b>PAP</b> - It means the router will attempt to authenticate dial-in users with the PAP protocol.</p> <p><b>CHAP</b> - It means the router will attempt to authenticate dial-in users with the CHAP protocol.</p>
<b>User Authentication Type</b>	<p>Set user authentication to <b>Local</b> server or <b>RADIUS</b> server.</p> <div style="border: 1px solid gray; padding: 2px;"> Local <span style="float: right;">▼</span>  Local  RADIUS </div>

<b>LAN Profile</b>	Choose a LAN profile for L2TP Server if <b>RADIUS</b> is selected as user authentication type.
<b>Apply</b>	Click it to save the configuration.
<b>Cancel</b>	Click it to discard the settings configured in this page.

#### 4.8.5 IPSec General Setup

The IPSec services can provide access control, connectionless integrity, data origin authentication, rejection of replayed packets that is a form of partial sequence integrity, and confidentiality by encryption. These objectives are met through the use of two traffic security protocols, the Authentication Header (AH) and the Encapsulating Security Payload (ESP), and through the use of cryptographic key management procedures and protocols.



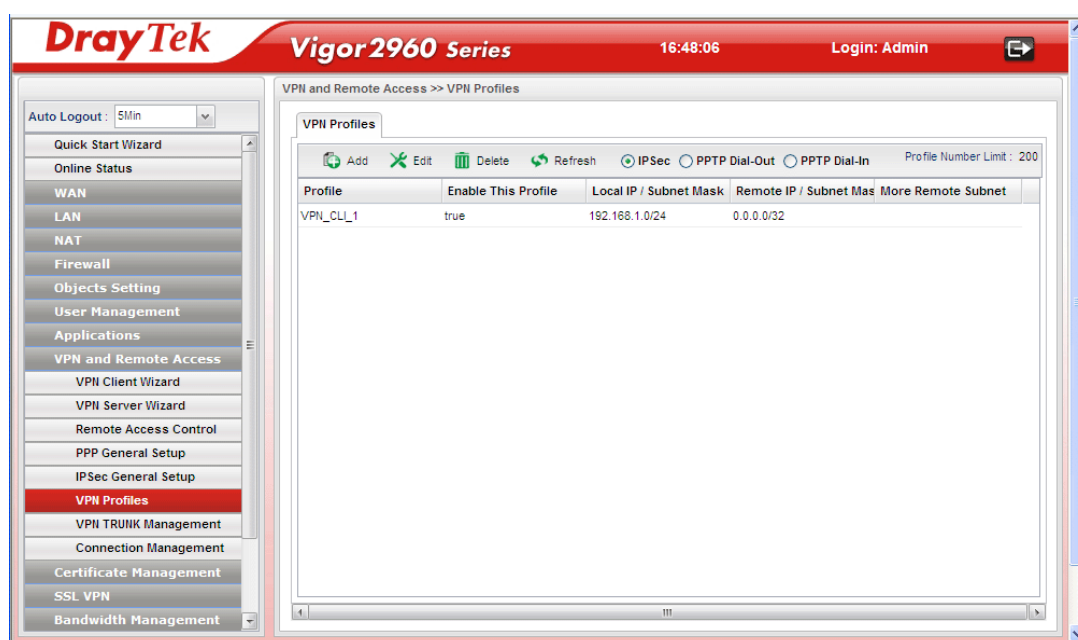
Available parameters are listed as follows:

Item	Description
<b>Preshared Key</b>	Specify a key for IKE authentication <b>Confirm Pre-Shared Key</b> - Retype the characters to confirm the pre-shared key.
<b>WAN Profile</b>	Choose the WAN interface profile(s) to be used.
<b>DHCP LAN Profile</b>	Choose one of the LAN profiles for VPN.
<b>IKE Port</b>	Type the UDP port number for Internet Key Exchange (IKE) traffic to the VPN server.
<b>NAT-T Port</b>	Type the UDP port number for IPSec network address translator traversal (NAT-T) traffic.
<b>IPsec MSS</b>	Type the port number for IPsec MSS.
<b>GRE over IPsec MSS</b>	Type the port number for GRE over IPsec MSS.
<b>Apply</b>	Click it to save the configuration.
<b>Cancel</b>	Click it to discard the settings configured in this page.

## 4.8.6 VPN Profiles

Here you can manage LAN-to-LAN connections by maintaining a table of connection profiles. You may set parameters including specified connection direction (dial-in or dial-out), connection peer ID, connection type (VPN connection - including PPTP, IPSec Tunnel, and L2TP by itself or over IPSec) and corresponding security methods, etc.

The router supports up to **200** VPN tunnels simultaneously. The following figure shows the summary table.



Each item will be explained as follows:

Item	Description
<b>Add</b>	Add a new profile.
<b>Edit</b>	Modify the selected profile. To edit a profile, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected profile.
<b>Delete</b>	Remove the selected profile. To delete a profile, simply select the one you want to delete and click the <b>Delete</b> button.
<b>Refresh</b>	Renew current web page.
<b>IPsec</b>	Display the LAN to LAN profile with IPsec policy.
<b>PPTP Dial-out</b>	Display the LAN to LAN profile with PPTP Dial-out policy.
<b>PPTP Dial-in</b>	Display the LAN to LAN profile with PPTP Dial-in policy.
<b>Profile</b>	Display the name of LAN to LAN profile.
<b>Enable This Profile</b>	Display the status of the profile. False means disabled; True means enabled.

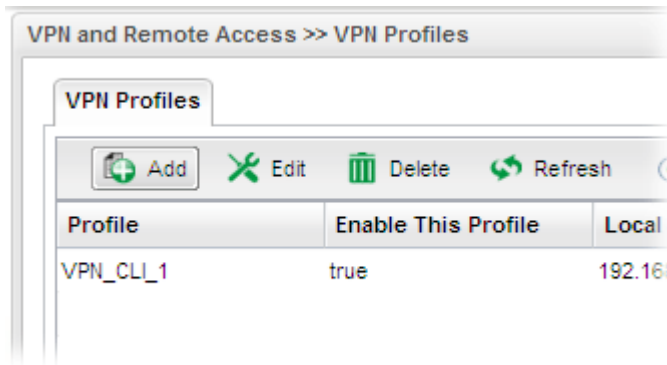


<b>Local IP / Subnet Mask</b>	Display the LAN IP address with subnet mask of this profile.
<b>Remote IP / Subnet Mask</b>	Display the WAN IP address with subnet mask of this profile.
<b>More Remote Subnet</b>	Display other LAN IP addresses with subnet mask which can be used of this profile.

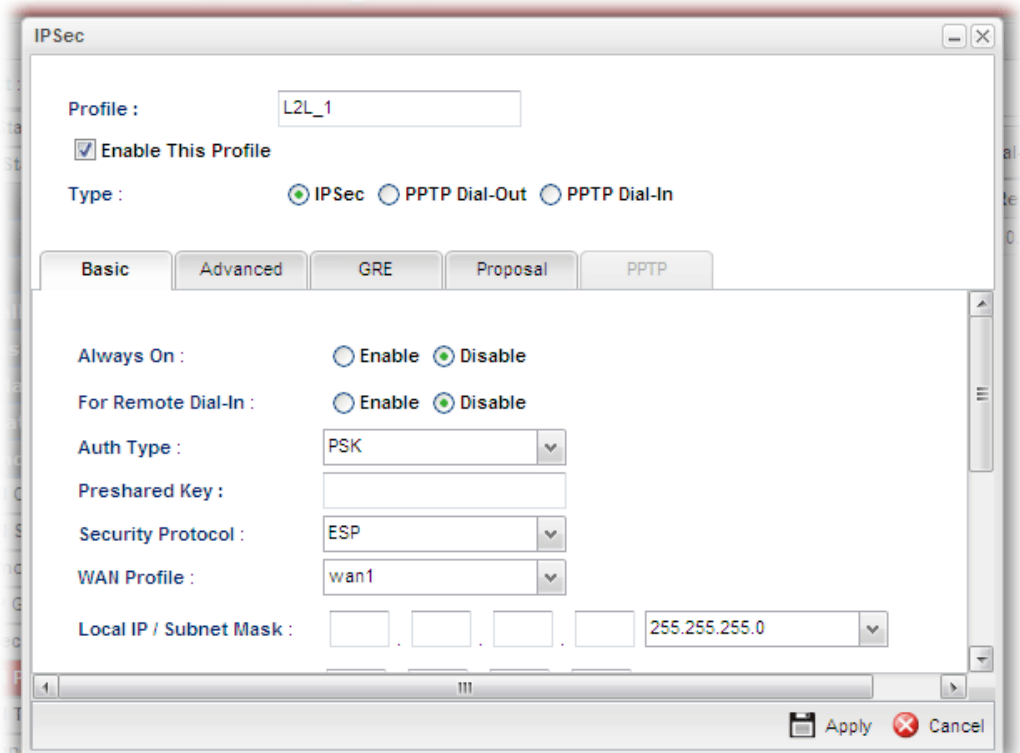
## How to create an IPSec VPN profile

The IPSec services can provide access control, connectionless integrity, data origin authentication, rejection of replayed packets that is a form of partial sequence integrity, and confidentiality by encryption. These objectives are met through the use of two traffic security protocols, the Authentication Header (AH) and the Encapsulating Security Payload (ESP), and through the use of cryptographic key management procedures and protocols.

1. Open **VPN and Remote Access >> VPN Profiles**.
2. Simply click the **Add** button.



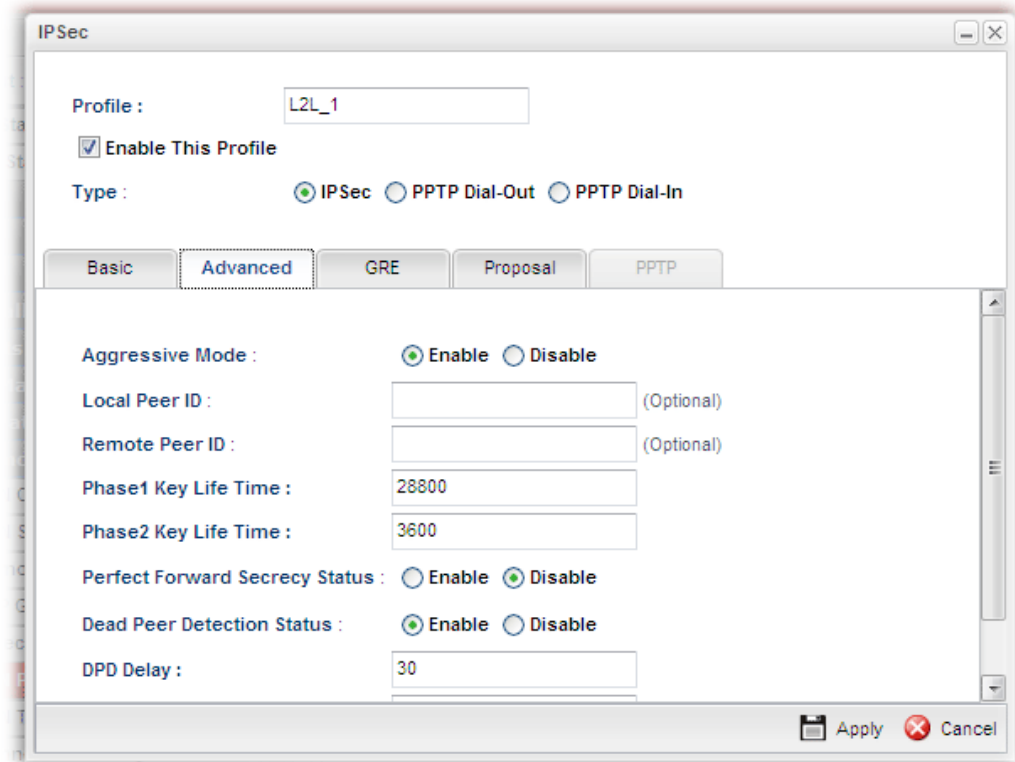
3. The following dialog will appear. Click the **Basic** tab to configure the settings.



Available parameters are listed as follows:

<b>Item</b>	<b>Description</b>
<b>Profile</b>	Type the name of the profile.
<b>Enable This Profile</b>	Check this box to enable this profile.
<b>Type</b>	There are three types offered here for you to choose. Please choose <b>IPSec</b> for this case.
<b>Basic</b>	<p><b>Always On</b> – Click Enable to make router always keeping connection.</p> <p><b>Auth Type</b> - The authentication to be used by Pre-Shared Key or RSA Signature. Choose <b>PSK</b> or <b>RSA</b> for such profile.</p> <p><b>Preshared Key</b> - Type a pre-shared key for authentication if PSK is selected as Auth Type.</p> <p><b>Security Protocol</b> – Choose <b>ESP</b> to specify the IPSec protocol for the Encapsulating Security Payload protocol. The data will be encrypted and authenticated. Choose <b>AH</b> to specify the IPSec protocol for the Authentication Header protocol. The data will be authenticated but not be encrypted.</p> <p><b>WAN Profile</b>- Choose a wan profile to be used by such profile.</p> <p><b>Local IP/Subnet Mask</b> - Type the IP address and subnet mask of local host.</p> <p><b>Local Next Hop</b> - Specify the gateway for WAN interface. Usually, use the default setting (leave it in blank).</p> <p><b>Remote Host</b> - Type the WAN IP address for the remote host.</p> <p><b>Remote IP / Subnet Mask</b> - Type the LAN IP address and LAN subnet mask for the remote host.</p> <p><b>More Remote Subnet</b> – Add more remote subnet in this field if required.</p>
<b>Apply</b>	Click it to save the configuration.
<b>Cancel</b>	Click it to exit the page without saving the configuration.

4. After filling the required information for **Basic**, click the **Advanced** tab to open the following page.

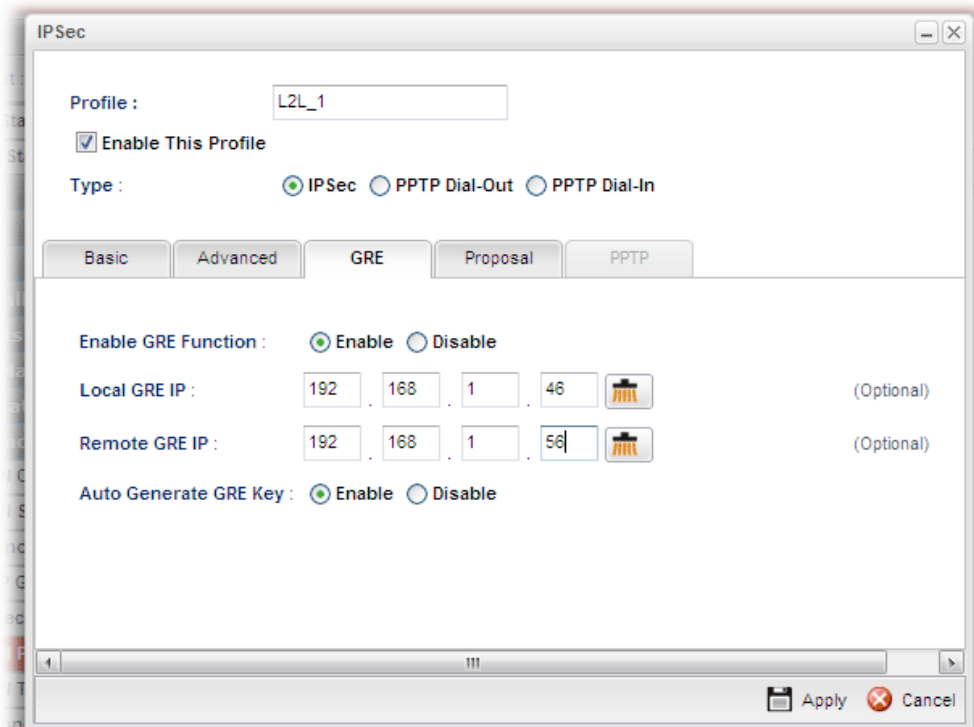


Available parameters are listed as follows:

Item	Description
<b>Aggressive Mode</b>	<b>Enable</b> – Click it to enable Aggressive Mode. <b>Disable</b> – Click it to disable Aggressive Mode.
<b>Local Peer ID</b>	Type the ID for Vigor2960 which can be configured by the remote end. It is available for Aggressive Mode enabled only.
<b>Remote Peer ID</b>	Peer ID is on behalf of the IP address while identity authenticating with remote VPN server. The length of the ID is limited to 47 characters. It is available for Aggressive Mode enabled only.
<b>Phase 1 Key Life Time</b>	The rekey-renegotiated period of the IKE Phase1 keying channel of a connection. The acceptable range is from 5 to 480 minutes (8 hours).
<b>Phase 2 Key Life Time</b>	The rekey-renegotiated period of the IKE Phase 2 keying channel of a connection. The acceptable range is from 5 to 480 minutes (8 hours).
<b>Perfect Forward Secrecy Status</b>	Enable the PFS function. A new Diffie-Hellman Key Exchange is included every time an encryption and/or authentication key are computed on PFS.
<b>Dead Peer Detection Status</b>	Enable or disable the DPD function.
<b>DPD Delay</b>	The keep-alive timer. A Hello message will be emitted

	periodically when a tunnel is idle. Use the value 0 to disable this function. The recommended value is 30 seconds if enabled.
<b>DPD Timeout</b>	The timeout timer. The peer will be declared dead once no acknowledge message is received after timeout value. Use the value 0 to disable this function. The recommended value is 120 seconds.
<b>Apply</b>	Click it to save the configuration.
<b>Cancel</b>	Click it to exit the page without saving the configuration.

5. After filling the required information for **Advanced**, click the **GRE** tab to open the following page.

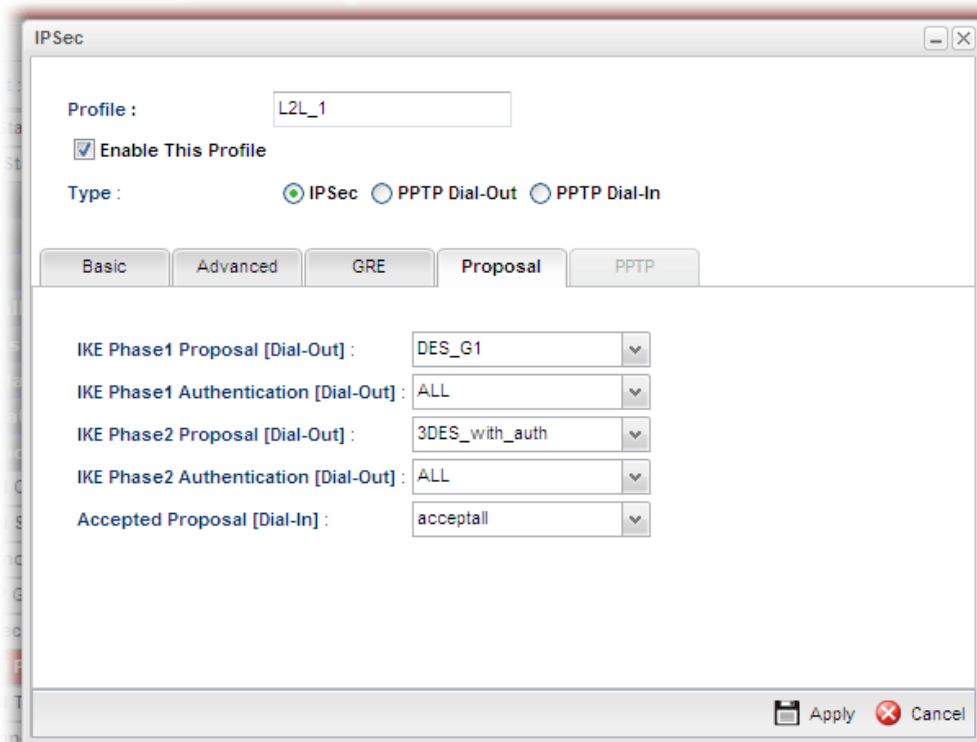


Available parameters are listed as follows:

Item	Description
<b>Enable GRE Function</b>	Click <b>Enable</b> to enable such function.
<b>Local GRE IP</b>	The virtual IP address of the router, specified for this tunnel.
<b>Remote GRE IP</b>	The virtual IP address of the remote client, specified for this tunnel.
<b>Auto Generate GRE Key</b>	Click <b>Enable</b> to enable such function. If you click <b>Disable</b> , you have to type <b>GRE In Key</b> and <b>GRE Out Key</b> respectively.
<b>GRE In Key</b>	Type the hexadecimal number as GRE In Key. This value is used for the router to authenticate the source of the packet. The length is 4 bytes

<b>GRE Out Key</b>	Type the hexadecimal number as GRE Out Key. This value is used for the remote client to authenticate the source of the packet. The length is 4 bytes.
<b>Apply</b>	Click it to save the configuration.
<b>Cancel</b>	Click it to exit the page without saving the configuration.

6. After filling the required information for **GRE**, click the **Proposal** tab to open the following page.

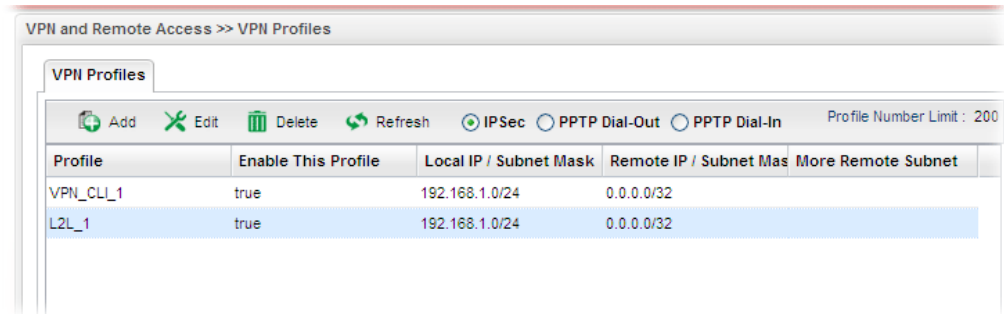


Available parameters are listed as follows:

Item	Description
<b>IKE Phase1 Proposal (Dial-Out)</b>	Propose the local available authentication schemes and encryption algorithms to the VPN peers, and get its feedback to find a match.
<b>IKE Phase1 Authentication (Dial-Out)</b>	Propose the local available algorithms to the VPN peers, and get its feedback to find a match.
<b>IKE Phase2 Proposal (Dial-Out)</b>	Propose the local available authentication schemes and encryption algorithms to the VPN peers, and get its feedback to find a match.
<b>IKE Phase2 Authentication (Dial-Out)</b>	Propose the local available algorithms to the VPN peers, and get its feedback to find a match.
<b>Accepted Proposal (Dial-In)</b>	For the dial-in VPN user, please specify the limitation of the proposal. <b>acceptall</b> - When the VPN tunnel is established, all the proposals supported by this device will be accepted and

	applied. <b>acceptabove</b> - When the VPN tunnel is established, only the selected proposal will be accepted and applied by this device.
<b>Apply</b>	Click it to save the configuration.
<b>Cancel</b>	Click it to exit the page without saving configuration.

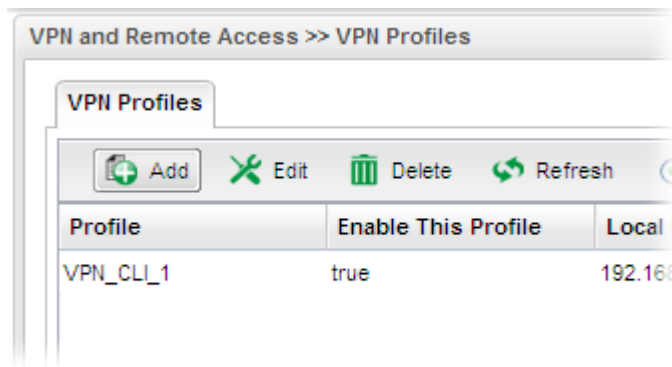
7. Enter all the settings and click **Apply**.
8. A new IPSec LAN-to-LAN profile has been created.



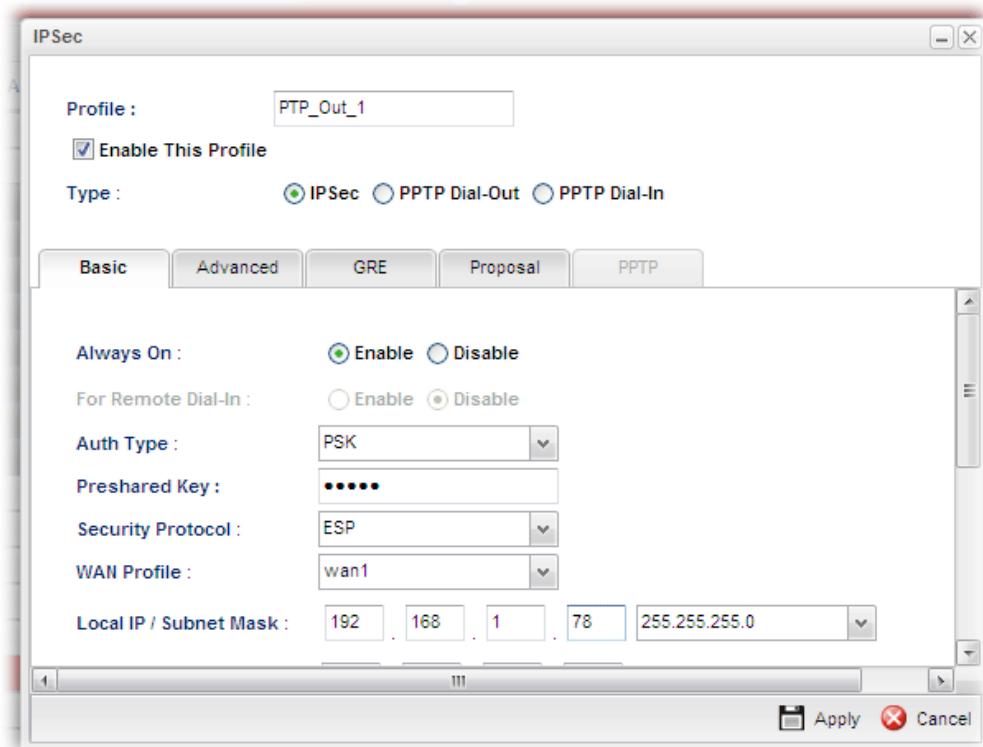
### How to create a PPTP Dial-Out VPN profile

Below will guide you to create a PPTP dial-out profile for VPN connection:

1. Open **VPN and Remote Access >> VPN Profiles**.
2. Simply click the **Add** button.



- The following dialog will appear.

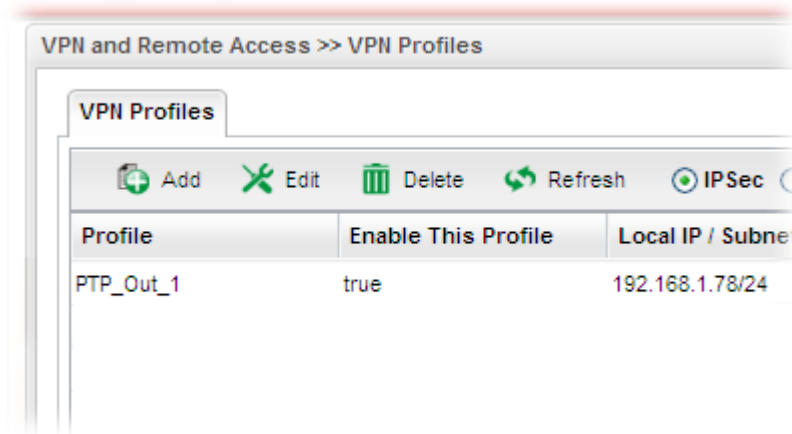


Available parameters are listed as follows:

Item	Description
<b>Profile</b>	Type the name of the profile.
<b>Enable This Profile</b>	Check this box to enable this profile.
<b>Type</b>	There are three types offered here for you to choose. Please choose <b>PPTP Dial-Out</b> for this case.
<b>PPTP</b>	<p><b>Always On</b> - Click <b>Enable</b> to make the profile being always on.</p> <p><b>Server IP Address</b> - Type the IP address of PPTP server.</p> <p><b>PPTP User Name</b> - Type a user name for authentication in PPTP connection.</p> <p><b>PPTP Password</b> - Type a password for authentication in PPTP connection.</p> <p><b>Local IP/Subnet Mask</b> - Type the IP address and subnet mask of local host.</p> <p><b>Remote IP / Subnet Mask</b> - Type the LAN IP address and LAN subnet mask for the remote host.</p>
<b>Apply</b>	Click it to save the configuration.
<b>Cancel</b>	Click it to exit the page without saving the configuration.

- Enter all the settings and click **Apply**.

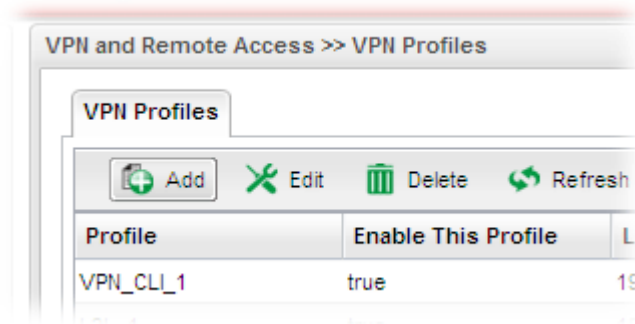
5. A new PPTP Dial-Out VPN profile has been created.



### How to create a PPTP Dial-In VPN profile

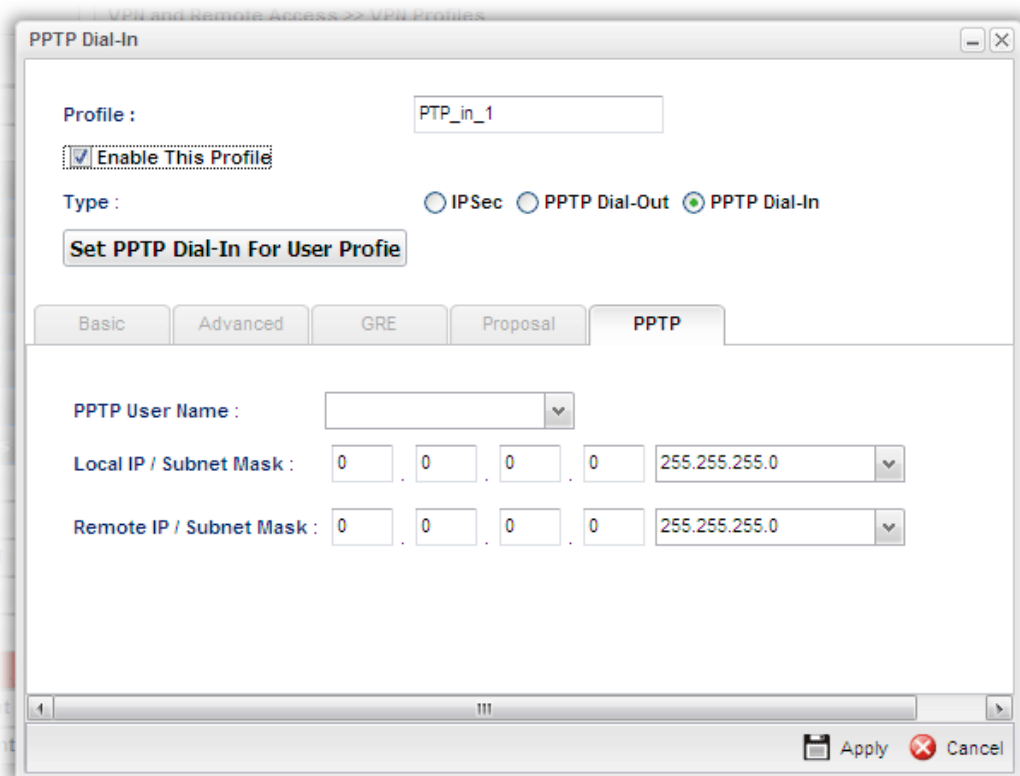
Below will guide you to create a PPTP dial-in profile for VPN connection:

1. Open **VPN and Remote Access >> VPN Profiles**.
2. Simply click the **Add** button.

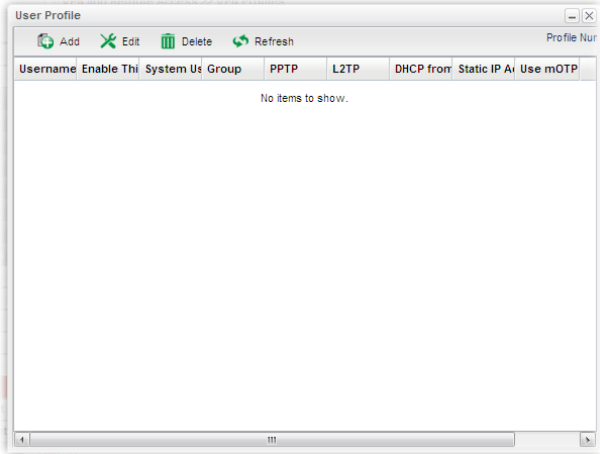


3. The following dialog will appear.





Available parameters are listed as follows:

Item	Description
<b>Profile</b>	Display the name of the profile.
<b>Enable This Profile</b>	Check this box to enable this profile.
<b>Type</b>	There are three types offered here for you to choose. Please choose <b>PPTP Dial-In</b> for this case.
<b>Set PPTP Dial-In For User Profile</b>	Click it to create a new user profile or to modify an existing profile. 
<b>PPTP User Name</b>	Choose a PPTP user profile for authentication in PPTP connection. Such profile shall be created in <b>User Management&gt;&gt;User</b>

	<b>Profile</b> previously. You can click <b>Set PPTP Dial-In For User Profile</b> in this page to configure a new one for choosing.
<b>Local IP/Subnet Mask</b>	Type the IP address and subnet mask of local host.
<b>Remote IP / Subnet Mask</b>	Type the LAN IP address and LAN subnet mask for the remote host.
<b>Apply</b>	Click it to save the configuration.
<b>Cancel</b>	Click it to exit the page without saving the configuration.

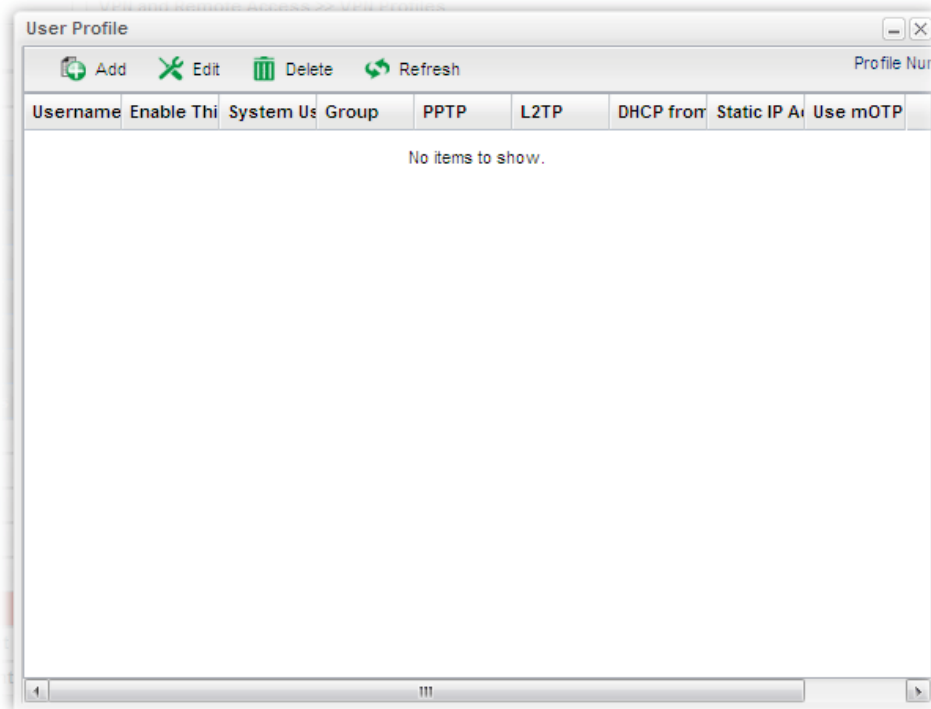
4. Enter all the settings and click **Apply**.
5. A new PPTP Dial-In LAN-to-LAN profile has been created.



## Set PPTP Dial-In For User Profile

To set PPTP Dial-In connection, you have to create PPTP user profiles previously in **User Management>>User Profile**, or click **Set PPTP Dial-In For User Profile** in this page to configure a new one for choosing for authentication in PPTP connection.

Below shows the window of **Set PPTP Dial-In For User Profile**. For the configuration and detailed information, simply refer to **4.6.2 User Profile**.

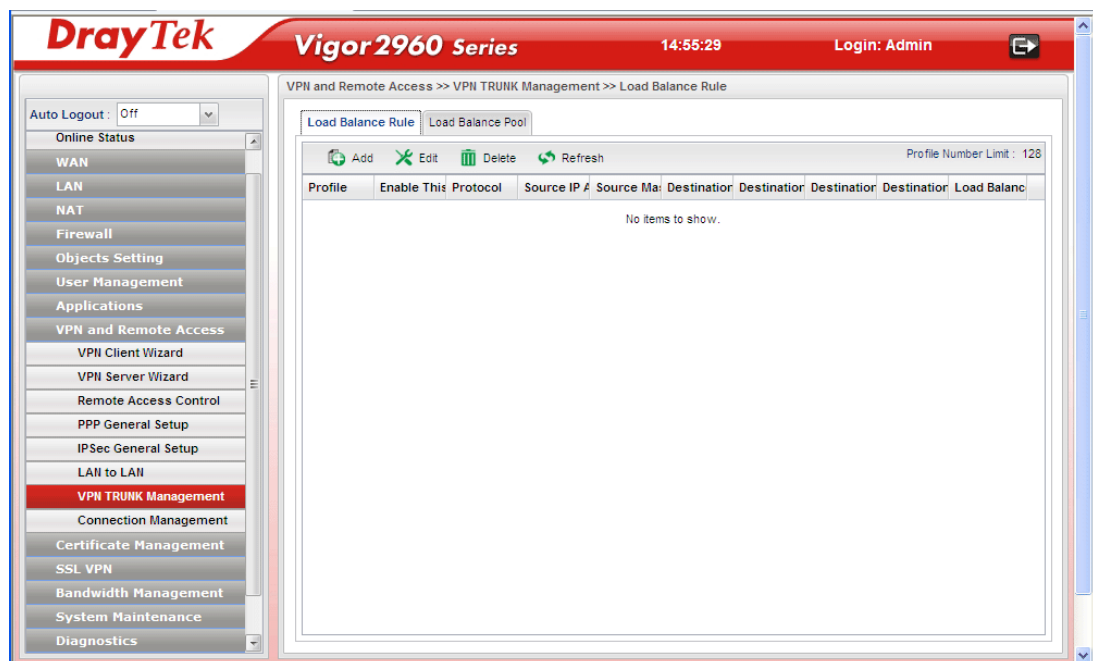


## 4.8.7 VPN Trunk Management

VPN Load Balance Mechanism can set multiple VPN tunnels for using as traffic load balance tunnel. It can assist users to do effective load sharing for multiple VPN tunnels according to real line bandwidth. Moreover, it offers three types of algorithms for load balancing and binding tunnel policy mechanism to let the administrator manage the network more flexibly.

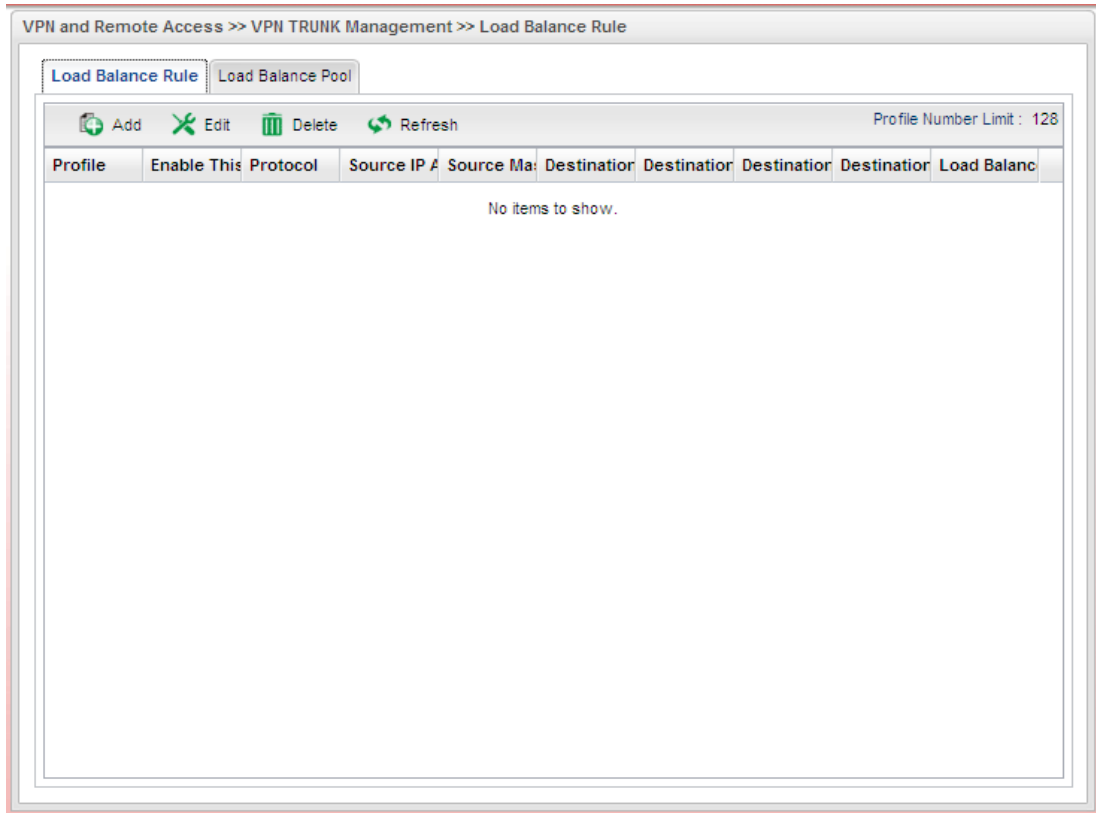
- Three types of load sharing algorithm offered, Round Robin, Weighted Round Robin and Fastest
- Binding Tunnel Policy mechanism allows users to encrypt the data in transmission or specified service function in transmission and define specified VPN Tunnel for having effective bandwidth management
- Dial-out connection types contain IPSec, PPTP, L2TP, L2TP over IPSec and GRE over IPSec
- The web page is simple to understand and easy to configure

The TCP Session transmitted by using VPN TRUNK-VPN Load Balance mechanism will not be lost due to one of VPN Tunnels disconnected. Users do not need to reconnect with setting TCP/UDP Service Port again. The VPN Load Balance function can keep the transmission for internal data on tunnel stably.



## Load Balance Rule

To build VPN load balance connection with other router, you can define the load balance rule in this page.



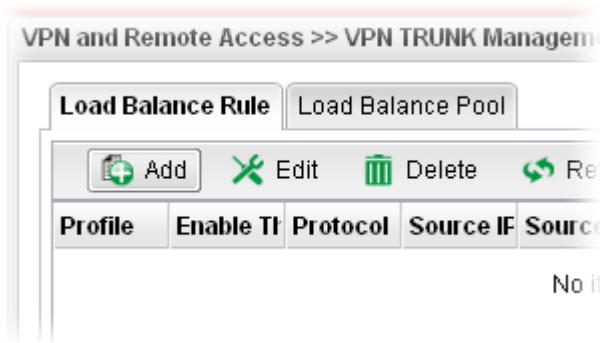
Each item will be explained as follows:

Item	Description
<b>Add</b>	Add a new profile.
<b>Edit</b>	Modify the selected profile. To edit a profile, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected profile.
<b>Delete</b>	Remove the selected profile. To delete a profile, simply select the one you want to delete and click the <b>Delete</b> button.
<b>Refresh</b>	Renew current web page.
<b>Profile</b>	Display the name of the profile.
<b>Enable This Profile</b>	Display the status of the profile. False means disabled; True means enabled.
<b>Protocol</b>	Display the protocol configured by such profile.
<b>Source IP Address</b>	Display the source IP address specified for this profile.
<b>Source Mask</b>	Display the subnet mask address specified for the source IP of this entry.

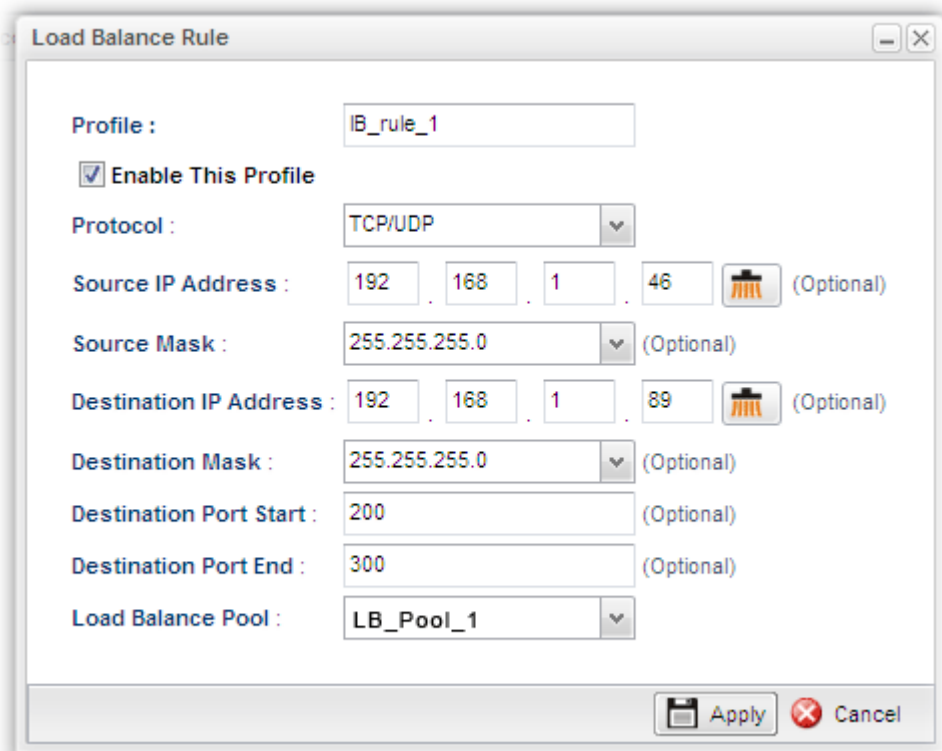
<b>Destination IP Address</b>	Display the destination IP address specified for this entry.
<b>Destination Mask</b>	Display the subnet mask address specified for the destination IP of this entry.
<b>Destination Port Start</b>	Display the start point specified in the <b>Dest Port Range</b> for this entry.
<b>Destination Port End</b>	Display the end point specified in the <b>Dest Port Range</b> for this entry.
<b>Load Balance Pool</b>	Display the load balance pool selected for such rule.

### How to add a Load Balance Rule profile

1. Open **VPN and Remote Access >> VPN TRUNK Management** and click the **Load Balance Rule** tab.
2. Simply click the **Add** button.



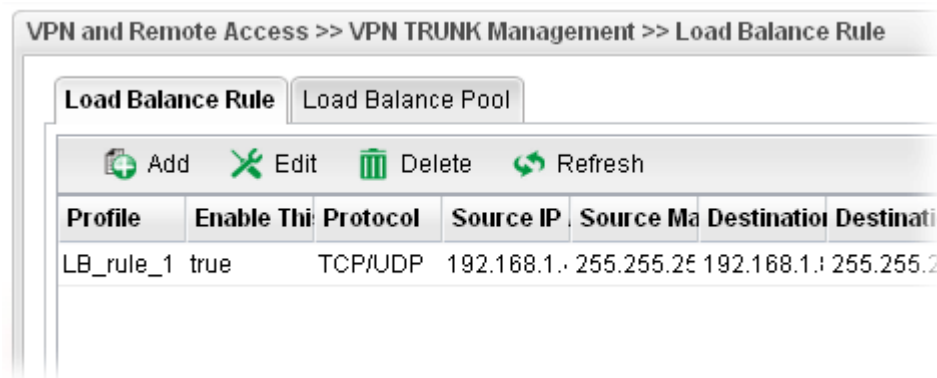
3. The following dialog will appear.



Available parameters are listed as follows:

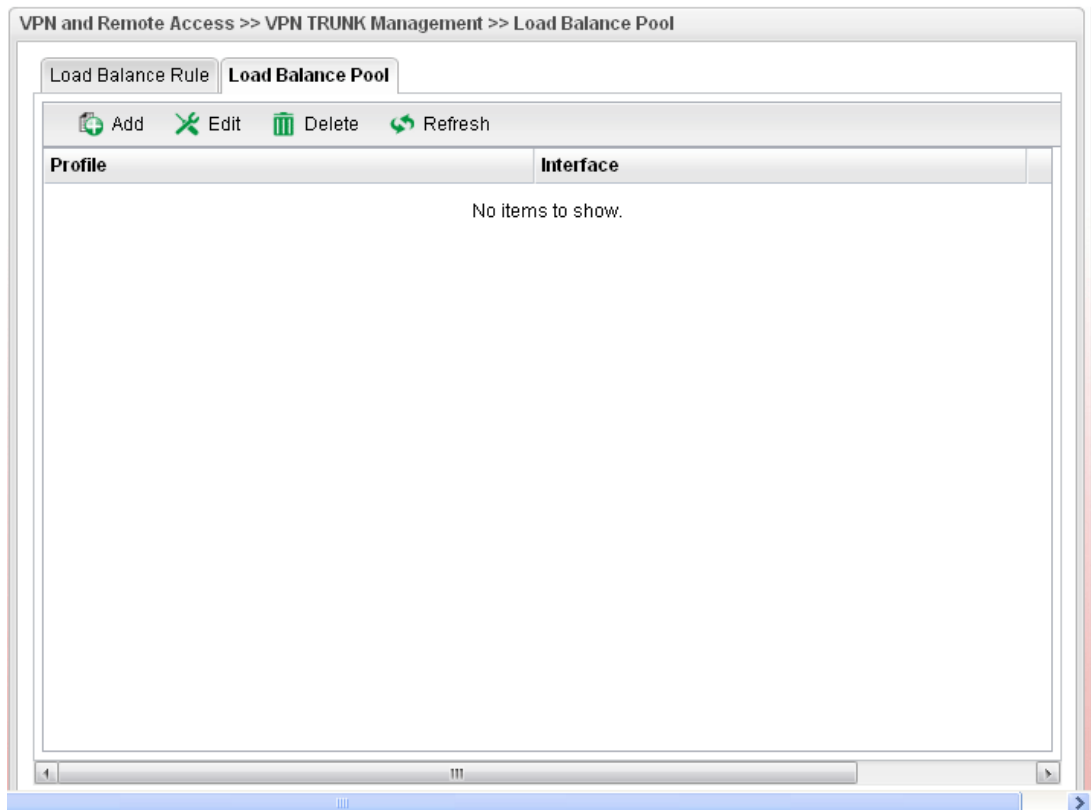
Item	Description
<b>Profile</b>	Type the name of the profile.
<b>Enable This Profile</b>	Check this box to enable such profile.
<b>Protocol</b>	Type the protocol configured by such profile.
<b>Source IP Address</b>	Type the source IP address specified for this profile.
<b>Source Mask</b>	Type the subnet mask address specified for the source IP.
<b>Destination IP Address</b>	Type the destination IP address specified for this entry.
<b>Destination Mask</b>	Type the subnet mask address specified for the destination IP.
<b>Destination Port Start</b>	Type the start point specified in the <b>Dest Port Range</b> .
<b>Destination Port End</b>	Type the end point specified in the <b>Dest Port Range</b> .
<b>Load Balance Pool</b>	Use the drop down list to choose one profile configured in load balance pool. Then, such rule will be applied by the pool.
<b>Apply</b>	Click it to save the configuration.
<b>Cancel</b>	Click it to exit the page without saving the configuration.

4. Enter all the settings and click **Apply**.
5. A new profile has been created.



## Load Balance Pool

This page allows the user to integrate **several** WAN profiles as a pool profile specified with the function of load balance or failover.



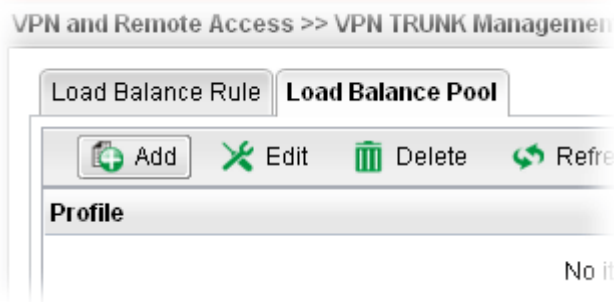
Each item will be explained as follows:

Item	Description
<b>Add</b>	Add a new profile.
<b>Edit</b>	Modify the selected profile. To edit a profile, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected profile.
<b>Delete</b>	Remove the selected profile. To delete a profile, simply select the one you want to delete and click the <b>Delete</b> button.
<b>Refresh</b>	Renew current web page.
<b>Profile</b>	Display the name of the profile.
<b>Interface</b>	Display the name of the Load Balance profile grouped under such pool profile.

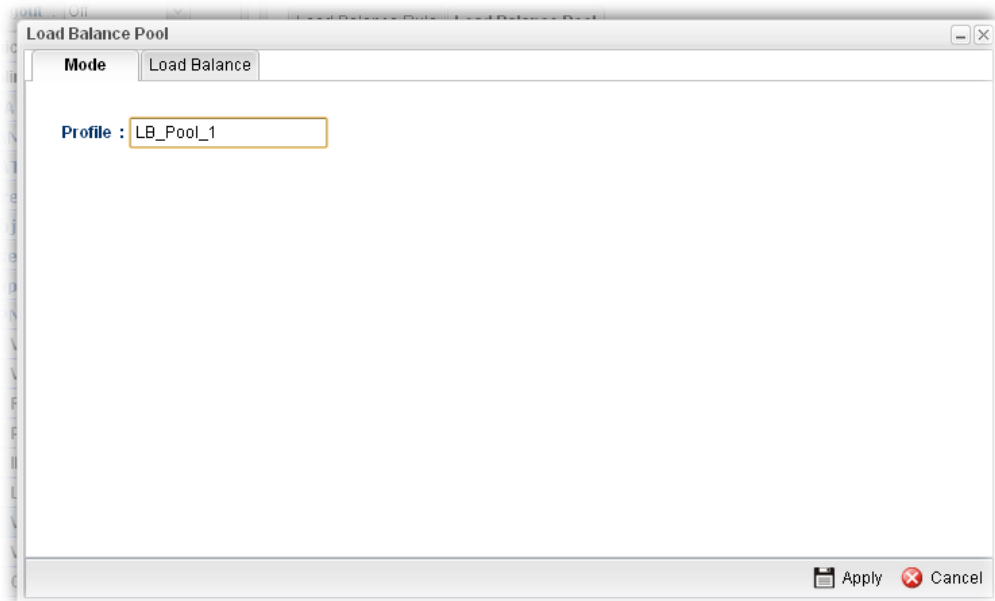
### How to add a Load Balance Pool Profile

1. Open **VPN and Remote Access >>VPN TRUNK Management** and click the **Load Balance Pool** tab.
2. Simply click the **Add** button.

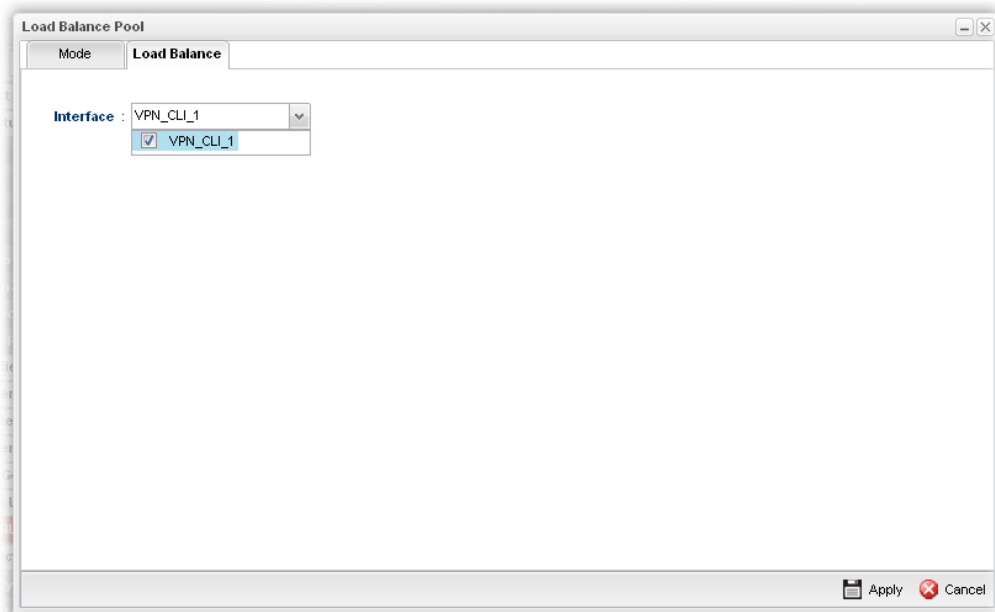




3. The following dialog will appear. Type the name of the profile (e.g., LB\_Pool\_1, within 10 characters including digit, letter, and underline) under the **Mode** tab.

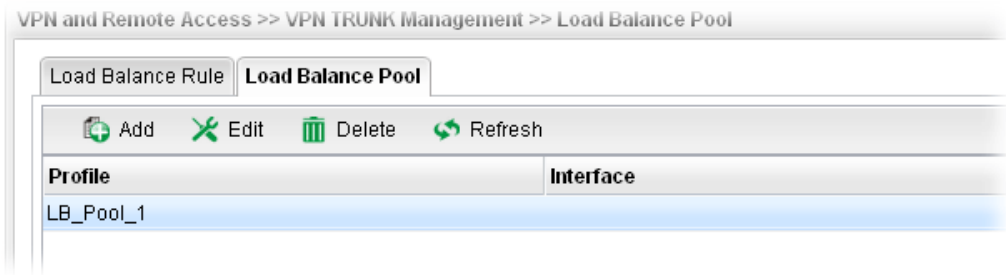


4. Click the **Load Balance** tab to open the following dialog.



If there is no selection for Interface option, please go to **VPN and Remote Access>>LAN to LAN** to create a new IPSec LAN to LAN profile with enabled GRE setting. Then, return to this page to specify the Interface option.

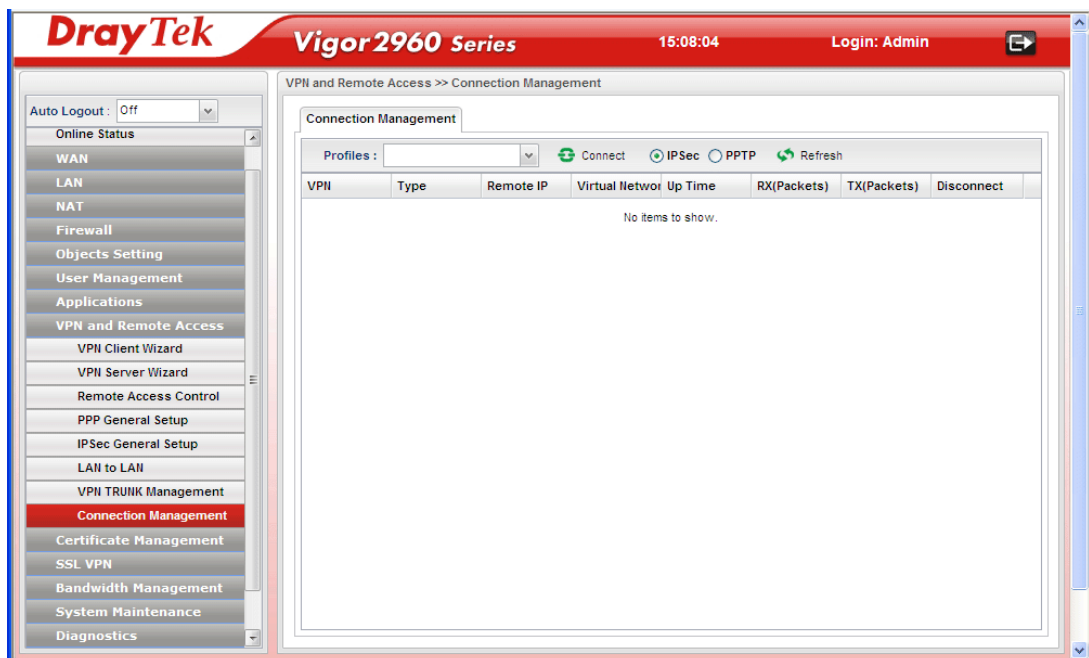
5. Enter all the settings and click **Apply**.
6. A new profile has been created.



Refer to Chapter 3, *How to Configure VPN Load Balance between Vigor2960 and Other Router* for getting more detailed information about Load Balance application.

#### 4.8.8 Connection Management

You can find the summary table of all VPN connections. You may disconnect any VPN connection by clicking **Disconnect** button.



Each item will be explained as follows:

Item	Description
<b>Profile</b>	This filed displays the profile configured in LAN-to-LAN (with Index number and VPN Server IP address). The VPN connection built by General Mode does not support VPN backup function.
<b>Connect</b>	Click this button to execute dial out function.
<b>IPSec</b>	Click it to perform IPSec VPN connection.
<b>PPTP</b>	Click it to perform PPTP VPN connection.
<b>Refresh</b>	Renew current web page.
<b>VPN</b>	Display the name of VPN profile.

<b>Type</b>	Display the connection type (PPTP or IPSec) for such VPN profile.
<b>Remote IP</b>	Display the remote IP configure by VPN profile.
<b>Virtual Network</b>	Display the virtual network established by such VPN profile.
<b>Up Time</b>	Display the connection time of this VPN tunnel.
<b>RX (Packets)</b>	Display the total received packets through this VPN.
<b>TX (Packets)</b>	Display the total transmitted packets through this VPN.
<b>Disconnect</b>	Terminate the VPN connection.

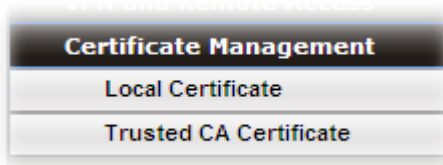
## 4.9 Certificate Management

A digital certificate works as an electronic ID, which is issued by a certification authority (CA). It contains information such as your name, a serial number, expiration dates etc., and the digital signature of the certificate-issuing authority so that a recipient can verify that the certificate is real. Here Vigor router support digital certificates conforming to standard X.509.

Any entity wants to utilize digital certificates should first request a certificate issued by a CA server. It should also retrieve certificates of other trusted CA servers so it can authenticate the peer with certificates issued by those trusted CA servers.

Here you can generate and manage the local digital certificates, and set trusted CA certificates. Remember to adjust the time of Vigor router before using the certificate so that you can get the correct valid period of certificate.

Below shows the menu items for Certificate Management.

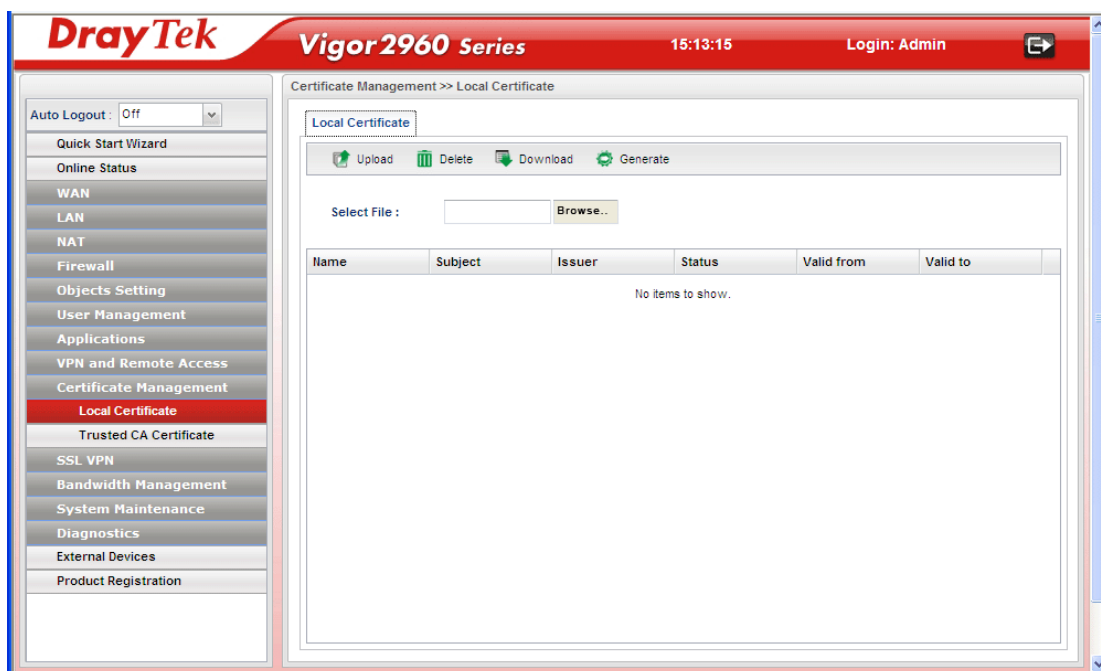


Local certificate is created by the end user and must be signed by a trusted CA center. Vigor2960 can serve as a trusted CA and is called with "Root CA". Therefore, any user can ask for certificate signed by Vigor2960.

When Vigor2960 serves as a Root CA, it can sign the certificates coming from the users. First, building a Root CA for Vigor2960 by clicking **Trusted CA Certificate**. Later, certificate coming from other users can be uploaded to Root CA (Vigor2960) and be signed by Vigor2960.

## 4.9.1 Local Certificate

This page allows users to generate certificate based on different work requests. Local certificate can be signed by itself or signed by a root CA (e.g., root CA on Vigor2960).

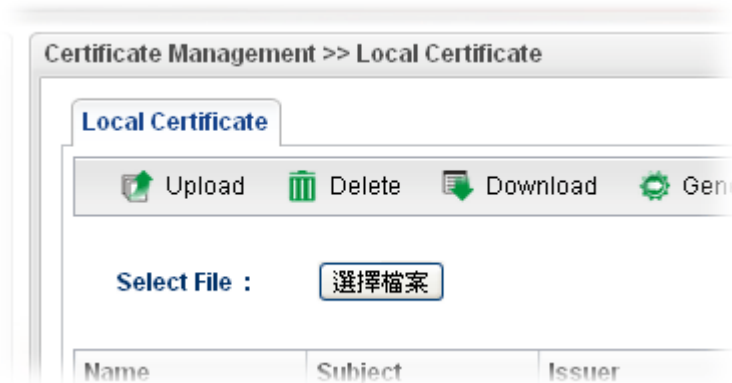


Each item will be explained as follows:

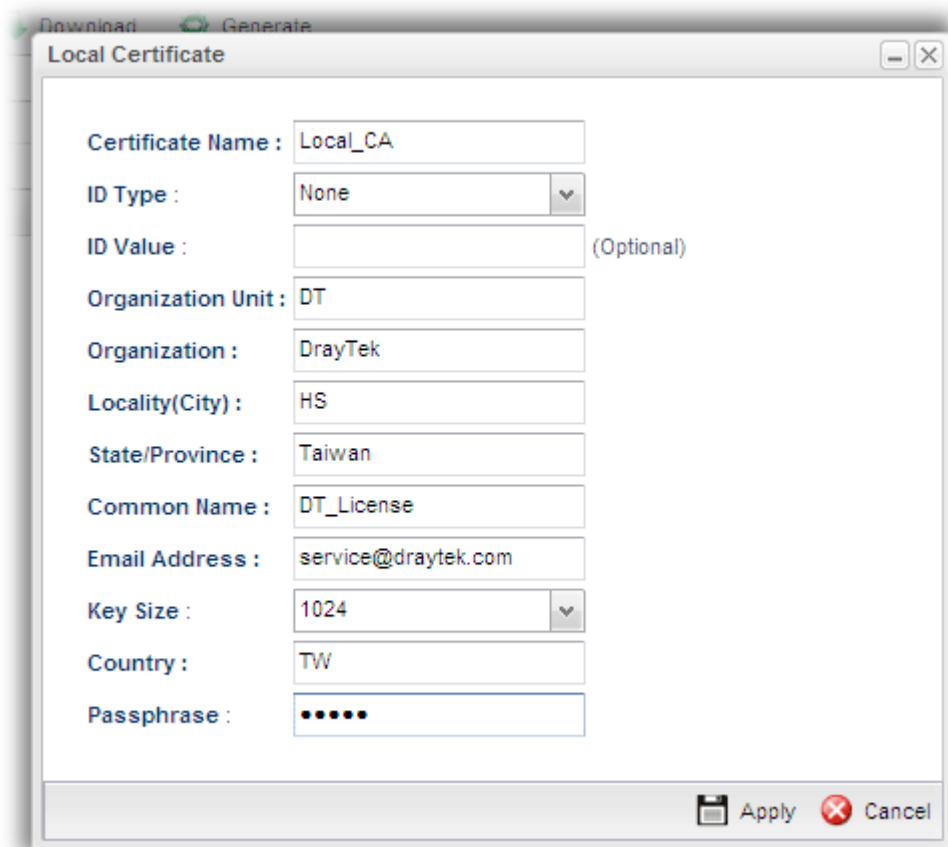
Item	Description
<b>Upload</b>	Allow you to upload current configuration to the host as a CA certificate.
<b>Delete</b>	Remove the selected item of Trusted CA listed below.
<b>Download</b>	Allow you to download an existing CA certificate to the router.
<b>Generate</b>	Open another web page for generating the local certificate.
<b>Selected File</b>	Use the <b>Browse..</b> button to specify a file to be used as trusted CA certificate.
<b>Name</b>	Display the name of trusted CA built.
<b>Subject</b>	Display the subject of the trusted CA built.
<b>Issuer</b>	Display the issuer of the trusted CA built.
<b>Status</b>	Display the status of the trusted CA built.
<b>Valid From</b>	Display the starting point of the valid time of trusted CA.
<b>Valid To</b>	Display the end point of the valid time of trusted CA.

## How to build a local certificate

1. Open **Certificate Management >> Local Certificate**.
2. Simply click the **Generate** button.

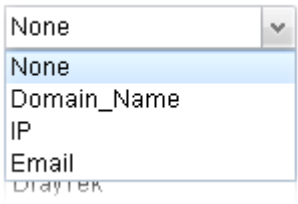


3. The following dialog will appear.

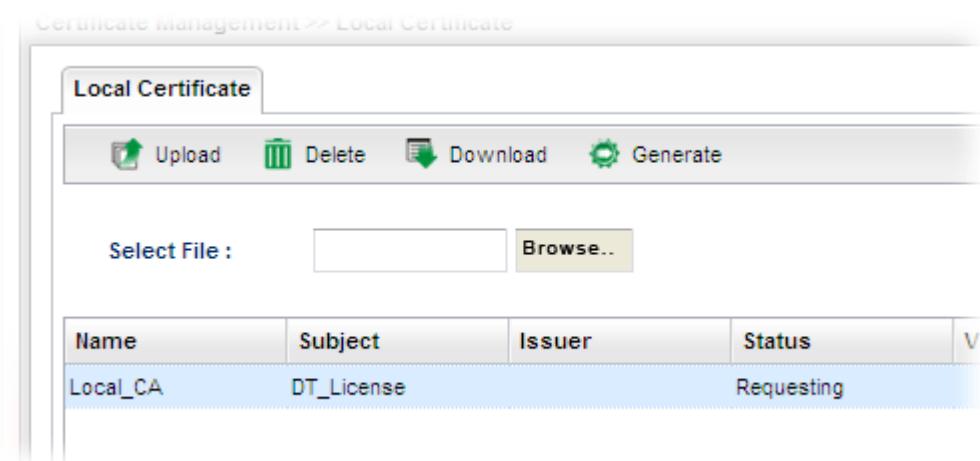


Available parameters are listed as follows:

Item	Description
<b>Certificate Name</b>	Type the name of the local certificate.
<b>ID Type</b>	The ID type for such certificate. There are four types: <b>Domain Name:</b> Certificated by domain name. <b>IP:</b> Certificated by IP address.

	<p><b>Email:</b> Certificated by email address.  <b>None:</b> Do not enter an ID value.</p> 
<b>ID Value</b>	<p>The ID value is determined by the <b>ID Type</b> selected for such certificate.  For example, if you choose <b>Domain_Name</b> as the ID Type, please type the domain name in this field.</p>
<b>Organization Unit</b>	Type a description for the organization unit.
<b>Organization</b>	Type the name of the organization.
<b>Locality (City)</b>	Type the name of the city for such certificate.
<b>State/Province</b>	Type the name of the state /province for such certificate.
<b>Common Name</b>	Type the common name for such certificate.
<b>Email Address</b>	Type the e-mail address for such certificate.
<b>Key Size</b>	Choose one of the key sizes for such certificate.
<b>Country</b>	Type the name of the country that such certificate located.
<b>Passphrase</b>	Such string will be used for confirmation while signing remote CA. It is similar to a password but generally it is longer for security.
<b>Apply</b>	Click it to create a new local certificate based on the configuration here.
<b>Cancel</b>	Click it to exit the web page without saving the configuration.

4. Enter all the settings and click **Apply**.
5. A new generated Local Certificate has been created.

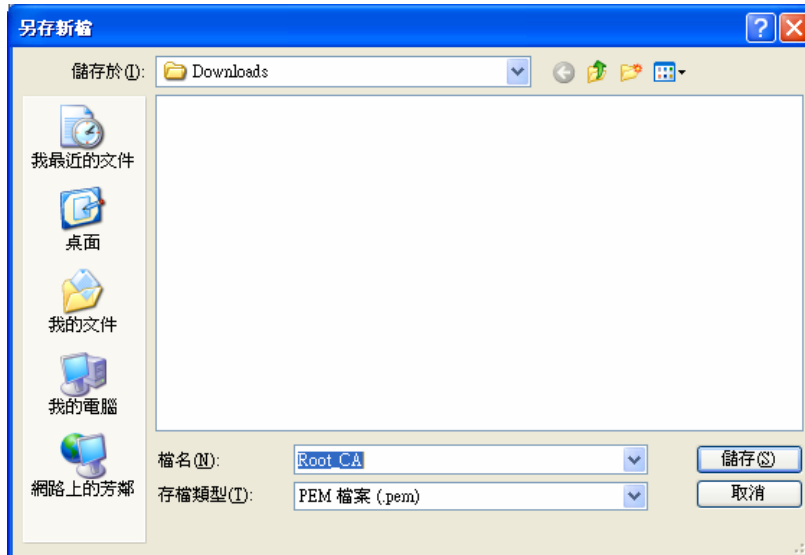


## How to download a local certificate into specified location

Vigor router allows you to generate a certificate request and submit it the CA server. After generating a local certificate, you can download it as a file into any place you want.

If you have already gotten a certificate from a third party, you may import it directly. The supported types are PKCS12 Certificate and Certificate with a private key.

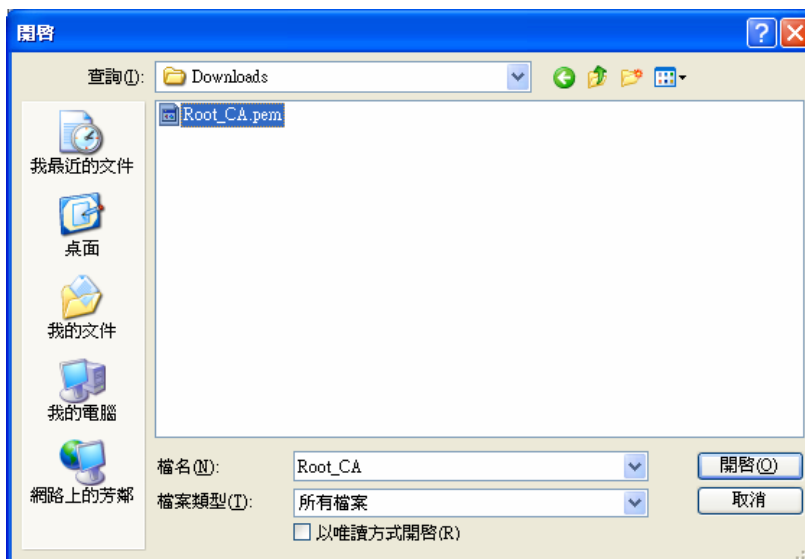
1. Open **Certificate Management>> Local Certificate**.
2. Click the **Download** button.



3. Click **Save**. The file will be stored under the folder you specified above.

## How to upload a local certificate

1. Open **Certificate Management>> Local Certificate**.
2. Click the **Browse..** button to import a CA file stored on the computer as the certification information.

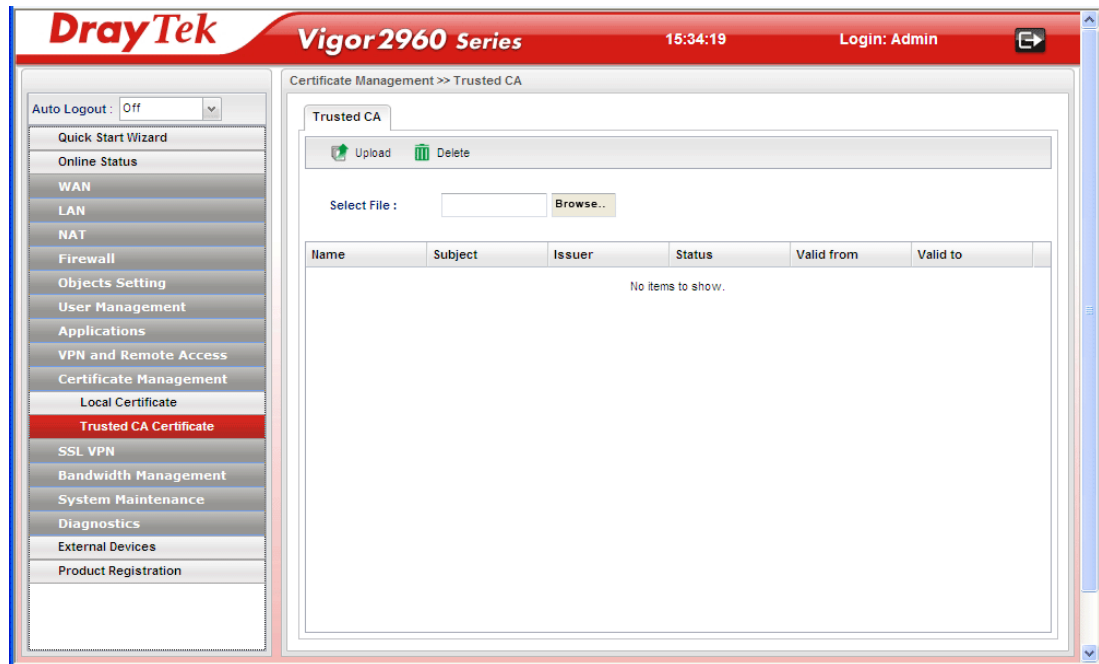


3. Click **Open** for the selected CA file.
4. Click **Upload**. The system will start to upload the selected file.

## 4.9.2 Trusted CA Certificate

This page allows you to build a RootCA certificate for Vigor2960.

RootCA can be deleted but not edited. If you want to modify the settings for a RootCA, please delete the one and create another one by clicking **Build RootCA**.



Each item will be explained as follows:

Item	Description
<b>Upload</b>	Allow you to upload current configuration to the host as a CA certificate.
<b>Delete</b>	Remove the selected item of trusted CA listed below.
<b>Selected File</b>	Use the <b>Browse..</b> button to specify a file to be used as trusted CA certificate.
<b>Name</b>	Display the name of trusted certificate built.
<b>Subject</b>	Display the subject of trusted certificate built.
<b>Issuer</b>	Display the issuer of trusted certificate built.
<b>Status</b>	Display the status of trusted certificate built.
<b>Valid From</b>	Display the starting point of the valid time of trusted certificate.
<b>Valid To</b>	Display the end point of the valid time of trusted certificate.

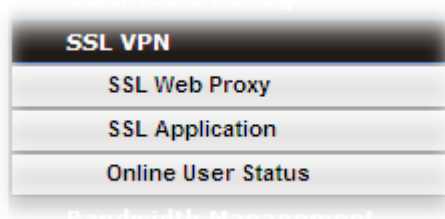


## 4.10 SSL VPN

An SSL VPN (Secure Sockets Layer virtual private network) is a form of VPN that can be used with a standard Web browser.

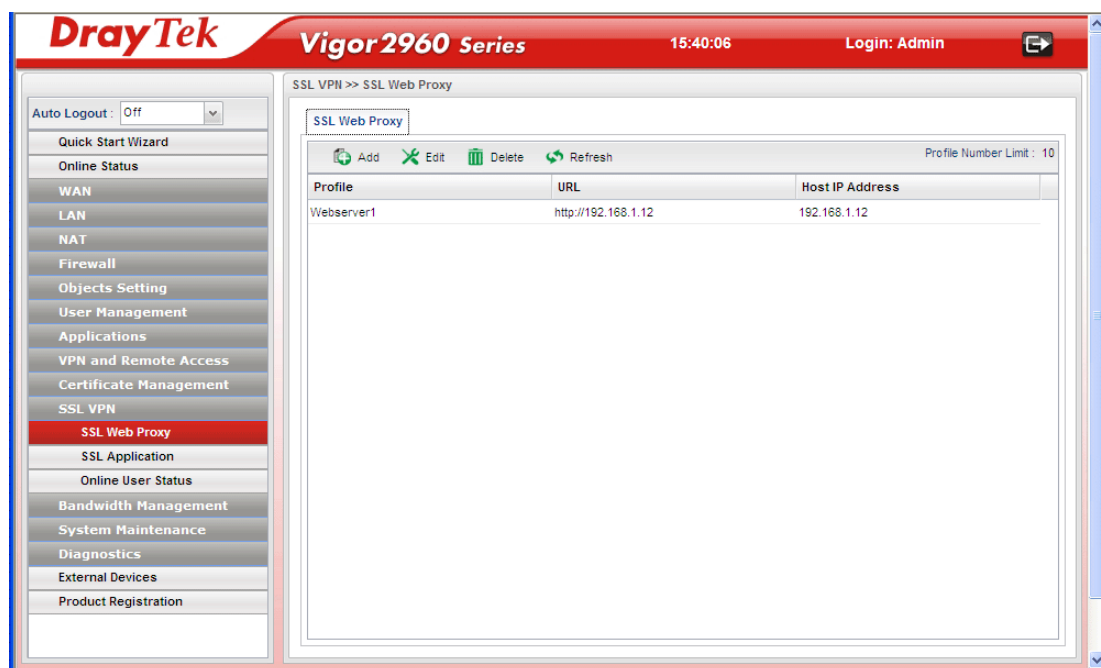
There are two benefits that SSL VPN provides:

- It is not necessary for users to preinstall VPN client software for executing SSL VPN connection.
- There are less restrictions for the data encrypted through SSL VPN in comparing with traditional VPN.



### 4.10.1 SSL Web Proxy

SSL Web Proxy will allow the remote users to access the internal web sites over SSL.



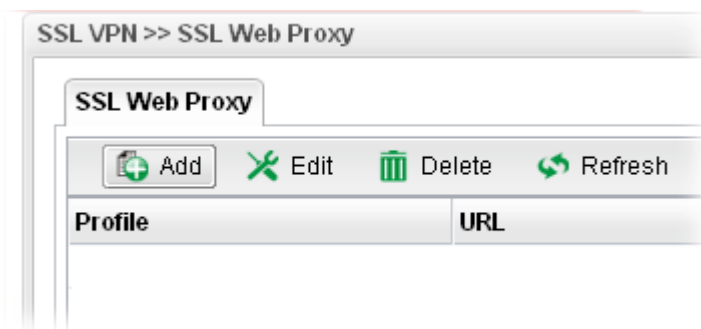
Each item will be explained as follows:

Item	Description
Add	Add a new profile.
Edit	Modify the selected profile. To edit a profile, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected profile.

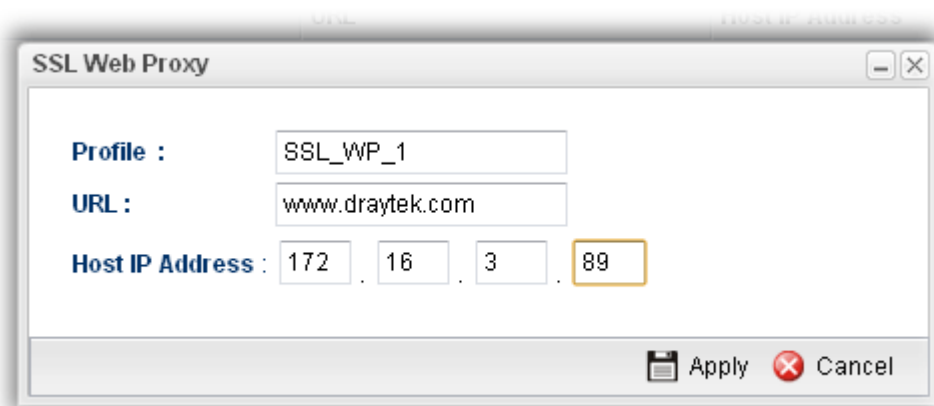
<b>Delete</b>	Remove the selected profile. To delete a profile, simply select the one you want to delete and click the <b>Delete</b> button.
<b>Refresh</b>	Renew current web page.
<b>Profile</b>	Display the name of the profile that you create.
<b>URL</b>	Display the URL.
<b>Host IP Address</b>	Display the IP address for the Host.

### How to create a new SSL Web Proxy

1. Open SSL VPN>> SSL Web Proxy.
2. Simply click the **Add** button.



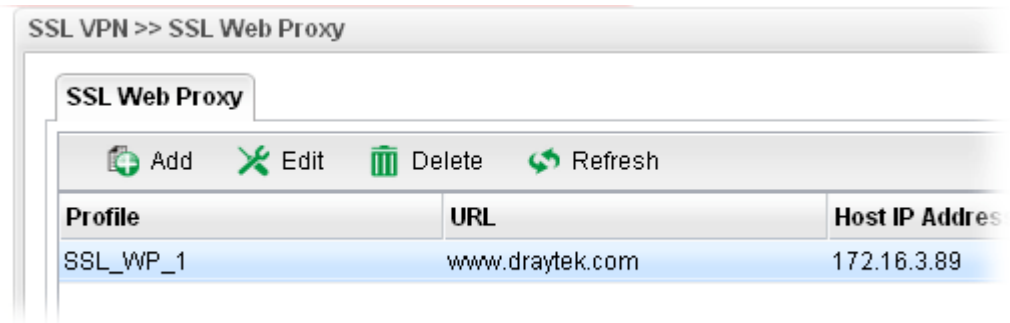
3. The following dialog will appear.



Available parameters are listed as follows:

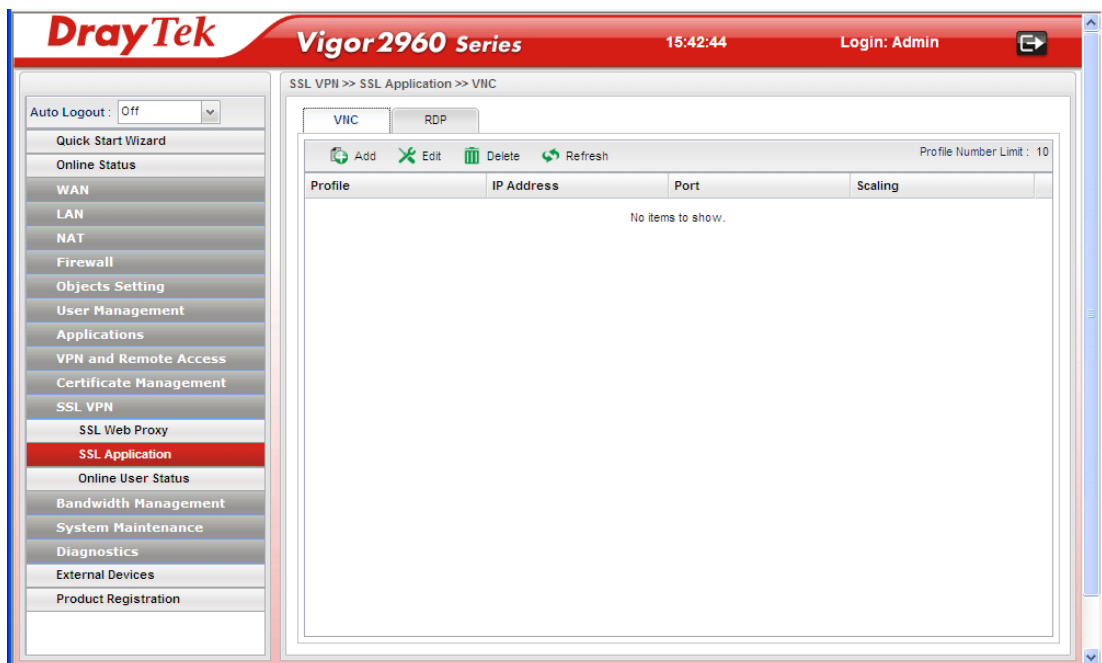
Item	Description
<b>Profile</b>	Type name of the profile.
<b>URL</b>	Type the address (function variation or IP address) or path of the proxy server.
<b>Host IP Address</b>	If you type function variation as URL, you have to type corresponding IP address in this field. Such field must match with URL setting.
<b>Apply</b>	Click it to save the configuration.
<b>Cancel</b>	Click it to exit the page without saving the configuration.

4. Enter all the settings and click **Apply**.
5. A new SSL Web Proxy profile has been created.



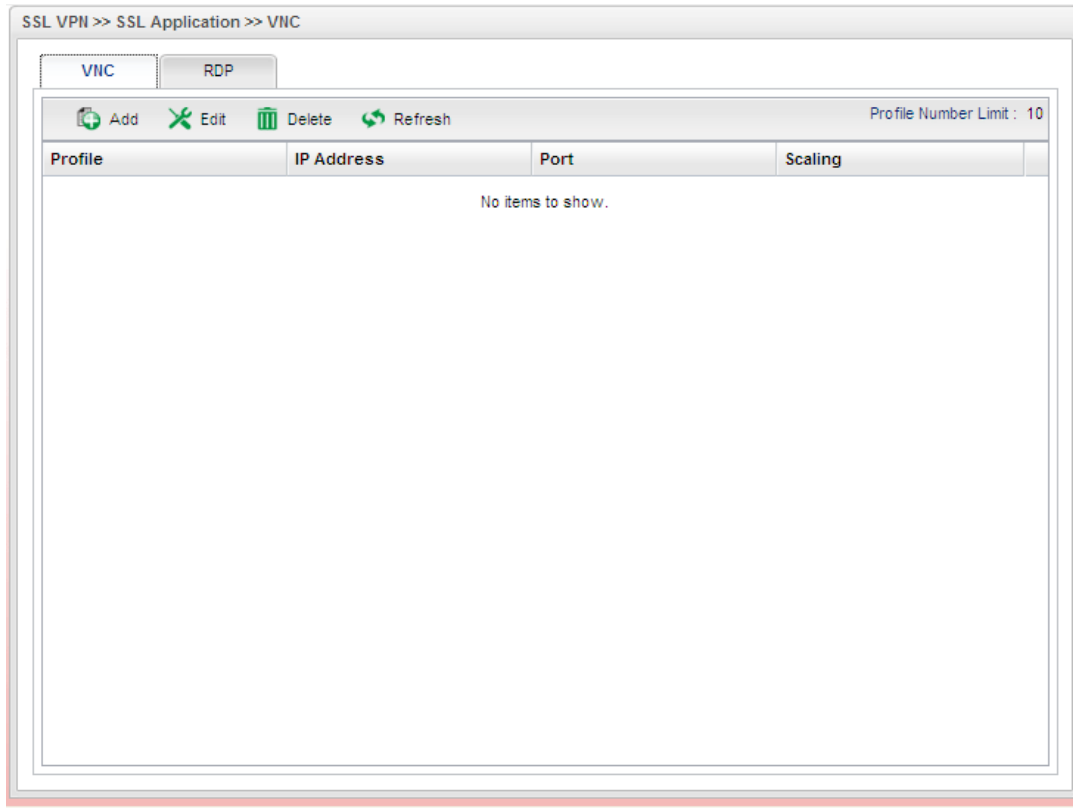
#### 4.10.2 SSL Application

It provides a secure and flexible solution for network resources, including VNC (Virtual Network Computer) /RDP (Remote Desktop Protocol) /SAMBA, to any remote user with access to Internet and a web browser.



## VNC

VNC stands for **Virtual Network Computing**. It allows you to access and control a remote PC through VNC protocol.



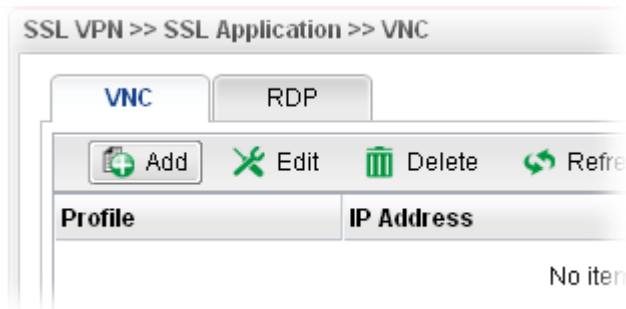
Each item will be explained as follows:

Item	Description
<b>Add</b>	Add a new profile.
<b>Edit</b>	Modify the selected profile. To edit a profile, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected profile.
<b>Delete</b>	Remove the selected profile. To delete a profile, simply select the one you want to delete and click the <b>Delete</b> button.
<b>Refresh</b>	Renew current web page.
<b>Profile</b>	Display the name of the profile that you create.
<b>IP Address</b>	Display the IP address for this protocol.
<b>Port</b>	Display the port used for this protocol.
<b>Scaling</b>	Display the percentage for such application.

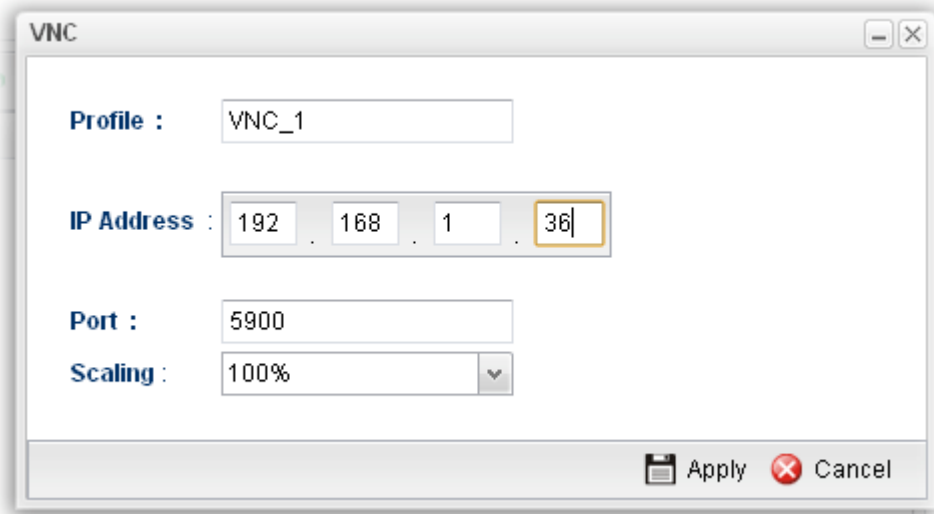
### How to create a new SSL Application with VNC protocol

1. Open SSL VPN>> SSL Application and click the VNC tab.

- Simply click the **Add** button.



- The following dialog will appear.

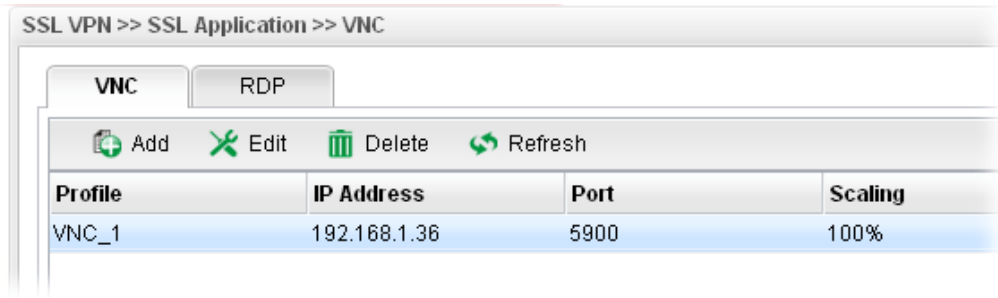


Available parameters are listed as follows:

Item	Description
<b>Profile</b>	Type the name of the profile that you create.
<b>IP Address</b>	Type the IP address for this protocol.
<b>Port</b>	Specify the port used for this protocol. The default setting is 5900.
<b>Scaling</b>	Chose the percentage (100%, 80%, 60%) for such application.
<b>Apply</b>	Click it to save the configuration.
<b>Cancel</b>	Click it to exit the page without saving the configuration.

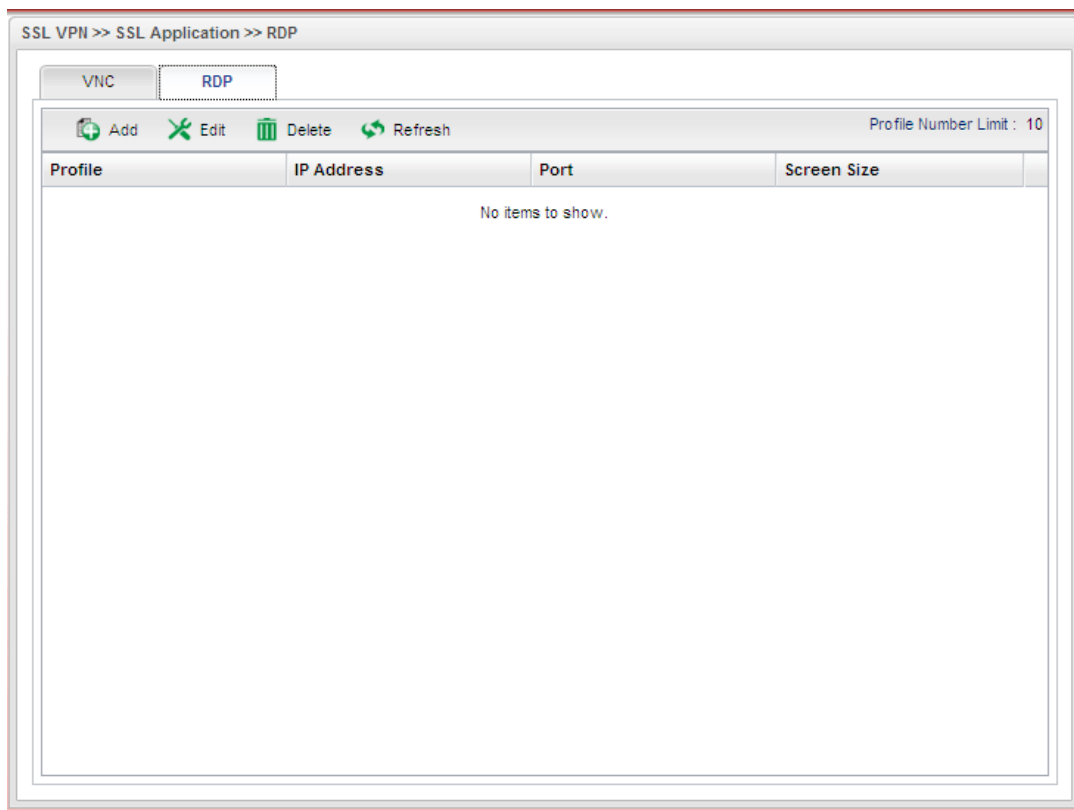
- Enter all the settings and click **Apply**.

- A new SSL Application profile has been created.



## RDP

**RDP** stands for **Remote Desktop Protocol**. It allows you to access and control a remote PC through RDP protocol.



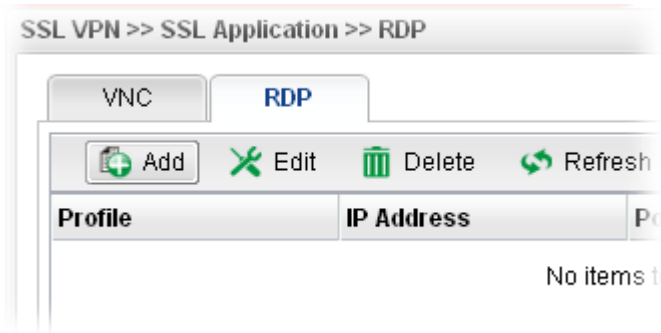
Each item will be explained as follows:

Item	Description
<b>Add</b>	Add a new profile.
<b>Edit</b>	Modify the selected profile. To edit a profile, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected profile.
<b>Delete</b>	Remove the selected profile. To delete a profile, simply select the one you want to delete and click the <b>Delete</b> button.

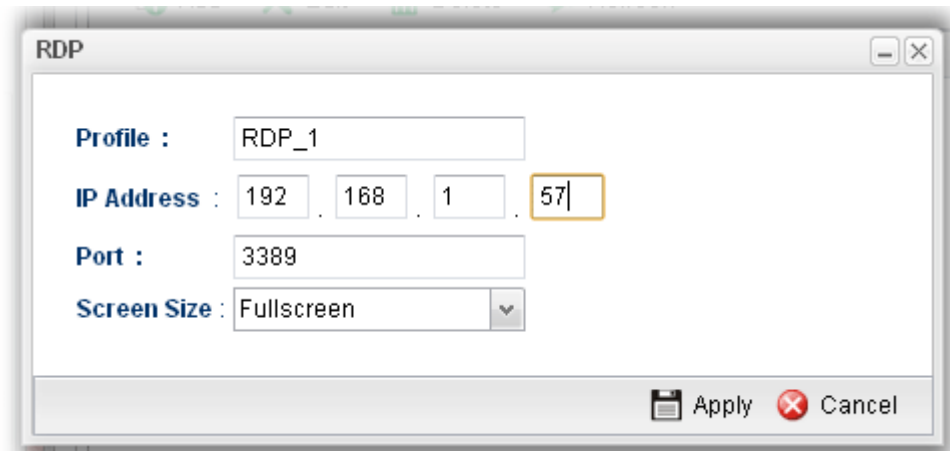
<b>Refresh</b>	Renew current web page.
<b>Profile</b>	Display the name of the profile that you create.
<b>IP Address</b>	Display the IP address for this protocol.
<b>Port</b>	Display the port used for this protocol.
<b>Screen Size</b>	Display the screen size for such application.

### How to create a new SSL Application with RDP protocol

1. Open **SSL VPN >> SSL Application** and click the **RDP** tab.
2. Simply click the **Add** button.



3. The following dialog will appear.

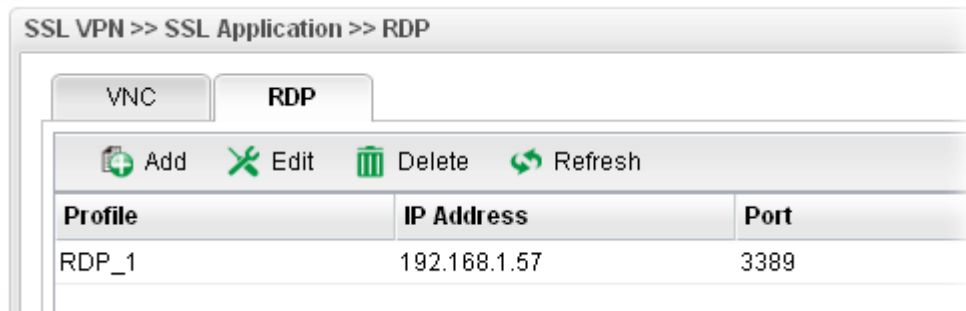


Available parameters are listed as follows:

Item	Description
<b>Profile</b>	Type the name of the profile that you create.
<b>IP Address</b>	Type the IP address for this protocol.
<b>Port</b>	Specify the port used for this protocol.
<b>Screen Size</b>	Chose the screen size for such application.
<b>Apply</b>	Click it to save the configuration.
<b>Cancel</b>	Click it to exit the page without saving the configuration.

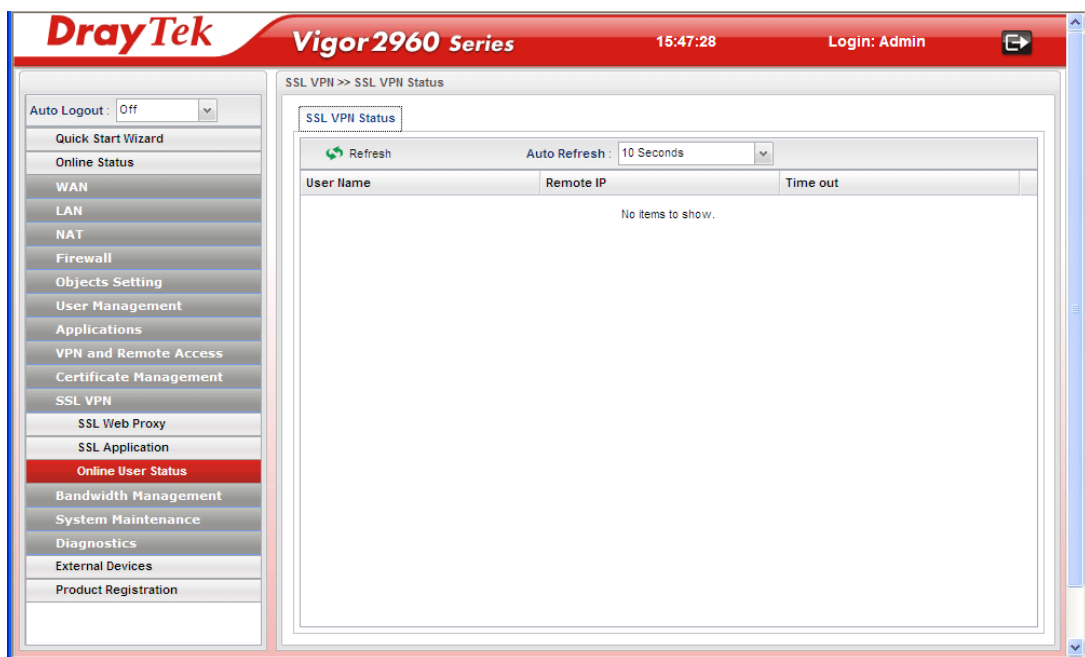
4. Enter all the settings and click **Apply**.

- A new SSL Application profile has been created.



### 4.10.3 Online User Status

If you have finished the configuration of SSL Web Proxy (server), users can find out corresponding settings when they access into Draytek SSL VPN portal interface.



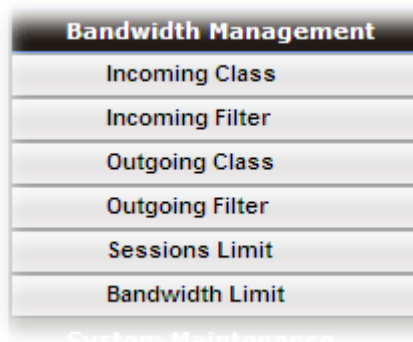
Each item will be explained as follows:

Item	Description
<b>Refresh</b>	Renew current web page.
<b>Auto Refresh</b>	Specify the interval of refresh time to obtain the latest status. The information will update immediately when the Refresh button is clicked.
<b>User Name</b>	Display current user who visit SSL VPN server.
<b>Remote IP</b>	Display the IP address for the host.
<b>Time out</b>	Display the time remaining for logging out.



## 4.11 Bandwidth Management

Below shows the menu items for Bandwidth Management.



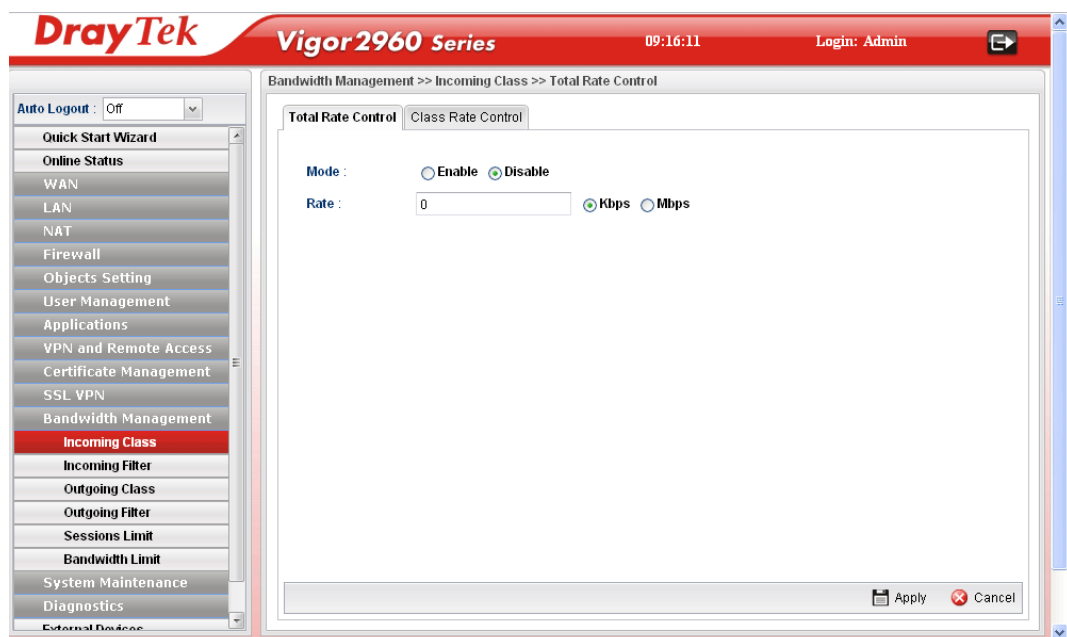
The QoS (Quality of Service) guaranteed technology in the Vigor router allows the network administrator to monitor, analyze, and allocate bandwidth for various types of network traffic in real-time and/or for business-critical traffic. Thus, timing-sensitive applications will not be impacted by web surfing traffic or other non-critical applications, such as file transfer. Without QoS-guaranteed control, there would be virtually no way to prioritize users/services or guarantee allocation of finite bandwidth resources to network or servers for supporting timing-sensitive and mission-critical network applications, such as VoIP (Voice over IP) and online gaming applications.

Differentiated quality of service is therefore one of the most important issues over the Internet infrastructure. In Vigor router, DSCP (Differentiated Service Code Point) support is also taken into consideration in the design of the QoS-guaranteed control module.

The QoS function handles incoming and outgoing classes independently. Users can configure incoming or outgoing separately without any impact on the other.

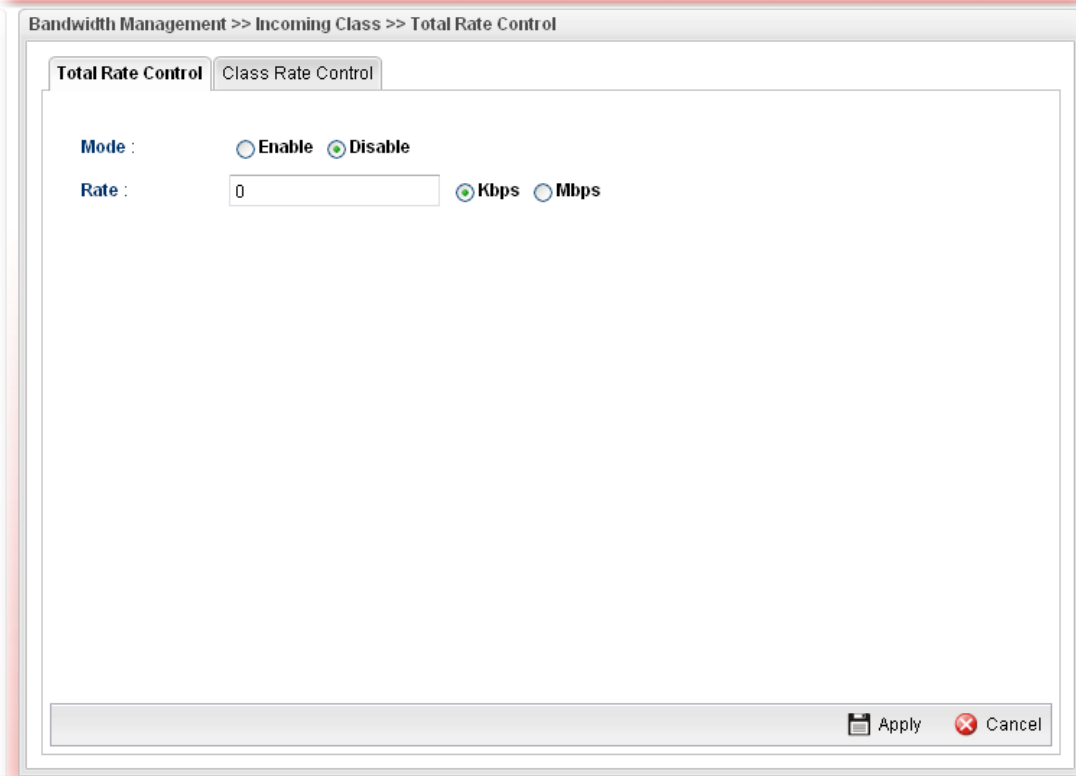
### 4.11.1 Incoming Class

Incoming Class Setup allows you to configure bandwidth percentage for data and voice signals transmission. Click the **Bandwidth Management** option and choose **Incoming Class**.



## Total Rate Control

This page can set the total rate of incoming data for the QoS policer.



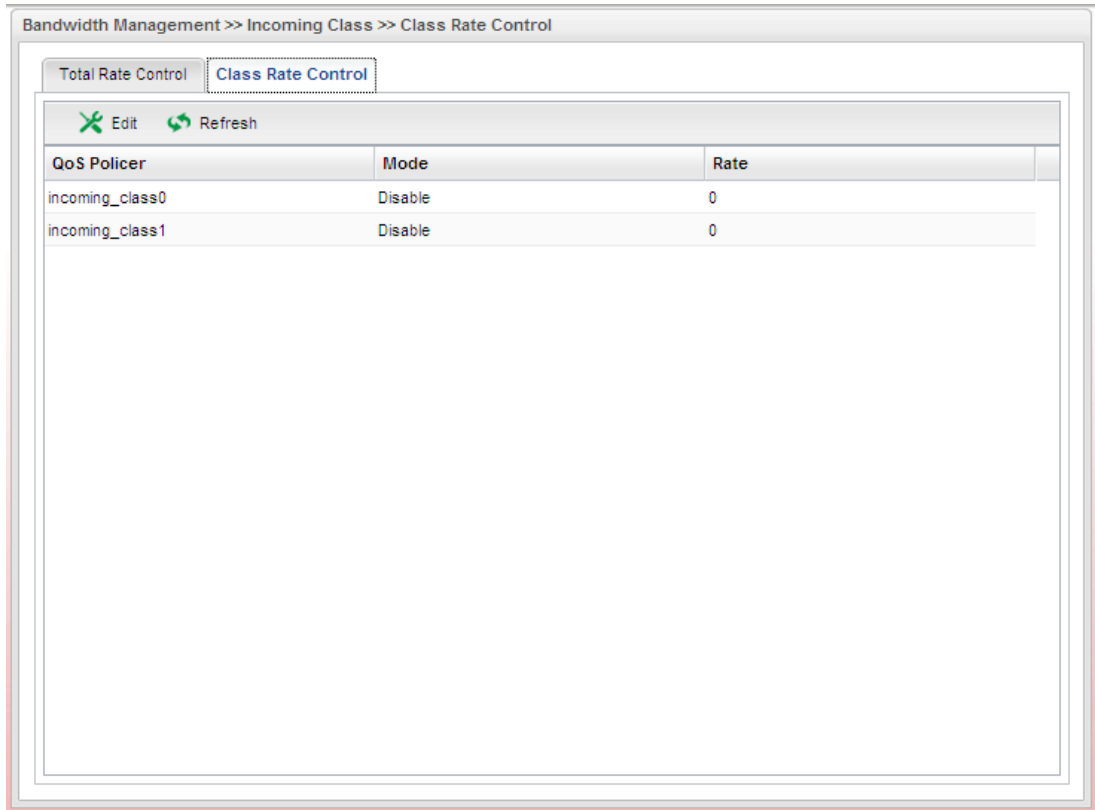
The screenshot shows a web interface window titled "Bandwidth Management >> Incoming Class >> Total Rate Control". Inside the window, there are two tabs: "Total Rate Control" (which is active) and "Class Rate Control". Under the "Total Rate Control" tab, there are two sections: "Mode" and "Rate". The "Mode" section has two radio buttons: "Enable" (which is unselected) and "Disable" (which is selected). The "Rate" section has a text input field containing the number "0" and two radio buttons: "Kbps" (which is selected) and "Mbps" (which is unselected). At the bottom right of the window, there are two buttons: "Apply" (with a floppy disk icon) and "Cancel" (with a red X icon).

Available parameters are listed as follows:

Item	Description
Mode	Click <b>Enable</b> to enable such function.
Rate	Type the number as the total transmission rate for the incoming data.
Apply	Click it to save the configuration.
Cancel	Click it to discard the settings configured in this page.

## Class Rate Control

This page allows you to edit the incoming class rate for the QoS policer.

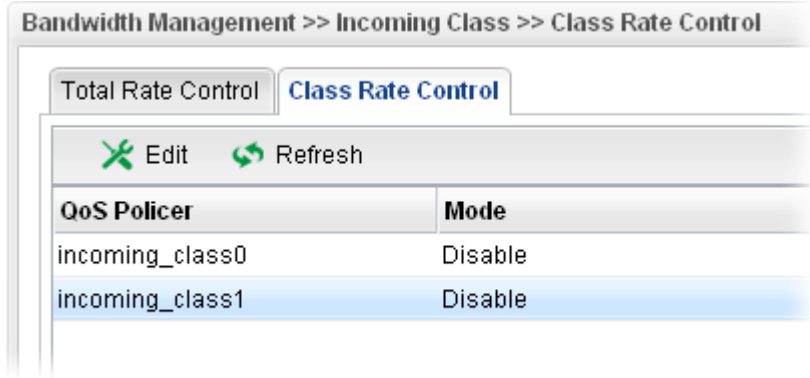


Each item will be explained as follows:

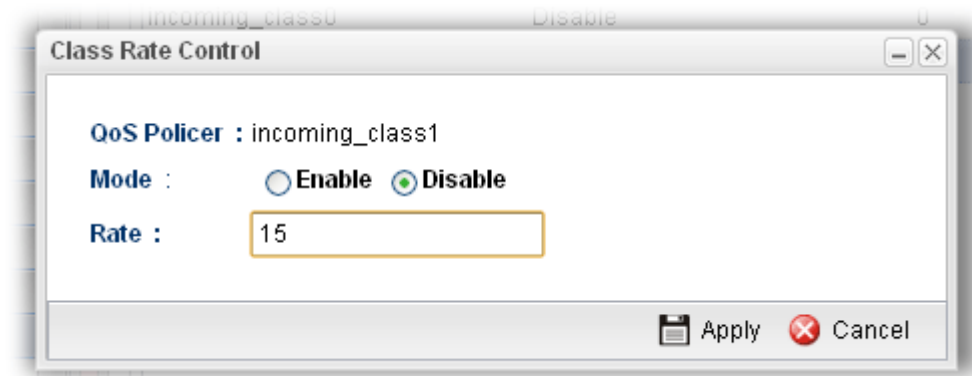
Item	Description
<b>Edit</b>	Modify the selected policy. To edit a profile, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected policy.
<b>Refresh</b>	Renew current web page.
<b>QoS Policer</b>	Display the name of the QoS Policer.
<b>Mode</b>	Display the status of QoS Policer.
<b>Rate</b>	Display the rate of QoS Policer.

## How to edit the incoming class rate for the QoS policer

1. Open **Bandwidth Management >> Incoming Class** and click the **Class Rate Control** tab.
2. Choose one of the incoming class rates and click the **Edit** button.



3. The following dialog will appear.

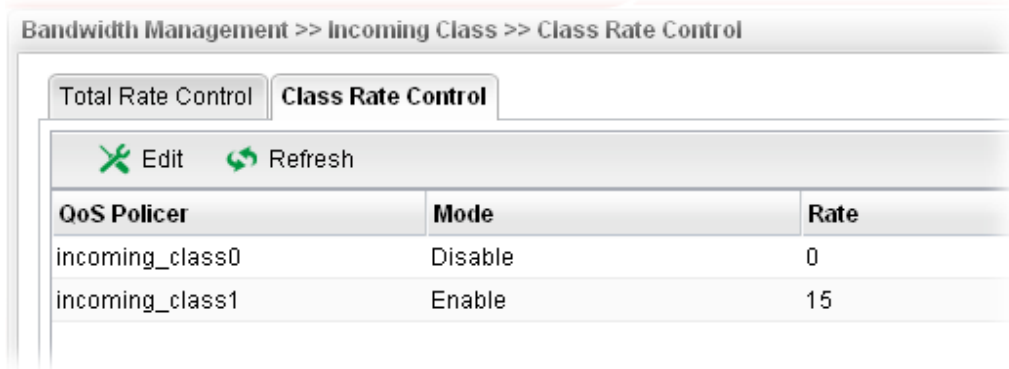


Available parameters are listed as follows:

Item	Description
<b>QoS Policer</b>	Display the name of the incoming class profile.
<b>Mode</b>	Click Enable to invoke such incoming class profile.
<b>Rate</b>	Type the number of rate for such profile.
<b>Apply</b>	Click it to save the configuration and exit the page.
<b>Cancel</b>	Click it to exit the dialog without saving the configuration.

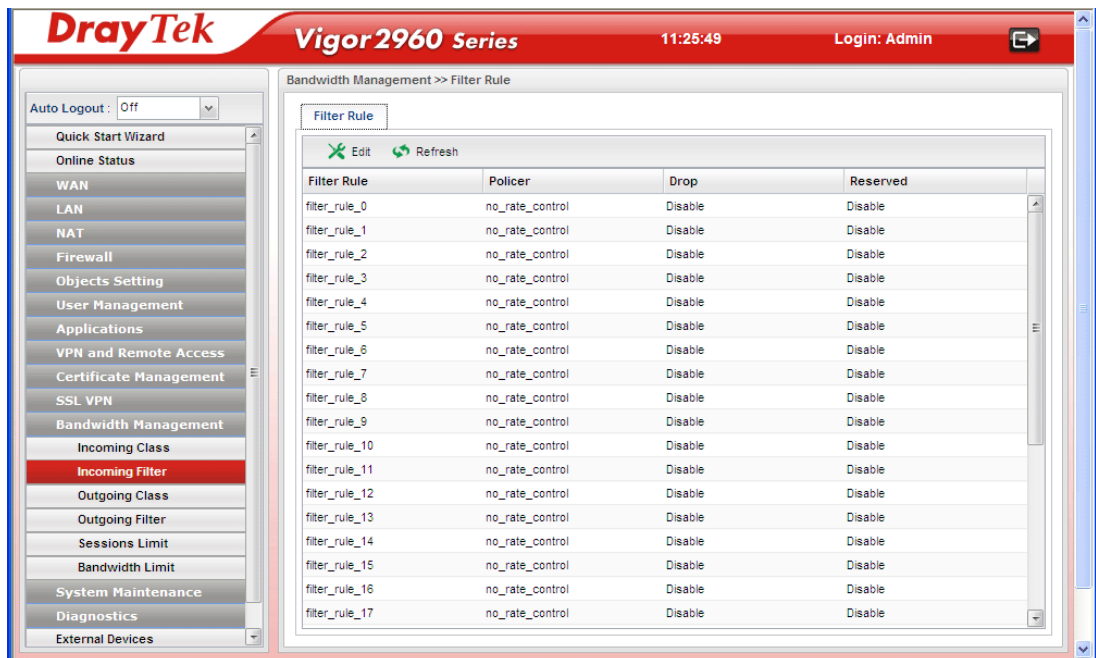
4. Enter all the settings and click **Apply**.

5. The **QoS Policer** profile has been modified.



#### 4.11.2 Incoming Filter

There are 30 filter rules for incoming data that can be configured in such page.



Each item will be explained as follows:

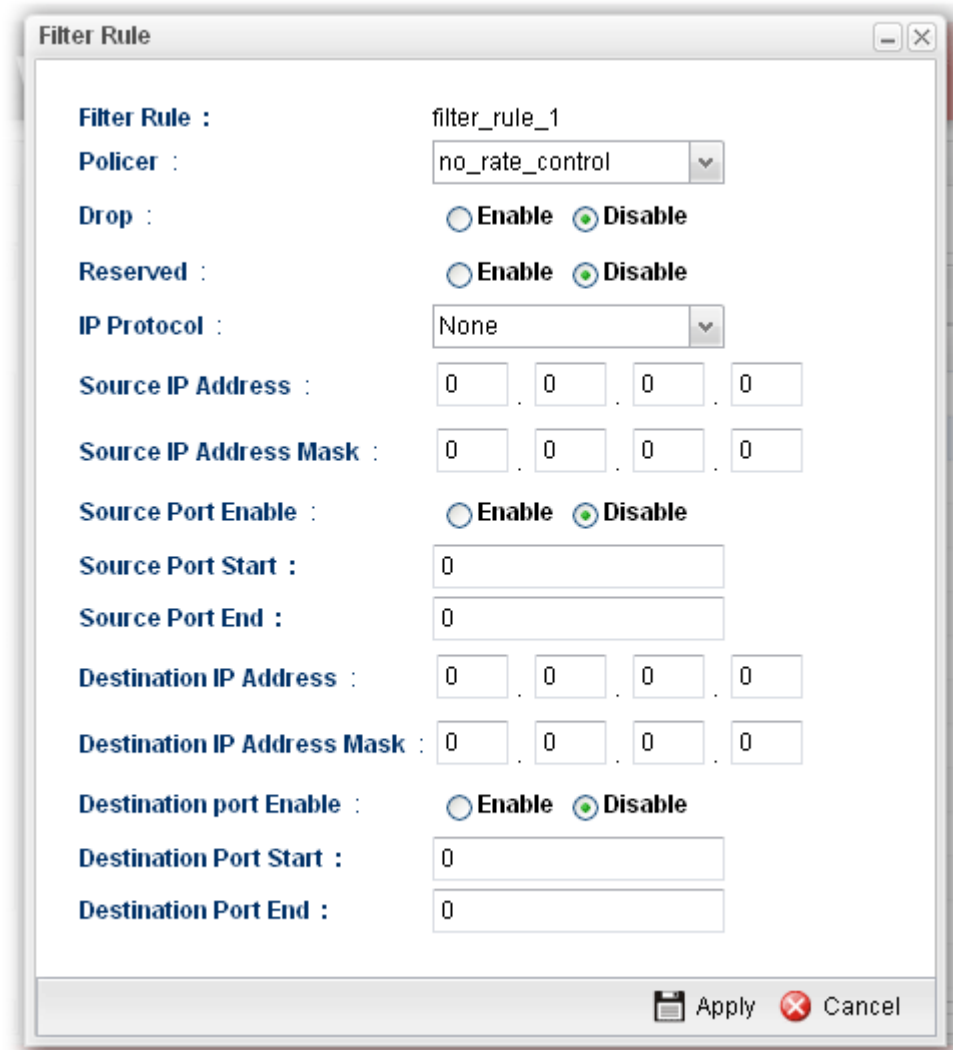
Item	Description
<b>Edit</b>	Modify the selected policy. To edit a profile, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected policy.
<b>Refresh</b>	Renew current web page.
<b>Filter Rule</b>	Display the name of the filter rule.
<b>Policer</b>	Display the name of filter Policer.
<b>Drop</b>	Display the status for the packet to be discarded or not.
<b>Reserved</b>	Display the status for the packet to be kept in the buffer or not.

## How to edit the incoming filter for the QoS policer

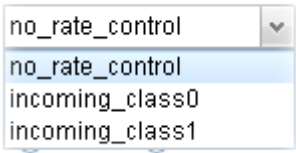
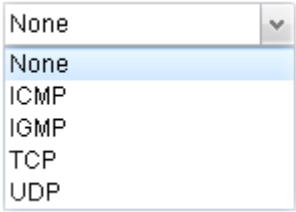
1. Open **Bandwidth Management >> Incoming Filter**.
2. Choose one of the filter rules and click the **Edit** button.



3. The following dialog will appear.



Available parameters are listed as follows:

Item	Description
<b>Filter Rule</b>	Display the profile name of the filter rule.
<b>Policer</b>	Choose the QoS Policer profile to apply to such filter rule. 
<b>Drop</b>	Choose <b>Enable</b> to discard the packets which satisfy the condition of the filter rule.
<b>Reserved</b>	Choose <b>Enable</b> to keep the packets which satisfy the condition of the filter rule, even the system is busy. When both <b>Drop</b> and <b>Reserved</b> are set to <b>Enable</b> , the priority of <b>Drop</b> is higher than <b>Reserved</b> .
<b>IP Protocol</b>	Choose a protocol for such filter rule. 
<b>Source IP Address</b>	Type the source IP address for such incoming filter rule.
<b>Source IP Address Mask</b>	Type the mask address for the source IP address.
<b>Source Port Enable</b>	Choose <b>Enable</b> to restrict the source port value.
<b>Source Port Start</b>	Type the starting port number (0 - 65535) in the range of the source port.
<b>Source Port End</b>	Type the ending port number (0 - 65535) in the range of the source port.
<b>Destination IP Address</b>	Type the destination IP address for such incoming filter rule.
<b>Destination IP Address Mask</b>	Type the mask address for the destination IP address.
<b>Destination port Enable</b>	Choose <b>Enable</b> to restrict the destination port value.
<b>Destination Port Start</b>	Type the starting port number (0 - 65535) in the range of the destination port.
<b>Destination Port End</b>	Type the ending port number (0 - 65535) in the range of the destination port.
<b>Apply</b>	Click it to save the configuration and exit the page.

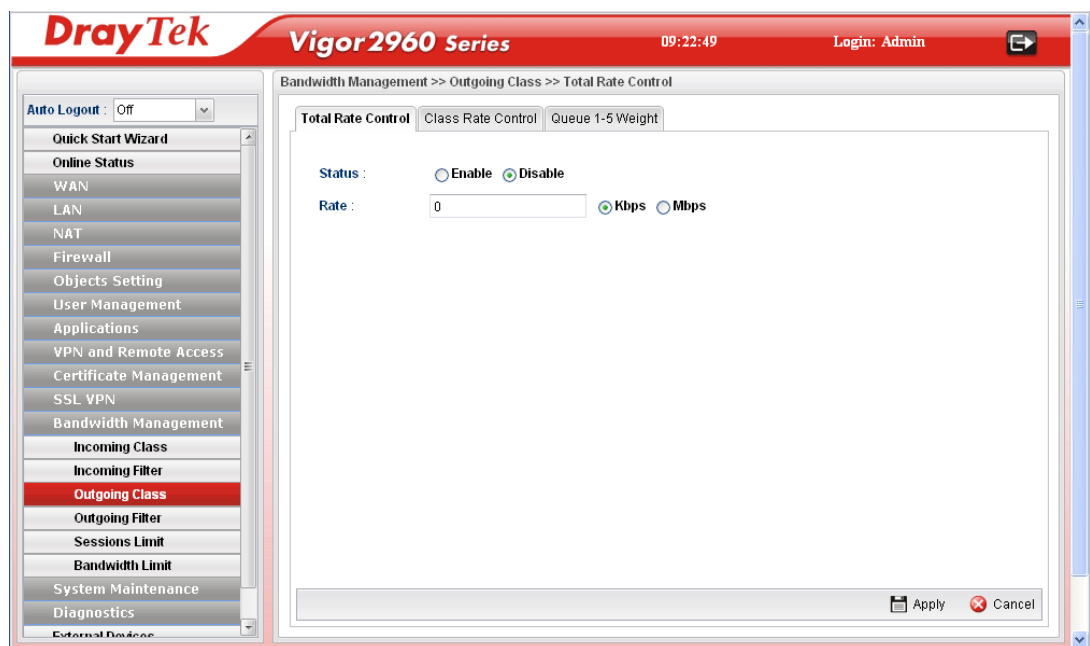
<b>Cancel</b>	Click it to exit the dialog without saving the configuration.
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4. Enter all the settings and click **Apply**.
5. The incoming filter rule for **QoS Policer** has been modified.

Filter Rule	Policer	Drop	Reserved
filter_rule_0	no_rate_control	Disable	Disable
filter_rule_1	no_rate_control	Enable	Disable
filter_rule_2	no_rate_control	Disable	Disable
filter_rule_3	no_rate_control	Disable	Disable

### 4.11.3 Outgoing Class

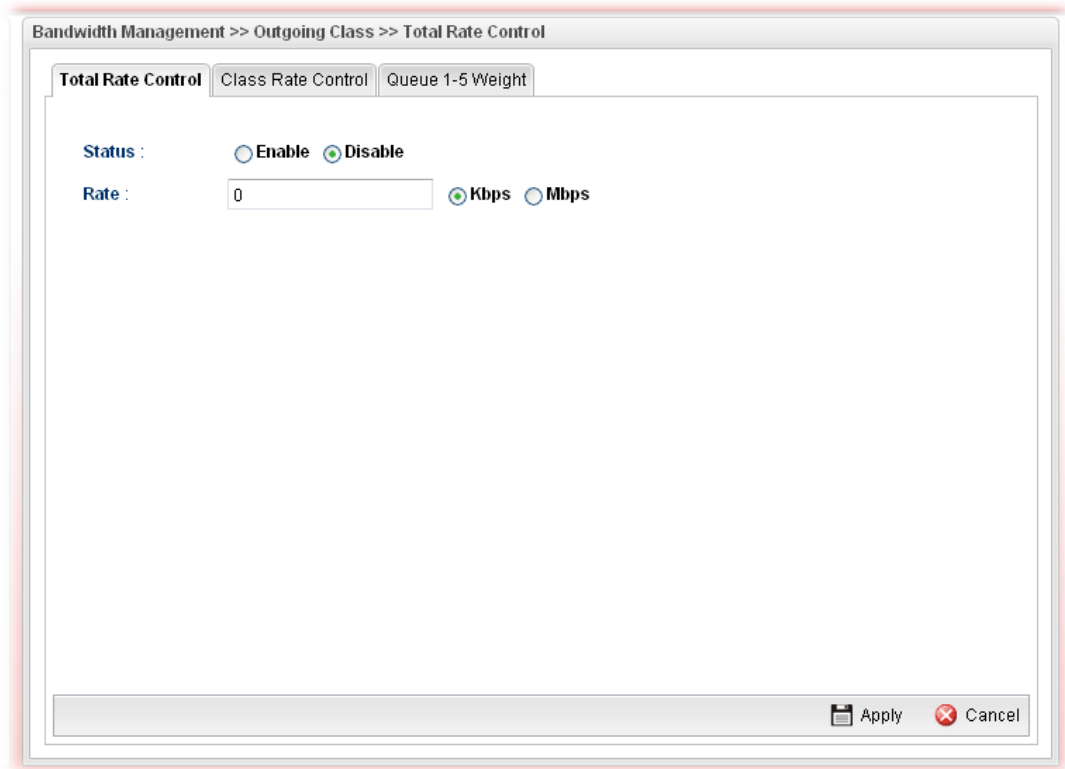
Outgoing Class Setup allows you to configure bandwidth percentage for data and voice signals transmission. Click the **Bandwidth Management** option and choose **Incoming Class**.





## Total Rate Control

This page can set the total rate of outgoing data for the QoS policer.



The screenshot shows a web interface window titled "Bandwidth Management >> Outgoing Class >> Total Rate Control". It features three tabs: "Total Rate Control" (selected), "Class Rate Control", and "Queue 1-5 Weight". The "Total Rate Control" tab contains the following elements:

- Status :** Two radio buttons, "Enable" and "Disable". The "Disable" button is selected.
- Rate :** A text input field containing the value "0".
- Units:** Two radio buttons, "Kbps" (selected) and "Mbps".

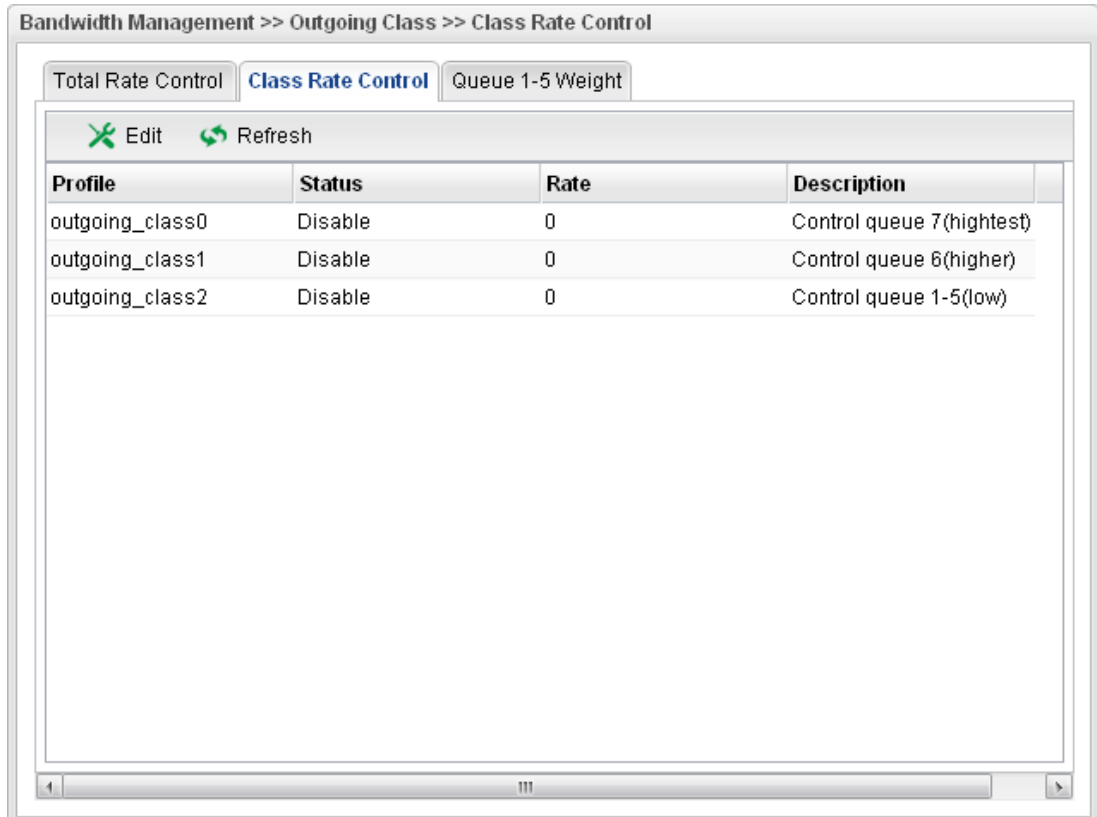
At the bottom right of the window, there are two buttons: "Apply" and "Cancel".

Available parameters are listed as follows:

Item	Description
Status	Click <b>Enable</b> to enable such function.
Rate	Type the rate for outgoing data. The range can be set from 64000 to 10000000.
Apply	Click it to save the configuration and exit the page.
Cancel	Click it to discard the settings configured in this page.

## Class Rate Control

This page allows you to edit the outgoing class rate for different QoS policer.

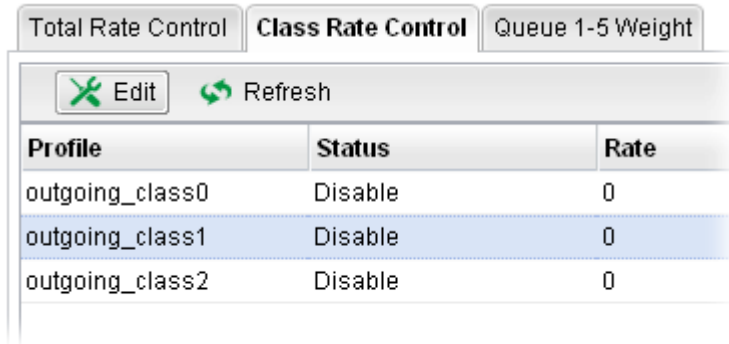


Each item will be explained as follows:

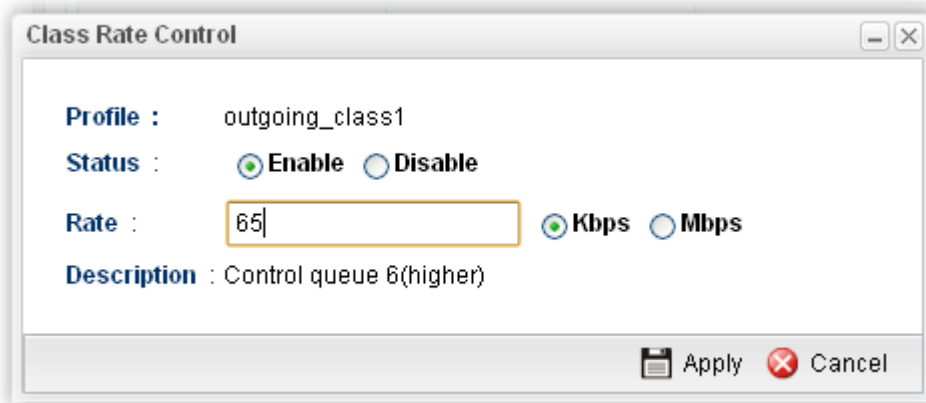
Item	Description
<b>Edit</b>	Modify the selected policy. To edit a profile, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected policy.
<b>Refresh</b>	Renew current web page.
<b>Profile</b>	Display the name of the outgoing class rate profile.
<b>Status</b>	Display the status (enable or disable) of such profile.
<b>Rate</b>	Display the limitation (from 64000 to 10000000) for the rate of queue.
<b>Description</b>	Display the description for such profile.

## How to edit the outgoing class rate for the QoS policer

1. Open **Bandwidth Management**>> **Outgoing Class** and click the **Class Rate Control** tab.
2. Choose one of the profiles and click the **Edit** button.



3. The following dialog will appear.



Available parameters are listed as follows:

Item	Description
<b>Profile</b>	Display the name of the QoS Shaper profile.
<b>Status</b>	Click <b>Enable</b> to enable such function.
<b>Rate</b>	Type the limitation for the rate of queue. Click the unit for such rate.
<b>Description</b>	Such information is offered by the system automatically. It is not necessary to change it.
<b>Apply</b>	Click it to save the configuration and exit the page.
<b>Cancel</b>	Click it to exit the page without saving the configuration.

4. Enter all the settings and click **Apply**.

5. The outgoing class rate for **QoS Policer** has been modified.

Profile	Status	Rate	Description
outgoing_class0	Disable	0	Control queue 7(highest)
outgoing_class1	Enable	65	Control queue 6(higher)
outgoing_class2	Disable	0	Control queue 1-5(low)

## Outgoing Queue 1- 5 Weight

There are several available outgoing queues, four shapers at varying levels, and five data queues with weights. All queues in the data group to be initialized with weights of zero, resulting in a strict service to completion (STC) mechanism across all queues.0.

QoS Queue	Weight
low_queue_5	0
low_queue_4	0
low_queue_3	0
low_queue_2	0
low_queue_1	0

Each item will be explained as follows:

Item	Description
<b>Edit</b>	Modify the selected policy. To edit a profile, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected policy.
<b>Refresh</b>	Renew current web page.
<b>QoS Queue</b>	Display the name of the QoS queue.

<b>Weight</b>	Display the weight of the QoS queue.
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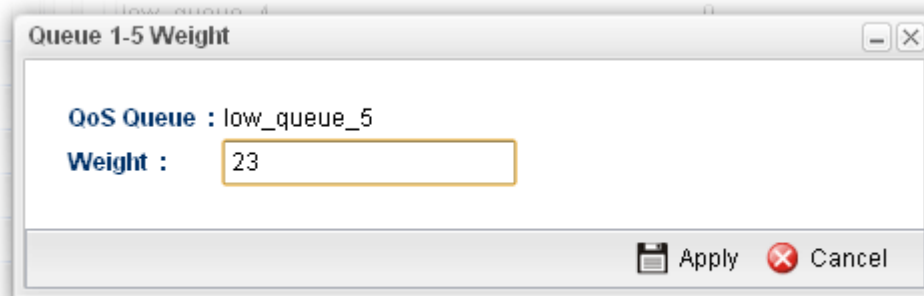
### How to edit the outgoing queue 1- 5 weight for the QoS policer

The bandwidth of the whole network traffic is dispatched according to the weight setting configured in Queue 1-5 Weight. For example, the weight value for queue 1 is set to 5, for queue 2 is 4, for queue 3 is 3, for queue 4 is 2 and for queue 5 is 1. Then session of queue 1 will have the largest bandwidth for it occupies largest weight ( $5/(5+4+3+2+1)$ ).

1. Open **Bandwidth Management**>> **Outgoing Class** and click the **Queue 1-5 Weight** tab.
2. Choose one of the profiles and click the **Edit** button.



3. The following dialog will appear.



Available parameters are listed as follows:

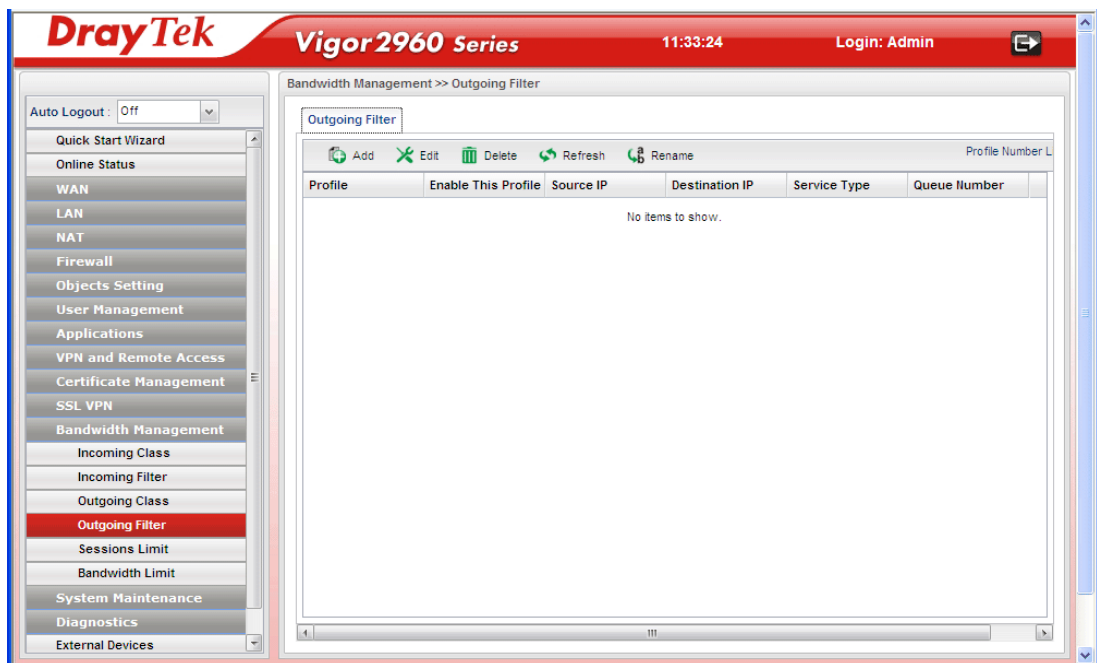
Item	Description
<b>QoS Queue</b>	Display the name of the QoS queue.
<b>Weight</b>	Type the weight of queues in bytes, range from 0 to 1000000.
<b>Apply</b>	Click it to save the configuration and exit the page.
<b>Cancel</b>	Click it to exit the page without saving the configuration.

4. Enter all the settings and click **Apply**.
5. The outgoing queue 1-5 weight for **QoS Policer** has been modified.

Total Rate Control		Class Rate Control		Queue 1-5 Weight	
✕ Edit		↻ Refresh			
QoS Queue				Weight	
low_queue_5				25	
low_queue_4				0	

#### 4.11.4 Outgoing Filter

There are 30 filter rules for outgoing data that can be configured in such page.



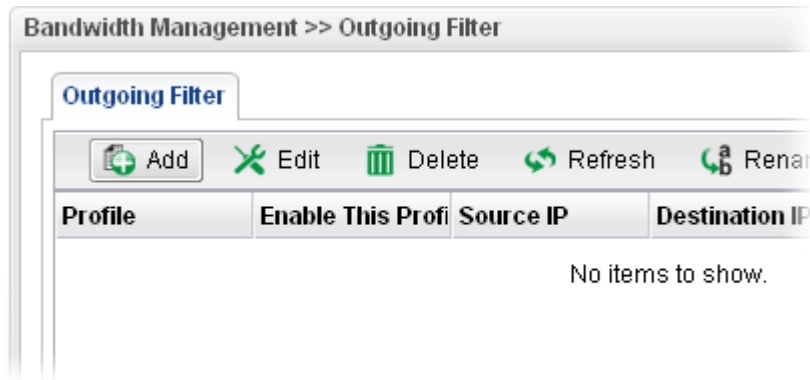
Each item will be explained as follows:

Item	Description
<b>Add</b>	Add a new filter profile.
<b>Edit</b>	Modify the selected profile. To edit a profile, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected profile.
<b>Delete</b>	Remove the selected profile. To delete a profile, simply select the one you want to delete and click the <b>Delete</b> button.
<b>Refresh</b>	Renew current web page.
<b>Rename</b>	Allow to modify the selected profile name.
<b>Profile</b>	Display the name of the profile for the filter.
<b>Enable This Profile</b>	Display the status of the profile. False means disabled; True means enabled.

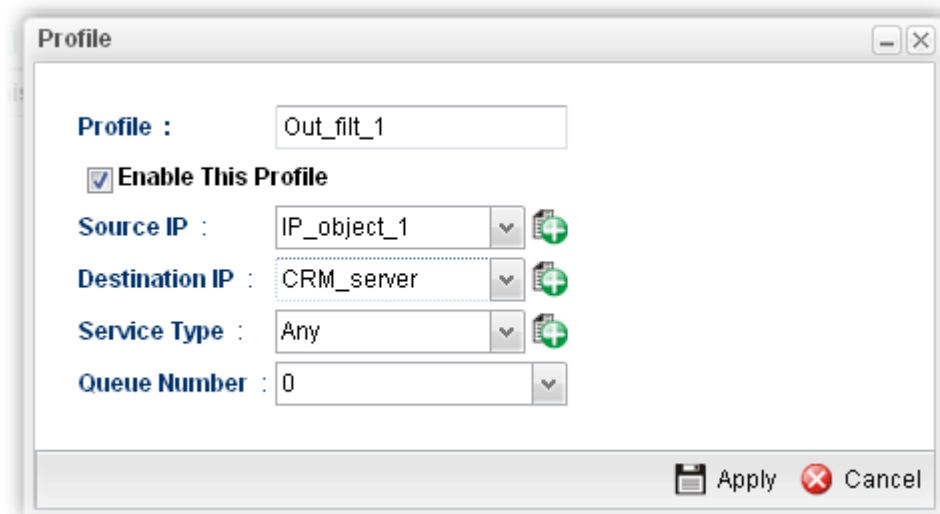
<b>Source IP</b>	Display the source IP address for the filter.
<b>Destination IP</b>	Display the destination IP address for the filter.
<b>Service Type</b>	Display the protocol used for such filter.
<b>Queue Number</b>	Display the queue number that such filter is categorized.

### How to add an outgoing filter for the QoS policer

1. Open **Bandwidth Management >> Outgoing Filter**.
2. Simply click the **Add** button.


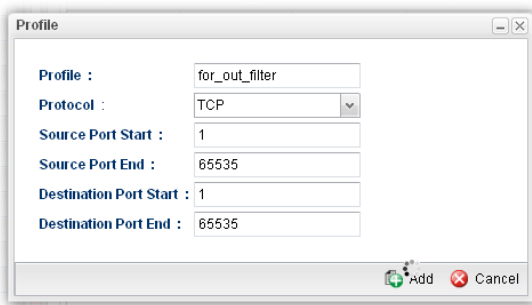
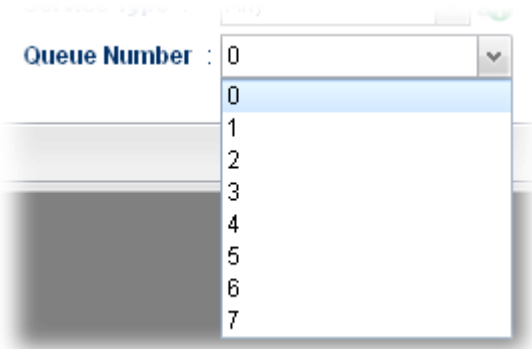


3. The following dialog will appear.

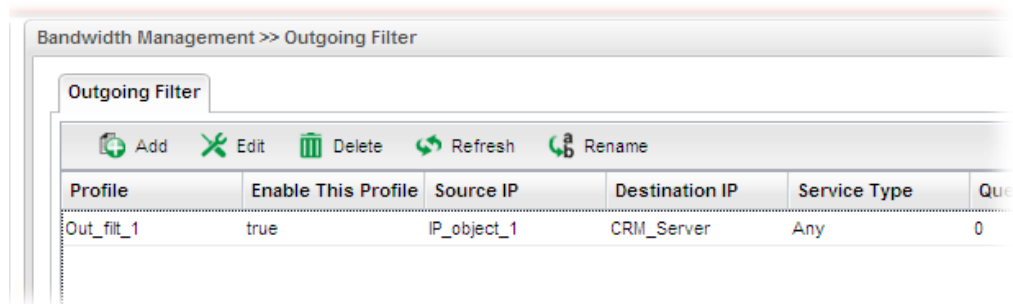


Available parameters are listed as follows:

Item	Description
<b>Profile</b>	Type the name of the filter profile.
<b>Enable This Profile</b>	Check this box to enable such profile.
<b>Source IP</b>	Type the source IP address with subnet mask value to be applied for this filter.
<b>Destination IP</b>	Type the destination IP address with subnet mask value to be applied for this filter.

<p><b>Service Type</b></p>	<p>Choose one of the service types from the drop down list. If you want to create a new service type, simply click  to open the following dialog.</p>  <p><b>Profile</b> – type a new name for such service type.  <b>Protocol</b> –There are two options: <b>TCP</b>, <b>UDP</b> and <b>TCP/UDP</b>. Select the protocol that you want to use.  <b>Source Port Start /End</b> - Type the start /end number for the port range of the source port for such filter.  <b>Destination Port Start / End</b> - Type the start /end number for the port range of the destination port for such filter.</p>
<p><b>Queue Number</b></p>	<p>Choose a queue number to category the packets matching with the condition configured as above. Queue 7 is the highest; 0 is the lowest.</p> 
<p><b>Apply</b></p>	<p>Click it to save the configuration and exit the page.</p>
<p><b>Cancel</b></p>	<p>Click it to exit the page without saving the configuration.</p>

4. Enter all the settings and click **Apply**.
5. The outgoing filter for **QoS Policier** has been created.

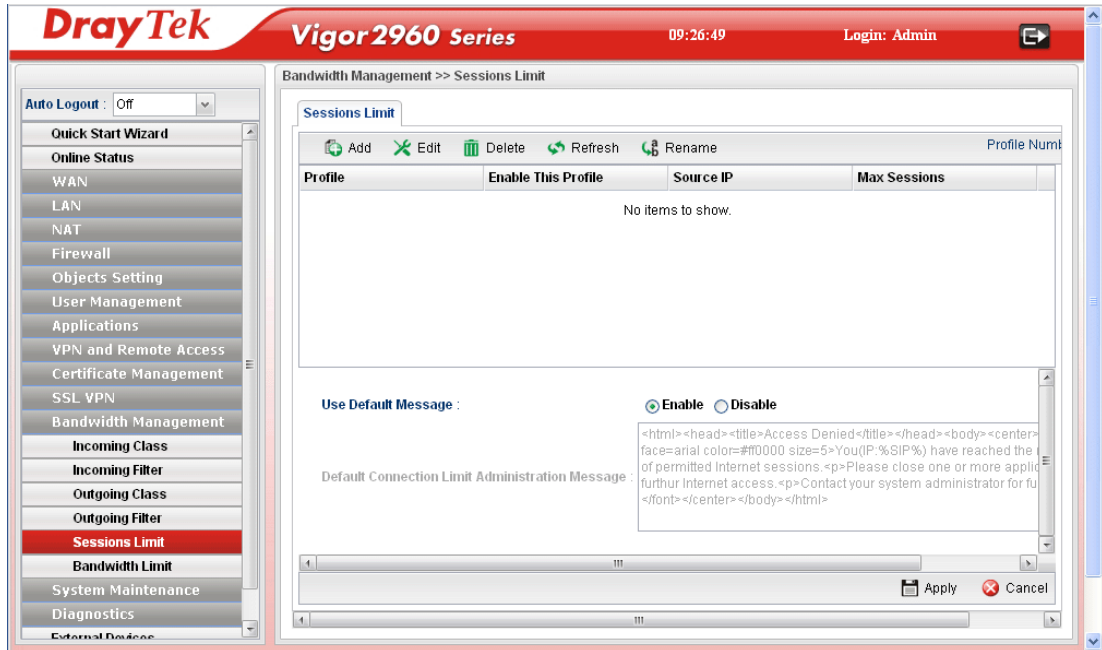




### 4.11.5 Sessions Limit

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.

In the **Bandwidth Management** menu, click **Sessions Limit** to open the web page.



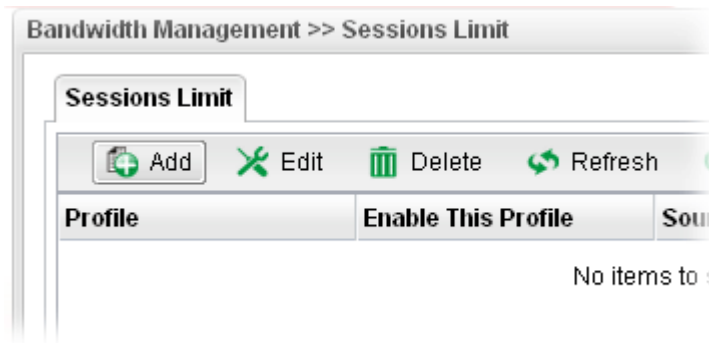
Each item will be explained as follows:

Item	Description
<b>Add</b>	Add a new profile.
<b>Edit</b>	Modify the selected profile. To edit a profile, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected profile.
<b>Delete</b>	Remove the selected profile. To delete a profile, simply select the one you want to delete and click the <b>Delete</b> button.
<b>Refresh</b>	Renew current web page.
<b>Rename</b>	Allow to modify the selected profile name.
<b>Profile</b>	Display the name of the profile.
<b>Enable This Profile</b>	Display the status of the profile. False means disabled; True means enabled.
<b>Source IP</b>	Display the IP address with subnet mask of the profile.
<b>Max Sessions</b>	Display the maximum sessions used by the profile.
<b>Connection Limit</b>	Display the message to inform the user when the permitted

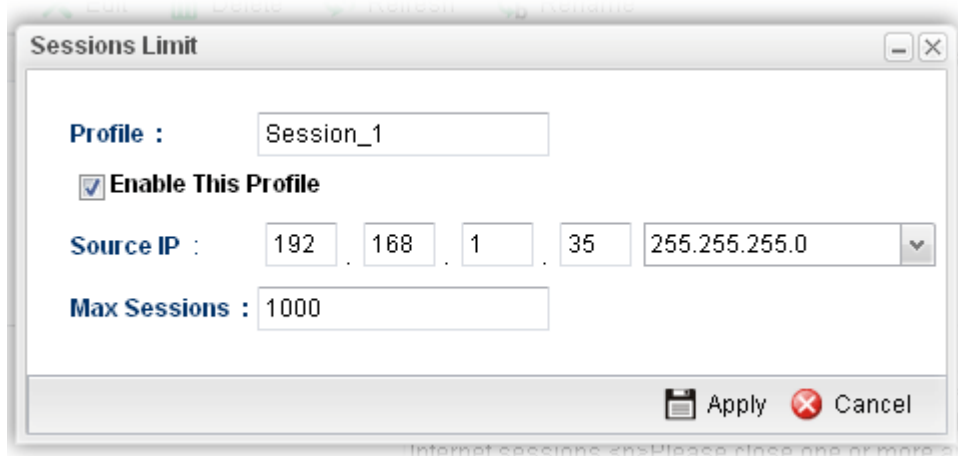
<b>Administration Message</b>	session limit is reached.
<b>Apply</b>	Click it to save the configuration.
<b>Cancel</b>	Click it to discard the settings configured in this page.

### How to add a session limit profile for the QoS policer

1. Open **Bandwidth Management>> Sessions Limit**.
2. Simply click the **Add** button.



3. The following dialog will appear.

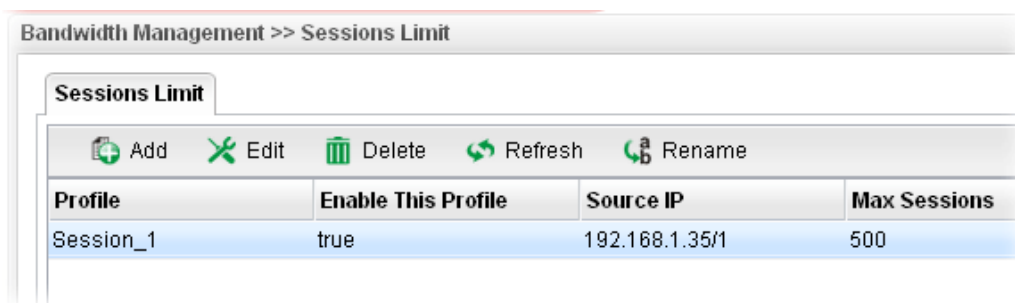


Available parameters are listed as follows:

Item	Description
<b>Profile</b>	Type the name of the profile.
<b>Enable This Profile</b>	Check this box to enable such profile.
<b>Source IP</b>	Type the source IP address with subnet mask for limit session.
<b>Max Sessions</b>	Defines the available session number for each host in the specific range of IP addresses. If you do not set the session number in this field, the system will use the default session limit for the specific limitation you set for each index. This field cannot be typed with "0", otherwise the profile cannot be saved.
<b>Apply</b>	Click it to save the configuration and exit the dialog.

<b>Cancel</b>	Click it to exit the dialog without saving the configuration.
---------------	---

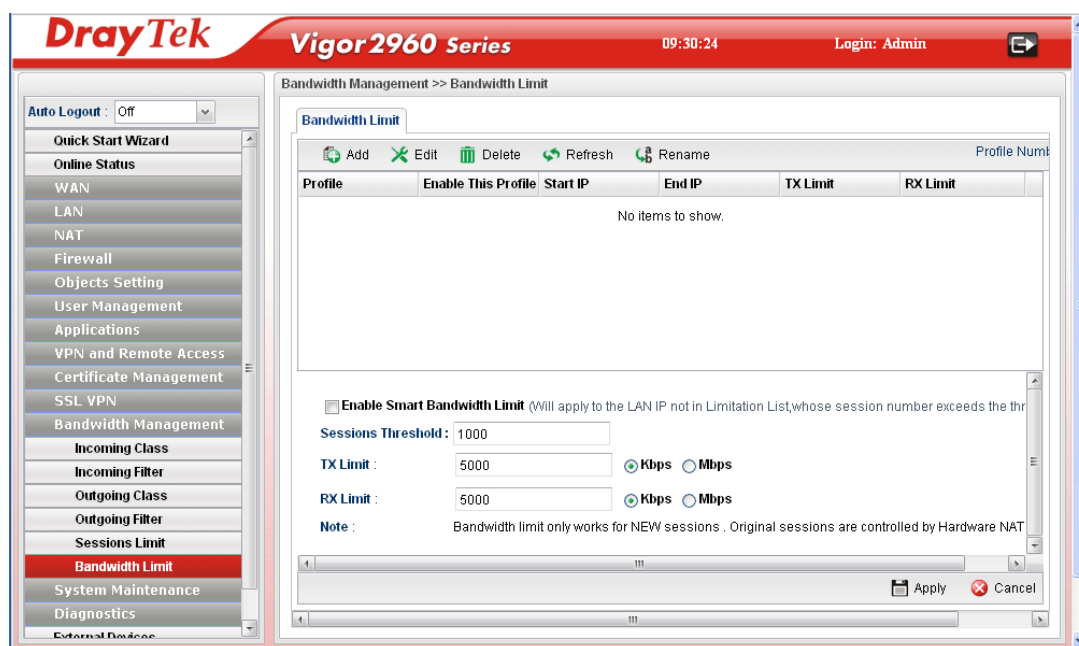
4. Enter all the settings and click **Apply**.
5. A session limit profile has been created.



#### 4.11.6 Bandwidth Limit

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 Limit Bandwidth to make the bandwidth usage more efficient.

In the **Bandwidth Management** menu, click **Bandwidth Limit** to open the web page.



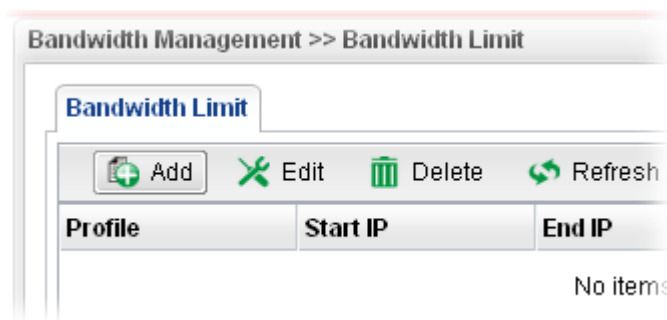
Each item will be explained as follows:

Item	Description
<b>Add</b>	Add a new profile.
<b>Edit</b>	Modify the selected profile. To edit a profile, simply select the one you want to modify and click the <b>Edit</b> button. The edit window will appear for you to modify the corresponding settings for the selected profile.
<b>Delete</b>	Remove the selected profile. To delete a profile, simply select the one you want to delete

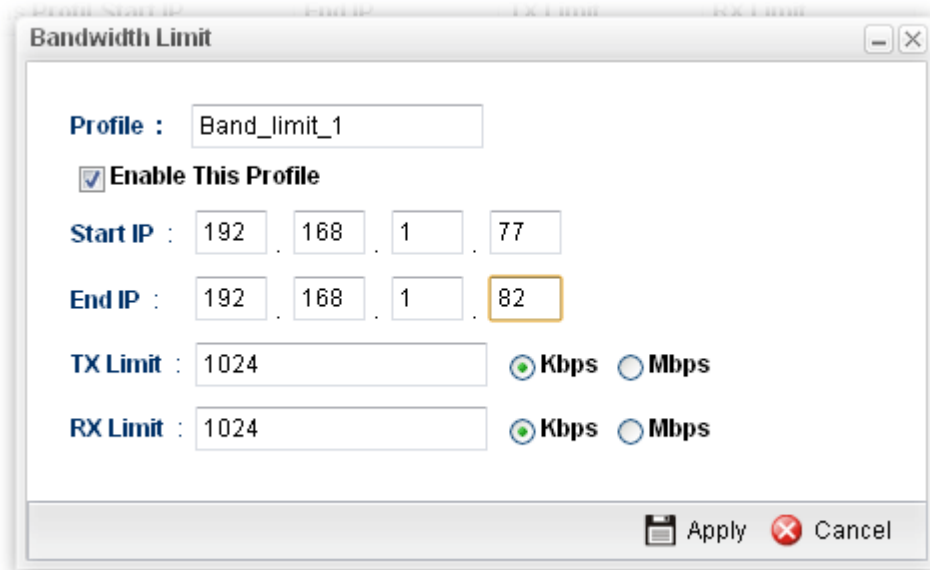
	and click the <b>Delete</b> button.
<b>Refresh</b>	Renew current web page.
<b>Rename</b>	Allow to modify the selected profile name.
<b>Profile</b>	Display the name of the bandwidth limitation profile.
<b>Enable This Profile</b>	Display the status of such profile.
<b>Start IP</b>	Display the start IP address for the profile.
<b>End IP</b>	Display the end IP address for the profile.
<b>TX Limit</b>	Display the limitation for the speed of the upstream for the profile.
<b>RX Limit</b>	Display the limitation for the speed of the downstream for the profile.
<b>Enable Smart Bandwidth Limit</b>	Check the box to enable smart bandwidth limit function. It will apply to the IP addresses that are not included in the limitation list defined in the Bandwidth Limit profile.
<b>Session Threshold</b>	If the session number for data transmission is over the threshold number configured here, the system will start to limit the TX(transmitting) and RX(receiving) rate.
<b>TX Limit</b>	Type a number as transmitting rate or keep the default setting.
<b>RX Limit</b>	Type a number as receiving rate or keep the default setting.
<b>Apply</b>	Click it to save the configuration.
<b>Cancel</b>	Click it to discard the settings configured in this page.

### How to add a bandwidth limit profile for the QoS policer

1. Open **Bandwidth Management>>Bandwidth Limit**.
2. Simply click the **Add** button.



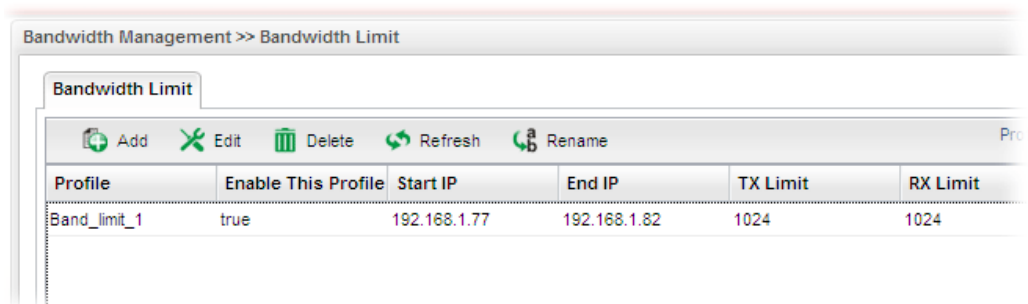
3. The following dialog will appear.



Available parameters are listed as follows:

Item	Description
<b>Profile</b>	Type the name of the profile.
<b>Start IP</b>	Define the start IP address for limit bandwidth.
<b>End IP</b>	Define the end IP address for limit bandwidth.
<b>TX Limit</b>	Define the limitation for the speed of the upstream. If you do not set the limit in this field, the system will use the default speed for the specific limitation you set for each index. Do not type the value with "0", otherwise the profile cannot be saved.
<b>RX Limit</b>	Define the limitation for the speed of the downstream. If you do not set the limit in this field, the system will use the default speed for the specific limitation you set for each index. Do not type the value with "0", otherwise the profile cannot be saved.
<b>Apply</b>	Click it to save the configuration and exit the dialog.
<b>Cancel</b>	Click it to exit the dialog without saving the configuration.

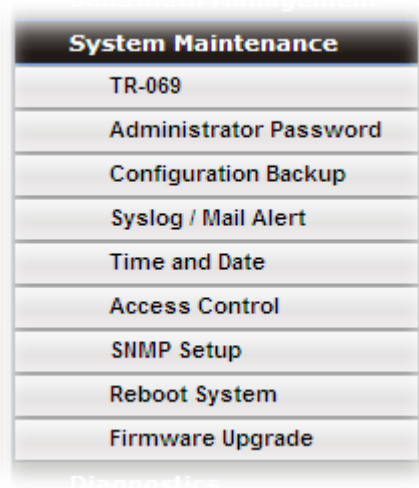
4. Enter all the settings and click **Apply**.
5. A bandwidth limit profile has been created.



## 4.12 System Maintenance

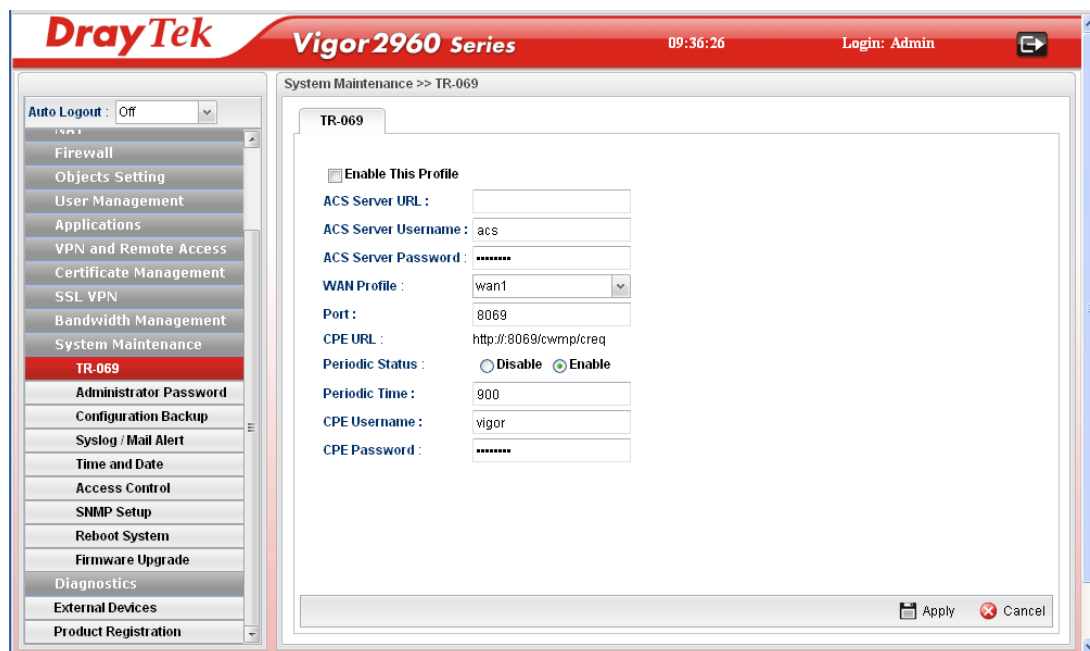
For the system setup, there are several items that you have to know the way of configuration: Status, Administrator Password, Configuration Backup, Syslog/Mail Alert, Time and Date, Access Control, SNMP Setup, Reboot System, Firmware Upgrade and Upload Language File.

Below shows the menu items for System Maintenance.



### 4.12.1 TR-069

This device supports TR-069 standard. It is very convenient for an administrator to manage a TR-069 device through an Auto Configuration Server, e.g., VigorACS.



Each item will be explained as follows:

Item	Description
<b>Enable This Profile</b>	Check this box to enable such profile.
<b>ACS Server URL/Username</b>	Such data must be typed according to the ACS (Auto Configuration Server) you want to link. Please refer to Auto

<b>/Password</b>	Configuration Server user's manual for detailed information.
<b>WAN Profile</b>	Choose one of the WAN profiles which will be recognized by VigorACS.
<b>Port</b>	Type the port number for Vigor2960 which will be recognized by VigorACS.
<b>CPE URL</b>	Display the URL of such CPE.
<b>Periodic Status</b>	The default setting is <b>Enable</b> . Please set periodic time for VigorACS to send notification to CPE. Or click <b>Disable</b> to close the mechanism of notification.
<b>Periodic Time</b>	Set the time for VigorACS to send notification to CPE.
<b>CPE Username</b>	Type the user name for the CPE which will be used by the administrator of VigorACS to log into the WUI of Vigor2960.
<b>CPE Password</b>	Type the password for the CPE which will be used by the administrator of VigorACS to log into the WUI of Vigor2960.
<b>Apply</b>	Click it to save the configuration.
<b>Cancel</b>	Click it to discard the settings configured in this page.

#### 4.12.2 Administrator Password

This page allows you to set new password for accessing into the WUI of the router.



Each item will be explained as follows:

<b>Item</b>	<b>Description</b>
<b>Original Password</b>	Type the old password.
<b>New Password</b>	Type the new password.
<b>Confirm Password</b>	Re-type the new password for confirmation.

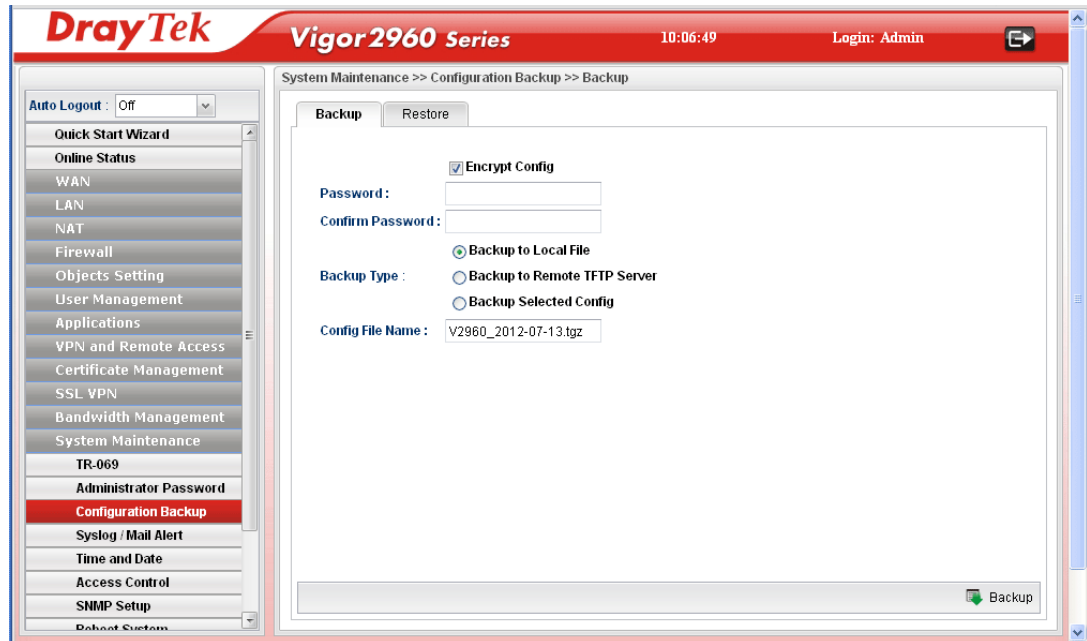
**Apply**

Click this button to save the configuration and exit the web page.

### 4.12.3 Configuration Backup

Most of the settings can be saved locally as a configuration file, and can be applied to another router. The router supports functions of **restore and backup** for the configuration file.

#### Backup



Each item will be explained as follows:

Item	Description
<b>Encrypt Config</b>	Check this box to encrypt the configuration file. <b>Password</b> – Type a password for encrypting the file. <b>Confirm Password</b> – Retype the password for confirmation.
<b>Backup Type</b>	Choose one of the types to determine where the file will be stored. <b>Backup to Local File</b> – The configuration file will be stored in local host. <b>Backup to Remote TFTP Server</b> – The configuration file will be stored in the remote TFTP server specified. <b>Backup Selected Config</b> – The configuration file will be stored with an existing file in local host. You must select which file you want to store.
<b>Config File Name</b>	The default configuration file name (file format shall be <i>.tgz</i> ) will be shown here. You can change the name if required.
<b>Backup</b>	Execute the file downloading job to the computer.



## Restore

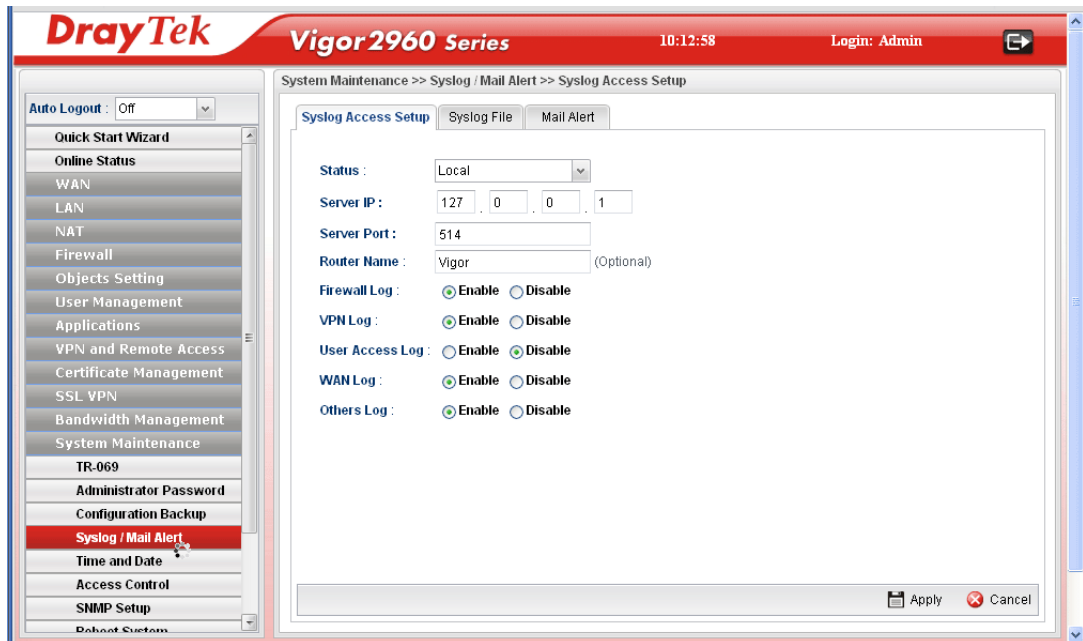


Each item will be explained as follows:

Item	Description
<b>Decrypt Config</b>	<p>Check this box to decrypt an encrypted configuration file. You can specify a password for decrypting the file for restoring it for use next time.</p> <p><b>Password</b> – Type a password for encrypting the file.</p> <p><b>Confirm Password</b> – Retype the password for confirmation.</p>
<b>Restore Type</b>	<p>Choose one of the types to determine where the file will be downloaded from.</p> <p><b>Restore Settings via Local Config File</b> – Click it to restore the configuration settings through a configuration file stored locally.</p> <p><b>Restore Settings via TFTP Server</b> – Click it to restore the configuration settings through TFTP server.</p>
<b>Select File</b>	<p>Use the <b>Browse..</b> button to locate the file for uploading to the router.</p>
<b>Restore</b>	<p>Click it to upload the selected file to the router. After finishing the restoration, the system will ask you to reboot the router.</p> <div style="border: 1px solid gray; padding: 5px; margin-top: 10px;"> <p style="text-align: center;"><b>Confirm</b></p> <p style="text-align: center;">Restore success, reboot now?</p> <p style="text-align: center;"> <input type="button" value="OK"/> <input type="button" value="Cancel"/> </p> </div>

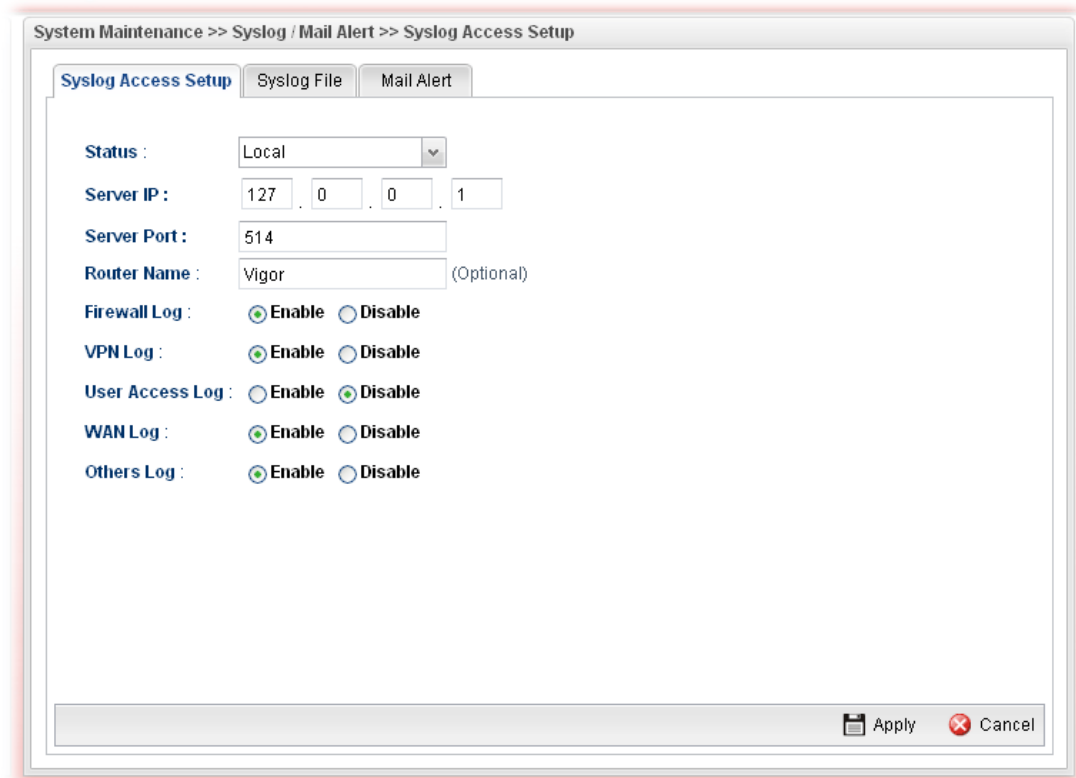
#### 4.12.4 Syslog / Mail Alert

SysLog function is provided for users to monitor router. There is no bother to directly get into the Web Configurator of the router or borrow debug equipments.

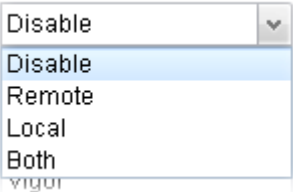


#### Syslog Access Setup

To configure settings for Syslog, open **System Maintenance>>Syslog/Mail Alert** and click the **Syslog Access Setup** tab.

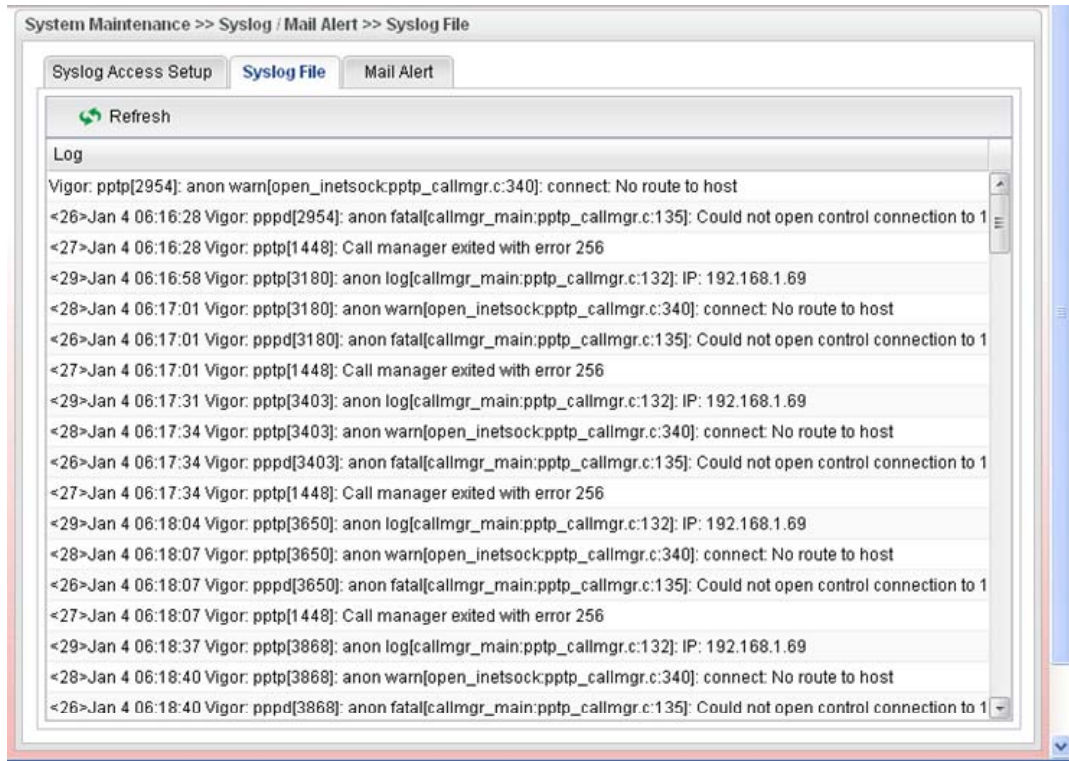


Available parameters are listed as follows:

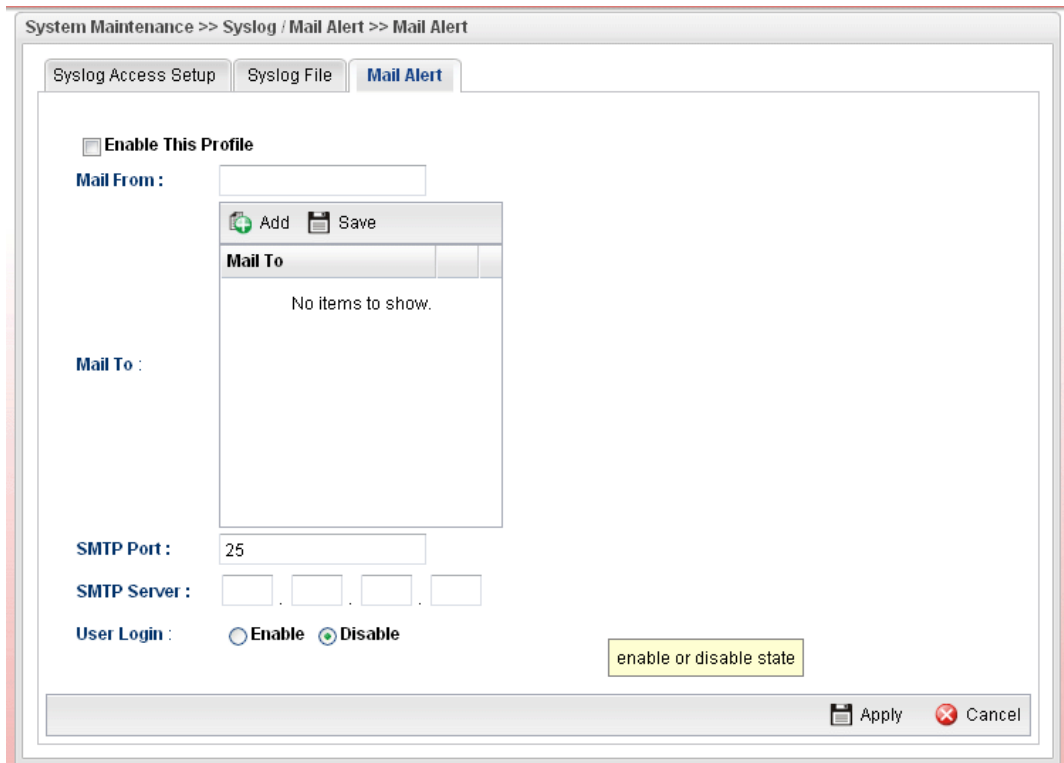
Item	Description
<b>Status</b>	<p>Choose one of the selections to determine current status for Syslog access. If you choose <b>Local</b> as Status, you don't need to type any server IP and port. Just give a name for the router.</p> 
<b>Server IP</b>	Type the IP address of the Syslog server.
<b>Server Port</b>	Type the port number for the Syslog server.
<b>Router Name</b>	Type the name of the router. The default name is <i>Vigor</i> .
<b>Firewall Log</b>	Click <b>Enable</b> to make the firewall log recorded in the Syslog.
<b>VPN Log</b>	Click <b>Enable</b> to make the VPN log recorded in the Syslog.
<b>User Access Log</b>	Click <b>Enable</b> to make the user access log recorded in the Syslog.
<b>WAN Log</b>	Click <b>Enable</b> to make the WAN log recorded in the Syslog.
<b>Others Log</b>	Click <b>Enable</b> to make other logs recorded in the Syslog.
<b>Apply</b>	Click this button to save the configuration and exit the web page.
<b>Cancel</b>	Click it to discard the settings configured in this page.

## SysLog File

This page displays all the operation logs for the router.



## Mail Alert



Available parameters are listed as follows:

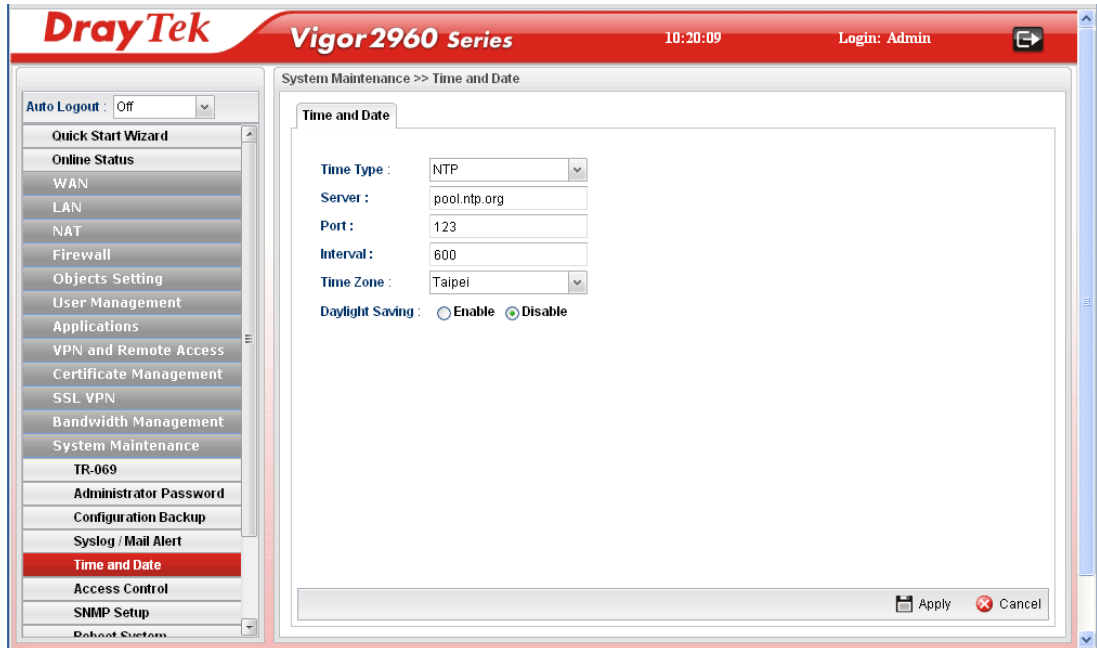
Item	Description
------	-------------

<b>Enable This Profile</b>	Check the box to enable such profile.
<b>Mail From</b>	Type a mail address for the mail sender.
<b>Mail To</b>	Assign a mail address for the mail receiver.
<b>SMTP Port</b>	Type the port number for SMTP server.
<b>SMTP Server</b>	Type the IP address for SMTP server.
<b>User Login</b>	Click <b>Enable</b> to make any user logging into the mail server.
<b>User Name</b>	Type the user name for authentication.
<b>User Password</b>	Type the password for authentication.
<b>Apply</b>	Click this button to save the configuration and exit the web page.
<b>Cancel</b>	Click it to discard the settings configured in this page.

## 4.12.5 Time and Date

This page allows you to specify where the time of the router should be inquired from.

As an NTP (Network Time Protocol) client, the router gets standard time from the time server. Some time-based functions cannot work properly until the system time functions run successfully. Typically, NTP achieves high accuracy and reliability with multiple redundant servers and diverse network paths.

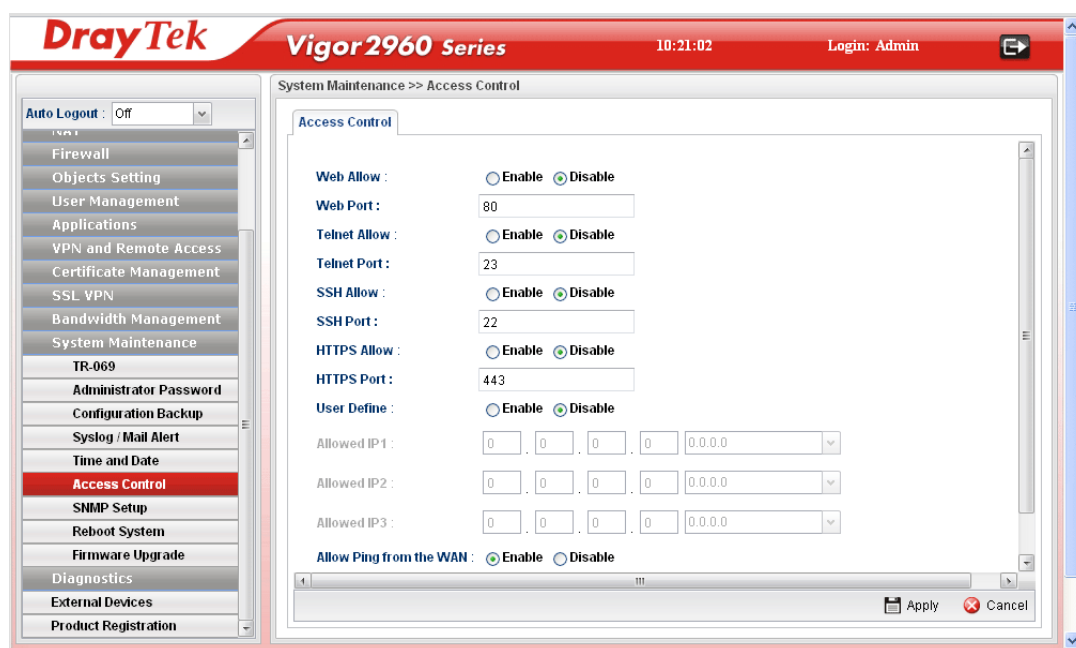


Available parameters are listed as follows:

Item	Description
<b>Time Type</b>	<b>NTP</b> – Select to inquire time information from Time Server on the Internet using assigned protocol. <b>Browser</b> - Select this option to use the browser time from the remote administrator PC host as router's system time.
<b>Server</b>	Type the domain name of the server.
<b>Port</b>	Type the port number for the time server.
<b>Interval</b>	Select a time interval for updating from the NTP server.
<b>Time Zone</b>	Select the time zone where the router is located.
<b>Daylight Saving</b>	Click <b>Enable</b> to enable the daylight saving. Such feature is available for certain area.
<b>Apply</b>	Click this button to save the configuration and exit the web page.
<b>Cancel</b>	Click it to discard the settings configured in this page.

## 4.12.6 Access Control

This page allows you to open or close the web configurator of Vigor2960 by using Telnet, SSH, HTTP, HTTPS... and etc...



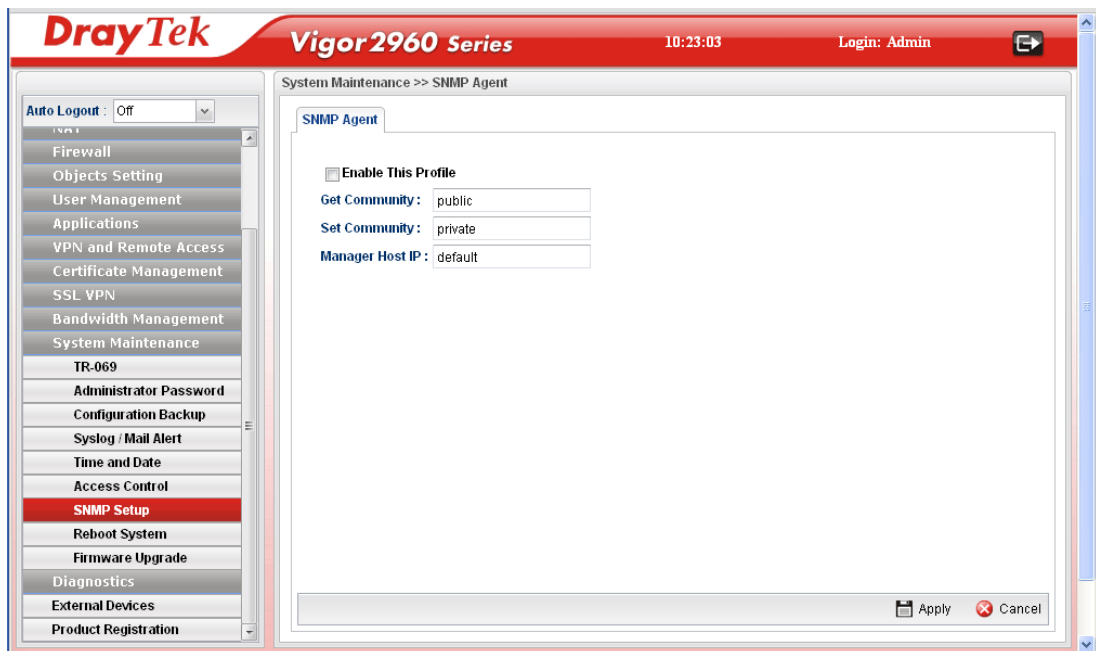
Available parameters are listed as follows:

Item	Description
<b>Web Allow</b>	Click <b>Enable</b> to allow system administrator to login from the Internet and management the web page of the router.
<b>Web Port</b>	Type the port number for the management through web page.
<b>Telnet Allow</b>	Click <b>Enable</b> to allow system administrator to login from the telnet and management the web page of the router.
<b>Telnet Port</b>	Type the port number for the management through telnet page.
<b>SSH Allow</b>	Click <b>Enable</b> to allow system administrator to login from the SSH server and management the web page of the router.
<b>SSH Port</b>	Type the port number for the management through SSH server.
<b>HTTPS Allow</b>	Click <b>Enable</b> to allow system administrator to login from the HTTPS server and management the web page of the router.
<b>HTTPS Port</b>	Type the port number for the management through HTTPS server.
<b>User Define</b>	Click <b>Enable</b> to allow system administrator to login from the user defined IP address and management the web page of the router. If you enable such function, the system can be managed by these three IP addresses via WAN.
<b>Allowed IP1 - Allowed IP3</b>	Type the first IP address for the system administrator to login.

	The former box indicates an IP address allowed to login to the router, and the later box indicates a subnet mask allowed to login to the router.
<b>Allow Ping from WAN</b>	Click <b>Enable</b> to allow system administrator to ping the router from WAN interface.
<b>Allow Ping form LAN</b>	Click <b>Enable</b> to allow system administrator to ping the router from LAN interface.
<b>Apply</b>	Click this button to save the configuration and exit the web page.
<b>Cancel</b>	Click it to discard the settings configured in this page.

#### 4.12.7 SNMP Setup

This page allows you to manage the settings for SNMP setup.



Available parameters are listed as follows:

Item	Description
<b>Enable This Profile</b>	Check the box to enable such profile.
<b>Get Community</b>	Set the name for getting community by typing a proper character. The default setting is <b>public</b> .
<b>Set Community</b>	Set community by typing a proper name. The default setting is <b>private</b> .
<b>Manager Host IP</b>	Type the IP address for the <b>manager host</b> .
<b>Apply</b>	Click this button to save the configuration and exit the web page.
<b>Cancel</b>	Click it to discard the settings configured in this page.

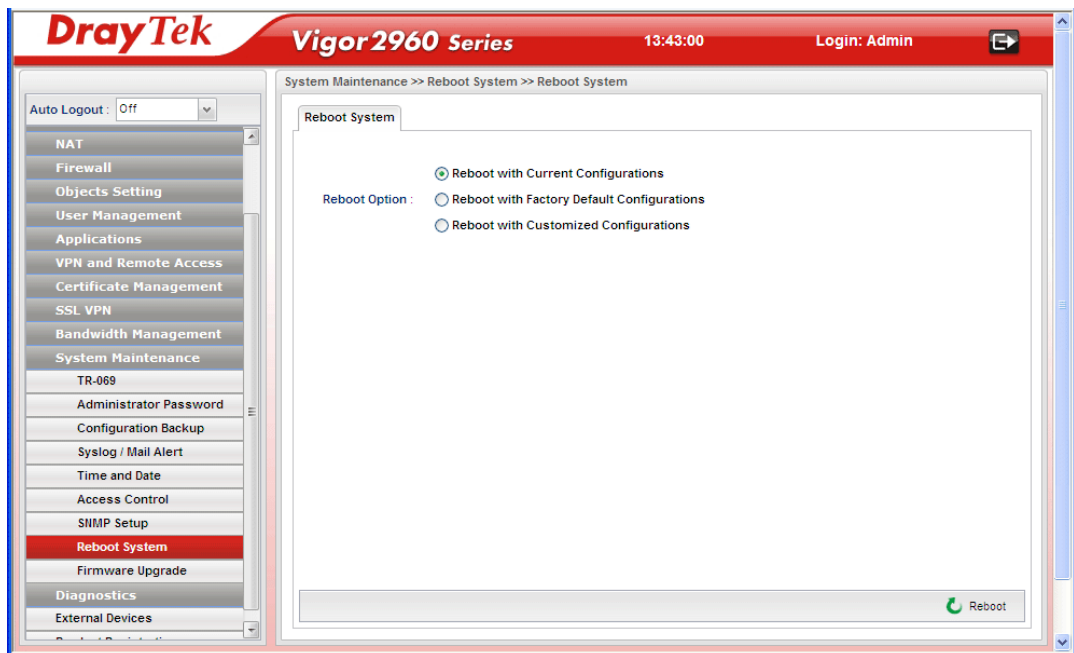


## 4.12.8 Reboot System

The Vigor router system can be restarted from a Web browser. You have to reboot the router to invoke the configured settings that you made before.

If you want to reboot the router using the current configuration, choose **Reboot with Current Configurations** and click **Reboot**. To reset the router settings to default values, click **Reboot with Factory Default Configurations** and click **Reboot**. The router will take a period of time to reboot the system.

Open **System Maintenance>> Reboot System**.



Available parameters are listed as follows:

Item	Description
<b>Reboot with Current Configurations</b>	Click it to reboot the router using the current configuration. Then, click <b>Reboot</b> .
<b>Reboot with Factory Default Configurations</b>	Click it to reset the router settings to default values. Then, click <b>Reboot</b> .
<b>Reboot with Customized Configurations</b>	Click it to reboot the router using the current configuration (only the configuration settings listed and selected below). If you choose this option, <b>Select Config File</b> will be available for you to select.  <div style="text-align: right;"> <input type="radio"/> Reboot with Current Configurations  <input type="radio"/> Reboot with Factory Default Configurations  <input checked="" type="radio"/> Reboot with Customized Configurations         </div> <div style="text-align: right;"> <b>Select Config File :</b> lan_wan_profile, wan_           <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> lan_wan_profile</li> <li><input type="checkbox"/> load_balance</li> <li><input checked="" type="checkbox"/> wan_vlan</li> <li><input checked="" type="checkbox"/> lan_vlan</li> <li><input type="checkbox"/> switch_mirror</li> <li><input type="checkbox"/> static_route</li> <li><input type="checkbox"/> ipbind_mac</li> <li><input type="checkbox"/> port_redirect</li> </ul> </div>

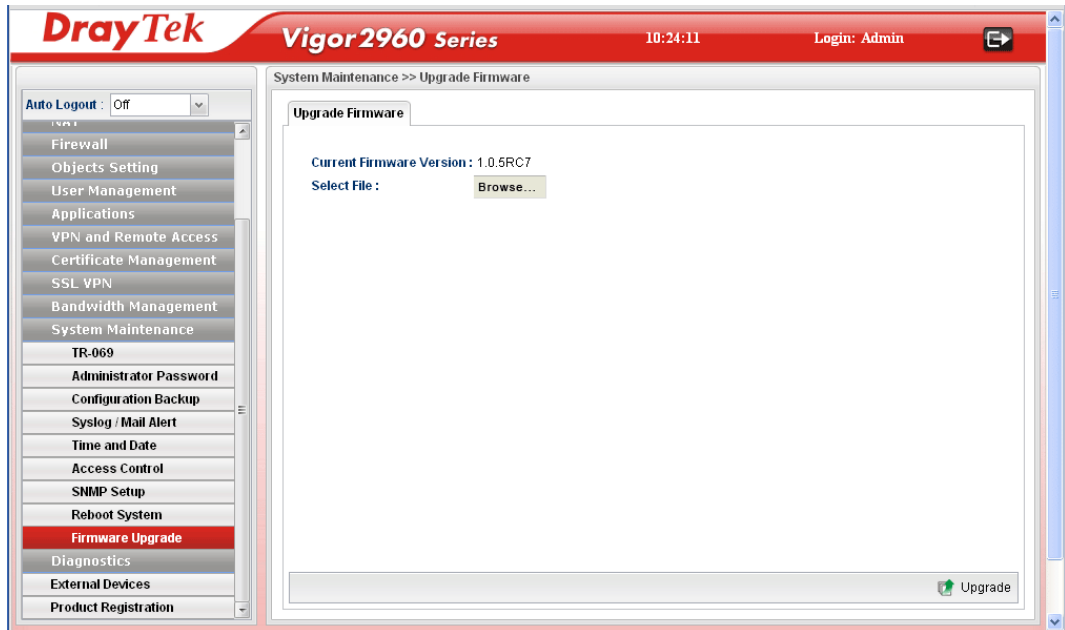
	After choosing the configuration files, click <b>Reboot</b> .
<b>Reboot</b>	Click this button to execute the rebooting job.

#### 4.12.9 Firmware Upgrade

The following web page will guide you to upgrade firmware by using such page.

Download the newest firmware from DrayTek's web site or FTP site. The DrayTek web site is [www.DrayTek.com](http://www.DrayTek.com) (or local DrayTek's web site) and FTP site is [ftp.DrayTek.com](ftp://ftp.DrayTek.com).

Click **System Maintenance>> Firmware Upgrade**.

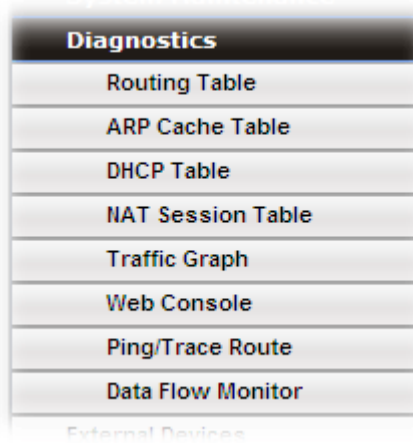


Available parameters are listed as follows:

Item	Description
<b>Current Firmware Version</b>	Display current version of the firmware.
<b>Select File</b>	Use the <b>Browse..</b> button to locate and select the new firmware.
<b>Upgrade</b>	Click it to perform the firmware upgrade.

## 4.13 Diagnostics

In some cases, a user may need to know some information about the router, such as static or dynamic databases, or other routing information. The Vigor2960 supports five functions, **Routing Table**, **ARP Cache Table**, **DHCP Assignment Table**, **NAT Sessions Table** and **Traffic Graph** for the user to review such information.



### 4.13.1 Routing Table

Click **Diagnostics** and click **Routing Table** to open the web page.

A screenshot of the DrayTek Vigor2960 Series web interface. The top header shows 'DrayTek Vigor2960 Series', the time '13:46:20', and 'Login: Admin'. The left sidebar contains a navigation menu with 'Diagnostics' selected, and 'Routing Table' highlighted. The main content area displays the 'Routing Table' with a 'Refresh' button and a table of routes.

Destination	Gateway	Genmask	Flags	Metric	Iface
192.168.1.0	0.0.0.0	255.255.255.0	U	0	lan-lan1
172.16.0.0	0.0.0.0	255.255.0.0	U	0	wan-wan2

### Routing Table

Display the information for each route.

Diagnosics >> Routing Table >> Routing Table

Routing Table IPv6 Routing Table

Refresh

Destination	Gateway	Genmask	Flags	Metric	Iface
192.168.1.0	0.0.0.0	255.255.255.0	U	0	lan-lan1
172.16.0.0	0.0.0.0	255.255.0.0	U	0	wan-wan2

Each item will be explained as follows:

Item	Description
<b>Refresh</b>	Renew the web page.
<b>Destination</b>	Display the destination IP address for various routings.
<b>Gateway</b>	Display the default gateway.
<b>Genmask</b>	Display the subnet mask for various routings.
<b>Flags</b>	Display the flag of the routing entry. Possible flags include: U (route is up) H (target is a host) G (use gateway) R (reinstate route for dynamic routing) D (dynamically installed by daemon or redirect) M (modified from routing daemon or redirect) A (installed by <i>addrconf</i> ) C (cache entry) ! (reject route)
<b>Metric</b>	Display the distance to the target (usually counted in hops). It may be needed by routing daemons.
<b>Iface</b>	Display the direction of such route represented with LAN/WAN profile (starting from LAN/WAN profile to LAN/WAN profile).

## IPv6 Routing Table

Display the information for each route with IPv6 protocol.

The screenshot shows a web interface titled "Diagnostics >> Routing Table >> IPv6 Routing Table". It features a "Refresh" button and a table with the following data:

Destination	Next Hop	Flags	Metric	Iface
fe80::/64	::	U	256	eth0
fe80::/64	::	U	256	eth2
fe80::/64	::	U	256	lan-lan1
fe80::/64	::	U	256	wan-wan2
fe80::/64	::	U	256	lan-lan1
fe80::/64	::	U	256	wan-wan1
fe80::/30	fe80::250:1212:ff:6666	UG	20	lan-lan1
::1/128	::	U	0	lo
fe80::/128	::	U	0	lo
fe80::/128	::	U	0	lo
fe80::/128	::	U	0	lo
fe80::/128	::	U	0	lo
fe80::/128	::	U	0	lo
fe80::/128	::	U	0	lo
fe80::250:7fff:feff:3900/...	::	U	0	lo
fe80::250:7fff:feff:3900/...	::	U	0	lo
fe80::250:7fff:feff:3900/...	::	U	0	lo
fe80::250:7fff:feff:3900/...	::	U	0	lo

Each item will be explained as follows:

Item	Description
<b>Refresh</b>	Renew the web page.
<b>Destination</b>	Display the destination IP address for various routings.
<b>Next Hop</b>	Display the next hop address for such route.
<b>Flags</b>	Display the flag of the routing entry. Possible flags include: U (route is up) H (target is a host) G (use gateway) R (reinstate route for dynamic routing) D (dynamically installed by daemon or redirect) M (modified from routing daemon or redirect) A (installed by <i>addrconf</i> ) C (cache entry) ! (reject route)
<b>Metric</b>	Display the distance to the target (usually counted in hops). It may be needed by routing daemons.
<b>Iface</b>	Display the direction of such route represented with LAN/WAN profile (starting from LAN/WAN profile to

### 4.13.2 ARP Cache Table

Click **Diagnostics** and click **ARP Cache Table** to view the content of the ARP (Address Resolution Protocol) cache held in the router. The table shows a mapping between an Ethernet hardware address (MAC Address) and an IP address.

The screenshot shows the DrayTek Vigor2960 Series web interface. The top navigation bar includes the DrayTek logo, 'Vigor2960 Series', the time '13:50:16', and the user 'Login: Admin'. The left sidebar contains a navigation menu with 'Diagnostics' selected. The main content area displays the 'ARP Cache Table' with the following data:

IP Address	HW Type	MAC Address	Flags	Profile	Clear
192.168.1.10	ether	e0:cb:4e:da:48:79	C	lan-lan1	

### ARP Cache Table

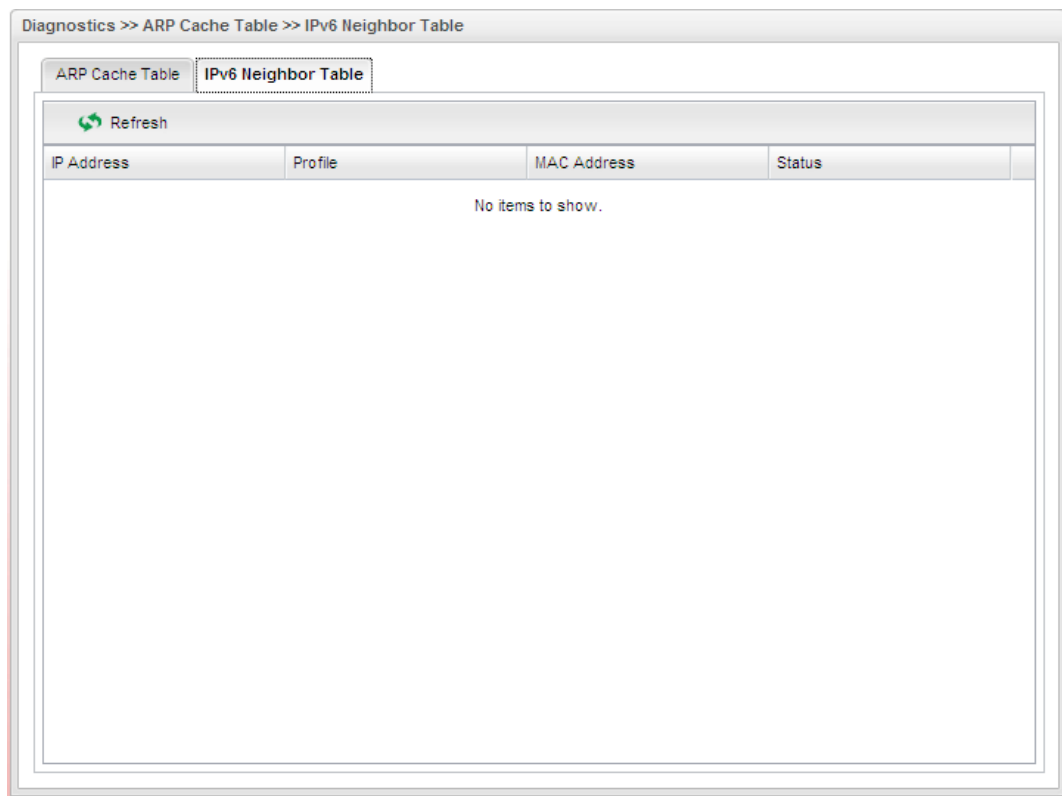
This is a close-up view of the ARP Cache Table interface. It shows the table with the following data:

IP Address	HW Type	MAC Address	Flags	Profile	Clear
192.168.1.10	ether	e0:cb:4e:da:48:79	C	lan-lan1	

Each item will be explained as follows:

Item	Description
<b>Refresh</b>	Renew the web page.
<b>Clear All</b>	Remove all of the information from this page.
<b>IP Address</b>	Display the IP address for different ARP cache.
<b>HW type</b>	Display the hardware type of the address from RFC 826.
<b>MAC Address</b>	Display the MAC address for different ARP cache.
<b>Flags</b>	Each complete entry in the ARP cache will be marked with the flag of 0x2. Permanent entries are marked with 0x4 and published entries have the 0x8 flag.
<b>Profile</b>	Display the direction of such route represented with LAN/WAN profile (starting from LAN/WAN profile to LAN/WAN profile).
<b>Clear</b>	Delete the selected profile.

### IPv6 Neighbor Table



Each item will be explained as follows:

Item	Description
<b>Refresh</b>	Renew the web page.
<b>IP Address</b>	Display the IPv6 address of the neighbor.
<b>Profile</b>	Display the interface to which this neighbor is attached.

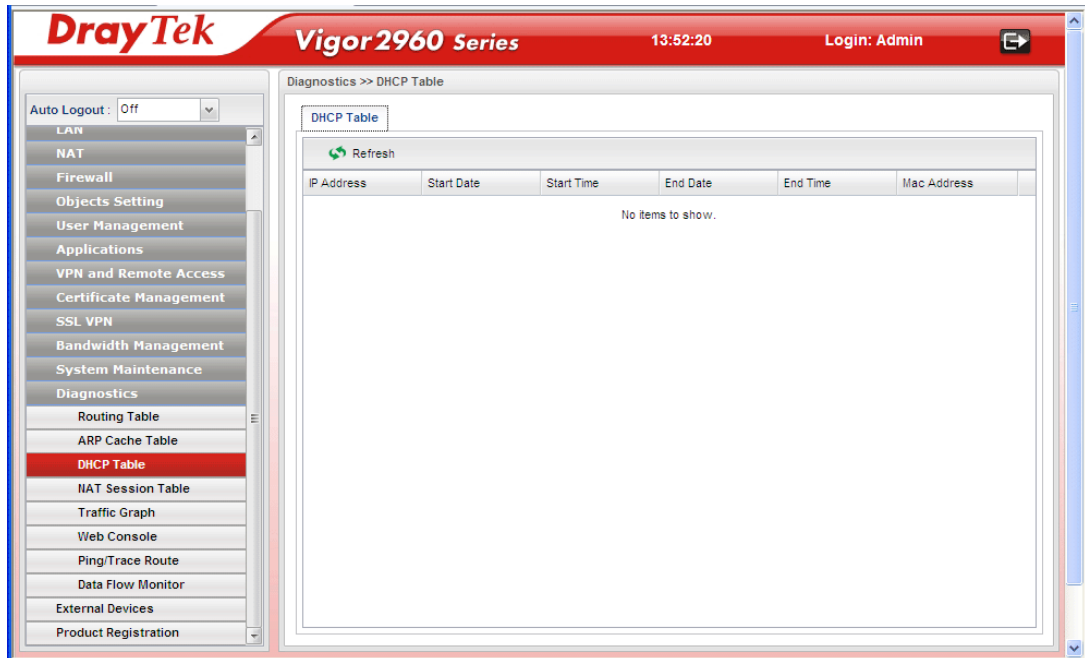
Item	Description
MAC Address	Display the MAC address of the neighbor.
Status	<p>Display the status for such neighbor.</p> <p><b>INCOMPLETE</b> - Address resolution is in progress and the link-layer address of the neighbor has not yet been determined.</p> <p><b>REACHABLE</b> - The neighbor is reachable recently (within tens of seconds ago).</p> <p><b>STALE</b>-The neighbor is no longer to be reachable. Yet, until traffic is sent to the neighbor, no attempt should be made to verify its reachability.</p> <p><b>DELAY</b> - The neighbor is no longer to be reachable, and the traffic has recently been sent to the neighbor.</p> <p>Rather than probe the neighbor immediately, however, delay sending probes for a short while in order to give upper layer protocols a chance to provide reachability confirmation.</p> <p><b>PROBE</b> - The neighbor is no longer to be reachable, and unicast Neighbor Solicitation probes are being sent to verify reachability.</p>



### 4.13.3 DHCP Table

The facility provides information on IP address assignments. This information is helpful in diagnosing network problems, such as IP address conflicts, etc.

Click **Diagnostics** and click **DHCP Table** to open the web page.



Each item will be explained as follows:

Item	Description
<b>Refresh</b>	Renew the web page.
<b>IP Address</b>	Display the IP address of the static DHCP server.
<b>Start Date</b>	Display the starting date that DHCP server is activated.
<b>Start Time</b>	Display the starting time that DHCP server is activated.
<b>End Date</b>	Display the end date that DHCP server is closed.
<b>End Time</b>	Display the end time that DHCP server is closed.
<b>Mac Address</b>	Display the MAC address of the static DHCP server.

#### 4.13.4 NAT Session Table

This table can display about 30000 sessions with 20 pages.

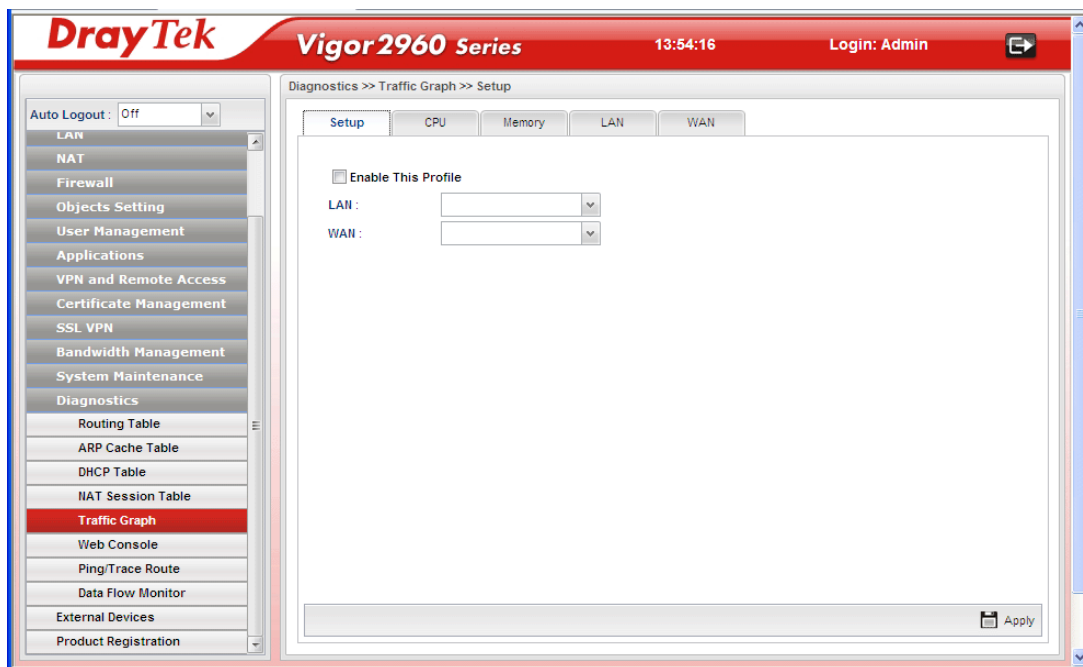


Each item will be explained as follows:

Item	Description
Refresh	Renew the web page.
Source	Display the source IP address and port of local PC.
Destination	Display the destination IP address and port of remote host.
WAN	Display the WAN interface used.
Protocol	Display the protocol of such NAT session used.
State	Display the actual state of the TCP connection.
TTL	Display how long the conntrack entry has to live.

### 4.13.5 Traffic Graph

Click **Diagnostics** and click **Traffic Graph** to pen the web page. Specify LAN and WAN profiles to display corresponding graphs for CPU, Memory, LAN and WAN configurations. Click **Refresh** to renew the graph at any time.

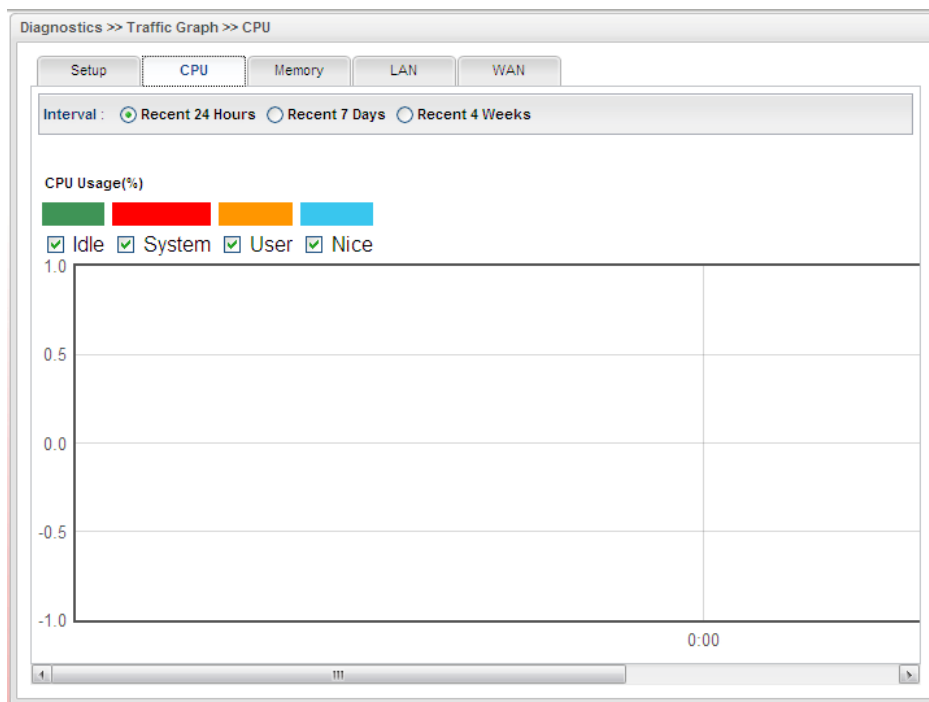


Each item will be explained as follows:

Item	Description
<b>Setup</b>	<p>In this page, simply specify which LAN profile and WAN profile will be applied. The traffic graph will be drawn based on the profiles selected.</p> <p><b>Enable This Profile</b> – Check this box to enable such profile.</p> <p><b>LAN</b> – Use the drop down menu to choose a LAN profile.</p> <p><b>WAN</b> – Use the drop down menu to choose a WAN profile.</p> <p><b>Refresh</b> - Click it to renew the web page under the Setup tab.</p> <p><b>Apply</b> - Click it to save the configuration configured under the Setup tab.</p>
<b>CPU</b>	<p>Click the CPU tab.</p> <p>There are three selections provided for you to specify.</p> <p><b>Recent 24 Hours</b> – Display the information of CPU operation about recent 24 hours.</p> <p><b>Recent 7 Days</b> – Display the information of CPU operation about recent 7 days.</p> <p><b>Recent 4 Weeks</b> – Display the information of CPU operation about recent 4 weeks.</p>
<b>Memory</b>	<p>Click the Memory tab.</p> <p>There are three selections provided for you to specify.</p> <p><b>Recent 24 Hours</b> – Display the information of memory</p>

Item	Description
	<p>operation about recent 24 hours.</p> <p><b>Recent 7 Days</b> – Display the information of memory operation about recent 7 days.</p> <p><b>Recent 4 Weeks</b> – Display the information of memory operation about recent 4 weeks.</p>
LAN	<p>Click the LAN tab.</p> <p>There are three selections provided for you to specify.</p> <p><b>Network Interface</b> – Display the information of LAN or WAN operation.</p> <p><b>Recent 24 Hours</b> – Display the information of LAN operation about recent 24 hours.</p> <p><b>Recent 7 Days</b> – Display the information of LAN operation about recent 7 days.</p> <p><b>Recent 4 Weeks</b> – Display the information of LAN operation about recent 4 weeks.</p>
WAN	<p>Click the WAN tab.</p> <p>There are three selections provided for you to specify.</p> <p><b>Network Interface</b> – Display the information of WAN or WAN operation.</p> <p><b>Recent 24 Hours</b> – Display the information of WAN operation about recent 24 hours.</p> <p><b>Recent 7 Days</b> – Display the information of WAN operation about recent 7 days.</p> <p><b>Recent 4 Weeks</b> – Display the information of WAN operation about recent 4 weeks.</p>

Below show a graphic for CPU:



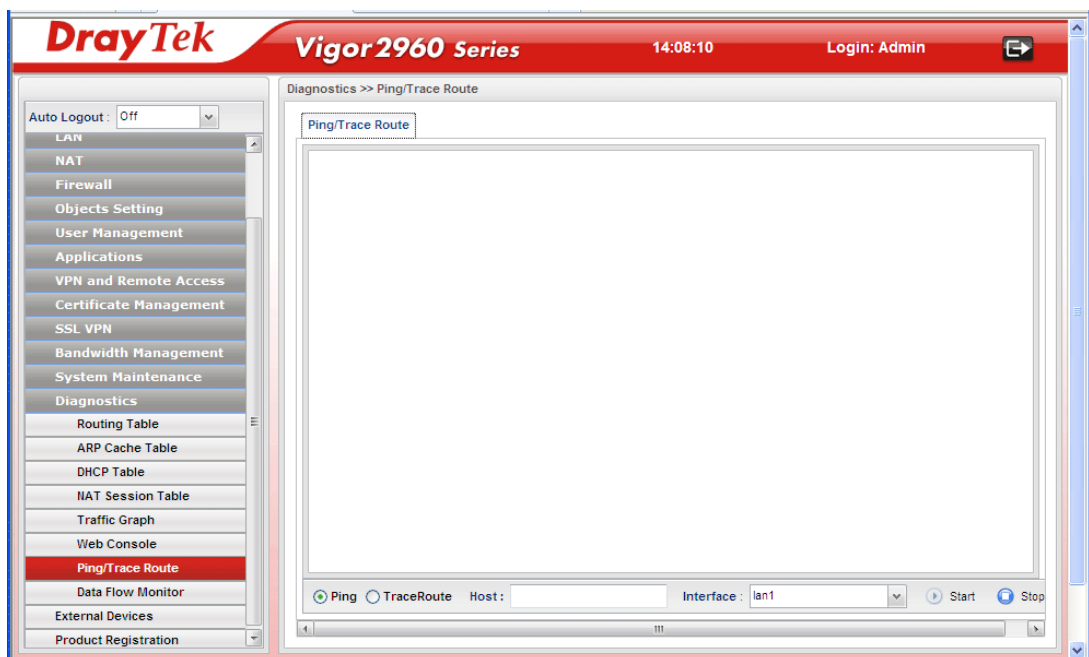
### 4.13.6 Web Console

Click **Diagnostics** and click **Web Console** to pen the web page for typing commands used in console connection. A remote user can operate Vigor2960 from this web page without installing and opening other connection utility.



### 4.13.7 Ping/Trace Route

This page allows you to trace the routes from router to the host. Simply type the IP address of the host in the box and click **Run**. The result of route trace will be shown on the screen.

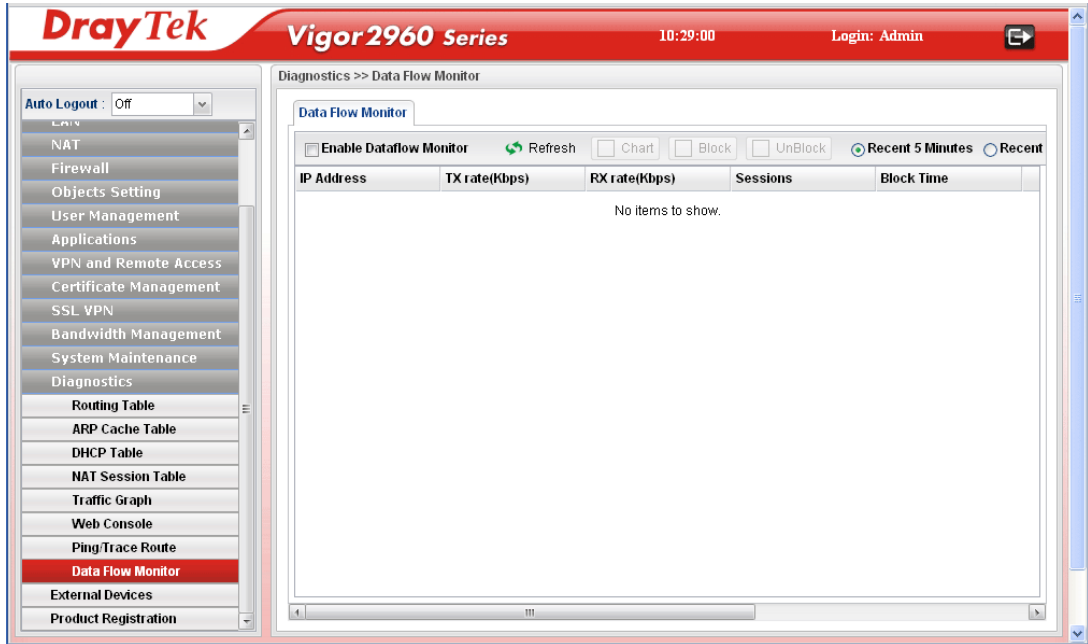


Each item will be explained as follows:

Item	Description
<b>Ping / TraceRoute</b>	Click <b>Ping</b> to perform ping function. Click <b>TraceRoute</b> to invoke trace router function.
<b>Host</b>	Type the IP address of the host.
<b>Interface</b>	Choose one of the LAN or WAN profile to be applied by such function.
<b>Start</b>	Click it to start the action of Ping or Trace Route.
<b>Stop</b>	Click it to terminate the action of Ping or Trace Route.

### 4.13.8 Data Flow Monitor

This page displays the running procedure (such as IP address, session number, transmission rate, receiving rate, and duration of the time block) by list or by chart for the IP address monitored and refreshes the data in an interval of several seconds.



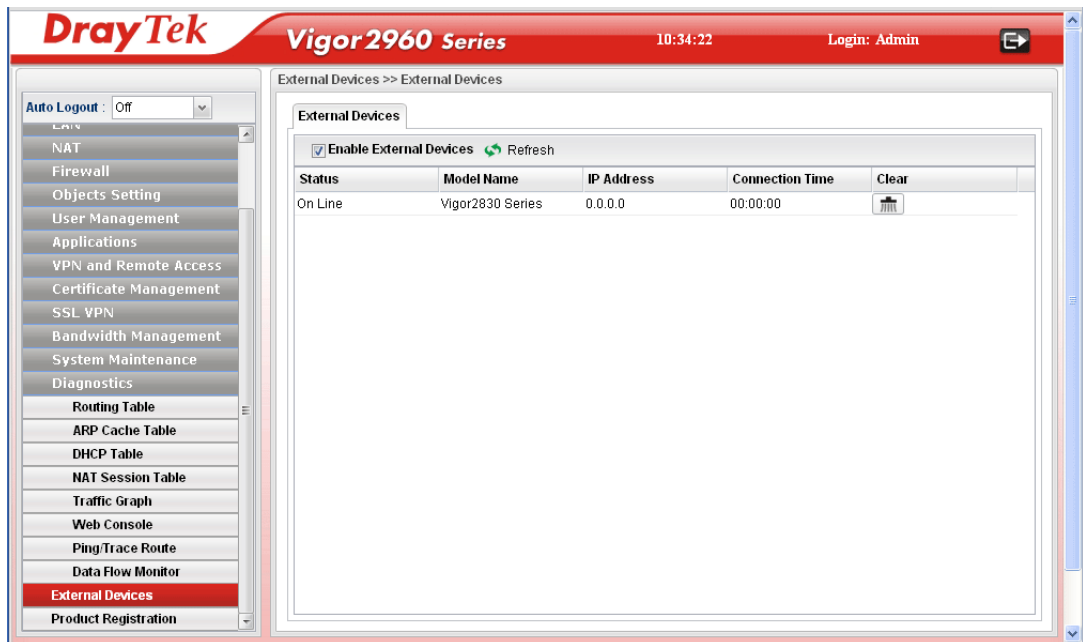
Each item will be explained as follows:

Item	Description
<b>Enable Dataflow Monitor</b>	Check this box to enable such function.
<b>Refresh</b>	Click it to renew the web page.
<b>Chart</b>	Click this button to illustrate data chart. Refer to the following figure as an example.
<b>Block</b>	Prevent the specified PC accessing into Internet within 5 minutes.
<b>UnBlock</b>	Allow the specified PC accessing into Internet within 5 minutes.
<b>Recent 5 Minutes/ Recent 24 Hours</b>	Display the records with 5 minutes/24 hours recently.
<b>Auto Refresh</b>	Specify the interval of refresh time to obtain the latest status. The information will update immediately when the Refresh button is clicked.


Item	Description
IP Address	Display the IP address of the monitored device.
TX rate (Kbps)	Display the transmission speed of the monitored device.
RX rate (Kbps)	Display the receiving speed of the monitored device.
Sessions	Display the session number that you specified in Limit Session web page.
Block Time	Display the time for the duration of the block.

## 4.14 External Devices

Vigor router can be used to connect with many types of external devices. In order to control or manage the external devices conveniently, open **External Devices** to make detailed configuration.



Each item will be explained as follows:

Item	Description
Enable External Devices	Check the box to detect the external device connected to Vigor2960.
Refresh	Click it to renew the web page.
Status	Display current status (online or offline) of the device.
Model Name	Display the model name of the external product.
IP Address	Display the IP address of the external product.
Connection Time	Display the connection time that the external product connecting to Vigor2960.
Clear	Click the icon  to remove the record of the device when it is offline.

After checking the box of **Enable External Devices**, click **Refresh**. Later, the basic information of available devices will be displayed in this pag.

## 4.15 Product Registration

Please refer to section **2.3 Register Vigor Router** for more detailed information.



# Chapter 5: Trouble Shooting

This section 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.

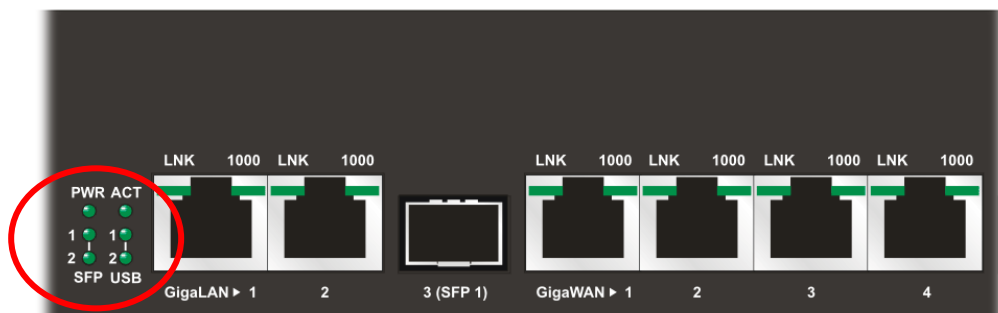
- Checking if the hardware status is OK or not.
- Checking if the network connection settings on your computer are OK or not.
- Pinging the router from your computer.
- Checking if the ISP settings are OK or not.
- Backing to factory default setting if necessary.

If all above stages are done and the router still cannot run normally, it is the time for you to contact your dealer for advanced help.

## 5.1 Checking If the Hardware Status Is OK or Not

Follow the steps below to verify the hardware status.

1. Check if the power line and WLAN/LAN cable connections is OK.  
If not, refer to “**1.3 Hardware Installation**” for reconnection.
2. Turn on the router. Make sure the **ACT LED** blink once per second and the correspondent **LAN LED** is bright.



3. If not, it means that there is something wrong with the hardware status. Simply back to “**1.3 Hardware Installation**” to execute the hardware installation again. And then, try again.

## 5.2 Checking If the Network Connection Settings on Your Computer Is OK or Not

Sometimes the link failure occurs due to the wrong network connection settings. After trying the above section, if the link is still failed, please do the steps listed below to make sure the network connection settings is OK.

### For Windows

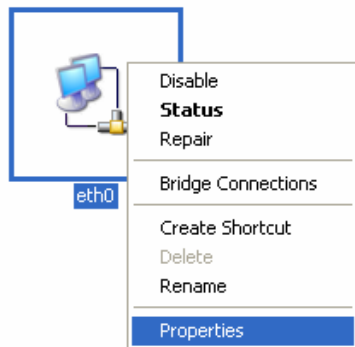


The example is based on Windows XP. As to the examples for other operation systems, please refer to the similar steps or find support notes in [www.draytek.com](http://www.draytek.com).

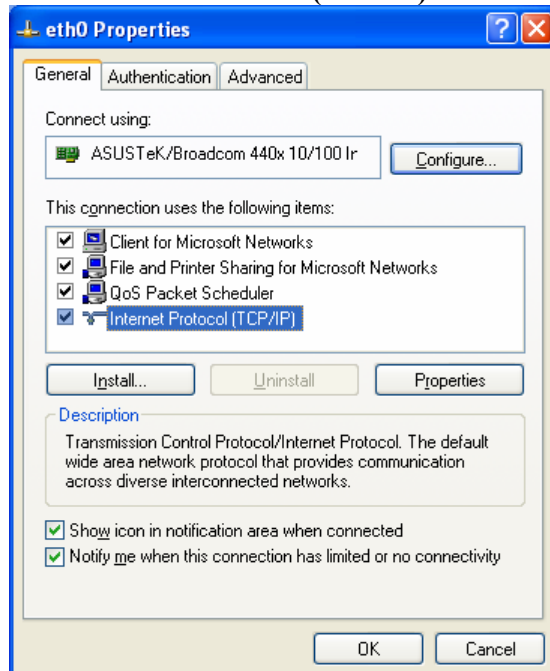
1. Go to **Control Panel** and then double-click on **Network Connections**.



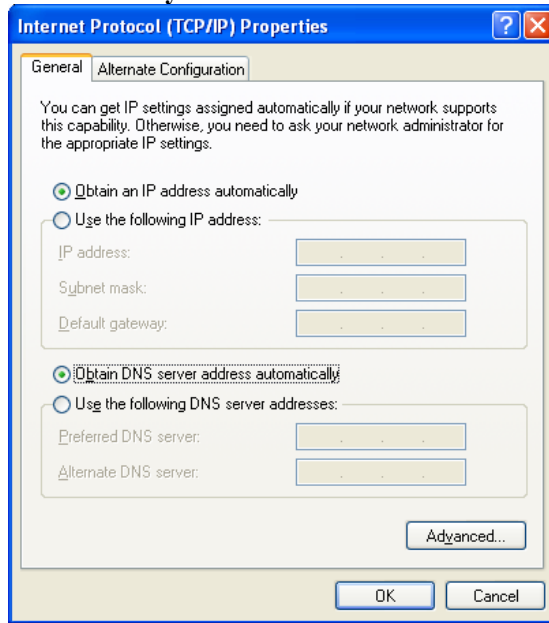
2. Right-click on **Local Area Connection** and click on **Properties**.



3. Select **Internet Protocol (TCP/IP)** and then click **Properties**.

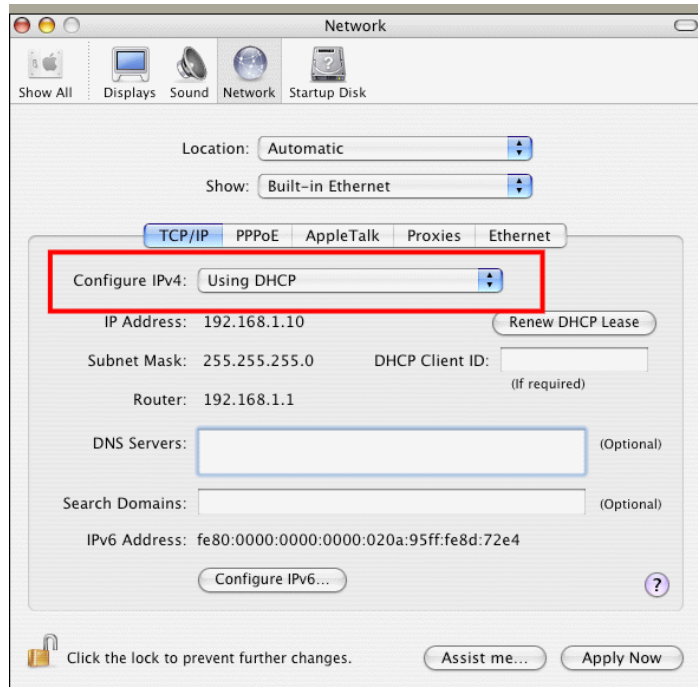


4. Select **Obtain an IP address automatically** and **Obtain DNS server address automatically**.



### For Mac OS

1. Double click on the current used Mac OS on the desktop.
2. Open the **Application** folder and get into **Network**.
3. On the **Network** screen, select **Using DHCP** from the drop down list of Configure IPv4.



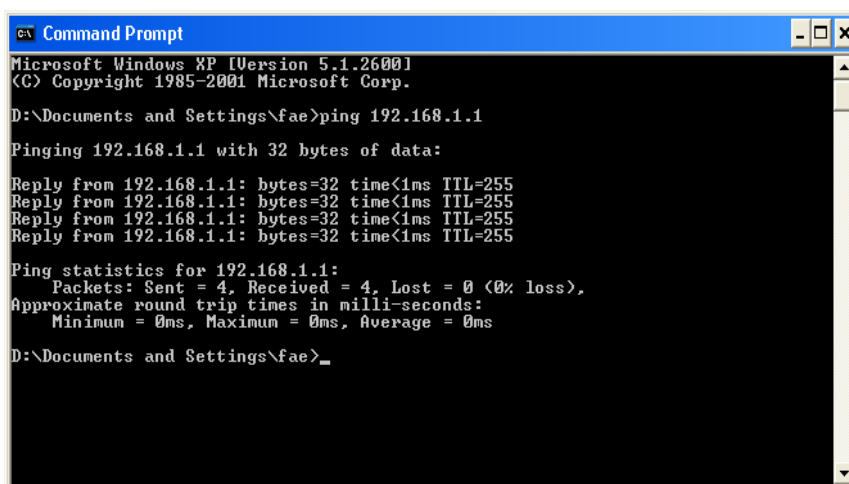
## 5.3 Pinging the Router from Your Computer

The default gateway IP address of the router is 192.168.1.1. For some reason, you might need to use “ping” command to check the link status of the router. **The most important thing is that the computer will receive a reply from 192.168.1.1.** If not, please check the IP address of your computer. We suggest you setting the network connection as **get IP automatically**. (Please refer to the section 5.2)

Please follow the steps below to ping the router correctly.

### For Windows

1. Open the **Command Prompt** window (from **Start menu> Run**).
2. Type **command** (for Windows 95/98/ME) or **cmd** (for Windows NT/ 2000/XP/Vista). The DOS command dialog will appear.



```
CA Command Prompt
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

D:\Documents and Settings\fae>ping 192.168.1.1
Pinging 192.168.1.1 with 32 bytes of data:
Reply from 192.168.1.1: bytes=32 time<1ms TTL=255
Reply from 192.168.1.1: bytes=32 time<1ms TTL=255
Reply from 192.168.1.1: bytes=32 time<1ms TTL=255
Reply from 192.168.1.1: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

D:\Documents and Settings\fae>_
```

3. Type ping 192.168.1.1 and press [Enter]. If the link is OK, the line of “**Reply from 192.168.1.1:bytes=32 time<1ms TTL=255**” will appear.
4. If the line does not appear, please check the IP address setting of your computer.

### For Mac OS (Terminal)

1. Double click on the current used Mac OS on the desktop.
2. Open the **Application** folder and get into **Utilities**.
3. Double click **Terminal**. The Terminal window will appear.
4. Type **ping 192.168.1.1** and press [Enter]. If the link is OK, the line of “**64 bytes from 192.168.1.1: icmp\_seq=0 ttl=255 time=xxxx ms**” will appear.

```

Terminal — bash — 80x24
Last login: Sat Jan  3 02:24:18 on ttys1
Welcome to Darwin!
Vigor10:~ draytek$ ping 192.168.1.1
PING 192.168.1.1 (192.168.1.1): 56 data bytes
64 bytes from 192.168.1.1: icmp_seq=0 ttl=255 time=0.755 ms
64 bytes from 192.168.1.1: icmp_seq=1 ttl=255 time=0.697 ms
64 bytes from 192.168.1.1: icmp_seq=2 ttl=255 time=0.716 ms
64 bytes from 192.168.1.1: icmp_seq=3 ttl=255 time=0.731 ms
64 bytes from 192.168.1.1: icmp_seq=4 ttl=255 time=0.72 ms
^C
--- 192.168.1.1 ping statistics ---
5 packets transmitted, 5 packets received, 0% packet loss
round-trip min/avg/max = 0.697/0.723/0.755 ms
Vigor10:~ draytek$

```

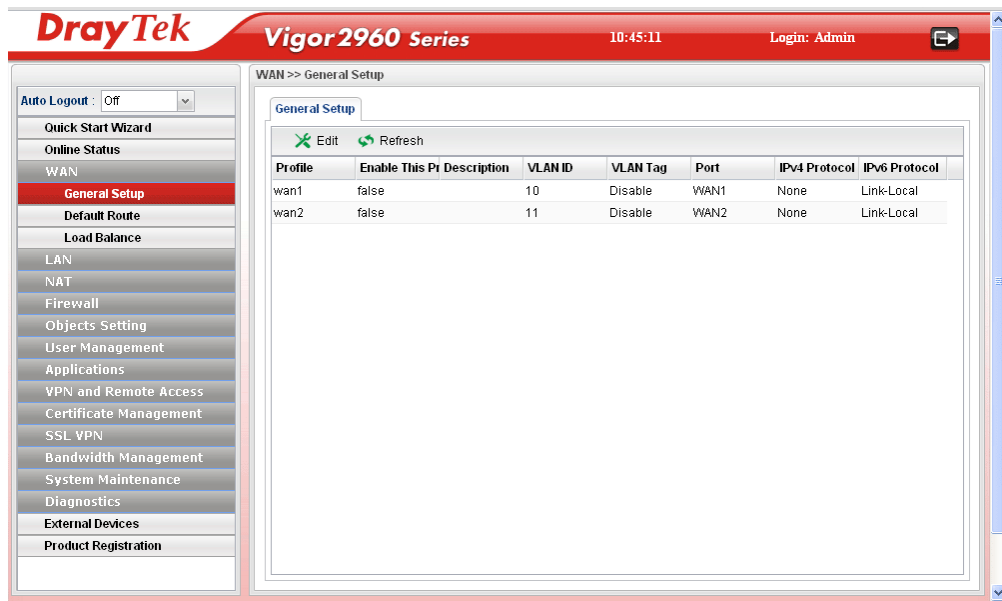
## 5.4 Checking If the ISP Settings are OK or Not

Open Online Status to check current network status. Be careful to check if the settings coming from your ISP have been typed correctly or not.

The screenshot displays the 'Online Status' page of the Vigor2960 web interface. It features a 'Refresh' button at the top left. The page is divided into two main sections: 'Device Information' and 'System Information'. Below these, there are tabs for 'IPv4' and 'IPv6', with 'IPv4' currently selected. A table at the bottom lists network profiles with columns for Profile, Connect, Uptime, MAC, Protocol, IP, Gateway, DNS, RX Pack, TX Pack, and Operation.

Profile	Connect	Uptime	MAC	Protocol	IP	Gateway	DNS	RX Pack	TX Pack	Operation
lan1	up	0 days ...	00:50:7...	static(N...	192.168...			6550	6532	
wan1	up	0 days ...	00:50:7...	static(N...	172.16....	172.16....		183030	4197	

If there is something wrong with the configuration, please go to **WAN** page and choose **General Setup** again to modify the WAN connection.



## 5.5 Backing to Factory Default Setting If Necessary

Sometimes, a wrong connection can be improved by returning to the default settings. Try to reset the router by software or hardware.

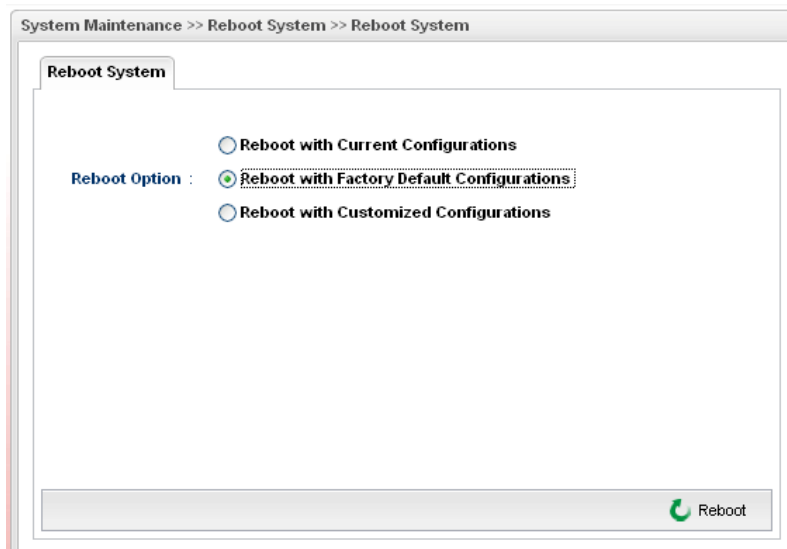


**Warning:** After pressing **factory default setting**, you will lose all settings you did before. Make sure you have recorded all useful settings before you pressing. The password of the factory default is null.

### Software Reset

You can reset router to factory default via Web page.

Go to **System Maintenance**>> **Reboot System** on the web page. The following screen will appear. Choose the selection you need and click **Reboot**. After few seconds, the router will return all the settings to the factory settings.



## Hardware Reset

While the router is running (ACT LED blinking), press the **Factory Reset** button and hold for more than 5 seconds. When you see the ACT LED blinks rapidly, please release the button. Then, the router will restart with the default configuration.



After restore the factory default setting, you can configure the settings for the router again to fit your personal request.

## 5.6 Contacting Your Dealer

If the router settings are correct at all, and the router still does not connect to internet, please contact your ISP technical support representative to help you for configuration.

Also, if the router still cannot work correctly, please contact your dealer for help. For any further questions, please send e-mail to [support@draytek.com](mailto:support@draytek.com).