DrayTek

Vigor2952 Series

Dual-WAN Security Firewall

Your reliable networking solutions partner

User's Guide

V1.0

Vigor2952 Series
Dual-WAN Security Firewall

User's Guide

Version: 1.0

Firmware Version: V3.8.2

(For future update, please visit DrayTek web site)

Date: March 3, 2016

Copyrights

© All rights reserved. This publication contains information that is protected by copyright. No part may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language without written permission from the copyright holders.

Trademarks

The following trademarks are used in this document:

- Microsoft is a registered trademark of Microsoft Corp.
- Windows, Windows 95, 98, Me, NT, 2000, XP, Vista, 7 and Explorer are trademarks of Microsoft Corp.
- Apple and Mac OS are registered trademarks of Apple Inc.
- Other products may be trademarks or registered trademarks of their respective manufacturers.

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 be 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 tore-store 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, Hsinchu County, Taiwan 303
Product:	Vigor2952 Series Router

DrayTek Corp. declares that Vigor2952 Series of routers are in compliance with the following essential requirements and other relevant provisions of R&TTE 1999/5/EC, ErP 2009/125/EC and RoHS 2011/65/EU.

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.

This product is designed for 2.4GHz WLAN network throughout the EC region.

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:

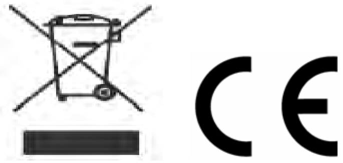
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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.

The antenna/transmitter should be kept at least 20 cm away from human body.



More update, please visit www.draytek.com.

Table of Contents

Part I Installation

Installation

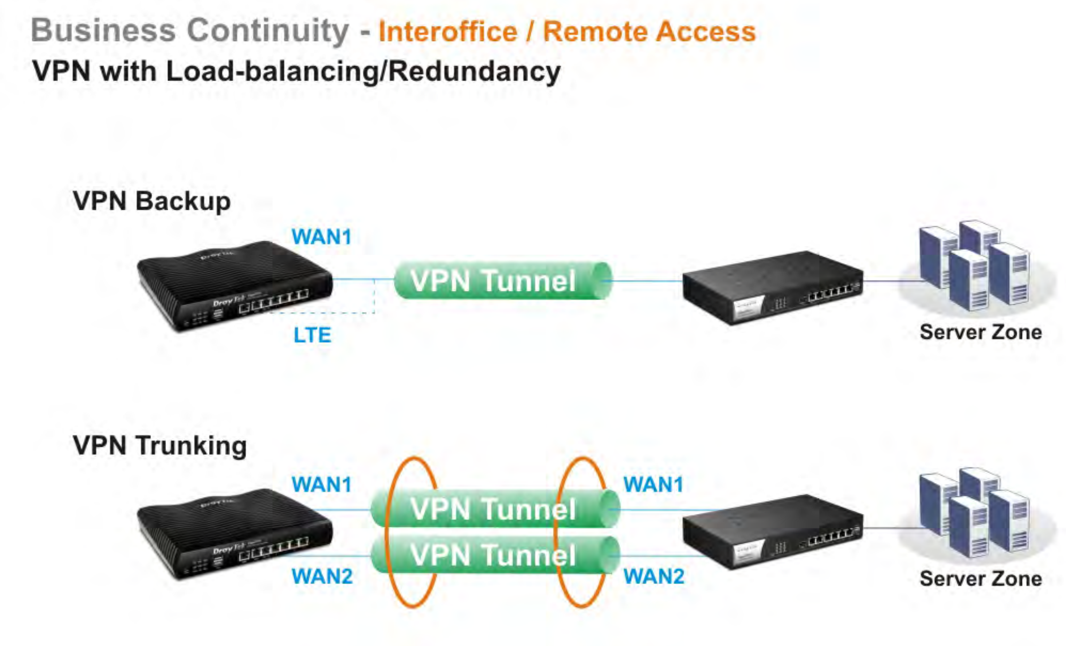
This part will introduce Vigor router and guide to install the device in hardware and software.

I-1 Introduction

This is a generic International version of the user guide. Specification, compatibility and features vary by region. For specific user guides suitable for your region or product, please contact local distributor.

Vigor2952 Series, a broadband router, integrates IP layer QoS, NAT session/bandwidth management to help users control works well with large bandwidth.

By adopting hardware-based VPN platform and hardware encryption of AES/DES/3DES, the router increases the performance of VPN greatly and offers several protocols (such as IPSec/PPTP/L2TP) with up to **100** VPN tunnels.

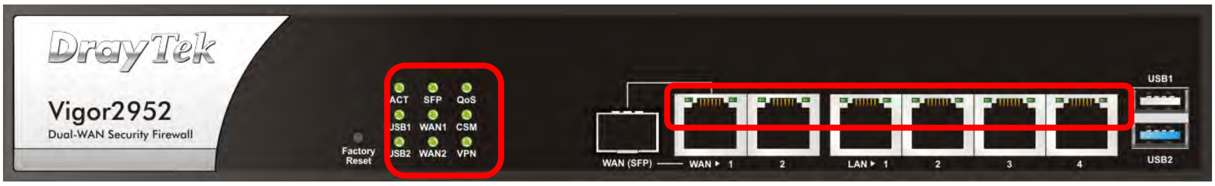


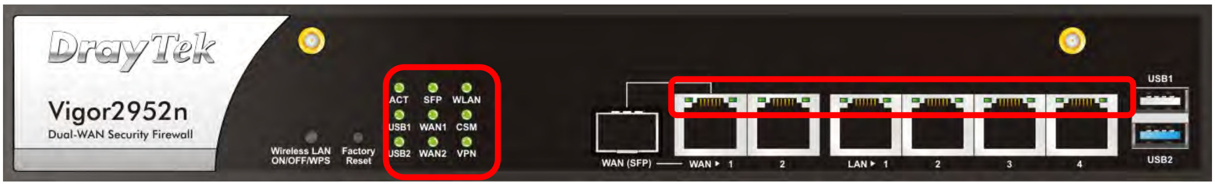
The object-based design used in SPI (Stateful Packet Inspection) firewall allows users to set firewall policy easily. CSM (Content Security Management) provides users control and management in IM (Instant Messenger) and P2P (Peer to Peer) more efficiency than before. By the way, DoS/DDoS prevention and URL/Web content filter strengthen the security outside and control inside.

In addition, Vigor2952 Series supports USB interface for connecting USB printer to share printer, USB storage device for sharing files, or for 3G/4G WAN.

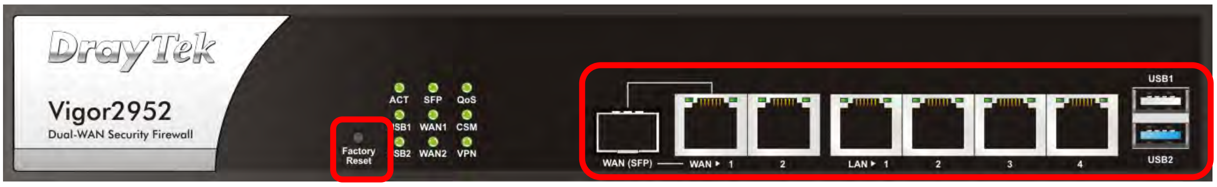
I-1-1 Indicators and Connectors

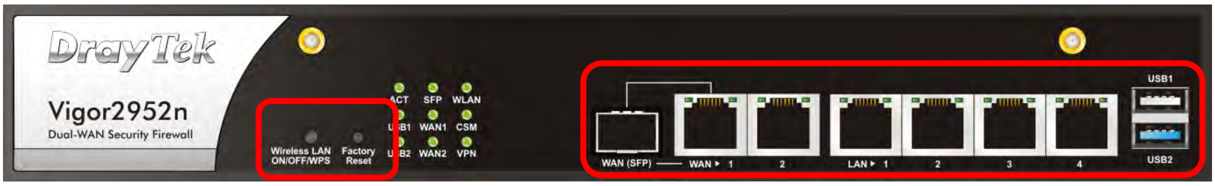
Before you use the Vigor router, please get acquainted with the LED indicators and connectors first.





LED		Status	Explanation
ACT (Activity)		Blinking	The router is powered on and running normally.
		Off	The router is powered off.
USB1~USB2		On	A USB device is connected and active.
		Blinking	The data is transmitting.
SFP		On	No fiber line connected.
		Off	File line connected.
WAN1~WAN2		On	The WAN connection is ready.
		Blinking	It will blink while transmitting data.
QoS		On	The QoS function is active.
WLAN		On	Wireless access point is ready.
		Blinking	Ethernet packets are transmitting over wireless LAN.
		Off	The WLAN function is inactive.
CSM		On	The profile of CSM (Content Security Management) for IM/P2P application is enabled from **Firewall >> General Setup**. (Such profile is established under **CSM** menu).
VPN		On	VPN tunnel is up and down.
		Off	VPN services are disabled.
		Blinking	Traffic is passing through VPN tunnel.
LED on Connector			
WAN1 or Fiber WAN	Left LED (Green)	On	The port is connected.
		Off	The port is disconnected.
		Blinking	The data is transmitting through WAN1 or Fiber WAN.
	Right LED (Green)	On	The WAN1/Fiber port is connected with 1000Mbps.
		Off	The WAN1/Fiber port is connected with 10/100Mbps.
WAN2	Left LED (Green)	On	The port is connected.
		Off	The port is disconnected.
		Blinking	The data is transmitting.
	Right LED (Green)	On	The port is connected with 1000Mbps.
		Off	The port is connected with 10/100Mbps.
LAN1~ LAN4	Left LED (Green)	On	The port is connected.
		Off	The port is disconnected.
		Blinking	The data is transmitting.
	Right LED (Green)	On	The port is connected with 1000Mbps.
		Off	The port is connected with 10/100Mbps.



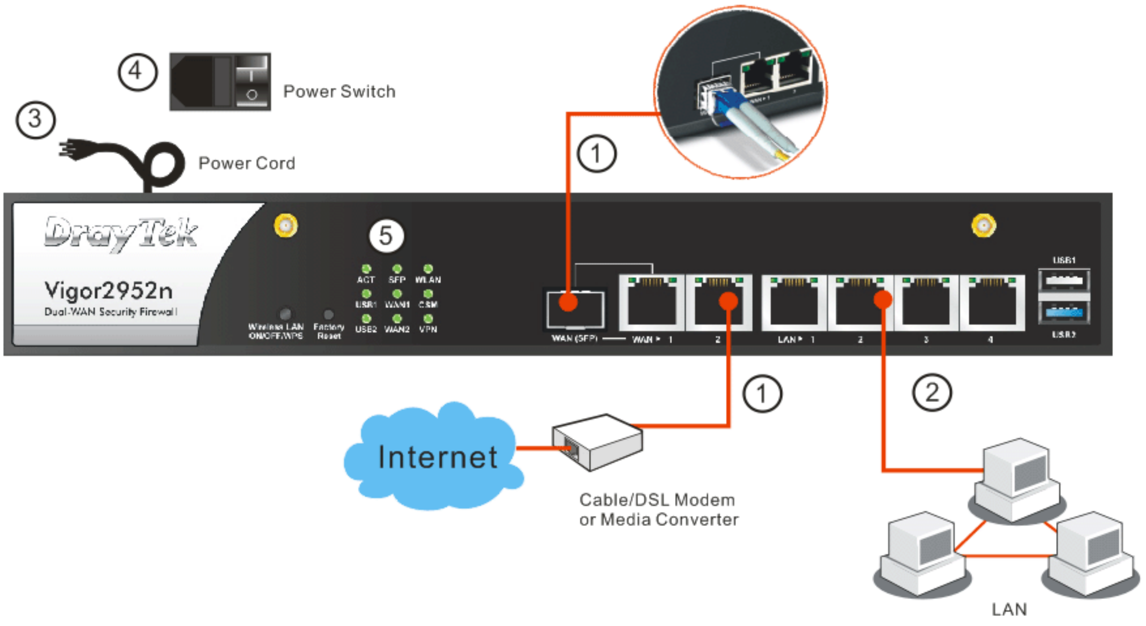


Interface	Description
Factory Reset	Restore the default settings. Usage: Turn on the router (ACT LED is blinking). Press the hole and keep for more than 5 seconds. When you see the ACT LED begins to blink rapidly than usual, release the button. Then the router will restart with the factory default configuration.
Wireless LAN ON/OFF/WPS	WLAN On - Press the button and release it within 2 seconds. When the wireless function is ready, the green LED will be on. WLAN Off - Press the button and release it within 2 seconds to turn off the WLAN function. When the wireless function is not ready, the LED will be off. WPS - When WPS function is enabled by web user interface, press this button for more than 2 seconds to wait for client's device making network connection through WPS.
Fiber	Connector for accessing the Internet.
WAN1~WAN2	Connector for remote networked devices.
LAN1~LAN4	Connectors for local networked devices.
USB1~USB2	Connector for a USB device (for 3G/4G USB Modem or printer).
PWR	Connector for a power cord.
ON/OFF	Power Switch.

I-2 Hardware Installation

I-2-1 Installing Vigor Router

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



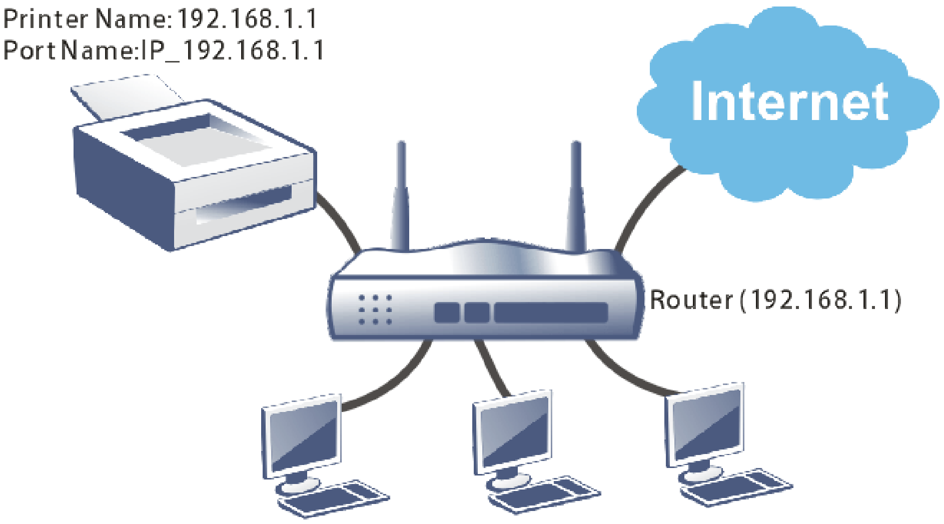
1. Connect a cable Modem/DSL Modem/Media Converter (depends on your requirement) to any WAN port of router with Ethernet cable (RJ-45). Or, connect the fiber cable to the WAN (SFP) port of router.
2. Connect one end of an Ethernet cable (RJ-45) to one of the **LAN** ports of the router and the other end of the cable (RJ-45) into the Ethernet port on your computer (that device also can connect to other computers to form a small area network).
3. Connect the power cord to the router's power port on the rear panel, and the other side into a wall outlet.
4. Power on the device by pressing down the power switch on the rear panel.
5. The system starts to initiate. After completing the system test, the **ACT** LED will light up and start blinking. The **WAN1/WAN2/LAN** connector LED (Left or Right) will light up according to the network card feature (1000 or 100) of the device that it connected.

If Fiber connection is used, check if SFP LED lights up or not.

(For the detailed information of LED status, please refer to section I-1-1 Indicators and Connectors.)

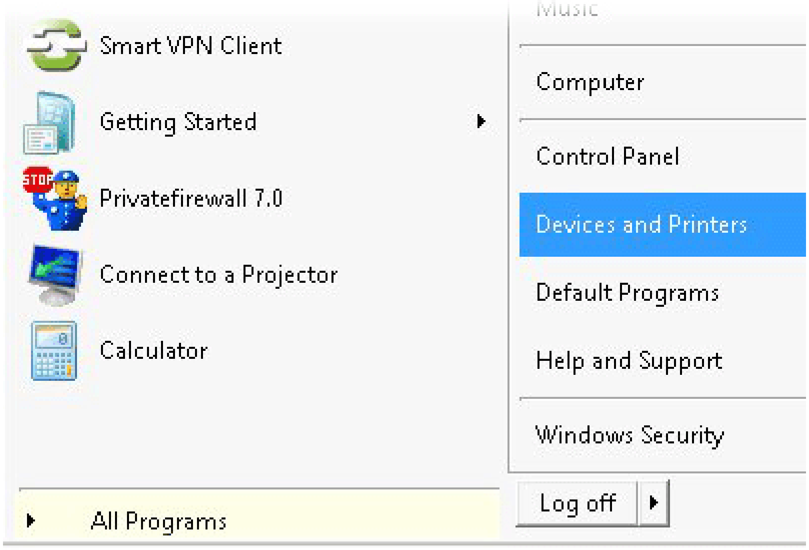
I-2-2 Installing USB Printer to Vigor Router

You can install a printer onto the router for sharing printing. All the PCs connected this router can print documents via the router. The example provided here is made based on Windows 7. For other Windows system, please visit **www.DrayTek.com**.

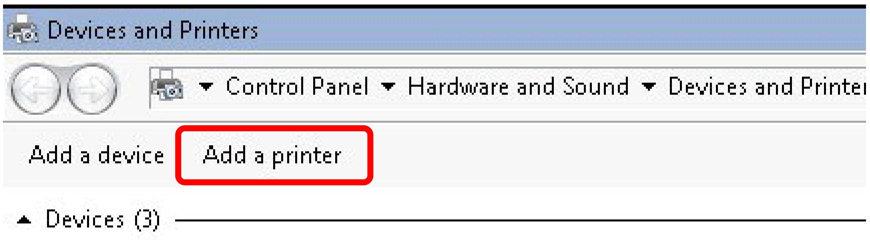


Before using it, please follow the steps below to configure settings for connected computers (or wireless clients).

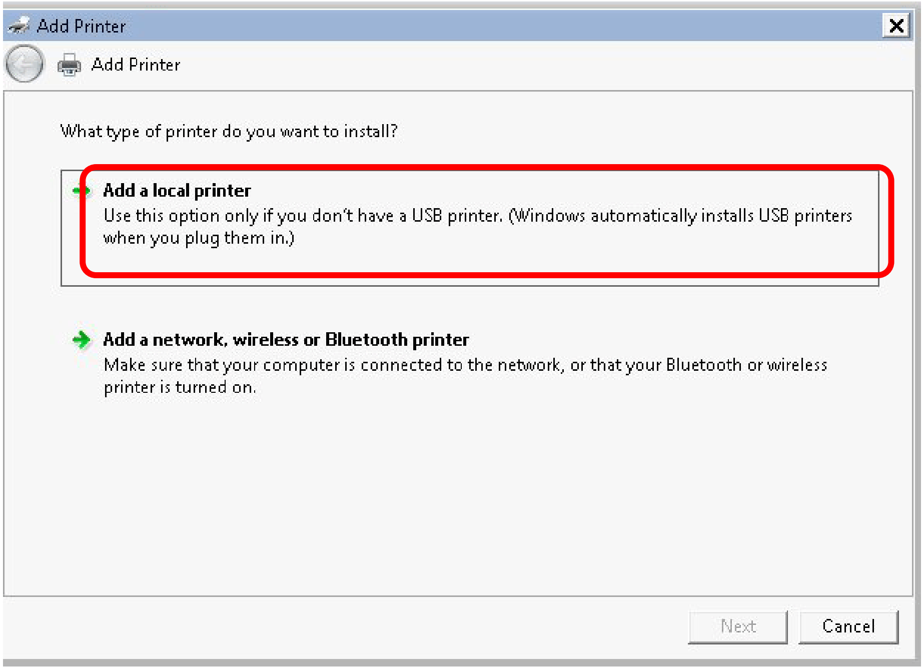
1. Connect the printer with the router through USB/parallel port.
2. Open **All Programs>>Getting Started>>Devices and Printers**.



3. Click **Add a printer**.



4. A dialog will appear. Click **Add a local printer** and click **Next**.



Add Printer

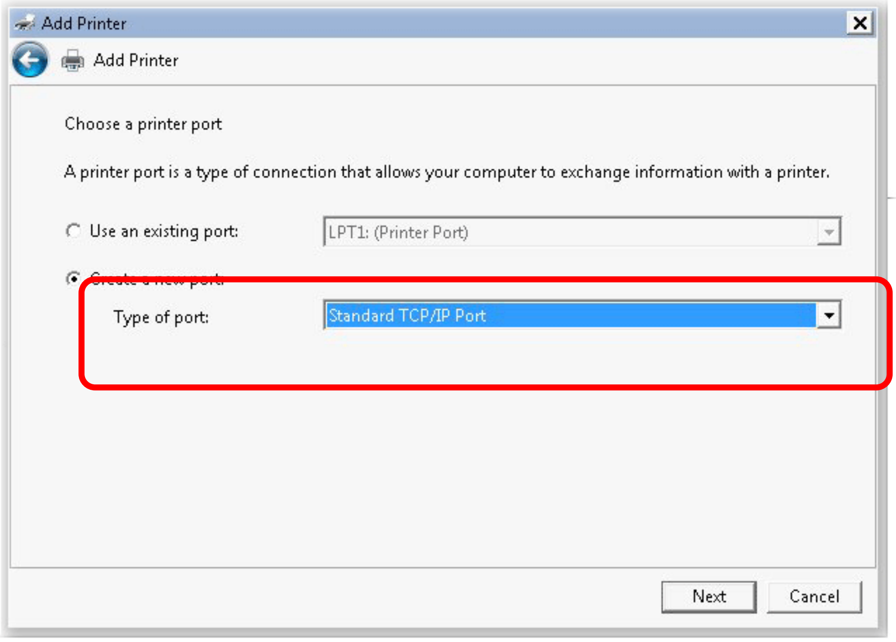
Add Printer

What type of printer do you want to install?

Add a local printer
Use this option only if you don't have a USB printer. (Windows automatically installs USB printers when you plug them in.)

Add a network, wireless or Bluetooth printer
Make sure that your computer is connected to the network, or that your Bluetooth or wireless printer is turned on.

5. In this dialog, choose **Create a new port.** In the field of **Type of port,** use the drop down list to select **Standard TCP/IP Port**. Then, click **Next**.



Add Printer

Add Printer

Choose a printer port

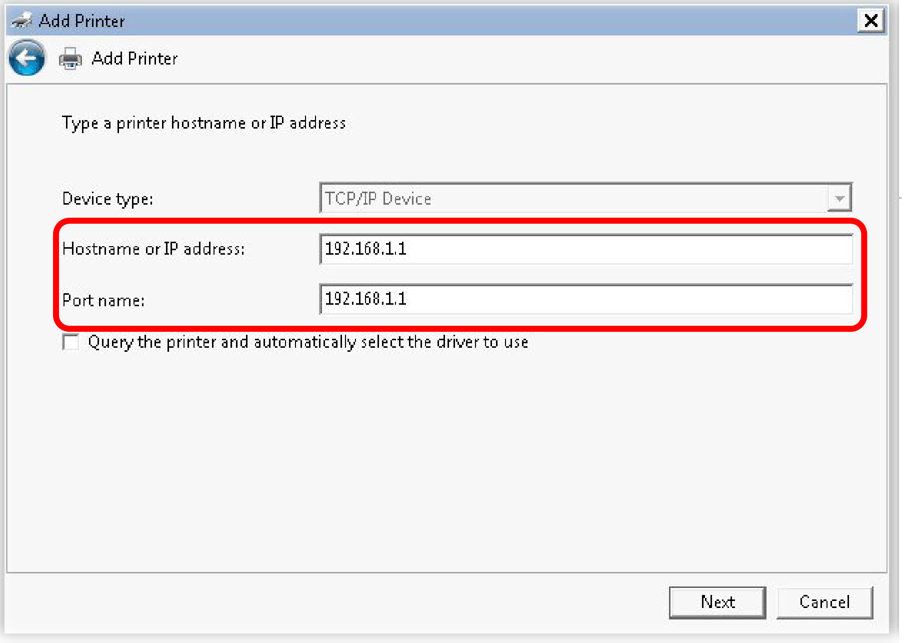
A printer port is a type of connection that allows your computer to exchange information with a printer.

○ Use an existing port: LPT1: (Printer Port)

● Create a new port:

Type of port: Standard TCP/IP Port

6. In the following dialog, type **192.168.1.1** (router's LAN IP) in the field of **Hostname or IP Address** and type **192.168.1.1** as the **Port name**. Then, click **Next**.



Add Printer

Type a printer hostname or IP address

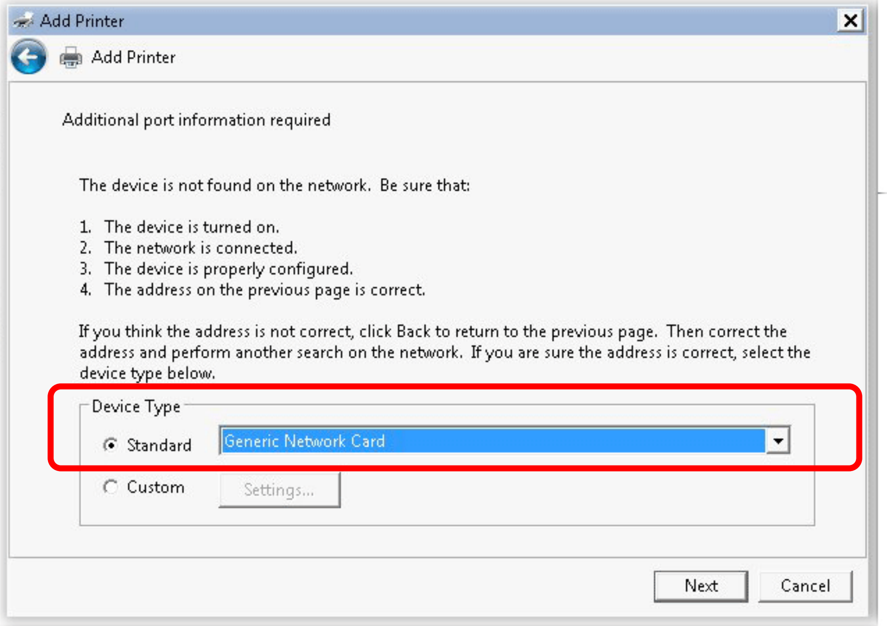
Device type: TCP/IP Device

Hostname or IP address: 192.168.1.1

Port name: 192.168.1.1

☐ Query the printer and automatically select the driver to use

7. Click **Standard** and choose **Generic Network Card**.



Add Printer

Additional port information required

The device is not found on the network. Be sure that:

1. The device is turned on.
2. The network is connected.
3. The device is properly configured.
4. The address on the previous page is correct.

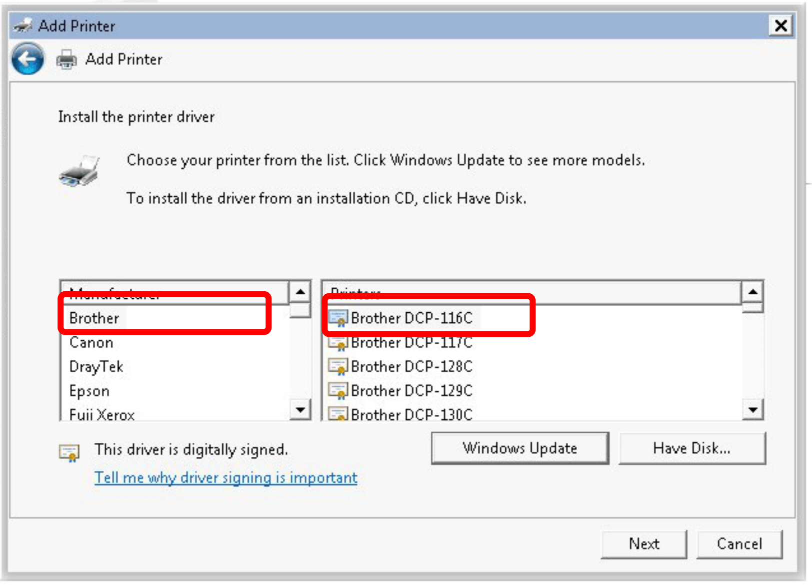
If you think the address is not correct, click Back to return to the previous page. Then correct the address and perform another search on the network. If you are sure the address is correct, select the device type below.

Device Type

● Standard Generic Network Card

○ Custom Settings...

8. Now, your system will ask you to choose right name of the printer that you installed onto the router. Such step can make correct driver loaded onto your PC. When you finish the selection, click **Next**.



Add Printer

Install the printer driver

Choose your printer from the list. Click Windows Update to see more models.

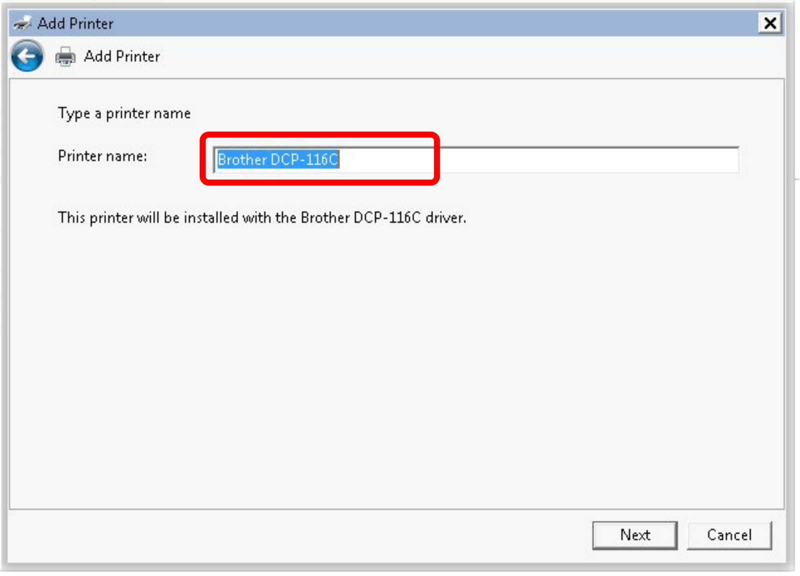
To install the driver from an installation CD, click Have Disk.

Manufacturer	Printers
Brother	Brother DCP-116C
Canon	Brother DCP-117C
DrayTek	Brother DCP-128C
Epson	Brother DCP-129C
Fuji Xerox	Brother DCP-130C

This driver is digitally signed.

Tell me why driver signing is important

9. Type a name for the chosen printer. Click **Next.**



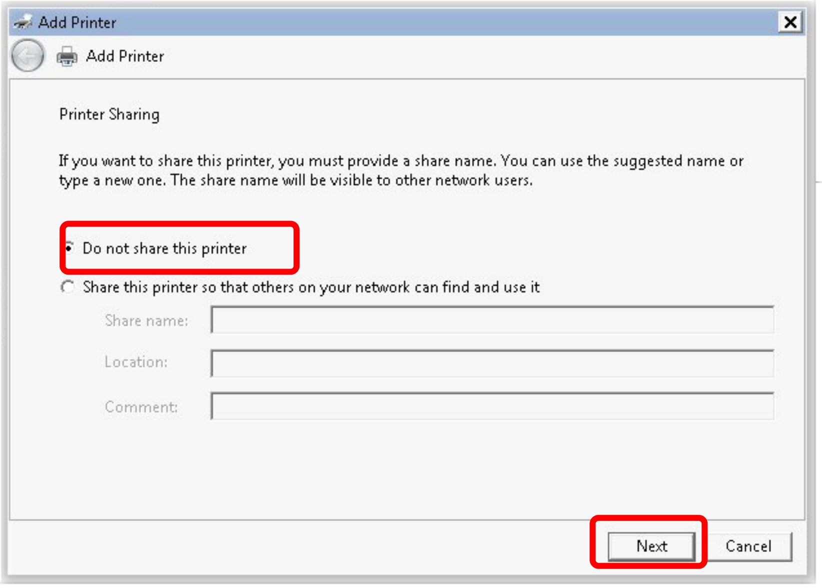
Add Printer

Type a printer name

Printer name: Brother DCP-116C

This printer will be installed with the Brother DCP-116C driver.

10. Choose **Do not share this printer** and click **Next**.



Add Printer

Printer Sharing

If you want to share this printer, you must provide a share name. You can use the suggested name or type a new one. The share name will be visible to other network users.

● Do not share this printer

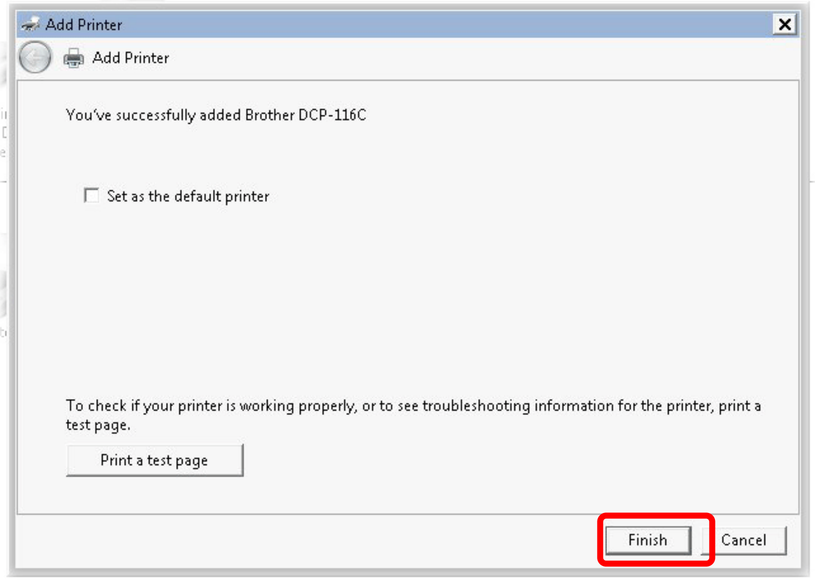
○ Share this printer so that others on your network can find and use it

Share name:

Location:

Comment:

11. Then, in the following dialog, click **Finish**.



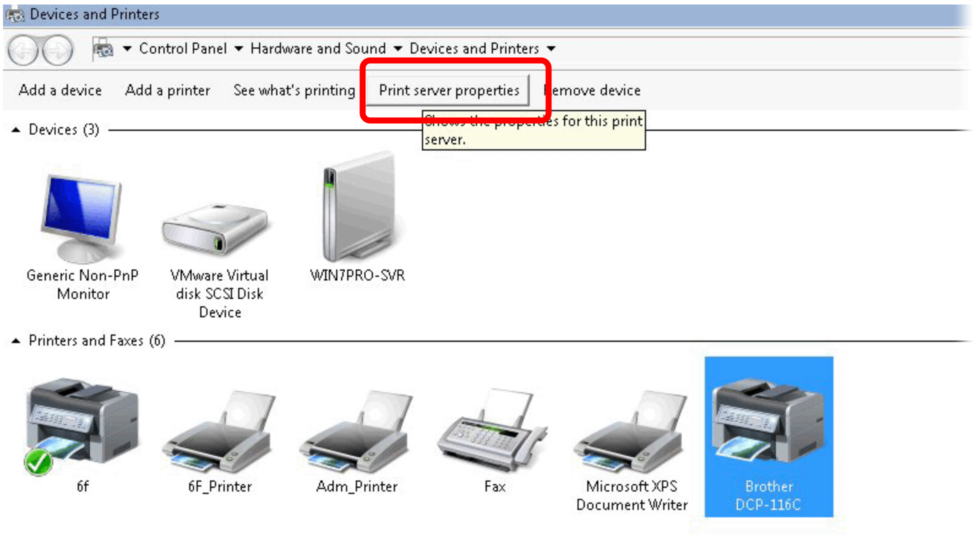
Add Printer

You've successfully added Brother DCP-116C

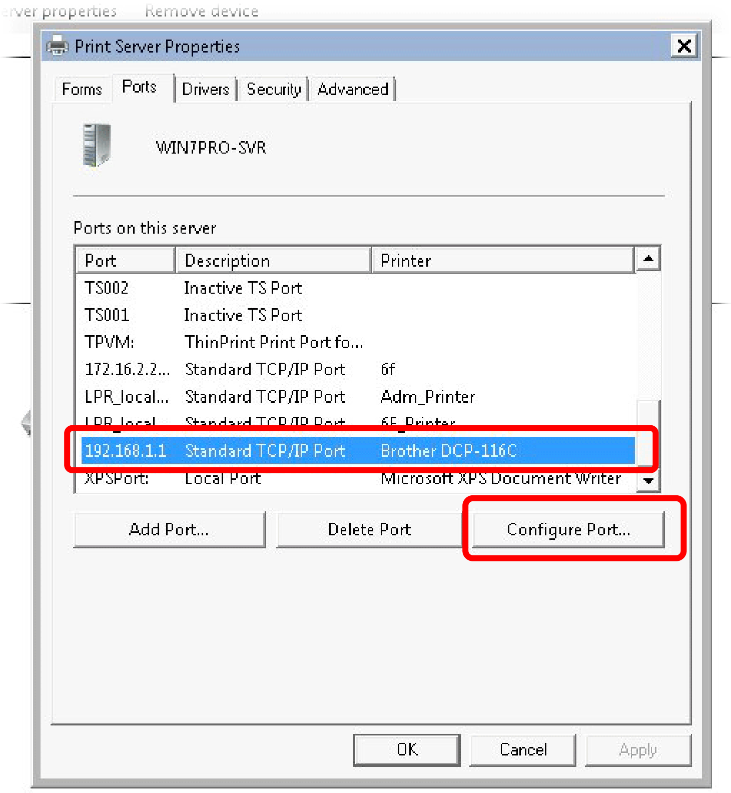
□ Set as the default printer

To check if your printer is working properly, or to see troubleshooting information for the printer, print a test page.

12. The new printer has been added and displayed under **Printers and Faxes**. Click the new printer icon and click **Printer server properties**.

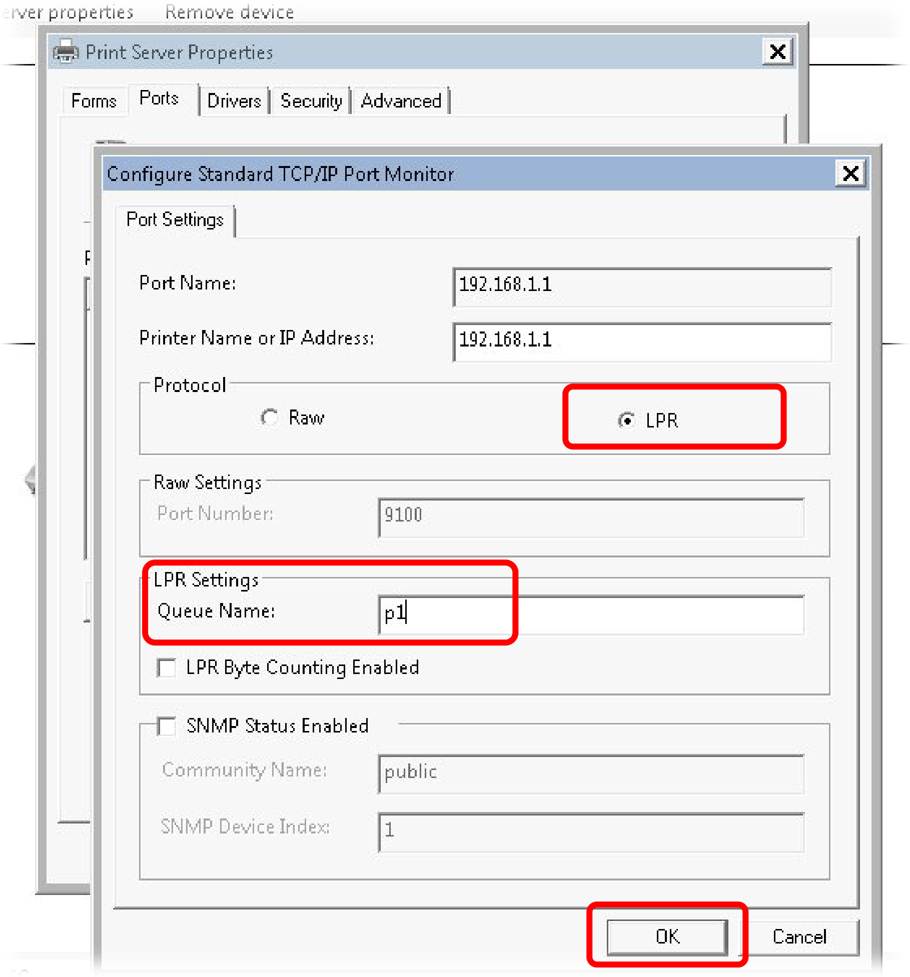


13. Edit the property of the new printer you have added by clicking **Configure Port**.



Port	Description	Printer
TS002	Inactive TS Port	
TS001	Inactive TS Port	
TPVM:	ThinPrint Print Port fo...	
172.16.2.2...	Standard TCP/IP Port	6f
LPR_local...	Standard TCP/IP Port	Adm_Printer
LPR_local...	Standard TCP/IP Port	6F_Printer
192.168.1.1	Standard TCP/IP Port	Brother DCP-116C
XPSPort:	Local Port	Microsoft XPS Document Writer

14. Select "**LPR**" on Protocol, type **p1** (number 1) as **Queue Name**. Then click **OK**. Next please refer to the red rectangle for choosing the correct protocol and LPR name.



Port Name: 192.168.1.1

Printer Name or IP Address: 192.168.1.1

Protocol

○ Raw ● LPR

Raw Settings

Port Number: 9100

LPR Settings

Queue Name: p1

□ LPR Byte Counting Enabled

□ SNMP Status Enabled

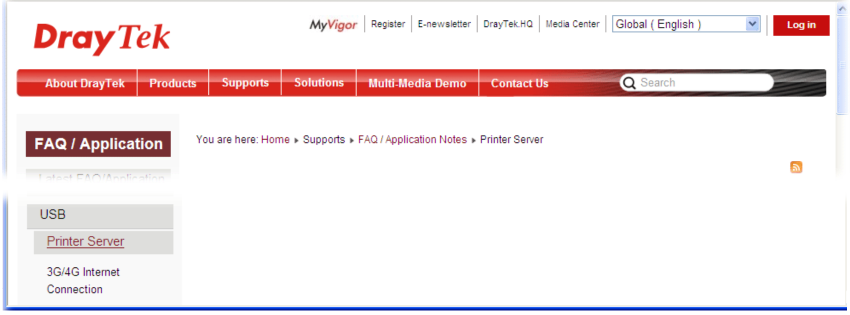
Community Name: public

SNMP Device Index: 1

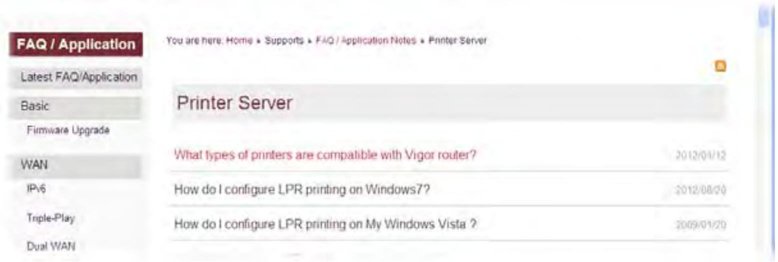
The printer can be used for printing now. Most of the printers with different manufacturers are compatible with vigor router.

Info

Note 1: Some printers with the fax/scanning or other additional functions are not supported. If you do not know whether your printer is supported or not, please visit www.draytek.com to find out the printer list. Open Support >FAQ/Application Notes; find out the link of USB>>Printer Server and click it.



Then, click the What types of printers are compatible with Vigor router? link.



Printer Server

What types of printers are compatible with Vigor router?	2012/01/12
How do I configure LPR printing on Windows7?	2012/08/20
How do I configure LPR printing on My Windows Vista ?	2009/01/20

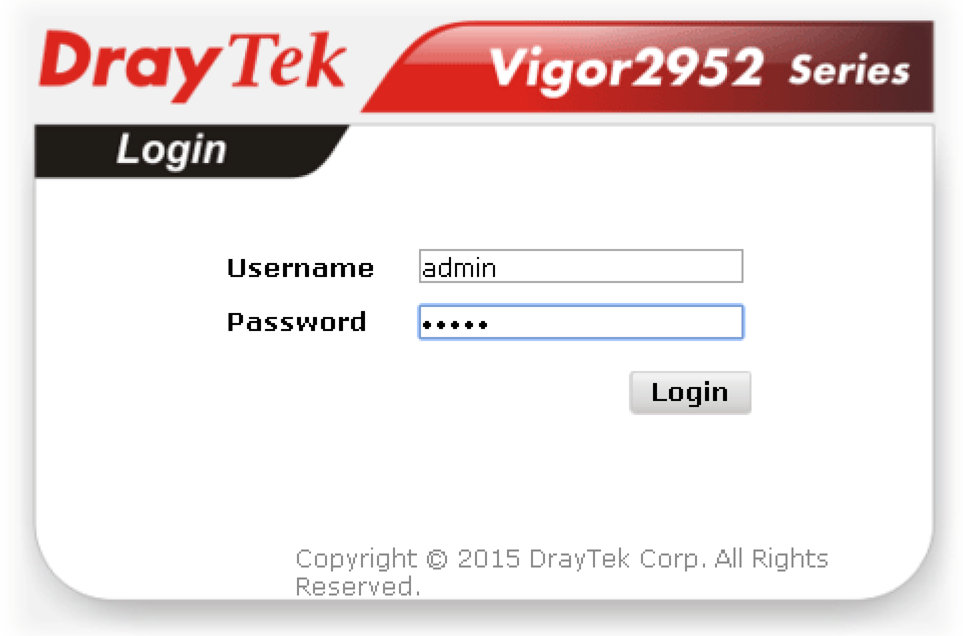
Note 2: Vigor router supports printing request from computers via LAN ports but not WAN port.

I-3 Accessing Web Page

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

   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 the guide.

2. Open a web browser on your PC and type **http://192.168.1.1.** The following window will be open to ask for username and password.



Username: admin

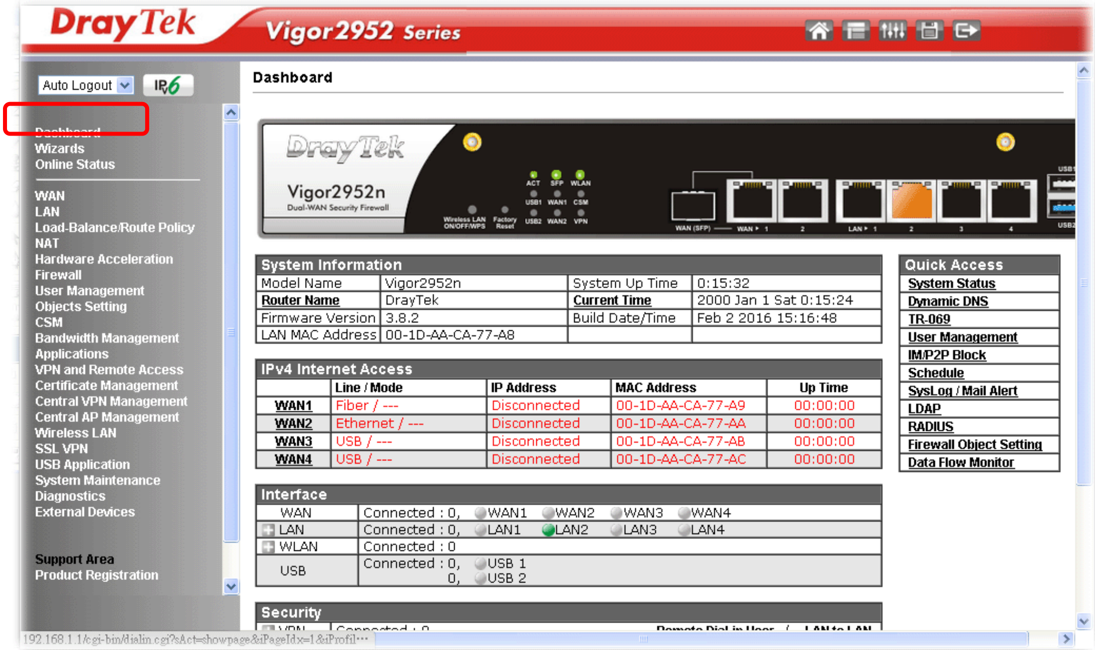
Password: •••••

3. Please type "admin/admin" as the Username/Password and click **Login**.

Info

If you fail to access to the web configuration, please go to "Trouble Shooting" for detecting and solving your problem.

4. Now, the **Main Screen** will appear.



Dashboard

System Information

Model Name	Vigor2952n	System Up Time	0:15:32
Router Name	DrayTek	Current Time	2000 Jan 1 Sat 0:15:24
Firmware Version	3.8.2	Build Date/Time	Feb 2 2016 15:16:48
LAN MAC Address	00-1D-AA-CA-77-A8		

IPv4 Internet Access

	Line / Mode	IP Address	MAC Address	Up Time
WAN1	Fiber / ---	Disconnected	00-1D-AA-CA-77-A9	00:00:00
WAN2	Ethernet / ---	Disconnected	00-1D-AA-CA-77-AA	00:00:00
WAN3	USB / ---	Disconnected	00-1D-AA-CA-77-AB	00:00:00
WAN4	USB / ---	Disconnected	00-1D-AA-CA-77-AC	00:00:00

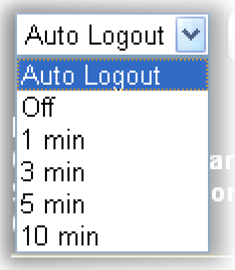
Interface

WAN	Connected : 0,	○WAN1	○WAN2	○WAN3	○WAN4
LAN	Connected : 0,	○LAN1	●LAN2	○LAN3	○LAN4
WLAN	Connected : 0				
USB	Connected : 0, 0,	○USB 1 ○USB 2			

Security

Info The home page will be different slightly in accordance with the type of the router you have.

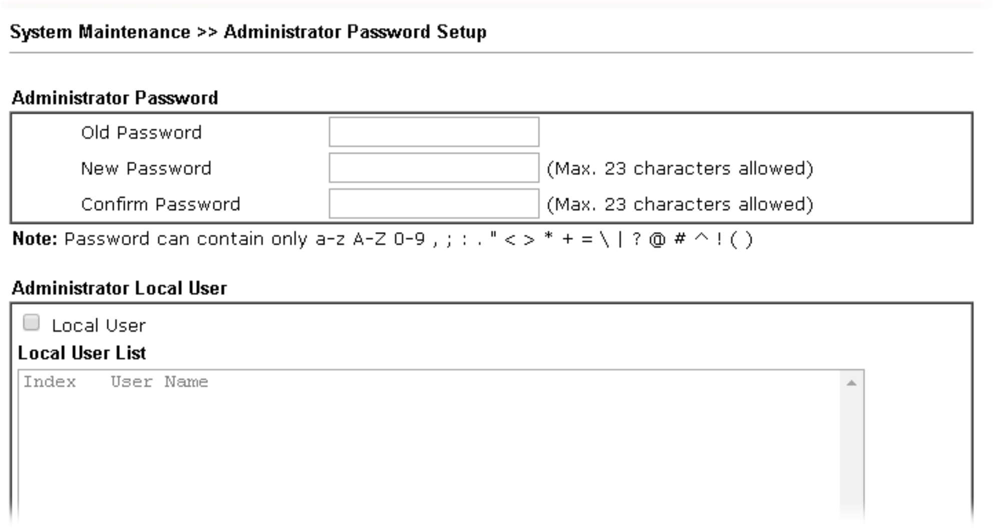
5. The web page can be logged out according to the chosen condition. The default setting is **Auto Logout**, which means the web configuration system will logout after 5 minutes without any operation. Change the setting for your necessity.



I-4 Changing Password

Please change the password for the original security of the router.

1. 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.
2. Please type "admin/admin" as Username/Password for accessing into the web user interface with admin mode.
3. Go to **System Maintenance** page and choose **Administrator Password**.



System Maintenance >> Administrator Password Setup

Administrator Password

Old Password

New Password (Max. 23 characters allowed)

Confirm Password (Max. 23 characters allowed)

Note: Password can contain only a-z A-Z 0-9 , ; : . " < > * + = \ | ? @ # ^ ! ( )

Administrator Local User

□ Local User

Local User List

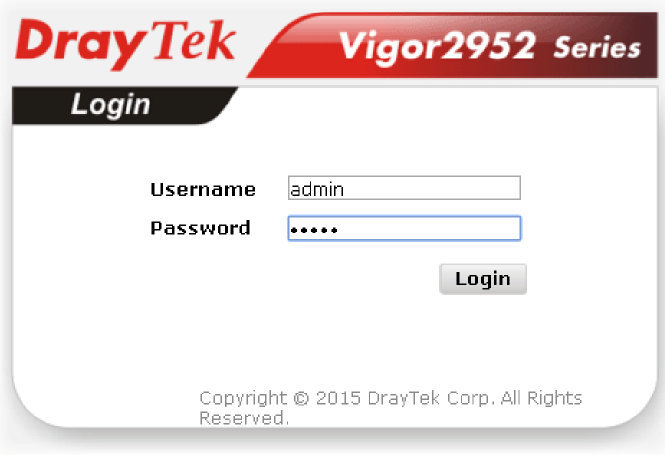
Index	User Name

4. Enter the login password (the default is "admin") on the field of **Old Password**. Type **New Password** and **Confirm Password**. Then click **OK** to continue.

Info

The maximum length of the password you can set is 23 characters.

5. Now, the password has been changed. Next time, use the new password to access the Web user interface for this router.



Username admin

Password •••••

Copyright © 2015 DrayTek Corp. All Rights Reserved.

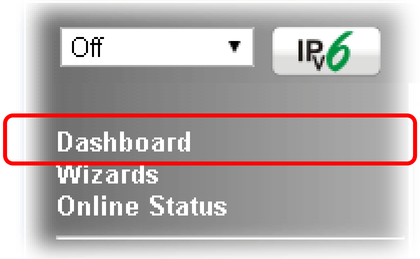
Info

Even the password is changed, the Username for logging onto the web user interface is still "admin".

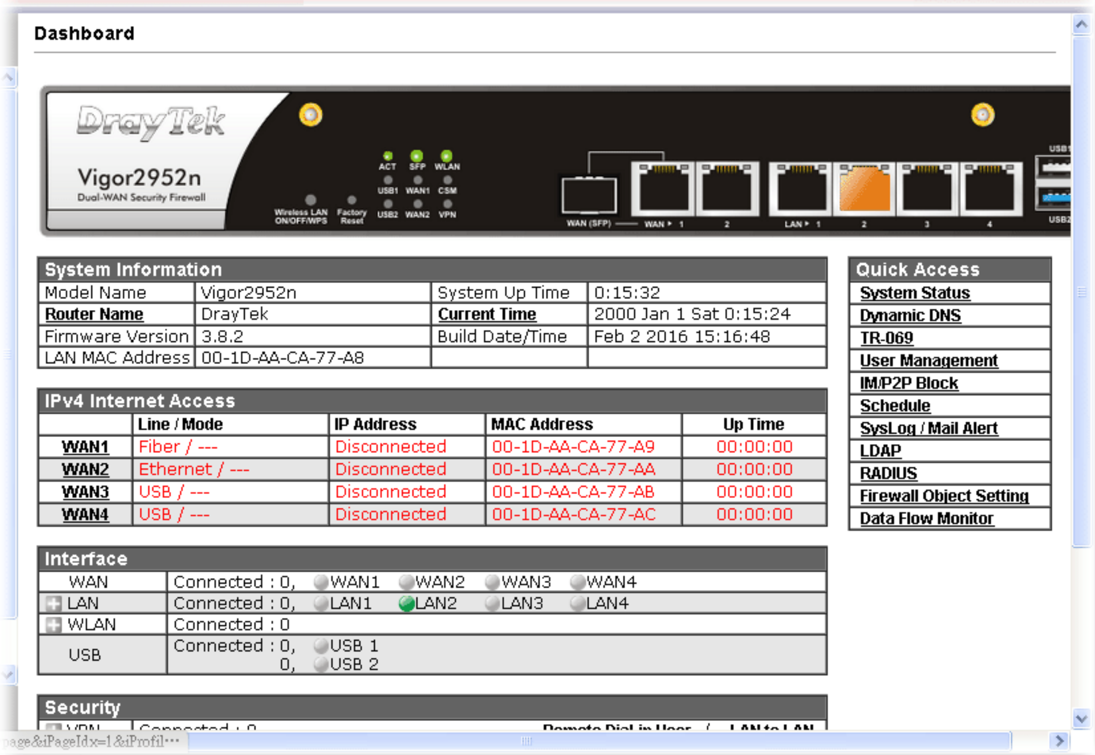
I-5 Dashboard

Dashboard shows the connection status including System Information, IPv4 Internet Access, IPv6 Internet Access, Interface (physical connection), Security and Quick Access.

Click **Dashboard** from the main menu on the left side of the main page.



A web page with default selections will be displayed on the screen. Refer to the following figure:



Dashboard

System Information			
Model Name	Vigor2952n	System Up Time	0:15:32
Router Name	DrayTek	Current Time	2000 Jan 1 Sat 0:15:24
Firmware Version	3.8.2	Build Date/Time	Feb 2 2016 15:16:48
LAN MAC Address	00-1D-AA-CA-77-A8		

Quick Access
System Status
Dynamic DNS
TR-069
User Management
IM/P2P Block
Schedule
SysLog / Mail Alert
LDAP
RADIUS
Firewall Object Setting
Data Flow Monitor

IPv4 Internet Access

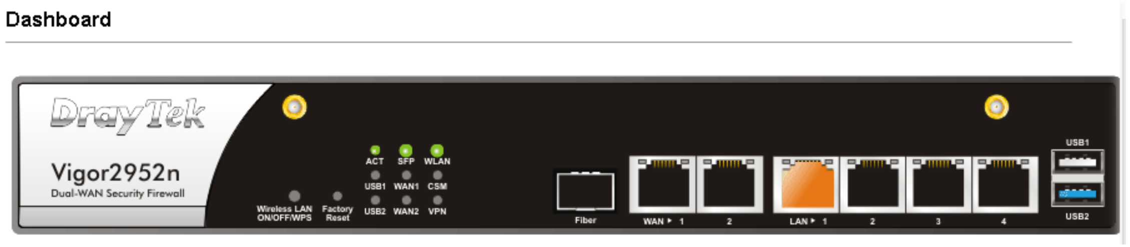
	Line / Mode	IP Address	MAC Address	Up Time
WAN1	Fiber / ---	Disconnected	00-1D-AA-CA-77-A9	00:00:00
WAN2	Ethernet / ---	Disconnected	00-1D-AA-CA-77-AA	00:00:00
WAN3	USB / ---	Disconnected	00-1D-AA-CA-77-AB	00:00:00
WAN4	USB / ---	Disconnected	00-1D-AA-CA-77-AC	00:00:00

Interface	
WAN	Connected : 0, ○WAN1 ○WAN2 ○WAN3 ○WAN4
⊞ LAN	Connected : 0, ○LAN1 ●LAN2 ○LAN3 ○LAN4
⊞ WLAN	Connected : 0
USB	Connected : 0, ○USB 1 0, ○USB 2

Security

I-5-1 Virtual Panel

On the top of the Dashboard, a virtual panel (simulating the physical panel of the router) displays the physical interface connection. It will be refreshed every five seconds. When you move and click the mouse cursor on LEDs (except ACT), USB ports, LAN, or WAN, related web setting page will be open for you to configure if required.

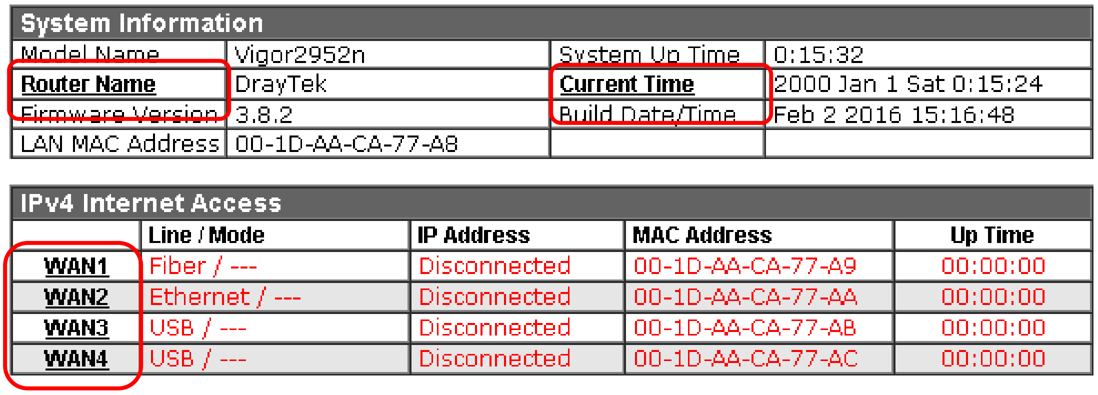


Dashboard

For detailed information about the LED display, refer to **I-1-1 LED Indicators and Connectors**.

I-5-2 Name with a Link

A name with a link (e.g., Router Name, Current Time, WAN1~4 and etc.) below means you can click it to open the configuration page for modification.



System Information

Model Name	Vigor2952n	System Up Time	0:15:32
Router Name	DrayTek	Current Time	2000 Jan 1 Sat 0:15:24
Firmware Version	3.8.2	Build Date/Time	Feb 2 2016 15:16:48
LAN MAC Address	00-1D-AA-CA-77-A8		

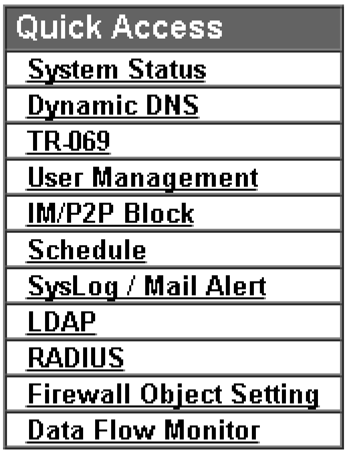
IPv4 Internet Access

	Line / Mode	IP Address	MAC Address	Up Time
WAN1	Fiber / ---	Disconnected	00-1D-AA-CA-77-A9	00:00:00
WAN2	Ethernet / ---	Disconnected	00-1D-AA-CA-77-AA	00:00:00
WAN3	USB / ---	Disconnected	00-1D-AA-CA-77-AB	00:00:00
WAN4	USB / ---	Disconnected	00-1D-AA-CA-77-AC	00:00:00

I-5-3 Quick Access for Common Used Menu

All the menu items can be accessed and arranged orderly on the left side of the main page for your request. However, some **important** and **common** used menu items which can be accessed in a quick way just for convenience.

Look at the right side of the Dashboard. You will find a group of common used functions grouped under **Quick Access**.

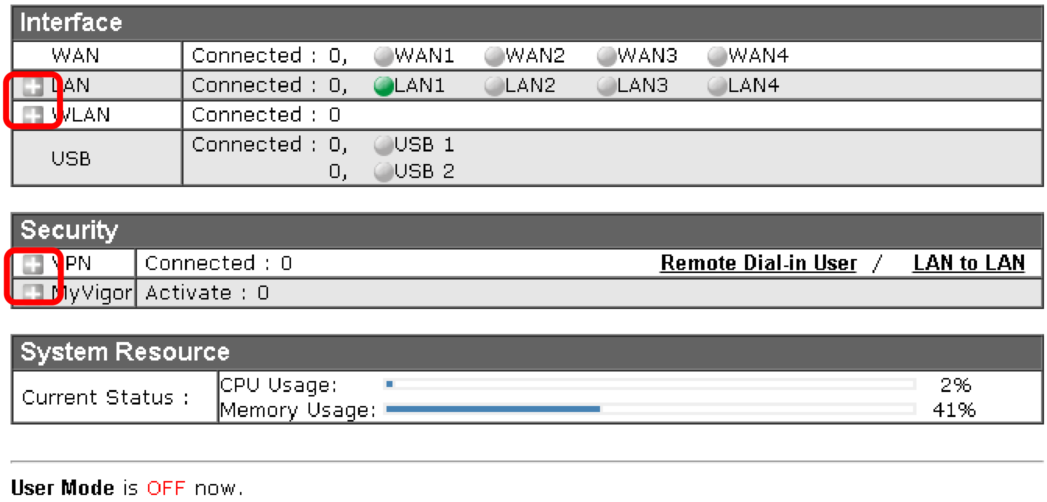


Quick Access

- System Status
- Dynamic DNS
- TR-069
- User Management
- IM/P2P Block
- Schedule
- SysLog / Mail Alert
- LDAP
- RADIUS
- Firewall Object Setting
- Data Flow Monitor

The function links of System Status, Dynamic DDNS, TR-069, User Management, IM/P2P Block, Schedule, Syslog/Mail Alert, LDAP, RADIUS, Firewall Object Setting and Data Flow Monitor are displayed here. Move your mouse cursor on any one of the links and click on it. The corresponding setting page will be open immediately.

In addition, quick access for VPN security settings such as **Remote Dial-in User** and **LAN to LAN** are located on the bottom of this page. Scroll down the page to find them and use them if required.



Interface

WAN	Connected : 0, ● WAN1 ● WAN2 ● WAN3 ● WAN4
⊞ LAN	Connected : 0, ● LAN1 ● LAN2 ● LAN3 ● LAN4
⊞ WLAN	Connected : 0
USB	Connected : 0, ● USB 1 0, ● USB 2

Security

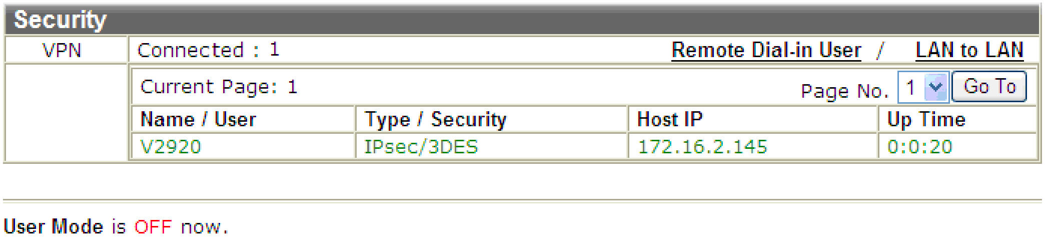
⊞ VPN	Connected : 0 Remote Dial-in User / LAN to LAN
⊞ MyVigor	Activate : 0

System Resource

Current Status :	CPU Usage: 2% Memory Usage: 41%

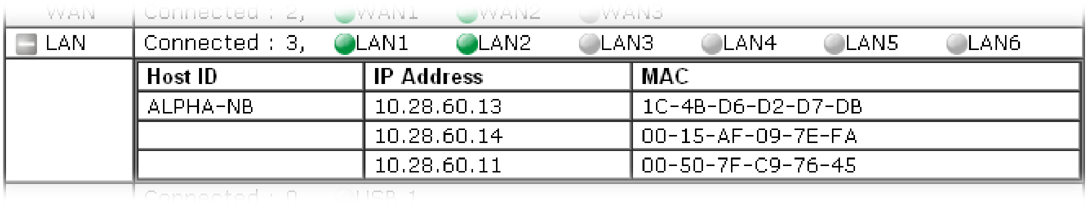
User Mode is OFF now.

Note that there is a plus (⊞) icon located on the left side of VPN/LAN. Click it to review the VPN connection(s) used presently.



Security				
VPN	Connected : 1		Remote Dial-in User /	LAN to LAN
	Current Page: 1		Page No. 1	Go To
	Name / User	Type / Security	Host IP	Up Time
	V2920	IPsec/3DES	172.16.2.145	0:0:20

User Mode is OFF now.

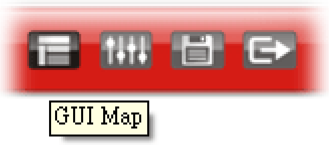


WAN	Connected : 2, ● WAN1 ● WAN2 ○ WAN3		
LAN	Connected : 3, ● LAN1 ● LAN2 ○ LAN3 ○ LAN4 ○ LAN5 ○ LAN6		
	Host ID	IP Address	MAC
	ALPHA-NB	10.28.60.13	1C-4B-D6-D2-D7-DB
		10.28.60.14	00-15-AF-09-7E-FA
		10.28.60.11	00-50-7F-C9-76-45
	Connected : 0 USB 1		

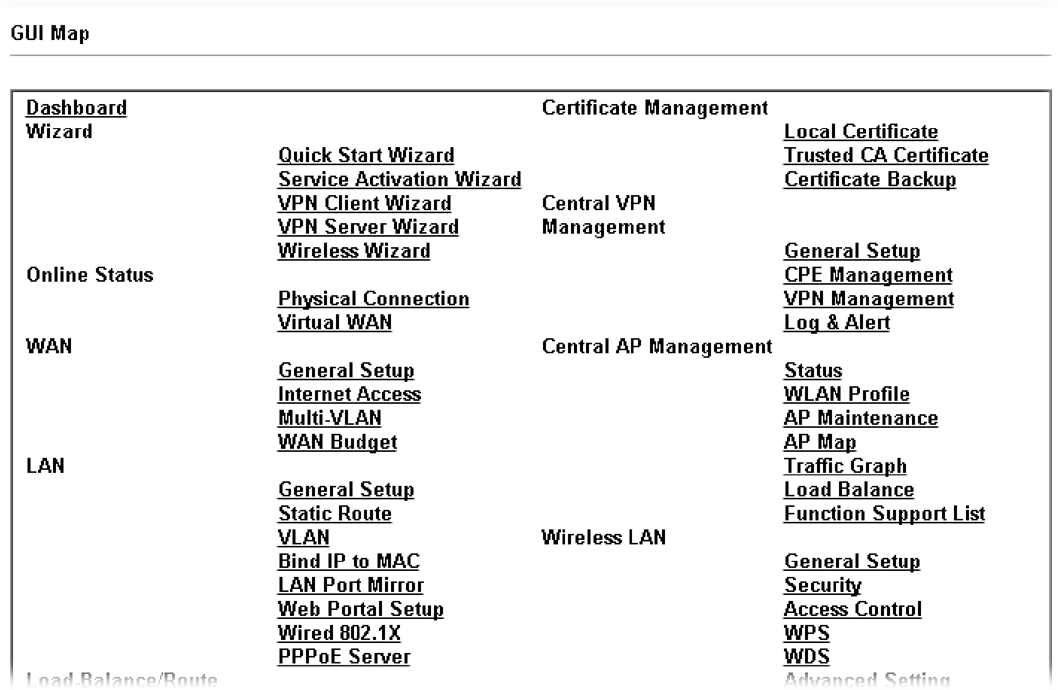
Host connected physically to the router via LAN port(s) will be displayed with green circles in the field of Connected.

All of the hosts (including wireless clients) displayed with Host ID, IP Address and MAC address indicates that the traffic would be transmitted through LAN port(s) and then the WAN port. The purpose is to perform the traffic monitor of the host(s).

I-5-4 GUI Map



All the functions the router supports are listed with table clearly in this page. Users can click the function link to access into the setting page of the function for detailed configuration. Click the icon on the top of the main screen to display all the functions.



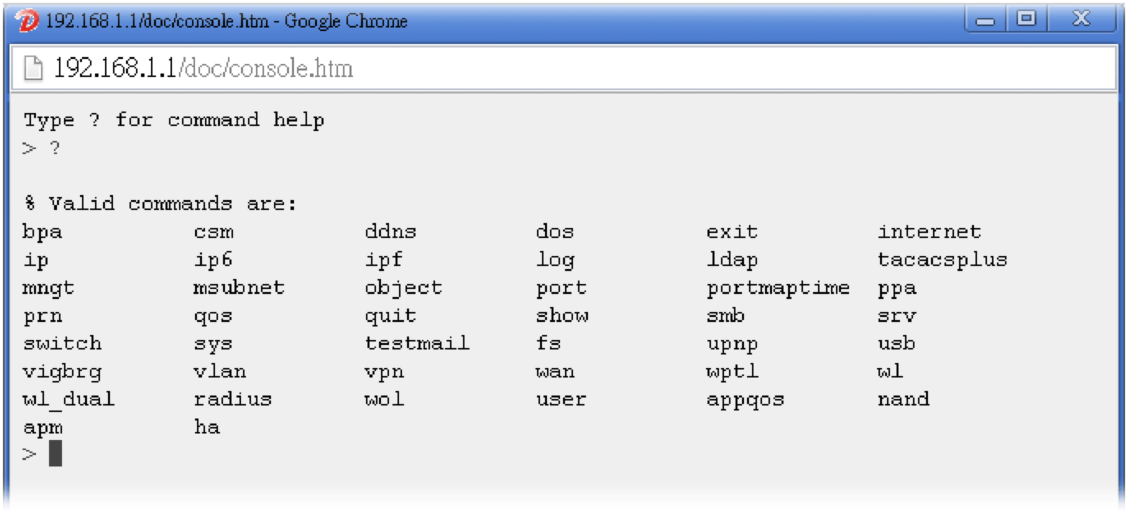
GUI Map

Dashboard		Certificate Management	
Wizard			Local Certificate
	Quick Start Wizard		Trusted CA Certificate
	Service Activation Wizard		Certificate Backup
	VPN Client Wizard	Central VPN Management	
	VPN Server Wizard		
	Wireless Wizard		General Setup
Online Status			CPE Management
	Physical Connection		VPN Management
	Virtual WAN		Log & Alert
WAN		Central AP Management	
	General Setup		Status
	Internet Access		WLAN Profile
	Multi-VLAN		AP Maintenance
	WAN Budget		AP Map
LAN			Traffic Graph
	General Setup		Load Balance
	Static Route		Function Support List
	VLAN	Wireless LAN	
	Bind IP to MAC		General Setup
	LAN Port Mirror		Security
	Web Portal Setup		Access Control
	Wired 802.1X		WPS
	PPPoE Server		WDS
Load-Balance/Route			Advanced Setting

I-5-5 Web Console

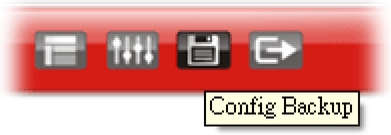
It is not necessary to use the telnet command via DOS prompt. The changes made by using web console have the same effects as modified through web user interface. The functions/settings modified under Web Console also can be reviewed on the web user interface.

Click the **Web Console** icon on the top of the main screen to open the following screen.


192.168.1.1/doc/console.htm - Google Chrome
192.168.1.1/doc/console.htm

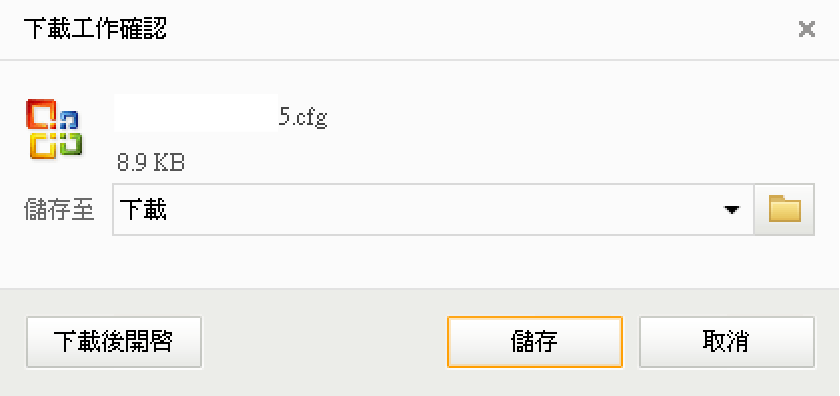
```
Type ? for command help
> ?

% Valid commands are:
bpa          csm          ddns         dos          exit         internet
ip           ip6          ipf          log          ldap         tacacsplus
mngt         msubnet      object       port         portmaptime  ppa
prn          qos          quit         show         smb          srv
switch       sys          testmail     fs           upnp         usb
vigbrg       vlan         vpn          wan          wptl         wl
wl_dual      radius       wol          user         appqos       nand
apm          ha
>
```

I-5-6 Config Backup



There is one way to store current used settings quickly by clicking the **Config Backup** icon. It allows you to backup current settings as a file. Such configuration file can be restored by using **System Maintenance>>Configuration Backup**.

Simply click the icon on the top of the main screen and a pop up dialog will appear.



下載工作確認

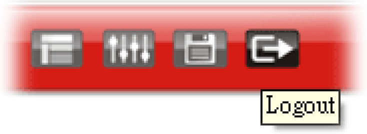
5.cfg

8.9 KB

儲存至 下載

Click **Save** to store the setting.

I-5-7 Logout



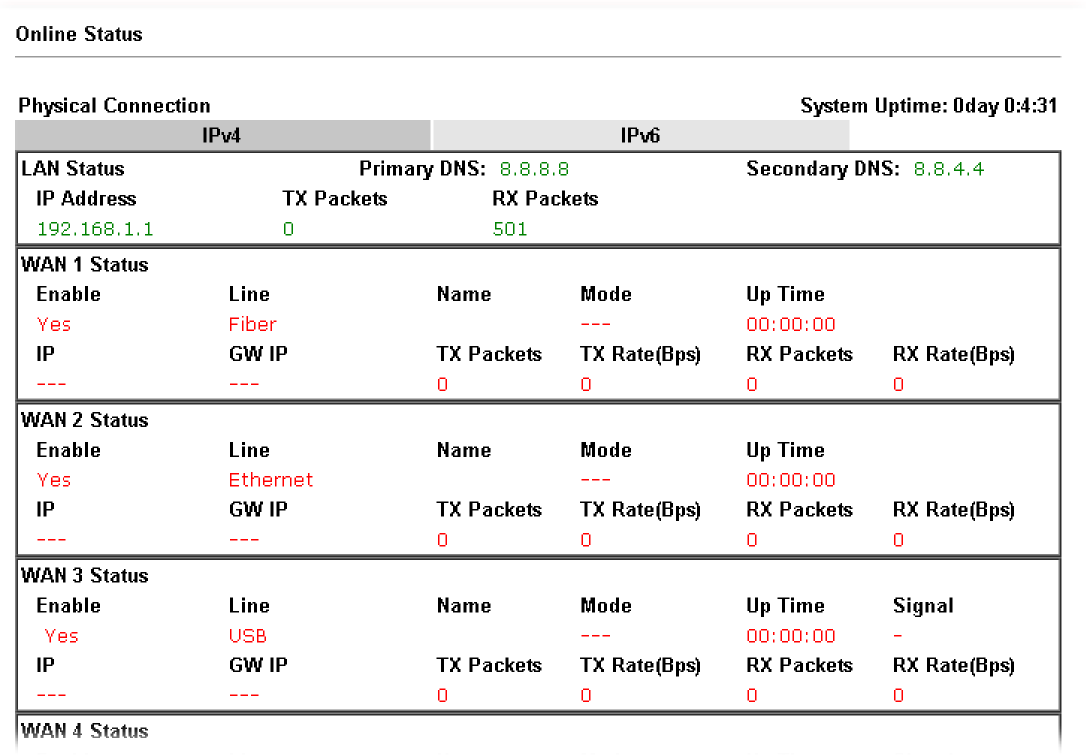
Click this icon to exit the web user interface.

I-5-8 Online Status

I-5-8-1 Physical Connection

Such page displays the physical connection status such as LAN connection status, WAN connection status, ADSL information, and so on.

Physical Connection for IPv4 Protocol



Online Status

Physical Connection System Uptime: 0day 0:4:31

IPv4 | IPv6

LAN Status		Primary DNS: 8.8.8.8		Secondary DNS: 8.8.4.4	
IP Address	TX Packets	RX Packets			
192.168.1.1	0	501			

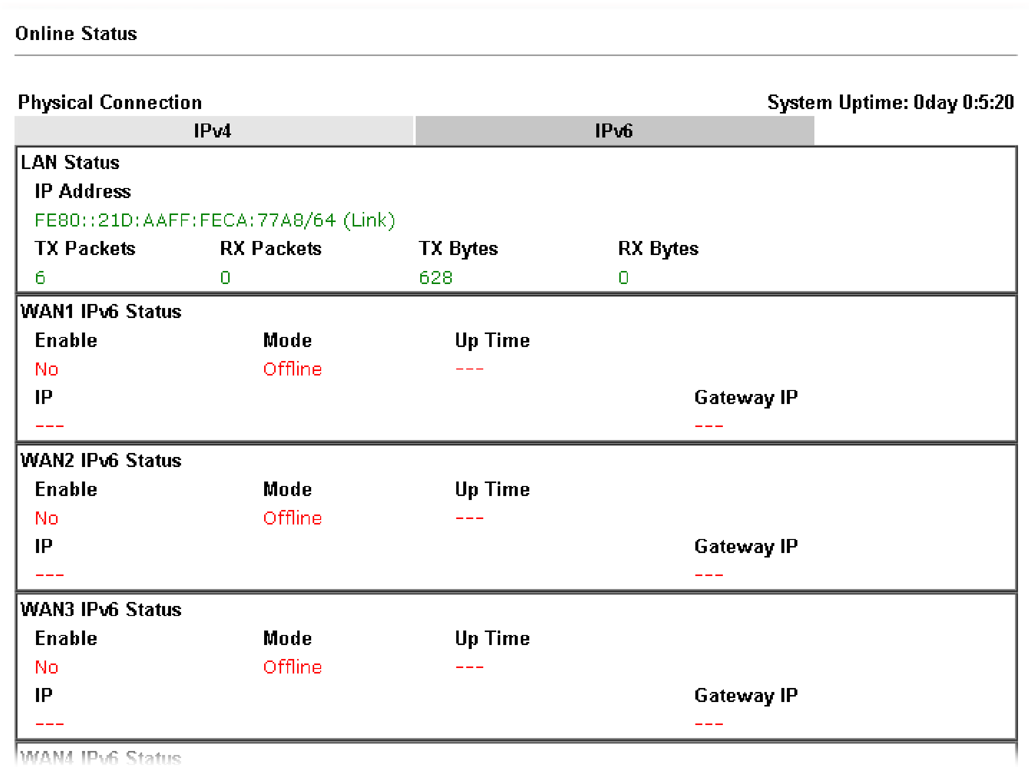
WAN 1 Status					
Enable	Line	Name	Mode	Up Time	
Yes	Fiber		---	00:00:00	
IP	GW IP	TX Packets	TX Rate(Bps)	RX Packets	RX Rate(Bps)
---	---	0	0	0	0

WAN 2 Status					
Enable	Line	Name	Mode	Up Time	
Yes	Ethernet		---	00:00:00	
IP	GW IP	TX Packets	TX Rate(Bps)	RX Packets	RX Rate(Bps)
---	---	0	0	0	0

WAN 3 Status					
Enable	Line	Name	Mode	Up Time	Signal
Yes	USB		---	00:00:00	-
IP	GW IP	TX Packets	TX Rate(Bps)	RX Packets	RX Rate(Bps)
---	---	0	0	0	0

WAN 4 Status

Physical Connection for IPv6 Protocol



Online Status

Physical Connection System Uptime: 0day 0:5:20

LAN Status			
IP Address			
FE80::21D:AAFF:FECA:77A8/64 (Link)			
TX Packets	RX Packets	TX Bytes	RX Bytes
6	0	628	0

WAN1 IPv6 Status			
Enable	Mode	Up Time	
No	Offline	---	
IP			Gateway IP
---			---

WAN2 IPv6 Status			
Enable	Mode	Up Time	
No	Offline	---	
IP			Gateway IP
---			---

WAN3 IPv6 Status			
Enable	Mode	Up Time	
No	Offline	---	
IP			Gateway IP
---			---

WAN4 IPv6 Status

Detailed explanation (for IPv4) is shown below:

Item	Description
LAN Status	**Primary DNS-**Displays the primary DNS server address for WAN interface. **Secondary DNS -**Displays the secondary DNS server address for WAN interface. **IP Address**-Displays the IP address of the LAN interface. **TX Packets**-Displays the total transmitted packets at the LAN interface. **RX Packets**-Displays the total received packets at the LAN interface.
WAN1/WAN2/WAN3 /WAN4 Status	**Enable - Yes** in red means such interface is available but not enabled. **Yes** in green means such interface is enabled. **Line** – Displays the physical connection (Ethernet, or USB) of this interface. **Name** – Display the name of the router. **Mode** - Displays the type of WAN connection (e.g., PPPoE). **Up Time** - Displays the total uptime of the interface. **IP** - Displays the IP address of the WAN interface. **GW IP** - Displays the IP address of the default gateway. **TX Packets** - Displays the total transmitted packets at the WAN interface. **TX Rate** - Displays the speed of transmitted octets at the WAN interface. **RX Packets** - Displays the total number of received packets at the WAN interface. **RX Rate** - Displays the speed of received octets at the WAN interface.

Detailed explanation (for IPv6) is shown below:

Item	Description
LAN Status	**IP Address**- Displays the IPv6 address of the LAN interface.. **TX Packets**-Displays the total transmitted packets at the LAN interface. **RX Packets**-Displays the total received packets at the LAN interface. **TX Bytes** - Displays the speed of transmitted octets at the LAN interface. **RX Bytes** - Displays the speed of received octets at the LAN interface.
WAN IPv6 Status	**Enable - No** in red means such interface is available but not enabled. **Yes** in green means such interface is enabled. No in red means such interface is not available. **Mode** - Displays the type of WAN connection (e.g., TSPC). **Up Time** - Displays the total uptime of the interface. **IP** - Displays the IP address of the WAN interface. **Gateway IP** - Displays the IP address of the default gateway.

Info

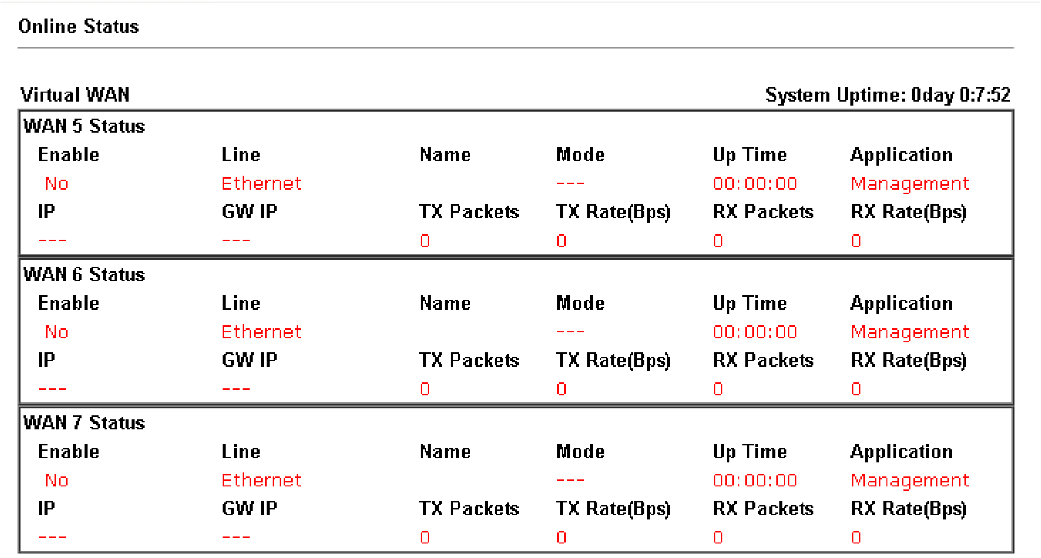
The words in green mean that the WAN connection of that interface is ready for accessing Internet; the words in red mean that the WAN connection of that interface is not ready for accessing Internet.

I-5-8-2 Virtual WAN

Such page displays the virtual WAN connection information.

Virtual WAN are used by TR-069 management, VoIP service and so on.

The field of Application will list the purpose of such WAN connection.



Online Status

Virtual WAN

System Uptime: 0day 0:7:52

WAN 5 Status

Enable	Line	Name	Mode	Up Time	Application
No	Ethernet		---	00:00:00	Management
IP	GW IP	TX Packets	TX Rate(Bps)	RX Packets	RX Rate(Bps)
---	---	0	0	0	0

WAN 6 Status

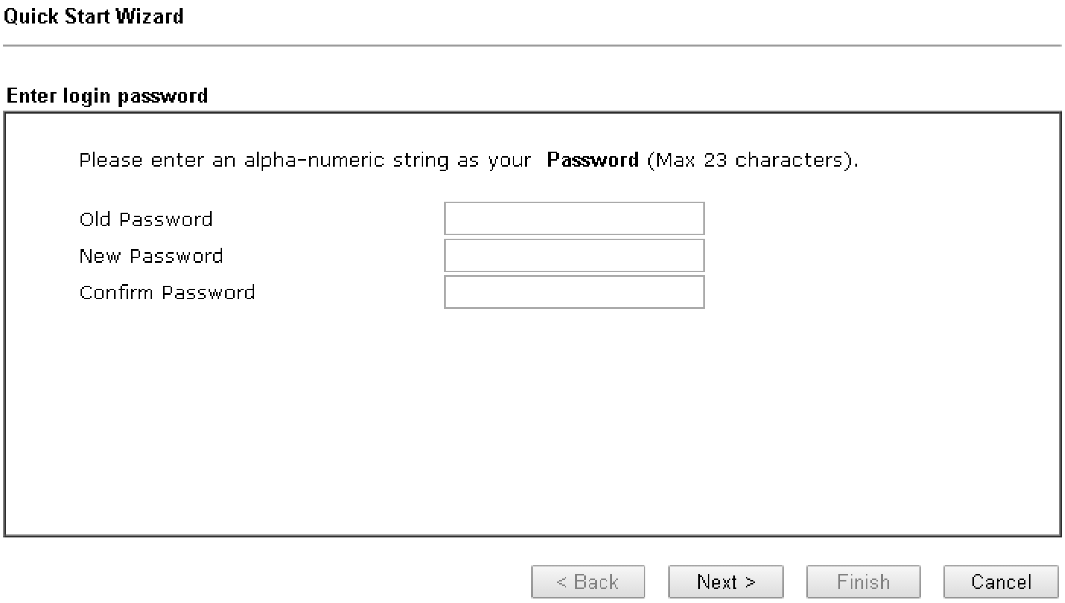
Enable	Line	Name	Mode	Up Time	Application
No	Ethernet		---	00:00:00	Management
IP	GW IP	TX Packets	TX Rate(Bps)	RX Packets	RX Rate(Bps)
---	---	0	0	0	0

WAN 7 Status

Enable	Line	Name	Mode	Up Time	Application
No	Ethernet		---	00:00:00	Management
IP	GW IP	TX Packets	TX Rate(Bps)	RX Packets	RX Rate(Bps)
---	---	0	0	0	0

I-6 Quick Start Wizard

Quick Start Wizard can help you to deploy and use the router easily and quickly. Click **Wizards>>Quick Start Wizard**. The first screen of **Quick Start Wizard** is entering login password. After typing the password, please click **Next**.



Quick Start Wizard

Enter login password

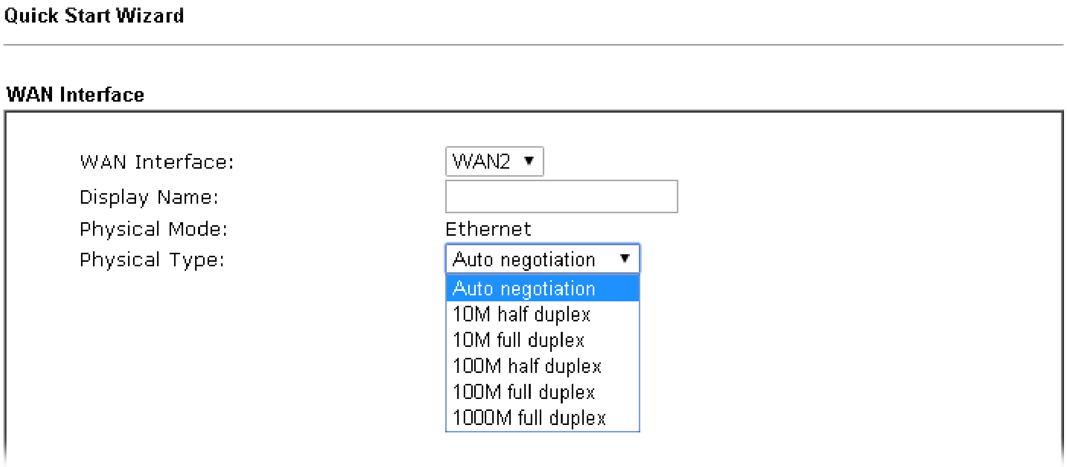
Please enter an alpha-numeric string as your **Password** (Max 23 characters).

Old Password

New Password

Confirm Password

On the next page as shown below, please select the WAN interface (WAN 1 to WAN4) that you use. If fiber connection is made, please choose WAN1; if Ethernet interface is used, please choose WAN1/WAN2; if 3G/4G USB modem is used, please choose WAN3 or WAN4. For Ethernet WAN2, choose **Auto negotiation** as the physical type for your router.



Quick Start Wizard

WAN Interface

WAN Interface: WAN2

Display Name:

Physical Mode: Ethernet

Physical Type: Auto negotiation

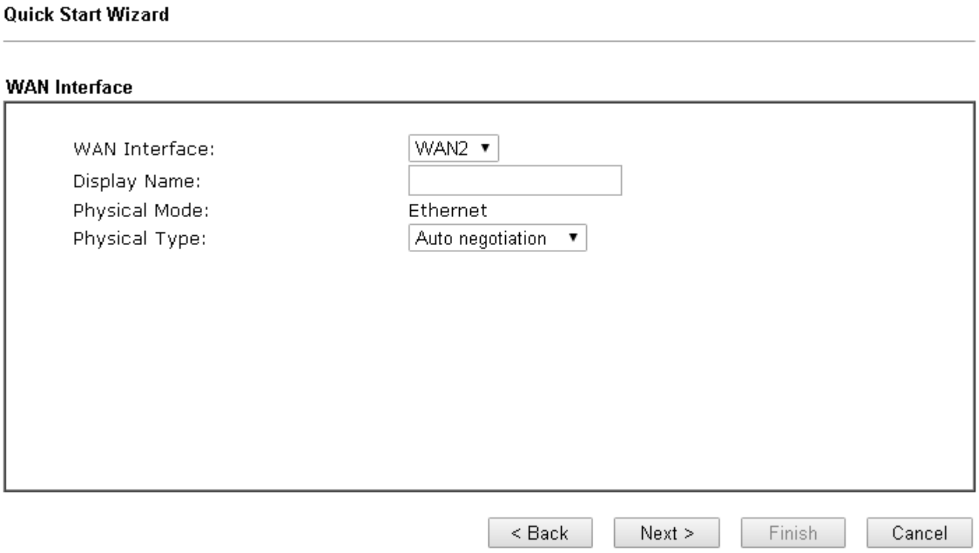
WAN1~ WAN4 will bring up different configuration page. Refer to the following sections for detailed information.

I-6-1 WAN1 (Fiber) /Ethernet WAN1(/Ethernet) / WAN2(/Ethernet)

Note	Vigor router will use either **Fiber WAN** or **WAN1** for Internet connection. If both Fiber WAN and WAN1 are connected physically at the same time, Fiber WAN will be the first choice for network connection.

WAN1 can be configured as Fiber WAN1 or Ethernet WAN1 according to the physical hardware connection.

WAN2 is dedicated to physical mode in Ethernet. Please select the appropriate Internet access type according to the information from your ISP. For example, you should select PPPoE mode if the ISP provides you PPPoE interface.



Quick Start Wizard

WAN Interface

WAN Interface: WAN2

Display Name:

Physical Mode: Ethernet

Physical Type: Auto negotiation

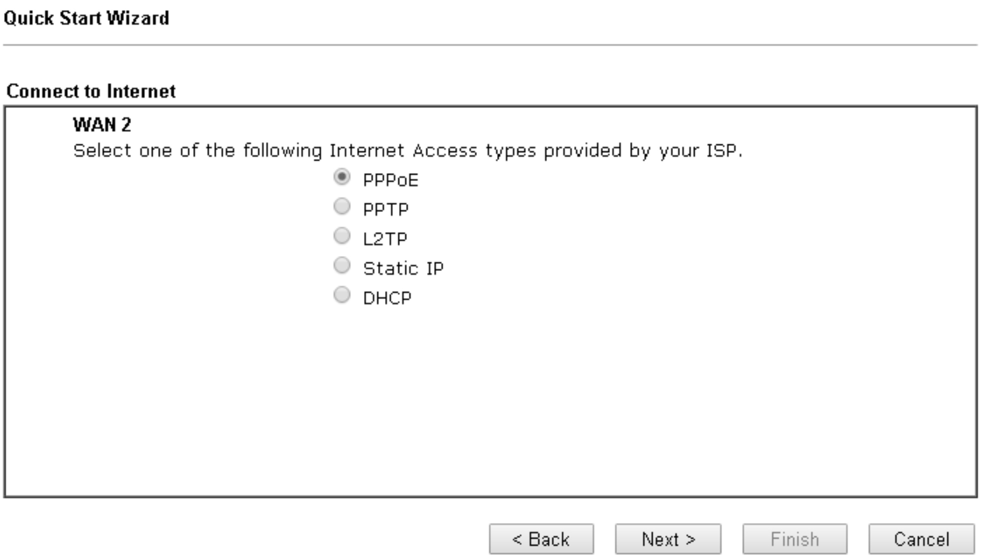
Available settings are explained as follows:

Item	Description
Display Name	Type a name for the router.

I-6-1-1 PPPoE

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 wireless device or cable modem. All users over the Ethernet can share a common connection. Your service provider will provide you information about user name, password, and authentication mode.

1. Choose **WAN2** as the WAN Interface and click the **Next** button. The following page will be open for you to specify Internet Access Type.



Quick Start Wizard

Connect to Internet

WAN 2

Select one of the following Internet Access types provided by your ISP.

● PPPoE

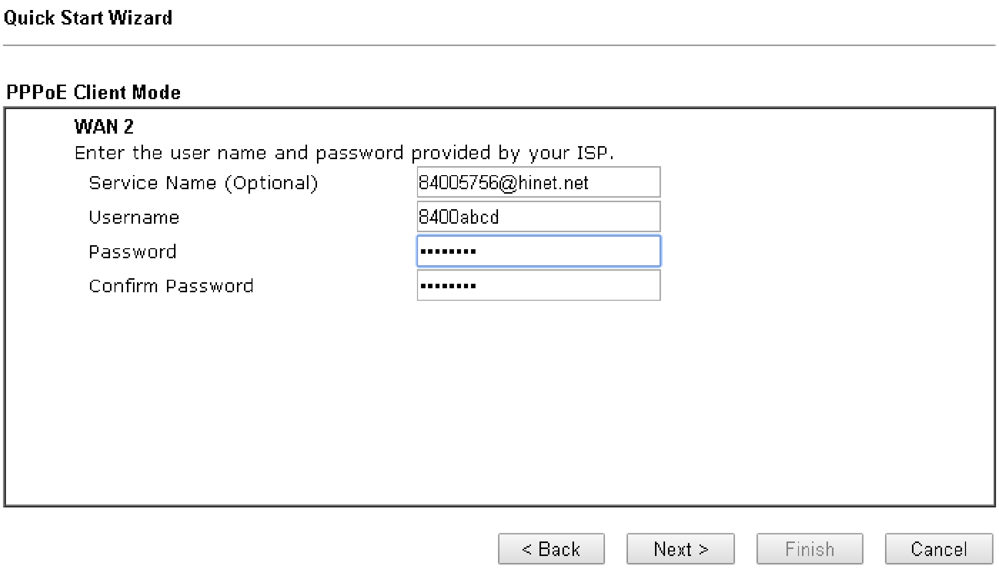
○ PPTP

○ L2TP

○ Static IP

○ DHCP

2. Click **PPPoE** as the Internet Access Type. Then click **Next** to continue.



Quick Start Wizard

PPPoE Client Mode

WAN 2

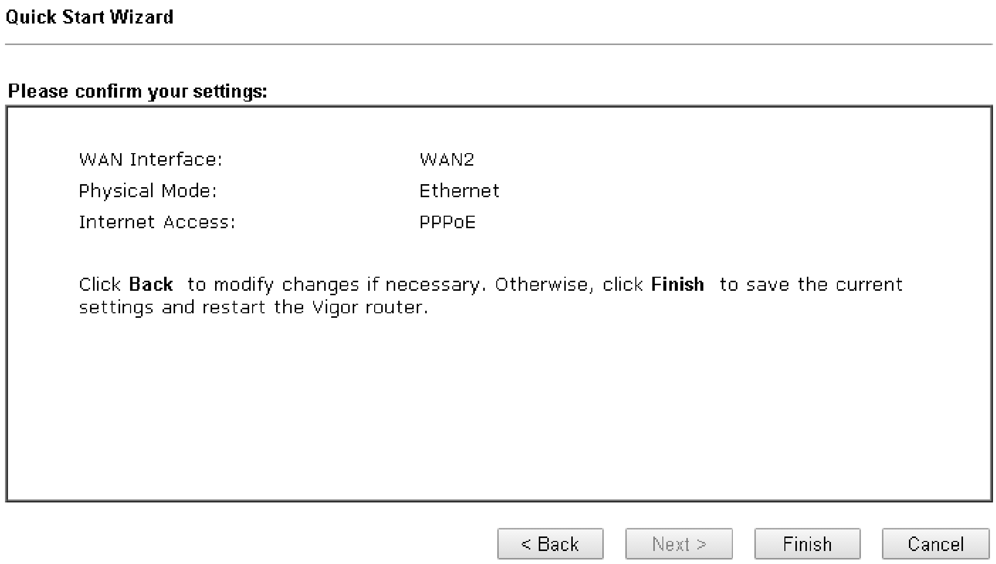
Enter the user name and password provided by your ISP.

Service Name (Optional)	84005756@hinet.net
Username	8400abcd
Password	••••••••
Confirm Password	••••••••

Available settings are explained as follows:

Item	Description
Service Name (Optional)	Enter the description of the specific network service.
Username	Assign a specific valid user name provided by the ISP. **Note:** The maximum length of the user name you can set is 63 characters.
Password	Assign a valid password provided by the ISP. **Note:** The maximum length of the password you can set is 62 characters.
Confirm Password	Retype the password.
Back	Click it to return to previous setting page.
Next	Click it to get into the next setting page.
Cancel	Click it to give up the quick start wizard.

3. Please manually enter the Username/Password provided by your ISP. Click **Next** for viewing summary of such connection.



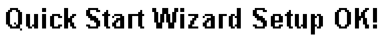
Quick Start Wizard

Please confirm your settings:

WAN Interface: WAN2
Physical Mode: Ethernet
Internet Access: PPPoE

Click **Back** to modify changes if necessary. Otherwise, click **Finish** to save the current settings and restart the Vigor router.

4. Click **Finish.** A page of **Quick Start Wizard Setup OK!!!** will appear. Then, the system status of this protocol will be shown.

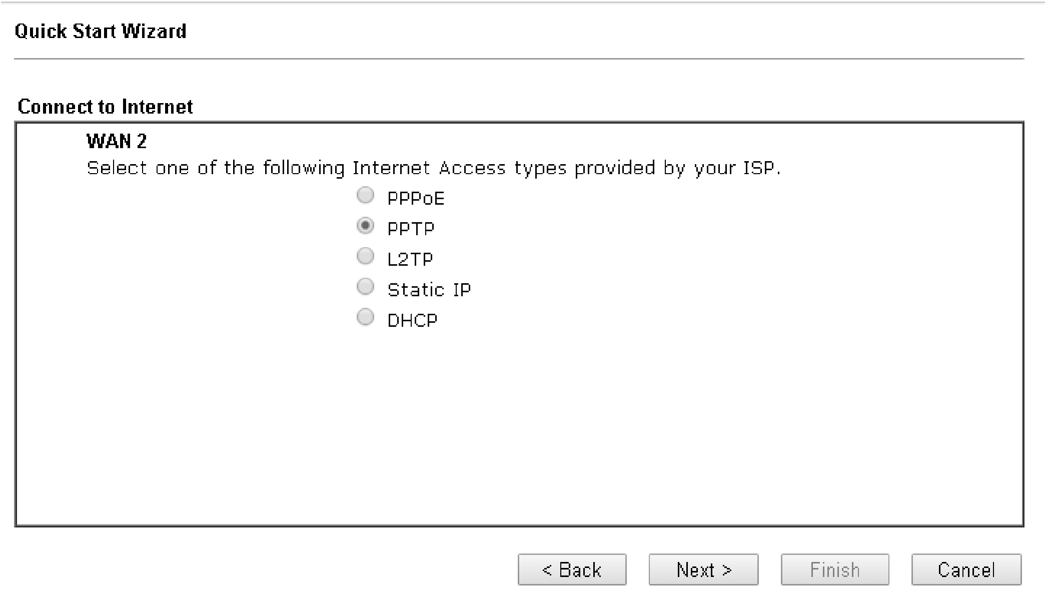


Quick Start Wizard Setup OK!

5. Now, you can enjoy surfing on the Internet.

I-6-1-2 PPTP/L2TP

1. Choose **WAN2** as the WAN Interface and click the **Next** button. The following page will be open for you to specify Internet Access Type.



Quick Start Wizard

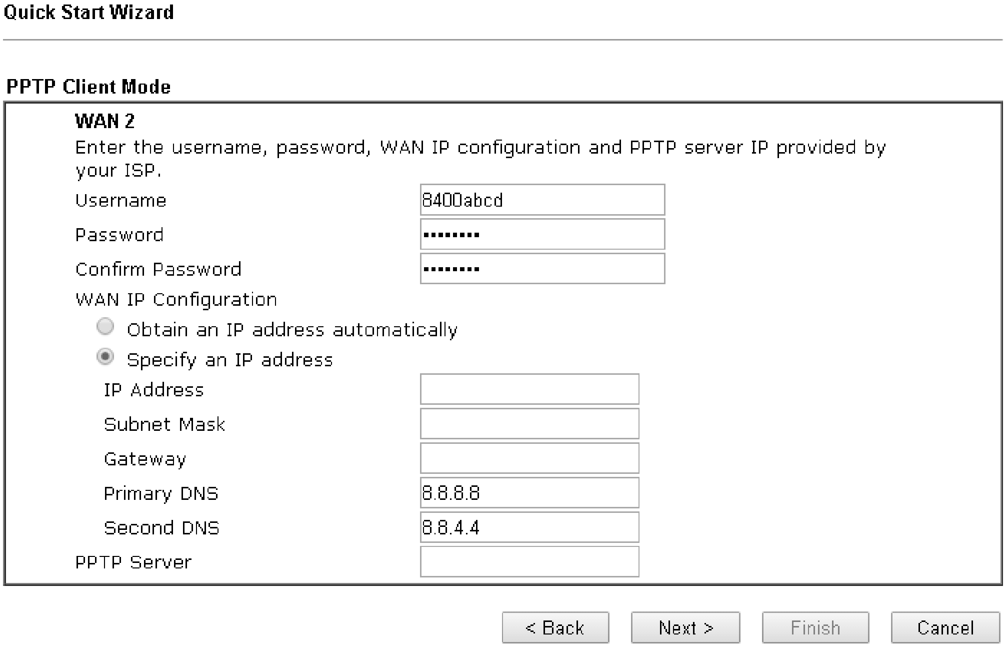
Connect to Internet

WAN 2

Select one of the following Internet Access types provided by your ISP.

○ PPPoE
● PPTP
○ L2TP
○ Static IP
○ DHCP

2. Click **PPTP/L2TP** as the Internet Access Type. Then click **Next** to continue.



Quick Start Wizard

PPTP Client Mode

WAN 2

Enter the username, password, WAN IP configuration and PPTP server IP provided by your ISP.

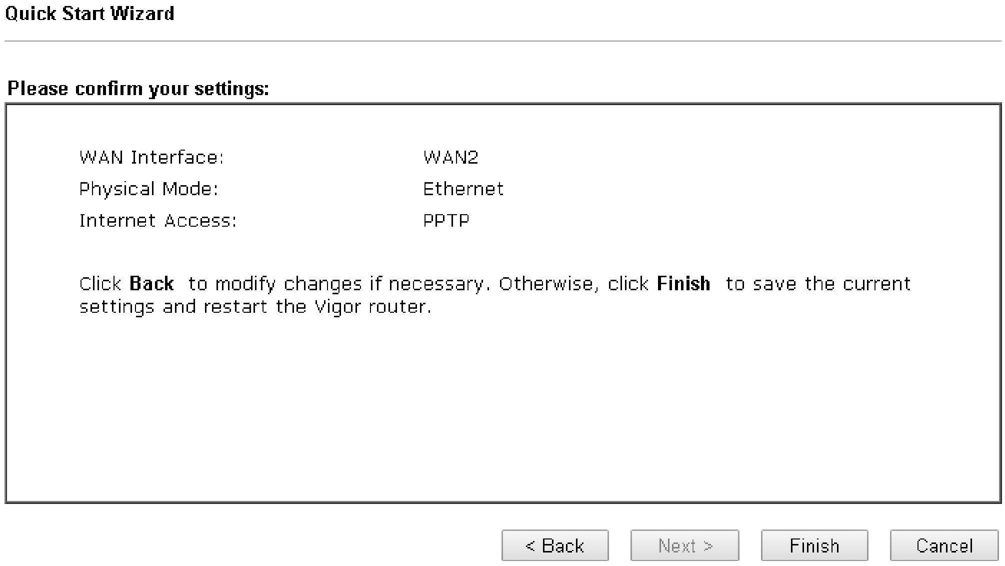
Username	8400abcd
Password	••••••••
Confirm Password	••••••••
WAN IP Configuration	
○ Obtain an IP address automatically	
● Specify an IP address	
IP Address	
Subnet Mask	
Gateway	
Primary DNS	8.8.8.8
Second DNS	8.8.4.4
PPTP Server	

Available settings are explained as follows:

Item	Description
Username	Assign a specific valid user name provided by the ISP. The maximum length of the user name you can set is 63 characters.
Password	Assign a valid password provided by the ISP. The maximum length of the password you can set is 62 characters.

Confirm Password	Retype the password.
WAN IP Configuration	**Obtain an IP address automatically** – the router will get an IP address automatically from DHCP server. **Specify an IP address** – you have to type relational settings manually. ● **IP Address** - Type the IP address. ● **Subnet Mask** –Type the subnet mask. ● **Gateway** – Type the IP address of the gateway. ● **Primary DNS** –Type in the primary IP address for the router. ● **Second DNS** –Type in secondary IP address for necessity in the future.
PPTP Server / L2TP Server	Type the IP address of the server.
Back	Click it to return to previous setting page.
Next	Click it to get into the next setting page.
Cancel	Click it to give up the quick start wizard.

3. Please type in the IP address/mask/gateway information originally provided by your ISP. Then click **Next** for viewing summary of such connection.



Quick Start Wizard

Please confirm your settings:

```
WAN Interface:        WAN2
Physical Mode:        Ethernet
Internet Access:      PPTP
```

Click **Back** to modify changes if necessary. Otherwise, click **Finish** to save the current settings and restart the Vigor router.

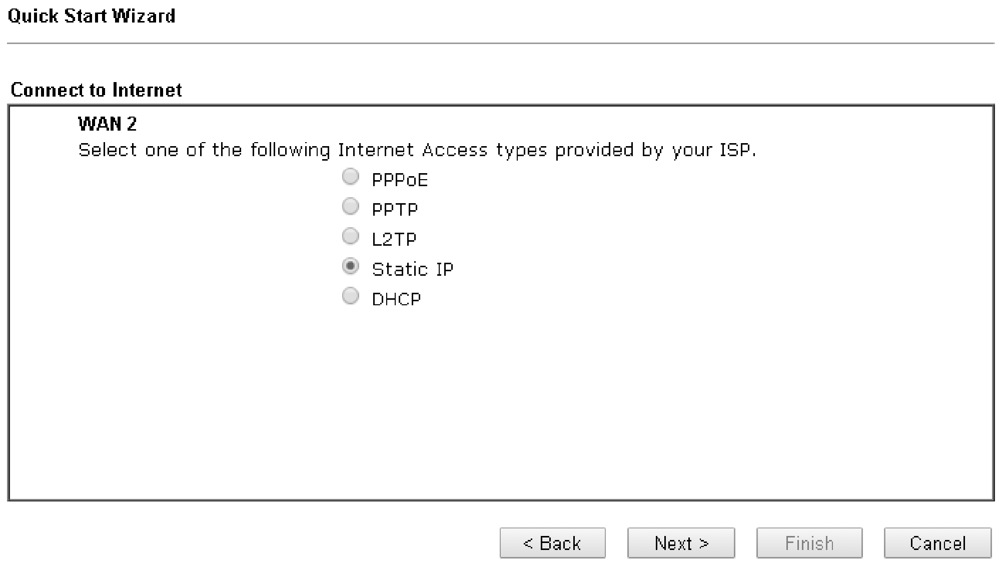
4. Click **Finish.** A page of **Quick Start Wizard Setup OK!!!** will appear. Then, the system status of this protocol will be shown.

Quick Start Wizard Setup OK!

5. Now, you can enjoy surfing on the Internet.

I-6-1-3 Static IP

1. Choose **WAN2** as the WAN Interface and click the **Next** button. The following page will be open for you to specify Internet Access Type.



Quick Start Wizard

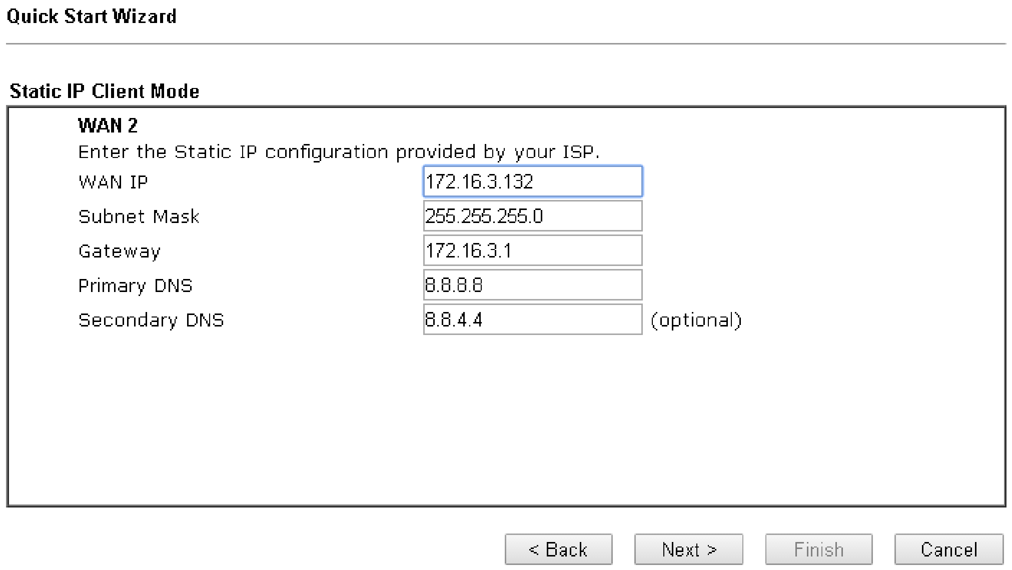
Connect to Internet

WAN 2

Select one of the following Internet Access types provided by your ISP.

○ PPPoE
○ PPTP
○ L2TP
● Static IP
○ DHCP

2. Click **Static IP** as the Internet Access type. Simply click **Next** to continue.



Quick Start Wizard

Static IP Client Mode

WAN 2

Enter the Static IP configuration provided by your ISP.

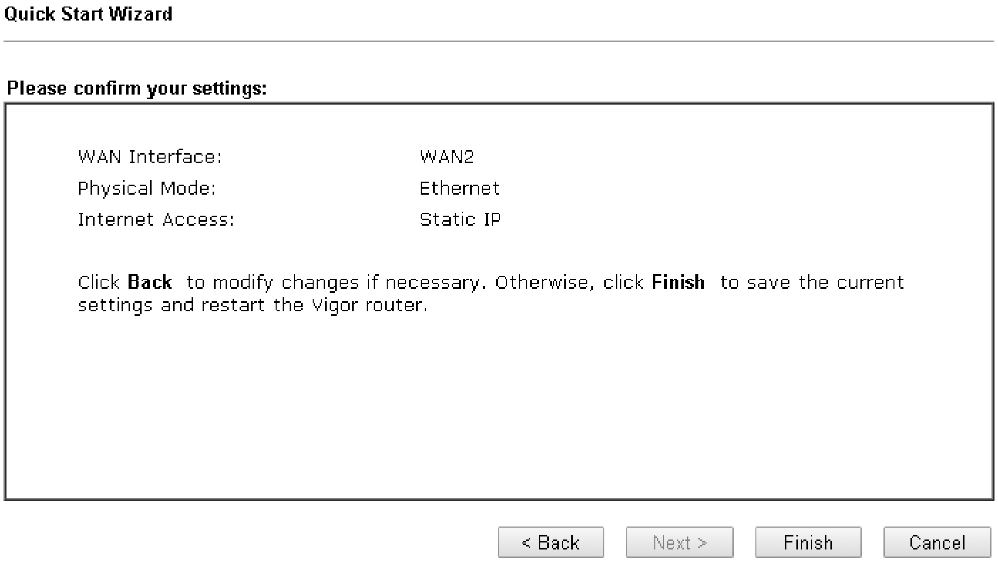
WAN IP	172.16.3.132
Subnet Mask	255.255.255.0
Gateway	172.16.3.1
Primary DNS	8.8.8.8
Secondary DNS	8.8.4.4 (optional)

Available settings are explained as follows:

Item	Description
WAN IP	Type the IP address.
Subnet Mask	Type the subnet mask.
Gateway	Type the IP address of gateway.
Primary DNS	Type in the primary IP address for the router.
Secondary DNS	Type in secondary IP address for necessity in the future.
Back	Click it to return to previous setting page.
Next	Click it to get into the next setting page.

Cancel	Click it to give up the quick start wizard.

3. Please type in the IP address information originally provided by your ISP. Then click **Next** for next step.



Quick Start Wizard

Please confirm your settings:

WAN Interface: WAN2

Physical Mode: Ethernet

Internet Access: Static IP

Click **Back** to modify changes if necessary. Otherwise, click **Finish** to save the current settings and restart the Vigor router.

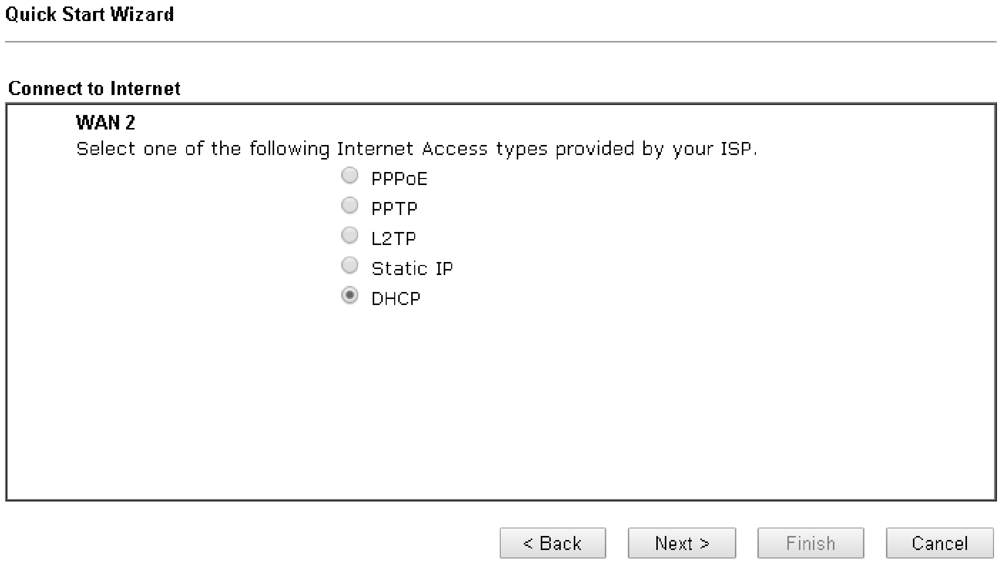
4. Click **Finish.** A page of **Quick Start Wizard Setup OK!!!** will appear. Then, the system status of this protocol will be shown.

Quick Start Wizard Setup OK!

5. Now, you can enjoy surfing on the Internet.

I-6-1-4 DHCP

1. Choose **WAN2** as WAN Interface and click the **Next** button. The following page will be open for you to specify Internet Access Type.



Quick Start Wizard

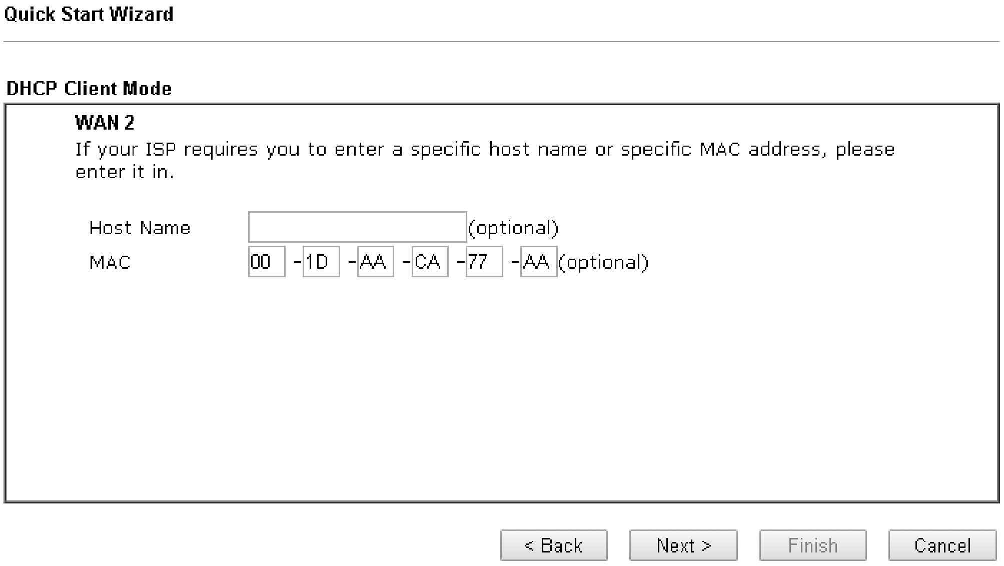
Connect to Internet

WAN 2

Select one of the following Internet Access types provided by your ISP.

○ PPPoE
○ PPTP
○ L2TP
○ Static IP
● DHCP

2. Click **DHCP** as the Internet Access type. Simply click **Next** to continue.



Quick Start Wizard

DHCP Client Mode

WAN 2

If your ISP requires you to enter a specific host name or specific MAC address, please enter it in.

Host Name (optional)

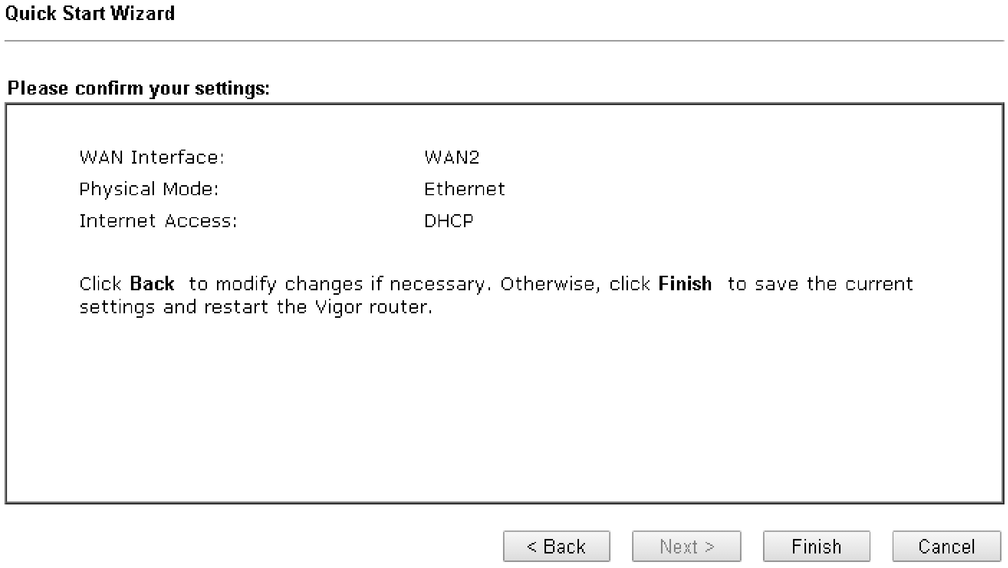
MAC 00 - 1D - AA - CA - 77 - AA (optional)

Available settings are explained as follows:

Item	**Description**
Host Name	Type the name of the host. The maximum length of the host name you can set is 39 characters.
MAC	Some Cable service providers specify a specific MAC address for access authentication. In such cases you need to enter the MAC address.
Back	Click it to return to previous setting page.
Next	Click it to get into the next setting page.

Cancel	Click it to give up the quick start wizard.

3. After finished the settings above, click **Next** for viewing summary of such connection.



Quick Start Wizard

Please confirm your settings:

WAN Interface:	WAN2
Physical Mode:	Ethernet
Internet Access:	DHCP

Click **Back** to modify changes if necessary. Otherwise, click **Finish** to save the current settings and restart the Vigor router.

4. Click **Finish.** A page of **Quick Start Wizard Setup OK!!!** will appear. Then, the system status of this protocol will be shown.

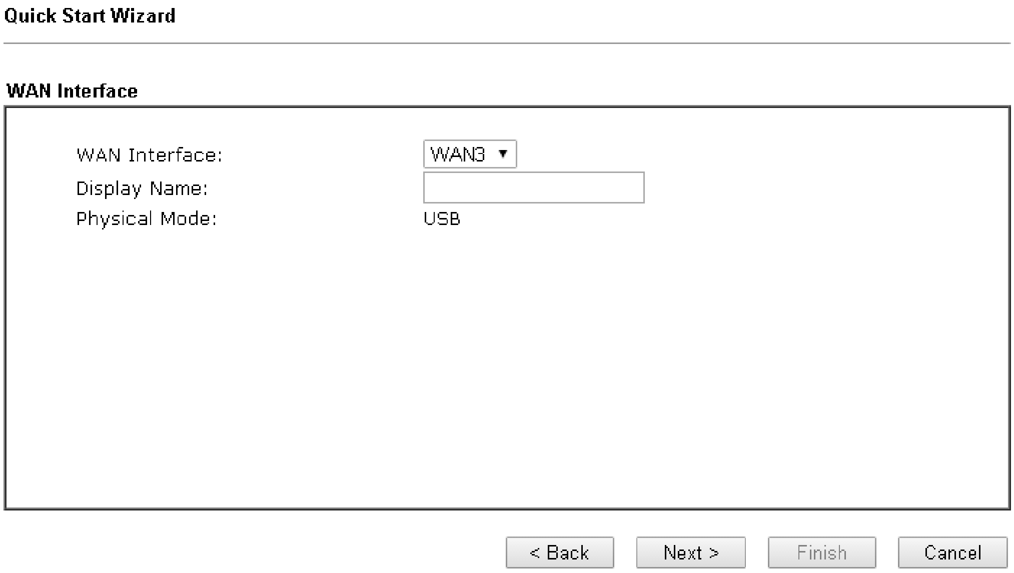
Quick Start Wizard Setup OK!

5. Now, you can enjoy surfing on the Internet.

I-6-2 WAN3 / WAN4 (USB)

WAN3/WAN4 is dedicated to physical mode in USB.

1. Choose **WAN3** as WAN Interface.



Quick Start Wizard

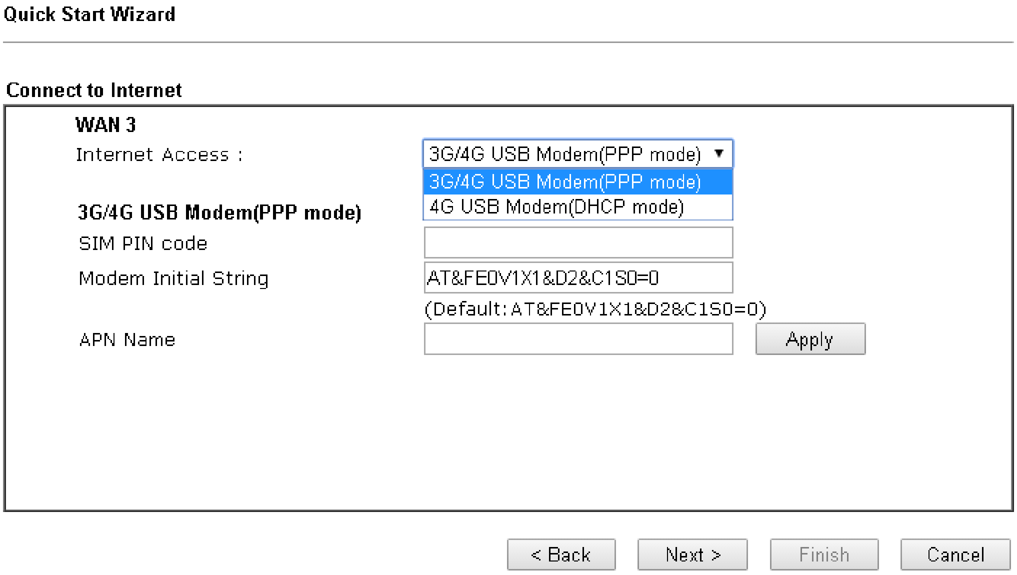
WAN Interface

WAN Interface: WAN3

Display Name:

Physical Mode: USB

2. Then, click **Next** for getting the following page.



Quick Start Wizard

Connect to Internet

WAN 3

Internet Access : 3G/4G USB Modem(PPP mode)

3G/4G USB Modem(PPP mode)

SIM PIN code

Modem Initial String AT&FE0V1X1&D2&C1S0=0

(Default:AT&FE0V1X1&D2&C1S0=0)

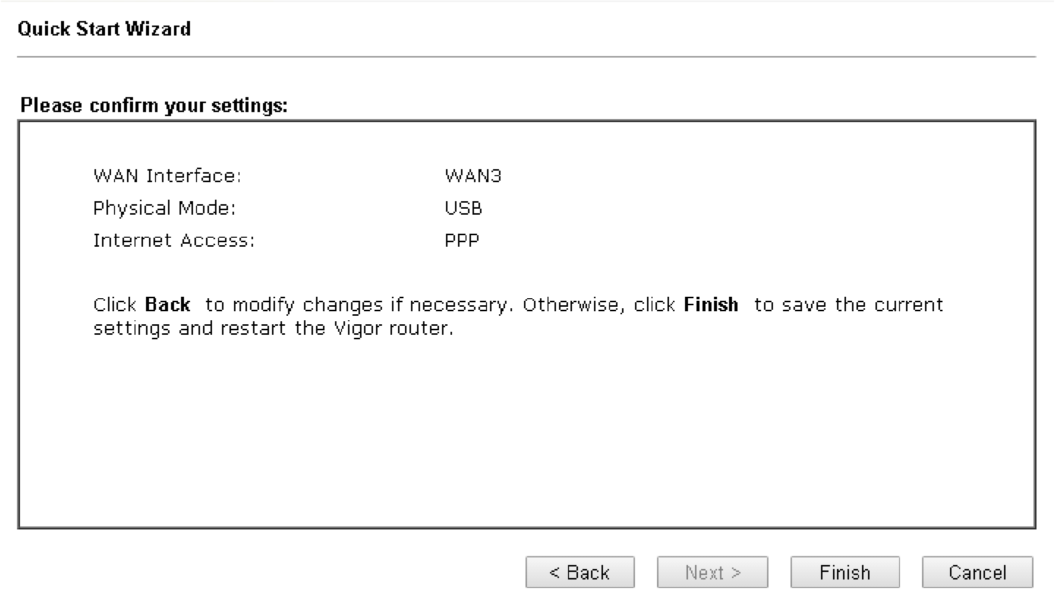
APN Name

Available settings are explained as follows:

Item	Description
Internet Access	Choose one of the selections as the protocol of accessing the internet.
3G/4G USB Modem (PPP mode)	**SIM Pin code** –Type PIN code of the SIM card that will be used to access Internet. The maximum length of the pin code you can set is 15 characters. **Modem Initial String** – Such value is used to initialize USB modem. Please use the default value. If you have any

	question, please contact to your ISP. The maximum length of the string you can set is 47 characters. **APN Name** – APN means Access Point Name which is provided and required by some ISPs. Type the name and click **Apply**.
4G USB Modem (DHCP mode)	**SIM Pin code** –Type PIN code of the SIM card that will be used to access Internet. **Network Mode** – Force Vigor router to connect Internet with the mode specified here. If you choose 4G/3G/2G as network mode, the router will choose a suitable one according to the actual wireless signal automatically. **APN Name** – APN means Access Point Name which is provided and required by some ISPs.

3. Then, click **Next** for viewing summary of such connection.



Quick Start Wizard

Please confirm your settings:

WAN Interface:	WAN3
Physical Mode:	USB
Internet Access:	PPP

Click **Back** to modify changes if necessary. Otherwise, click **Finish** to save the current settings and restart the Vigor router.

4. Click **Finish.** A page of **Quick Start Wizard Setup OK!!!** will appear. Then, the system status of this protocol will be shown.

Quick Start Wizard Setup OK!

5. Now, you can enjoy surfing on the Internet.

I-7 Service Activation Wizard

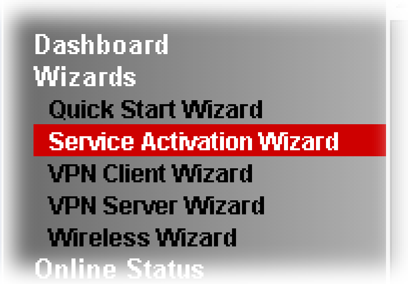
Service Activation Wizard can guide you to activate WCF service (Web Content Filter) with a quick and easy way. **For the Service Activation Wizard is only available for admin operation, therefore, please type "admin/admin" on Username/Password while Logging into the web user interface.**

Service Activation Wizard is a tool which allows you to use trial version of WCF directly without accessing into the server (***MyVigor***) located on http://myvigor.draytek.com. For using Web Content Filter Profile, please refer to later section **Web Content Filter Profile** for detailed information.

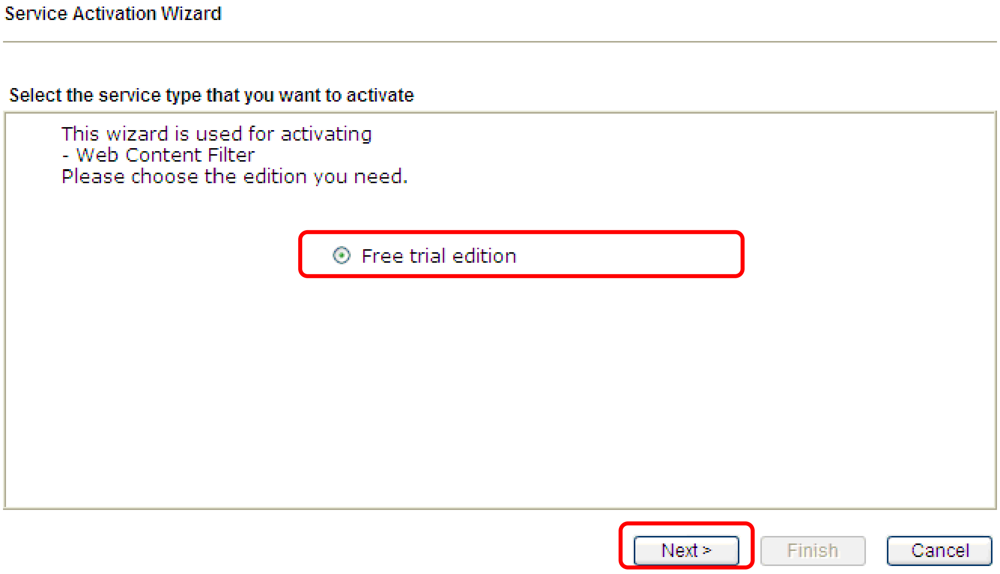
Now, follow the steps listed below to activate WCF feature for your router.

Info	Such function is available only for Admin Mode.

1. Open **Wizards>>Service Activation Wizard**.



2. The screen of **Service Activation Wizard** will be shown as follows. Click **Next** to activate free trail edition.



Service Activation Wizard

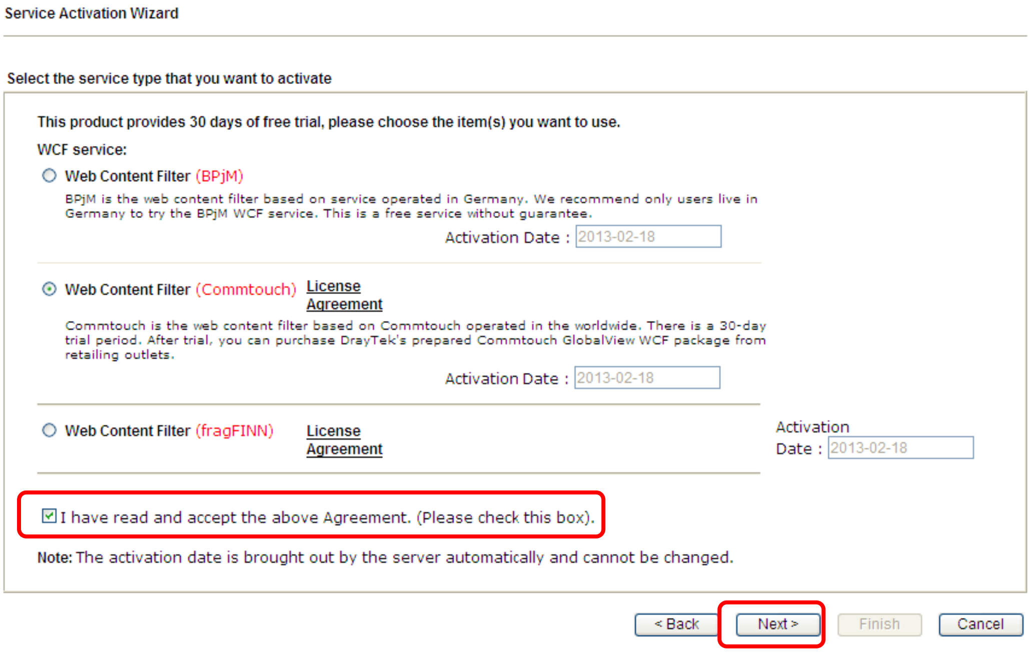
Select the service type that you want to activate

This wizard is used for activating
- Web Content Filter
Please choose the edition you need.

● Free trial edition

Free trial edition: it offers a period of trial for you to get acquainted with WCF function.

3. In the following page, you can activate the Web content filter services at the same time or individually. When you finish the selection, please click **Next**.



Service Activation Wizard

Select the service type that you want to activate

This product provides 30 days of free trial, please choose the item(s) you want to use.

WCF service:

○ Web Content Filter (BPjM)

BPjM is the web content filter based on service operated in Germany. We recommend only users live in Germany to try the BPjM WCF service. This is a free service without guarantee.

Activation Date : 2013-02-18

● Web Content Filter (Commtouch) License Agreement

Commtouch is the web content filter based on Commtouch operated in the worldwide. There is a 30-day trial period. After trial, you can purchase DrayTek's prepared Commtouch GlobalView WCF package from retailing outlets.

Activation Date : 2013-02-18

○ Web Content Filter (fragFINN) License Agreement

Activation Date : 2013-02-18

☑ I have read and accept the above Agreement. (Please check this box).

Note: The activation date is brought out by the server automatically and cannot be changed.

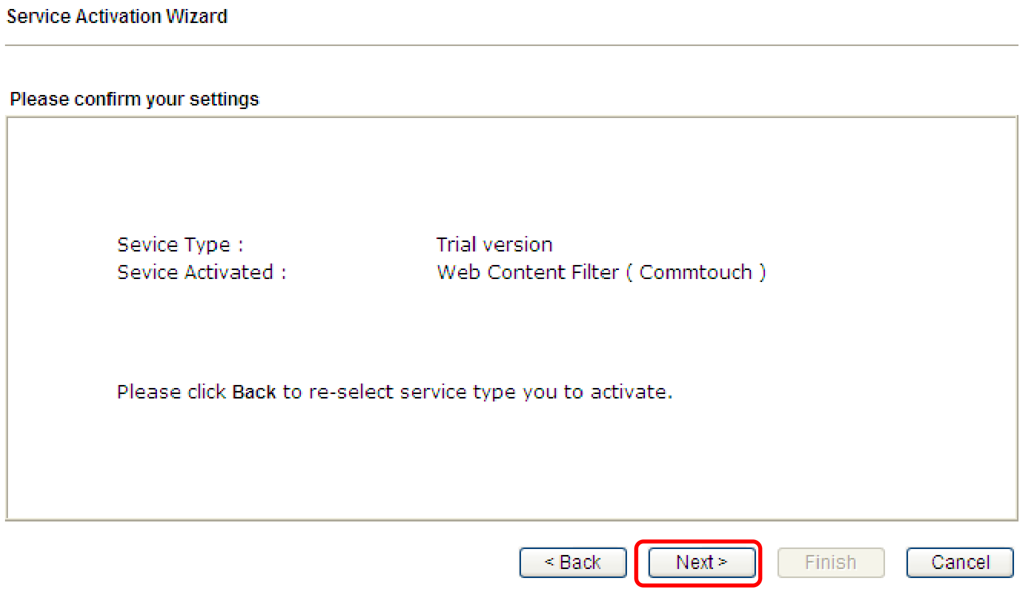
Info

Commtouch is the web content filter based on Commtouch operated in the worldwide. There is a 30-day trial period. After trial, you can purchase DrayTek's prepared Commtouch GlobalView WCF package from retailing outlets.

BPjM is WCF for German Speaking users. The fragfINN is whitelist for German Speaking users. The BPjM is ideal for your family to provide more Internet security for youngsters.

Web Content Filter (fragFINN) service will not be supported since January 1, 2015.

4. Setting confirmation page will be displayed as follows, please click **Next**.



Service Activation Wizard

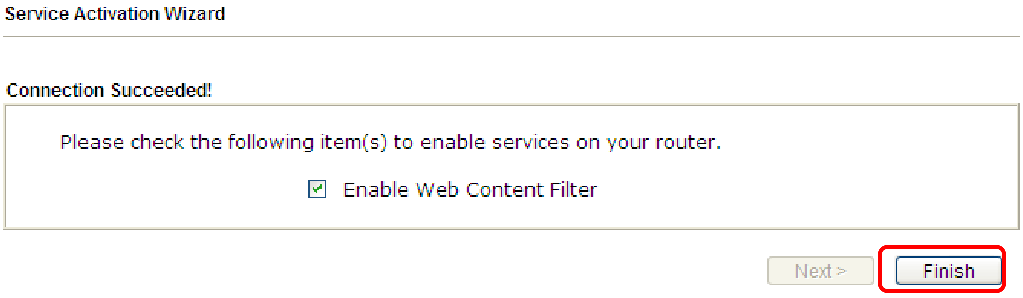
Please confirm your settings

Sevice Type : Trial version

Sevice Activated : Web Content Filter (Commtouch)

Please click Back to re-select service type you to activate.

5. Wait for a moment till the following page appears.



Service Activation Wizard

Connection Succeeded!

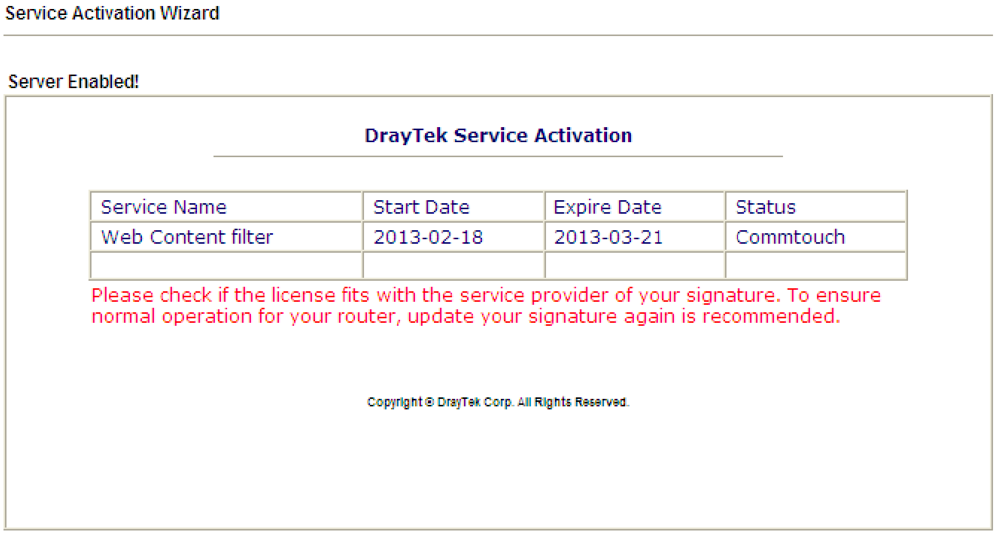
Please check the following item(s) to enable services on your router.

☑ Enable Web Content Filter

When such page appears, you can enable or disable these services for your necessity. Then, click **Finish.**

Info The service will be activated and applied as the default rule configured in Firewall>>General Setup.

6. Now, the web page will display the service that you have activated according to your selection(s). The valid time for the free trial of these services is one month.



Service Activation Wizard

Server Enabled!

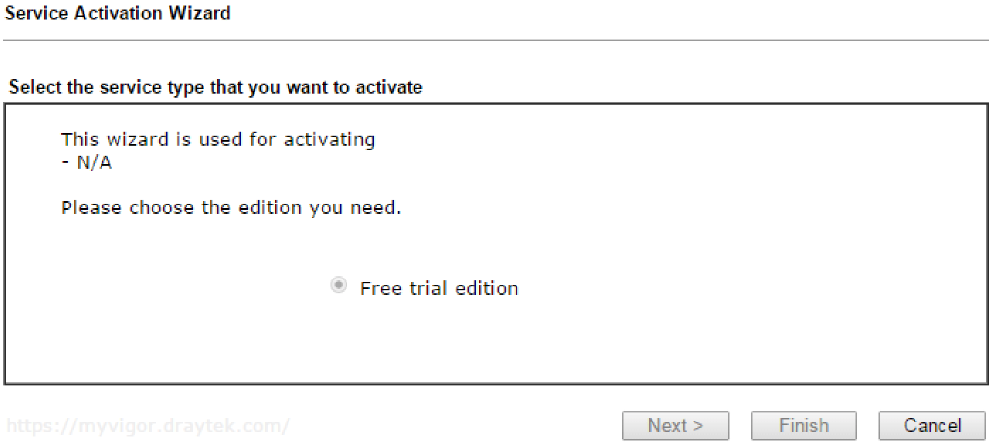
DrayTek Service Activation

Service Name	Start Date	Expire Date	Status
Web Content filter	2013-02-18	2013-03-21	Commtouch

Please check if the license fits with the service provider of your signature. To ensure normal operation for your router, update your signature again is recommended.

Copyright © DrayTek Corp. All Rights Reserved.

When all the trial editions for various web content filters had been enabled, the configuration page of Service Activation Wizard will be invalid as shown below.



Service Activation Wizard

Select the service type that you want to activate

This wizard is used for activating
- N/A

Please choose the edition you need.

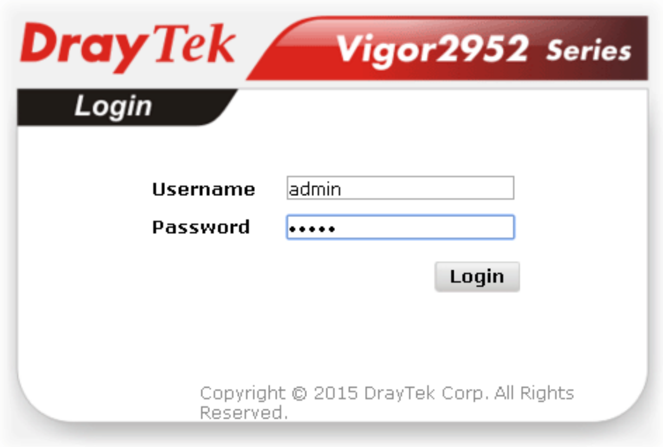
○ Free trial edition

https://myvigor.draytek.com/

I-8 Registering Vigor Router

You have finished the configuration of Quick Start Wizard and you can surf the Internet at any time. Now it is the time to register your Vigor router to MyVigor website for getting more service. Please follow the steps below to finish the router registration.

1 Please login the web configuration interface of Vigor router by typing “**admin/admin**” as User Name / Password.



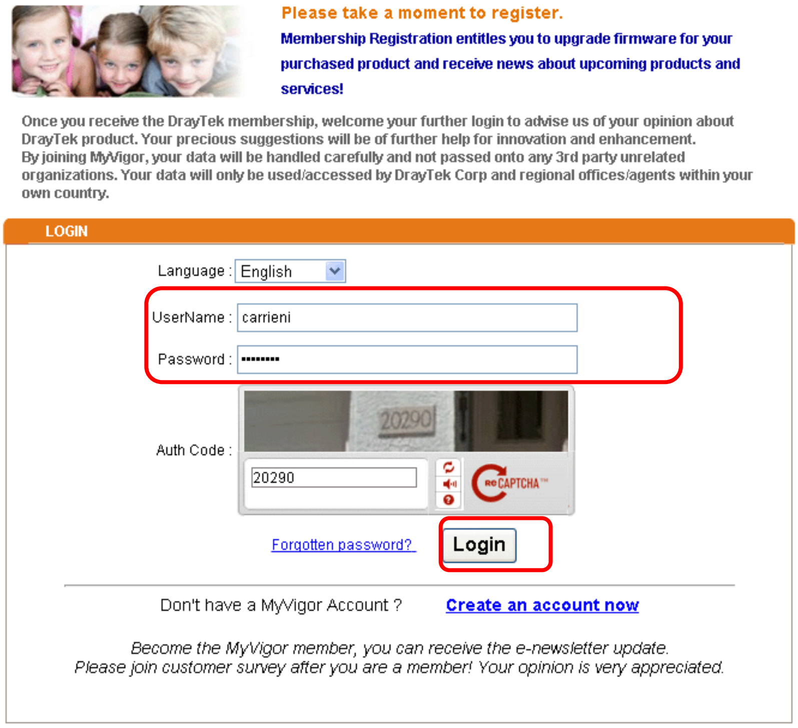
Username admin

Password •••••

Copyright © 2015 DrayTek Corp. All Rights Reserved.

2 Click **Support Area>>Production Registration** from the home page.

3 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!

Once you receive the DrayTek membership, welcome your further login to advise us of your opinion about DrayTek product. Your precious suggestions will be of further help for innovation and enhancement. By joining MyVigor, your data will be handled carefully and not passed onto any 3rd party unrelated organizations. Your data will only be used/accessed by DrayTek Corp and regional offices/agents within your own country.

LOGIN

Language : English

UserName : carrieni

Password : ••••••••

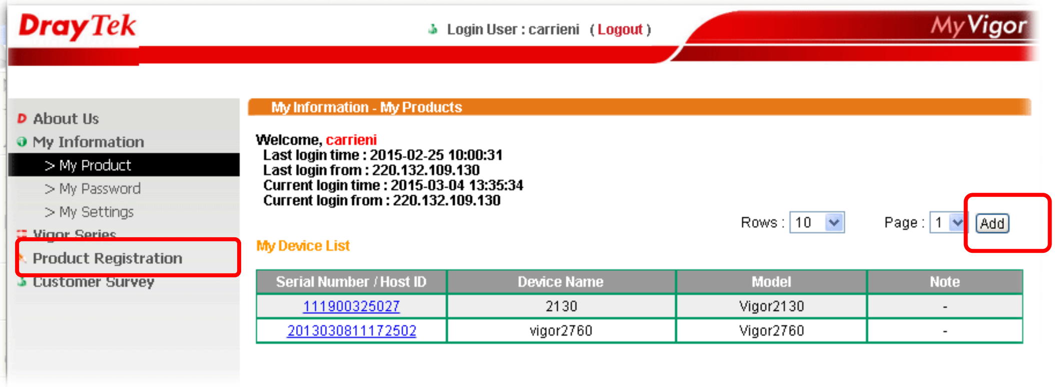
Auth Code : 20290

Don't have a MyVigor Account ? **Create an account now**

Become the MyVigor member, you can receive the e-newsletter update.
Please join customer survey after you are a member! Your opinion is very appreciated.

Info If you haven't an accessing account, please refer to section Creating an Account for MyVigor to create your own one. Please read the articles on the Agreement regarding user rights carefully while creating a user account.

4 The following page will be displayed after you logging in MyVigor. From this page, please click **Add** or **Product Registration**.

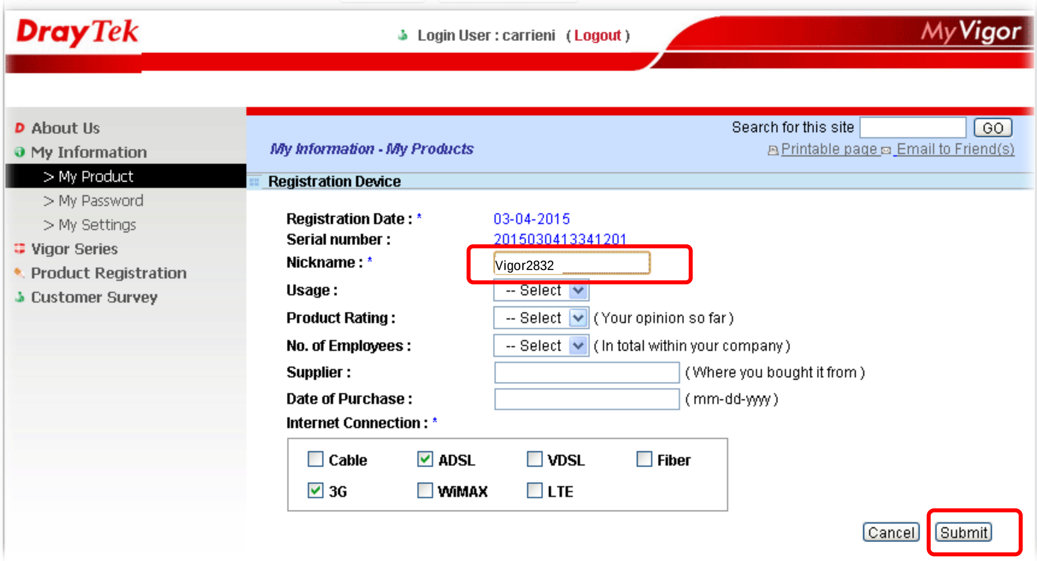


Welcome, carrieni
Last login time : 2015-02-25 10:00:31
Last login from : 220.132.109.130
Current login time : 2015-03-04 13:35:34
Current login from : 220.132.109.130

My Device List

Serial Number / Host ID	Device Name	Model	Note
111900325027	2130	Vigor2130	-
2013030811172502	vigor2760	Vigor2760	-

5 When the following page appears, please type in Nickname (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**.

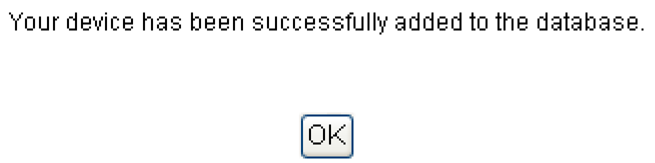


Registration Device

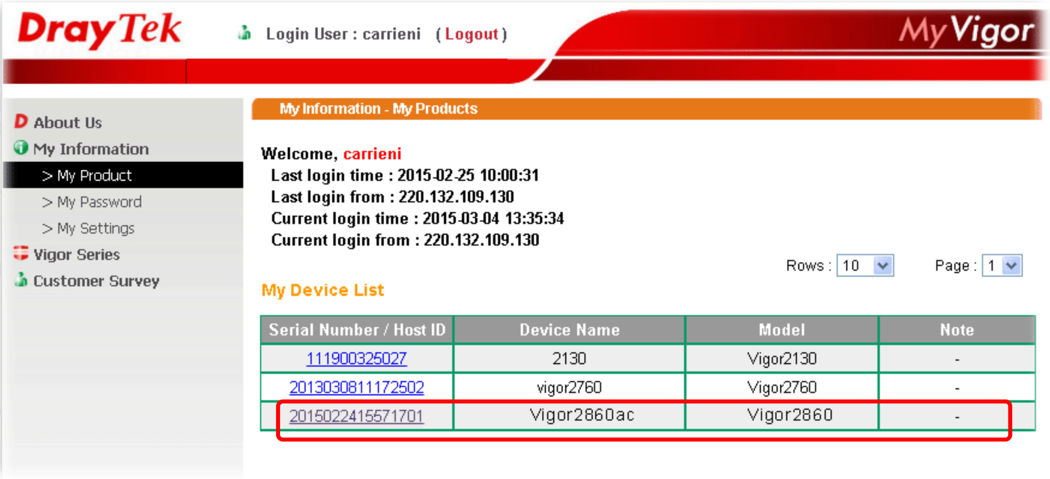
Registration Date : * 03-04-2015
Serial number : 2015030413341201
Nickname : * Vigor2832
Usage : -- Select
Product Rating : -- Select (Your opinion so far)
No. of Employees : -- Select (In total within your company)
Supplier : (Where you bought it from)
Date of Purchase : (mm-dd-yyyy)
Internet Connection : *

□ Cable ☑ ADSL □ VDSL □ Fiber
☑ 3G □ WiMAX □ LTE

6 When the following page appears, your router information has been added to the database.


Your device has been successfully added to the database.

7 After clicking **OK**, you will see the following page. Your router has been registered to *myvigor* website successfully.



Login User : carrieni (Logout)

My Information - My Products

Welcome, carrieni

Last login time : 2015-02-25 10:00:31

Last login from : 220.132.109.130

Current login time : 2015-03-04 13:35:34

Current login from : 220.132.109.130

Rows : 10 Page : 1

My Device List

Serial Number / Host ID	Device Name	Model	Note
111900325027	2130	Vigor2130	-
2013030811172502	vigor2760	Vigor2760	-
2015022415571701	Vigor2860ac	Vigor2860	-

This page is left blank.

Part II Connectivity

WAN

It means wide area network. Public IP will be used in WAN.

LAN

It means local area network. Private IP will be used in 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.

NAT

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.

Applications

DNS, LAN DNS, UPnP, IGMP, WOL, RADIUS, …

Routing

Static Route, Load-Balance/Route Policy

II-1 WAN

It allows users to access Internet.

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.

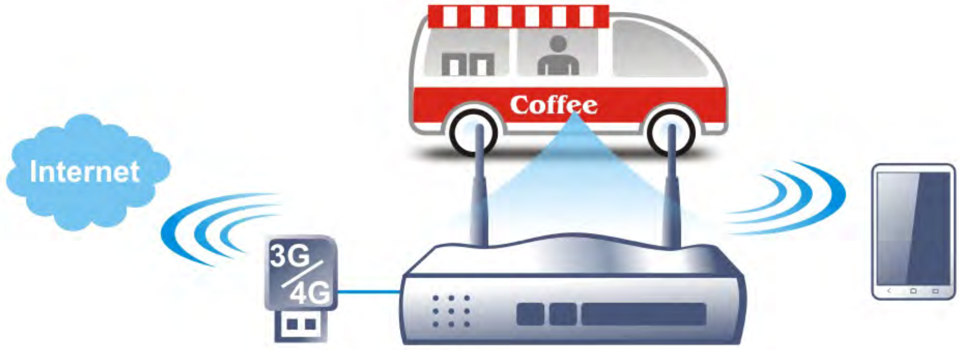
Get Your Public IP Address from ISP

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.

Network Connection by 3G/4G USB Modem

For 3G/4G mobile communication through Access Point is popular more and more, Vigor2952 adds the function of 3G/4G network connection for such purpose. By connecting 3G/4G USB Modem to the USB port of Vigor2952, it can support HSDPA/UMTS/EDGE/GPRS/GSM and the future 3G/4G standard (HSUPA, etc). Vigor2952n with 3G/4G USB Modem allows you to receive 3G/4G signals at any place such as your car or certain location holding outdoor activity and share the bandwidth for using by more people. Users can use LAN ports on the router to access Internet. Also, they can access Internet via 802.11(a/b/g/n) wireless standard, and enjoy the powerful firewall, bandwidth management, and VPN features of Vigor2952n series.



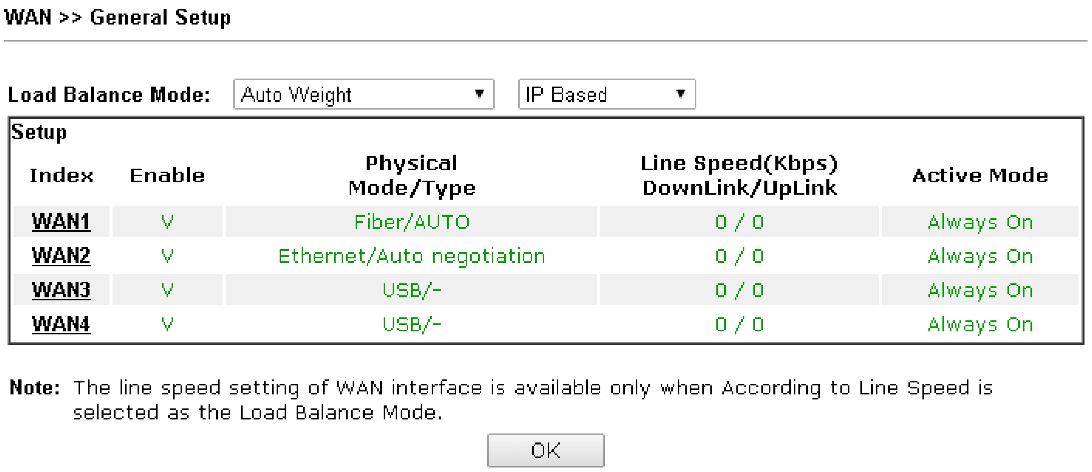
After connecting into the router, 3G/4G USB Modem will be regarded as the WAN3/WAN4 port. However, the original WAN1 and WAN2 still can be used and Load-Balance can be done in the router. Besides, 3G/4G USB Modem in WAN3/WAN4 also can be used as backup device. Therefore, when WAN1 and WAN2 are not available, the router will use 3.5G for supporting automatically. The supported 3G/4G USB Modem will be listed on DrayTek web site. Please visit www.draytek.com for more detailed information.

II-1-1 General Setup

This section will introduce some general settings of Internet and explain the connection modes for WAN1, WAN2 and WAN3/WAN4 in details.

This router supports multiple-WAN function. It allows users to access Internet and combine the bandwidth of the multiple WANs 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. Please configure WAN1, WAN2, WAN3 and WAN4 settings.

This webpage allows you to set general setup for WAN1, WAN2, WAN3 and WAN4 respectively. In default, WAN2 is disabled. If you want to enable it, simply click the WAN2 link and select **Yes** in the field of **Enable**.



WAN >> General Setup

Load Balance Mode: Auto Weight ▾ IP Based ▾

Setup

Index	Enable	Physical Mode/Type	Line Speed(Kbps) DownLink/UpLink	Active Mode
WAN1	V	Fiber/AUTO	0 / 0	Always On
WAN2	V	Ethernet/Auto negotiation	0 / 0	Always On
WAN3	V	USB/-	0 / 0	Always On
WAN4	V	USB/-	0 / 0	Always On

Note: The line speed setting of WAN interface is available only when According to Line Speed is selected as the Load Balance Mode.

Available settings are explained as follows:

Item	Description
Load Balance Mode	This option is available for multiple-WAN for getting enough bandwidth for each WAN port. If you know the practical bandwidth for your WAN interface, please choose the setting of **According to Line Speed**. Otherwise, please choose **Auto Weight** to let the router reach the best load balance. **IP Based** - The same source / destination IP pair will select the same WAN interface as policy. It is the default setting. **Sesseion Based**- All of the WAN interfaces will be used (as out-going WAN) for passing through new sessions to get better transmission speed. Though good speed test result for throughput might be reached; however, some web site may not open smoothly, especially the site need authentication, e.g., FTP. If you have no strong demand about speed test result, keep default settings as IP based.
Index	Click the WAN interface link under Index to access into the WAN configuration page.

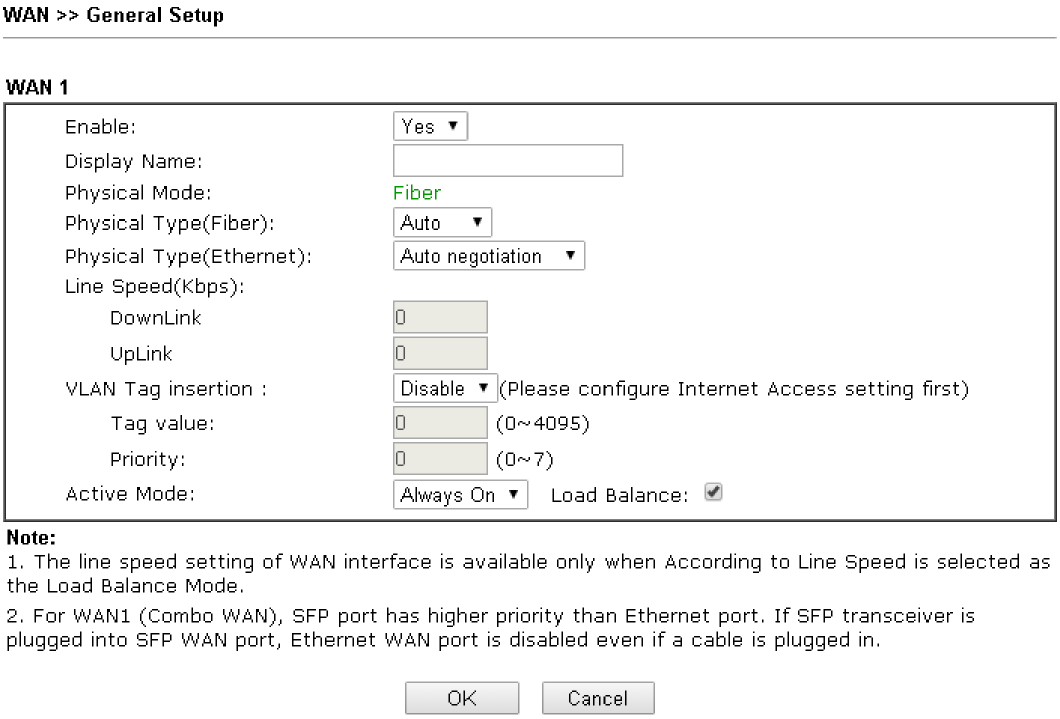
Enable	**V** means such WAN interface is enabled and ready to be used.
Physical Mode / Type	Display the physical mode and physical type of such WAN interface.
Line Speed(Kbps) DownLink/UpLink	Display the downstream and upstream rate of such WAN interface.
Active Mode	Display whether such WAN interface is Active device or backup device. **Backup (WAN#) -** Display the backup WAN interface for such WAN when it is disabled.

Info	In default, each WAN port is enabled.

After finished the above settings, click **OK** to save the settings.

II-1-1-1 WAN1 (Fiber/AUTO)

Vigor router will **detect** the physical line is connected by fiber cable or Ethernet cable **automatically**.



WAN >> General Setup

WAN 1

Enable:	Yes ▼
Display Name:	
Physical Mode:	Fiber
Physical Type(Fiber):	Auto ▼
Physical Type(Ethernet):	Auto negotiation ▼
Line Speed(Kbps):	
DownLink	0
UpLink	0
VLAN Tag insertion :	Disable ▼ (Please configure Internet Access setting first)
Tag value:	0 (0~4095)
Priority:	0 (0~7)
Active Mode:	Always On ▼ Load Balance: ☑

Note:

1. The line speed setting of WAN interface is available only when According to Line Speed is selected as the Load Balance Mode.

2. For WAN1 (Combo WAN), SFP port has higher priority than Ethernet port. If SFP transceiver is plugged into SFP WAN port, Ethernet WAN port is disabled even if a cable is plugged in.

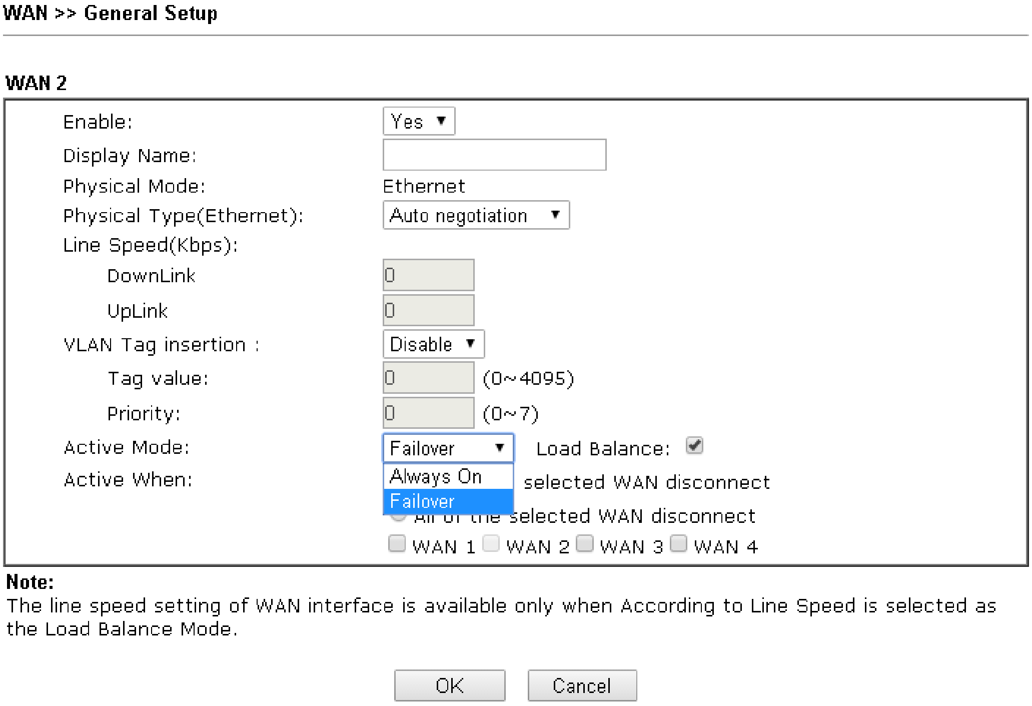
Available settings are explained as follows:

Item	Description
Enable	Choose **Yes** to invoke the settings for this WAN interface. Choose **No** to disable the settings for this WAN interface.
Display Name	Type the description for such interface.
Physical Mode	Display the physical mode of such interface.
Physical Type (Fiber)	Specify the mode for data transmission.
Physical Type (Ethernet)	Specify the mode for data transmission.

Line Speed (Kpbs)	If your choose **According to Line Speed** as the **Load Balance Mode** in previous page, please type the line speed for downloading and uploading for such WAN interface. The unit is kbps.
VLAN Tag insertion	The settings configured in this field are available for ADSL. **Enable** – Enable the function of VLAN with tag. The router will add specific VLAN number to all packets on the WAN while sending them out. Please type the tag value and specify the priority for the packets sending by WAN1. **Disable** – Disable the function of VLAN with tag. **Tag value** – Type the value as the VLAN ID number. The range is form 0 to 4095. **Priority** – Type the packet priority number for such VLAN. The range is from 0 to 7.
Active Mode	Choose **Always On** to make the WAN1 connection being activated always. **Load Balance**: Check this box to enable **auto** load balance function for such WAN interface. When the data traffic is large, the WAN interface with the function enabled will balance the data transmission automatically among all of the WAN interfaces in connection status.
Active When	If you choose **Failover** as the **Active Mode**, the option of **Active When** will appear. ● **Any of the selected WAN disconnect** – Such WAN connection will be activated when any selected WAN interface (checked below) disconnects. ● **All of the selected WAN disconnect** – Such WAN connection will be activated only when all of selected WAN interfaces (checked below) disconnect. ● **Check boxes for WAN1 to WAN4** – Specify the WAN interface by checking the WAN box.

II-1-1-2 WAN2 (Ethernet)

Ethernet is the Physical Mode for WAN2.



WAN >> General Setup

WAN 2

Enable:	Yes ▾
Display Name:	
Physical Mode:	Ethernet
Physical Type(Ethernet):	Auto negotiation ▾
Line Speed(Kbps):	
DownLink	0
UpLink	0
VLAN Tag insertion :	Disable ▾
Tag value:	0 (0~4095)
Priority:	0 (0~7)
Active Mode:	Failover ▾ (Always On / Failover) Load Balance: ☑
Active When:	selected WAN disconnect ○ All of the selected WAN disconnect □ WAN 1 □ WAN 2 □ WAN 3 □ WAN 4

Note:
The line speed setting of WAN interface is available only when According to Line Speed is selected as the Load Balance Mode.

Available settings are explained as follows:

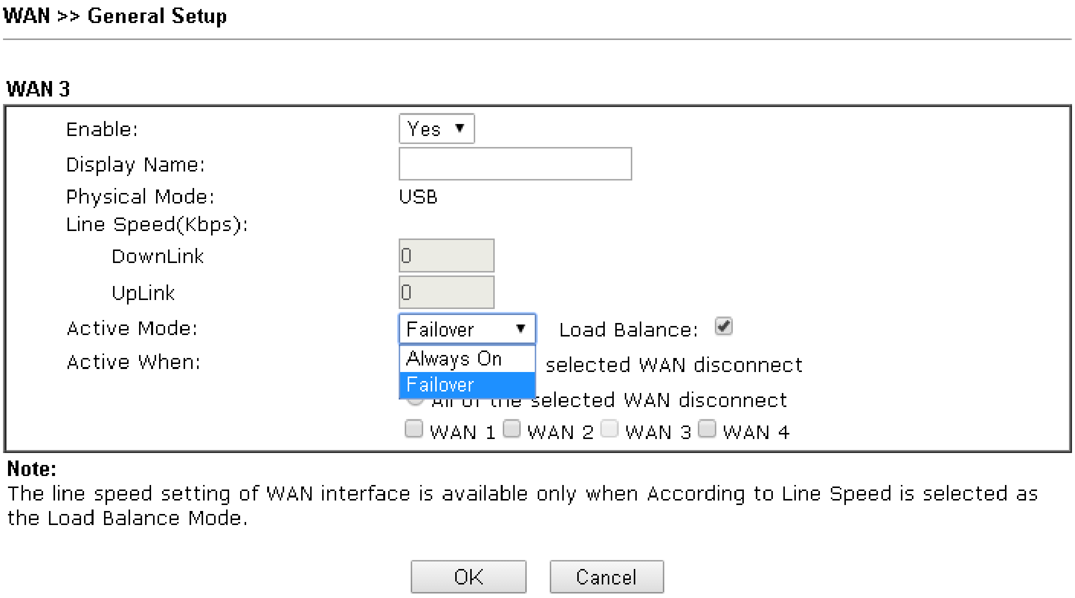
Item	Description
Enable	Choose **Yes** to invoke the settings for this WAN interface. Choose **No** to disable the settings for this WAN interface.
Display Name	Type the description for such WAN interface.
Physical Mode	Display the physical mode of such WAN interface.
Physical Type (Ethernet)	Specify the mode for data transmission. You can change the physical type or choose **Auto negotiation** for determined by the system.
Line Speed	If your choose **According to Line Speed** as the **Load Balance Mode**, please type the line speed for downloading and uploading for such WAN interface. The unit is kbps.
VLAN Tag insertion	**Enable** – Enable the function of VLAN with tag. The router will add specific VLAN number to all packets on the WAN while sending them out. Please type the tag value and specify the priority for the packets sending by WAN1. **Disable** – Disable the function of VLAN with tag. **Tag value** – Type the value as the VLAN ID number. The range is form 0 to 4095. **Priority** – Type the packet priority number for such VLAN. The range is from 0 to 7.
Active Mode	Choose **Always On** to make the WAN1/WAN2/WAN3/WAN4 connection being activated always. **Load Balance**: Check this box to enable **auto** load balance

	function for such WAN interface. When the data traffic is large, the WAN interface with the function enabled will balance the data transmission automatically among all of the WAN interfaces in connection status.
Active When	If you choose **Failover** as the **Active Mode**, the option of **Active When** will appear. ● **Any of the selected WAN disconnect** – Such WAN connection will be activated when any selected WAN interface (checked below) disconnects. ● **All of the selected WAN disconnect** – Such WAN connection will be activated only when all of selected WAN interfaces (checked below) disconnect. ● **Check boxes for WAN1 to WAN4** – Specify the WAN interface by checking the WAN box.

After finished the above settings, click **OK** to save the settings.

II-1-1-3 WAN3 / WAN4 (USB)

To use 3G/4G network connection through 3G/4G USB Modem, please configure **WAN3** or **WAN4** interface.



WAN >> General Setup

WAN 3

Enable:	Yes ▾
Display Name:	
Physical Mode:	USB
Line Speed(Kbps):	
DownLink	0
UpLink	0
Active Mode:	Failover ▾ Load Balance: ☑
Active When:	○ selected WAN disconnect ○ All of the selected WAN disconnect □ WAN 1 □ WAN 2 □ WAN 3 □ WAN 4

Note:
The line speed setting of WAN interface is available only when According to Line Speed is selected as the Load Balance Mode.

Available settings are explained as follows:

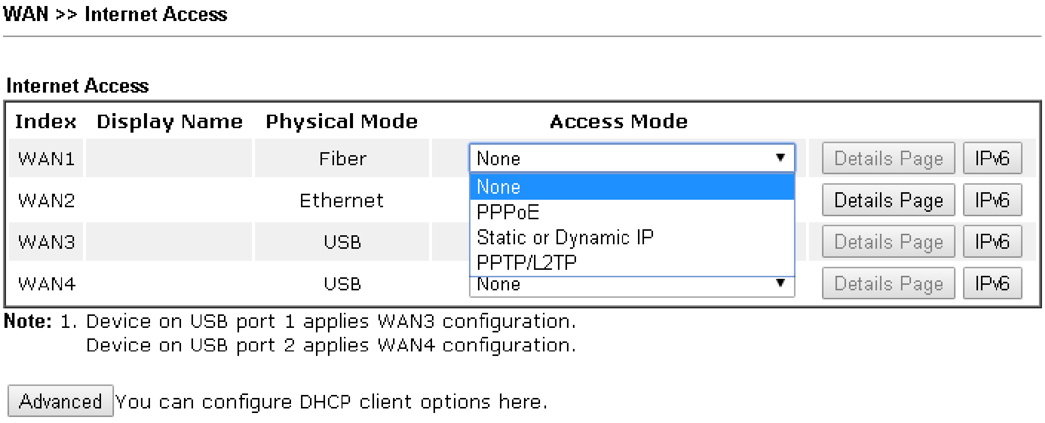
Item	Description
Enable	Choose **Yes** to invoke the settings for this WAN interface. Choose **No** to disable the settings for this WAN interface.
Display Name	Type the description for such WAN interface.
Physical Mode	Display the physical mode of such WAN interface.
Line Speed	If your choose **According to Line Speed** as the **Load Balance Mode**, please type the line speed for downloading and uploading for such WAN interface. The unit is kbps.

Active Mode	Choose **Always On** to make such WAN connection being activated always. **Load Balance**: Check this box to enable **auto** load balance function for such WAN interface. When the data traffic is large, the WAN interface with the function enabled will balance the data transmission automatically among all of the WAN interfaces in connection status.
Active When	If you choose **Failover** as the **Active Mode**, the option of **Active When** will appear. ● **Any of the selected WAN disconnect** – Such WAN connection will be activated when any selected WAN interface (checked below) disconnects. ● **All of the selected WAN disconnect** – Such WAN connection will be activated only when all of selected WAN interfaces (checked below) disconnect. ● **Check boxes for WAN1 to WAN4** – Specify the WAN interface by checking the WAN box.

After finished the above settings, click **OK** to save the settings.

II-1-2 Internet Access

For the router supports multi-WAN function, the users can set different WAN settings (for WAN1/WAN2/WAN3/WAN4) for Internet Access. Due to different Physical Mode for WAN interface, the Access Mode for these connections also varies. Refer to the following figures.



WAN >> Internet Access

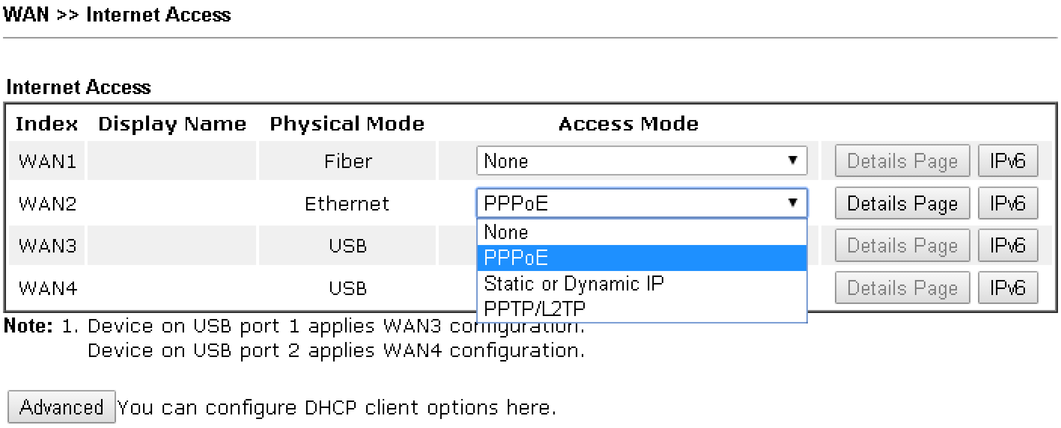
Internet Access

Index	Display Name	Physical Mode	Access Mode		
WAN1		Fiber	None	Details Page	IPv6
WAN2		Ethernet		Details Page	IPv6
WAN3		USB		Details Page	IPv6
WAN4		USB	None	Details Page	IPv6

Note: 1. Device on USB port 1 applies WAN3 configuration.
Device on USB port 2 applies WAN4 configuration.

Advanced You can configure DHCP client options here.

And,



WAN >> Internet Access

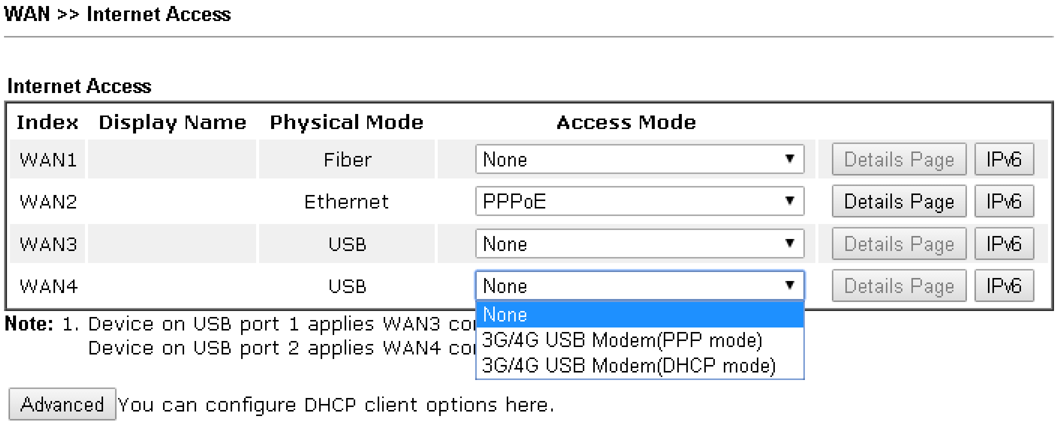
Internet Access

Index	Display Name	Physical Mode	Access Mode		
WAN1		Fiber	None	Details Page	IPv6
WAN2		Ethernet	PPPoE	Details Page	IPv6
WAN3		USB		Details Page	IPv6
WAN4		USB		Details Page	IPv6

Note: 1. Device on USB port 1 applies WAN3 configuration.
Device on USB port 2 applies WAN4 configuration.

Advanced You can configure DHCP client options here.

And,



WAN >> Internet Access

Internet Access

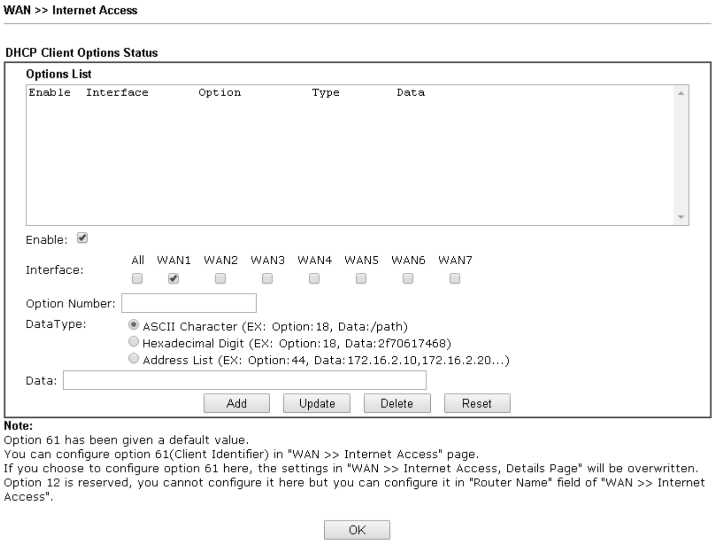
Index	Display Name	Physical Mode	Access Mode		
WAN1		Fiber	None	Details Page	IPv6
WAN2		Ethernet	PPPoE	Details Page	IPv6
WAN3		USB	None	Details Page	IPv6
WAN4		USB	None	Details Page	IPv6

Note: 1. Device on USB port 1 applies WAN3 co
Device on USB port 2 applies WAN4 co

Advanced You can configure DHCP client options here.

Available settings are explained as follows:

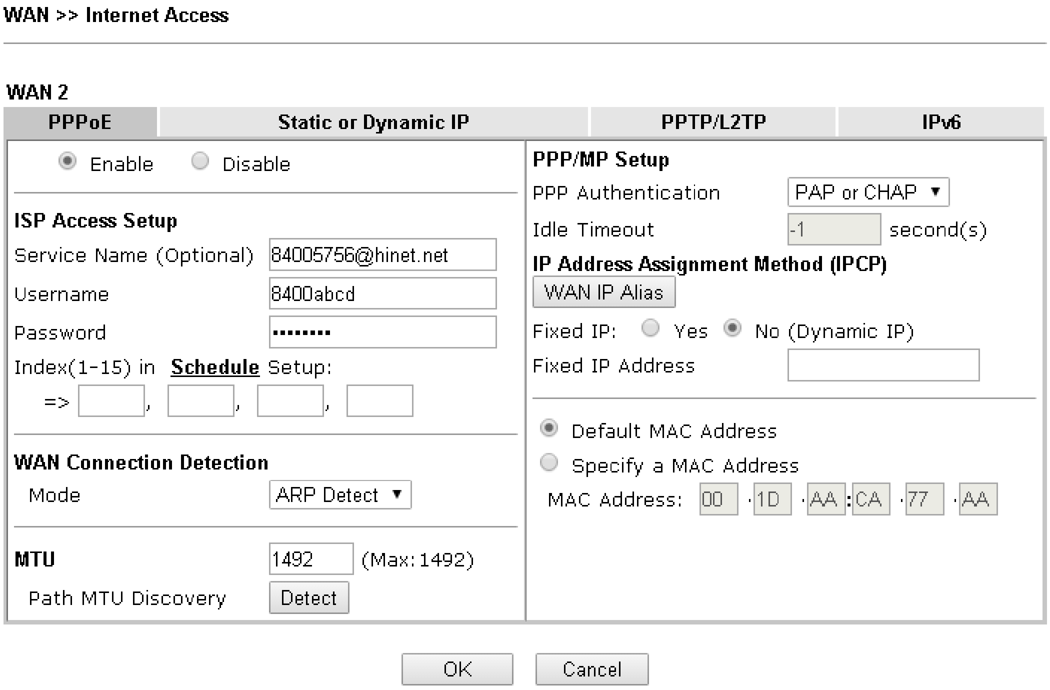
Item	Description
Index	Display the WAN interface.

Display Name	It shows the name of the WAN1/WAN2/WAN3/WAN4/WAN5 that entered in general setup.
Physical Mode	It shows the physical connection for WAN1~4 (Ethernet) /WAN5 (3G/4G USB Modem) according to the real network connection.
Access Mode	Use the drop down list to choose a proper access mode. The details page of that mode will be popped up. If not, click Details Page for accessing the page to configure the settings.
Details Page	This button will open different web page (based on IPv4) according to the access mode that you choose in WAN interface. Note that **Details Page** will be changed slightly based on physical mode.
IPv6	This button will open different web page (based on Physical Mode) to setup IPv6 Internet Access Mode for WAN interface. If IPv6 service is active on this WAN interface, the color of "IPv6" will become green.
Advanced	This button allows you to configure DHCP client options. DHCP packets can be processed by adding option number and data information when such function is enabled and configured.  WAN >> Internet Access DHCP Client Options Status Options List Enable Interface Option Type Data Enable: ☑ Interface: All □ WAN1 ☑ WAN2 □ WAN3 □ WAN4 □ WAN5 □ WAN6 □ WAN7 □ Option Number: DataType: ● ASCII Character (EX: Option:18, Data:/path) ○ Hexadecimal Digit (EX: Option:18, Data:2f70617468) ○ Address List (EX: Option:44, Data:172.16.2.10,172.16.2.20...) Data: Add Update Delete Reset Note: Option 61 has been given a default value. You can configure option 61(Client Identifier) in "WAN >> Internet Access" page. If you choose to configure option 61 here, the settings in "WAN >> Internet Access, Details Page" will be overwritten. Option 12 is reserved, you cannot configure it here but you can configure it in "Router Name" field of "WAN >> Internet Access". OK **Enable** – Check the box to enable the function of DHCP Option. Each DHCP option is composed by an option number with data. For example, Option number:100 Data: abcd When such function is enabled, the specified values for DHCP option will be seen in DHCP reply packets. **Interface** – Specify the WAN interface(s) that will be overwritten by such function. WAN5 ~ WAN7 can be located under **WAN>>Multi-VLAN**. **Option Number** – Type a number for such function. **DataType** – Choose the type (ASCII or Hex) for the data to be stored. **Data** – Type the content of the data to be processed by the function of DHCP option.

Info	If you choose to configure option 61 here, the detailed settings in WAN>>Internet Access will be overwritten.

II-1-2-1 Details Page for PPPoE in Etherenet WAN1/WAN2 and Fiber WAN1

To choose PPPoE as the accessing protocol of the Internet, please select **PPPoE** from the **WAN>>Internet Access >>WAN1** page. The following web page will be shown.



WAN >> Internet Access

WAN 2

PPPoE | Static or Dynamic IP | PPTP/L2TP | IPv6

● Enable ○ Disable

ISP Access Setup

Service Name (Optional): 84005756@hinet.net

Username: 8400abcd

Password: ••••••••

Index(1-15) in Schedule Setup: =>

WAN Connection Detection

Mode: ARP Detect

MTU: 1492 (Max:1492)

Path MTU Discovery: Detect

PPP/MP Setup

PPP Authentication: PAP or CHAP

Idle Timeout: -1 second(s)

IP Address Assignment Method (IPCP)

WAN IP Alias

Fixed IP: ○ Yes ● No (Dynamic IP)

Fixed IP Address:

● Default MAC Address

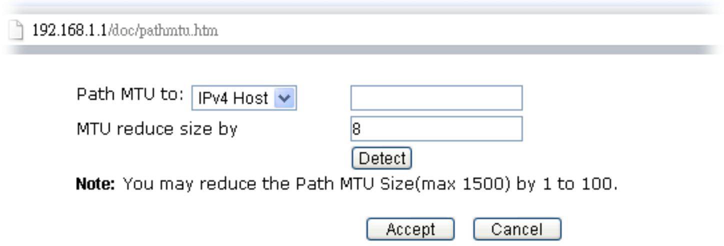
○ Specify a MAC Address

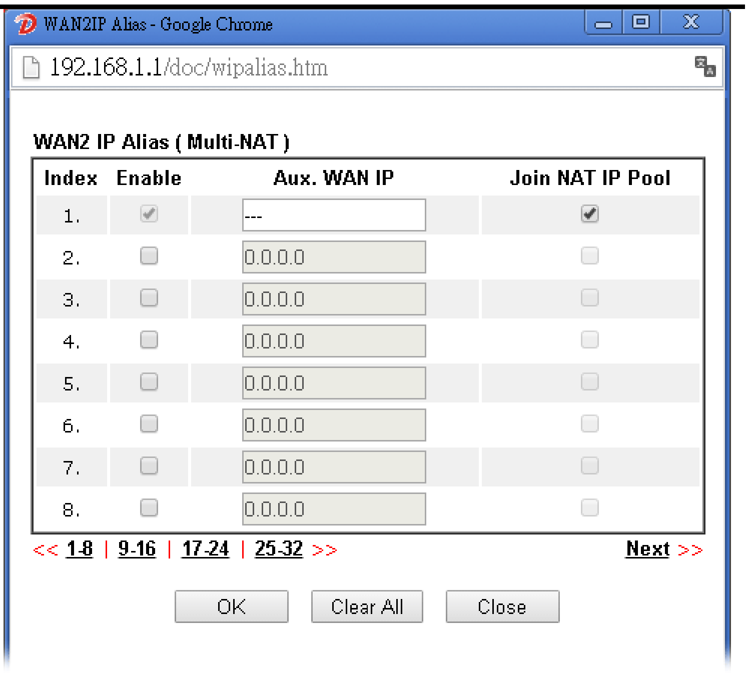
MAC Address: 00 : 1D : AA : CA : 77 : AA

OK Cancel

Available settings are explained as follows:

Item	Description
Enable/Disable	Click **Enable** for activating this function. If you click **Disable**, this function will be closed and all the settings that you adjusted in this page will be invalid.
ISP Access Setup	Enter your allocated username, password and authentication parameters according to the information provided by your ISP. **Service Name (Optional)** - Enter the description of the specific network service. **Username** – Type in the username provided by ISP in this field. The maximum length of the user name you can set is 63 characters. **Password** – Type in the password provided by ISP in this field. The maximum length of the password you can set is 62 characters. **Index (1-15) in Schedule Setup -** You can type in four sets of time schedule for your request. All the schedules can be set previously in **Application >> Schedule** web page and you can use the number that you have set in that web page.
WAN Connection Detection	Such function allows you to verify whether network connection is alive or not through ARP Detect or Ping Detect.

	Mode – Choose **ARP Detect** or **Ping Detect** for the system to execute for WAN detection. If you choose Ping Detect as the detection mode, you have to type required settings for the following items. ● **Ping IP** – If you choose **Ping Detect** as detection mode, you also can enable this setting to use current WAN gateway IP address for pinging. With the IP address(es) pinging, Vigor router can check if the WAN connection is on or off. ● **TTL (Time to Live)** – Set TTL value of PING operation.
MTU	It means Max Transmit Unit for packet. **Path MTU Discovery** – It is used to detect the maximum MTU size of a packet not to be segmented in specific transmit path. Click **Detect** to open the following dialog.  192.168.1.1/doc/pathmtu.htm Path MTU to: IPv4 Host MTU reduce size by 8 Detect **Note:** You may reduce the Path MTU Size(max 1500) by 1 to 100. Accept Cancel ● **Path MTU to** – Type the IP address as the specific transmit path. ● **MTU reduce size by**– It determines the decreasing size of MTU value. For example, the number specified in this field is “8”. The maximum MTU size is “1500”. After clicking the “detect” button, the system will calculate and get the suitable MTU value such as 1500, 1492, 1484 and etc., automatically. ● **Detect** – Click it to detect a suitable MTU value ● **Accept**– After clicking it, the detected value will be displayed in the field of MTU.
PPP/MP Setup	**PPP Authentication** – Select **PAP only** or **PAP or CHAP** for PPP. **Idle Timeout** – Set the timeout for breaking down the Internet after passing through the time without any action.
IP Address Assignment Method (IPCP)	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. Please contact your ISP before you want to use this function. **WAN IP Alias** - If you have multiple public IP addresses and would like to utilize them on the WAN interface, please use WAN IP Alias. You can set up to 32 public IP addresses other than the current one you are using. Type the additional WAN IP address and check the Enable box. Then click **OK** to exit the dialog.



WAN2 IP Alias (Multi-NAT)

Index	Enable	Aux. WAN IP	Join NAT IP Pool
1.	☑	---	☑
2.	□	0.0.0.0	□
3.	□	0.0.0.0	□
4.	□	0.0.0.0	□
5.	□	0.0.0.0	□
6.	□	0.0.0.0	□
7.	□	0.0.0.0	□
8.	□	0.0.0.0	□

Fixed IP – Click **Yes** to use this function and type in a fixed IP address in the box of **Fixed IP Address**.

Default MAC Address – You can use **Default MAC Address** or specify another MAC address by typing on the boxes of MAC Address for the router.

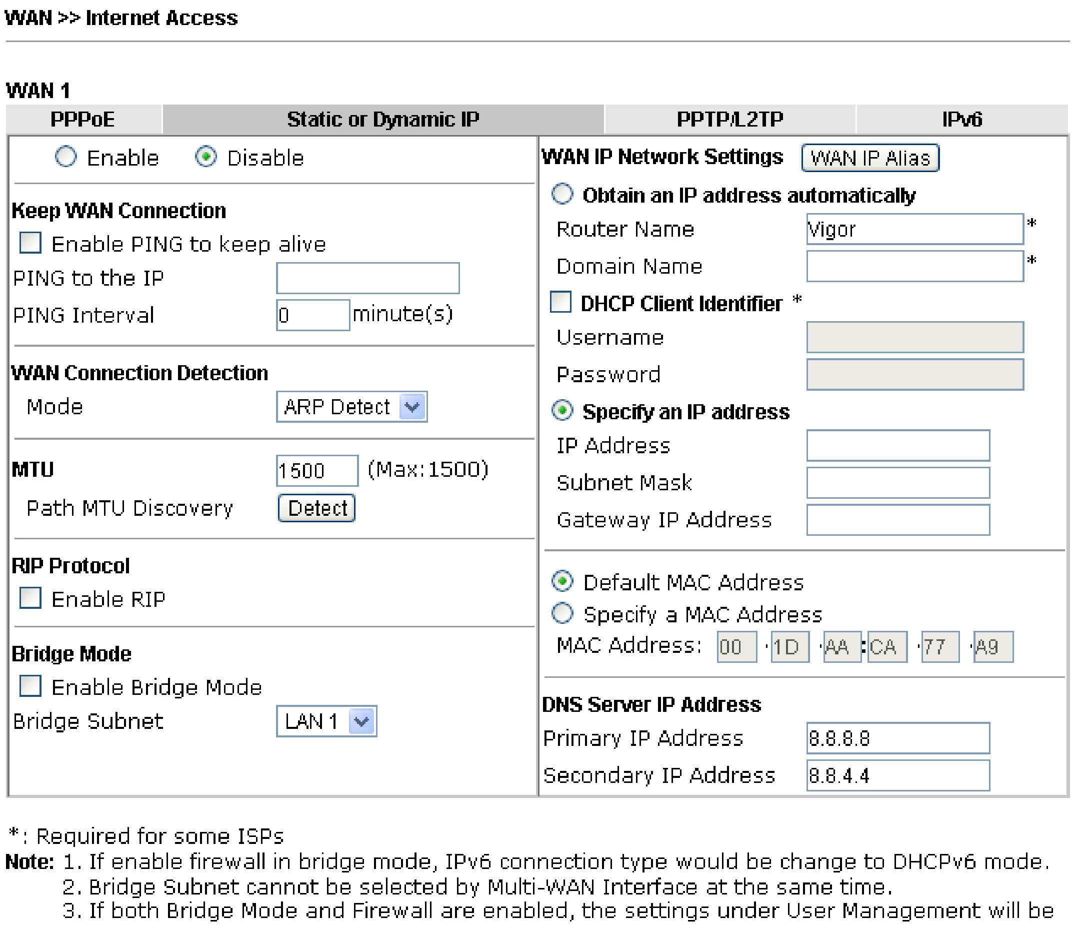
Specify a MAC Address - Type the MAC address for the router manually.

After finishing all the settings here, please click **OK** to activate them.

II-1-2-2 Details Page for Static or Dynamic IP in Etherenet WAN1/WAN2 and Fiber WAN1

For static IP mode, you usually receive a fixed public IP address or a public subnet, namely multiple public IP addresses from your DSL or Cable ISP service providers. In most cases, a Cable service provider will offer a fixed public IP, while a DSL service provider will offer a public subnet. If you have a public subnet, you could assign an IP address or many IP address to the WAN interface.

To use **Static or Dynamic IP** as the accessing protocol of the internet, please click the **Static or Dynamic IP** tab. The following web page will be shown.



WAN >> Internet Access

WAN 1

PPPoE | Static or Dynamic IP | PPTP/L2TP | IPv6

○ Enable ● Disable

Keep WAN Connection

□ Enable PING to keep alive

PING to the IP

PING Interval 0 minute(s)

WAN Connection Detection

Mode ARP Detect

MTU 1500 (Max:1500)

Path MTU Discovery Detect

RIP Protocol

□ Enable RIP

Bridge Mode

□ Enable Bridge Mode

Bridge Subnet LAN 1

WAN IP Network Settings WAN IP Alias

○ **Obtain an IP address automatically**

Router Name Vigor *

Domain Name *

□ **DHCP Client Identifier** *

Username

Password

● **Specify an IP address**

IP Address

Subnet Mask

Gateway IP Address

● Default MAC Address

○ Specify a MAC Address

MAC Address: 00 : 1D : AA : CA : 77 : A9

DNS Server IP Address

Primary IP Address 8.8.8.8

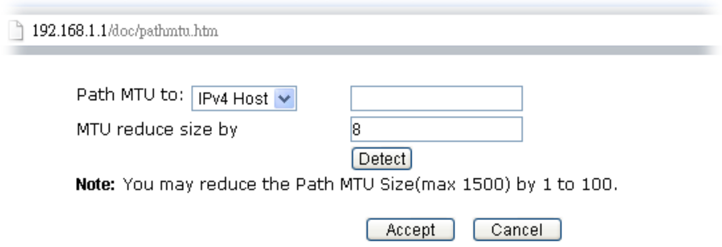
Secondary IP Address 8.8.4.4

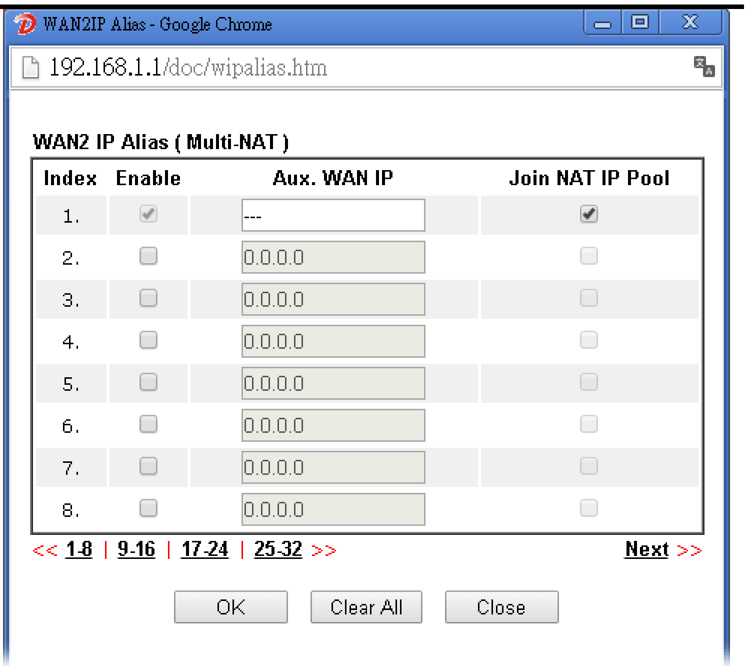
*: Required for some ISPs

Note: 1. If enable firewall in bridge mode, IPv6 connection type would be change to DHCPv6 mode.
2. Bridge Subnet cannot be selected by Multi-WAN Interface at the same time.
3. If both Bridge Mode and Firewall are enabled, the settings under User Management will be

Available settings are explained as follows:

Item	Description
Enable / Disable	Click **Enable** for activating this function. If you click **Disable**, this function will be closed and all the settings that you adjusted in this page will be invalid.
Keep WAN Connection	Normally, this function is designed for Dynamic IP environments because some ISPs will drop connections if there is no traffic within certain periods of time. Check **Enable PING to keep alive** box to activate this function. **PING to the IP** - If you enable the PING function, please specify the IP address for the system to PING it for keeping alive. **PING Interval** - Enter the interval for the system to execute the PING operation.
WAN Connection Detection	Such function allows you to verify whether network connection is alive or not through ARP Detect or Ping Detect. **Mode** – Choose **ARP Detect** or **Ping Detect** or **Always On** for the system to execute for WAN detection. If you choose Ping Detect as the detection mode, you have to type required settings for the following items. ● **Ping IP** – If you choose **Ping Detect** as detection mode, you also can enable this setting to use current WAN gateway IP address for pinging. With the IP address(es) pinging, Vigor router can check if the WAN connection is on or off. ● **TTL (Time to Live)** – Set TTL value of PING operation.

MTU	It means Max Transmit Unit for packet. **Path MTU Discovery** – It is used to detect the maximum MTU size of a packet not to be segmented in specific transmit path. Click **Detect** to open the following dialog.  192.168.1.1/doc/pathmtu.htm Path MTU to: IPv4 Host MTU reduce size by 8 **Note:** You may reduce the Path MTU Size(max 1500) by 1 to 100. ● **Path MTU to** – Type the IP address as the specific transmit path. ● **MTU reduce size by**– It determines the decreasing size of MTU value. For example, the number specified in this field is “8”. The maximum MTU size is “1500”. After clicking the “detect” button, the system will calculate and get the suitable MTU value such as 1500, 1492, 1484 and etc., automatically. ● **Detect** – Click it to detect a suitable MTU value ● **Accept**– After clicking it, the detected value will be displayed in the field of MTU.
RIP Protocol	Routing Information Protocol is abbreviated as RIP（RFC1058）specifying how routers exchange routing tables information. Click **Enable RIP** for activating this function.
Bridge Mode	**Enable Bridge Mode** - If the function is enabled, the router will work as a bridge modem. **Enable Firewall** – It is available when Bridge Mode is enabled. When both Bridge Mode and Firewall check boxes are enabled, the settings configured (user profiles) under User Management will be ignored. And all of the filter rules defined and enabled in Firewall menu will be activated. **Bridge Subnet** – Make a bridge between the selected LAN subnet and such WAN interface.
WAN IP Network Settings	This group allows you to obtain an IP address automatically and allows you type in IP address manually. **WAN IP Alias** - If you have multiple public IP addresses and would like to utilize them on the WAN interface, please use WAN IP Alias. You can set up to 32 public IP addresses other than the current one you are using.



WAN2 IP Alias (Multi-NAT)

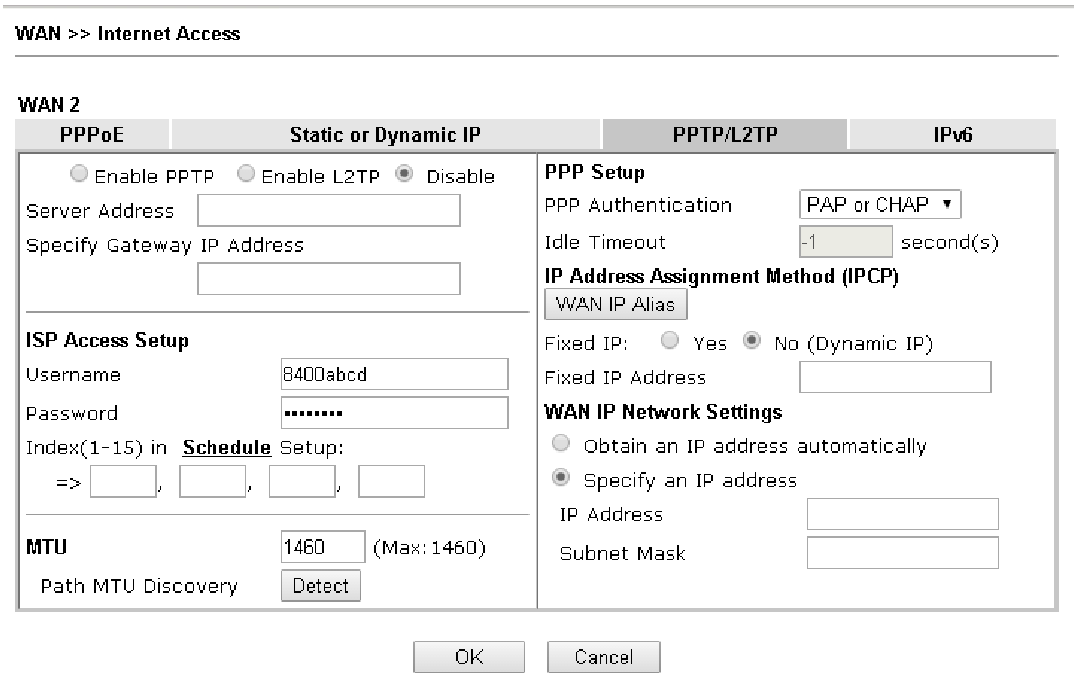
Index	Enable	Aux. WAN IP	Join NAT IP Pool
1.	☑	---	☑
2.	☐	0.0.0.0	☐
3.	☐	0.0.0.0	☐
4.	☐	0.0.0.0	☐
5.	☐	0.0.0.0	☐
6.	☐	0.0.0.0	☐
7.	☐	0.0.0.0	☐
8.	☐	0.0.0.0	☐

	Obtain an IP address automatically – Click this button to obtain the IP address automatically if you want to use **Dynamic IP** mode. ● **Router Name**: Type in the router name provided by ISP. ● **Domain Name**: Type in the domain name that you have assigned. **DHCP Client Identifier for some ISP** ● **Enable:** Check the box to specify username and password as the DHCP client identifier for some ISP. ● **Username:** Type a name as username. The maximum length of the user name you can set is 63 characters. ● **Password:** Type a password. The maximum length of the password you can set is 62 characters. **Specify an IP address** – Click this radio button to specify some data if you want to use **Static IP** mode. ● **IP Address**: Type the IP address. ● **Subnet Mask**: Type the subnet mask. ● **Gateway IP Address**: Type the gateway IP address. **Default MAC Address**: Click this radio button to use default MAC address for the router. **Specify a MAC Address**: Some Cable service providers specify a specific MAC address for access authentication. In such cases you need to click the **Specify a MAC Address** and enter the MAC address in the MAC Address field.
DNS Server IP Address	Type in the primary IP address for the router if you want to use **Static IP** mode. If necessary, type in secondary IP address for necessity in the future.

After finishing all the settings here, please click **OK** to activate them.

II-1-2-3 Details Page for PPTP/L2TP in Etherenet WAN1/WAN2 and Fiber WAN1

To use **PPTP/L2TP** as the accessing protocol of the internet, please click the **PPTP/L2TP** tab. The following web page will be shown.



WAN >> Internet Access

WAN 2

○ Enable PPTP ○ Enable L2TP ● Disable

Server Address

Specify Gateway IP Address

ISP Access Setup

Username: 8400abcd

Password: ••••••••

Index(1-15) in Schedule Setup:

=> , , ,

MTU: 1460 (Max:1460)

Path MTU Discovery

PPP Setup

PPP Authentication: PAP or CHAP

Idle Timeout: -1 second(s)

IP Address Assignment Method (IPCP)

Fixed IP: ○ Yes ● No (Dynamic IP)

Fixed IP Address

WAN IP Network Settings

○ Obtain an IP address automatically

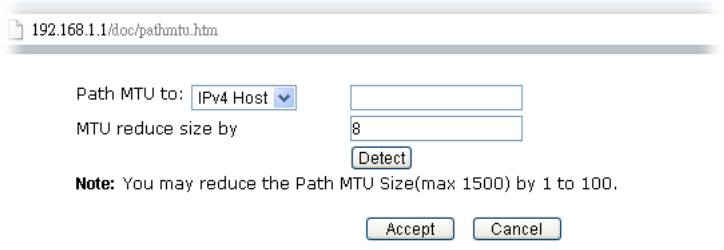
● Specify an IP address

IP Address

Subnet Mask

Available settings are explained as follows:

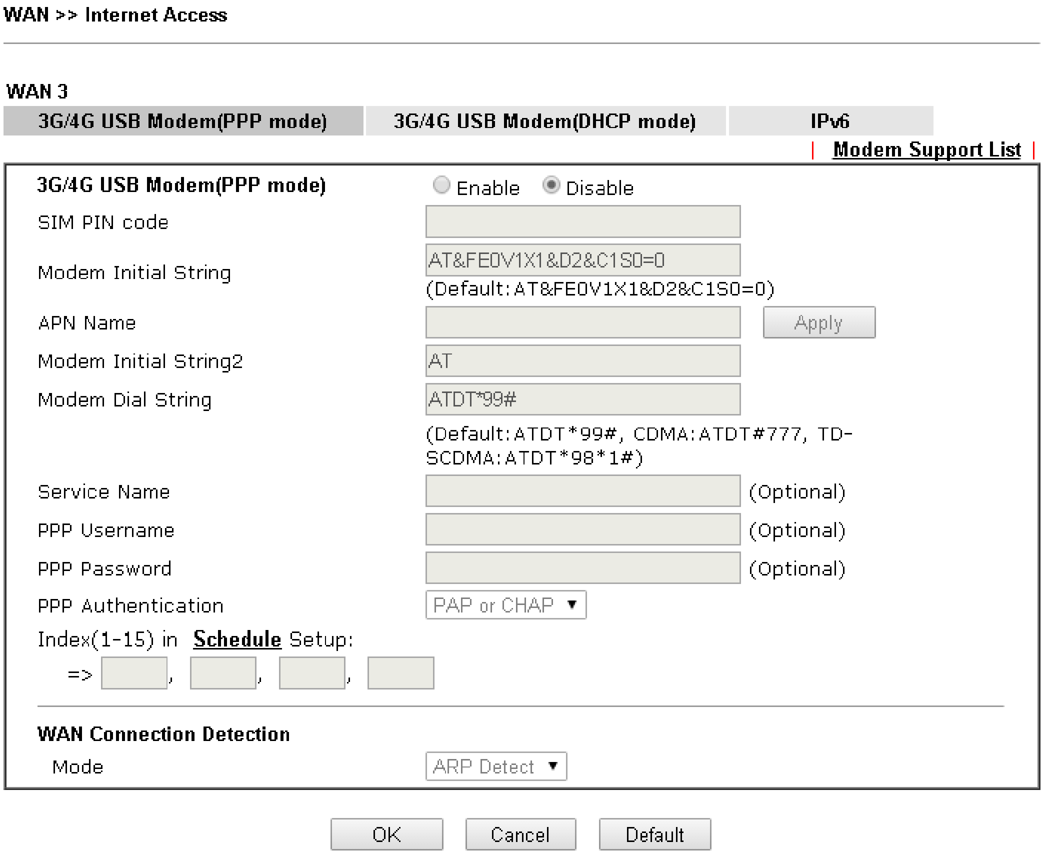
Item	Description
PPTP/L2TP	**Enable PPTP-** Click this radio button to enable a PPTP client to establish a tunnel to a DSL modem on the WAN interface. **Enable L2TP** - Click this radio button to enable a L2TP client to establish a tunnel to a DSL modem on the WAN interface. **Disable** – Click this radio button to close the connection through PPTP or L2TP. **Server Address** - Specify the IP address of the PPTP/L2TP server if you enable PPTP/L2TP client mode. **Specify Gateway IP Address** – Specify the gateway IP address for DHCP server.
ISP Access Setup	**Username** -Type in the username provided by ISP in this field. The maximum length of the user name you can set is 63 characters. **Password** -Type in the password provided by ISP in this field. The maximum length of the password you can set is 62 characters. **Index (1-15) in Schedule Setup -** You can type in four sets of time schedule for your request. All the schedules can be set previously in **Application >> Schedule** web page and you can use the number that you have set in that web page.
MTU	It means Max Transmit Unit for packet. **Path MTU Discovery** – It is used to detect the maximum MTU size of a packet not to be segmented in specific transmit path. Click **Detect** to open the following dialog.

	 192.168.1.1/doc/pathmtu.htm Path MTU to: IPv4 Host MTU reduce size by 8 **Note:** You may reduce the Path MTU Size(max 1500) by 1 to 100. ● **Path MTU to** – Type the IP address as the specific transmit path. ● **MTU reduce size by**– It determines the decreasing size of MTU value. For example, the number specified in this field is "8". The maximum MTU size is "1500". After clicking the "detect" button, the system will calculate and get the suitable MTU value such as 1500, 1492, 1484 and etc., automatically. ● **Detect** – Click it to detect a suitable MTU value ● **Accept**– After clicking it, the detected value will be displayed in the field of MTU.
PPP Setup	**PPP Authentication** - Select **PAP only** or **PAP or CHAP** for PPP. **Idle Timeout** - Set the timeout for breaking down the Internet after passing through the time without any action.
IP Address Assignment Method(IPCP)	**WAN IP Alias** - If you have multiple public IP addresses and would like to utilize them on the WAN interface, please use WAN IP Alias. You can set up to 32 public IP addresses other than the current one you are using. **Fixed IP** - 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. Please contact your ISP before you want to use this function. Click **Yes** to use this function and type in a fixed IP address in the box. **Fixed IP Address -**Type a fixed IP address.
WAN IP Network Settings	**Obtain an IP address automatically** – Click this button to obtain the IP address automatically. **Specify an IP address** – Click this radio button to specify some data. ● **IP Address** – Type the IP address. ● **Subnet Mask** – Type the subnet mask.

After finishing all the settings here, please click **OK** to activate them.

II-1-2-4 Details Page for 3G/4G USB Modem (PPP mode) in USB WAN3/WAN4

To use **3G/4G USB Modem (PPP mode)** as the accessing protocol of the internet, please choose **Internet Access** from **WAN** menu. Then, select **3G/4G USB Modem (PPP mode)** for WAN5. The following web page will be shown.



WAN >> Internet Access

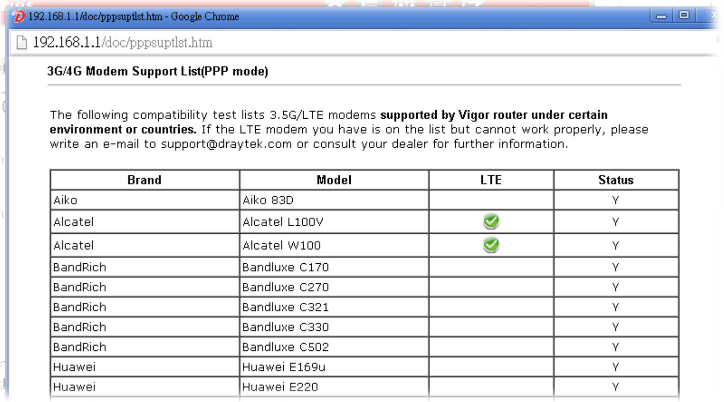
WAN 3

3G/4G USB Modem(PPP mode)	○ Enable ● Disable
SIM PIN code	
Modem Initial String	AT&FE0V1X1&D2&C1S0=0 (Default:AT&FE0V1X1&D2&C1S0=0)
APN Name	Apply
Modem Initial String2	AT
Modem Dial String	ATDT*99# (Default:ATDT*99#, CDMA:ATDT#777, TD-SCDMA:ATDT*98*1#)
Service Name	(Optional)
PPP Username	(Optional)
PPP Password	(Optional)
PPP Authentication	PAP or CHAP ▼
Index(1-15) in Schedule Setup: => , , ,	

WAN Connection Detection

Mode	ARP Detect ▼

Available settings are explained as follows:

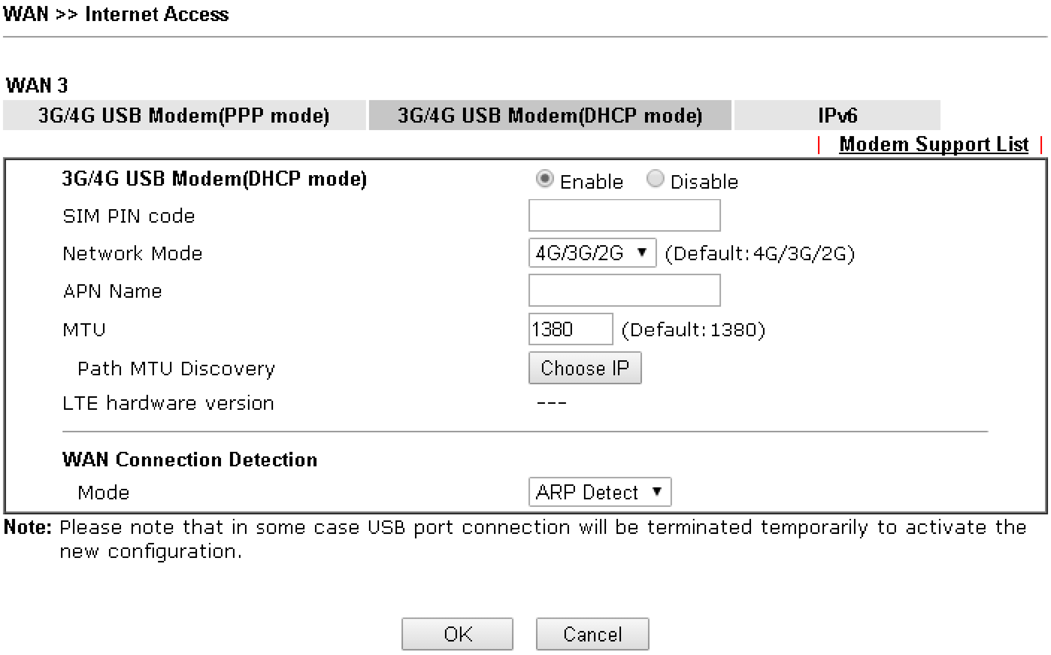
<table>
<tr><th>Item</th><th>Description</th></tr>
<tr><td><b>Modem Support List</b></td><td>It lists all of the modems supported by such router.

192.168.1.1/doc/pppsuptlst.htm - Google Chrome
192.168.1.1/doc/pppsuptlst.htm
3G/4G Modem Support List(PPP mode)
The following compatibility test lists 3.5G/LTE modems <b>supported by Vigor router under certain environment or countries.</b> If the LTE modem you have is on the list but cannot work properly, please write an e-mail to support@draytek.com or consult your dealer for further information.
<table>
<tr><th>Brand</th><th>Model</th><th>LTE</th><th>Status</th></tr>
<tr><td>Aiko</td><td>Aiko 83D</td><td></td><td>Y</td></tr>
<tr><td>Alcatel</td><td>Alcatel L100V</td><td>✓</td><td>Y</td></tr>
<tr><td>Alcatel</td><td>Alcatel W100</td><td>✓</td><td>Y</td></tr>
<tr><td>BandRich</td><td>Bandluxe C170</td><td></td><td>Y</td></tr>
<tr><td>BandRich</td><td>Bandluxe C270</td><td></td><td>Y</td></tr>
<tr><td>BandRich</td><td>Bandluxe C321</td><td></td><td>Y</td></tr>
<tr><td>BandRich</td><td>Bandluxe C330</td><td></td><td>Y</td></tr>
<tr><td>BandRich</td><td>Bandluxe C502</td><td></td><td>Y</td></tr>
<tr><td>Huawei</td><td>Huawei E169u</td><td></td><td>Y</td></tr>
<tr><td>Huawei</td><td>Huawei E220</td><td></td><td>Y</td></tr>
</table></td></tr>
<tr><td><b>3G /4G USB Modem (PPP mode)</b></td><td>Click <b>Enable</b> for activating this function. If you click <b>Disable</b>, this function will be closed and all the settings that you adjusted in this page will be invalid.</td></tr>
<tr><td><b>SIM PIN code</b></td><td>Type PIN code of the SIM card that will be used to access Internet.
The maximum length of the PIN code you can set is 15 characters.</td></tr>
<tr><td><b>Modem Initial String</b></td><td>Such value is used to initialize USB modem. Please use the default value. If you have any question, please contact to your ISP.
The maximum length of the string you can set is 47 characters.</td></tr>
</table>

APN Name	APN means Access Point Name which is provided and required by some ISPs. Type the name and click **Apply**. The maximum length of the name you can set is 43 characters.
Modem Initial String2	The initial string 1 is shared with APN. In some cases, user may need another initial AT command to restrict 3G band or do any special settings. The maximum length of the string you can set is 47 characters.
Modem Dial String	Such value is used to dial through USB mode. Please use the default value. If you have any question, please contact to your ISP. The maximum length of the string you can set is 31 characters.
Service Name	Enter the description of the specific network service.
PPP Username	Type the PPP username (optional). The maximum length of the name you can set is 63 characters.
PPP Password	Type the PPP password (optional). The maximum length of the password you can set is 62 characters.
PPP Authentication	Select **PAP only** or **PAP or CHAP** for PPP.
Index (1-15) in Schedule Setup	You can type in four sets of time schedule for your request. All the schedules can be set previously in **Application >> Schedule** web page and you can use the number that you have set in that web page
WAN Connection Detection	Such function allows you to verify whether network connection is alive or not through ARP Detect or Ping Detect. **Mode** – Choose **ARP Detect** or **Ping Detect** for the system to execute for WAN detection. If you choose Ping Detect as the detection mode, you have to type required settings for the following items. ● **Primary/Secondary Ping IP** – If you choose **Ping Detect** as detection mode, you have to type Primary or Secondary IP address in this field for pinging. ● **TTL (Time to Live)** – Set TTL value of PING operation. ● **Ping Interval -** Type the interval for the system to execute the PING operation. ● **Ping Retry -** Type the number of times that the system is allowed to execute the PING operation before WAN disconnection is judged.

After finishing all the settings here, please click **OK** to activate them.

II-1-2-5 Details Page for 3G/4G USB Modem (DHCP mode) in USB WAN3/WAN4

To use **3G/4G USB Modem (DHCP mode)** as the accessing protocol of the internet, please choose **Internet Access** from **WAN** menu. Then, select **3G/4G USB Modem (DHCP mode)** for WAN3/WAN4. The following web page will be shown.



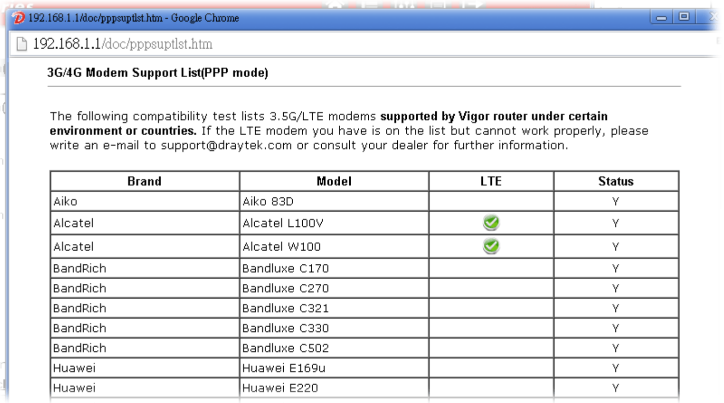
WAN >> Internet Access

WAN 3

3G/4G USB Modem(DHCP mode)	● Enable ○ Disable
SIM PIN code	
Network Mode	4G/3G/2G ▼ (Default: 4G/3G/2G)
APN Name	
MTU	1380 (Default: 1380)
Path MTU Discovery	Choose IP
LTE hardware version	---
WAN Connection Detection	
Mode	ARP Detect ▼

Note: Please note that in some case USB port connection will be terminated temporarily to activate the new configuration.

Available settings are explained as follows:

<table>
<tr><th>Item</th><th>Description</th></tr>
<tr><td><b>Modem Support List</b></td><td>It lists all of the modems supported by such router.

192.168.1.1/doc/pppsuptlst.htm - Google Chrome
192.168.1.1/doc/pppsuptlst.htm
<b>3G/4G Modem Support List(PPP mode)</b>
The following compatibility test lists 3.5G/LTE modems <b>supported by Vigor router under certain environment or countries.</b> If the LTE modem you have is on the list but cannot work properly, please write an e-mail to support@draytek.com or consult your dealer for further information.
<table>
<tr><th>Brand</th><th>Model</th><th>LTE</th><th>Status</th></tr>
<tr><td>Aiko</td><td>Aiko 83D</td><td></td><td>Y</td></tr>
<tr><td>Alcatel</td><td>Alcatel L100V</td><td>✓</td><td>Y</td></tr>
<tr><td>Alcatel</td><td>Alcatel W100</td><td>✓</td><td>Y</td></tr>
<tr><td>BandRich</td><td>Bandluxe C170</td><td></td><td>Y</td></tr>
<tr><td>BandRich</td><td>Bandluxe C270</td><td></td><td>Y</td></tr>
<tr><td>BandRich</td><td>Bandluxe C321</td><td></td><td>Y</td></tr>
<tr><td>BandRich</td><td>Bandluxe C330</td><td></td><td>Y</td></tr>
<tr><td>BandRich</td><td>Bandluxe C502</td><td></td><td>Y</td></tr>
<tr><td>Huawei</td><td>Huawei E169u</td><td></td><td>Y</td></tr>
<tr><td>Huawei</td><td>Huawei E220</td><td></td><td>Y</td></tr>
</table></td></tr>
<tr><td><b>3G/4G USB Modem (DHCP mode)</b></td><td>Click <b>Enable</b> for activating this function. If you click <b>Disable</b>, this function will be closed and all the settings that you adjusted in this page will be invalid.</td></tr>
<tr><td><b>SIM PIN code</b></td><td>Type PIN code of the SIM card that will be used to access Internet.
The maximum length of the PIN code you can set is 19 characters.</td></tr>
<tr><td><b>Network Mode</b></td><td>Force Vigor router to connect Internet with the mode specified here. If you choose 4G/3G/2G as network mode, the router will choose a suitable one according to the actual wireless signal automatically.</td></tr>
<tr><td><b>APN Name</b></td><td>APN means Access Point Name which is provided and required by some ISPs. Type the name and click <b>Apply.</b>
The maximum length of the name you can set is 47 characters.</td></tr>
<tr><td><b>MTU</b></td><td>It means Max Transmit Unit for packet.</td></tr>
</table>

WAN Connection Detection	Such function allows you to verify whether network connection is alive or not through ARP Detect or Ping Detect. **Mode** – Choose **ARP Detect** or **Ping Detect** for the system to execute for WAN detection. If you choose Ping Detect as the detection mode, you have to type required settings for the following items. ● **Primary/Secondary Ping IP** – If you choose **Ping Detect** as detection mode, you have to type Primary or Secondary IP address in this field for pinging. ● **Ping Gateway IP** – If you choose **Ping Detect** as detection mode, you also can enable this setting to use current WAN gateway IP address for pinging. With the IP address(es) pinging, Vigor router can check if the WAN connection is on or off. ● **TTL (Time to Live)** – Set TTL value of PING operation. ● **Ping Interval -** Type the interval for the system to execute the PING operation. ● **Ping Retry -** Type the number of times that the system is allowed to execute the PING operation before WAN disconnection is judged.

After finishing all the settings here, please click **OK** to activate them.

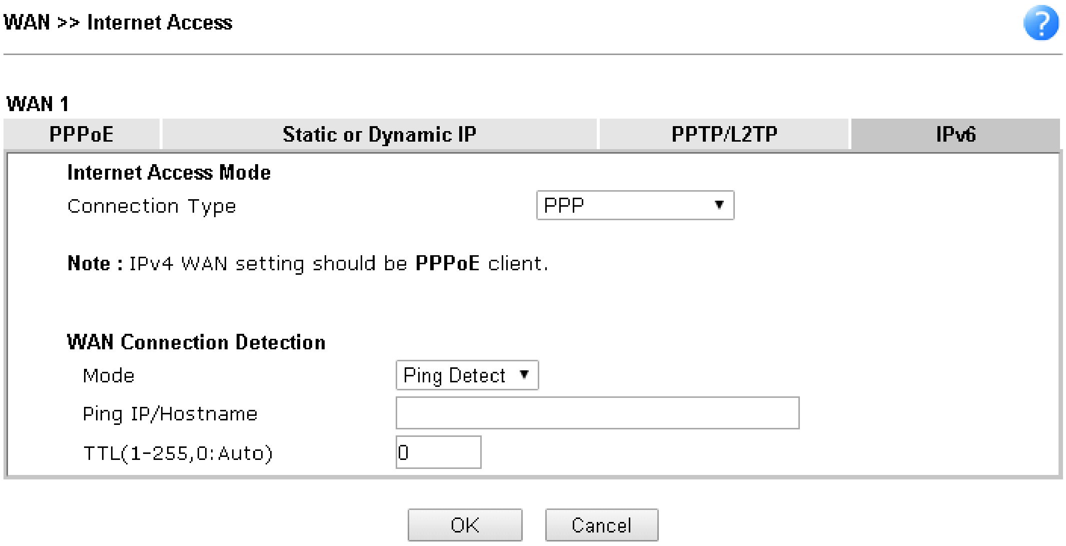
II-1-2-6 Details Page for IPv6 – Offline in WAN1/WAN2/WAN3/WAN4

When Offline is selected, the IPv6 connection will be disabled.

II-1-2-7 Details Page for IPv6 – PPP in WAN1/WAN2

During the procedure of IPv4 PPPoE connection, we can get the IPv6 Link Local Address between the gateway and Vigor router through IPv6CP. Later, use DHCPv6 or accept RA to acquire the IPv6 prefix address (such as: 2001:B010:7300:200::/64) offered by the ISP. In addition, PCs under LAN also can have the public IPv6 address for Internet access by means of the generated prefix.

No need to type any other information for PPP mode.



WAN >> Internet Access

WAN 1

Internet Access Mode

Connection Type: PPP

Note : IPv4 WAN setting should be **PPPoE** client.

WAN Connection Detection

Mode: Ping Detect

Ping IP/Hostname:

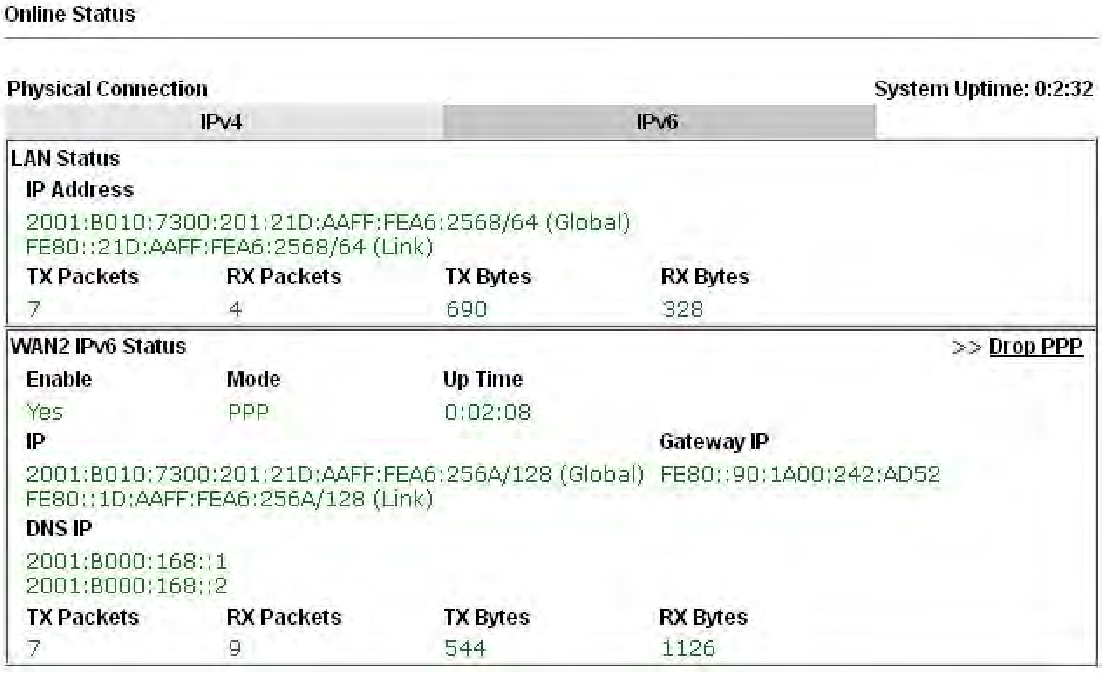
TTL(1-255,0:Auto): 0

Available settings are explained as follows:

Item	Description

WAN Connection Detection	Such function allows you to verify whether network connection is alive or not through Ping Detect. **Mode** – Choose **Always On** or **Ping Detect** for the system to execute for WAN detection. **Always On** means no detection will be executed. The network connection will be on always. ● **Ping IP/Hostname** – If you choose **Ping Detect** as detection mode, you have to type IP address in this field for pinging. ● **TTL (Time to Live)** –If you choose **Ping Detect** as detection mode, you have to type TTL value.

Below shows an example for successful IPv6 connection based on PPP mode.



Online Status

Physical Connection System Uptime: 0:2:32

LAN Status

IP Address

2001:B010:7300:201:21D:AAFF:FEA6:2568/64 (Global)
FE80::21D:AAFF:FEA6:2568/64 (Link)

TX Packets	RX Packets	TX Bytes	RX Bytes
7	4	690	328

WAN2 IPv6 Status >> Drop PPP

Enable	Mode	Up Time
Yes	PPP	0:02:08

IP

2001:B010:7300:201:21D:AAFF:FEA6:256A/128 (Global)
FE80::1D:AAFF:FEA6:256A/128 (Link)

Gateway IP

FE80::90:1A00:242:AD52

DNS IP

2001:B000:168::1
2001:B000:168::2

TX Packets	RX Packets	TX Bytes	RX Bytes
7	9	544	1126

Info

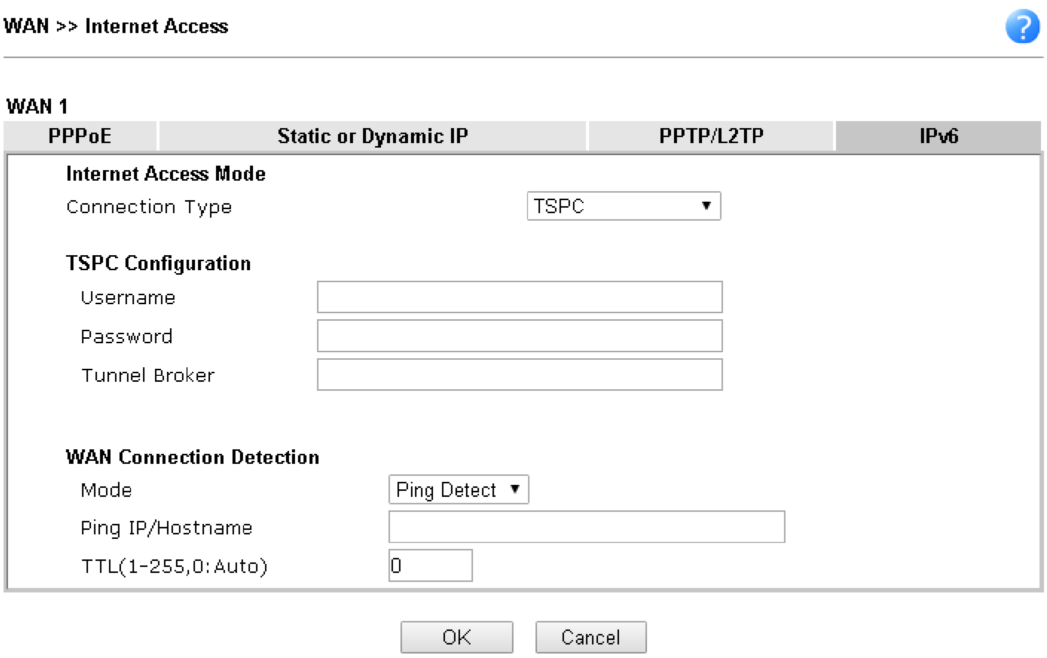
At present, the IPv6 prefix can be acquired via the PPPoE mode connection which is available for the areas such as Taiwan (hinet), the Netherlands, Australia and UK.

II-1-2-8 Details Page for IPv6 – TSPC in WAN1/WAN2/WAN3/WAN4

Tunnel setup protocol client (TSPC) is an application which could help you to connect to IPv6 network easily.

Please make sure your IPv4 WAN connection is OK and apply one free account from hexago (http://gogonet.gogo6.com/page/freenet6-account) before you try to use TSPC for network connection. TSPC would connect to tunnel broker and requests a tunnel according to the specifications inside the configuration file. It gets a public IPv6 IP address and an IPv6 prefix from the tunnel broker and then monitors the state of the tunnel in background.

After getting the IPv6 prefix and starting router advertisement daemon (RADVD), the PC behind this router can directly connect to IPv6 the Internet.


WAN >> Internet Access

WAN 1

Internet Access Mode

Connection Type: TSPC

TSPC Configuration

Username

Password

Tunnel Broker

WAN Connection Detection

Mode: Ping Detect

Ping IP/Hostname

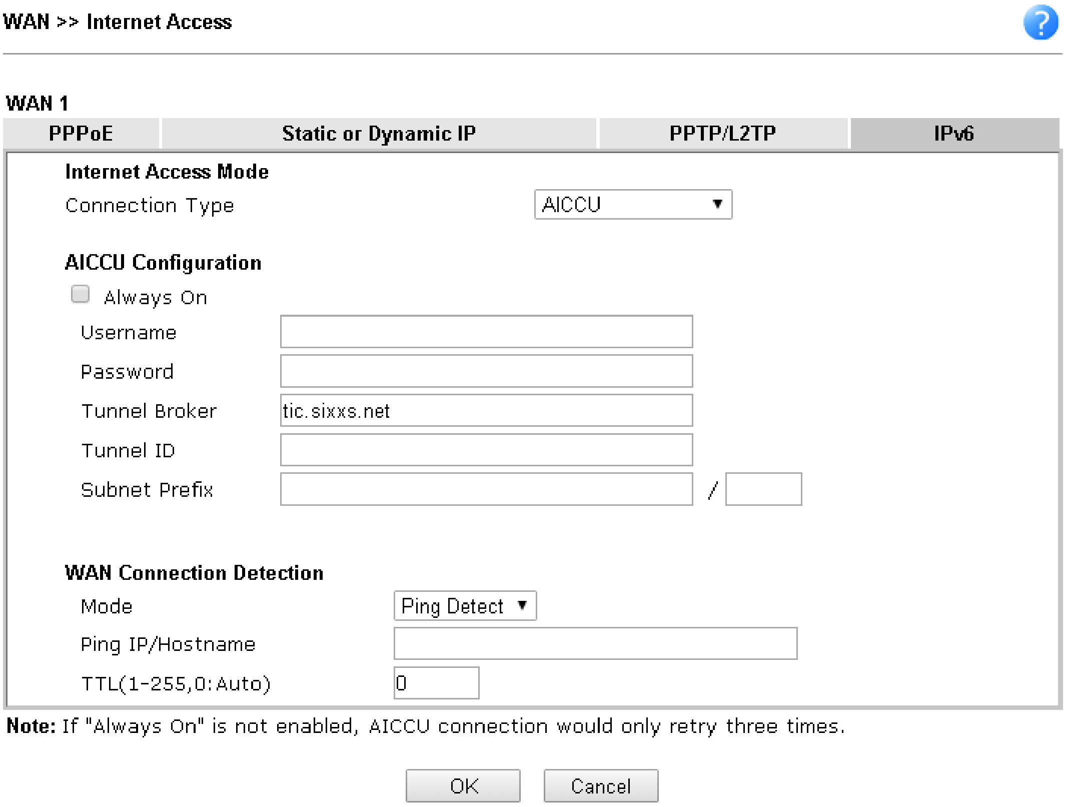
TTL(1-255,0:Auto): 0

Available settings are explained as follows:

Item	Description
Username	Type the name obtained from the broker. It is suggested for you to apply another username and password for http://gogonet.gogo6.com/page/freenet6-account. The maximum length of the name you can set is 63 characters.
Password	Type the password assigned with the user name. The maximum length of the name you can set is 19 characters.
Tunnel Broker	Type the address for the tunnel broker IP, FQDN or an optional port number.
WAN Connection Detection	Such function allows you to verify whether network connection is alive or not through Ping Detect. **Mode** – Choose **Always On** or **Ping Detect** for the system to execute for WAN detection. **Always On** means no detection will be executed. The network connection will be on always. ● **Ping IP/Hostname** – If you choose **Ping Detect** as detection mode, you have to type IP address in this field for pinging. ● **TTL (Time to Live)** –If you choose **Ping Detect** as detection mode, you have to type TTL value.

After finished the above settings, click **OK** to save the settings.

II-1-2-9 Details Page for IPv6 – AICCU in WAN1/WAN2/WAN3/WAN4


WAN >> Internet Access

WAN 1

Internet Access Mode

Connection Type: AICCU

AICCU Configuration

□ Always On

Username:

Password:

Tunnel Broker: tic.sixxs.net

Tunnel ID:

Subnet Prefix: /

WAN Connection Detection

Mode: Ping Detect

Ping IP/Hostname:

TTL(1-255,0:Auto): 0

Note: If "Always On" is not enabled, AICCU connection would only retry three times.

Available settings are explained as follows:

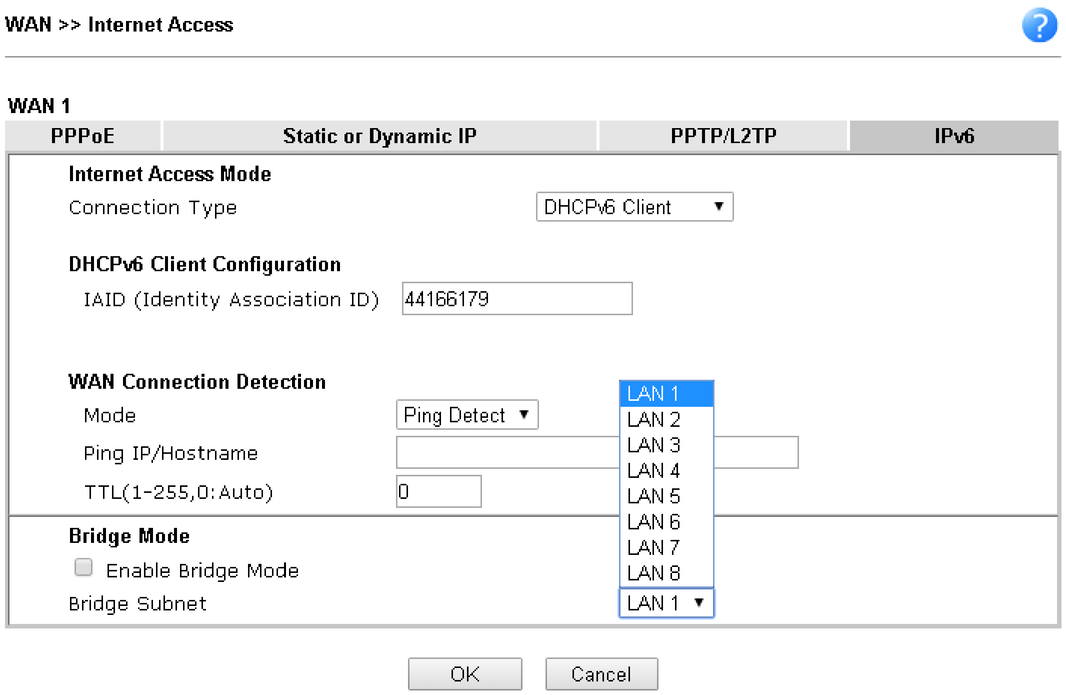
Item	Description
Always On	Check this box to keep the network connection always.
Username	Type the name obtained from the broker. Please apply new account at http://www.sixxs.net/. It is suggested for you to apply another username and password. The maximum length of the name you can set is 19 characters.
Password	Type the password assigned with the user name. The maximum length of the password you can set is 19 characters.
Tunnel Broker	It means a server of AICCU. The server can provide IPv6 tunnels to sites or end users over IPv4. Type the address for the tunnel broker IP, FQDN or an optional port number.
Tunnel ID	One user account may have several tunnels. And, each tunnel shall have one specified tunnel ID (e.g., T115394). Type the ID offered by Tunnel Broker.
Subnet Prefix	Type the subnet prefix address obtained from service provider. The maximum length of the prefix you can set is 128 characters.

WAN Connection Detection	Such function allows you to verify whether network connection is alive or not through Ping Detect. **Mode** – Choose **Always On** or **Ping Detect** for the system to execute for WAN detection. ● **Ping IP/Hostname** – If you choose **Ping Detect** as detection mode, you have to type IP address in this field for pinging. ● **TTL (Time to Live)** –If you choose **Ping Detect** as detection mode, you have to type TTL value.

After finished the above settings, click **OK** to save the settings.

II-1-2-10 Details Page for IPv6 – DHCPv6 Client in WAN1/WAN2

DHCPv6 client mode would use DHCPv6 protocol to obtain IPv6 address from server.



WAN >> Internet Access

WAN 1

Internet Access Mode

Connection Type: DHCPv6 Client

DHCPv6 Client Configuration

IAID (Identity Association ID): 44166179

WAN Connection Detection

Mode: Ping Detect

Ping IP/Hostname:

TTL(1-255,0:Auto): 0

Bridge Mode

□ Enable Bridge Mode

Bridge Subnet: LAN 1

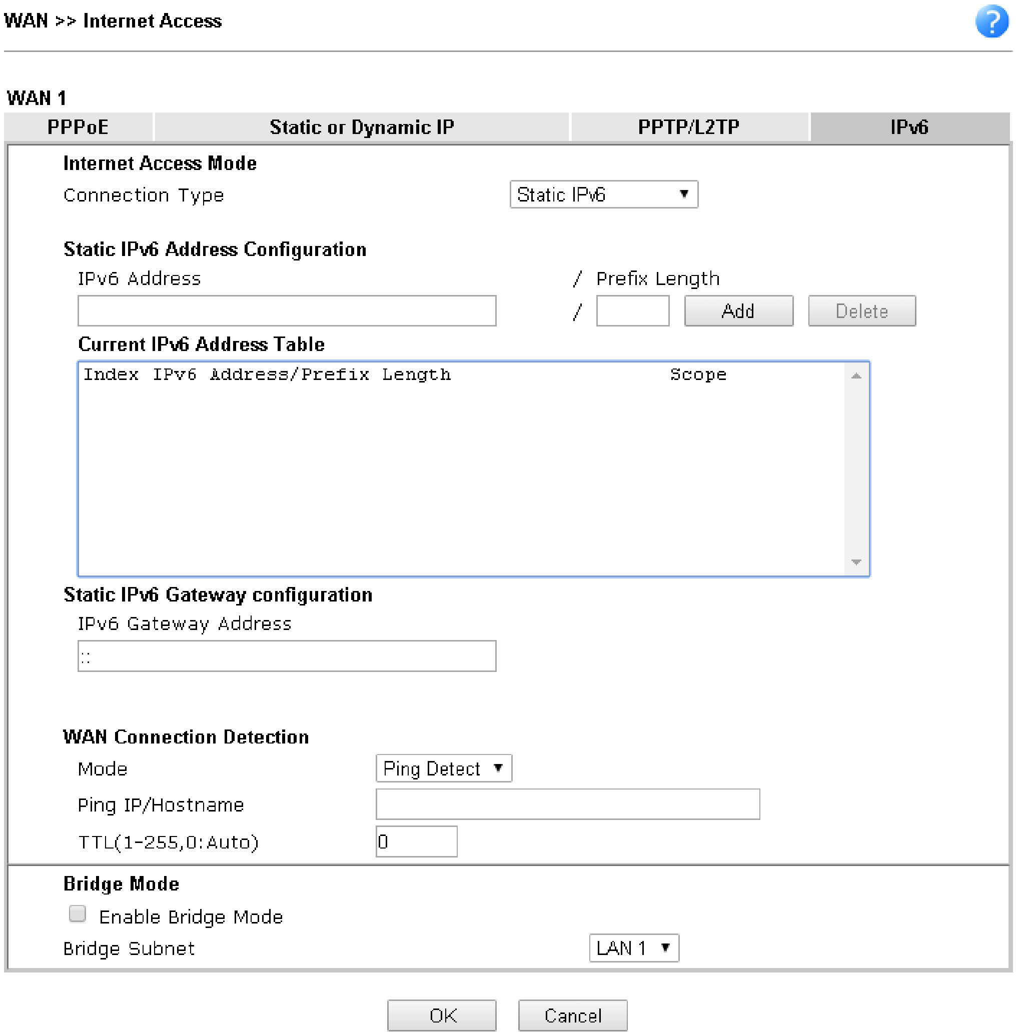
Available settings are explained as follows:

Item	Description
Identify Association	Choose **Prefix Delegation** or **Non-temporary Address** as the identify association.
IAID	Type a number as IAID.
WAN Connection Detection	Such function allows you to verify whether network connection is alive or not through NS Detect or Ping Detect. **Mode** – Choose **Always On**, **Ping Detect** or **NS Detect** for the system to execute for WAN detection. With **NS Detect** mode, the system will check if network connection is established or not, like IPv4 ARP Detect. **Always On** means no detection will be executed. The network connection will be on always. ● **Ping IP/Hostname** – If you choose **Ping Detect** as detection mode, you have to type IP address in this field for pinging. ● **TTL (Time to Live)** –If you choose **Ping Detect** as detection mode, you have to type TTL value.
Bridge Mode	**Enable Bridge Mode** - If the function is enabled, the router will work as a bridge modem. **Enable Firewall** – It is available when Bridge Mode is enabled. When both Bridge Mode and Firewall check boxes are enabled, the settings configured (user profiles) under User Management will be ignored. And all of the filter rules defined and enabled in Firewall menu will be activated. **Bridge Subnet** – Make a bridge between the selected LAN subnet and such WAN interface.

After finished the above settings, click **OK** to save the settings.

II-1-2-11 Details Page for IPv6 – Static IPv6 in in WAN1/WAN2

This type allows you to setup static IPv6 address for WAN interface.


WAN >> Internet Access

WAN 1

Internet Access Mode

Connection Type: Static IPv6

Static IPv6 Address Configuration

IPv6 Address / Prefix Length

Current IPv6 Address Table

```
Index IPv6 Address/Prefix Length                 Scope
```

Static IPv6 Gateway configuration

IPv6 Gateway Address: ::

WAN Connection Detection

Mode: Ping Detect

Ping IP/Hostname:

TTL(1-255,0:Auto): 0

Bridge Mode

□ Enable Bridge Mode

Bridge Subnet: LAN 1

Available settings are explained as follows:

Item	Description
Static IPv6 Address Configuration	**IPv6 Address -** Type the IPv6 Static IP Address. **Prefix Length -** Type the fixed value for prefix length. **Add -** Click it to add a new entry. **Delete -** Click it to remove an existed entry.
Current IPv6 Address Table	Display current interface IPv6 address.
Static IPv6 Gateway Configuration	**IPv6 Gateway Address -** Type your IPv6 gateway address here.

WAN Connection Detection	Such function allows you to verify whether network connection is alive or not through Ping Detect. **Mode** – Choose **Always On** or **Ping Detect** or **NS Detect** for the system to execute for WAN detection. **Always On** means no detection will be executed. The network connection will be on always. ● **Ping IP/Hostname** – If you choose **Ping Detect** as detection mode, you have to type IP address in this field for pinging. ● **TTL (Time to Live)** –If you choose **Ping Detect** as detection mode, you have to type TTL value.
Bridge Mode	**Enable Bridge Mode** - If the function is enabled, the router will work as a bridge modem. **Enable Firewall** – It is available when Bridge Mode is enabled. When both Bridge Mode and Firewall check boxes are enabled, the settings configured (user profiles) under User Management will be ignored. And all of the filter rules defined and enabled in Firewall menu will be activated. **Bridge Subnet** – Make a bridge between the selected LAN subnet and such WAN interface.

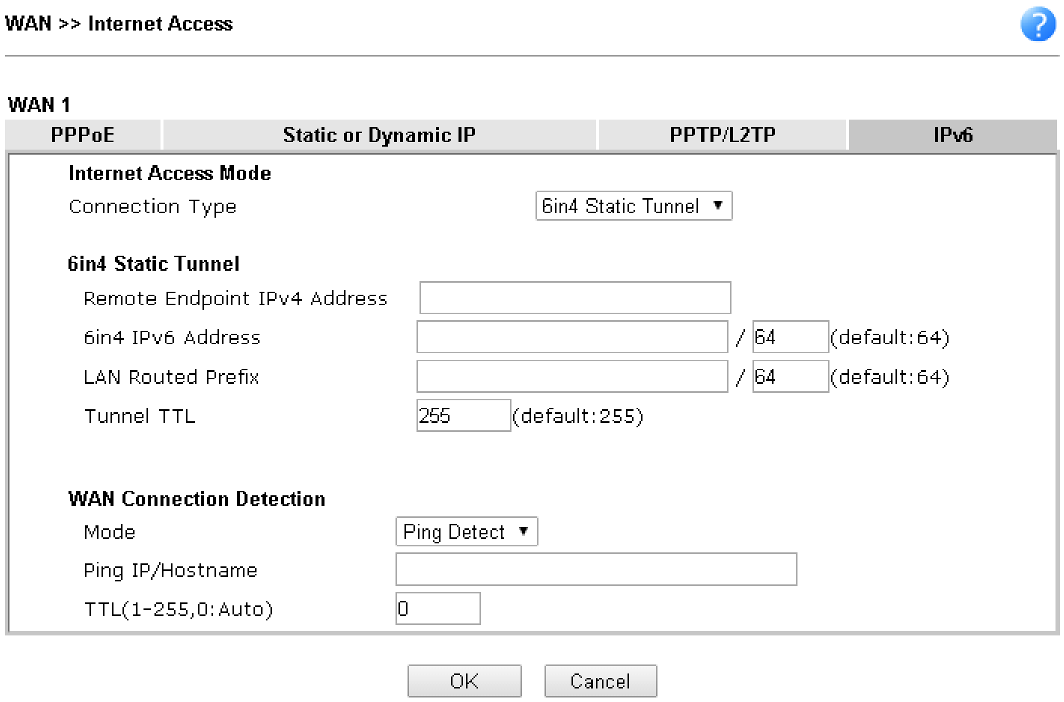
After finished the above settings, click **OK** to save the settings.

II-1-2-12 Details Page for IPv6 – 6in4 Static Tunnel in WAN1 / WAN2

This type allows you to setup 6in4 Static Tunnel for WAN interface.

Such mode allows the router to access IPv6 network through IPv4 network.

However, 6in4 offers a prefix outside of 2002::0/16. So, you can use a fixed endpoint rather than anycast endpoint. The mode has more reliability.



Internet Access Mode

Connection Type: 6in4 Static Tunnel

6in4 Static Tunnel

Remote Endpoint IPv4 Address

6in4 IPv6 Address / 64 (default:64)

LAN Routed Prefix / 64 (default:64)

Tunnel TTL: 255 (default:255)

WAN Connection Detection

Mode: Ping Detect

Ping IP/Hostname

TTL(1-255,0:Auto): 0

A

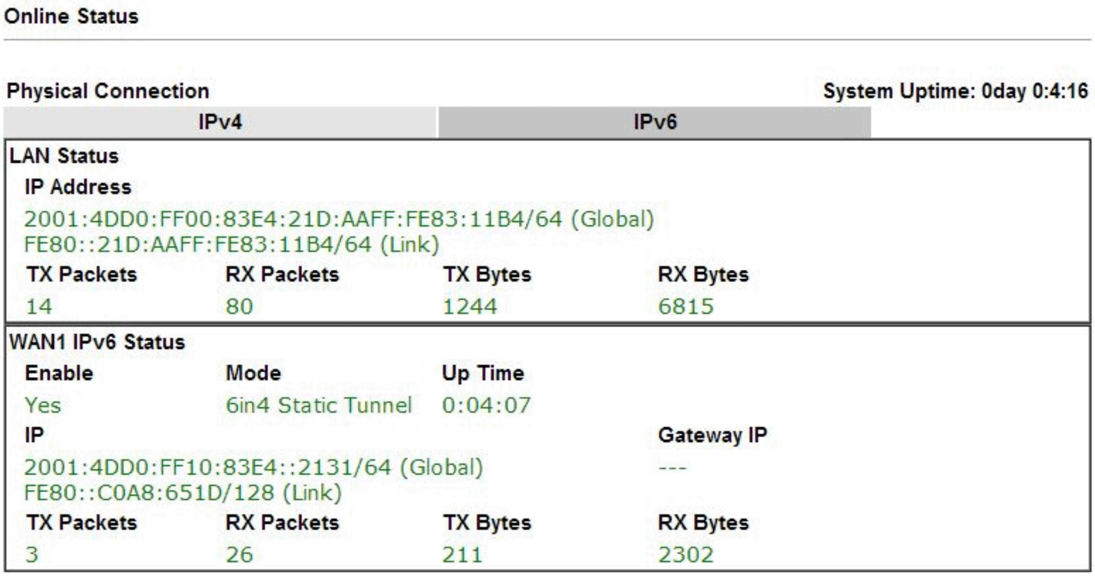
vailable settings are explained as follows:

Item	Description

Remote Endpoint IPv4 Address	Type the static IPv4 address for the remote server.
6in4 IPv6 Address	Type the static IPv6 address for IPv4 tunnel with the value for prefix length.
LAN Routed Prefix	Type the static IPv6 address for LAN routing with the value for prefix length.
Tunnel TTL	Type the number for the data lifetime in tunnel.
WAN Connection Detection	Such function allows you to verify whether network connection is alive or not through Ping Detect. **Mode** – Choose **Always On** or **Ping Detect** for the system to execute for WAN detection. **Always On** means no detection will be executed. The network connection will be on always. ● **Ping IP/Hostname** – If you choose **Ping Detect** as detection mode, you have to type IP address in this field for pinging. ● **TTL (Time to Live)** –If you choose **Ping Detect** as detection mode, you have to type TTL value.

After finished the above settings, click **OK** to save the settings.

Below shows an example for successful IPv6 connection based on 6in4 Static Tunnel mode.


Online Status

Physical Connection System Uptime: 0day 0:4:16

LAN Status

IP Address

2001:4DD0:FF00:83E4:21D:AAFF:FE83:11B4/64 (Global)
FE80::21D:AAFF:FE83:11B4/64 (Link)

TX Packets	RX Packets	TX Bytes	RX Bytes
14	80	1244	6815

WAN1 IPv6 Status

Enable	Mode	Up Time
Yes	6in4 Static Tunnel	0:04:07

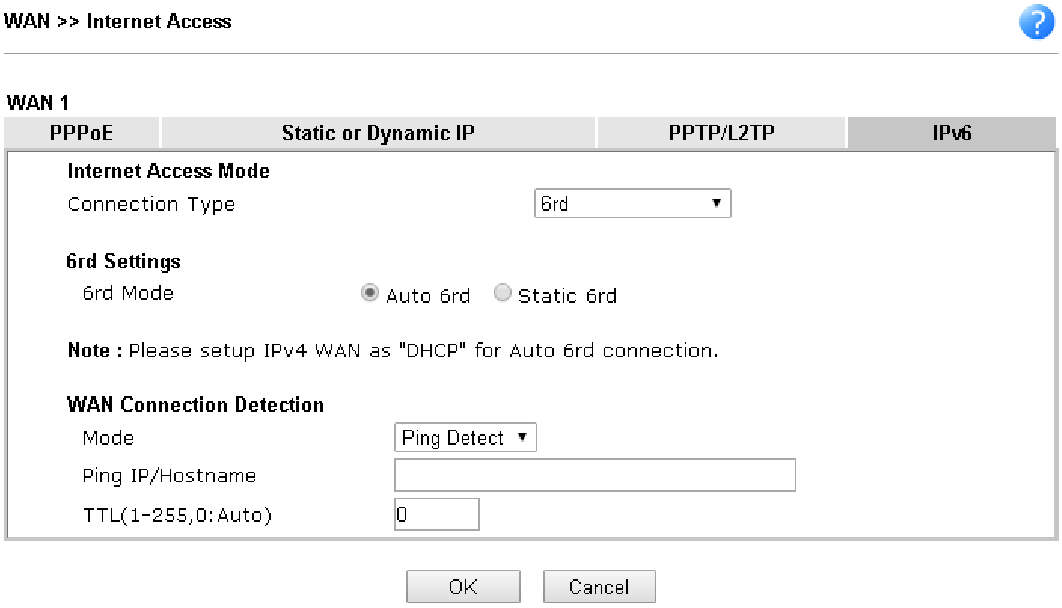
IP: 2001:4DD0:FF10:83E4::2131/64 (Global)
FE80::C0A8:651D/128 (Link)

Gateway IP: ---

TX Packets	RX Packets	TX Bytes	RX Bytes
3	26	211	2302

II-1-2-13 Details Page for IPv6 – 6rd in WAN1 / WAN2

This type allows you to setup 6rd for WAN interface.



WAN >> Internet Access

WAN 1

PPPoE | Static or Dynamic IP | PPTP/L2TP | IPv6

Internet Access Mode

Connection Type: 6rd

6rd Settings

6rd Mode: ● Auto 6rd ○ Static 6rd

Note : Please setup IPv4 WAN as "DHCP" for Auto 6rd connection.

WAN Connection Detection

Mode: Ping Detect

Ping IP/Hostname:

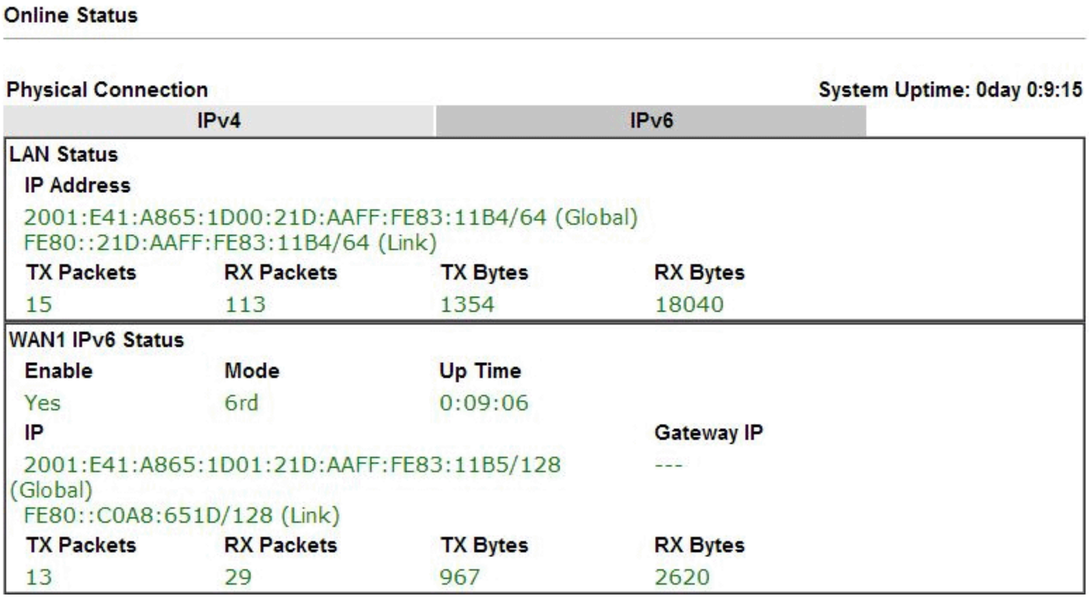
TTL(1-255,0:Auto): 0

Available settings are explained as follows:

Item	Description
6rd Settings	**6rd Mode** – Choose **Auto 6rd** for retrieving 6rd prefix automatically from 6rd service provider. The IPv4 WAN must be set as "DHCP"; choose **Static 6rd** to set 6rd options manually.
Static 6rd Settings	The following options appear when **Static 6rd** is selected as 6rd Mode. **IPv4 Border Relay** - Type the IPv4 addresses of the 6rd Border Relay for a given 6rd domain. **IPv4 Mask Length -** Type a number of high-order bits that are identical across all CE IPv4 addresses within a given 6rd domain. It may be any value between 0 and 32. **6rd Prefix -** Type the 6rd IPv6 address. **6rd Prefix Length -** Type the IPv6 prefix length for the 6rd IPv6 prefix in number of bits.
WAN Connection Detection	Such function allows you to verify whether network connection is alive or not through Ping Detect. **Mode** – Choose **Always On** or **Ping Detect** for the system to execute for WAN detection. **Always On** means no detection will be executed. The network connection will be on always. ● **Ping IP/Hostname** – If you choose **Ping Detect** as detection mode, you have to type IP address in this field for pinging. ● **TTL (Time to Live)** –If you choose **Ping Detect** as detection mode, you have to type TTL value.

After finished the above settings, click **OK** to save the settings.

Below shows an example for successful IPv6 connection based on 6rd mode.



Online Status

Physical Connection System Uptime: 0day 0:9:15

LAN Status

IP Address

2001:E41:A865:1D00:21D:AAFF:FE83:11B4/64 (Global)
FE80::21D:AAFF:FE83:11B4/64 (Link)

TX Packets	RX Packets	TX Bytes	RX Bytes
15	113	1354	18040

WAN1 IPv6 Status

Enable	Mode	Up Time
Yes	6rd	0:09:06

IP	Gateway IP
2001:E41:A865:1D01:21D:AAFF:FE83:11B5/128 (Global) FE80::C0A8:651D/128 (Link)	---

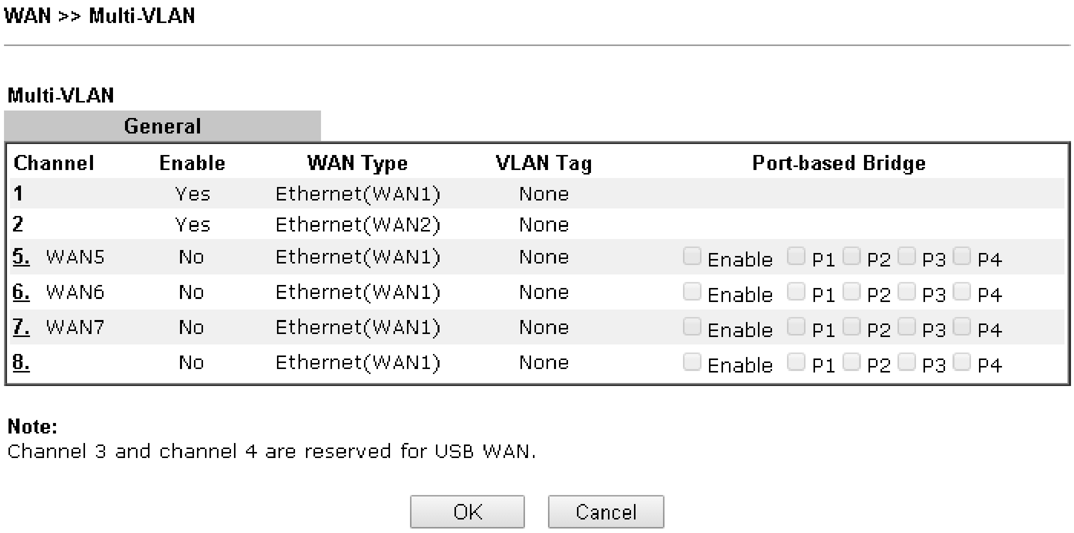
TX Packets	RX Packets	TX Bytes	RX Bytes
13	29	967	2620

II-1-3 Multi-VLAN

This router allows you to create multi-PVC for different data transferring for using. Simply go to **WAN** and select **Multi-VLAN** page.

General

The system allows you to set up to eight channels used as multi-VLAN.



WAN >> Multi-VLAN

Multi-VLAN

General

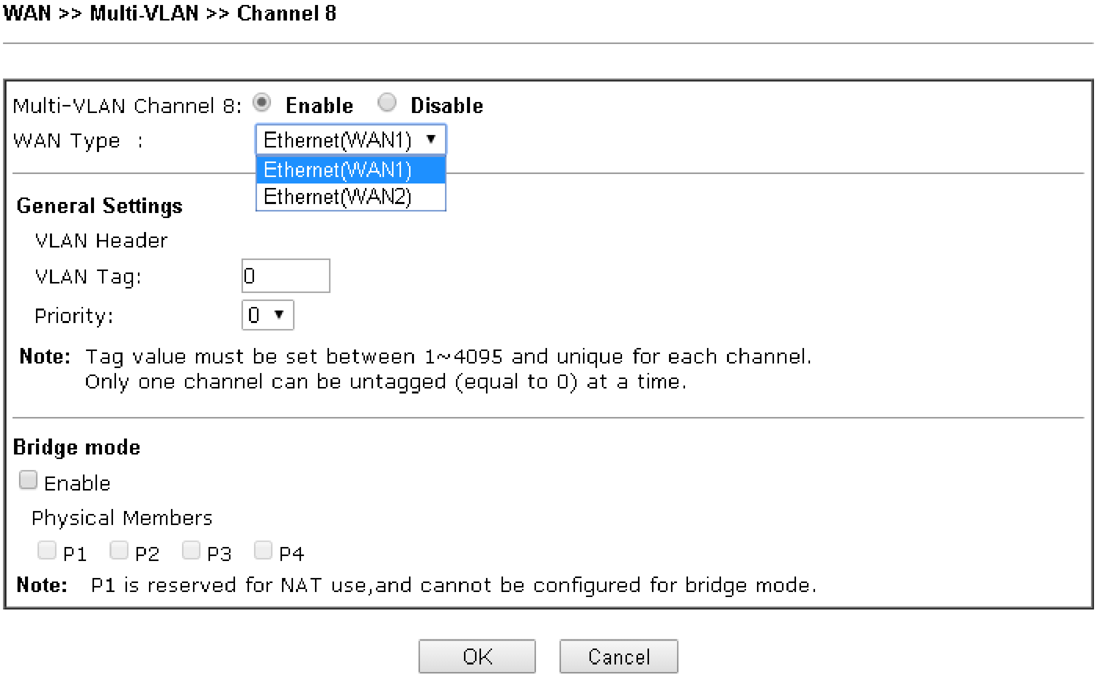
Channel	Enable	WAN Type	VLAN Tag	Port-based Bridge
1	Yes	Ethernet(WAN1)	None	
2	Yes	Ethernet(WAN2)	None	
5. WAN5	No	Ethernet(WAN1)	None	□ Enable □ P1 □ P2 □ P3 □ P4
6. WAN6	No	Ethernet(WAN1)	None	□ Enable □ P1 □ P2 □ P3 □ P4
7. WAN7	No	Ethernet(WAN1)	None	□ Enable □ P1 □ P2 □ P3 □ P4
8.	No	Ethernet(WAN1)	None	□ Enable □ P1 □ P2 □ P3 □ P4

Note:
Channel 3 and channel 4 are reserved for USB WAN.

Available settings are explained as follows:

Item	Description
Channel	Display the number of each channel. Channels 1 and 2 are used by the Internet Access web user interface and can not be configured here. Channels 5 ~ 8 are configurable.
Enable	Display whether the settings in this channel are enabled (Yes) or not (No).
WAN Type	Displays the physical medium that the channel will use.
VLAN Tag	Displays the VLAN tag value that will be used for the packets traveling on this channel.
Port-based Bridge	The network traffic flowing on each channel will be identified by the system via their VLAN Tags. Channels using the same WAN type may not configure the same VLAN tag value. **Enable** - Check this box to enable the port-based bridge function on this channel. **P1 ~ P4** – Check the box(es) to build bridge connection on LAN.

Click index 8 to get the following web page:



WAN >> Multi-VLAN >> Channel 8

Multi-VLAN Channel 8: ● Enable ○ Disable

WAN Type : Ethernet(WAN1) ▼

General Settings

VLAN Header

VLAN Tag: 0

Priority: 0 ▼

Note: Tag value must be set between 1~4095 and unique for each channel.
Only one channel can be untagged (equal to 0) at a time.

Bridge mode

□ Enable

Physical Members

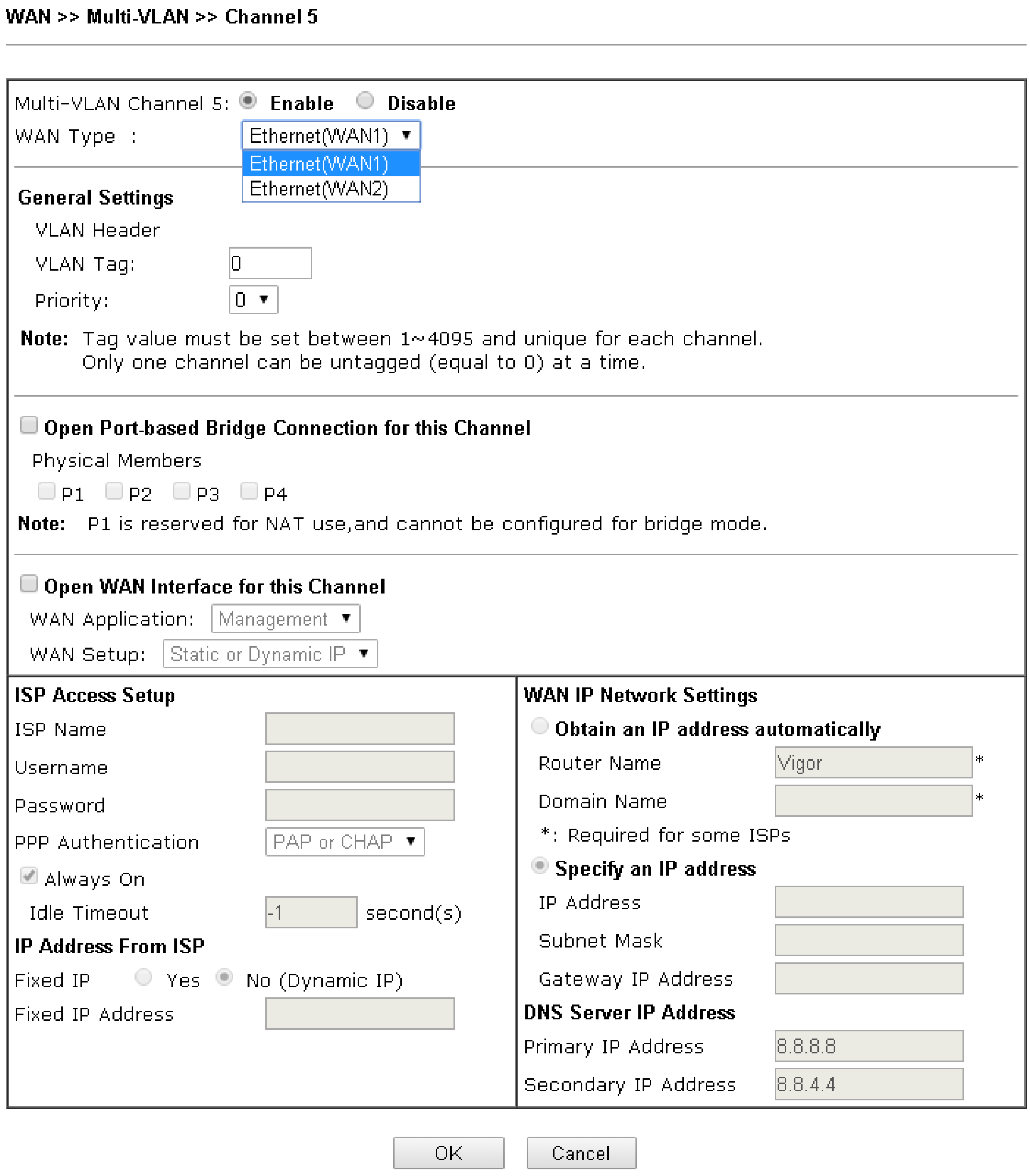
□ P1 □ P2 □ P3 □ P4

Note: P1 is reserved for NAT use,and cannot be configured for bridge mode.

Available settings are explained as follows:

Item	Description
Multi-VLAN Channel 8	**Enable -** Click it to enable the configuration of this channel. **Disable -**Click it to disable the configuration of this channel.
WAN Type	The connections and interfaces created in every channel may select a specific WAN type to be built upon. In the Multi-VLAN application, only the Ethernet WAN type is available. The user will be able to select the physical WAN interface the channel shall use here.
General Settings	**VLAN Tag -** Type the value as the VLAN ID number. Valid settings are in the range from 1 to 4095. The network traffic flowing on each channel will be identified by the system via their VLAN Tags. Channels using the same WAN type may not configure the same VLAN tag value. **Priority -** Choose the number to determine the packet priority for such VLAN. The range is from 0 to 7.
Bridge mode	**Enable -** Click it to enable Bridge mode for such channel. **Physical Members -** Group the physical ports by checking the corresponding check box(es) for applying the bridge connection.

WAN links for Channel 5, 6 and 7 are provided for router-borne application such as **TR-069**. The settings must be applied and obtained from your ISP. For your special request, please contact with your ISP and then click WAN link of Channel 5, 6 or 7 to configure your router.



WAN >> Multi-VLAN >> Channel 5

Multi-VLAN Channel 5: ● Enable ○ Disable

WAN Type : Ethernet(WAN1) ▼ (Ethernet(WAN1) / Ethernet(WAN2))

General Settings

VLAN Header

VLAN Tag: 0

Priority: 0 ▼

Note: Tag value must be set between 1~4095 and unique for each channel.
Only one channel can be untagged (equal to 0) at a time.

□ **Open Port-based Bridge Connection for this Channel**

Physical Members

□ P1 □ P2 □ P3 □ P4

Note: P1 is reserved for NAT use,and cannot be configured for bridge mode.

□ **Open WAN Interface for this Channel**

WAN Application: Management ▼

WAN Setup: Static or Dynamic IP ▼

ISP Access Setup

ISP Name

Username

Password

PPP Authentication: PAP or CHAP ▼

☑ Always On

Idle Timeout: -1 second(s)

IP Address From ISP

Fixed IP ○ Yes ● No (Dynamic IP)

Fixed IP Address

WAN IP Network Settings

○ **Obtain an IP address automatically**

Router Name: Vigor *

Domain Name: *

*: Required for some ISPs

● **Specify an IP address**

IP Address

Subnet Mask

Gateway IP Address

DNS Server IP Address

Primary IP Address: 8.8.8.8

Secondary IP Address: 8.8.4.4

Available settings are explained as follows:

Item	Description
Multi-VLAN Channel 5/6/7	**Enable -** Click it to enable the configuration of this channel. **Disable -**Click it to disable the configuration of this channel.
WAN Type	The connections and interfaces created in every channel may select a specific WAN type to be built upon. In the Multi-PVC application, only the Ethernet WAN type is available. The user will be able to select the physical WAN interface the channel shall use here.
General Settings	**VLAN Tag -** Type the value as the VLAN ID number. Valid settings are in the range from 1 to 4095. The network traffic flowing on each channel will be identified by the system via their VLAN Tags. Channels using the same WAN type may not configure the same VLAN tag value. **Priority -** Choose the number to determine the packet priority for such VLAN. The range is from 0 to 7.

Open Port-based Bridge Connection for this Channel	The settings here will create a bridge between the LAN ports selected and the WAN. The WAN interface of the bridge connection will be built upon the WAN type selected using the VLAN tag configured. **Physical Members -** Group the physical ports by checking the corresponding check box(es) for applying the port-based bridge connection.
Open WAN Interface for this Channel	Check the box to enable relating function. **WAN Application -** ● **Management** – It can be specified for general management (Web configuration/telnet/TR-069). If you choose Management, the configuration for this VLAN will be effective for Web configuration/telnet/TR-069. ● **IPTV** - The IPTV configuration will allow the WAN interface to send IGMP packets to IPTV servers.
WAN Setup	Choose **PPPoE/PPPoA** or **Static or Dynamic IP** as the protocol in General Settings for such channel. ● **If PPPoE/PPPoA Client** is selected**,** you have to configure the settings listed under **ISP Access Setup.** Enter your allocated username, password and authentication parameters according to the information provided by your ISP. **ISP Name** – Type in the name of your ISP. **Username** – Type in the username provided by ISP in this field. The maximum length of the name you can set is 80 characters. **Password** – Type in the password provided by ISP in this field. The maximum length of the password you can set is 48 characters. **PPP Authentication** – Select **PAP only** or **PAP or CHAP** for PPP. ➢ **Always On** – Check it to keep the network connection always. ➢ **Idle Timeout** – Set the timeout for breaking down the Internet after passing through the time without any action. **Fixed IP** – Click **Yes** to use this function and type in a fixed IP address in the box of **Fixed IP Address**. ● If **Static or Dynamic IP** is selected**,** you have to configure the settings listed under **Static or Dynamic IP.** **Obtain an IP address automatically** – Click this button to obtain the IP address automatically. ➢ **Router Name** – Type in the router name provided by ISP. ➢ **Domain Name** – Type in the domain name that you have assigned. **Specify an IP address** – Click this radio button to specify some data. ➢ **IP Address** – Type in the private IP address. ➢ **Subnet Mask** – Type in the subnet mask. ➢ **Gateway IP Address** – Type in gateway IP address. **DNS Server IP Address -** Type in the primary IP address for

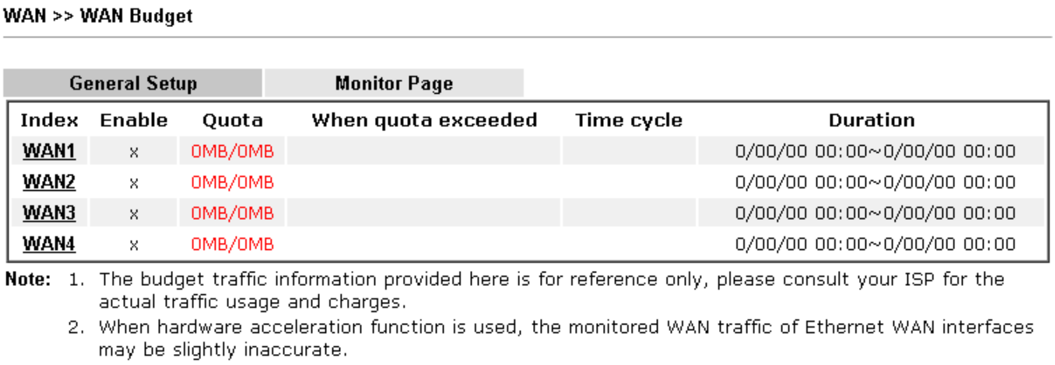
	the router if you want to use **Static IP** mode. If necessary, type in secondary IP address for necessity in the future.

After finished the above settings, click **OK** to save the settings and return to previous page.

II-1-4 WAN Budget

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

II-1-4-1 General Setup

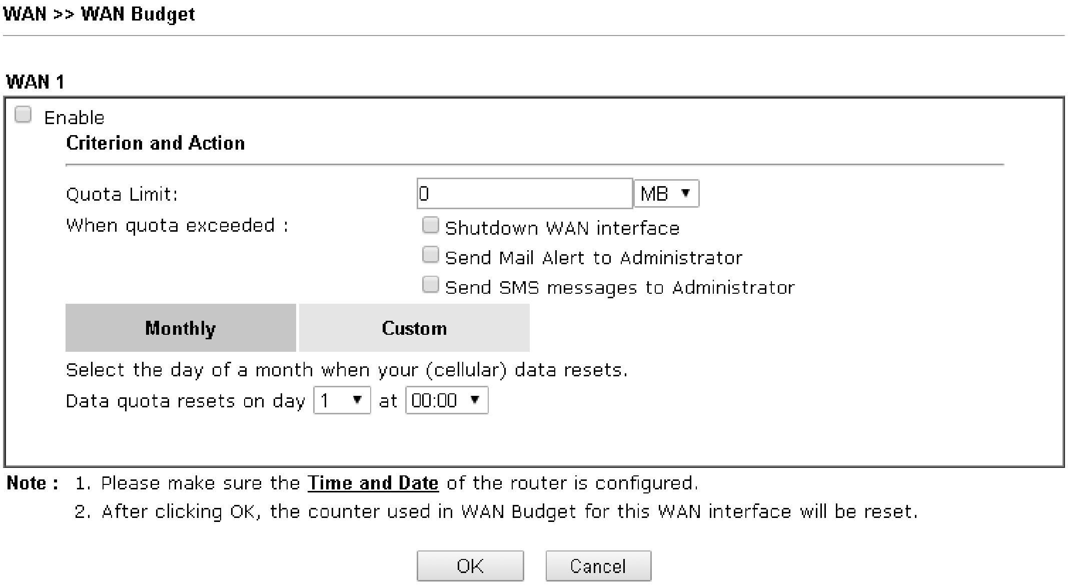


WAN >> WAN Budget

Index	Enable	Quota	When quota exceeded	Time cycle	Duration
WAN1	x	0MB/0MB			0/00/00 00:00~0/00/00 00:00
WAN2	x	0MB/0MB			0/00/00 00:00~0/00/00 00:00
WAN3	x	0MB/0MB			0/00/00 00:00~0/00/00 00:00
WAN4	x	0MB/0MB			0/00/00 00:00~0/00/00 00:00

Note: 1. The budget traffic information provided here is for reference only, please consult your ISP for the actual traffic usage and charges.
2. When hardware acceleration function is used, the monitored WAN traffic of Ethernet WAN interfaces may be slightly inaccurate.

Click WAN1/WAN2/WAN3/WAN4 link to open the following web page.



WAN >> WAN Budget

WAN 1

□ Enable

Criterion and Action

Quota Limit: 0 MB ▼

When quota exceeded : □ Shutdown WAN interface
□ Send Mail Alert to Administrator
□ Send SMS messages to Administrator

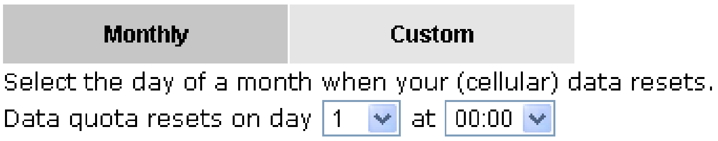
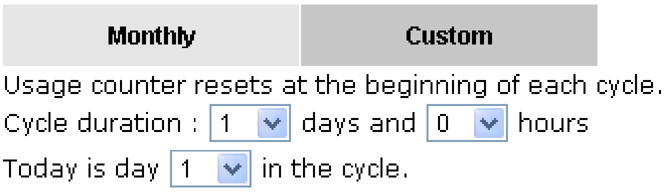
Select the day of a month when your (cellular) data resets.

Data quota resets on day 1 ▼ at 00:00 ▼

Note : 1. Please make sure the Time and Date of the router is configured.
2. After clicking OK, the counter used in WAN Budget for this WAN interface will be reset.

Available settings are explained as follows:

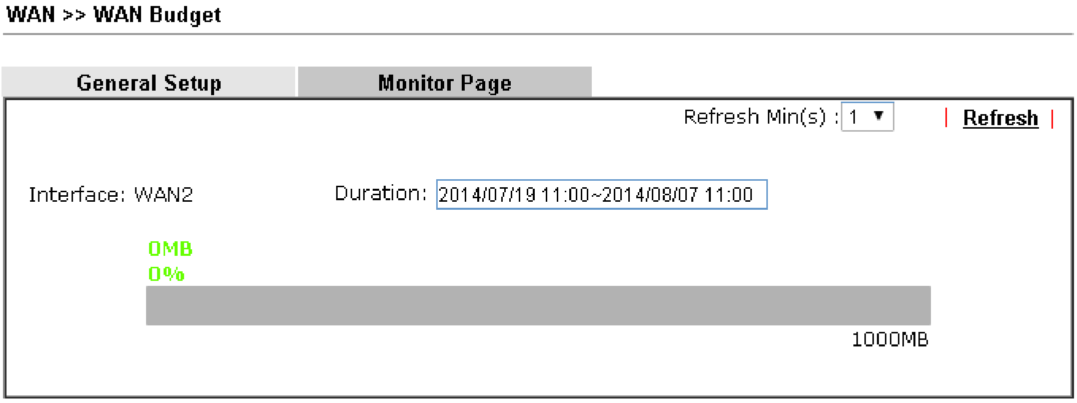
Item	Description
Enable	Check the box to enable such function.
Quota Limit	Type the data traffic quota allowed for such WAN interface. There are two unit (MB and GB) offered for you to specify.
When quota exceeded	Check the box(es) as the condition(s) for the system to perform when the traffic has exceeded the budget limit. **Shutdown WAN interface** – All the outgoing traffic through such WAN interface will be terminated. **Send Mail Alert to Administrator** – The system will send out a warning message to the administrator when the quota is running out. However, the connection charges will be

	calculated continuously. **Send SMS messages to Administrator** - The system will send out SMS message to the administrator when the quota is running out.
Monthly	Some ISP might apply for the network limitation based on the traffic limit per month. This setting is to offer a mechanism of resetting the traffic record every month.  Monthly | Custom Select the day of a month when your (cellular) data resets. Data quota resets on day 1 at 00:00 **Data quota resets on day ...** – You can determine the starting day in one month.
Custom	This setting allows the user to define the billing cycle according to his request. The WAN budget will be reset with an interval of billing cycle. **Custom** – Monthly is default setting. If long period or a short period is required, use **Custom**. The period of cycle duration is between 1 day and 60 days. You can determine the cycle duration by specifying the days and the hours. In addition, you can specify which day of today is in a cycle.  Monthly | Custom Usage counter resets at the beginning of each cycle. Cycle duration : 1 days and 0 hours Today is day 1 in the cycle. ● **Cycle duration**: Specify the days to reset the traffic record. For example, 7 means the whole cycle is 7 days; 20 means the whole cycle is 20 days. When the time is up, the router will reset the traffic record automatically. ● **Today is day** – Specify the day in the cycle as the starting point which Vigor router will reset the traffic record. For example, “3” means the third day of the cycle duration.

After finished the above settings, click **OK** to save the settings.

II-1-4-2 Monitor Page

The monitor page displays the status WAN budget, including the duration and the usage.



WAN >> WAN Budget

General Setup | Monitor Page

Refresh Min(s) : 1 | Refresh |

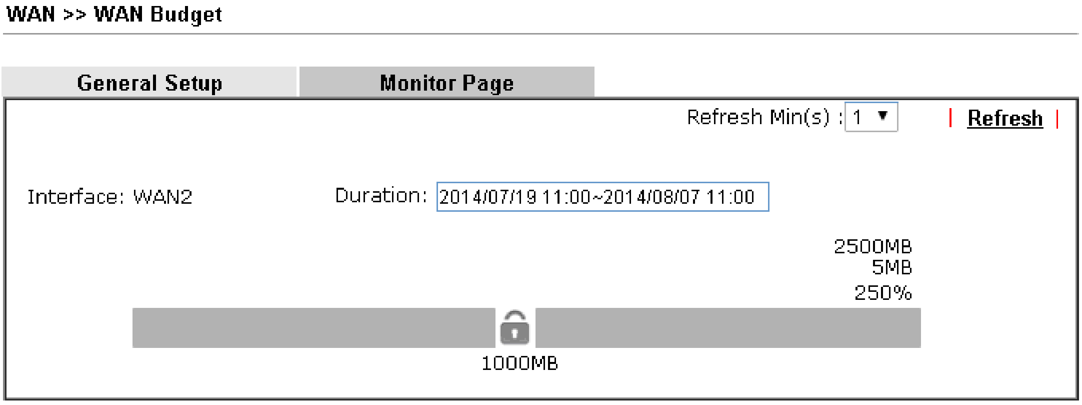
Interface: WAN2

Duration: 2014/07/19 11:00~2014/08/07 11:00

0MB
0%

1000MB

If the WAN budget is exhausted, a lock will be displayed on the page if **Shutdown WAN interface** is selected. Which means no data transmission will be carried out. Moreover, the system will send out a warning message to the administrator if **Send Mail Alert to Administrator** is selected**.** Or, the system will send out SMS message to the administrator if **Send SMS messages to Administrator** is selected.



WAN >> WAN Budget

Interface: WAN2

Duration: 2014/07/19 11:00~2014/08/07 11:00

Application Notes

A-1 How to configure settings for IPv6 Service in Vigor2952

Due to the shortage of IPv4 address, more and more countries use IPv6 to solve the problem. However, to continually use the original rich resources of IPv4, both IPv6 and IPv4 networks shall communicate for each other via intercommunication mechanism to complete the shifting job from IPv4 to IPv6 gradually. At present, there are three common types of intercommunication mechanisms:

- **Dual Stack**

  The user can use both IPv4 and IPv6 techniques at the same time. That means adding an IPv6 stack on the origin network layer to let the host own the communication capability of IPv4 and IPv6.

- **Tunnel**

  Both IPv6 hosts can communication for each other via existing IPv4 network environment. The IPv6 packets will be encapsulated with the header of IPv4 first. Later, the packets will be transformed and judged by IPv4 router. Once the packets arrive the border between IPv4 and IPv6, the header of IPv4 on the packets will be removed. Then, the packets with IPv6 address will be forwarded to the destination of IPv6 network.

- **Translation**

  Such feature is active only for the user who uses IPv4 to communicate with other user using IPv4 service.

Before configuring the settings on Vigor2952, you need to know which connection type that your IPv6 service used.

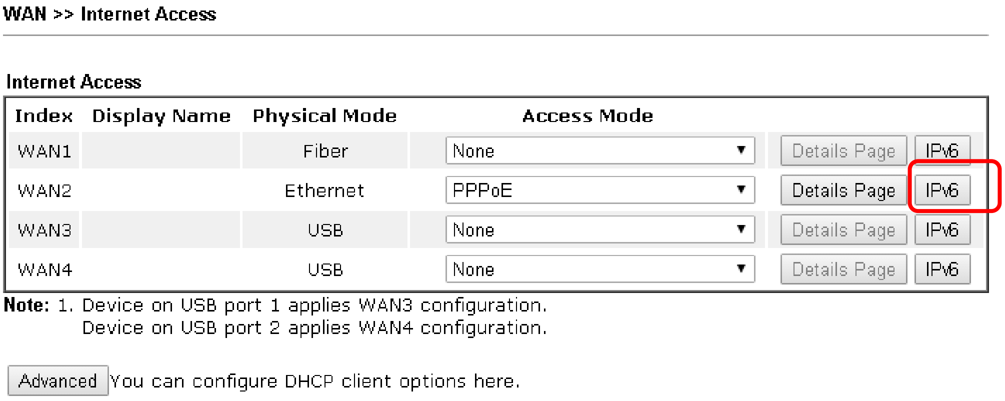
Info

For the IPv6 service, you have to configure WAN/LAN settings before using the service.

I. Configuring the WAN Settings

For the IPv6 WAN settings for Vigor2952, there are several connection types to be chosen.

1. Access into the web user interface of Vigor2952. Open **WAN**>> **Internet Access**. Choose one of the WAN interfaces as the one supporting IPv6 service. Then, click the **IPv6** button of the selected WAN.



WAN >> Internet Access

Internet Access

Index	Display Name	Physical Mode	Access Mode		
WAN1		Fiber	None	Details Page	IPv6
WAN2		Ethernet	PPPoE	Details Page	IPv6
WAN3		USB	None	Details Page	IPv6
WAN4		USB	None	Details Page	IPv6

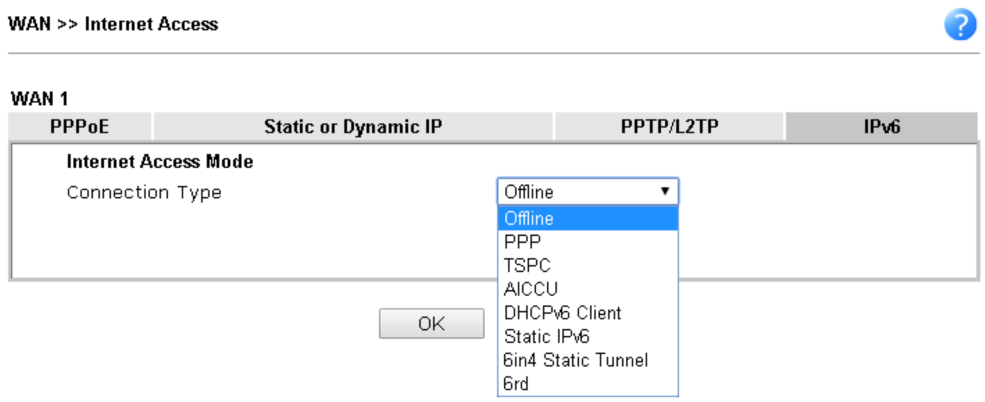
Note: 1. Device on USB port 1 applies WAN3 configuration.
Device on USB port 2 applies WAN4 configuration.

Advanced You can configure DHCP client options here.

Info

Only one WAN interface support IPv6 service at one time. In this example, WAN2 is chosen as the one supporting IPv6 service.

2. In the following figure, use the drop down list to choose a proper connection type.



WAN >> Internet Access

WAN 1

PPPoE | Static or Dynamic IP | PPTP/L2TP | IPv6

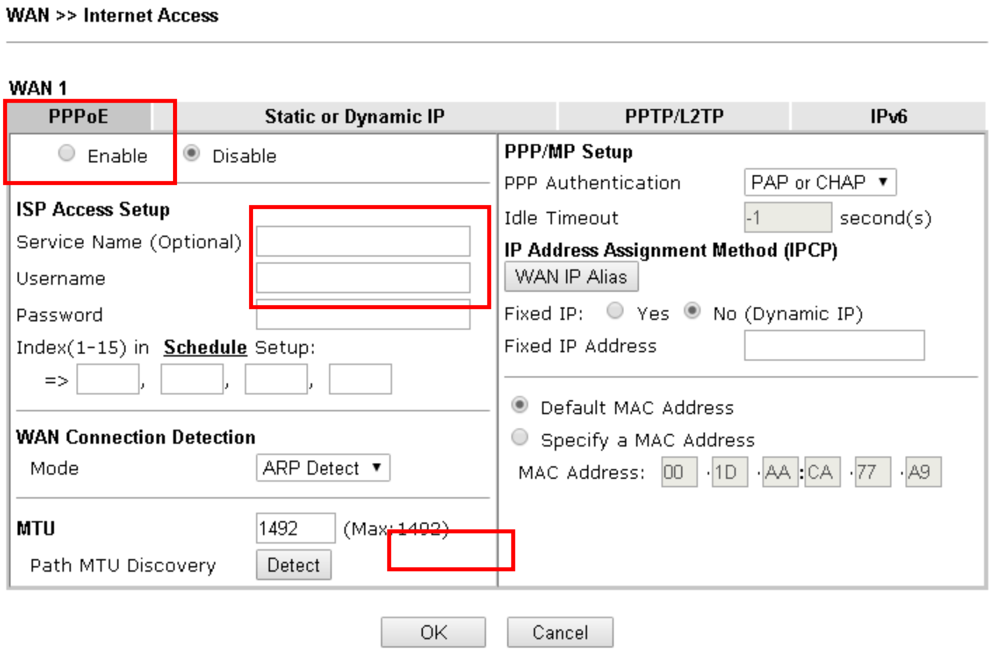
Internet Access Mode

Connection Type: Offline ▼

Different connection types will bring out different configuration page. Refer to the following:

- **PPP - Dual Stack application, IPv4 and IPv6 services can be utilized at the same time**

Choose PPP and type the information for PPPoE of IPv4.



WAN >> Internet Access

WAN 1

PPPoE | Static or Dynamic IP | PPTP/L2TP | IPv6

○ Enable ● Disable

ISP Access Setup

Service Name (Optional):

Username:

Password:

Index(1-15) in Schedule Setup:

=> , , ,

WAN Connection Detection

Mode: ARP Detect ▼

MTU: 1492 (Max:1492)

Path MTU Discovery: Detect

PPP/MP Setup

PPP Authentication: PAP or CHAP ▼

Idle Timeout: -1 second(s)

IP Address Assignment Method (IPCP)

WAN IP Alias

Fixed IP: ○ Yes ● No (Dynamic IP)

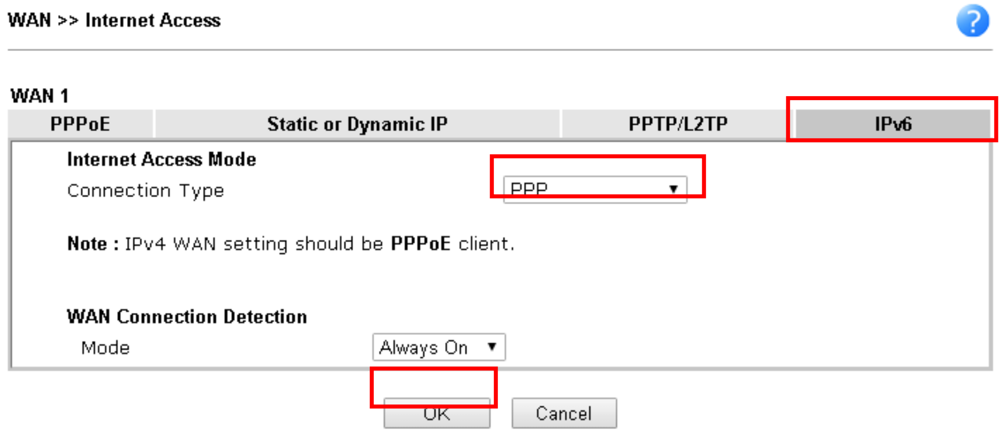
Fixed IP Address:

● Default MAC Address

○ Specify a MAC Address

MAC Address: 00 : 1D : AA : CA : 77 : A9

Access into the setting page for IPv6 service, it is not necessary for you to configure anything.



WAN >> Internet Access

WAN 1

PPPoE	Static or Dynamic IP	PPTP/L2TP	IPv6

Internet Access Mode

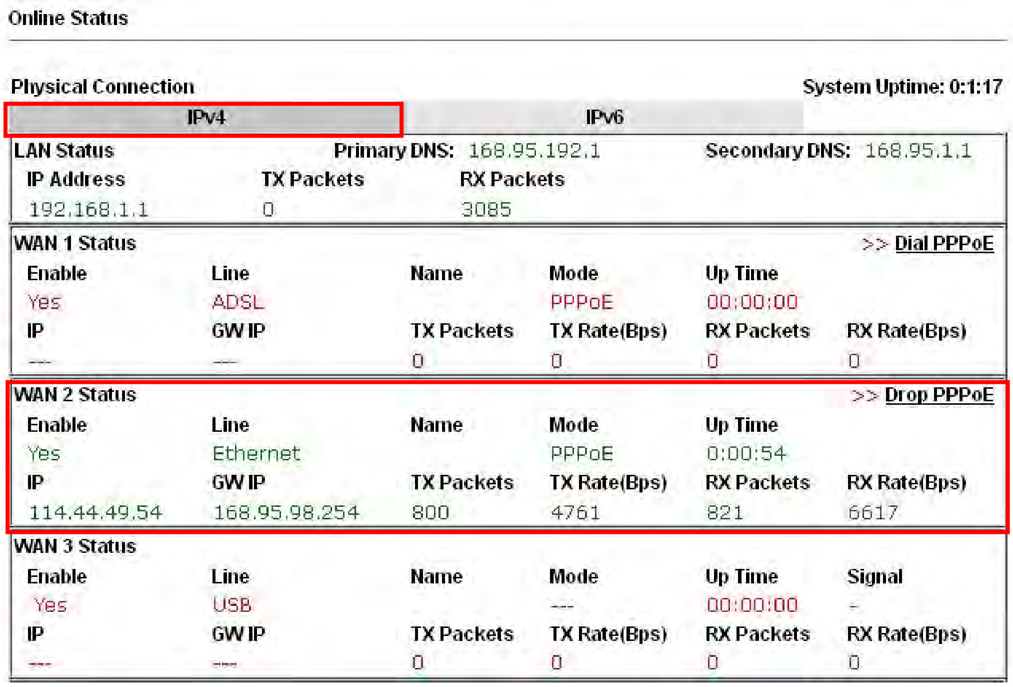
Connection Type: PPP

Note : IPv4 WAN setting should be **PPPoE** client.

WAN Connection Detection

Mode: Always On

Click **OK** and open **Online Status**. If the connection is successful, you will get the IP address for IPv4 and IPv6 at the same time.



Online Status

Physical Connection — System Uptime: 0:1:17

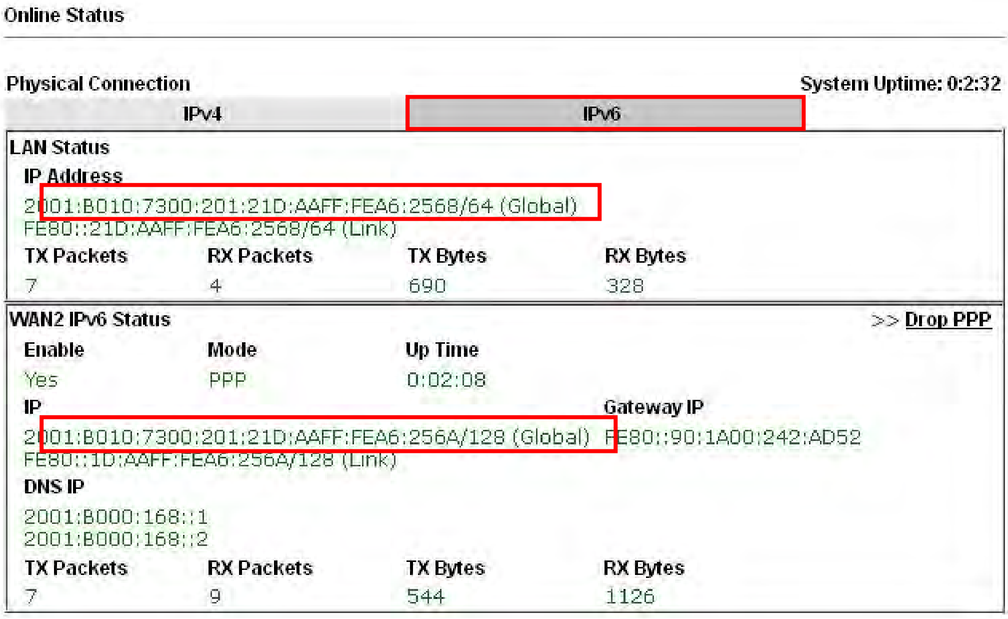
IPv4	IPv6

LAN Status		Primary DNS: 168.95.192.1		Secondary DNS: 168.95.1.1	
IP Address	TX Packets	RX Packets			
192.168.1.1	0	3085			

WAN 1 Status				>> Dial PPPoE	
Enable	Line	Name	Mode	Up Time	
Yes	ADSL		PPPoE	00:00:00	
IP	GW IP	TX Packets	TX Rate(Bps)	RX Packets	RX Rate(Bps)
---	---	0	0	0	0

WAN 2 Status				>> Drop PPPoE	
Enable	Line	Name	Mode	Up Time	
Yes	Ethernet		PPPoE	0:00:54	
IP	GW IP	TX Packets	TX Rate(Bps)	RX Packets	RX Rate(Bps)
114.44.49.54	168.95.98.254	800	4761	821	6617

WAN 3 Status					
Enable	Line	Name	Mode	Up Time	Signal
Yes	USB		---	00:00:00	-
IP	GW IP	TX Packets	TX Rate(Bps)	RX Packets	RX Rate(Bps)
---	---	0	0	0	0



Online Status

Physical Connection System Uptime: 0:2:32

LAN Status

IP Address

2001:B010:7300:201:21D:AAFF:FEA6:2568/64 (Global)
FE80::21D:AAFF:FEA6:2568/64 (Link)

TX Packets	RX Packets	TX Bytes	RX Bytes
7	4	690	328

WAN2 IPv6 Status >> Drop PPP

Enable	Mode	Up Time
Yes	PPP	0:02:08

IP
2001:B010:7300:201:21D:AAFF:FEA6:256A/128 (Global)
FE80::1D:AAFF:FEA6:256A/128 (Link)

Gateway IP
FE80::90:1A00:242:AD52

DNS IP
2001:B000:168::1
2001:B000:168::2

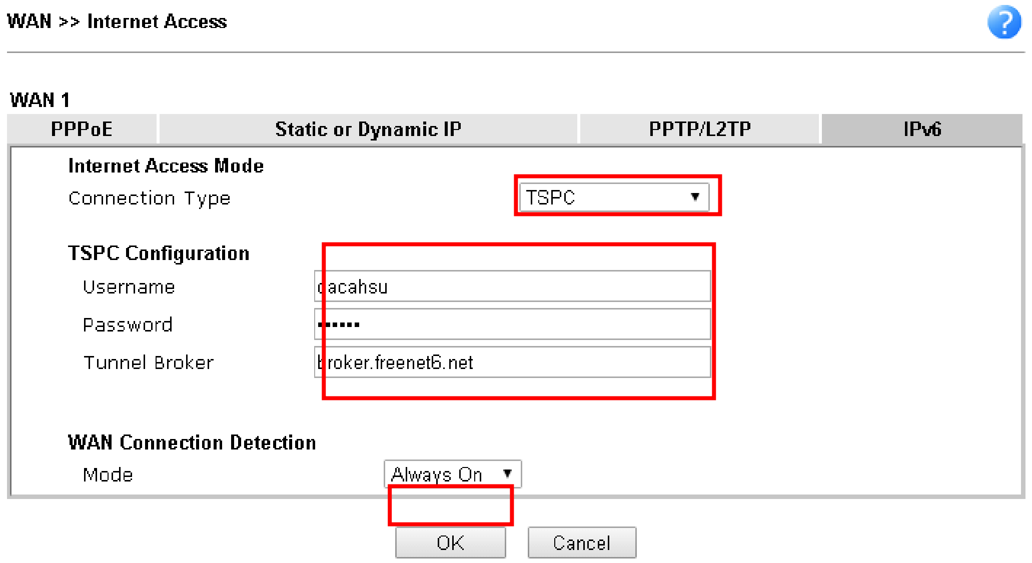
TX Packets	RX Packets	TX Bytes	RX Bytes
7	9	544	1126

- **TSPC - Tunnel application, both IPv6 hosts communicate through IPv4 network**

Choose **TSPC** and type the information for TSPC service.

Info	While using such mode, you have to make sure the IPv4 network connection is normal.

(In the following figure, the TSPC information is obtained from http://gogo6.com/ after applied for the service.)



WAN >> Internet Access

WAN 1

Internet Access Mode

Connection Type: TSPC

TSPC Configuration

Username: dacahsu

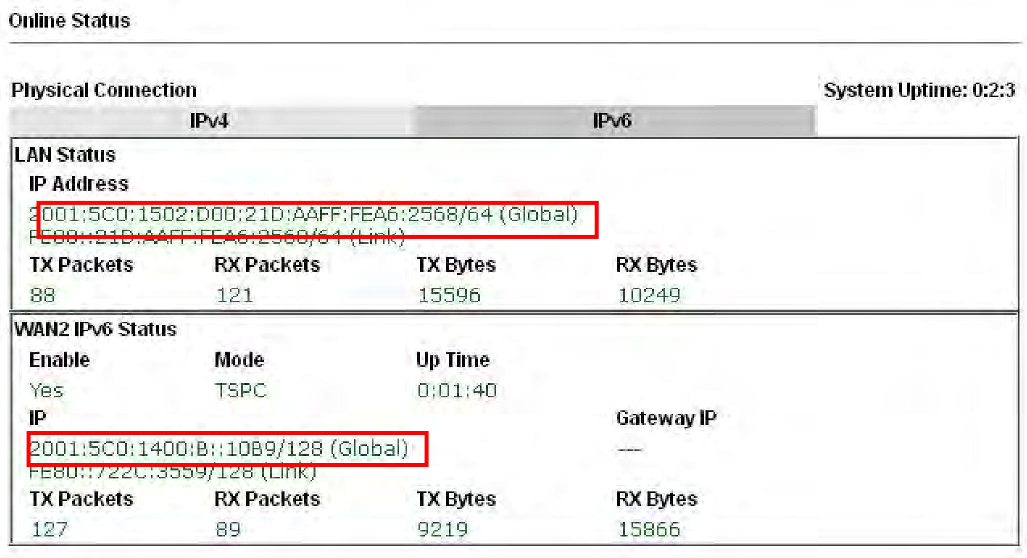
Password: ••••••

Tunnel Broker: broker.freenet6.net

WAN Connection Detection

Mode: Always On

Click **OK** and open **Online Status**. If the connection is successful, the physical connection will be shown as follows:



Online Status

Physical Connection — System Uptime: 0:2:3

LAN Status

IP Address

2001:5C0:1502:D00:21D:AAFF:FEA6:2568/64 (Global)
FE80::21D:AAFF:FEA6:2568/64 (Link)

TX Packets	RX Packets	TX Bytes	RX Bytes
88	121	15596	10249

WAN2 IPv6 Status

Enable	Mode	Up Time
Yes	TSPC	0:01:40

IP	Gateway IP
2001:5C0:1400:B::10B9/128 (Global) FE80::722C:3559/128 (Link)	---

TX Packets	RX Packets	TX Bytes	RX Bytes
127	89	9219	15866

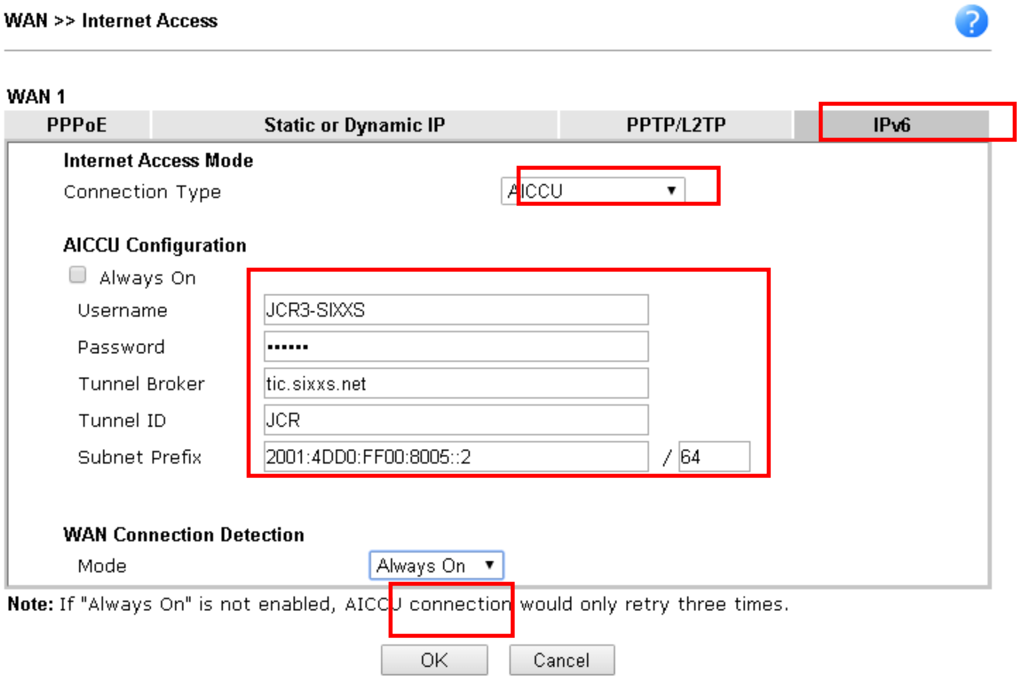
- **AICCU - Tunnel application**

Choose AICCU and type the information for AICCU of IPv6.

Info

While using such mode, you have to make sure the IPv4 network connection is normal.

(In the following figure, the AICCU information is obtained from https://www.sixxs.net/main/ after applied for the service.)



WAN >> Internet Access

WAN 1

Internet Access Mode

Connection Type: AICCU ▾

AICCU Configuration

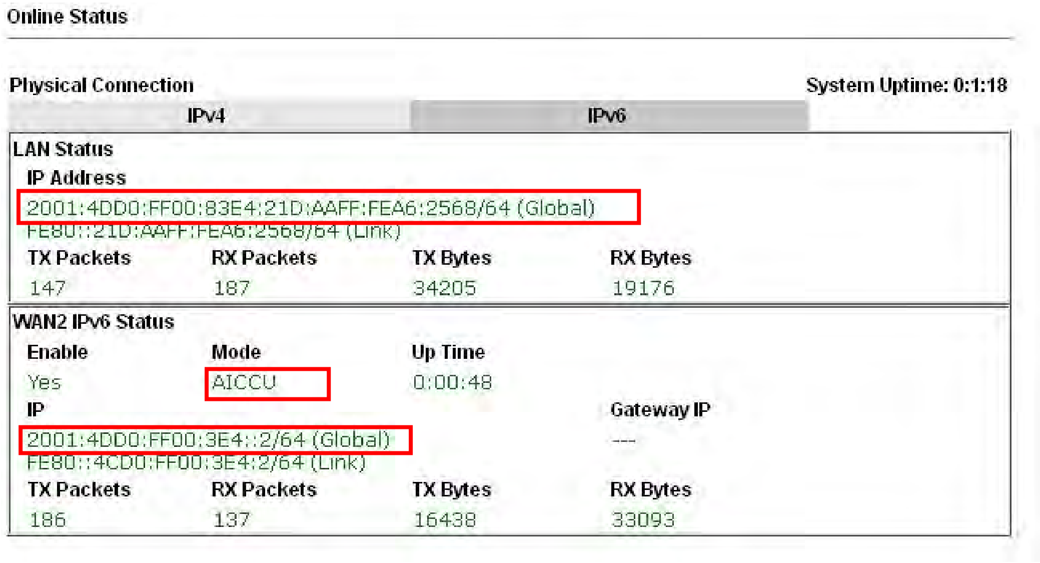
□ Always On	
Username	JCR3-SIXXS
Password	••••••
Tunnel Broker	tic.sixxs.net
Tunnel ID	JCR
Subnet Prefix	2001:4DD0:FF00:8005::2 / 64

WAN Connection Detection

Mode: Always On ▾

Note: If "Always On" is not enabled, AICCU connection would only retry three times.

Click **OK** and open **Online Status**. If the connection is successful, the physical connection will be shows as follows:



Online Status

Physical Connection **System Uptime: 0:1:18**

LAN Status

IP Address

2001:4DD0:FF00:83E4:21D:AAFF:FEA6:2568/64 (Global)
FE80::21D:AAFF:FEA6:2568/64 (Link)

TX Packets	RX Packets	TX Bytes	RX Bytes
147	187	34205	19176

WAN2 IPv6 Status

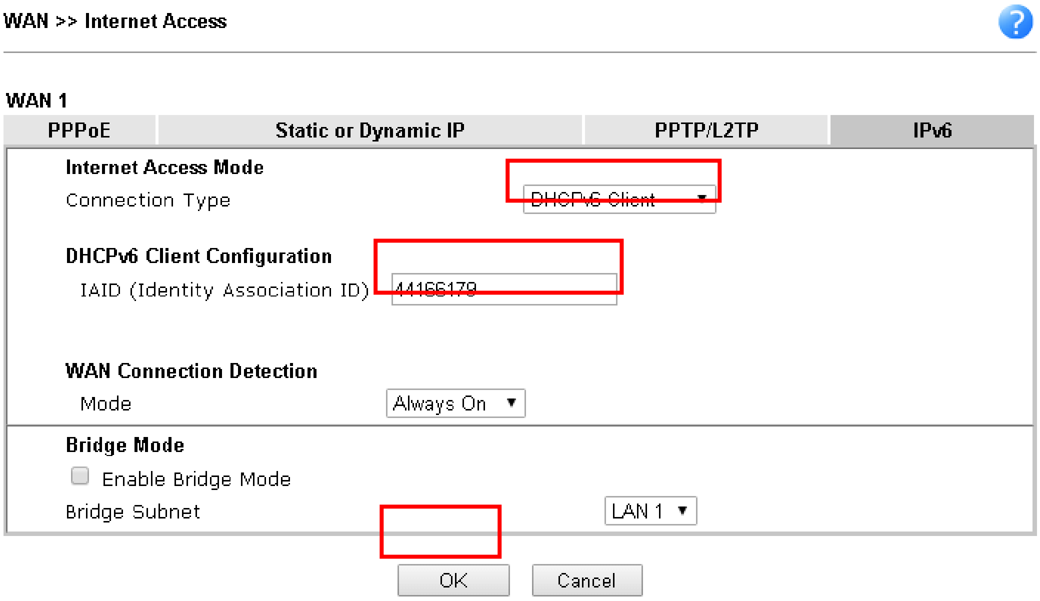
Enable	Mode	Up Time
Yes	AICCU	0:00:48

IP	Gateway IP
2001:4DD0:FF00:3E4::2/64 (Global) FE80::4CD0:FF00:3E4:2/64 (Link)	---

TX Packets	RX Packets	TX Bytes	RX Bytes
186	137	16438	33093

- **DHCPv6 Client**

Choose DHCPv6 Client. Click one of the identity associations and type the IAID number.



WAN >> Internet Access

WAN 1

PPPoE	Static or Dynamic IP	PPTP/L2TP	IPv6

Internet Access Mode

Connection Type: DHCPv6 Client

DHCPv6 Client Configuration

IAID (Identity Association ID): 44166179

WAN Connection Detection

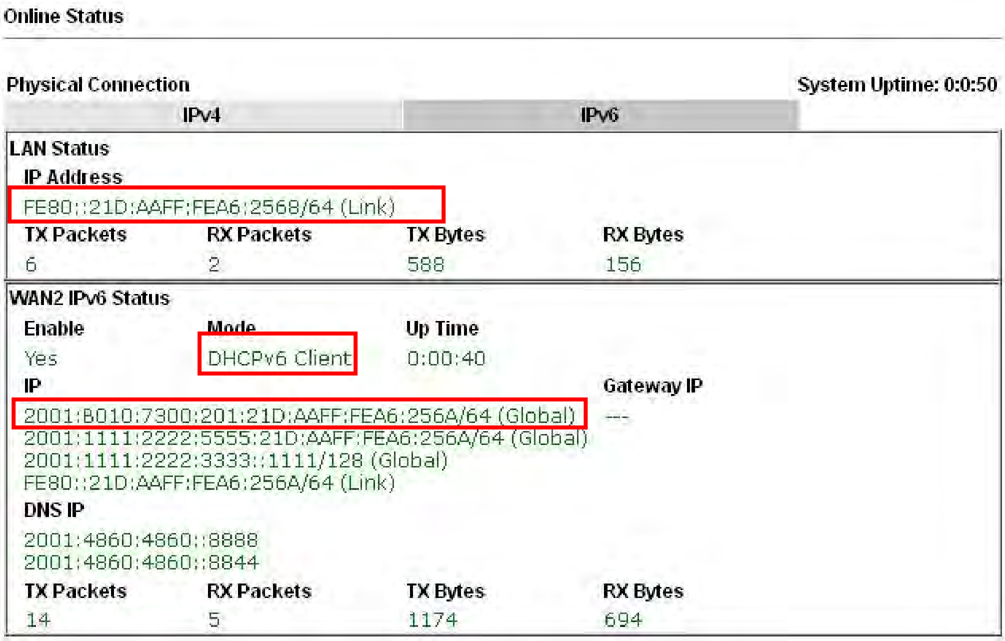
Mode: Always On

Bridge Mode

☐ Enable Bridge Mode

Bridge Subnet: LAN 1

Click **OK** and open **Online Status**. If the connection is successful, the physical connection will be shows as follows:



Online Status

Physical Connection — System Uptime: 0:0:50

IPv4	IPv6

LAN Status

IP Address

FE80::21D:AAFF:FEA6:2568/64 (Link)

TX Packets	RX Packets	TX Bytes	RX Bytes
6	2	588	156

WAN2 IPv6 Status

Enable	Mode	Up Time
Yes	DHCPv6 Client	0:00:40

IP	Gateway IP
2001:B010:7300:201:21D:AAFF:FEA6:256A/64 (Global) 2001:1111:2222:5555:21D:AAFF:FEA6:256A/64 (Global) 2001:1111:2222:3333::1111/128 (Global) FE80::21D:AAFF:FEA6:256A/64 (Link)	---

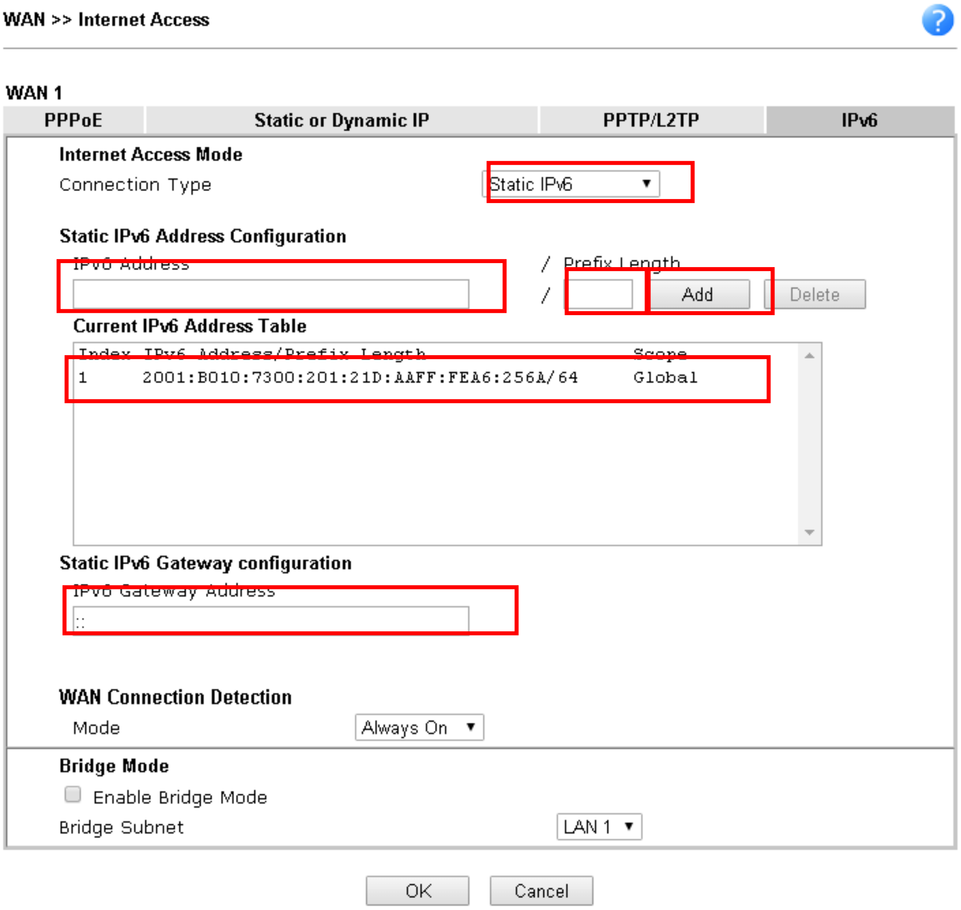
DNS IP

2001:4860:4860::8888
2001:4860:4860::8844

TX Packets	RX Packets	TX Bytes	RX Bytes
14	5	1174	694

- **Static IPv6**

Choose Static IPv6. Type IPv6 address, Prefix Length and Gateway Address.



WAN >> Internet Access

WAN 1

Internet Access Mode

Connection Type: Static IPv6 ▼

Static IPv6 Address Configuration

IPv6 Address / Prefix Length

Current IPv6 Address Table

Index	IPv6 Address/Prefix Length	Scope
1	2001:B010:7300:201:21D:AAFF:FEA6:256A/64	Global

Static IPv6 Gateway configuration

IPv6 Gateway Address: ::

WAN Connection Detection

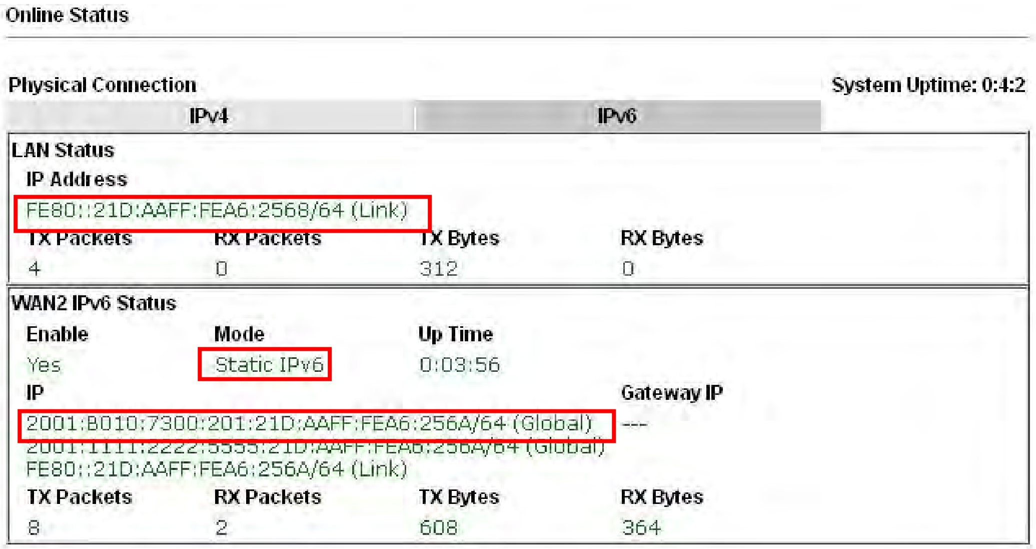
Mode: Always On ▼

Bridge Mode

□ Enable Bridge Mode

Bridge Subnet: LAN 1 ▼

Click **OK** and open **Online Status**. If the connection is successful, the physical connection will be shows as follows:



Online Status

Physical Connection

System Uptime: 0:4:2

LAN Status

IP Address

FE80::21D:AAFF:FEA6:2568/64 (Link)

TX Packets	RX Packets	TX Bytes	RX Bytes
4	0	312	0

WAN2 IPv6 Status

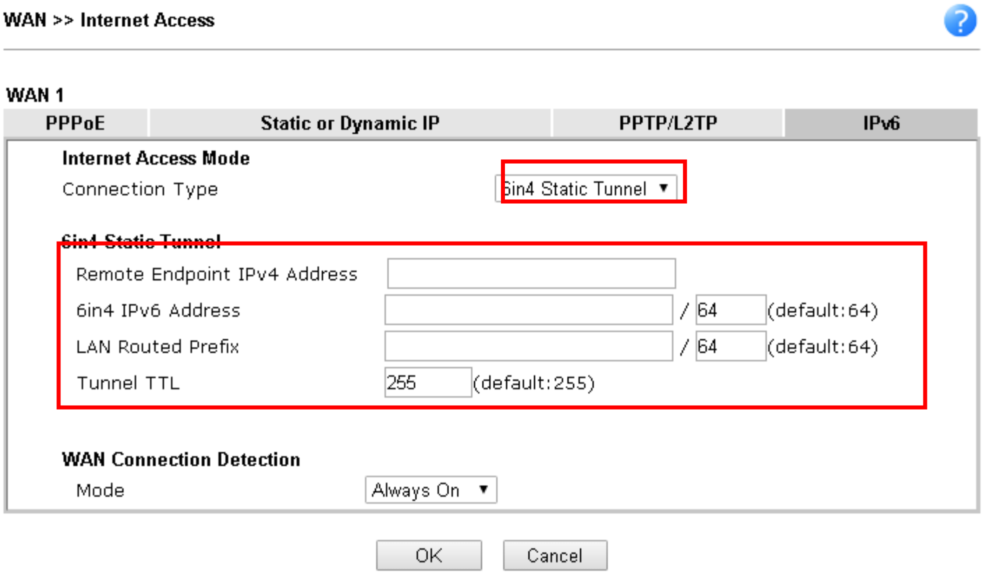
Enable	Mode	Up Time	
Yes	Static IPv6	0:03:56	

IP	Gateway IP
2001:B010:7300:201:21D:AAFF:FEA6:256A/64 (Global) 2001:1111:2222:3333:21D:AAFF:FEA6:256A/64 (Global) FE80::21D:AAFF:FEA6:256A/64 (Link)	---

TX Packets	RX Packets	TX Bytes	RX Bytes
8	2	608	364

- **6in4 Static Tunnel**

Choose 6in4 Static Tunnel. Type remote endpoint IPv4 address, 6in4 IPv6 Address, LAN Routed Prefix and Tunnel TTL.



Internet Access Mode

Connection Type: 6in4 Static Tunnel

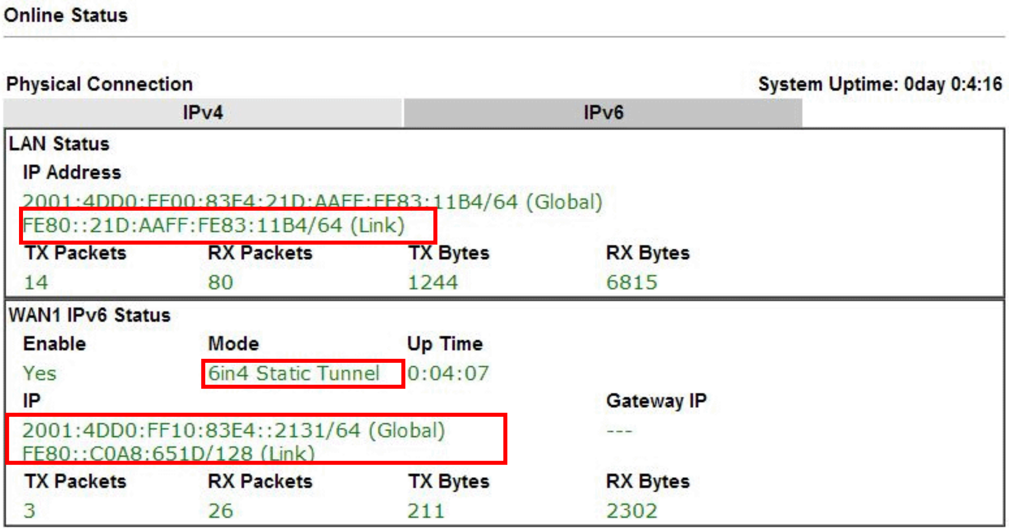
6in4 Static Tunnel

Remote Endpoint IPv4 Address	
6in4 IPv6 Address	/ 64 (default:64)
LAN Routed Prefix	/ 64 (default:64)
Tunnel TTL	255 (default:255)

WAN Connection Detection

Mode: Always On

Click **OK** and open **Online Status**. If the connection is successful, the physical connection will be shows as follows:



Physical Connection — System Uptime: 0day 0:4:16

LAN Status

IP Address

2001:4DD0:FF00:83E4:21D:AAFF:FE83:11B4/64 (Global)
FE80::21D:AAFF:FE83:11B4/64 (Link)

TX Packets	RX Packets	TX Bytes	RX Bytes
14	80	1244	6815

WAN1 IPv6 Status

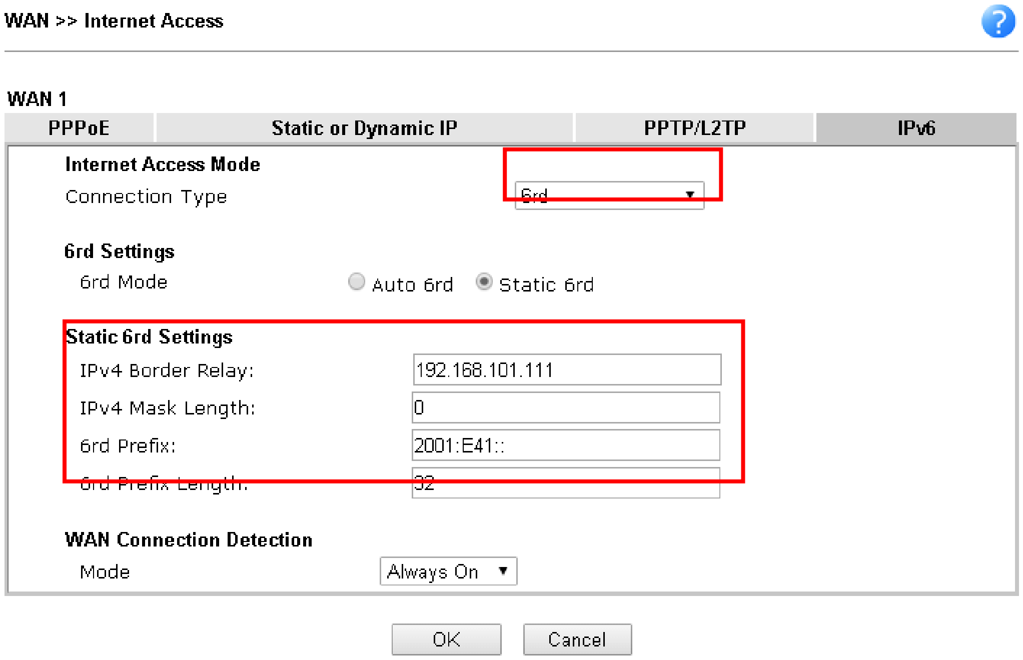
Enable	Mode	Up Time
Yes	6in4 Static Tunnel	0:04:07

IP	Gateway IP
2001:4DD0:FF10:83E4::2131/64 (Global) FE80::C0A8:651D/128 (Link)	---

TX Packets	RX Packets	TX Bytes	RX Bytes
3	26	211	2302

- **6rd**

Choose 6rd. Type IPv4 Border Relay, IPv4 Mask Length, 6rd Prefix and 6rd Prefix Length.



WAN >> Internet Access

WAN 1

Internet Access Mode

Connection Type: 6rd

6rd Settings

6rd Mode: ○ Auto 6rd ● Static 6rd

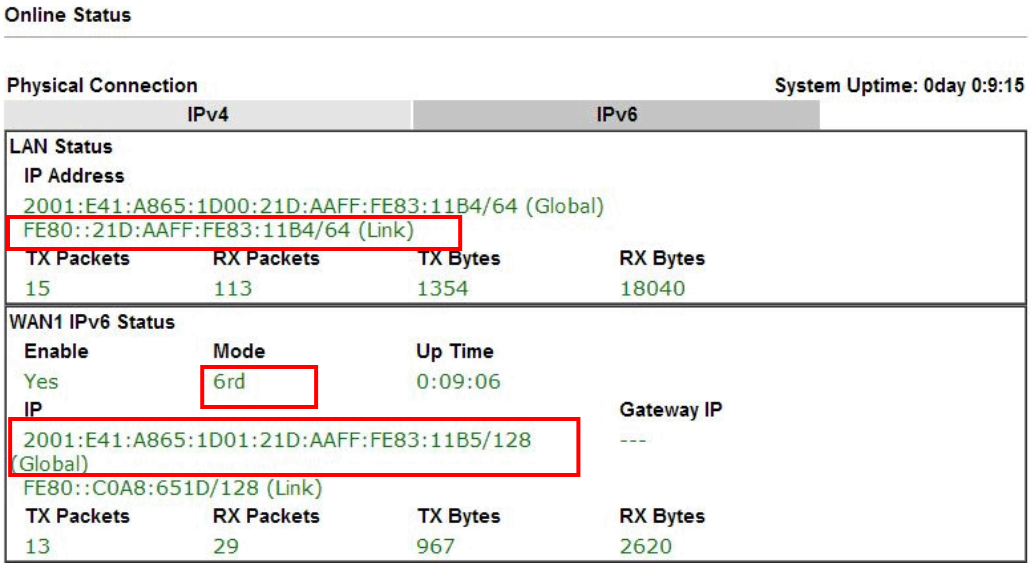
Static 6rd Settings

IPv4 Border Relay:	192.168.101.111
IPv4 Mask Length:	0
6rd Prefix:	2001:E41::
6rd Prefix Length:	32

WAN Connection Detection

Mode: Always On

Click **OK** and open **Online Status**. If the connection is successful, the physical connection will be shows as follows:



Online Status

Physical Connection — System Uptime: 0day 0:9:15

LAN Status

IP Address

2001:E41:A865:1D00:21D:AAFF:FE83:11B4/64 (Global)

FE80::21D:AAFF:FE83:11B4/64 (Link)

TX Packets	RX Packets	TX Bytes	RX Bytes
15	113	1354	18040

WAN1 IPv6 Status

Enable	Mode	Up Time
Yes	6rd	0:09:06

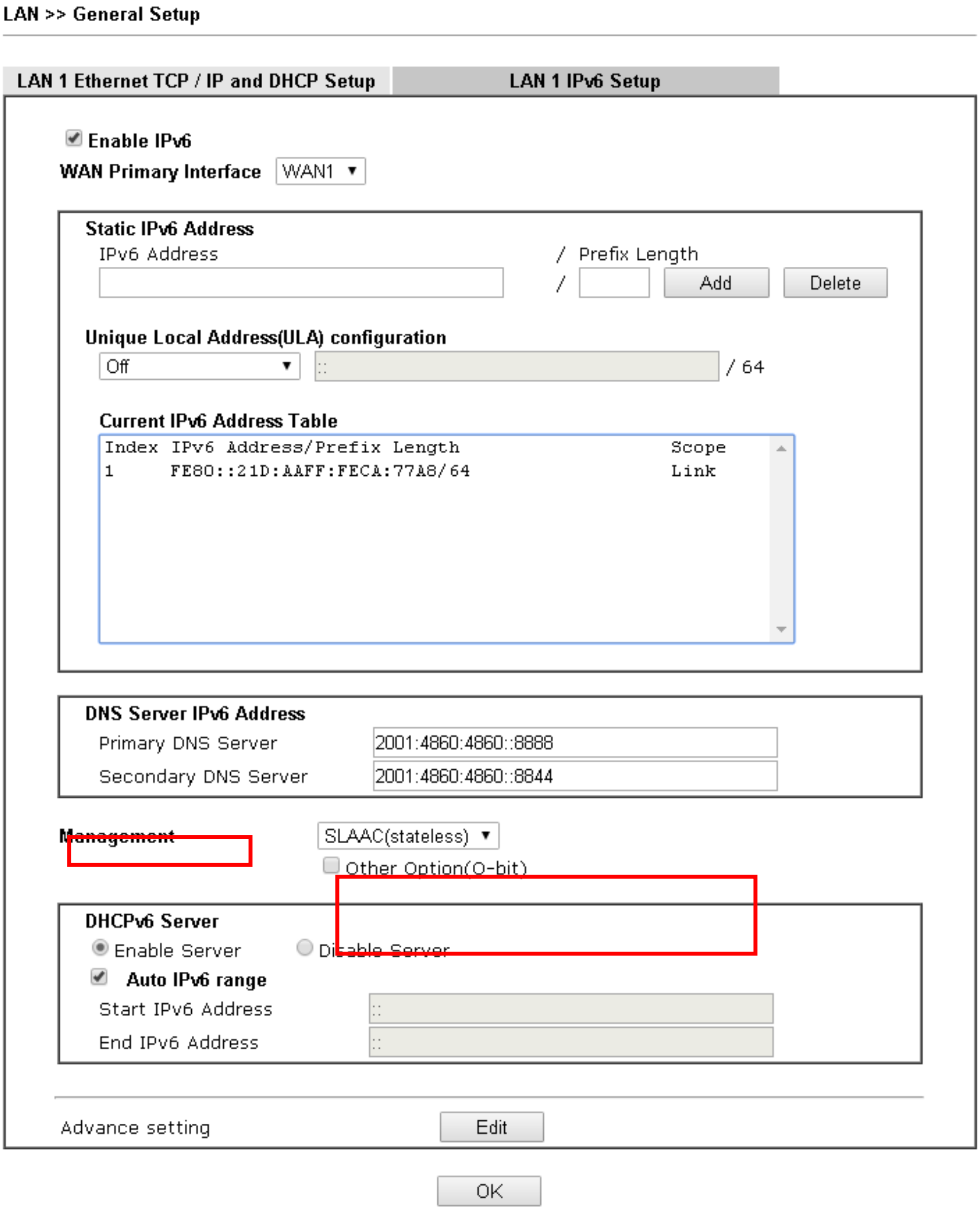
IP	Gateway IP
2001:E41:A865:1D01:21D:AAFF:FE83:11B5/128 (Global) FE80::C0A8:651D/128 (Link)	---

TX Packets	RX Packets	TX Bytes	RX Bytes
13	29	967	2620

II. Configuring the LAN Settings

After finished the WAN settings for IPv6, please configure the LAN settings to make the router’s client get the IPv6 address.

1. Access into the web user interface of Vigor2952. Open **LAN**>> **General Setup**. Click the **IPv6** button.
2. In the field of **DHCPv6 Server Configuration**, when DHCPv6 service is enabled, you can assign available IPv6 address for the client manually.



LAN >> General Setup

LAN 1 Ethernet TCP / IP and DHCP Setup | LAN 1 IPv6 Setup

☑ Enable IPv6

WAN Primary Interface: WAN1

Static IPv6 Address

IPv6 Address / Prefix Length

Unique Local Address(ULA) configuration: Off, :: / 64

Current IPv6 Address Table

```
Index IPv6 Address/Prefix Length                    Scope
1      FE80::21D:AAFF:FECA:77A8/64                  Link
```

DNS Server IPv6 Address

Primary DNS Server: 2001:4860:4860::8888

Secondary DNS Server: 2001:4860:4860::8844

Management: SLAAC(stateless)

□ Other Option(O-bit)

DHCPv6 Server

● Enable Server ○ Disable Server

☑ Auto IPv6 range

Start IPv6 Address: ::

End IPv6 Address: ::

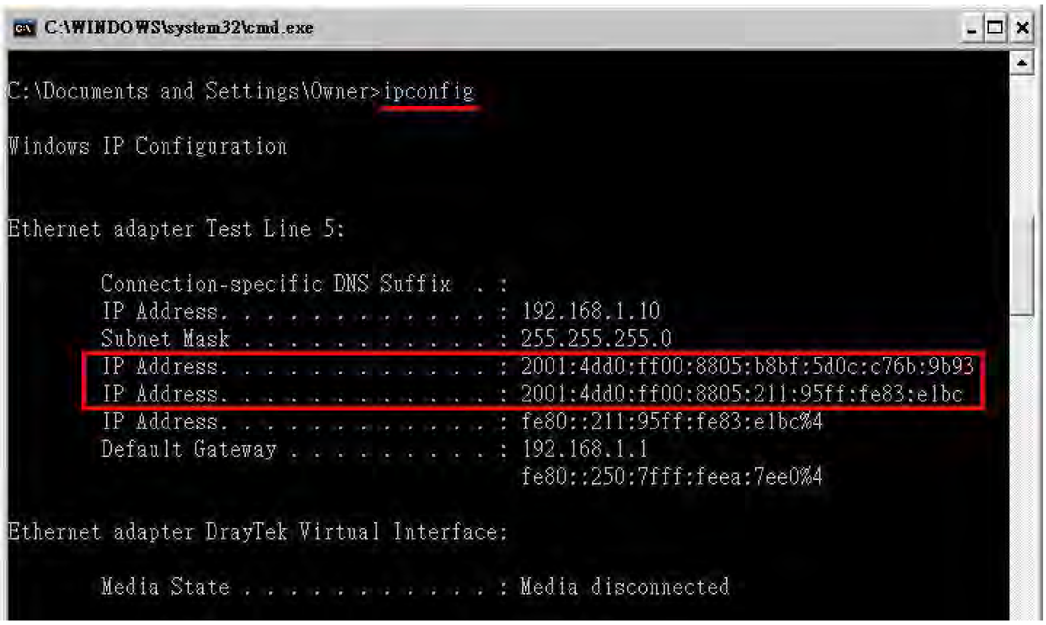
Advance setting: Edit

Info

When both mechanisms are enabled, the client can determine which mechanism to be used (e.g., the default mechanism for Windows7 is RADVD).

III. Confirming IPv6 Service Run Successfully

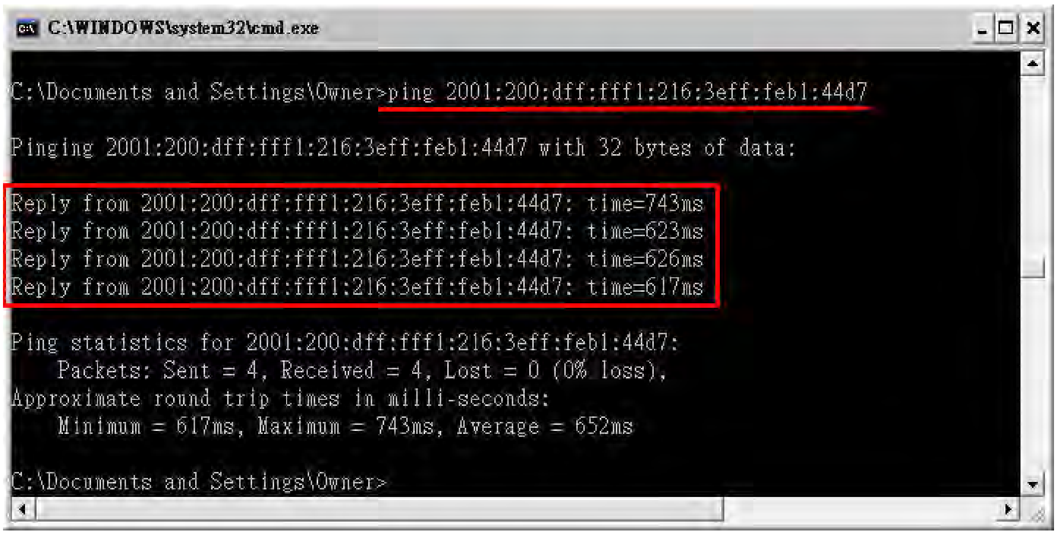
1. Make sure you have obtained the correct IPv6 IP address. Get into MS-DOS interface and type the command of “ipconfig”. Refer to the following figure.



```
C:\Documents and Settings\Owner>ipconfig

Windows IP Configuration


Ethernet adapter Test Line 5:

        Connection-specific DNS Suffix  . :
        IP Address. . . . . . . . . . . . : 192.168.1.10
        Subnet Mask . . . . . . . . . . . : 255.255.255.0
        IP Address. . . . . . . . . . . . : 2001:4dd0:ff00:8805:b8bf:5d0c:c76b:9b93
        IP Address. . . . . . . . . . . . : 2001:4dd0:ff00:8805:211:95ff:fe83:e1bc
        IP Address. . . . . . . . . . . . : fe80::211:95ff:fe83:e1bc%4
        Default Gateway . . . . . . . . . : 192.168.1.1
                                            fe80::250:7fff:feea:7ee0%4

Ethernet adapter DrayTek Virtual Interface:

        Media State . . . . . . . . . . . : Media disconnected
```

From the above figure we can see IPv6 IP address has been captured by the system.

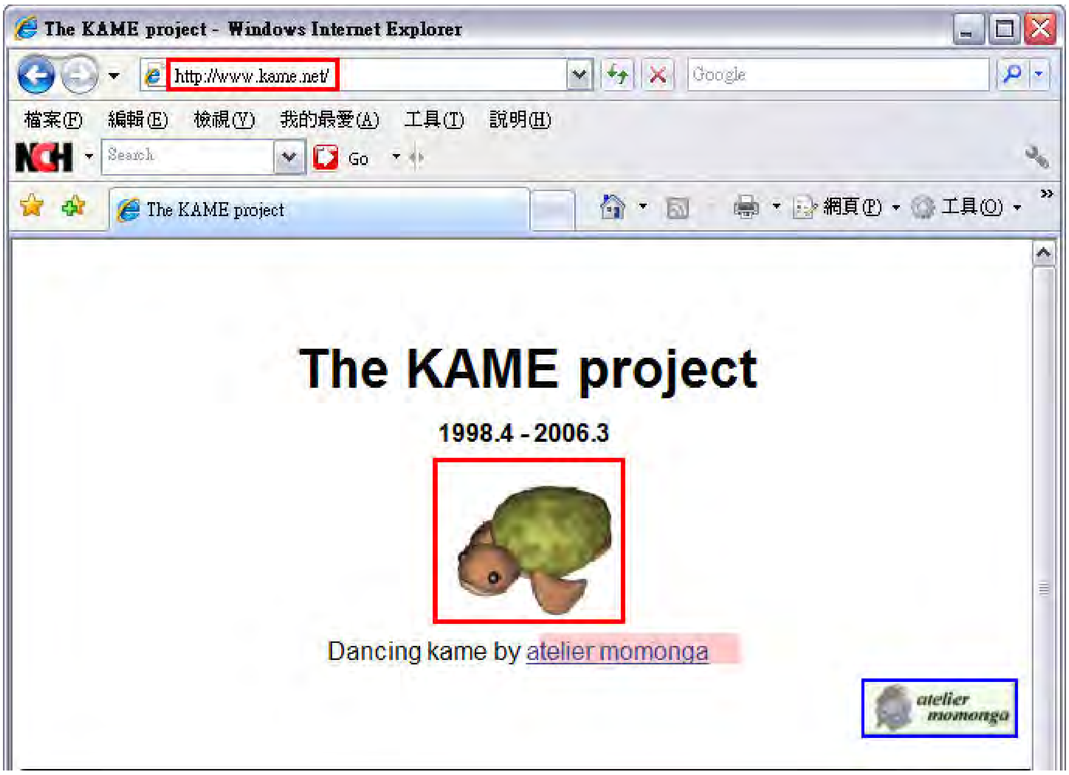
2. Use the Ping command to ping any IPv6 address indicating an IPv6 website. For example, www.kame.net is a website supporting IPv4 IP and IPv6 IP services. Its IPv6 address is seen with a format of 2001:200:dff:fff1:216:3eff:feb1:44d7.



```
C:\Documents and Settings\Owner>ping 2001:200:dff:fff1:216:3eff:feb1:44d7

Pinging 2001:200:dff:fff1:216:3eff:feb1:44d7 with 32 bytes of data:

Reply from 2001:200:dff:fff1:216:3eff:feb1:44d7: time=743ms
Reply from 2001:200:dff:fff1:216:3eff:feb1:44d7: time=623ms
Reply from 2001:200:dff:fff1:216:3eff:feb1:44d7: time=626ms
Reply from 2001:200:dff:fff1:216:3eff:feb1:44d7: time=617ms

Ping statistics for 2001:200:dff:fff1:216:3eff:feb1:44d7:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 617ms, Maximum = 743ms, Average = 652ms

C:\Documents and Settings\Owner>
```

After getting the above message, it means the IPv6 service has been activated successfully.

3. Connect to the website for IPv6. Open a web browser and type an URL of IPv6, e.g., www.kame.net. If your computer accesses into the website by using IPv6 address, you may see a turtle dancing on the screen. If not, only a steady turtle will be seen.

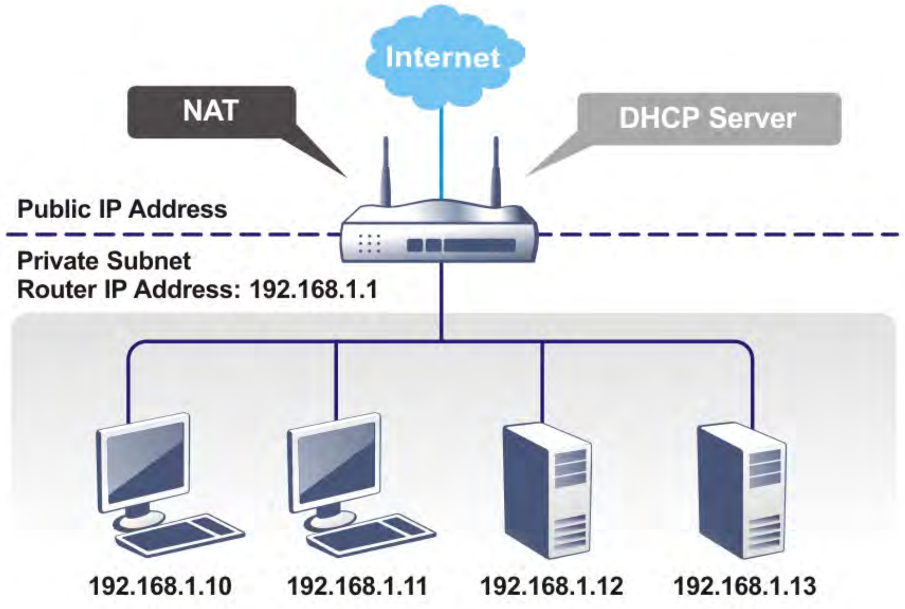

The KAME project - Windows Internet Explorer
http://www.kame.net/
Google
檔案(F) 編輯(E) 檢視(V) 我的最愛(A) 工具(T) 說明(H)
Search
Go
The KAME project
網頁(P) 工具(O)
The KAME project
1998.4 - 2006.3
Dancing kame by atelier momonga
atelier momonga

If you can see a turtle dancing on the screen, that means IPv6 service is ready for you to access and utilize.

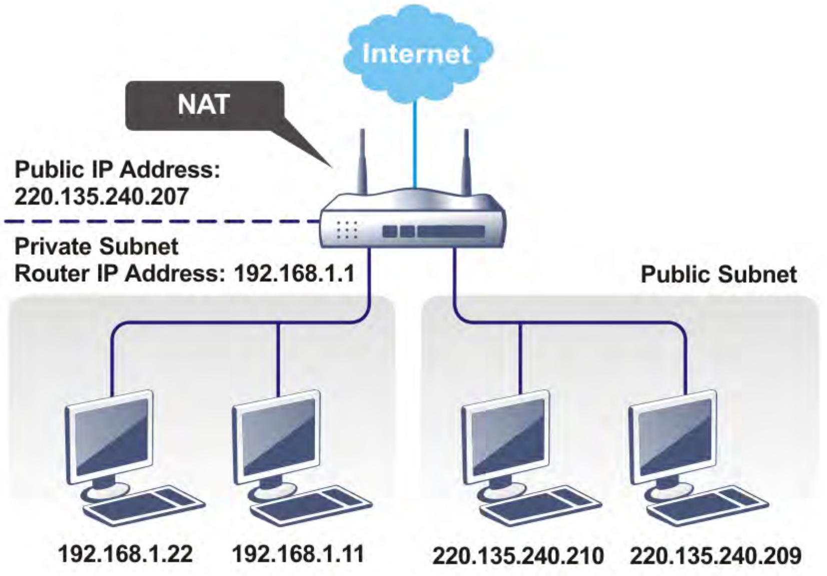
II-2 LAN

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 public IP address to private 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. See the following diagram for a briefly understanding.



In some special case, you may have a public IP subnet from your ISP such as 220.135.240.0/24. This means that you can set up a public subnet or call second subnet that each host is equipped with a public IP address. As a part of the public subnet, the Vigor router will serve for IP routing to help hosts in the public subnet to communicate with other public hosts or servers outside. Therefore, the router should be set as the gateway for public hosts.



What is Routing Information Protocol (RIP)

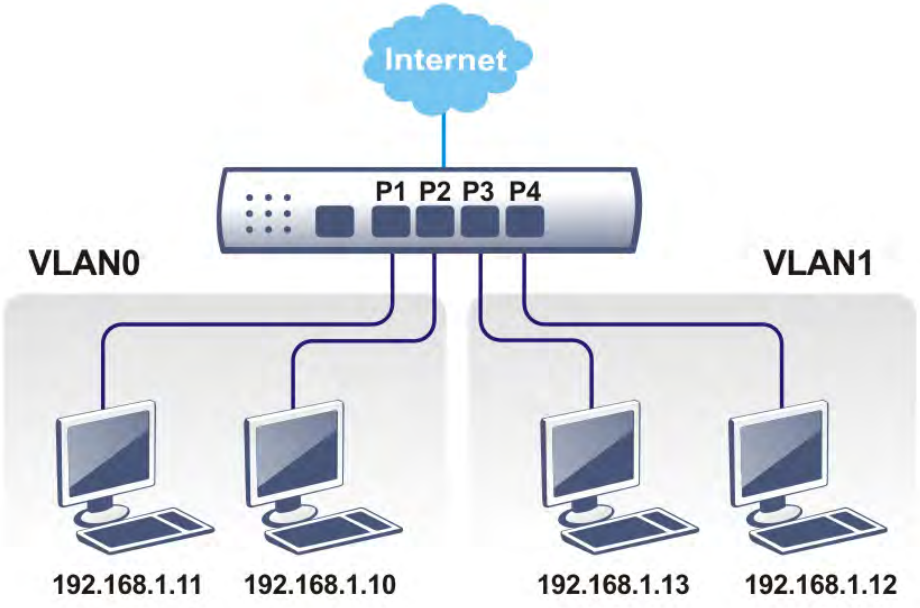
Vigor router will exchange routing information with neighboring routers using the RIP to accomplish IP routing. This allows users to change the information of the router such as IP address and the routers will automatically inform for each other.

What is Static Route

When you have several subnets in your LAN, sometimes a more effective and quicker way for connection is the **Static routes** function rather than other method. You may simply set rules to forward data from one specified subnet to another specified subnet without the presence of RIP.

What are Virtual LANs and Rate Control

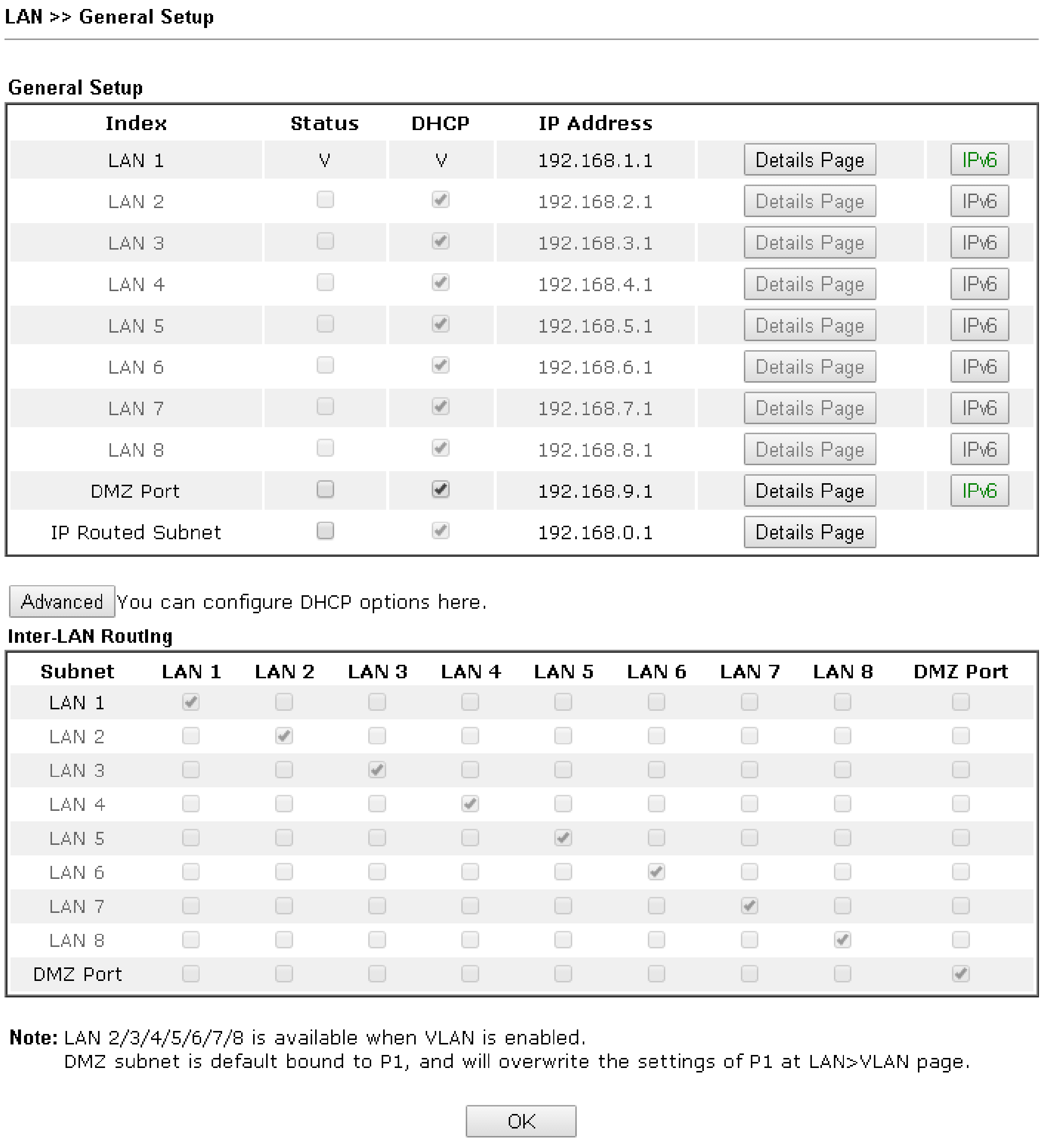
You can group local hosts by physical ports and create up to 8 virtual LANs. To manage the communication between different groups, please set up rules in Virtual LAN (VLAN) function and the rate of each.



II-2-1 General Setup

This page provides you the general settings for LAN. Click **LAN** to open the LAN settings page and choose **General Setup**.

There are several subnets provided by the router which allow users to divide groups into different subnets (LAN1 – LAN6). In addition, different subnets can link for each other by configuring **Inter-LAN Routing**. At present, LAN1 setting is fixed with NAT mode only. LAN2 – LAN6 can be operated under **NAT** or **Route** mode. IP Routed Subnet can be operated under Route mode.



LAN >> General Setup

General Setup

Index	Status	DHCP	IP Address		
LAN 1	V	V	192.168.1.1	Details Page	IPv6
LAN 2	□	☑	192.168.2.1	Details Page	IPv6
LAN 3	□	☑	192.168.3.1	Details Page	IPv6
LAN 4	□	☑	192.168.4.1	Details Page	IPv6
LAN 5	□	☑	192.168.5.1	Details Page	IPv6
LAN 6	□	☑	192.168.6.1	Details Page	IPv6
LAN 7	□	☑	192.168.7.1	Details Page	IPv6
LAN 8	□	☑	192.168.8.1	Details Page	IPv6
DMZ Port	□	☑	192.168.9.1	Details Page	IPv6
IP Routed Subnet	□	☑	192.168.0.1	Details Page	

Advanced You can configure DHCP options here.

Inter-LAN Routing

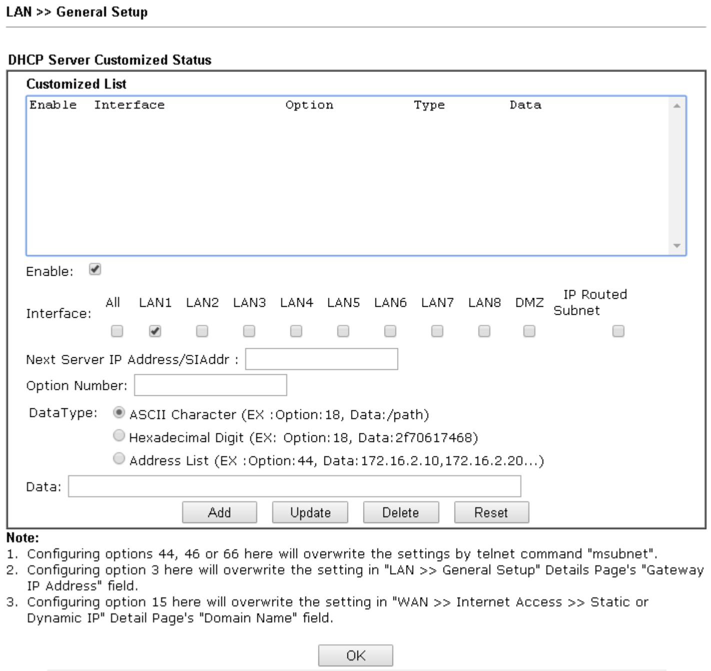
Subnet	LAN 1	LAN 2	LAN 3	LAN 4	LAN 5	LAN 6	LAN 7	LAN 8	DMZ Port
LAN 1	☑	□	□	□	□	□	□	□	□
LAN 2	□	☑	□	□	□	□	□	□	□
LAN 3	□	□	☑	□	□	□	□	□	□
LAN 4	□	□	□	☑	□	□	□	□	□
LAN 5	□	□	□	□	☑	□	□	□	□
LAN 6	□	□	□	□	□	☑	□	□	□
LAN 7	□	□	□	□	□	□	☑	□	□
LAN 8	□	□	□	□	□	□	□	☑	□
DMZ Port	□	□	□	□	□	□	□	□	☑

Note: LAN 2/3/4/5/6/7/8 is available when VLAN is enabled.
DMZ subnet is default bound to P1, and will overwrite the settings of P1 at LAN>VLAN page.

OK

Available settings are explained as follows:

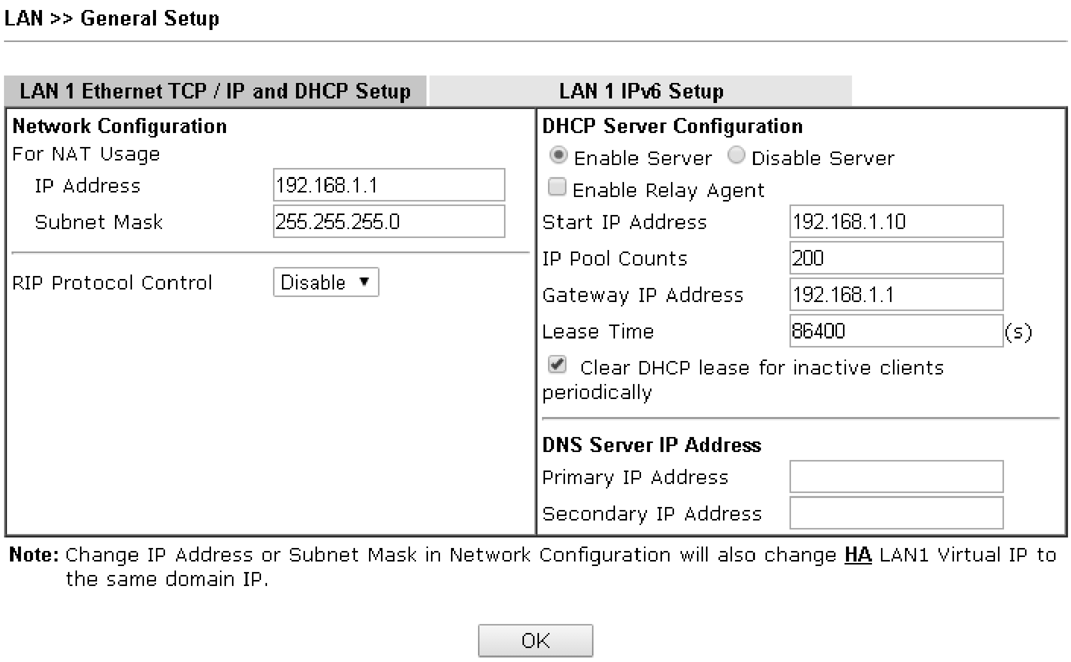
Item	Description
General Setup	Allow to configure settings for each subnet respectively. **Index -** Display all of the LAN items. **Status-** Basically, LAN1 status is enabled in default.

	LAN2 –LAN6 and IP Routed Subnet can be observed by checking the box of **Status**. **DHCP-** LAN1 is configured with DHCP in default. If required, please check the DHCP box for each LAN. **IP Address -** Display the IP address for each LAN item. Such information is set in default and you can not modify it. **Details Page -** Click it to access into the setting page. Each LAN will have different LAN configuration page. **Each LAN must be configured in different subnet.** **IPv6 -** Click it to access into the settings page of IPv6.
Advanced	DHCP packets can be processed by adding option number and data information when such function is enabled.  LAN >> General Setup DHCP Server Customized Status Customized List Enable Interface Option Type Data Enable: ☑ Interface: All □ LAN1 ☑ LAN2 □ LAN3 □ LAN4 □ LAN5 □ LAN6 □ LAN7 □ LAN8 □ DMZ □ IP Routed Subnet □ Next Server IP Address/SIAddr : Option Number: DataType: ● ASCII Character (EX :Option:18, Data:/path) ○ Hexadecimal Digit (EX: Option:18, Data:2f70617468) ○ Address List (EX :Option:44, Data:172.16.2.10,172.16.2.20...) Data: Add Update Delete Reset Note: 1. Configuring options 44, 46 or 66 here will overwrite the settings by telnet command "msubnet". 2. Configuring option 3 here will overwrite the setting in "LAN >> General Setup" Details Page's "Gateway IP Address" field. 3. Configuring option 15 here will overwrite the setting in "WAN >> Internet Access >> Static or Dynamic IP" Detail Page's "Domain Name" field. OK **Enable/Disable** – Enable/Disable the function of DHCP Option. Each DHCP option is composed by an option number with data. For example, Option number:100 Data: abcd When such function is enabled, the specified values for DHCP option will be seen in DHCP reply packets. **Interface** – Choose the interface for such option. **Next Server IP Address/SIAddr** – Type the IP address for the next server. Vigor router's DHCP server can redirect clients to a secondary server specified in such field. **Option Number** – Type a number for such function. **DataType** – Choose the type (ASCII or Hex or address list) for the data to be stored. **Data** – Type the content of the data to be processed by the function of DHCP option.
Inter-LAN Routing	Check the box to link two or more different subnets (LAN and LAN).

When you finish the configuration, please click **OK** to save and exit this page.

II-2-1-1 Details Page for LAN1 – Ethernet TCP/IP and DHCP Setup

There are two configuration pages for LAN1, Ethernet TCP/IP and DHCP Setup (based on IPv4) and IPv6 Setup. Click the tab for each type and refer to the following explanations for detailed information.



LAN >> General Setup

LAN 1 Ethernet TCP / IP and DHCP Setup | LAN 1 IPv6 Setup

Network Configuration

For NAT Usage

IP Address	192.168.1.1
Subnet Mask	255.255.255.0
RIP Protocol Control	Disable ▼

DHCP Server Configuration

● Enable Server ○ Disable Server

□ Enable Relay Agent

Start IP Address	192.168.1.10
IP Pool Counts	200
Gateway IP Address	192.168.1.1
Lease Time	86400 (s)

☑ Clear DHCP lease for inactive clients periodically

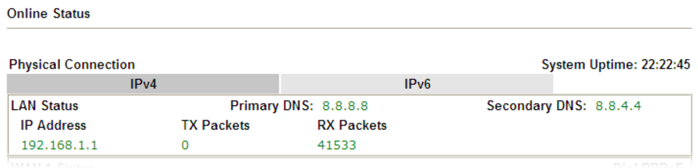
DNS Server IP Address

Primary IP Address	
Secondary IP Address	

Note: Change IP Address or Subnet Mask in Network Configuration will also change HA LAN1 Virtual IP to the same domain IP.

Available settings are explained as follows:

Item	Description
Network Configuration	**For NAT Usage,** **IP Address** - Type in private IP address for connecting to a local private network (Default: 192.168.1.1). **Subnet Mask -** Type in an address code that determines the size of the network. (Default: 255.255.255.0/ 24) **RIP Protocol Control,** **Disable -** deactivate the RIP protocol. It will lead to a stoppage of the exchange of routing information between routers. (Default) **Enable -** activate the RIP protocol.
DHCP Server Configuration	DHCP stands for Dynamic Host Configuration Protocol. The router by factory default acts a DHCP server for your network so it automatically dispatches related IP settings to any local user configured as a DHCP client. It is highly recommended that you leave the router enabled as a DHCP server if you do not have a DHCP server for your network. If you want to use another DHCP server in the network other than the Vigor Router's, you can let Relay Agent help you to redirect the DHCP request to the specified location. **Enable Server -** Let the router assign IP address to every host in the LAN. **Disable Server -** Let you manually assign IP address to every host in the LAN. **Enable Relay Agent -**Specify which subnet that DHCP server is located the relay agent should redirect the DHCP request

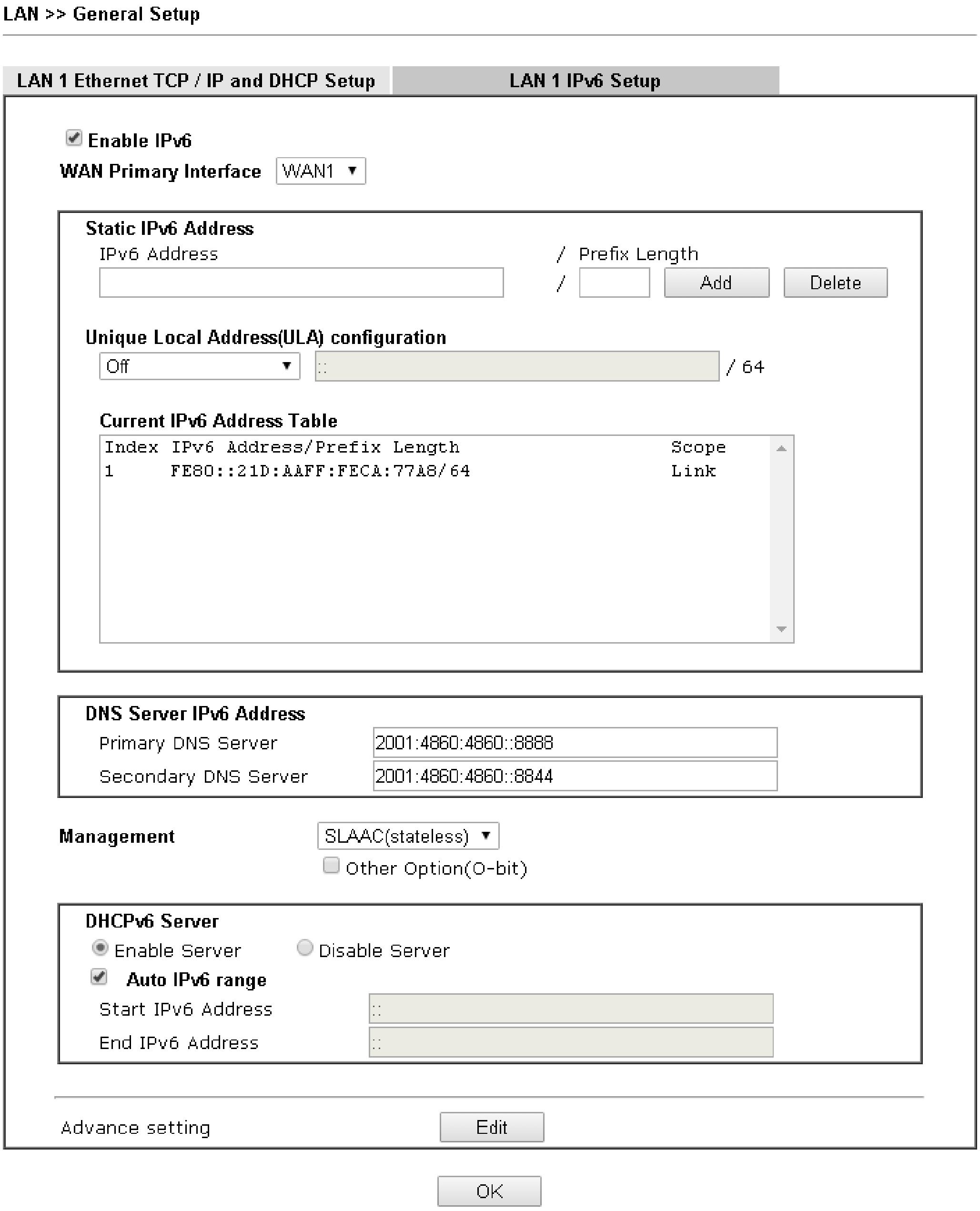
	to. ● **DHCP Server IP Address -** It is available when **Enable Relay Agent** is checked. Set the IP address of the DHCP server you are going to use so the Relay Agent can help to forward the DHCP request to the DHCP server. **Start IP Address -** Enter a value of the IP address pool for the DHCP server to start with when issuing IP addresses. If the 1st IP address of your router is 192.168.1.1, the starting IP address must be 192.168.1.2 or greater, but smaller than 192.168.1.254. **IP Pool Counts -** Enter the maximum number of PCs that you want the DHCP server to assign IP addresses to. The default is 50 and the maximum is 253. **Gateway IP Address -** Enter a value of the gateway IP address for the DHCP server. The value is usually as same as the 1st IP address of the router, which means the router is the default gateway. **Lease Time** - Enter the time to determine how long the IP address assigned by DHCP server can be used. **Clear DHCP lease for inactive clients periodically -** Whenever a DHCP client requests an IP address from the LAN DHCP server, the server will give out an IP to this client for a certain amount of time (e.g., 1 day). However, even if this client only uses the IP for say 5 minutes, the server still "reserves" 1 day for that client. Because a DHCP server only has a limited number of IPs to lease to its DHCP clients, soon enough all the IPs will be used out and then no one will be able to get any IPs from this server anymore. Therefore, this feature is used to get the IP back from inactive clients (i.e. doesn't use the IP but the server still reserves the IP for him).
DNS Server IP Address	DNS stands for Domain Name System. Every Internet host must have a unique IP address, also they may have a human-friendly, easy to remember name such as www.yahoo.com. The DNS server converts the user-friendly name into its equivalent IP address. **Primary IP Address -**You must specify a DNS server IP address here because your ISP should provide you with usually more than one DNS Server. If your ISP does not provide it, the router will automatically apply default DNS Server IP address: 194.109.6.66 to this field. **Secondary IP Address -** You can specify secondary DNS server IP address here because your ISP often provides you more than one DNS Server. If your ISP does not provide it, the router will automatically apply default secondary DNS Server IP address: 194.98.0.1 to this field. The default DNS Server IP address can be found via Online Status:  Online Status Physical Connection System Uptime: 22:22:45 IPv4 IPv6 LAN Status Primary DNS: 8.8.8.8 Secondary DNS: 8.8.4.4 IP Address TX Packets RX Packets 192.168.1.1 0 41533 If both the Primary IP and Secondary IP Address fields are left empty, the router will assign its own IP address to local users as a DNS proxy server and maintain a DNS cache. If the IP address of a domain name is already in the DNS

	cache, the router will resolve the domain name immediately. Otherwise, the router forwards the DNS query packet to the external DNS server by establishing a WAN (e.g. DSL/Cable) connection.

When you finish the configuration, please click **OK** to save and exit this page.

II-2-1-2 Details Page for LAN1~ LAN4 – IPv6 Setup

There are two configuration pages for each LAN port, Ethernet TCP/IP and DHCP Setup (based on IPv4) and IPv6 Setup. Click the tab for each type and refer to the following explanations for detailed information. Below shows the settings page for IPv6.



LAN >> General Setup

LAN 1 Ethernet TCP / IP and DHCP Setup | LAN 1 IPv6 Setup

☑ Enable IPv6

WAN Primary Interface: WAN1

Static IPv6 Address

IPv6 Address / Prefix Length

Add | Delete

Unique Local Address(ULA) configuration

Off :: / 64

Current IPv6 Address Table

```
Index  IPv6 Address/Prefix Length          Scope
1      FE80::21D:AAFF:FECA:77A8/64         Link
```

DNS Server IPv6 Address

Primary DNS Server: 2001:4860:4860::8888

Secondary DNS Server: 2001:4860:4860::8844

Management: SLAAC(stateless)

□ Other Option(O-bit)

DHCPv6 Server

● Enable Server ○ Disable Server

☑ Auto IPv6 range

Start IPv6 Address: ::

End IPv6 Address: ::

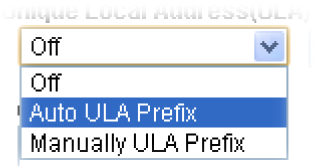
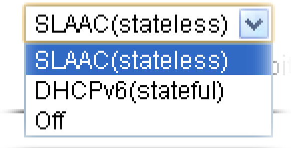
Advance setting: Edit

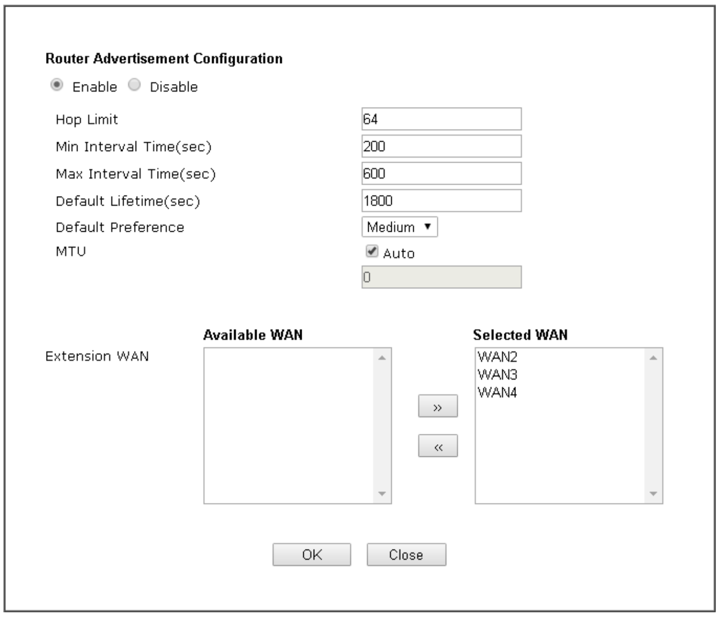
OK

It provides 2 daemons for LAN side IPv6 address configuration. One is **SLAAC**(stateless) and the other is **DHCPv6 Server** (Stateful).

Available settings are explained as follows:

Item	Description

Enable IPv6	Check the box to enable the configuration of LAN 1 IPv6 Setup.
WAN Primary Interface	Use the drop down list to specify a WAN interface for IPv6.
Static IPv6 Address	**IPv6 Address** –Type static IPv6 address for LAN. **Prefix Length -** Type the fixed value for prefix length. **Add -** Click it to add a new entry. **Delete -** Click it to remove an existed entry.
Unique Local Address (ULA) configuration	Such feature is used for the host without assigned IPv6 address to obtain IPv6 address automatically or have an IPv6 address specified manually via ULA configuration. It is convenient for communication among different subnets.  **Auto ULA Prefix -** The system will generate the required IPv6 address. **Manually ULA Prefix -** A user can type the ULA IPv6 address manually.
DNS Server IPv6 Address	**Primary DNS Sever** – Type the IPv6 address for Primary DNS server. **Secondary DNS Server** –Type another IPv6 address for DNS server if required.
Management	Host under LAN can be assigned IP address from Vigor router via the following method.  SLAAC(stateless) SLAAC(stateless) DHCPv6(stateful) Off ● **SLAAC(stateless)** – The IP address (with Prefix) of the host shall be formed according to RA transmitted by Vigor router. ● **DHCPv6(stateful)** - The IP address of the host shall be assigned after communicating with DHCPv6 server for answering the request of client. ● **Off -** No IP address is assigned. **Other Option (O-bit)** – Check this box to enable the O-bit for obtaining additional information (e.g., DNS) from DHCPv6.
DHCPv6 Server Configuration	**Enable Server** –Click it to enable DHCPv6 server. DHCPv6 Server could assign IPv6 address to PC according to the Start/End IPv6 address configuration. **Disable Server** –Click it to disable DHCPv6 server. **Start IPv6 Address** / **End IPv6 Address** –Type the start and end address for IPv6 server.
Advance setting	More options are offered under the **Advance setting**. Click **Edit** to open the pop-up window.



Router Advertisement Configuration

● Enable ○ Disable

Hop Limit 64

Min Interval Time(sec) 200

Max Interval Time(sec) 600

Default Lifetime(sec) 1800

Default Preference Medium ▾

MTU ☑ Auto 0

Extension WAN

Available WAN

Selected WAN: WAN2, WAN3, WAN4

Router Advertisement Configuration – Click **Enable** to enable router advertisement server. The router advertisement daemon 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.

Disable – Click it to disable router advertisement server.

Hop Limt - The value is required for the device behind the router when IPv6 is in use.

Min/Max Interval Time (sec) - It defines the interval (between minimum time and maximum time) for sending RA (Router Advertisement) packets.

Default Lifetime (sec) -Within such period of time, Vigor2925 can be treated as the default gateway.

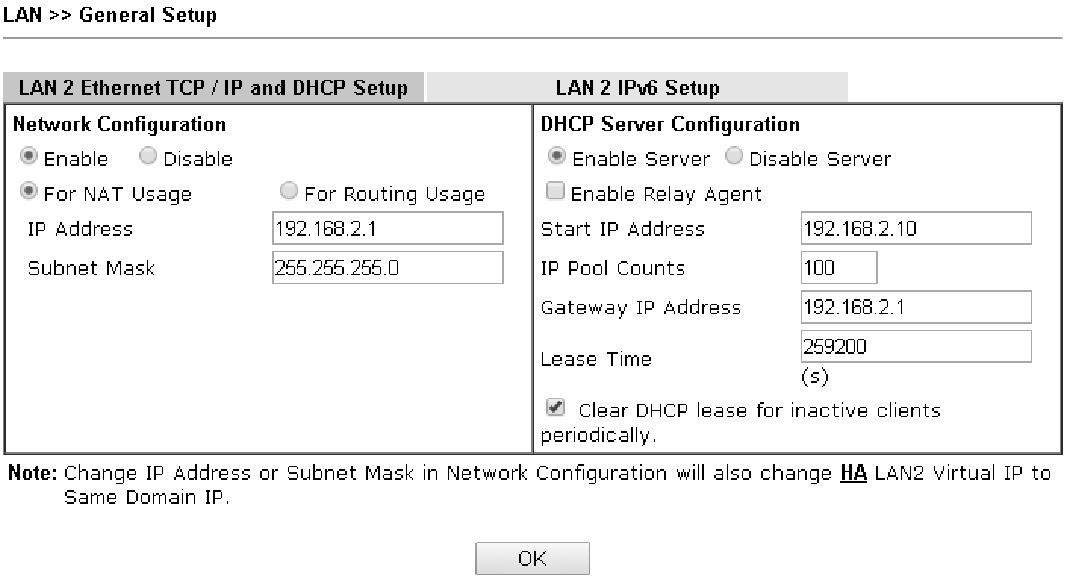
Default Preference - It determines the priority of the host behind the router when RA (Router Advertisement) packets are transmitted.

MTU - It means Max Transmit Unit for packet. If **Auto** is selected, the router will determine the MTU value for LAN.

Extension WAN - Not only the IP address can be obtained from the primary WAN, but also the prefix for IPv6 LAN IP address can be assigned by extension WAN specified here.

When you finish the configuration, please click **OK** to save and exit this page.

II-2-1-3 Details Page for LAN2 ~ LAN8



LAN >> General Setup

LAN 2 Ethernet TCP / IP and DHCP Setup | LAN 2 IPv6 Setup

Network Configuration		DHCP Server Configuration	
● Enable ○ Disable		● Enable Server ○ Disable Server	
● For NAT Usage	○ For Routing Usage	□ Enable Relay Agent	
IP Address	192.168.2.1	Start IP Address	192.168.2.10
Subnet Mask	255.255.255.0	IP Pool Counts	100
		Gateway IP Address	192.168.2.1
		Lease Time	259200 (s)
		☑ Clear DHCP lease for inactive clients periodically.	

Note: Change IP Address or Subnet Mask in Network Configuration will also change HA LAN2 Virtual IP to Same Domain IP.

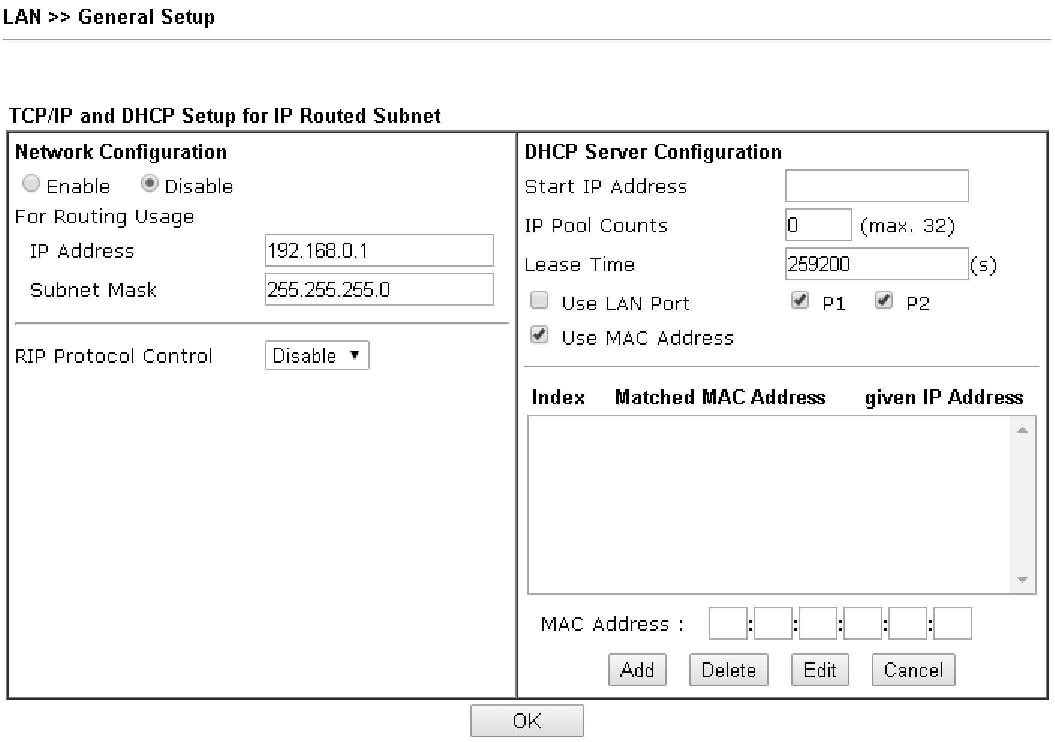
Available settings are explained as follows:

Item	Description
Network Configuration	**Enable/Disable -** Click **Enable** to enable such configuration; click **Disable** to disable such configuration. **For NAT Usage -** Click this radio button to invoke NAT function. **For Routing Usage -** Click this radio button to invoke this function. **IP Address -** Type in private IP address for connecting to a local private network (Default: 192.168.1.1). **Subnet Mask -** Type in an address code that determines the size of the network. (Default: 255.255.255.0/ 24)
DHCP Server Configuration	DHCP stands for Dynamic Host Configuration Protocol. The router by factory default acts a DHCP server for your network so it automatically dispatch related IP settings to any local user configured as a DHCP client. It is highly recommended that you leave the router enabled as a DHCP server if you do not have a DHCP server for your network. **Enable Server -** Let the router assign IP address to every host in the LAN. **Disable Server -** Let you manually assign IP address to every host in the LAN. **Enable Relay Agent** - If you want to use another DHCP server in the network other than the Vigor Router's, you can let Relay Agent help you to redirect the DHCP request to the specified location. **DHCP Server IP Address -** It is available when **Enable Relay Agent** is checked. Set the IP address of the DHCP server you are going to use so the Relay Agent can help to forward the DHCP request to the DHCP server. **Start IP Address -** Enter a value of the IP address pool for the DHCP server to start with when issuing IP addresses. If the 1st IP address of your router is 192.168.1.1, the starting IP address must be 192.168.1.2 or greater, but smaller than

	192.168.1.254. **IP Pool Counts -** Enter the maximum number of PCs that you want the DHCP server to assign IP addresses to. The default is 50 and the maximum is 253. **Gateway IP Address -** Enter a value of the gateway IP address for the DHCP server. The value is usually as same as the 1st IP address of the router, which means the router is the default gateway. **Lease Time** - Enter the time to determine how long the IP address assigned by DHCP server can be used. **Clear DHCP lease for inactive clients periodically -** Whenever a DHCP client requests an IP address from the LAN DHCP server, the server will give out an IP to this client for a certain amount of time (e.g., 1 day). However, even if this client only uses the IP for say 5 minutes, the server still "reserves" 1 day for that client. Because a DHCP server only has a limited number of IPs to lease to its DHCP clients, soon enough all the IPs will be used out and then no one will be able to get any IPs from this server anymore. Therefore, this feature is used to get the IP back from inactive clients (i.e. doesn't use the IP but the server still reserves the IP for him.

When you finish the configuration, please click **OK** to save and exit this page.

II-2-1-4 Details Page for IP Routed Subnet



LAN >> General Setup

TCP/IP and DHCP Setup for IP Routed Subnet

Network Configuration

○ Enable ● Disable

For Routing Usage

IP Address 192.168.0.1

Subnet Mask 255.255.255.0

RIP Protocol Control Disable ▼

DHCP Server Configuration

Start IP Address

IP Pool Counts 0 (max. 32)

Lease Time 259200 (s)

□ Use LAN Port ☑ P1 ☑ P2

☑ Use MAC Address

Index	Matched MAC Address	given IP Address

MAC Address : : : : : :

Available settings are explained as follows:

Item	Description
Network Configuration	**Enable/Disable -** Click **Enable** to enable such configuration; click **Disable** to disable such configuration. **For Routing Usage,** **IP Address -** Type in private IP address for connecting to a local private network (Default: 192.168.1.1).

	Subnet Mask - Type in an address code that determines the size of the network. (Default: 255.255.255.0/ 24) **RIP Protocol Control,** **Disable -** deactivate the RIP protocol. It will lead to a stoppage of the exchange of routing information between routers. (Default) **Enable -** activate the RIP protocol.
DHCP Server Configuration	DHCP stands for Dynamic Host Configuration Protocol. The router by factory default acts a DHCP server for your network so it automatically dispatch related IP settings to any local user configured as a DHCP client. It is highly recommended that you leave the router enabled as a DHCP server if you do not have a DHCP server for your network. If you want to use another DHCP server in the network other than the Vigor Router's, you can let Relay Agent help you to redirect the DHCP request to the specified location. **Start IP Address -** Enter a value of the IP address pool for the DHCP server to start with when issuing IP addresses. If the 1st IP address of your router is 192.168.1.1, the starting IP address must be 192.168.1.2 or greater, but smaller than 192.168.1.254. **IP Pool Counts -** Enter the maximum number of PCs that you want the DHCP server to assign IP addresses to. The default is 50 and the maximum is 253. **Lease Time** - Enter the time to determine how long the IP address assigned by DHCP server can be used. **Use LAN Port -** Specify an IP for IP Route Subnet. If it is enabled, DHCP server will assign IP address automatically for the clients coming from P1. Please check the box of P1. **Use MAC Address -** Check such box to specify MAC address. **MAC Address:** Enter the MAC Address of the host one by one and click **Add** to create a list of hosts which can be assigned, deleted or edited from above pool. Set a list of MAC Address for 2nd DHCP server will help router to assign the correct IP address of the correct subnet to the correct host. So those hosts in 2nd subnet won't get an IP address belonging to 1st subnet. **Add –** Type the MAC address in the boxes and click this button to add. **Delete** – Click it to delete the selected MAC address. **Edit** – Click it to edit the selected MAC address. **Cancel** – Click it to cancel the job of adding, deleting and editing.

When you finish the configuration, please click **OK** to save and exit this page.

II-2-2 VLAN

With the 6-port Gigabit switch on the LAN side, Vigor router provides extremely high speed connectivity for the highest speed local data transfer of any server or local PCs. On the Wireless-equipped models (e.g., Vigor2952n), each of the wireless SSIDs can also be grouped within one of the VLANs.

Tagged VLAN

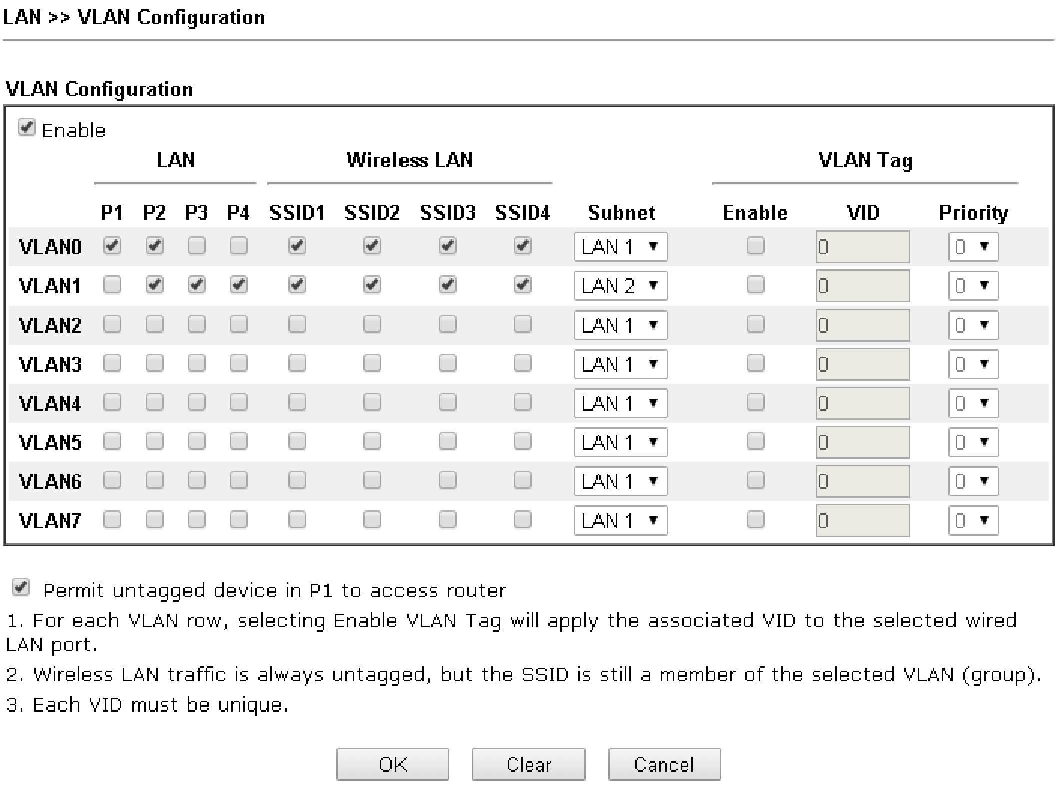
The tagged VLANs (802.1q) can mark data with a VLAN identifier. This identifier can be carried through an onward Ethernet switch to specific ports. The specific VLAN clients can also pick up this identifier as it is just passed to the LAN. You can set the priorities for LAN-side QoS. You can assign each of VLANs to each of the different IP subnets that the router may also be operating, to provide even more isolation. The said functionality is **tag-based multi-subnet**.

Port-Based VLAN

Relative to tag-based VLAN which groups clients with an identifier, port-based VLAN uses physical ports (P1 ~ P4) to separate the clients into different VLAN group.

Virtual LAN function provides you a very convenient way to manage hosts by grouping them based on the physical port. The multi-subnet can let a small businesses have much better isolation for multi-occupancy applications. Go to **LAN** page and select **VLAN**. The following page will appear. Click **Enable** to invoke VLAN function.

Below is an example page in Vigor2952n:



LAN >> VLAN Configuration

VLAN Configuration

☑ Enable

	LAN				Wireless LAN					VLAN Tag		
	P1	P2	P3	P4	SSID1	SSID2	SSID3	SSID4	Subnet	Enable	VID	Priority
VLAN0	☑	☑	□	□	☑	☑	☑	☑	LAN 1 ▼	□	0	0 ▼
VLAN1	□	☑	☑	☑	☑	☑	☑	☑	LAN 2 ▼	□	0	0 ▼
VLAN2	□	□	□	□	□	□	□	□	LAN 1 ▼	□	0	0 ▼
VLAN3	□	□	□	□	□	□	□	□	LAN 1 ▼	□	0	0 ▼
VLAN4	□	□	□	□	□	□	□	□	LAN 1 ▼	□	0	0 ▼
VLAN5	□	□	□	□	□	□	□	□	LAN 1 ▼	□	0	0 ▼
VLAN6	□	□	□	□	□	□	□	□	LAN 1 ▼	□	0	0 ▼
VLAN7	□	□	□	□	□	□	□	□	LAN 1 ▼	□	0	0 ▼

☑ Permit untagged device in P1 to access router

1. For each VLAN row, selecting Enable VLAN Tag will apply the associated VID to the selected wired LAN port.

2. Wireless LAN traffic is always untagged, but the SSID is still a member of the selected VLAN (group).

3. Each VID must be unique.

Info	Settings in this page only applied to LAN port but not WAN port.

Available settings are explained as follows:

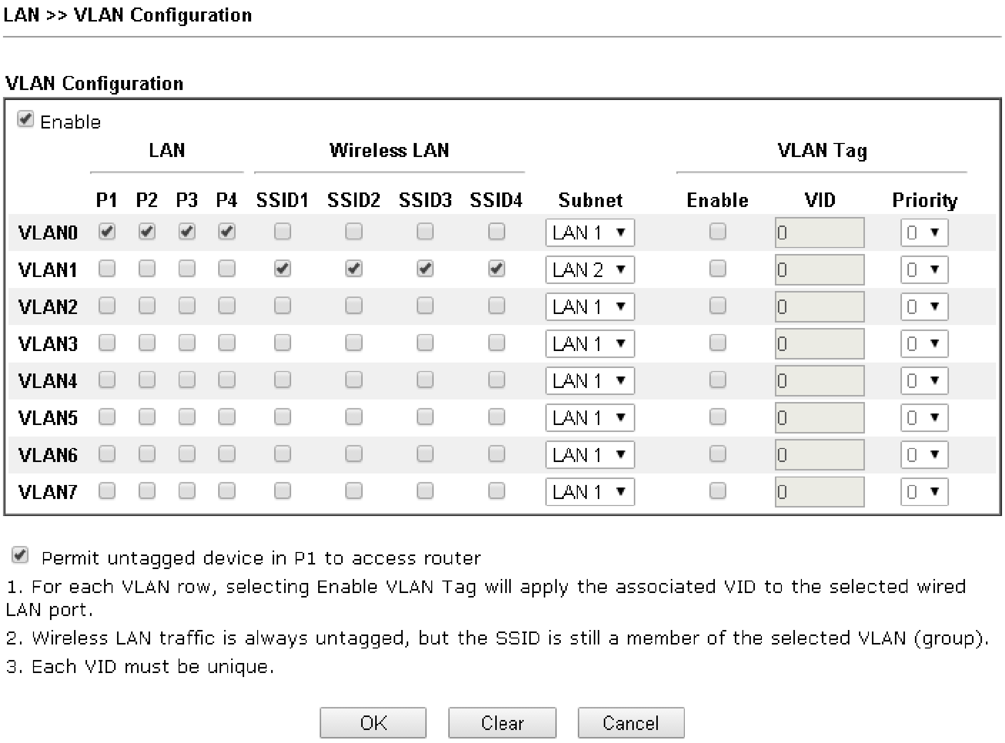
Item	Description
Enable	Click it to enable VLAN configuration.
LAN	**P1 - P4** – Check the LAN port(s) to group them under the selected VLAN.
Wireless LAN	**SSID1 - SSID4 -** Check the SSID boxes to group them under the selected VLAN.
Subnet	Choose one of them to make the selected VLAN mapping to the specified subnet only. For example, LAN1 is specified for VLAN0. It means that PCs grouped under VLAN0 can get the IP address(es) that specified by the subnet.
VLAN Tag	**Enable** – Check the box to enable the function of VLAN with tag. The router will add specific VLAN number to all packets on the LAN while sending them out. Please type the tag value and specify the priority for the packets sending by LAN. **VID** – Type the value as the VLAN ID number. The range is form 0 to 4095. **Priority** – Type the packet priority number for such VLAN. The range is from 0 to 7.
Permit untagged device in P1 to access router	It can help users to communicate with the router still even though configuring wrong VLAN tag setting. It is recommended to enable the management port (LAN 1) to ensure the data transmission is unimpeded.

Info Leave one VLAN untagged at least to prevent from not connecting to Vigor router due to unexpected error.

Vigor2952 Series features a hugely flexible VLAN system. In its simplest form, each of the Gigabit LAN ports can be isolated from each other, for example to feed different companies or departments but keeping their local traffic completely separated.

Configuring port-based VLAN for wireless and non-wireless clients

1. All the wire network clients are categorized to group VLAN0 in subnet 192.168.1.0/24 (LAN1).
2. All the wireless network clients are categorized to group VLAN1 in subnet 192.168.2.0/24 (LAN2).
3. Open **LAN>>VLAN Configuration**. Check the boxes according to the statement in step 1 and Step 2.



LAN >> VLAN Configuration

VLAN Configuration

☑ Enable

	LAN				Wireless LAN					VLAN Tag		
	P1	P2	P3	P4	SSID1	SSID2	SSID3	SSID4	Subnet	Enable	VID	Priority
VLAN0	☑	☑	☑	☑	□	□	□	□	LAN 1	□	0	0
VLAN1	□	□	□	□	☑	☑	☑	☑	LAN 2	□	0	0
VLAN2	□	□	□	□	□	□	□	□	LAN 1	□	0	0
VLAN3	□	□	□	□	□	□	□	□	LAN 1	□	0	0
VLAN4	□	□	□	□	□	□	□	□	LAN 1	□	0	0
VLAN5	□	□	□	□	□	□	□	□	LAN 1	□	0	0
VLAN6	□	□	□	□	□	□	□	□	LAN 1	□	0	0
VLAN7	□	□	□	□	□	□	□	□	LAN 1	□	0	0

☑ Permit untagged device in P1 to access router

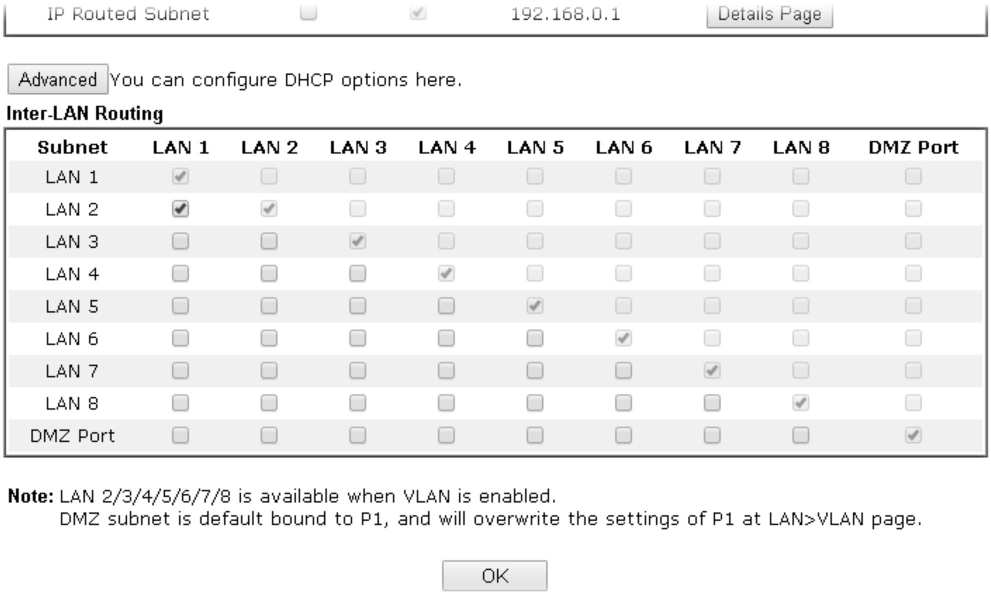
1. For each VLAN row, selecting Enable VLAN Tag will apply the associated VID to the selected wired LAN port.

2. Wireless LAN traffic is always untagged, but the SSID is still a member of the selected VLAN (group).

3. Each VID must be unique.

4. Click **OK**.

5. Open **LAN>>General Setup**. If you want to let the clients in both groups communicate with each other, simply activate **Inter-LAN Routing** by checking the box between **LAN1** and **LAN2.**



IP Routed Subnet □ ☑ 192.168.0.1 Details Page

Advanced You can configure DHCP options here.

Inter-LAN Routing

Subnet	LAN 1	LAN 2	LAN 3	LAN 4	LAN 5	LAN 6	LAN 7	LAN 8	DMZ Port
LAN 1	☑	□	□	□	□	□	□	□	□
LAN 2	☑	☑	□	□	□	□	□	□	□
LAN 3	□	□	☑	□	□	□	□	□	□
LAN 4	□	□	□	☑	□	□	□	□	□
LAN 5	□	□	□	□	☑	□	□	□	□
LAN 6	□	□	□	□	□	☑	□	□	□
LAN 7	□	□	□	□	□	□	☑	□	□
LAN 8	□	□	□	□	□	□	□	☑	□
DMZ Port	□	□	□	□	□	□	□	□	☑

Note: LAN 2/3/4/5/6/7/8 is available when VLAN is enabled.
DMZ subnet is default bound to P1, and will overwrite the settings of P1 at LAN>VLAN page.

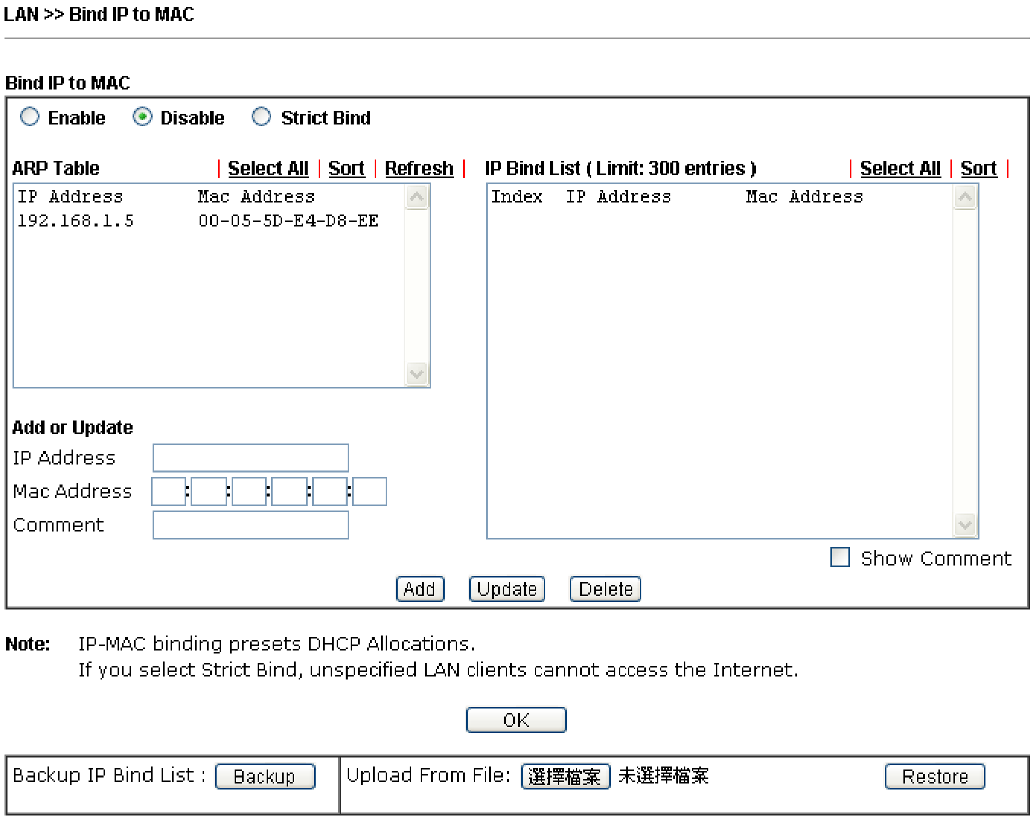
Vigor router supports up to six private IP subnets on LAN. Each can be independent (isolated) or common (able to communicate with each other). This is ideal for departmental or multi-occupancy applications.

Info	As for the VLAN applications, refer to "Appendix I: VLAN Application on Vigor Router" for more detailed information.

II-2-3 Bind IP to MAC

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

Click **LAN** and click **Bind IP to MAC** to open the setup page.



LAN >> Bind IP to MAC

Bind IP to MAC

○ Enable ● Disable ○ Strict Bind

ARP Table | Select All | Sort | Refresh |

```
IP Address       Mac Address
192.168.1.5      00-05-5D-E4-D8-EE
```

IP Bind List (Limit: 300 entries) | Select All | Sort |

```
Index  IP Address        Mac Address
```

Add or Update

IP Address

Mac Address

Comment

□ Show Comment

Add Update Delete

Note: IP-MAC binding presets DHCP Allocations.
If you select Strict Bind, unspecified LAN clients cannot access the Internet.

OK

Backup IP Bind List : Backup | Upload From File: 選擇檔案 未選擇檔案 Restore

Available settings are explained as follows:

Item	Description
Enable	Click this radio button to invoke this function. However, IP/MAC which is not listed in IP Bind List also can connect to Internet.
Disable	Click this radio button to disable this function. All the settings on this page will be invalid.
Strict Bind	Click this radio button to block the connection of the IP/MAC which is not listed in IP Bind List.
ARP Table	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 **Add** below.
Select All	Click this link to select all the items in the ARP table.
Sort	Reorder the table based on the IP address.
Refresh	Refresh the ARP table listed below to obtain the newest ARP table information.

Add or Update	**IP Address** – Type the IP address that will be used for the specified MAC address. **Mac Address** – Type the MAC address that is used to bind with the assigned IP address. **Comment** – Type a brief description for the entry. **Show Comment** – Check this box to display the comment on IP Bind List box.
IP Bind List	It displays a list for the IP bind to MAC information.
Add	It allows you to add the one you choose from the ARP table or the IP/MAC address typed in **Add and Edit** to the table of **IP Bind List**.
Update	It allows you to edit and modify the selected IP address and MAC address that you create before.
Delete	You can remove any item listed in **IP Bind List**. Simply click and select the one, and click **Delete**. The selected item will be removed from the **IP Bind List**.
Backup	Store the configuration for Bind IP to MAC as a file.
Restore	Restore the previously stored configuration file and apply to such page.

Info

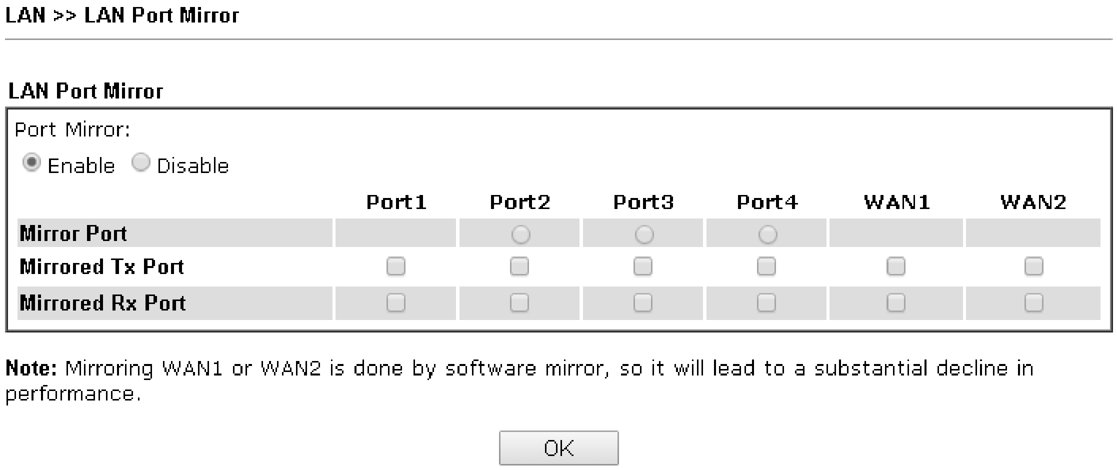
Before you select Strict Bind, you have to bind one set of IP/MAC address for one PC. If not, no one of the PCs can access into Internet. And the web user interface of the router might not be accessed.

When you finish the configuration, click **OK** to save the settings.

II-2-4 LAN Port Mirror

LAN port mirror can be applied for the users in LAN. Generally speaking, this function copies traffic from one or more specific ports to a target port. This mechanism helps manager track the network errors or abnormal packets transmission without interrupting the flow of data access the network. By the way, user can apply this function to monitor all traffics which user needs to check.

There are some advantages supported in this feature. First, it is more economical without other detecting equipments to be set up. Second, it may be able to view traffic on one or more ports within a VLAN at the same time. Third, it can transfer all data traffics to be mirrored to one analyzer connecting to the mirroring port. Last, it is more convenient and asy to configure in user's interface.



LAN >> LAN Port Mirror

LAN Port Mirror

Port Mirror:

● Enable ○ Disable

	Port1	Port2	Port3	Port4	WAN1	WAN2
Mirror Port		○	○	○		
Mirrored Tx Port	□	□	□	□	□	□
Mirrored Rx Port	□	□	□	□	□	□

Note: Mirroring WAN1 or WAN2 is done by software mirror, so it will lead to a substantial decline in performance.

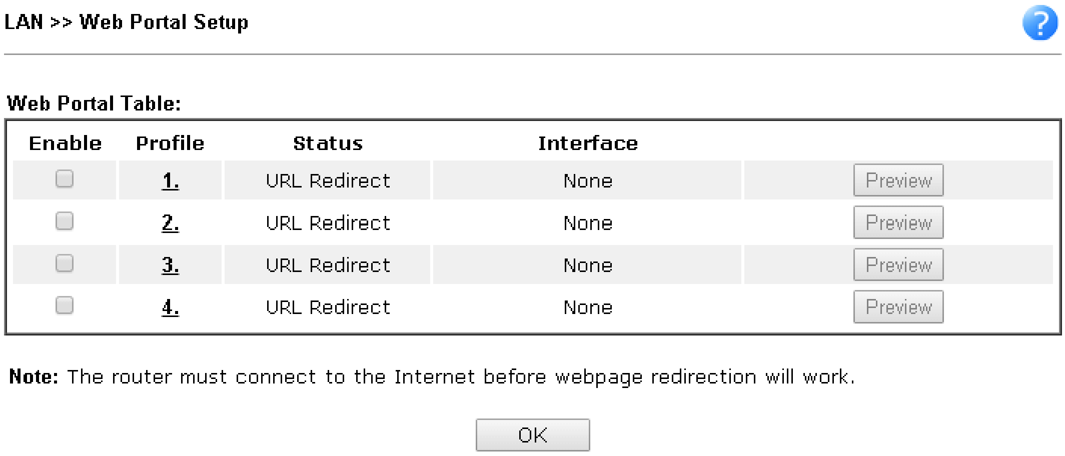
Available settings are explained as follows:

Item	Description
Port Mirror	Check **Enable** to activate this function. Or, check **Disable** to close this function.
Mirror Port	Select a port to view traffic sent from mirrored ports.
Mirrored Tx Port	Select which ports are necessary to be mirrored for transmitting the packets.
Mirrored Rx Port	Select which ports are necessary to be mirrored for receiving the packets.

After finishing all the settings here, please click **OK** to save the configuration.

II-2-5 Web Portal Setup

This page allows you to configure a profile with specified URL for accessing into or display a message when a wireless/LAN user connects to Internet through this router. No matter what the purpose of the wireless/LAN client is, he/she will be forced into the URL configured here while trying to access into the Internet or the desired web page through this router. That is, a company which wants to have an advertisement for its products to users can specify the URL in this page to reach its goal.


LAN >> Web Portal Setup

Web Portal Table:

Enable	Profile	Status	Interface	
□	1.	URL Redirect	None	Preview
□	2.	URL Redirect	None	Preview
□	3.	URL Redirect	None	Preview
□	4.	URL Redirect	None	Preview

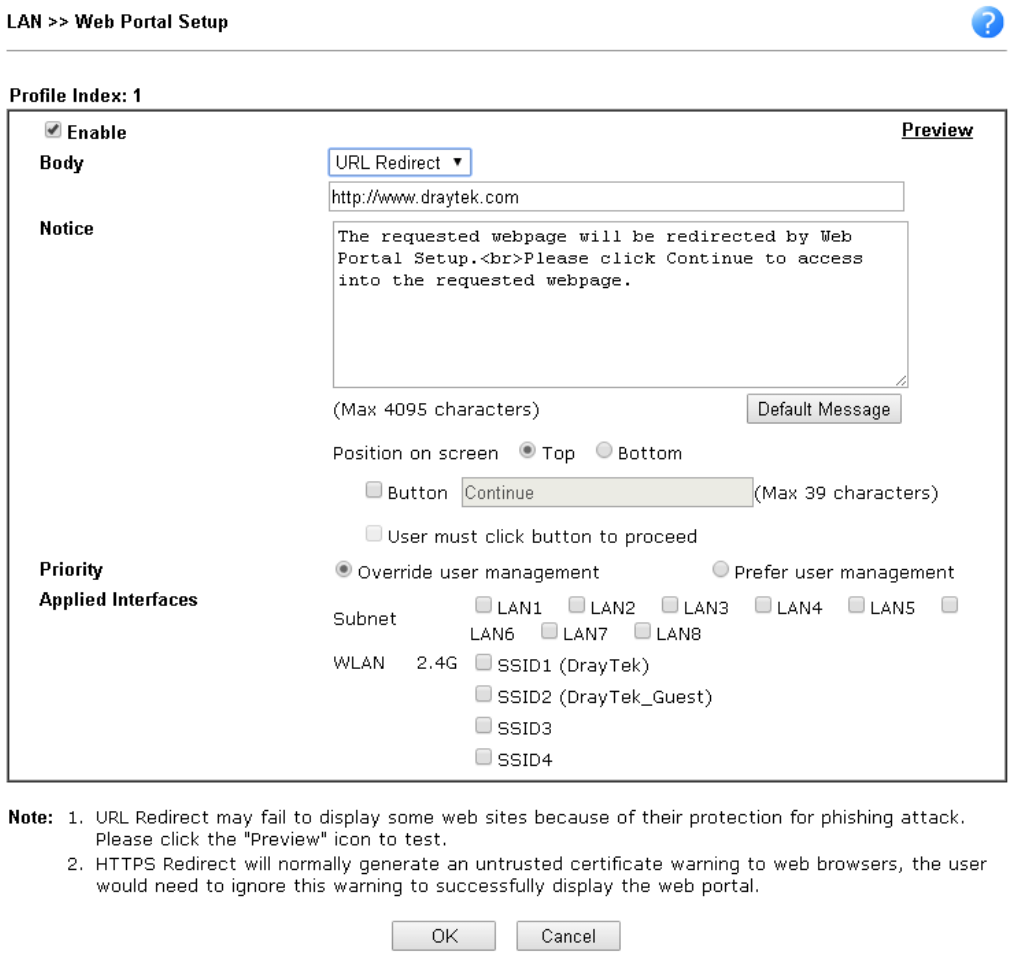
Note: The router must connect to the Internet before webpage redirection will work.

Each item is explained as follows:

Item	Description
Profile	Display the number link which allows you to configure the profile.
Status	Display the content (Disable, URL Redirect or Message) of the profile.
Interface	Display the applied interface of the profile.
Preview	Open a preview window according to the configured settings.

There are four profiles which allow you to configure mode, priority, and applied interface in response to different conditions or requirements.

To configure the profile, click any index number link to open the following page.



LAN >> Web Portal Setup

Profile Index: 1

☑ Enable

Preview

Body: URL Redirect ▼

http://www.draytek.com

Notice:

```
The requested webpage will be redirected by Web
Portal Setup.<br>Please click Continue to access
into the requested webpage.
```

(Max 4095 characters) Default Message

Position on screen ● Top ○ Bottom

□ Button Continue (Max 39 characters)

□ User must click button to proceed

Priority: ● Override user management ○ Prefer user management

Applied Interfaces:

Subnet □ LAN1 □ LAN2 □ LAN3 □ LAN4 □ LAN5 □ LAN6 □ LAN7 □ LAN8

WLAN 2.4G □ SSID1 (DrayTek)
□ SSID2 (DrayTek_Guest)
□ SSID3
□ SSID4

Note: 1. URL Redirect may fail to display some web sites because of their protection for phishing attack. Please click the "Preview" icon to test.

2. HTTPS Redirect will normally generate an untrusted certificate warning to web browsers, the user would need to ignore this warning to successfully display the web portal.

OK Cancel

Available settings are explained as follows:

Item	Description
Enable	Check the box to enable this function.
Body	Two types can be specified for web portal setup. **URL Redirect -** Any user who wants to access into Internet through this router will be redirected to the URL specified here first. It is a useful method for the purpose of advertisement. For example, force the wireless user(s) in hotel to access into the web page that the hotel wants the user(s) to visit. **Message -** Type words or sentences here. The message will be displayed on the screen for several seconds when the wireless users access into the web page through the router. ● **Default Message** – Click it to restore the default content.

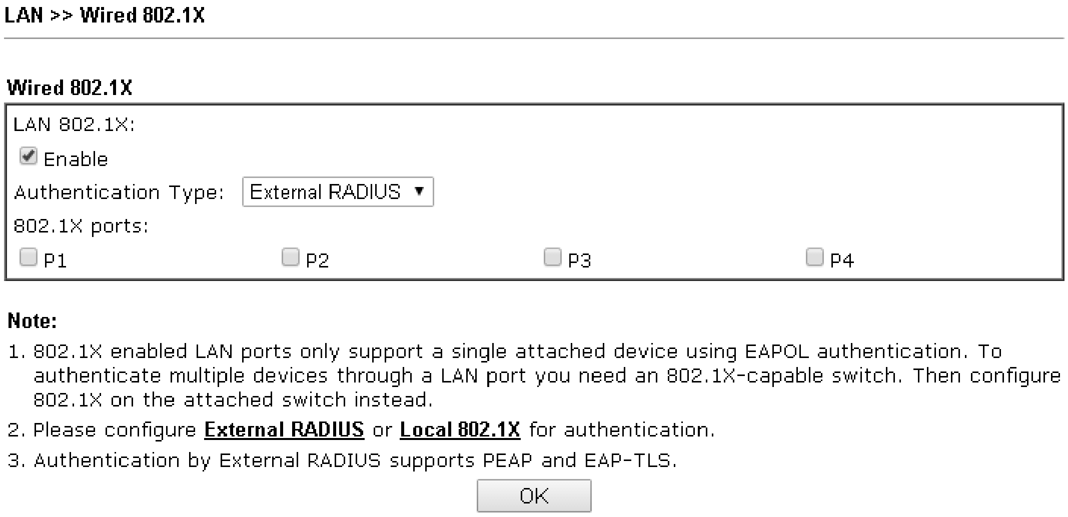
Notice	Content given in this field will be displayed on the screen when a web page is redirected by web portal mechanism. **Position on Screen** – The content of notice and the defined button can be shown upside (**Top**) or downside (**Bottom**) the text defined for message body. ● **Button** – Define the word (default word is "Continue") shown on the button. ● **User must click button to proceed** – Check the box to force the user click the button (with the word defined on Button box) to proceed the operation.
Priority	If User Management (refer to VII-3 User Management) mode and such web portal profile are configured and enabled for filtering users, you have to determine which one shall have the highest priority. **Override user management** – Web portal profile will be used to filter users first. **Prefer user management** – User Management profile will be used to filter users first.
Applied Interfaces	Check the box(es) representing different interfaces to be applied by such profile. The advantage is that each SSID (1/2/3/4) for wireless network can be applied with different web portal separately.

After finishing all the settings here, please click **OK** to save the configuration.

II-2-6 Wired 802.1x

IEEE 802.1x is an IEEE Standard for port-based Network Access Control (PNAC). It is part of the IEEE 802.1 group of networking protocols. It provides an authentication mechanism for the device that is attached to a LAN or WLAN.

Wired 802.1x provides authentication for one network device on each LAN port. The RADIUS Server settings must be configured before enabling 802.1x because the EAP (Extensible Authentication Protocol) Authenticator relies on the RADIUS Server in its authentication process. Each LAN port with Wired 802.1x configured will only forward 802.1x packets and block all other packets until the authentication has successfully completed.



LAN >> Wired 802.1X

Wired 802.1X

LAN 802.1X:

☑ Enable

Authentication Type: External RADIUS ▼

802.1X ports:

□ P1 □ P2 □ P3 □ P4

Note:

1. 802.1X enabled LAN ports only support a single attached device using EAPOL authentication. To authenticate multiple devices through a LAN port you need an 802.1X-capable switch. Then configure 802.1X on the attached switch instead.
2. Please configure **External RADIUS** or **Local 802.1X** for authentication.
3. Authentication by External RADIUS supports PEAP and EAP-TLS.

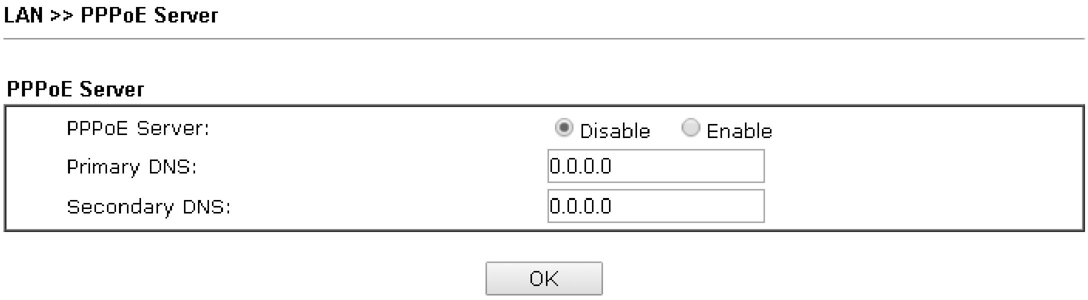
Available settings are explained as follows:

Item	Description
Enable	Check the box to enable LAN 802.1x function.
Authentication Type	Use the drop down list to choose which server (External RADIUS or Local 802.1x) will be used for authenticating LAN user.
802.1x ports	After enabling the function, simply specify the LAN port(s) to apply such function.

After finishing all the settings here, please click **OK** to save the configuration.

II-2-7 PPPoE Server

LAN users can access into Internet through built-in PPPoE server on Vigor router. PPPoE server is a mechanism which can authenticate LAN users (configured in **User Management>>User Profile**) and prevent ARP attack completely.



LAN >> PPPoE Server

PPPoE Server

PPPoE Server: ● Disable ○ Enable

Primary DNS: 0.0.0.0

Secondary DNS: 0.0.0.0

Available settings are explained as follows:

Item	Description
PPPoE Server	Enable – Activate the built-in PPPoE Server. Disable – Disable the built-in PPPoE Server.
Primary DNS / Secondary DNS	Type the IP address(es) of Primary /Secondary DNS server for PPPoE Client(s) in LAN.

II-3 NAT

Usually, the router serves as an NAT (Network Address Translation) router. NAT is a mechanism that one or more private IP addresses can be mapped into a single public one. Public IP address is usually assigned by your ISP, for which you may get charged. Private IP addresses are recognized only among internal hosts.

When the outgoing packets destined to some public server on the Internet reach the NAT router, the router will change its source address into the public IP address of the router, select the available public port, and then forward it. At the same time, the router shall list an entry in a table to memorize this address/port-mapping relationship. When the public server response, the incoming traffic, of course, is destined to the router's public IP address and the router will do the inversion based on its table. Therefore, the internal host can communicate with external host smoothly.

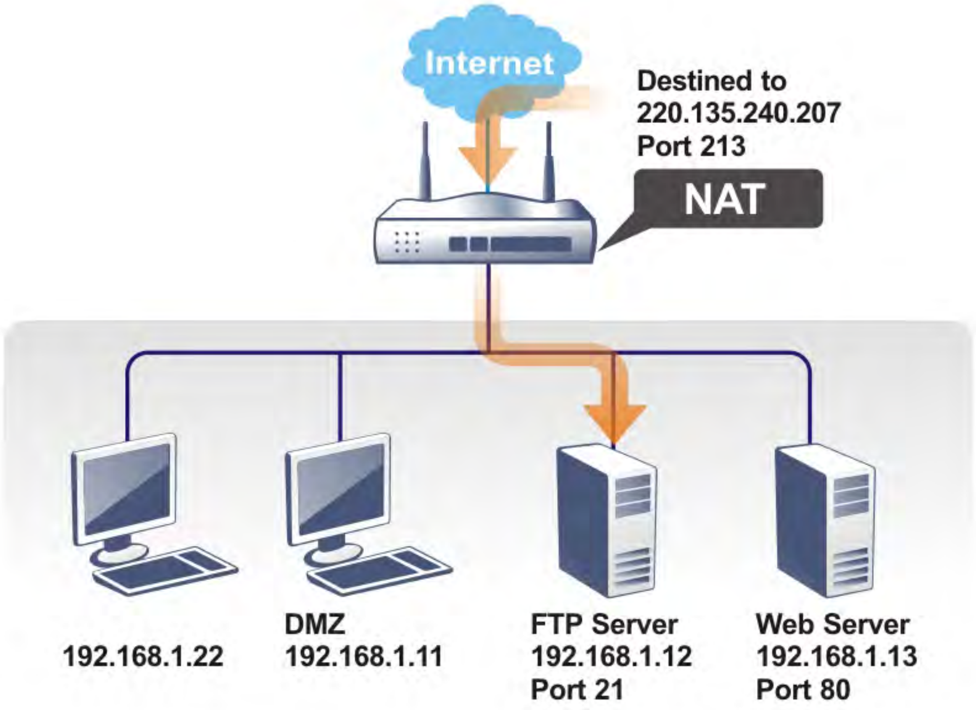
The benefit of the NAT includes:

- **Save cost on applying public IP address and apply efficient usage of IP address.** NAT allows the internal IP addresses of local hosts to be translated into one public IP address, thus you can have only one IP address on behalf of the entire internal hosts.
- **Enhance security of the internal network by obscuring the IP address.** There are many attacks aiming victims based on the IP address. Since the attacker cannot be aware of any private IP addresses, the NAT function can protect the internal network.

Info	On NAT page, you will see the private IP address defined in RFC-1918. Usually we use the 192.168.1.0/24 subnet for the router. As stated before, the NAT facility can map one or more IP addresses and/or service ports into different specified services. In other words, the NAT function can be achieved by using port mapping methods.

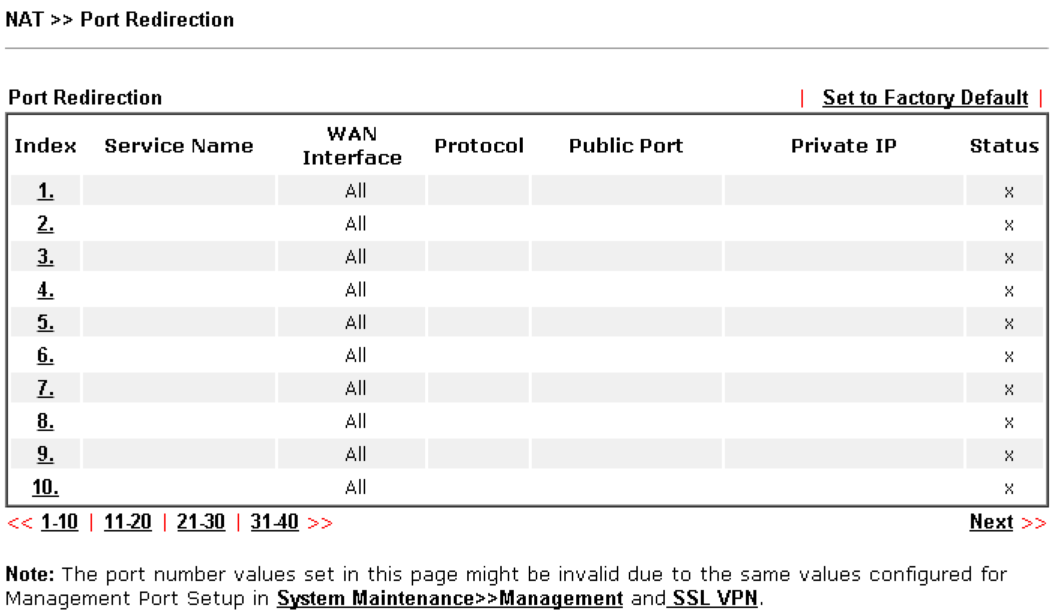
II-3-1 Port Redirection

Port Redirection is usually set up for server related service inside the local network (LAN), such as web servers, FTP servers, E-mail servers etc. Most of the case, you need a public IP address for each server and this public IP address/domain name are recognized by all users. Since the server is actually located inside the LAN, the network well protected by NAT of the router, and identified by its private IP address/port, the goal of Port Redirection function is to forward all access request with public IP address from external users to the mapping private IP address/port of the server.



The port redirection can only apply to incoming traffic.

To use this function, please go to **NAT** page and choose **Port Redirection** web page. The **Port Redirection Table** provides 40 port-mapping entries for the internal hosts.



NAT >> Port Redirection

Port Redirection | Set to Factory Default |

Index	Service Name	WAN Interface	Protocol	Public Port	Private IP	Status
1.		All				x
2.		All				x
3.		All				x
4.		All				x
5.		All				x
6.		All				x
7.		All				x
8.		All				x
9.		All				x
10.		All				x

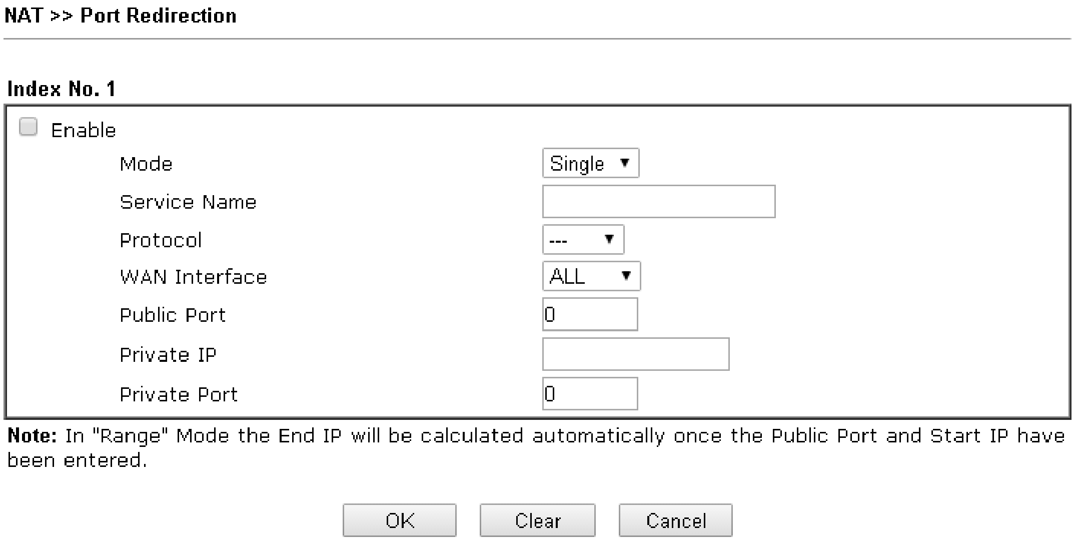
<< 1-10 | 11-20 | 21-30 | 31-40 >> Next >>

Note: The port number values set in this page might be invalid due to the same values configured for Management Port Setup in System Maintenance>>Management and SSL VPN.

Each item is explained as follows:

Item	Description
Index	Display the number of the profile.
Service Name	Display the description of the specific network service.
WAN Interface	Display the WAN IP address used by the profile.
Protocol	Display the transport layer protocol (TCP or UDP).
Public Port	Display the port number which will be redirected to the specified **Private IP and Port** of the internal host.
Private IP	Display the IP address of the internal host providing the service.
Status	Display if the profile is enabled (v) or not (x).

Press any number under Index to access into next page for configuring port redirection.



NAT >> Port Redirection

Index No. 1

☐ Enable

Mode	Single ▼
Service Name	
Protocol	--- ▼
WAN Interface	ALL ▼
Public Port	0
Private IP	
Private Port	0

Note: In "Range" Mode the End IP will be calculated automatically once the Public Port and Start IP have been entered.

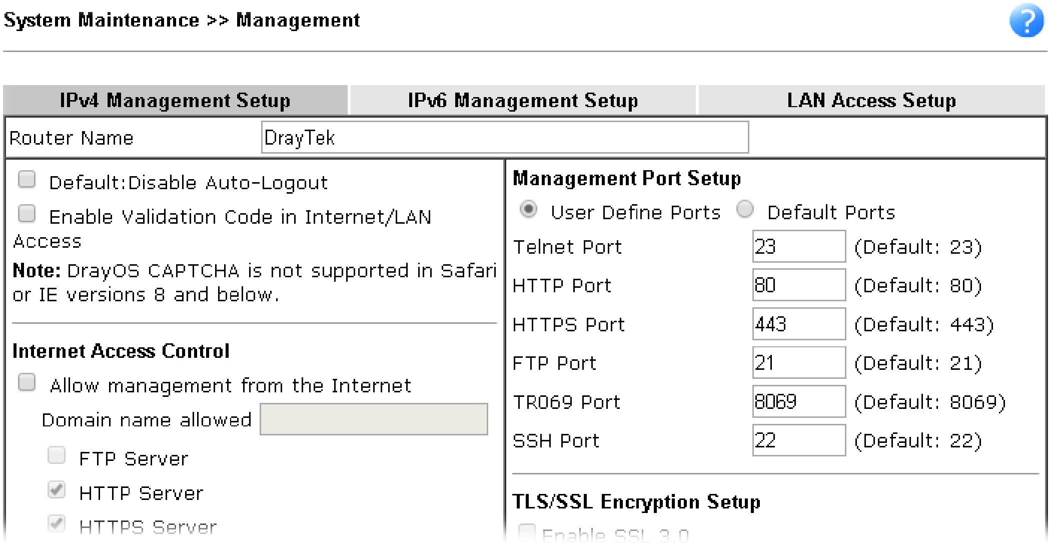
Available settings are explained as follows:

Item	Description
Enable	Check this box to enable such port redirection setting.
Mode	Two options (Single and Range) are provided here for you to choose. To set a range for the specific service, select **Range**. In Range mode, if the public port (start port and end port) and the starting IP of private IP had been entered, the system will calculate and display the ending IP of private IP automatically.
Service Name	Enter the description of the specific network service.
Protocol	Select the transport layer protocol (TCP or UDP).
WAN Interface	Select the WAN interface for port redirection.
WAN IP	Based on the WAN interface selected, the available IP address will be displayed in this field. Select the WAN IP used for port redirection.
Public Port	Specify which port can be redirected to the specified **Private IP and Port** of the internal host. If you choose **Range** as the port redirection mode, you will see two boxes on this field. Type the required number on the first box (as the starting port) and the second box (as the ending port).
Private IP	Specify the private IP address of the internal host providing the service. If you choose **Range** as the port redirection mode, you will see two boxes on this field. Type a complete IP address in the first box (as the starting point). The second one will be assigned automatically later.
Private Port	Specify the private port number of the service offered by the internal host.

After finishing all the settings here, please click **OK** to save the configuration.

Note that the router has its own built-in services (servers) such as Telnet, HTTP and FTP etc. Since the common port numbers of these services (servers) are all the same, you may need to reset the router in order to avoid confliction.

For example, the built-in web user interface in the router is with default port 80, which may conflict with the web server in the local network, http://192.168.1.13:80. Therefore, you need to **change the router's http port to any one other than the default port 80** to avoid conflict, such as 8080. This can be set in the **System Maintenance >>Management Setup**. You then will access the admin screen of by suffixing the IP address with 8080, e.g., http://192.168.1.1:8080 instead of port 80.



System Maintenance >> Management

IPv4 Management Setup | IPv6 Management Setup | LAN Access Setup

Router Name: DrayTek

□ Default:Disable Auto-Logout

□ Enable Validation Code in Internet/LAN Access

Note: DrayOS CAPTCHA is not supported in Safari or IE versions 8 and below.

Internet Access Control

□ Allow management from the Internet

Domain name allowed

□ FTP Server

☑ HTTP Server

☑ HTTPS Server

Management Port Setup

● User Define Ports ○ Default Ports

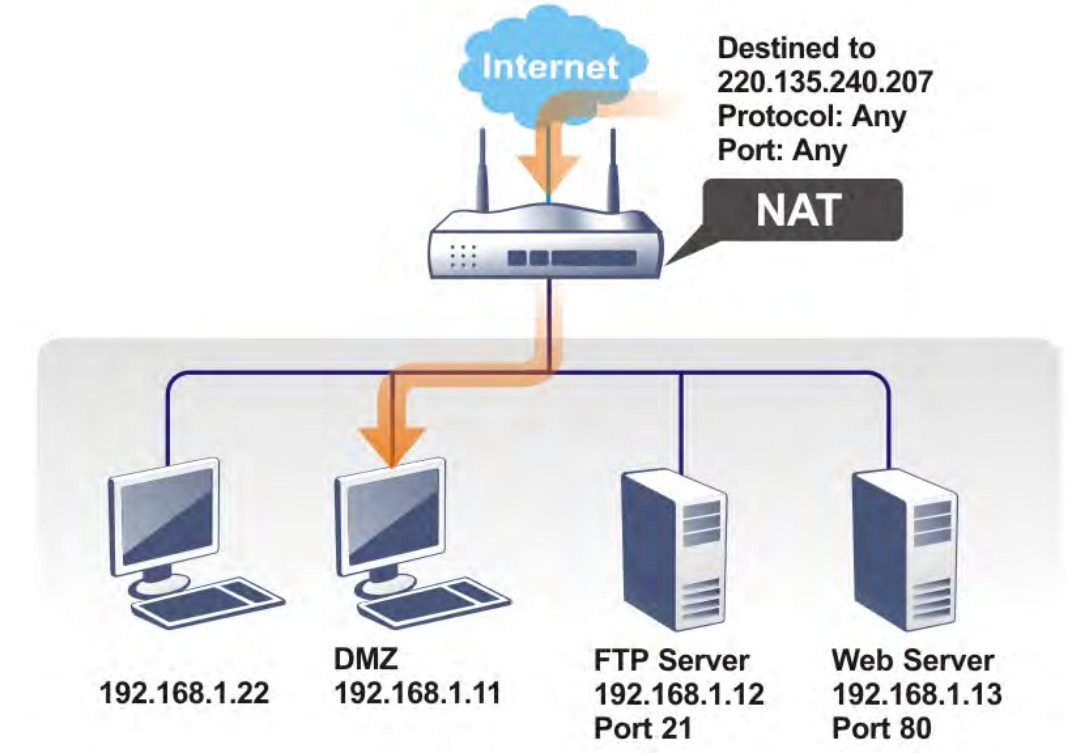
Telnet Port	23	(Default: 23)
HTTP Port	80	(Default: 80)
HTTPS Port	443	(Default: 443)
FTP Port	21	(Default: 21)
TR069 Port	8069	(Default: 8069)
SSH Port	22	(Default: 22)

TLS/SSL Encryption Setup

□ Enable SSL 3.0

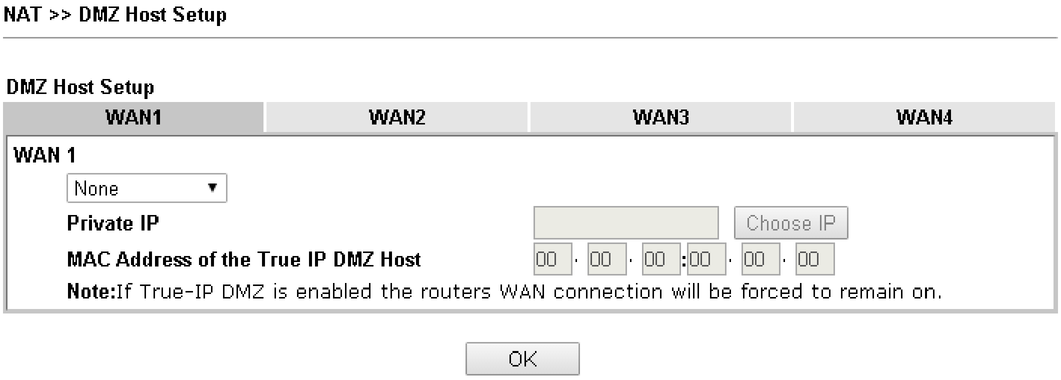
II-3-2 DMZ Host

As mentioned above, **Port Redirection** can redirect incoming TCP/UDP or other traffic on particular ports to the specific private IP address/port of host in the LAN. However, other IP protocols, for example Protocols 50 (ESP) and 51 (AH), do not travel on a fixed port. Vigor router provides a facility **DMZ Host** that maps ALL unsolicited data on any protocol to a single host in the LAN. Regular web surfing and other such Internet activities from other clients will continue to work without inappropriate interruption. **DMZ Host** allows a defined internal user to be totally exposed to the Internet, which usually helps some special applications such as Netmeeting or Internet Games etc.



The security properties of NAT are somewhat bypassed if you set up DMZ host. We suggest you to add additional filter rules or a secondary firewall.

Click **DMZ Host** to open the following page. You can set different DMZ host for each WAN interface. Click the WAN tab to switch into the configuration page for that WAN.



NAT >> DMZ Host Setup

DMZ Host Setup

WAN 1

None ▼

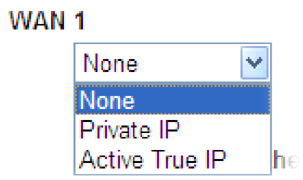
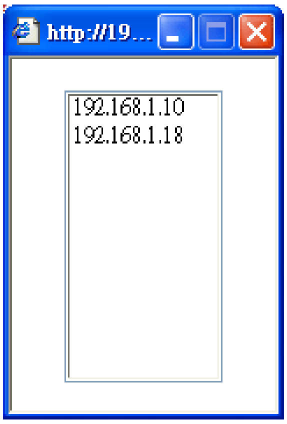
Private IP [Choose IP]

MAC Address of the True IP DMZ Host 00 : 00 : 00 : 00 : 00 : 00

Note: If True-IP DMZ is enabled the routers WAN connection will be forced to remain on.

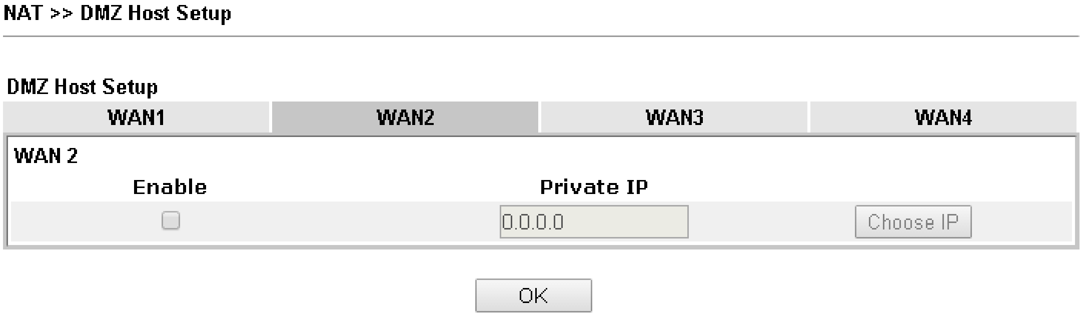
Available settings are explained as follows:

Item	Description

WAN 1 	Choose **Private IP** or **Active True IP** first. **Active True IP** selection is available for WAN1 only.
Private IP	Enter the private IP address of the DMZ host, or click Choose PC to select one.
Choose IP	Click this button and then a window will automatically pop up, as depicted below. The window consists of a list of private IP addresses of all hosts in your LAN network. Select one private IP address in the list to be the DMZ host.  192.168.1.10 192.168.1.18 When you have selected one private IP from the above dialog, the IP address will be shown on the screen. Click **OK** to save the setting.

DMZ Host for WAN2, WAN3, or WAN4 is slightly different with WAN1. **Active True IP** selection is available for WAN1 only.

See the following figure.



NAT >> DMZ Host Setup

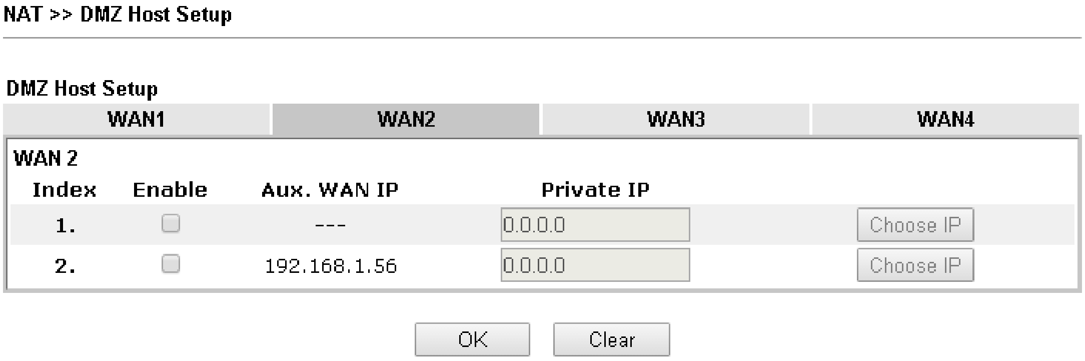
DMZ Host Setup

WAN1	WAN2	WAN3	WAN4

WAN 2

Enable	Private IP	
□	0.0.0.0	Choose IP

If you previously have set up **WAN Alias** for **PPPoE** or **Static or Dynamic IP** mode in WAN2 interface**,** you will find them in **Aux. WAN IP** for your selection.



NAT >> DMZ Host Setup

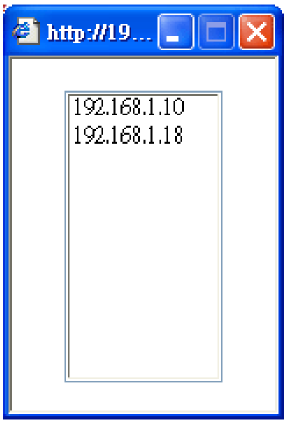
DMZ Host Setup

WAN1	WAN2	WAN3	WAN4

WAN 2

Index	Enable	Aux. WAN IP	Private IP	
1.	□	---	0.0.0.0	Choose IP
2.	□	192.168.1.56	0.0.0.0	Choose IP

Available settings are explained as follows:

Item	Description
Enable	Check to enable the DMZ Host function.
Private IP	Enter the private IP address of the DMZ host, or click Choose PC to select one.
Choose IP	Click this button and then a window will automatically pop up, as depicted below. The window consists of a list of private IP addresses of all hosts in your LAN network. Select one private IP address in the list to be the DMZ host.  http://19... 192.168.1.10 192.168.1.18 When you have selected one private IP from the above dialog, the IP address will be shown on the screen. Click **OK** to save the setting.

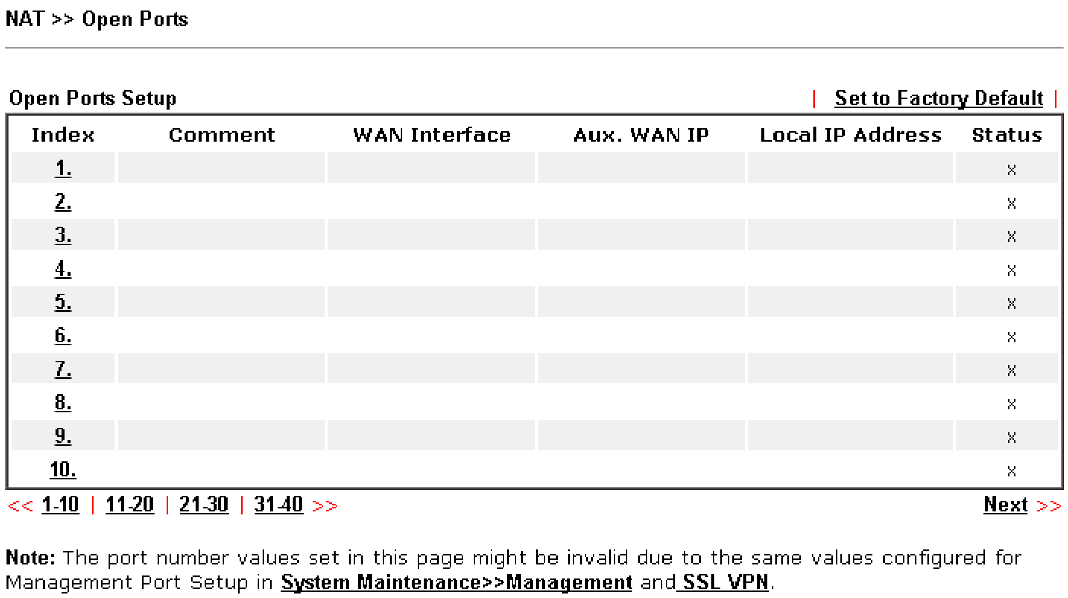
After finishing all the settings here, please click **OK** to save the configuration.

II-3-3 Open Ports

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

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

Click **Open Ports** to open the following page:



NAT >> Open Ports

Open Ports Setup | Set to Factory Default |

Index	Comment	WAN Interface	Aux. WAN IP	Local IP Address	Status
1.					x
2.					x
3.					x
4.					x
5.					x
6.					x
7.					x
8.					x
9.					x
10.					x

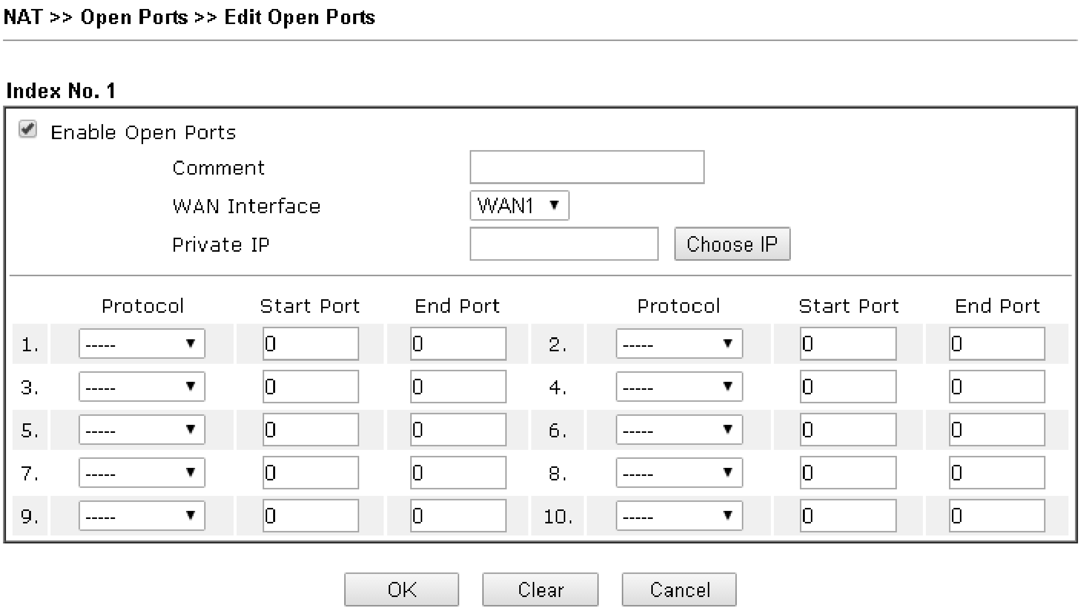
<< 1-10 | 11-20 | 21-30 | 31-40 >> Next >>

Note: The port number values set in this page might be invalid due to the same values configured for Management Port Setup in System Maintenance>>Management and SSL VPN.

Available settings are explained as follows:

Item	Description
Index	Indicate the relative number for the particular entry that you want to offer service in a local host. You should click the appropriate index number to edit or clear the corresponding entry.
Comment	Specify the name for the defined network service.
WAN Interface	Display the WAN interface used by such index.
Aux. WAN IP	Display the IP alias setting used by such index. If no IP alias setting exists, such field will not appear.
Local IP Address	Display the private IP address of the local host offering the service.
Status	Display the state for the corresponding entry. X or V is to represent the **Inactive** or **Active** state.

To add or edit port settings, click one index number on the page. The index entry setup page will pop up. In each index entry, you can specify **10** port ranges for diverse services.



NAT >> Open Ports >> Edit Open Ports

Index No. 1

☑ Enable Open Ports

Comment

WAN Interface: WAN1 ▼

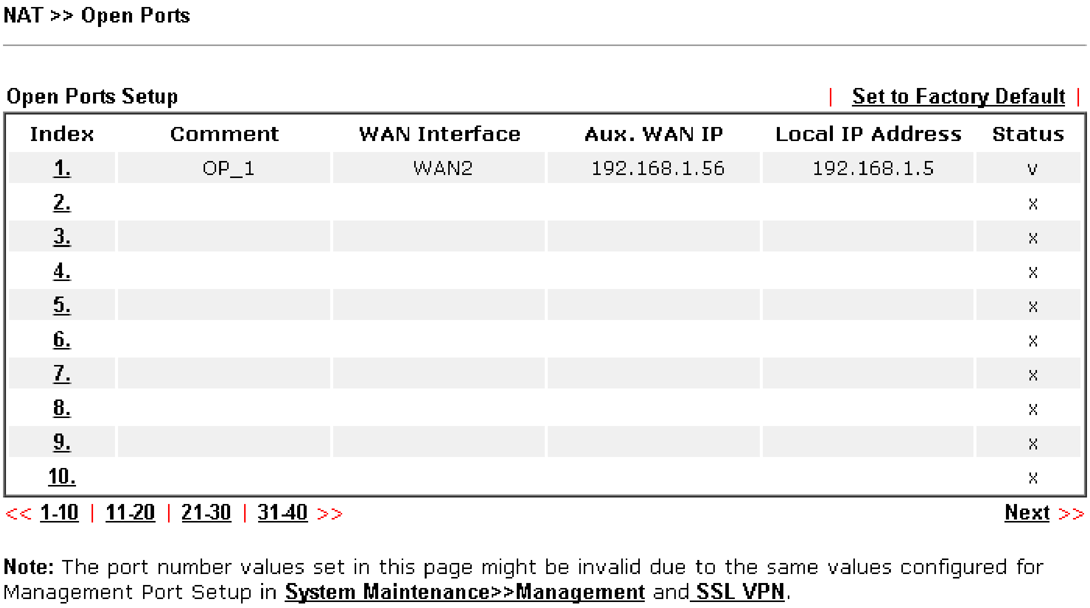
Private IP

	Protocol	Start Port	End Port		Protocol	Start Port	End Port
1.	----- ▼	0	0	2.	----- ▼	0	0
3.	----- ▼	0	0	4.	----- ▼	0	0
5.	----- ▼	0	0	6.	----- ▼	0	0
7.	----- ▼	0	0	8.	----- ▼	0	0
9.	----- ▼	0	0	10.	----- ▼	0	0

Available settings are explained as follows:

Item	Description
Enable Open Ports	Check to enable this entry.
Comment	Make a name for the defined network application/service.
WAN Interface	Specify the WAN interface that will be used for this entry.
WAN IP	Specify the WAN IP address that will be used for this entry. This setting is available when WAN IP Alias is configured.
Private IP	Enter the private IP address of the local host or click **Choose PC** to select one. **Choose IP -** Click this button and, subsequently, a window having a list of private IP addresses of local hosts will automatically pop up. Select the appropriate IP address of the local host in the list.
Protocol	Specify the transport layer protocol. It could be **TCP**, **UDP**, or **-----** (none) for selection.
Start Port	Specify the starting port number of the service offered by the local host.
End Port	Specify the ending port number of the service offered by the local host.

After finishing all the settings here, please click **OK** to save the configuration.



NAT >> Open Ports

Open Ports Setup | Set to Factory Default |

Index	Comment	WAN Interface	Aux. WAN IP	Local IP Address	Status
1.	OP_1	WAN2	192.168.1.56	192.168.1.5	v
2.					x
3.					x
4.					x
5.					x
6.					x
7.					x
8.					x
9.					x
10.					x

<< 1-10 | 11-20 | 21-30 | 31-40 >> Next >>

Note: The port number values set in this page might be invalid due to the same values configured for Management Port Setup in **System Maintenance>>Management** and **SSL VPN**.

II-3-4 Port Triggering

Port Triggering is a variation of open ports function.

The key difference between "open port" and "port triggering" is:

- Once the OK button is clicked and the configuration has taken effect, "open port" keeps the ports opened forever.
- Once the OK button is clicked and the configuration has taken effect, "port triggering" will only attempt to open the ports once the triggering conditions are met.
- The duration that these ports are opened depends on the type of protocol used. The "default" durations are shown below and these duration values can be modified via telnet commands.

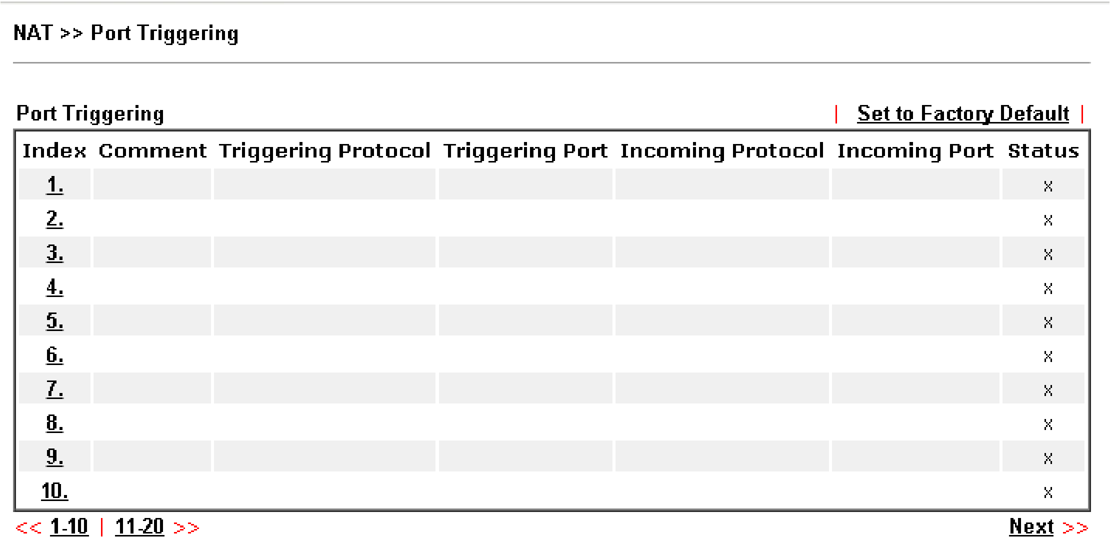
  TCP: 86400 sec.

  UDP: 180 sec.

  IGMP: 10 sec.

  TCP WWW: 60 sec.

  TCP SYN: 60 sec.



NAT >> Port Triggering

Port Triggering | Set to Factory Default |

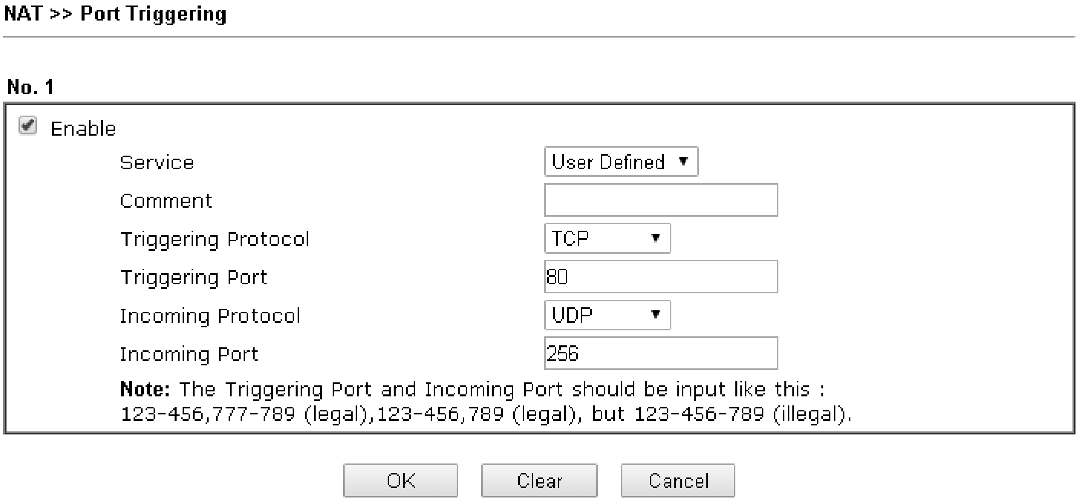
Index	Comment	Triggering Protocol	Triggering Port	Incoming Protocol	Incoming Port	Status
1.						x
2.						x
3.						x
4.						x
5.						x
6.						x
7.						x
8.						x
9.						x
10.						x

<< 1-10 | 11-20 >> Next >>

Available settings are explained as follows:

Item	Description
Comment	Display the text which memorizes the application of this rule.
Triggering Protocol	Display the protocol of the triggering packets.
Triggering Port	Display the port of the triggering packets.
Incoming Protocol	Display the protocol for the incoming data of such triggering profile.
Incoming Port	Display the port for the incoming data of such triggering profile.
Status	Display if the rule is active or de-active.

Click the index number link to open the configuration page.



NAT >> Port Triggering

No. 1

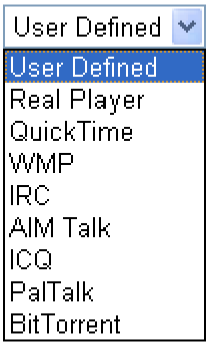
☑ Enable

Service	User Defined ▼
Comment	
Triggering Protocol	TCP ▼
Triggering Port	80
Incoming Protocol	UDP ▼
Incoming Port	256

Note: The Triggering Port and Incoming Port should be input like this : 123-456,777-789 (legal),123-456,789 (legal), but 123-456-789 (illegal).

Available settings are explained as follows:

Item	Description
Enable	Check to enable this entry.

Service	Choose the **predefined** service to apply for such trigger profile.  User Defined User Defined Real Player QuickTime WMP IRC AIM Talk ICQ PalTalk BitTorrent
Comment	Type the text to memorize the application of this rule.
Triggering Protocol	Select the protocol (TCP, UDP or TCP/UDP) for such triggering profile.
Triggering Port	Type the port or port range for such triggering profile.
Incoming Protocol	When the triggering packets received, it is expected the incoming packets will use the selected protocol. Select the protocol (TCP, UDP or TCP/UDP) for the incoming data of such triggering profile.
Incoming Port	Type the port or port range for the incoming packets.

After finishing all the settings here, please click **OK** to save the configuration.

II-4 Applications

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 three accounts from three 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, www.no-ip.com, www.dtdns.com, www.changeip.com, www.dynamic- nameserver.com.** You should visit their websites to register your own domain name for the router.

LAN DNS / DNS Forwarding

The LAN DNS lets the network administrators host servers with privacy and security. When the network administrators of your office set up FTP, Mail or Web server inside LAN, you can specify specific private IP address (es) to correspondent servers. Thus, even the remote PC is adopting public DNS as the DNS server, the LAN DNS resolution on Vigor2952 Series will respond the specified private IP address.

Schedule

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

RADIUS/TACACS+

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.

LDAP /Active Directory Setup

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.

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.

Wake on LAN

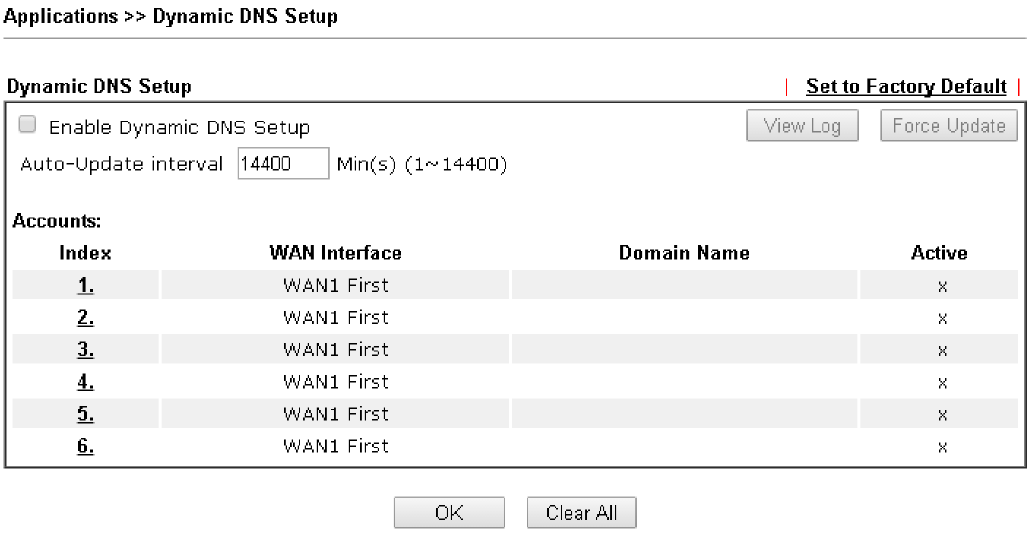
A PC client on LAN can be woken up by the router it connects. When a user wants to wake up a specified PC through the router, he/she must type correct MAC address of the specified PC on this web page of **Wake on LAN** (WOL) of this router.

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

II-4-1 Dynamic DNS

Enable the Function and Add a Dynamic DNS Account

1. Assume you have a registered domain name from the DDNS provider, say *hostname.dyndns.org*, and an account with username: *test* and password: *test*.
2. Open **Applications>>Dynamic DNS**.
3. Check **Enable Dynamic DNS Setup**.



Applications >> Dynamic DNS Setup

Dynamic DNS Setup | Set to Factory Default |

□ Enable Dynamic DNS Setup

Auto-Update interval 14400 Min(s) (1~14400)

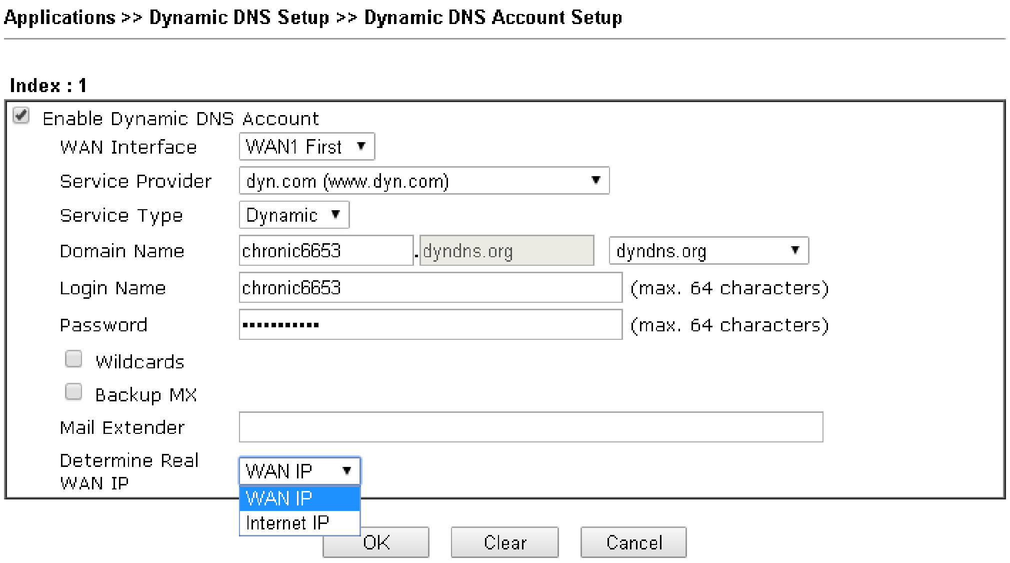
Accounts:

Index	WAN Interface	Domain Name	Active
1.	WAN1 First		x
2.	WAN1 First		x
3.	WAN1 First		x
4.	WAN1 First		x
5.	WAN1 First		x
6.	WAN1 First		x

Available settings are explained as follows:

Item	Description
Enable Dynamic DNS Setup	Check this box to enable DDNS function.
Set to Factory Default	Clear all profiles and recover to factory settings.
View Log	Display DDNS log status.
Force Update	Force the router updates its information to DDNS server.
Auto-Update interval	Set the time for the router to perform auto update for DDNS service.
Index	Click the number below Index to access into the setting page of DDNS setup to set account(s).
WAN Interface	Display the WAN interface used.
Domain Name	Display the domain name that you set on the setting page of DDNS setup.
Active	Display if this account is active or inactive.

4. Select Index number 1 to add an account for the router. Check **Enable Dynamic DNS Account**, and choose correct Service Provider, type the registered hostname and domain name suffix: dyndns.org in the **Domain Name** block. The following two blocks should be typed your account Login Name and Password.



Applications >> Dynamic DNS Setup >> Dynamic DNS Account Setup

Index : 1

☑ Enable Dynamic DNS Account

WAN Interface	WAN1 First
Service Provider	dyn.com (www.dyn.com)
Service Type	Dynamic
Domain Name	chronic6653 . dyndns.org dyndns.org
Login Name	chronic6653 (max. 64 characters)
Password	••••••••••• (max. 64 characters)
□ Wildcards	
□ Backup MX	
Mail Extender	
Determine Real WAN IP	WAN IP

Available settings are explained as follows:

Item	Description
Enable Dynamic DNS Account	Check this box to enable the current account. If you did check the box, you will see a check mark appeared on the Active column of the previous web page in step 2).
WAN Interface	**WAN1/WAN2/WAN3/WAN4 First** - While connecting, the router will use WAN1/WAN2/WAN3**/**WAN4 as the first channel for such account. If WAN1/WAN2/WAN3 /WAN4 fails, the router will use another WAN interface instead. **WAN1/WAN2/WAN3/WAN4 Only** - While connecting, the router will use WAN1/WAN2/WAN3/WAN4 as the only channel for such account.
Service Provider	Select the service provider for the DDNS account.
Service Type	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.
Domain Name	Type in one domain name that you applied previously. Use the drop down list to choose the desired domain.
Login Name	Type in the login name that you set for applying domain.
Password	Type in the password that you set for applying domain.
Wildcard and Backup MX	The Wildcard and Backup MX (Mail Exchange) features are not supported for all Dynamic DNS providers. You could get more detailed information from their websites.
Mail Extender	If the mail server is defined with another name, please type the name in this area. Such mail server will be used as backup mail exchange.
Determine Real WAN IP	If a Vigor router is installed behind any NAT router, you can enable such function to locate the real WAN IP. When the WAN IP used by Vigor router is private IP, this function can detect the public IP used by the NAT router and use the detected IP address for DDNS update. There are two methods offered for you to choose: ● **WAN IP** - If it is selected and the WAN IP of Vigor router is private, DDNS update will take place right away.

	● **Internet IP** – If it is selected and the WAN IP of Vigor router is private, it will be converted to public IP before DDNS update takes place.

5. Click **OK** button to activate the settings. You will see your setting has been saved.

Disable the Function and Clear all Dynamic DNS Accounts

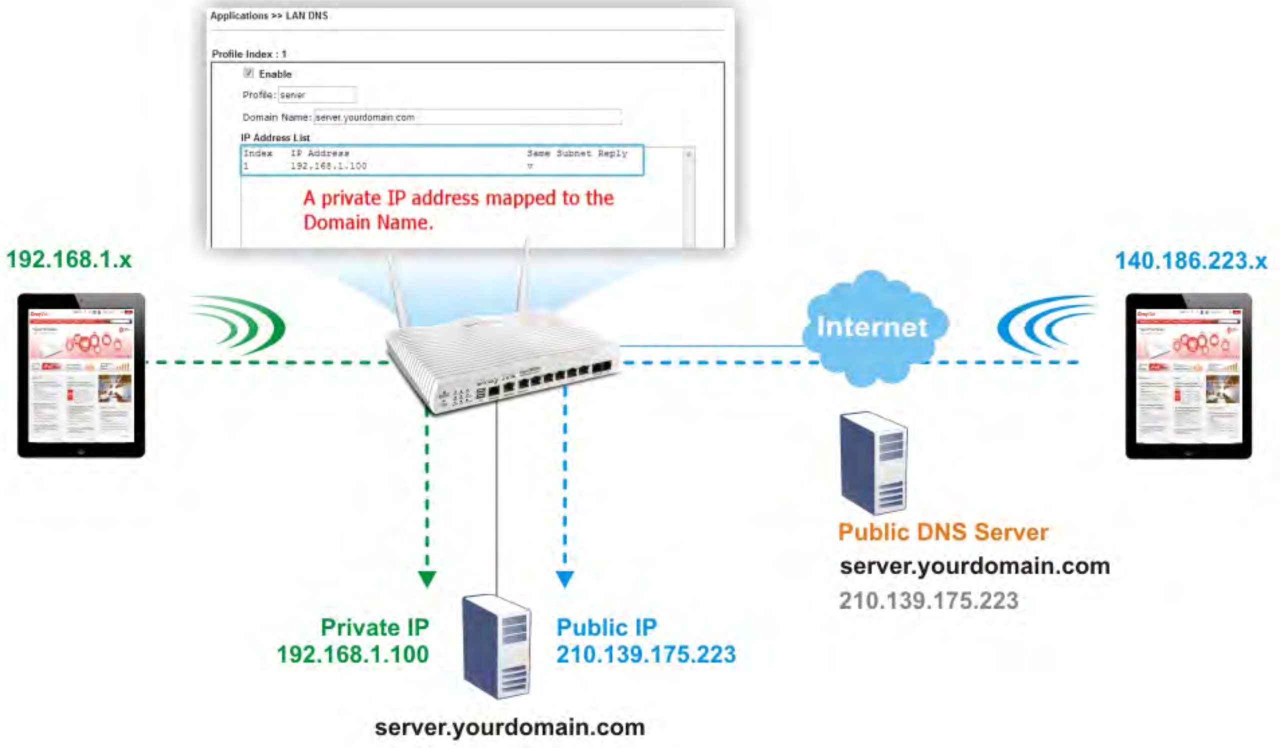
Uncheck **Enable Dynamic DNS Setup**, and click **Clear All** button to disable the function and clear all accounts from the router.

Delete a Dynamic DNS Account

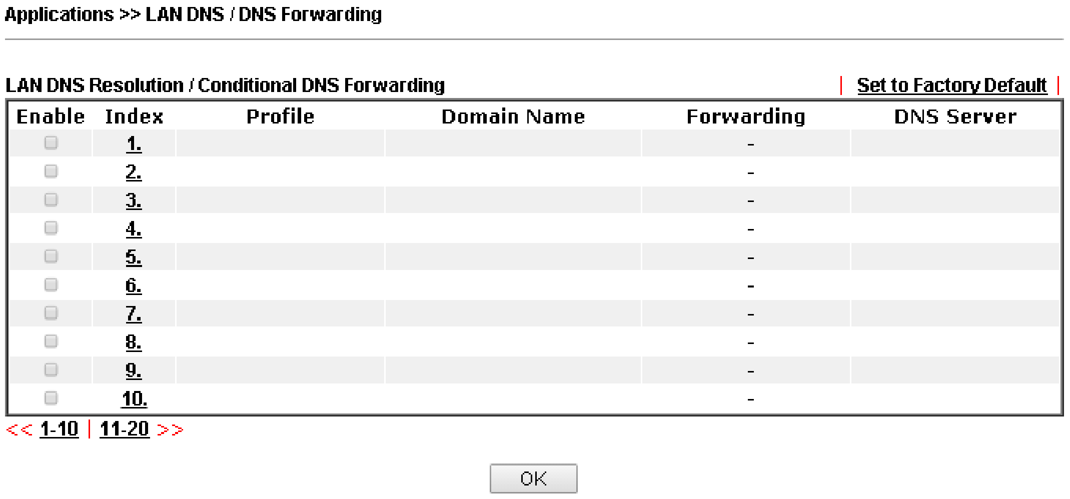
Click the **Index** number you want to delete and then click **Clear All** button to delete the account.

II-4-2 LAN DNS / DNS Forwarding

The LAN DNS lets the network administrators host servers with privacy and security. When the network administrators of your office set up FTP, Mail or Web server inside LAN, you can specify specific private IP address (es) to correspondent servers. Thus, even the remote PC is adopting public DNS as the DNS server, the LAN DNS resolution on Vigor2952 Series will respond the specified private IP address.



Simply click **Application>>LAN DNS** to open the following page.



Applications >> LAN DNS / DNS Forwarding

LAN DNS Resolution / Conditional DNS Forwarding | Set to Factory Default |

Enable	Index	Profile	Domain Name	Forwarding	DNS Server
□	1.			-	
□	2.			-	
□	3.			-	
□	4.			-	
□	5.			-	
□	6.			-	
□	7.			-	
□	8.			-	
□	9.			-	
□	10.			-	

<< 1-10 | 11-20 >>

OK

Each item is explained as follows:

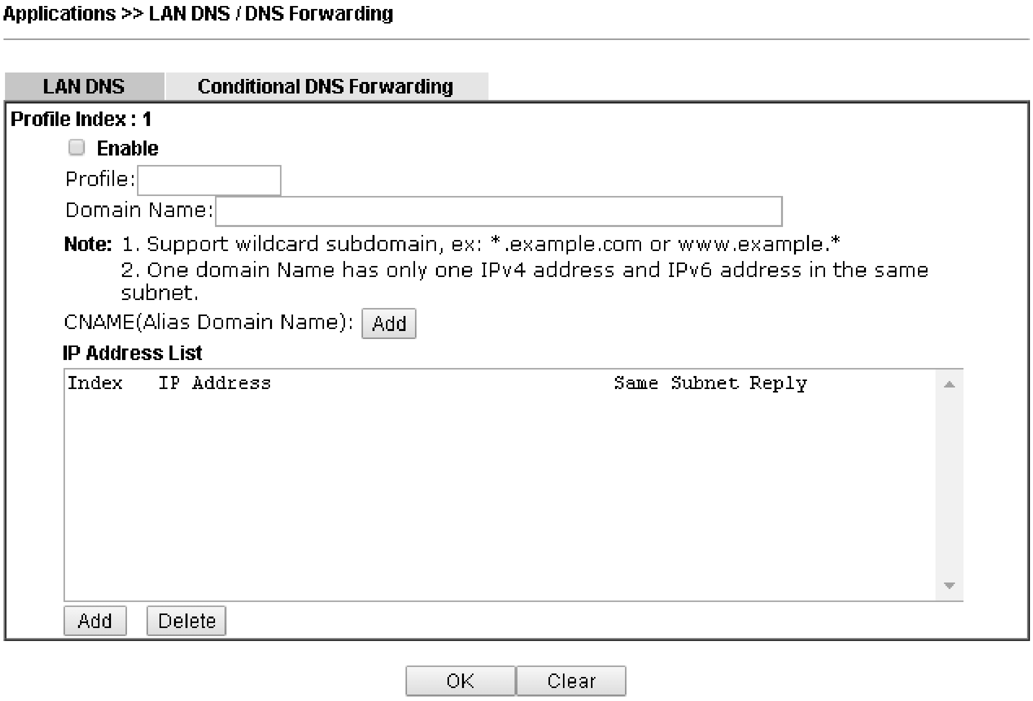
Item	Description
Set to Factory Default	Clear all profiles and recover to factory settings.

Enable	Check the box to enable the selected profile.
Index	Click the number below Index to access into the setting page.
Profile	Display the name of the LAN DNS profile.
Domain Name	Display the domain name of the LAN DNS profile.
Forwarding	Display that such profile is conditional DNS forwarding or not.
DNS Server	Display the IP addres of the DNS Server.

You can set up to 20 LAN DNS profiles.

To create a LAN DNS profile:

1. Click any index, say Index No. 1.
2. The detailed settings with index 1 are shown below.



Applications >> LAN DNS / DNS Forwarding

Profile Index : 1

□ Enable

Profile:

Domain Name:

Note: 1. Support wildcard subdomain, ex: *.example.com or www.example.*
2. One domain Name has only one IPv4 address and IPv6 address in the same subnet.

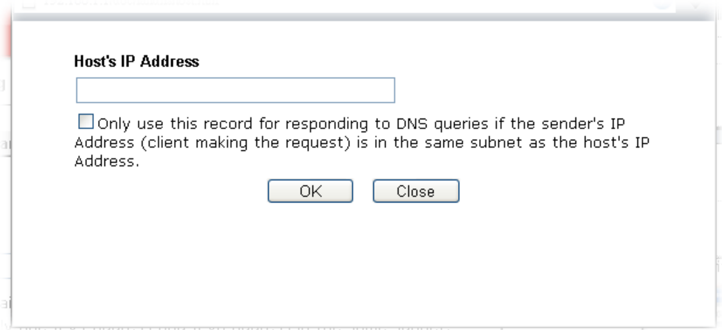
CNAME(Alias Domain Name): Add

IP Address List

Index	IP Address	Same Subnet Reply

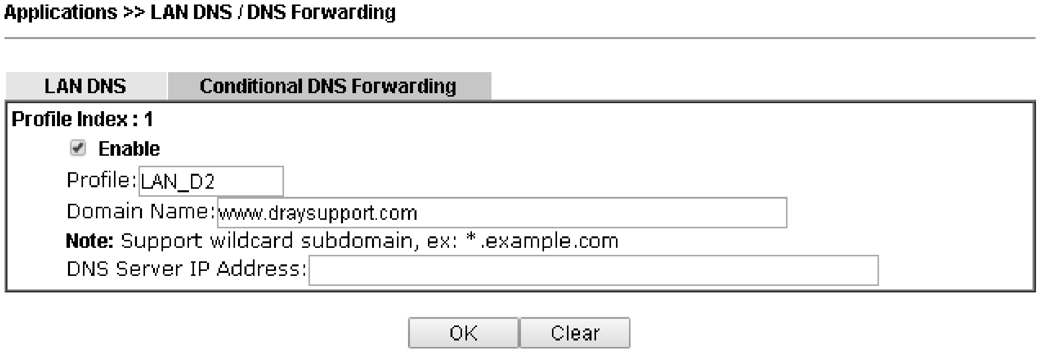
Available settings are explained as follows:

Item	Description
Enable	Check this box to enable such profile.
Profile	Type a name for such profile. **Note:** If you type a name here for LAN DNS and click **OK** to save the configuration, the name also will be applied to conditional DNS forwarding automatically.
Domain Name	Type the domain name for such profile.
CNAME (Alias Domain Name)	CNAME is abbreviation of Canonical name record. Such option is used to record the domain name or the host alias. **Add** – Click it to add a new host with specified reference. **Delete** – Click it to remove the setting.
IP Address List	The IP address listed here will be used for mapping with the

	domain name specified above. In general, one domain name maps with one IP address. If required, you can configure two IP addresses mapping with the same domain name. **Add** – Click it to open a dialog to type the host's IP address.  Host's IP Address □ Only use this record for responding to DNS queries if the sender's IP Address (client making the request) is in the same subnet as the host's IP Address. ● **Only responds to the DNS….** – Different LAN PCs can share the same domain name. However, you have to check this box to make the router identify & respond the IP address for the DNS query coming from different LAN PC. **Delete** – Click it to remove an existed IP address on the list.

3. Click **OK** button to save the settings.

4. If you need to configure LAN DNS settings, click index 1 to edit the LAN DNS profile just created. Or, you can click index 2 to use this profile as conditional DNS forwarding.



Applications >> LAN DNS / DNS Forwarding

Profile Index : 1

☑ Enable

Profile: LAN_D2

Domain Name: www.draysupport.com

Note: Support wildcard subdomain, ex: *.example.com

DNS Server IP Address:

Available settings are explained as follows:

Item	Description
Enable	Check this box to enable such profile.
Profile	Type a name for such profile. **Note:** If you type a name here for conditional DNS forwarding and click **OK** to save the configuration, the name also will be applied to LAN DNS automatically.
Domain Name	Type the domain name for such profile.
DNS Server IP Address	Type the IP address of the DNS server you want to use for DNS forwarding.

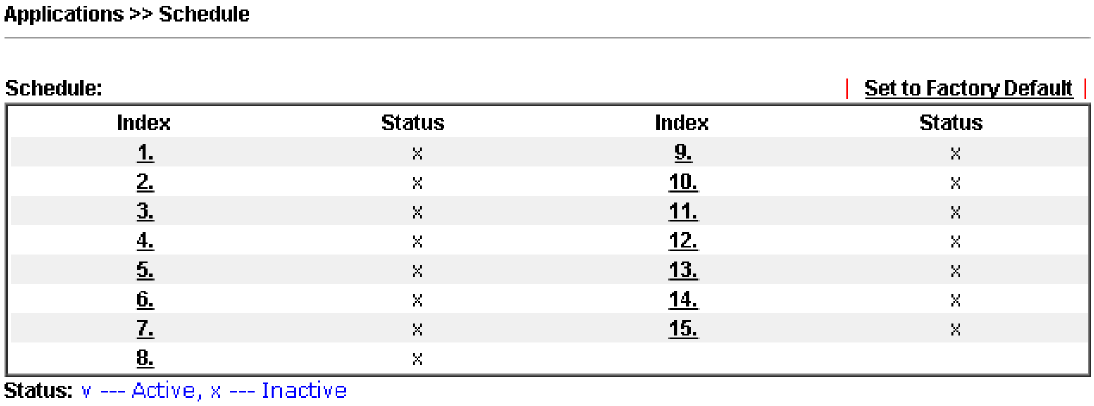
5. Click **OK** button to save the settings.

6. A new LAN DNS profile has been created.

II-4-3 Schedule

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

You have to set your time before set schedule. In **System Maintenance>> Time and Date** menu, press **Inquire Time** button to set the Vigor router's clock to current time of your PC. The clock will reset once if you power down or reset the router. There is another way to set up time. You can inquiry an NTP server (a time server) on the Internet to synchronize the router's clock. This method can only be applied when the WAN connection has been built up.



Applications >> Schedule

Schedule: | Set to Factory Default |

Index	Status	Index	Status
1.	x	9.	x
2.	x	10.	x
3.	x	11.	x
4.	x	12.	x
5.	x	13.	x
6.	x	14.	x
7.	x	15.	x
8.	x		

Status: v --- Active, x --- Inactive

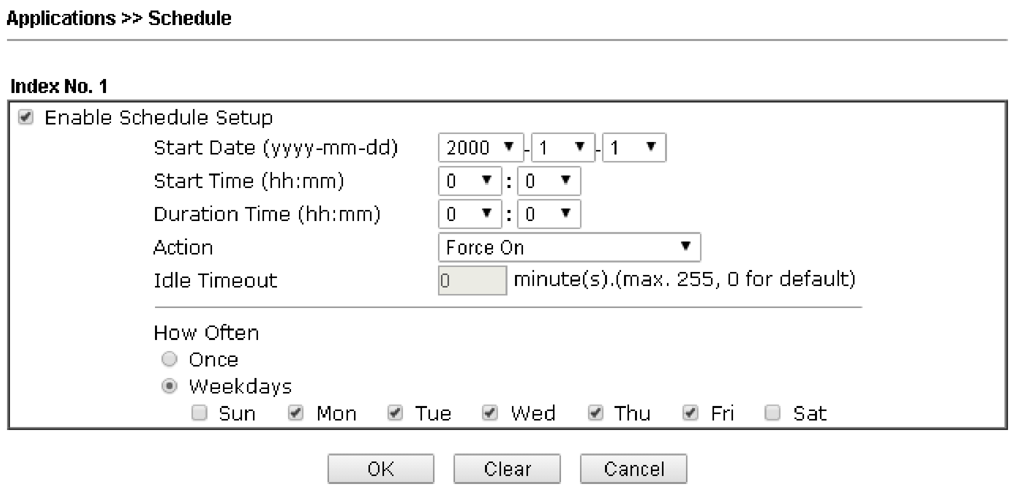
Available settings are explained as follows:

Item	Description
Set to Factory Default	Clear all profiles and recover to factory settings.
Index	Click the number below Index to access into the setting page of schedule.
Status	Display if this schedule setting is active or inactive.

You can set up to 15 schedules. Then you can apply them to your **Internet Access** or **VPN and Remote Access >> LAN-to-LAN** settings.

To add a schedule:

1. Click any index, say Index No. 1.
2. The detailed settings of the call schedule with index 1 are shown below.



Applications >> Schedule

Index No. 1

☑ Enable Schedule Setup

Start Date (yyyy-mm-dd)	2000 - 1 - 1
Start Time (hh:mm)	0 : 0
Duration Time (hh:mm)	0 : 0
Action	Force On
Idle Timeout	0 minute(s).(max. 255, 0 for default)

How Often

○ Once

● Weekdays

□ Sun ☑ Mon ☑ Tue ☑ Wed ☑ Thu ☑ Fri □ Sat

Available settings are explained as follows:

Item	Description
Enable Schedule Setup	Check to enable the schedule.
Start Date (yyyy-mm-dd)	Specify the starting date of the schedule.
Start Time (hh:mm)	Specify the starting time of the schedule.
Duration Time (hh:mm)	Specify the duration (or period) for the schedule.
Action	Specify which action Call Schedule should apply during the period of the schedule. **Force On -**Force the connection to be always on. **Force Down -**Force the connection to be always down. **Enable Dial-On-Demand -**Specify the connection to be dial-on-demand and the value of idle timeout should be specified in **Idle Timeout** field. **Disable Dial-On-Demand -**Specify the connection to be up when it has traffic on the line. Once there is no traffic over idle timeout, the connection will be down and never up again during the schedule.
Idle Timeout	Specify the duration (or period) for the schedule. **How often -**Specify how often the schedule will be applied **Once -**The schedule will be applied just once **Weekdays -**Specify which days in one week should perform the schedule.

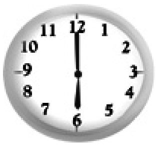
3. Click **OK** button to save the settings.

Example

Suppose you want to control the PPPoE Internet access connection to be always on (Force On) from 9:00 to 18:00 for whole week. Other time the Internet access connection should be disconnected (Force Down).

Office Hour:

(Force On)



Mon - Sun 9:00 am to 6:00 pm

1. Make sure the PPPoE connection and **Time Setup** is working properly.
2. Configure the PPPoE always on from 9:00 to 18:00 for whole week.
3. Configure the **Force Down** from 18:00 to next day 9:00 for whole week.
4. Assign these two profiles to the PPPoE Internet access profile. Now, the PPPoE Internet connection will follow the schedule order to perform **Force On** or **Force Down** action according to the time plan that has been pre-defined in the schedule profiles.

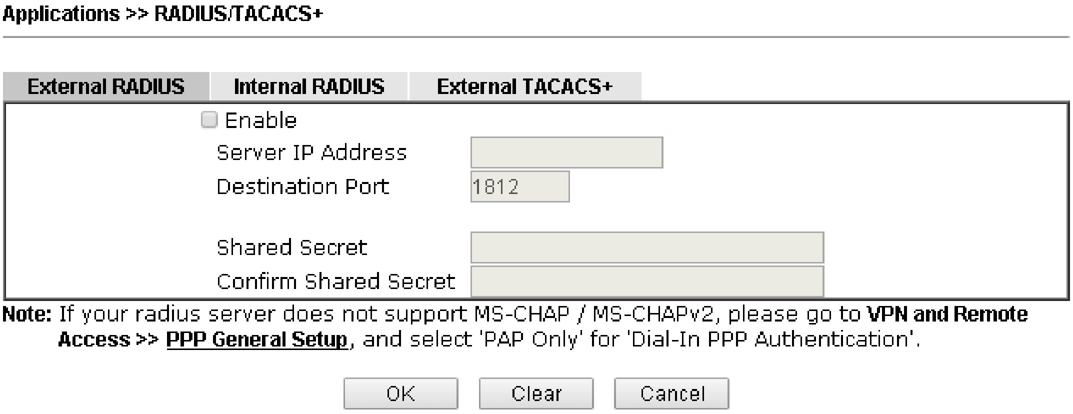
II-4-4 RADIUS/TACACS+

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.

II-4-4-1 External RADIUS

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.

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



Applications >> RADIUS/TACACS+

☐ Enable

Server IP Address	
Destination Port	1812
Shared Secret	
Confirm Shared Secret	

Note: If your radius server does not support MS-CHAP / MS-CHAPv2, please go to **VPN and Remote Access >> PPP General Setup**, and select 'PAP Only' for 'Dial-In PPP Authentication'.

Available settings are explained as follows:

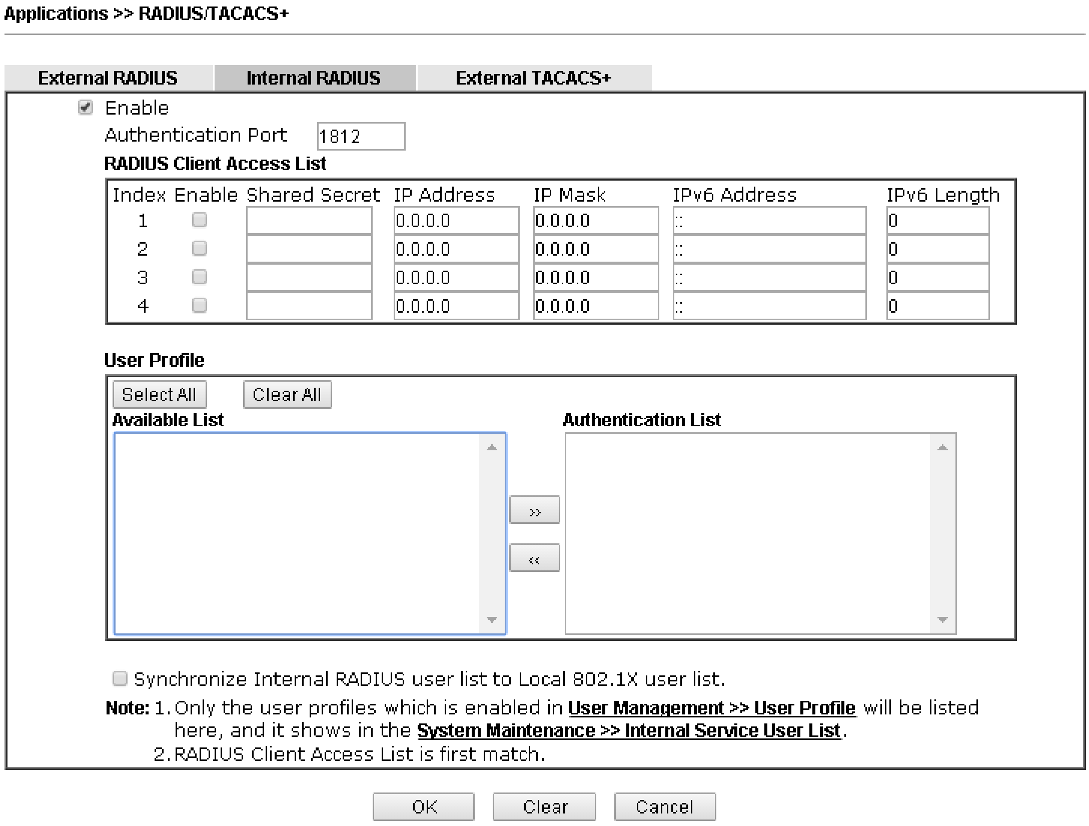
Item	Description
Enable	Check to enable RADIUS client feature.
Server IP Address	Enter the IP address of RADIUS server
Destination Port	The UDP port number that the RADIUS server is using. The default value is 1812, based on RFC 2138.
Shared Secret	The RADIUS server and client share a secret that is used to authenticate the messages sent between them. Both sides must be configured to use the same shared secret. The maximum length of the shared secret you can set is 36 characters.

Confirm Shared Secret	Re-type the Shared Secret for confirmation.

After finished the above settings, click **OK** button to save the settings.

II-4-4-2 Internal RADIUS

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



Applications >> RADIUS/TACACS+

External RADIUS | Internal RADIUS | External TACACS+

☑ Enable

Authentication Port 1812

RADIUS Client Access List

Index	Enable	Shared Secret	IP Address	IP Mask	IPv6 Address	IPv6 Length
1	□		0.0.0.0	0.0.0.0	::	0
2	□		0.0.0.0	0.0.0.0	::	0
3	□		0.0.0.0	0.0.0.0	::	0
4	□		0.0.0.0	0.0.0.0	::	0

User Profile

Select All | Clear All

Available List | **Authentication List**

□ Synchronize Internal RADIUS user list to Local 802.1X user list.

Note: 1. Only the user profiles which is enabled in **User Management >> User Profile** will be listed here, and it shows in the **System Maintenance >> Internal Service User List**.
2. RADIUS Client Access List is first match.

Available settings are explained as follows:

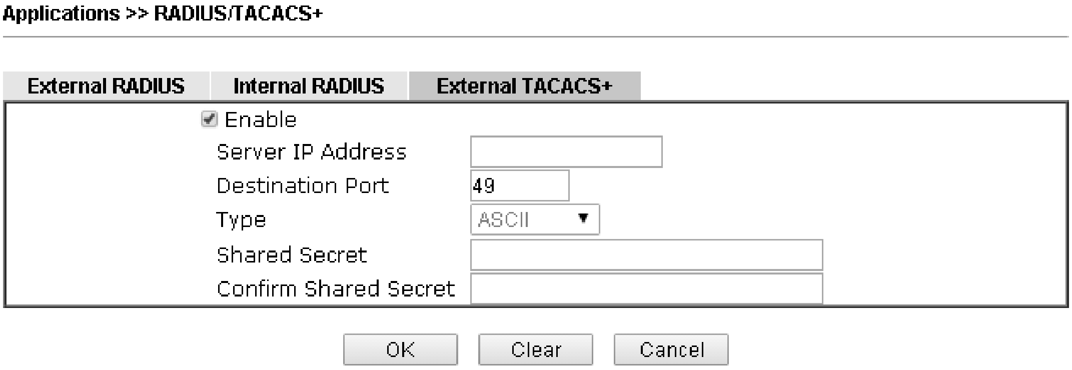
Item	Description
Enable	Check to enable internal RADIUS client feature.
Authentication Port	Set a port number for internal RADIUS server.
RADIUS Client Access List	Allow to configure that clients under specified domain (IPv4 and IPv6) must be authenticated with the specified shared secret. **Enable** - Check to enable RADIUS client feature. **Shared Secret** - The RADIUS server and client share a secret that is used to authenticate the messages sent between them. Both sides must be configured to use the same shared secret. The maximum length of the shared secret you can set is 36 characters. **IP Address** – Type the IP addres of the wired/wireless client. **IP Mask** – Type the subnet mask required for the IP address. **IPv6 Address** – Type the IPv6 address of the wired/wireless

	client. **IPv6 Length** - Type the prefix length required for the IPv6 address.
User Profile	During the process of security authentication, user account and user password will be required for identity authentication. Before configuring such page, create at least one user profile in **User Management>>User Profile** first. **Select All** – Click it to select all of the user profiles in Available List. **Clear All**- Click to remove all of the user profiles in Available List. **Available List** – The user profiles **without** RADIUS server enabled in **User Management >> User Profile** will be listed in this field. **Authentication List** –The user profiles **with** RADIUS server enabled in **User Management >> User Profile** will be listed in this field.
Synchronize Internal RADIUS user list to Local 802.1X user list	Users can be authenticated by RADIUS server and local 802.1X to get certain network service. It is not necessary to create new user profiles (containing user accounts and user passwords) for RADIUS and local 802.1X respectively. Simply check this box; all of the user profiles (prepared for RADIUS server authentication) listed in Authentication List will be synchronized for local 802.1X user authentication.

After finished the above settings, click **OK** button to save the settings.

II-4-4-3 External TACACS+

It means Terminal Access Controller Access-Control System Plus. It works like RADIUS does. Click the **TACACS+ Setup** to open the following page:



Applications >> RADIUS/TACACS+

External RADIUS | Internal RADIUS | External TACACS+

☑ Enable

Server IP Address

Destination Port 49

Type ASCII

Shared Secret

Confirm Shared Secret

Available settings are explained as follows:

Item	Description
Enable	Check to enable TACACS+ feature.
Server IP Address	Enter the IP address of TACACS+ server.
Destination Port	The UDP port number that the TACACS+ server is using.
Shared Secret	The TACACS+ server and client share a secret that is used to authenticate the messages sent between them. Both sides must be configured to use the same shared secret.

Confirm Shared Secret	Re-type the Shared Secret for confirmation.

After finished the above settings, click **OK** button to save the settings.

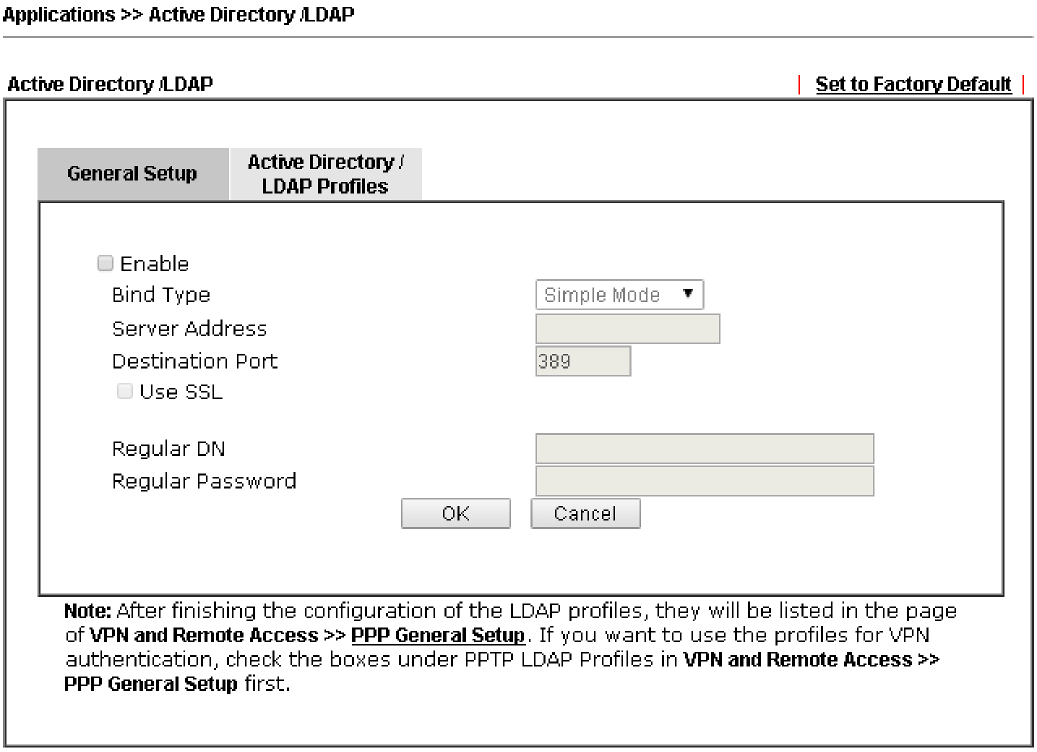
II-4-5 Active Directory/ LDAP

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

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

General Setup

This page allows you to enable the function and specify general settings for LDAP server.



Applications >> Active Directory /LDAP

Active Directory /LDAP | Set to Factory Default |

□ Enable

Bind Type	Simple Mode ▼
Server Address	
Destination Port	389
□ Use SSL	
Regular DN	
Regular Password	

Note: After finishing the configuration of the LDAP profiles, they will be listed in the page of **VPN and Remote Access >> PPP General Setup**. If you want to use the profiles for VPN authentication, check the boxes under PPTP LDAP Profiles in **VPN and Remote Access >> PPP General Setup** first.

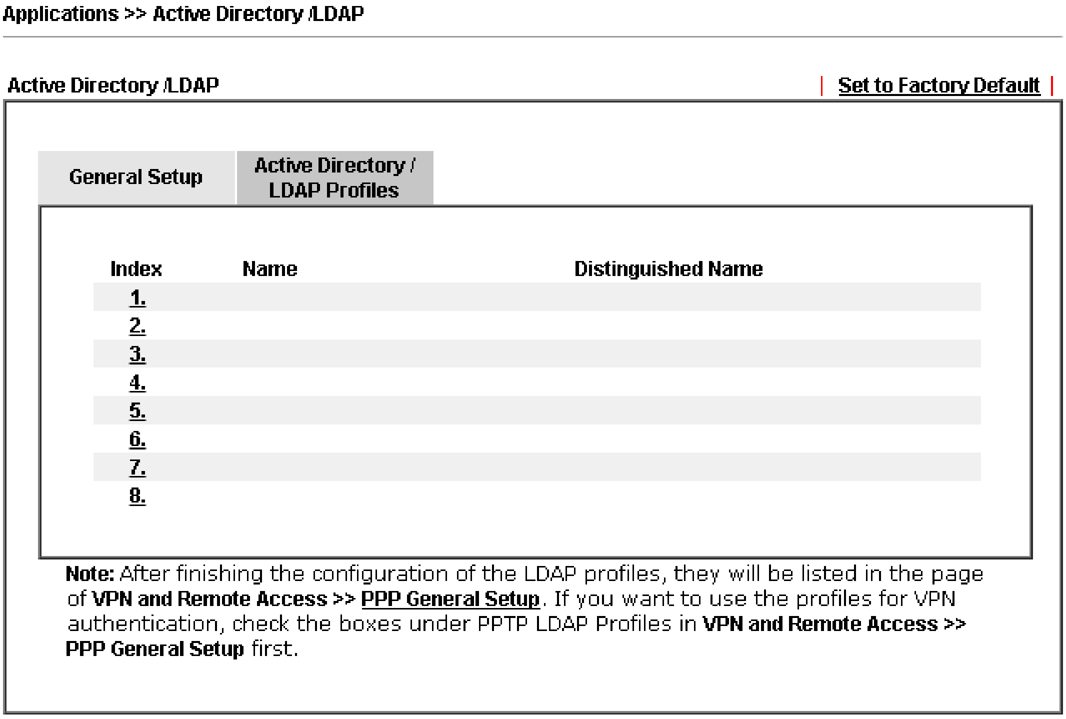
Available settings are explained as follows:

Item	Description
Enable	Check to enable such function.
Bind Type	There are three types of bind type supported. ● **Simple Mode** – Just simply do the bind authentication without any search action. ● **Anonymous** – Perform a search action first with Anonymous account then do the bind authentication. ● **Regular Mode**– Mostly it is the same with anonymous mode. The different is that, the server will firstly check if you have the search authority. For the regular mode, you'll need to type in the **Regular DN** and **Regular Password**.
Server Address	Enter the IP address of LDAP server.
Destination Port	Type a port number as the destination port for LDAP server.
Use SSL	Check the box to use the port number specified for SSL.
Regular DN	Type this setting if **Regular Mode** is selected as **Bind Type.**
Regular Password	Specify a password if **Regular Mode** is selected as **Bind Type.**

After finished the above settings, click **OK** button to save the settings.

Profiles

You can configure eight AD/LDAP profiles. These profiles would be used with User Management for different purposes in management.



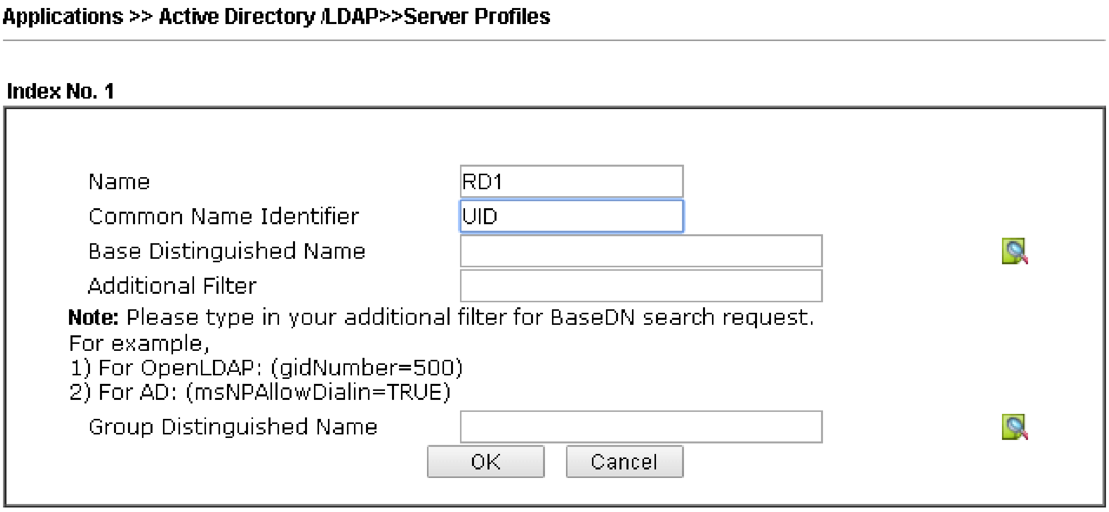
Applications >> Active Directory /LDAP

Active Directory /LDAP | Set to Factory Default |

Index	Name	Distinguished Name
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

Note: After finishing the configuration of the LDAP profiles, they will be listed in the page of **VPN and Remote Access >> PPP General Setup**. If you want to use the profiles for VPN authentication, check the boxes under PPTP LDAP Profiles in **VPN and Remote Access >> PPP General Setup** first.

Click any index number link to open the following page.



Applications >> Active Directory /LDAP>>Server Profiles

Index No. 1

Name	RD1
Common Name Identifier	UID
Base Distinguished Name	
Additional Filter	

Note: Please type in your additional filter for BaseDN search request.
For example,
1) For OpenLDAP: (gidNumber=500)
2) For AD: (msNPAllowDialin=TRUE)

Group Distinguished Name	

Available settings are explained as follows:

Item	Description
Name	Type a name for such profile. The length of the user name is limited to 19 characters.
Common Name Identifier	Type or edit the common name identifier for the LDAP server. The common name identifier for most LDAP server is "cn".
Base Distinguished Name / Group Distinguished Name	Type or edit the distinguished name used to look up entries on the LDAP server. Sometimes, you may forget the Distinguished Name since it's too long. Then you may click the 🔍 button to list all the account information on the AD/LDAP Server to assist you finish the setup.
Additional Filter	Type the condition for additional filter.

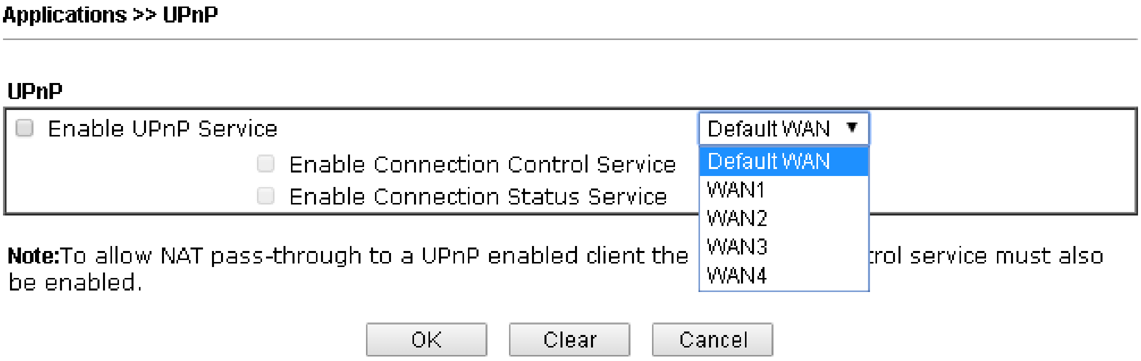
After finished the above settings, click **OK** to save and exit this page. A new profile has been created.

II-4-6 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.

Info

UPnP is required for some applications such as PPS, Skype, eMule…and etc. If you are not familiar with UPnP, it is suggested to turn off this function for security.


Applications >> UPnP

UPnP

□ Enable UPnP Service

□ Enable Connection Control Service

□ Enable Connection Status Service

Default WAN ▼ (Default WAN, WAN1, WAN2, WAN3, WAN4)

Note: To allow NAT pass-through to a UPnP enabled client the [Connection Cont]rol service must also be enabled.

Available settings are explained as follows:

Item	Description
Enable UPNP Service	Accordingly, you can enable either the **Connection Control Service** or **Connection Status Service**.
Default WAN	It is used to specify the WAN interface for applying such function.

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

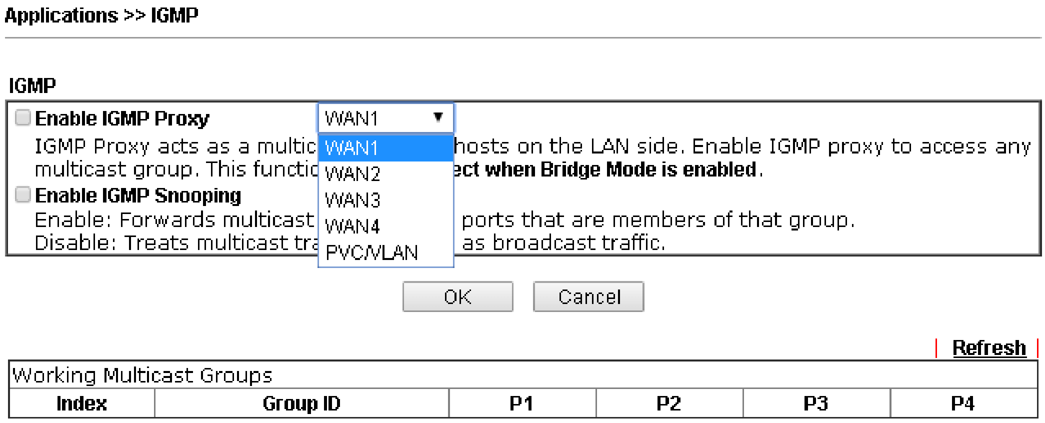
Activating the UPnP function on your network may incur some security threats. You should consider carefully these risks before activating the UPnP function.

- 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.

II-4-7 IGMP

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



Applications >> IGMP

IGMP

□ Enable IGMP Proxy WAN1 ▼

IGMP Proxy acts as a multic hosts on the LAN side. Enable IGMP proxy to access any multicast group. This functic ect **when Bridge Mode is enabled**.

□ Enable IGMP Snooping

Enable: Forwards multicast ports that are members of that group.

Disable: Treats multicast tra as broadcast traffic.

Working Multicast Groups					
Index	Group ID	P1	P2	P3	P4

Available settings are explained as follows:

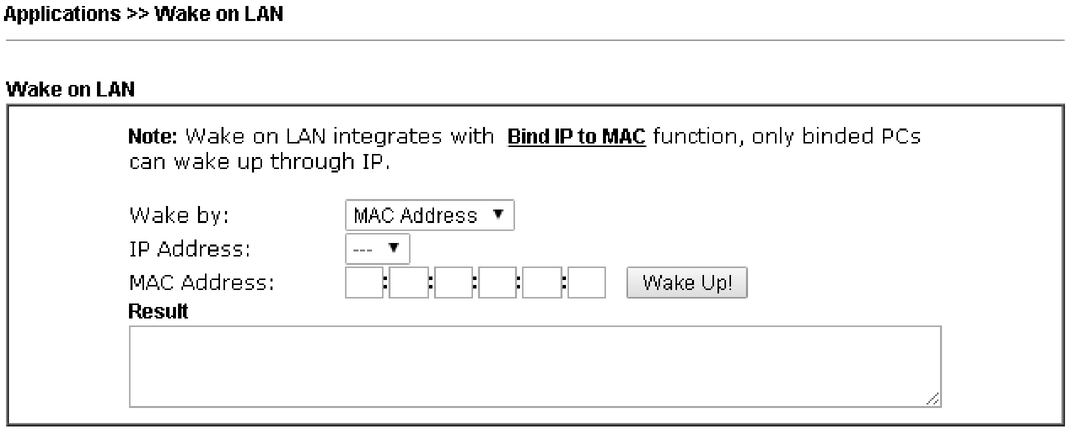
Item	Description
IGMP Proxy	Check this box to enable this function. The application of multicast will be executed through WAN/PVC/VLAN port. In addition, such function is available in NAT mode.
IGMP Snooping	Check this box to enable this function. Multicast traffic will be forwarded to ports that have members of that group. Disabling IGMP snooping will make multicast traffic treated in the same manner as broadcast traffic.
Refresh	Click this link to renew the working multicast group status.
Group ID	This field displays the ID port for the multicast group. The available range for IGMP starts from 224.0.0.0 to 239.255.255.254.
P1- P4	It indicates the LAN port used for the multicast group.

After finishing all the settings here, please click **OK** to save the configuration.

II-4-8 Wake on LAN

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

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



Applications >> Wake on LAN

Wake on LAN

Note: Wake on LAN integrates with **Bind IP to MAC** function, only binded PCs can wake up through IP.

Wake by: MAC Address

IP Address: ---

MAC Address: : : : : :

Result

Available settings are explained as follows:

Item	Description
Wake by	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.
IP Address	The IP addresses that have been configured in **Firewall>>Bind IP to MAC** will be shown in this drop down list. Choose the IP address from the drop down list that you want to wake up.
MAC Address	Type any one of the MAC address of the bound PCs.
Wake Up	Click this button to wake up the selected IP. See the following figure. The result will be shown on the box.

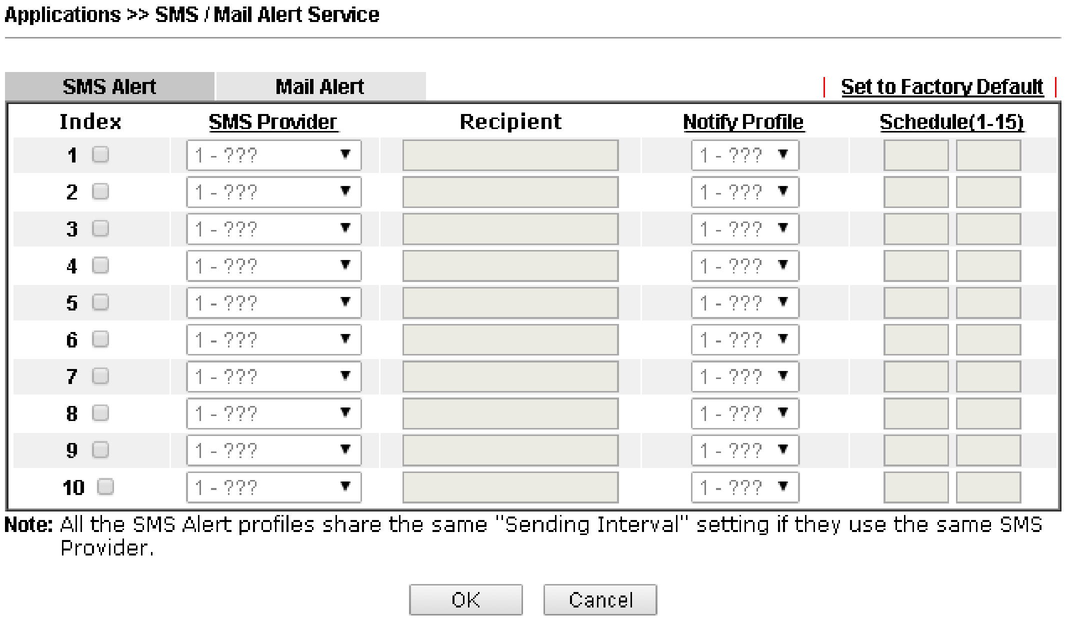
II-4-9 SMS / Mail Alert Service

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

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

SMS Alert

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



Index	SMS Provider	Recipient	Notify Profile	Schedule(1-15)
1 ☐	1 - ???		1 - ???	
2 ☐	1 - ???		1 - ???	
3 ☐	1 - ???		1 - ???	
4 ☐	1 - ???		1 - ???	
5 ☐	1 - ???		1 - ???	
6 ☐	1 - ???		1 - ???	
7 ☐	1 - ???		1 - ???	
8 ☐	1 - ???		1 - ???	
9 ☐	1 - ???		1 - ???	
10 ☐	1 - ???		1 - ???	

Note: All the SMS Alert profiles share the same "Sending Interval" setting if they use the same SMS Provider.

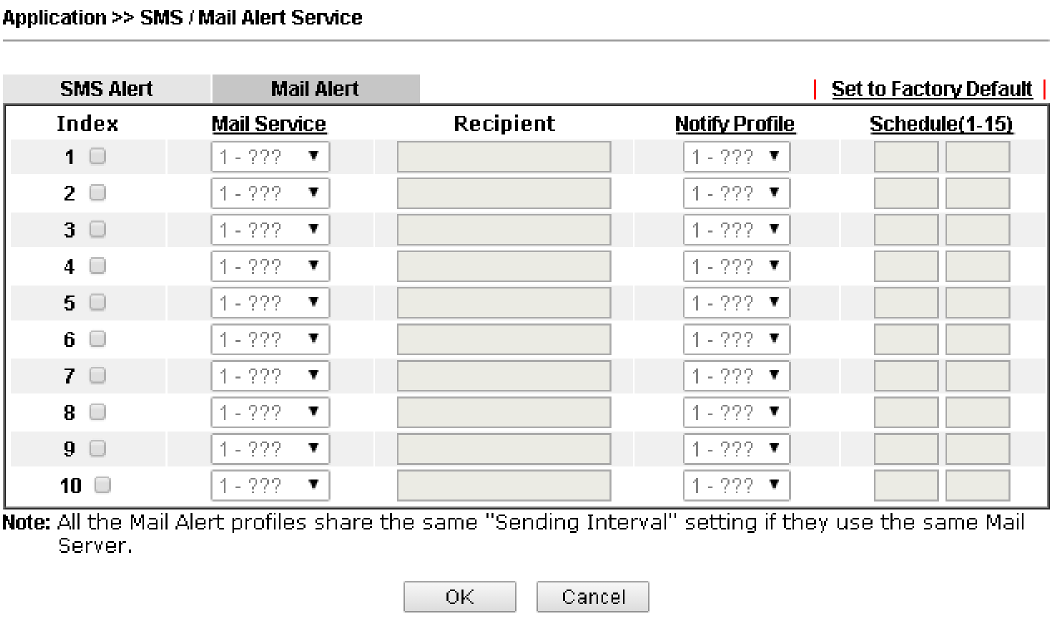
Available settings are explained as follows:

Item	Description
Index	Check the box to enable such profile.
SMS Provider	Use the drop down list to choose SMS service provider. You can click **SMS Provider** link to define the SMS server.
Recipient	Type the name of the one who will receive the SMS.
Notify Profile	Use the drop down list to choose a message profile. The recipient will get the content stated in the message profile. You can click the **Notify Profile** link to define the content of the SMS.
Schedule (1-15)	Type the schedule number that the SMS will be sent out. You can click the **Schedule(1-15)** link to define the schedule.

After finishing all the settings here, please click **OK** to save the configuration.

Mail Alert

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



Application >> SMS / Mail Alert Service

SMS Alert | Mail Alert | Set to Factory Default |

Index	Mail Service	Recipient	Notify Profile	Schedule(1-15)
1 □	1 - ??? ▼		1 - ??? ▼	
2 □	1 - ??? ▼		1 - ??? ▼	
3 □	1 - ??? ▼		1 - ??? ▼	
4 □	1 - ??? ▼		1 - ??? ▼	
5 □	1 - ??? ▼		1 - ??? ▼	
6 □	1 - ??? ▼		1 - ??? ▼	
7 □	1 - ??? ▼		1 - ??? ▼	
8 □	1 - ??? ▼		1 - ??? ▼	
9 □	1 - ??? ▼		1 - ??? ▼	
10 □	1 - ??? ▼		1 - ??? ▼	

Note: All the Mail Alert profiles share the same "Sending Interval" setting if they use the same Mail Server.

Available settings are explained as follows:

Item	Description
Index	Check the box to enable such profile.
Mail Service	Use the drop down list to choose mail service object. All of the available objects are created in **Object Settings>>SMS/Mail Service Option**. If there is no object listed, click **Mail Service** link to define a new one with specified service provider.
Recipient	Type the e-mail address of the one who will receive the notification message.
Notify Profile	Use the drop down list to choose a message profile. The recipient will get the content stated in the message profile. You can click the **Notify Profile** link to define the content of the mail message.
Schedule (1-15)	Type the schedule number that the notification will be sent out. You can click the **Schedule(1-15)** link to define the schedule.

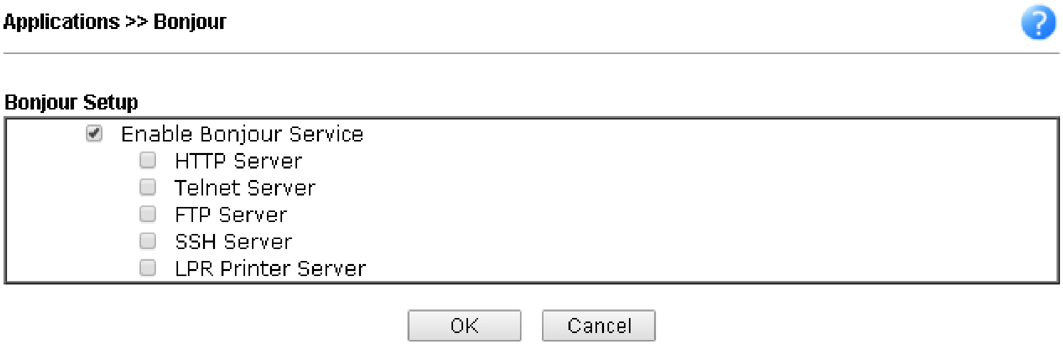
After finishing all the settings here, please click **OK** to save the configuration.

II-4-10 Bonjour

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

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

To enable the Bonjour service, click **Applications>>Bonjour** to open the following page. Check the box(es) of the server service(s) that you want to share to the LAN clients.



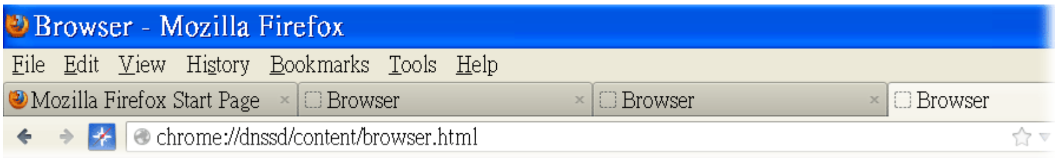
Applications >> Bonjour

Bonjour Setup

☑ Enable Bonjour Service
- □ HTTP Server
- □ Telnet Server
- □ FTP Server
- □ SSH Server
- □ LPR Printer Server

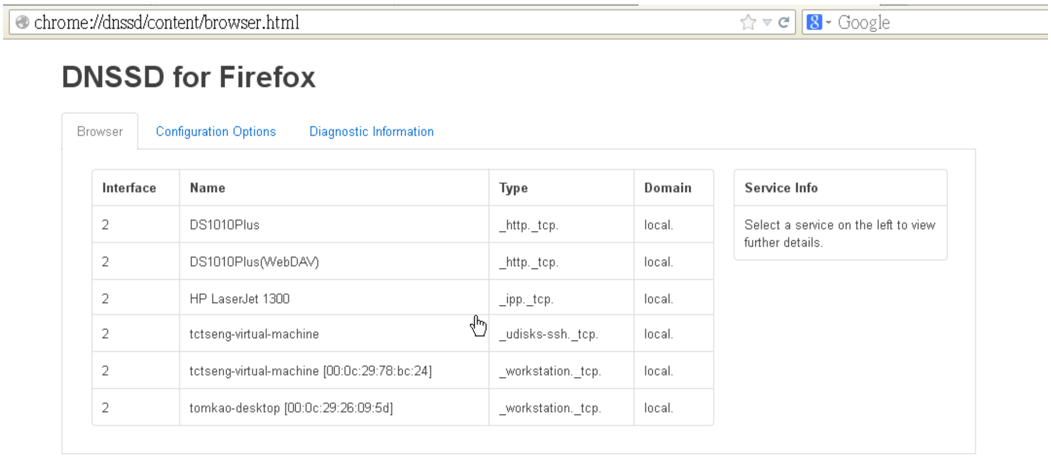
Below shows an example for applying the bonjour feature that Vigor router can be used as the FTP server.

1. Here, we use Firefox and DNSSD to discover the service in such case. Therefore, just ensure the Bonjour client program and DNSSD for Firefox have been installed on the computer.



Browser - Mozilla Firefox
File Edit View History Bookmarks Tools Help
Mozilla Firefox Start Page
Browser
Browser
Browser
chrome://dnssd/content/browser.html

2. Open the web browse, Firefox. If Bonjour and DNSSD have been installed, you can open the web page (DNSSD) and see the following results.



chrome://dnssd/content/browser.html

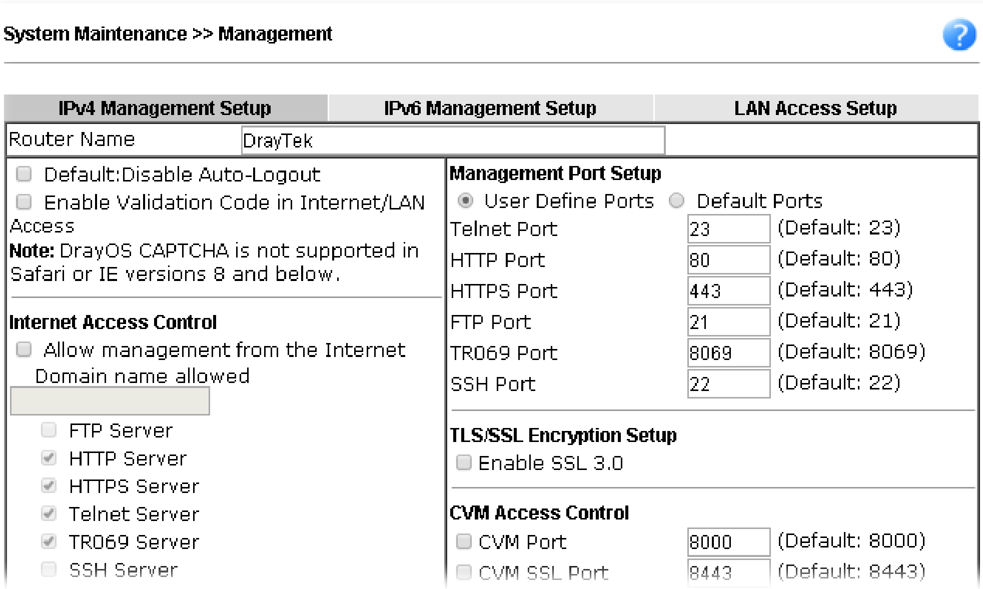
DNSSD for Firefox

Interface	Name	Type	Domain
2	DS1010Plus	_http._tcp.	local.
2	DS1010Plus(WebDAV)	_http._tcp.	local.
2	HP LaserJet 1300	_ipp._tcp.	local.
2	tctseng-virtual-machine	_udisks-ssh._tcp.	local.
2	tctseng-virtual-machine [00:0c:29:78:bc:24]	_workstation._tcp.	local.
2	tomkao-desktop [00:0c:29:26:09:5d]	_workstation._tcp.	local.

Service Info

Select a service on the left to view further details.

3. Open **System Maintenance>>Management**. Type a name as the Router Name and click **OK**.



System Maintenance >> Management

Router Name: DrayTek

☐ Default:Disable Auto-Logout

☐ Enable Validation Code in Internet/LAN Access

Note: DrayOS CAPTCHA is not supported in Safari or IE versions 8 and below.

Internet Access Control

☐ Allow management from the Internet

Domain name allowed

☐ FTP Server
☑ HTTP Server
☑ HTTPS Server
☑ Telnet Server
☑ TR069 Server
☐ SSH Server

Management Port Setup

● User Define Ports ○ Default Ports

Telnet Port	23	(Default: 23)
HTTP Port	80	(Default: 80)
HTTPS Port	443	(Default: 443)
FTP Port	21	(Default: 21)
TR069 Port	8069	(Default: 8069)
SSH Port	22	(Default: 22)

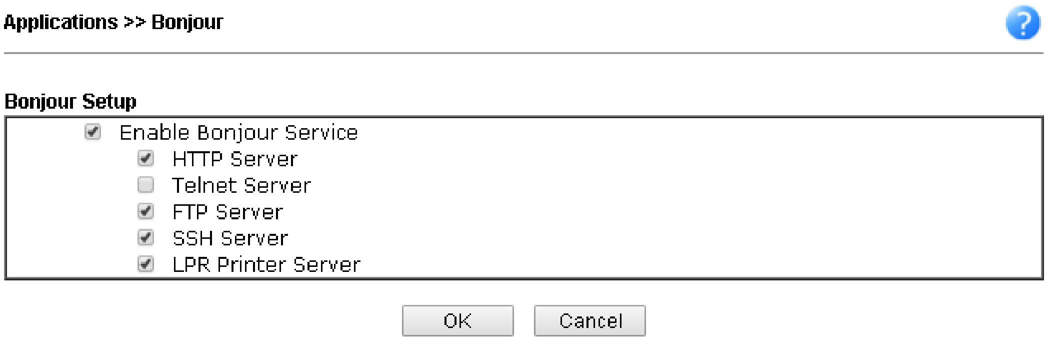
TLS/SSL Encryption Setup

☐ Enable SSL 3.0

CVM Access Control

☐ CVM Port	8000	(Default: 8000)
☐ CVM SSL Port	8443	(Default: 8443)

4. Next, open **Applications>>Bonjour**. Check the service that you want to use via Bonjour.

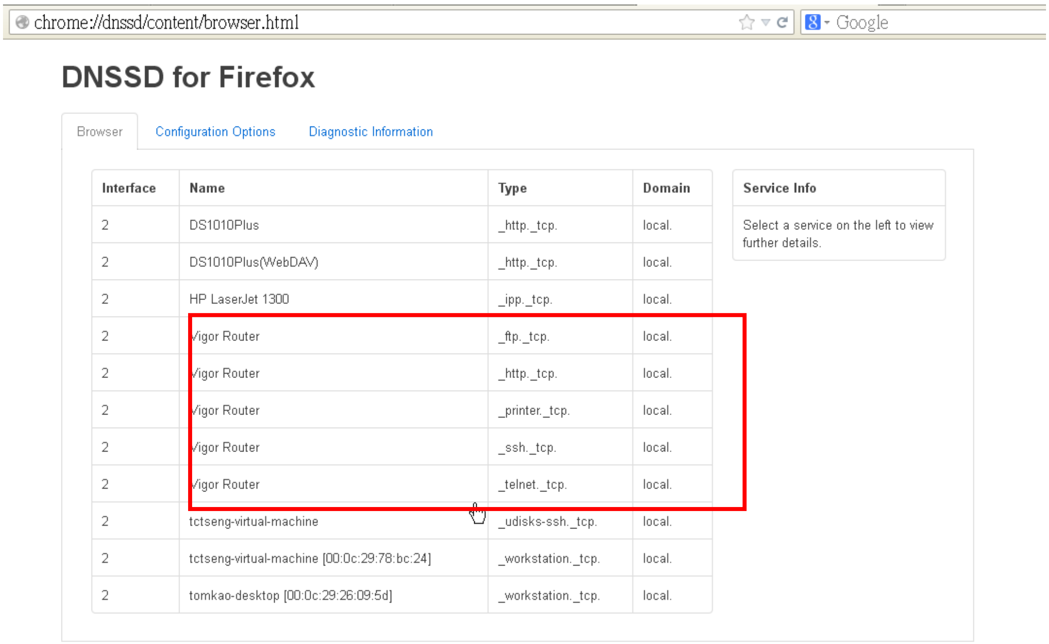


Applications >> Bonjour

Bonjour Setup

☑ Enable Bonjour Service
☑ HTTP Server
☐ Telnet Server
☑ FTP Server
☑ SSH Server
☑ LPR Printer Server

5. Open the DNSSD page again. The available items will be changed as the follows. It means the Vigor router (based on Bonjour protocol) is ready to be used as a printer server, FTP server, SSH Server, Telnet Server, and HTTP Server.


chrome://dnssd/content/browser.html

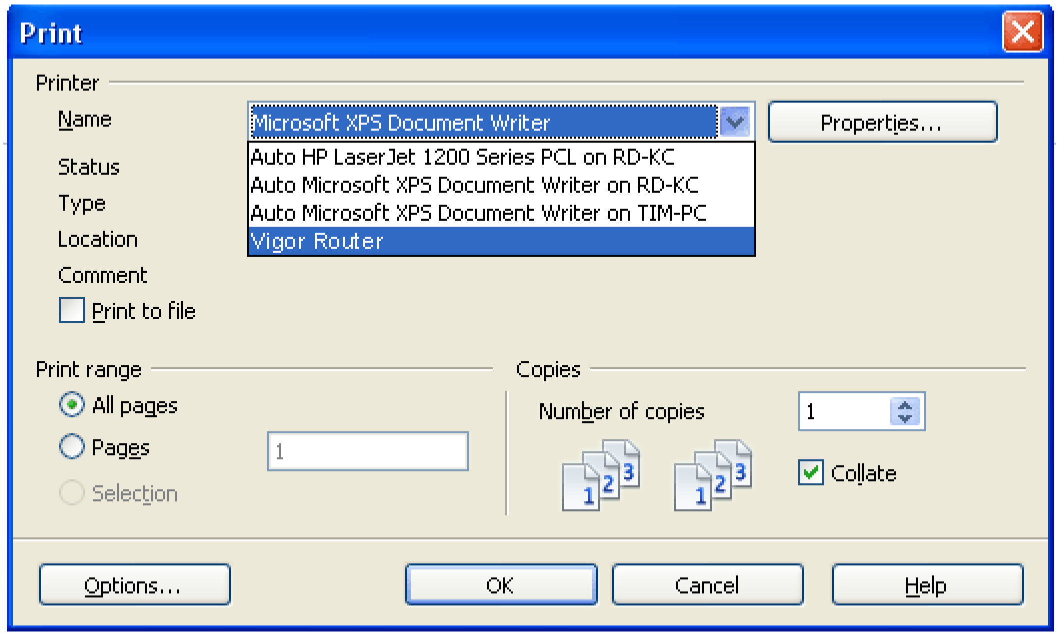
DNSSD for Firefox

Interface	Name	Type	Domain
2	DS1010Plus	_http._tcp.	local.
2	DS1010Plus(WebDAV)	_http._tcp.	local.
2	HP LaserJet 1300	_ipp._tcp.	local.
2	Vigor Router	_ftp._tcp.	local.
2	Vigor Router	_http._tcp.	local.
2	Vigor Router	_printer._tcp.	local.
2	Vigor Router	_ssh._tcp.	local.
2	Vigor Router	_telnet._tcp.	local.
2	tctseng-virtual-machine	_udisks-ssh._tcp.	local.
2	tctseng-virtual-machine [00:0c:29:78:bc:24]	_workstation._tcp.	local.
2	tomkao-desktop [00:0c:29:26:09:5d]	_workstation._tcp.	local.

Service Info

Select a service on the left to view further details.

6. Now, any page or document can be printed out through Vigor router (installed with a printer).


Print

Printer

Name: Microsoft XPS Document Writer

- Auto HP LaserJet 1200 Series PCL on RD-KC
- Auto Microsoft XPS Document Writer on RD-KC
- Auto Microsoft XPS Document Writer on TIM-PC
- Vigor Router

Status

Type

Location

Comment

□ Print to file

Print range

● All pages

○ Pages 1

○ Selection

Copies

Number of copies: 1

☑ Collate

II-4-11 High Availability

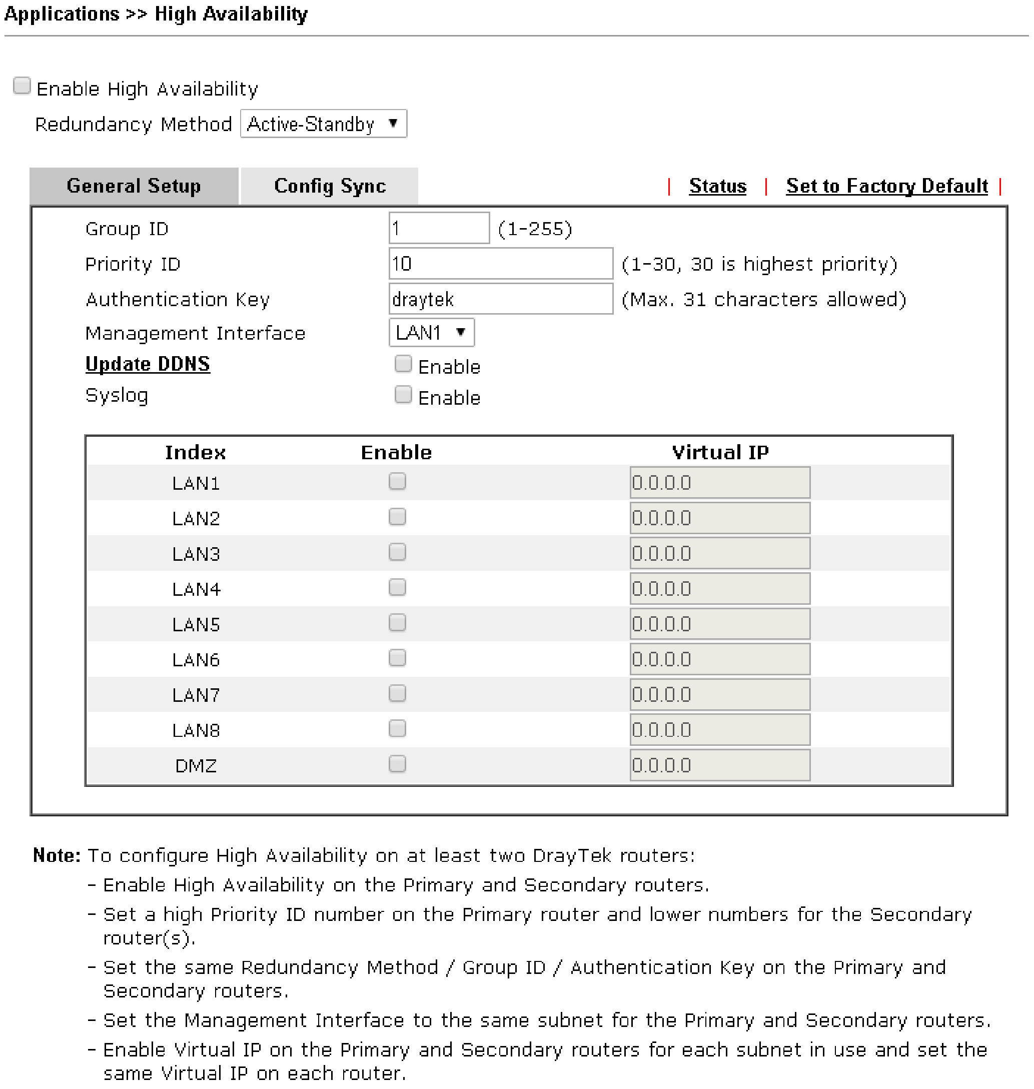
The High Availability (HA) feature refers to the awareness of component failure and the availability of backup resources. The complexity of HA is determined by the availability needs and the tolerance of system interruptions. Systems, provide nearly full-time availability, typically have redundant hardware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

The high availability of the Vigor2952 Series is designed to avoid single points-of-failure. When failures occur, the failover process moves processing performed by the failed component (the “primary”) to the backup component (the “secondary”). This process remains system-wide resources, recovers partial of failed transactions, and restores the system to normal within a few seconds.

To configure High Availability on, at least two DrayTek routers:

- Enable High Availability on the Primary and Secondary routers.
- Set a high Priority ID number on the Primary router and lower numbers for the Secondary router(s).
- Set the same Redundancy Method/Group ID/Authentication Key on the Primary and Secondary rotuers.
- Set the Management Interface to the same subnet for the Primary and Secondary routers.
- Enable Virtual IP on the Primary and Secondary routers for each subnet in use and set the same virtual IP on each rouer.

Open **Applications>>High Availability** to get the following page.



Applications >> High Availability

□ Enable High Availability

Redundancy Method: Active-Standby ▼

General Setup | Config Sync | Status | Set to Factory Default

Group ID	1 (1-255)
Priority ID	10 (1-30, 30 is highest priority)
Authentication Key	draytek (Max. 31 characters allowed)
Management Interface	LAN1 ▼
Update DDNS	□ Enable
Syslog	□ Enable

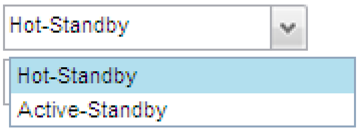
Index	Enable	Virtual IP
LAN1	□	0.0.0.0
LAN2	□	0.0.0.0
LAN3	□	0.0.0.0
LAN4	□	0.0.0.0
LAN5	□	0.0.0.0
LAN6	□	0.0.0.0
LAN7	□	0.0.0.0
LAN8	□	0.0.0.0
DMZ	□	0.0.0.0

Note: To configure High Availability on at least two DrayTek routers:

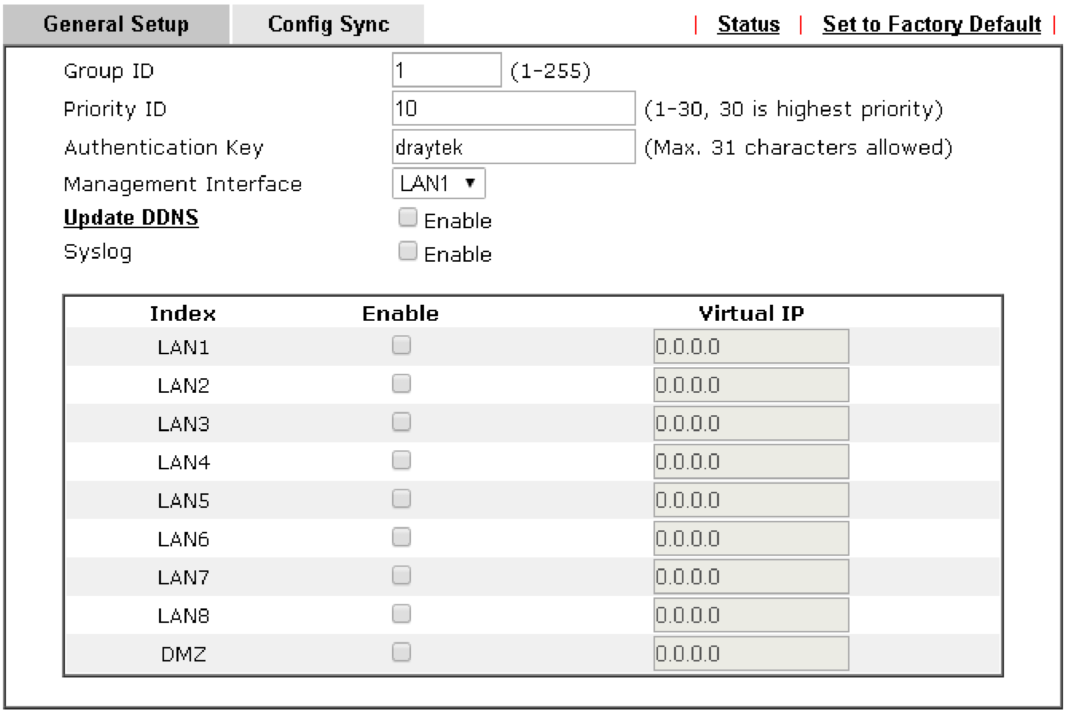
- Enable High Availability on the Primary and Secondary routers.
- Set a high Priority ID number on the Primary router and lower numbers for the Secondary router(s).
- Set the same Redundancy Method / Group ID / Authentication Key on the Primary and Secondary routers.
- Set the Management Interface to the same subnet for the Primary and Secondary routers.
- Enable Virtual IP on the Primary and Secondary routers for each subnet in use and set the same Virtual IP on each router.

Available settings are explained as follows:

Item	Description
Enable High Abailablity	Check this box to enable HA function.

Redundancy Method	Choose Hot-Standby or Active-Standby as the method for HA.  Hot-Standby ▾ Hot-Standby Active-Standby **Hot-Standby -** Such method is suitable for a user which has one ISP account. With such method; ● All WANs of secondary routers will be shut down by HA function. ● WAN settings of primary and secondary routers can be the same. **Note**: When Hot-Standby is used, wireless LAN will be “enabled” automatically for clients connecting to the primary router; however, wireless LAN on secondary router will be “disabled” directlly. Thus clients can not connect to the secondary router any more. **Active-Standby -** Such method is suitable for a user which has multiple ISP accounts. With such method; ● All WANs of secondary routers can be up. Therefore, the user can route it's traffic to secondary. ● WAN settings of primary and secondary routers must not be the same. ● The Config Sync must be disabled, or you cannot change redundancy method to active-standby.

II-4-11-1 General Setup



Group ID	1	(1-255)
Priority ID	10	(1-30, 30 is highest priority)
Authentication Key	draytek	(Max. 31 characters allowed)
Management Interface	LAN1 ▾	
Update DDNS	□ Enable	
Syslog	□ Enable	

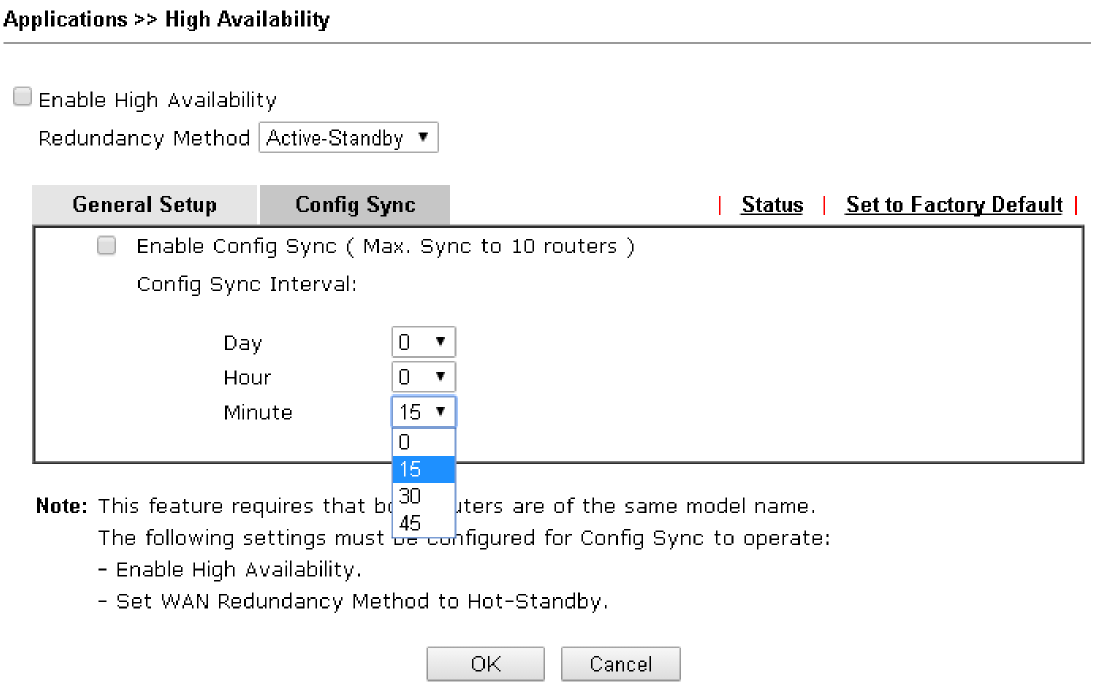
Index	Enable	Virtual IP
LAN1	□	0.0.0.0
LAN2	□	0.0.0.0
LAN3	□	0.0.0.0
LAN4	□	0.0.0.0
LAN5	□	0.0.0.0
LAN6	□	0.0.0.0
LAN7	□	0.0.0.0
LAN8	□	0.0.0.0
DMZ	□	0.0.0.0

Available settings are explained as follows:

Item	Description
Group ID	Type a value (1~255). In LAN environment, multiple routers can be devided into several groups. Each router must be specified with one group ID. Different routers with the same ID value will be categoried into the same group. Only one of the routers in the same group will be selected as the primary router.
Priority ID	Type a value (1~30). Different routers must be configured with different IDs. The router with the highest priority will be treated as primary router. If multiple routers have the same priority, the router with lower "IP" will be treated as primary. "IP" is the IP address configured on **LAN >> General Setup** page, in which LAN is determined by management interface.
Authentication Key	Type a string as the authentication key (maximum 31 characters allowed). It is used for encrypting the DARP to prevent malicious attack.
Management Interface	Such interface is used for DARP (DrayTek Address Redundancy Protocol) negotiation between routers. Only the interface which is enabled in **LAN>>General Setup** is available for selection. However, LAN1 is always enabled.
Update DDNS	**Enable -** Check the box to update the DDNS server for the secondary device if required. If the primary device fails, and the secondary device must take over the job of data transmitting and receiving. Then the system will update the DDNS server to make the user connect to the specified domain name.
Syslog	**Enable -** Check the box to record required information on Syslog.
LAN1 ~ LAN8, DMZ	**Enable -** Check the box to enable the interface. **Virtual IP -** Type the IP address of the router plays the role of Primary device.

II-4-11-2 Config Sync

This page is used to specify the synchronization time for such Vigor router and only available when **Hot-Standby** method is specified and High Availability is enabled.



Applications >> High Availability

□ Enable High Availability

Redundancy Method: Active-Standby

□ Enable Config Sync (Max. Sync to 10 routers)

Config Sync Interval:

Day: 0

Hour: 0

Minute: 15

Note: This feature requires that b[...]ters are of the same model name.
The following settings must be configured for Config Sync to operate:
- Enable High Availability.
- Set WAN Redundancy Method to Hot-Standby.

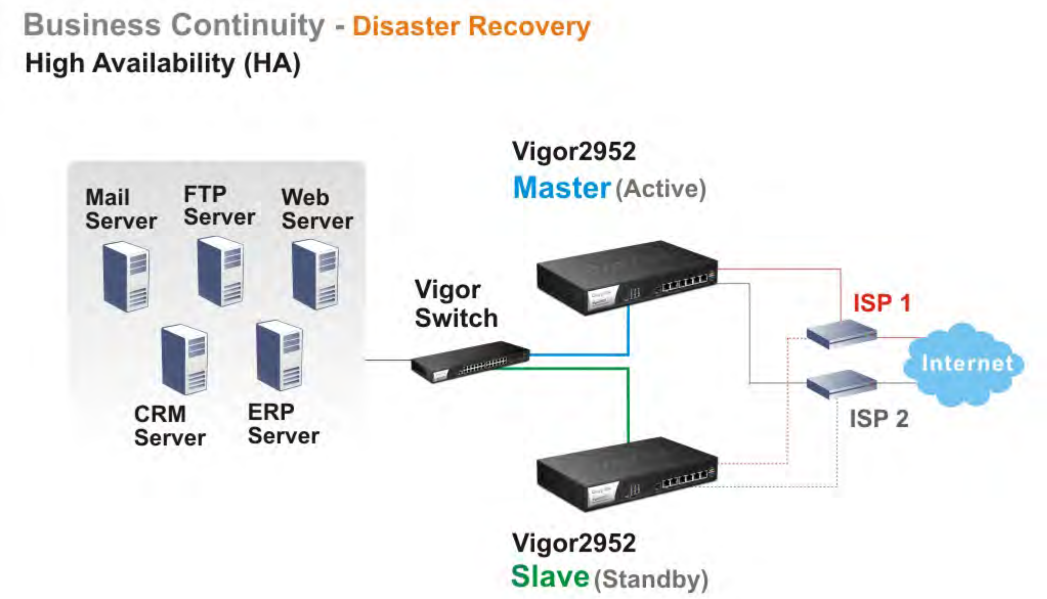
Available settings are explained as follows:

Item	Description
Enable Config Sync (Max. Sync to 10 routers)	Check this box to enable configuration synchronization. To sync configuration from primary to secondary router, both primary and seconday routers need to enable “config sync”. Note that config sync can be enabled by **Hot-Standby** redundancy method only.
Config Sync Interval	**Day / Hour / Minute** - Primary router will sync its configuration to secondary router based on the time interval set here.

After finishing all the settings here, please click **OK** to save the configuration.

Example:

Take the following picture as an example. The upper Vigor2952 is regarded as primary device, the lower Vigor2952 is regarded as secondary device. When primary Vigor2952 Series is broken down, the secondary device could replace the primary role to take over all jobs as soon as possible. However, once the primary device is working again, the secondary device would be changed to original role to stand by.



Application Notes

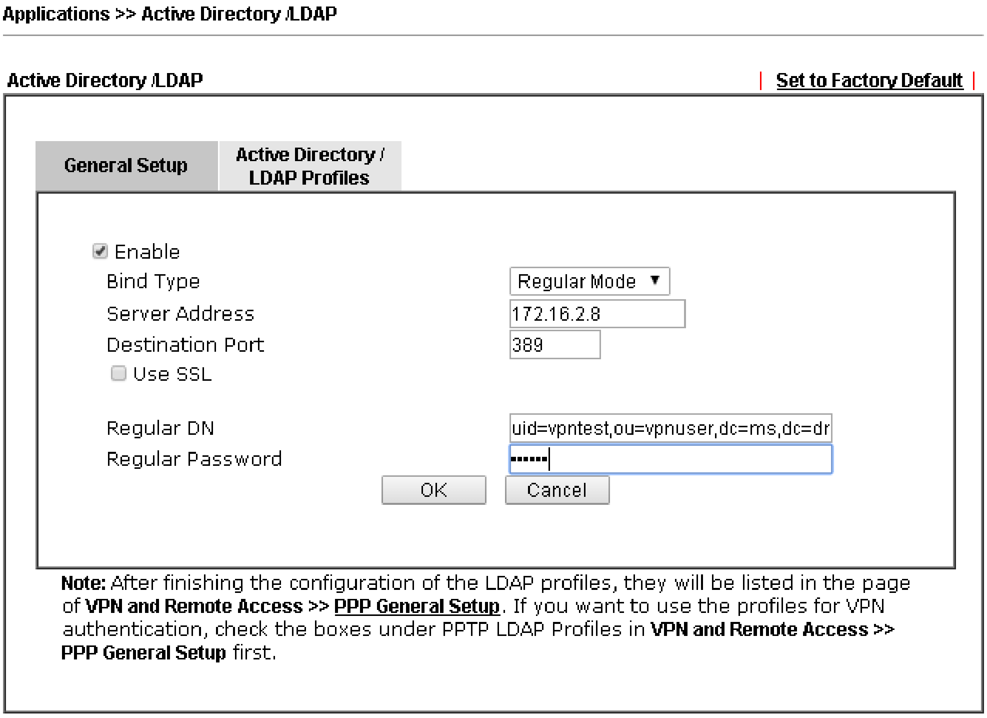
A-1 How to Implement the LDAP/AD Authentication for User Management?

For simplifying the configuration of LDAP authentication for User Access Management, we implement "Group" feature.

There is no need to pre-configure user profile for each user on Vigor router anymore. We only need to configure the Groups DN, then the Vigor router (e.g., Vigor2952 series) can pass the authentication to LDAP server with the pre-defined Group path.

Below shows the configuration steps:

1. Access into the web user interface of the Vigor router.
2. Open **Applications>>Active Directory /LDAP** to get the following page for configuring LDAP related settings.



Applications >> Active Directory /LDAP

Active Directory /LDAP | Set to Factory Default |

☑ Enable

Bind Type: Regular Mode ▼

Server Address: 172.16.2.8

Destination Port: 389

□ Use SSL

Regular DN: uid=vpntest,ou=vpnuser,dc=ms,dc=dr

Regular Password: ••••••

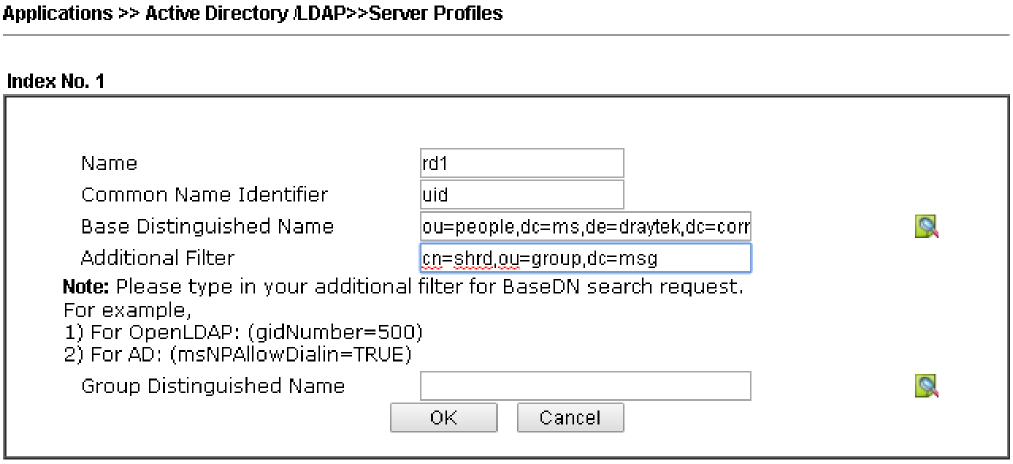
Note: After finishing the configuration of the LDAP profiles, they will be listed in the page of **VPN and Remote Access >> PPP General Setup**. If you want to use the profiles for VPN authentication, check the boxes under PPTP LDAP Profiles in **VPN and Remote Access >> PPP General Setup** first.

There are three types of bind type supported:

- **Simple Mode** – Just simply do the bind authentication without any search action.
- **Anonymous** – Perform a search action first with Anonymous account then do the bind authentication.
- **Regular Mode**– Mostly it is the same with anonymous mode. The different is that, the server will firstly check if you have the search authority.
  For the regular mode, you'll need to type in the **Regular DN** and **Regular Password**.

3. Create LDAP server profiles. Click the **Active Directory /LDAP** tab to open the profile web page and click any one of the index number link.

   If we have two groups "**RD1**" and "**SHRD**" on LDAP server, we can configure two LDAP server profiles with different Group Distinguished Name.



Applications >> Active Directory /LDAP>>Server Profiles

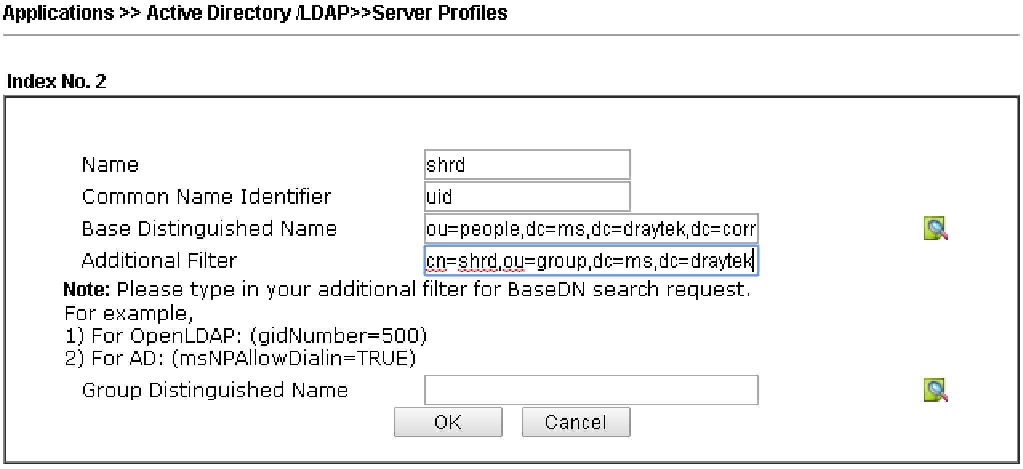
Index No. 1

Name	rd1
Common Name Identifier	uid
Base Distinguished Name	ou=people,dc=ms,de=draytek,dc=corr
Additional Filter	cn=shrd,ou=group,dc=msg

Note: Please type in your additional filter for BaseDN search request.
For example,
1) For OpenLDAP: (gidNumber=500)
2) For AD: (msNPAllowDialin=TRUE)

Group Distinguished Name	

and



Applications >> Active Directory /LDAP>>Server Profiles

Index No. 2

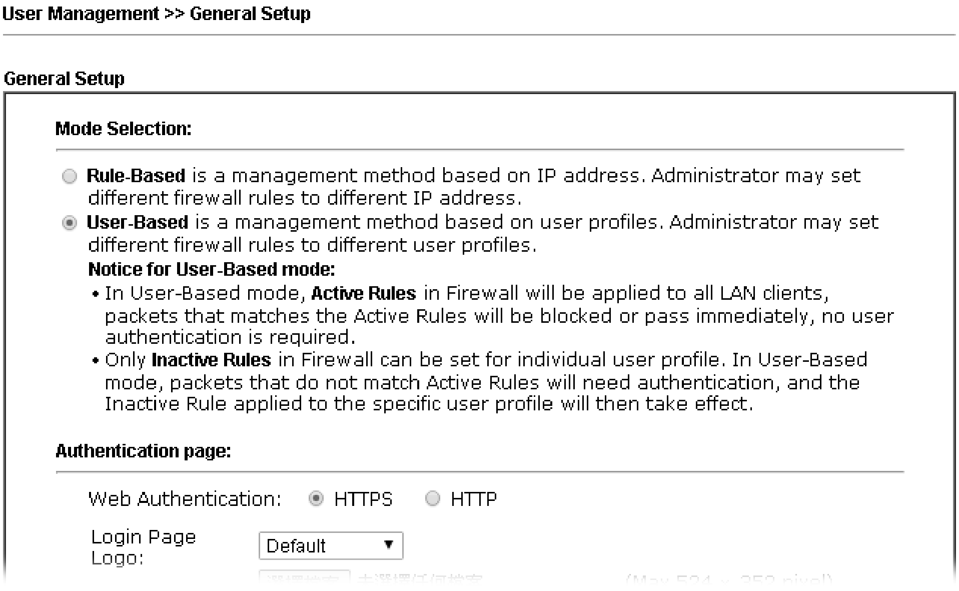
Name	shrd
Common Name Identifier	uid
Base Distinguished Name	ou=people,dc=ms,dc=draytek,dc=corr
Additional Filter	cn=shrd,ou=group,dc=ms,dc=draytek

Note: Please type in your additional filter for BaseDN search request.
For example,
1) For OpenLDAP: (gidNumber=500)
2) For AD: (msNPAllowDialin=TRUE)

Group Distinguished Name	

4. Click **OK** to save the settings above.

5. Open **User Management>>General Setup.** Select **User-Based** as the **Mode** option.



User Management >> General Setup

General Setup

Mode Selection:

○ **Rule-Based** is a management method based on IP address. Administrator may set different firewall rules to different IP address.

● **User-Based** is a management method based on user profiles. Administrator may set different firewall rules to different user profiles.

Notice for User-Based mode:

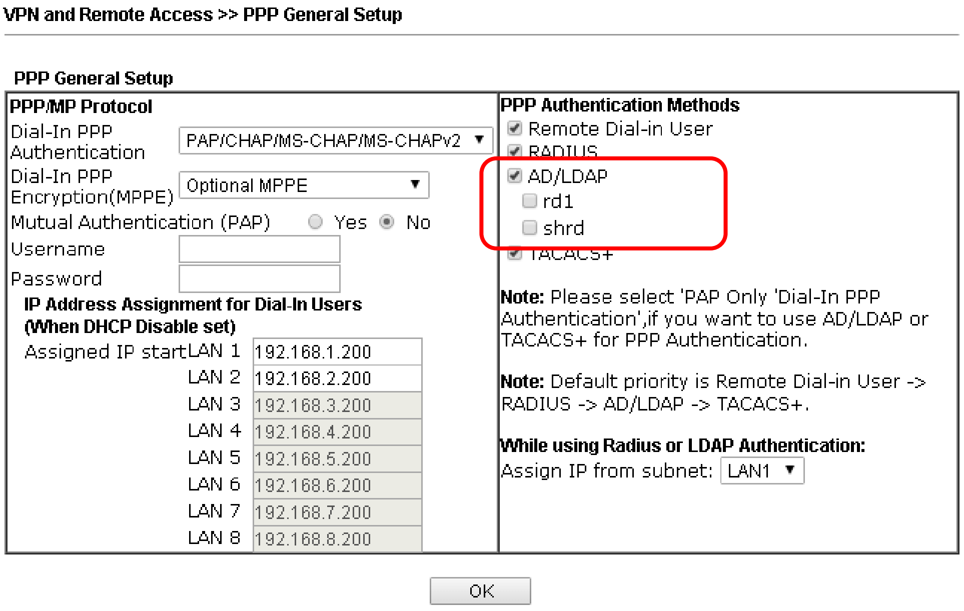
- In User-Based mode, **Active Rules** in Firewall will be applied to all LAN clients, packets that matches the Active Rules will be blocked or pass immediately, no user authentication is required.
- Only **Inactive Rules** in Firewall can be set for individual user profile. In User-Based mode, packets that do not match Active Rules will need authentication, and the Inactive Rule applied to the specific user profile will then take effect.

Authentication page:

Web Authentication: ● HTTPS ○ HTTP

Login Page Logo: Default

6. Then open **VPN and Remote Access>>PPP General Setup** to **check** the profile(s) that will be authenticated with LDAP server.



VPN and Remote Access >> PPP General Setup

PPP General Setup

PPP/MP Protocol

Dial-In PPP Authentication: PAP/CHAP/MS-CHAP/MS-CHAPv2 ▼

Dial-In PPP Encryption(MPPE): Optional MPPE ▼

Mutual Authentication (PAP): ○ Yes ● No

Username:

Password:

IP Address Assignment for Dial-In Users (When DHCP Disable set)

Assigned IP start	LAN 1	192.168.1.200
	LAN 2	192.168.2.200
	LAN 3	192.168.3.200
	LAN 4	192.168.4.200
	LAN 5	192.168.5.200
	LAN 6	192.168.6.200
	LAN 7	192.168.7.200
	LAN 8	192.168.8.200

PPP Authentication Methods

☑ Remote Dial-in User

☑ RADIUS

☑ AD/LDAP

□ rd1

□ shrd

☑ TACACS+

Note: Please select 'PAP Only 'Dial-In PPP Authentication',if you want to use AD/LDAP or TACACS+ for PPP Authentication.

Note: Default priority is Remote Dial-in User -> RADIUS -> AD/LDAP -> TACACS+.

While using Radius or LDAP Authentication:

Assign IP from subnet: LAN1 ▼

After above configurations, users belong to either “rd1” or “shrd” group can access Internet after inputting their credentials on LDAP server.

II-5 Routing

Route Policy (also well known as PBR, policy-based routing) is a feature where you may need to get a strategy for routing. The packets will be directed to the specified interface if they match one of the policies. You can setup route policies in various reasons such as load balance, security, routing decision, and etc.

Through protocol, IP address, port number and interface configuration, Route Policy can be used to configure any routing rules to fit actual request. In general, Route Policy can easily reach the following purposes:

Load Balance

You may manually create policies to balance the traffic across network interface.

Specify Interface

Through dedicated interface (WAN/LAN/VPN), the data can be sent from the source IP to the destination IP.

Address Mapping

Allows you specify the outgoing WAN IP address (es) for an internal private IP address or a range of internal private IP addresses.

Priority

The router will determine which policy will be adopted for transmitting the packet according to the priority of Static Route and Route Policy.

Failover to/Failback

Packets will be sent through another Interface or follow another Policy when the original interface goes down (**Failover to**). Once the original interface resumes service (**Failback**), the packets will be returned to it immediately.

Other routing

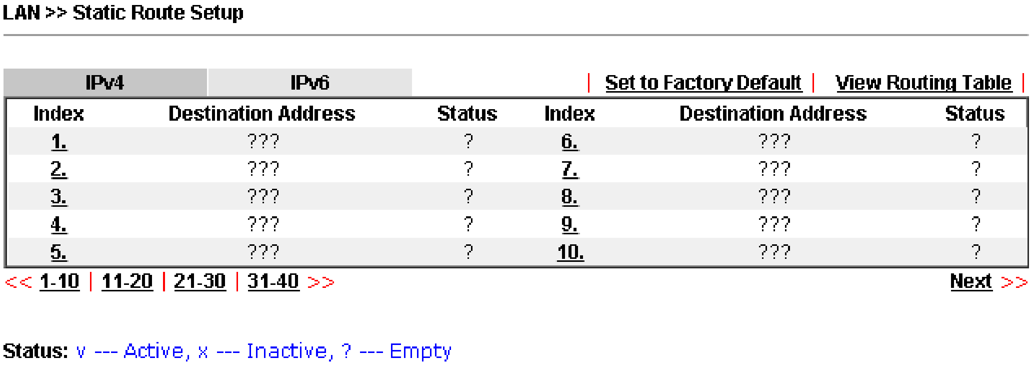
Specify routing policy to determine the direction of the data transmission.

Info	For more detailed information about using policy route, refer to Support >>FAQ/Application Notes on www.draytek.com.

II-5-1 Static Route

Go to **LAN** to open setting page and choose **Static Route**. The router offers IPv4 and IPv6 for you to configure the static route. Both protocols bring different web pages.

II-5-1-1 Static Route for IPv4



LAN >> Static Route Setup

Index	Destination Address	Status	Index	Destination Address	Status
1.	???	?	6.	???	?
2.	???	?	7.	???	?
3.	???	?	8.	???	?
4.	???	?	9.	???	?
5.	???	?	10.	???	?

Status: v --- Active, x --- Inactive, ? --- Empty

Available settings are explained as follows:

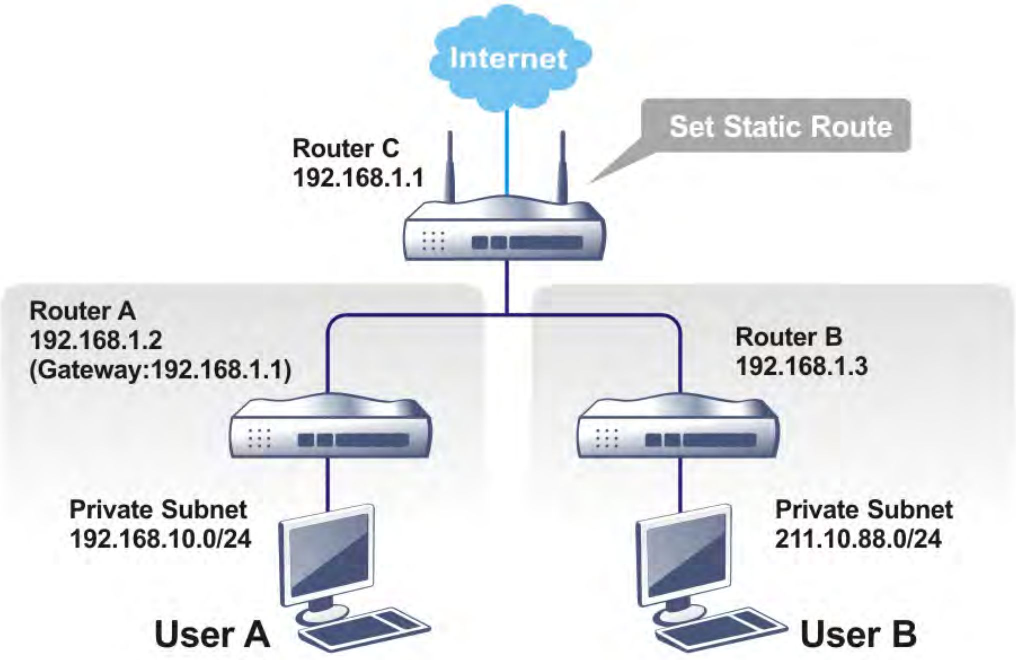
Item	Description
Index	The number (1 to 30) under Index allows you to open next page to set up static route.
Destination Address	Displays the destination address of the static route.
Status	Displays the status of the static route.
Set to Factory Default	Clear all of the settings and return to factory default settings.
Viewing Routing Table	Displays the routing table for your reference.

Add Static Routes to Private and Public Networks

Here is an example (based on IPv4) of setting Static Route in Main Router so that user A and B locating in different subnet can talk to each other via the router. Assuming the Internet access has been configured and the router works properly:

- use the Main Router to surf the Internet.
- create a private subnet 192.168.10.0 using an internal Router A (192.168.1.2)
- create a public subnet 211.100.88.0 via an internal Router B (192.168.1.3).
- have set Main Router 192.168.1.1 as the default gateway for the Router A 192.168.1.2.

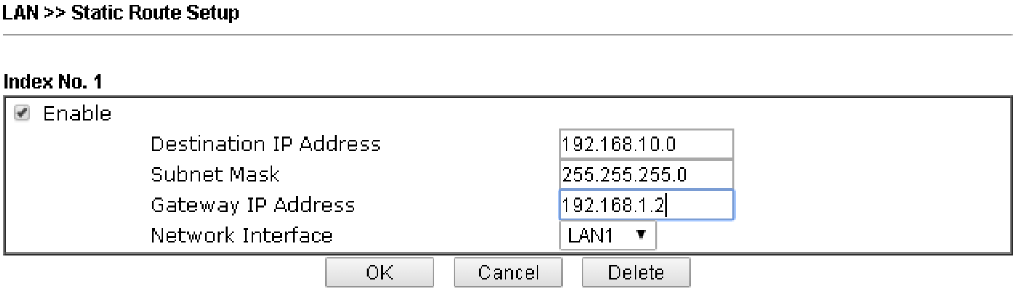
Before setting Static Route, user A cannot talk to user B for Router A can only forward recognized packets to its default gateway Main Router.



1. Go to **LAN** page and click **General Setup**, select 1st Subnet as the **RIP Protocol Control.** Then click the **OK** button.

Info	There are two reasons that we have to apply RIP Protocol Control on 1st Subnet. The first is that the LAN interface can exchange RIP packets with the neighboring routers via the 1st subnet (192.168.1.0/24). The second is that those hosts on the internal private subnets (ex. 192.168.10.0/24) can access the Internet via the router, and continuously exchange of IP routing information with different subnets.

2. Click the **LAN >> Static Route** and click on the **Index Number 1.** Check the **Enable** box. Please add a static route as shown below, which regulates all packets destined to 192.168.10.0 will be forwarded to 192.168.1.2. Click **OK**.



LAN >> Static Route Setup

Index No. 1

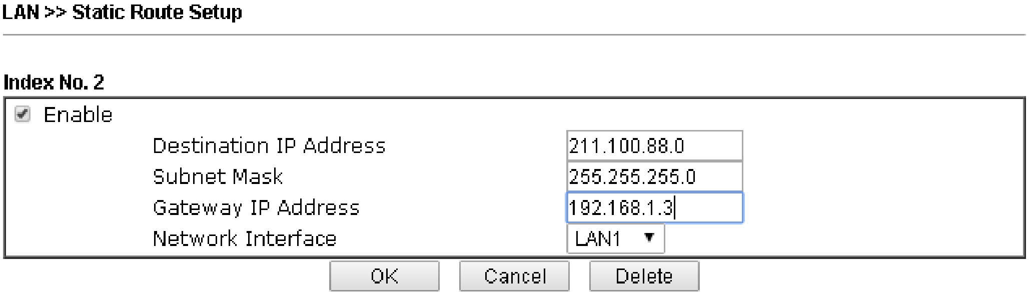
☑ Enable

Destination IP Address	192.168.10.0
Subnet Mask	255.255.255.0
Gateway IP Address	192.168.1.2
Network Interface	LAN1 ▼

Available settings are explained as follows:

Item	Description
Enable	Click it to enable this profile.
Destination IP Address	Type an IP address as the destination of such static route.
Subnet Mask	Type the subnet mask for such static route.
Gateway IP Address	Type the gateway IP addres for such static route.
Network Interface	Use the drop down list to specify an interface for such static route.

3. Return to **Static Route Setup** page. Click on another **Index Number** to add another static route as show below, which regulates all packets destined to 211.100.88.0 will be forwarded to 192.168.1.3. Click **OK**.



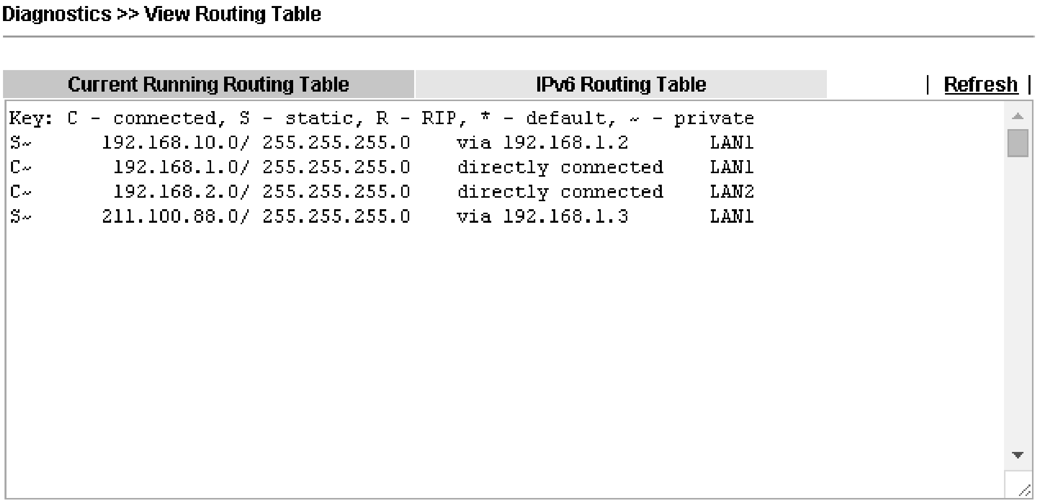
LAN >> Static Route Setup

Index No. 2

☑ Enable

Destination IP Address	211.100.88.0
Subnet Mask	255.255.255.0
Gateway IP Address	192.168.1.3
Network Interface	LAN1 ▼

4. Go to **Diagnostics** and choose **Routing Table** to verify current routing table.

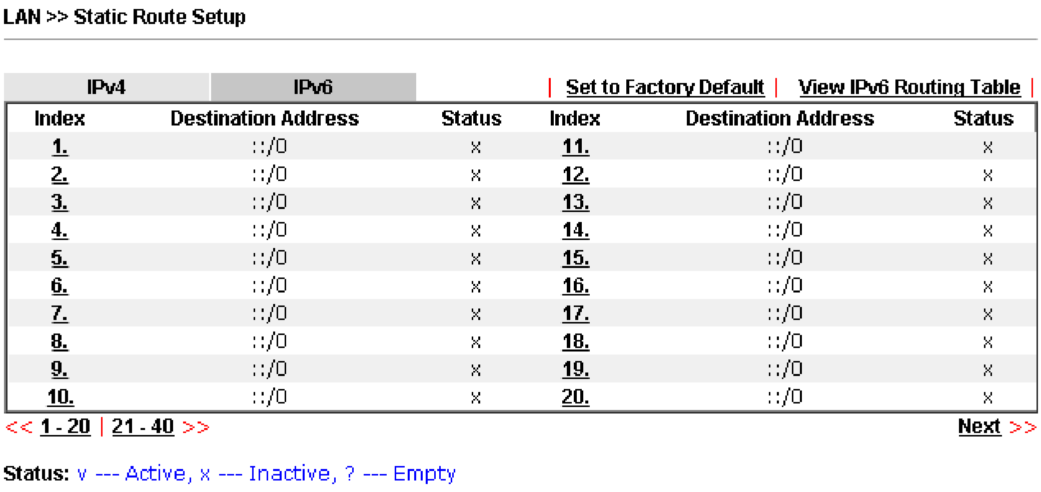


Diagnostics >> View Routing Table

```
Key: C - connected, S - static, R - RIP, * - default, ~ - private
S~      192.168.10.0/ 255.255.255.0    via 192.168.1.2       LAN1
C~       192.168.1.0/ 255.255.255.0    directly connected    LAN1
C~       192.168.2.0/ 255.255.255.0    directly connected    LAN2
S~      211.100.88.0/ 255.255.255.0    via 192.168.1.3       LAN1
```

II-5-1-2 Static Route for IPv6

You can set up to 40 profiles for IPv6 static route. Click the IPv6 tab to open the following page:



LAN >> Static Route Setup

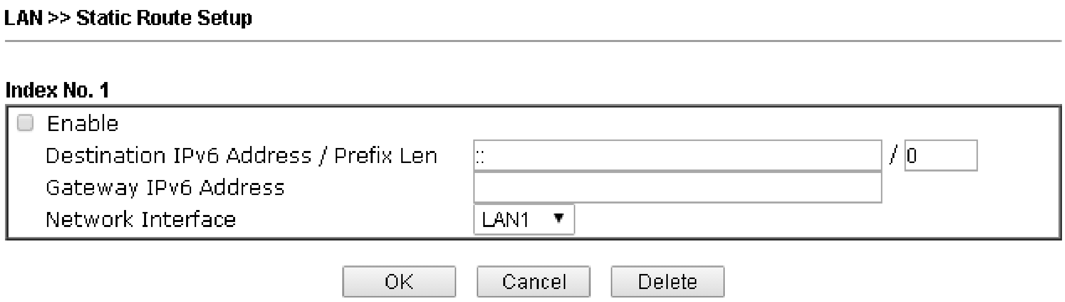
Index	Destination Address	Status	Index	Destination Address	Status
1.	::/0	x	11.	::/0	x
2.	::/0	x	12.	::/0	x
3.	::/0	x	13.	::/0	x
4.	::/0	x	14.	::/0	x
5.	::/0	x	15.	::/0	x
6.	::/0	x	16.	::/0	x
7.	::/0	x	17.	::/0	x
8.	::/0	x	18.	::/0	x
9.	::/0	x	19.	::/0	x
10.	::/0	x	20.	::/0	x

Status: v --- Active, x --- Inactive, ? --- Empty

Available settings are explained as follows:

Item	Description
Index	The number (1 to 40) under Index allows you to open next page to set up static route.
Destination Address	Displays the destination address of the static route.
Status	Displays the status of the static route.
Set to Factory Default	Clear all of the settings and return to factory default settings.
Viewing IPv6 Routing Table	Displays the routing table for your reference.

Click any underline of index number to get the following page.



LAN >> Static Route Setup

Index No. 1

☐ Enable

Destination IPv6 Address / Prefix Len: :: / 0

Gateway IPv6 Address:

Network Interface: LAN1 ▼

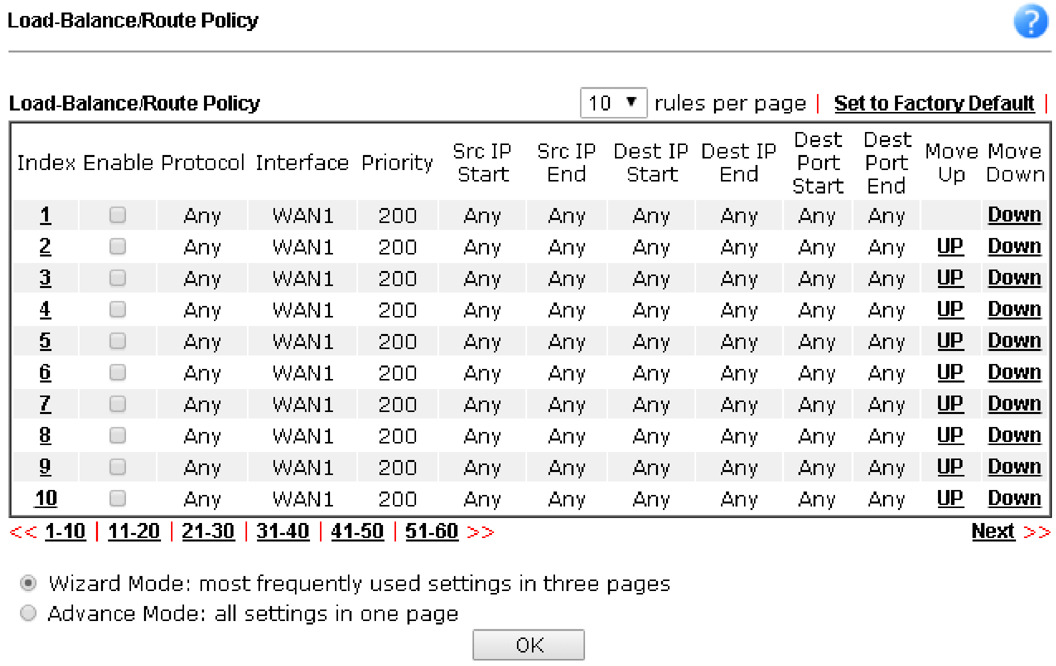
Available settings are explained as follows:

Item	Description
Enable	Click it to enable this profile.
Destination IPv6 Address / Prefix Len	Type the IP address with the prefix length for this entry.
Gateway IPv6 Address	Type the gateway address for this entry.
Network Interface	Use the drop down list to specify an interface for this static route.

When you finish the configuration, please click **OK** to save and exit this page.

II-5-2 Load-Balance /Route Policy

II-5-2-1 General Setup



Load-Balance/Route Policy

Load-Balance/Route Policy 10 ▼ rules per page | Set to Factory Default |

Index	Enable	Protocol	Interface	Priority	Src IP Start	Src IP End	Dest IP Start	Dest IP End	Dest Port Start	Dest Port End	Move Up	Move Down
1	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any		Down
2	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
3	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
4	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
5	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
6	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
7	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
8	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
9	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
10	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down

<< 1-10 | 11-20 | 21-30 | 31-40 | 41-50 | 51-60 >> Next >>

● Wizard Mode: most frequently used settings in three pages

○ Advance Mode: all settings in one page

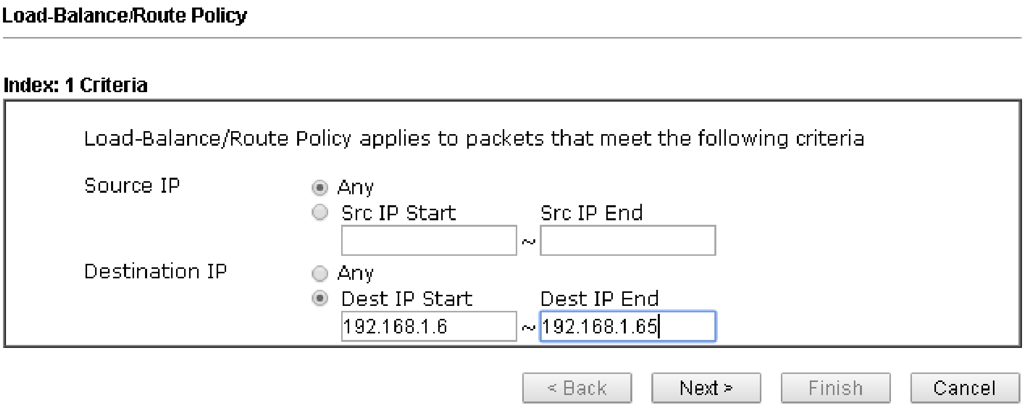
OK

Available settings are explained as follows:

Item	Description
Index	Click the number of index to access into the configuration web page.
Enable	Check this box to enable this policy.
Protocol	Display the protocol used for this policy.
Interface	Display the interface to send packets to once the policy is matched.
Interface Address	Display the WAN IP or WAN IP alias address which is used as source IP of the outgoing packets.
Src IP Start	Displays the IP address for the start of the source IP.
Src IP End	Displays the IP address for the end of the source IP.
Dest IP Start	Displays the IP address for the start of the destination IP.
Dest IP End	Displays the IP address for the end of the destination IP.
Dest Port Start	Displays the IP address for the start of the destination port.
Dest Port End	Displays the IP address for the end of the destination port.
Move UP/Move Down	Use **Up** or **Down** link to move the order of the policy.
Wizard Mode	Allows to configure frequently used settings of route policy via three setting pages
Advance Mode	Allows to configure detailed settings of route policy.

To use **Wizard Mode**, simple do the following steps:

1. Click the **Wizard Mode** radio button.
2. Click **Index 1**. The setting page will appear as follows:



Load-Balance/Route Policy

Index: 1 Criteria

Load-Balance/Route Policy applies to packets that meet the following criteria

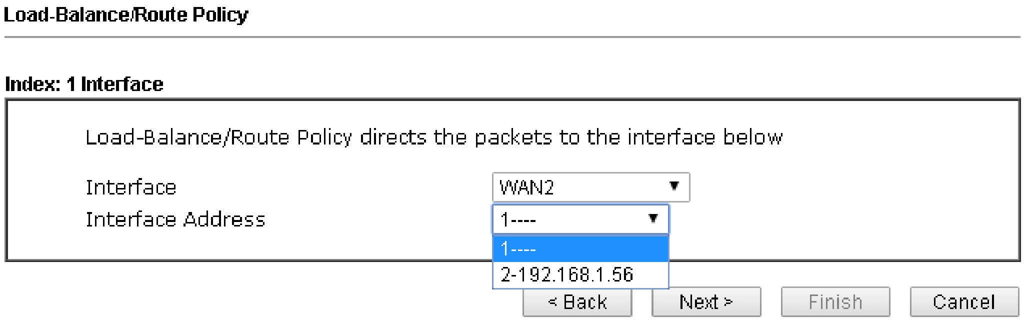
Source IP: ● Any ○ Src IP Start ~ Src IP End

Destination IP: ○ Any ● Dest IP Start 192.168.1.6 ~ Dest IP End 192.168.1.65

Available settings are explained as follows:

Item	Description
Source IP	**Any** – Any IP can be treated as the source IP. **Src IP Start -** Type the source IP start for the specified WAN interface. **Src IP End -** Type the source IP end for the specified WAN interface. If this field is blank, it means that all the source IPs inside the LAN will be passed through the WAN interface.
Destination IP	**Any** – Any IP can be treated as the destination IP. **Dest IP Start-** Type the destination IP start for the specified WAN interface. **Dest IP End -** Type the destination IP end for the specified WAN interface. If this field is blank, it means that all the destination IPs will be passed through the WAN interface.

3. Click **Next** to get the following page.



Load-Balance/Route Policy

Index: 1 Interface

Load-Balance/Route Policy directs the packets to the interface below

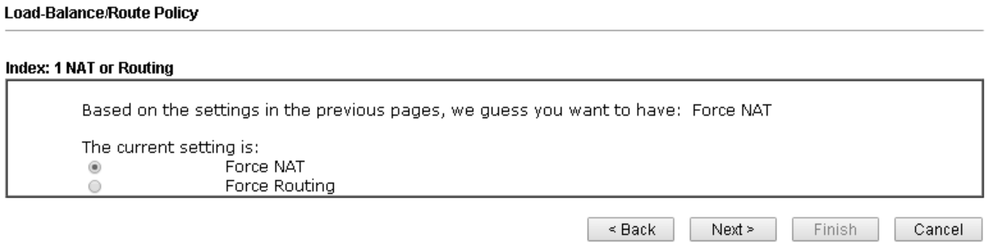
Interface: WAN2

Interface Address: 1----

Available settings are explained as follows:

Item	Description
Interface	Use the drop down list to choose an interface or VPN profile. Packets match with the above criteria will be transferred to the interface chosen here.
Interface Address	Use the drop down list to choose an existed IP address.

4. After specifying the interface, click **Next** to get the following page.



Load-Balance/Route Policy

Index: 1 NAT or Routing

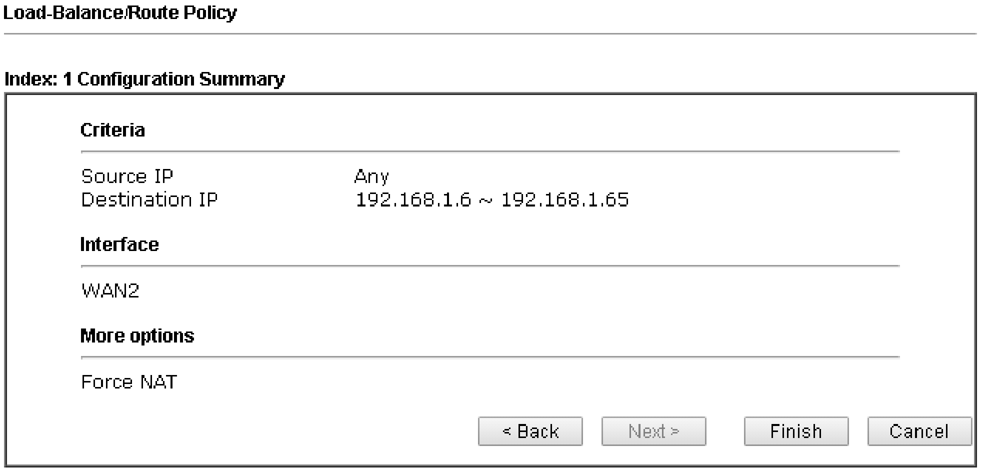
Based on the settings in the previous pages, we guess you want to have: Force NAT

The current setting is:
● Force NAT
○ Force Routing

Available settings are explained as follows:

Item	Description
Force NAT /Force Routing	It determines which mechanism that the router will use to forward the packet to WAN.

5. After choosing the mechanism, click **Next** to get the summary page for reference.



Load-Balance/Route Policy

Index: 1 Configuration Summary

Criteria

Source IP Any
Destination IP 192.168.1.6 ~ 192.168.1.65

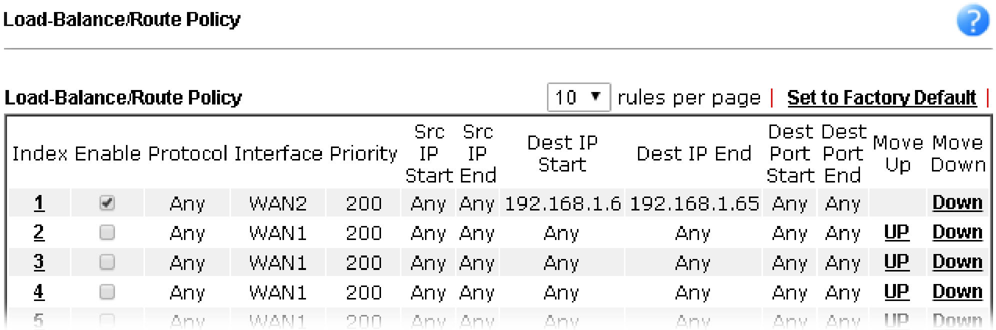
Interface

WAN2

More options

Force NAT

6. If there is no error, click **Finish** to complete wizard setting.



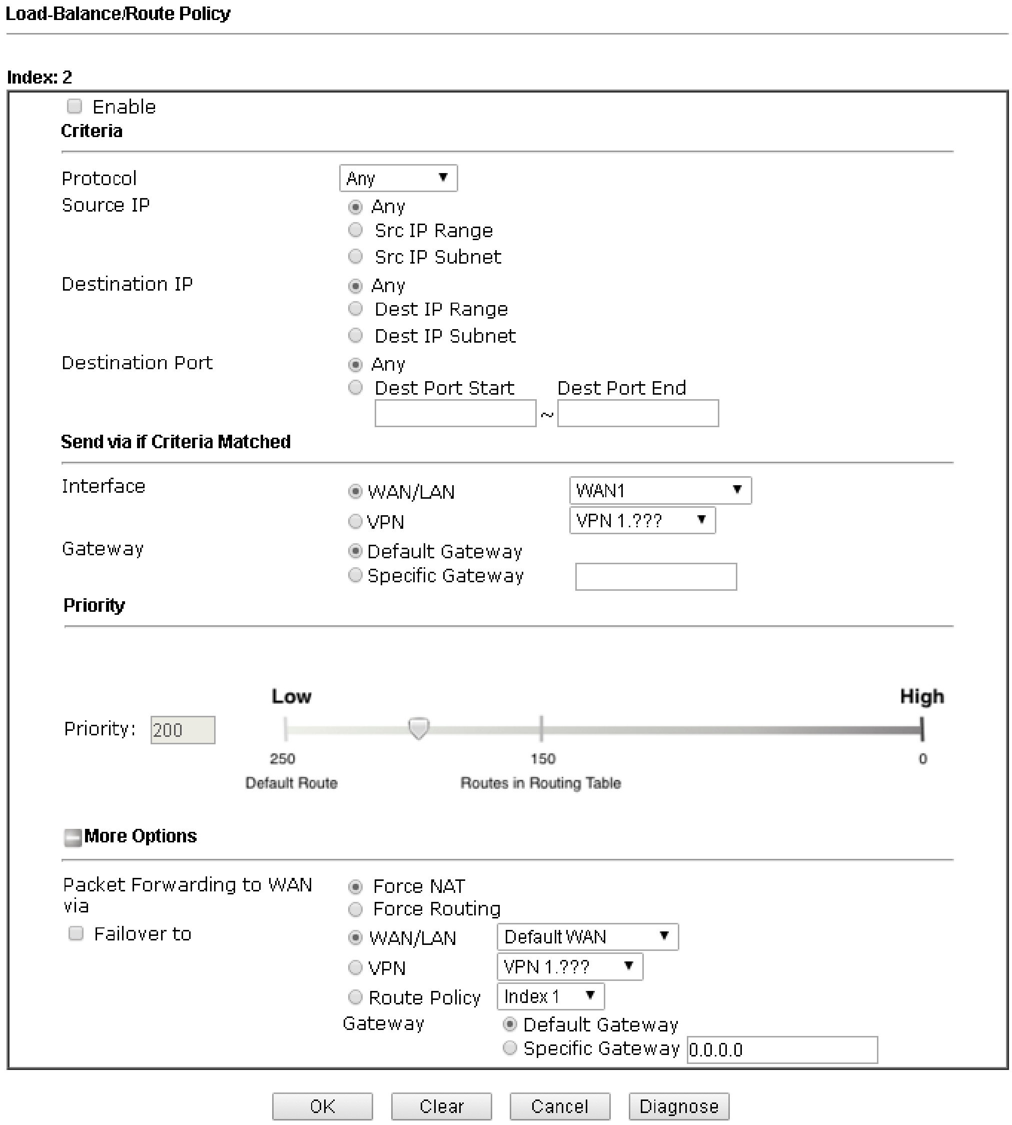
Load-Balance/Route Policy

Load-Balance/Route Policy 10 ▼ rules per page | Set to Factory Default |

Index	Enable	Protocol	Interface	Priority	Src IP Start	Src IP End	Dest IP Start	Dest IP End	Dest Port Start	Dest Port End	Move Up	Move Down
1	☑	Any	WAN2	200	Any	Any	192.168.1.6	192.168.1.65	Any	Any		Down
2	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
3	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
4	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
5	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down

To use **Advance Mode,** do the following steps:

1. Click the **Advance Mode** radio button.
2. Click **Index 2** to access into the following page.



Load-Balance/Route Policy

Index: 2

□ Enable

Criteria

Protocol: Any

Source IP: ● Any ○ Src IP Range ○ Src IP Subnet

Destination IP: ● Any ○ Dest IP Range ○ Dest IP Subnet

Destination Port: ● Any ○ Dest Port Start ~ Dest Port End

Send via if Criteria Matched

Interface: ● WAN/LAN WAN1 ○ VPN VPN 1.???

Gateway: ● Default Gateway ○ Specific Gateway

Priority

Priority: 200

More Options

Packet Forwarding to WAN via: ● Force NAT ○ Force Routing

□ Failover to: ● WAN/LAN Default WAN ○ VPN VPN 1.??? ○ Route Policy Index 1

Gateway: ● Default Gateway ○ Specific Gateway 0.0.0.0

Available settings are explained as follows:

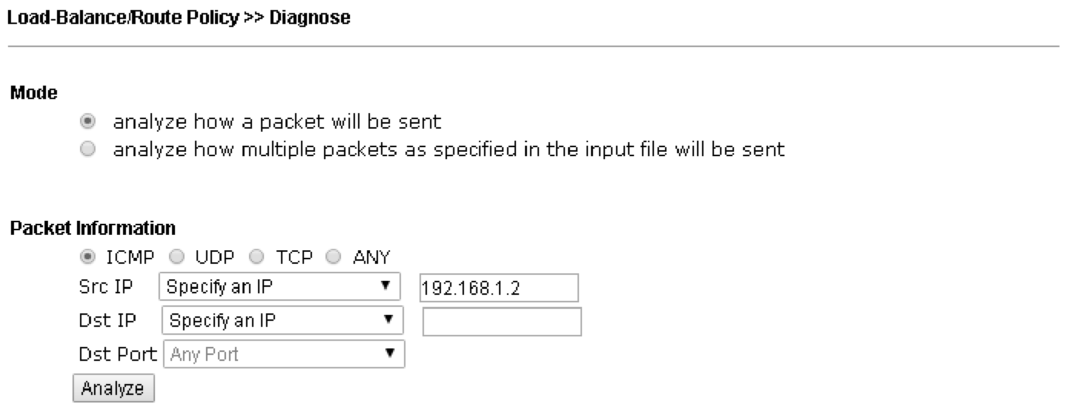
Item	Description
Enable	Check this box to enable this policy.
Criteria	
Protocol	Use the drop-down menu to choose a proper protocol for the WAN interface.
Source IP	**Any** – Any IP can be treated as the source IP. **Src IP Start -** Type the source IP start for the specified WAN interface. **Src IP End -** Type the source IP end for the specified WAN interface. If this field is blank, it means that all the source IPs inside the LAN will be passed through the WAN interface.
Destination IP	**Any** – Any IP can be treated as the destination IP.

	Dest IP Start- Type the destination IP start for the specified WAN interface. **Dest IP End -** Type the destination IP end for the specified WAN interface. If this field is blank, it means that all the destination IPs will be passed through the WAN interface.
Destination Port	**Any** – Any port number can be treated as the destination port. **Dest Port Start -** Type the destination port start for the destination IP. **Dest Port End -** Type the destination port end for the destination IP. If this field is blank, it means that all the destination ports will be passed through the WAN interface.
Send to if criteria matched	
Interface	Use the drop down list to choose a WAN or LAN interface or VPN profile. Packets match with the above criteria will be transferred to the interface chosen here.
Gateway	**Specific gateway** is used only when you want to forward the packets to the desired gateway. Usually, Default Gateway is selected in default.
Priority	
Priority	Packets will be transmitted based on all routes or Route Policy. Vigor router will determine which rule will be adopted for transmitting the packet according to the priority of Static Route and Route Policy. The greater the value is, the lower the priority is. Default value for route policy is "200" which means it has higher priority than the default route.
More options	**Packet Forwarding to WAN via** – When you choose WAN (e.g., WAN1) as the Interface for packet transmission, you have to specify the way the packet forwarded to. Choose **Force NAT** or **Force Routing**. **Failover to** – Check this button to lead the data passing through specific interface (WAN/LAN/VPN/Route Policy) automatically when the selected interface (defined in **Send via if criteria matched**) is down. ● **WAN/LAN -** Use the drop down list to choose an interface as an auto failover interface. ● **VPN -** Use the drop down list to choose a VPN tunnel as a failover tunnel. ● **Route Policy -** Use the drop down list to choose an existed route policy profile. **Gateway** – **Specific gateway** is used only when you want to forward the packets to the desired gateway. Usually, Default Gateway is selected in default.

3. When you finish the configuration, please click **OK** to save and exit this page.

II-5-2-2 Diagnose

With the analysis done by such page, possible path (static route, routing table or policy route) of the packets sent out of the router can be traced.



Load-Balance/Route Policy >> Diagnose

Mode

● analyze how a packet will be sent
○ analyze how multiple packets as specified in the input file will be sent

Packet Information

● ICMP ○ UDP ○ TCP ○ ANY

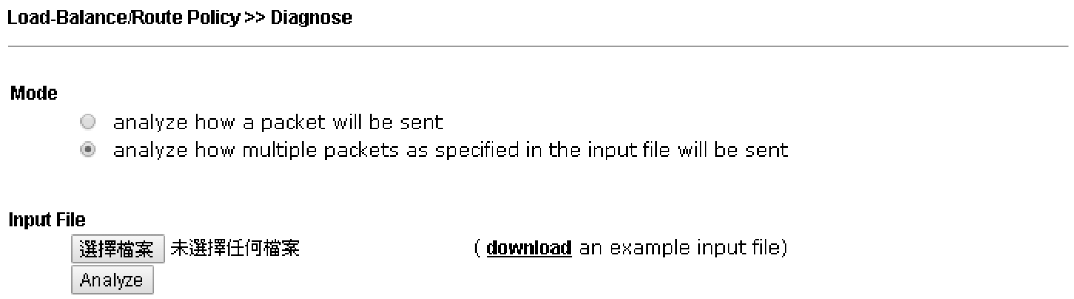
Src IP: Specify an IP ▼ 192.168.1.2

Dst IP: Specify an IP ▼

Dst Port: Any Port ▼

Analyze

or



Load-Balance/Route Policy >> Diagnose

Mode

○ analyze how a packet will be sent
● analyze how multiple packets as specified in the input file will be sent

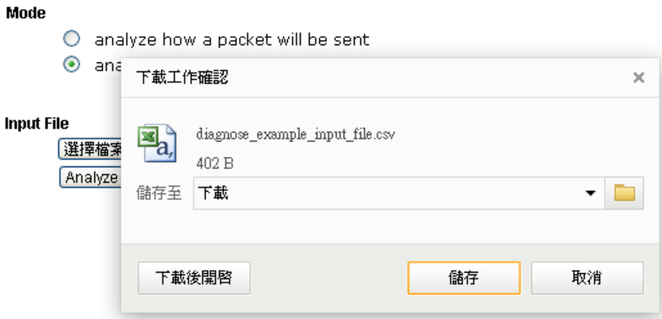
Input File

選擇檔案 未選擇任何檔案 (**download** an example input file)

Analyze

Available settings are explained as follows:

Item	Description
Mode	**Analyze how a packet will be sent** – Choose such mode to make Vigor router analyze how a single packet will be sent by a route policy. **Analyze how multiple packets**… - Choose such mode to make Vigor router analyze how multiple packets in a specified file will be sent by a route policy.
Packet Information	Specify the nature of the packets to be analyzed by Vigor router. **ICMP/UDP/TCP/ANY-** Specify a protocol for diagnosis. **Src IP** – Type an IP address as the source IP. **Dst IP** – Type an IP address as the destination IP. **Dst Port** – Use the drop down list to specify the destination port. **Analyze** – Click it to perform the job of analyzing. The analyzed result will be shown on the page. If required, click **export analysis** to export the result as a file.
Input File	**Select** – Click the download link to get a blank example file. Then, click such button to select that blank ".csv" file for saving the result of analysis.



Mode

○ analyze how a packet will be sent

● ana

Input File

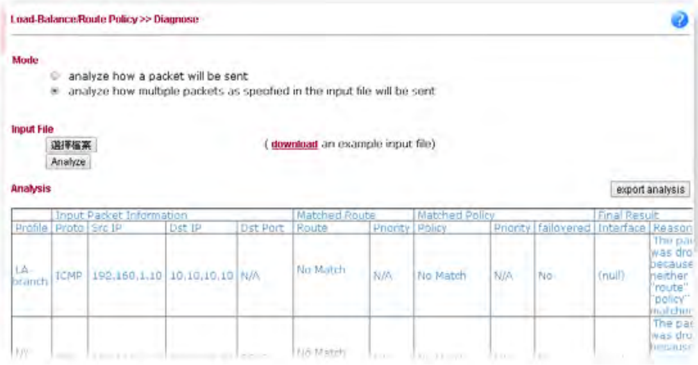
下載工作確認

diagnose_example_input_file.csv

402 B

儲存至 下載

Analyze – Click it to perform the job of analyzing. The analyzed result will be shown on the page. If required, click **export analysis** to export the result as a file.



Load-Balance/Route Policy >> Diagnose

Mode

○ analyze how a packet will be sent

● analyze how multiple packets as specified in the input file will be sent

Input File

(download an example input file)

Analysis

	Input Packet Information				Matched Route		Matched Policy			Final Result	
Profile	Proto	Src IP	Dst IP	Dst Port	Route	Priority	Policy	Priority	failovered	Interface	Reason
LA-branch	ICMP	192.168.1.10	10.10.10.10	N/A	No Match	N/A	No Match	N/A	No	(null)	The pa was dro because neither "route" "policy" matchin
N/					No Match						The pa was dro becaus

Note that the analysis was based on the current "load-balance/route policy" settings, we do not guarantee it will be 100% the same as the real case.

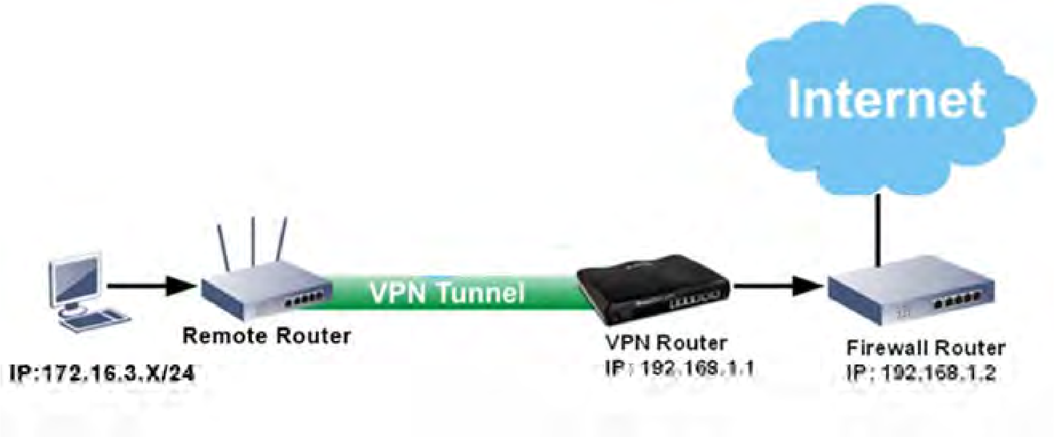
Application Notes

A-1 How to Customize a Secure Route between VPN Router and Remote Router by Using Route Policy

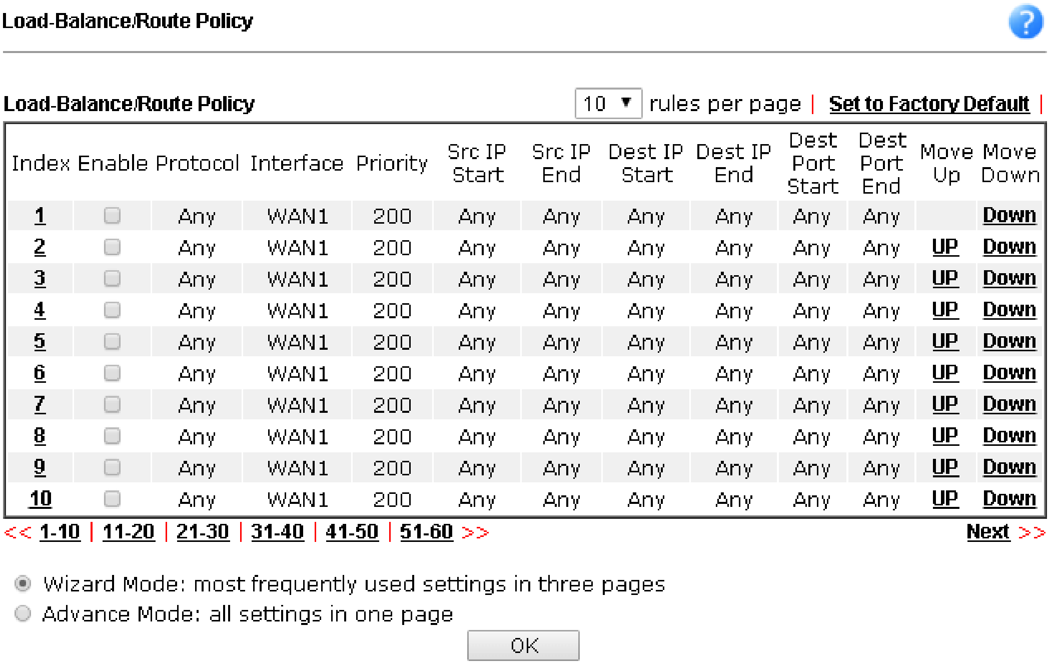
Info	The web user interface will be revised later.

Example 1:

In the following figure, a LAN to LAN VPN tunnel is built between DrayTek VPN router (e.g., Vigor2952 Series) and the remote router. Firewall Router can receive all of the traffic coming from remote PC which wants to access into Internet; and send back the packets to Remote Router through VPN Router.



1. Establish a **VPN tunnel** between VPN Router and the Remote Router.
2. Change to default route for the router located in Remote Router.
3. Access into the web user interface of the router in VPN Router. Then, open **Load-Balance / Route Policy** and click **Advance Mode.**



Load-Balance/Route Policy

Load-Balance/Route Policy　10 ▼ rules per page | **Set to Factory Default** |

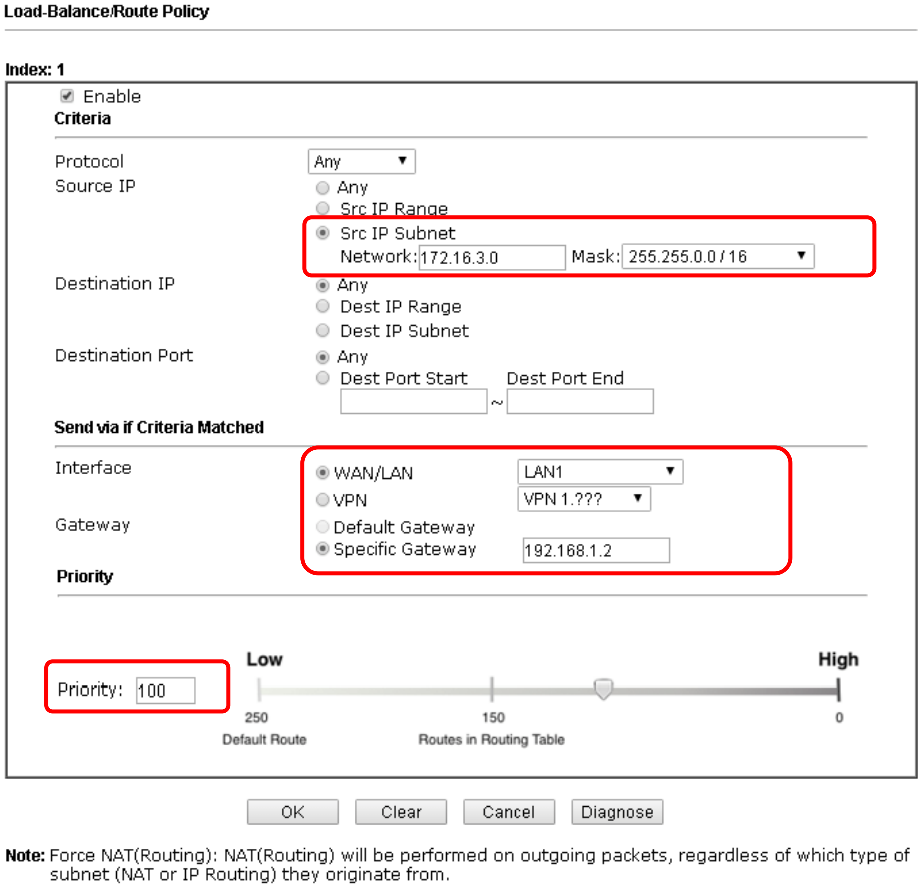
Index	Enable	Protocol	Interface	Priority	Src IP Start	Src IP End	Dest IP Start	Dest IP End	Dest Port Start	Dest Port End	Move Up	Move Down
1	☐	Any	WAN1	200	Any	Any	Any	Any	Any	Any		Down
2	☐	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
3	☐	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
4	☐	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
5	☐	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
6	☐	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
7	☐	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
8	☐	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
9	☐	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
10	☐	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down

<< 1-10 | 11-20 | 21-30 | 31-40 | 41-50 | 51-60 >>　　**Next** >>

● Wizard Mode: most frequently used settings in three pages
○ Advance Mode: all settings in one page

OK

4. Click any **Index** number link (e.g., 1 in this case). Configure the settings as follows.



Load-Balance/Route Policy

Index: 1

☑ Enable

Criteria

Protocol: Any ▼

Source IP: ○ Any　○ Src IP Range　● Src IP Subnet　Network: 172.16.3.0　Mask: 255.255.0.0 / 16 ▼

Destination IP: ● Any　○ Dest IP Range　○ Dest IP Subnet

Destination Port: ● Any　○ Dest Port Start ~ Dest Port End

Send via if Criteria Matched

Interface: ● WAN/LAN　LAN1 ▼　○ VPN　VPN 1.??? ▼

Gateway: ○ Default Gateway　● Specific Gateway　192.168.1.2

Priority

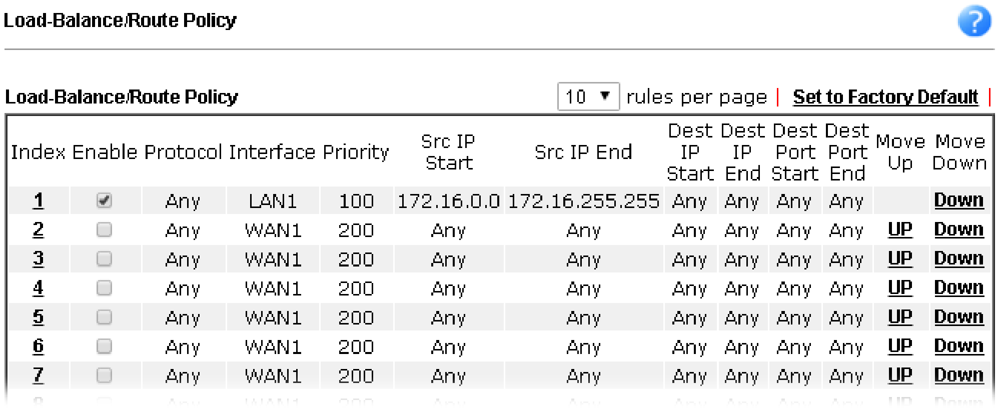
Priority: 100

OK　Clear　Cancel　Diagnose

Note: Force NAT(Routing): NAT(Routing) will be performed on outgoing packets, regardless of which type of subnet (NAT or IP Routing) they originate from.

Now, if you want such route policy will be applied by Vigor router with higher priority, please adjust the value of **Priority** for such route policy. In general, default route is specified with the lowest priority for it value is fixed as "250". And Routes in Routing Table are fixed as "150". You can adjust the value for such route policy with lower value, e.g., 100 to ensure it will be applied to packets transmission with the highest priority.

5. After finished the above settings, click **OK** to save the configuration.



Load-Balance/Route Policy

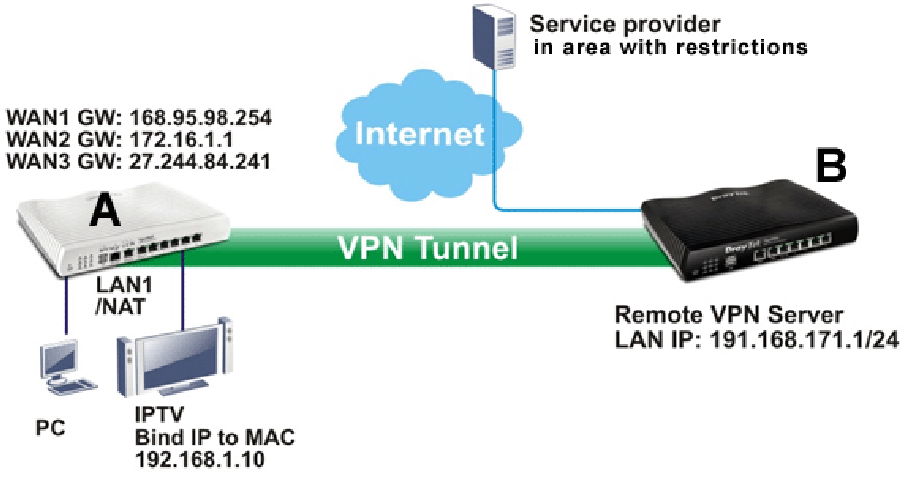
Load-Balance/Route Policy　10 ▼ rules per page | **Set to Factory Default** |

Index	Enable	Protocol	Interface	Priority	Src IP Start	Src IP End	Dest IP Start	Dest IP End	Dest Port Start	Dest Port End	Move Up	Move Down
1	☑	Any	LAN1	100	172.16.0.0	172.16.255.255	Any	Any	Any	Any		Down
2	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
3	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
4	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
5	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
6	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
7	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
8	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down

6. To route the packets coming from the Firewall Router back to the remote router, access into the web user interface of the Firewall Router. Then, set “192.168.1.1/24” as the gateway IP address and set “172.16.3.0/24” as the destination IP address.

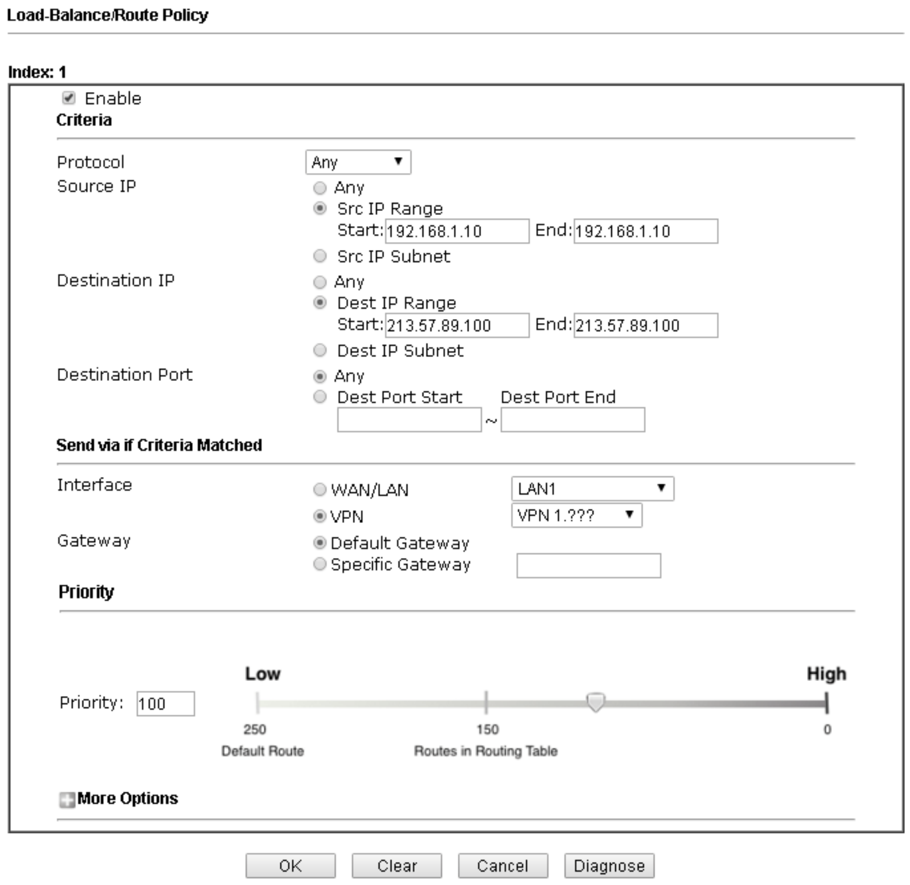
Example 2:

Below shows a scenario that local users behind Vigor router A want to access into a remote service (e.g., YouTube) which is blocked or restricted by local Service Provider in area with restrictions. A policy route can be created by the side of Router A to break through the Internet censorship circumvention.



A VPN tunnel has been established between Router A and router B.

1. Access into the web user interface of Router A.
2. Open **Load-Balance/Route Policy**.
3. Click any index number (e.g., #1 in this case).
4. In the following web page, check **Enable**; type “192.168.1.10” as **Src IP Range**; type “213.57.89.100” as the **Destination IP** for the remote VPN server; and choose VPN as the **Interface** setting.



Load-Balance/Route Policy

Index: 1

☑ Enable

Criteria

Protocol: Any

Source IP:
○ Any
● Src IP Range
Start: 192.168.1.10 End: 192.168.1.10
○ Src IP Subnet

Destination IP:
○ Any
● Dest IP Range
Start: 213.57.89.100 End: 213.57.89.100
○ Dest IP Subnet

Destination Port:
● Any
○ Dest Port Start ~ Dest Port End

Send via if Criteria Matched

Interface:
○ WAN/LAN LAN1
● VPN VPN 1.???

Gateway:
● Default Gateway
○ Specific Gateway

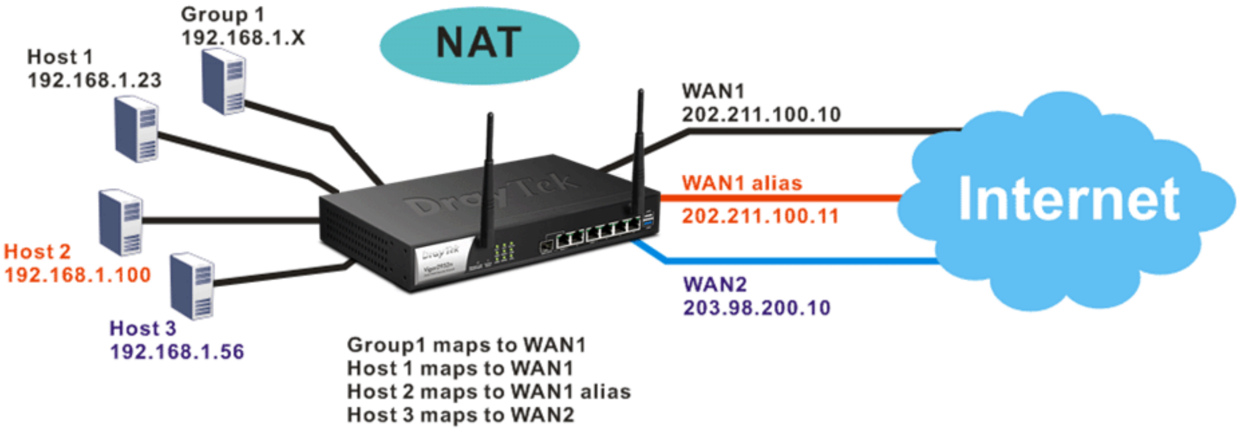
Priority

Priority: 100

5. Click **OK** to save the settings.

A-2 How to Setup Address Mapping

Address Mapping is used to map a specified private IP or a range of private IPs of NAT subnet into a specified WAN IP (or WAN IP alias IP). Refer to the following figure.



Suppose the WAN settings for a router are configured as follows:

WAN1: 202.211.100.10, WAN1 alias: 202.211.100.11

WAN2: 203.98.200.10

Without address mapping feature, when a NAT host with an IP say "192.168.1.10" sends a packet to the WAN side (or the Internet), the source address of the NAT host will be mapped into either 202.211.100.10 or 203.98.200.10 (which IP or mapping is decided by the internal load balancing algorithm).

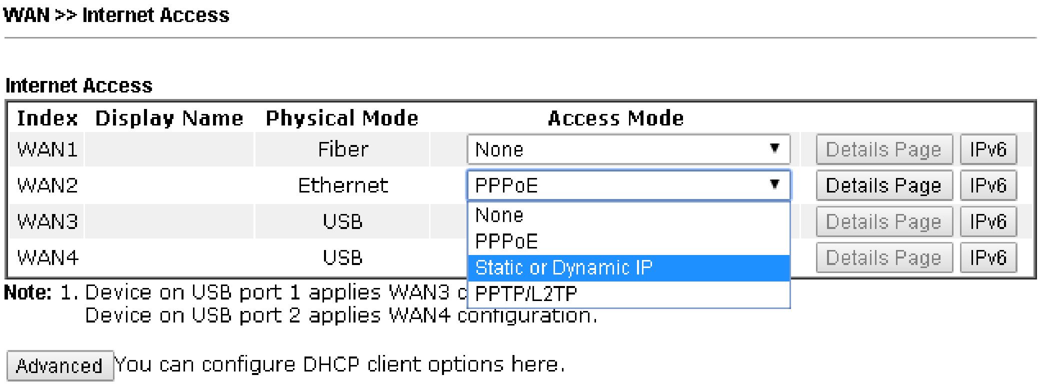
With address mapping feature, you can manually configure any host mapping to any WAN interface to fit the request. In the above example, you can configure NAT Host 1 to always map to 202.211.100.10 (WAN1); Host 2 to always map to 202.211.100.11 (WAN1 alias); Host 3 always map to 203.98.200.10 (WAN2) and Group 1 to always map to 202.211.100.10 (WAN1).

NAT Address Mapping function lets you specify the outgoing IP address(es) for one internal IP address or a block of internal IP addresses.

We will take an example to introduce how to make use of this feature.

1. Log into the web user interface of Vigor2952.

2. Open **WAN>>Internet Access**. For WAN1, choose **Static or Dynamic IP** as the **Access Mode**.



WAN >> Internet Access

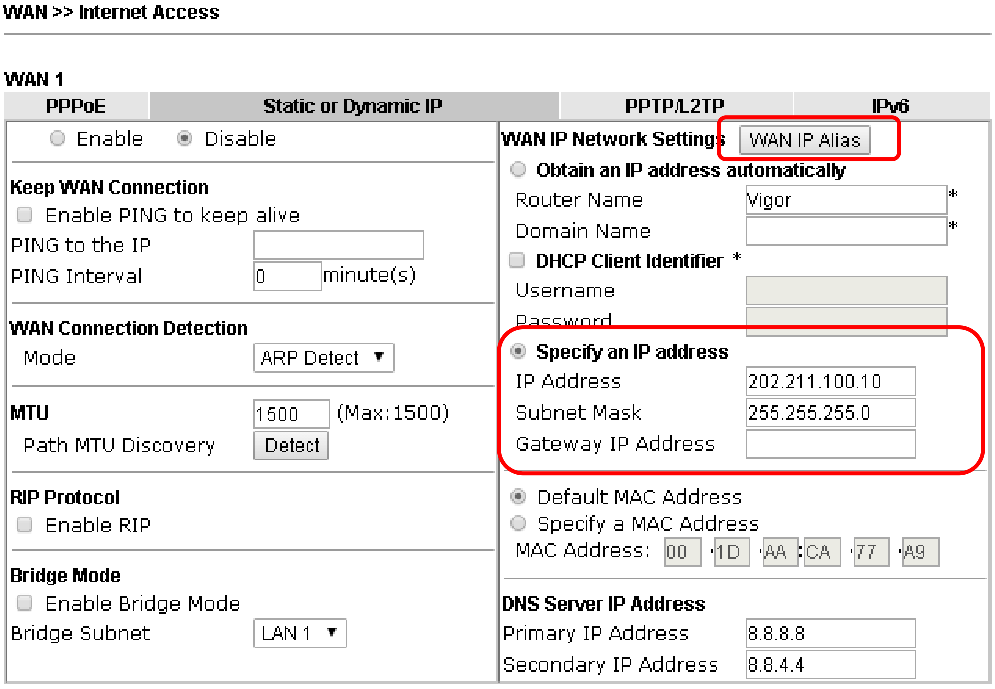
Internet Access

Index	Display Name	Physical Mode	Access Mode		
WAN1		Fiber	None ▼	Details Page	IPv6
WAN2		Ethernet	PPPoE ▼	Details Page	IPv6
WAN3		USB		Details Page	IPv6
WAN4		USB		Details Page	IPv6

Note: 1. Device on USB port 1 applies WAN3 c
Device on USB port 2 applies WAN4 configuration.

Advanced You can configure DHCP client options here.

3. Click the **Details Page** of WAN 1 to open the following page. From the above figure, set main WAN IP address as *202.211.100.10*.



WAN >> Internet Access

WAN 1

PPPoE	Static or Dynamic IP	PPTP/L2TP	IPv6

○ Enable ● Disable

Keep WAN Connection

□ Enable PING to keep alive

PING to the IP

PING Interval 0 minute(s)

WAN Connection Detection

Mode ARP Detect

MTU 1500 (Max:1500)

Path MTU Discovery Detect

RIP Protocol

□ Enable RIP

Bridge Mode

□ Enable Bridge Mode

Bridge Subnet LAN 1

WAN IP Network Settings WAN IP Alias

○ **Obtain an IP address automatically**

Router Name Vigor *

Domain Name *

□ **DHCP Client Identifier** *

Username

Password

● **Specify an IP address**

IP Address 202.211.100.10

Subnet Mask 255.255.255.0

Gateway IP Address

● Default MAC Address

○ Specify a MAC Address

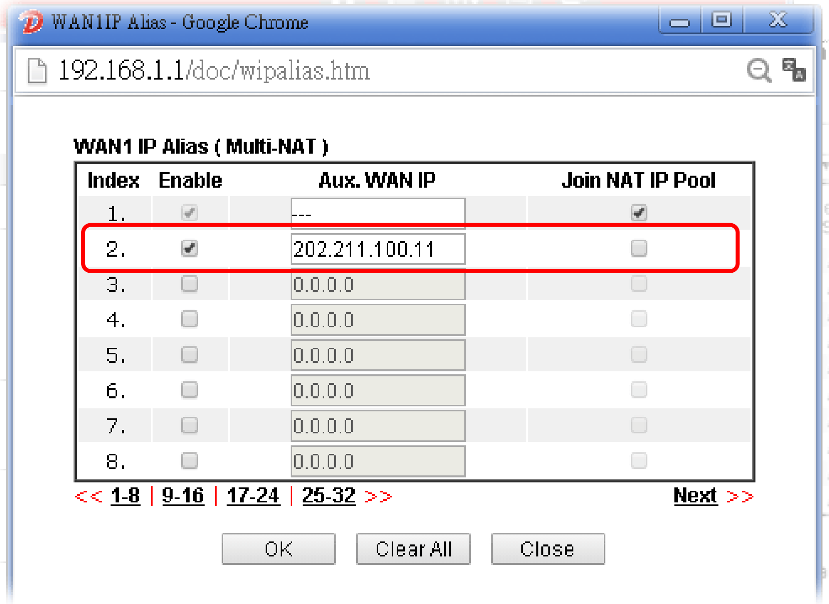
MAC Address: 00 :1D :AA :CA :77 :A9

DNS Server IP Address

Primary IP Address 8.8.8.8

Secondary IP Address 8.8.4.4

Click the **WAN IP Alias** button to configure the other IP address which is *202.211.100.11*. Make sure **Join IP NAT Pool** is not checked. Click **OK** to save the settings.



WAN1IP Alias - Google Chrome

192.168.1.1/doc/wipalias.htm

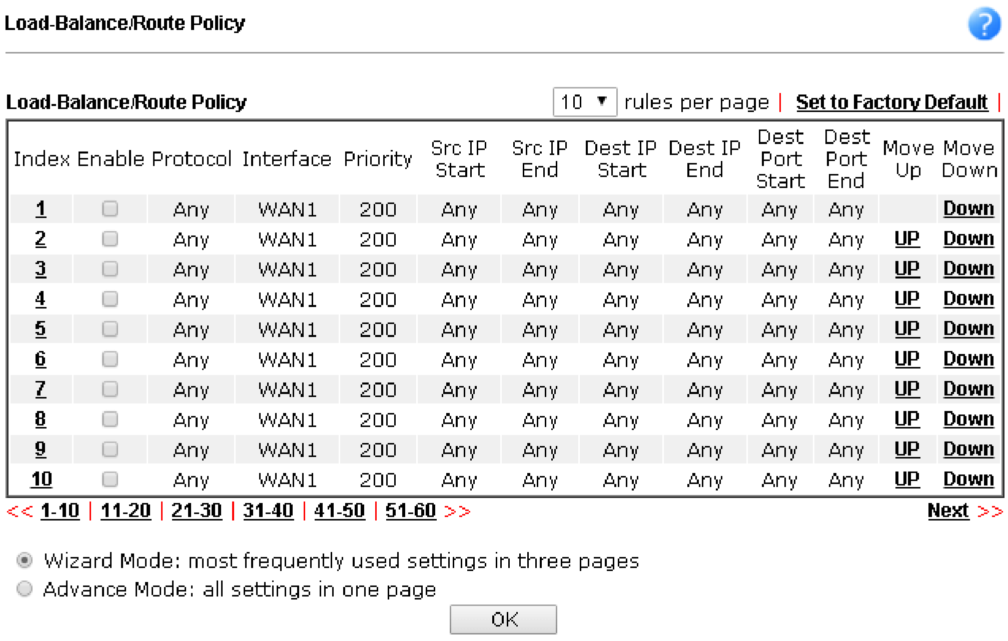
WAN1 IP Alias (Multi-NAT)

Index	Enable	Aux. WAN IP	Join NAT IP Pool
1.	☑	---	☑
2.	☑	202.211.100.11	□
3.	□	0.0.0.0	□
4.	□	0.0.0.0	□
5.	□	0.0.0.0	□
6.	□	0.0.0.0	□
7.	□	0.0.0.0	□
8.	□	0.0.0.0	□

<< 1-8 | 9-16 | 17-24 | 25-32 >> Next >>

OK Clear All Close

4. After finished configuration for WAN1, open **Load-Balance/Route Policy**.



Load-Balance/Route Policy

Load-Balance/Route Policy 10 ▼ rules per page | Set to Factory Default |

Index	Enable	Protocol	Interface	Priority	Src IP Start	Src IP End	Dest IP Start	Dest IP End	Dest Port Start	Dest Port End	Move Up	Move Down
1	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any		Down
2	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
3	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
4	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
5	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
6	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
7	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
8	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
9	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
10	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down

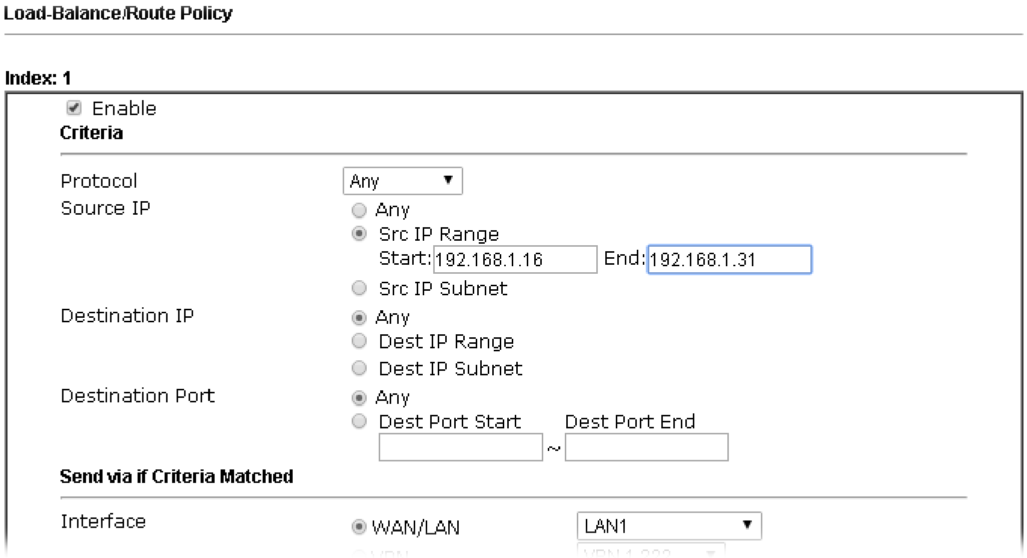
<< 1-10 | 11-20 | 21-30 | 31-40 | 41-50 | 51-60 >> Next >>

● Wizard Mode: most frequently used settings in three pages

○ Advance Mode: all settings in one page

OK

5. Click Index number 1 and 2 to configure the details. After finished the settings, click **OK** to save the settings respectively.



Load-Balance/Route Policy

Index: 1

☑ Enable

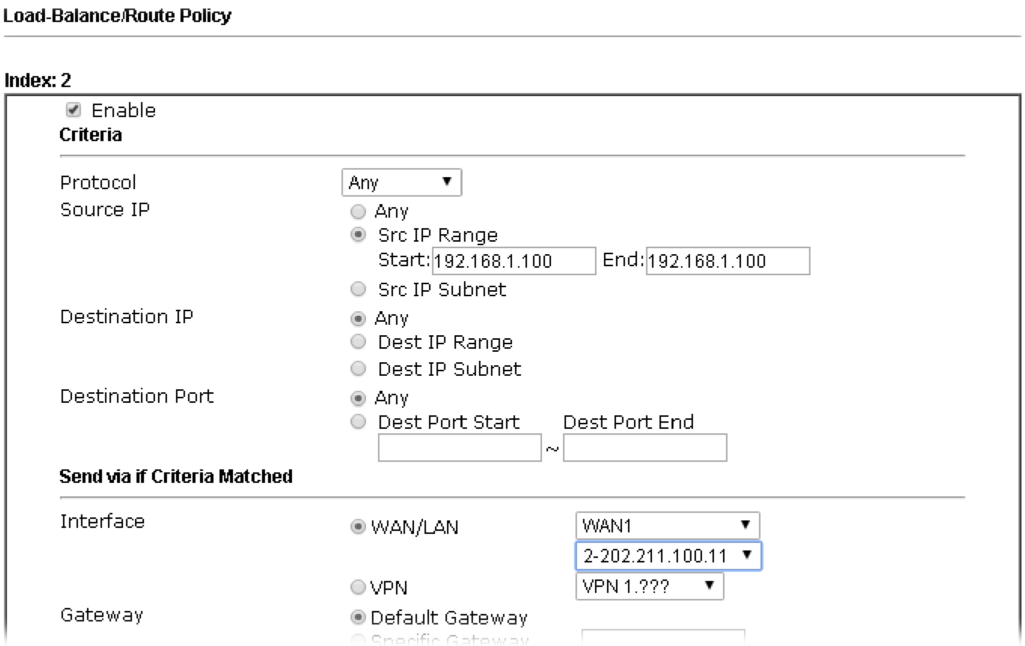
Criteria

Protocol	Any ▼
Source IP	○ Any ● Src IP Range Start: 192.168.1.16 End: 192.168.1.31 ○ Src IP Subnet
Destination IP	● Any ○ Dest IP Range ○ Dest IP Subnet
Destination Port	● Any ○ Dest Port Start Dest Port End ~

Send via if Criteria Matched

Interface	● WAN/LAN	LAN1 ▼

And



Load-Balance/Route Policy

Index: 2

☑ Enable

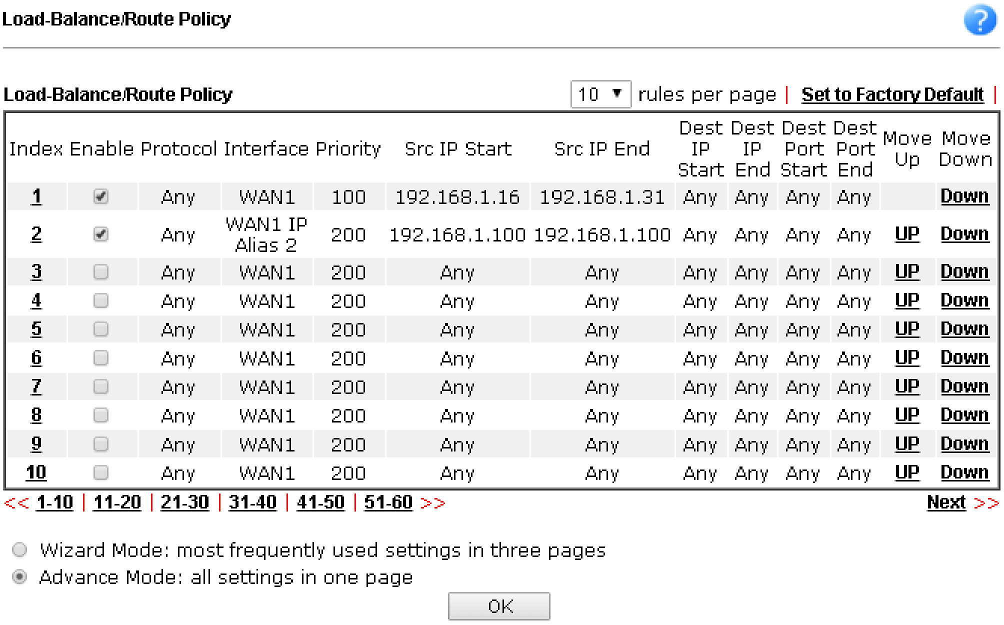
Criteria

Protocol	Any ▼
Source IP	○ Any ● Src IP Range Start: 192.168.1.100 End: 192.168.1.100 ○ Src IP Subnet
Destination IP	● Any ○ Dest IP Range ○ Dest IP Subnet
Destination Port	● Any ○ Dest Port Start ~ Dest Port End

Send via if Criteria Matched

Interface	● WAN/LAN	WAN1 ▼ 2-202.211.100.11 ▼
	○ VPN	VPN 1.??? ▼
Gateway	● Default Gateway ○ Specific Gateway	

6. Upon completing the above configuration, you have specified the outgoing IP address(es) for some specific computers.



Load-Balance/Route Policy

Load-Balance/Route Policy 10 ▼ rules per page | Set to Factory Default |

Index	Enable	Protocol	Interface	Priority	Src IP Start	Src IP End	Dest IP Start	Dest IP End	Dest Port Start	Dest Port End	Move Up	Move Down
1	☑	Any	WAN1	100	192.168.1.16	192.168.1.31	Any	Any	Any	Any		Down
2	☑	Any	WAN1 IP Alias 2	200	192.168.1.100	192.168.1.100	Any	Any	Any	Any	UP	Down
3	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
4	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
5	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
6	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
7	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
8	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
9	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
10	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down

<< 1-10 | 11-20 | 21-30 | 31-40 | 41-50 | 51-60 >> Next >>

○ Wizard Mode: most frequently used settings in three pages

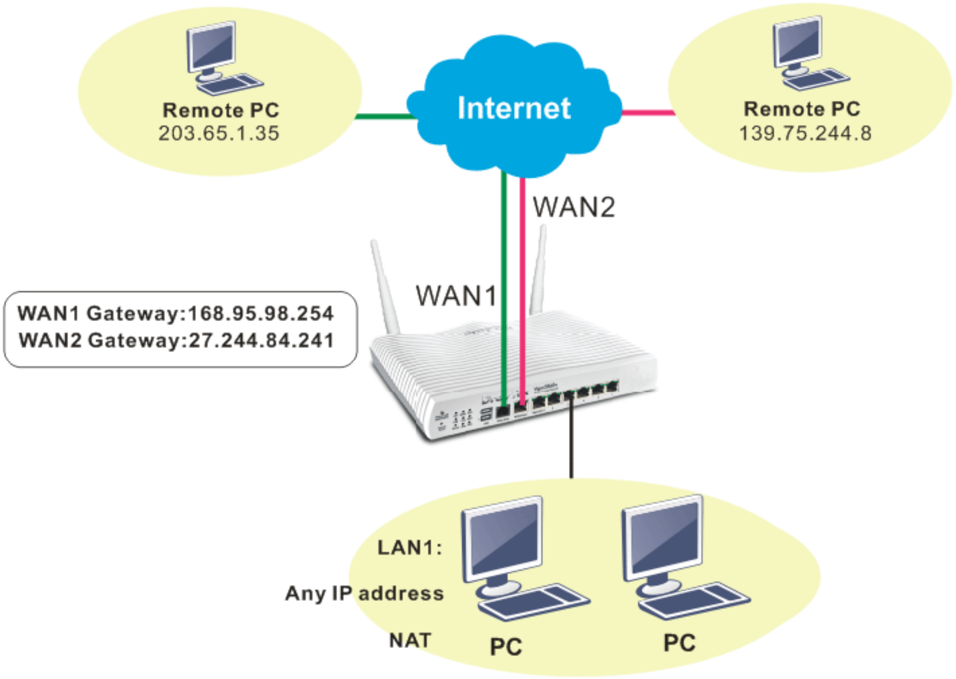
● Advance Mode: all settings in one page

OK

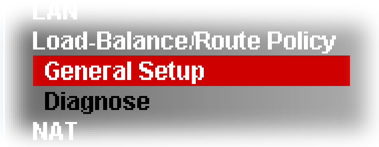
Now, you bind some specific computers to some WAN IP alias for outgoing traffic.

A-3 How to setup Load Balance for Packets?

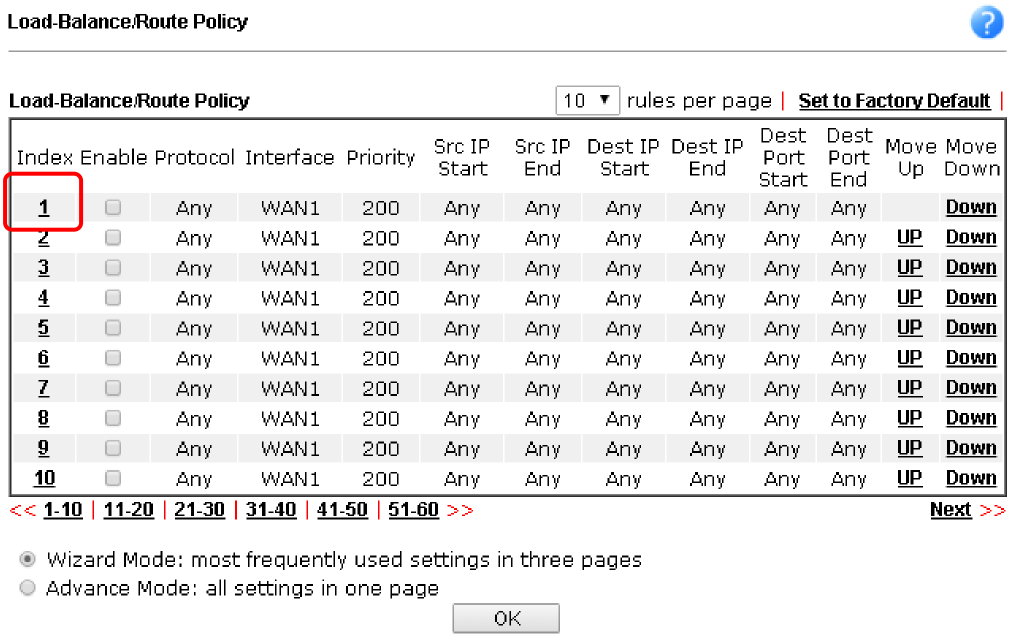
The following figure shows a simple application of load balance. WAN1 and WAN2 can be used to access into Internet. The PC in LAN1 can send the data to the remote PC through the specified WAN1.



1. Access into web user interface of Vigor2952 Series. Open **Load-Balance/Route Policy>>General Setup**.



2. From the following web page, simply click index number #1.



Load-Balance/Route Policy

Load-Balance/Route Policy　10 ▼ rules per page | Set to Factory Default |

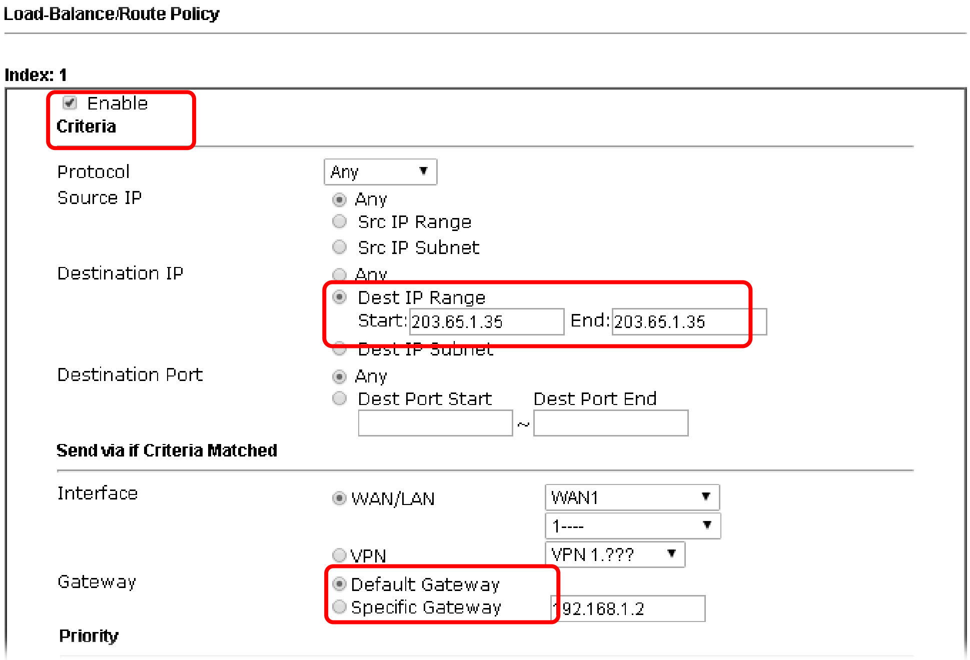
Index	Enable	Protocol	Interface	Priority	Src IP Start	Src IP End	Dest IP Start	Dest IP End	Dest Port Start	Dest Port End	Move Up	Move Down
1	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any		Down
2	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
3	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
4	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
5	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
6	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
7	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
8	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
9	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
10	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down

<< 1-10 | 11-20 | 21-30 | 31-40 | 41-50 | 51-60 >>　Next >>

● Wizard Mode: most frequently used settings in three pages
○ Advance Mode: all settings in one page

OK

3. In the following page, check **Enable**; set Dest IP Start and Dest IP End with 203.65.1.35 and 203.65.1.35; choose WAN1 as the **Interface**; click **default gateway**.



Load-Balance/Route Policy

Index: 1

☑ Enable

Criteria

Protocol: Any

Source IP: ● Any ○ Src IP Range ○ Src IP Subnet

Destination IP: ○ Any ● Dest IP Range Start: 203.65.1.35 End: 203.65.1.35 ○ Dest IP Subnet

Destination Port: ● Any ○ Dest Port Start ~ Dest Port End

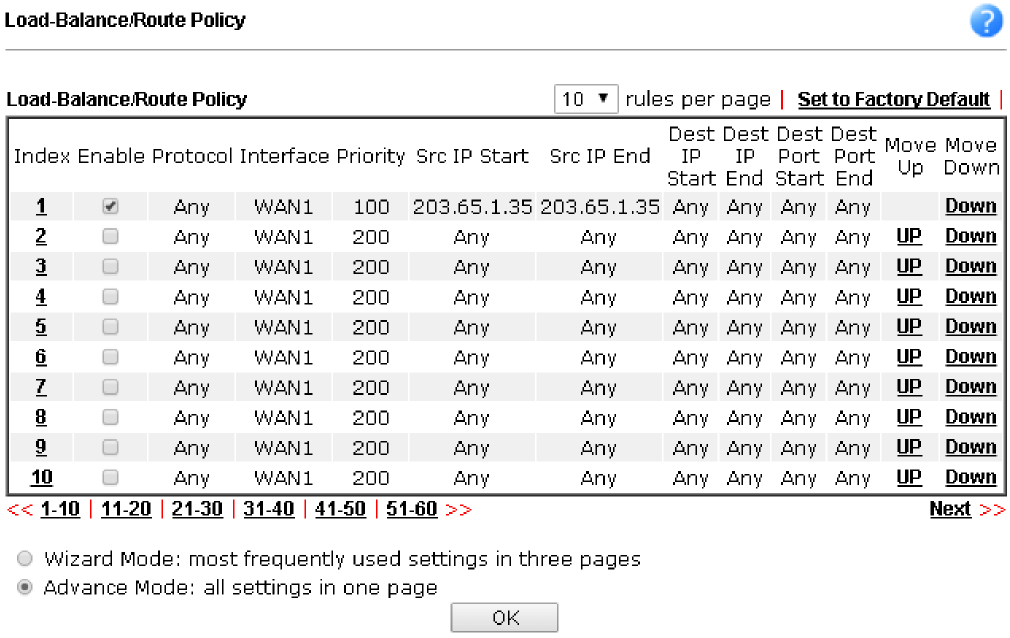
Send via if Criteria Matched

Interface: ● WAN/LAN WAN1, 1----; ○ VPN VPN 1.???

Gateway: ● Default Gateway ○ Specific Gateway 192.168.1.2

Priority

4. After finished the above settings, click **OK** to save the configuration.



Load-Balance/Route Policy

Load-Balance/Route Policy 10 rules per page | Set to Factory Default |

Index	Enable	Protocol	Interface	Priority	Src IP Start	Src IP End	Dest IP Start	Dest IP End	Dest Port Start	Dest Port End	Move Up	Move Down
1	☑	Any	WAN1	100	203.65.1.35	203.65.1.35	Any	Any	Any	Any		Down
2	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
3	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
4	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
5	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
6	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
7	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
8	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
9	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
10	□	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down

<< 1-10 | 11-20 | 21-30 | 31-40 | 41-50 | 51-60 >> Next >>

○ Wizard Mode: most frequently used settings in three pages

● Advance Mode: all settings in one page

OK

Now, the packets sent to the remote PC (IP address: 203.65.1.35) will be forced to pass through WAN1.

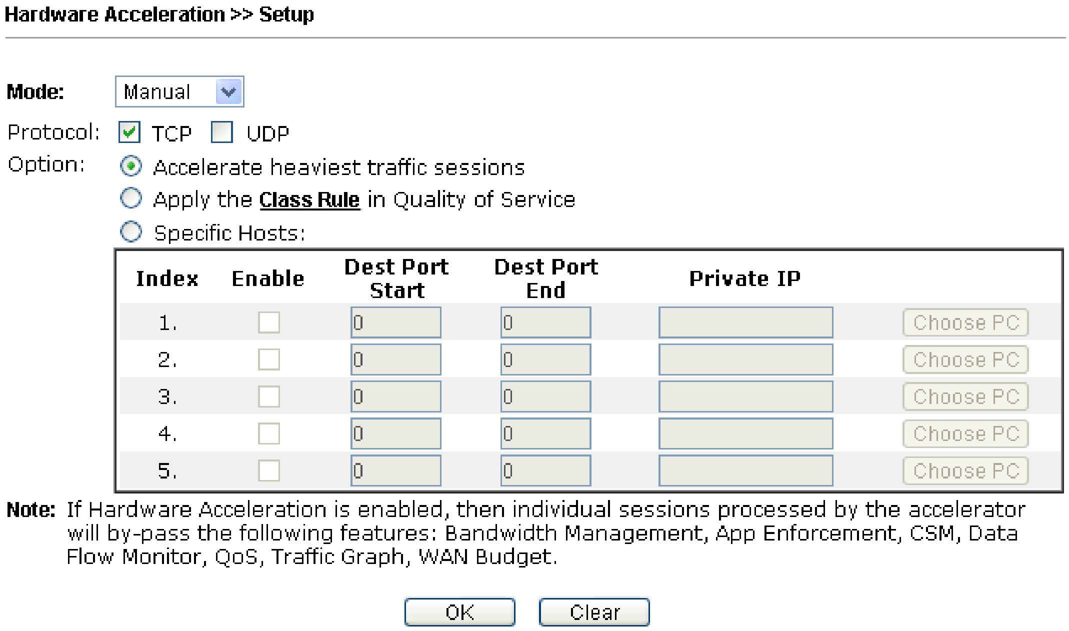
II-6 Hardware Acceleration

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

Web User Interface

II-6-1 Setup

When the data traffic is heavy and data transmission is getting slowly and slowly, you can configure this page to accelerate the data streaming by hardware itself. Open **Hardware Acceleration** to access into the following page:



Hardware Acceleration >> Setup

Mode: Manual

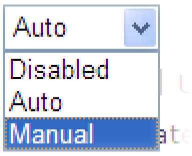
Protocol: ☑ TCP □ UDP

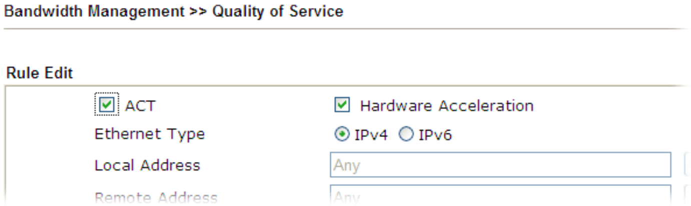
Option: ● Accelerate heaviest traffic sessions
○ Apply the **Class Rule** in Quality of Service
○ Specific Hosts:

Index	Enable	Dest Port Start	Dest Port End	Private IP	
1.	□	0	0		Choose PC
2.	□	0	0		Choose PC
3.	□	0	0		Choose PC
4.	□	0	0		Choose PC
5.	□	0	0		Choose PC

Note: If Hardware Acceleration is enabled, then individual sessions processed by the accelerator will by-pass the following features: Bandwidth Management, App Enforcement, CSM, Data Flow Monitor, QoS, Traffic Graph, WAN Budget.

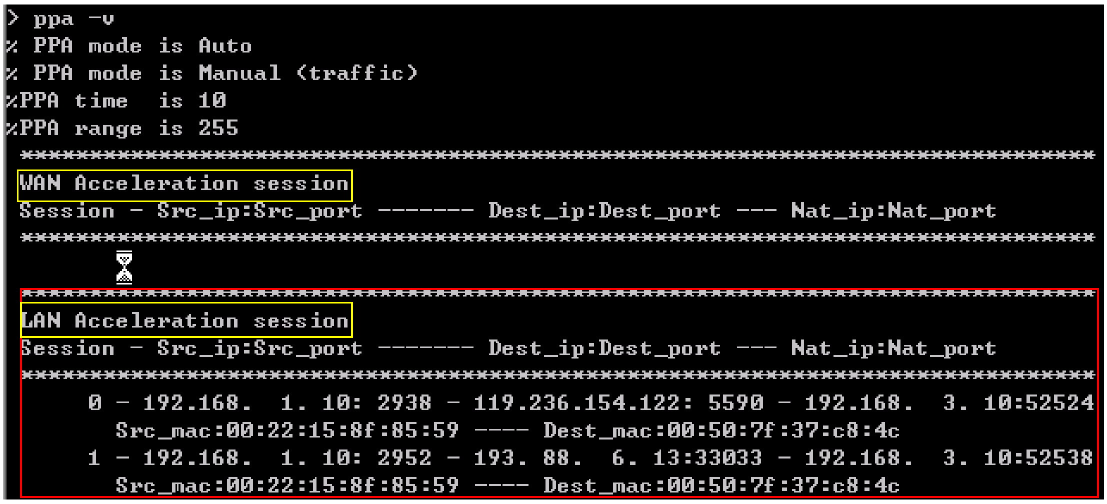
Available settings are explained as follows:

Item	Description
Mode	**Auto -** When the hardware acceleration is configured with the **Auto** mode, the sessions with the heaviest loading and the lower latency traffic will be added into PPA. However, the Auto mode does not support UDP protocol by designed. **Manual -** The Manual mode implements three sub-items-- *Accelerate most heavy traffic sessions*, *Apply the Class Rule in Quality of Service*, and *Specific Hosts*. Each of these sub-items can support TCP and UDP protocol. 

Protocol	There are two types supported by this function, TCP and UDP.
Option	**Accelerate most heavy traffic sessions** – Such option is available in Auto Mode, too. But the UDP protocol is only supported in this sub-item. **Apply the Class Rule in Quality of Service** – Users can apply the information provided by QoS in this sub-item. **Note:** Please visit our website for referring the detailed configuration of QoS.  Bandwidth Management >> Quality of Service Rule Edit ☑ ACT ☑ Hardware Acceleration Ethernet Type ● IPv4 ○ IPv6 Local Address Any Remote Address Any **Specific Hosts** – This sub-item provides 5 hosts for adding NAT sessions into the PPA. For the PPA only support s128 sessions, these hosts will share these sessions. Therefore, the performance will be lower than only one host. Choose this option to specify certain PCs on LAN to apply the hardware acceleration. ● **Enable** – Check the box to make PC(s) specified in the selected index entry to be applied. ● **Dest Port Start** – Type the starting port for the PC(s) in LAN. ● **Dest Port End** – Type the ending port for the PC(s) in LAN. ● **Private IP/Choose PC** – Type the IP address as the selected host. Or click the Choose PC button to specify one IP address from the pop-up window.

Checking the PPA status

For checking whether the rule of PPA is working or not, a user can login toVigor2952 series by using telnet. User can view how many sessions are transferring in each direction of PPA table after entering “**ppa -v**”.



```
> ppa -v
% PPA mode is Auto
% PPA mode is Manual (traffic)
%PPA time  is 10
%PPA range is 255
 ******************************************************************************
 WAN Acceleration session
 Session - Src_ip:Src_port ------- Dest_ip:Dest_port --- Nat_ip:Nat_port
 ******************************************************************************

 ******************************************************************************
 LAN Acceleration session
 Session - Src_ip:Src_port ------- Dest_ip:Dest_port --- Nat_ip:Nat_port
 ******************************************************************************
      0 - 192.168.  1. 10: 2938 - 119.236.154.122: 5590 - 192.168.  3. 10:52524
        Src_mac:00:22:15:8f:85:59 ---- Dest_mac:00:50:7f:37:c8:4c
      1 - 192.168.  1. 10: 2952 - 193. 88.  6. 13:33033 - 192.168.  3. 10:52538
        Src_mac:00:22:15:8f:85:59 ---- Dest_mac:00:50:7f:37:c8:4c
```

This page is left blank.

Part III Wireless LAN

Wireless

Wireless LAN enables high mobility so WLAN users can simultaneously access all LAN facilities just like on a wired LAN as well as Internet access.

III-1 Wireless LAN

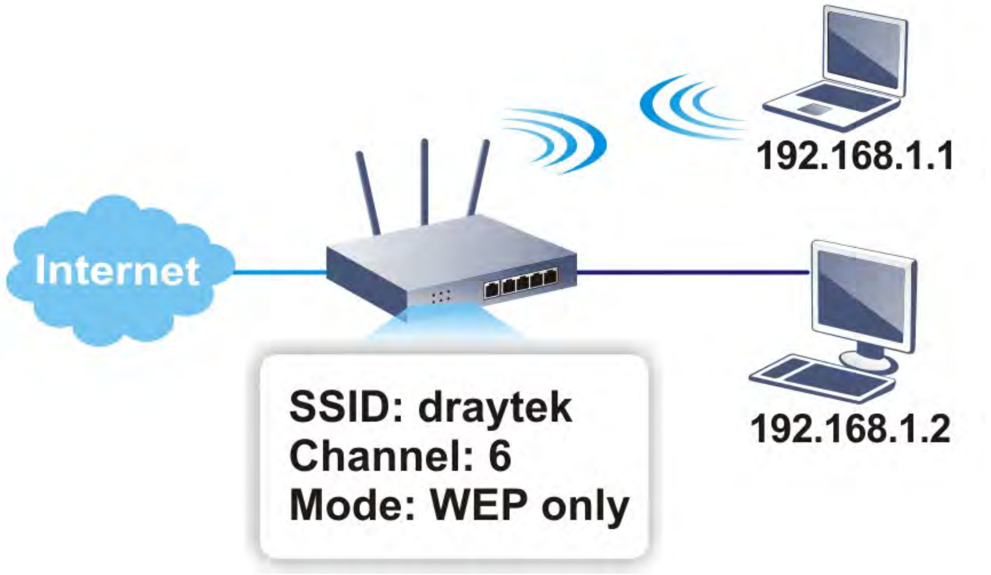
This function is used for "n" models only.

Over recent years, the market for wireless communications has enjoyed tremendous growth. Wireless technology now reaches or is capable of reaching virtually every location on the surface of the earth. Hundreds of millions of people exchange information every day via wireless communication products. The Vigor2952 wireless series router (with "n" in model name) is designed for maximum flexibility and efficiency of a small office/home. Any authorized staff can bring a built-in WLAN client PDA or notebook into a meeting room for conference without laying a clot of LAN cable or drilling holes everywhere. Wireless LAN enables high mobility so WLAN users can simultaneously access all LAN facilities just like on a wired LAN as well as Internet access.

Vigor2952 wireless router is a highly integrated wireless local area network (WLAN) for 2.4 GHz 802.11n WLAN applications. Vigor2952 "n" series router supports 802.11n up to 300 Mbps for 40 MHz channel operations.

Info	The actual data throughput will vary according to the network conditions and environmental factors, including volume of network traffic, network overhead and building materials.

In an Infrastructure Mode of wireless network, Vigor wireless router plays a role as an Access Point (AP) connecting to lots of wireless clients or Stations (STA). All the STAs will share the same Internet connection via Vigor wireless router. The **General Settings** will set up the information of this wireless network, including its SSID as identification, located channel etc.



Multiple SSIDs

Vigor router supports four SSID settings for wireless connections. Each SSID can be defined with different name and download/upload rate for selecting by stations connected to the router wirelessly.

Real-time Hardware Encryption

Vigor Router is equipped with a hardware AES encryption engine so it can apply the highest protection to your data without influencing user experience.

Complete Security Standard Selection

To ensure the security and privacy of your wireless communication, we provide several prevailing standards on market.

WEP (Wired Equivalent Privacy) is a legacy method to encrypt each frame transmitted via radio using either a 64-bit or 128-bit key. Usually access point will preset a set of four keys and it will communicate with each station using only one out of the four keys.

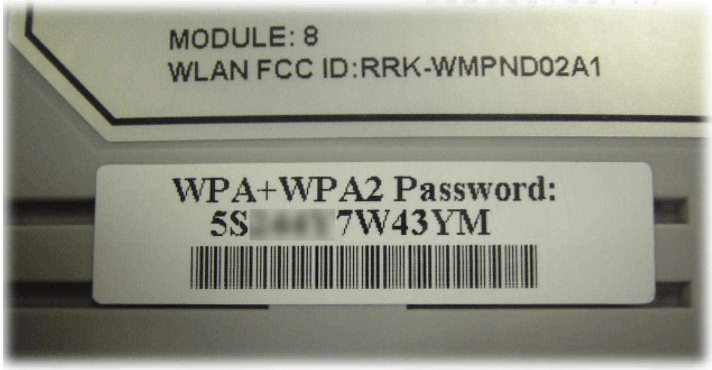
WPA (Wi-Fi Protected Access), the most dominating security mechanism in industry, is separated into two categories: WPA-personal or called WPA Pre-Share Key (WPA/PSK), and WPA-Enterprise or called WPA/802.1x.

In WPA-Personal, a pre-defined key is used for encryption during data transmission. WPA applies Temporal Key Integrity Protocol (TKIP) for data encryption while WPA2 applies AES. The WPA-Enterprise combines not only encryption but also authentication.

Since WEP has been proved vulnerable, you may consider using WPA for the most secure connection. You should select the appropriate security mechanism according to your needs. No matter which security suite you select, they all will enhance the over-the-air data protection and /or privacy on your wireless network. The Vigor wireless router is very flexible and can support multiple secure connections with both WEP and WPA at the same time.

Info

The password (PSK) of default security mode is provided and stated on the label pasted on the bottom of the router. For the wireless client who wants to access into Internet through such router, please input the default PSK value for connection.



Separate the Wireless and the Wired LAN- WLAN Isolation

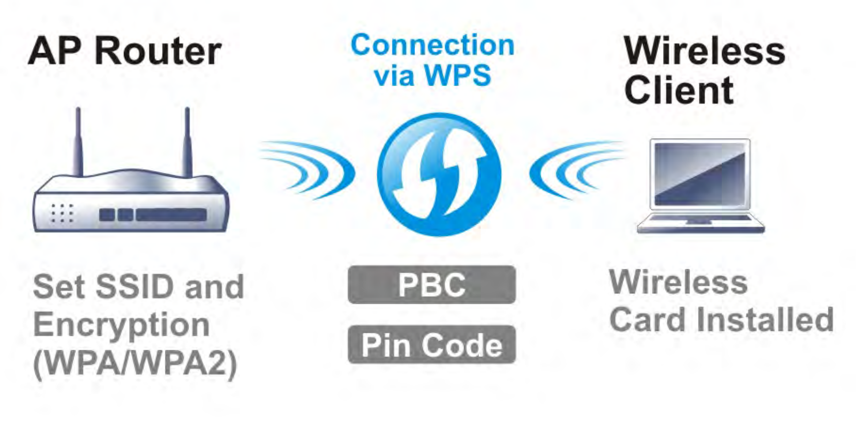
It enables you to isolate your wireless LAN from wired LAN for either quarantine or limit access reasons. To isolate means neither of the parties can access each other. To elaborate an example for business use, you may set up a wireless LAN for visitors only so they can connect to Internet without hassle of the confidential information leakage. For a more flexible deployment, you may add filters of MAC addresses to isolate users' access from wired LAN.

Manage Wireless Stations - Station List

It will display all the stations in your wireless network and the status of their connection.

WPS

WPS (Wi-Fi Protected Setup) provides easy procedure to make network connection between wireless station and wireless access point (vigor router) with the encryption of WPA and WPA2.

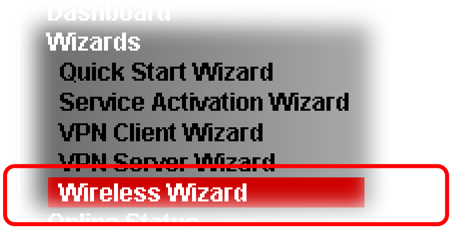


III-1-1 Wireless Wizard

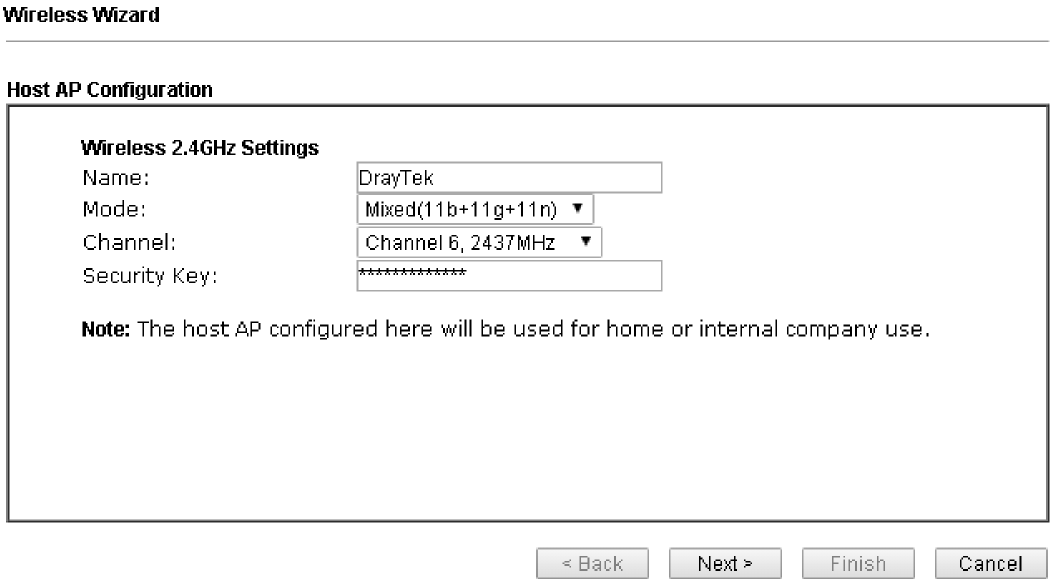
The wireless wizard allows you to configure settings specified for a host AP (for home use or internal use for a company) and specified for a guest AP (for any wireless clients accessing into Internet).

Follow the steps listed below:

1. Open **Wizards>>Wireless Wizard**.



2. The screen of wireless wizard will be shown as follows. This page will be used for internal users in a company or your home.



Wireless Wizard

Host AP Configuration

Wireless 2.4GHz Settings

Name: DrayTek

Mode: Mixed(11b+11g+11n)

Channel: Channel 6, 2437MHz

Security Key: **************

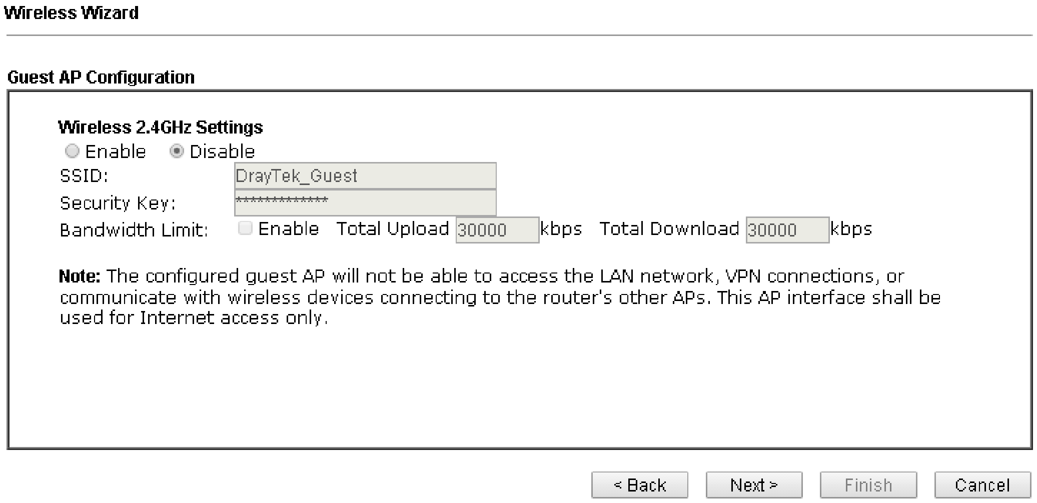
Note: The host AP configured here will be used for home or internal company use.

Available settings are explained as follows:

Item	Description
Name	Type the SSID name of this router for wireless 2.4GHz. The default name is defined with DrayTek. Change the name if required.
Mode	At present, the router can connect to 11b Only, 11n Only, 11g Only, Mixed (11b+11g), Mixed (11g+11n), and Mixed (11b+11g+11n) stations simultaneously. Simply choose Mix (11b+11g+11n) mode.
Channel	Means the channel of frequency of the wireless LAN. The default channel is 6. You may switch channel if the selected channel is under serious interference. If you have no idea of choosing the frequency, please select Auto to let system

	determine for you.
Security Key	The wireless mode offered by this wizard is WPA2/PSK. The WPA encrypts each frame transmitted from the radio using the key, which either PSK (Pre-Shared Key) entered manually in this field below or automatically negotiated via 802.1x authentication. Either **8~63** ASCII characters, such as 012345678(or 64 Hexadecimal digits leading by 0x, such as “0x321253abcde…”).
Next	Click it to get into the next setting page.
Cancel	Exit the wireless wizard without saving any changes.

3. After typing the required information, click **Next**. The settings in the page limit the wireless station (guest) accessing into Internet but not being allowed to share the LAN network and VPN connection.



Wireless Wizard

Guest AP Configuration

Wireless 2.4GHz Settings

○ Enable ● Disable

SSID: DrayTek_Guest

Security Key: **************

Bandwidth Limit: □ Enable Total Upload 30000 kbps Total Download 30000 kbps

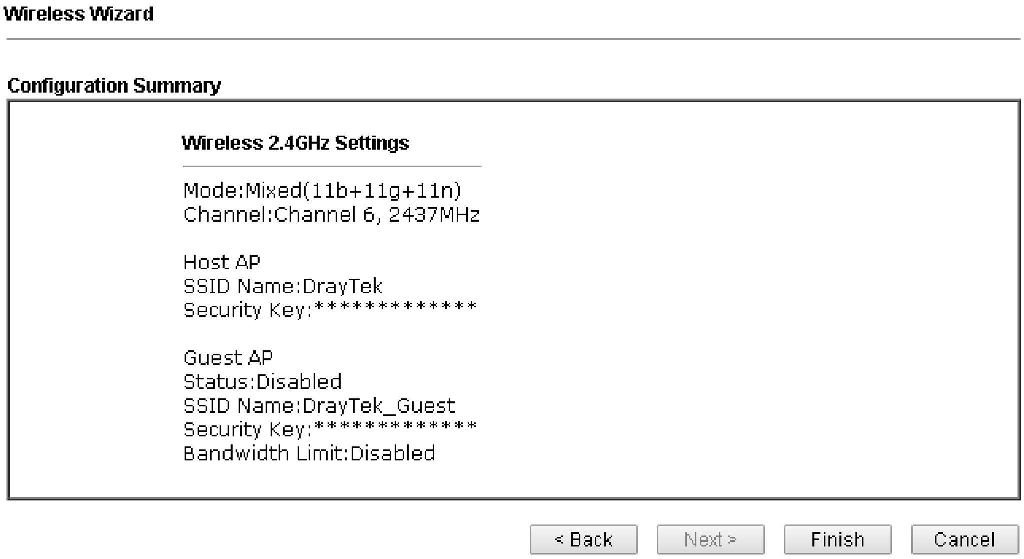
Note: The configured guest AP will not be able to access the LAN network, VPN connections, or communicate with wireless devices connecting to the router's other APs. This AP interface shall be used for Internet access only.

Available settings are explained as follows:

Item	Description
Enable/Disable	Click it to enable or disable settings in this page.
SSID	Type the SSID name of this router. (SSID1)
Security Key	The wireless mode offered by this wizard is WPA2/PSK. The WPA encrypts each frame transmitted from the radio using the key, which either PSK (Pre-Shared Key) entered manually in this field below or automatically negotiated via 802.1x authentication. Either **8~63** ASCII characters, such as 012345678(or 64 Hexadecimal digits leading by 0x, such as "0x321253abcde...").
Bandwidth Limit	It controls the data transmission rate through wireless connection. **Total Upload** – Check Enable and type the transmitting rate for data upload. Default value is 30,000 kbps. **Total Download** – Type the transmitting rate for data download. Default value is 30,000 kbps.
Next	Click it to get into the next setting page.
Cancel	Exit the wireless wizard without saving any changes.

4. After typing the required information, click **Next**.

5. The following page will display the configuration summary for wireless setting.



Wireless Wizard

Configuration Summary

Wireless 2.4GHz Settings

Mode:Mixed(11b+11g+11n)
Channel:Channel 6, 2437MHz

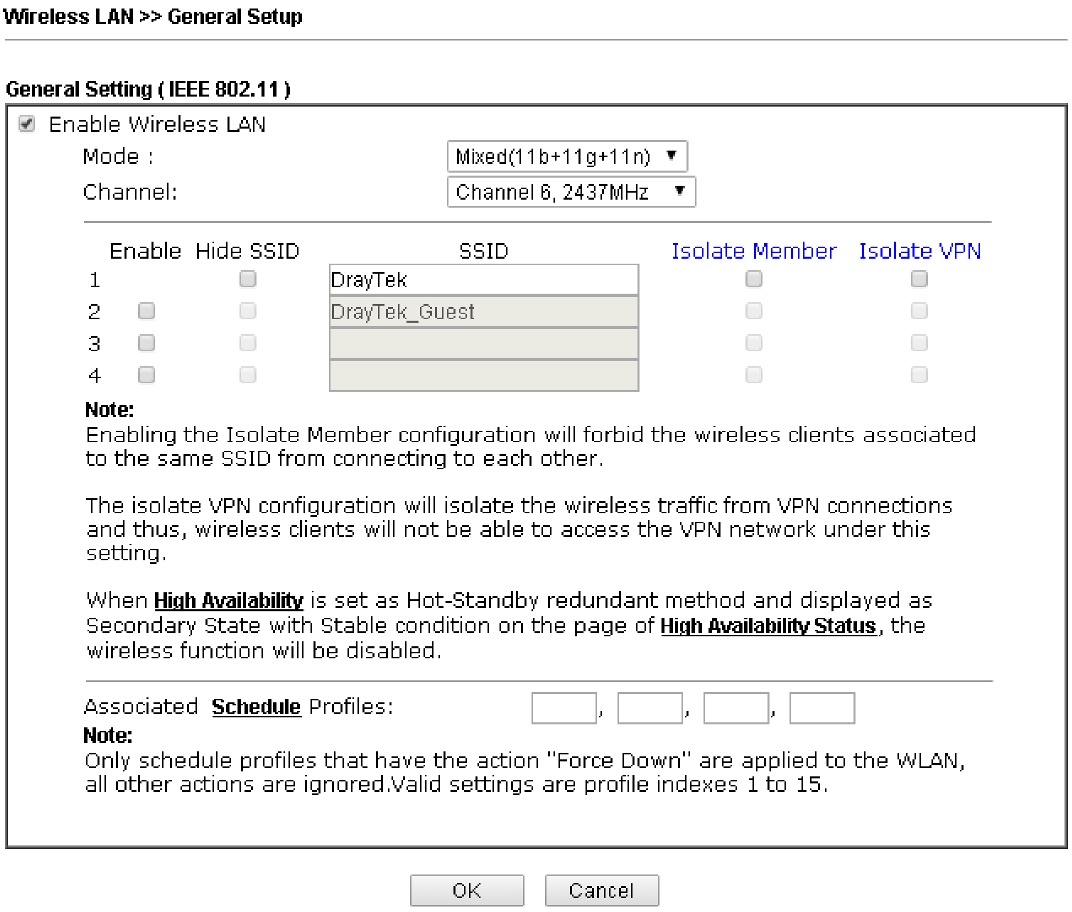
Host AP
SSID Name:DrayTek
Security Key:*************

Guest AP
Status:Disabled
SSID Name:DrayTek_Guest
Security Key:*************
Bandwidth Limit:Disabled

6. Click **Finish** to complete the wireless settings configuration.

III-1-2 General Setup

By clicking the **Wireless LAN>> General Settings**, a new web page will appear so that you could configure the SSID and the wireless channel. Please refer to the following figure for more information.



Wireless LAN >> General Setup

General Setting (IEEE 802.11)

☑ Enable Wireless LAN

Mode : Mixed(11b+11g+11n) ▼

Channel: Channel 6, 2437MHz ▼

	Enable	Hide SSID	SSID	Isolate Member	Isolate VPN
1		□	DrayTek	□	□
2	□	□	DrayTek_Guest	□	□
3	□	□		□	□
4	□	□		□	□

Note:
Enabling the Isolate Member configuration will forbid the wireless clients associated to the same SSID from connecting to each other.

The isolate VPN configuration will isolate the wireless traffic from VPN connections and thus, wireless clients will not be able to access the VPN network under this setting.

When **High Availability** is set as Hot-Standby redundant method and displayed as Secondary State with Stable condition on the page of **High Availability Status**, the wireless function will be disabled.

Associated **Schedule** Profiles: ______ , ______ , ______ , ______

Note:
Only schedule profiles that have the action "Force Down" are applied to the WLAN, all other actions are ignored.Valid settings are profile indexes 1 to 15.

Available settings are explained as follows:

Item	Description
Enable Wireless LAN	Check the box to enable wireless function.
Mode	At present, the router can connect to 11b Only, 11g Only, 11n Only, Mixed (11b+11g), Mixed (11g+11n), and Mixed (11b+11g+11n) stations simultaneously. Simply choose Mixed (11b+11g+11n) mode.
Channel	Means the channel of frequency of the wireless LAN. The default channel is 6. You may switch channel if the selected channel is under serious interference. If you have no idea of choosing the frequency, please select Auto to let system determine for you.
Hide SSID	Check it to prevent from wireless sniffing and make it harder for unauthorized clients or STAs to join your wireless LAN. Depending on the wireless utility, the user may only see the information except SSID or just cannot see any thing about Vigor wireless router while site surveying. The system allows you to set four sets of SSID for different usage. In default, the first set of SSID will be enabled. You can hide it for your necessity.

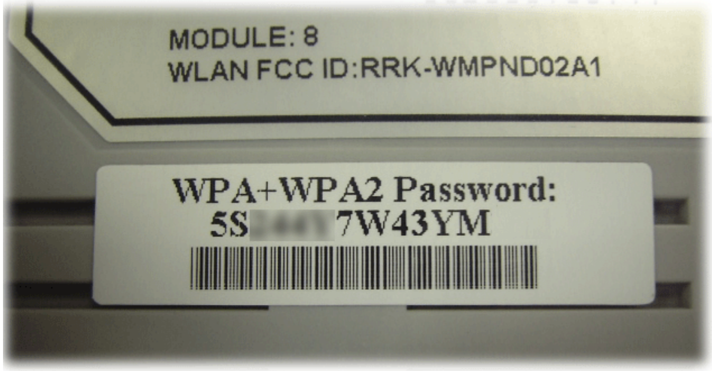
SSID	Means the identification of the wireless LAN. SSID can be any text numbers or various special characters.
Isolate	**Member** –Check this box to make the wireless clients (stations) with the same SSID not accessing for each other. **VPN** – Check this box to make the wireless clients (stations) with different VPN not accessing for each other.
Schedule	Set the wireless LAN to work at certain time interval only. You may choose up to 4 schedules out of the 15 schedules pre-defined in **Applications >> Schedule** setup. The default setting of this field is blank and the function will always work.

After finishing all the settings here, please click **OK** to save the configuration.

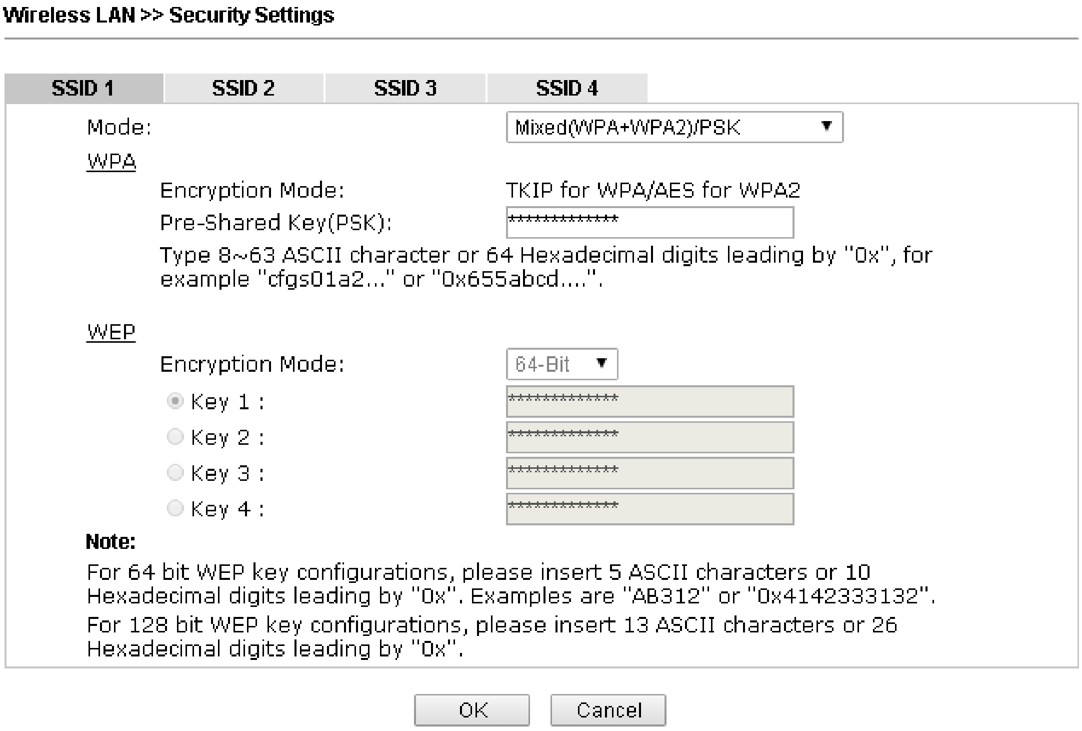
III-1-3 Security

This page allows you to set security with different modes for SSID 1, 2, 3 and 4 respectively. After configuring the correct settings, please click **OK** to save and invoke it.

The password (PSK) of default security mode is provided and stated on the label pasted on the bottom of the router. For the wireless client who wants to access into Internet through such router, please input the default PSK value for connection.



By clicking the **Security**, a new web page will appear so that you could configure the settings of WPA and WEP.



Wireless LAN >> Security Settings

Mode: Mixed(WPA+WPA2)/PSK ▼

WPA

Encryption Mode: TKIP for WPA/AES for WPA2

Pre-Shared Key(PSK): **************

Type 8~63 ASCII character or 64 Hexadecimal digits leading by "0x", for example "cfgs01a2..." or "0x655abcd....".

WEP

Encryption Mode: 64-Bit ▼

● Key 1 : **************

○ Key 2 : **************

○ Key 3 : **************

○ Key 4 : **************

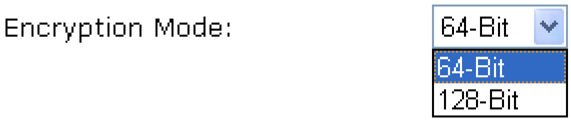
Note:

For 64 bit WEP key configurations, please insert 5 ASCII characters or 10 Hexadecimal digits leading by "0x". Examples are "AB312" or "0x4142333132".

For 128 bit WEP key configurations, please insert 13 ASCII characters or 26 Hexadecimal digits leading by "0x".

Available settings are explained as follows:

Item	Description
Mode	There are several modes provided for you to choose. **Info** You should also set **RADIUS Server** simultaneously if 802.1x mode is selected. **Disable** - Turn off the encryption mechanism.

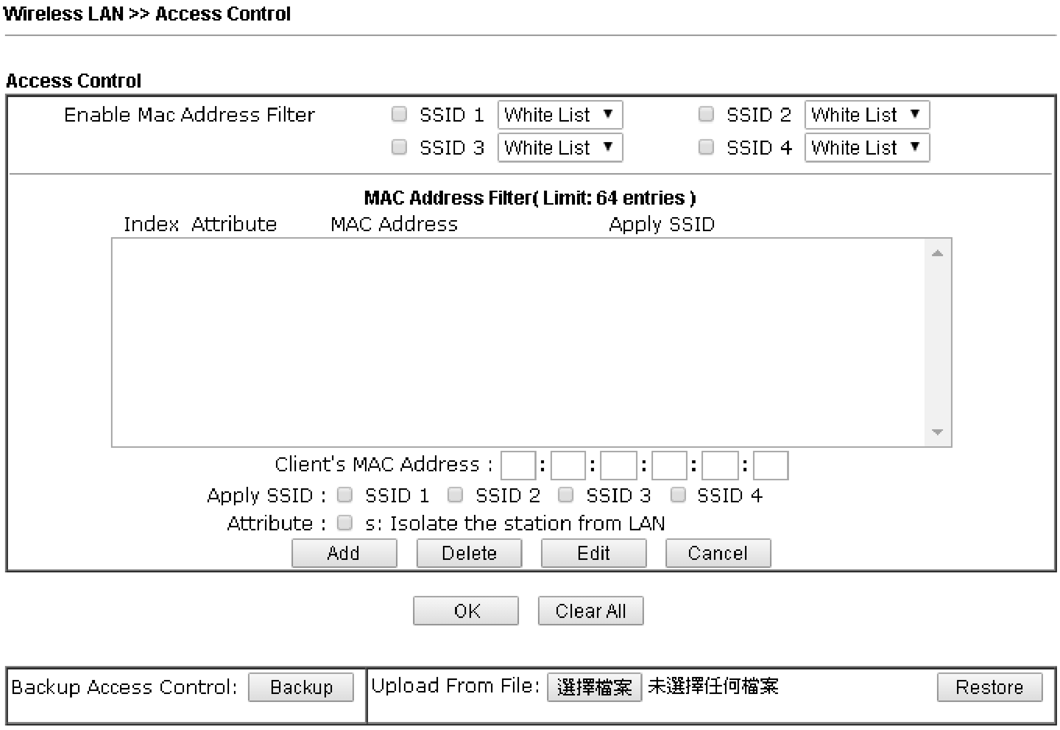
	WEP-Accepts only WEP clients and the encryption key should be entered in WEP Key. **WEP/802.1x Only -** Accepts only WEP clients and the encryption key is obtained dynamically from RADIUS server with 802.1X protocol. **WPA/802.1x Only-** Accepts only WPA clients and the encryption key is obtained dynamically from RADIUS server with 802.1X protocol. **WPA2/802.1x Only-** Accepts only WPA2 clients and the encryption key is obtained dynamically from RADIUS server with 802.1X protocol. **Mixed (WPA+WPA2/802.1x only) -** Accepts WPA and WPA2 clients simultaneously and the encryption key is obtained dynamically from RADIUS server with 802.1X protocol. **WPA/PSK-**Accepts only WPA clients and the encryption key should be entered in PSK. **WPA2/PSK-**Accepts only WPA2 clients and the encryption key should be entered in PSK. **Mixed (WPA+ WPA2)/PSK -** Accepts WPA and WPA2 clients simultaneously and the encryption key should be entered in PSK.
WPA	The WPA encrypts each frame transmitted from the radio using the key, which either PSK (Pre-Shared Key) entered manually in this field below or automatically negotiated via 802.1x authentication. Either **8~63** ASCII characters, such as 012345678(or 64 Hexadecimal digits leading by 0x, such as "0x321253abcde…"). **Pre-Shared Key (PSK)** - Either **8~63** ASCII characters, such as 012345678..(or 64 Hexadecimal digits leading by 0x, such as "0x321253abcde…").
WEP	**64-Bit** - For 64 bits WEP key, either **5** ASCII characters, such as 12345 (or 10 hexadecimal digitals leading by 0x, such as 0x4142434445.) **128-Bit** - For 128 bits WEP key, either **13** ASCII characters, such as ABCDEFGHIJKLM (or 26 hexadecimal digits leading by 0x, such as 0x4142434445464748494A4B4C4D).  Encryption Mode: 64-Bit All wireless devices must support the same WEP encryption bit size and have the same key. **Four keys** can be entered here, but only one key can be selected at a time. The keys can be entered in ASCII or Hexadecimal. Check the key you wish to use.

After finishing all the settings here, please click **OK** to save the configuration.

III-1-4 Access Control

In the **Access Control**, the router may restrict wireless access to certain wireless clients only by locking their MAC address into a black or white list. The user may block wireless clients by inserting their MAC addresses into a black list, or only let them be able to connect by inserting their MAC addresses into a white list.

In the **Access Control** web page, users may configure the **white/black** list modes used by each SSID and the MAC addresses applied to their lists.



Wireless LAN >> Access Control

Access Control

Enable Mac Address Filter: □ SSID 1 [White List ▼] □ SSID 2 [White List ▼] □ SSID 3 [White List ▼] □ SSID 4 [White List ▼]

MAC Address Filter(Limit: 64 entries)

Index Attribute MAC Address Apply SSID

Client's MAC Address : [ ] : [ ] : [ ] : [ ] : [ ] : [ ]

Apply SSID : □ SSID 1 □ SSID 2 □ SSID 3 □ SSID 4

Attribute : □ s: Isolate the station from LAN

Backup Access Control: Backup

Upload From File: 選擇檔案 未選擇任何檔案 Restore

Available settings are explained as follows:

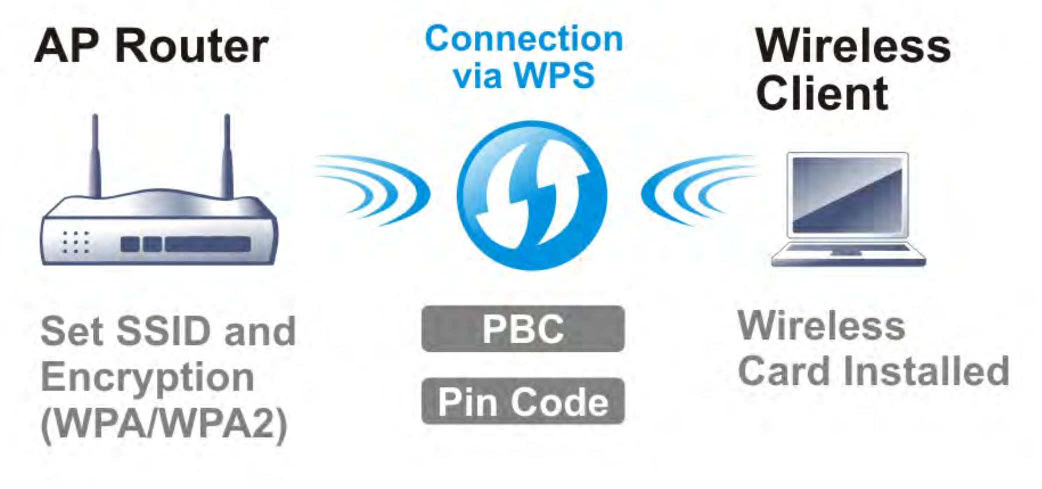
Item	Description
Enable Mac Address Filter	Select to enable the MAC Address filter for wireless LAN identified with SSID 1 to 4 respectively. All the clients (expressed by MAC addresses) listed in the box can be grouped under different wireless LAN. For example, they can be grouped under SSID 1 and SSID 2 at the same time if you check SSID 1 and SSID 2.
MAC Address Filter	Display all MAC addresses that are edited before.
Client's MAC Address	Manually enter the MAC address of wireless client.
Apply SSID	After entering the client's MAC address, check the box of the SSIDs desired to insert this MAC address into their access control list.
Attribute	**s: Isolate the station from LAN -** select to isolate the wireless connection of the wireless client of the MAC address from LAN.
Add	Add a new MAC address into the list.
Delete	Delete the selected MAC address in the list.
Edit	Edit the selected MAC address in the list.

Cancel	Give up the access control set up.
OK	Click it to save the access control list.
Clear All	Clean all entries in the MAC address list.

After finishing all the settings here, please click **OK** to save the configuration.

III-1-5 WPS

WPS (Wi-Fi Protected Setup) provides easy procedure to make network connection between wireless station and wireless access point (vigor router) with the encryption of WPA and WPA2.

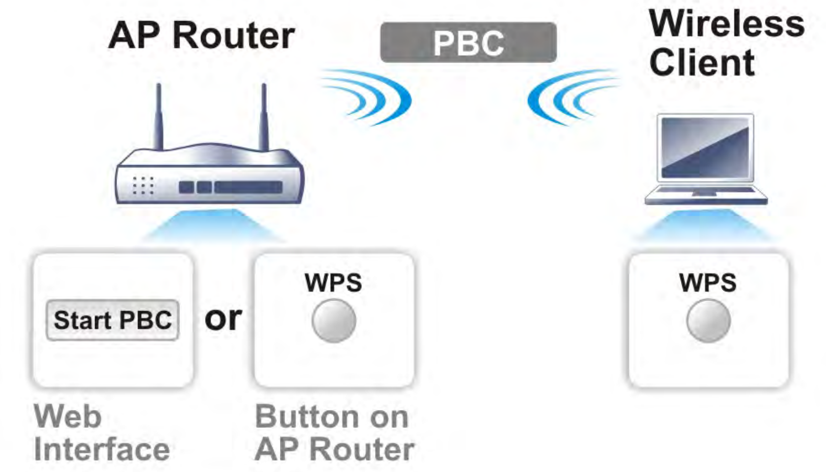


Info	WPS is available for the wireless station with WPS supported.

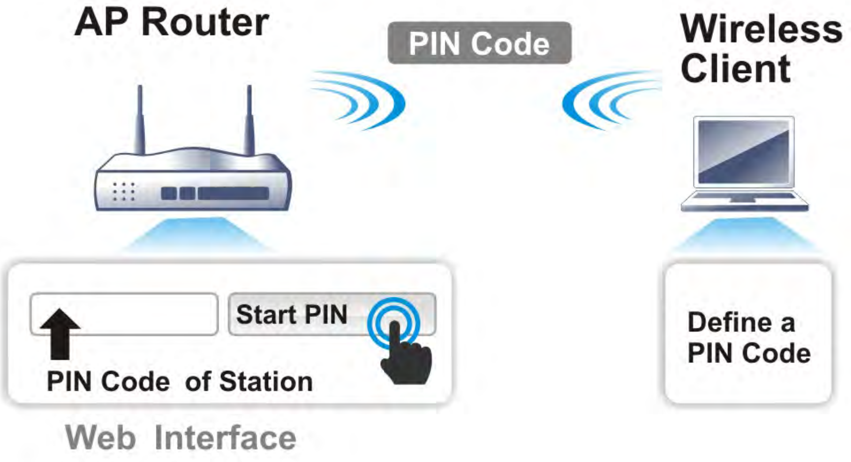
It is the simplest way to build connection between wireless network clients and vigor router. Users do not need to select any encryption mode and type any long encryption passphrase to setup a wireless client every time. He/she only needs to press a button on wireless client, and WPS will connect for client and router automatically.

There are two methods to do network connection through WPS between AP and Stations: pressing the *Start PBC* button or using *PIN Code*.

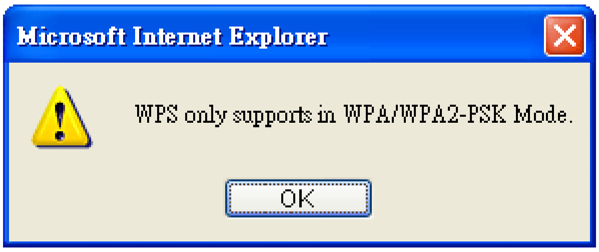
- On the side of Vigor 3220 series which served as an AP, press **WPS** button once on the front panel of the router or click **Start PBC** on web configuration interface. On the side of a station with network card installed, press **Start PBC** button of network card.



- If you want to use PIN code, you have to know the PIN code specified in wireless client. Then provide the PIN code of the wireless client you wish to connect to the vigor router.



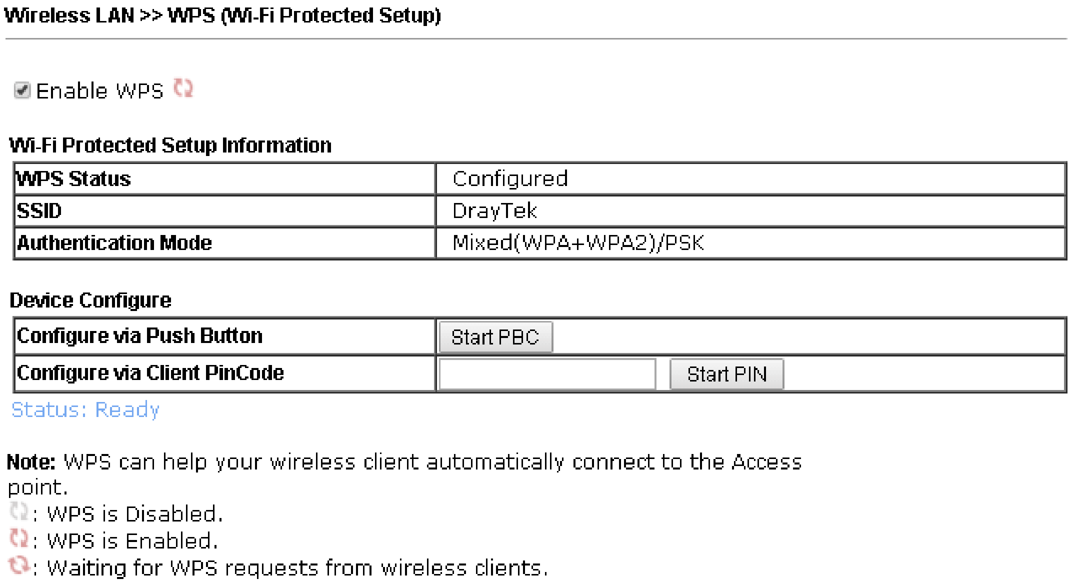
For WPS is supported in WPA-PSK or WPA2-PSK mode, if you do not choose such mode in **Wireless LAN>>Security**, you will see the following message box.


Microsoft Internet Explorer

WPS only supports in WPA/WPA2-PSK Mode.

Please click **OK** and go back **Wireless LAN>>Security** to choose WPA-PSK or WPA2-PSK mode and access WPS again.

Below shows **Wireless LAN>>WPS** web page:



Wireless LAN >> WPS (Wi-Fi Protected Setup)

☑ Enable WPS

Wi-Fi Protected Setup Information

WPS Status	Configured
SSID	DrayTek
Authentication Mode	Mixed(WPA+WPA2)/PSK

Device Configure

Configure via Push Button	Start PBC
Configure via Client PinCode	Start PIN

Status: Ready

Note: WPS can help your wireless client automatically connect to the Access point.

: WPS is Disabled.

: WPS is Enabled.

: Waiting for WPS requests from wireless clients.

Available settings are explained as follows:

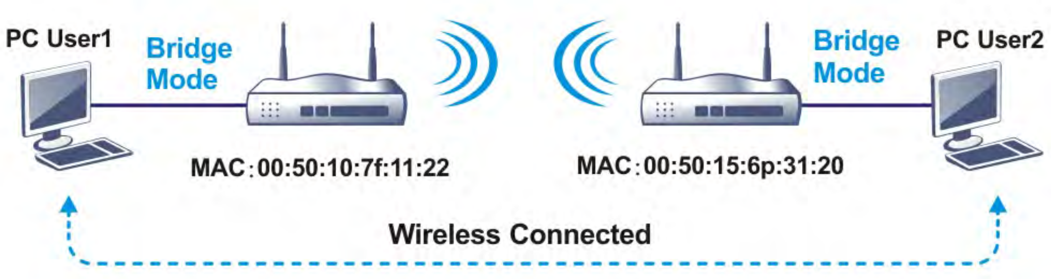
Item	Description
Enable WPS	Check this box to enable WPS setting.
WPS Status	Display related system information for WPS. If the wireless security (encryption) function of the router is properly configured, you can see 'Configured' message here.
SSID	Display the SSID1 of the router. WPS is supported by SSID1 only.
Authentication Mode	Display current authentication mode of the router. Only WPA2/PSK and WPA/PSK support WPS.
Configure via Push Button	Click **Start PBC** to invoke Push-Button style WPS setup procedure. The router will wait for WPS requests from wireless clients about two minutes. The WPS LED on the router will blink fast when WPS is in progress. It will return to normal condition after two minutes. (You need to setup WPS within two minutes)
Configure via Client PinCode	Please input the PIN code specified in wireless client you wish to connect, and click **Start PIN** button. The WPS LED on the router will blink fast when WPS is in progress. It will return to normal condition after two minutes. (You need to setup WPS within two minutes)

III-1-6 WDS

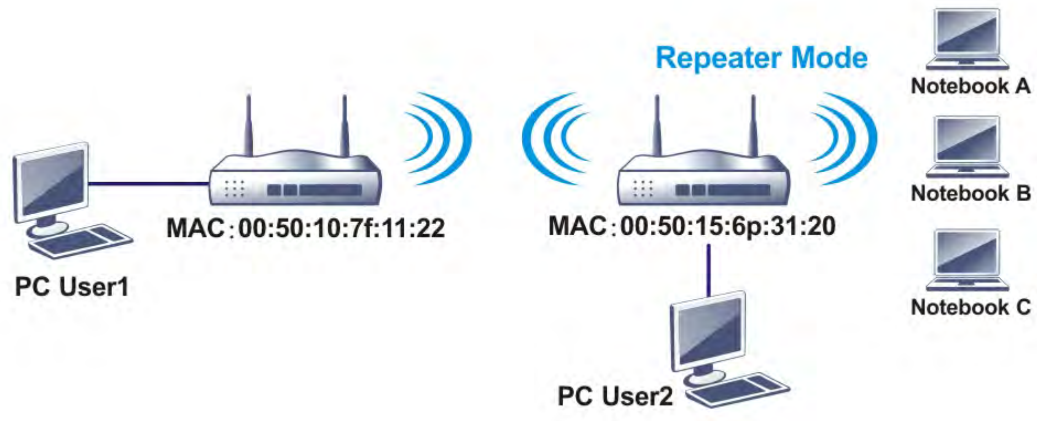
WDS means Wireless Distribution System. It is a protocol for connecting two access points (AP) wirelessly. Usually, it can be used for the following application:

- Provide bridge traffic between two LANs through the air.
- Extend the coverage range of a WLAN.

To meet the above requirement, two WDS modes are implemented in Vigor router. One is **Bridge**, the other is **Repeater**. Below shows the function of WDS-bridge interface:

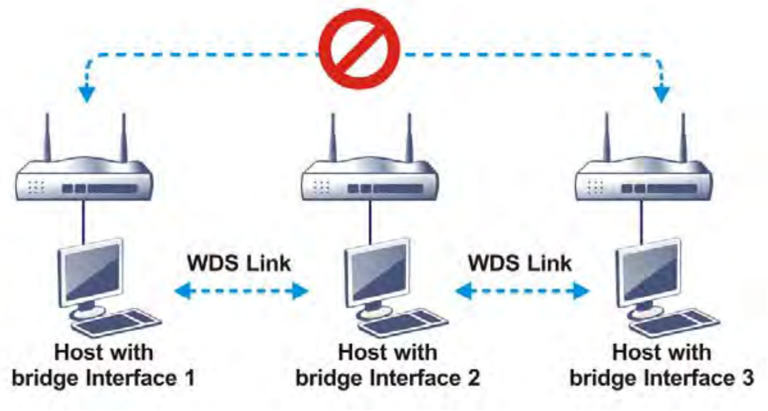


The application for the WDS-Repeater mode is depicted as below:

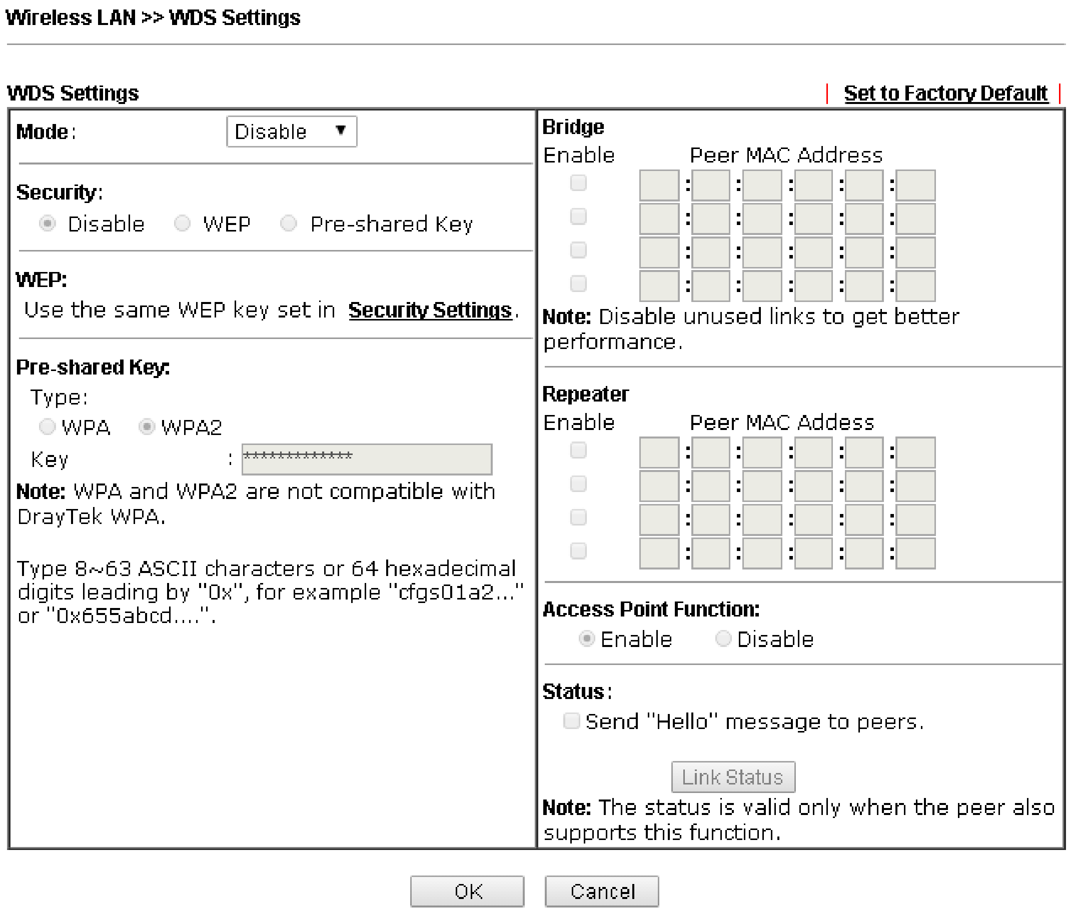


The major difference between these two modes is that: while in **Repeater** mode, the packets received from one peer AP can be repeated to another peer AP through WDS links. Yet in **Bridge** mode, packets received from a WDS link will only be forwarded to local wired or wireless hosts. In other words, only Repeater mode can do WDS-to-WDS packet forwarding.

In the following examples, hosts connected to Bridge 1 or 3 can communicate with hosts connected to Bridge 2 through WDS links. However, hosts connected to Bridge 1 CANNOT communicate with hosts connected to Bridge 3 through Bridge 2.


WDS Link
WDS Link
Host with bridge Interface 1
Host with bridge Interface 2
Host with bridge Interface 3

Click **WDS** from **Wireless LAN** menu. The following page will be shown.



Wireless LAN >> WDS Settings

WDS Settings | Set to Factory Default |

Mode: Disable ▼

Security:
● Disable ○ WEP ○ Pre-shared Key

WEP:
Use the same WEP key set in Security Settings.

Pre-shared Key:
Type:
○ WPA ● WPA2
Key : *************

Note: WPA and WPA2 are not compatible with DrayTek WPA.

Type 8~63 ASCII characters or 64 hexadecimal digits leading by "0x", for example "cfgs01a2..." or "0x655abcd....".

Bridge
Enable Peer MAC Address
□ __ : __ : __ : __ : __ : __
□ __ : __ : __ : __ : __ : __
□ __ : __ : __ : __ : __ : __
□ __ : __ : __ : __ : __ : __

Note: Disable unused links to get better performance.

Repeater
Enable Peer MAC Address
□ __ : __ : __ : __ : __ : __
□ __ : __ : __ : __ : __ : __
□ __ : __ : __ : __ : __ : __
□ __ : __ : __ : __ : __ : __

Access Point Function:
● Enable ○ Disable

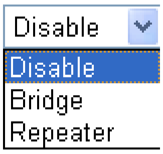
Status:
□ Send "Hello" message to peers.

Link Status

Note: The status is valid only when the peer also supports this function.

OK Cancel

Available settings are explained as follows:

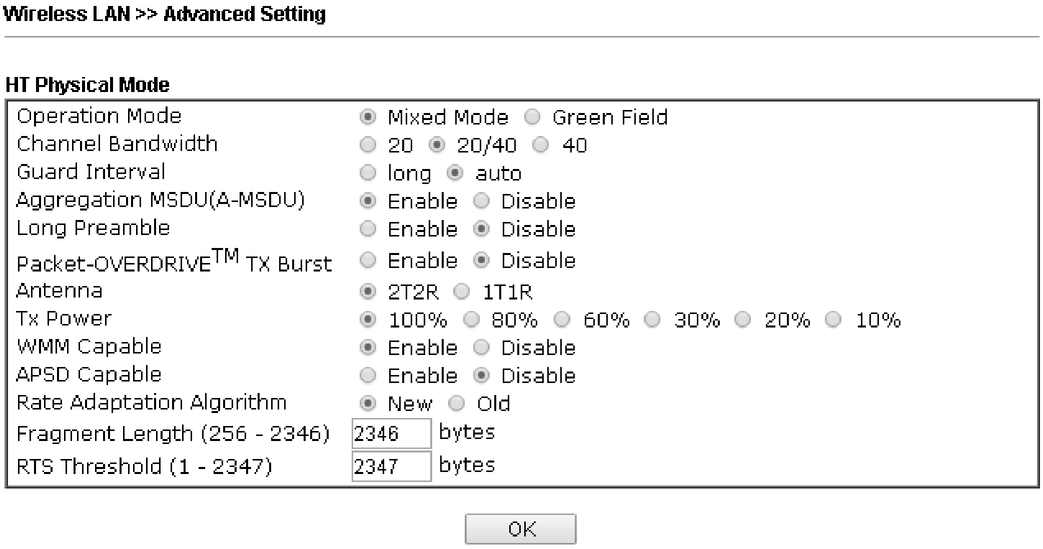
Item	Description
Mode	Choose the mode for WDS setting. **Disable** mode will not invoke any WDS setting. **Bridge** mode is designed to fulfill the first type of application. **Repeater** mode is for the second one.  Disable Disable Bridge Repeater
Security	There are three types for security, **Disable** and **Pre-shared key**. The setting you choose here will make the following

	WEP or Pre-shared key field valid or not. Choose one of the types for the router.
Pre-shared Key	**Type -** There are some types for you to choose. **WPA** and **WPA2** are used for WDS devices (e.g.2920n wireless router, you can set the encryption mode as WPA or WPA2 to establish your WDS system between AP and the router. **Key -** Type 8 ~ 63 ASCII characters or 64 hexadecimal digits leading by "0x".
Bridge	If you choose Bridge as the connecting mode, please type in the peer MAC address in these fields. Four peer MAC addresses are allowed to be entered in this page at one time. Yet please disable the unused link to get better performance. If you want to invoke the peer MAC address, remember to check **Enable** box in the front of the MAC address after typing.
Repeater	If you choose Repeater as the connecting mode, please type in the peer MAC address in these fields. Four peer MAC addresses are allowed to be entered in this page at one time. Similarly, if you want to invoke the peer MAC address, remember to check **Enable** box in the front of the MAC address after typing.
Access Point Function	Click **Enable** to make this router serve as an access point; click **Disable** to cancel this function.
Status	It allows user to send "hello" message to peers. Yet, it is valid only when the peer also supports this function.

After finishing all the settings here, please click **OK** to save the configuration.

III-1-7 Advanced Setting

This page allows users to set advanced settings such as operation mode, channel bandwidth, guard interval, and aggregation MSDU for wireless data transmission.



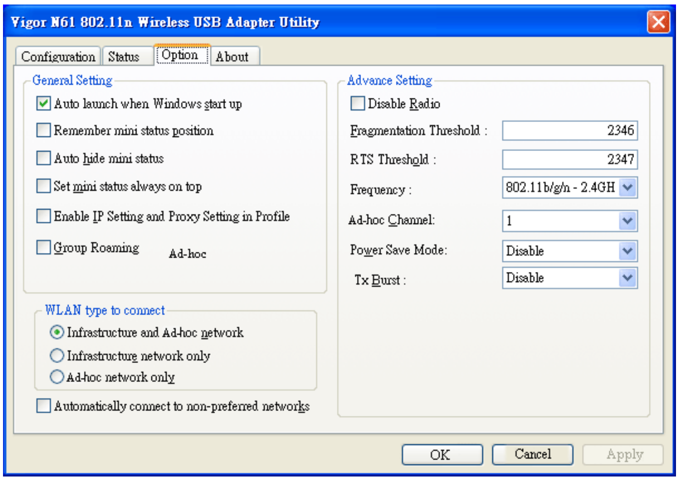
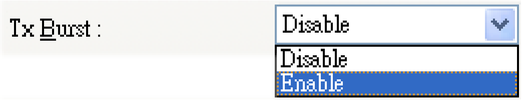
Wireless LAN >> Advanced Setting

HT Physical Mode

Operation Mode	● Mixed Mode ○ Green Field
Channel Bandwidth	○ 20 ● 20/40 ○ 40
Guard Interval	○ long ● auto
Aggregation MSDU(A-MSDU)	● Enable ○ Disable
Long Preamble	○ Enable ● Disable
Packet-OVERDRIVE^{TM} TX Burst	○ Enable ● Disable
Antenna	● 2T2R ○ 1T1R
Tx Power	● 100% ○ 80% ○ 60% ○ 30% ○ 20% ○ 10%
WMM Capable	● Enable ○ Disable
APSD Capable	○ Enable ● Disable
Rate Adaptation Algorithm	● New ○ Old
Fragment Length (256 - 2346)	2346 bytes
RTS Threshold (1 - 2347)	2347 bytes

Available settings are explained as follows:

Item	Description
Operation Mode	**Mixed Mode** – the router can transmit data with the ways supported in both 802.11a/b/g and 802.11n standards. However, the entire wireless transmission will be slowed down if 802.11g or 802.11b wireless client is connected. **Green Field** – to get the highest throughput, please choose such mode. Such mode can make the data transmission happen between 11n systems only. In addition, it does not have protection mechanism to avoid the conflict with neighboring devices of 802.11a/b/g.
Channel Bandwidth	**20-** the router will use 20Mhz for data transmission and receiving between the AP and the stations. **20/40 -** the router will use 20Mhz or 40Mhz for data transmission and receiving according to the station capability. Such channel can increase the performance for data transit. **20/40/80 -** the router will use 20Mhz, 40Mhz or 80Mhz for data transmission and receiving according to the station capability. Such channel can increase the performance for data transit.
Guard Interval	It is to assure the safety of propagation delays and reflections for the sensitive digital data. If you choose **auto** as guard interval, the AP router will choose short guard interval (increasing the wireless performance) or long guard interval for data transmit based on the station capability.
Aggregation MSDU	Aggregation MSDU can combine frames with different sizes. It is used for improving MAC layer's performance for some brand's clients. The default setting is **Enable.**
Long Preamble	This option is to define the length of the sync field in an 802.11 packet. Most modern wireless network uses short

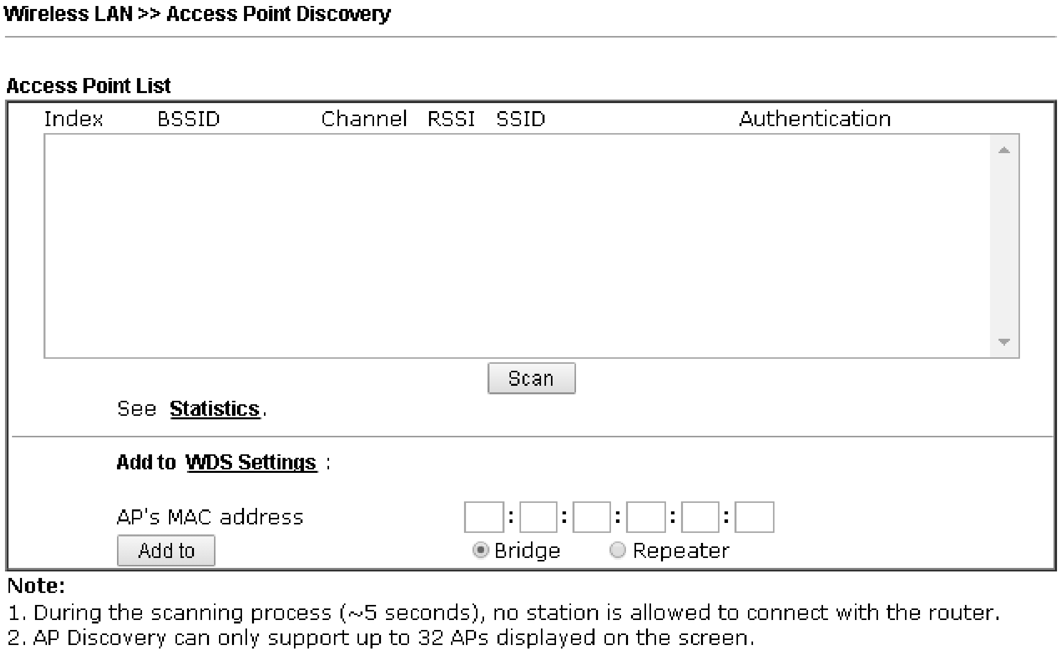
	preamble with 56 bit sync field instead of long preamble with 128 bit sync field. However, some original 11b wireless network devices only support long preamble. Click **Enable** to use **Long Preamble** if needed to communicate with this kind of devices.
Packet-OVERDRIVE	This feature can enhance the performance in data transmission about 40%* more (by checking **Tx Burst**). It is active only when both sides of Access Point and Station (in wireless client) invoke this function at the same time. That is, the wireless client must support this feature and invoke the function, too. **Note:** Vigor N61 wireless adapter supports this function. Therefore, you can use and install it into your PC for matching with Packet-OVERDRIVE (refer to the following picture of Vigor N61 wireless utility window, choose **Enable** for **TxBURST** on the tab of **Option**).  Vigor N61 802.11n Wireless USB Adapter Utility Configuration Status Option About OK Cancel Apply General Setting ☑ Auto launch when Windows start up □ Remember mini status position □ Auto hide mini status □ Set mini status always on top □ Enable IP Setting and Proxy Setting in Profile □ Group Roaming Ad-hoc WLAN type to connect ● Infrastructure and Ad-hoc network ○ Infrastructure network only ○ Ad-hoc network only □ Automatically connect to non-preferred networks Advance Setting □ Disable Radio Fragmentation Threshold : 2346 RTS Threshold : 2347 Frequency : 802.11b/g/n - 2.4GH Ad-hoc Channel: 1 Power Save Mode: Disable Tx Burst : Disable  Tx Burst : Disable **Note:** * means the real transmission rate depends on the environment of the network.
Antenna	Choose one of the types.
Tx Power	Set the power percentage for transmission signal of access point. The greater the value is, the higher intensity of the signal will be.
WMM Capable	To apply WMM parameters for wireless data transmission, please click the **Enable** radio button.
APSD Capable	The default setting is **Disable**.
Rate Adaptation Algorithm	Wireless transmission rate is adapted dynamically. Usually, performance of “new” algorithm is better than “old”.
Fragment Length (256 - 2346)	Set the Fragment threshold of wireless radio. Do not modify default value if you don’t know what it is, default value is 2346.
RTS Threshold (1 - 2347)	Minimize the collision (unit is bytes) between hidden stations to improve wireless performance. Set the RTS threshold of wireless radio. Do not modify default value if you don’t know what it is, default value is 2347.

After finishing all the settings here, please click **OK** to save the configuration.

III-1-8 AP Discovery

Vigor router can scan all regulatory channels and find working APs in the neighborhood. Based on the scanning result, users will know which channel is clean for usage. Also, it can be used to facilitate finding an AP for a WDS link. Notice that during the scanning process (about 5 seconds), no client is allowed to connect to Vigor.

This page is used to scan the existence of the APs on the wireless LAN. Yet, only the AP which is in the same channel of this router can be found. Please click **Scan** to discover all the connected APs.



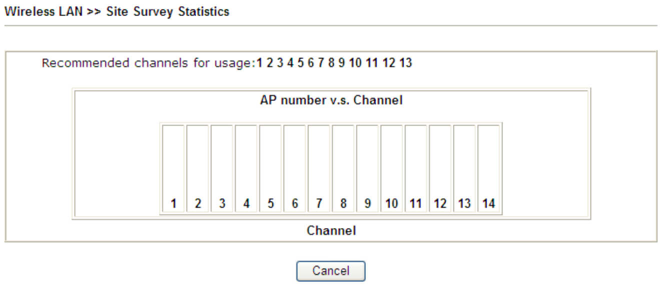
Wireless LAN >> Access Point Discovery

Access Point List

Index	BSSID	Channel	RSSI	SSID	Authentication

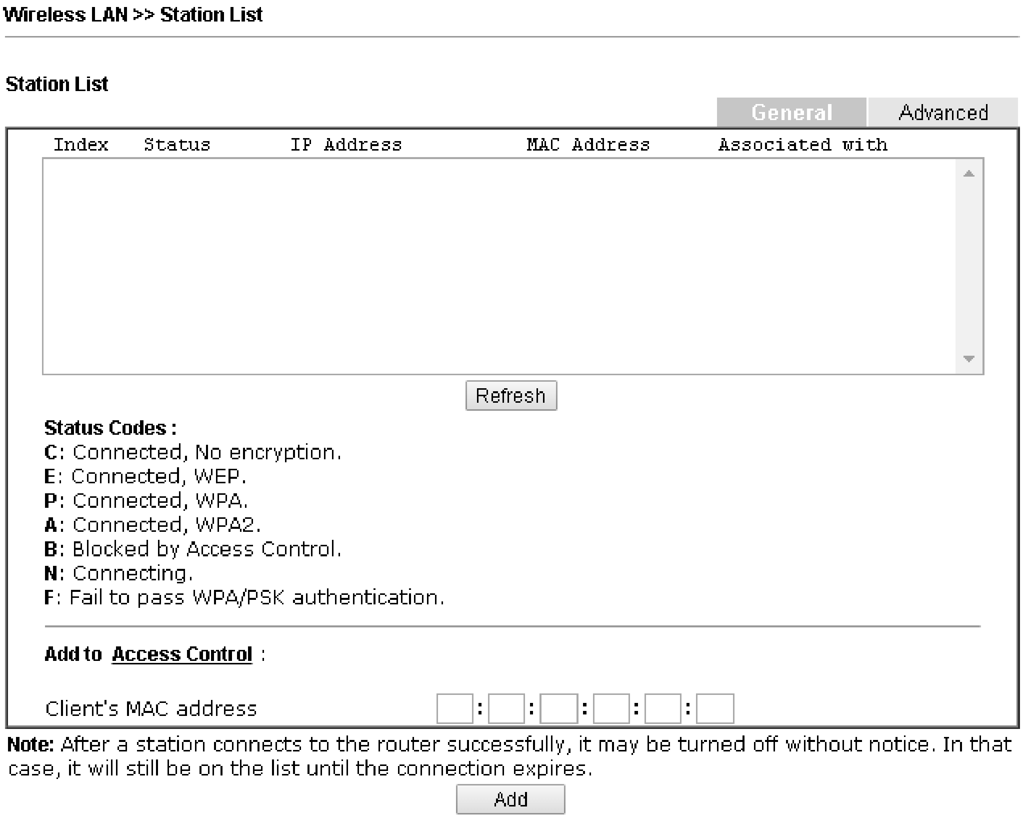
Note:
1. During the scanning process (~5 seconds), no station is allowed to connect with the router.
2. AP Discovery can only support up to 32 APs displayed on the screen.

Available settings are explained as follows:

Item	Description
Scan	It is used to discover all the connected AP. The results will be shown on the box above this button.
Statistics	It displays the statistics for the channels used by APs.  Wireless LAN >> Site Survey Statistics Recommended channels for usage:1 2 3 4 5 6 7 8 9 10 11 12 13 AP number v.s. Channel 1 2 3 4 5 6 7 8 9 10 11 12 13 14 Channel Cancel
Add to	If you want the found AP applying the WDS settings, please type in the AP's MAC address on the bottom of the page and click Bridge or Repeater. Next, click **Add to**. Later, the MAC address of the AP will be added to Bridge or Repeater field of WDS settings page.

III-1-9 Station List

Station List provides the knowledge of connecting wireless clients now along with its status code. There is a code summary below for explanation. For convenient **Access Control**, you can select a WLAN station and click **Add to Access Control** below.


Wireless LAN >> Station List

Station List

Status Codes :
C: Connected, No encryption.
E: Connected, WEP.
P: Connected, WPA.
A: Connected, WPA2.
B: Blocked by Access Control.
N: Connecting.
F: Fail to pass WPA/PSK authentication.

Add to Access Control :

Client's MAC address □ : □ : □ : □ : □ : □

Note: After a station connects to the router successfully, it may be turned off without notice. In that case, it will still be on the list until the connection expires.

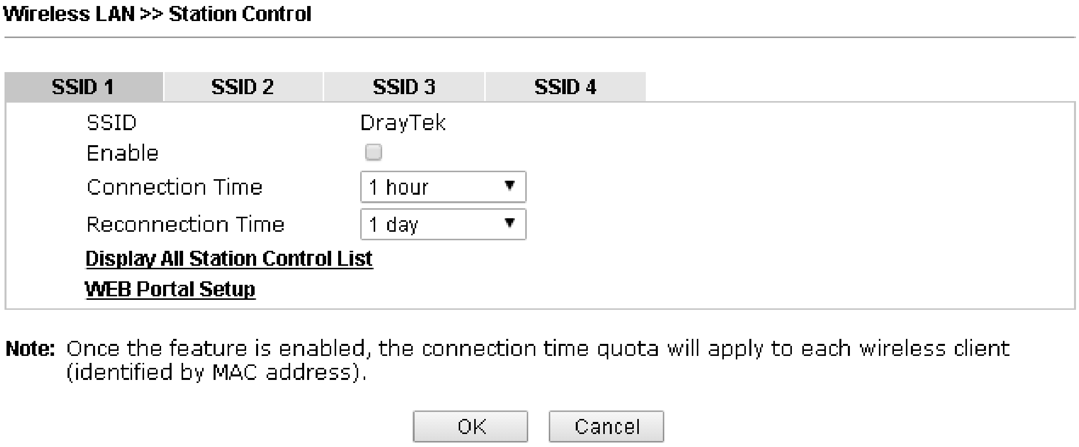
Available settings are explained as follows:

Item	Description
Refresh	Click this button to refresh the status of station list.
Add	Click this button to add current typed MAC address into **Access Control.**

III-1-10 Station Control

Station Control is used to specify the duration for the wireless client to connect and reconnect Vigor router. If such function is not enabled, the wireless client can connect Vigor router until the router shuts down.

Such feature is especially useful for free Wi-Fi service. For example, a coffee shop offers free Wi-Fi service for its guests for one hour every day. Then, the connection time can be set as "1 hour" and reconnection time can be set as "1 day". Thus, the guest can finish his job within one hour and will not occupy the wireless network for a long time.



Wireless LAN >> Station Control

SSID DrayTek

Enable □

Connection Time 1 hour ▼

Reconnection Time 1 day ▼

Display All Station Control List

WEB Portal Setup

Note: Once the feature is enabled, the connection time quota will apply to each wireless client (identified by MAC address).

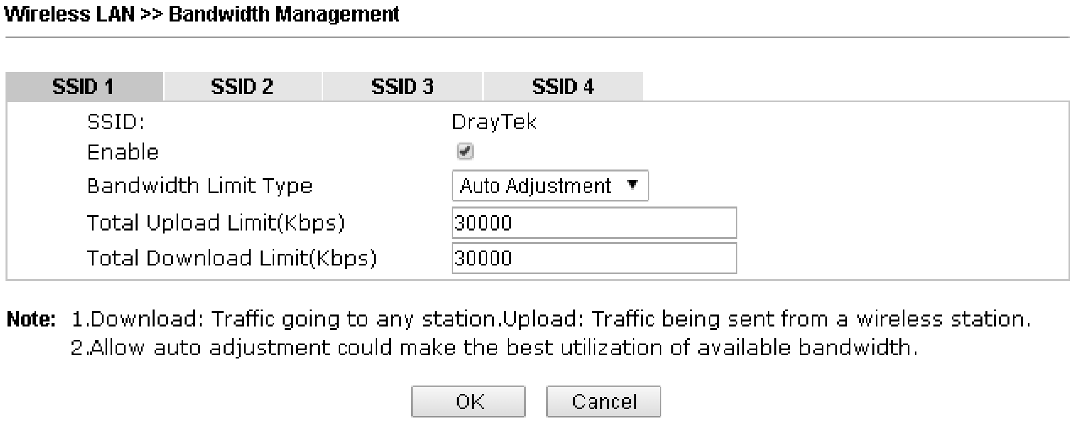
Available settings are explained as follows:

Item	Description
SSID	Display the SSID that the wireless station will use it to connect with Vigor router.
Enable	Check the box to enable the station control function.
Connection Time / Reconnection Time	Use the drop down list to choose the duration for the wireless client connecting /reconnecting to Vigor router. Or, type the duration manually when you choose **User defined**.
Display All Station Control List	All the wireless stations connecting to Vigor router by using such SSID will be listed on Station Control List.
WEB Portal Setup	Click it to access in to **LAN>>Web Portal Setup** page for modifying the settings if required.

After finishing all the settings here, please click **OK** to save the configuration.

III-1-11 Bandwidth Management

The downstream or upstream from FTP, HTTP or some P2P applications will occupy large of bandwidth and affect the applications for other programs. Please use Bandwidth Management to make the bandwidth usage more efficient.



Wireless LAN >> Bandwidth Management

SSID:	DrayTek
Enable	☑
Bandwidth Limit Type	Auto Adjustment ▼
Total Upload Limit(Kbps)	30000
Total Download Limit(Kbps)	30000

Note: 1.Download: Traffic going to any station.Upload: Traffic being sent from a wireless station.
2.Allow auto adjustment could make the best utilization of available bandwidth.

Available settings are explained as follows:

Item	Description
SSID	Display the specific SSID name.
Enable	Check this box to enable the bandwidth management for clients.
Bandwidth Limit Type	**Auto Adjustment -** Bandwidth limit is determined by the system automatically. **Per Station Limit** – Bandwidth limit is determined according to the limitation of the wireless client.
Total Upload Limit	It is available when Auto Adjustment is selected. Type a value to define the maximum data traffic (uploading) for all of the wireless clients connecting to Vigor2952.
Total Download Limit	It is available when Auto Adjustment is selected. Type a value to define the maximum data clientstations connecting to Vigor2952.
Upload Limit	It is available when Per Station Limit is selected. Type a value to define the maximum data traffic (uploading) for each wireless client connecting to Vigor2952.
Download Limit	It is available when Per Station Limit is selected Type a value to define the maximum data traffic (downloading) for each wireless client connecting to Vigor2952.

After finishing this web page configuration, please click **OK** to save the settings

Part IV VPN

VPN

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.

SSL VPN

It is a form of VPN that can be used with a standard Web browser.

Certificate Management

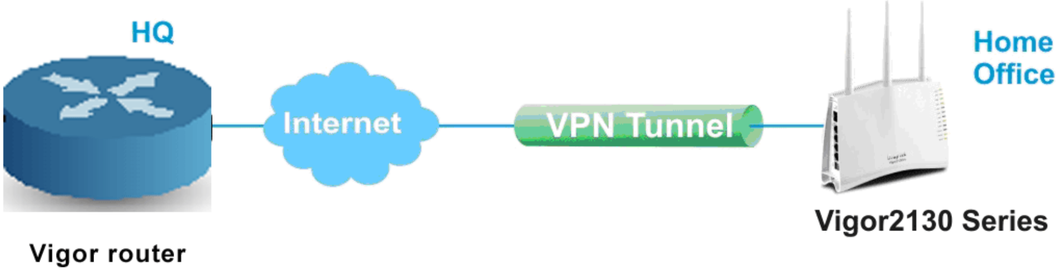
A digital certificate works as an electronic ID, which is issued by a certification authority (CA). It contains information such as your name, a serial number, expiration dates etc., and the digital signature of the certificate-issuing authority so that a recipient can verify that the certificate is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

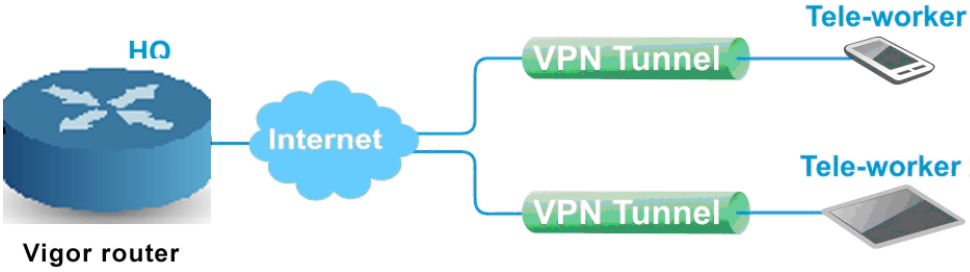
IV-1 VPN and Remote Access

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.

The VPN built is suitable for:

- Communication between home office and customer
- Secure connection between Teleworker, staff on business trip and main office
- Exchange data between remote office and main office
- POS between chain store and headquarters

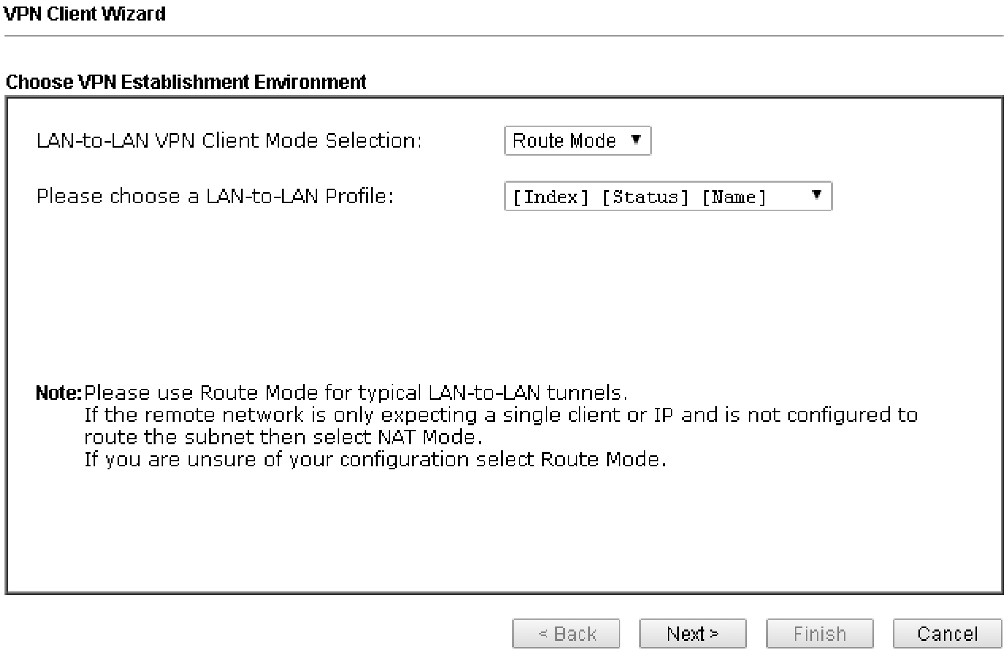




IV-1-1 VPN Client Wizard

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.

1. Open **Wizards>>VPN Client Wizard**. The following page will appear.



VPN Client Wizard

Choose VPN Establishment Environment

LAN-to-LAN VPN Client Mode Selection: Route Mode

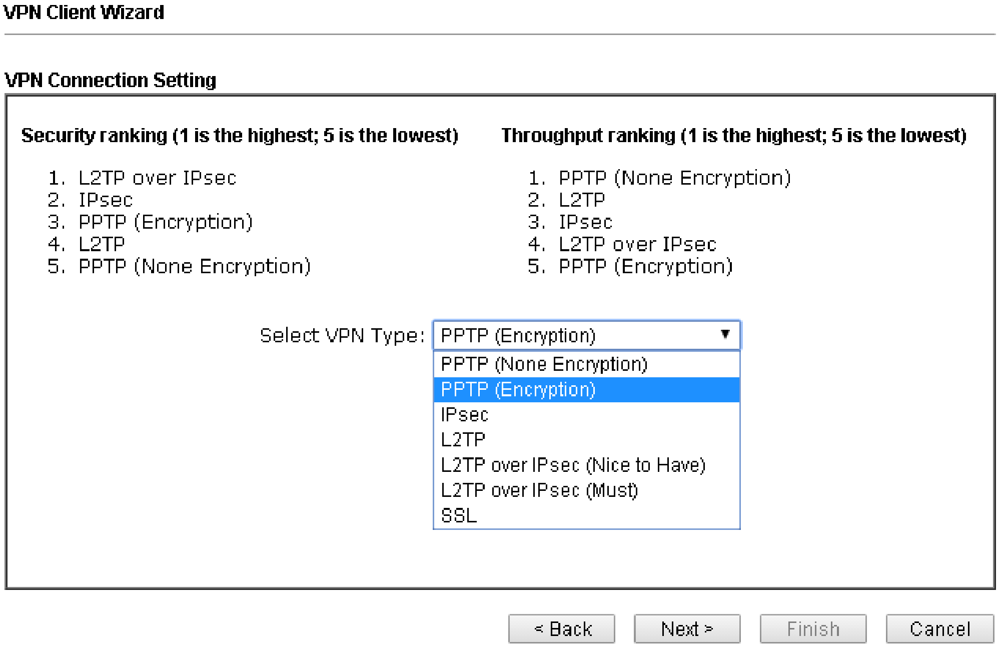
Please choose a LAN-to-LAN Profile: [Index] [Status] [Name]

Note: Please use Route Mode for typical LAN-to-LAN tunnels.
If the remote network is only expecting a single client or IP and is not configured to route the subnet then select NAT Mode.
If you are unsure of your configuration select Route Mode.

Available settings are explained as follows:

Item	Description
LAN-to-LAN Client Mode Selection	Choose the client mode. **Route Mode/NAT Mode** – If the remote network only allows you to dial in with single IP, please choose NAT mode, otherwise please choose Route Mode.
Please choose a LAN-to-LAN Profile	There are several VPN profiles for users to set.

2. When you finish the mode and profile selection, please click **Next** to open the following page.



VPN Client Wizard

VPN Connection Setting

Security ranking (1 is the highest; 5 is the lowest)

1. L2TP over IPsec
2. IPsec
3. PPTP (Encryption)
4. L2TP
5. PPTP (None Encryption)

Throughput ranking (1 is the highest; 5 is the lowest)

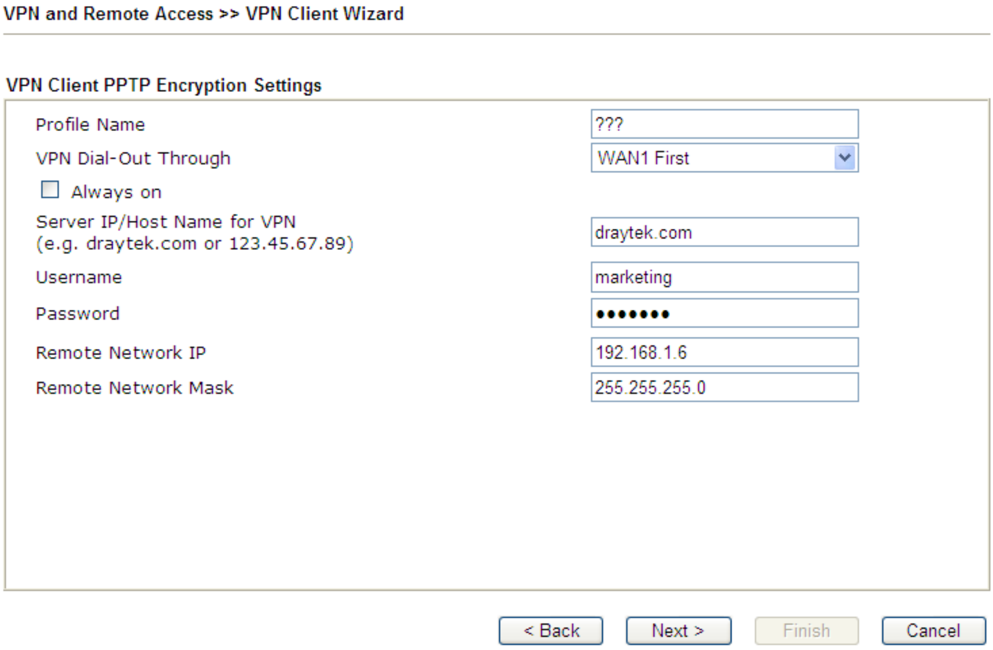
1. PPTP (None Encryption)
2. L2TP
3. IPsec
4. L2TP over IPsec
5. PPTP (Encryption)

Select VPN Type: PPTP (Encryption)

In this page, you have to select suitable VPN type for the VPN client profile. There are six types provided here. Different type will lead to different configuration page. After making the choices for the client profile, please click **Next**. You will see different configurations based on the selection(s) you made.

Info The following descriptions for VPN Type are based on the Route Mode specified in LAN-to-LAN Client Mode Selection.

When you choose **PPTP (None Encryption)** or **PPTP (Encryption)**, you will see the following graphic:

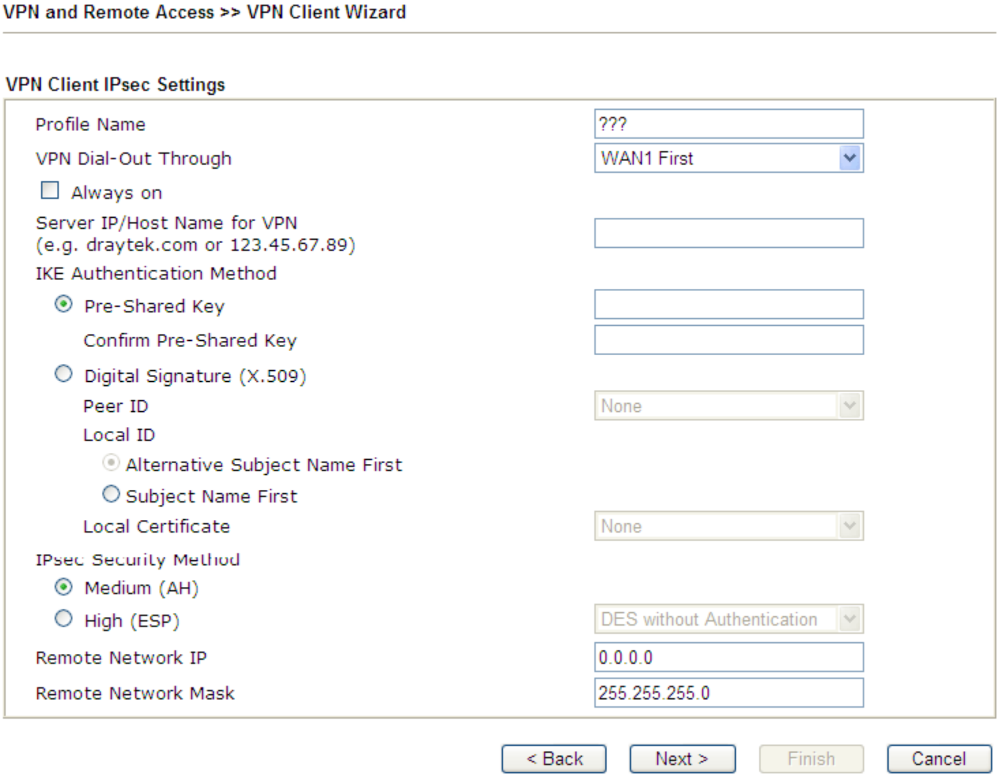


VPN and Remote Access >> VPN Client Wizard

VPN Client PPTP Encryption Settings

Profile Name	???
VPN Dial-Out Through	WAN1 First
□ Always on	
Server IP/Host Name for VPN (e.g. draytek.com or 123.45.67.89)	draytek.com
Username	marketing
Password	•••••••
Remote Network IP	192.168.1.6
Remote Network Mask	255.255.255.0

When you choose **IPsec**, you will see the following graphic:

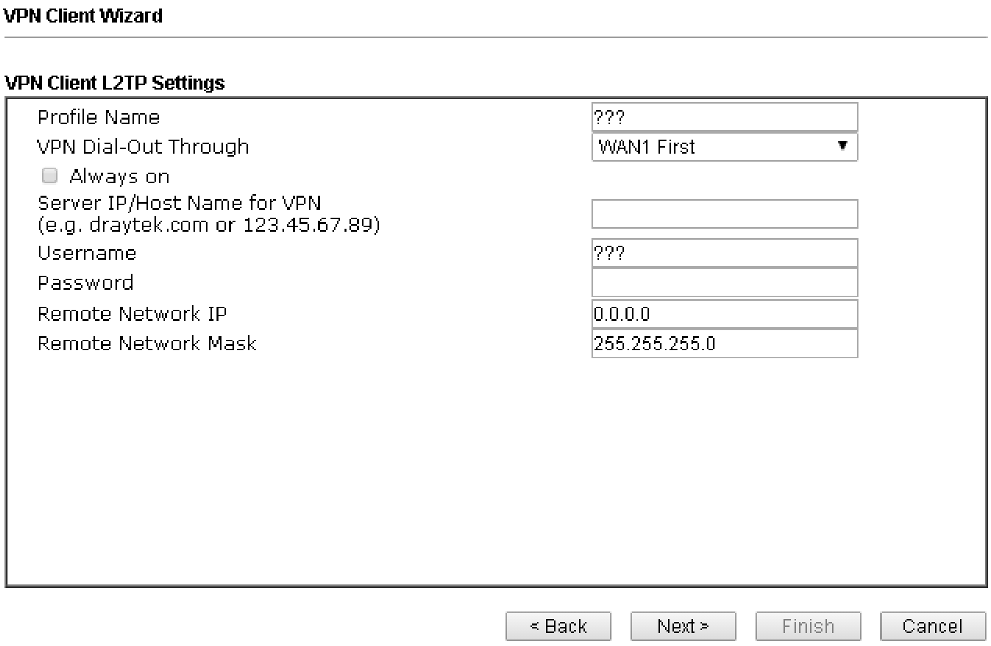


VPN and Remote Access >> VPN Client Wizard

VPN Client IPsec Settings

Profile Name	???
VPN Dial-Out Through	WAN1 First
□ Always on	
Server IP/Host Name for VPN (e.g. draytek.com or 123.45.67.89)	
IKE Authentication Method	
● Pre-Shared Key	
Confirm Pre-Shared Key	
○ Digital Signature (X.509)	
Peer ID	None
Local ID	
● Alternative Subject Name First	
○ Subject Name First	
Local Certificate	None
IPsec Security Method	
● Medium (AH)	
○ High (ESP)	DES without Authentication
Remote Network IP	0.0.0.0
Remote Network Mask	255.255.255.0

When you choose **L2TP**, you will see the following graphic:

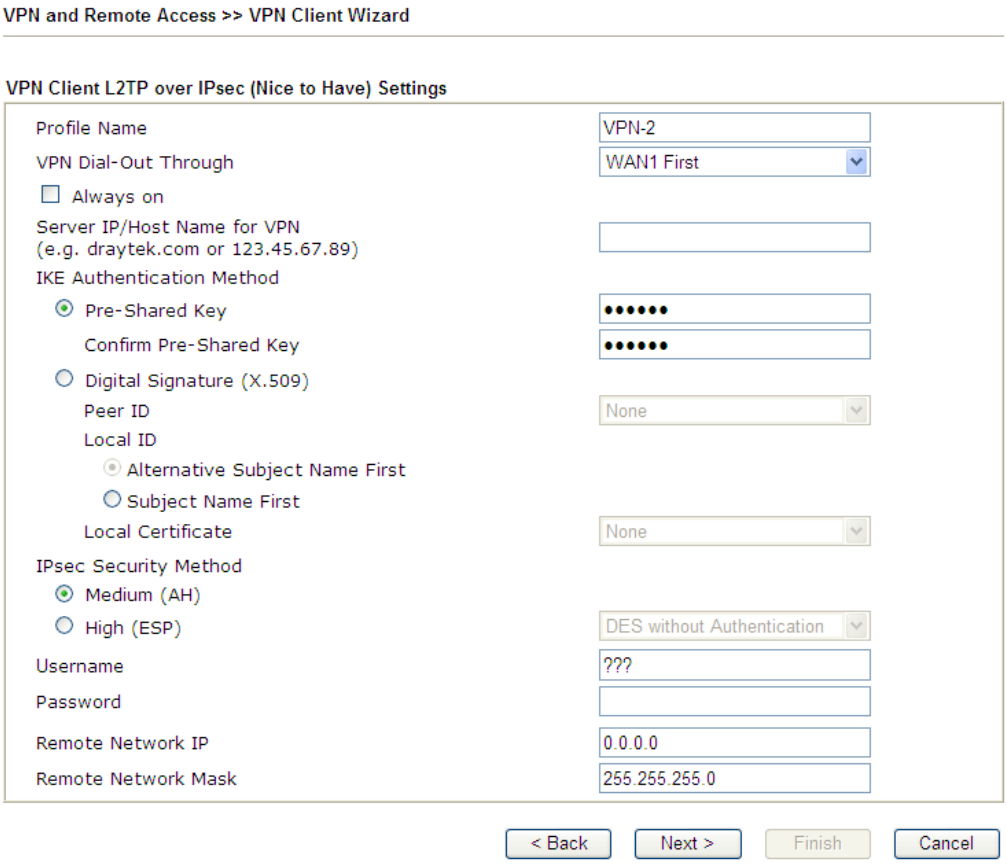


VPN Client Wizard

VPN Client L2TP Settings

Profile Name	???
VPN Dial-Out Through	WAN1 First ▼
□ Always on	
Server IP/Host Name for VPN (e.g. draytek.com or 123.45.67.89)	
Username	???
Password	
Remote Network IP	0.0.0.0
Remote Network Mask	255.255.255.0

When you choose **L2TP over IPsec (Nice to Have)** or **L2TP over IPsec (Must),** you will see the following graphic:

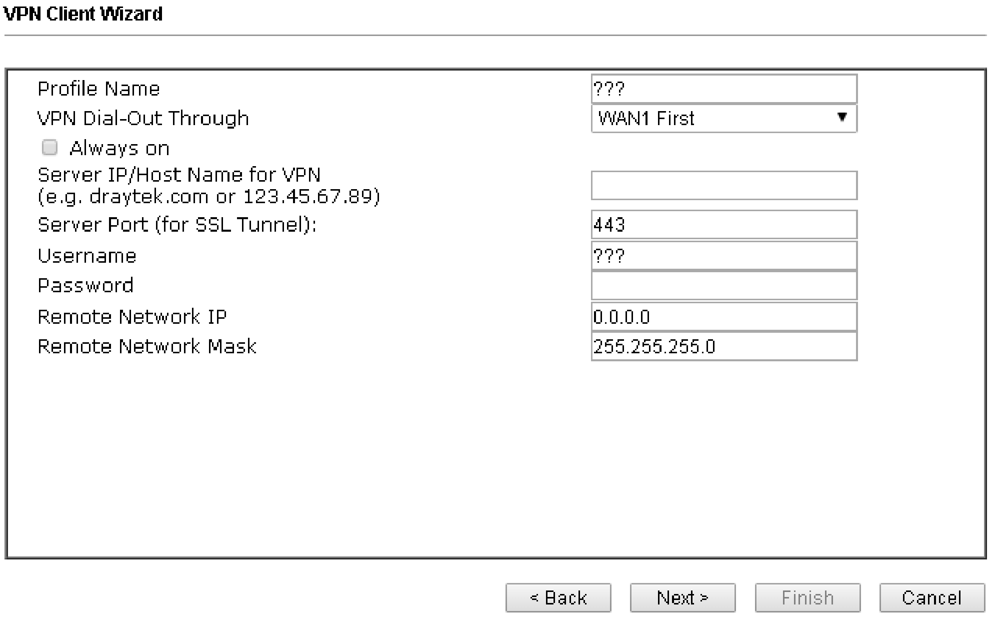


VPN and Remote Access >> VPN Client Wizard

VPN Client L2TP over IPsec (Nice to Have) Settings

Profile Name	VPN-2
VPN Dial-Out Through	WAN1 First
□ Always on	
Server IP/Host Name for VPN (e.g. draytek.com or 123.45.67.89)	
IKE Authentication Method	
● Pre-Shared Key	••••••
Confirm Pre-Shared Key	••••••
○ Digital Signature (X.509)	
Peer ID	None
Local ID	
● Alternative Subject Name First	
○ Subject Name First	
Local Certificate	None
IPsec Security Method	
● Medium (AH)	
○ High (ESP)	DES without Authentication
Username	???
Password	
Remote Network IP	0.0.0.0
Remote Network Mask	255.255.255.0

When you choose **SSL,** you will see the following graphic:



VPN Client Wizard

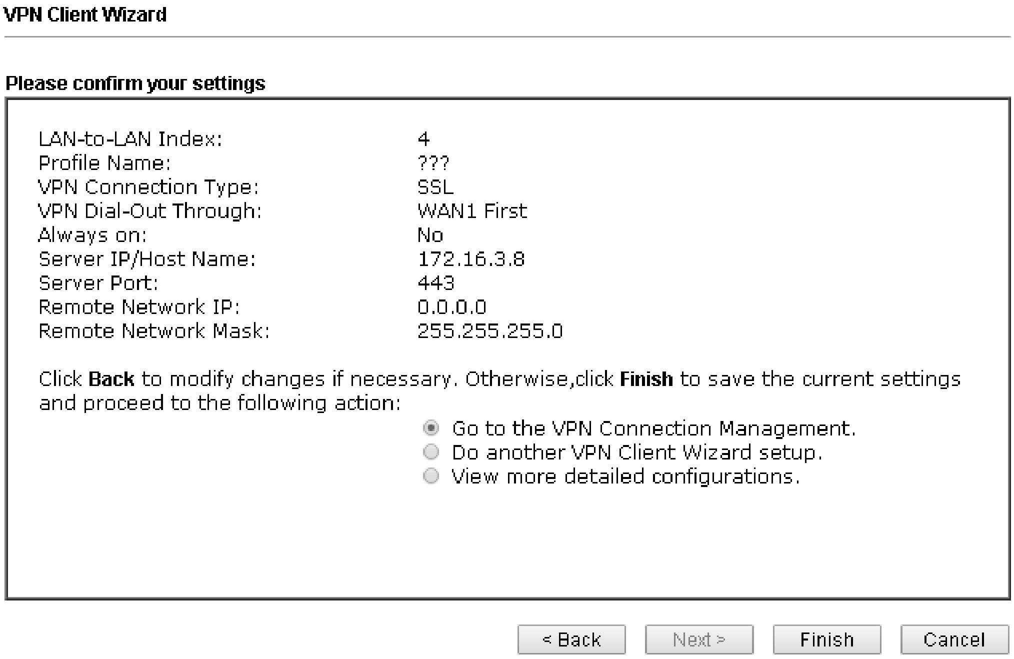
Profile Name	???
VPN Dial-Out Through	WAN1 First ▼
□ Always on	
Server IP/Host Name for VPN (e.g. draytek.com or 123.45.67.89)	
Server Port (for SSL Tunnel):	443
Username	???
Password	
Remote Network IP	0.0.0.0
Remote Network Mask	255.255.255.0

Available settings are explained as follows:

Item	Description
Profile Name	Type a name for such profile. The length of the file is limited to 10 characters.
VPN Dial-Out Through	Use the drop down menu to choose a proper WAN interface for this profile. This setting is useful for dial-out only. **WAN1 First/ WAN2 First /WAN3 First/WAN4 First**- While connecting, the router will use WAN1/WAN2/WAN3/WAN4/WAN5 as the first channel for VPN connection. If WAN1/WAN2/WAN3/WAN4 fails, the router will use another WAN interface instead. **WAN1 Only /WAN2 Only/WAN3 Only/WAN4 Only** - While connecting, the router will use WAN1/WAN2/WAN3/WAN4 as the only channel for VPN connection. **WAN1 Only: Only establish VPN if WAN2 down** - If WAN2 failed, the router will use WAN1 for VPN connection. **WAN2 Only: Only establish VPN if WAN1 down** - If WAN1 failed, the router will use WAN2 for VPN connection.
Always On	Check to enable router always keep VPN connection.
Server IP/Host Name for VPN	Type the IP address of the server or type the host name for such VPN profile.
Server Port (for SSL Tunnel)	Type a port number for SSL tunnel.
IKE Authentication Method	IKE Authentication Method usually applies to those are remote dial-in user or node (LAN to LAN) which uses dynamic IP address and IPsec-related VPN connections such as L2TP over IPsec and IPsec tunnel. **Pre-Shared Key-** Specify a key for IKE authentication. **Confirm Pre-Shared Key-**Confirm the pre-shared key.

Digital Signature (X.509)	Click **Digital Signature** to invoke this function. **Peer ID** – Choose the peer ID selection from the drop down list. **Local ID** – Choose **Alternative Subject Name First** or **Subject Name First**. **Local Certificate** – Use the drop down list to choose one of the certificates for using. You have to configure one certificate at least previously in **Certificate Management >> Local Certificate.** Otherwise, the setting you choose here will not be effective.
IPsec Security Method	**Medium** - Authentication Header (AH) means data will be authenticated, but not be encrypted. By default, this option is active. **High** - Encapsulating Security Payload (ESP) means payload (data) will be encrypted and authenticated. You may select encryption algorithm from Data Encryption Standard (DES), Triple DES (3DES), and AES.
User Name	This field is used to authenticate for connection when you select PPTP or L2TP with or without IPsec policy above. The length of the user name is limited to 11 characters.
Password	This field is used to authenticate for connection when you select PPTP or L2TP with or without IPsec policy above. The length of the password is limited to 11 characters.
Remote Network IP	Please type one LAN IP address (according to the real location of the remote host) for building VPN connection.
Remote Network Mask	Please type the network mask (according to the real location of the remote host) for building VPN connection.

3. After finishing the configuration, please click **Next.** The confirmation page will be shown as follows. If there is no problem, you can click one of the radio buttons listed on the page and click **Finish** to execute the next action.



VPN Client Wizard

Please confirm your settings

```
LAN-to-LAN Index:          4
Profile Name:              ???
VPN Connection Type:       SSL
VPN Dial-Out Through:      WAN1 First
Always on:                 No
Server IP/Host Name:       172.16.3.8
Server Port:               443
Remote Network IP:         0.0.0.0
Remote Network Mask:       255.255.255.0
```

Click **Back** to modify changes if necessary. Otherwise,click **Finish** to save the current settings and proceed to the following action:

● Go to the VPN Connection Management.
○ Do another VPN Client Wizard setup.
○ View more detailed configurations.

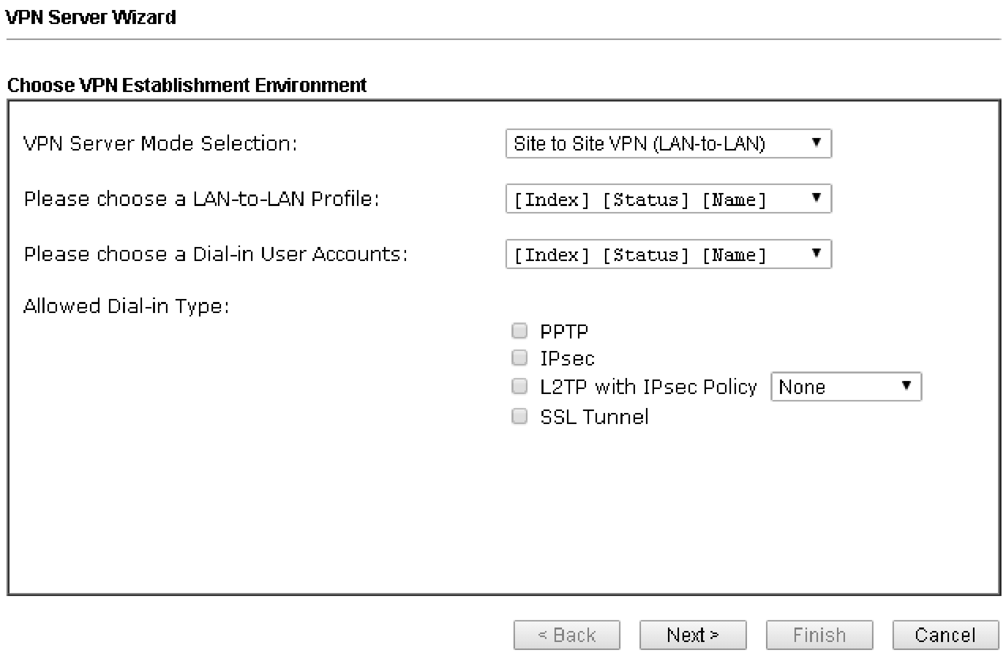
Available settings are explained as follows:

Item	Description
Go to the VPN Connection Management	Click this radio button to access **VPN and Remote Access>>Connection Management** for viewing VPN Connection status.
Do another VPN Server Wizard Setup	Click this radio button to set another profile of VPN Server through VPN Server Wizard.
View more detailed configuration	Click this radio button to access **VPN and Remote Access>>LAN to LAN** for viewing detailed configuration.

IV-1-2 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.

1. Open **Wizards>>VPN Server Wizard**. The following page will appear.



VPN Server Wizard

Choose VPN Establishment Environment

VPN Server Mode Selection: Site to Site VPN (LAN-to-LAN) ▼

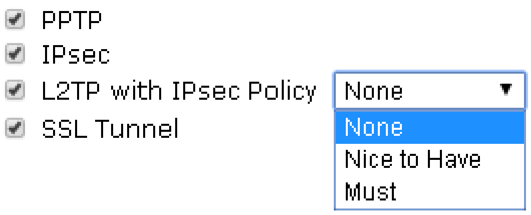
Please choose a LAN-to-LAN Profile: [Index] [Status] [Name] ▼

Please choose a Dial-in User Accounts: [Index] [Status] [Name] ▼

Allowed Dial-in Type:

□ PPTP
□ IPsec
□ L2TP with IPsec Policy None ▼
□ SSL Tunnel

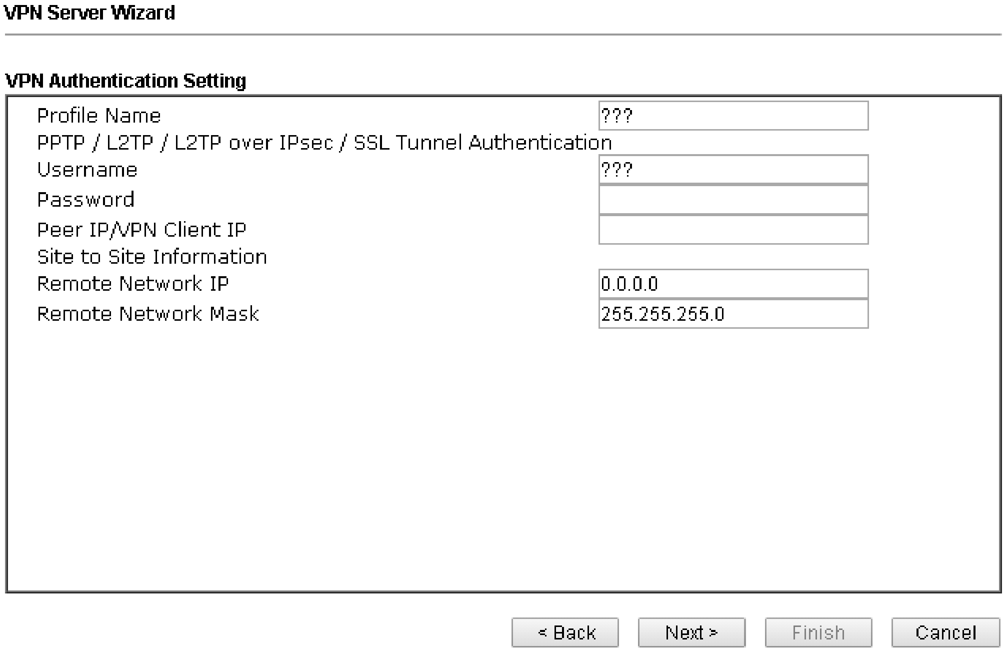
Available settings are explained as follows:

Item	Description
VPN Server Mode Selection	Choose the direction for the VPN server. **Site to Site VPN** – To set a LAN-to-LAN profile automatically, please choose Site to Site VPN. **Remote Dial-in User** –You can manage remote access by maintaining a table of remote user profile, so that users can be authenticated to dial-in via VPN connection.
Please choose a LAN-to-LAN Profile	This item is available when you choose **Site to Site VPN** (LAN-to-LAN) as VPN server mode.
Please choose a Dial-in User Accounts	This item is available when you choose Remote Dial-in User (Teleworker) as VPN server mode. There are 32 VPN tunnels for users to set.
Allowed Dial-in Type	This item is available after you choose any one of dial-in user account profiles. Next, you have to select suitable dial-in type for the VPN server profile. There are several types provided here (similar to VPN Client Wizard).  ☑ PPTP ☑ IPsec ☑ L2TP with IPsec Policy None ▼ ☑ SSL Tunnel None Nice to Have Must

	Different Dial-in Type will lead to different configuration page. In addition, adjustable items for each dial-in type will be changed according to the VPN Server Mode (**Site to Site VPN** and **Remote Dial-in User**) selected.

2. After making the choices for the server profile, please click **Next**. You will see different configurations based on the selection you made. Here we take the examples of choosing **Site-to-Site VPN** as the **VPN Server Mode**.

When you check **PPTP**, you will see the following graphic:

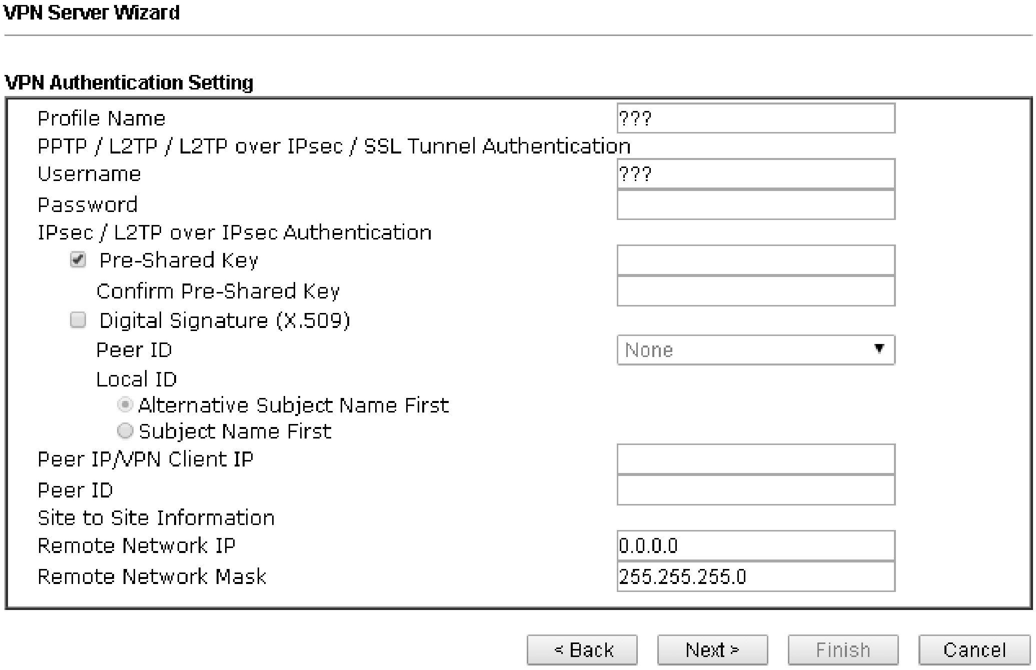


VPN Server Wizard

VPN Authentication Setting

Profile Name	???
PPTP / L2TP / L2TP over IPsec / SSL Tunnel Authentication	
Username	???
Password	
Peer IP/VPN Client IP	
Site to Site Information	
Remote Network IP	0.0.0.0
Remote Network Mask	255.255.255.0

When you check **PPTP & IPsec & L2TP** (three types) or **PPTP & IPsec** (two types) or **L2TP with Policy (Nice to Have/Must)**, you will see the following graphic:

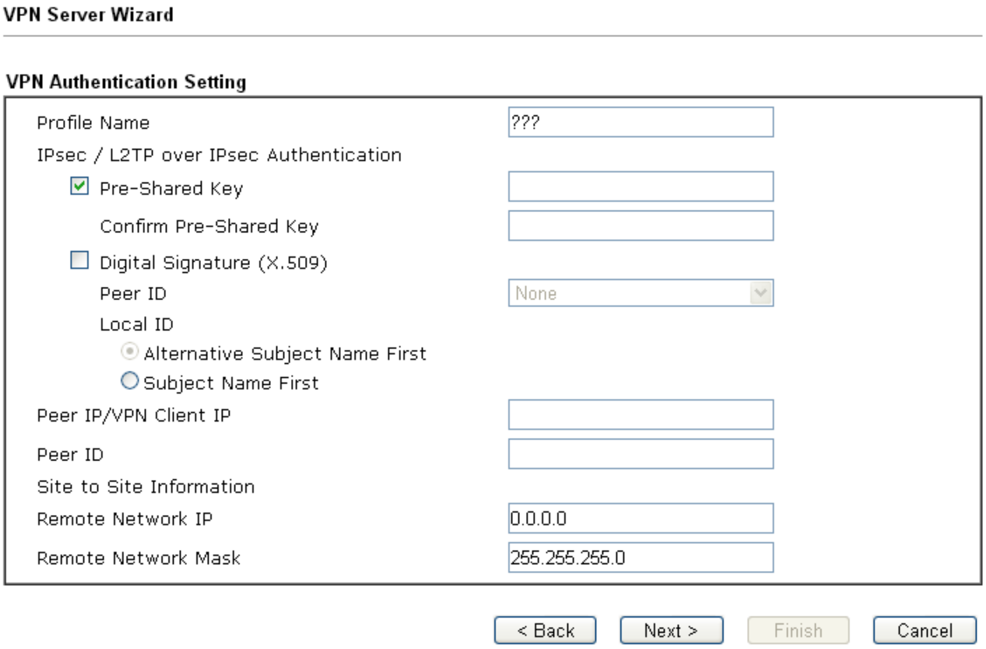


VPN Server Wizard

VPN Authentication Setting

Profile Name	???
PPTP / L2TP / L2TP over IPsec / SSL Tunnel Authentication	
Username	???
Password	
IPsec / L2TP over IPsec Authentication	
☑ Pre-Shared Key	
Confirm Pre-Shared Key	
□ Digital Signature (X.509)	
Peer ID	None
Local ID	
● Alternative Subject Name First	
○ Subject Name First	
Peer IP/VPN Client IP	
Peer ID	
Site to Site Information	
Remote Network IP	0.0.0.0
Remote Network Mask	255.255.255.0

When you check **IPsec**, you will see the following graphic:



VPN Server Wizard

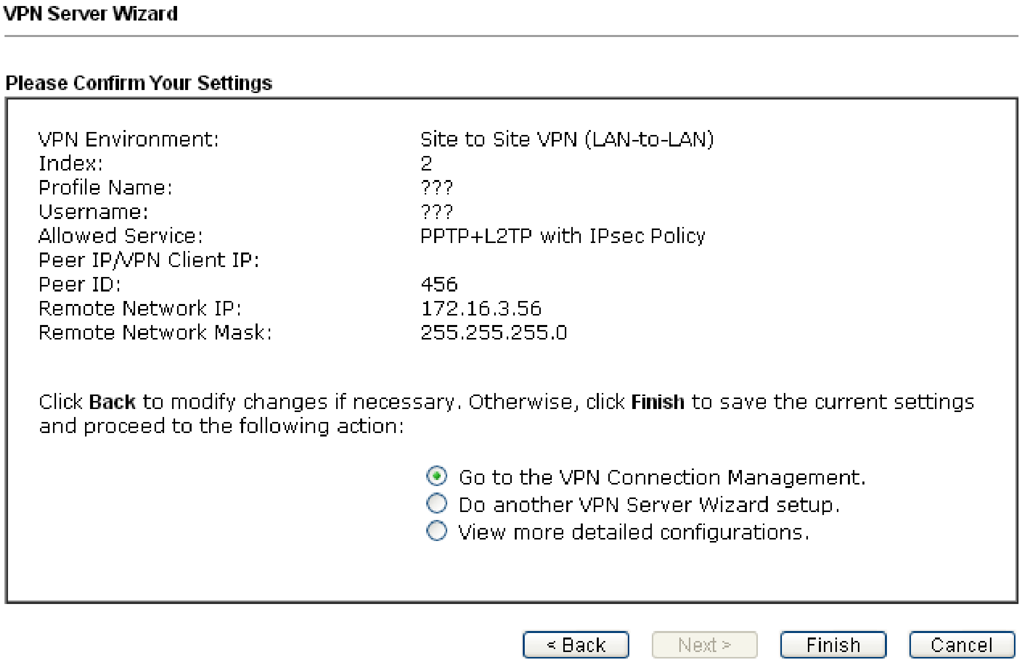
VPN Authentication Setting

Profile Name	???
IPsec / L2TP over IPsec Authentication	
☑ Pre-Shared Key	
Confirm Pre-Shared Key	
□ Digital Signature (X.509)	
Peer ID	None
Local ID	
● Alternative Subject Name First	
○ Subject Name First	
Peer IP/VPN Client IP	
Peer ID	
Site to Site Information	
Remote Network IP	0.0.0.0
Remote Network Mask	255.255.255.0

Available settings are explained as follows:

Item	Description
Profile Name	Type a name for such profile. The length of the file is limited to 10 characters.
User Name	This field is used to authenticate for connection when you select PPTP or L2TP with or without IPsec policy above. The length of the name is limited to 11 characters.
Password	This field is used to authenticate for connection when you select PPTP or L2TP with or without IPsec policy above. The length of the name is limited to 11 characters.
Pre-Shared Key	For IPsec/L2TP IPsec authentication, you have to type a pre-shared key. The length of the name is limited to 64 characters.
Confirm Pre-Shared Key	Type the pre-shared key again for confirmation.
Digital Signature (X.509)	Check the box of Digital Signature to invoke this function. **Peer ID** – Choose the peer ID selection from the drop down list. **Local ID** – Choose **Alternative Subject Name First** or **Subject Name First**.
Peer IP/VPN Client IP	Type the WAN IP address or VPN client IP address for the remote client.
Peer ID	Type the ID name for the remote client. The length of the name is limited to 47 characters.
Remote Network IP	Please type one LAN IP address (according to the real location of the remote host) for building VPN connection.
Remote Network Mask	Please type the network mask (according to the real location of the remote host) for building VPN connection.

3. After finishing the configuration, please click **Next.** The confirmation page will be shown as follows. If there is no problem, you can click one of the radio buttons listed on the page and click **Finish** to execute the next action.



VPN Server Wizard

Please Confirm Your Settings

VPN Environment:	Site to Site VPN (LAN-to-LAN)
Index:	2
Profile Name:	???
Username:	???
Allowed Service:	PPTP+L2TP with IPsec Policy
Peer IP/VPN Client IP:	
Peer ID:	456
Remote Network IP:	172.16.3.56
Remote Network Mask:	255.255.255.0

Click **Back** to modify changes if necessary. Otherwise, click **Finish** to save the current settings and proceed to the following action:

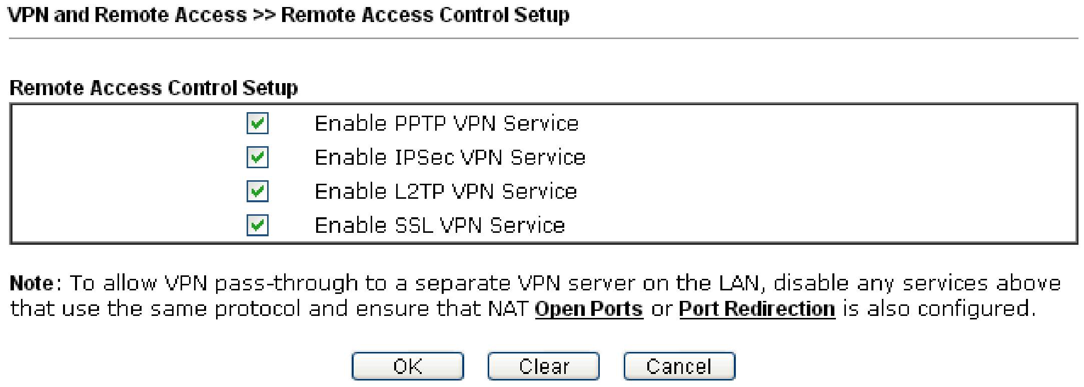
● Go to the VPN Connection Management.
○ Do another VPN Server Wizard setup.
○ View more detailed configurations.

Available settings are explained as follows:

Item	Description
Go to the VPN Connection Management	Click this radio button to access **VPN and Remote Access>>Connection Management** for viewing VPN Connection status.
Do another VPN Server Wizard Setup	Click this radio button to set another profile of VPN Server through VPN Server Wizard.
View more detailed configuration	Click this radio button to access **VPN and Remote Access>>LAN to LAN** for viewing detailed configuration.

IV-1-3 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 of Vigor Router to allow VPN tunnel pass through, as well as the appropriate NAT settings, such as DMZ or open port.



VPN and Remote Access >> Remote Access Control Setup

Remote Access Control Setup

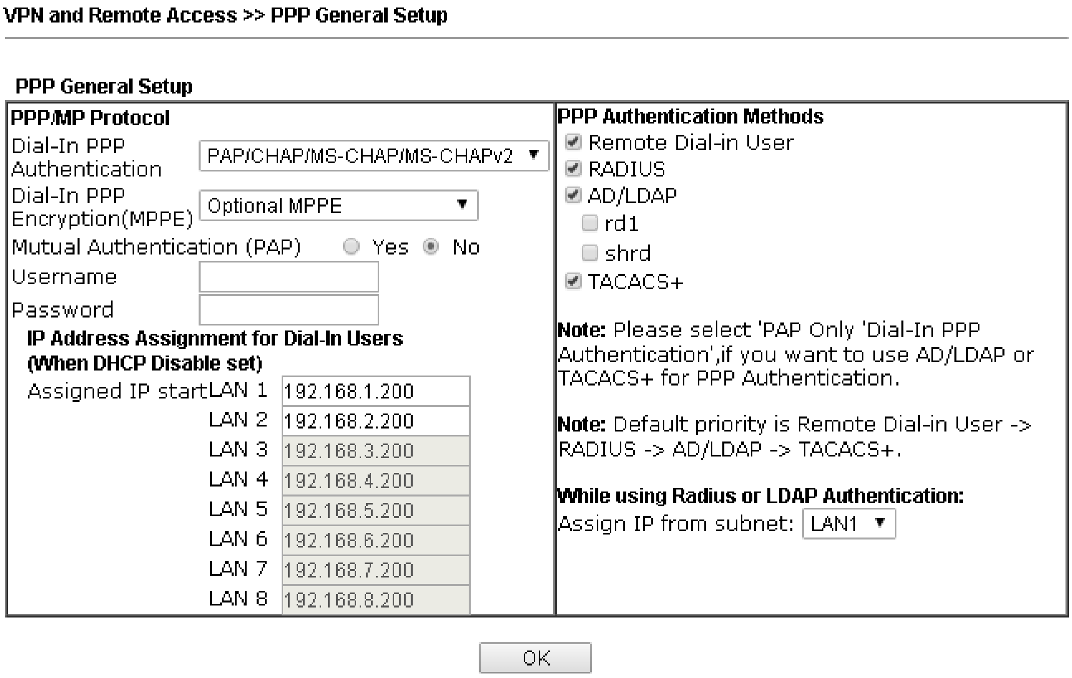
☑ Enable PPTP VPN Service
☑ Enable IPSec VPN Service
☑ Enable L2TP VPN Service
☑ Enable SSL VPN Service

Note: To allow VPN pass-through to a separate VPN server on the LAN, disable any services above that use the same protocol and ensure that NAT **Open Ports** or **Port Redirection** is also configured.

After finishing all the settings here, please click **OK** to save the configuration.

IV-1-4 PPP General Setup

This submenu only applies to PPP-related VPN connections, such as PPTP, L2TP, L2TP over IPsec.



VPN and Remote Access >> PPP General Setup

PPP General Setup

PPP/MP Protocol	
Dial-In PPP Authentication	PAP/CHAP/MS-CHAP/MS-CHAPv2 ▼
Dial-In PPP Encryption(MPPE)	Optional MPPE ▼
Mutual Authentication (PAP)	○ Yes ● No
Username	
Password	

IP Address Assignment for Dial-In Users (When DHCP Disable set)

Assigned IP start		
	LAN 1	192.168.1.200
	LAN 2	192.168.2.200
	LAN 3	192.168.3.200
	LAN 4	192.168.4.200
	LAN 5	192.168.5.200
	LAN 6	192.168.6.200
	LAN 7	192.168.7.200
	LAN 8	192.168.8.200

PPP Authentication Methods

- ☑ Remote Dial-in User
- ☑ RADIUS
- ☑ AD/LDAP
  - □ rd1
  - □ shrd
- ☑ TACACS+

Note: Please select 'PAP Only 'Dial-In PPP Authentication',if you want to use AD/LDAP or TACACS+ for PPP Authentication.

Note: Default priority is Remote Dial-in User -> RADIUS -> AD/LDAP -> TACACS+.

While using Radius or LDAP Authentication:
Assign IP from subnet: LAN1 ▼

Available settings are explained as follows:

Item	Description
Dial-In PPP Authentication	**PAP Only** - elect this option to force the router to authenticate dial-in users with the PAP protocol. **PAP/CHAP/MS-CHAP/MS-CHAPv2** - Selecting this option means the router will attempt to authenticate dial-in users with the CHAP protocol first. If the dial-in user does not support this protocol, it will fall back to use the PAP protocol for authentication.
Dial-In PPP Encryption (MPPE)	**Optional MPPE** - This option represents that the MPPE encryption method will be optionally employed in the router for the remote dial-in user. If the remote dial-in user does not support the MPPE encryption algorithm, the router will transmit "no MPPE encrypted packets". Otherwise, the MPPE encryption scheme will be used to encrypt the data. ● **Require MPPE (40/128bits) -** Selecting this option will force the router to encrypt packets by using the MPPE encryption algorithm. In addition, the remote dial-in user will use 40-bit to perform encryption prior to using 128-bit for encryption. In other words, if 128-bit MPPE encryption method is not available, then 40-bit encryption scheme will be applied to encrypt the data. ● **Maximum MPPE -** This option indicates that the router will use the MPPE encryption scheme with maximum bits (128-bit) to encrypt the data.
Mutual Authentication (PAP)	The Mutual Authentication function is mainly used to communicate with other routers or clients who need

	bi-directional authentication in order to provide stronger security, for example, Cisco routers. So you should enable this function when your peer router requires mutual authentication. You should further specify the **User Name** and **Password** of the mutual authentication peer. The length of the name/password is limited to 23/19 characters.
Assigned IP Start	Enter a start IP address for the dial-in PPP connection. You should choose an IP address from the local private network. For example, if the local private network is 192.168.1.0/255.255.255.0, you could choose 192.168.1.200 as the Start IP Address. You can configure up to four start IP addresses for LAN1 ~ LAN8.
PPP Authentication Methods	Select the method(s) to be used for authentication in PPP connection.
While using Radius or LDAP Authentication	If PPP connection will be authenticated via RADIUS server or LDAP profiles, it is necessary to specify the LAN profile for the dial-in user to get IP from.

IV-1-5 IPsec General Setup

In **IPsec General Setup,** there are two major parts of configuration.

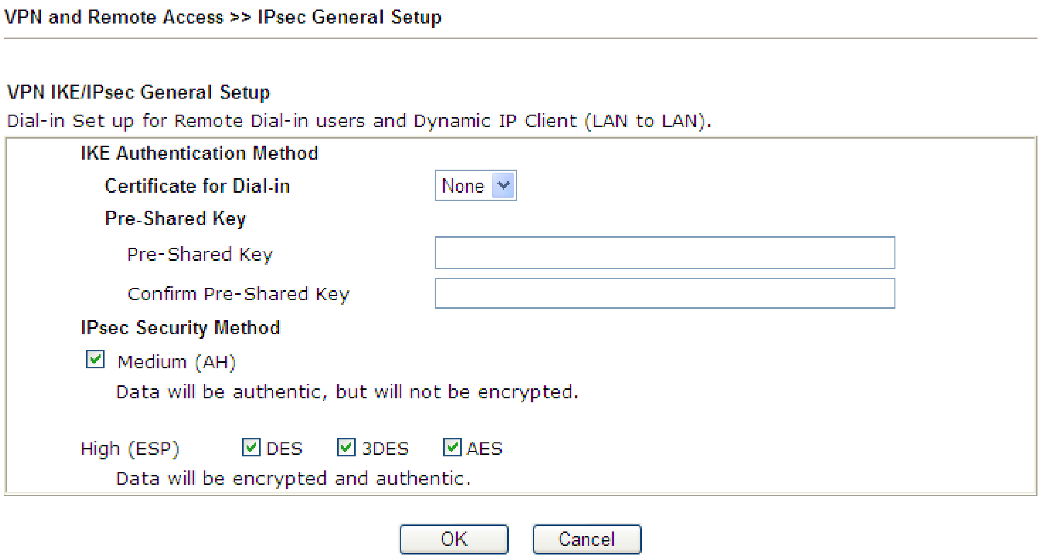
There are two phases of IPsec.

- Phase 1: negotiation of IKE parameters including encryption, hash, Diffie-Hellman parameter values, and lifetime to protect the following IKE exchange, authentication of both peers using either a Pre-Shared Key or Digital Signature (x.509). The peer that starts the negotiation proposes all its policies to the remote peer and then remote peer tries to find a highest-priority match with its policies. Eventually to set up a secure tunnel for IKE Phase 2.
- Phase 2: negotiation IPsec security methods including Authentication Header (AH) or Encapsulating Security Payload (ESP) for the following IKE exchange and mutual examination of the secure tunnel establishment.

There are two encapsulation methods used in IPsec, **Transport** and **Tunnel**. The **Transport** mode will add the AH/ESP payload and use original IP header to encapsulate the data payload only. It can just apply to local packet, e.g., L2TP over IPsec. The **Tunnel** mode will not only add the AH/ESP payload but also use a new IP header (Tunneled IP header) to encapsulate the whole original IP packet.

Authentication Header (AH) provides data authentication and integrity for IP packets passed between VPN peers. This is achieved by a keyed one-way hash function to the packet to create a message digest. This digest will be put in the AH and transmitted along with packets. On the receiving side, the peer will perform the same one-way hash on the packet and compare the value with the one in the AH it receives.

Encapsulating Security Payload (ESP) is a security protocol that provides data confidentiality and protection with optional authentication and replay detection service.



VPN and Remote Access >> IPsec General Setup

VPN IKE/IPsec General Setup

Dial-in Set up for Remote Dial-in users and Dynamic IP Client (LAN to LAN).

IKE Authentication Method

Certificate for Dial-in: None

Pre-Shared Key

Pre-Shared Key

Confirm Pre-Shared Key

IPsec Security Method

☑ Medium (AH)

Data will be authentic, but will not be encrypted.

High (ESP) ☑ DES ☑ 3DES ☑ AES

Data will be encrypted and authentic.

Available settings are explained as follows:

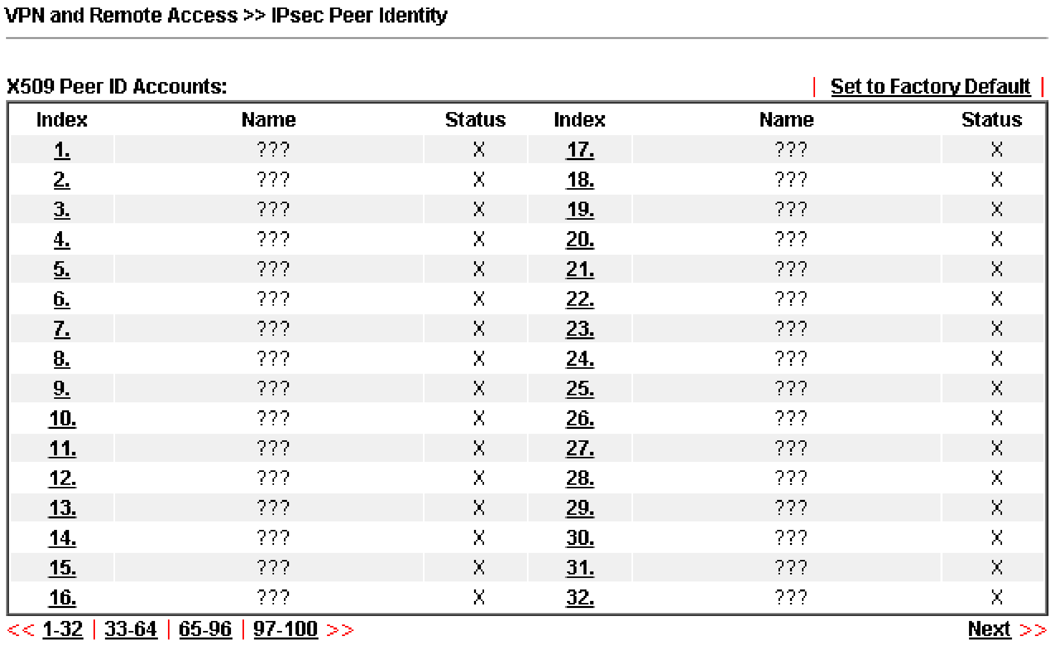
Item	Description
IKE Authentication Method	This usually applies to those are remote dial-in user or node (LAN-to-LAN) which uses dynamic IP address and IPsec-related VPN connections such as L2TP over IPsec and IPsec tunnel. There are two methods offered by Vigor router for you to authenticate the incoming data coming from remote dial-in user, **Certificate (X.509)** and **Pre-Shared**

	Key. **Certificate for Dial-in** –Choose one of the local certificates from the drop down list. **Pre-Shared Key-** Specify a key for IKE authentication. **Confirm Pre-Shared Key-** Retype the characters to confirm the pre-shared key. **Note**: Any packets from the remote dial-in user which does not match the rule defined in **VPN and Remote Access>>Remote Dial-In User** will be applied with the method specified here.
IPsec Security Method	**Medium** - Authentication Header (AH) means data will be authenticated, but not be encrypted. By default, this option is active. **High (ESP)** - Encapsulating Security Payload (ESP) means payload (data) will be encrypted and authenticated. You may select encryption algorithm from Data Encryption Standard (DES), Triple DES (3DES), and AES.

After finishing all the settings here, please click **OK** to save the configuration.

IV-1-6 IPsec Peer Identity

To use digital certificate for peer authentication in either LAN-to-LAN connection or Remote User Dial-In connection, here you may edit a table of peer certificate for selection. As shown below, the router provides **100** entries of digital certificates for peer dial-in users.



VPN and Remote Access >> IPsec Peer Identity

X509 Peer ID Accounts: | Set to Factory Default |

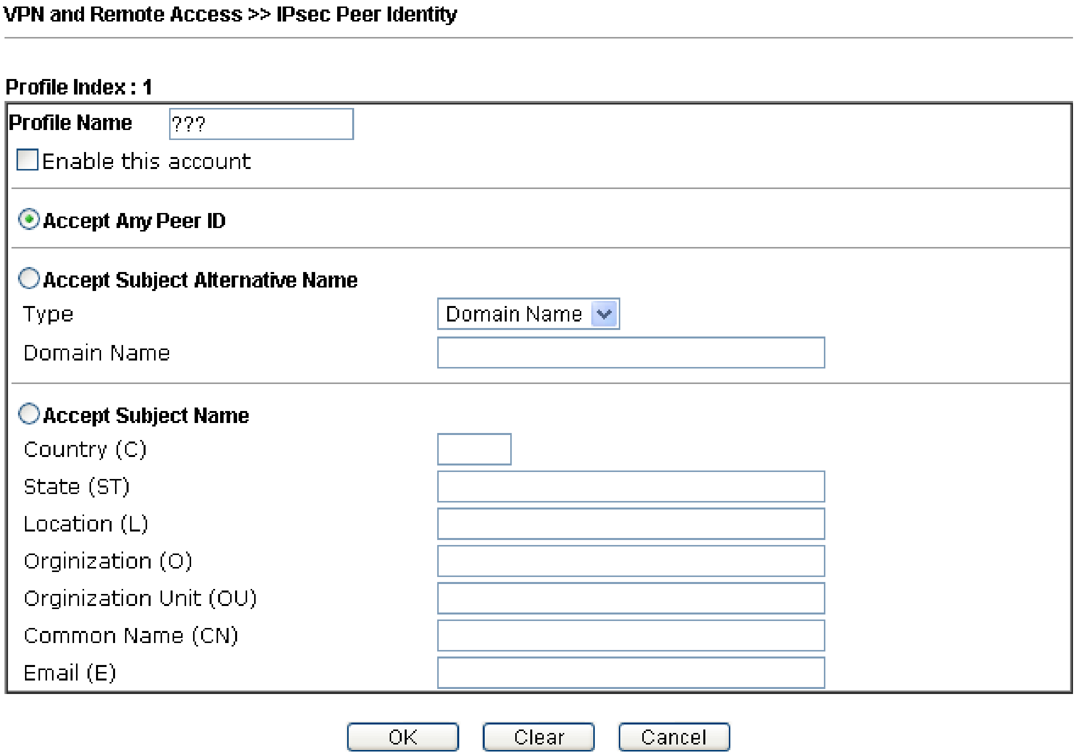
Index	Name	Status	Index	Name	Status
1.	???	X	17.	???	X
2.	???	X	18.	???	X
3.	???	X	19.	???	X
4.	???	X	20.	???	X
5.	???	X	21.	???	X
6.	???	X	22.	???	X
7.	???	X	23.	???	X
8.	???	X	24.	???	X
9.	???	X	25.	???	X
10.	???	X	26.	???	X
11.	???	X	27.	???	X
12.	???	X	28.	???	X
13.	???	X	29.	???	X
14.	???	X	30.	???	X
15.	???	X	31.	???	X
16.	???	X	32.	???	X

Available settings are explained as follows:

Item	Description
Set to Factory Default	Click it to clear all indexes.
Index	Click the number below Index to access into the setting page of IPsec Peer Identity.

Name	Display the profile name of that index.

Click each index to edit one peer digital certificate. There are three security levels of digital signature authentication: Fill each necessary field to authenticate the remote peer. The following explanation will guide you to fill all the necessary fields.



VPN and Remote Access >> IPsec Peer Identity

Profile Index : 1

Profile Name ???

□ Enable this account

● Accept Any Peer ID

○ Accept Subject Alternative Name

Type Domain Name

Domain Name

○ Accept Subject Name

Country (C)

State (ST)

Location (L)

Orginization (O)

Orginization Unit (OU)

Common Name (CN)

Email (E)

Available settings are explained as follows:

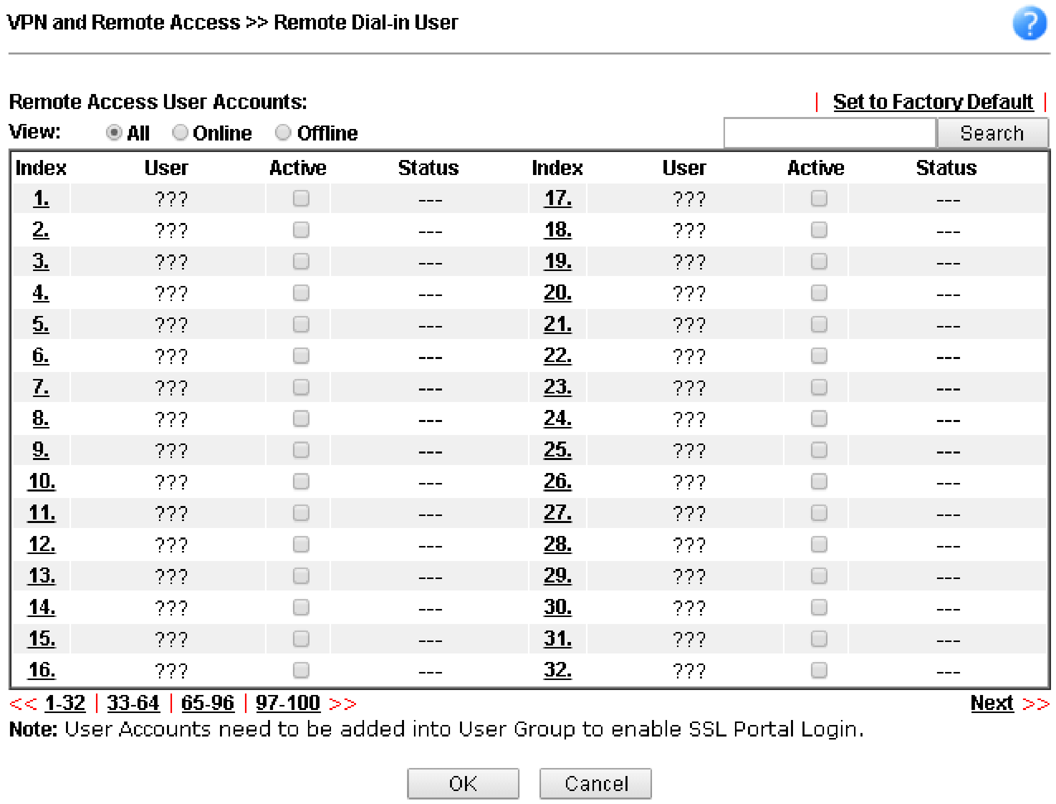
Item	Description
Profile Name	Type the name of the profile. The maximum length of the name you can set is 32 characters.
Enable this account	Check it to enable such account profile.
Accept Any Peer ID	Click to accept any peer regardless of its identity.
Accept Subject Alternative Name	Click to check one specific field of digital signature to accept the peer with matching value. The field can be **IP Address, Domain,** or **E-mail Address**. The box under the Type will appear according to the type you select and ask you to fill in corresponding setting.
Accept Subject Name	Click to check the specific fields of digital signature to accept the peer with matching value. The field includes **Country (C), State (ST), Location (L), Organization (O), Organization Unit (OU), Common Name (CN),** and **Email (E)**.

After finishing all the settings here, please click **OK** to save the configuration.

IV-1-7 Remote Dial-in User

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

The router provides **100** access accounts for dial-in users. Besides, you can extend the user accounts to the RADIUS server through the built-in RADIUS client function. The following figure shows the summary table.



VPN and Remote Access >> Remote Dial-in User

Remote Access User Accounts: | Set to Factory Default |

View: ● All ○ Online ○ Offline [ ] Search

Index	User	Active	Status	Index	User	Active	Status
1.	???	□	---	17.	???	□	---
2.	???	□	---	18.	???	□	---
3.	???	□	---	19.	???	□	---
4.	???	□	---	20.	???	□	---
5.	???	□	---	21.	???	□	---
6.	???	□	---	22.	???	□	---
7.	???	□	---	23.	???	□	---
8.	???	□	---	24.	???	□	---
9.	???	□	---	25.	???	□	---
10.	???	□	---	26.	???	□	---
11.	???	□	---	27.	???	□	---
12.	???	□	---	28.	???	□	---
13.	???	□	---	29.	???	□	---
14.	???	□	---	30.	???	□	---
15.	???	□	---	31.	???	□	---
16.	???	□	---	32.	???	□	---

<< 1-32 | 33-64 | 65-96 | 97-100 >> Next >>

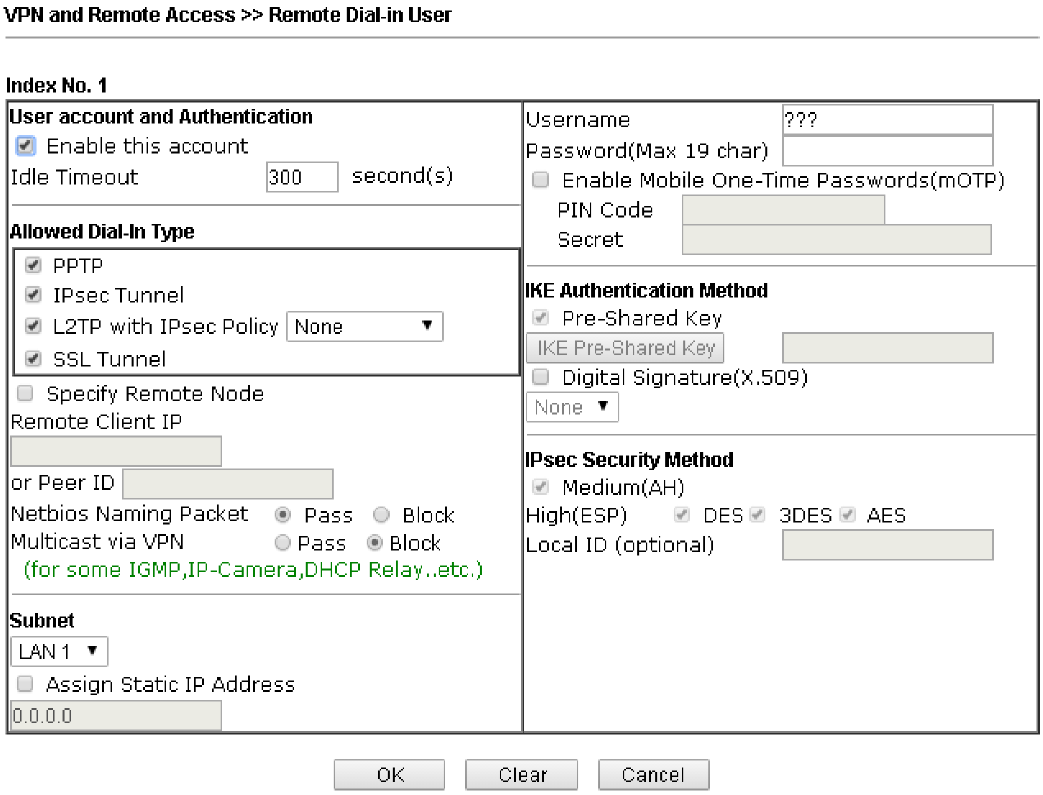
Note: User Accounts need to be added into User Group to enable SSL Portal Login.

OK Cancel

Available settings are explained as follows:

Item	Description
Set to Factory Default	Click to clear all indexes.
View	**All -** Click it to display the all of the user accounts. **Online** – Click it to display the online user accounts. **Offline** – Click it to display the offline user accounts.
Index	Click the number below Index to access into the setting page of Remote Dial-in User.
User	Display the username for the specific dial-in user of the LAN-to-LAN profile. The symbol **???** represents that the profile is empty.
Active	Check the box to activate such profile.
Status	Display the access state of the specific dial-in user. The symbol V and X represent the specific dial-in user to be active and inactive, respectively.

Click each index to edit one remote user profile. **Each Dial-In Type requires you to fill the different corresponding fields on the right.** If the fields gray out, it means you may leave it untouched. The following explanation will guide you to fill all the necessary fields.



VPN and Remote Access >> Remote Dial-in User

Index No. 1

User account and Authentication

☑ Enable this account

Idle Timeout 300 second(s)

Allowed Dial-In Type

☑ PPTP

☑ IPsec Tunnel

☑ L2TP with IPsec Policy None ▼

☑ SSL Tunnel

□ Specify Remote Node

Remote Client IP

or Peer ID

Netbios Naming Packet ● Pass ○ Block

Multicast via VPN ○ Pass ● Block

(for some IGMP,IP-Camera,DHCP Relay..etc.)

Subnet

LAN 1 ▼

□ Assign Static IP Address

0.0.0.0

Username ???

Password(Max 19 char)

□ Enable Mobile One-Time Passwords(mOTP)

PIN Code

Secret

IKE Authentication Method

☑ Pre-Shared Key

IKE Pre-Shared Key

□ Digital Signature(X.509)

None ▼

IPsec Security Method

☑ Medium(AH)

High(ESP) ☑ DES ☑ 3DES ☑ AES

Local ID (optional)

Available settings are explained as follows:

Item	Description
User account and Authentication	**Enable this account** - Check the box to enable this function. **Idle Timeout-** If the dial-in user is idle over the limitation of the timer, the router will drop this connection. By default, the Idle Timeout is set to 300 seconds.
Allowed Dial-In Type	**PPTP** - Allow the remote dial-in user to make a PPTP VPN connection through the Internet. You should set the User Name and Password of remote dial-in user below. **IPsec Tunnel** - Allow the remote dial-in user to make an IPsec VPN connection through Internet. **L2TP with IPsec Policy** - Allow the remote dial-in user to make a L2TP VPN connection through the Internet. You can select to use L2TP alone or with IPsec. Select from below: ● **None -** Do not apply the IPsec policy. Accordingly, the VPN connection employed the L2TP without IPsec policy can be viewed as one pure L2TP connection. ● **Nice to Have -** Apply the IPsec policy first, if it is applicable during negotiation. Otherwise, the dial-in VPN connection becomes one pure L2TP connection. ● **Must -**Specify the IPsec policy to be definitely applied on the L2TP connection. **SSL Tunnel -** Allow the remote dial-in user to make an SSL VPN connection through Internet. **Specify Remote Node -**You can specify the IP address of the

	remote dial-in user, ISDN number or peer ID (used in IKE aggressive mode). Uncheck the checkbox means the connection type you select above will apply the authentication methods and security methods in the **general settings**. **Netbios Naming Packet -** ● **Pass** – Click it to have an inquiry for data transmission between the hosts located on both sides of VPN Tunnel while connecting. ● **Block** – When there is conflict occurred between the hosts on both sides of VPN Tunnel in connecting, such function can block data transmission of Netbios Naming Packet inside the tunnel. **Multicast via VPN** - Some programs might send multicast packets via VPN connection. ● **Pass** – Click this button to let multicast packets pass through the router. ● **Block** – This is default setting. Click this button to let multicast packets be blocked by the router. **User Name** - This field is applicable when you select PPTP or L2TP with or without IPsec policy above. The length of the name is limited to 23 characters. **Password** - This field is applicable when you select PPTP or L2TP with or without IPsec policy above. The length of the password is limited to 19 characters. **Enable Mobile One-Time Passwords (mOTP) -** Check this box to make the authentication with mOTP function. **PIN Code** – Type the code for authentication (e.g, 1234). **Secret** – Use the 32 digit-secret number generated by mOTP in the mobile phone (e.g., e759bb6f0e94c7ab4fe6).
Subnet	Chose one of the subnet selections for such VPN profile. **Assign Static IP Address -** Please type a static IP address for the subnet you specified.
IKE Authentication Method	This group of fields is applicable for IPsec Tunnels and L2TP with IPsec Policy when you specify the IP address of the remote node. The only exception is Digital Signature (X.509) can be set when you select IPsec tunnel either with or without specifying the IP address of the remote node. **Pre-Shared Key -** Check the box of Pre-Shared Key to invoke this function and type in the required characters (1-63) as the pre-shared key. **Digital Signature (X.509) -** Check the box of Digital Signature to invoke this function and Select one predefined Profiles set in the **VPN and Remote Access >>IPsec Peer Identity.**
IPsec Security Method	This group of fields is a must for IPsec Tunnels and L2TP with IPsec Policy when you specify the remote node. Check the Medium, DES, 3DES or AES box as the security method. **Medium-Authentication Header (AH)** means data will be authenticated, but not be encrypted. By default, this option is invoked. You can uncheck it to disable it. **High-Encapsulating Security Payload (ESP)** means payload (data) will be encrypted and authenticated. You may select encryption algorithm from Data Encryption Standard (DES), Triple DES (3DES), and AES.

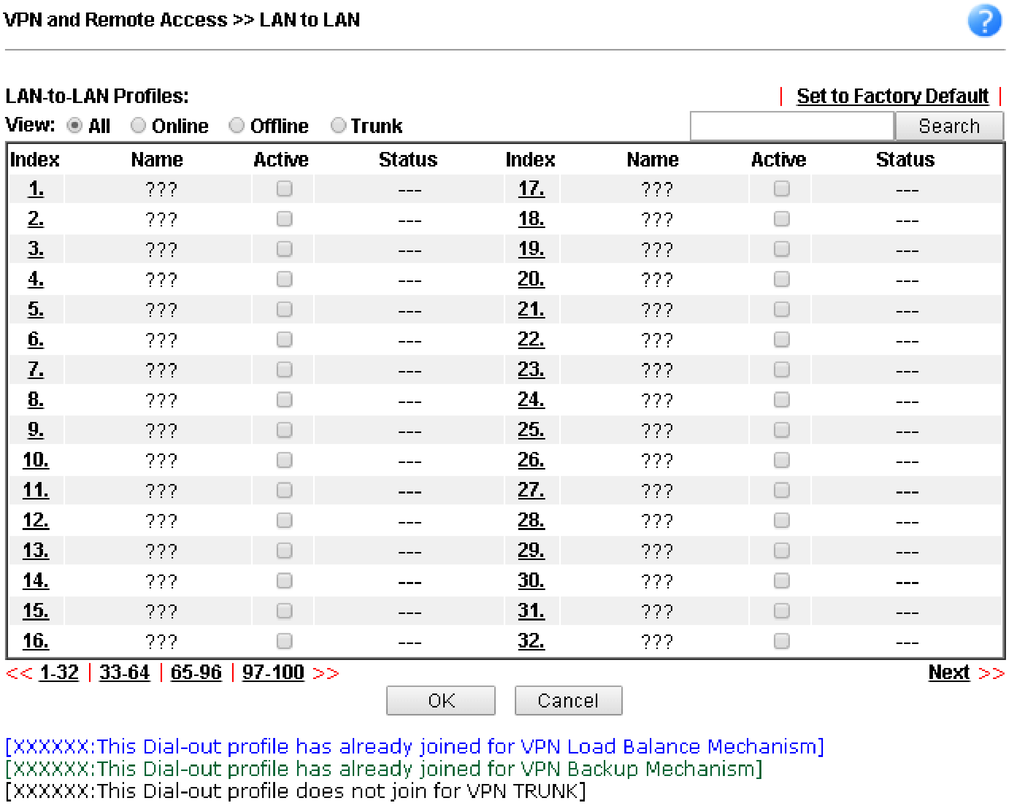
	Local ID (Optional)- Specify a local ID to be used for Dial-in setting in the LAN-to-LAN Profile setup. This item is optional and can be used only in IKE aggressive mode.

After finishing all the settings here, please click **OK** to save the configuration.

IV-1-8 LAN to LAN

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 following figure shows the summary table according to the item (All/Trunk/Online/Offline) selected for **View**.



VPN and Remote Access >> LAN to LAN

LAN-to-LAN Profiles: | Set to Factory Default |

View: ● All ○ Online ○ Offline ○ Trunk Search

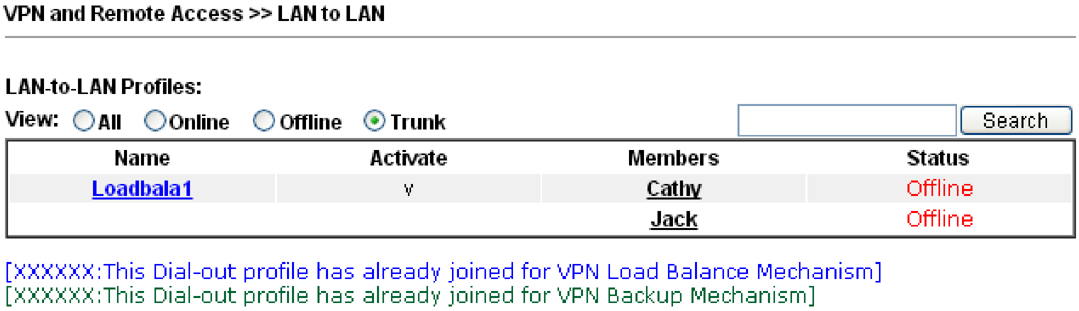
Index	Name	Active	Status	Index	Name	Active	Status
1.	???	□	---	17.	???	□	---
2.	???	□	---	18.	???	□	---
3.	???	□	---	19.	???	□	---
4.	???	□	---	20.	???	□	---
5.	???	□	---	21.	???	□	---
6.	???	□	---	22.	???	□	---
7.	???	□	---	23.	???	□	---
8.	???	□	---	24.	???	□	---
9.	???	□	---	25.	???	□	---
10.	???	□	---	26.	???	□	---
11.	???	□	---	27.	???	□	---
12.	???	□	---	28.	???	□	---
13.	???	□	---	29.	???	□	---
14.	???	□	---	30.	???	□	---
15.	???	□	---	31.	???	□	---
16.	???	□	---	32.	???	□	---

<< 1-32 | 33-64 | 65-96 | 97-100 >> Next >>

OK Cancel

[XXXXXX:This Dial-out profile has already joined for VPN Load Balance Mechanism]
[XXXXXX:This Dial-out profile has already joined for VPN Backup Mechanism]
[XXXXXX:This Dial-out profile does not join for VPN TRUNK]

The following shows profiles joined into VPN Load Balance and VPN Backup mechanism.



VPN and Remote Access >> LAN to LAN

LAN-to-LAN Profiles:

View: ○ All ○ Online ○ Offline ● Trunk Search

Name	Activate	Members	Status
Loadbala1	v	Cathy	Offline
		Jack	Offline

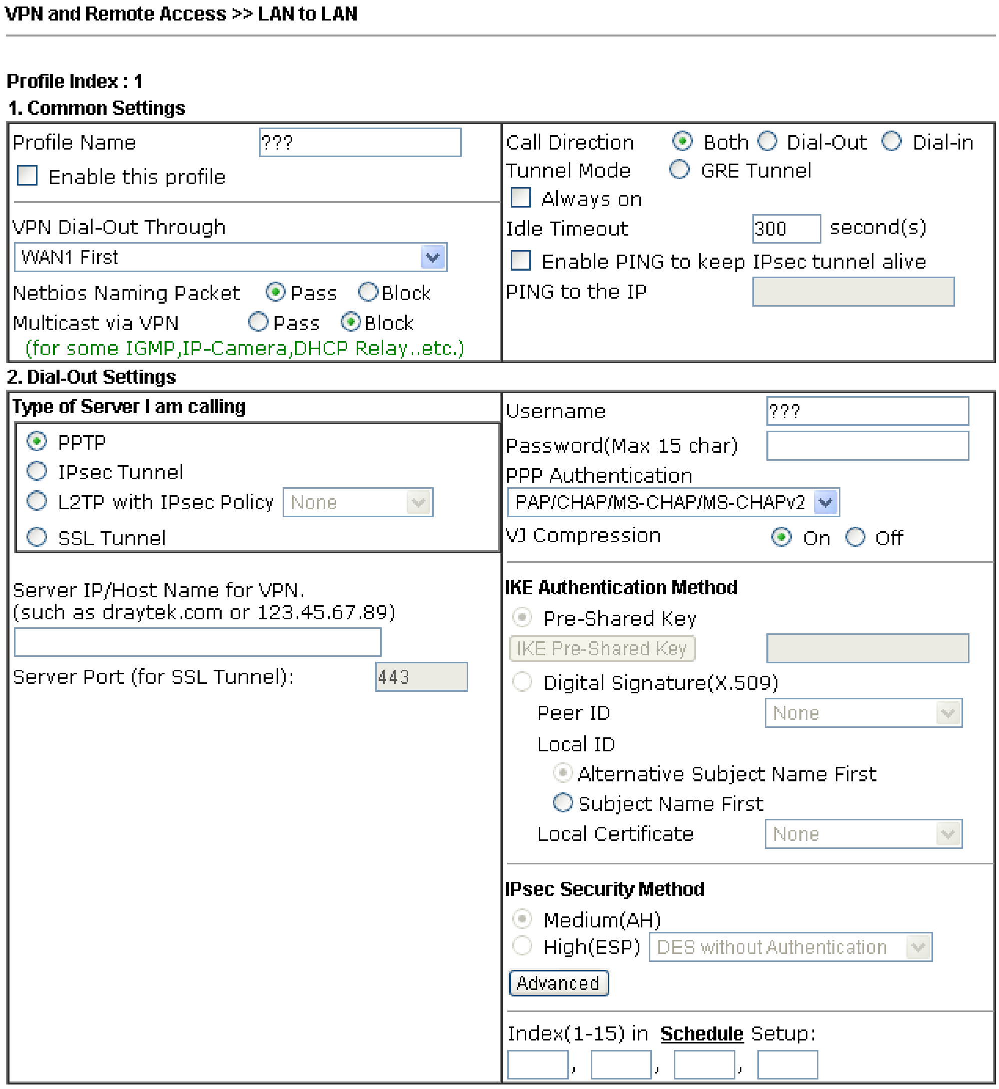
[XXXXXX:This Dial-out profile has already joined for VPN Load Balance Mechanism]
[XXXXXX:This Dial-out profile has already joined for VPN Backup Mechanism]

Available settings are explained as follows:

Item	Description
View	**All -** Click it to display the LAN to LAN profiles. **Trunk -** Click it to display the Trunk profiles.
Set to Factory Default	Click to clear all indexes.
Name	Indicate the name of the LAN-to-LAN profile. The symbol **???** represents that the profile is empty.
Active	V – means the profile has been enabled. X – means the profile has not been enabled.
Status	Indicate the status of individual profiles. The symbol V and X represent the profile to be active and inactive, respectively.

To edit each profile:

1. Click each index to edit each profile and you will get the following page. Each LAN-to-LAN profile includes 5 subgroups. If the fields gray out, it means you may leave it untouched. The following explanations will guide you to fill all the necessary fields.



VPN and Remote Access >> LAN to LAN

Profile Index : 1

1. Common Settings

Profile Name ???

□ Enable this profile

VPN Dial-Out Through

WAN1 First

Netbios Naming Packet ● Pass ○ Block

Multicast via VPN ○ Pass ● Block

(for some IGMP,IP-Camera,DHCP Relay..etc.)

Call Direction ● Both ○ Dial-Out ○ Dial-in

Tunnel Mode ○ GRE Tunnel

□ Always on

Idle Timeout 300 second(s)

□ Enable PING to keep IPsec tunnel alive

PING to the IP

2. Dial-Out Settings

Type of Server I am calling

● PPTP

○ IPsec Tunnel

○ L2TP with IPsec Policy None

○ SSL Tunnel

Server IP/Host Name for VPN.
(such as draytek.com or 123.45.67.89)

Server Port (for SSL Tunnel): 443

Username ???

Password(Max 15 char)

PPP Authentication

PAP/CHAP/MS-CHAP/MS-CHAPv2

VJ Compression ● On ○ Off

IKE Authentication Method

● Pre-Shared Key

IKE Pre-Shared Key

○ Digital Signature(X.509)

Peer ID None

Local ID

● Alternative Subject Name First

○ Subject Name First

Local Certificate None

IPsec Security Method

● Medium(AH)

○ High(ESP) DES without Authentication

Advanced

Index(1-15) in Schedule Setup:

Available settings are explained as follows:

Item	Description
Common Settings	**Profile Name -** Specify a name for the profile of the LAN-to-LAN connection. **Enable this profile -** Check here to activate this profile. **VPN Dial-Out Through -** Use the drop down menu to choose a proper WAN interface for this profile. This setting is useful for dial-out only. ● **WAN1 First/ WAN2 First/ WAN3 First/WAN4 First** - While connecting, the router will use WAN1/WAN2/WAN3/WAN4 as the first channel for VPN connection. If WAN1/WAN2/WAN3/WAN4 fails, the router will use another WAN interface instead. ● **WAN1 Only /WAN2 Only/WAN3 Only/WAN4 Only** - While connecting, the router will use WAN1/WAN2/WAN3/WAN4 as the only channel for VPN connection. ● **WAN1 Only: Only establish VPN if WAN2 down** - If WAN2 failed, the router will use WAN1 for VPN connection. ● **WAN2 Only: Only establish VPN if WAN1 down** - If WAN1 failed, the router will use WAN2 for VPN connection. **Netbios Naming Packet** ● **Pass** – click it to have an inquiry for data transmission between the hosts located on both sides of VPN Tunnel while connecting. ● **Block** – When there is conflict occurred between the hosts on both sides of VPN Tunnel in connecting, such function can block data transmission of Netbios Naming Packet inside the tunnel. **Multicast via VPN -** Some programs might send multicast packets via VPN connection. ● **Pass** – Click this button to let multicast packets pass through the router. ● **Block** – This is default setting. Click this button to let multicast packets be blocked by the router. **Call Direction -** Specify the allowed call direction of this LAN-to-LAN profile. ● **Both**:-initiator/responder ● **Dial-Out**- initiator only ● **Dial-In-** responder only. **Always On-**Check to enable router always keep VPN connection. **Idle Timeout:** The default value is 300 seconds. If the connection has been idled over the value, the router will drop the connection. **Enable PING to keep IPsec tunnel alive -** This function is to help the router to determine the status of IPsec VPN connection, especially useful in the case of abnormal VPN IPsec tunnel disruption. For details, please refer to the note below. Check to enable the transmission of PING packets to a specified IP address. **Enable PING to keep IPsec tunnel alive** is used to handle abnormal IPsec VPN connection disruption. It will help to provide the state of a VPN connection for router's judgment

	of redial. Normally, if any one of VPN peers wants to disconnect the connection, it should follow a serial of packet exchange procedure to inform each other. However, if the remote peer disconnects without notice, Vigor router will by no where to know this situation. To resolve this dilemma, by continuously sending PING packets to the remote host, the Vigor router can know the true existence of this VPN connection and react accordingly. This is independent of DPD (dead peer detection). **PING to the IP -** Enter the IP address of the remote host that located at the other-end of the VPN tunnel.
Dial-Out Settings	**Type of Server I am calling - PPTP** - Build a PPTP VPN connection to the server through the Internet. You should set the identity like User Name and Password below for the authentication of remote server. **IPsec Tunnel** - Build an IPsec VPN connection to the server through Internet. **L2TP with IPsec Policy -** Build a L2TP VPN connection through the Internet. You can select to use L2TP alone or with IPsec. Select from below: ● **None:** Do not apply the IPsec policy. Accordingly, the VPN connection employed the L2TP without IPsec policy can be viewed as one pure L2TP connection. ● **Nice to Have:** Apply the IPsec policy first, if it is applicable during negotiation. Otherwise, the dial-out VPN connection becomes one pure L2TP connection. ● **Must:** Specify the IPsec policy to be definitely applied on the L2TP connection. **SSL Tunnel -** Build an SSL VPN connection to the server through Internet. **User Name -** This field is applicable when you select, PPTP or L2TP with or without IPsec policy above. The length of the name is limited to 49 characters. **Password -** This field is applicable when you select PPTP or L2TP with or without IPsec policy above. The length of the password is limited to 15 characters. **PPP Authentication -** This field is applicable when you select, PPTP or L2TP with or without IPSec policy above. PAP/CHAP/MS-CHAP/MS-CHAPv2 is the most common selection due to compatibility. **VJ compression -** This field is applicable when you select PPTP or L2TP with or without IPsec policy above. VJ Compression is used for TCP/IP protocol header compression. Normally set to **On** to improve bandwidth utilization. **IKE Authentication Method -** This group of fields is applicable for IPsec Tunnels and L2TP with IPsec Policy. ● **Pre-Shared Key** - Input 1-63 characters as pre-shared key. ● **Digital Signature (X.509)** - Select one predefined Profiles set in the **VPN and Remote Access >>IPsec Peer Identity**. **Peer ID -** Select one of the predefined Profiles set in **VPN and Remote Access >>IPsec Peer Identity.** **Local ID -** Specify a local ID **(Alternative Subject Name First** or **Subject Name First)** to be used for Dial-in setting in the LAN-to-LAN Profile setup. This item is

optional and can be used only in IKE aggressive mode.

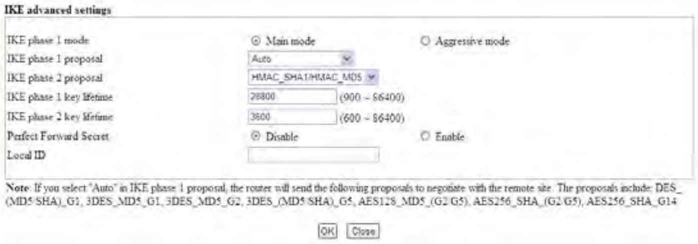
- **Local Certificate -** Select one of the profiles set in **Certificate Management>>Local Certificate**.

IPsec Security Method - This group of fields is a must for IPsec Tunnels and L2TP with IPsec Policy.

- **Medium AH (Authentication Header)** means data will be authenticated, but not be encrypted. By default, this option is active.
- **High (ESP-Encapsulating Security Payload)-** means payload (data) will be encrypted and authenticated. Select from below:
- **DES without Authentication** -Use DES encryption algorithm and not apply any authentication scheme.
- **DES with Authentication-**Use DES encryption algorithm and apply MD5 or SHA-1 authentication algorithm.
- **3DES without Authentication**-Use triple DES encryption algorithm and not apply any authentication scheme.
- **3DES with Authentication-**Use triple DES encryption algorithm and apply MD5 or SHA-1 authentication algorithm.
- **AES without Authentication**-Use AES encryption algorithm and not apply any authentication scheme.
- **AES with Authentication-**Use AES encryption algorithm and apply MD5 or SHA-1 authentication algorithm.

Advanced - Specify mode, proposal and key life of each IKE phase, Gateway, etc.

The window of advance setup is shown as below:



IKE advanced settings

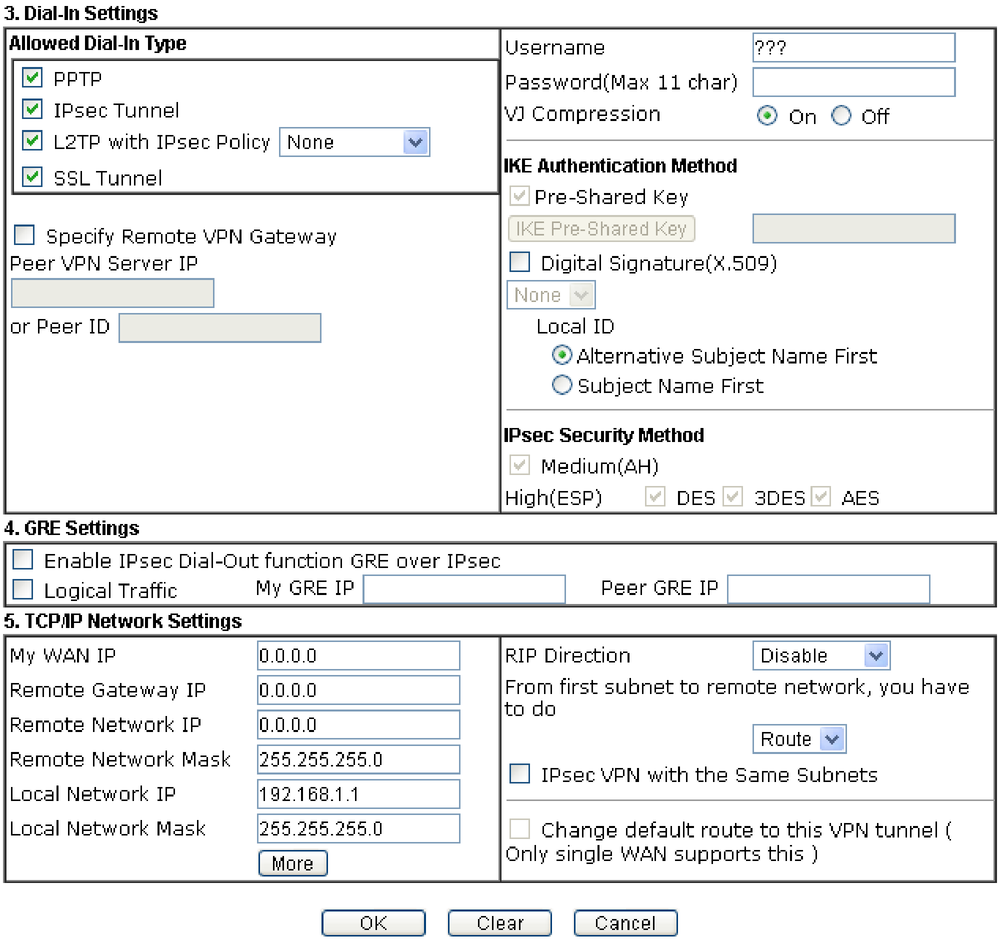
IKE phase 1 mode	● Main mode	○ Aggressive mode
IKE phase 1 proposal	Auto	
IKE phase 2 proposal	HMAC_SHA1/HMAC_MD5	
IKE phase 1 key lifetime	28800 (900 ~ 86400)	
IKE phase 2 key lifetime	3600 (600 ~ 86400)	
Perfect Forward Secret	● Disable	○ Enable
Local ID		

Note: If you select "Auto" in IKE phase 1 proposal, the router will send the following proposals to negotiate with the remote site. The proposals include: DES_(MD5/SHA)_G1, 3DES_MD5_G1, 3DES_MD5_G2, 3DES_(MD5/SHA)_G5, AES128_MD5_(G2/G5), AES256_SHA_(G2/G5), AES256_SHA_G14

IKE phase 1 mode -Select from **Main** mode and **Aggressive** mode. The ultimate outcome is to exchange security proposals to create a protected secure channel. **Main** mode is more secure than **Aggressive** mode since more exchanges are done in a secure channel to set up the IPsec session. However, the **Aggressive** mode is faster. The default value in Vigor router is Main mode.

- **IKE phase 1 proposal-**To propose the local available authentication schemes and encryption algorithms to the VPN peers, and get its feedback to find a match. Two combinations are available for Aggressive mode and nine for **Main** mode. We suggest you select the combination that covers the most schemes.
- **IKE phase 2 proposal-**To propose the local available algorithms to the VPN peers, and get its feedback to find a match. Three combinations are available for both modes. We suggest you select the combination that covers the most algorithms.
- **IKE phase 1 key lifetime-**For security reason, the lifetime of key should be defined. The default value is

	28800 seconds. You may specify a value in between 900 and 86400 seconds. ● **IKE phase 2 key lifetime-**For security reason, the lifetime of key should be defined. The default value is 3600 seconds. You may specify a value in between 600 and 86400 seconds. ● **Perfect Forward Secret (PFS)-**The IKE Phase 1 key will be reused to avoid the computation complexity in phase 2. The default value is inactive this function. **Local ID-**In **Aggressive** mode, Local 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. **Index(1-15) -** Set the wireless LAN to work at certain time interval only. You may choose up to 4 schedules out of the 15 schedules pre-defined in **Applications >> Schedule** setup. The default setting of this field is blank and the function will always work.



3. Dial-In Settings

Allowed Dial-In Type

☑ PPTP

☑ IPsec Tunnel

☑ L2TP with IPsec Policy None

☑ SSL Tunnel

□ Specify Remote VPN Gateway

Peer VPN Server IP

or Peer ID

Username ???

Password(Max 11 char)

VJ Compression ● On ○ Off

IKE Authentication Method

☑ Pre-Shared Key

IKE Pre-Shared Key

□ Digital Signature(X.509)

None

Local ID

● Alternative Subject Name First

○ Subject Name First

IPsec Security Method

☑ Medium(AH)

High(ESP) ☑ DES ☑ 3DES ☑ AES

4. GRE Settings

□ Enable IPsec Dial-Out function GRE over IPsec

□ Logical Traffic My GRE IP Peer GRE IP

5. TCP/IP Network Settings

My WAN IP 0.0.0.0

Remote Gateway IP 0.0.0.0

Remote Network IP 0.0.0.0

Remote Network Mask 255.255.255.0

Local Network IP 192.168.1.1

Local Network Mask 255.255.255.0

RIP Direction Disable

From first subnet to remote network, you have to do Route

□ IPsec VPN with the Same Subnets

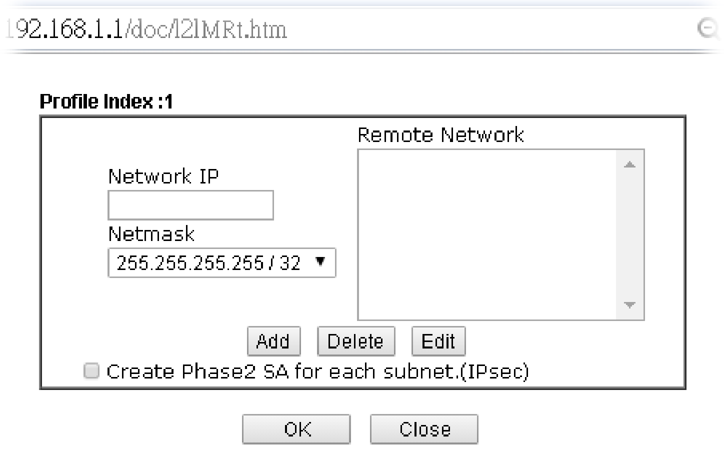
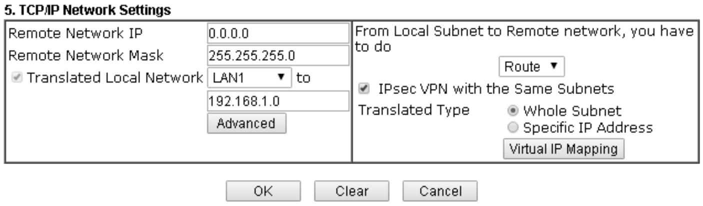
□ Change default route to this VPN tunnel (Only single WAN supports this)

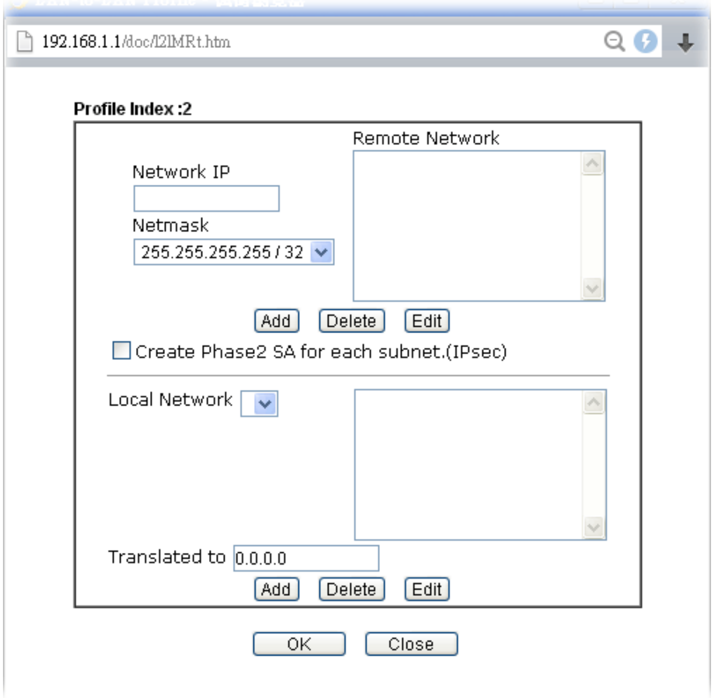
Available settings are explained as follows:

Item	Description
Dial-In Settings	**Allowed Dial-In Type -** Determine the dial-in connection with different types. ● **PPTP -** Allow the remote dial-in user to make a PPTP VPN connection through the Internet. You should set

	the User Name and Password of remote dial-in user below. ● **IPsec Tunnel-** Allow the remote dial-in user to trigger an IPsec VPN connection through Internet. ● **L2TP with IPsec Policy -** Allow the remote dial-in user to make a L2TP VPN connection through the Internet. You can select to use L2TP alone or with IPsec. Select from below: ■ **None -** Do not apply the IPsec policy. Accordingly, the VPN connection employed the L2TP without IPsec policy can be viewed as one pure L2TP connection. ■ **Nice to Have** - Apply the IPsec policy first, if it is applicable during negotiation. Otherwise, the dial-in VPN connection becomes one pure L2TP connection. ■ **Must -** Specify the IPsec policy to be definitely applied on the L2TP connection. ● **SSL Tunnel-** Allow the remote dial-in user to trigger an SSL VPN connection through Internet. **Specify Remote VPN Gateway -** You can specify the IP address of the remote dial-in user or peer ID (should be the same with the ID setting in dial-in type) by checking the box. Also, you should further specify the corresponding security methods on the right side. If you uncheck the checkbox**,** the connection type you select above will apply the authentication methods and security methods in the general settings. **User Name -** This field is applicable when you select PPTP or L2TP with or without IPsec policy above. The length of the name is limited to 11 characters. **Password -** This field is applicable when you select PPTP or L2TP with or without IPsec policy above. The length of the password is limited to 11 characters. **VJ Compression -** VJ Compression is used for TCP/IP protocol header compression. This field is applicable when you select PPTP or L2TP with or without IPsec policy above. **IKE Authentication Method -** This group of fields is applicable for IPsec Tunnels and L2TP with IPsec Policy when you specify the IP address of the remote node. The only exception is Digital Signature (X.509) can be set when you select IPsec tunnel either with or without specify the IP address of the remote node. ● **Pre-Shared Key -** Check the box of Pre-Shared Key to invoke this function and type in the required characters (1-63) as the pre-shared key. ● **Digital Signature (X.509) -**Check the box of Digital Signature to invoke this function and select one predefined Profiles set in the **VPN and Remote Access >>IPsec Peer Identity**. ■ **Local ID** – Specify which one will be inspected first. ■ **Alternative Subject Name First** – The alternative subject name (configured in **Certificate Management>>Local Certificate**) will be inspected first.

	■ **Subject Name First** – The subject name (configured in **Certificate Management>>Local Certificate**) will be inspected first. **IPsec Security Method -** This group of fields is a must for IPsec Tunnels and L2TP with IPsec Policy when you specify the remote node. ● **Medium-** Authentication Header (AH) means data will be authenticated, but not be encrypted. By default, this option is active. ● **High-** Encapsulating Security Payload (ESP) means payload (data) will be encrypted and authenticated. You may select encryption algorithm from Data Encryption Standard (DES), Triple DES (3DES), and AES.
GRE over IPsec Settings	**Enable IPsec Dial-Out function GRE over IPsec -** Check this box to verify data and transmit data in encryption with GRE over IPsec packet after configuring IPsec Dial-Out setting. Both ends must match for each other by setting same virtual IP address for communication. **Logical Traffic -** Such technique comes from RFC2890. Define logical traffic for data transmission between both sides of VPN tunnel by using the characteristic of GRE. Even hacker can decipher IPsec encryption, he/she still cannot ask LAN site to do data transmission with any information. Such function can ensure the data transmitted on VPN tunnel is really sent out from both sides. This is an optional function. However, if one side wants to use it, the peer must enable it, too. **My GRE IP -**Type the virtual IP for router itself for verified by peer. **Peer GRE IP -** Type the virtual IP of peer host for verified by router.
TCP/IP Network Settings	**My WAN IP -**This field is only applicable when you select PPTP or L2TP with or without IPsec policy above. The default value is 0.0.0.0, which means the Vigor router will get a PPP IP address from the remote router during the IPCP negotiation phase. If the PPP IP address is fixed by remote side, specify the fixed IP address here. Do not change the default value if you do not select PPTP or L2TP. **Remote Gateway IP -** This field is only applicable when you select PPTP or L2TP with or without IPsec policy above. The default value is 0.0.0.0, which means the Vigor router will get a remote Gateway PPP IP address from the remote router during the IPCP negotiation phase. If the PPP IP address is fixed by remote side, specify the fixed IP address here. Do not change the default value if you do not select PPTP or L2TP. **Remote Network IP/ Remote Network Mask -** Add a static route to direct all traffic destined to this Remote Network IP Address/Remote Network Mask through the VPN connection. For IPsec, this is the destination clients IDs of phase 2 quick mode. **Local Network IP / Local Network Mask -** Display the local network IP and mask for TCP / IP configuration. You can modify the settings if required. **More -** Add a static route to direct all traffic destined to more Remote Network IP Addresses/ Remote Network Masks

	through the VPN connection. This is usually used when you find there are several subnets behind the remote VPN router.  192.168.1.1/doc/l2lMRt.htm Profile Index :1 Network IP Netmask 255.255.255.255 / 32 Remote Network Add Delete Edit □ Create Phase2 SA for each subnet.(IPsec) OK Close **RIP Direction -** The option specifies the direction of RIP (Routing Information Protocol) packets. You can enable/disable one of direction here. Herein, we provide four options: TX/RX Both, TX Only, RX Only, and Disable. **From first subnet to remote network, you have to do -** If the remote network only allows you to dial in with single IP, please choose **NAT**, otherwise choose **Route**. **Change default route to this VPN tunnel -** Check this box to change the default route with this VPN tunnel.
IPSec VPN with the Same subnet	For both ends (e.g., different sections in a company) are within the same subnet, there is a function which allows you to build Virtual IP mapping between two ends. Thus, when VPN connection established, the router will change the IP address according to the settings configured here and block sessions which are not coming from the IP address defined in the Virtual IP Mapping list. After checking the box of **IPSec VPN with the Same subnet**, the options under **TCP/IP Network Settings** will be changed as shown below:  5. TCP/IP Network Settings Remote Network IP 0.0.0.0 Remote Network Mask 255.255.255.0 ☑ Translated Local Network LAN1 to 192.168.1.0 Advanced From Local Subnet to Remote network, you have to do Route ☑ IPsec VPN with the Same Subnets Translated Type ● Whole Subnet ○ Specific IP Address Virtual IP Mapping OK Clear Cancel **Remote Network IP/ Remote Network Mask -** Add a static route to direct all traffic destined to this Remote Network IP Address/Remote Network Mask through the VPN connection. For IPSec, this is the destination clients IDs of phase 2 quick mode. **Translated Local Network -** This function is enabled in default. Use the drop down list to specify a LAN port as the transferred direction. Then specify an IP address. Click **Advanced** to configure detailed settings if required. **Advanced** – Add a static route to direct all traffic destined to more Remote Network IP Addresses/ Remote Network Mask through the VPN connection. This is usually used when you find there are several subnets behind the remote VPN router.



192.168.1.1/doc/l2lMRt.htm

Profile Index :2

Network IP

Netmask

255.255.255.255 / 32

Remote Network

□ Create Phase2 SA for each subnet.(IPsec)

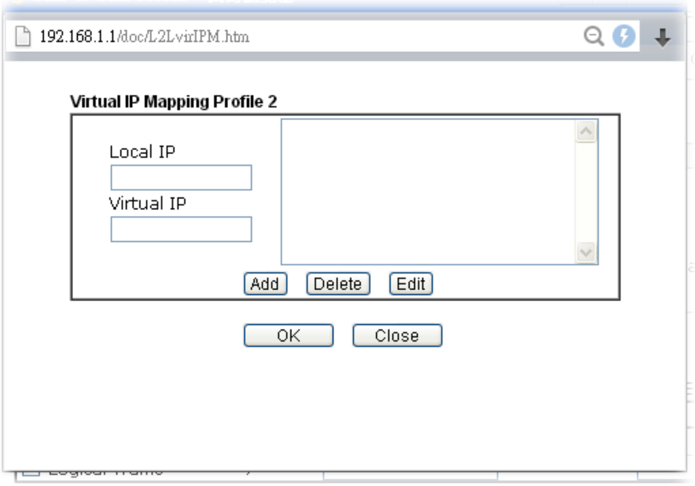
Local Network

Translated to 0.0.0.0

Translated Type - There are two types for you to choose.

- **Whole Subnet**
- **Specific IP Address**

Virtual IP Mapping - A pop up dialog will appear for you to specify the local IP address and the mapping virtual IP address.



192.168.1.1/doc/L2LvirIPM.htm

Virtual IP Mapping Profile 2

Local IP

Virtual IP

2. After finishing all the settings here, please click **OK** to save the configuration.

IV-1-9 VPN Trunk Management

VPN trunk includes four features - VPN Backup, VPN load balance, GRE over IPsec, and Binding tunnel policy.

Features of VPN TRUNK — VPN Backup Mechanism

VPN TRUNK Management is a backup mechanism which can set multiple VPN tunnels as backup tunnel. It can assure the network connection not to be cut off due to network environment blocked by any reason.

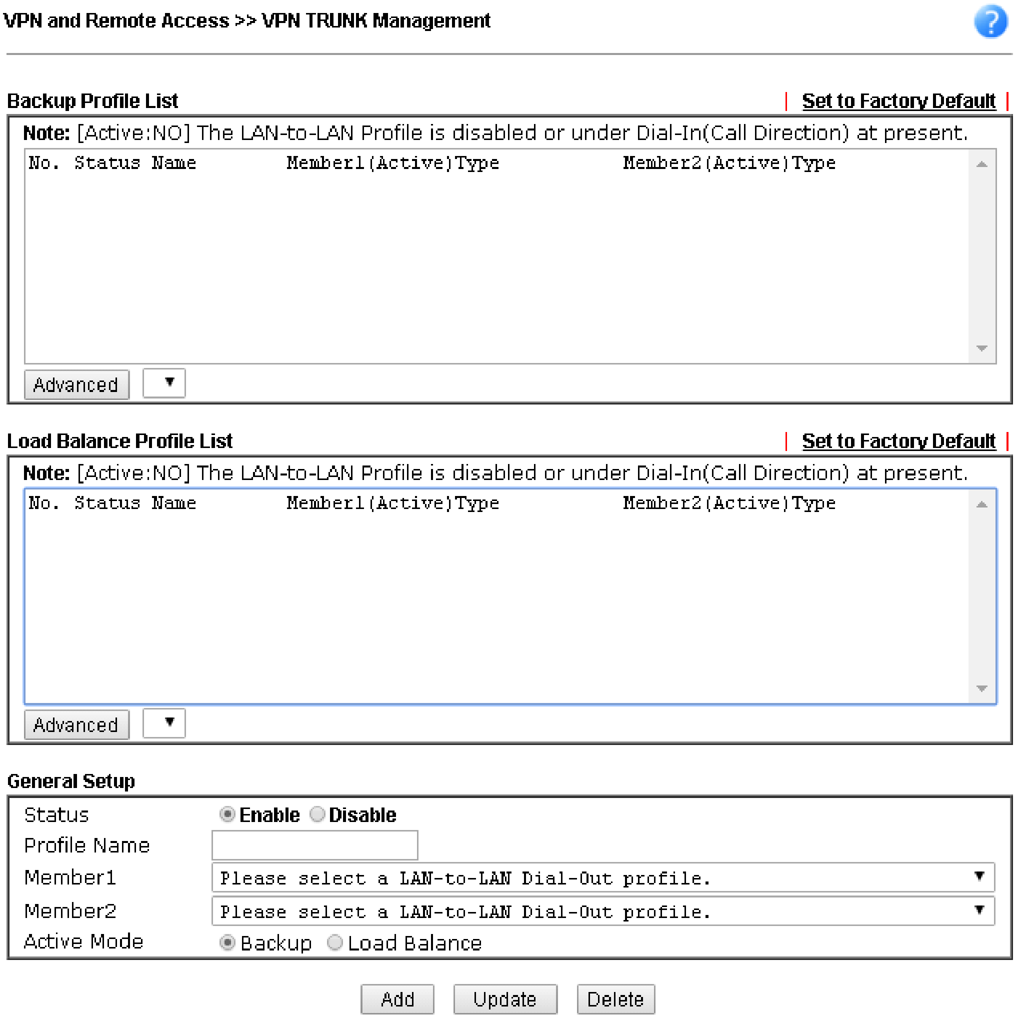
- VPN TRUNK-VPN Backup mechanism can judge abnormal situation for the environment of VPN server and correct it to complete the backup of VPN Tunnel in real-time.
- VPN TRUNK-VPN Backup mechanism is compliant with all WAN modes (single/multi)
- Dial-out connection types contain IPsec, PPTP, L2TP, L2TP over IPsec and ISDN (depends on hardware specification)
- The web page is simple to understand and easy to configure
- Fully compliant with VPN Server LAN Site Single/Multi Network
- Mail Alert support, please refer to **System Maintenance >> SysLog / Mail Alert** for detailed configuration
- Syslog support, please refer to **System Maintenance >> SysLog / Mail Alert** for detailed configuration
- Specific ERD (Environment Recovery Detection) mechanism which can be operated by using Telnet command

VPN TRUNK-VPN Backup mechanism profile will be activated when initial connection of single VPN tunnel is off-line. Before setting VPN TRUNK -VPN Backup mechanism backup profile, please configure at least two sets of LAN-to-LAN profiles (with fully configured dial-out settings) first, otherwise you will not have selections for grouping Member1 and Member2.

Features of VPN TRUNK — VPN Load Balance Mechanism

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



VPN and Remote Access >> VPN TRUNK Management

Backup Profile List | Set to Factory Default |

Note: [Active:NO] The LAN-to-LAN Profile is disabled or under Dial-In(Call Direction) at present.

```
No. Status Name        Member1(Active)Type           Member2(Active)Type
```

Load Balance Profile List | Set to Factory Default |

Note: [Active:NO] The LAN-to-LAN Profile is disabled or under Dial-In(Call Direction) at present.

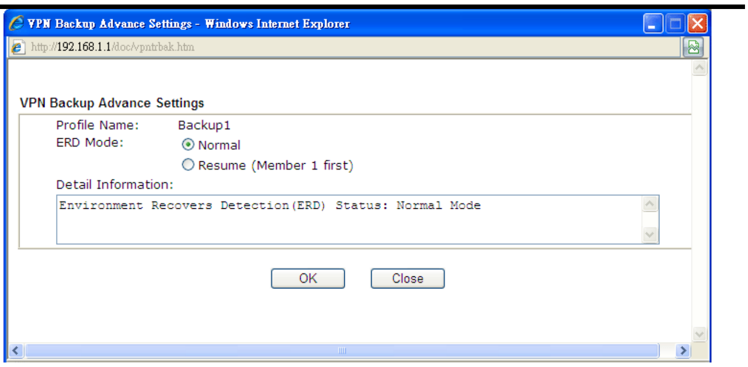
```
No. Status Name        Member1(Active)Type           Member2(Active)Type
```

General Setup

Status	● Enable ○ Disable
Profile Name	
Member1	Please select a LAN-to-LAN Dial-Out profile.
Member2	Please select a LAN-to-LAN Dial-Out profile.
Active Mode	● Backup ○ Load Balance

Available settings are explained as follows:

Item	Description
Backup Profile List	**Set to Factory Default -** Click to clear all VPN TRUNK-VPN Backup mechanism profile. **No -** The order of VPN TRUNK-VPN Backup mechanism profile. **Status** - “v” means such profile is enabled; “x” means such profile is disabled. **Name -** Display the name of VPN TRUNK-VPN Backup mechanism profile. **Member1 -** Display the dial-out profile selected from the Member1 drop down list below. **Active -** “Yes” means normal condition. “No” means the state might be disabled or that profile currently is set with Dial-in mode (for call direction) in LAN-to-LAN. **Type -** Display the connection type for that profile, such as IPsec, PPTP, L2TP, L2TP over IPsec (NICE), L2TP over IPsec(MUST) and so on. **Member2 -** Display the dial-out profile selected from the Member2 drop down list below. **Advanced** – This button is available only when LAN to LAN profile (or more) is created.



VPN Backup Advance Settings - Windows Internet Explorer

http://192.168.1.1/doc/vpntrbak.htm

VPN Backup Advance Settings

Profile Name: Backup1

ERD Mode: ● Normal ○ Resume (Member 1 first)

Detail Information:

```
Environment Recovers Detection(ERD) Status: Normal Mode
```

Detailed information for this dialog, see later section - **Advanced Load Balance and Backup**.

Load Balance Profile List

Set to Factory Default - Click to clear all VPN TRUNK-VPN Load Balance mechanism profile.

No - The order of VPN TRUNK-VPN Load Balance mechanism profile.

Status - "v" means such profile is enabled; "x" means such profile is disabled.

Name - Display the name of VPN TRUNK-VPN Load Balance mechanism profile.

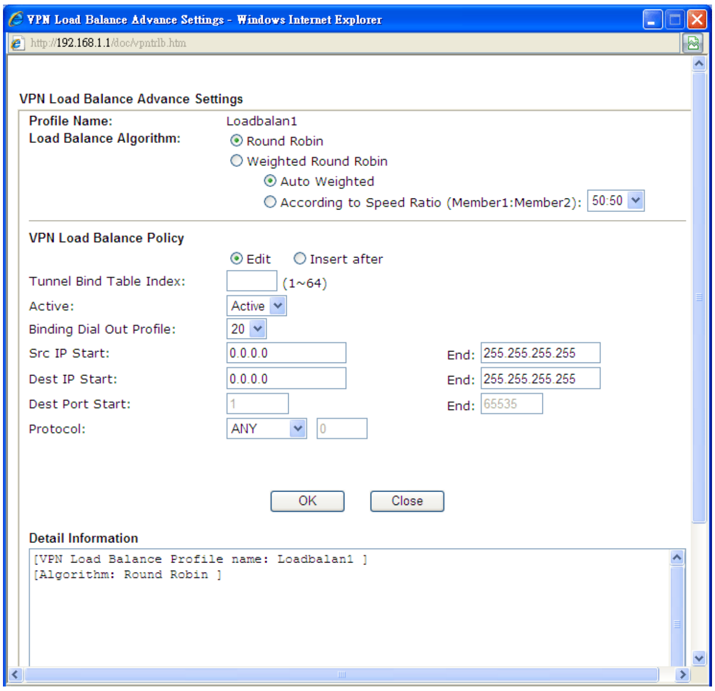
Member1 - Display the dial-out profile selected from the Member1 drop down list below.

Active - "Yes" means normal condition. "No" means the state might be disabled or that profile currently is set with Dial-in mode (for call direction) in LAN-to-LAN.

Type - Display the connection type for that profile, such as IPsec, PPTP, L2TP, L2TP over IPsec (NICE), L2TP over IPsec(MUST) and so on.

Member2 - Display the dial-out profile selected from the Member2 drop down list below.

Advanced – This button is only available when there is one or more profiles created in this page.



VPN Load Balance Advance Settings - Windows Internet Explorer

http://192.168.1.1/doc/vpntrlb.htm

VPN Load Balance Advance Settings

Profile Name: Loadbalan1

Load Balance Algorithm: ● Round Robin ○ Weighted Round Robin ● Auto Weighted ○ According to Speed Ratio (Member1:Member2): 50:50

VPN Load Balance Policy

● Edit ○ Insert after

Tunnel Bind Table Index: (1~64)

Active: Active

Binding Dial Out Profile: 20

Src IP Start: 0.0.0.0 End: 255.255.255.255

Dest IP Start: 0.0.0.0 End: 255.255.255.255

Dest Port Start: 1 End: 65535

Protocol: ANY 0

Detail Information

```
[VPN Load Balance Profile name: Loadbalan1 ]
[Algorithm: Round Robin ]
```

Detailed information for this dialog, see later section - **Advanced Load Balance and Backup**.

General Setup	**Status**- After choosing one of the profile listed above, please click **Enable** to activate this profile. If you click **Disable**, the selected or current used VPN TRUNK-Backup/Load Balance mechanism profile will not have any effect for VPN tunnel. **Profile Name**- Type a name for VPN TRUNK profile. Each profile can group two VPN connections set in LAN-to-LAN. The saved VPN profiles in LAN-to-LAN will be shown on Member1 and Member2 fields. The length of the name is limited to 11 characters. **Member 1/Member2** - Display the selection for LAN-to-LAN dial-out profiles (configured in **VPN and Remote Access >> LAN-to-LAN**) for you to choose for grouping under certain VPN TRUNK-VPN Backup/Load Balance mechanism profile. ● **No** - Index number of LAN-to-LAN dial-out profile. ● **Name** - Profile name of LAN-to-LAN dial-out profile. ● **Connection Type** - Connection type of LAN-to-LAN dial-out profile. ● **VPN ServerIP (Private Network)** - VPN Server IP of LAN-to-LAN dial-out profiles. **Active Mode** - Display available mode for you to choose. Choose **Backup** or **Load Balance** for your router. **Add -** Add and save new profile to the backup profile list. The corresponding members (LAN-to-LAN profiles) grouped in such new VPN TRUNK – VPN Backup mechanism profile will be locked. The profiles in LAN-to-LAN will be displayed in red. VPN TRUNK – VPN Load Balance mechanism profile will be locked. The profiles in LAN-to-LAN will be displayed in blue. **Update -** Click this button to save the changes to the **Status** (Enable or Disable), profile name, member1 or member2. **Delete -** Click this button to delete the selected VPN TRUNK profile. The corresponding members (LAN-to-LAN profiles) grouped in the deleted VPN TRUNK profile will be released and that profiles in LAN-to-LAN will be displayed in black.

Time for activating VPN TRUNK — VPN Backup mechanism profile

VPN TRUNK – VPN Backup mechanism will be activated automatically after the initial connection of single VPN Tunnel off-line. The content in Member1/2 within VPN TRUNK – VPN Backup mechanism backup profile is similar to dial-out profile configured in LAN-to-LAN web page. VPN TRUNK – VPN Backup mechanism backup profile will process and handle everything unless it is off-line once it is activated.

Time for activating VPN TRUNK — VPN Load Balance mechanism profile

After finishing the connection for one tunnel, the other tunnel will dial out automatically within two seconds. Therefore, you can choose any one of members under VPN Load Balance for dialing out.

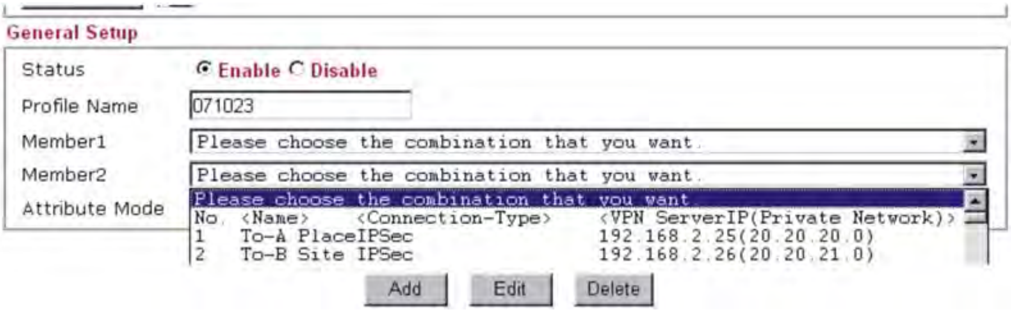
Time for activating VPN TRUNK —Dial-out when VPN Load Balance Disconnected

For there is one Tunnel created and connected successfully, to keep the load balance effect between two tunnels, auto-dial will be executed within two seconds.

To close two tunnels of load balance after connecting, please click **Disable** for **Status** in **General Setup** field.

How can you set a VPN TRUNK-VPN Backup/Load Balance mechanism profile?

1. First of all, go to **VPN and Remote Access>>LAN-to-LAN**. Set two or more LAN-to-LAN profiles first that will be used for Member1 and Member2. If you do not set enough LAN-to-LAN profiles, you cannot operate VPN TRUNK – VPN Backup /Load Balance mechanism profile management well.
2. Access into **VPN and Remote Access>>VPN TRUNK Management**.
3. Set one group of VPN TRUNK – VPN Backup/Load Balance mechanism backup profile by choosing **Enable** radio button; type a name for such profile (e.g., 071023); choose one of the LAN-to-LAN profiles from Member1 drop down list; choose one of the LAN-to-LAN profiles from Member2 drop down list; and click **Add** at last.

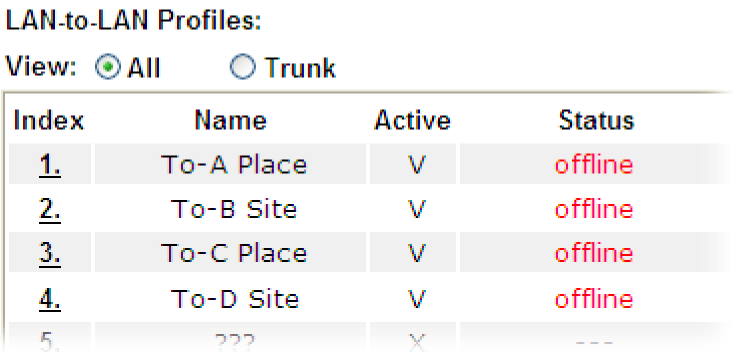


General Setup

Status	● Enable ○ Disable
Profile Name	071023
Member1	Please choose the combination that you want.
Member2	Please choose the combination that you want.
Attribute Mode	

```
Please choose the combination that you want.
No. <Name>      <Connection-Type>     <VPN ServerIP(Private Network)>
1   To-A PlaceIPSec                   192.168.2.25(20.20.20.0)
2   To-B Site IPSec                   192.168.2.26(20.20.21.0)
```

4. Take a look for LAN-to-LAN profiles. Index 1 is chosen as Member1; index 2 is chosen as Member2. For such reason, LAN-to-LAN profiles of 1 and 2 will be expressed in red to indicate that they are fixed. If you delete the VPN TRUNK – VPN Backup/Load Balance mechanism profile, the selected LAN-to-LAN profiles will be released and expressed in black.



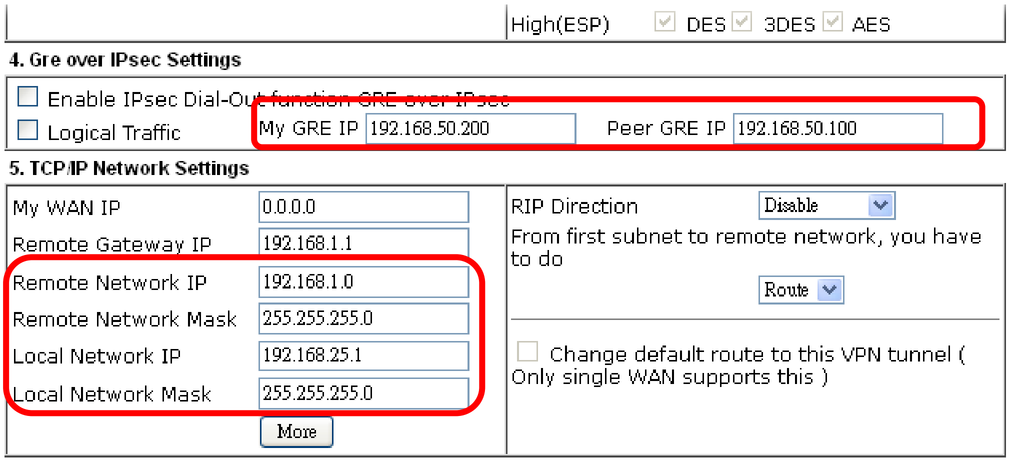
LAN-to-LAN Profiles:

View: ● All ○ Trunk

Index	Name	Active	Status
1.	To-A Place	V	offline
2.	To-B Site	V	offline
3.	To-C Place	V	offline
4.	To-D Site	V	offline
5.	???	X	---

How can you set a GRE over IPsec profile?

1. Please go to LAN to LAN to set a profile with IPsec.
2. If the router will be used as the VPN Server (i.e., with virtual address 192.168.50.200). Please type 192.168.50.200 in the field of My GRE IP. Type IP address (192.168.50.100) of the client in the field of Peer GRE IP. See the following graphic for an example.



High(ESP) ☑ DES ☑ 3DES ☑ AES

4. Gre over IPsec Settings

☐ Enable IPsec Dial-Out function GRE over IPsec

☐ Logical Traffic My GRE IP 192.168.50.200 Peer GRE IP 192.168.50.100

5. TCP/IP Network Settings

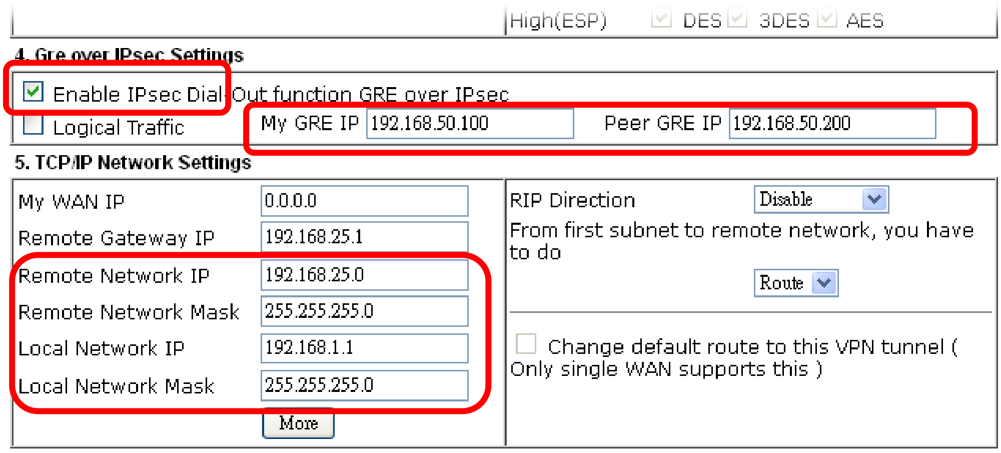
My WAN IP	0.0.0.0
Remote Gateway IP	192.168.1.1
Remote Network IP	192.168.1.0
Remote Network Mask	255.255.255.0
Local Network IP	192.168.25.1
Local Network Mask	255.255.255.0

RIP Direction: Disable

From first subnet to remote network, you have to do: Route

☐ Change default route to this VPN tunnel (Only single WAN supports this)

3. Later, on peer side (as VPN Client): please type 192.168.50.100 in the field of My GRE IP and type IP address of the server (192.168.50.200) in the field of Peer GRE IP.



High(ESP) ☑ DES ☑ 3DES ☑ AES

4. Gre over IPsec Settings

☑ Enable IPsec Dial-Out function GRE over IPsec

☐ Logical Traffic My GRE IP 192.168.50.100 Peer GRE IP 192.168.50.200

5. TCP/IP Network Settings

My WAN IP	0.0.0.0
Remote Gateway IP	192.168.25.1
Remote Network IP	192.168.25.0
Remote Network Mask	255.255.255.0
Local Network IP	192.168.1.1
Local Network Mask	255.255.255.0

RIP Direction: Disable

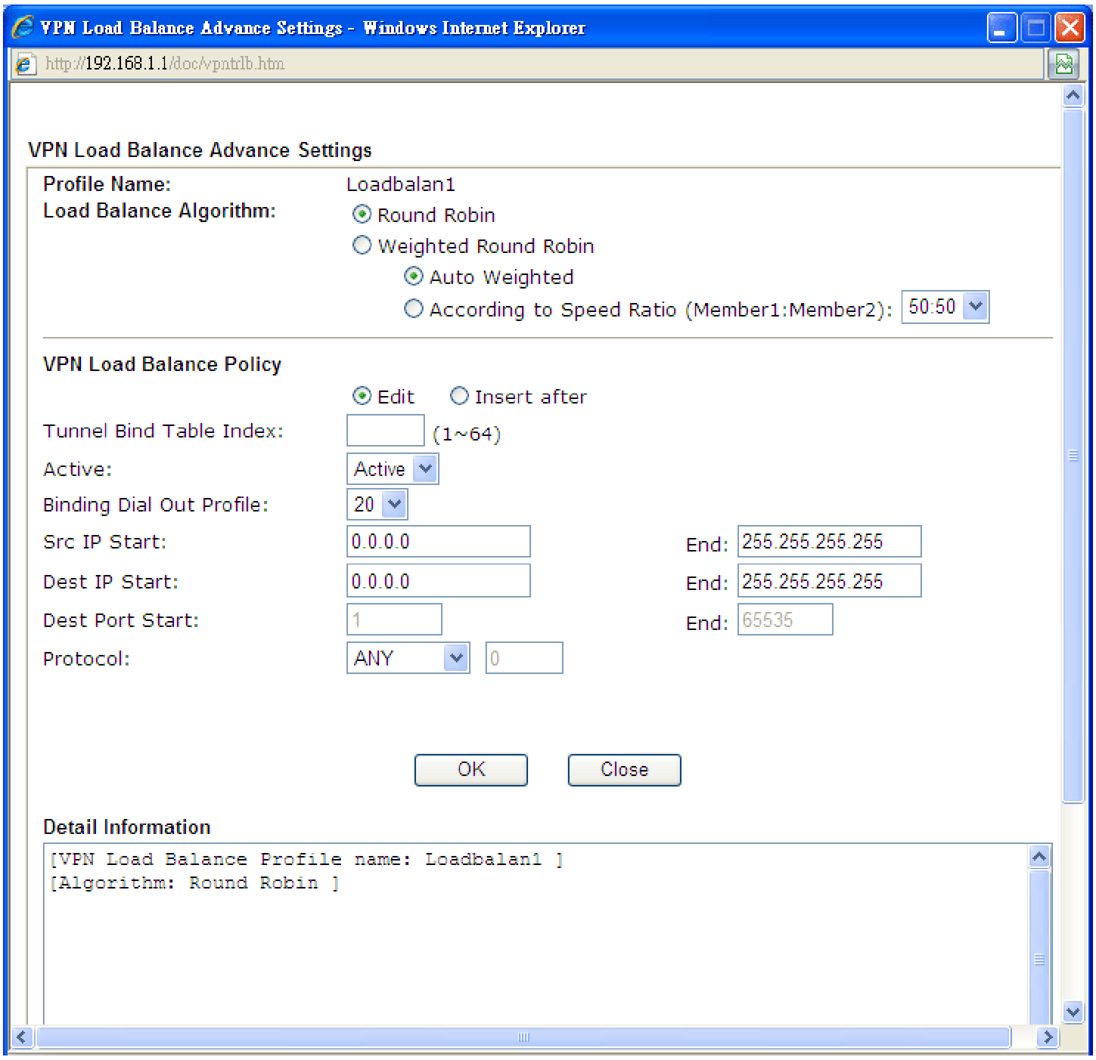
From first subnet to remote network, you have to do: Route

☐ Change default route to this VPN tunnel (Only single WAN supports this)

Advanced Load Balance and Backup

After setting profiles for load balance, you can choose any one of them and click Advance for more detailed configuration. The windows for advanced load balance and backup are different. Refer to the following explanation:

Advanced Load Balance



VPN Load Balance Advance Settings

Profile Name: Loadbalan1

Load Balance Algorithm: ● Round Robin ○ Weighted Round Robin ● Auto Weighted ○ According to Speed Ratio (Member1:Member2): 50:50

VPN Load Balance Policy

● Edit ○ Insert after

Tunnel Bind Table Index: (1~64)

Active: Active

Binding Dial Out Profile: 20

Src IP Start: 0.0.0.0 End: 255.255.255.255

Dest IP Start: 0.0.0.0 End: 255.255.255.255

Dest Port Start: 1 End: 65535

Protocol: ANY 0

Detail Information

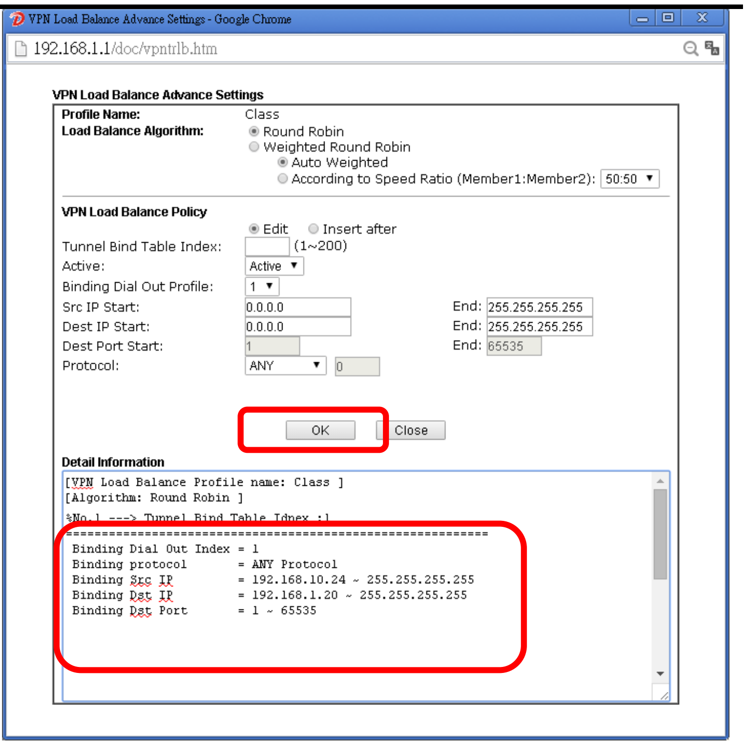
```
[VPN Load Balance Profile name: Loadbalan1 ]
[Algorithm: Round Robin ]
```

VPN Load Balance Advance Settings - Windows Internet Explorer
http://192.168.1.1/doc/vpntrlb.htm
OK
Close

Available settings are explained as follows:

Item	Description
Profile Name	List the load balance profile name.
Load Balance Algorithm	**Round Robin** – Based on packet base, both tunnels will send the packet alternatively. Such method can reach the balance of packet transmission with fixed rate. **Weighted Round Robin** – Such method can reach the balance of packet transmission with flexible rate. It can be divided into Auto Weighted and According to Speed Ratio. **Auto Weighted** can detect the device speed (10Mbps/100Mbps) and switch with fixed value ratio (3:7) for packet transmission. If the transmission rate for packets on both sides of the tunnels is the same, the value of Auto Weighted should be 50:50. **According to Speed Ratio** allows user to adjust suitable rate manually. There are 100 groups of rate ratio for Member1:Member2 (range from 1:99 to 99:1).
VPN Load Balance Policy	Below shows the algorithm for Load Balance. **Edit** – Click this radio button for assign a blank table for configuring Binding Tunnel. **Insert after** – Click this radio button to adding a new binding tunnel table.

	Tunnel Bind Table Index- 128 Binding tunnel tables are provided by this device. Specify the number of the tunnel for such Load Balance profile. **Active** – In-active/Delete can delete this binding tunnel table. Active can activate this binding tunnel table. **Binding Dial Out Index** – Specify connection type for transmission by choosing the index (LAN to LAN Profile Index) for such binding tunnel table. **Scr IP Start /End**– Specify source IP addresses as starting point and ending point. **Dest IP Start/End** – Specify destination IP addresses as starting point and ending point. **Dest Port Start /End**– Specify destination service port as starting point and ending point. **Protocol** – **Any** means when the source IP, destination IP, destination port and fragment conditions match with the settings specified here, such binding tunnel table can be established for TCP Service Port/UDP Service Port/ICMP/IGMP specified here. **TCP** means when the source IP, destination IP, destination port and fragment conditions match with the settings specified here and TCP Service Port also fits the number here, such binding tunnel table can be established. **UDP** means when the source IP, destination IP, destination port and fragment conditions match with the settings specified here and UDP Service Port also fits the number here, such binding tunnel table can be established. **TCP/UPD** means when the source IP, destination IP, destination port and fragment conditions match with the settings specified here and TCP/UDP Service Port also fits the number here, such binding tunnel table can be established. **ICMP** means when the source IP, destination IP, destination port and fragment conditions match with the settings specified here and ICMP Service Port also fits the number here, such binding tunnel table can be established. IGMP means when the source IP, destination IP, destination port and fragment conditions match with the settings specified here and IGMP Service Port also fits the number here, such binding tunnel table can be established. **Other** means when the source IP, destination IP, destination port and fragment conditions match with the settings specified here with different TCP Service Port/UDP Service Port/ICMP/IGMP, such binding tunnel table can be established.
Detail Information	This field will display detailed information for Binding Tunnel Policy. Below shows a successful binding tunnel policy for load balance:



VPN Load Balance Advance Settings - Google Chrome
192.168.1.1/doc/vpntrlb.htm

VPN Load Balance Advance Settings

Profile Name: Class

Load Balance Algorithm:
- ● Round Robin
- ○ Weighted Round Robin
  - ● Auto Weighted
  - ○ According to Speed Ratio (Member1:Member2): 50:50

VPN Load Balance Policy

● Edit ○ Insert after

Tunnel Bind Table Index: (1~200)
Active: Active
Binding Dial Out Profile: 1
Src IP Start: 0.0.0.0 End: 255.255.255.255
Dest IP Start: 0.0.0.0 End: 255.255.255.255
Dest Port Start: 1 End: 65535
Protocol: ANY 0

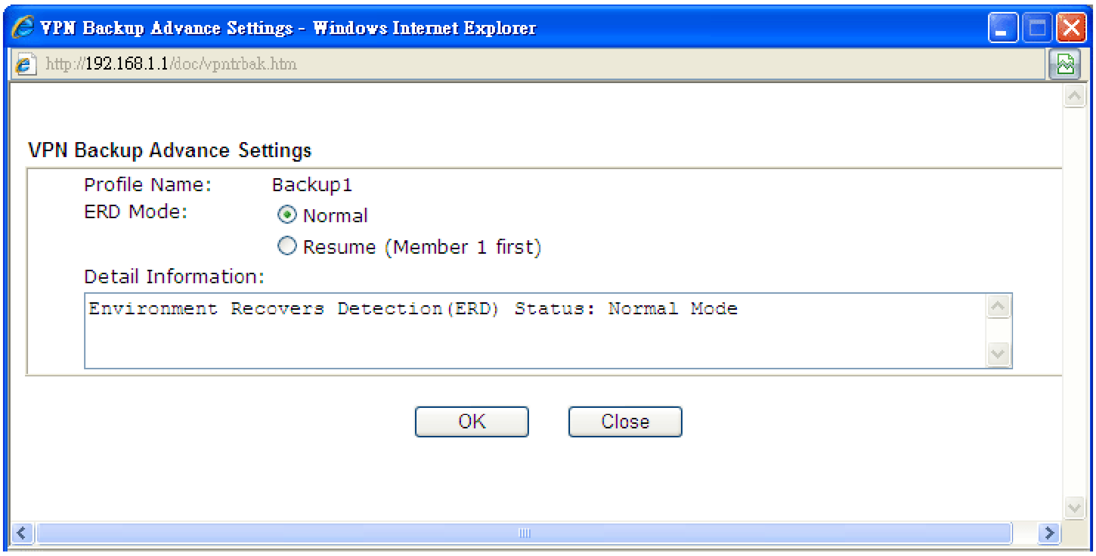
Detail Information

```
[VPN Load Balance Profile name: Class ]
[Algorithm: Round Robin ]
%No.1 ---> Tunnel Bind Table Idnex :1
===============================================================
 Binding Dial Out Index = 1
 Binding protocol       = ANY Protocol
 Binding Src IP         = 192.168.10.24 ~ 255.255.255.255
 Binding Dst IP         = 192.168.1.20 ~ 255.255.255.255
 Binding Dst Port       = 1 ~ 65535
```

To configure a successful binding tunnel, you have to:

Type Binding Src IP range (Start and End) and Binding Des IP range (Start and End). Choose TCP/UDP, IGMP/ICMP or Other as Binding Protocol.

Advanced Backup



VPN Backup Advance Settings - Windows Internet Explorer
http://192.168.1.1/doc/vpntrbak.htm

VPN Backup Advance Settings

Profile Name: Backup1

ERD Mode:
- ● Normal
- ○ Resume (Member 1 first)

Detail Information:

```
Environment Recovers Detection(ERD) Status: Normal Mode
```

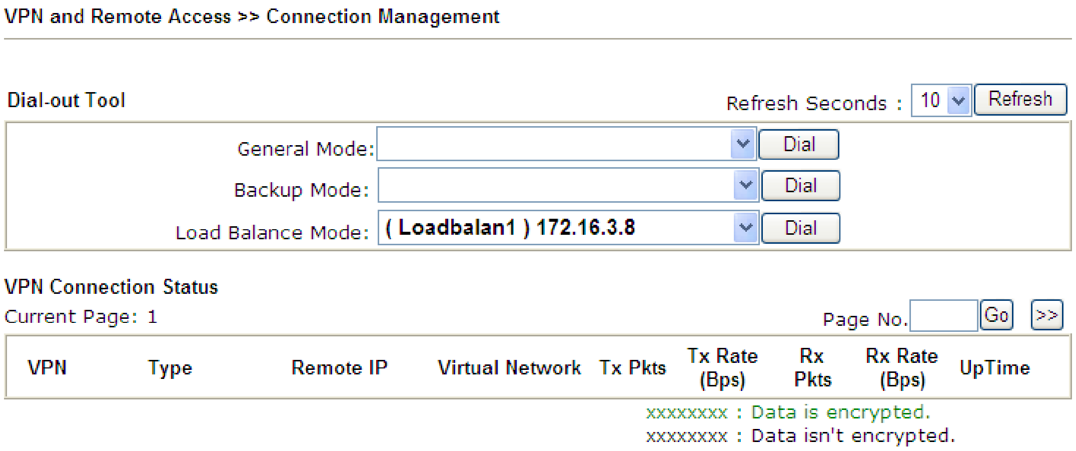
Available settings are explained as follows:

Item	Description
Profile Name	List the backup profile name.
ERD Mode	ERD means “Environment Recovers Detection”. **Normal** – choose this mode to make all dial-out VPN TRUNK backup profiles being activated alternatively. **Resume** – when VPN connection breaks down or disconnects,

	Member 1 will be the top priority for the system to do VPN connection.
Detail Information	This field will display detailed information for Environment Recovers Detection.

IV-1-10 Connection Management

You can find the summary table of all VPN connections. You may disconnect any VPN connection by clicking **Drop** button. You may also aggressively Dial-out by using Dial-out Tool and clicking **Dial** button.



VPN and Remote Access >> Connection Management

Dial-out Tool

Refresh Seconds : 10 Refresh

General Mode: Dial

Backup Mode: Dial

Load Balance Mode: (Loadbalan1) 172.16.3.8 Dial

VPN Connection Status

Current Page: 1

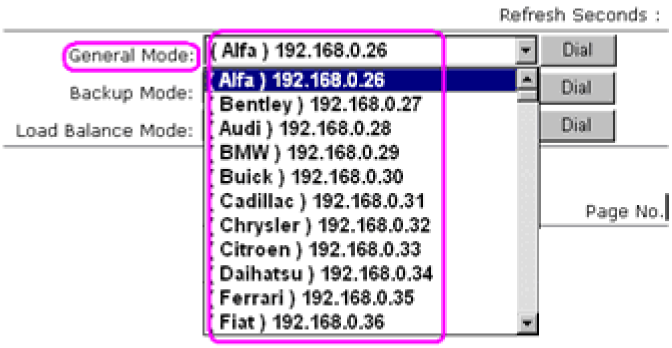
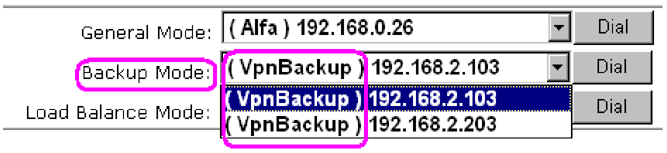
Page No. Go >>

VPN	Type	Remote IP	Virtual Network	Tx Pkts	Tx Rate (Bps)	Rx Pkts	Rx Rate (Bps)	UpTime

xxxxxxxx : Data is encrypted.

xxxxxxxx : Data isn't encrypted.

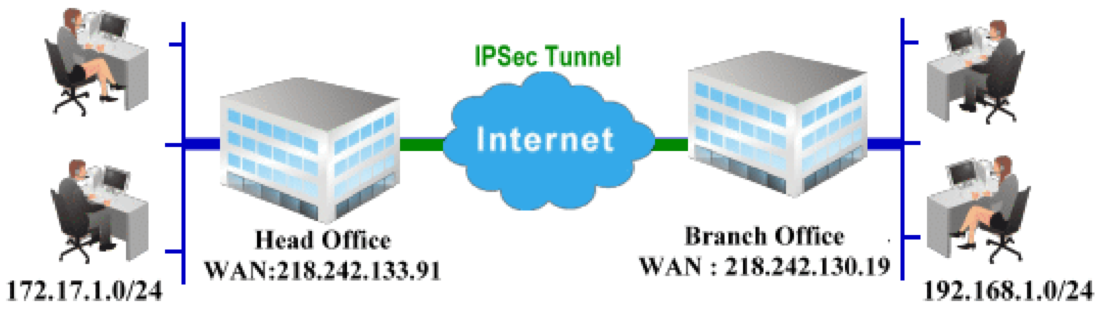
Available settings are explained as follows:

Item	Description
Dial-out Tool	**General Mode -** 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.  Refresh Seconds : General Mode: (Alfa) 192.168.0.26 Dial (Alfa) 192.168.0.26 (Bentley) 192.168.0.27 (Audi) 192.168.0.28 (BMW) 192.168.0.29 (Buick) 192.168.0.30 (Cadillac) 192.168.0.31 (Chrysler) 192.168.0.32 (Citroen) 192.168.0.33 (Daihatsu) 192.168.0.34 (Ferrari) 192.168.0.35 (Fiat) 192.168.0.36 Backup Mode: Dial Load Balance Mode: Dial Page No. **Backup Mode -** This filed displays the profile name saved in VPN TRUNK Management (with Index number and VPN Server IP address). The VPN connection built by Backup Mode supports VPN backup function.  General Mode: (Alfa) 192.168.0.26 Dial Backup Mode: (VpnBackup) 192.168.2.103 Dial (VpnBackup) 192.168.2.103 (VpnBackup) 192.168.2.203 Load Balance Mode: Dial **Dial -** Click this button to execute dial out function.

	Refresh Seconds - Choose the time for refresh the dial information among 5, 10, and 30. **Refresh -** Click this button to refresh the whole connection status.

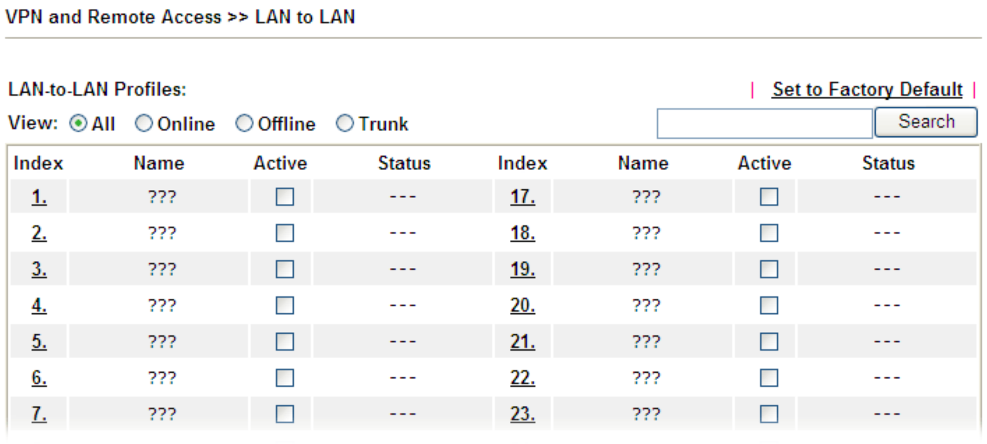
Application Notes

A-1 How to Build a LAN-to-LAN VPN Between Remote Office and Headquarter via IPsec Tunnel (Main Mode)



Configuration on Vigor Router for Head Office

1. Log into the web user interface of Vigor router.
2. Open **VPN and Remote Access>>LAN to LAN** to create a LAN-to-LAN profile. The following settings are for a permanent VPN connection.



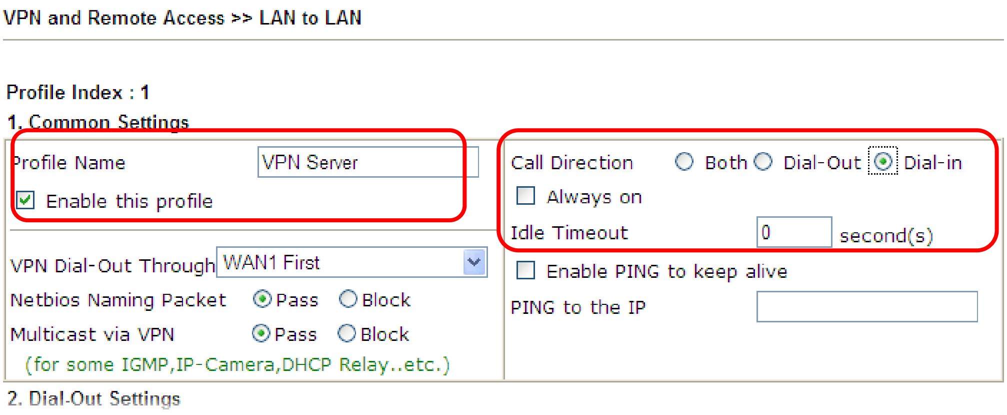
VPN and Remote Access >> LAN to LAN

LAN-to-LAN Profiles: | Set to Factory Default |

View: ● All ○ Online ○ Offline ○ Trunk [ ] Search

Index	Name	Active	Status	Index	Name	Active	Status
1.	???	□	---	17.	???	□	---
2.	???	□	---	18.	???	□	---
3.	???	□	---	19.	???	□	---
4.	???	□	---	20.	???	□	---
5.	???	□	---	21.	???	□	---
6.	???	□	---	22.	???	□	---
7.	???	□	---	23.	???	□	---

3. Click any index number to open the configuration page. Type a name which is easy for identification for such profile (in this case, type *VPN Server*)**,** and check the box of **Enable This Profile**. For Vigor router will be set as a **server**, the call direction shall be set as **Dial-in** and set 0 as **Idle Timeout**.



VPN and Remote Access >> LAN to LAN

Profile Index : 1

1. Common Settings

Profile Name VPN Server

☑ Enable this profile

VPN Dial-Out Through WAN1 First

Netbios Naming Packet ● Pass ○ Block

Multicast via VPN ● Pass ○ Block

(for some IGMP,IP-Camera,DHCP Relay..etc.)

Call Direction ○ Both ○ Dial-Out ● Dial-in

□ Always on

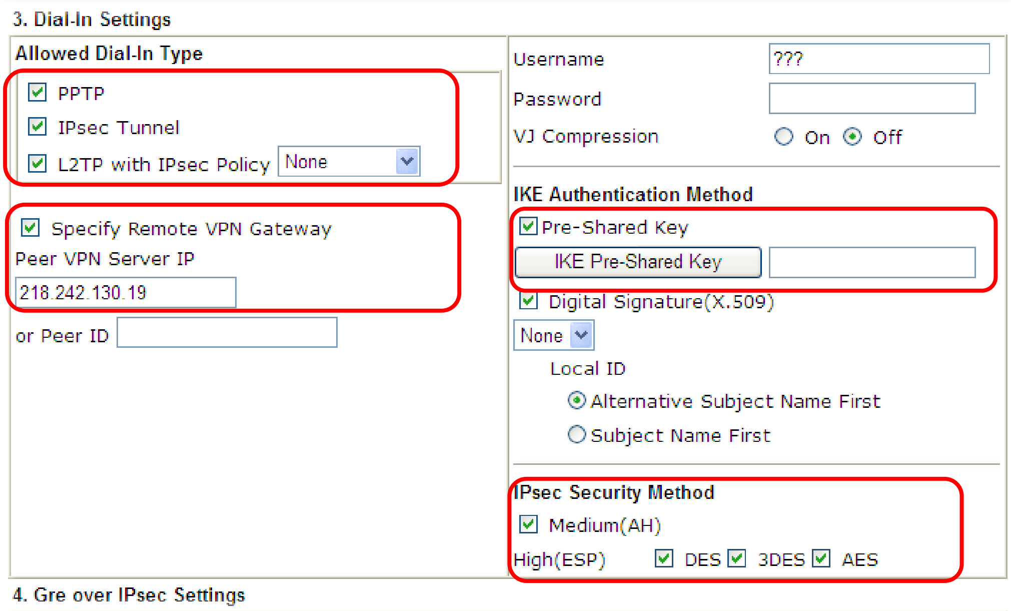
Idle Timeout 0 second(s)

□ Enable PING to keep alive

PING to the IP

2. Dial-Out Settings

4. Now navigate to the next section, **Dial-In Settings** to check PPTP, IPsec Tunnel and L2TP boxes. Check the box of **Specify Remote…** and type the **Peer VPN Server IP** (e.g., 218.242.130.19 in this case). Press the **IKE Pre-Shared Key** button to set the **PSK**; and select **Medium (AH)** or **High (ESP)** as the security method.



3. Dial-In Settings

Allowed Dial-In Type

☑ PPTP

☑ IPsec Tunnel

☑ L2TP with IPsec Policy None

☑ Specify Remote VPN Gateway

Peer VPN Server IP

218.242.130.19

or Peer ID

Username ???

Password

VJ Compression ○ On ● Off

IKE Authentication Method

☑ Pre-Shared Key

IKE Pre-Shared Key

☑ Digital Signature(X.509)

None

Local ID

● Alternative Subject Name First

○ Subject Name First

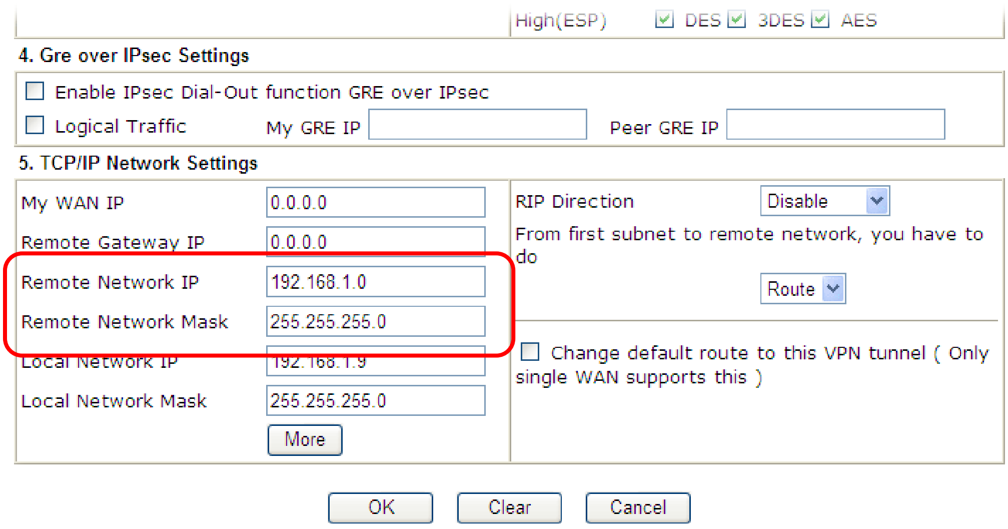
IPsec Security Method

☑ Medium(AH)

High(ESP) ☑ DES ☑ 3DES ☑ AES

4. Gre over IPsec Settings

5. Continue to navigate to the **TCP/IP Network Settings** for setting the LAN IP for remote side.



High(ESP) ☑ DES ☑ 3DES ☑ AES

4. Gre over IPsec Settings

□ Enable IPsec Dial-Out function GRE over IPsec

□ Logical Traffic My GRE IP Peer GRE IP

5. TCP/IP Network Settings

My WAN IP 0.0.0.0

Remote Gateway IP 0.0.0.0

Remote Network IP 192.168.1.0

Remote Network Mask 255.255.255.0

Local Network IP 192.168.1.9

Local Network Mask 255.255.255.0

More

RIP Direction Disable

From first subnet to remote network, you have to do

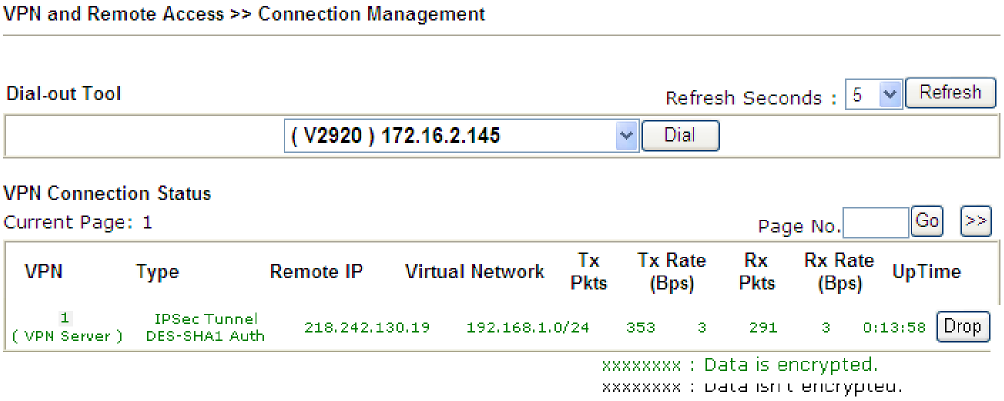
Route

□ Change default route to this VPN tunnel (Only single WAN supports this)

OK Clear Cancel

6. Click **OK** to save the settings.

7. Open **VPN and Remote Access>>Connection Management** to check the dial-in connection status (from branch office).



VPN and Remote Access >> Connection Management

Dial-out Tool — Refresh Seconds : 5 | Refresh

(V2920) 172.16.2.145 | Dial

VPN Connection Status

Current Page: 1 — Page No. | Go | >>

VPN	Type	Remote IP	Virtual Network	Tx Pkts	Tx Rate (Bps)	Rx Pkts	Rx Rate (Bps)	UpTime	
1 (VPN Server)	IPSec Tunnel DES-SHA1 Auth	218.242.130.19	192.168.1.0/24	353	3	291	3	0:13:58	Drop

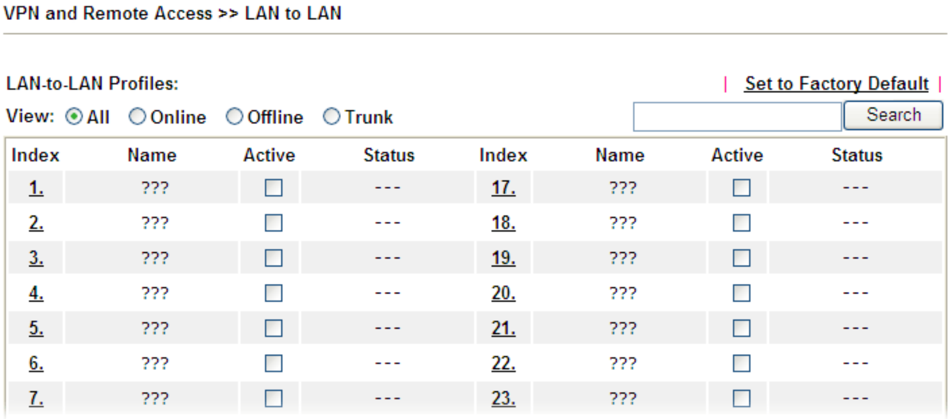
xxxxxxxx : Data is encrypted.

xxxxxxxx : Data isn't encrypted.

Configuration on Vigor Router for Branch Office

1. Log into the web user interface of Vigor router.

2. Open **VPN and Remote Access>>LAN to LAN** to create a LAN-to-LAN profile. The following settings are for a permanent VPN connection.



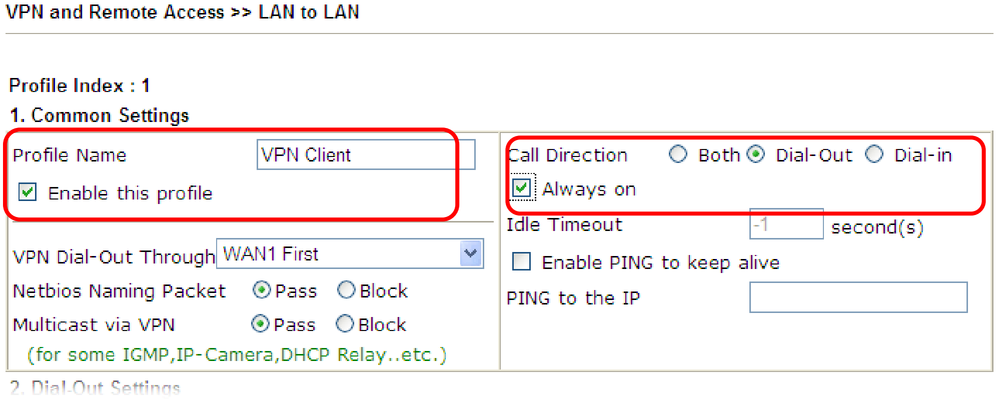
VPN and Remote Access >> LAN to LAN

LAN-to-LAN Profiles: | Set to Factory Default |

View: ● All ○ Online ○ Offline ○ Trunk | Search

Index	Name	Active	Status	Index	Name	Active	Status
1.	???	□	---	17.	???	□	---
2.	???	□	---	18.	???	□	---
3.	???	□	---	19.	???	□	---
4.	???	□	---	20.	???	□	---
5.	???	□	---	21.	???	□	---
6.	???	□	---	22.	???	□	---
7.	???	□	---	23.	???	□	---

3. Click any index number to open the configuration page. Type a name which is easy for identification for such profile (in this case, type *VPN Client*)**,** and check the box of **Enable This Profile**. For such Vigor router will be set as a **client**, the call direction shall be set as **Dial-out.** Check the box of **Always on** for a permanent VPN connection.



VPN and Remote Access >> LAN to LAN

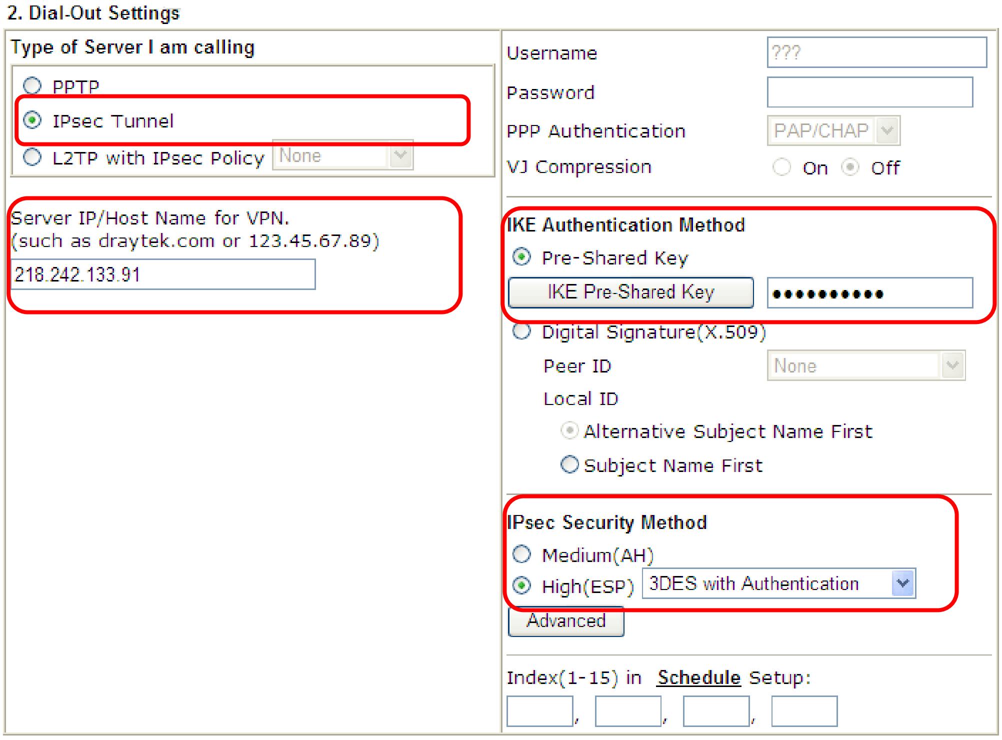
Profile Index : 1

1. Common Settings

Profile Name	VPN Client	Call Direction	○ Both ● Dial-Out ○ Dial-in
☑ Enable this profile		☑ Always on	
		Idle Timeout	-1 second(s)
VPN Dial-Out Through	WAN1 First	□ Enable PING to keep alive	
Netbios Naming Packet	● Pass ○ Block	PING to the IP	
Multicast via VPN	● Pass ○ Block		
(for some IGMP,IP-Camera,DHCP Relay..etc.)			

2. Dial-Out Settings

4. Now navigate to the next section, **Dial-Out Settings** to select the **IPsec Tunnel** service and type the remote server IP/host name (e.g., 218.242.133.91, in this case). Press the **IKE Pre-Shared Key** button to set the **PSK**; and select **Medium (AH)** or **High (ESP)** as the security method.



2. Dial-Out Settings

Type of Server I am calling

○ PPTP
● IPsec Tunnel
○ L2TP with IPsec Policy None

Server IP/Host Name for VPN.
(such as draytek.com or 123.45.67.89)
218.242.133.91

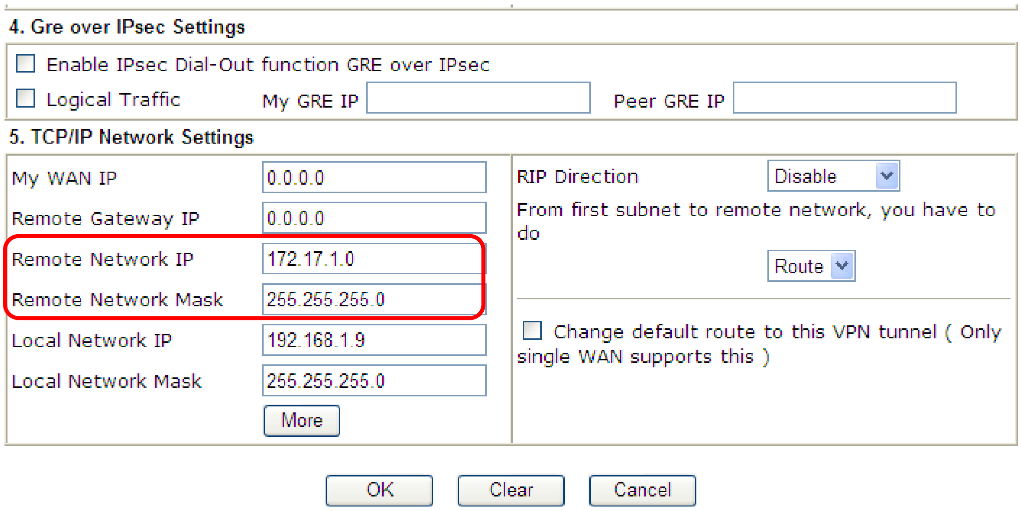
Username ???
Password
PPP Authentication PAP/CHAP
VJ Compression ○ On ● Off

IKE Authentication Method
● Pre-Shared Key
IKE Pre-Shared Key ••••••••••
○ Digital Signature(X.509)
Peer ID None
Local ID
● Alternative Subject Name First
○ Subject Name First

IPsec Security Method
○ Medium(AH)
● High(ESP) 3DES with Authentication
Advanced

Index(1-15) in Schedule Setup:

5. Continue to navigate to the **TCP/IP Network Settings** for setting the LAN IP for the remote side.



4. Gre over IPsec Settings

□ Enable IPsec Dial-Out function GRE over IPsec
□ Logical Traffic My GRE IP Peer GRE IP

5. TCP/IP Network Settings

My WAN IP 0.0.0.0
Remote Gateway IP 0.0.0.0
Remote Network IP 172.17.1.0
Remote Network Mask 255.255.255.0
Local Network IP 192.168.1.9
Local Network Mask 255.255.255.0
More

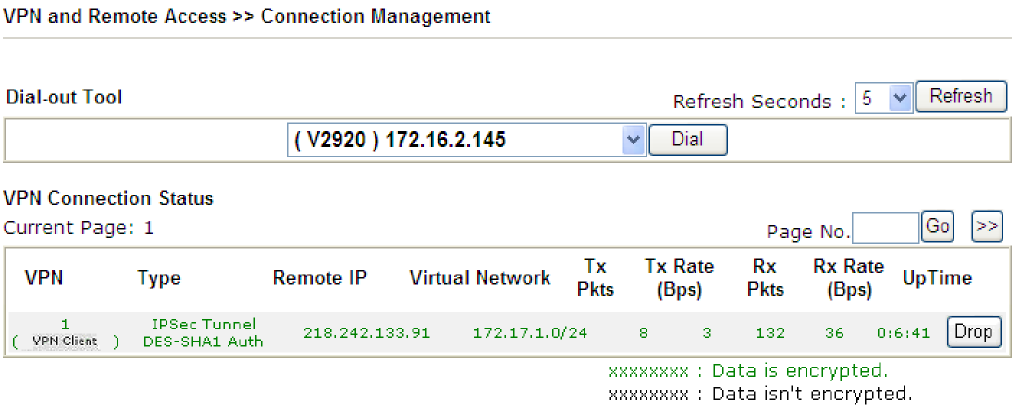
RIP Direction Disable
From first subnet to remote network, you have to do
Route

□ Change default route to this VPN tunnel (Only single WAN supports this)

OK Clear Cancel

6. Click **OK** to save the settings.

7. Open **VPN and Remote Access>>Connection Management** to check the dial-in connection status (from head office).



VPN and Remote Access >> Connection Management

Dial-out Tool

Refresh Seconds : 5 Refresh

(V2920) 172.16.2.145 Dial

VPN Connection Status

Current Page: 1

Page No. Go >>

VPN	Type	Remote IP	Virtual Network	Tx Pkts	Tx Rate (Bps)	Rx Pkts	Rx Rate (Bps)	UpTime	
1 (VPN Client)	IPSec Tunnel DES-SHA1 Auth	218.242.133.91	172.17.1.0/24	8	3	132	36	0:6:41	Drop

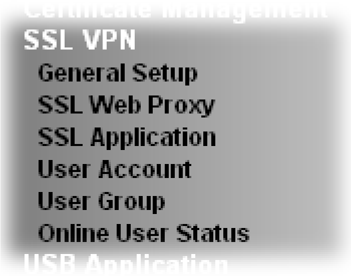
xxxxxxxx : Data is encrypted.
xxxxxxxx : Data isn't encrypted.

IV-2 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.

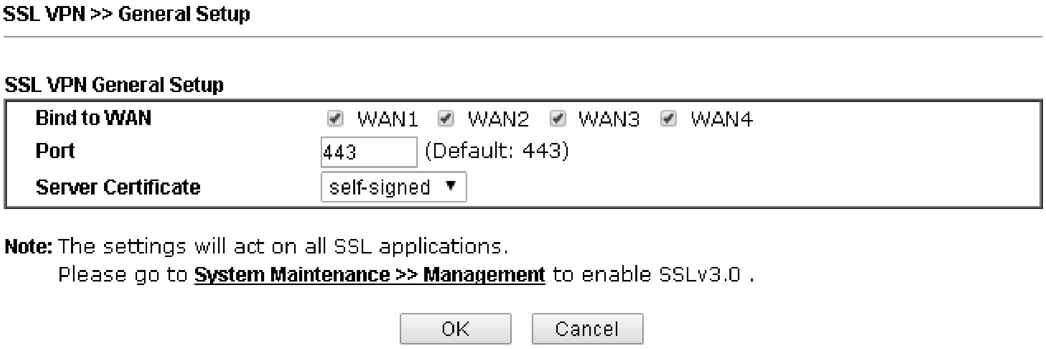
There are two benefits that SSL VPN provides:

- 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.



IV-2-1 General Setup

This page determines the general configuration for SSL VPN Server and SSL Tunnel.



SSL VPN >> General Setup

SSL VPN General Setup

Bind to WAN	☑ WAN1 ☑ WAN2 ☑ WAN3 ☑ WAN4
Port	443 (Default: 443)
Server Certificate	self-signed ▼

Note: The settings will act on all SSL applications.
Please go to **System Maintenance >> Management** to enable SSLv3.0 .

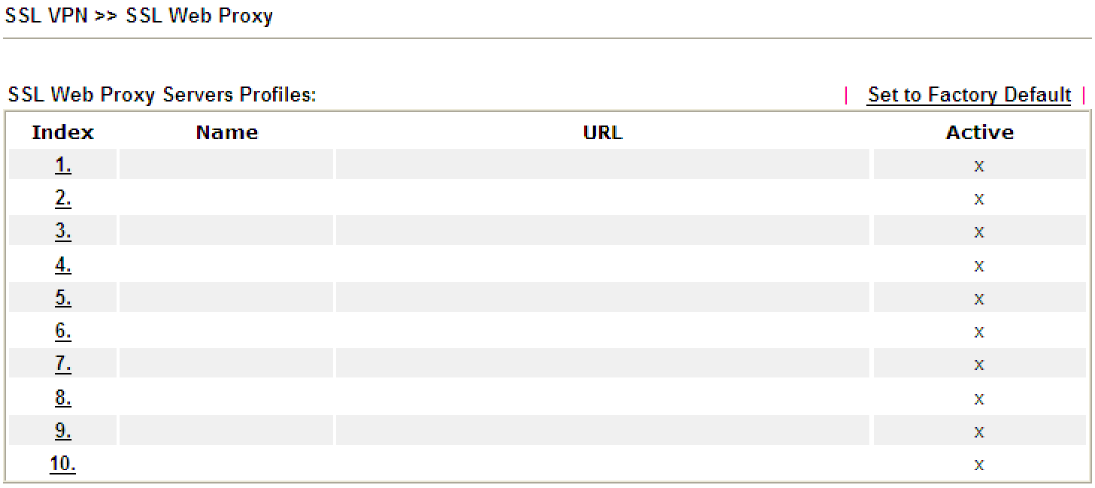
Available settings are explained as follows:

Item	Description
Bind to WAN	Choose and check WAN interface(s) for SSL VPN tunnel establishement.
Port	Such port is set for SSL VPN server. It will not affect the HTTPS Port configuration set in **System Maintenance>>Management**. In general, the default setting is 443.
Server Certificate	When the client does not set any certificate, default certificate will be used for HTTPS and SSL VPN server. Choose any one of the user-defined certificates from the drop down list if users set several certificates previously. Otherwise, choose **Self-signed** to use the router's built-in default certificate. The default certificate can be used in SSL VPN server and HTTPS Web Proxy.

After finishing all the settings here, please click **OK** to save the configuration.

IV-2-2 SSL Web Proxy

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



SSL VPN >> SSL Web Proxy

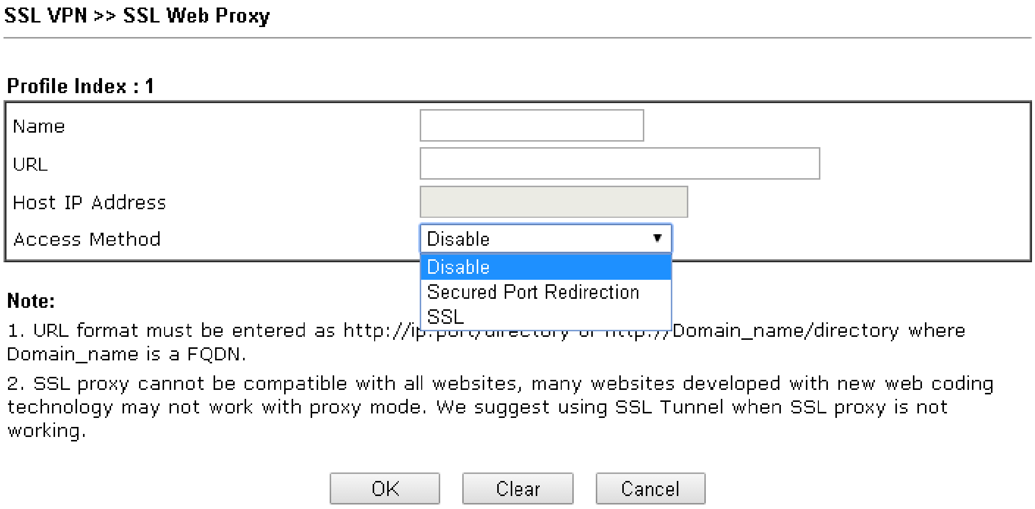
SSL Web Proxy Servers Profiles: | Set to Factory Default |

Index	Name	URL	Active
1.			x
2.			x
3.			x
4.			x
5.			x
6.			x
7.			x
8.			x
9.			x
10.			x

Each item is explained as follows:

Item	Description
Name	Display the name of the profile that you create.
URL	Display the URL.
Active	Display current status (active or inactive) of such profile.

Click number link under Index filed to set detailed configuration.



SSL VPN >> SSL Web Proxy

Profile Index : 1

Name	
URL	
Host IP Address	
Access Method	Disable ▾

Note:

1. URL format must be entered as http://ip:port/directory or http://Domain_name/directory where Domain_name is a FQDN.

2. SSL proxy cannot be compatible with all websites, many websites developed with new web coding technology may not work with proxy mode. We suggest using SSL Tunnel when SSL proxy is not working.

Available settings are explained as follows:

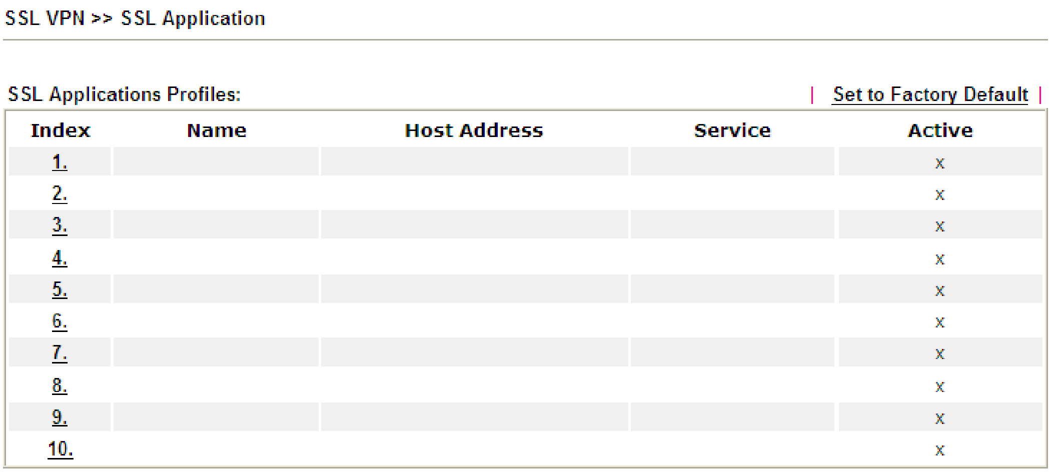
Item	Description
Name	Type name of the profile. The length of the name is limited to 15 characters.
URL	Type the address (function variation or IP address) or path of the proxy server.

Host IP Address	If you type function variation as URL, you have to type corresponding IP address in this filed. Such field must match with URL setting.
Access Method	There are three modes for you to choose. **Disable** – The profile will be inactive. If you choose **Disable**, all the web proxy profile appeared under VPN remote dial-in web page will disappear. **Secured Port Redirection** – Such technique applies private port mapping to random WAN port. There are two restrictions for proxy web server for such selection: 1) it is only used for WAN to LAN access, the web server must be configured behind vigor router; 2) web server gateway must be indicated to vigor router. In addition, users must execute "Connect" manually in SSL Client Portal page. **SSL** – If you choose such selection, web proxy over SSL will be applied for VPN.

After finishing all the settings here, please click **OK** to save the configuration.

IV-2-3 SSL Application

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



SSL VPN >> SSL Application

SSL Applications Profiles: | Set to Factory Default |

Index	Name	Host Address	Service	Active
1.				x
2.				x
3.				x
4.				x
5.				x
6.				x
7.				x
8.				x
9.				x
10.				x

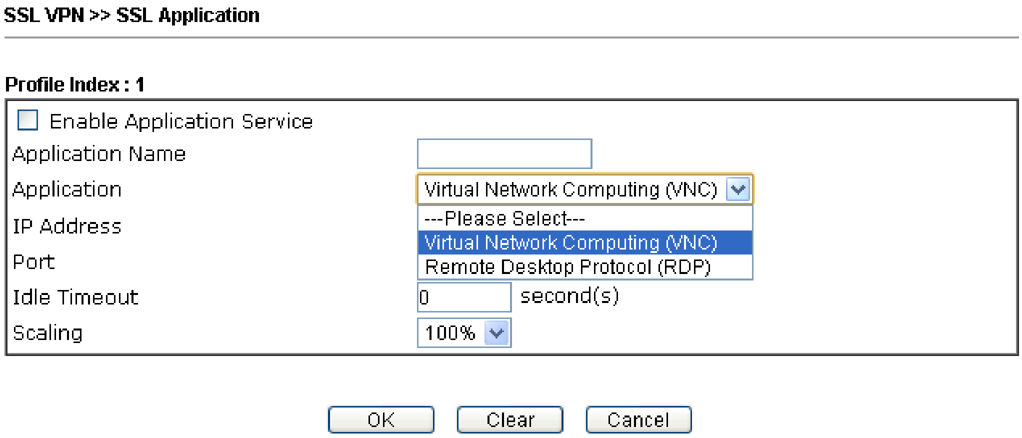
Each item is explained as follows:

Item	Description
Name	Display the application name of the profile that you create.
Host Address	Display the IP address for VNC/RDP or SMB path.
Service	Display the type of the service selected, e.g., VNC/RDP/SMB.
Active	Display current status (active or inactive) of the selected profile.

To create a new SSL application profile:

1. Click number link under Index filed to set detailed configuration.

2. The following page will appear.



SSL VPN >> SSL Application

Profile Index : 1

☐ Enable Application Service

Application Name	
Application	Virtual Network Computing (VNC)
IP Address	
Port	
Idle Timeout	0 second(s)
Scaling	100%

---Please Select---
Virtual Network Computing (VNC)
Remote Desktop Protocol (RDP)
OK
Clear
Cancel

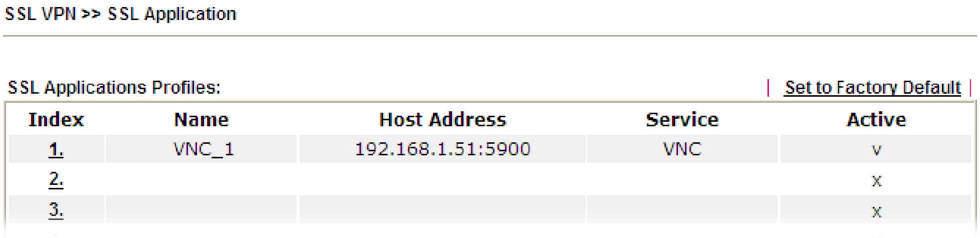
Available settings are explained as follows:

Item	Description
Enable Application	Check the box to enable such profile.

Server	
Application Name	Type a name for such application. The length of the name is limited to 23 characters.
Application	There are two types offered for you to create an application profile. **Virtual Network Computing (VNC)** – It allows you to access and control a remote PC through VNC protocol. **Remote Desktop Protocol (RDP)** – It allows you to access and control a remote PC through RDP protocol.
IP Address	If you choose VNC or RDP, you have to type the IP address for this protocol.
Port	If you choose VNC or RDP, you have to specify the port used for this protocol. The default setting is 5900.
Idle Timeout	If you choose VNC, you have to specify the time for disconnecting the SSL VPN tunnel.
Scaling	If you choose VNC, you have to choose the percentage (100%, 80%, 60%) for such application.
Screen Size	If you choose RDP, you have to choose the screen size for such application.

3. Enter the required information.

4. After finished the above settings, click **OK** to save the configuration.



SSL VPN >> SSL Application

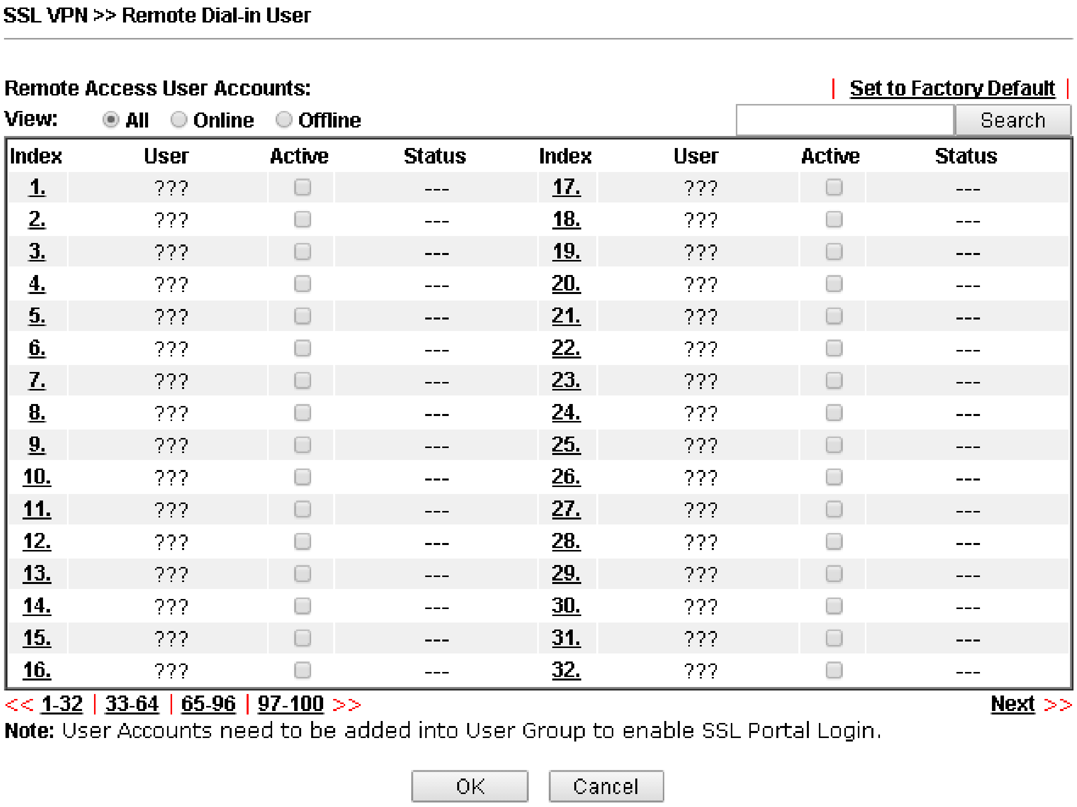
SSL Applications Profiles: | Set to Factory Default |

Index	Name	Host Address	Service	Active
1.	VNC_1	192.168.1.51:5900	VNC	v
2.				x
3.				x

IV-2-4 User Account

With SSL VPN, Vigor2952 Series let teleworkers have convenient and simple remote access to central site VPN. The teleworkers do not need to install any VPN software manually. From regular web browser, you can establish VPN connection back to your main office even in a guest network or web cafe. The SSL technology is the same as the encryption that you use for secure web sites such as your online bank. The SSL VPN can be operated in either full tunnel mode or proxy mode. Now, Vigor2952 Series allows up to 16 simultaneous incoming users.

For SSL VPN, identity authentication and power management are implemented through deploying user accounts. Therefore, the user account for SSL VPN must be set together with remote dial-in user web page. Such menu item will guide to access into **VPN and Remote Access>>Remote Dial-in user**.



SSL VPN >> Remote Dial-in User

Remote Access User Accounts: | Set to Factory Default |

View: ● All ○ Online ○ Offline [Search]

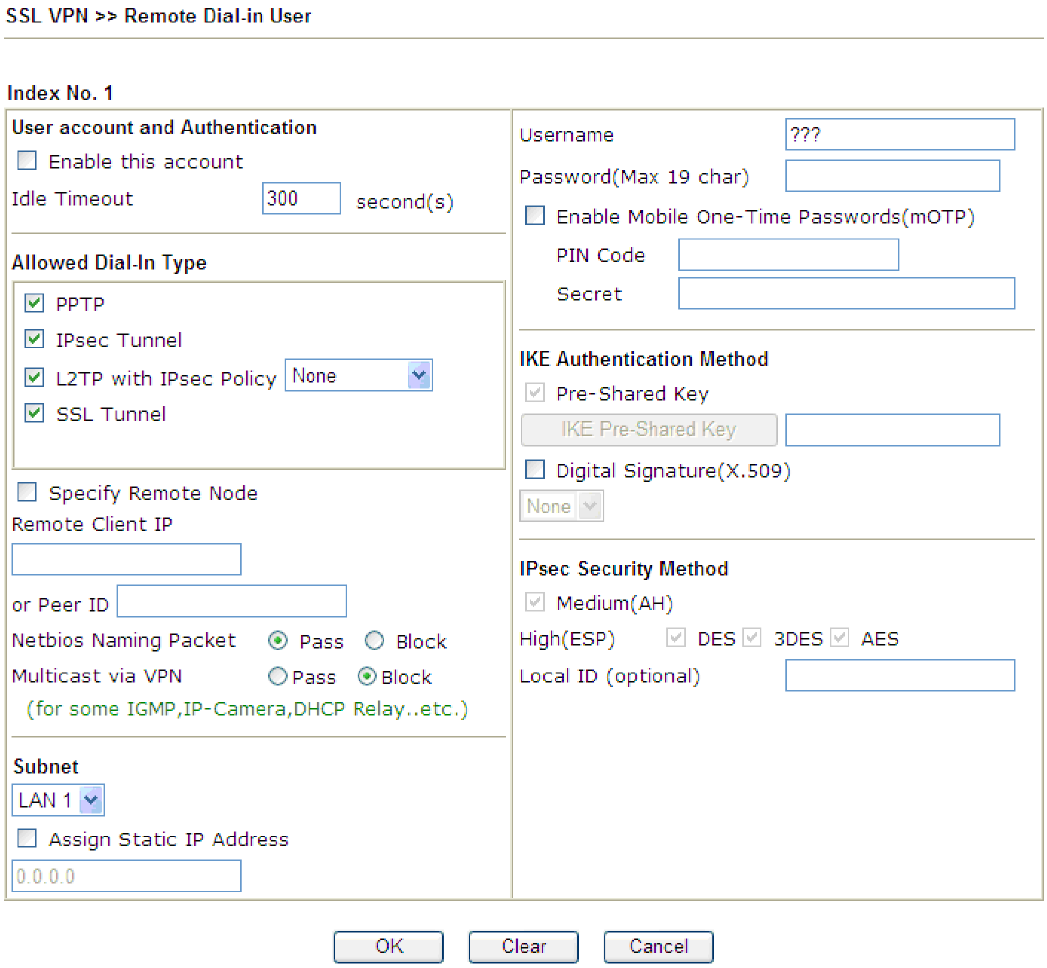
Index	User	Active	Status	Index	User	Active	Status
1.	???	□	---	17.	???	□	---
2.	???	□	---	18.	???	□	---
3.	???	□	---	19.	???	□	---
4.	???	□	---	20.	???	□	---
5.	???	□	---	21.	???	□	---
6.	???	□	---	22.	???	□	---
7.	???	□	---	23.	???	□	---
8.	???	□	---	24.	???	□	---
9.	???	□	---	25.	???	□	---
10.	???	□	---	26.	???	□	---
11.	???	□	---	27.	???	□	---
12.	???	□	---	28.	???	□	---
13.	???	□	---	29.	???	□	---
14.	???	□	---	30.	???	□	---
15.	???	□	---	31.	???	□	---
16.	???	□	---	32.	???	□	---

<< 1-32 | 33-64 | 65-96 | 97-100 >> Next >>

Note: User Accounts need to be added into User Group to enable SSL Portal Login.

[OK] [Cancel]

Click each index to edit one remote user profile.



SSL VPN >> Remote Dial-in User

Index No. 1

User account and Authentication

□ Enable this account

Idle Timeout 300 second(s)

Allowed Dial-In Type

☑ PPTP

☑ IPsec Tunnel

☑ L2TP with IPsec Policy None

☑ SSL Tunnel

□ Specify Remote Node

Remote Client IP

or Peer ID

Netbios Naming Packet ● Pass ○ Block

Multicast via VPN ○ Pass ● Block

(for some IGMP,IP-Camera,DHCP Relay..etc.)

Subnet

LAN 1

□ Assign Static IP Address

0.0.0.0

Username ???

Password(Max 19 char)

□ Enable Mobile One-Time Passwords(mOTP)

PIN Code

Secret

IKE Authentication Method

☑ Pre-Shared Key

IKE Pre-Shared Key

□ Digital Signature(X.509)

None

IPsec Security Method

☑ Medium(AH)

High(ESP) ☑ DES ☑ 3DES ☑ AES

Local ID (optional)

Available settings are explained as follows:

Item	Description
User account and Authentication	**Enable this account** - Check the box to enable this function. **Idle Timeout-** If the dial-in user is idle over the limitation of the timer, the router will drop this connection. By default, the Idle Timeout is set to 300 seconds. **User Name** - This field is applicable when you select PPTP or L2TP with or without IPsec policy above. The length of the name/password is limited to 23 characters. **Password** - This field is applicable when you select PPTP or L2TP with or without IPsec policy above. The length of the name/password is limited to 19 characters. **Enable Mobile One-Time Passwords (mOTP) -** Check this box to make the authentication with mOTP function. ● **PIN Code** – Type the code for authentication (e.g, 1234). ● **Secret** – Use the 32 digit-secret number generated by mOTP in the mobile phone (e.g., e759bb6f0e94c7ab4fe6).
Allowed Dial-In Type	**PPTP** - Allow the remote dial-in user to make a PPTP VPN connection through the Internet. You should set the User Name and Password of remote dial-in user below. **IPSec Tunnel** - Allow the remote dial-in user to make an IPSec VPN connection through Internet.

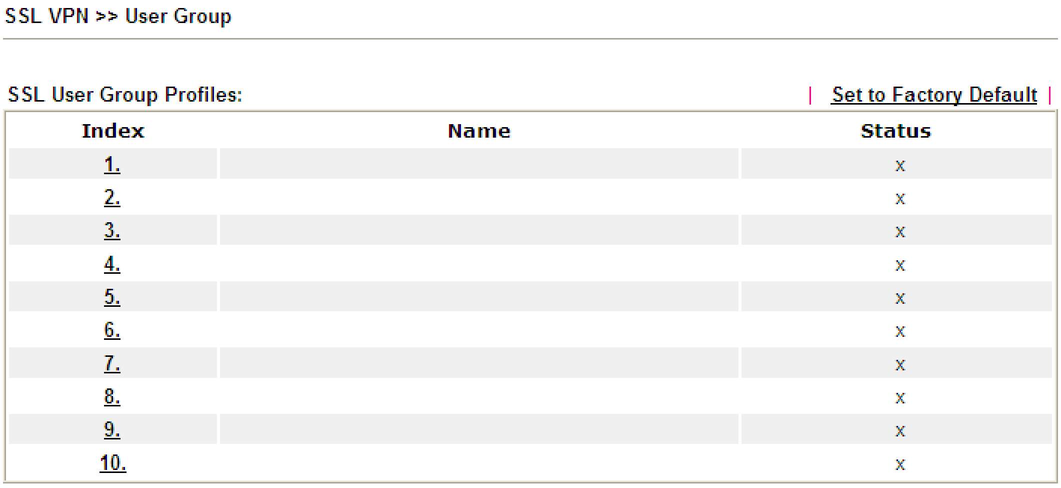
Item	Description
	L2TP with IPSec Policy - Allow the remote dial-in user to make a L2TP VPN connection through the Internet. You can select to use L2TP alone or with IPSec. Select from below: ● **None -** Do not apply the IPSec policy. Accordingly, the VPN connection employed the L2TP without IPSec policy can be viewed as one pure L2TP connection. ● **Nice to Have -** Apply the IPSec policy first, if it is applicable during negotiation. Otherwise, the dial-in VPN connection becomes one pure L2TP connection. ● **Must -**Specify the IPSec policy to be definitely applied on the L2TP connection. **SSL Tunnel -** It allows the remote dial-in user to make an SSL VPN Tunnel connection through Internet, suitable for the application through network accessing (e.g., PPTP/L2TP/IPSec). If you check this box, the function of SSL Tunnel for this account will be activated immediately. **Specify Remote Node -** Check the checkbox to specify the IP address of the remote dial-in user, ISDN number or peer ID (used in IKE aggressive mode). If you uncheck the checkbox, the connection type you select above will apply the authentication methods and security methods in the **general settings**. **Netbios Naming Packet** ● **Pass** – Click it to have an inquiry for data transmission between the hosts located on both sides of VPN Tunnel while connecting. ● **Block** – When there is conflict occurred between the hosts on both sides of VPN Tunnel in connecting, such function can block data transmission of Netbios Naming Packet inside the tunnel. **Multicast via VPN** - Some programs might send multicast packets via VPN connection. ● **Pass** – Click this button to let multicast packets pass through the router. ● **Block** – This is default setting. Click this button to let multicast packets be blocked by the router.
Subnet	Chose one of the subnet selections for such VPN profile. **Assign Static IP Address -** Please type a static IP address for the subnet you specified.
IKE Authentication Method	This group of fields is applicable for IPSec Tunnels and L2TP with IPSec Policy when you specify the IP address of the remote node. The only exception is Digital Signature (X.509) can be set when you select IPSec tunnel either with or without specify the IP address of the remote node. **Pre-Shared Key -** Check the box of Pre-Shared Key to invoke this function and type in the required characters (1-63) as the pre-shared key. **Digital Signature (X.509) -** Check the box of Digital Signature to invoke this function and Select one predefined Profiles set in the **VPN and Remote Access >>IPSec Peer Identity.**
IPSec Security Method	This group of fields is a must for IPSec Tunnels and L2TP with IPSec Policy when you specify the remote node. Check the

Item	Description
	Medium, DES, 3DES or AES box as the security method. **Medium-Authentication Header (AH)** means data will be authenticated, but not be encrypted. By default, this option is invoked. You can uncheck it to disable it. **High-Encapsulating Security Payload (ESP)** means payload (data) will be encrypted and authenticated. You may select encryption algorithm from Data Encryption Standard (DES), Triple DES (3DES), and AES. **Local ID -** Specify a local ID to be used for Dial-in setting in the LAN-to-LAN Profile setup. This item is optional and can be used only in IKE aggressive mode.

After finishing all the settings here, please click **OK** to save the configuration.

IV-2-5 User Group

There are 10 user group profiles which can be created for authentication by LDAP server. Such profiles will be used by applications such as User Management, VPN and etc.



SSL VPN >> User Group

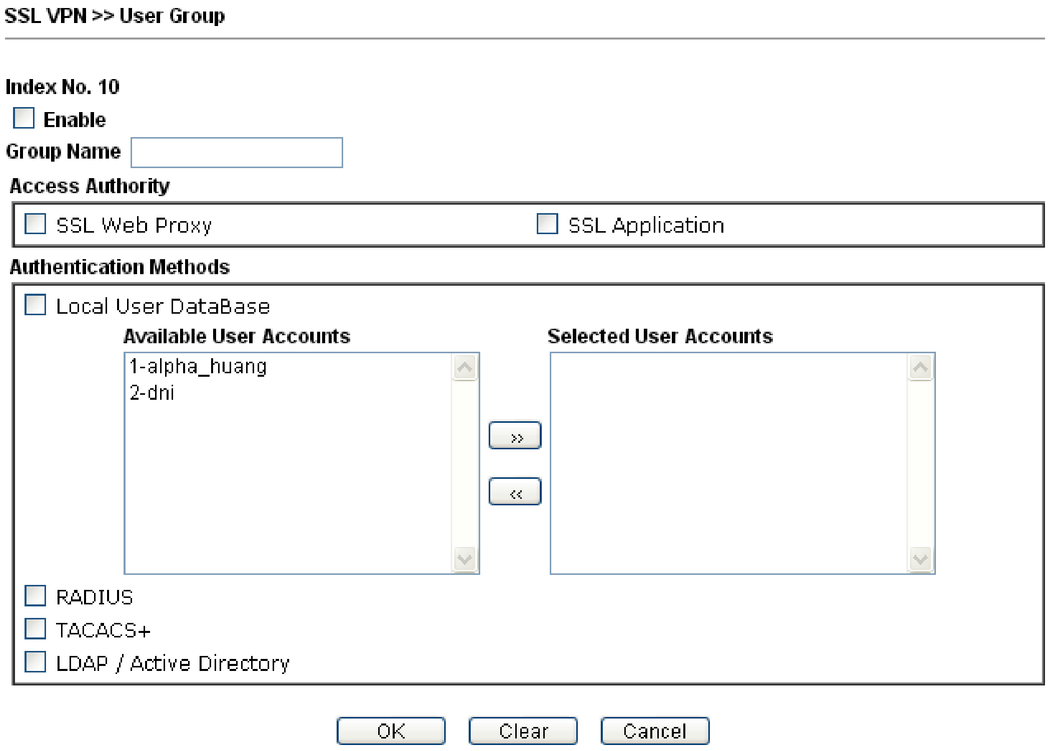
SSL User Group Profiles: | Set to Factory Default |

Index	Name	Status
1.		x
2.		x
3.		x
4.		x
5.		x
6.		x
7.		x
8.		x
9.		x
10.		x

Each item is explained as follows:

Item	Description
Set to Factory Default	Click to clear all indexes.
Index	Display the number of the client which connecting to FTP server.
Name	Display the name of the group profile.

Click any index number link to open the following page for detailed configuration.



SSL VPN >> User Group

Index No. 10

□ Enable

Group Name

Access Authority

□ SSL Web Proxy □ SSL Application

Authentication Methods

□ Local User DataBase

Available User Accounts

1-alpha_huang
2-dni

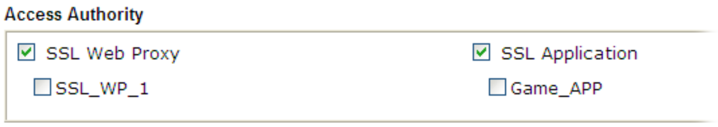
Selected User Accounts

□ RADIUS

□ TACACS+

□ LDAP / Active Directory

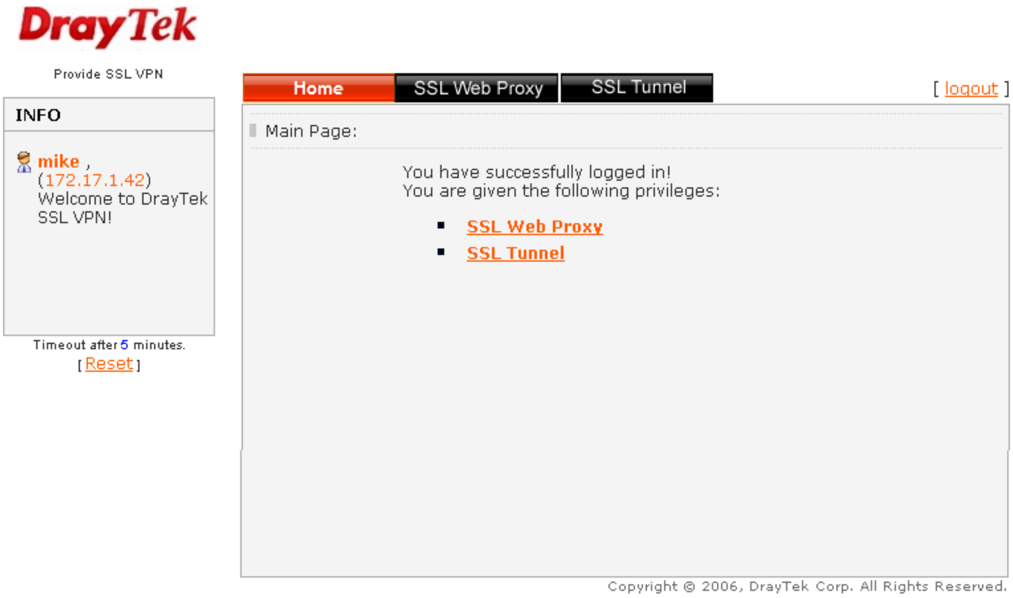
Available settings are explained as follows:

Item	Description
Enable	Check this box to enable such profile.
Group Name	Type a name for such profile. The length of the name is limited to 23 characters.
Access Authority	Specify the authority for such profile. At present, Vigor router allows you to create SSL Web Proxy and SSL Application profiles used for SSL VPN. The available profiles will be displayed here for you to select.  Access Authority ☑ SSL Web Proxy ☑ SSL Application □ SSL_WP_1 □ Game_APP
Authentication Methods	It can determine the authentication method used for such profile. **Local User DataBase -** The system will do the authentication by using the user defined account profiles (in **VPN and Remote Access>>Remote Dial-In User**). The enabled profiles will be listed in the **Available User Account** on the left box. To add a profile into a group, simply choose the one from the left box and click the **>>** button. It will be displayed in the **Selected User Account** on the right box. For detailed information about configuring the profile setting, refer to **Objects Setting>>IP Group**. **RADIUS -** The RADIUS server will do the authentication by using the username and password **TACACS+** - The TACACS+ will do the authentication by using the username and password. **LDAP / Active Directory -** If it is checked, the LDAP / AD server will do the authentication by using the username, password, information stated on the selected profiles. If the above three options are enabled, the system will do the authentication based on them in sequence.

After finishing all the settings here, please click **OK** to save the configuration.

IV-2-6 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.



DrayTek

Provide SSL VPN

INFO

mike ,
(172.17.1.42)
Welcome to DrayTek SSL VPN!

Timeout after 5 minutes.
[Reset]

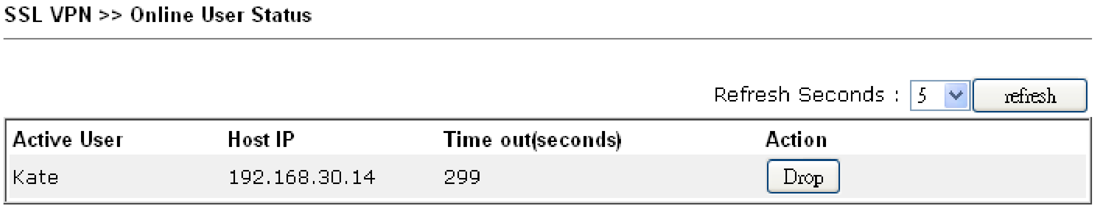
Main Page:

You have successfully logged in!
You are given the following privileges:

- SSL Web Proxy
- SSL Tunnel

Copyright © 2006, DrayTek Corp. All Rights Reserved.

Next, users can open **SSL VPN>> Online Status** to view logging status of SSL VPN.



SSL VPN >> Online User Status

Refresh Seconds : 5 refresh

Active User	Host IP	Time out(seconds)	Action
Kate	192.168.30.14	299	Drop

Available settings are explained as follows:

Item	Description
Active User	Display current user who visits SSL VPN server.
Host IP	Display the IP address for the host.
Time out	Display the time remaining for logging out.
Action	You can click **Drop** to drop certain login user from the router's SSL Portal UI.

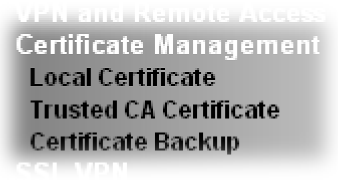
IV-3 Certificate Management

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.

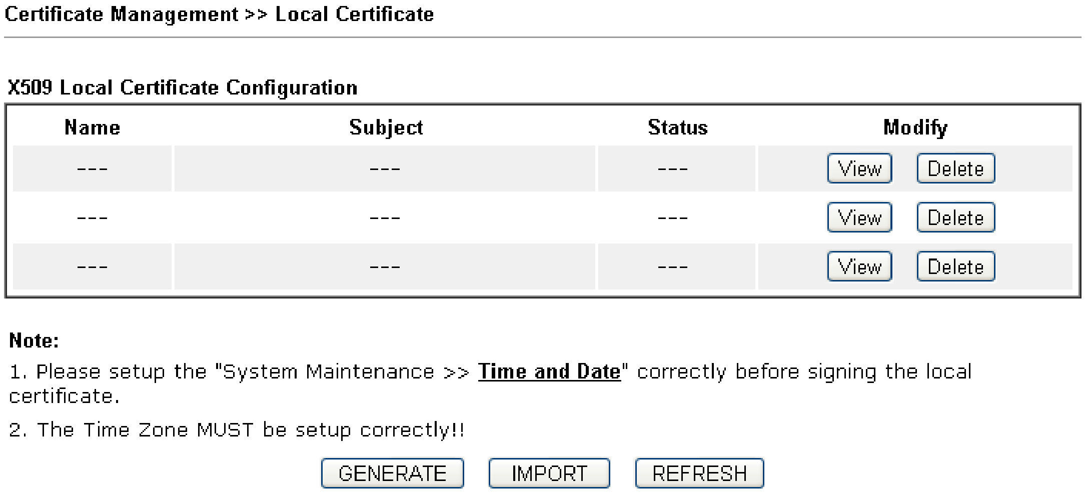
Any entity wants to utilize digital certificates should first request a certificate issued by a CA server. It should also retrieve certificates of other trusted CA servers so it can authenticate the peer with certificates issued by those trusted CA servers.

Here you can manage 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.



IV-3-1 Local Certificate



Certificate Management >> Local Certificate

X509 Local Certificate Configuration

Name	Subject	Status	Modify
---	---	---	View Delete
---	---	---	View Delete
---	---	---	View Delete

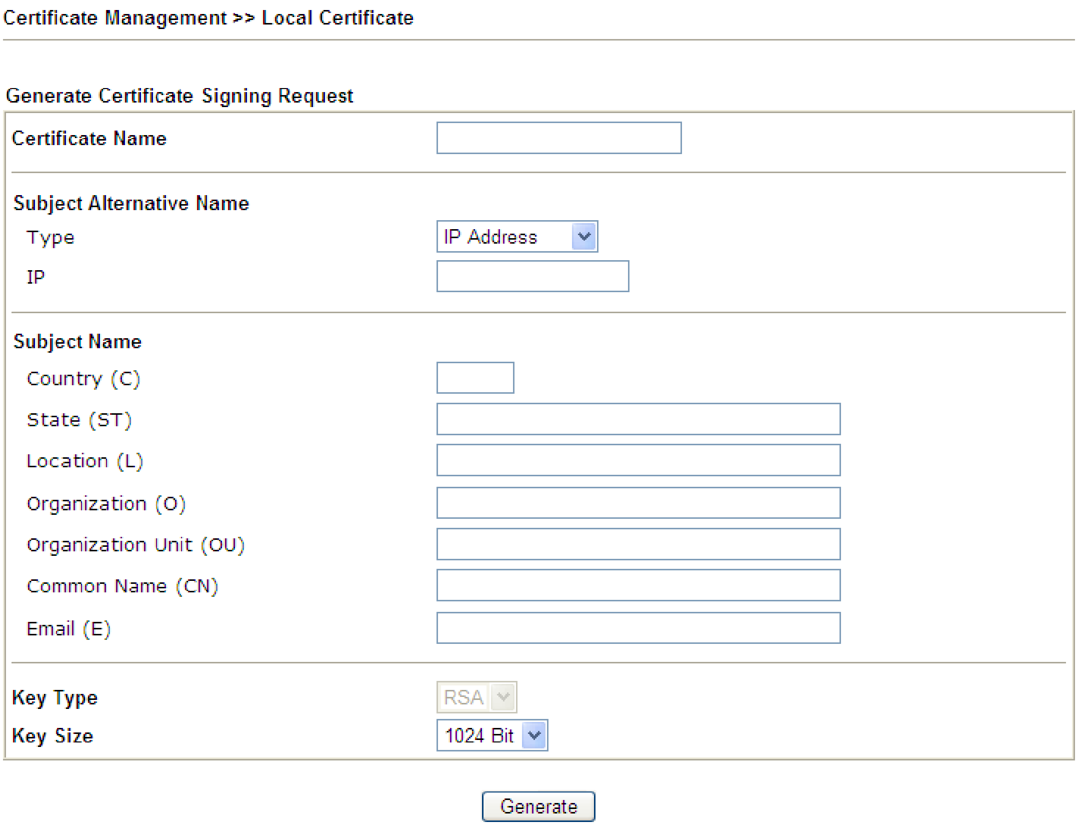
Note:
1. Please setup the "System Maintenance >> Time and Date" correctly before signing the local certificate.
2. The Time Zone MUST be setup correctly!!

Available settings are explained as follows:

Item	Description
Generate	Click this button to open **Generate Certificate Request** window. Type in all the information that the window requests. Then click **Generate** again.
Import	Click this button to import a saved file as the certification information.
Refresh	Click this button to refresh the information listed below.
View	Click this button to view the detailed settings for certificate request.
Delete	Click this button to delete selected name with certification information.

GENERATE

Click this button to open **Generate Certificate Signing Request** window. Type in all the information that the window request such as certifcate name (used for identifying different certificate), subject alternative name type and relational settings for subject name. Then click **GENERATE** again.



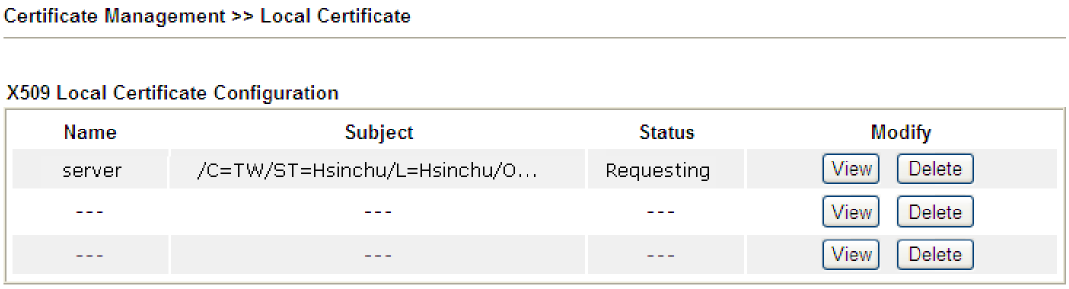
Certificate Management >> Local Certificate

Generate Certificate Signing Request

Certificate Name	
Subject Alternative Name	
Type	IP Address
IP	
Subject Name	
Country (C)	
State (ST)	
Location (L)	
Organization (O)	
Organization Unit (OU)	
Common Name (CN)	
Email (E)	
Key Type	RSA
Key Size	1024 Bit

Info Please be noted that “Common Name” must be configured with rotuer’s WAN IP or domain name.

After clicking **GENERATE**, the generated information will be displayed on the window below:



Certificate Management >> Local Certificate

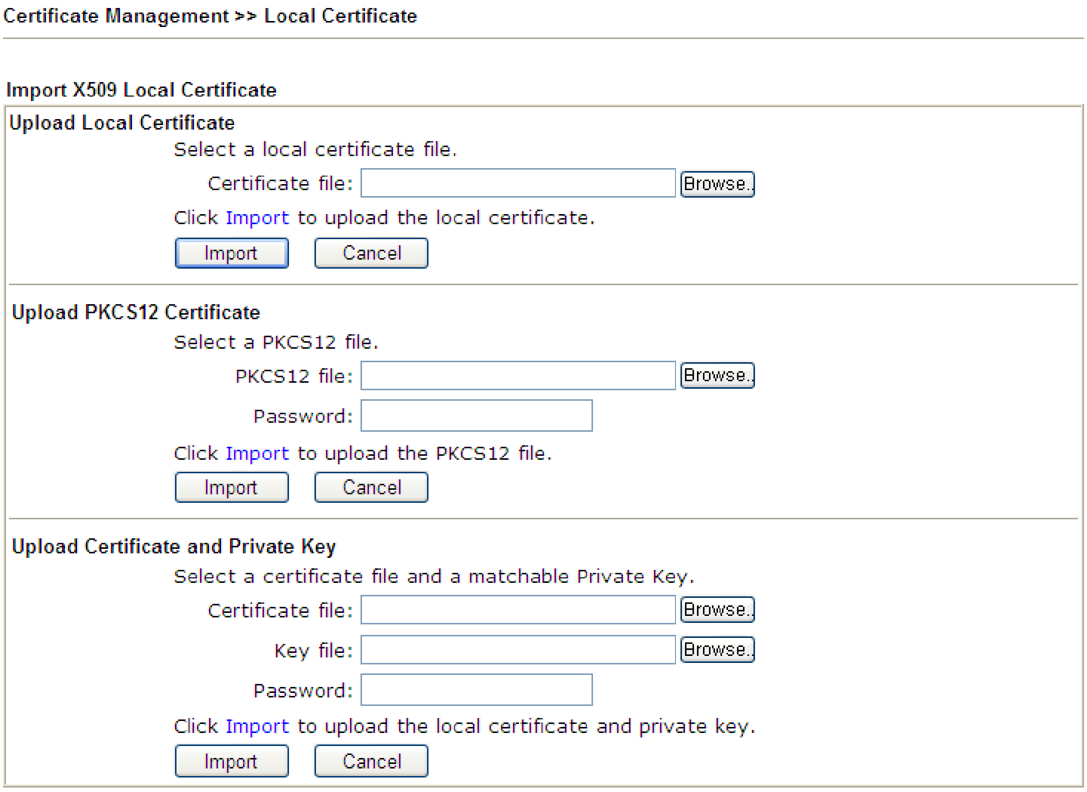
X509 Local Certificate Configuration

Name	Subject	Status	Modify
server	/C=TW/ST=Hsinchu/L=Hsinchu/O...	Requesting	View Delete
---	---	---	View Delete
---	---	---	View Delete

IMPORT

Vigor router allows you to generate a certificate request and submit it the CA server, then import it as “Local Certificate”. 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.

Click this button to import a saved file as the certification information. There are three types of local certificate supported by Vigor router.



Certificate Management >> Local Certificate

Import X509 Local Certificate

Upload Local Certificate

Select a local certificate file.

Certificate file: [ ] Browse...

Click Import to upload the local certificate.

Import Cancel

Upload PKCS12 Certificate

Select a PKCS12 file.

PKCS12 file: [ ] Browse...

Password: [ ]

Click Import to upload the PKCS12 file.

Import Cancel

Upload Certificate and Private Key

Select a certificate file and a matchable Private Key.

Certificate file: [ ] Browse...

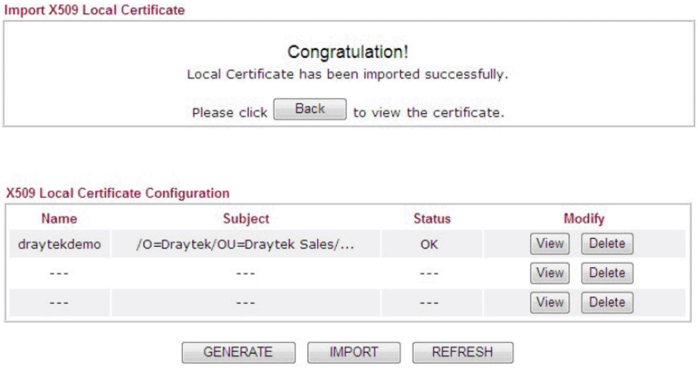
Key file: [ ] Browse...

Password: [ ]

Click Import to upload the local certificate and private key.

Import Cancel

Available settings are explained as follows:

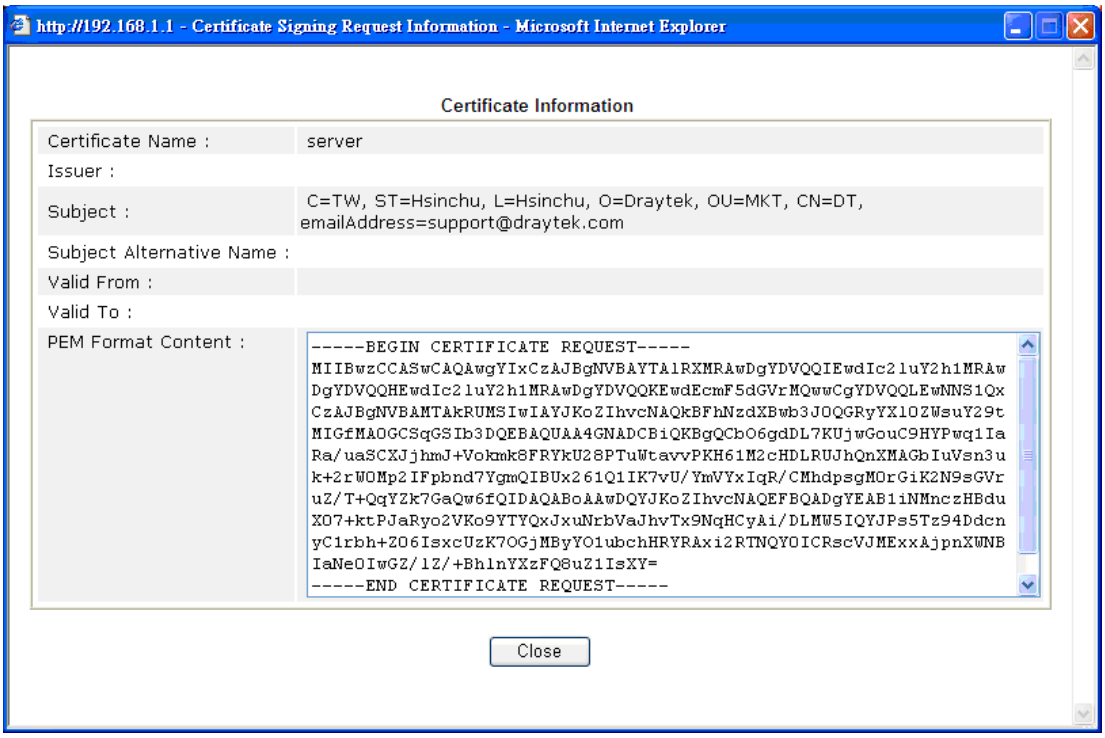
Item	Description
Upload Local Certificate	It allows users to import the certificate which is generated by Vigor router and signed by CA server. If you have done well in certificate generation, the Status of the certificate will be shown as “**OK**”.  Import X509 Local Certificate Congratulation! Local Certificate has been imported successfully. Please click Back to view the certificate. X509 Local Certificate Configuration Name / Subject / Status / Modify draytekdemo / /O=Draytek/OU=Draytek Sales/... / OK / View Delete --- / --- / --- / View Delete --- / --- / --- / View Delete GENERATE IMPORT REFRESH
Upload PKCS12 Certificate	It allows users to import the certificate whose extensions are usually .pfx or .p12. And these certificates usually need passwords. **Note:** PKCS12 is a standard for storing private keys and certificates securely. It is used in (among other things) Netscape and Microsoft Internet Explorer with their import and export options.
Upload Certificate and Private Key	It is useful when users have separated certificates and private keys. And the password is needed if the private key is encrypted.

REFRESH

Click this button to refresh the information listed below.

View

Click this button to view the detailed settings for certificate request.



http://192.168.1.1 - Certificate Signing Request Information - Microsoft Internet Explorer

Certificate Information

Certificate Name :	server
Issuer :	
Subject :	C=TW, ST=Hsinchu, L=Hsinchu, O=Draytek, OU=MKT, CN=DT, emailAddress=support@draytek.com
Subject Alternative Name :	
Valid From :	
Valid To :	
PEM Format Content :	see below

```
-----BEGIN CERTIFICATE REQUEST-----
MIIBwzCCASwCAQAwgYIxCzAJBgNVBAYTAlRXMRAwDgYDVQQIEwdIc2luY2h1MRAw
DgYDVQQHEwdIc2luY2h1MRAwDgYDVQQKEwdEcmF5dGVrMQwwCgYDVQQLEwNNS1Qx
CzAJBgNVBAMTAkRUMSIwIAYJKoZIhvcNAQkBFhNzdXBwb3J0QGRyYXl0ZWsuY29t
MIGfMA0GCSqGSIb3DQEBAQUAA4GNADCBiQKBgQCbO6gdDL7KUjwGouC9HYPwq1Ia
Ra/uaSCXJjhmJ+Vokmk8FRYkU28PTuWtavvPKH61M2cHDLRUJhQnXMAGbIuVsn3u
k+2rWOMp2IFpbnd7YgmQIBUx261Q1IK7vU/YmVYxIqR/CMhdpsgMOrGiK2N9sGVr
uZ/T+QqYZk7GaQw6fQIDAQABoAAwDQYJKoZIhvcNAQEFBQADgYEAB1iNMnczHBdu
XO7+ktPJaRyo2VKo9YTYQxJxuNrbVaJhvTx9NqHCyAi/DLMW5IQYJPs5Tz94Ddcn
yC1rbh+ZO6IsxcUzK7OGjMByYO1ubchHRYRAxi2RTNQYOICRscVJMExxAjpnXWNB
IaNeOIwGZ/lZ/+BhlnYXzFQ8uZ1IsXY=
-----END CERTIFICATE REQUEST-----
```

Info

You have to copy the certificate request information from above window. Next, access your CA server and enter the page of certificate request, copy the information into it and submit a request. A new certificate will be issued to you by the CA server. You can save it.

Delete

Click this button to remove the selected certificate.

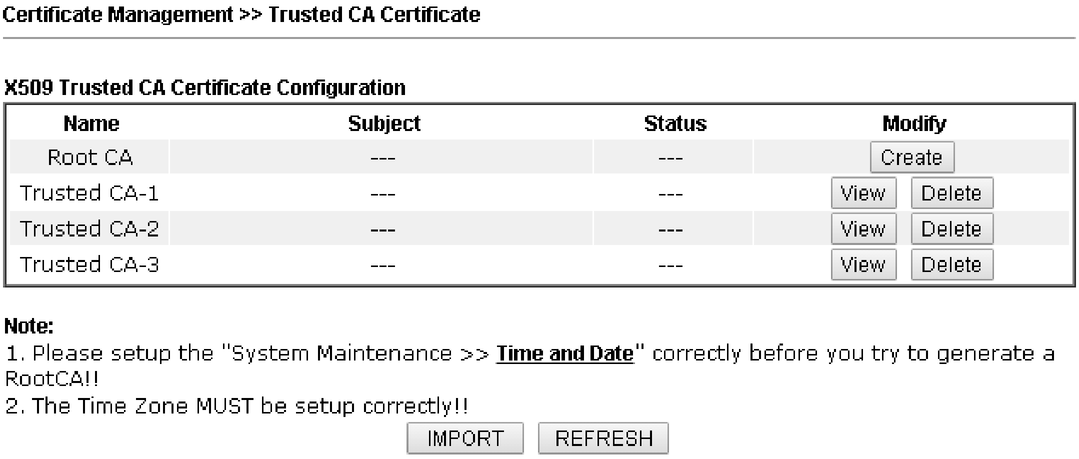
IV-3-2 Trusted CA Certificate

Trusted CA certificate lists three sets of trusted CA certificate. In addition, you can build a RootCA certificate if required.

When the local client and remote client are required to make certificate authentication (e.g., IPsec X.509) for data passing through SSL tunnel and avoiding the attack of MITM, a trusted root certificate authority (Root CA) will be used to authenticate the digital certificates offered by both ends.

However, the procedure of applying digital certificate from a trusted root certificate authority is complicated and time-consuming. Therefore, Vigor router offers a mechanism which allows you to generate root CA to save time and provide convenience for general user. Later, such root CA generated by DrayTek server can perform the issuing of local certificate.

Info	Root CA can be deleted but not edited. If you want to modify the settings for a Root CA, please delete the one and create another one by clicking Create Root CA.



Certificate Management >> Trusted CA Certificate

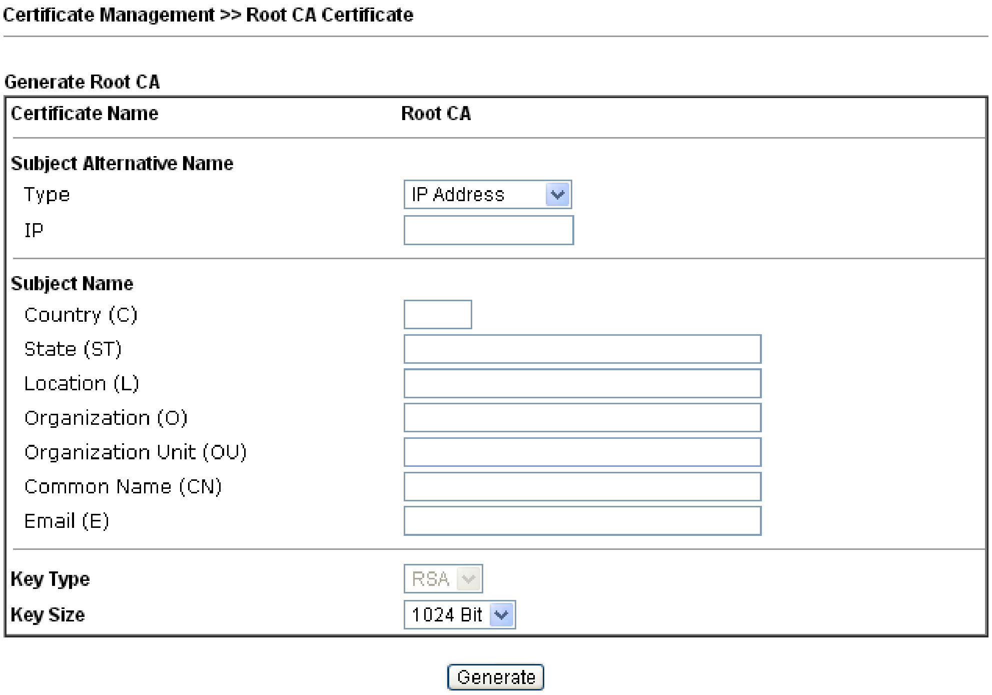
X509 Trusted CA Certificate Configuration

Name	Subject	Status	Modify
Root CA	---	---	Create
Trusted CA-1	---	---	View Delete
Trusted CA-2	---	---	View Delete
Trusted CA-3	---	---	View Delete

Note:
1. Please setup the "System Maintenance >> **Time and Date**" correctly before you try to generate a RootCA!!
2. The Time Zone MUST be setup correctly!!

Creating a RootCA

Click **Create** to open the following page. Type in all the information that the window request such as certifcate name (used for identifying different certificate), subject alternative name type and relational settings for subject name. Then click **GENERATE** again.



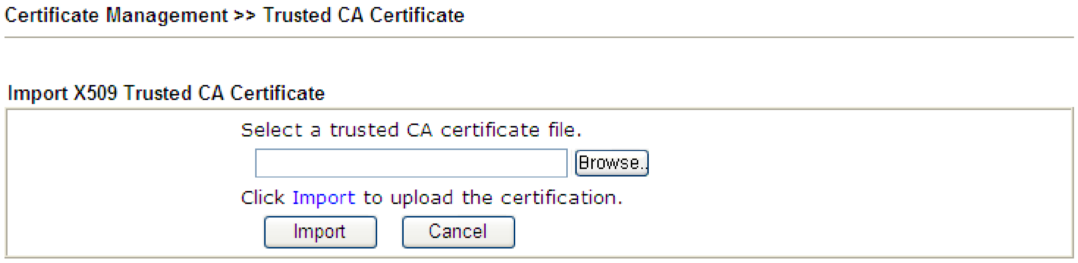
Certificate Management >> Root CA Certificate

Generate Root CA

Certificate Name	Root CA
Subject Alternative Name	
Type	IP Address
IP	
Subject Name	
Country (C)	
State (ST)	
Location (L)	
Organization (O)	
Organization Unit (OU)	
Common Name (CN)	
Email (E)	
Key Type	RSA
Key Size	1024 Bit

Importing a Trusted CA

To import a pre-saved trusted CA certificate, please click **IMPORT** to open the following window. Use **Browse…** to find out the saved text file. Then click **Import**. The one you imported will be listed on the Trusted CA Certificate window.



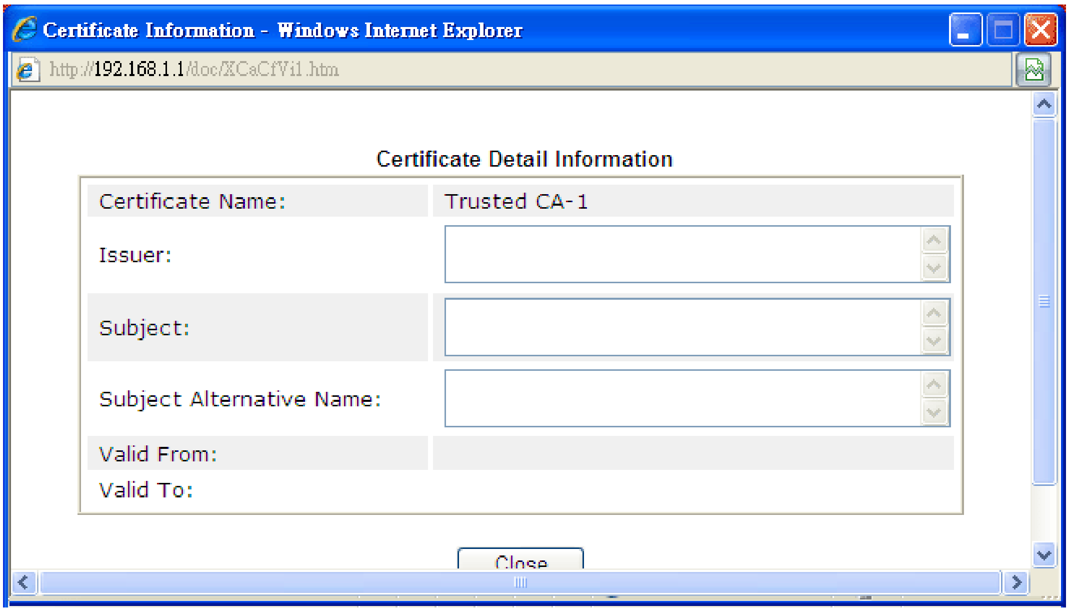
Certificate Management >> Trusted CA Certificate

Import X509 Trusted CA Certificate

Select a trusted CA certificate file.

Click Import to upload the certification.

For viewing each trusted CA certificate, click **View** to open the certificate detail information window. If you want to delete a CA certificate, choose the one and click **Delete** to remove all the certificate information.



Certificate Information - Windows Internet Explorer

http://192.168.1.1/doc/XCaCfVi1.htm

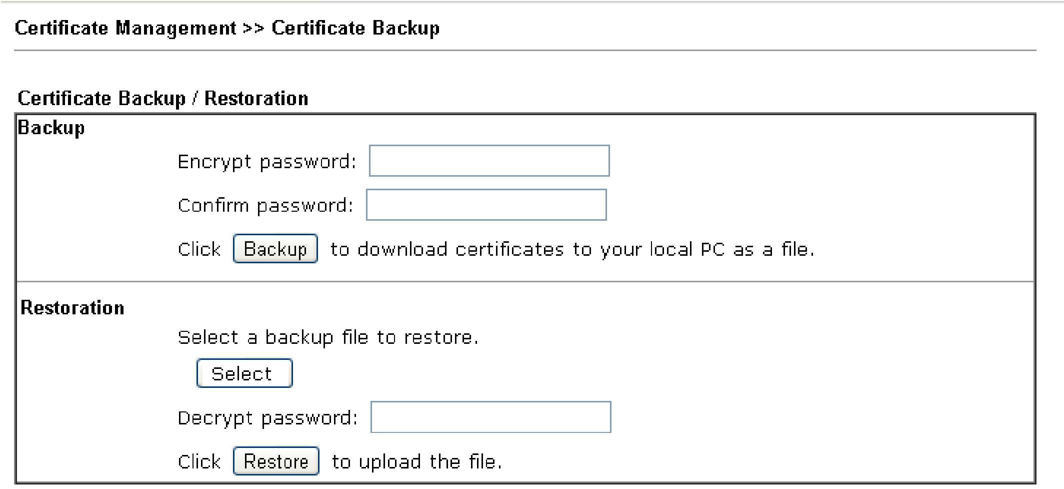
Certificate Detail Information

Certificate Name:	Trusted CA-1
Issuer:	
Subject:	
Subject Alternative Name:	
Valid From:	
Valid To:	

IV-3-3 Certificate Backup

Local certificate and Trusted CA certificate for this router can be saved within one file. Please click **Backup** on the following screen to save them. If you want to set encryption password for these certificates, please type characters in both fields of **Encrypt password** and **Confirm password**.

Also, you can use **Restore** to retrieve these two settings to the router whenever you want.



Certificate Management >> Certificate Backup

Certificate Backup / Restoration

Backup

Encrypt password:

Confirm password:

Click Backup to download certificates to your local PC as a file.

Restoration

Select a backup file to restore.

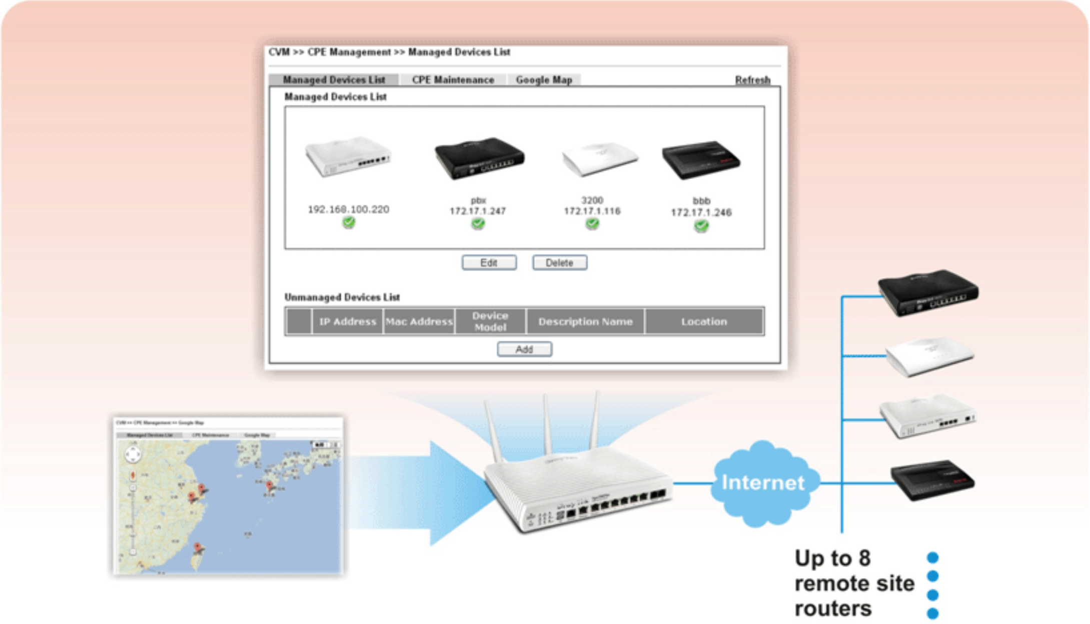
Select

Decrypt password:

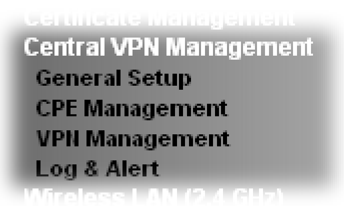
Click Restore to upload the file.

IV-4 Central VPN Management

Vigor2952 can build virtual private network (VPN) between itself and any other TR-069 CPE by the function of central VPN management. In addition, it can be treated as a server (called CVM server) which can manage TR-069 CPE for periodical firmware upgrade, configuration backup and restoring configuration.



Central VPN Management menu can manage the CPE connected through WAN only.

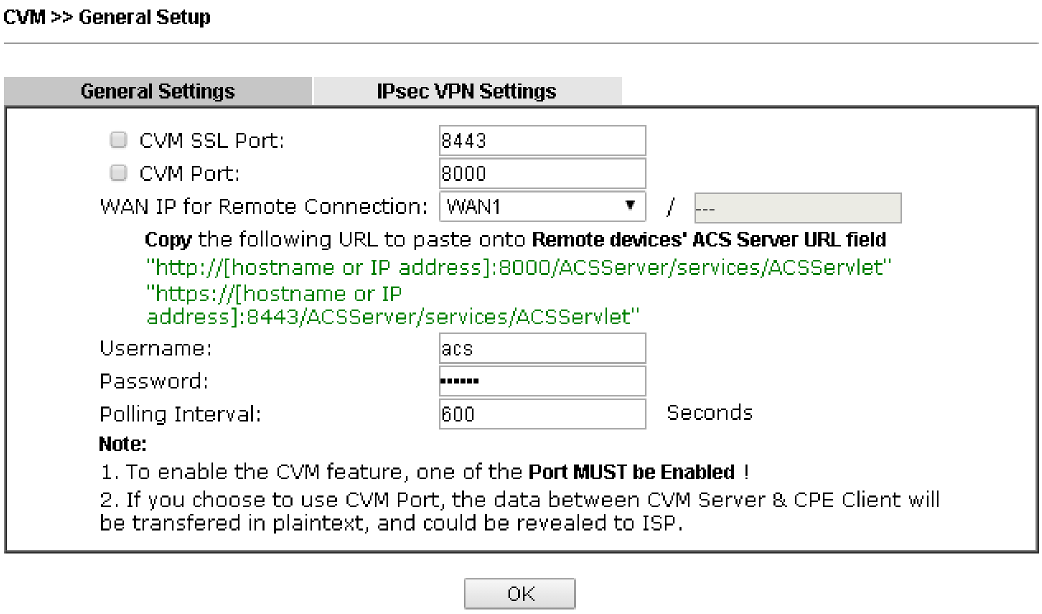


IV-4-1 General Setup

General Setup is used to configure settings which will be used by the clients to register to such Vigor router. Click the tabs of **General Settings** and **IPsec VPN Settings** to configure the basic settings for CVM mechanism.

IV-4-1-1 General Settings

To enable the CVM feature, the first thing you have to do is enabling CVM port or CVM SSL Port.



CVM >> General Setup

General Settings | IPsec VPN Settings

□ CVM SSL Port: 8443

□ CVM Port: 8000

WAN IP for Remote Connection: WAN1 ▼ / ---

Copy the following URL to paste onto **Remote devices' ACS Server URL field**

"http://[hostname or IP address]:8000/ACSServer/services/ACSServlet"

"https://[hostname or IP address]:8443/ACSServer/services/ACSServlet"

Username: acs

Password: ••••••

Polling Interval: 600 Seconds

Note:

1. To enable the CVM feature, one of the **Port MUST be Enabled** !

2. If you choose to use CVM Port, the data between CVM Server & CPE Client will be transfered in plaintext, and could be revealed to ISP.

OK

Available settings are explained as follows:

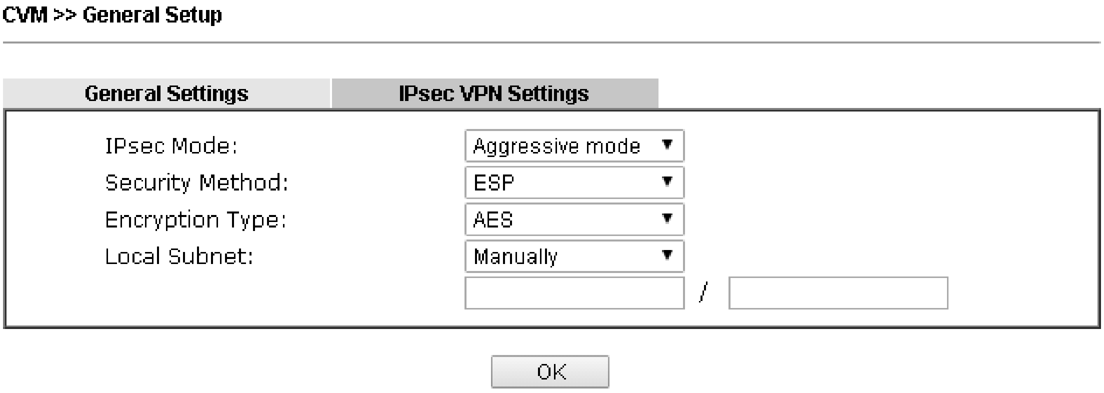
Item	**Description**
CVM SSL Port	Check the box to enable the port setting. Type the port number in the box.
CVM Port	Check the box to enable the port setting. Type the port number in the box.
WAN IP for Remote Connection	For Vigor router can manage only the client from WAN interface, therefore you have to specify which interface will be used for such function. If you choose MANUALLY, you have to specify WAN IP address.

Username	Type a username which will be used by any CPE trying to connect to Vigor router.
Password	Type the password for the user.
Polling Interval	Type the time value (unit is second). The range is from 60 ~ 86400.

After finishing all the settings here, please click **OK** to save the configuration.

IV-4-1-2 IPsec VPN Settings

Central VPN management is operated through IPsec VPN connection.



CVM >> General Setup

IPsec Mode: Aggressive mode

Security Method: ESP

Encryption Type: AES

Local Subnet: Manually

/

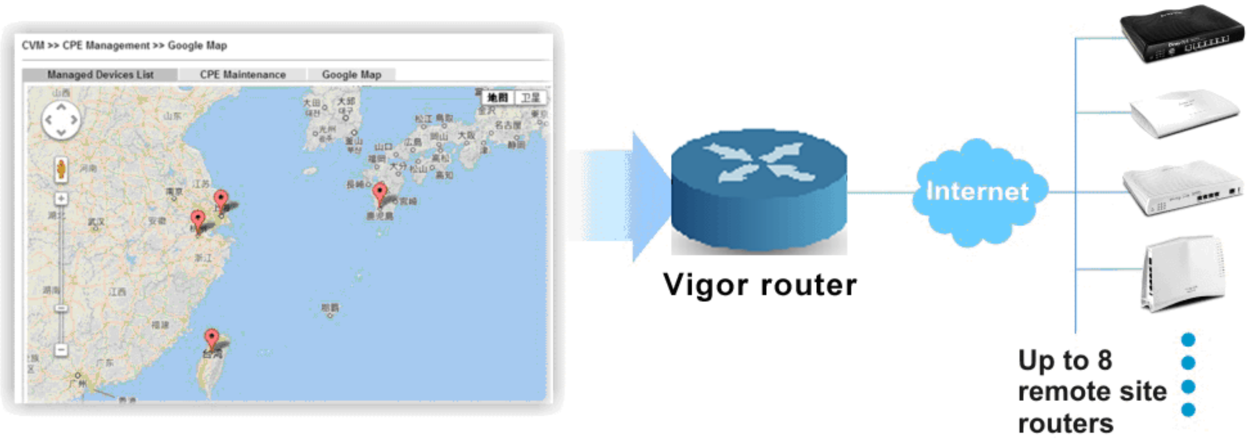
Available settings are explained as follows:

Item	Description
IPsec Mode	Choose **Aggressive** or **Main** as the IPsec Mode.
Security Method	Choose one of the following methods (AH or ESP) for the security of data transmission. For example, choose **AH** to specify the IPsec protocol for the Authentication Header protocol. The data will be authenticated but not be encrypted.
Encryption Type	Choose one of the selections as the encryption type.
Local Subnet	Type the IP address and subnet mask of local host.

After finishing all the settings here, please click **OK** to save the configuration.

IV-4-2 CPE Management

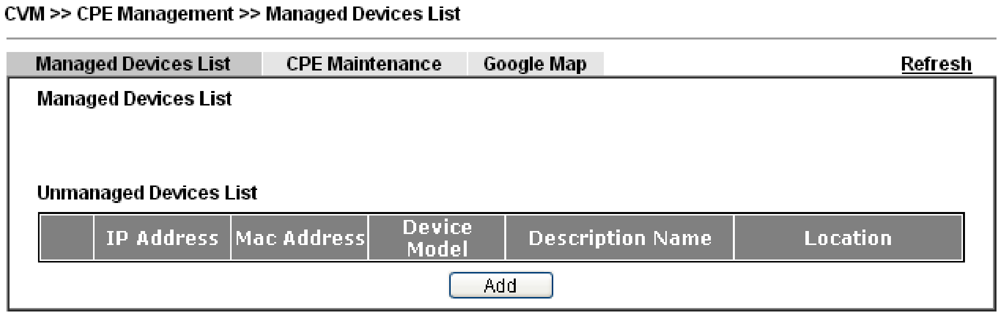
All the CPEs managed by Vigor2952 Series can be seen with icons from this page. Before using such feature, make sure the CVM port has been enabled and configured properly.



IV-4-2-1 Managed Device List

This page allows you to manage the CPEs connected to Vigor2952 Series.

Page without CPE connected



CVM >> CPE Management >> Managed Devices List

Managed Devices List | CPE Maintenance | Google Map | Refresh

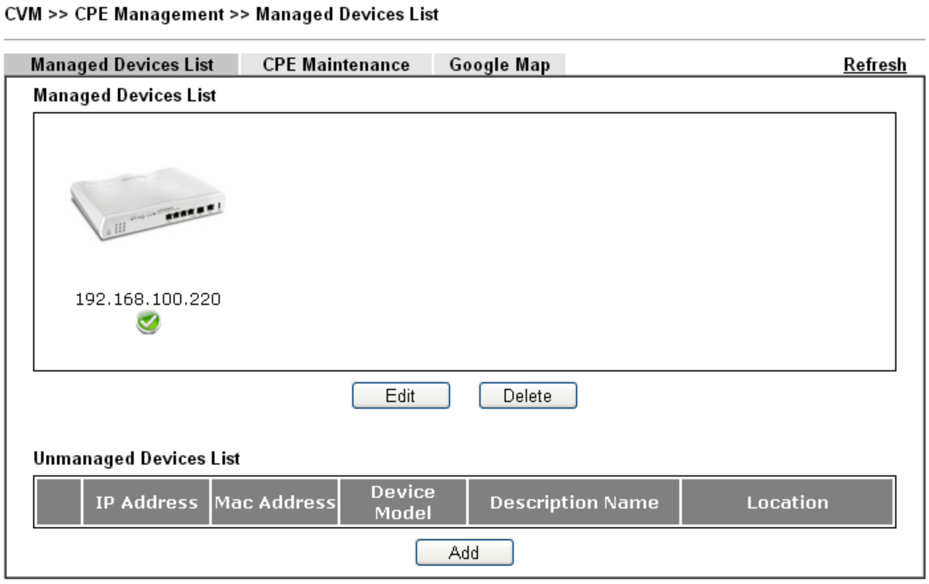
Managed Devices List

Unmanaged Devices List

	IP Address	Mac Address	Device Model	Description Name	Location

Add

Page with CPE connected



CVM >> CPE Management >> Managed Devices List

Managed Devices List | CPE Maintenance | Google Map | Refresh

Managed Devices List

192.168.100.220 ✓

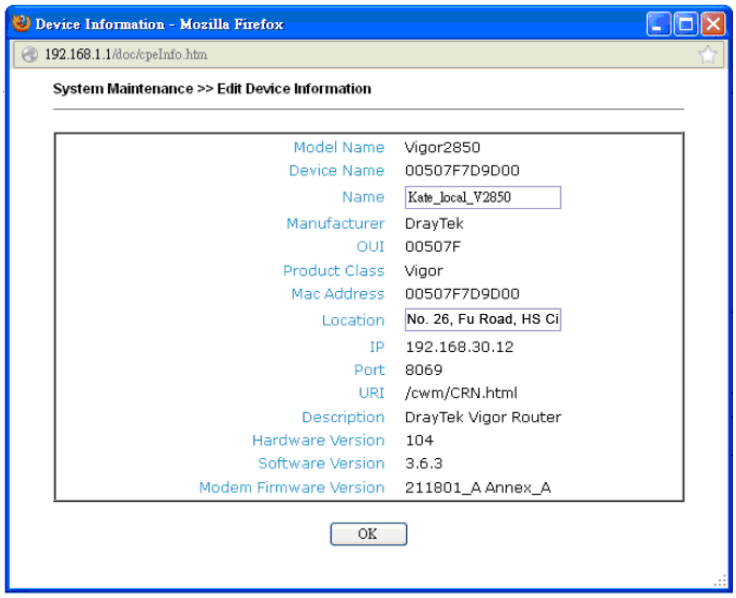
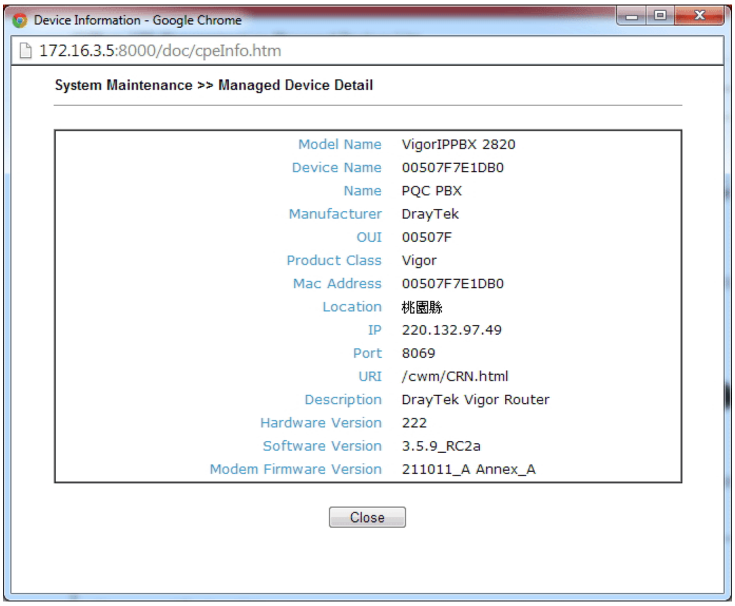
Edit Delete

Unmanaged Devices List

	IP Address	Mac Address	Device Model	Description Name	Location

Add

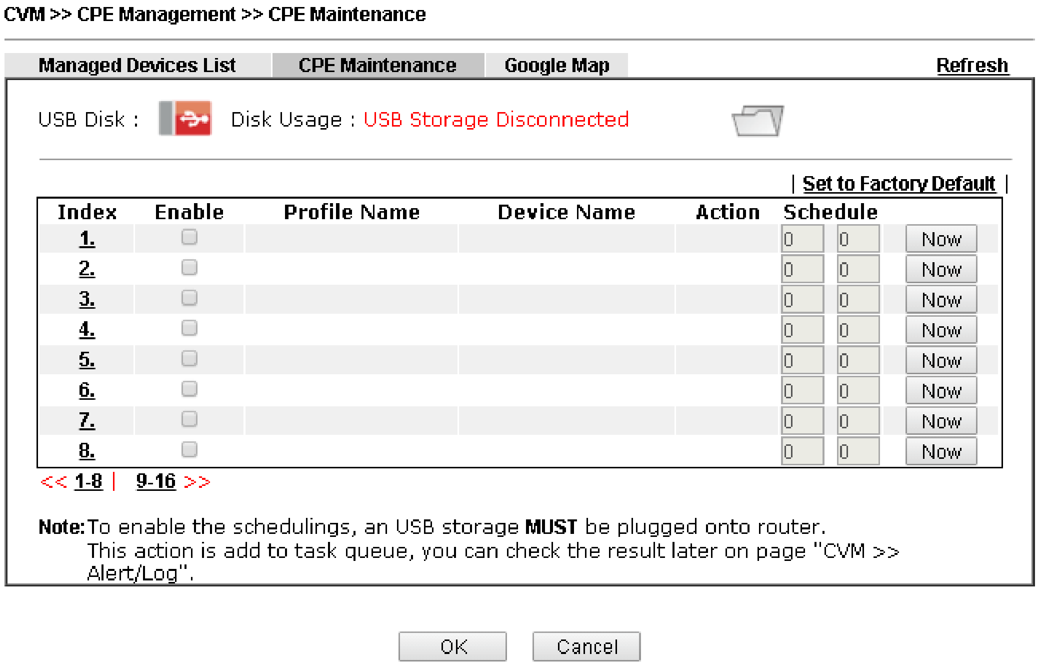
Available settings are explained as follows:

Item	Description
Managed Devices List	This area displays device icons (up to 8) for the CPE managed by Vigor2952 Series. **Edit** – To modify the name and location of specific CPE, click the one you want and click the **Edit** button. A pop up window will appear. Simply change the name and/or location manually.  Device Information - Mozilla Firefox 192.168.1.1/doc/cpeInfo.htm System Maintenance >> Edit Device Information Model Name Vigor2850 Device Name 00507F7D9D00 Name Kate_local_V2850 Manufacturer DrayTek OUI 00507F Product Class Vigor Mac Address 00507F7D9D00 Location No. 26, Fu Road, HS Ci IP 192.168.30.12 Port 8069 URI /cwm/CRN.html Description DrayTek Vigor Router Hardware Version 104 Software Version 3.6.3 Modem Firmware Version 211801_A Annex_A OK **Delete** – To disconnect the management of any CPE, click the CPE icon you want and click the Delete button. Double-clicking the CPE icon also can pop up the Managed Device Detail window. However, you cannot modify any data on the window.  Device Information - Google Chrome 172.16.3.5:8000/doc/cpeInfo.htm System Maintenance >> Managed Device Detail Model Name VigorIPPBX 2820 Device Name 00507F7E1DB0 Name PQC PBX Manufacturer DrayTek OUI 00507F Product Class Vigor Mac Address 00507F7E1DB0 Location 桃園縣 IP 220.132.97.49 Port 8069 URI /cwm/CRN.html Description DrayTek Vigor Router Hardware Version 222 Software Version 3.5.9_RC2a Modem Firmware Version 211011_A Annex_A Close
Unmanaged Devices List	Any device (CPE) which follows the standard of TR-069 can be configured and can be detected by Vigor2952 Series automatically. Only eight remote devices can be managed by Vigor2952 at one time. Therefore, other remote devices detected by Vigor2952 Series might not be displayed in such field.

	Add – Move the selected device from Unmanaged Devices List to Managed Devices List. **IP Address** – Display the IP address of the remote device. **Mac Address** – Display the MAC address of the remote device. **Device Model** – Display the model name of the remote device. **Description Name** – Define the name or type the additional description of CPE for identification in VPN management and CPE management. **Location** – Type the location (address) of the CPE to be displayed by Google Map.
Refresh	Click it to refresh current web page.

IV-4-2-2 CPE Maintenance

This area displays all the profiles which are created for applying to the managed device. This page can help the administrator to do maintenance jobs like firmware upgrade, configuration backup, configuration restoration and etc.



CVM >> CPE Management >> CPE Maintenance

USB Disk : 🟥 Disk Usage : USB Storage Disconnected

Index	Enable	Profile Name	Device Name	Action	Schedule		
1.	□				0	0	Now
2.	□				0	0	Now
3.	□				0	0	Now
4.	□				0	0	Now
5.	□				0	0	Now
6.	□				0	0	Now
7.	□				0	0	Now
8.	□				0	0	Now

<< 1-8 | 9-16 >>

Note: To enable the schedulings, an USB storage **MUST** be plugged onto router.
This action is add to task queue, you can check the result later on page "CVM >> Alert/Log".

Available settings are explained as follows:

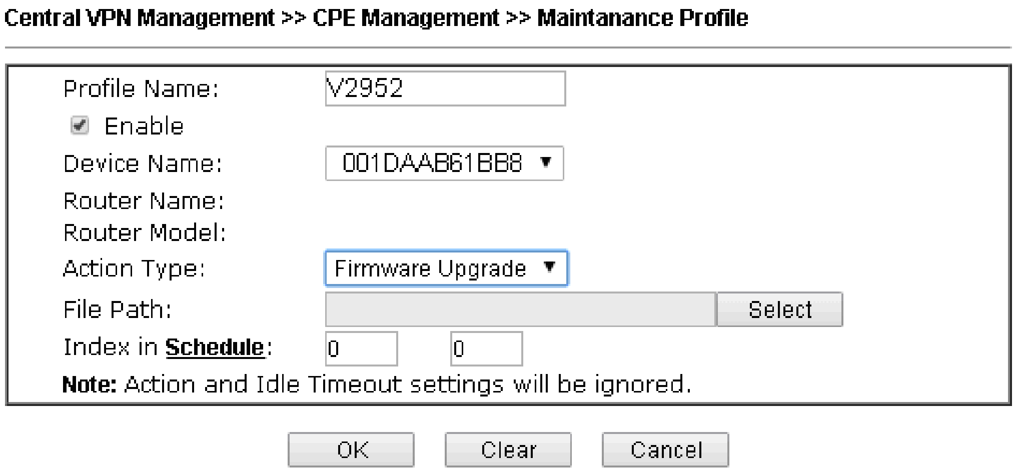
Item	Description
Refresh	Click it to refresh current page.
USB Disk	USB Disk : 🟩 - It means a USB disk connecting to Vigor2952. USB Disk : 🟥 - It means no USB disk connecting to Vigor2952.
Disk Usage	Disk Usage : 1084MB / 2009MB - When a USB disk connects to Vigor2952, the disk usage and the disk capacity will be displayed in such field. Disk Usage : USB Storage Disconnected - When there is no

	USB disk connecting to Vigor2952, such message will be displayed in this field.
📁	Click the icon to see the content inside the USB disk.
Set to Factory Default	Click to clear all indexes.
Index	Display the number of the profile that you can edit.
Enable	Check the box to enable such index profile.
Profile Name	Display the name of the maintenance profile.
Device Name	Display the name of the managed CPE that the maintenance profile will apply to.
Action	Display the action that managed CPE shall accept.
Schedule	Display the schedule profiles selected for such profile.
Now	The action will be performed for the selected CPE immediately.

How to add a new Maintenance Profile

Follow the steps below to create a new maintenance profile.

1. Click any index number link, e.g., Index 1.
2. The Maintenance page appears.



Central VPN Management >> CPE Management >> Maintanance Profile

Profile Name:	V2952
☑ Enable	
Device Name:	001DAAB61BB8 ▼
Router Name:	
Router Model:	
Action Type:	Firmware Upgrade ▼
File Path:	[ ] Select
Index in **Schedule**:	0 0

Note: Action and Idle Timeout settings will be ignored.

Info

When restoring configuration to a CPE, make sure the configuration file you selected was backup from this CPE before. Because restoring from another device's configuration file may cause serious problem (e.g., Both devices have different ISP username/ password. Restoring configuration from one CPE to the other will cause Internet connection not being online).

Available parameters are listed as follows:

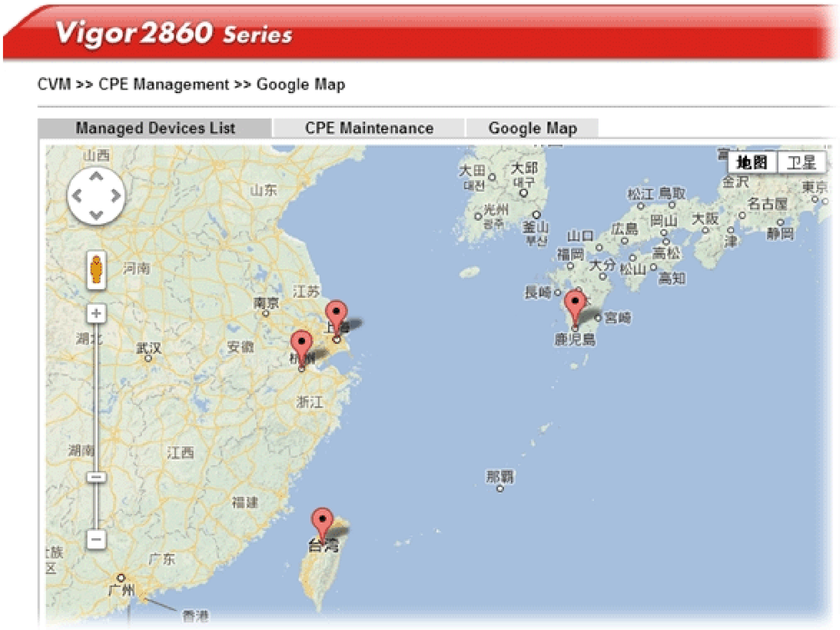
Item	Description
Profile Name	Type the name of the maintenance profile.
Enable	Check it to enable such profile.
Device Name	The drop down list will display all the CPE devices detected by Vigor2952 Series. Choose the one which will be applied with

	such new created profile.
Action Type	There are three actions for you to choose for such profile. ● **Config Backup** – It means such profile will be used for configuration backup of the selected CPE. ● **Config Restore** – It means such profile will be used for restoring the configuration of the selected CPE. **Info** When restoring configuration to a CPE, make sure the configuration file you selected was backup from this CPE before. Because restoring from another device's configuration file may cause serious problem (e.g., Both devices have different ISP username/ password. Restoring configuration from one CPE to the other will cause Internet connection not being online). ● **Firmware Upgrade** – It means such profile will be used for firmware upgrade.
File Path	Click **Select** to locate the file you want to save, restore or upgrade for CPE.
Index in Schedule	Vigor2952 Series will perform the specified action to the selected CPE based on the schedule configured here. Specify one or two schedule profiles (represented by number) here.

3. Enter all the settings and click **OK**.
4. A new maintenance profile has been created.

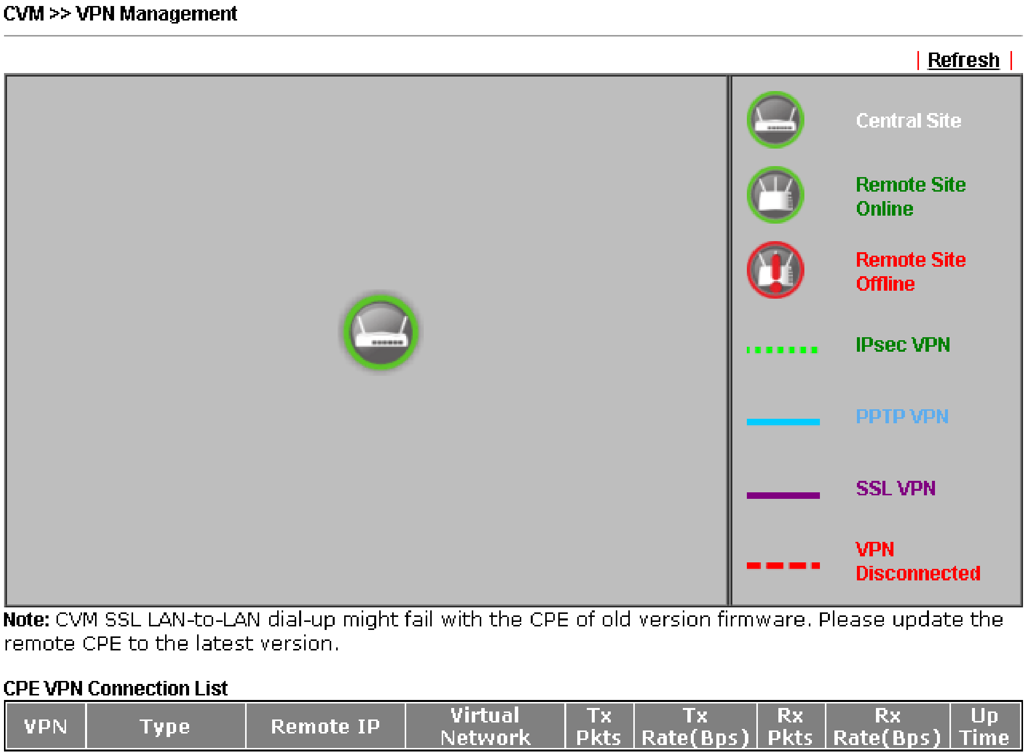
IV-4-2-3 Google Map

To display the **location** of the managed CPE with a bird’s eye view, open **Central VPN Management>>CPE Management** and click the tab of **Google Map**.



IV-4-3 VPN Management

An easy and quick method is offered to configure VPN settings for building VPN connection automatically between Vigor2952 Series (treated as VPN server) and other Vigor router (treated as CPE device, i.e., VPN client).



CVM >> VPN Management

Note: CVM SSL LAN-to-LAN dial-up might fail with the CPE of old version firmware. Please update the remote CPE to the latest version.

CPE VPN Connection List

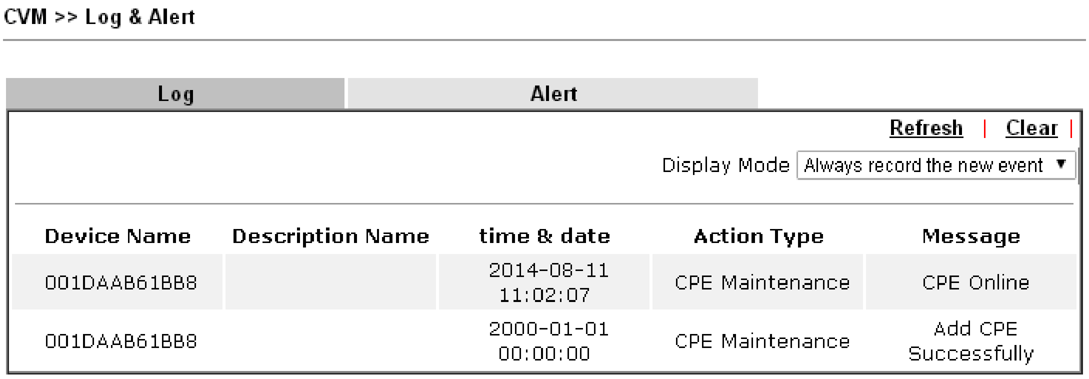
VPN	Type	Remote IP	Virtual Network	Tx Pkts	Tx Rate(Bps)	Rx Pkts	Rx Rate(Bps)	Up Time

Available parameters are listed as follows:

Item	Description
VPN Management	
CPE VPN Connection List	
VPN	Display the name of the LAN-to-LAN profile. It is generated automatically when you click the PPTP/IPsec/Advanced button to build the VPN connection between Vigor2952 and remote CPE.
Type	Display the dial-in type and the authentication method.
Remote IP	Display the IP address of the remote CPE and the interface.
Virtual Network	Display the IP address and subnet mask of Vigor2952 Series.
Tx Pkts	Display the number of the transmitted packets.
Tx Rate(Bps)	Display the number of the transmitted rate.
Rx Pkts	Display the number of the received packets.
Rx Rate(Bps)	Display the number of the received rate.
UP Time	Display the connection time of such VPN.

IV-4-4 Log & Alert

This page offers brief information to identify the CPE connected to Vigor2952 Series.


CVM >> Log & Alert

Display Mode: Always record the new event

Device Name	Description Name	time & date	Action Type	Message
001DAAB61BB8		2014-08-11 11:02:07	CPE Maintenance	CPE Online
001DAAB61BB8		2000-01-01 00:00:00	CPE Maintenance	Add CPE Successfully

Available settings are explained as follows:

Item	Description
Display Mode	Choose the mode you want to display the related information on the following table. ● **Stop record when fulls -** when the capacity of CVM log is full, the system will stop recording. ● **Always record the new event -** only the newest events will be recorded by the system.
Device Name	Display the name of the managed CPE.
Description Name	Display the brief explanation for the managed CPE.
Time & date	Display the time and date that the managed CPE scanned by Vigor2952 Series.
Action Type	Display the action that Vigor2952 Series will perform for the managed CPE.
Message	Display the information for each event.

The Alert page offers brief information to identify the CPE connected to Vigor2952 Series.

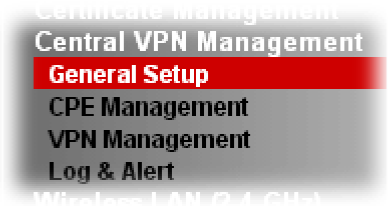
Application Notes

A-1 CVM Application - How to manage the CPE (router) through Vigor2952 Series?

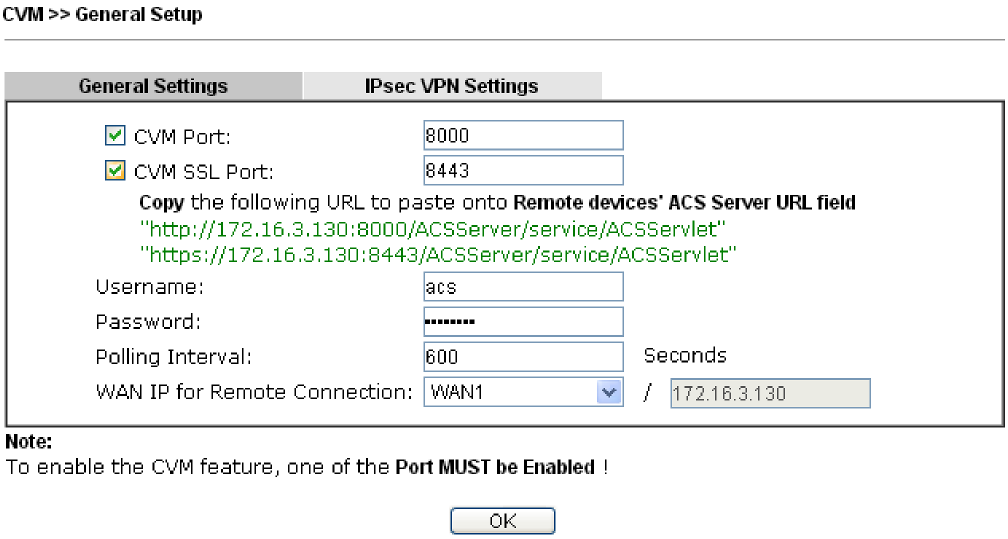
To manage CPEs through Vigor2952 Series, you have to set URL on CPE first and set username and password for Vigor2952 Series. All the CPE configuration will be done through Vigor2952 series.

Configure CVM Settings on Vigor2952 Series

1. Access into the web user interface of Vigor2952 Series.
2. Open **Central VPN Management>>General Setup.**



3. In the following page, check the boxes for CVM Port and CVM SSL Port to enable the port setting. Type the values for **CVM Port**, **CVM SSL Port, Username**, and **Password** respectively. Remember the values configured in this page.



CVM >> General Setup

General Settings | IPsec VPN Settings

☑ CVM Port: 8000

☑ CVM SSL Port: 8443

Copy the following URL to paste onto **Remote devices' ACS Server URL field**
"http://172.16.3.130:8000/ACSServer/service/ACSServlet"
"https://172.16.3.130:8443/ACSServer/service/ACSServlet"

Username: acs

Password: ••••••••

Polling Interval: 600 Seconds

WAN IP for Remote Connection: WAN1 / 172.16.3.130

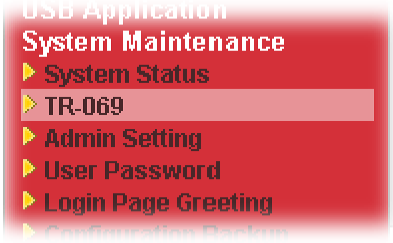
Note:
To enable the CVM feature, one of the **Port MUST be Enabled** !

4. Click **OK** to save the settings.

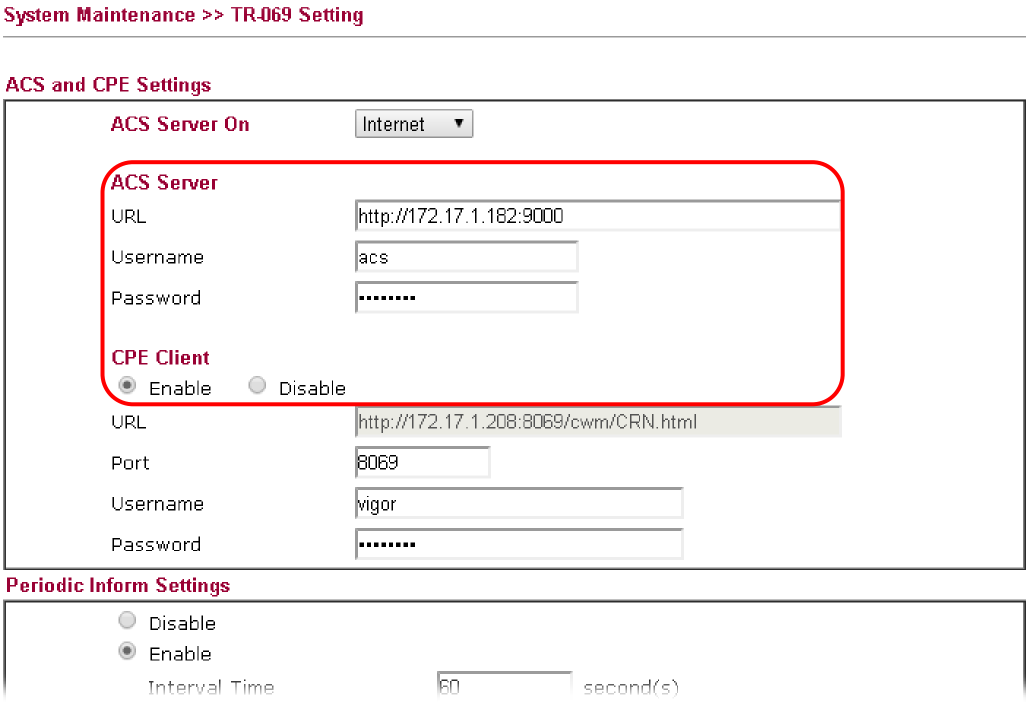
Configure Settings on CPE

1. In the end of the CPE, access into the web user interface of the CPE (e.g., Vigor2850 series in this case). Open a web browser (for example, **IE**, **Mozilla Firefox** or **Netscape**) and type **http://192.168.1.1.**

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



3. In the field of **ACS Server**, type the URL (IP address with port number) of Vigor2952 Series and type the same Username and Password defined on the page of **Central VPN Management>>General Setup** in Vigor2952 Series. Then, click **Enable** for CPE Client and then click **OK** to save the settings.



System Maintenance >> TR-069 Setting

ACS and CPE Settings

ACS Server On: Internet ▼

ACS Server

URL	http://172.17.1.182:9000
Username	acs
Password	••••••••

CPE Client

● Enable ○ Disable

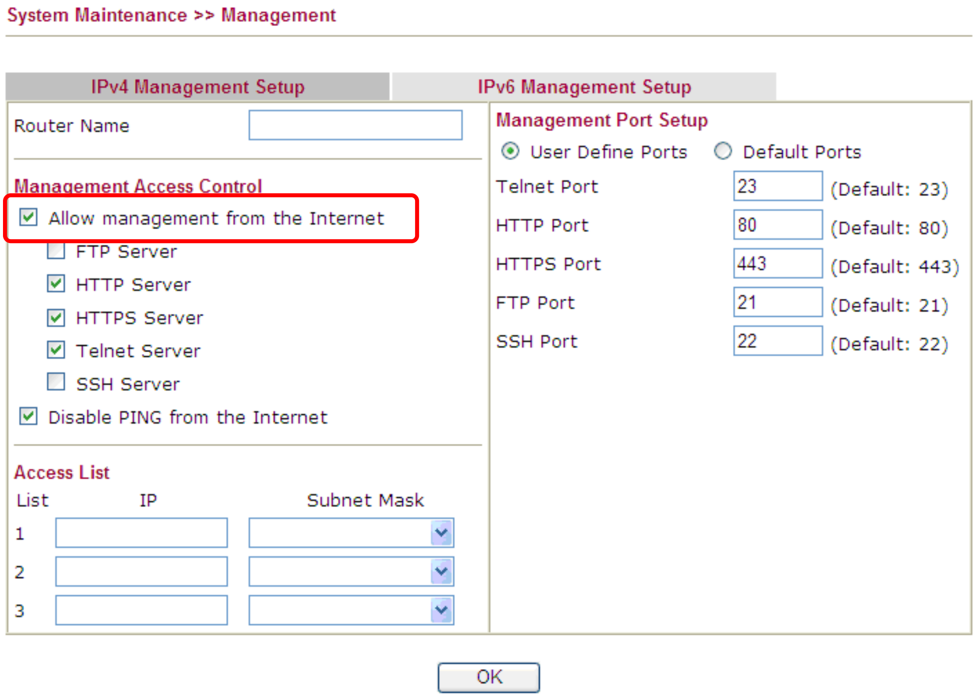
URL	http://172.17.1.208:8069/cwm/CRN.html
Port	8069
Username	vigor
Password	••••••••

Periodic Inform Settings

○ Disable
● Enable
Interval Time 60 second(s)

4. Open **System Maintenance>>Management Setup**.

5. Check **Allow management from the Internet** to set management access control and click **OK.**



System Maintenance >> Management

IPv4 Management Setup | IPv6 Management Setup

Router Name

Management Access Control

☑ Allow management from the Internet

□ FTP Server

☑ HTTP Server

☑ HTTPS Server

☑ Telnet Server

□ SSH Server

☑ Disable PING from the Internet

Access List

List	IP	Subnet Mask
1		
2		
3		

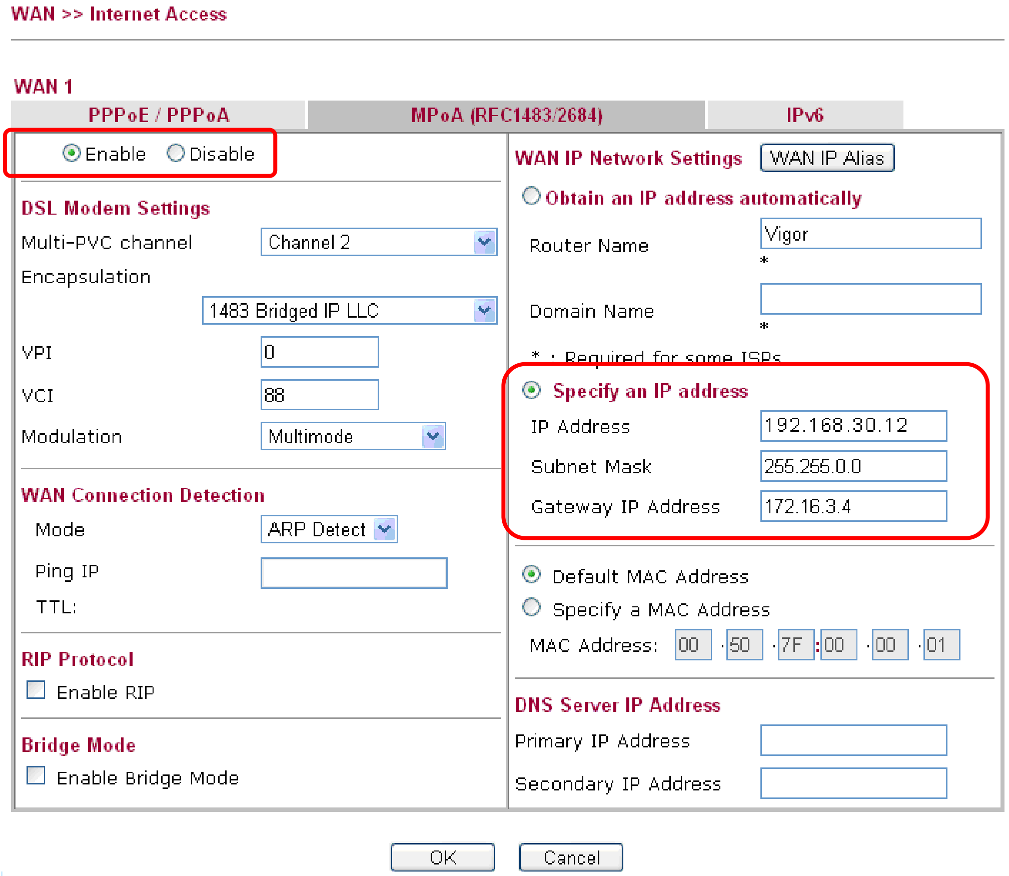
Management Port Setup

● User Define Ports ○ Default Ports

Telnet Port	23	(Default: 23)
HTTP Port	80	(Default: 80)
HTTPS Port	443	(Default: 443)
FTP Port	21	(Default: 21)
SSH Port	22	(Default: 22)

6. Open **WAN>>Internet Access.** Use the drop down list of **Access Mode** on WAN1 to select **MPoA** (RFC1483/2684). Then, click **Details Page**.

7. Click **Specify an IP address**. Type correct WAN IP address, subnet mask and gateway IP address for your CPE. Then click **OK**.



WAN >> Internet Access

WAN 1

PPPoE / PPPoA | MPoA (RFC1483/2684) | IPv6

● Enable ○ Disable

DSL Modem Settings

Multi-PVC channel	Channel 2
Encapsulation	1483 Bridged IP LLC
VPI	0
VCI	88
Modulation	Multimode

WAN Connection Detection

Mode	ARP Detect
Ping IP	
TTL:	

RIP Protocol

□ Enable RIP

Bridge Mode

□ Enable Bridge Mode

WAN IP Network Settings WAN IP Alias

○ Obtain an IP address automatically

Router Name	Vigor *
Domain Name	 *

* : Required for some ISPs

● Specify an IP address

IP Address	192.168.30.12
Subnet Mask	255.255.0.0
Gateway IP Address	172.16.3.4

● Default MAC Address

○ Specify a MAC Address

MAC Address: 00 :50 :7F :00 :00 :01

DNS Server IP Address

Primary IP Address	
Secondary IP Address	

Info

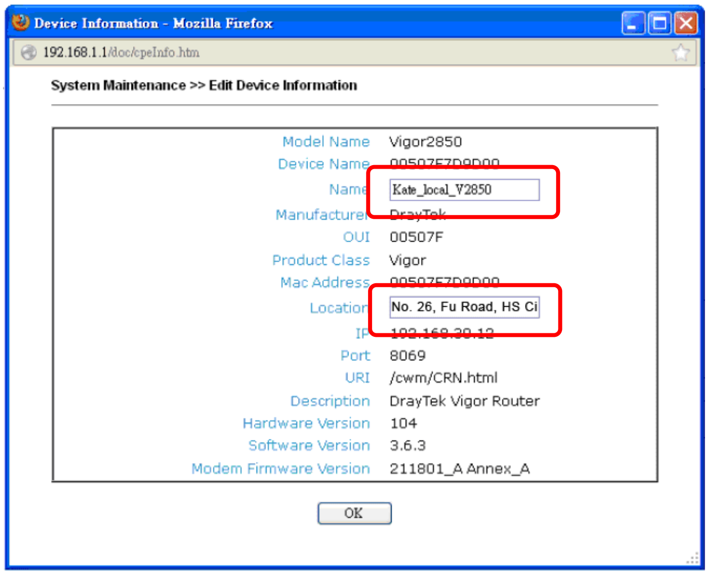
Reboot the CPE device and re-log into Vigor2952 Series. CPE which has registered to Vigor2952 Series will be captured and displayed on the page of Central VPN Management>>CPE Management.

Check CPE Maintenance Page

1. Return to the web user interface of Vigor2952 Series.

2. Open **Central VPN Management>>VPN Management**. Now there is one CPE displayed on the field of Unmanaged Devices List.

3. Choose the one (Vigor2850) from Unmanaged Devices List and click **Add**. The following dialog will be popped up. Type the name and the location of the router respectively. Click **OK** to save the configuration.



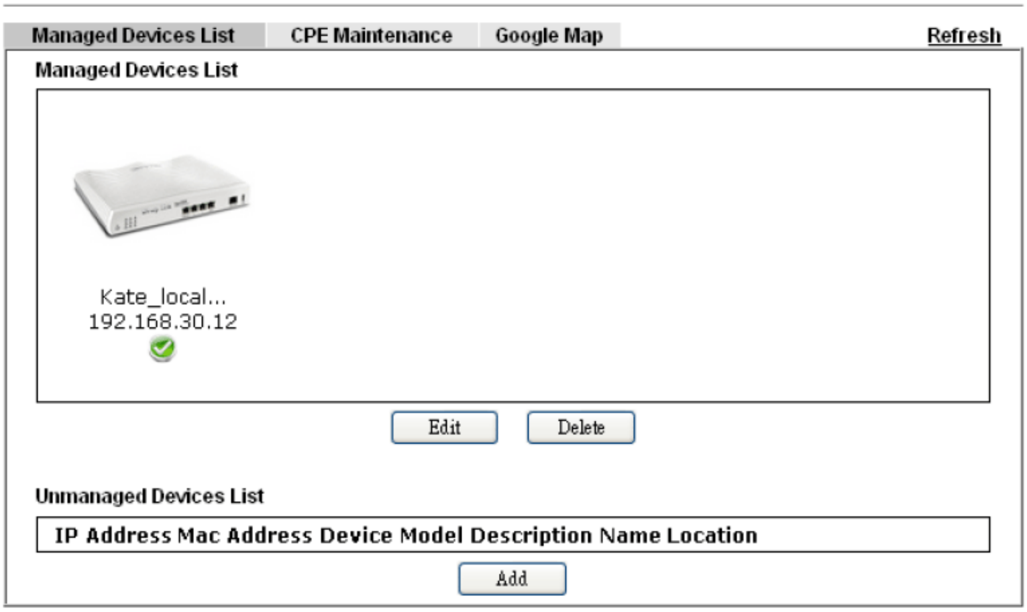
Device Information - Mozilla Firefox

192.168.1.1/doc/cpeInfo.htm

System Maintenance >> Edit Device Information

Model Name	Vigor2850
Device Name	00507F7D9D00
Name	Kate_local_V2850
Manufacturer	DrayTek
OUI	00507F
Product Class	Vigor
Mac Address	00507F7D9D00
Location	No. 26, Fu Road, HS Ci
IP	192.168.30.12
Port	8069
URI	/cwm/CRN.html
Description	DrayTek Vigor Router
Hardware Version	104
Software Version	3.6.3
Modem Firmware Version	211801_A Annex_A

4. The selected CPE will be moved and displayed on Managed Devices List which means it is controlled / managed by Vigor2952 Series from now on.



Managed Devices List

Kate_local...
192.168.30.12

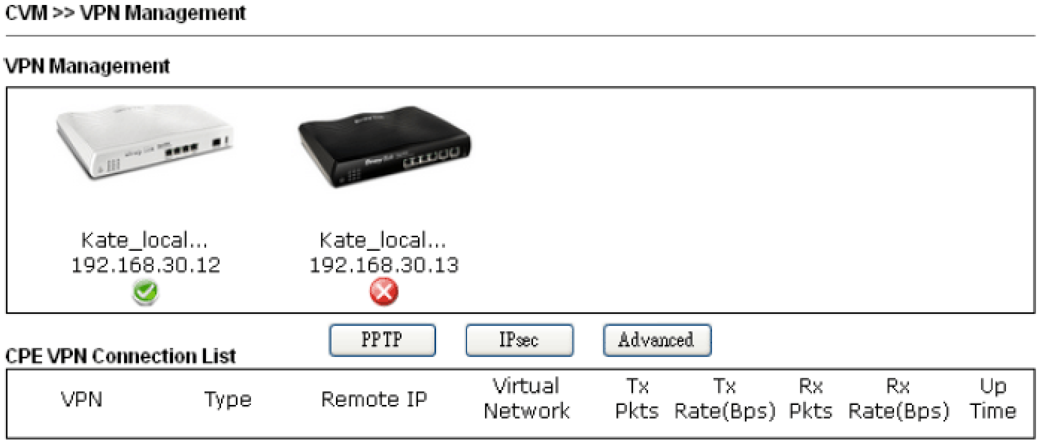
Unmanaged Devices List

IP Address	Mac Address	Device Model	Description	Name	Location

A-2 CVM Application - How to build the VPN between remote devices and Vigor2952 Series?

When a remote device is managed by Vigor2952 Series, it is easy to build VPN between these two devices.

1. Access into the web user interface of Vigor2952 Series.
2. Open **Central VPN Management>>CPE Management**.



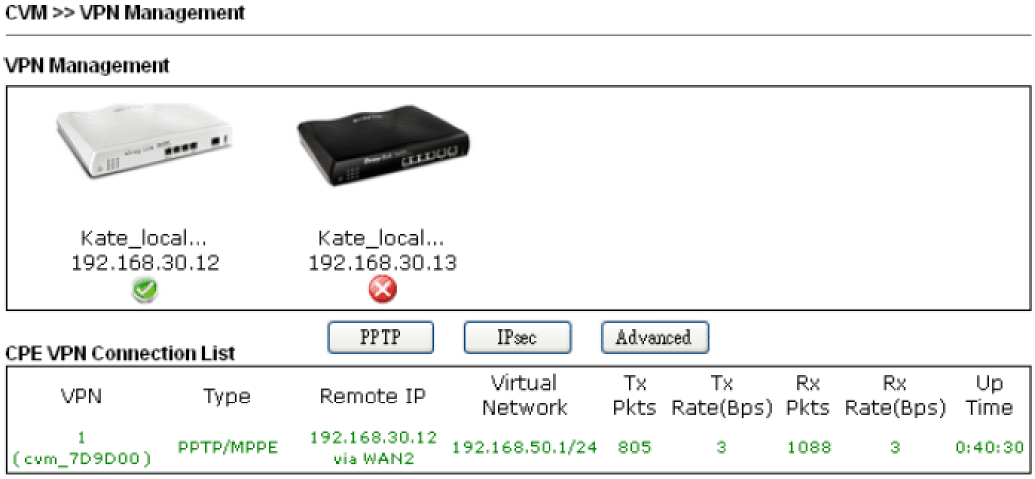
CVM >> VPN Management

VPN Management

CPE VPN Connection List

VPN	Type	Remote IP	Virtual Network	Tx Pkts	Tx Rate(Bps)	Rx Pkts	Rx Rate(Bps)	Up Time

3. Click the device icon (marked with ✓) and click the **PPTP/IPsec** button.
4. Wait for a moment. If VPN is built successfully, related information will be displayed on **CPE VPN Connection List**.



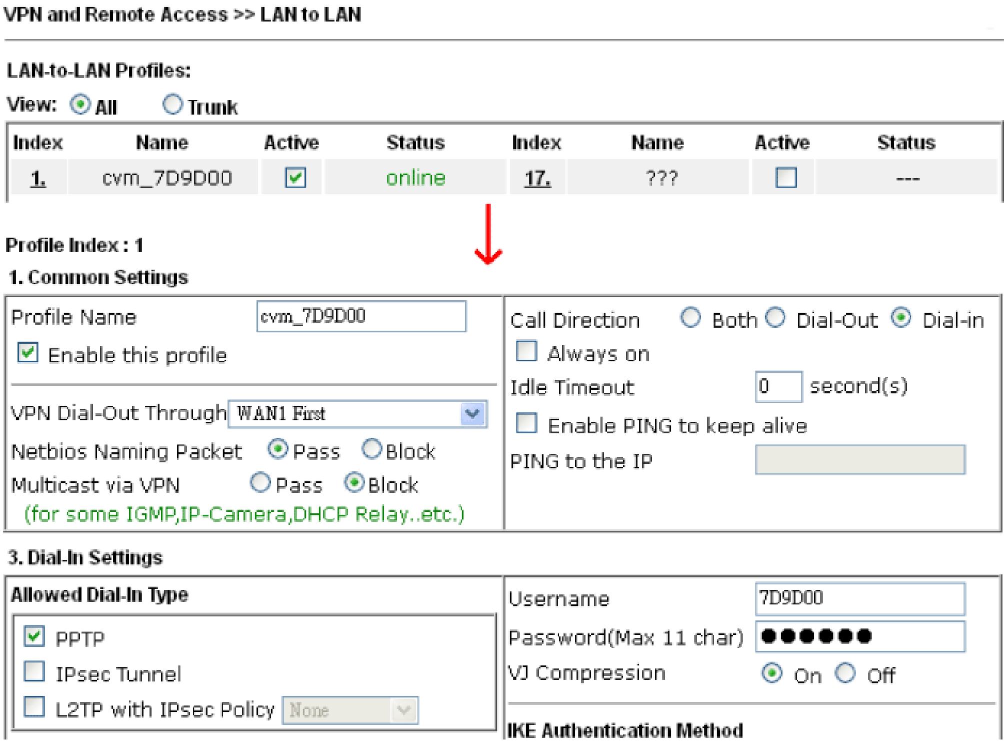
CVM >> VPN Management

VPN Management

CPE VPN Connection List

VPN	Type	Remote IP	Virtual Network	Tx Pkts	Tx Rate(Bps)	Rx Pkts	Rx Rate(Bps)	Up Time
1 (cvm_7D9D00)	PPTP/MPPE	192.168.30.12 via WAN2	192.168.50.1/24	805	3	1088	3	0:40:30

5. A LAN to LAN profile for such VPN will be generated automatically. You can access into **VPN and Remote Access>>LAN to LAN** of the remote device for viewing the detailed information.



VPN and Remote Access >> LAN to LAN

LAN-to-LAN Profiles:

View: ● All ○ Trunk

Index	Name	Active	Status	Index	Name	Active	Status
1.	cvm_7D9D00	☑	online	17.	???	□	---

Profile Index : 1

1. Common Settings

Profile Name: cvm_7D9D00

☑ Enable this profile

VPN Dial-Out Through: WAN1 First

Netbios Naming Packet ● Pass ○ Block

Multicast via VPN ○ Pass ● Block

(for some IGMP,IP-Camera,DHCP Relay..etc.)

Call Direction ○ Both ○ Dial-Out ● Dial-in

□ Always on

Idle Timeout: 0 second(s)

□ Enable PING to keep alive

PING to the IP

3. Dial-In Settings

Allowed Dial-In Type

☑ PPTP

□ IPsec Tunnel

□ L2TP with IPsec Policy: None

Username: 7D9D00

Password(Max 11 char): ●●●●●●

VJ Compression ● On ○ Off

IKE Authentication Method

Info

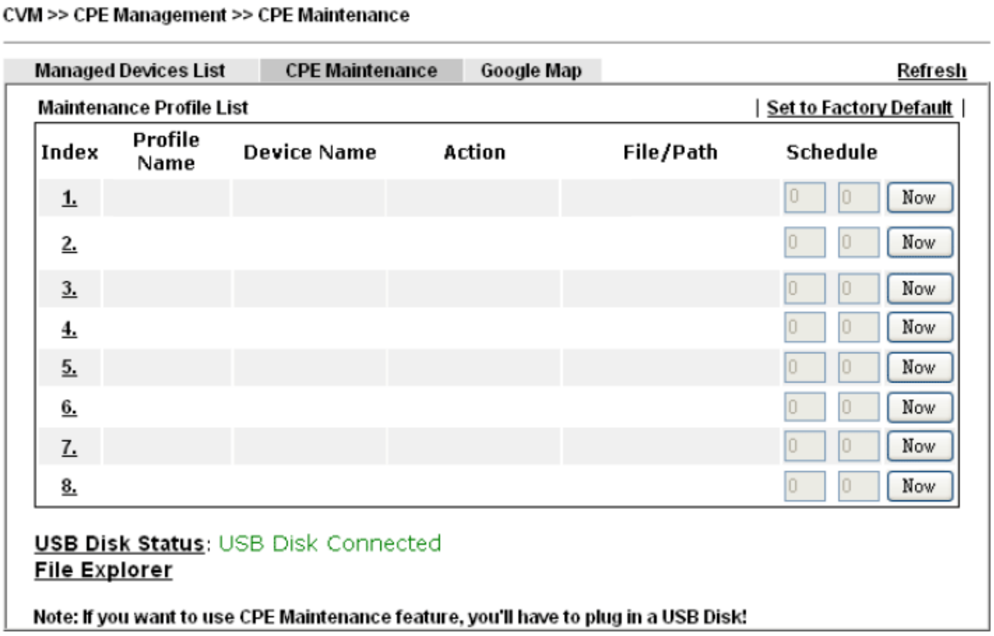
The profile name is created automatically by the system. Do not modify any value in such page to avoid VPN error.

A-3 CVM Application - How to upgrade CPE firmware through Vigor2952 Series?

Download the newest firmware from your Draytek website to USB Storage Disk for the device (e.g., Vigor2850) managed by Vigor2952 Series.

Vigor2850, as an example, is chosen for Vigor2952 to perform the CPE firmware upgrade remotely in this case.

1. Plug in USB storage disk onto Vigor2952 Series via USB interface. Make sure the USB disk has been installed correctly, otherwise, the firmware upgrade will not be successful.
2. Access into web user interface of Vigor2952 Series. Open Central **VPN Management>>CPE Management** and click the **CPE Maintenance** tab.



Maintenance Profile List

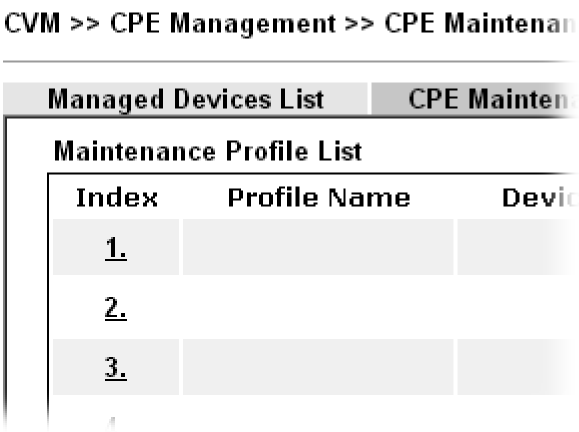
Index	Profile Name	Device Name	Action	File/Path	Schedule
1.					0 0 Now
2.					0 0 Now
3.					0 0 Now
4.					0 0 Now
5.					0 0 Now
6.					0 0 Now
7.					0 0 Now
8.					0 0 Now

USB Disk Status: USB Disk Connected

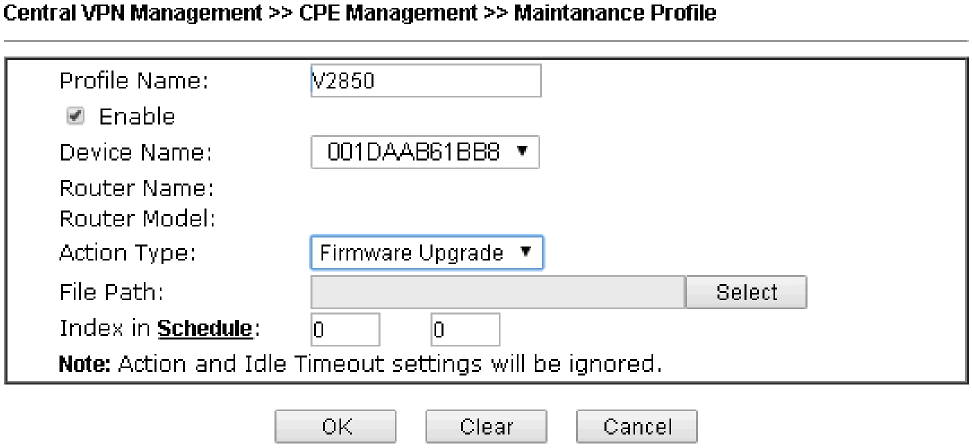
File Explorer

Note: If you want to use CPE Maintenance feature, you'll have to plug in a USB Disk!

3. Click any index number link, e.g., Index 1.



4. The Maintenance profile dialog appears.



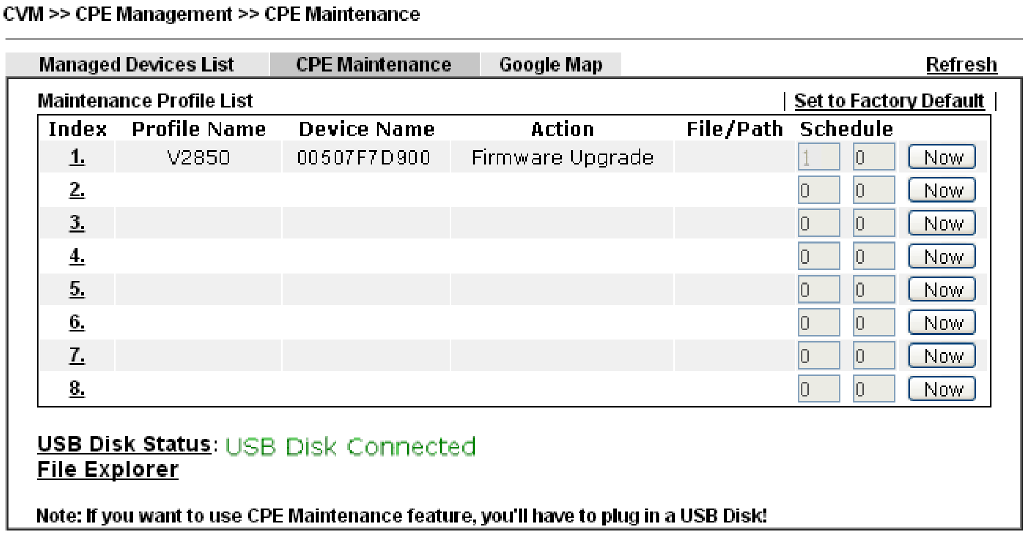
Central VPN Management >> CPE Management >> Maintanance Profile

Profile Name:	V2850
☑ Enable	
Device Name:	001DAAB61BB8 ▼
Router Name:	
Router Model:	
Action Type:	Firmware Upgrade ▼
File Path:	Select
Index in **Schedule**:	0 0

Note: Action and Idle Timeout settings will be ignored.

In the field of Profile Name, type a name for such maintenance profile; check Enable; and choose the one you want to perform firmware upgrade from Device Name drop down list. From the Action Type, choose Firmware Upgrade. Type the file/path of the newest firmware or click Select to locate it. Specify the Schedule profile. At last, click **OK**.

5. Now, a new maintenance profile has been created.



CVM >> CPE Management >> CPE Maintenance

Maintenance Profile List | Set to Factory Default |

Index	Profile Name	Device Name	Action	File/Path	Schedule		
1.	V2850	00507F7D900	Firmware Upgrade		1	0	Now
2.					0	0	Now
3.					0	0	Now
4.					0	0	Now
5.					0	0	Now
6.					0	0	Now
7.					0	0	Now
8.					0	0	Now

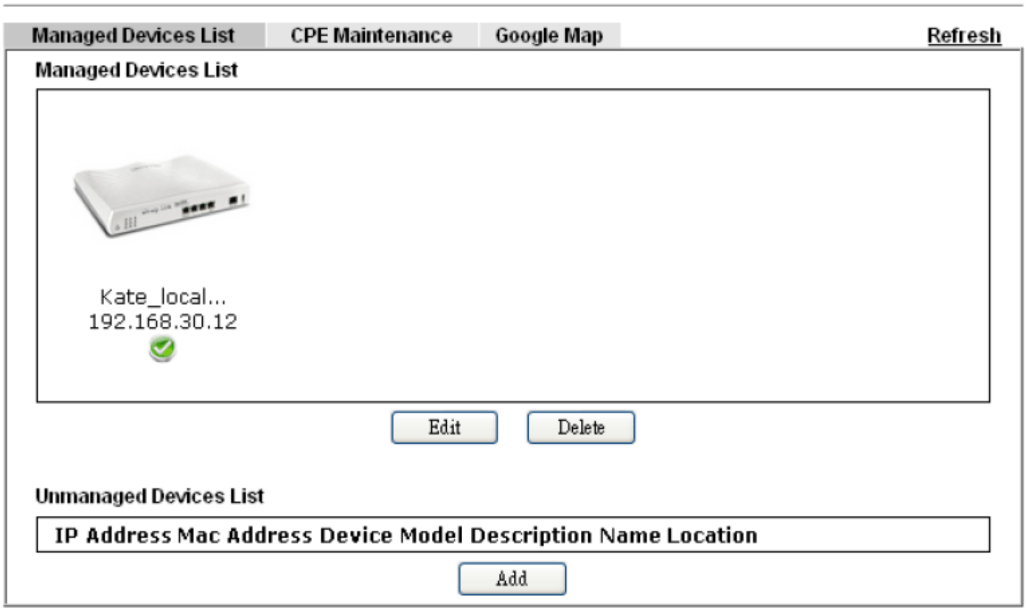
USB Disk Status: USB Disk Connected
File Explorer

Note: If you want to use CPE Maintenance feature, you'll have to plug in a USB Disk!

6. Click **Now** to perform the firmware upgrade immediately for Vigor2850.

7. Wait for several minutes for firmware upgrade.

8. Then check the device information for the managed device if the firmware upgrade is successful or not. Click **Managed Devices List**.



IP Address	Mac Address	Device Model	Description	Name	Location

Click the icon of Vigor2850 and click **Edit** and view the software version. Another way to check if the firmware upgrade is completed or not, simply open **Central VPN Management>>Log & Alert**.

Part V Security

Firewall

While the broadband users demand more bandwidth for multimedia, interactive applications, or distance learning, security has been always the most concerned. The firewall of the Vigor router helps to protect your local network against attack from unauthorized outsiders. It also restricts users in the local network from accessing the Internet.

CSM

CSM is an abbreviation of Central Security Management which is used to control IM/P2P usage, filter the web content and URL content to reach a goal of security management.

V-1 Firewall

While the broadband users demand more bandwidth for multimedia, interactive applications, or distance learning, security has been always the most concerned. The firewall of the Vigor router helps to protect your local network against attack from unauthorized outsiders. It also restricts users in the local network from accessing the Internet. Furthermore, it can filter out specific packets that trigger the router to build an unwanted outgoing connection.

Firewall Facilities

The users on the LAN are provided with secured protection by the following firewall facilities:

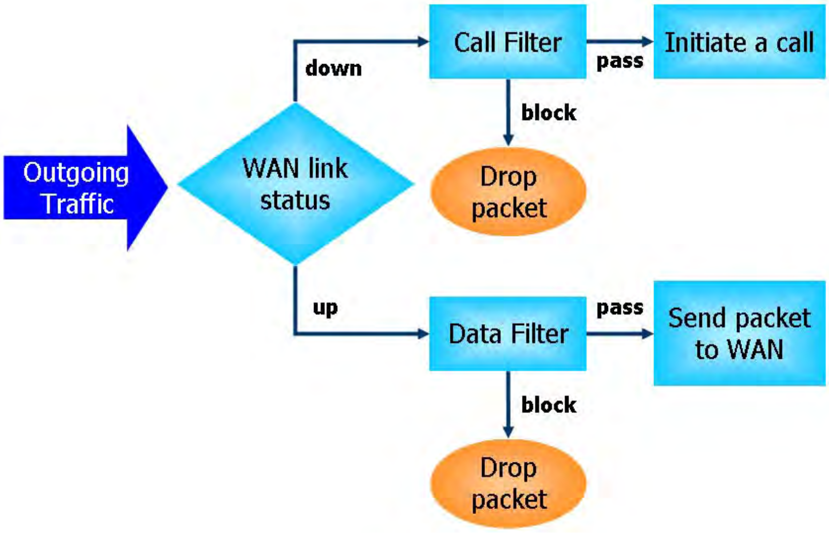
- User-configurable IP filter (Call Filter/ Data Filter).
- Stateful Packet Inspection (SPI): tracks packets and denies unsolicited incoming data
- Selectable Denial of Service (DoS) /Distributed DoS (DDoS) attacks protection

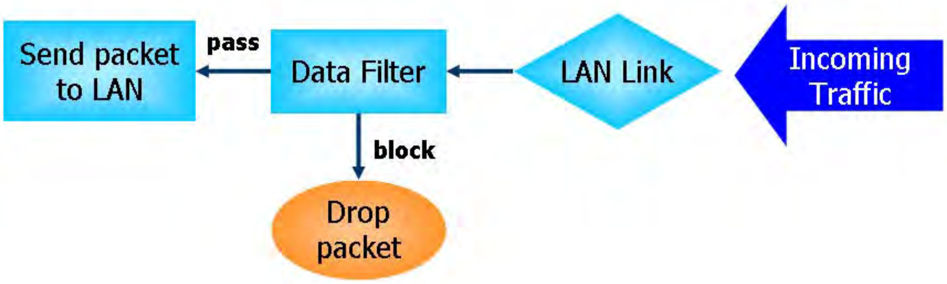
IP Filters

Depending on whether there is an existing Internet connection, or in other words "the WAN link status is up or down", the IP filter architecture categorizes traffic into two: **Call Filter** and **Data Filter**.

- **Call Filter -** When there is no existing Internet connection, **Call Filter** is applied to all traffic, all of which should be outgoing. It will check packets according to the filter rules. If legal, the packet will pass. Then the router shall **"initiate a call"** to build the Internet connection and send the packet to Internet.
- **Data Filter** - When there is an existing Internet connection, **Data Filter** is applied to incoming and outgoing traffic. It will check packets according to the filter rules. If legal, the packet will pass the router.

The following illustrations are flow charts explaining how router will treat incoming traffic and outgoing traffic respectively.





Stateful Packet Inspection (SPI)

Stateful inspection is a firewall architecture that works at the network layer. Unlike legacy static packet filtering, which examines a packet based on the information in its header, stateful inspection builds up a state machine to track each connection traversing all interfaces of the firewall and makes sure they are valid. The stateful firewall of Vigor router not only examines the header information also monitors the state of the connection.

Denial of Service (DoS) Defense

The **DoS Defense** functionality helps you to detect and mitigate the DoS attack. The attacks are usually categorized into two types, the flooding-type attacks and the vulnerability attacks. The flooding-type attacks will attempt to exhaust all your system's resource while the vulnerability attacks will try to paralyze the system by offending the vulnerabilities of the protocol or operation system.

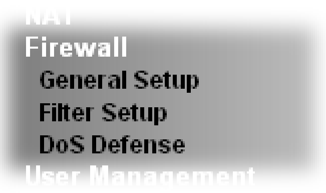
The **DoS Defense** function enables the Vigor router to inspect every incoming packet based on the attack signature database. Any malicious packet that might duplicate itself to paralyze the host in the secure LAN will be strictly blocked and a Syslog message will be sent as warning, if you set up Syslog server.

Also the Vigor router monitors the traffic. Any abnormal traffic flow violating the pre-defined parameter, such as the number of thresholds, is identified as an attack and the Vigor router will activate its defense mechanism to mitigate in a real-time manner.

The below shows the attack types that DoS/DDoS defense function can detect:

1. SYN flood attack
2. UDP flood attack
3. ICMP flood attack
4. Port Scan attack
5. IP options
6. Land attack
7. Smurf attack
8. Trace route
9. SYN fragment
10. Fraggle attack
11. TCP flag scan
12. Tear drop attack
13. Ping of Death attack
14. ICMP fragment
15. Unassigned Numbers

Below shows the menu items for Firewall.



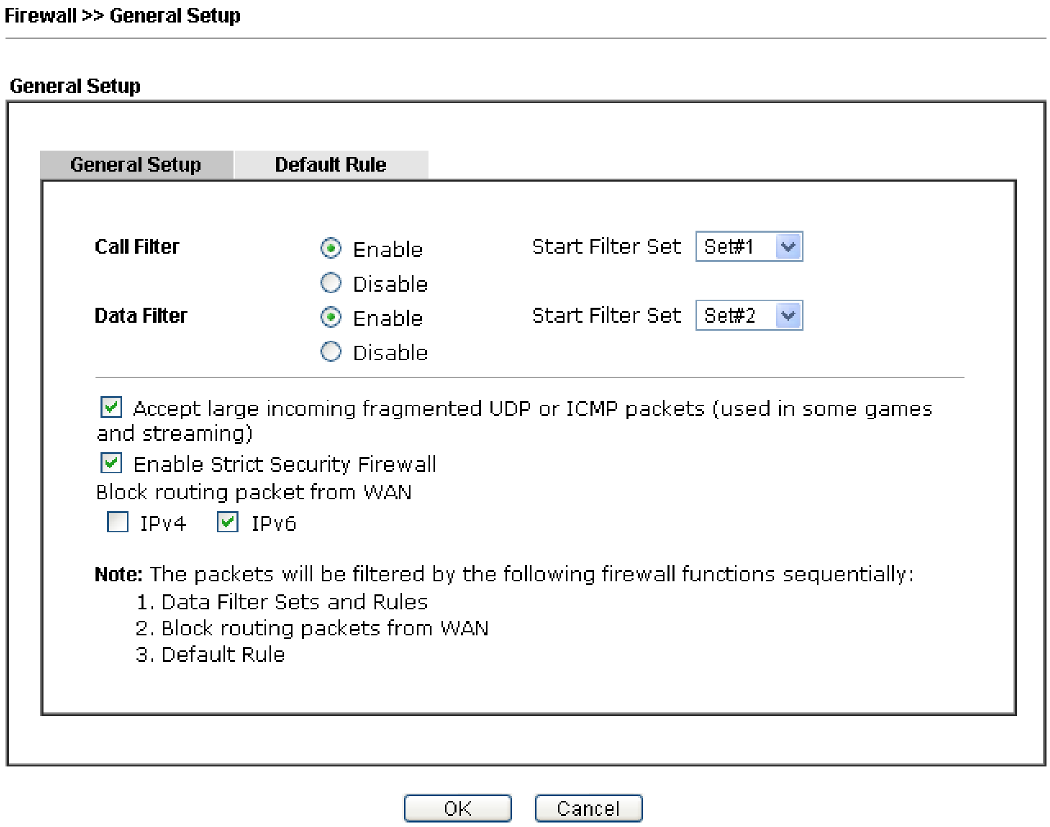
V-1-1 General Setup

General Setup allows you to adjust settings of IP Filter and common options. Here you can enable or disable the **Call Filter** or **Data Filter**. Under some circumstance, your filter set can be linked to work in a serial manner. So here you assign the **Start Filter Set** only. Also you can configure the **Log Flag** settings, **Apply IP filter to VPN incoming packets**, and **Accept incoming fragmented UDP packets**.

Click **Firewall** and click **General Setup** to open the general setup page.

General Setup Page

Such page allows you to enable / disable Call Filter and Data Filter, determine general rule for filtering the incoming and outgoing data.



Firewall >> General Setup

General Setup

Call Filter ● Enable ○ Disable Start Filter Set Set#1

Data Filter ● Enable ○ Disable Start Filter Set Set#2

☑ Accept large incoming fragmented UDP or ICMP packets (used in some games and streaming)

☑ Enable Strict Security Firewall

Block routing packet from WAN

☐ IPv4 ☑ IPv6

Note: The packets will be filtered by the following firewall functions sequentially:

1. Data Filter Sets and Rules
2. Block routing packets from WAN
3. Default Rule

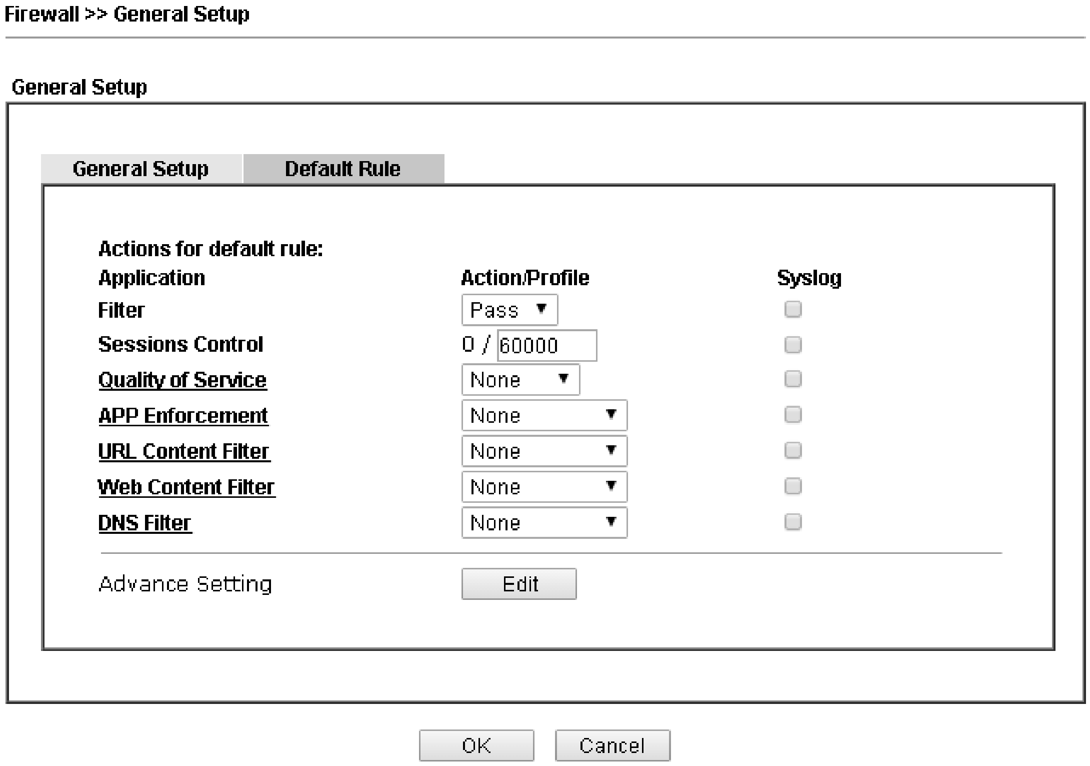
Available settings are explained as follows:

Item	Description

Call Filter	Check **Enable** to activate the Call Filter function. Assign a start filter set for the Call Filter.
Data Filter	Check **Enable** to activate the Data Filter function. Assign a start filter set for the Data Filter.
Accept large incoming…	Some on-line games (for example: Half Life) will use lots of fragmented UDP packets to transfer game data. Instinctively as a secure firewall, Vigor router will reject these fragmented packets to prevent attack unless you enable "**Accept large incoming fragmented UDP or ICMP Packets**". By checking this box, you can play these kinds of on-line games. If security concern is in higher priority, you cannot enable "**Accept large incoming fragmented UDP or ICMP Packets**".
Enable Strict Security Firewall	For the sake of security, the router will execute strict security checking for data transmission. Such feature is enabled in default. All the packets, while transmitting through Vigor router, will be filtered by firewall. If the firewall system (e.g., content filter server) does not make any response (pass or block) for these packets, then the router's firewall will block the packets directly.
Block routing packet from WAN	Usually, IPv6 network sessions/traffic from WAN to LAN will be accepted by IPv6 firewall in default. **IPv6** - To prevent remote client accessing into the PCs on LAN, check the box to make the packets (routed from WAN to LAN) via IPv6 being blocked by such router. It is effective only for the packets routed but not for packets translated by NAT. **IPv4** - To prevent remote client accessing into the PCs on LAN, check the box to make the incoming packets via IPv4 being blocked by such router. It is effective only for the packets routed but not for packets translated by NAT.

Default Rule Page

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



Firewall >> General Setup

General Setup

General Setup | Default Rule

Actions for default rule:

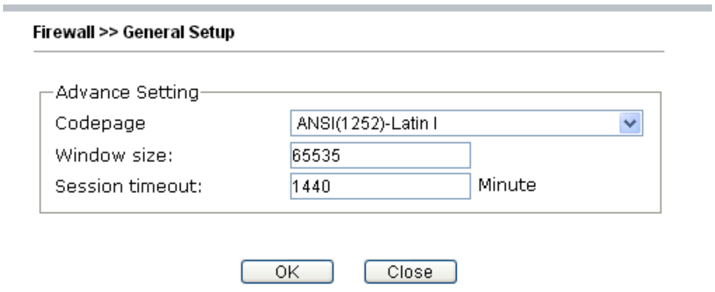
Application	Action/Profile	Syslog
Filter	Pass ▼	□
Sessions Control	0 / 60000	□
Quality of Service	None ▼	□
APP Enforcement	None ▼	□
URL Content Filter	None ▼	□
Web Content Filter	None ▼	□
DNS Filter	None ▼	□

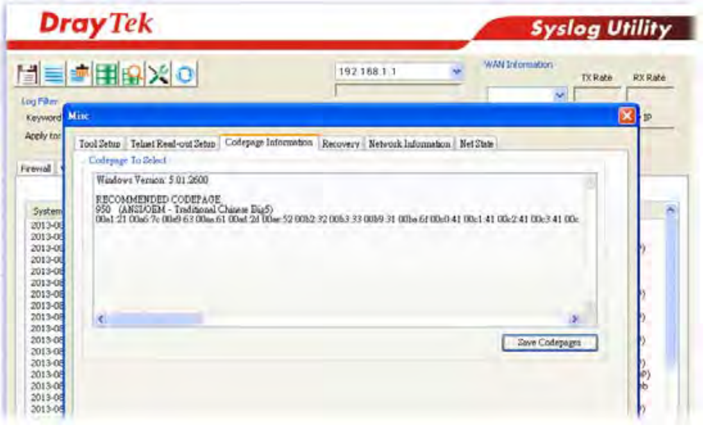
Advance Setting: Edit

OK Cancel

Available settings are explained as follows:

Item	Description
Filter	Select **Pass** or **Block** for the packets that do not match with the filter rules.
Sessions Control	The number typed here is the total sessions of the packets that do not match the filter rule configured in this page. The default setting is 60000.
Quality of Service	Choose one of the QoS rules to be applied as firewall rule. For detailed information of setting QoS, please refer to the related section later.
User Management	Such item is available only when **Rule-Based** is selected in **User Management>>General Setup**. The general firewall rule will be applied to the user/user group/all users specified here. **Note:** When there is no user profile or group profile existed, **Create New User** or **Create New Group** item will appear for you to click to create a new one.
APP Enforcement	Select an **APP Enforcement** profile for global IM/P2P application blocking. If there is no profile for you to select, please choose **[Create New]** from the drop down list in this page to create a new profile. All the hosts in LAN must follow the standard configured in the **APP Enforcement** profile selected here. For detailed information, refer to the section of **APP Enforcement** profile setup. For troubleshooting needs, you can specify to record information for IM/P2P by checking the Log box. It will be sent to Syslog server. Please

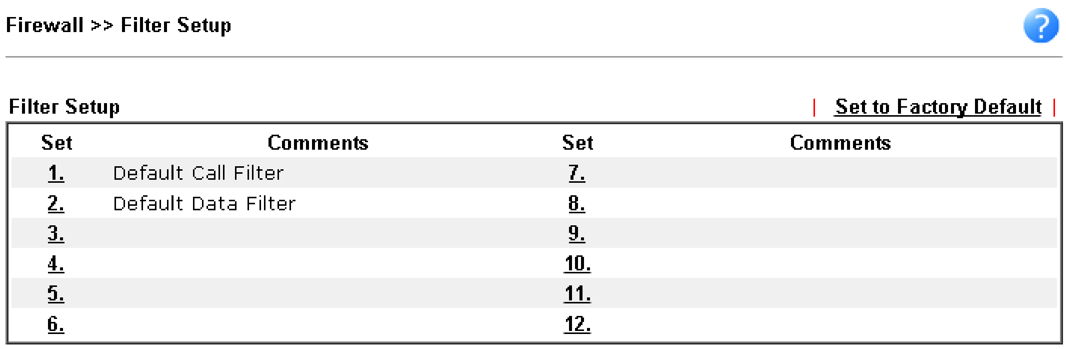
	refer to section **Syslog/Mail Alert** for more detailed information.
URL Content Filter	Select one of the **URL Content Filter** profile settings (created in **CSM>> URL Content Filter**) for applying with this router. Please set at least one profile for choosing in **CSM>> URL Content Filter** web page first. Or choose **[Create New]** from the drop down list in this page to create a new profile. For troubleshooting needs, you can specify to record information for **URL Content Filter** by checking the Log box. It will be sent to Syslog server. Please refer to section **Syslog/Mail Alert** for more detailed information.
Web Content Filter	Select one of the **Web Content Filter** profile settings (created in **CSM>> Web Content Filter**) for applying with this router. Please set at least one profile for anti-virus in **CSM>> Web Content Filter** web page first. Or choose **[Create New]** from the drop down list in this page to create a new profile. For troubleshooting needs, you can specify to record information for **Web Content Filter** by checking the Log box. It will be sent to Syslog server. Please refer to section **Syslog/Mail Alert** for more detailed information.
DNS Filter	Select one of the DNS Filter profile settings (created in CSM>>DNS Filter) for applying with this router. Please set at least one profile in **CSM>> Web Content Filter** web page first. Or click the DNS Filter link in this page to create a new profile.
Advance Setting	Click **Edit** to open the following window. However, it is **strongly recommended** to use the default settings here.  Firewall >> General Setup Advance Setting Codepage: ANSI(1252)-Latin I Window size: 65535 Session timeout: 1440 Minute **Codepage** - This function is used to compare the characters among different languages. Choose correct codepage can help the system obtain correct ASCII after decoding data from URL and enhance the correctness of URL Content Filter. The default value for this setting is ANSI 1252 Latin I. If you do not choose any codepage, no decoding job of URL will be processed. Please use the drop-down list to choose a codepage. If you do not have any idea of choosing suitable codepage, please open Syslog. From Codepage Information of Setup dialog, you will see the recommended codepage listed on the dialog box.

	 DrayTek Syslog Utility 192.168.1.1 WAN Information TX Rate RX Rate Log Filter Keyword Apply to Firewall System Misc Tool Setup Telnet Read-out Setup Codepage Information Recovery Network Information Net State Codepage To Select Save Codepages Windows Version: 5.01.2600 RECOMMENDED CODEPAGE 950 (ANSI/OEM - Traditional Chinese Big5) 00a1:21 00a6:7c 00e9:63 00ea:61 00ed:2d 00ee:52 00b2:32 00b3:33 00b9:31 00ba:6f 00c0:41 00c1:41 00c2:41 00c3:41 00c **Window size** – It determines the size of TCP protocol (0~65535). The more the value is, the better the performance will be. However, if the network is not stable, small value will be proper. **Session timeout** – Setting timeout for sessions can make the best utilization of network resources.

After finishing all the settings here, please click **OK** to save the configuration.

V-1-2 Filter Setup

Click **Firewall** and click **Filter Setup** to open the setup page.

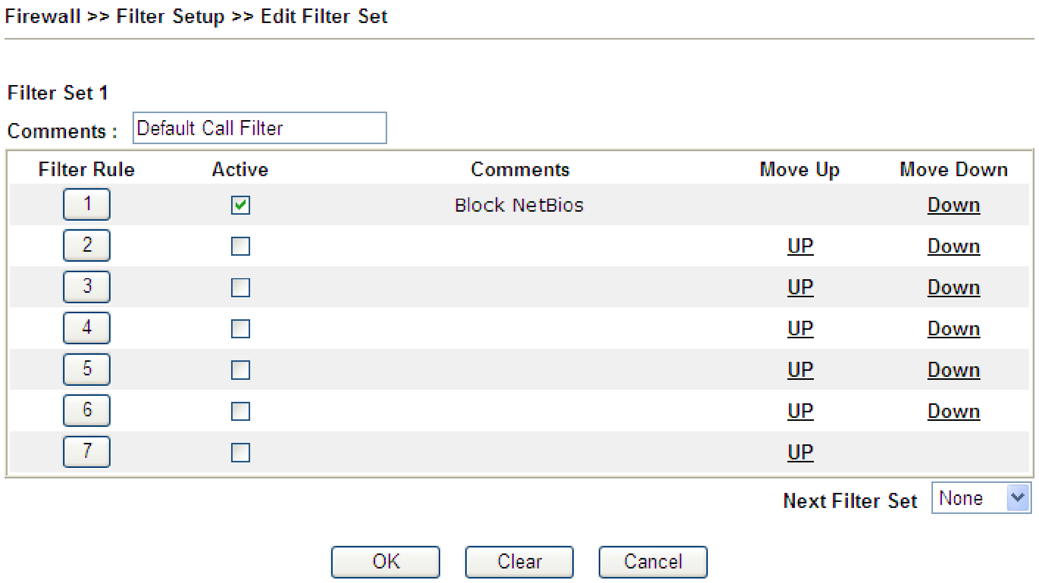


Firewall >> Filter Setup

Filter Setup | Set to Factory Default |

Set	Comments	Set	Comments
1.	Default Call Filter	7.	
2.	Default Data Filter	8.	
3.		9.	
4.		10.	
5.		11.	
6.		12.	

To edit or add a filter, click on the set number to edit the individual set. The following page will be shown. Each filter set contains up to 7 rules. Click on the rule number button to edit each rule. Check **Active** to enable the filter rule.



Firewall >> Filter Setup >> Edit Filter Set

Filter Set 1

Comments : Default Call Filter

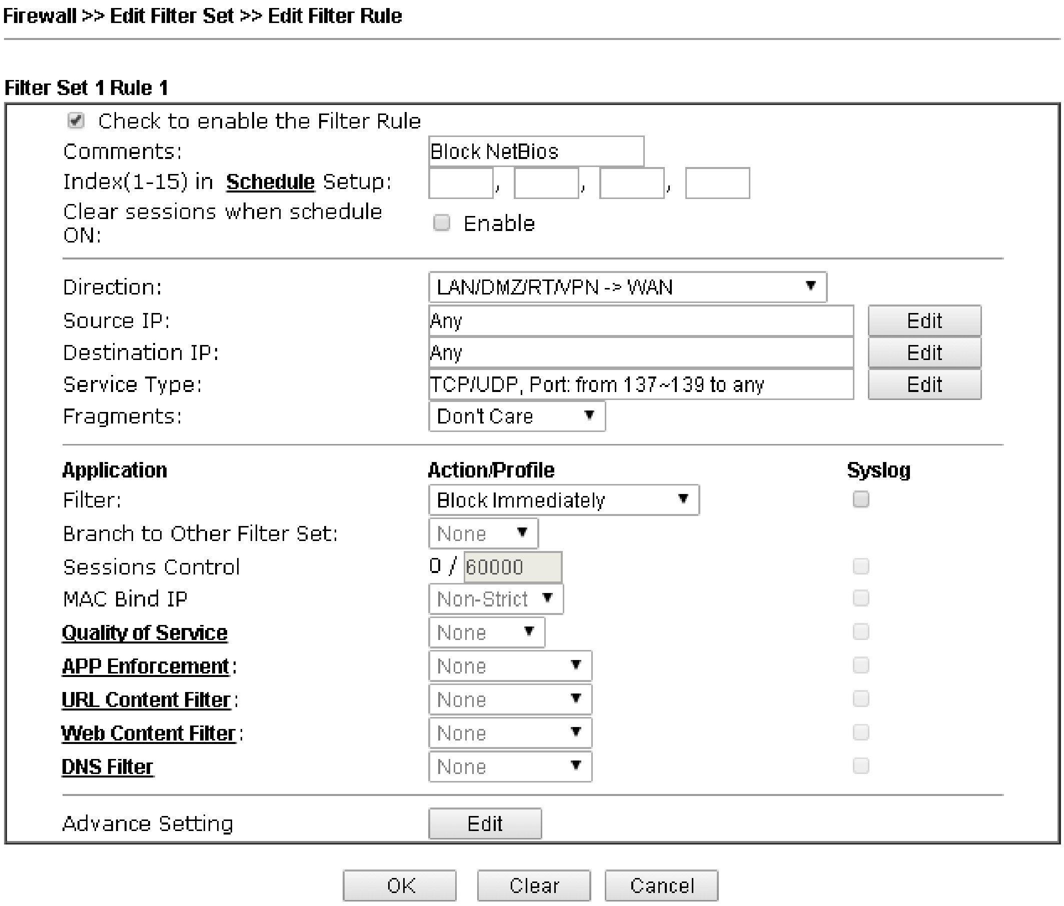
Filter Rule	Active	Comments	Move Up	Move Down
1	☑	Block NetBios		Down
2	□		UP	Down
3	□		UP	Down
4	□		UP	Down
5	□		UP	Down
6	□		UP	Down
7	□		UP	

Next Filter Set: None

Available settings are explained as follows:

Item	Description
Rule	Click a button numbered (1 ~ 7) to edit the filter rule. Click the button will open Edit Filter Rule web page. For the detailed information, refer to the following page.
Active	Enable or disable the filter rule.
Comment	Enter filter set comments/description. Maximum length is 23-character long.
Move Up/Down	Use **Up** or **Down** link to move the order of the filter rules.
Next Filter Set	Set the link to the next filter set to be executed after the current filter run. Do not make a loop with many filter sets.

To edit **Filter Rule**, click the **Filter Rule** index button to enter the **Filter Rule** setup page.



Firewall >> Edit Filter Set >> Edit Filter Rule

Filter Set 1 Rule 1

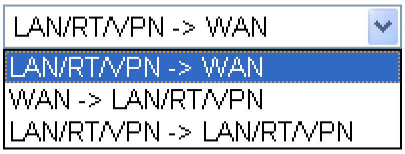
☑ Check to enable the Filter Rule

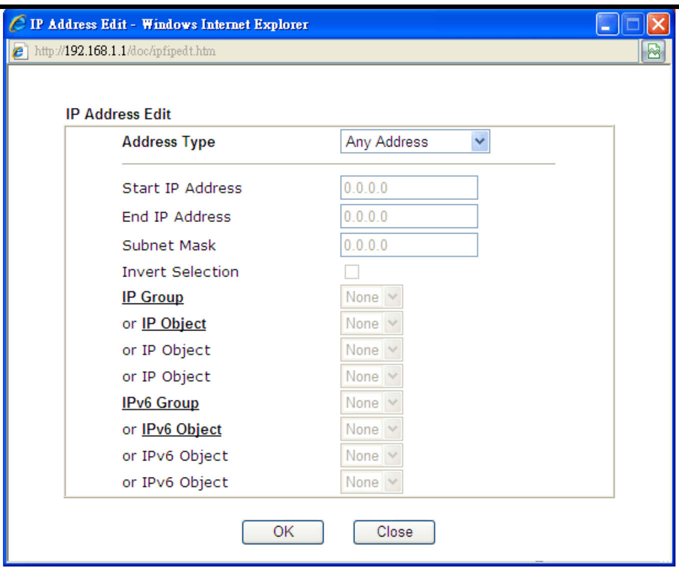
Comments:	Block NetBios	
Index(1-15) in Schedule Setup:	, , ,	
Clear sessions when schedule ON:	□ Enable	
Direction:	LAN/DMZ/RT/VPN -> WAN ▼	
Source IP:	Any	Edit
Destination IP:	Any	Edit
Service Type:	TCP/UDP, Port: from 137~139 to any	Edit
Fragments:	Don't Care ▼	

Application	Action/Profile	Syslog
Filter:	Block Immediately ▼	□
Branch to Other Filter Set:	None ▼	
Sessions Control	0 / 60000	□
MAC Bind IP	Non-Strict ▼	□
Quality of Service	None ▼	□
APP Enforcement:	None ▼	□
URL Content Filter:	None ▼	□
Web Content Filter:	None ▼	□
DNS Filter	None ▼	□

Advance Setting Edit

Available settings are explained as follows:

Item	Description
Check to enable the Filter Rule	Check this box to enable the filter rule.
Comments	Enter filter set comments/description. Maximum length is 14-character long.
Index(1-15)	Set PCs on LAN to work at certain time interval only. You may choose up to 4 schedules out of the 15 schedules pre-defined in **Applications >> Schedule** setup. The default setting of this field is blank and the function will always work.
Clear sessions when schedule ON	Check this box to clear the sessions when the above schedule profiles are applied.
Direction	Set the direction of packet flow. It is for **Data Filter** only. For the **Call Filter**, this setting is not available since **Call Filter** is only applied to outgoing traffic.  LAN/RT/VPN -> WAN LAN/RT/VPN -> WAN WAN -> LAN/RT/VPN LAN/RT/VPN -> LAN/RT/VPN **Note:** RT means routing domain for 2nd subnet or other LAN.
Source/Destination IP	Click **Edit** to access into the following dialog to choose the source/destination IP or IP ranges.



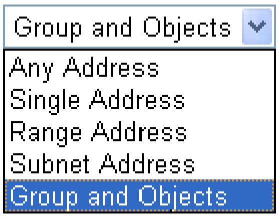
IP Address Edit - Windows Internet Explorer

http://192.168.1.1/doc/ipfipedt.htm

IP Address Edit

Address Type	Any Address
Start IP Address	0.0.0.0
End IP Address	0.0.0.0
Subnet Mask	0.0.0.0
Invert Selection	□
IP Group	None
or IP Object	None
or IP Object	None
or IP Object	None
IPv6 Group	None
or IPv6 Object	None
or IPv6 Object	None
or IPv6 Object	None

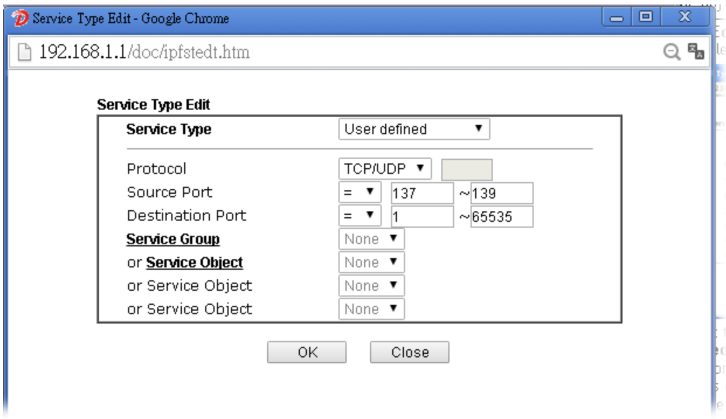
To set the IP address manually, please choose **Any Address/Single Address/Range Address/Subnet Address** as the Address Type and type them in this dialog. In addition, if you want to use the IP range from defined groups or objects, please choose **Group and Objects** as the Address Type.



From the **IP Group** drop down list, choose the one that you want to apply. Or use the **IP Object** drop down list to choose the object that you want.

Service Type

Click **Edit** to access into the following dialog to choose a suitable service type.



Service Type Edit - Google Chrome

192.168.1.1/doc/ipfstedt.htm

Service Type Edit

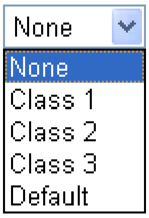
Service Type	User defined
Protocol	TCP/UDP
Source Port	= 137 ~139
Destination Port	= 1 ~65535
Service Group	None
or Service Object	None
or Service Object	None
or Service Object	None

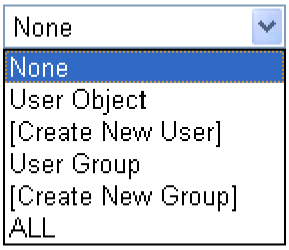
To set the service type manually, please choose **User defined** as the Service Type and type them in this dialog. In addition, if you want to use the service type from defined groups or objects, please choose **Group and Objects** as the Service Type.

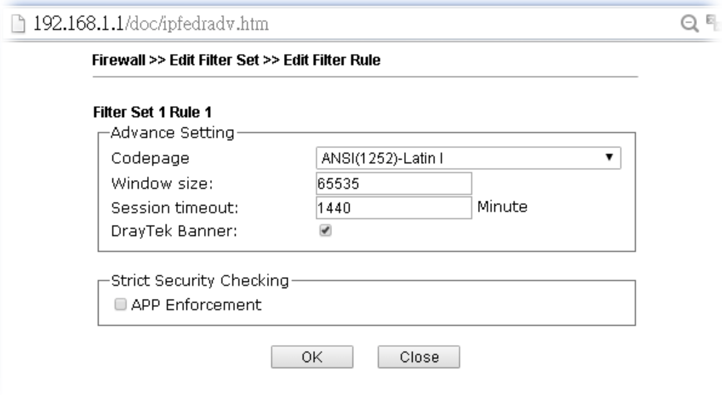
Protocol - Specify the protocol(s) which this filter rule will apply to.

Source/Destination Port -

(=) – when the first and last value are the same, it indicates one port; when the first and last values are different, it

	indicates a range for the port and available for this service type. *(!=)* – when the first and last value are the same, it indicates all the ports except the port defined here; when the first and last values are different, it indicates that all the ports except the range defined here are available for this service type. *(>)* – the port number greater than this value is available. *(<)* – the port number less than this value is available for this profile. **Service Group/Object** - Use the drop down list to choose the one that you want.
Fragments	Specify the action for fragmented packets. And it is used for **Data Filter** only. *Don't care* -No action will be taken towards fragmented packets. *Unfragmented* -Apply the rule to unfragmented packets. *Fragmented* - Apply the rule to fragmented packets. *Too Short* - Apply the rule only to packets that are too short to contain a complete header.
Filter	Specifies the action to be taken when packets match the rule. **Block Immediately -** Packets matching the rule will be dropped immediately. **Pass Immediately -** Packets matching the rule will be passed immediately. **Block If No Further Match -** A packet matching the rule, and that does not match further rules, will be dropped. **Pass If No Further Match -** A packet matching the rule, and that does not match further rules, will be passed through.
Branch to other Filter Set	If the packet matches the filter rule, the next filter rule will branch to the specified filter set. Select next filter rule to branch from the drop-down menu. Be aware that the router will apply the specified filter rule for ever and will not return to previous filter rule any more.
Sessions Control	The number typed here is the total sessions of the packets that do not match the filter rule configured in this page. The default setting is 60000.
MAC Bind IP	**Strict** – Make the MAC address and IP address settings configured in **IP Object** for **Source IP** and **Destination IP** are bound for applying such filter rule. **No-Strict -** no limitation.
Quality of Service	Choose one of the QoS rules to be applied as firewall rule. For detailed information of setting QoS, please refer to the related section later. 
User Management	Such item is available only when **Rule-Based** is selected in

	User Management>>General Setup. The general firewall rule will be applied to the user/user group/all users specified here.  None None User Object [Create New User] User Group [Create New Group] ALL **Note:** When there is no user profile or group profile existed, **Create New User** or **Create New Group** item will appear for you to click to create a new one.
APP Enforcement	Select an **APP Enforcement** profile for global IM/P2P application blocking. If there is no profile for you to select, please choose **[Create New]** from the drop down list in this page to create a new profile. All the hosts in LAN must follow the standard configured in the **APP Enforcement** profile selected here. For detailed information, refer to the section of **APP Enforcement** profile setup. For troubleshooting needs, you can specify to record information for IM/P2P by checking the Log box. It will be sent to Syslog server. Please refer to section **Syslog/Mail Alert** for more detailed information.
URL Content Filter	Select one of the **URL Content Filter** profile settings (created in **CSM>> URL Content Filter**) for applying with this router. Please set at least one profile for choosing in **CSM>> URL Content Filter** web page first. Or choose **[Create New]** from the drop down list in this page to create a new profile. For troubleshooting needs, you can specify to record information for **URL Content Filter** by checking the Log box. It will be sent to Syslog server. Please refer to section **Syslog/Mail Alert** for more detailed information.
Web Content Filter	Select one of the **Web Content Filter** profile settings (created in **CSM>> Web Content Filter**) for applying with this router. Please set at least one profile for anti-virus in **CSM>> Web Content Filter** web page first. Or choose **[Create New]** from the drop down list in this page to create a new profile. For troubleshooting needs, you can specify to record information for **Web Content Filter** by checking the Log box. It will be sent to Syslog server. Please refer to section **Syslog/Mail Alert** for more detailed information.
DNS Filter	Select one of the DNS Filter profile settings (created in CSM>>DNS Filter) for applying with this router. Please set at least one profile in **CSM>> Web Content Filter** web page first. Or click the DNS Filter link from the drop down list in this page to create a new profile.
Advance Setting	Click **Edit** to open the following window. However, it is **strongly recommended** to use the default settings here.



192.168.1.1/doc/ipfedradv.htm

Firewall >> Edit Filter Set >> Edit Filter Rule

Filter Set 1 Rule 1

Advance Setting

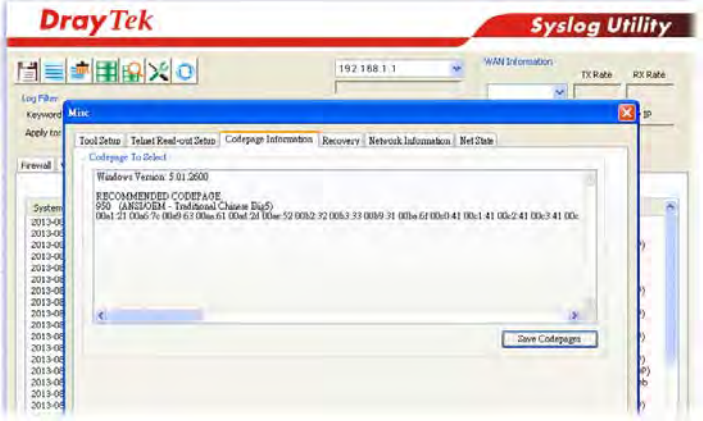
Codepage	ANSI(1252)-Latin I	
Window size:	65535	
Session timeout:	1440	Minute
DrayTek Banner:	☑	

Strict Security Checking

☐ APP Enforcement

Codepage - This function is used to compare the characters among different languages. Choose correct codepage can help the system obtaining correct ASCII after decoding data from URL and enhance the correctness of URL Content Filter. The default value for this setting is ANSI 1252 Latin I. If you do not choose any codepage, no decoding job of URL will be processed. Please use the drop-down list to choose a codepage.

If you do not have any idea of choosing suitable codepage, please open Syslog. From Codepage Information of Setup dialog, you will see the recommended codepage listed on the dialog box.

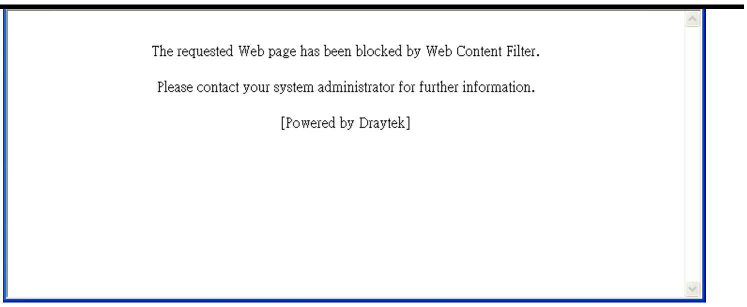


```
Windows Version: 5.01.2600

RECOMMENDED CODEPAGE
950   (ANSI/OEM - Traditional Chinese Big5)
00a1 21 00a6 7c 00e9 63 00ea 61 00ed 2d 00ee 52 00b2 32 00b3 33 00b9 31 00ba 6f 00c0 41 00c1 41 00c2 41 00c3 41 00c
```

Window size – It determines the size of TCP protocol (0~65535). The more the value is, the better the performance will be. However, if the network is not stable, small value will be proper.

Session timeout–Setting timeout for sessions can make the best utilization of network resources. However, Queue timeout is configured for TCP protocol only; session timeout is configured for the data flow which matched with the firewall rule.

DrayTek Banner – Please uncheck this box and the following screen will not be shown for the unreachable web page. The default setting is Enabled.

	 The requested Web page has been blocked by Web Content Filter. Please contact your system administrator for further information. [Powered by Draytek] **Strict Security Checking** - All the packets, while transmitting through Vigor router, will be filtered by firewall settings configured by Vigor router. When the resource is inadequate, the packets will be blocked if Strict Security Checking is enabled. If Strict Security Checking is not enabled, then the packets will pass through the router.

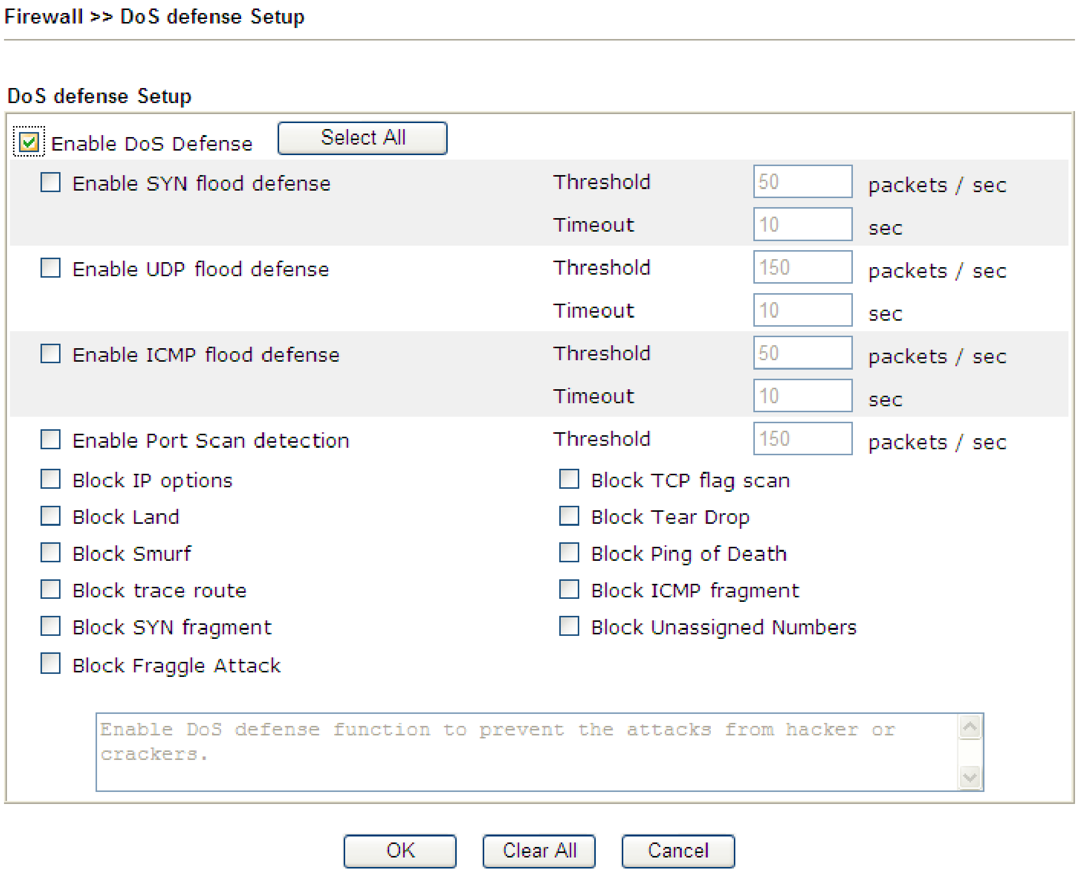
Example

As stated before, all the traffic will be separated and arbitrated using on of two IP filters: call filter or data filter. You may preset 12 call filters and data filters in **Filter Setup** and even link them in a serial manner. Each filter set is composed by 7 filter rules, which can be further defined. After that, in **General Setup** you may specify one set for call filter and one set for data filter to execute first.

V-1-3 DoS Defense

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

Click **Firewall** and click **DoS Defense** to open the setup page.



Firewall >> DoS defense Setup

DoS defense Setup

☑ Enable DoS Defense Select All

□ Enable SYN flood defense	Threshold	50	packets / sec
	Timeout	10	sec
□ Enable UDP flood defense	Threshold	150	packets / sec
	Timeout	10	sec
□ Enable ICMP flood defense	Threshold	50	packets / sec
	Timeout	10	sec
□ Enable Port Scan detection	Threshold	150	packets / sec
□ Block IP options	□ Block TCP flag scan		
□ Block Land	□ Block Tear Drop		
□ Block Smurf	□ Block Ping of Death		
□ Block trace route	□ Block ICMP fragment		
□ Block SYN fragment	□ Block Unassigned Numbers		
□ Block Fraggle Attack			

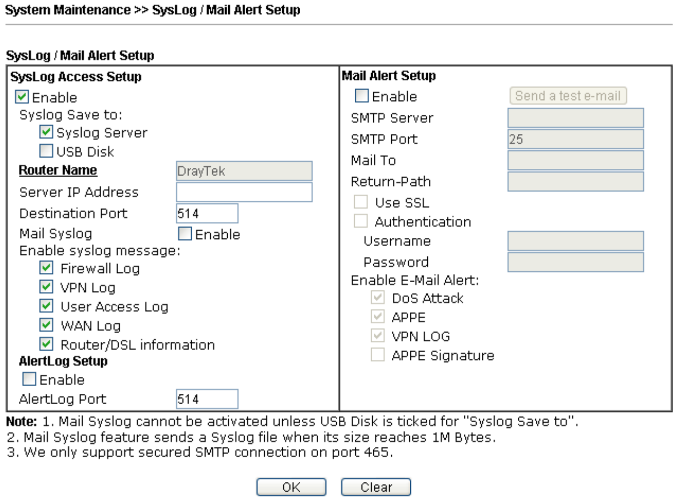
Enable DoS defense function to prevent the attacks from hacker or crackers.

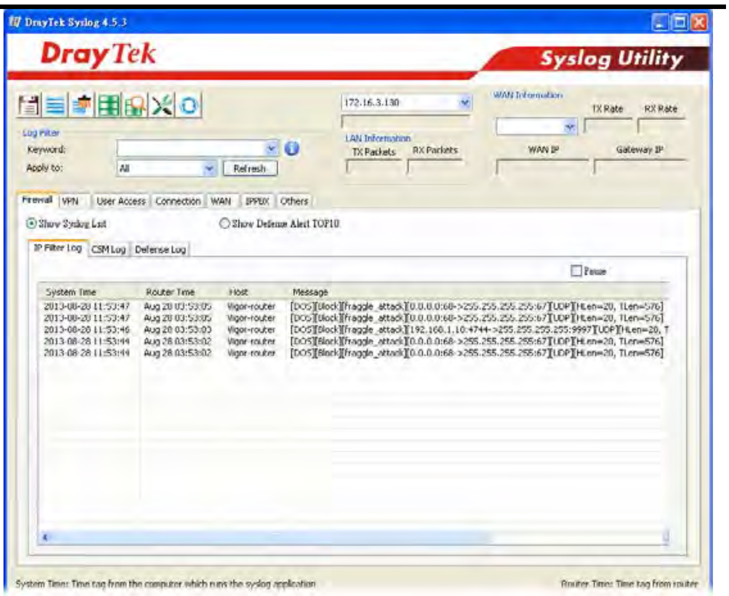
OK Clear All Cancel

Available settings are explained as follows:

Item	Description
Enable Dos Defense	Check the box to activate the DoS Defense Functionality.
Select All	Click this button to select all the items listed below.
Enable SYN flood defense	Check the box to activate the SYN flood defense function. Once detecting the Threshold of the TCP SYN packets from the Internet has exceeded the defined value, the Vigor router will start to randomly discard the subsequent TCP SYN packets for a period defined in Timeout. The goal for this is prevent the TCP SYN packets' attempt to exhaust the limited-resource of Vigor router. By default, the threshold and timeout values are set to 2000 packets per second and 10 seconds, respectively. That means, when 2000 packets per second received, they will be regarded as "attack event" and the session will be paused for 10 seconds.
Enable UDP flood defense	Check the box to activate the UDP flood defense function. Once detecting the Threshold of the UDP packets from the Internet has exceeded the defined value, the Vigor router will start to randomly discard the subsequent UDP packets

	for a period defined in Timeout. The default setting for threshold and timeout are 2000 packets per second and 10 seconds, respectively. That means, when 2000 packets per second received, they will be regarded as "attack event" and the session will be paused for 10 seconds.
Enable ICMP flood defense	Check the box to activate the ICMP flood defense function. Similar to the UDP flood defense function, once if the Threshold of ICMP packets from Internet has exceeded the defined value, the router will discard the ICMP echo requests coming from the Internet. The default setting for threshold and timeout are 250 packets per second and 10 seconds, respectively. That means, when 250 packets per second received, they will be regarded as "attack event" and the session will be paused for 10 seconds.
Enable PortScan detection	Port Scan attacks the Vigor router by sending lots of packets to many ports in an attempt to find ignorant services would respond. Check the box to activate the Port Scan detection. Whenever detecting this malicious exploration behavior by monitoring the port-scanning Threshold rate, the Vigor router will send out a warning. By default, the Vigor router sets the threshold as 2000 packets per second. That means, when 2000 packets per second received, they will be regarded as "attack event".
Block IP options	Check the box to activate the Block IP options function. The Vigor router will ignore any IP packets with IP option field in the datagram header. The reason for limitation is IP option appears to be a vulnerability of the security for the LAN because it will carry significant information, such as security, TCC (closed user group) parameters, a series of Internet addresses, routing messages…etc. An eavesdropper outside might learn the details of your private networks.
Block Land	Check the box to enforce the Vigor router to defense the Land attacks. The Land attack combines the SYN attack technology with IP spoofing. A Land attack occurs when an attacker sends spoofed SYN packets with the identical source and destination addresses, as well as the port number to victims.
Block Smurf	Check the box to activate the Block Smurf function. The Vigor router will ignore any broadcasting ICMP echo request.
Block trace route	Check the box to enforce the Vigor router not to forward any trace route packets.
Block SYN fragment	Check the box to activate the Block SYN fragment function. The Vigor router will drop any packets having SYN flag and more fragment bit set.
Block Fraggle Attack	Check the box to activate the Block fraggle Attack function. Any broadcast UDP packets received from the Internet is blocked. Activating the DoS/DDoS defense functionality might block some legal packets. For example, when you activate the fraggle attack defense, all broadcast UDP packets coming from the Internet are blocked. Therefore, the RIP packets

	from the Internet might be dropped.
Block TCP flag scan	Check the box to activate the Block TCP flag scan function. Any TCP packet with anomaly flag setting is dropped. Those scanning activities include *no flag scan*, *FIN without ACK scan*, *SYN FINscan*, *Xmas scan* and *full Xmas scan*.
Block Tear Drop	Check the box to activate the Block Tear Drop function. Many machines may crash when receiving ICMP datagrams (packets) that exceed the maximum length. To avoid this type of attack, the Vigor router is designed to be capable of discarding any fragmented ICMP packets with a length greater than 1024 octets.
Block Ping of Death	Check the box to activate the Block Ping of Death function. This attack involves the perpetrator sending overlapping packets to the target hosts so that those target hosts will hang once they re-construct the packets. The Vigor routers will block any packets realizing this attacking activity.
Block ICMP Fragment	Check the box to activate the Block ICMP fragment function. Any ICMP packets with more fragment bit set are dropped.
Block Unassigned Numbers	Check the box to activate the Block Unknown Protocol function. Individual IP packet has a protocol field in the datagram header to indicate the protocol type running over the upper layer. However, the protocol types greater than 100 are reserved and undefined at this time. Therefore, the router should have ability to detect and reject this kind of packets.
Warning Messages	We provide Syslog function for user to retrieve message from Vigor router. The user, as a Syslog Server, shall receive the report sending from Vigor router which is a Syslog Client. All the warning messages related to **DoS Defense** will be sent to user and user can review it through Syslog daemon. Look for the keyword **DoS** in the message, followed by a name to indicate what kind of attacks is detected.  System Maintenance >> SysLog / Mail Alert Setup SysLog / Mail Alert Setup SysLog Access Setup ☑ Enable Syslog Save to: ☑ Syslog Server □ USB Disk Router Name: DrayTek Server IP Address: Destination Port: 514 Mail Syslog: □ Enable Enable syslog message: ☑ Firewall Log ☑ VPN Log ☑ User Access Log ☑ WAN Log ☑ Router/DSL information AlertLog Setup □ Enable AlertLog Port: 514 Mail Alert Setup □ Enable [Send a test e-mail] SMTP Server: SMTP Port: 25 Mail To: Return-Path: □ Use SSL □ Authentication Username: Password: Enable E-Mail Alert: ☑ DoS Attack ☑ APPE ☑ VPN LOG □ APPE Signature **Note:** 1. Mail Syslog cannot be activated unless USB Disk is ticked for "Syslog Save to". 2. Mail Syslog feature sends a Syslog file when its size reaches 1M Bytes. 3. We only support secured SMTP connection on port 465. [OK] [Clear]



○ Show Syslog List ○ Show Defense Alert TOP10

□ Pause

```
System Time          Router Time       Host           Message
2013-08-28 11:53:47  Aug 28 03:53:05   Vigor-router   [DOS][Block][fraggle_attack][0.0.0.0:68->255.255.255.255:67][UDP][HLen=20, TLen=576]
2013-08-28 11:53:47  Aug 28 03:53:05   Vigor-router   [DOS][Block][fraggle_attack][0.0.0.0:68->255.255.255.255:67][UDP][HLen=20, TLen=576]
2013-08-28 11:53:46  Aug 28 03:53:03   Vigor-router   [DOS][Block][fraggle_attack][192.168.1.10:4744->255.255.255.255:9997][UDP][HLen=20, T
2013-08-28 11:53:44  Aug 28 03:53:02   Vigor-router   [DOS][Block][fraggle_attack][0.0.0.0:68->255.255.255.255:67][UDP][HLen=20, TLen=576]
2013-08-28 11:53:44  Aug 28 03:53:02   Vigor-router   [DOS][Block][fraggle_attack][0.0.0.0:68->255.255.255.255:67][UDP][HLen=20, TLen=576]
```

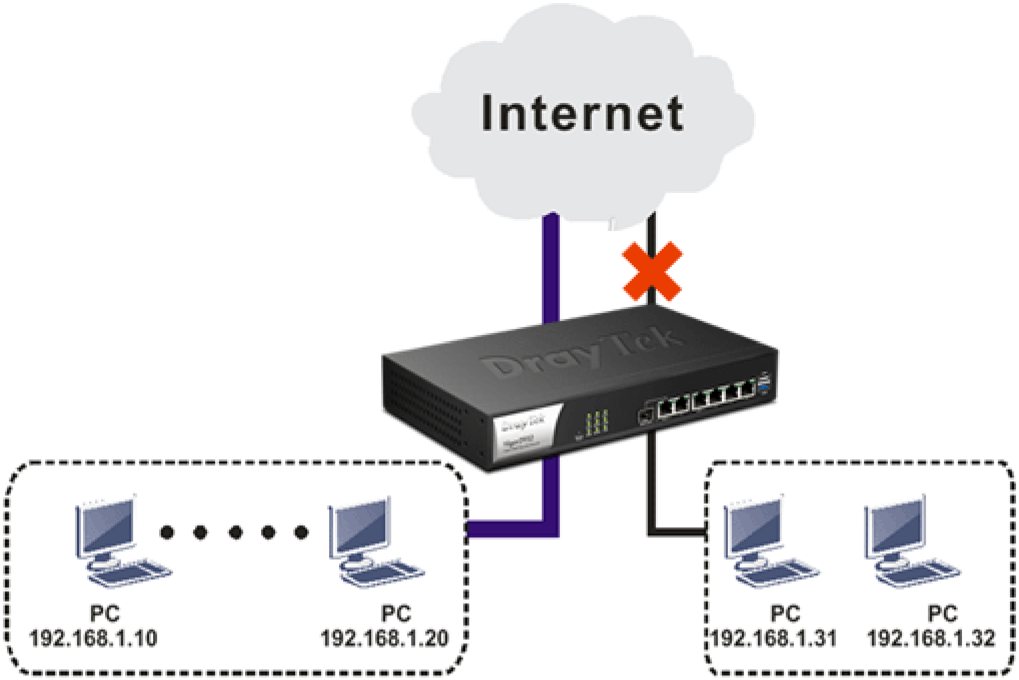
System Time: Time tag from the computer which runs the syslog application

Router Time: Time tag from router

Application Notes

A-1 How to Configure Certain Computers Accessing to Internet

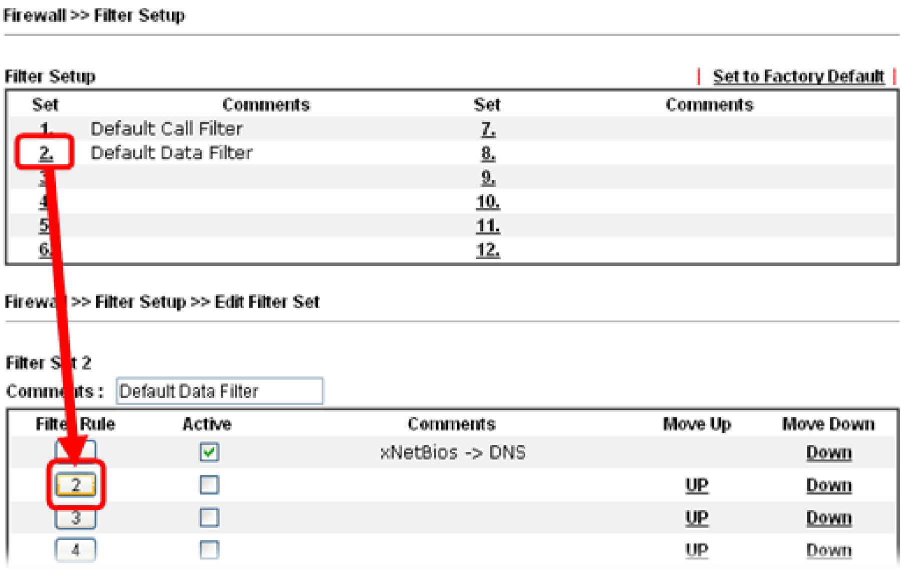
We can specify certain computers (e.g., 192.168.1.10 ~ 192.168.1.20) accessing to Internet through Vigor router. Others (e.g., 192.168.1.31 and 192.168.1.32) outside the range can get the source from LAN only.



The way we can use is to set two rules under **Firewall**. For **Rule 1** of **Set 2** under **Firewall>>Filter Setup** is used as the default setting, we have to create a new rule starting from Filter Rule 2 of Set 2.

1. Access into the web user interface of Vigor router.

2. Open **Firewall>>Filter Setup**. Click the **Set 2** link and choose the **Filter Rule 2** button.



Firewall >> Filter Setup

Filter Setup | Set to Factory Default |

Set	Comments	Set	Comments
1.	Default Call Filter	7.	
2.	Default Data Filter	8.	
3.		9.	
4.		10.	
5.		11.	
6.		12.	

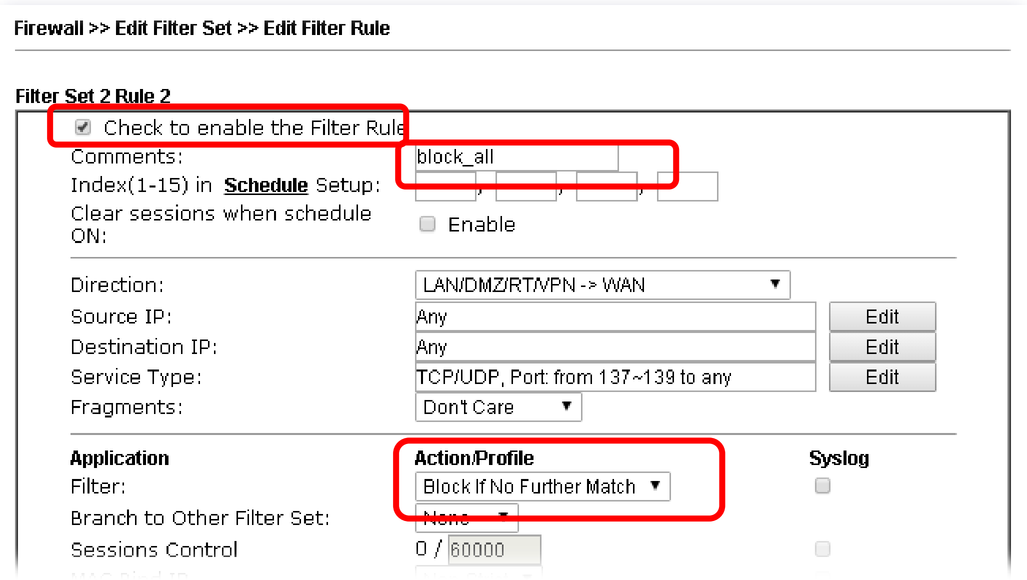
Firewall >> Filter Setup >> Edit Filter Set

Filter Set 2

Comments : Default Data Filter

Filter Rule	Active	Comments	Move Up	Move Down
1	☑	xNetBios -> DNS		Down
2	□		UP	Down
3	□		UP	Down
4	□		UP	Down

3. Check the box of **Check to enable the Filter Rule**. Type the comments (e.g., **block_all**). Choose **Block If No Further Match** for the **Filter** setting. Then, click **OK**.



Firewall >> Edit Filter Set >> Edit Filter Rule

Filter Set 2 Rule 2

☑ Check to enable the Filter Rule

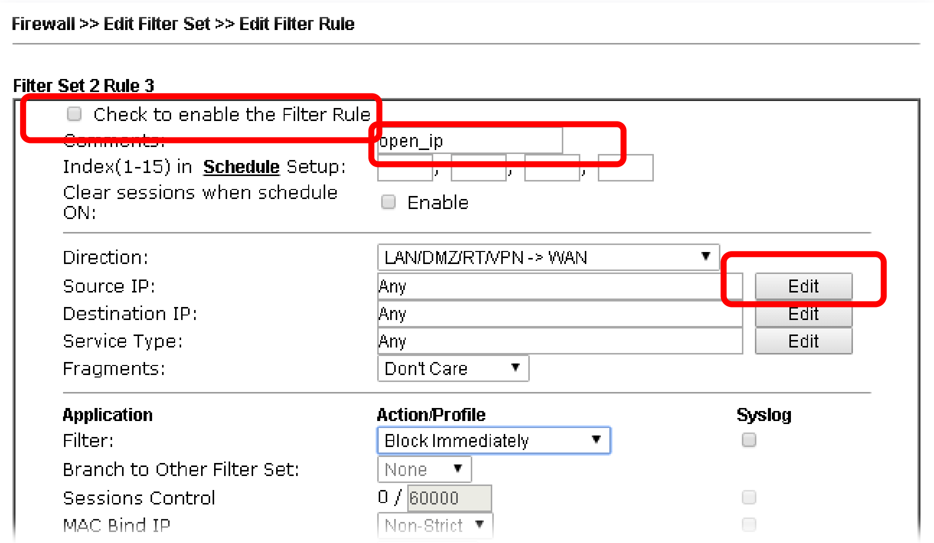
Comments:	block_all	
Index(1-15) in **Schedule** Setup:	, , ,	
Clear sessions when schedule ON:	□ Enable	
Direction:	LAN/DMZ/RT/VPN -> WAN ▼	
Source IP:	Any	Edit
Destination IP:	Any	Edit
Service Type:	TCP/UDP, Port: from 137~139 to any	Edit
Fragments:	Don't Care ▼	

Application	**Action/Profile**	**Syslog**
Filter:	Block If No Further Match ▼	□
Branch to Other Filter Set:	None ▼	
Sessions Control	0 / 60000	□

Info In default, the router will check the packets starting with Set 2, Filter Rule 2 to Filter Rule 7. If Block If No Further Match for is selected for Filter, the firewall of the router would check the packets with the rules starting from Rule 3 to Rule 7. The packets not matching with the rules will be processed according to Rule 2.

4. Next, set another rule. Just open **Firewall>>Filter Setup**. Click the **Set 2** link and choose the **Filter Rule 3** button.

5. Check the box of **Check to enable the Filter Rule**. Type the comments (e.g., **open_ip**). Click the **Edit** button for **Source IP**.



Firewall >> Edit Filter Set >> Edit Filter Rule

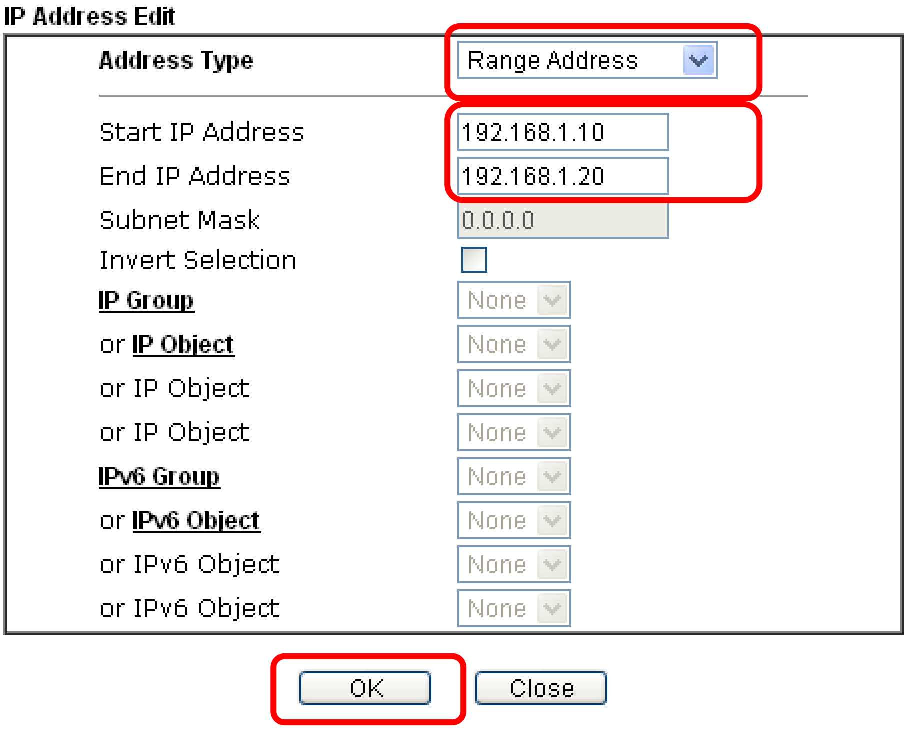
Filter Set 2 Rule 3

□ Check to enable the Filter Rule

Comments:	open_ip	
Index(1-15) in **Schedule** Setup:	, , ,	
Clear sessions when schedule ON:	□ Enable	
Direction:	LAN/DMZ/RT/VPN -> WAN ▼	
Source IP:	Any	Edit
Destination IP:	Any	Edit
Service Type:	Any	Edit
Fragments:	Don't Care ▼	

Application	**Action/Profile**	**Syslog**
Filter:	Block Immediately ▼	□
Branch to Other Filter Set:	None ▼	
Sessions Control	0 / 60000	□
MAC Bind IP	Non-Strict ▼	□

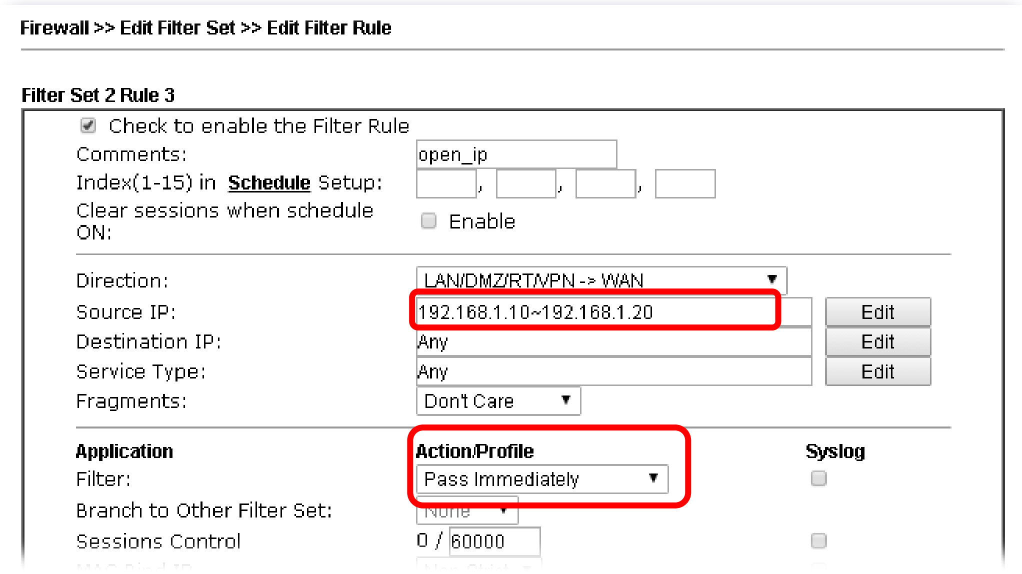
6. A dialog box will be popped up. Choose **Range Address** as **Address Type** by using the drop down list. Type 192.168.1.10 in the field of **Start IP**, and type 192.168.1.20 in the field of **End IP**. Then, click **OK** to save the settings. The computers within the range can access into the Internet.



IP Address Edit

Address Type	Range Address
Start IP Address	192.168.1.10
End IP Address	192.168.1.20
Subnet Mask	0.0.0.0
Invert Selection	□
IP Group	None
or **IP Object**	None
or IP Object	None
or IP Object	None
IPv6 Group	None
or **IPv6 Object**	None
or IPv6 Object	None
or IPv6 Object	None

7. Now, check the content of **Source IP** is correct or not. The action for **Filter** shall be set with **Pass Immediately.** Then, click **OK** to save the settings.



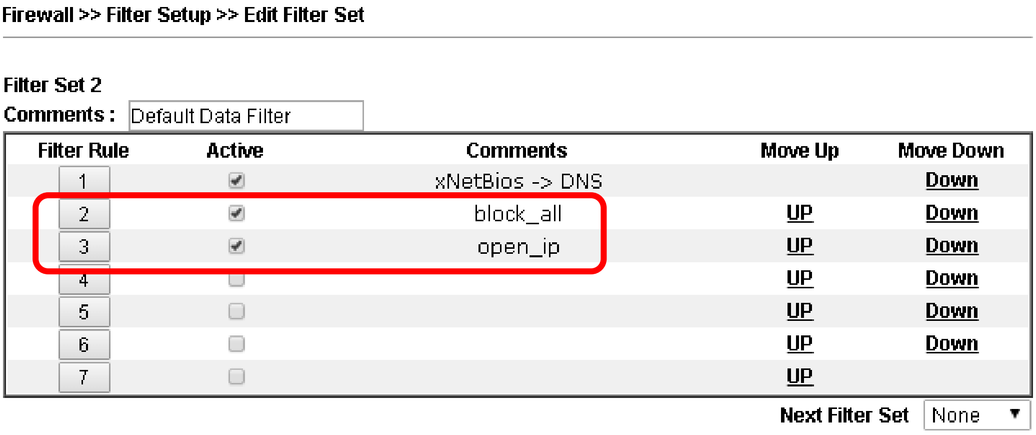
Firewall >> Edit Filter Set >> Edit Filter Rule

Filter Set 2 Rule 3

☑ Check to enable the Filter Rule

Comments:	open_ip	
Index(1-15) in **Schedule** Setup:	, , ,	
Clear sessions when schedule ON:	□ Enable	
Direction:	LAN/DMZ/RT/VPN -> WAN	
Source IP:	192.168.1.10~192.168.1.20	Edit
Destination IP:	Any	Edit
Service Type:	Any	Edit
Fragments:	Don't Care	
Application	**Action/Profile**	**Syslog**
Filter:	Pass Immediately	□
Branch to Other Filter Set:	None	
Sessions Control	0 / 60000	□

8. Both filter rules have been created. Click **OK**.



Firewall >> Filter Setup >> Edit Filter Set

Filter Set 2

Comments : Default Data Filter

Filter Rule	Active	Comments	Move Up	Move Down
1	☑	xNetBios -> DNS		Down
2	☑	block_all	UP	Down
3	☑	open_ip	UP	Down
4	□		UP	Down
5	□		UP	Down
6	□		UP	Down
7	□		UP	

Next Filter Set: None

Now, all the settings are configured well. Only the computers with the IP addresses within 192.168.1.10 ~ 192.168.1.20 can access to Internet.

V-2 CSM(Central Security Management)

CSM is an abbreviation of **Central Security Management** which is used to control IM/P2P usage, filter the web content and URL content to reach a goal of security management.

APP Enforcement Filter

As the popularity of all kinds of instant messenger application arises, communication cannot become much easier. Nevertheless, while some industry may leverage this as a great tool to connect with their customers, some industry may take reserved attitude in order to reduce employee misusage during office hour or prevent unknown security leak. It is similar situation for corporation towards peer-to-peer applications since file-sharing can be convenient but insecure at the same time. To address these needs, we provide CSM functionality.

URL Content Filter

To provide an appropriate cyberspace to users, Vigor router equips with **URL Content Filter** not only to limit illegal traffic from/to the inappropriate web sites but also prohibit other web feature where malicious code may conceal.

Once a user type in or click on an URL with objectionable keywords, URL keyword blocking facility will decline the HTTP request to that web page thus can limit user's access to the website. You may imagine **URL Content Filter** as a well-trained convenience-store clerk who won't sell adult magazines to teenagers. At office, **URL Content Filter** can also provide a job-related only environment hence to increase the employee work efficiency. How can URL Content Filter work better than traditional firewall in the field of filtering? Because it checks the URL strings or some of HTTP data hiding in the payload of TCP packets while legacy firewall inspects packets based on the fields of TCP/IP headers only.

On the other hand, Vigor router can prevent user from accidentally downloading malicious codes from web pages. It's very common that malicious codes conceal in the executable objects, such as ActiveX, Java Applet, compressed files, and other executable files. Once downloading these types of files from websites, you may risk bringing threat to your system. For example, an ActiveX control object is usually used for providing interactive web feature. If malicious code hides inside, it may occupy user's system.

Web Content Filter

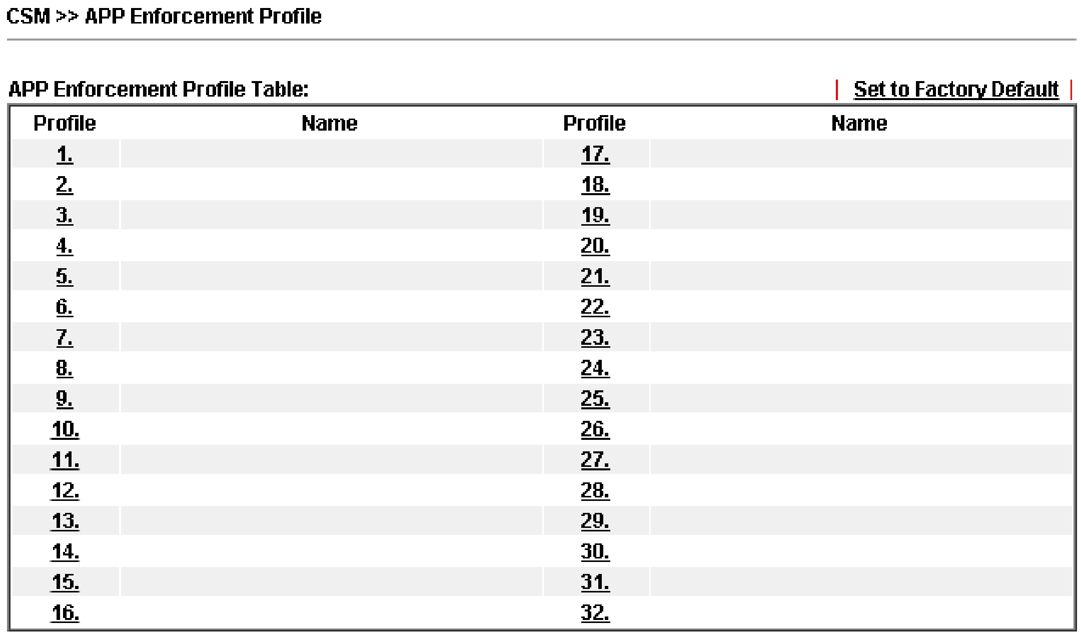
We all know that the content on the Internet just like other types of media may be inappropriate sometimes. As a responsible parent or employer, you should protect those in your trust against the hazards. With Web filtering service of the Vigor router, you can protect your business from common primary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

Once you have activated your Web Filtering service in Vigor router and chosen the categories of website you wish to restrict, each URL address requested (e.g.www.bbc.co.uk) will be checked against our server database. This database is updated as frequent as daily by a global team of Internet researchers. The server will look up the URL and return a category to your router. Your Vigor router will then decide whether to allow access to this site according to the categories you have selected. Please note that this action will not introduce any delay in your Web surfing because each of multiple load balanced database servers can handle millions of requests for categorization.

Info	The priority of URL Content Filter is higher than Web Content Filter.

V-2-1 APP Enforcement Profile

You can define policy profiles for IM (Instant Messenger)/P2P (Peer to Peer)/Protocol/Misc application. This page allows you to set 32 profiles for different requirements. The APP Enforcement Profile will be applied in **Default Rule** of **Firewall>>General Setup** for filtering.



CSM >> APP Enforcement Profile

APP Enforcement Profile Table: | Set to Factory Default |

Profile	Name	Profile	Name
1.		17.	
2.		18.	
3.		19.	
4.		20.	
5.		21.	
6.		22.	
7.		23.	
8.		24.	
9.		25.	
10.		26.	
11.		27.	
12.		28.	
13.		29.	
14.		30.	
15.		31.	
16.		32.	

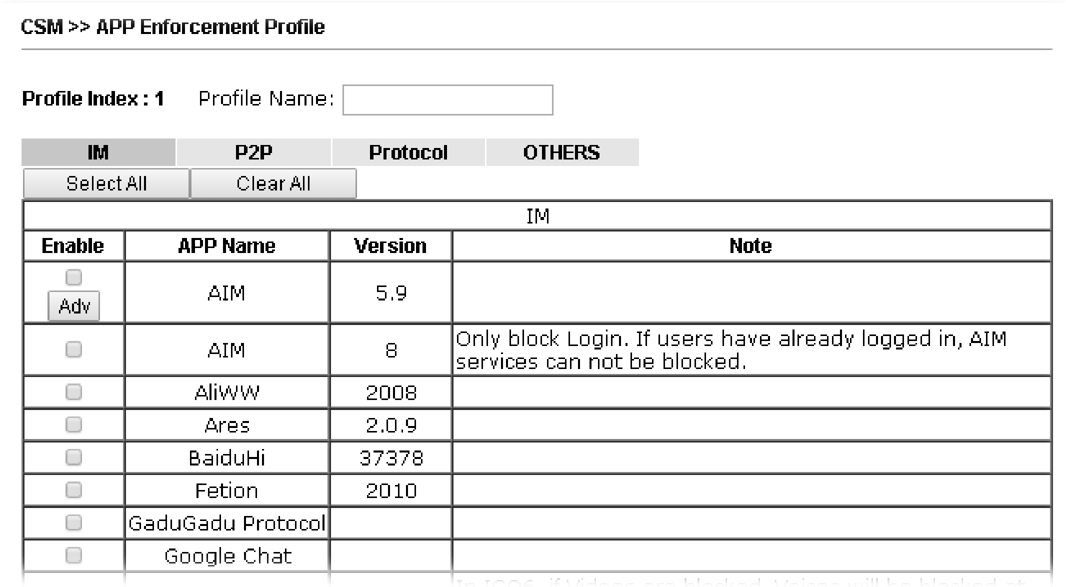
Available settings are explained as follows:

Item	Description
Set to Factory Default	Clear all profiles.
Profile	Display the number of the profile which allows you to click to set different policy.
Name	Display the name of the APP Enforcement Profile.

Click the number under Index column for settings in detail.

There are four tabs IM, P2P, Protocol and Others displayed on this page. Each tab will bring out different items with supported versions that you can choose to disallow people using.

Below shows the items which are categorized under **IM**.



CSM >> APP Enforcement Profile

Profile Index : 1 Profile Name:

IM			
Enable	**APP Name**	**Version**	**Note**
□ Adv	AIM	5.9	
□	AIM	8	Only block Login. If users have already logged in, AIM services can not be blocked.
□	AliWW	2008	
□	Ares	2.0.9	
□	BaiduHi	37378	
□	Fetion	2010	
□	GaduGadu Protocol		
□	Google Chat		

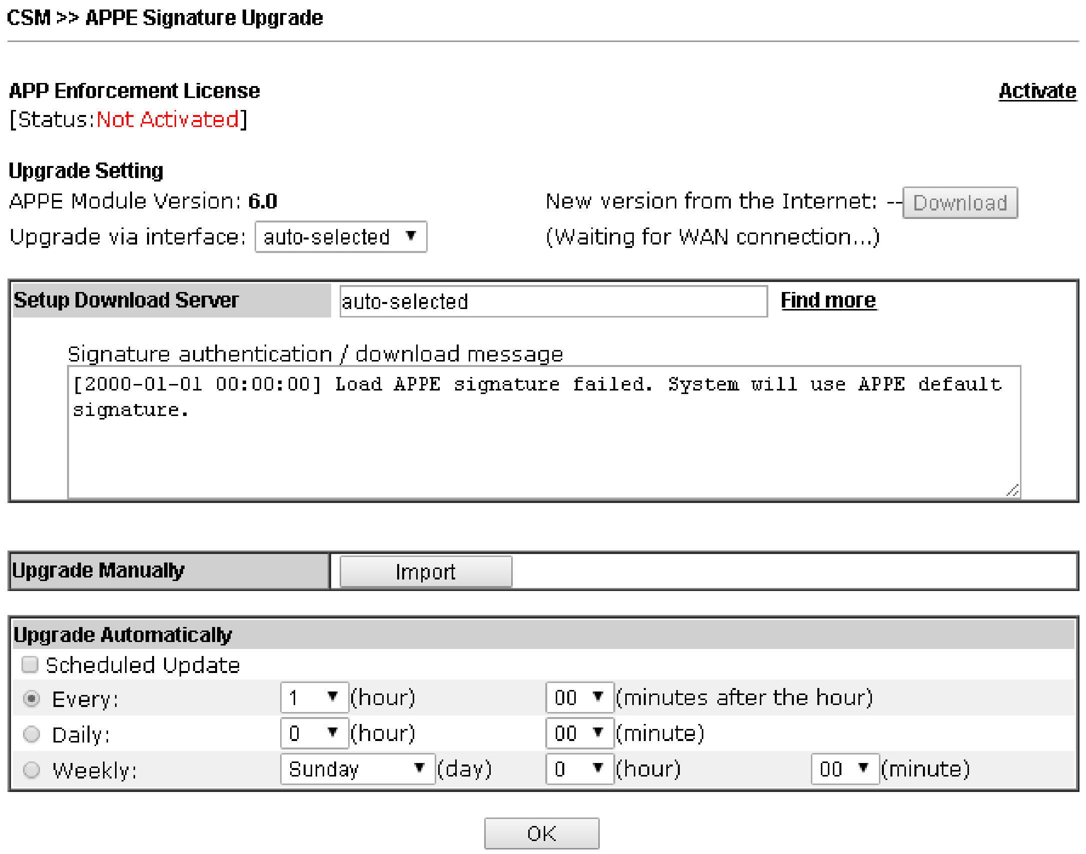
Available settings are explained as follows:

Item	Description
Profile Name	Type a name for the CSM profile. The maximum length of the name you can set is 15 characters.
Select All	Click it to choose all of the items in this page.
Clear All	Uncheck all the selected boxes.
Enable	Check the box to select the APP to be blocked by Vigor router.
Adv	A button under Enable check box allows you to open a pop up window to specify activity for that APP.

The profiles configured here can be applied in the **Firewall>>General Setup** and **Firewall>>Filter Setup** pages as the standard for the host(s) to follow.

V-2-2 APPE Signature Upgrade

The APPE Enforcement Profile adopted by Vigor router will be treated as the APPE signature. DrayTek will periodically upgrade versions for all of the APPs supported by Vigor router. However, it might be inconvenient for users to upgrade the APP version one by one. This feature is specially designed to offer a quick method to execute APP version upgrade. Users can perform the APPE signature upgrade manually or configure the settings on this page to make Vigor router performing the APPE signature automatically.



CSM >> APPE Signature Upgrade

APP Enforcement License Activate
[Status:Not Activated]

Upgrade Setting
APPE Module Version: **6.0** New version from the Internet: -- Download
Upgrade via interface: auto-selected ▼ (Waiting for WAN connection...)

Setup Download Server: auto-selected Find more

Signature authentication / download message

```
[2000-01-01 00:00:00] Load APPE signature failed. System will use APPE default
signature.
```

Upgrade Manually: Import

Upgrade Automatically

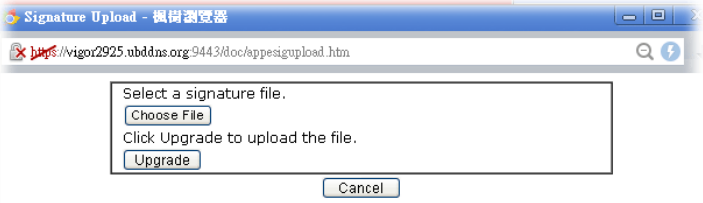
□ Scheduled Update

● Every:	1 ▼ (hour)	00 ▼ (minutes after the hour)	
○ Daily:	0 ▼ (hour)	00 ▼ (minute)	
○ Weekly:	Sunday ▼ (day)	0 ▼ (hour)	00 ▼ (minute)

OK

Available settings are explained as follows:

Item	Description
Upgrade Setting	**APPE Module Version** – Display current version status of APPE signature. **New version from the Internet** – **Download** button is available only when Vigor router detects new APPE version. After clicking it, a dialog will appear with information added to such new version. Click **OK** to exit the dialog and start the signature upgrade. **Upgrade via interface** – Choose one of the WAN interfaces as a channel for APPE signature upgrade.
Setup Download Server	Specify the download server by typing the URL of the server located. Or you can click Find more link to search the one you want. **Signature authentication/download message** – Display the status of APPE Signature Upgrade.
Upgrade Manually	**Import** – Click this button to open the following page. Press Choose File to locate the signature file which downloaded

	from MyVigor portal or FTP server previously. Then, click **Upgrade** and wait for the system completing the process.  Signature Upload - 楓樹瀏覽器 https://vigor2925.ubddns.org:9443/doc/appesigupload.htm Select a signature file. Choose File Click Upgrade to upload the file. Upgrade Cancel
Upgrade Automatically	**Scheduled Update -** Check the box to make Vigor router upgrading the APPE signature based on the schedule configured here.

After finishing all the settings, please click **OK** to save the configuration.

V-2-3 URL Content Filter Profile

To provide an appropriate cyberspace to users, Vigor router equips with **URL Content Filter** not only to limit illegal traffic from/to the inappropriate web sites but also prohibit other web feature where malicious code may conceal.

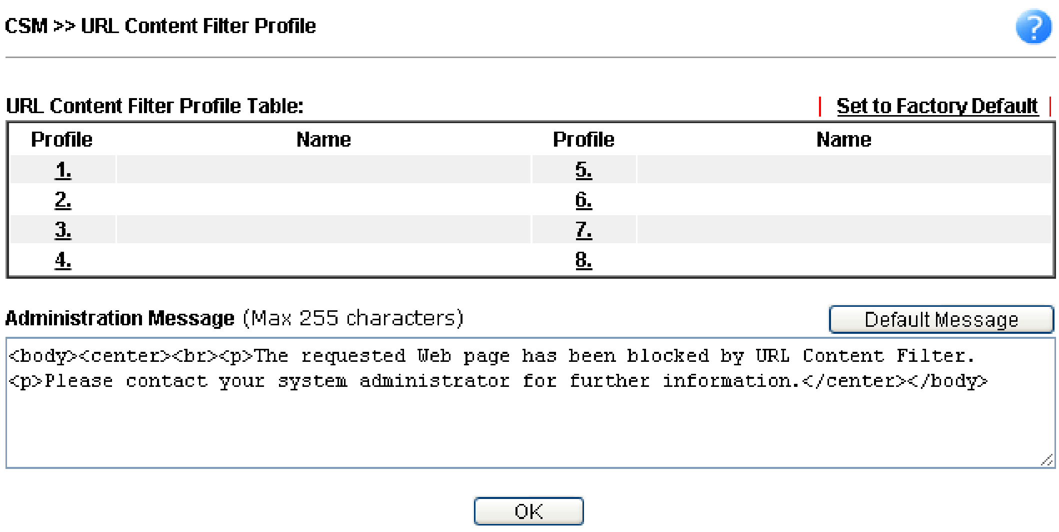
Once a user type in or click on an URL with objectionable keywords, URL keyword blocking facility will decline the HTTP request to that web page thus can limit user's access to the website. You may imagine **URL Content Filter** as a well-trained convenience-store clerk who won't sell adult magazines to teenagers. At office, **URL Content Filter** can also provide a job-related only environment hence to increase the employee work efficiency. How can URL Content Filter work better than traditional firewall in the field of filtering? Because it checks the URL strings or some of HTTP data hiding in the payload of TCP packets while legacy firewall inspects packets based on the fields of TCP/IP headers only.

On the other hand, Vigor router can prevent user from accidentally downloading malicious codes from web pages. It's very common that malicious codes conceal in the executable objects, such as ActiveX, Java Applet, compressed files, and other executable files. Once downloading these types of files from websites, you may risk bringing threat to your system. For example, an ActiveX control object is usually used for providing interactive web feature. If malicious code hides inside, it may occupy user's system.

For example, if you add key words such as "sex", Vigor router will limit web access to web sites or web pages such as "www.sex.com", "www.backdoor.net/images/sex/p_386.html". Or you may simply specify the full or partial URL such as "www.sex.com" or "sex.com".

Also the Vigor router will discard any request that tries to retrieve the malicious code.

Click **CSM** and click **URL Content Filter Profile** to open the profile setting page.



CSM >> URL Content Filter Profile

URL Content Filter Profile Table: | Set to Factory Default |

Profile	Name	Profile	Name
1.		5.	
2.		6.	
3.		7.	
4.		8.	

Administration Message (Max 255 characters) Default Message

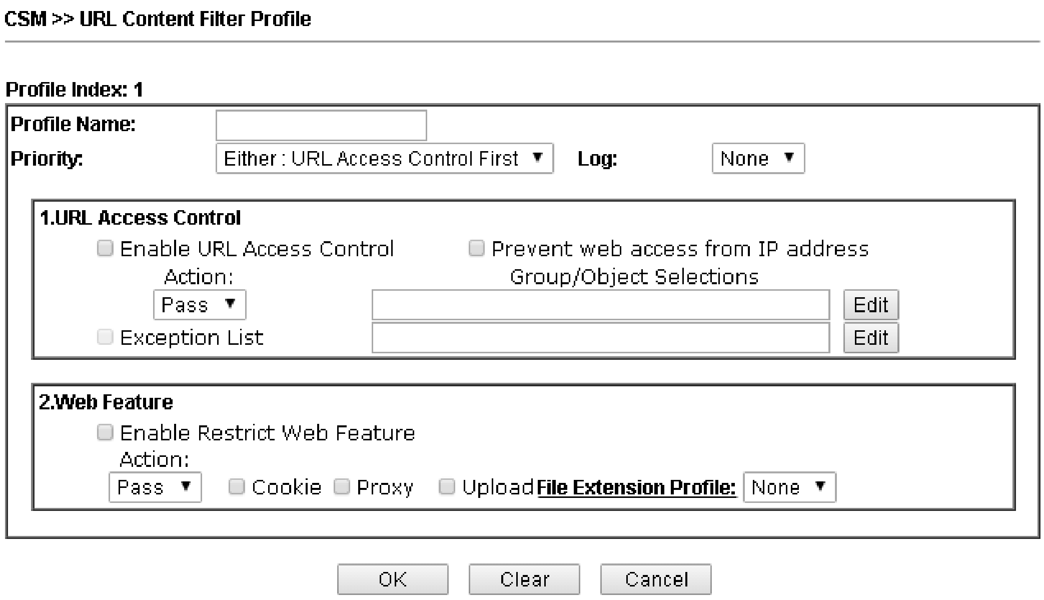
```
<body><center><br><p>The requested Web page has been blocked by URL Content Filter.
<p>Please contact your system administrator for further information.</center></body>
```

OK

Each item is explained as follows:

Item	Description
Set to Factory Default	Clear all profiles.
Profile	Display the number of the profile which allows you to click to set different policy.
Name	Display the name of the URL Content Filter Profile.
Administration Message	You can type the message manually for your necessity. **Default Message** - You can type the message manually for your necessity or click this button to get the default message which will be displayed on the field of **Administration Message**.

You can set eight profiles as URL content filter. Simply click the index number under Profile to open the following web page.



CSM >> URL Content Filter Profile

Profile Index: 1

Profile Name:

Priority: Either : URL Access Control First ▼ Log: None ▼

1.URL Access Control

□ Enable URL Access Control □ Prevent web access from IP address

Action: Pass ▼ Group/Object Selections Edit

□ Exception List Edit

2.Web Feature

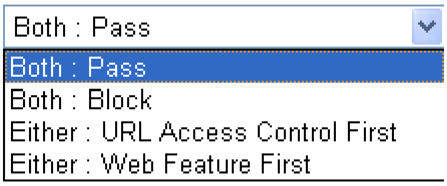
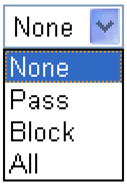
□ Enable Restrict Web Feature

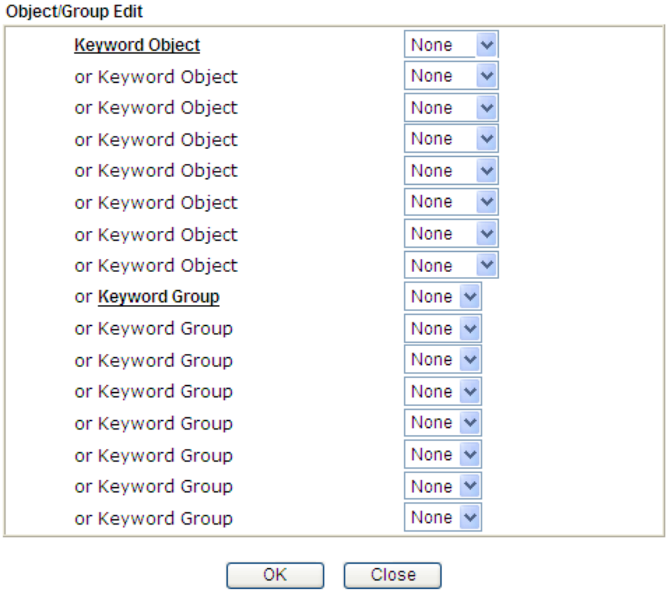
Action: Pass ▼ □ Cookie □ Proxy □ Upload File Extension Profile: None ▼

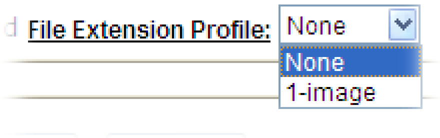
OK Clear Cancel

Available settings are explained as follows:

Item	Description
Profile Name	Type a name for the CSM profile. The maximum length of the

	name you can set is 15 characters.
Priority	It determines the action that this router will apply. **Both: Pass** – The router will let all the packages that match with the conditions specified in URL Access Control and Web Feature below passing through. When you choose this setting, both configuration set in this page for URL Access Control and Web Feature will be inactive. **Both: Block** –The router will block all the packages that match with the conditions specified in URL Access Control and Web Feature below. When you choose this setting, both configuration set in this page for URL Access Control and Web Feature will be inactive. **Either: URL Access Control First** – When all the packages matching with the conditions specified in URL Access Control and Web Feature below, such function can determine the priority for the actions executed. For this one, the router will process the packages with the conditions set below for URL first, then Web feature second. **Either: Web Feature First** –When all the packages matching with the conditions specified in URL Access Control and Web Feature below, such function can determine the priority for the actions executed. For this one, the router will process the packages with the conditions set below for web feature first, then URL second.  Both : Pass Both : Pass Both : Block Either : URL Access Control First Either : Web Feature First
Log	**None** – There is no log file will be recorded for this profile. **Pass** – Only the log about Pass will be recorded in Syslog. **Block** – Only the log about Block will be recorded in Syslog. **All** – All the actions (Pass and Block) will be recorded in Syslog. 
URL Access Control	**Enable URL Access Control** - Check the box to activate URL Access Control. Note that the priority for **URL Access Control** is higher than **Restrict Web Feature**. If the web content match the setting set in URL Access Control, the router will execute the action specified in this field and ignore the action specified under Restrict Web Feature. **Prevent web access from IP address** - Check the box to deny any web surfing activity using IP address, such as http://202.6.3.2. The reason for this is to prevent someone dodges the URL Access Control. You must clear your browser cache first so that the URL content filtering facility operates properly on a web page that you visited before. **Action** – This setting is available only when **Either : URL Access Control First** or **Either : Web Feature First** is selected.

	● *Pass* - Allow accessing into the corresponding webpage with the keywords listed on the box below. ● *Block* - Restrict accessing into the corresponding webpage with the keywords listed on the box below. If the web pages do not match with the keyword set here, it will be processed with reverse action. **Exception List** – Specify the object profile(s) as the exception list which will be processed in an opposite manner to the action selected above. **Group/Object Selections** – The Vigor router provides several frames for users to define keywords and each frame supports multiple keywords. The keyword could be a noun, a partial noun, or a complete URL string. Multiple keywords within a frame are separated by space, comma, or semicolon. In addition, the maximal length of each frame is 32-character long. After specifying keywords, the Vigor router will decline the connection request to the website whose URL string matched to any user-defined keyword. It should be noticed that the more simplified the blocking keyword list is, the more efficiently the Vigor router performs.  Object/Group Edit Keyword Object: None or Keyword Object: None or Keyword Object: None or Keyword Object: None or Keyword Object: None or Keyword Object: None or Keyword Object: None or Keyword Object: None or Keyword Group: None or Keyword Group: None or Keyword Group: None or Keyword Group: None or Keyword Group: None or Keyword Group: None or Keyword Group: None or Keyword Group: None
Web Feature	**Enable Restrict Web Feature -** Check this box to make the keyword being blocked or passed. **Action -** This setting is available only when **Either: URL Access Control First** or **Either: Web Feature First** is selected. ● *Pass* **-** Allow accessing into the corresponding webpage with the keywords listed on the box below. ● *Block* **-** Restrict accessing into the corresponding webpage with the keywords listed on the box below. If the web pages do not match with the specified feature set here, it will be processed with reverse action. **Cookie** - Check the box to filter out the cookie transmission from inside to outside world to protect the local user's privacy. **Proxy** - Check the box to reject any proxy transmission. To control efficiently the limited-bandwidth usage, it will be of

	great value to provide the blocking mechanism that filters out the multimedia files downloading from web pages. **Upload** – Check the box to block the file upload by way of web page. **File Extension Profile -** Choose one of the profiles that you configured in **Object Setting>> File Extension Objects** previously for passing or blocking the file downloading. File Extension Profile: None None 1-image

After finishing all the settings, please click **OK** to save the configuration.

V-2-4 Web Content Filter Profile

There are three ways to activate WCF on vigor router, using **Service Activation Wizard**, by means of **CSM>>Web Content Filter Profile** or via **System Maintenance>>Activation**.

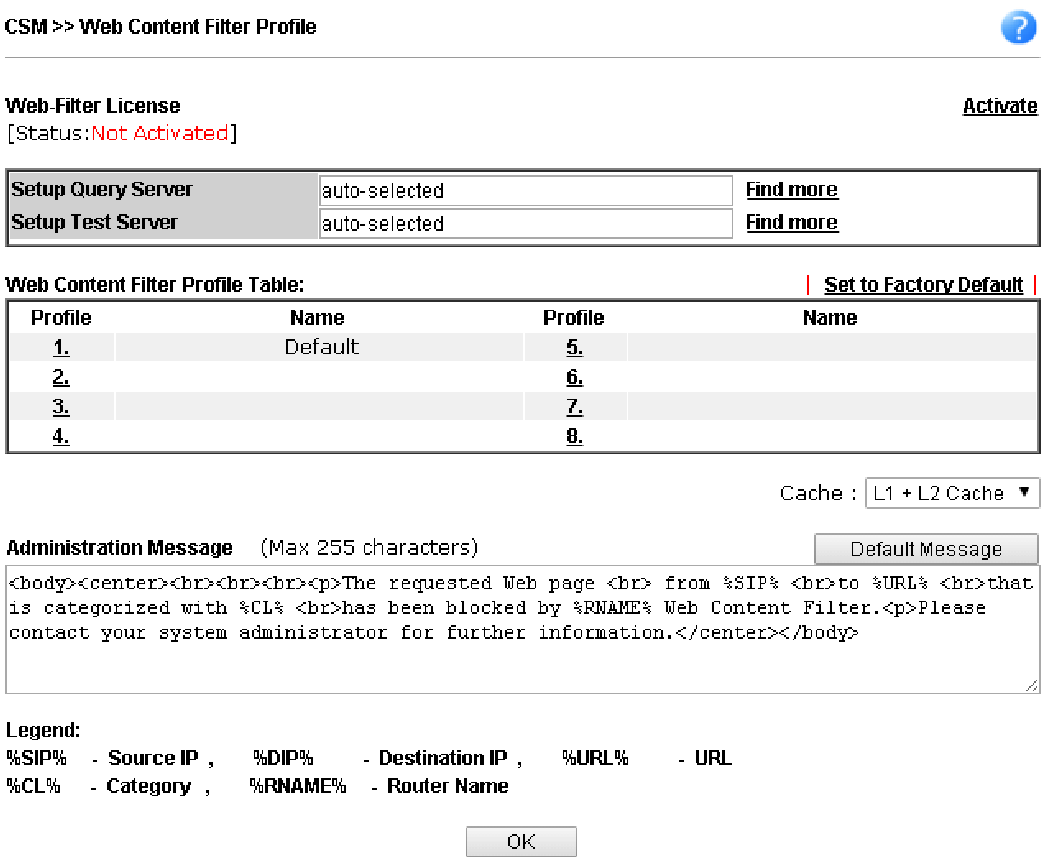
Service Activation Wizard allows you to use trial version of WCF directly without accessing into the server (***MyVigor***) located on http://myvigor.draytek.com.

However, if you use the **Web Content Filter Profile** page to activate WCF feature, it is necessary for you to access into the server (***MyVigor***) located on http://myvigor.draytek.com. Therefore, you need to register an account on http://myvigor.draytek.com for using corresponding service. Please refer to section of creating MyVigor account.

WCF adopts the mechanism developed and offered by certain service provider (e.g., DrayTek). No matter activating WCF feature or getting a new license for web content filter, you have to click **Activate** to satisfy your request. Be aware 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 the channel partner or your dealer.

Click **CSM** and click **Web Content Filter Profile** to open the profile setting page. The default setting for Setup Query Server /Setup Test Server is **auto-selected**. You can choose another server for your necessity by clicking **Find more** to open http://myvigor.draytek.com for searching another qualified and suitable one.

Info 1	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.
Info 2	Commtouch is merged by Cyren, and GlobalView services will be continued to deliver powerful cloud-based information security solutions! Refer to: http://www.prnewswire.com/news-releases/commtouch-is-now-cyren-239025151.html



CSM >> Web Content Filter Profile

Web-Filter License
[Status:Not Activated]

Activate

Setup Query Server	auto-selected	Find more
Setup Test Server	auto-selected	Find more

Web Content Filter Profile Table: | Set to Factory Default |

Profile	Name	Profile	Name
1.	Default	5.	
2.		6.	
3.		7.	
4.		8.	

Cache : L1 + L2 Cache ▼

Administration Message (Max 255 characters) Default Message

```
<body><center><br><br><br><p>The requested Web page <br> from %SIP% <br>to %URL% <br>that
is categorized with %CL% <br>has been blocked by %RNAME% Web Content Filter.<p>Please
contact your system administrator for further information.</center></body>
```

Legend:
%SIP% - Source IP , %DIP% - Destination IP , %URL% - URL
%CL% - Category , %RNAME% - Router Name

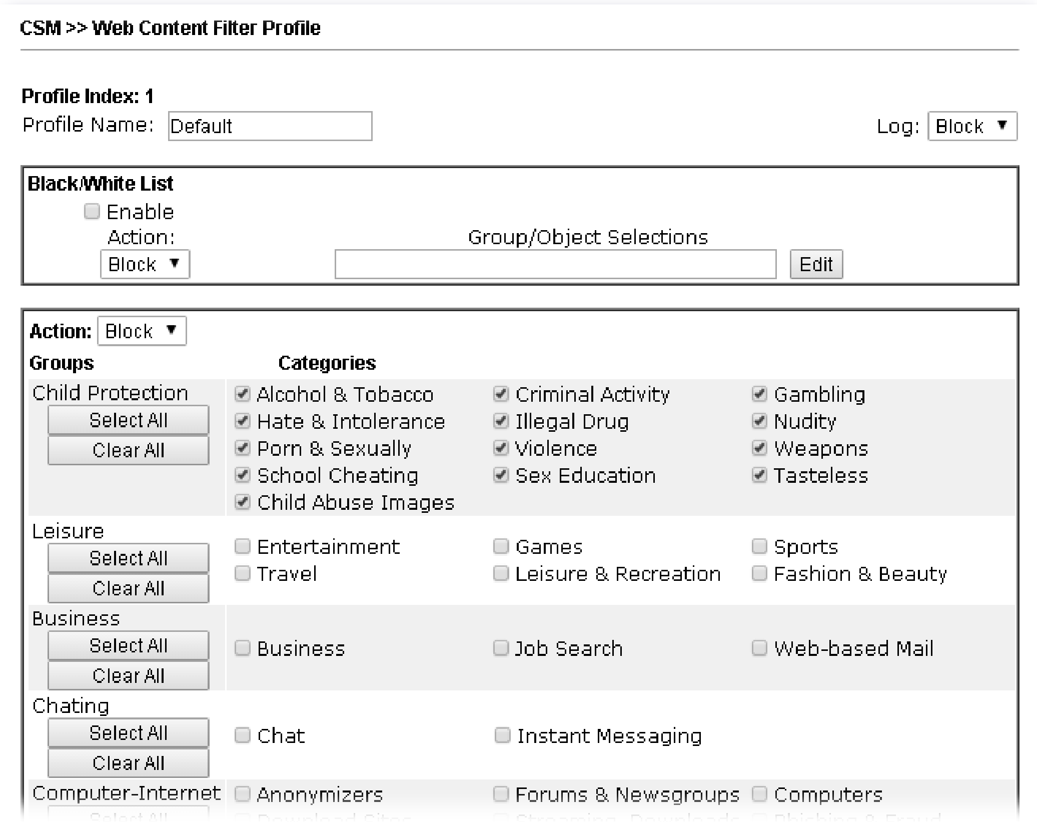
OK

Available settings are explained as follows:

Item	Description
Activate	Click it to access into MyVigor for activating WCF service.
Setup Query Server	It is recommended for you to use the default setting, auto-selected. You need to specify a server for categorize searching when you type URL in browser based on the web content filter profile.
Setup Test Server	It is recommended for you to use the default setting, auto-selected.
Find more	Click it to open http://myvigor.draytek.com for searching another qualified and suitable server.
Set to Factory Default	Click this link to retrieve the factory settings.
Default Message	You can type the message manually for your necessity or click this button to get the default message which will be displayed on the field of **Administration Message**.
Cache	**None** – the router will check the URL that the user wants to access via WCF precisely, however, the processing rate is normal. Such item can provide the most accurate URL matching. **L1** – the router will check the URL that the user wants to access via WCF. If the URL has been accessed previously, it will be stored in the router to be accessed quickly if required. Such item can provide accurate URL matching with faster rate. **L2** – the router will check the URL that the user wants to access via WCF. If the data has been accessed previously, the IP addresses of source and destination IDs will be memorized

	for a short time (about 1 second) in the router. When the user tries to access the same destination ID, the router will check it by comparing the record stored. If it matches, the page will be retrieved quickly. Such item can provide URL matching with the fastest rate. **L1+L2 Cache** – the router will check the URL with fast processing rate combining the feature of L1 and L2.

Eight profiles are provided here as Web content filters. Simply click the index number under Profile to open the following web page. The items listed in Categories will be changed according to the different service providers. If you have and activate another web content filter license, the items will be changed simultaneously. All of the configuration made for web content filter will be deleted automatically. Therefore, please backup your data before you change the web content filter license.



CSM >> Web Content Filter Profile

Profile Index: 1

Profile Name: Default

Log: Block ▼

Black/White List

□ Enable

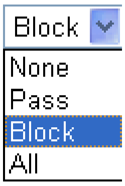
Action: Block ▼

Group/Object Selections: Edit

Action: Block ▼

Groups	Categories		
Child Protection Select All Clear All	☑ Alcohol & Tobacco ☑ Hate & Intolerance ☑ Porn & Sexually ☑ School Cheating ☑ Child Abuse Images	☑ Criminal Activity ☑ Illegal Drug ☑ Violence ☑ Sex Education	☑ Gambling ☑ Nudity ☑ Weapons ☑ Tasteless
Leisure Select All Clear All	□ Entertainment □ Travel	□ Games □ Leisure & Recreation	□ Sports □ Fashion & Beauty
Business Select All Clear All	□ Business	□ Job Search	□ Web-based Mail
Chating Select All Clear All	□ Chat	□ Instant Messaging	
Computer-Internet	□ Anonymizers	□ Forums & Newsgroups	□ Computers

Available settings are explained as follows:

Item	Description
Profile Name	Type a name for the CSM profile. The maximum length of the name you can set is 15 characters.
Log	**None** – There is no log file will be recorded for this profile. **Pass** – Only the log about Pass will be recorded in Syslog. **Block** – Only the log about Block will be recorded in Syslog. **All** – All the actions (Pass and Block) will be recorded in Syslog. 

Black/White List	**Enable -** Activate white/black list function for such profile. **Group/Object Selections -** Click **Edit** to choose the group or object profile as the content of white/black list. **Pass** - **allow** accessing into the corresponding webpage with the characters listed on **Group/Object Selections**. If the web pages do not match with the specified feature set here, they will be processed with the categories listed on the box below. **Block** - **restrict** accessing into the corresponding webpage with the characters listed on **Group/Object Selections**. If the web pages do not match with the specified feature set here, they will be processed with the categories listed on the box below.
Action	**Pass** - allow accessing into the corresponding webpage with the categories listed on the box below. **Block** - restrict accessing into the corresponding webpage with the categories listed on the box below. If the web pages do not match with the specified feature set here, it will be processed with reverse action.

After finishing all the settings, please click **OK** to save the configuration.

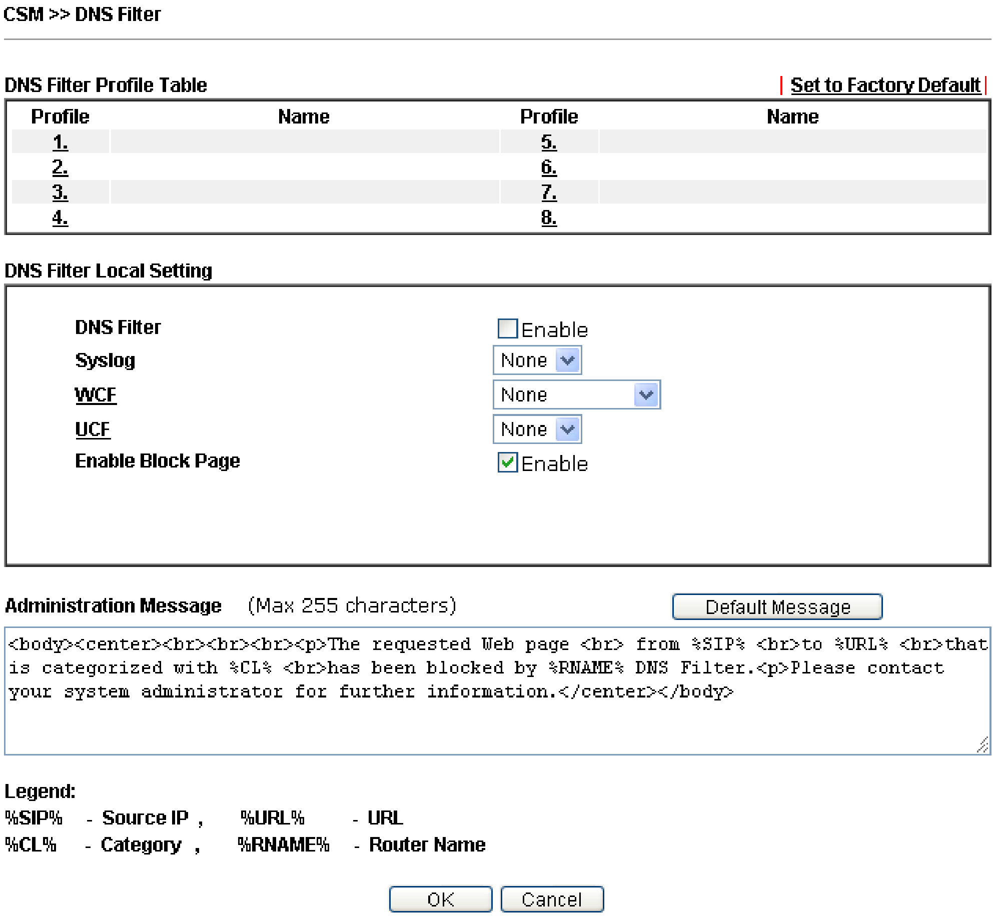
V-2-5 DNS Filter Profile

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

DNS can be specified in **LAN>>General Setup** by using the server (e.g., 168.95.1.1) on router or external DNS server (e.g., 8.8.8.8). If the router server is used, **DNS Filter General Setting** will be applied to DNS query from clients on LAN. However, if the external DNS server is used, **DNS Filter Profile** will be applied to DNS query coming from clients on LAN.

Info

For DNS filter must use the WCF service profile to filter the packets, therefore WCF license must be activated first. Otherwise, DNS filter does not have any effect on packets.



CSM >> DNS Filter

DNS Filter Profile Table | Set to Factory Default |

Profile	Name	Profile	Name
1.		5.	
2.		6.	
3.		7.	
4.		8.	

DNS Filter Local Setting

DNS Filter	□ Enable
Syslog	None
WCF	None
UCF	None
Enable Block Page	☑ Enable

Administration Message (Max 255 characters) Default Message

```
<body><center><br><br><br><p>The requested Web page <br> from %SIP% <br>to %URL% <br>that
is categorized with %CL% <br>has been blocked by %RNAME% DNS Filter.<p>Please contact
your system administrator for further information.</center></body>
```

Legend:

%SIP%	- Source IP ,	%URL%	- URL
%CL%	- Category ,	%RNAME%	- Router Name

Available settings are explained as follows:

Item	Description
DNS Filter Profile Table	It displays a list of different DNS filter profiles (with specified WCF and UCF). Click the profile link to open the following page. Then, type the name of the profile and specify WCF/UCF based on your requirement.
DNS Filter Local Setting	**DNS Filter Local Setting** will be applied to DNS query from clients on LAN when router's DNS server is used. **DNS Filter -** Check Enable to enable such feature. **Syslog -** The filtering result can be recorded according to the

	setting selected for Syslog. ● **None** – There is no log file will be recorded for this profile. ● **Pass** – Only the log about Pass will be recorded in Syslog. ● **Block** – Only the log about Block will be recorded in Syslog. ● **All** – All the actions (Pass and Block) will be recorded in Syslog. **WCF-** Set the filtering conditions. **UCF** - Set the filtering conditions. **Enable Block Page -** If such function is enabled, when DNS packets are blocked by DNS filter, a web page containing the description listed on Administration Message will be shown on the screen.
Administration Message	Type the words or sentences which will be displayed when a web page is blocked by Vigor router.

After finishing all the settings, please click **OK** to save the configuration.

Application Notes

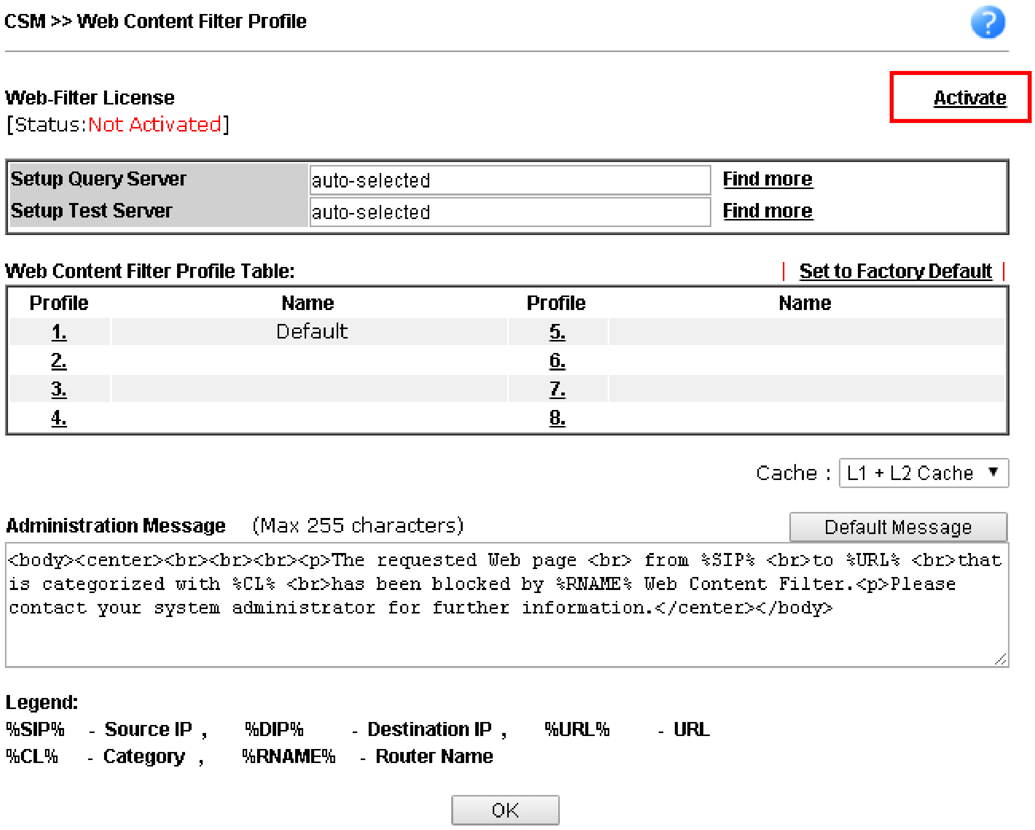
A-1 How to Create an Account for MyVigor

The website of MyVigor (a server located on http://myvigor.draytek.com) provides several useful services (such as Anti-Spam, Web Content Filter, Anti-Intrusion, and etc.) to filtering the web pages for the sake of protecting your system.

To access into MyVigor for getting more information, please create an account for MyVigor.

Create an Account via Vigor Router

1. Click **CSM>> Web Content Filter Profile**. The following page will appear.



CSM >> Web Content Filter Profile

Web-Filter License
[Status:Not Activated]

Activate

Setup Query Server	auto-selected	Find more
Setup Test Server	auto-selected	Find more

Web Content Filter Profile Table: | Set to Factory Default |

Profile	Name	Profile	Name
1.	Default	5.	
2.		6.	
3.		7.	
4.		8.	

Cache : L1 + L2 Cache

Administration Message (Max 255 characters) Default Message

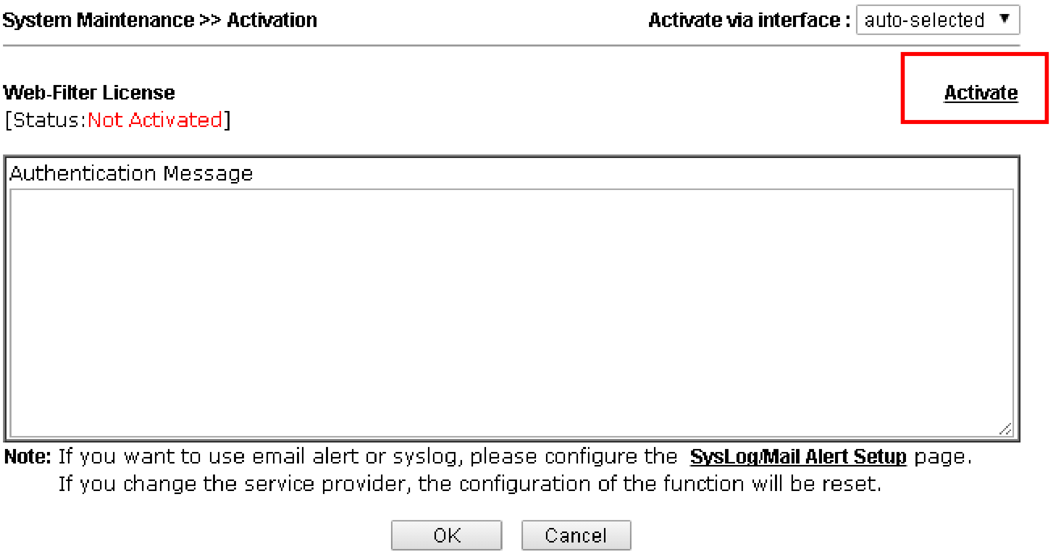
```
<body><center><br><br><br><p>The requested Web page <br> from %SIP% <br>to %URL% <br>that is categorized with %CL% <br>has been blocked by %RNAME% Web Content Filter.<p>Please contact your system administrator for further information.</center></body>
```

Legend:
%SIP% - Source IP , %DIP% - Destination IP , %URL% - URL
%CL% - Category , %RNAME% - Router Name

OK

Or

Click **System Maintenance>>Activation** to open the following page.



System Maintenance >> Activation

Activate via interface : auto-selected ▼

Web-Filter License

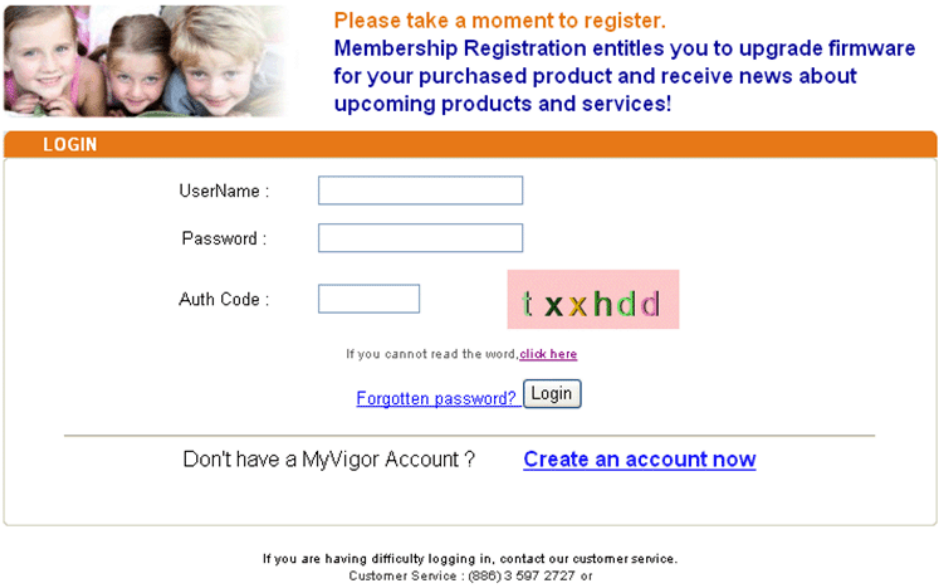
[Status:Not Activated]

Activate

Authentication Message

Note: If you want to use email alert or syslog, please configure the SysLog/Mail Alert Setup page.
If you change the service provider, the configuration of the function will be reset.

2. Click the **Activate** link. A login page for MyVigor web site will pop up automatically.



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 :

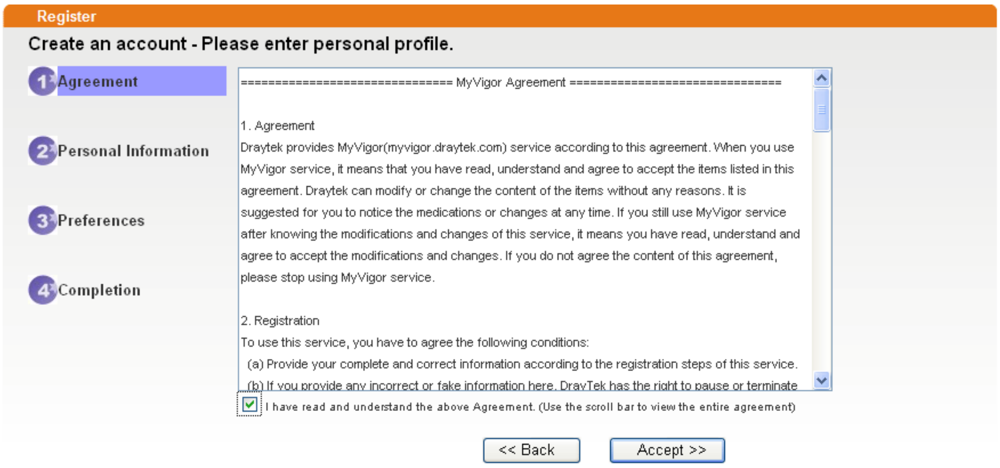
If you cannot read the word,click here

Don't have a MyVigor Account ? Create an account now

If you are having difficulty logging in, contact our customer service.
Customer Service : (886) 3 597 2727 or

3. Click the link of **Create an account now**.

4. Check to confirm that you accept the Agreement and click **Accept**.



Register

Create an account - Please enter personal profile.

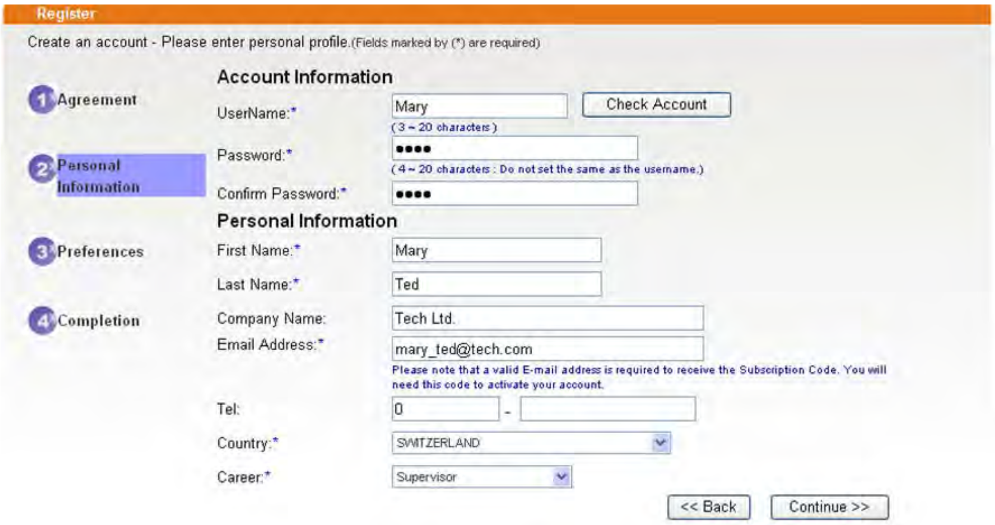
============================== MyVigor Agreement ==============================

1. Agreement
Draytek provides MyVigor(myvigor.draytek.com) service according to this agreement. When you use MyVigor service, it means that you have read, understand and agree to accept the items listed in this agreement. Draytek can modify or change the content of the items without any reasons. It is suggested for you to notice the medications or changes at any time. If you still use MyVigor service after knowing the modifications and changes of this service, it means you have read, understand and agree to accept the modifications and changes. If you do not agree the content of this agreement, please stop using MyVigor service.

2. Registration
To use this service, you have to agree the following conditions:
(a) Provide your complete and correct information according to the registration steps of this service.
(b) If you provide any incorrect or fake information here, DrayTek has the right to pause or terminate

☑ I have read and understand the above Agreement. (Use the scroll bar to view the entire agreement)

5. Type your personal information in this page and then click **Continue**.



Register

Create an account - Please enter personal profile.(Fields marked by (*) are required)

1 Agreement
2 Personal Information
3 Preferences
4 Completion

Account Information

UserName:* Mary [Check Account]
(3 ~ 20 characters)

Password:* ●●●●
(4 ~ 20 characters : Do not set the same as the username.)

Confirm Password:* ●●●●

Personal Information

First Name:* Mary

Last Name:* Ted

Company Name: Tech Ltd.

Email Address:* mary_ted@tech.com
Please note that a valid E-mail address is required to receive the Subscription Code. You will need this code to activate your account.

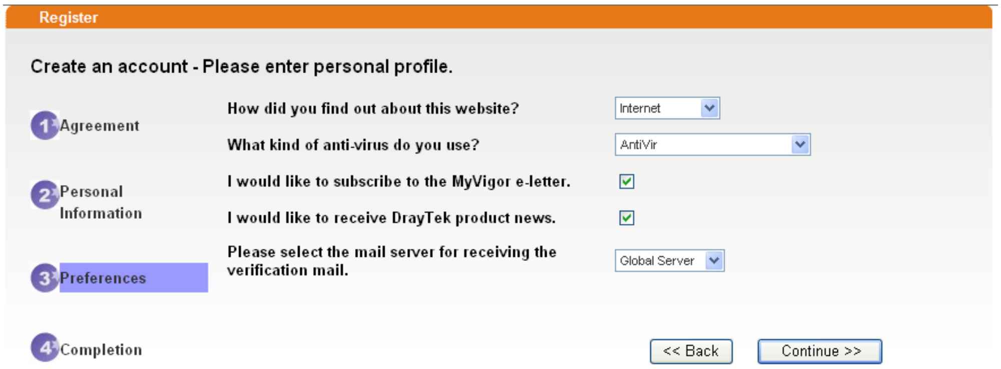
Tel: 0 -

Country:* SWITZERLAND

Career:* Supervisor

[<< Back] [Continue >>]

6. Choose proper selection for your computer and click **Continue**.



Register

Create an account - Please enter personal profile.

1 Agreement
2 Personal Information
3 Preferences
4 Completion

How did you find out about this website? Internet

What kind of anti-virus do you use? AntiVir

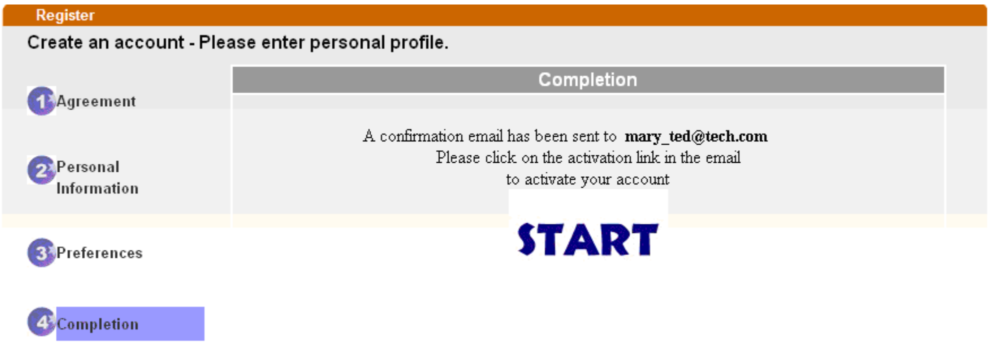
I would like to subscribe to the MyVigor e-letter. ☑

I would like to receive DrayTek product news. ☑

Please select the mail server for receiving the verification mail. Global Server

[<< Back] [Continue >>]

7. Now you have created an account successfully. Click START.

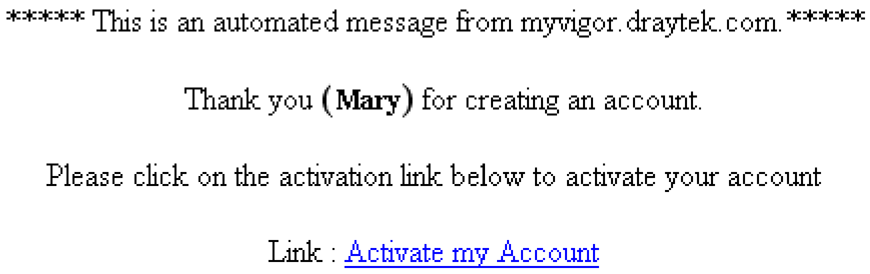


Register

Create an account - Please enter personal profile.

A confirmation email has been sent to **mary_ted@tech.com**
Please click on the activation link in the email
to activate your account

8. Check to see the confirmation *email* with the title of **New Account Confirmation Letter from myvigor.draytek.com**.



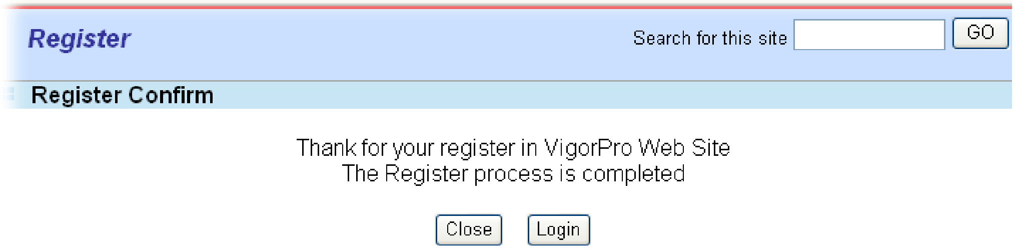
***** This is an automated message from myvigor.draytek.com.*****

Thank you (**Mary**) for creating an account.

Please click on the activation link below to activate your account

Link : Activate my Account

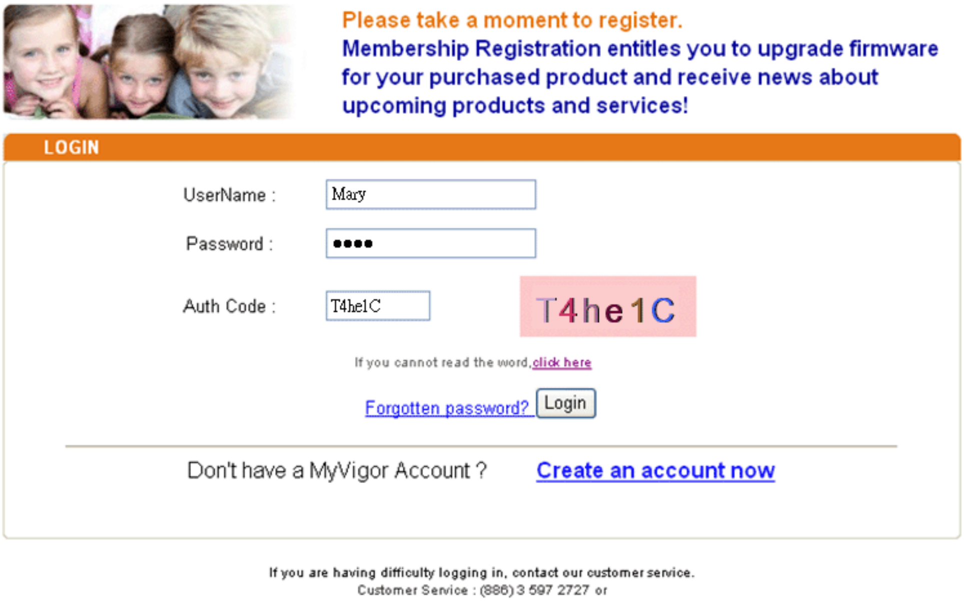
9. Click the **Activate my Account** link to enable the account that you created. The following screen will be shown to verify the register process is finished. Please click **Login**.



Register Confirm

Thank for your register in VigorPro Web Site
The Register process is completed

10. When you see the following page, please type in the account and password (that you just created) in the fields of **UserName** and **Password**.



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 : Mary

Password : ●●●●

Auth Code : T4he1C

If you cannot read the word,click here

Forgotten password? Login

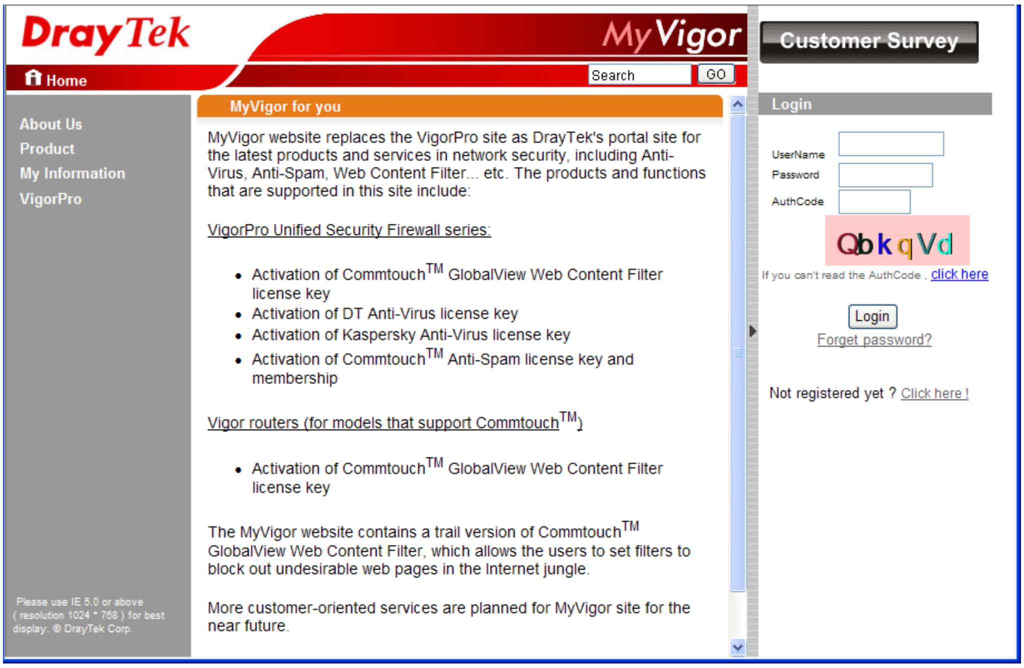
Don't have a MyVigor Account ? Create an account now

If you are having difficulty logging in, contact our customer service.
Customer Service : (886) 3 597 2727 or

11. Now, click **Login**. Your account has been activated. You can access into MyVigor server to activate the service (e.g., WCF) that you want.

Create an Account via MyVigor Web Site

1. Access into http://myvigor.draytek.com. Find the line of **Not registered yet?**. Then, click the link **Click here!** to access into next page.



MyVigor for you

MyVigor website replaces the VigorPro site as DrayTek's portal site for the latest products and services in network security, including Anti-Virus, Anti-Spam, Web Content Filter... etc. The products and functions that are supported in this site include:

VigorPro Unified Security Firewall series:

- Activation of Commtouch™ GlobalView Web Content Filter license key
- Activation of DT Anti-Virus license key
- Activation of Kaspersky Anti-Virus license key
- Activation of Commtouch™ Anti-Spam license key and membership

Vigor routers (for models that support Commtouch™)

- Activation of Commtouch™ GlobalView Web Content Filter license key

The MyVigor website contains a trail version of Commtouch™ GlobalView Web Content Filter, which allows the users to set filters to block out undesirable web pages in the Internet jungle.

More customer-oriented services are planned for MyVigor site for the near future.

Login

UserName

Password

AuthCode

If you can't read the AuthCode , click here

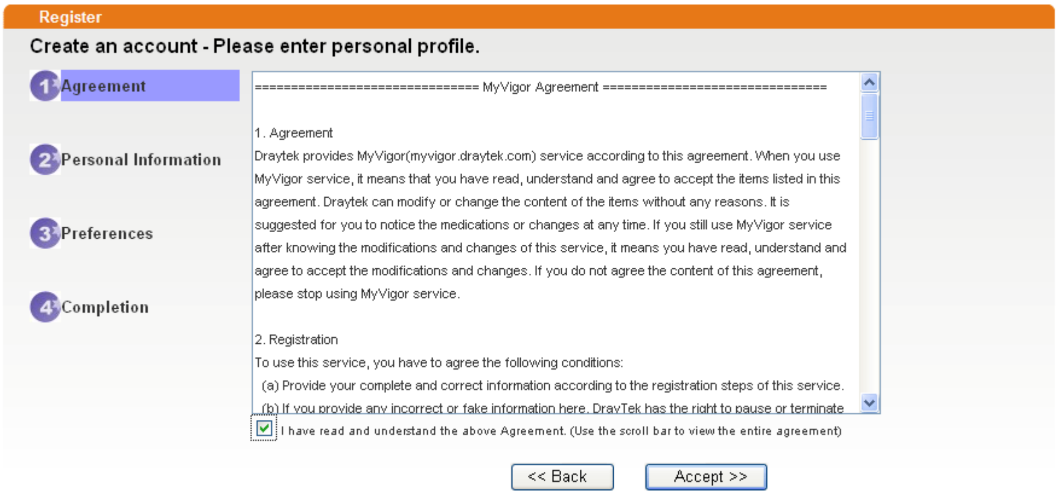
Login

Forget password?

Not registered yet ? Click here !

Please use IE 5.0 or above (resolution 1024 * 768) for best display. © DrayTek Corp.

2. Check to confirm that you accept the Agreement and click **Accept**.



Register

Create an account - Please enter personal profile.

1 Agreement

2 Personal Information

3 Preferences

4 Completion

============================== MyVigor Agreement ==============================

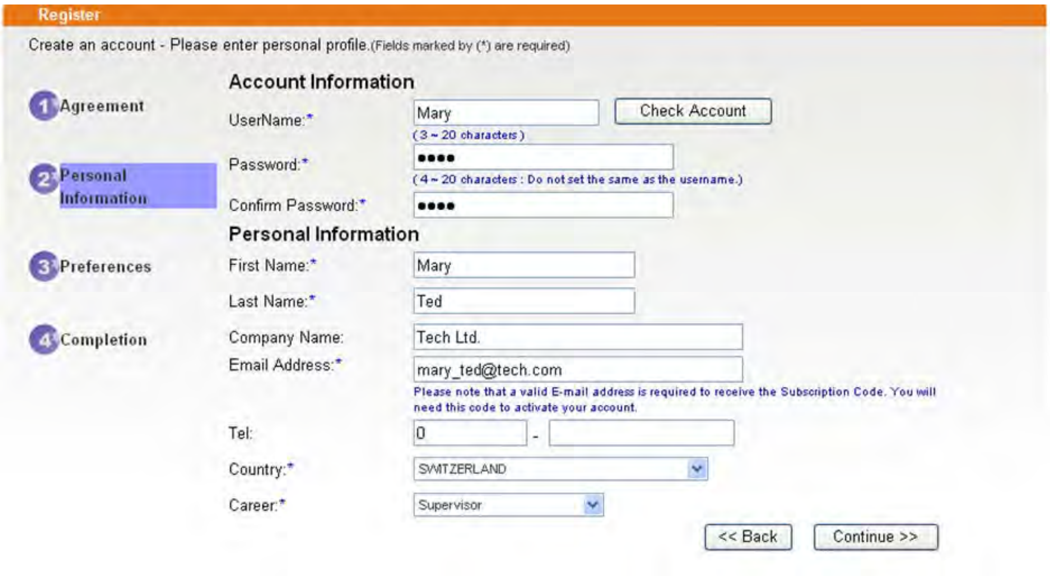
1. Agreement
Draytek provides MyVigor(myvigor.draytek.com) service according to this agreement. When you use MyVigor service, it means that you have read, understand and agree to accept the items listed in this agreement. Draytek can modify or change the content of the items without any reasons. It is suggested for you to notice the medications or changes at any time. If you still use MyVigor service after knowing the modifications and changes of this service, it means you have read, understand and agree to accept the modifications and changes. If you do not agree the content of this agreement, please stop using MyVigor service.

2. Registration
To use this service, you have to agree the following conditions:
(a) Provide your complete and correct information according to the registration steps of this service.
(b) If you provide any incorrect or fake information here, DrayTek has the right to pause or terminate

☑ I have read and understand the above Agreement. (Use the scroll bar to view the entire agreement)

<< Back | Accept >>

3. Type your personal information in this page and then click **Continue**.



Register

Create an account - Please enter personal profile.(Fields marked by (*) are required)

1 Agreement

2 Personal Information

3 Preferences

4 Completion

Account Information

UserName:* Mary [Check Account]
(3 ~ 20 characters)

Password:* ●●●●
(4 ~ 20 characters : Do not set the same as the username.)

Confirm Password:* ●●●●

Personal Information

First Name:* Mary

Last Name:* Ted

Company Name: Tech Ltd.

Email Address:* mary_ted@tech.com
Please note that a valid E-mail address is required to receive the Subscription Code. You will need this code to activate your account.

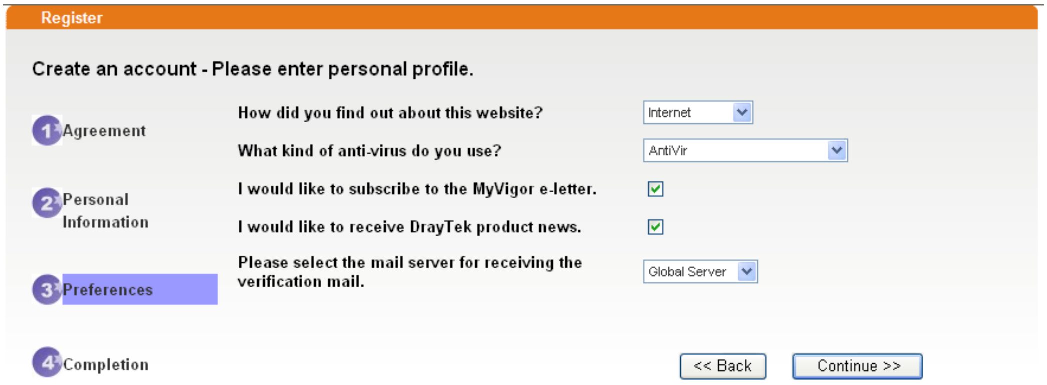
Tel: 0 -

Country:* SWITZERLAND

Career:* Supervisor

<< Back | Continue >>

4. Choose proper selection for your computer and click **Continue**.



Register

Create an account - Please enter personal profile.

1 Agreement

2 Personal Information

3 Preferences

4 Completion

How did you find out about this website? Internet

What kind of anti-virus do you use? AntiVir

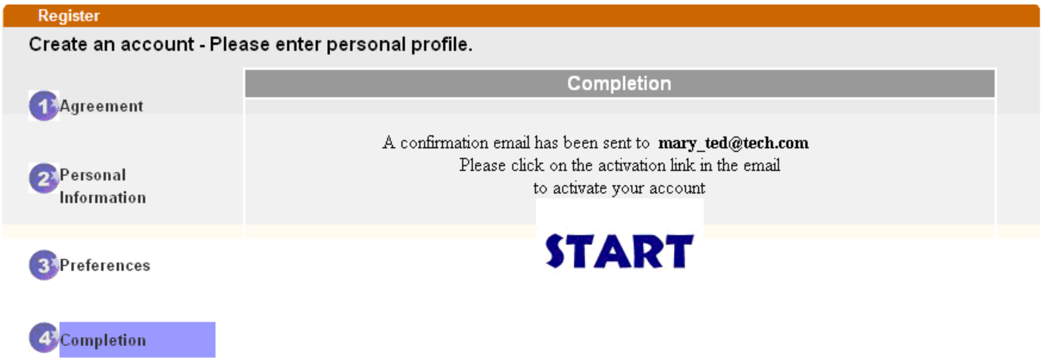
I would like to subscribe to the MyVigor e-letter. ☑

I would like to receive DrayTek product news. ☑

Please select the mail server for receiving the verification mail. Global Server

<< Back | Continue >>

5. Now you have created an account successfully. Click START.



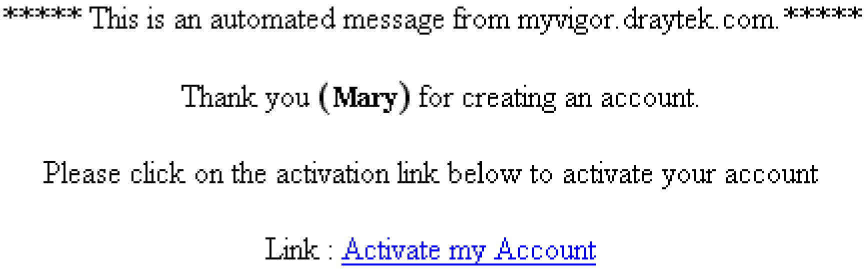
Register

Create an account - Please enter personal profile.

Completion

A confirmation email has been sent to **mary_ted@tech.com**
Please click on the activation link in the email
to activate your account

6. Check to see the confirmation *email* with the title of **New Account Confirmation Letter from myvigor.draytek.com**.



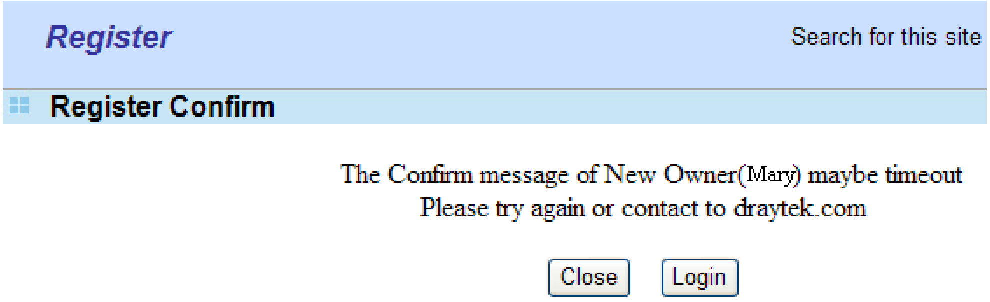
***** This is an automated message from myvigor.draytek.com.*****

Thank you (**Mary**) for creating an account.

Please click on the activation link below to activate your account

Link : Activate my Account

7. Click the **Activate my Account** link to enable the account that you created. The following screen will be shown to verify the register process is finished. Please click **Login**.

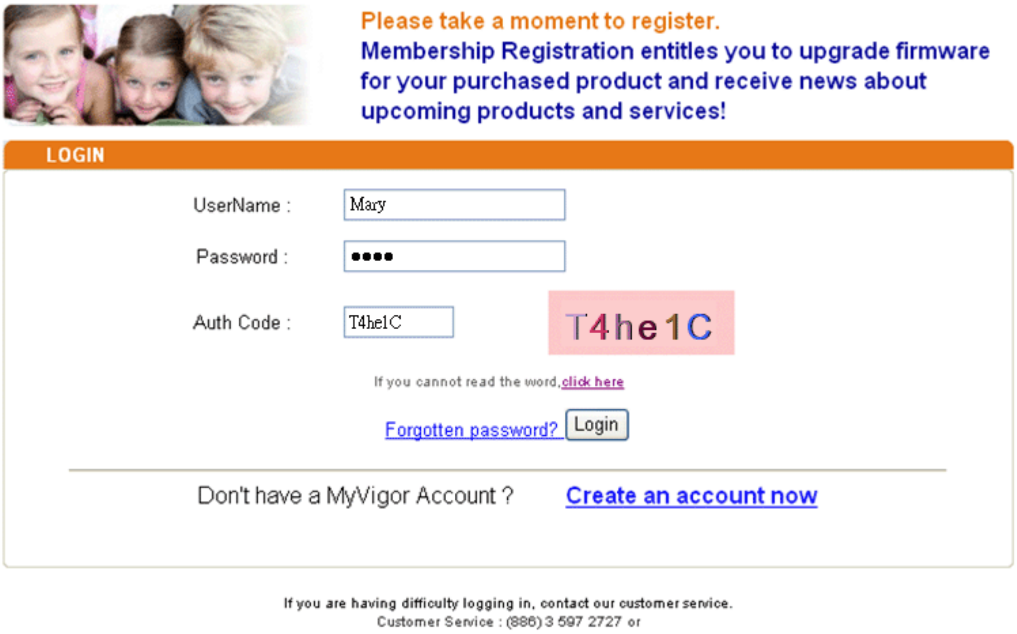


Register

Register Confirm

The Confirm message of New Owner(Mary) maybe timeout
Please try again or contact to draytek.com

8. When you see the following page, please type in the account and password (that you just created) in the fields of **UserName** and **Password**. Then type the code in the box of Auth Code according to the value displayed on the right side of it.



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 : Mary

Password : ●●●●

Auth Code : T4he1C

T4he1C
If you cannot read the word,click here
Forgotten password?
Login
Don't have a MyVigor Account ?
Create an account now

If you are having difficulty logging in, contact our customer service.
Customer Service : (886) 3 597 2727 or

Now, click **Login**. Your account has been activated. You can access into MyVigor server to activate the service (e.g., WCF) that you want.

A-2 How to Block Facebook Service Accessed by the Users via Web Content Filter / URL Content Filter

There are two ways to block the facebook service, Web Content Filter and URL Content Filter.

Web Content Filter,

Benefits: Easily and quickly implement the category/website that you want to block.

Note: License is required.

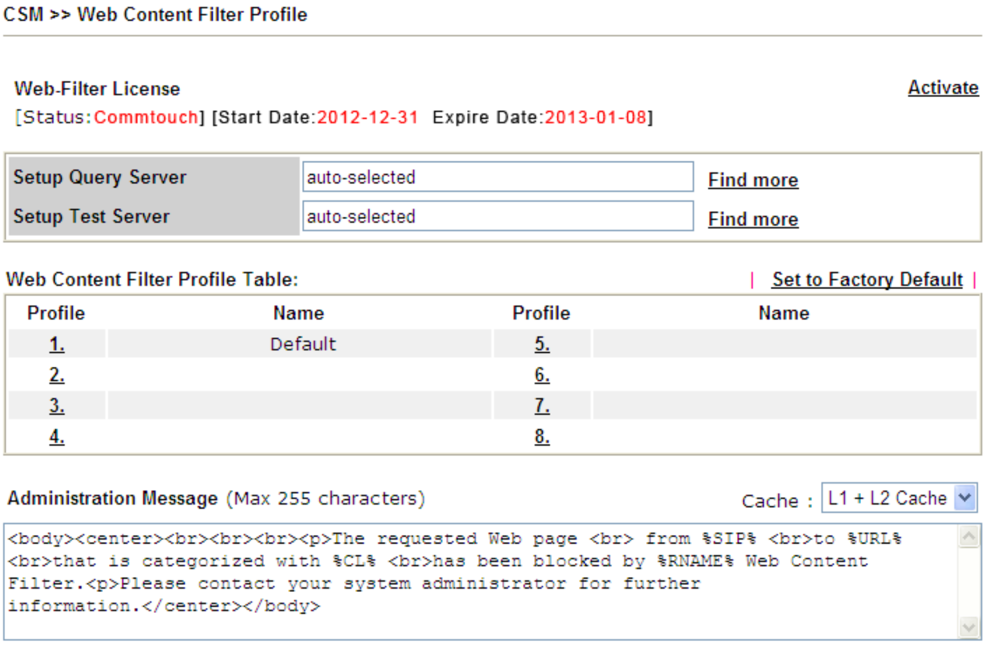
URL Content Filter,

Benefits: Free, flexible for customize webpage.

Note: Manual setting (e.g., one keyword for one website.)

I. Via Web Content Filter

1. Make sure the Web Content Filter (powered by Commtouch) license is valid.



CSM >> Web Content Filter Profile

Web-Filter License
[Status:Commtouch] [Start Date:2012-12-31 Expire Date:2013-01-08]

Activate

Setup Query Server	auto-selected	Find more
Setup Test Server	auto-selected	Find more

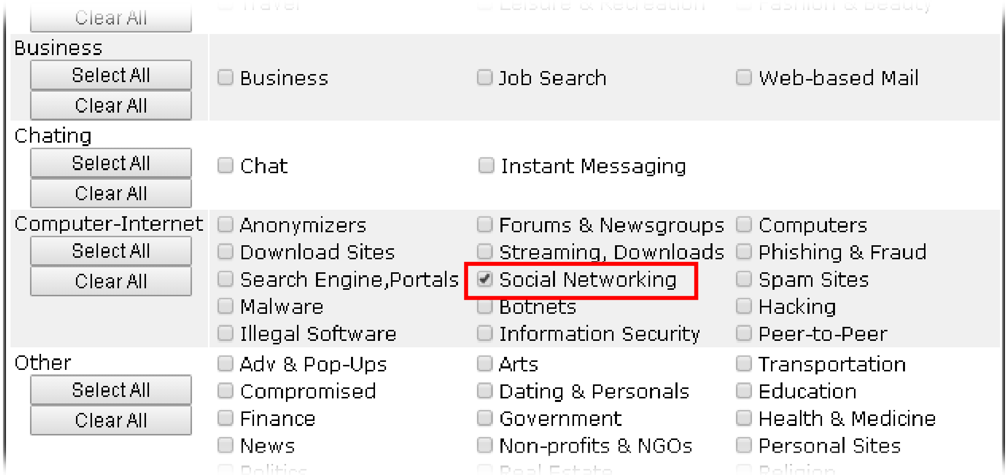
Web Content Filter Profile Table: | Set to Factory Default |

Profile	Name	Profile	Name
1.	Default	5.	
2.		6.	
3.		7.	
4.		8.	

Administration Message (Max 255 characters) Cache : L1 + L2 Cache

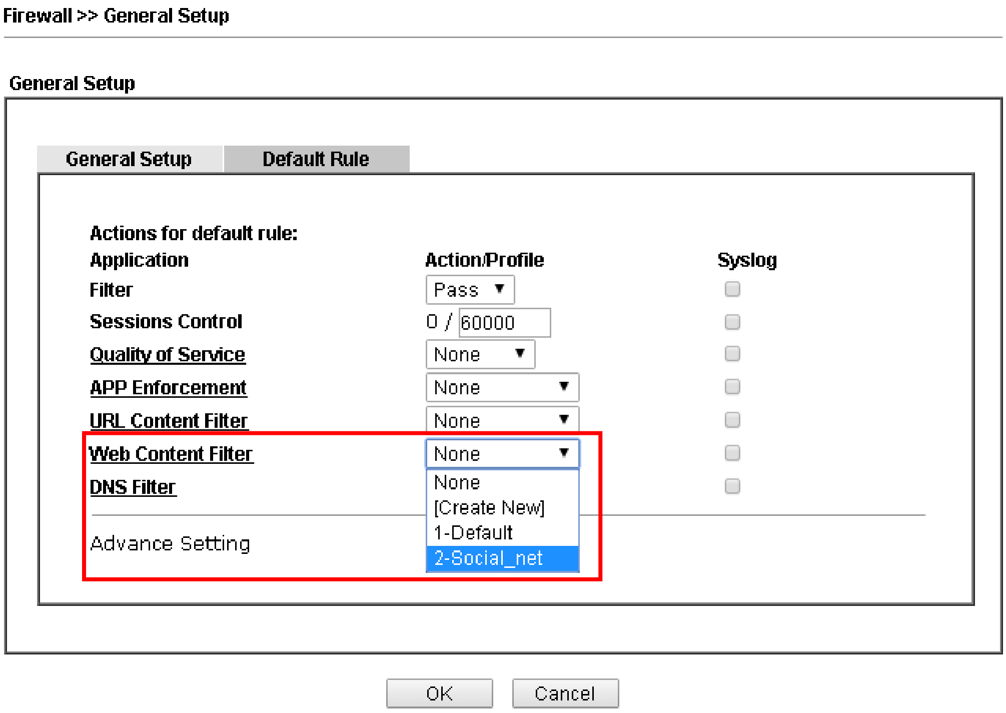
```
<body><center><br><br><br><p>The requested Web page <br> from %SIP% <br>to %URL%
<br>that is categorized with %CL% <br>has been blocked by %RNAME% Web Content
Filter.<p>Please contact your system administrator for further
information.</center></body>
```

2. Open **CSM >> Web Content Filter Profile** to create a WCF profile. Check **Social Networking** with Action**, Block**.



Clear All	□ Travel	□ Leisure & Recreation	□ Fashion & Beauty
Business Select All Clear All	□ Business	□ Job Search	□ Web-based Mail
Chatting Select All Clear All	□ Chat	□ Instant Messaging	
Computer-Internet Select All Clear All	□ Anonymizers □ Download Sites □ Search Engine,Portals □ Malware □ Illegal Software	□ Forums & Newsgroups □ Streaming, Downloads ☑ Social Networking □ Botnets □ Information Security	□ Computers □ Phishing & Fraud □ Spam Sites □ Hacking □ Peer-to-Peer
Other Select All Clear All	□ Adv & Pop-Ups □ Compromised □ Finance □ News □ Politics	□ Arts □ Dating & Personals □ Government □ Non-profits & NGOs □ Real Estate	□ Transportation □ Education □ Health & Medicine □ Personal Sites □ Religion

3. Enable this profile in **Firewall>>General Setup>>Default Rule**.



Firewall >> General Setup

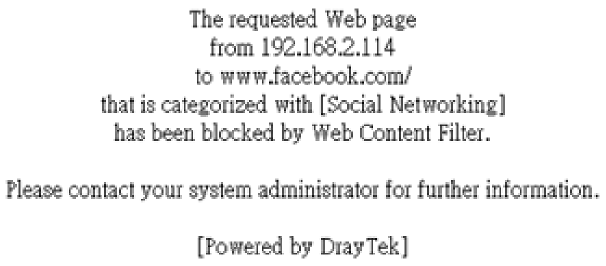
General Setup

Actions for default rule:

Application	Action/Profile	Syslog
Filter	Pass	□
Sessions Control	0 / 60000	□
Quality of Service	None	□
APP Enforcement	None	□
URL Content Filter	None	□
Web Content Filter	None	□
DNS Filter		□

Advance Setting

4. Next time when someone accesses facebook via this router, the web page would be blocked and the following message would be displayed instead.



The requested Web page
from 192.168.2.114
to www.facebook.com/
that is categorized with [Social Networking]
has been blocked by Web Content Filter.

Please contact your system administrator for further information.

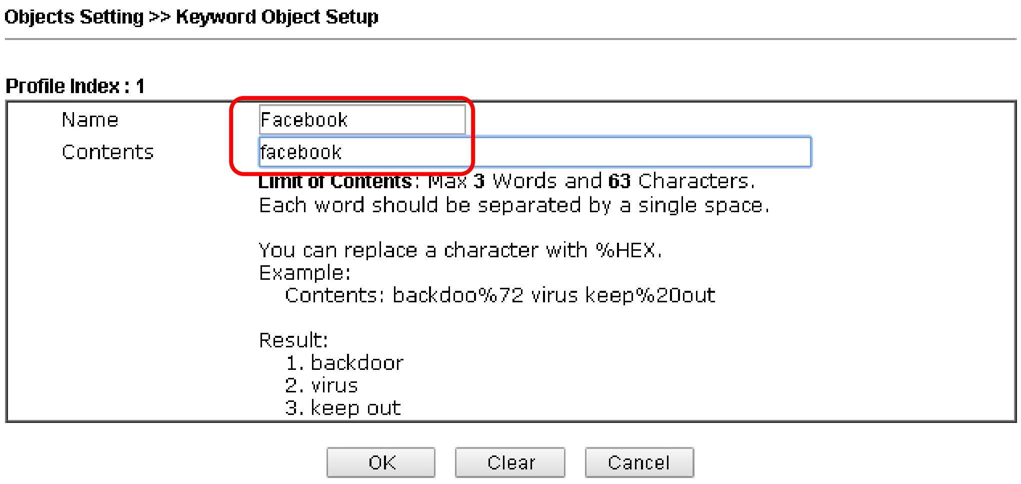
[Powered by DrayTek]

II. Via URL Content Filter

A. Block the web page containing the word of “Facebook”

1. Open **Object Settings>>Keyword Object**. Click an index number to open the setting page.

2. In the field of **Contents**, please type *facebook*. Configure the settings as the following figure.



Objects Setting >> Keyword Object Setup

Profile Index : 1

Name	Facebook
Contents	facebook

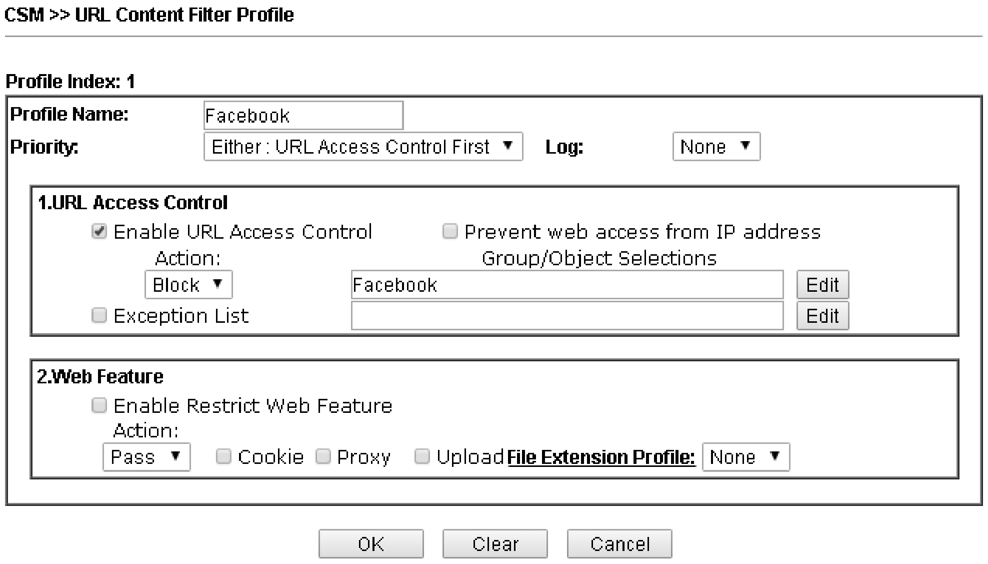
Limit of Contents: Max **3** Words and **63** Characters.
Each word should be separated by a single space.

You can replace a character with %HEX.
Example:
Contents: backdoo%72 virus keep%20out

Result:
1. backdoor
2. virus
3. keep out

3. Open **CSM>>URL Content Filter Profile**. Click an index number to open the setting page.

4. Configure the settings as the following figure.



CSM >> URL Content Filter Profile

Profile Index: 1

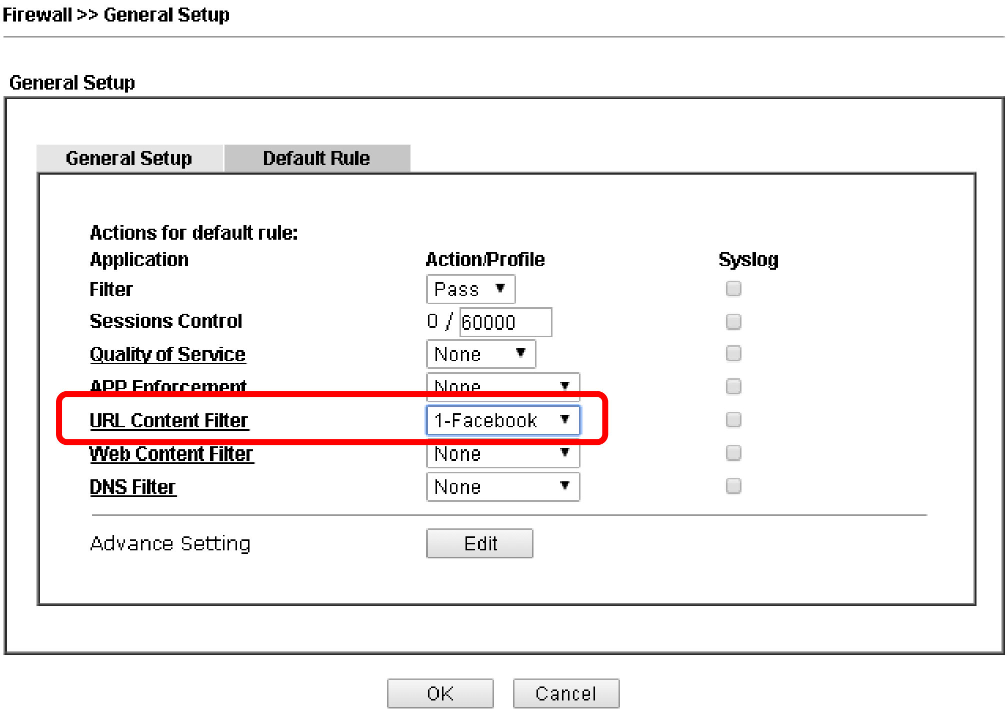
Profile Name: Facebook
Priority: Either : URL Access Control First **Log:** None

1.URL Access Control
☑ Enable URL Access Control ☐ Prevent web access from IP address
Action: Block
Group/Object Selections: Facebook
☐ Exception List

2.Web Feature
☐ Enable Restrict Web Feature
Action: Pass ☐ Cookie ☐ Proxy ☐ Upload **File Extension Profile:** None

5. When you finished the above steps, click **OK**. Then, open **Firewall>>General Setup**.

6. Click the **Default Rule** tab. Choose the profile just configured from the drop down list in the field of **URL Content Filter**. Now, users cannot open any web page with the word "facebook" inside.



Firewall >> General Setup

General Setup

Actions for default rule:

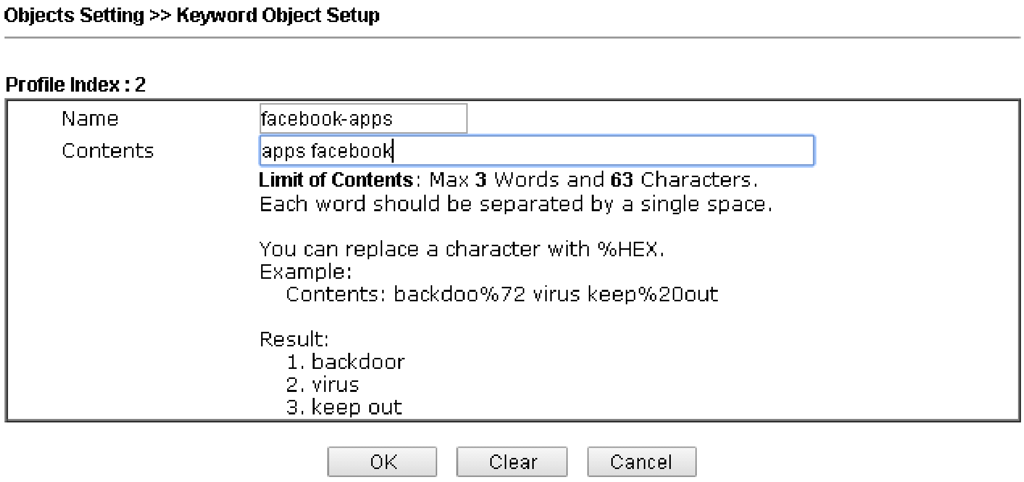
Application	Action/Profile	Syslog
Filter	Pass ▼	□
Sessions Control	0 / 60000	□
Quality of Service	None ▼	□
APP Enforcement	None ▼	□
URL Content Filter	1-Facebook ▼	□
Web Content Filter	None ▼	□
DNS Filter	None ▼	□

Advance Setting Edit

B. Disallow users to play games on Facebook

1. Open **Object Settings>>Keyword Object**. Click an index number to open the setting page.

2. In the field of **Contents**, please type *apps.facebook*. Configure the settings as the following figure.



Objects Setting >> Keyword Object Setup

Profile Index : 2

Name: facebook-apps

Contents: apps facebook

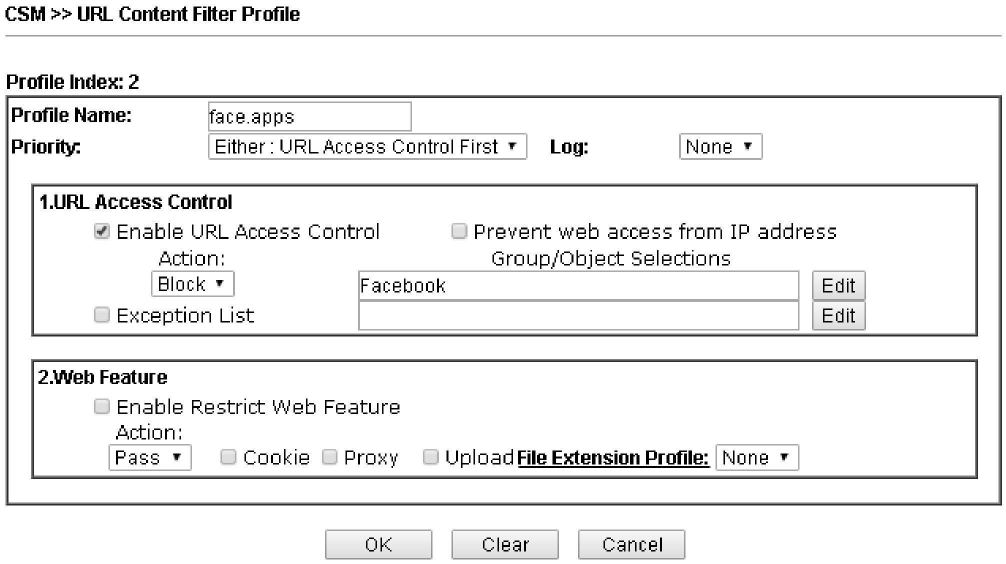
Limit of Contents: Max **3** Words and **63** Characters.
Each word should be separated by a single space.

You can replace a character with %HEX.
Example:
Contents: backdoo%72 virus keep%20out

Result:
1. backdoor
2. virus
3. keep out

3. Open **CSM>>URL Content Filter Profile**. Click an index number to open the setting page.

4. Configure the settings as the following figure.



CSM >> URL Content Filter Profile

Profile Index: 2

Profile Name: face.apps

Priority: Either : URL Access Control First ▾ Log: None ▾

1.URL Access Control

☑ Enable URL Access Control □ Prevent web access from IP address

Action: Block ▾

Group/Object Selections: Facebook Edit

□ Exception List Edit

2.Web Feature

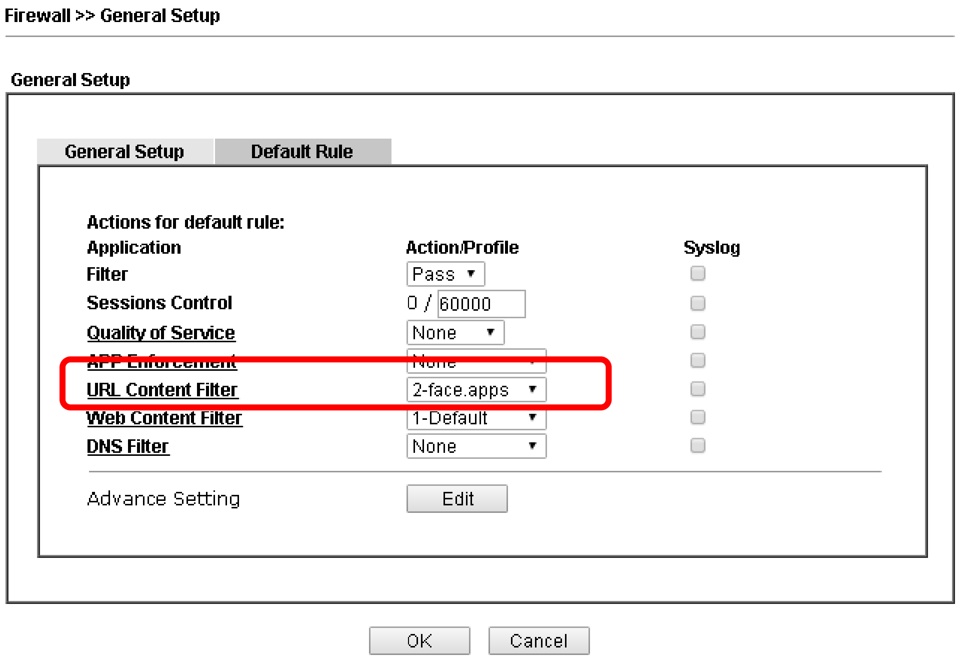
□ Enable Restrict Web Feature

Action: Pass ▾ □ Cookie □ Proxy □ Upload **File Extension Profile:** None ▾

OK Clear Cancel

5. When you finished the above steps, please open **Firewall>>General Setup**.

6. Click the **Default Rule** tab. Choose the profile just configured from the drop down list in the field of URL Content Filter. Now, users cannot open any web page with the word “facebook” inside.



Firewall >> General Setup

General Setup

General Setup | Default Rule

Actions for default rule:

Application	Action/Profile	Syslog
Filter	Pass ▾	□
Sessions Control	0 / 60000	□
Quality of Service	None ▾	□
APP Enforcement	None ▾	□
URL Content Filter	2-face.apps ▾	□
Web Content Filter	1-Default ▾	□
DNS Filter	None ▾	□

Advance Setting Edit

OK Cancel

Part VI Management

System Maintenance

There are several items offered for the Vigor router system setup: System Status, TR-069, Administrator Password, User Password, Login Page Greeting, Configuration Backup, Syslog /Mail Alert, Time and Date, Management, Reboot System, Firmware Upgrade and Activation.

Bandwidth Management

It is used to control the bandwith of data transmission through configuration of Sessions Limit, Bandwidth Limit, and Quality of Servie (QoS).

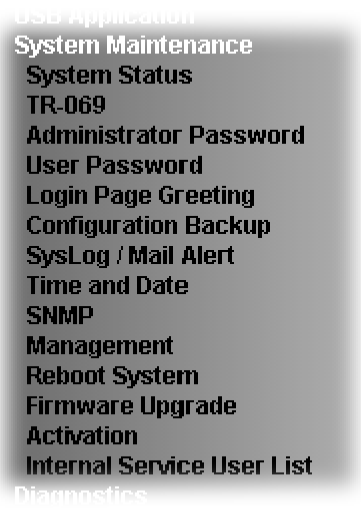
User Management

It is a security feature which disallows any IP traffic (except DHCP-related packets) from a particular host until that host has correctly supplied a valid username and password.

VI-1 System Maintenance

For the system setup, there are several items that you have to know the way of configuration: System Status, TR-069, Administrator Password, User Password, Login Page Greeting, Configuration Backup, Syslog /Mail Alert, Time and Date, Management, Reboot System, Firmware Upgrade, Activation and Internal Service User List.

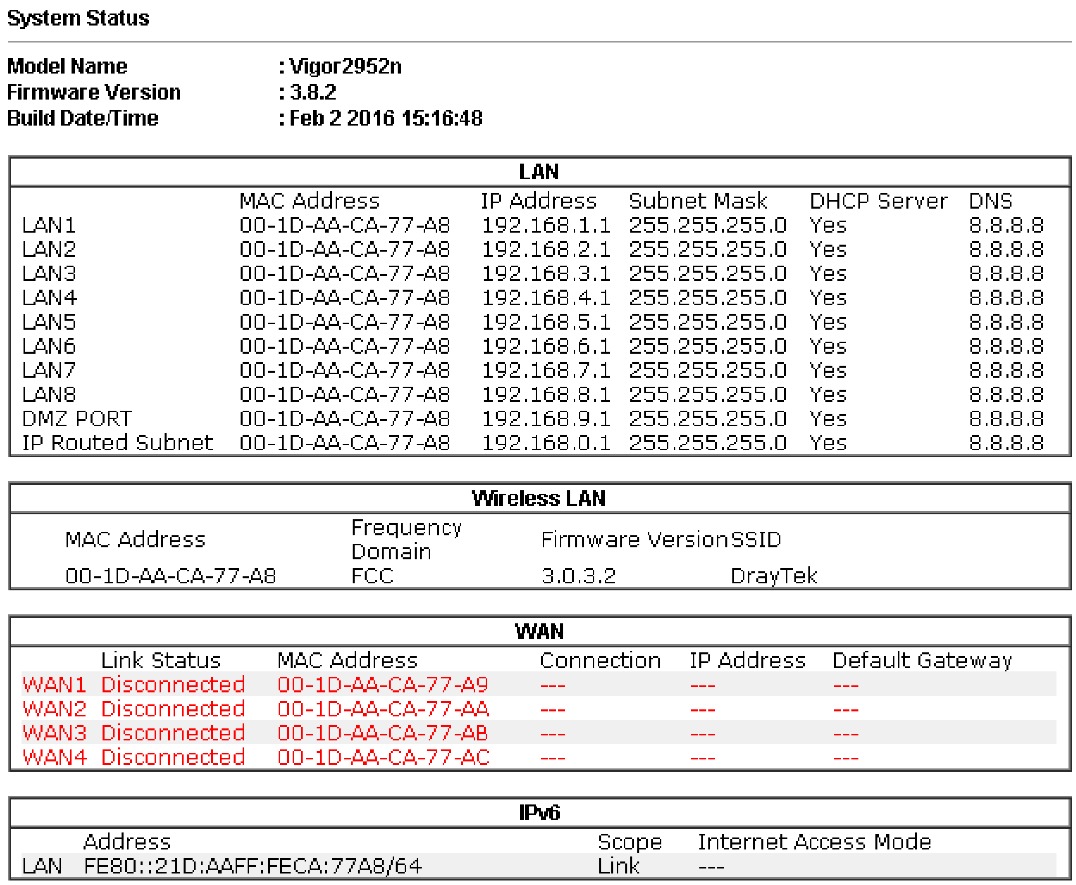
Below shows the menu items for System Maintenance.



Web User Interface

VI-1-1 System Status

The **System Status** provides basic network settings of Vigor router. It includes LAN and WAN interface information. Also, you could get the current running firmware version or firmware related information from this presentation.



System Status

Model Name : Vigor2952n
Firmware Version : 3.8.2
Build Date/Time : Feb 2 2016 15:16:48

LAN

	MAC Address	IP Address	Subnet Mask	DHCP Server	DNS
LAN1	00-1D-AA-CA-77-A8	192.168.1.1	255.255.255.0	Yes	8.8.8.8
LAN2	00-1D-AA-CA-77-A8	192.168.2.1	255.255.255.0	Yes	8.8.8.8
LAN3	00-1D-AA-CA-77-A8	192.168.3.1	255.255.255.0	Yes	8.8.8.8
LAN4	00-1D-AA-CA-77-A8	192.168.4.1	255.255.255.0	Yes	8.8.8.8
LAN5	00-1D-AA-CA-77-A8	192.168.5.1	255.255.255.0	Yes	8.8.8.8
LAN6	00-1D-AA-CA-77-A8	192.168.6.1	255.255.255.0	Yes	8.8.8.8
LAN7	00-1D-AA-CA-77-A8	192.168.7.1	255.255.255.0	Yes	8.8.8.8
LAN8	00-1D-AA-CA-77-A8	192.168.8.1	255.255.255.0	Yes	8.8.8.8
DMZ PORT	00-1D-AA-CA-77-A8	192.168.9.1	255.255.255.0	Yes	8.8.8.8
IP Routed Subnet	00-1D-AA-CA-77-A8	192.168.0.1	255.255.255.0	Yes	8.8.8.8

Wireless LAN

MAC Address	Frequency Domain	Firmware Version	SSID
00-1D-AA-CA-77-A8	FCC	3.0.3.2	DrayTek

WAN

	Link Status	MAC Address	Connection	IP Address	Default Gateway
WAN1	Disconnected	00-1D-AA-CA-77-A9	---	---	---
WAN2	Disconnected	00-1D-AA-CA-77-AA	---	---	---
WAN3	Disconnected	00-1D-AA-CA-77-AB	---	---	---
WAN4	Disconnected	00-1D-AA-CA-77-AC	---	---	---

IPv6

	Address	Scope	Internet Access Mode
LAN	FE80::21D:AAFF:FECA:77A8/64	Link	---

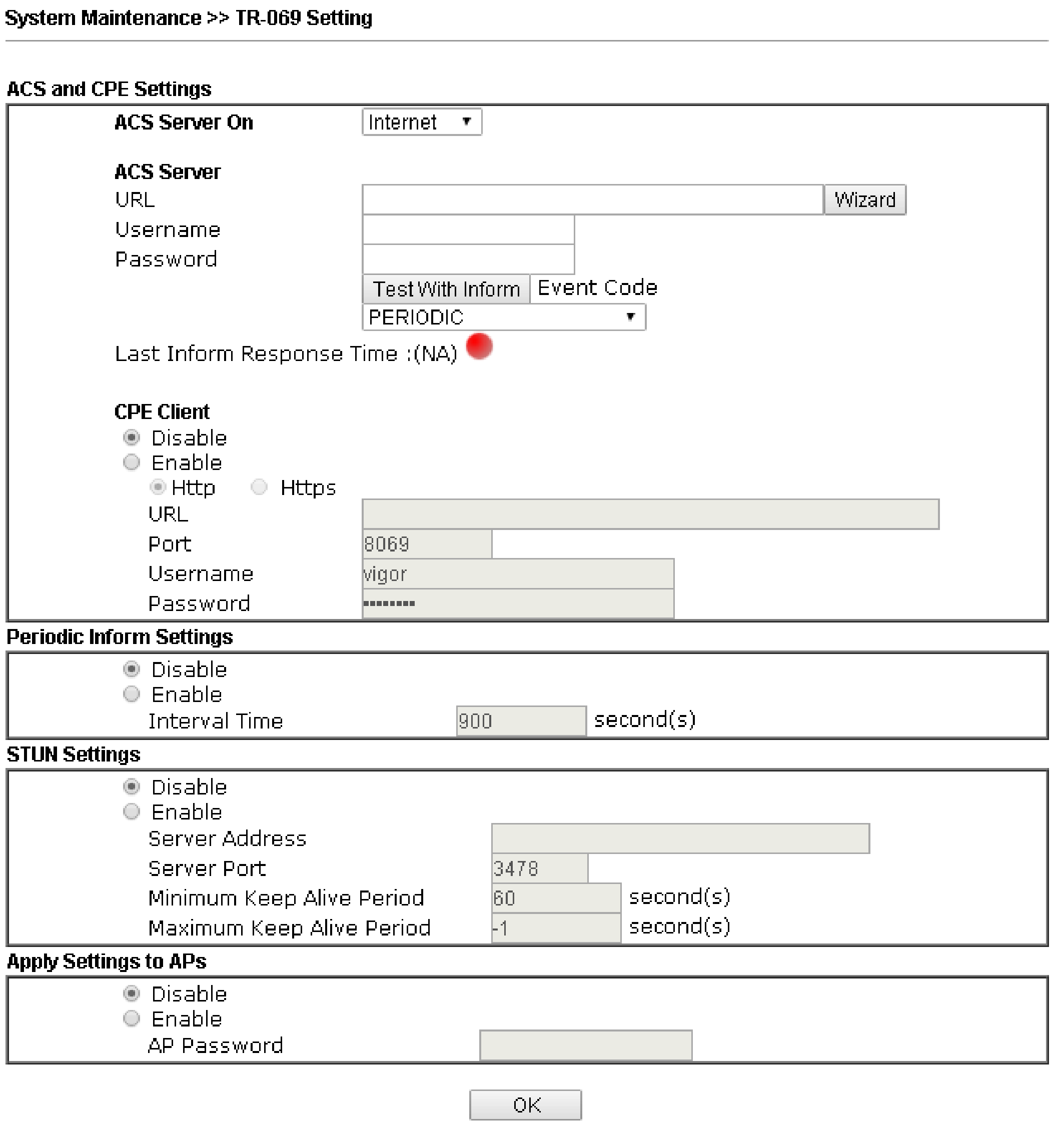
Available settings are explained as follows:

Item	Description
Model Name	Display the model name of the router.
Firmware Version	Display the firmware version of the router.
Build Date/Time	Display the date and time of the current firmware build.
LAN	**MAC Address** **-** Display the MAC address of the LAN Interface. **IP Address** **-** Display the IP address of the LAN interface. **Subnet Mask** **-** Display the subnet mask address of the LAN interface. **DHCP Server** **-** Display the current status of DHCP server of the LAN interface

	DNS **-** Display the assigned IP address of the primary DNS.
WAN	**Link Status** **-** Display current connection status. **MAC Address** **-** Display the MAC address of the WAN Interface. **Connection** **-** Display the connection type. **IP Address** **-** Display the IP address of the WAN interface. **Default Gateway** **-** Display the assigned IP address of the default gateway.
IPv6	**Address -** Display the IPv6 address for LAN. **Scope -** Display the scope of IPv6 address. For example, IPv6 **Link Local** could only be used for direct IPv6 link. It can't be used for IPv6 internet. **Internet Access Mode -** Display the connection mode chosen for accessing into Internet.

VI-1-2 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.



System Maintenance >> TR-069 Setting

ACS and CPE Settings

ACS Server On: Internet ▾

ACS Server
URL: [ ] Wizard
Username: [ ]
Password: [ ]
Test With Inform | Event Code: PERIODIC ▾
Last Inform Response Time :(NA) ●

CPE Client
● Disable
○ Enable
● Http ○ Https
URL: [ ]
Port: 8069
Username: vigor
Password: ••••••••

Periodic Inform Settings
● Disable
○ Enable
Interval Time: 900 second(s)

STUN Settings
● Disable
○ Enable
Server Address: [ ]
Server Port: 3478
Minimum Keep Alive Period: 60 second(s)
Maximum Keep Alive Period: -1 second(s)

Apply Settings to APs
● Disable
○ Enable
AP Password: [ ]

OK

Available settings are explained as follows:

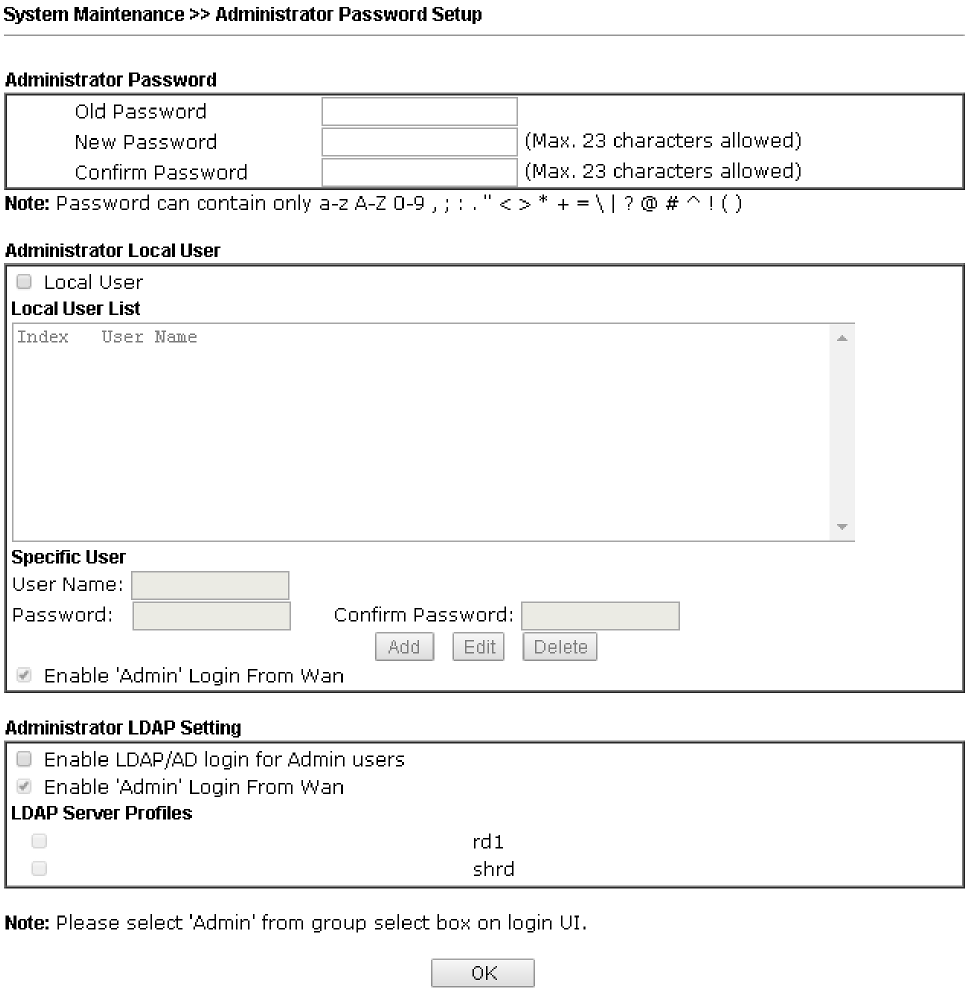
Item	Description
ACS Server On	Choose the interface for the router connecting to ACS server.
ACS Server	**URL/Username/Password -** Such data must be typed according to the ACS (Auto Configuration Server) you want to link. Please refer to Auto Configuration Server user's manual for detailed information. **Test With Inform** – Click it to send a message based on the event code selection to test if such CPE is able to communicate with VigorACS SI server. **Event Cod**e – Use the drop down menu to specify an event to perform the test. **Last Inform Response Time** – Display the time that VigorACS server made a response while receiving Inform message from

	CPE last time.
CPE Client	Such information is useful for Auto Configuration Server. **Enable/Disable** – Allow/Deny the CPE Client to connect with Auto Configuration Server. **Port** – Sometimes, port conflict might be occurred. To solve such problem, you might change port number for CPE. **Username** and **Password** – Type the username and password that VigorACS can use to access into such CPE.
Periodic Inform Settings	The default setting is **Enable**. Please set interval time or schedule time for the router to send notification to CPE. Or click **Disable** to close the mechanism of notification.
STUN Settings	The default is **Disable**. If you click **Enable**, please type the relational settings listed below: **Server IP -** Type the IP address of the STUN server. **Server Port -** Type the port number of the STUN server. **Minimum Keep Alive Period -** If STUN is enabled, the CPE must send binding request to the server for the purpose of maintaining the binding in the Gateway. Please type a number as the minimum period. The default setting is "60 seconds". **Maximum Keep Alive Period -** If STUN is enabled, the CPE must send binding request to the server for the purpose of maintaining the binding in the Gateway. Please type a number as the maximum period. A value of "-1" indicates that no maximum period is specified.
Apply Settings to APs	This feature is able to apply TR-069 settings (including STUN and ACS server settings) to all of APs managed by Vigor2952 at the same time. **Disable** – Related settings will not be applied to VigorAP. **Enable** – Above settings will be applied to VigorAP after clicking **OK** to save the configuration. If such feature is enabled, you have to type the password for accessing VigorAP. ● **AP Password** – Type the password of the VigorAP that you want to apply Vigor2952's TR-069 settings.

After finishing all the settings here, please click **OK** to save the configuration.

VI-1-3 Admininstrator Password

This page allows you to set new password for administrator.



System Maintenance >> Administrator Password Setup

Administrator Password

Old Password		
New Password		(Max. 23 characters allowed)
Confirm Password		(Max. 23 characters allowed)

Note: Password can contain only a-z A-Z 0-9 , ; : . " < > * + = \ | ? @ # ^ ! ( )

Administrator Local User

□ Local User

Local User List

Index	User Name

Specific User

User Name:

Password: Confirm Password:

Add Edit Delete

☑ Enable 'Admin' Login From Wan

Administrator LDAP Setting

□ Enable LDAP/AD login for Admin users

☑ Enable 'Admin' Login From Wan

LDAP Server Profiles

□ rd1

□ shrd

Note: Please select 'Admin' from group select box on login UI.

OK

Available settings are explained as follows:

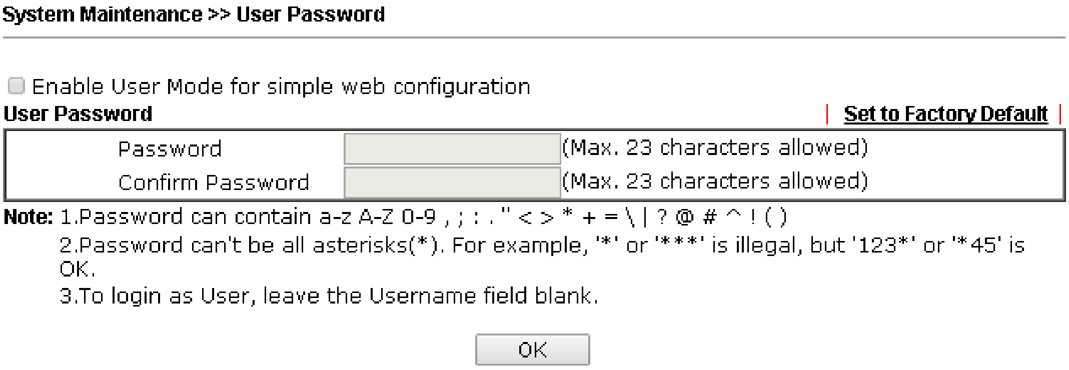
Item	Description
Administrator Password	**Old Password** - Type in the old password. The factory default setting for password is **"admin"**. **New Password** -Type in new password in this field. The length of the password is limited to 23 characters. **Confirm Password** -Type in the new password again.
Administrator Local User	The administrator can login web user interface of Vigor router to modify all of the settings to fit the requirements. This feature allows other user in LAN who can access into the web user interface with the same privilege of the administrator. **Local User** – Check the box to enable the local user configuration. **Local User List** – It displays the username of the local user. **User Name** – Give a user name for the local user. **Password** – Type the password for the local user. **Confirm Password** – Type the password again for

	confirmation. **Add** – After typing the user name and password above, simply click it to create a new local user. The new one will be shown on the Local User List immediately. **Edit** – If the username listed on the box above is not satisfied, simply click the username and modify it on the field of User Name. Later, click **Edit** to update the information. **Delete** – If the local user listed on the box above is not satisfied, simply click the username and click **Delete** to remove it. **Enable Admin Login From Wan** – The default setting is enabled. It can ensure that any user is able to successfully accesses into web user interface of Vigor router through **Internet** by username/password of "admin/admin".
Administrator LDAP Setting	**Enable LDAP/AD login for Admin users** – If it is enabled, any user can access into the web user interface of Vigor router through the LDAP server authentication. **Enable Admin Login From Wan** – The default setting is enabled. It can ensure that any user is able to successfully accesses into web user interface of Vigor router through **Internet** by username/password of "admin/admin". **LDAP Server Profiles** – Available profiles will be displayed here under the link of LDAP Profile Setup. To create a new profile, simply click the link of **LDAP Profile Setup**.

When you click **OK**, the login window will appear. Please use the new password to access into the web user interface again.

VI-1-4 User Password

This page allows you to set new password for user operation.



System Maintenance >> User Password

□ Enable User Mode for simple web configuration

User Password | Set to Factory Default |

Password		(Max. 23 characters allowed)
Confirm Password		(Max. 23 characters allowed)

Note: 1.Password can contain a-z A-Z 0-9 , ; : . " < > * + = \ | ? @ # ^ ! ( )
2.Password can't be all asterisks(*). For example, '*' or '***' is illegal, but '123*' or '*45' is OK.
3.To login as User, leave the Username field blank.

Available settings are explained as follows:

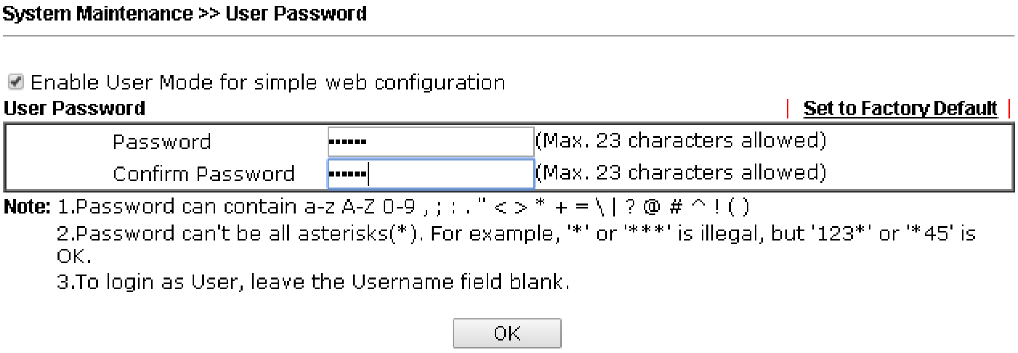
Item	Description
Enable User Mode for simple web configuration	After checking this box, you can access into the web user interface with the password typed here for simple web configuration. The settings on simple web user interface will be different with full web user interface accessed by using the administrator password.
Password	Type in new password in this field. The length of the password is limited to 31 characters.
Confirm Password	Type in the new password again.
Set to Factory Default	Click to return to the factory default setting.

When you click **OK**, the login window will appear. Please use the new password to access into the web user interface again.

Below shows an example for accessing into User Operation with User Password.

1. Open **System Maintenance>>User Password**.

2. Check the box of **Enable User Mode for simple web configuration** to enable user mode operation. Type a new password in the field of New Password and click **OK**.



System Maintenance >> User Password

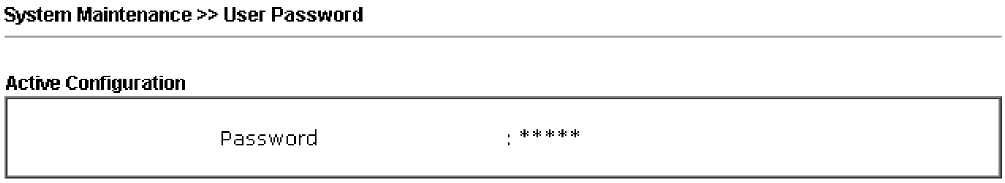
☑ Enable User Mode for simple web configuration

User Password | Set to Factory Default |

Password	••••••	(Max. 23 characters allowed)
Confirm Password	••••••	(Max. 23 characters allowed)

Note: 1.Password can contain a-z A-Z 0-9 , ; : . " < > * + = \ | ? @ # ^ ! ( )
2.Password can't be all asterisks(*). For example, '*' or '***' is illegal, but '123*' or '*45' is OK.
3.To login as User, leave the Username field blank.

3. The following screen will appear. Simply click **OK**.

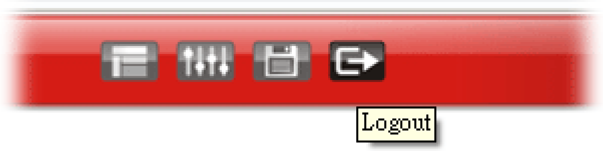


System Maintenance >> User Password

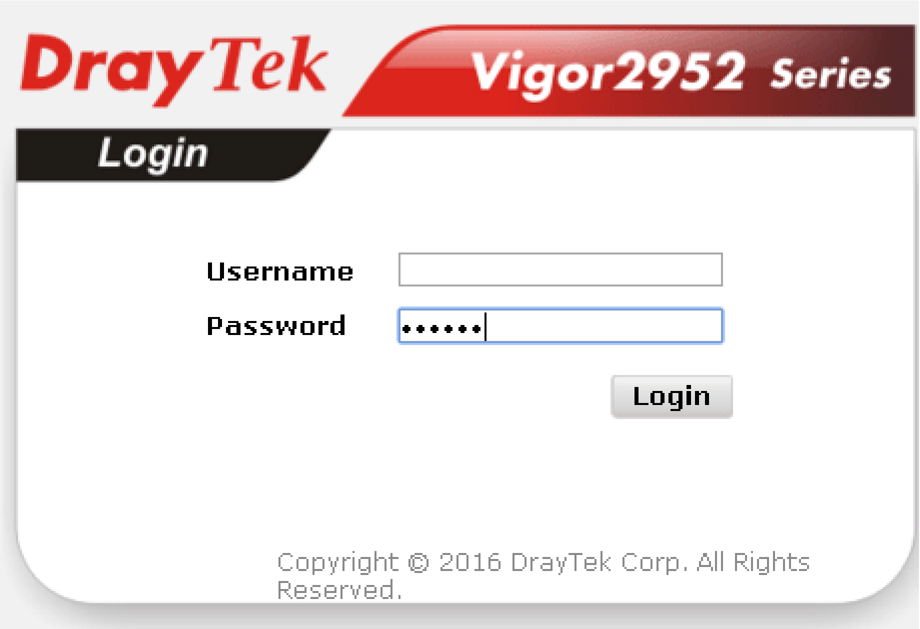
Active Configuration

Password : *****

4. Log out Vigor router web user interface by clicking the Logout button.



5. The following window will be open to ask for username and password. Type the new user password in the filed of **Password** and click **Login**.

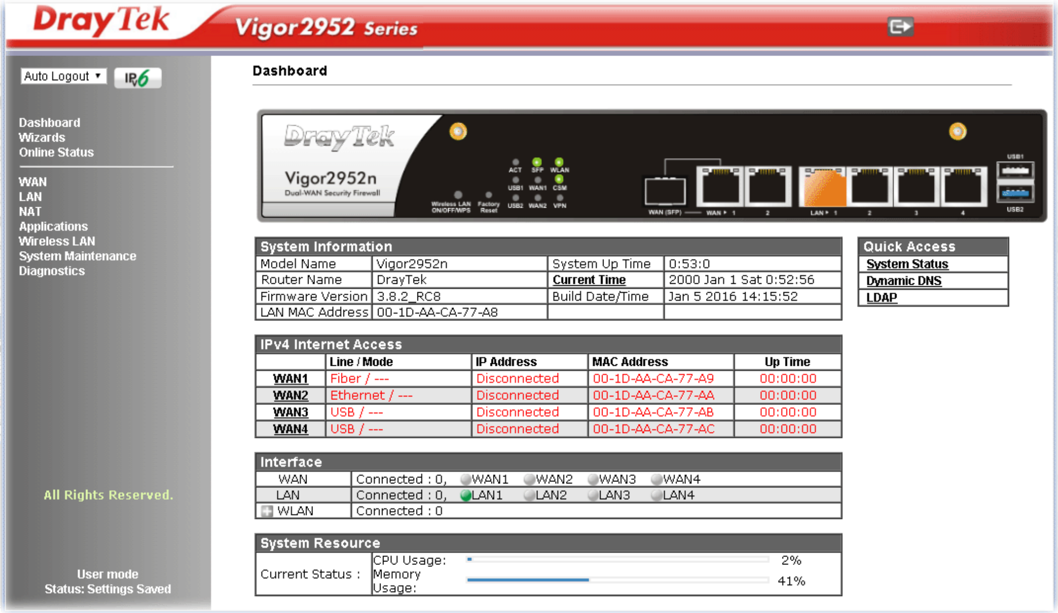


Username

Password ••••••

Copyright © 2016 DrayTek Corp. All Rights Reserved.

6. The main screen with User Mode will be shown as follows.



Dashboard

System Information			
Model Name	Vigor2952n	System Up Time	0:53:0
Router Name	DrayTek	Current Time	2000 Jan 1 Sat 0:52:56
Firmware Version	3.8.2_RC8	Build Date/Time	Jan 5 2016 14:15:52
LAN MAC Address	00-1D-AA-CA-77-A8		

Quick Access
System Status
Dynamic DNS
LDAP

IPv4 Internet Access

	Line / Mode	IP Address	MAC Address	Up Time
WAN1	Fiber / ---	Disconnected	00-1D-AA-CA-77-A9	00:00:00
WAN2	Ethernet / ---	Disconnected	00-1D-AA-CA-77-AA	00:00:00
WAN3	USB / ---	Disconnected	00-1D-AA-CA-77-AB	00:00:00
WAN4	USB / ---	Disconnected	00-1D-AA-CA-77-AC	00:00:00

Interface	
WAN	Connected : 0, ○WAN1 ○WAN2 ○WAN3 ○WAN4
LAN	Connected : 0, ●LAN1 ○LAN2 ○LAN3 ○LAN4
⊞ WLAN	Connected : 0

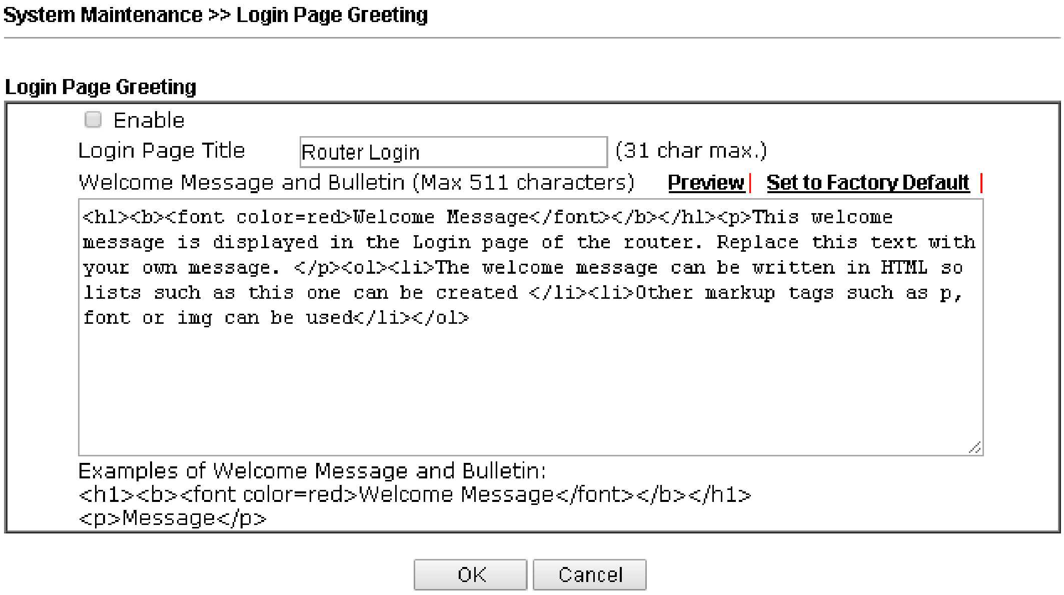
System Resource		
Current Status :	CPU Usage:	2%
	Memory Usage:	41%

Settings to be configured in User Mode will be less than settings in Admin Mode. Only basic configuration settings will be available in User Mode.

Info Setting in User Mode can be configured as same as in Admin Mode.

VI-1-5 Login Page Greeting

When you want to access into the web user interface of Vigor router, the system will ask you to offer username and password first. At that moment, the background of the web page is blank and no heading will be displayed on the Login window. This page allows you to specify login URL and the heading on the Login window if you have such requirement.


System Maintenance >> Login Page Greeting

Login Page Greeting

□ Enable

Login Page Title: Router Login (31 char max.)

Welcome Message and Bulletin (Max 511 characters)

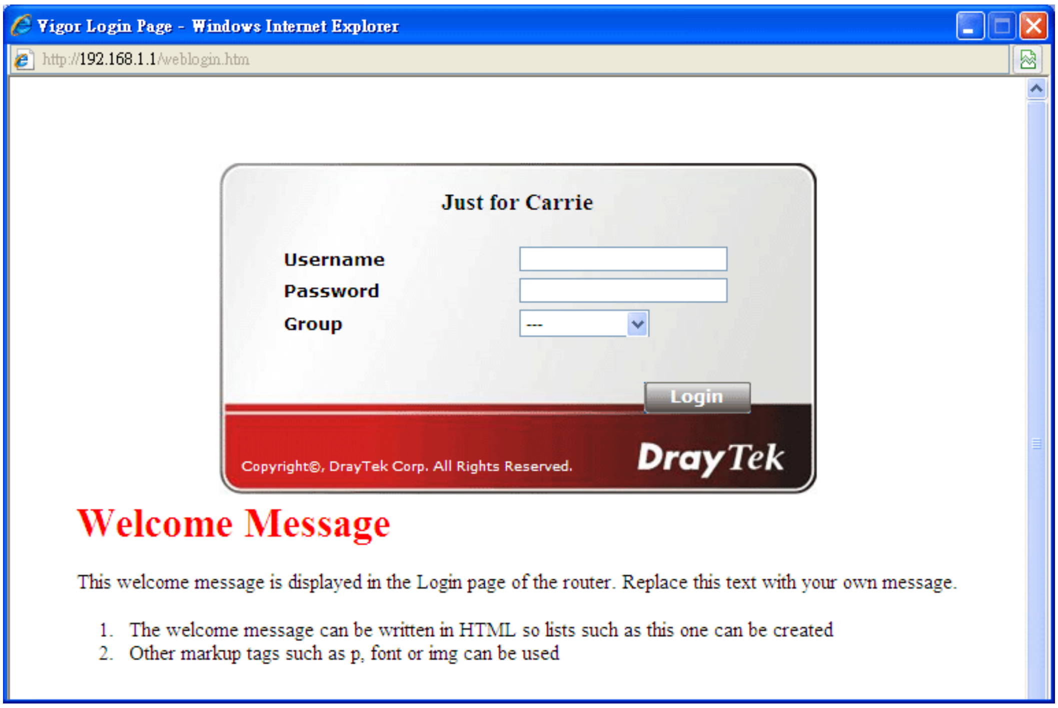
```
<h1><b><font color=red>Welcome Message</font></b></h1><p>This welcome
message is displayed in the Login page of the router. Replace this text with
your own message. </p><ol><li>The welcome message can be written in HTML so
lists such as this one can be created </li><li>Other markup tags such as p,
font or img can be used</li></ol>
```

Examples of Welcome Message and Bulletin:
<h1><b><font color=red>Welcome Message</font></b></h1>
<p>Message</p>

Available settings are explained as follows:

Item	Description
Enable	Check this box to enable the login customization function.
Login Page Title	Type a brief description (e.g., Welcome to DrayTek) which will be shown on the heading of the login dialog.
Welcome Message and Bulletin	Type words or sentences here. It will be displayed for bulletin message. In addition, it can be displayed on the login dialog at the bottom. Note that do not type URL redirect link here.
Preview	Click it to display the preview of the login window based on the settings on this web page.
Set to Factory Default	Click to return to the factory default setting.

Below shows an example of login customization with the information typed in Login Description and Bulletin.


Vigor Login Page - Windows Internet Explorer
http://192.168.1.1/weblogin.htm

Just for Carrie

Username

Password

Group ---

Login
Copyright©, DrayTek Corp. All Rights Reserved.
DrayTek

Welcome Message

This welcome message is displayed in the Login page of the router. Replace this text with your own message.

1. The welcome message can be written in HTML so lists such as this one can be created
2. Other markup tags such as p, font or img can be used

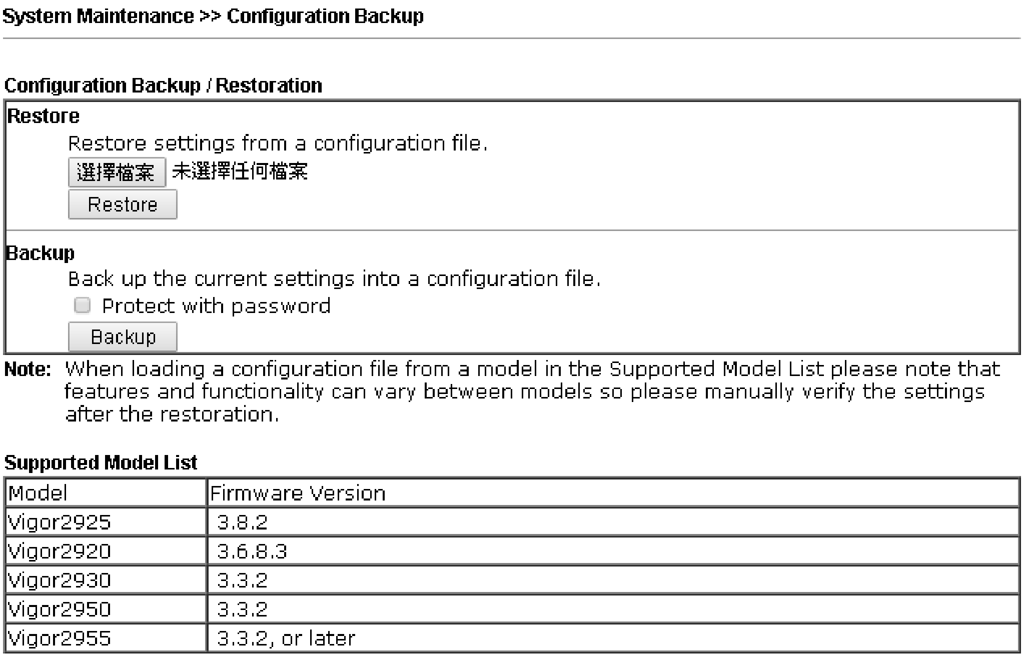
VI-1-6 Configuration Backup

Such function can be used to apply the router settings configured by Vigor2820/ Vigor2830/ Vigor2850 to Vigor2952.

Backup the Configuration

Follow the steps below to backup your configuration.

1. Go to **System Maintenance** >> **Configuration Backup**. The following page will be popped-up, as shown below.



System Maintenance >> Configuration Backup

Configuration Backup / Restoration

Restore

Restore settings from a configuration file.

選擇檔案 未選擇任何檔案

Restore

Backup

Back up the current settings into a configuration file.

□ Protect with password

Backup

Note: When loading a configuration file from a model in the Supported Model List please note that features and functionality can vary between models so please manually verify the settings after the restoration.

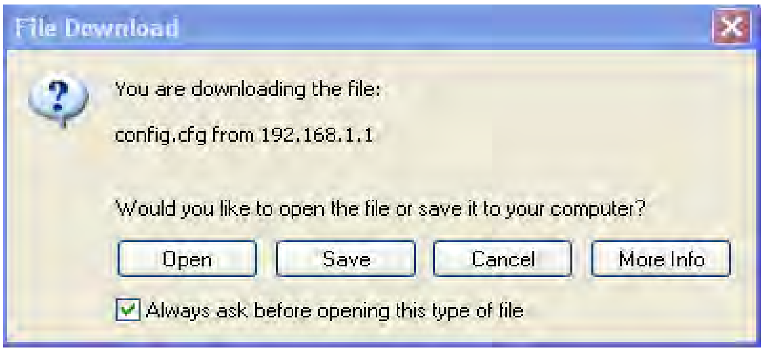
Supported Model List

Model	Firmware Version
Vigor2925	3.8.2
Vigor2920	3.6.8.3
Vigor2930	3.3.2
Vigor2950	3.3.2
Vigor2955	3.3.2, or later

Available settings are explained as follows:

Item	Description
Restore	**Choose File** – Click it to specify a file to be restored. Click **Restore** to restore the configuration.
Backup	Click it to perform the configuration backup of this router.

2. Click **Backup** button to get into the following dialog. Click **Save** button to open another dialog for saving configuration as a file.



File Download

You are downloading the file:

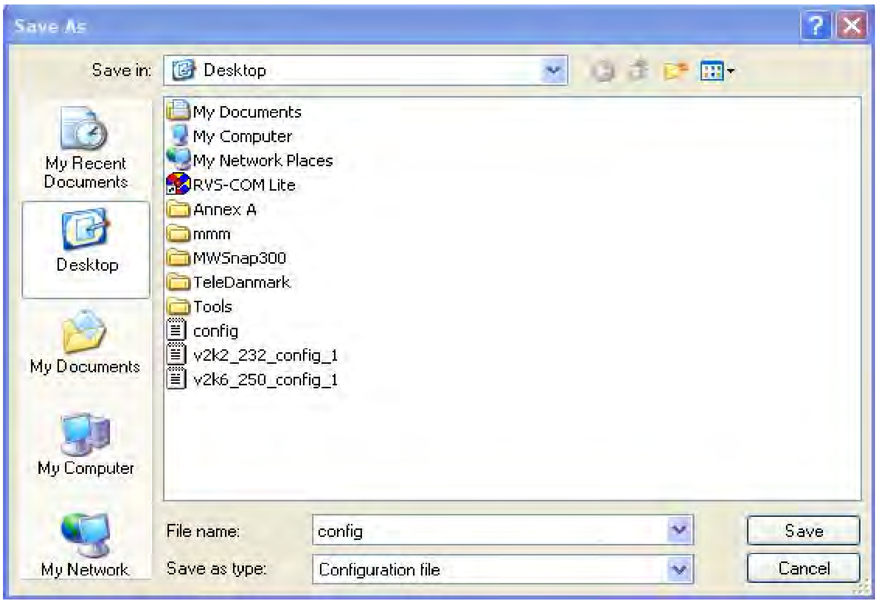
config.cfg from 192.168.1.1

Would you like to open the file or save it to your computer?

Open Save Cancel More Info

☑ Always ask before opening this type of file

3. In **Save As** dialog, the default filename is **config.cfg**. You could give it another name by yourself.



File name: config

Save as type: Configuration file

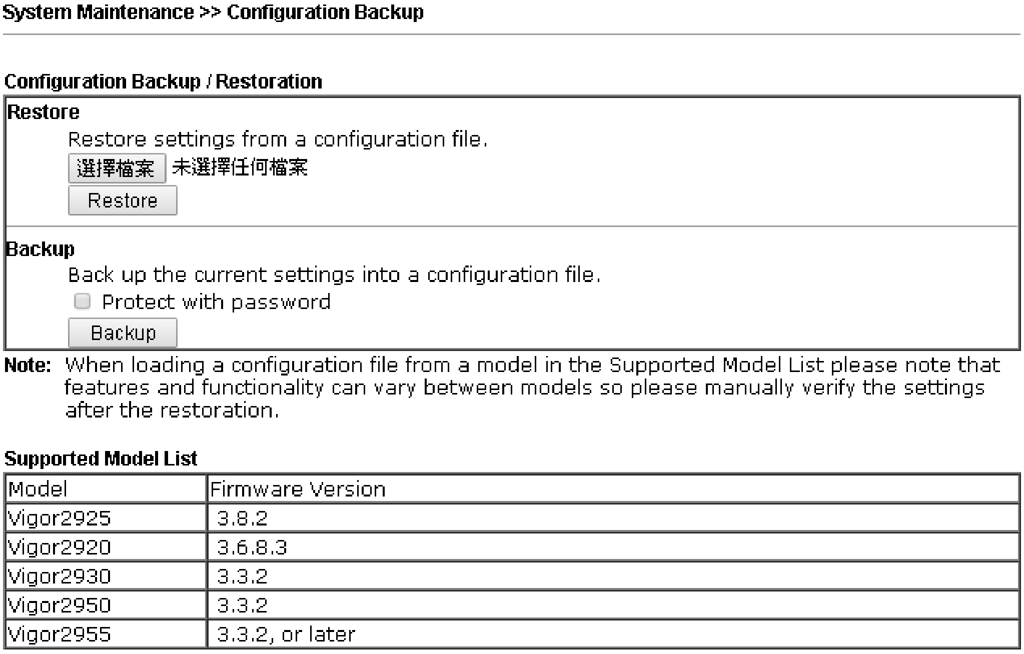
4. Click **Save** button, the configuration will download automatically to your computer as a file named **config.cfg**.

The above example is using **Windows** platform for demonstrating examples. The **Mac** or **Linux** platform will appear different windows, but the backup function is still available.

Info Backup for Certification must be done independently. The Configuration Backup does not include information of Certificate.

Restore Configuration

1. Go to **System Maintenance** >> **Configuration Backup**. The following windows will be popped-up, as shown below.



System Maintenance >> Configuration Backup

Configuration Backup / Restoration

Restore

Restore settings from a configuration file.

選擇檔案 未選擇任何檔案

Restore

Backup

Back up the current settings into a configuration file.

□ Protect with password

Backup

Note: When loading a configuration file from a model in the Supported Model List please note that features and functionality can vary between models so please manually verify the settings after the restoration.

Supported Model List

Model	Firmware Version
Vigor2925	3.8.2
Vigor2920	3.6.8.3
Vigor2930	3.3.2
Vigor2950	3.3.2
Vigor2955	3.3.2, or later

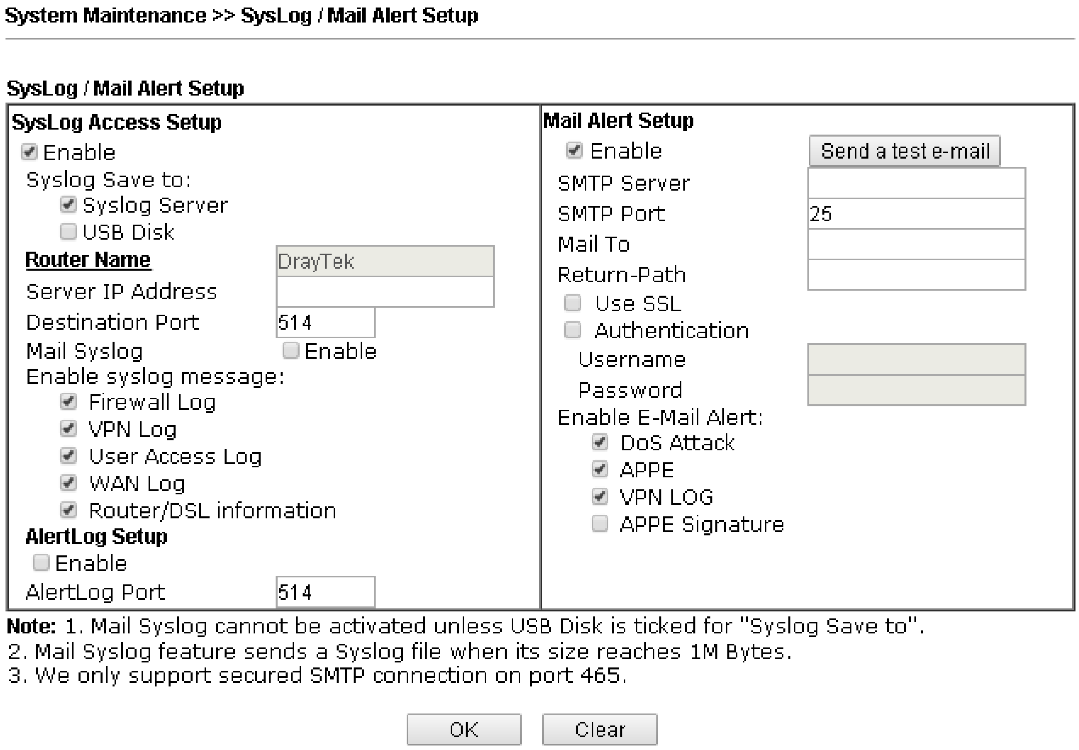
2. Click **Choose File** button to choose the correct configuration file for uploading to the

router.

3. Click **Restore** button and wait for few seconds, the following picture will tell you that the restoration procedure is successful.

VI-1-7 SysLog/Mail Alert

SysLog function is provided for users to monitor router.



System Maintenance >> SysLog / Mail Alert Setup

SysLog / Mail Alert Setup

SysLog Access Setup

☑ Enable

Syslog Save to:

☑ Syslog Server

□ USB Disk

Router Name: DrayTek

Server IP Address:

Destination Port: 514

Mail Syslog: □ Enable

Enable syslog message:

☑ Firewall Log

☑ VPN Log

☑ User Access Log

☑ WAN Log

☑ Router/DSL information

AlertLog Setup

□ Enable

AlertLog Port: 514

Mail Alert Setup

☑ Enable

SMTP Server:

SMTP Port: 25

Mail To:

Return-Path:

□ Use SSL

□ Authentication

Username:

Password:

Enable E-Mail Alert:

☑ DoS Attack

☑ APPE

☑ VPN LOG

□ APPE Signature

Note: 1. Mail Syslog cannot be activated unless USB Disk is ticked for "Syslog Save to".
2. Mail Syslog feature sends a Syslog file when its size reaches 1M Bytes.
3. We only support secured SMTP connection on port 465.

Available settings are explained as follows:

Item	Description
SysLog Access Setup	**Enable** - Check **Enable** to activate function of syslog. **Syslog Save to** – Check **Syslog Server** to save the log to Syslog server. Check **USB Disk** to save the log to the attached USB storage disk.
Router Name	Display the name for such router configured in **System Maintenance>>Management.** If there is no name here, simply lick the link to access into **System Maintenance>>Management** to set the router name. **Server IP Address -**The IP address of the Syslog server. **Destination Port -** Assign a port for the Syslog protocol. **Mail Syslog -** Check the box to recode the mail event on Syslog. **Enable syslog message -** Check the box listed on this web page to send the corresponding message of firewall, VPN, User Access, WAN, Router/DSL information to Syslog.
Mail Alert Setup	Check **Enable** to activate function of mail alert. **Send a test e-mail -** Make a simple test for the e-mail address specified in this page. Please assign the mail address first and click this button to execute a test for verify the mail

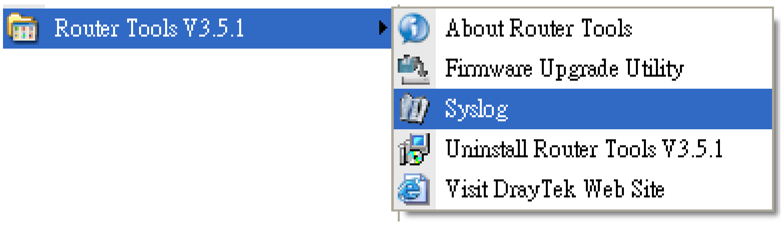
	address is available or not. **SMTP Server/SMTP Port -** The IP address/Port number of the SMTP server. **Mail To -** Assign a mail address for sending mails out. **Return-Path -** Assign a path for receiving the mail from outside. **Use SSL -** Check this box to use port 465 for SMTP server for some e-mail server uses https as the transmission method. **Authentication -** Check this box to activate this function while using e-mail application. **User Name -** Type the user name for authentication. **Password -** Type the password for authentication. **Enable E-mail Alert -** Check the box to send alert message to the e-mail box while the router detecting the item(s) you specify here.

Click **OK** to save these settings.

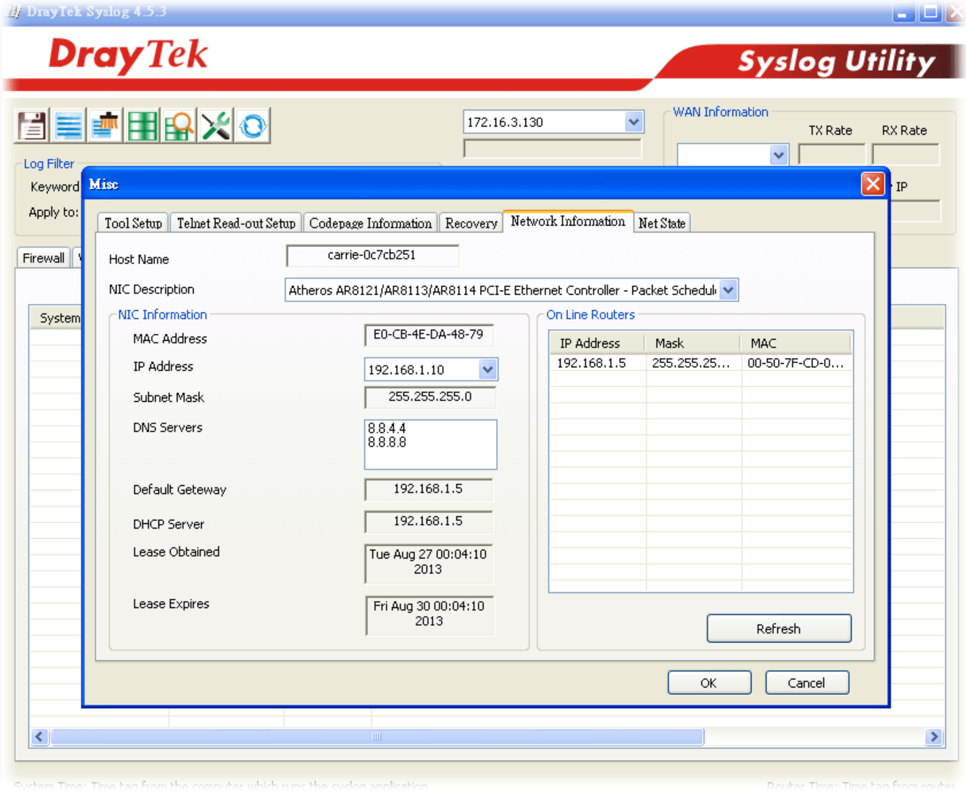
For viewing the Syslog, please do the following:

1. Just set your monitor PC's IP address in the field of Server IP Address

2. Install the Router Tools in the **Utility** within provided CD. After installation, click on the **Router Tools>>Syslog** from program menu.



3. From the Syslog screen, select the router you want to monitor. Be reminded that in **Network Information**, select the network adapter used to connect to the router. Otherwise, you won't succeed in retrieving information from the router.



Host Name: carrie-0c7cb251

NIC Description: Atheros AR8121/AR8113/AR8114 PCI-E Ethernet Controller - Packet Schedul

NIC Information

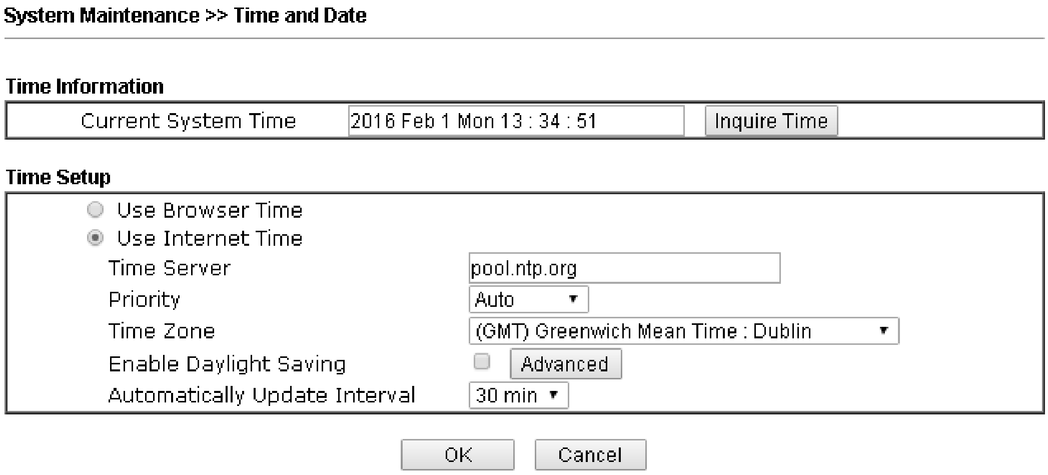
- MAC Address: E0-CB-4E-DA-48-79
- IP Address: 192.168.1.10
- Subnet Mask: 255.255.255.0
- DNS Servers: 8.8.4.4
8.8.8.8
- Default Geteway: 192.168.1.5
- DHCP Server: 192.168.1.5
- Lease Obtained: Tue Aug 27 00:04:10 2013
- Lease Expires: Fri Aug 30 00:04:10 2013

On Line Routers

IP Address	Mask	MAC
192.168.1.5	255.255.25...	00-50-7F-CD-0...

VI-1-8 Time and Date

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



System Maintenance >> Time and Date

Time Information

Current System Time: 2016 Feb 1 Mon 13 : 34 : 51

Time Setup

○ Use Browser Time

● Use Internet Time

Time Server: pool.ntp.org

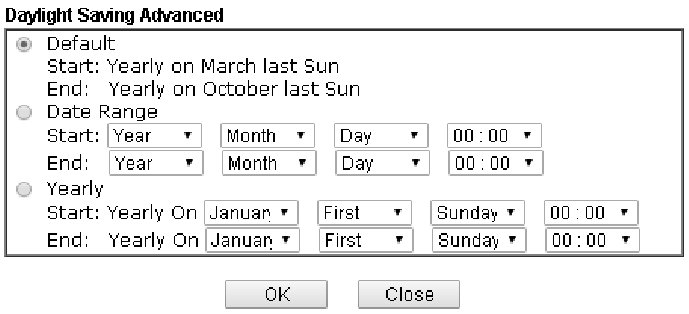
Priority: Auto

Time Zone: (GMT) Greenwich Mean Time : Dublin

Enable Daylight Saving: □

Automatically Update Interval: 30 min

Available settings are explained as follows:

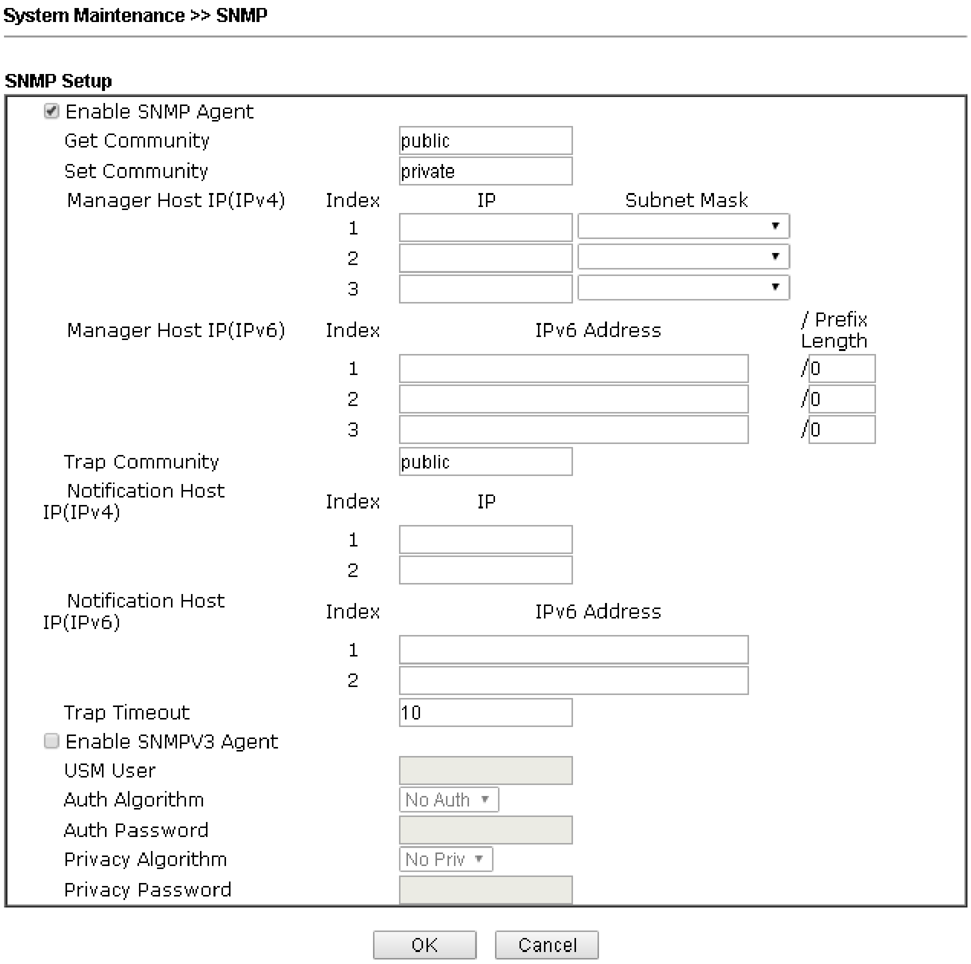
Item	Description
Current System Time	Click **Inquire Time** to get the current time.
Use Browser Time	Select this option to use the browser time from the remote administrator PC host as router's system time.
Use Internet Time	Select to inquire time information from Time Server on the Internet using assigned protocol.
Time Server	Type the web site of the time server.
Priority	Choose Auto or IPv6 First as the priority.
Time Zone	Select the time zone where the router is located.
Enable Daylight Saving	Check the box to enable the daylight saving. Such feature is available for certain area. **Advanced** – Click it to open a pop up dialog.  Daylight Saving Advanced ● Default Start: Yearly on March last Sun End: Yearly on October last Sun ○ Date Range Start: Year Month Day 00 : 00 End: Year Month Day 00 : 00 ○ Yearly Start: Yearly On Januan First Sunday 00 : 00 End: Yearly On Januan First Sunday 00 : 00 Use the default time setting or set user defined time for your requirement.
Automatically Update Interval	Select a time interval for updating from the NTP server.

Click **OK** to save these settings.

VI-1-9 SNMP

This page allows you to configure settings for SNMP and SNMPV3 services.

The SNMPv3 is **more secure than** SNMP through the encryption method (support AES and DES) and authentication method (support MD5 and SHA) for the management needs.



System Maintenance >> SNMP

SNMP Setup

☑ Enable SNMP Agent

Get Community: public

Set Community: private

Manager Host IP(IPv4)

Index	IP	Subnet Mask
1		
2		
3		

Manager Host IP(IPv6)

Index	IPv6 Address	/ Prefix Length
1		/0
2		/0
3		/0

Trap Community: public

Notification Host IP(IPv4)

Index	IP
1	
2	

Notification Host IP(IPv6)

Index	IPv6 Address
1	
2	

Trap Timeout: 10

□ Enable SNMPV3 Agent

USM User:

Auth Algorithm: No Auth

Auth Password:

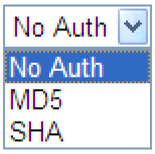
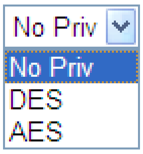
Privacy Algorithm: No Priv

Privacy Password:

OK Cancel

Available settings are explained as follows:

Item	Description
Enable SNMP Agent	Check it to enable this function.
Get Community	Set the name for getting community by typing a proper character. The default setting is **public.** The maximum length of the text is limited to 23 characters.
Set Community	Set community by typing a proper name. The default setting is **private.** The maximum length of the text is limited to 23 characters.
Manager Host IP (IPv4)	Set one host as the manager to execute SNMP function. Please type in IPv4 address to specify certain host.
Manager Host IP (IPv6)	Set one host as the manager to execute SNMP function. Please type in IPv6 address to specify certain host.
Trap Community	Set trap community by typing a proper name. The default setting is **public.** The maximum length of the text is limited to 23 characters.

Notification Host IP (IPv4)	Set the IPv4 address of the host that will receive the trap community.
Notification Host IP (IPv6)	Set the IPv6 address of the host that will receive the trap community.
Trap Timeout	The default setting is 10 seconds.
Enable SNMPV3 Agent	Check it to enable this function.
USM User	USM means user-based security mode. Type a username which will be used for authentication. The maximum length of the text is limited to 23 characters.
Auth Algorithm	Choose one of the encryption methods listed below as the authentication algorithm. 
Auth Password	Type a password for authentication. The maximum length of the text is limited to 23 characters.
Privacy Algorithm	Choose one of the methods listed below as the privacy algorithm. 
Privacy Password	Type a password for privacy. The maximum length of the text is limited to 23 characters.

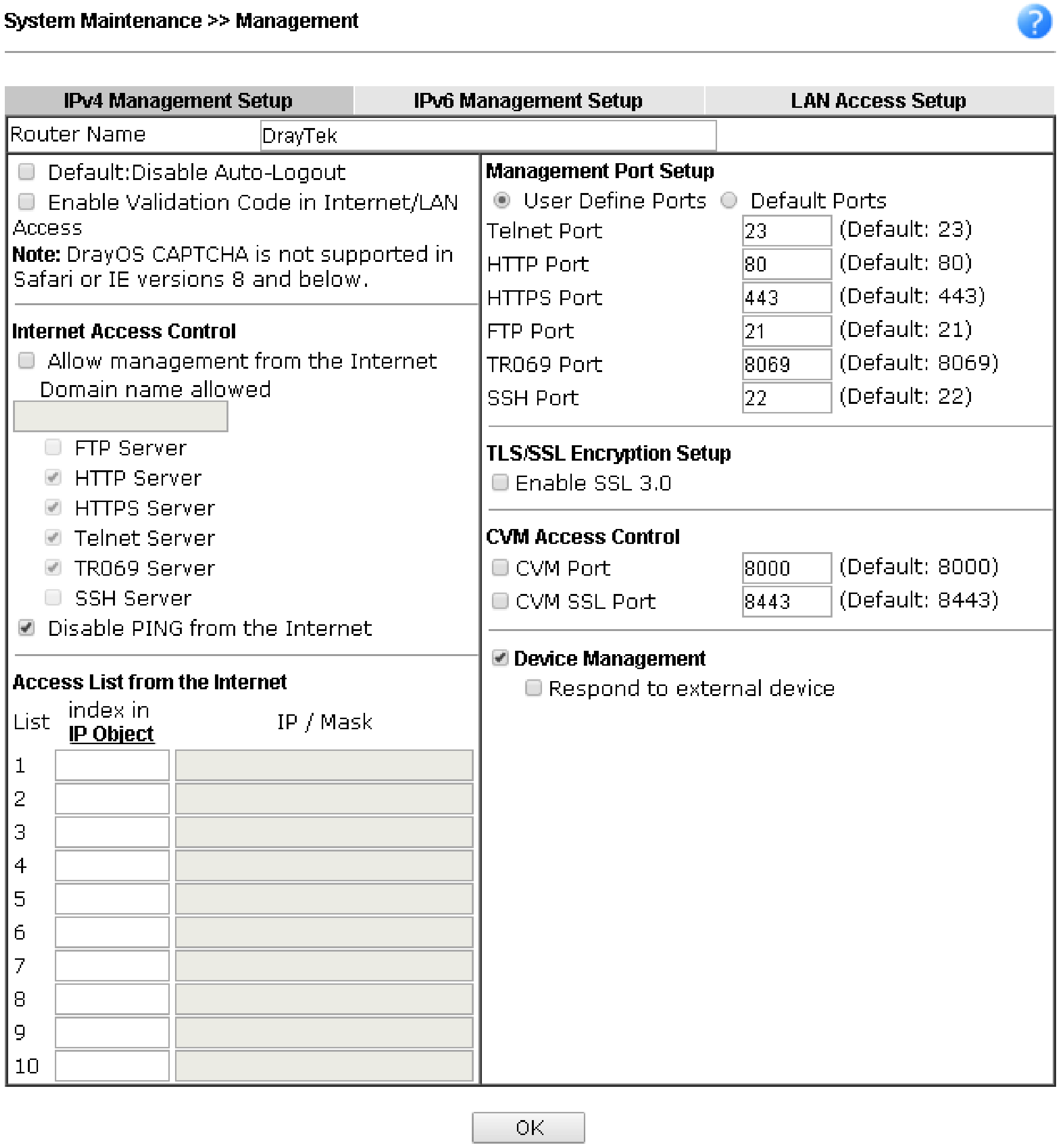
Click **OK** to save these settings.

VI-1-10 Management

This page allows you to manage the settings for Internet/LAN Access Control, Access List from Internet, Management Port Setup, TLS/SSL Encryption Setup, and Device Management.

The management pages for IPv4 and IPv6 protocols are different.

VI-1-10-1 IPv4 Management Setup



System Maintenance >> Management

IPv4 Management Setup | IPv6 Management Setup | LAN Access Setup

Router Name: DrayTek

□ Default:Disable Auto-Logout

□ Enable Validation Code in Internet/LAN Access

Note: DrayOS CAPTCHA is not supported in Safari or IE versions 8 and below.

Internet Access Control

□ Allow management from the Internet

Domain name allowed

□ FTP Server

☑ HTTP Server

☑ HTTPS Server

☑ Telnet Server

☑ TR069 Server

□ SSH Server

☑ Disable PING from the Internet

Access List from the Internet

List	index in IP Object	IP / Mask
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Management Port Setup

● User Define Ports ○ Default Ports

Telnet Port	23	(Default: 23)
HTTP Port	80	(Default: 80)
HTTPS Port	443	(Default: 443)
FTP Port	21	(Default: 21)
TR069 Port	8069	(Default: 8069)
SSH Port	22	(Default: 22)

TLS/SSL Encryption Setup

□ Enable SSL 3.0

CVM Access Control

□ CVM Port	8000	(Default: 8000)
□ CVM SSL Port	8443	(Default: 8443)

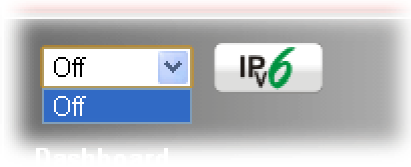
☑ **Device Management**

□ Respond to external device

OK

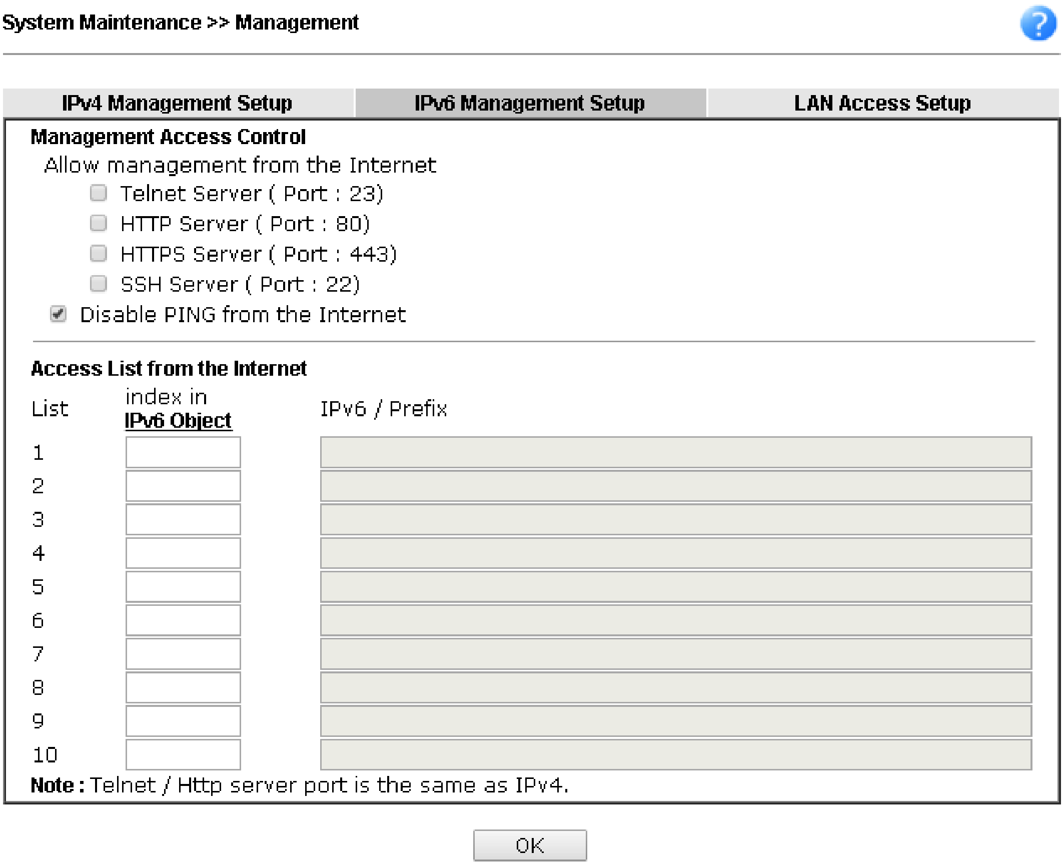
Available settings are explained as follows:

Item	Description
Router Name	Type in the router name provided by ISP.
Default: Disable Auto-Logout	If it is enabled, the function of auto-logout for web user interface will be disabled.

	 The web user interface will be open until you click the Logout icon manually.
Enable Validation Code in Internet/LAN Access	If it is enabled, the mechanism of validation code will be offered by Vigor router. That is, the client must type validation code while accessing into Internet or web user interface of Vigor router.
Internet Access Control	**Allow management from the Internet** - Enable the checkbox to allow system administrators to login from the Internet. There are several servers provided by the system to allow you managing the router from Internet. Check the box(es) to specify. **Disable PING from the Internet -** Check the checkbox to reject all PING packets from the Internet. For security issue, this function is enabled by default.
Access List from the Internet	You could specify that the system administrator can only login from a specific host or network defined in the list. A maximum of three IPs/subnet masks is allowed. **List index in IP Object**- Type the index number of the IP object profile. Related IP with Subnet Mask will appear automatically.
Management Port Setup	**User Define Ports -** Check to specify user-defined port numbers for the Telnet, HTTP, HTTPS, FTP, TR-069 and SSH servers. **Default Ports -** Check to use standard port numbers for the Telnet and HTTP servers.
TLS/SSL Encryption Setup	**Enable SSL 3.0 -** Check the box to enable the function of SSL 3.0 if required. Due to security consideration, the built-in HTTPS and SSL VPN server of the router had upgraded to TLS1.x protocol. If you are using old browser(eg. IE6.0) or old SmartVPN Client, you may still need to enable SSL 3.0 to make sure you can connect, however, it's not recommended.
CVM Access Control	**CVM Port -** Check the box to enable such port setting. **CVM SSL Port -** Check the box to enable such port setting.
Device Management	Check the box to enable the device management function for Vigor2952. **Respond to external device -** If it is enabled, Vigor2952 will be regarded as slave device. When the external device (master device) sends request packet to Vigor2952**,** Vigor2952 would send back information to respond the request coming from the external device which is able to manage Vigor2952.

After finished the above settings, click **OK** to save the configuration.

VI-1-10-2 IPv6 Management Setup



System Maintenance >> Management

Management Access Control

Allow management from the Internet

□ Telnet Server (Port : 23)

□ HTTP Server (Port : 80)

□ HTTPS Server (Port : 443)

□ SSH Server (Port : 22)

☑ Disable PING from the Internet

Access List from the Internet

List	index in **IPv6 Object**	IPv6 / Prefix
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

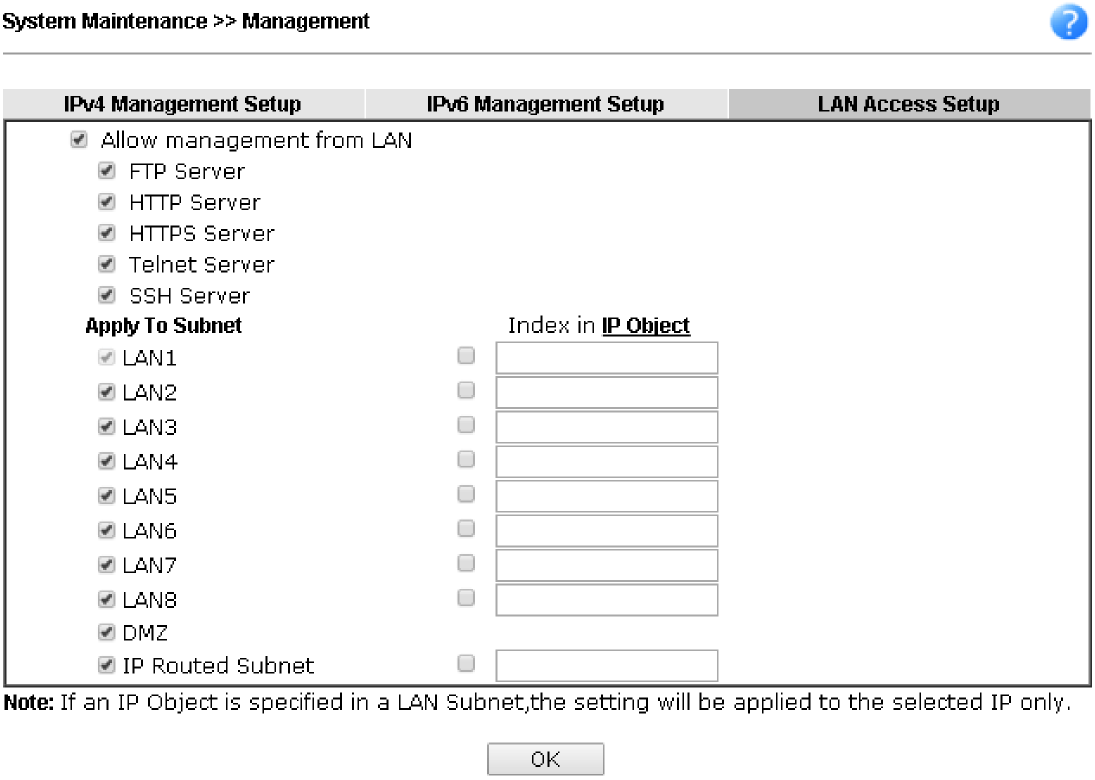
Note : Telnet / Http server port is the same as IPv4.

Available settings are explained as follows:

Item	Description
Management Access Control	**Allow management from the Internet** - Enable the checkbox to allow system administrators to login from the Internet. There are several servers provided by the system to allow you managing the router from Internet. Check the box(es) to specify. **Enable PING from the Internet** - Check the checkbox to enable all PING packets from the Internet. For security issue, this function is disabled by default.
Access List	You could specify that the system administrator can only login from a specific host or network defined in the list. A maximum of three IPs/subnet masks is allowed. **Index in IP Object**- Type the index number of the IP object profile. Related IP address will appear automatically.

After finished the above settings, click **OK** to save the configuration.

VI-1-10-3 LAN Access Control



System Maintenance >> Management

☑ Allow management from LAN
- ☑ FTP Server
- ☑ HTTP Server
- ☑ HTTPS Server
- ☑ Telnet Server
- ☑ SSH Server

Apply To Subnet	Index in IP Object
☑ LAN1	□
☑ LAN2	□
☑ LAN3	□
☑ LAN4	□
☑ LAN5	□
☑ LAN6	□
☑ LAN7	□
☑ LAN8	□
☑ DMZ	
☑ IP Routed Subnet	□

Note: If an IP Object is specified in a LAN Subnet,the setting will be applied to the selected IP only.

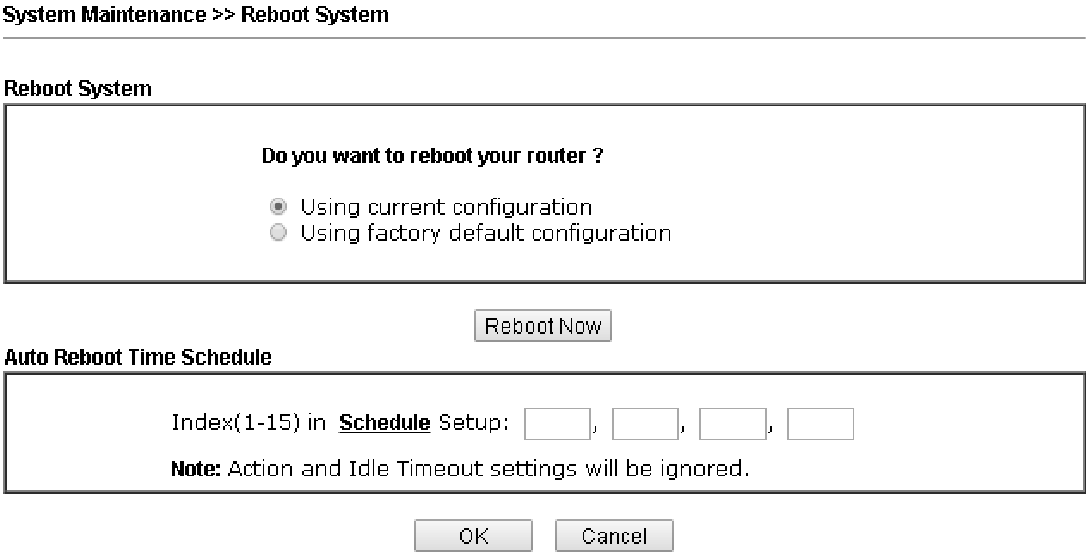
Available settings are explained as follows:

Item	Description
Allow management from LAN	Enable the checkbox to allow system administrators to login from LAN interface. There are several servers provided by the system which allow you to manage the router from LAN interface. Check the box(es) to specify.
Apply To Subnet	Check the LAN interface for the administrator to use for accessing into web user interface of Vigor router. **Index in IP Object**- Type the index number of the IP object profile. Related IP address will appear automatically.

After finished the above settings, click **OK** to save the configuration.

VI-1-11 Reboot System

The Web user interface may be used to restart your router. Click **Reboot System** from **System Maintenance** to open the following page.



System Maintenance >> Reboot System

Reboot System

Do you want to reboot your router ?

● Using current configuration
○ Using factory default configuration

Auto Reboot Time Schedule

Index(1-15) in Schedule Setup: ___, ___, ___, ___

Note: Action and Idle Timeout settings will be ignored.

Index (1-15) in Schedule Setup - You can type in four sets of time schedule for performing system reboot. All the schedules can be set previously in **Applications >> Schedule** web page and you can use the number that you have set in that web page.

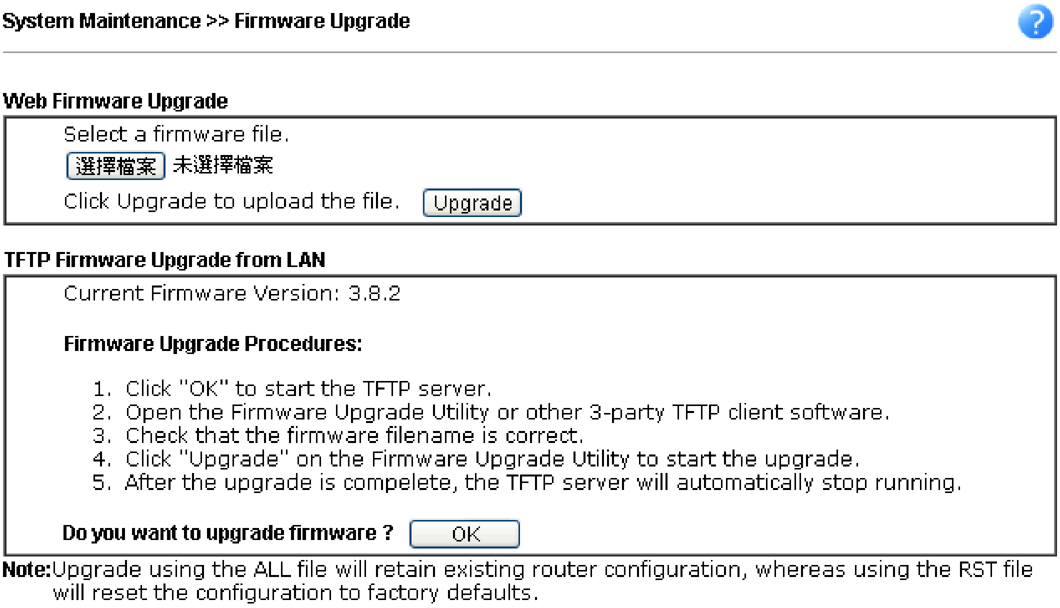
If you want to reboot the router using the current configuration, check **Using current configuration** and click **Reboot Now**. To reset the router settings to default values, check **Using factory default configuration** and click **Reboot Now**. The router will take 5 seconds to reboot the system.

Info	When the system pops up Reboot System web page after you configure web settings, please click Reboot Now to reboot your router for ensuring normal operation and preventing unexpected errors of the router in the future.

VI-1-12 Firmware Upgrade

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

Click **System Maintenance>> Firmware Upgrade** to launch the Firmware Upgrade Utility.



System Maintenance >> Firmware Upgrade

Web Firmware Upgrade

Select a firmware file.

選擇檔案 未選擇檔案

Click Upgrade to upload the file. Upgrade

TFTP Firmware Upgrade from LAN

Current Firmware Version: 3.8.2

Firmware Upgrade Procedures:

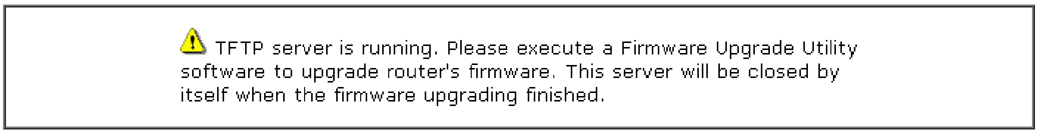
1. Click "OK" to start the TFTP server.
2. Open the Firmware Upgrade Utility or other 3-party TFTP client software.
3. Check that the firmware filename is correct.
4. Click "Upgrade" on the Firmware Upgrade Utility to start the upgrade.
5. After the upgrade is compelete, the TFTP server will automatically stop running.

Do you want to upgrade firmware ? OK

Note: Upgrade using the ALL file will retain existing router configuration, whereas using the RST file will reset the configuration to factory defaults.

Choose the right firmware by clicking **Select**. Then, click **Upgrade**. The system will upgrade the firmware of the router automatically.

Click **OK**. The following screen will appear. Please execute the firmware upgrade utility first.



TFTP server is running. Please execute a Firmware Upgrade Utility software to upgrade router's firmware. This server will be closed by itself when the firmware upgrading finished.

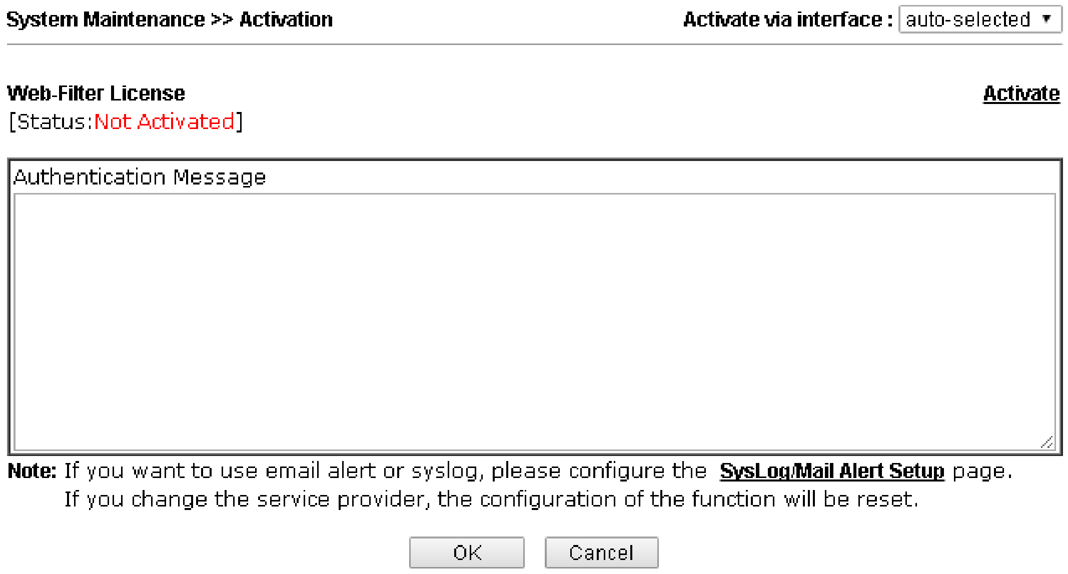
For the detailed information about firmware update, please go to Chapter 5.

VI-1-13 Activation

There are three ways to activate WCF on vigor router, using **Service Activation Wizard**, by means of **CSM>>Web Content Filter Profile** or via **System Maintenance>>Activation**.

After you have finished the setting profiles for WCF (refer to **Web Content Filter Profile**), it is the time to activate the mechanism for your computer.

Click **System Maintenance>>Activation** to open the following page for accessing http://myvigor.draytek.com.



System Maintenance >> Activation

Activate via interface : auto-selected

Web-Filter License
[Status:Not Activated]

Activate

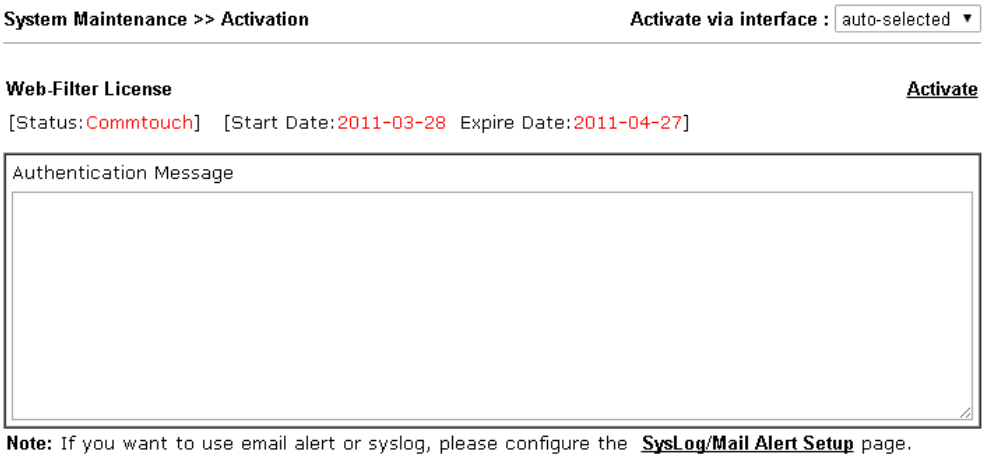
Authentication Message

Note: If you want to use email alert or syslog, please configure the SysLog/Mail Alert Setup page.
If you change the service provider, the configuration of the function will be reset.

Available settings are explained as follows:

Item	Description
Activate via Interface	Choose WAN interface used by such device for activating Web Content Filter.
Activate	The **Activate** link brings you accessing into www.vigorpro.com to finish the activation of the account and the router.
Authentication Message	As for authentication information of **web filter**, the process of authenticating will be displayed on this field for your reference.

Below shows the successful activation of Web Content Filter:



System Maintenance >> Activation

Activate via interface : auto-selected ▼

Web-Filter License

Activate

[Status:Commtouch] [Start Date:2011-03-28 Expire Date:2011-04-27]

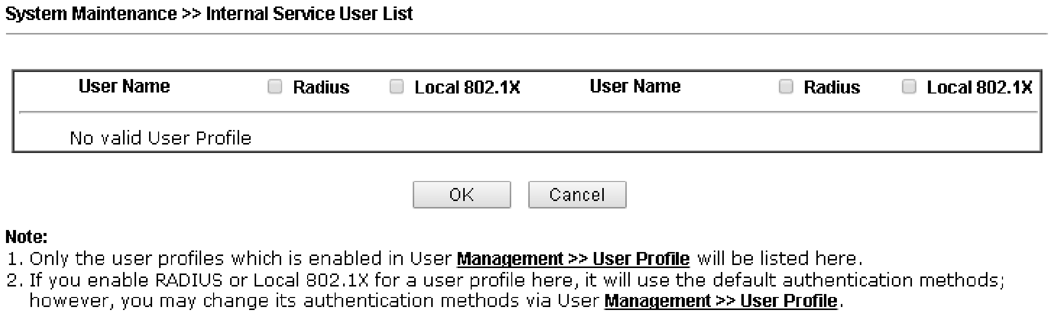
Authentication Message

Note: If you want to use email alert or syslog, please configure the SysLog/Mail Alert Setup page.

VI-1-14 Internal Service User List

User profiles (clients) defined and enabled in **User Management>>User Profile** will be displayed in this page.

Such page allows you to turn on or turn off security authentication service (offered by inernal RADIUS and/or Local 802.1X) for each user profile without accessing into the User Management configuration page.



System Maintenance >> Internal Service User List

User Name	□ Radius	□ Local 802.1X	User Name	□ Radius	□ Local 802.1X
No valid User Profile					

Note:
1. Only the user profiles which is enabled in User Management >> User Profile will be listed here.
2. If you enable RADIUS or Local 802.1X for a user profile here, it will use the default authentication methods; however, you may change its authentication methods via User Management >> User Profile.

Available settings are explained as follows:

Item	Description
User Name	Display the name of the existed user profile. To modify the detailed settings, simply click the user name link to access into the web page for modification.
Radius	Check the box to turn on the security authentication service offered by internal RADIUS server for the user profile. Uncheck the box to turn off ecurity authentication service offered by internal RADIUS server for the user profile. If you check the box next to such item, all of the user profiles listed in this page will be enabled with RADIUS service enabled vice versa.
Local 802.1X	Check the box to turn on the security authentication service offered by Local 802.1X server for the user profile. Uncheck the box to turn off ecurity authentication service offered by Local 802.1X server for the user profile. If you check the box next to such item, all of the user profiles listed in this page will be enabled with Local 802.1X service enabled; vice versa.

Info

For the detailed setting (such as IP address, port number) configuration of internal RADIUS, refer to **Applications>>RADIUS/TACACS+**.

For the detailed setting (such as IP address, port number) configuration of Local 802.1X, refer to **LAN>>Wired 802.1X** and **Wireless LAN>>Security**.

VI-2 Bandwidth Management

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.

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.

Quality of Service (QoS)

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

One reason for QoS is that numerous TCP-based applications tend to continually increase their transmission rate and consume all available bandwidth, which is called TCP slow start. If other applications are not protected by QoS, it will detract much from their performance in the overcrowded network. This is especially essential to those are low tolerant of loss, delay or jitter (delay variation).

Another reason is due to congestions at network intersections where speeds of interconnected circuits mismatch or traffic aggregates, packets will queue up and traffic can be throttled back to a lower speed. If there's no defined priority to specify which packets should be discarded (or in another term "dropped") from an overflowing queue, packets of sensitive applications mentioned above might be the ones to drop off. How this will affect application performance?

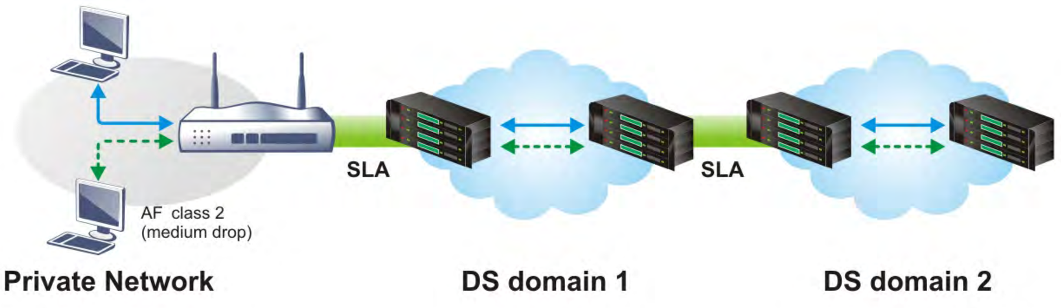
There are two components within Primary configuration of QoS deployment:

- Classification: Identifying low-latency or crucial applications and marking them for high-priority service level enforcement throughout the network.
- Scheduling: Based on classification of service level to assign packets to queues and associated service types

The basic QoS implementation in Vigor routers is to classify and schedule packets based on the service type information in the IP header. For instance, to ensure the connection with the headquarter, a teleworker may enforce an index of QoS Control to reserve bandwidth for HTTPS connection while using lots of application at the same time.

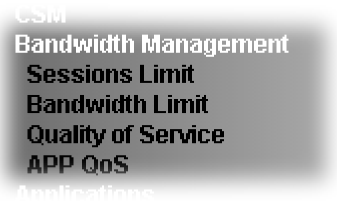
One more larger-scale implementation of QoS network is to apply DSCP (Differentiated Service Code Point) and IP Precedence disciplines at Layer 3. Compared with legacy IP Precedence that uses Type of Service (ToS) field in the IP header to define 8 service classes, DSCP is a successor creating 64 classes possible with backward IP Precedence compatibility. In a QoS-enabled network, or Differentiated Service (DiffServ or DS) framework, a DS domain owner should sign a Service License Agreement (SLA) with other DS domain owners to define the service level provided toward traffic from different domains. Then each DS node in these domains will perform the priority treatment. This is called per-hop-behavior (PHB). The definition of PHB includes Expedited Forwarding (EF), Assured Forwarding (AF), and Best Effort (BE). AF defines the four classes of delivery (or forwarding) classes and three levels of drop precedence in each class.

Vigor routers as edge routers of DS domain shall check the marked DSCP value in the IP header of bypassing traffic, to allocate certain amount of resource execute appropriate policing, classification or scheduling. The core routers in the backbone will do the same checking before executing treatments in order to ensure service-level consistency throughout the whole QoS-enabled network.



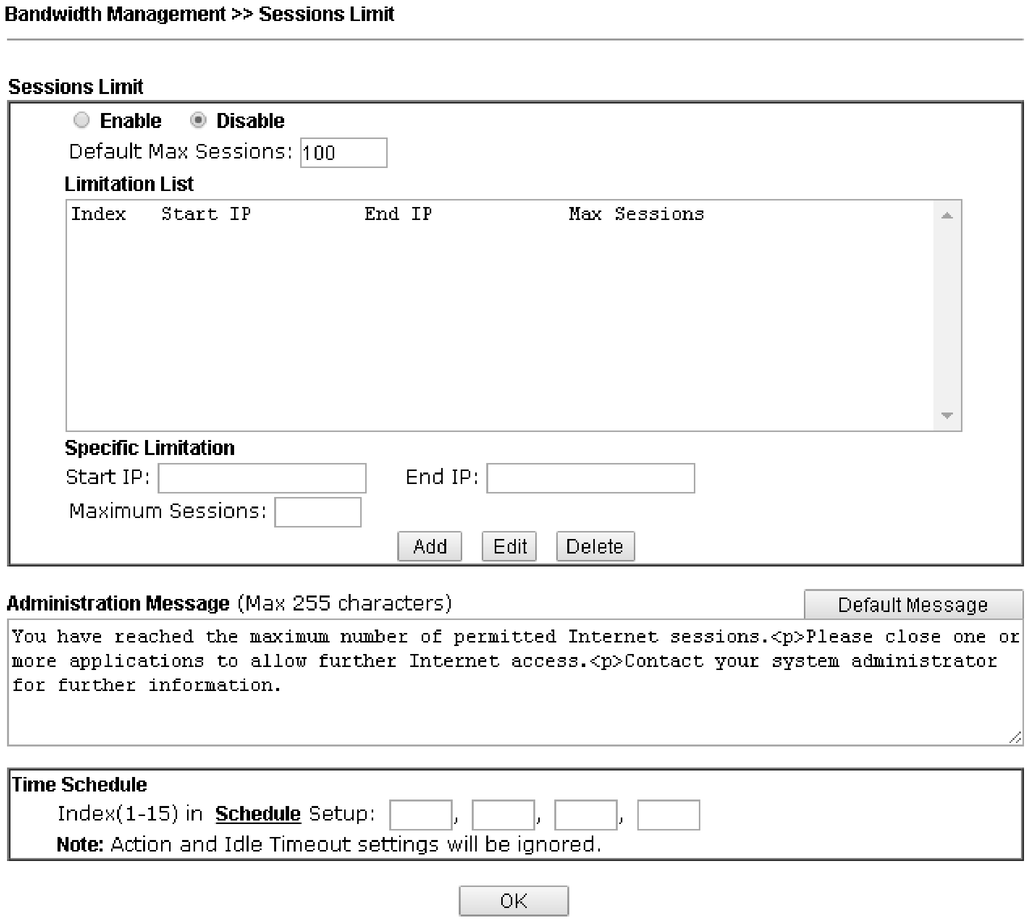
However, each node may take different attitude toward packets with high priority marking since it may bind with the business deal of SLA among different DS domain owners. It's not easy to achieve deterministic and consistent high-priority QoS traffic throughout the whole network with merely Vigor router's effort.

Below shows the menu items for Bandwidth Management.



VI-2-1 Sessions Limit

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



Bandwidth Management >> Sessions Limit

Sessions Limit

○ Enable ● Disable

Default Max Sessions: 100

Limitation List

```
Index   Start IP          End IP              Max Sessions
```

Specific Limitation

Start IP: End IP:

Maximum Sessions:

Administration Message (Max 255 characters)

```
You have reached the maximum number of permitted Internet sessions.<p>Please close one or
more applications to allow further Internet access.<p>Contact your system administrator
for further information.
```

Time Schedule

Index(1-15) in Schedule Setup: , , ,

Note: Action and Idle Timeout settings will be ignored.

To activate the function of limit session, simply click **Enable** and set the default session limit.

Available settings are explained as follows:

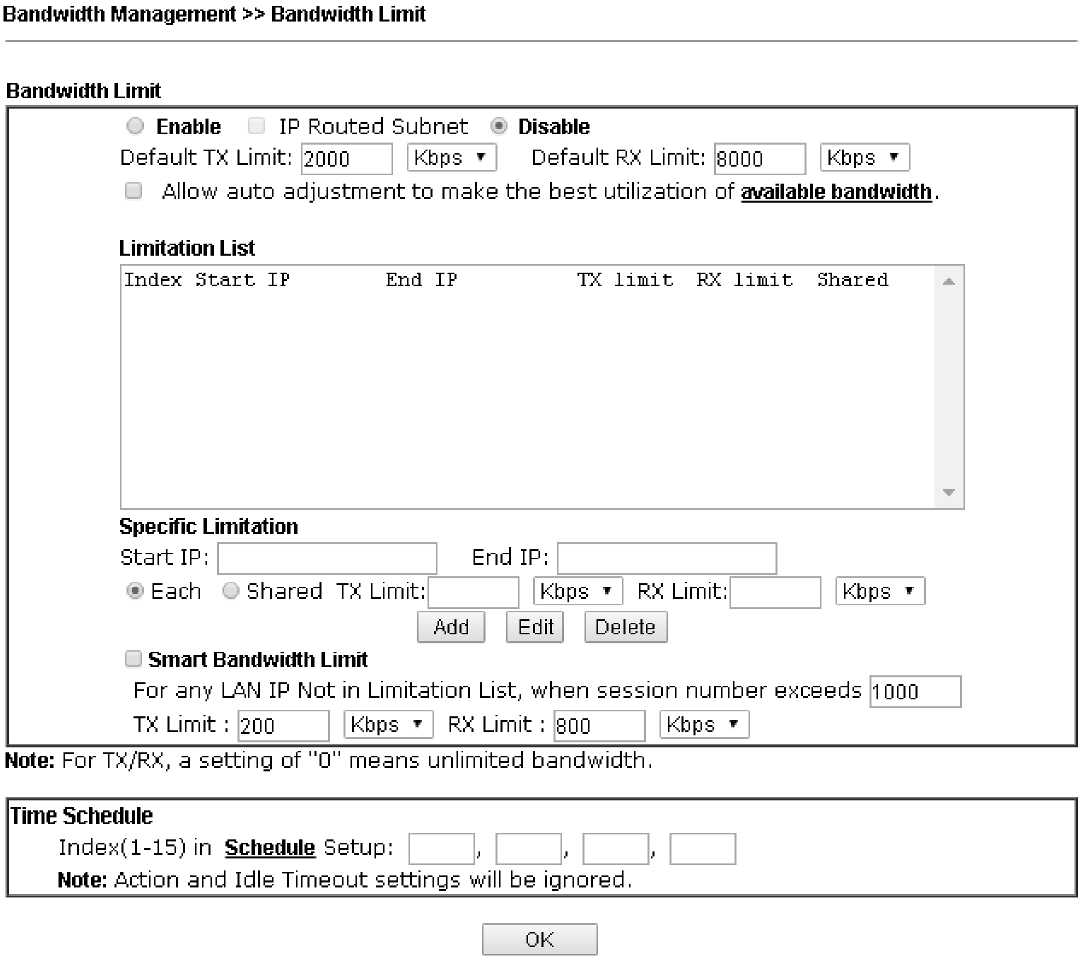
Item	Description
Session Limit	**Enable -** Click this button to activate the function of limit session. **Disable** - Click this button to close the function of limit session. **Default session limit -** Defines the default session number

	used for each computer in LAN.
Limitation List	Displays a list of specific limitations that you set on this web page.
Specific Limitation	**Start IP-** Defines the start IP address for limit session. **End IP -** Defines the end IP address for limit session. **Maximum Sessions -** 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. **Add -** Adds the specific session limitation onto the list above. **Edit -** Allows you to edit the settings for the selected limitation. **Delete -** Remove the selected settings existing on the limitation list.
Administration Message	Type the words which will be displayed when reaches the maximum number of Internet sessions permitted. **Default Message -** Click this button to apply the default message offered by the router.
Time Schedule	**Index (1-15) in Schedule Setup** - You can type in four sets of time schedule for your request. All the schedules can be set previously in **Application >> Schedule** web page and you can use the number that you have set in that web page.

After finishing all the settings, please click **OK** to save the configuration.

VI-2-2 Bandwidth Limit

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



Bandwidth Management >> Bandwidth Limit

Bandwidth Limit

○ Enable □ IP Routed Subnet ● Disable

Default TX Limit: 2000 Kbps Default RX Limit: 8000 Kbps

□ Allow auto adjustment to make the best utilization of available bandwidth.

Limitation List

```
Index Start IP        End IP          TX limit   RX limit   Shared
```

Specific Limitation

Start IP: End IP:

● Each ○ Shared TX Limit: Kbps RX Limit: Kbps

Add Edit Delete

□ Smart Bandwidth Limit

For any LAN IP Not in Limitation List, when session number exceeds 1000

TX Limit : 200 Kbps RX Limit : 800 Kbps

Note: For TX/RX, a setting of "0" means unlimited bandwidth.

Time Schedule

Index(1-15) in Schedule Setup: , , ,

Note: Action and Idle Timeout settings will be ignored.

OK

To activate the function of limit bandwidth, simply click **Enable** and set the default upstream and downstream limit.

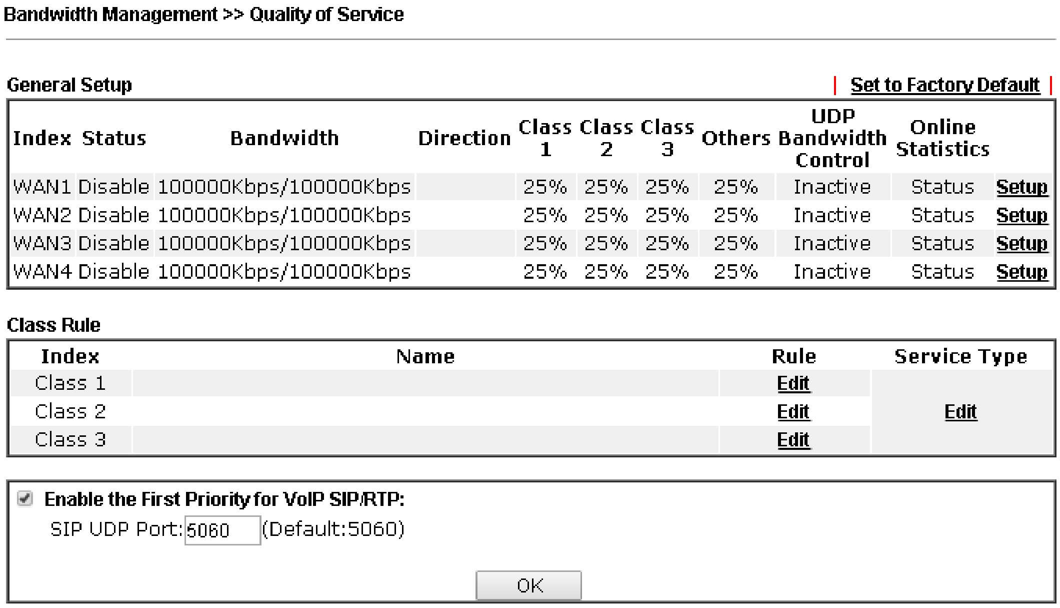
Available settings are explained as follows:

Item	Description
Bandwidth Limit	**Enable** - Click this button to activate the function of limit bandwidth. ● **IP Routed Subnet** – Check this box to apply the bandwidth limit to the second subnet specified in **LAN>>General Setup**. **Disable -** Click this button to close the function of limit bandwidth. **Default TX limit -** Define the default speed of the upstream for each computer in LAN. **Default RX limit -** Define the default speed of the downstream for each computer in LAN.
Limitation List	Display a list of specific limitations that you set on this web page.
Specific Limitation	**Start IP -** Define the start IP address for limit bandwidth. **End IP -** Define the end IP address for limit bandwidth.

	Each /Shared - Select **Each** to make each IP within the range of Start IP and End IP having the same speed defined in TX limit and RX limit fields; select **Shared** to make all the IPs within the range of Start IP and End IP share the speed defined in TX limit and RX limit fields. **TX limit -** 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. **RX limit -** 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. **Add -** Add the specific speed limitation onto the list above. **Edit -** Allow you to edit the settings for the selected limitation. **Delete -** Remove the selected settings existing on the limitation list.
Smart Bandwidth Limit	Check this box to have the bandwidth limit determined by the system automatically. **TX limit -** 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. **RX limit -** 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.
Time Schedule	**Index (1-15) in Schedule Setup -** You can type in four sets of time schedule for your request. All the schedules can be set previously in **Application >> Schedule** web page and you can use the number that you have set in that web page.

VI-2-3 Quality of Service

In the **Bandwidth Management** menu, click **Quality of Service** to open the web page.



Bandwidth Management >> Quality of Service

General Setup | Set to Factory Default |

Index	Status	Bandwidth	Direction	Class 1	Class 2	Class 3	Others	UDP Bandwidth Control	Online Statistics	
WAN1	Disable	100000Kbps/100000Kbps		25%	25%	25%	25%	Inactive	Status	Setup
WAN2	Disable	100000Kbps/100000Kbps		25%	25%	25%	25%	Inactive	Status	Setup
WAN3	Disable	100000Kbps/100000Kbps		25%	25%	25%	25%	Inactive	Status	Setup
WAN4	Disable	100000Kbps/100000Kbps		25%	25%	25%	25%	Inactive	Status	Setup

Class Rule

Index	Name	Rule	Service Type
Class 1		Edit	Edit
Class 2		Edit	
Class 3		Edit	

☑ Enable the First Priority for VoIP SIP/RTP:

SIP UDP Port: 5060 (Default:5060)

Available settings are explained as follows:

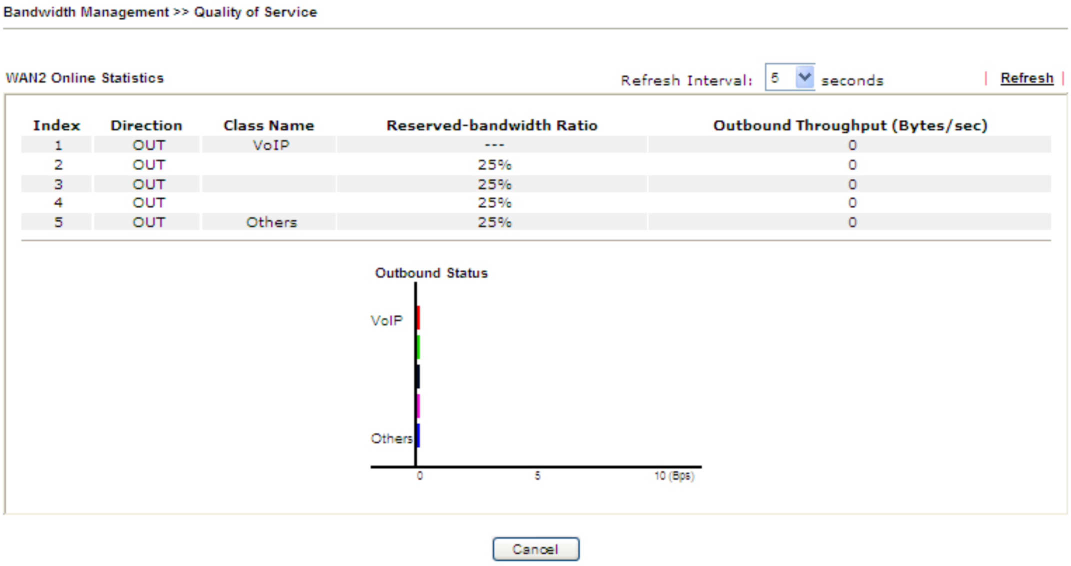
Item	Description
General Setup	**Index** – Display the WAN interface number that you can edit. **Status** – Display if the WAN interface is available for such function or not. **Bandwidth** – Display the inbound and outbound bandwidth setting for the WAN interface. **Direction** – Display which direction that such function will influence. **Class 1/Class2/Class 3/Others** – Display the bandwidth percentage for each class. **UDP Bandwidth Control** – Display the UDP bandwidth control is enabled or not. **Online Statistics** – Display an online statistics for quality of service for your reference **Setup** – Allow to configure general QoS setting for WAN interface.
Class Rule	**Index** – Display the class number that you can edit. **Name** – Display the name of the class. **Rule** – Allow to configure detailed settings for the selected Class. **Service Type** – Allow to configure detailed settings for the service type.
Enable the First Priority for VoIP SIP/RTP	When this feature is enabled, the VoIP SIP/UDP packets will be sent with highest priority. **SIP UDP Port** – Set a port number used for SIP.

This page displays the QoS settings result of the WAN interface. Click the **Setup** link to access into next page for the general setup of WAN interface. As to class rule, simply click the **Edit** link to access into next for configuration.

You can configure general setup for the WAN interface, edit the Class Rule, and edit the Service Type for the Class Rule for your request.

Online Statistics

Display an online statistics for quality of service for your reference. This feature is available only when the Quality of Service for WAN interface is enabled.



Bandwidth Management >> Quality of Service

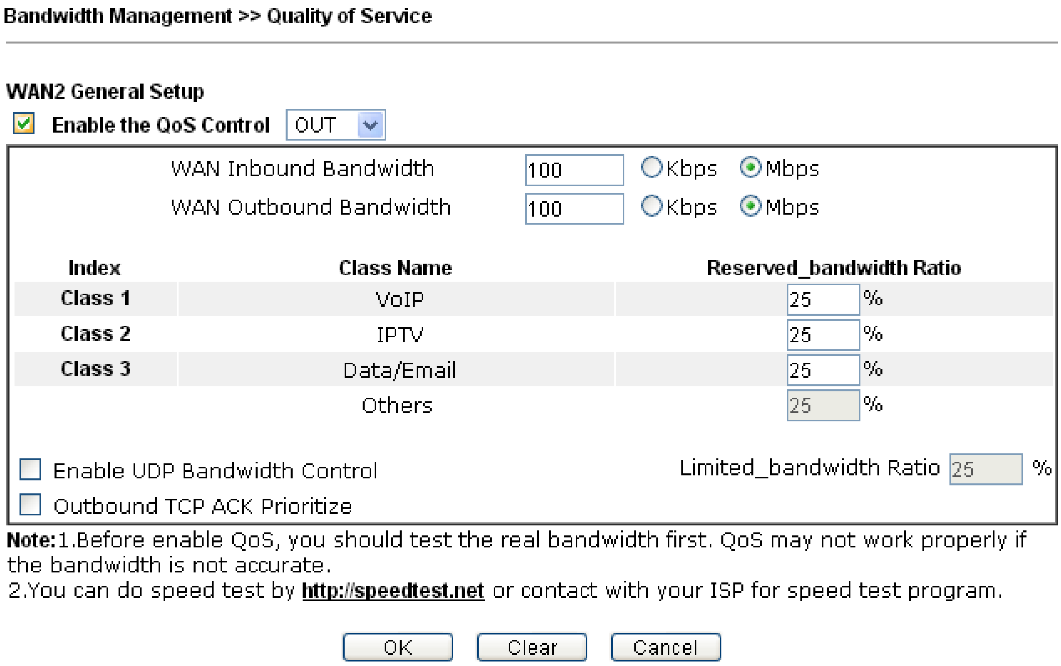
WAN2 Online Statistics

Refresh Interval: 5 seconds

Index	Direction	Class Name	Reserved-bandwidth Ratio	Outbound Throughput (Bytes/sec)
1	OUT	VoIP	---	0
2	OUT		25%	0
3	OUT		25%	0
4	OUT		25%	0
5	OUT	Others	25%	0

General Setup for WAN Interface

When you click **Setup**, you can configure the bandwidth ratio for QoS of the WAN interface. There are four queues allowed for QoS control. The first three (Class 1 to Class 3) class rules can be adjusted for your necessity. Yet, the last one is reserved for the packets which are not suitable for the user-defined class rules.



Bandwidth Management >> Quality of Service

WAN2 General Setup

☑ Enable the QoS Control OUT

WAN Inbound Bandwidth	100	○ Kbps	● Mbps
WAN Outbound Bandwidth	100	○ Kbps	● Mbps

Index	Class Name	Reserved_bandwidth Ratio
Class 1	VoIP	25 %
Class 2	IPTV	25 %
Class 3	Data/Email	25 %
	Others	25 %

□ Enable UDP Bandwidth Control   Limited_bandwidth Ratio 25 %

□ Outbound TCP ACK Prioritize

Note:1.Before enable QoS, you should test the real bandwidth first. QoS may not work properly if the bandwidth is not accurate.
2.You can do speed test by **http://speedtest.net** or contact with your ISP for speed test program.

Available settings are explained as follows:

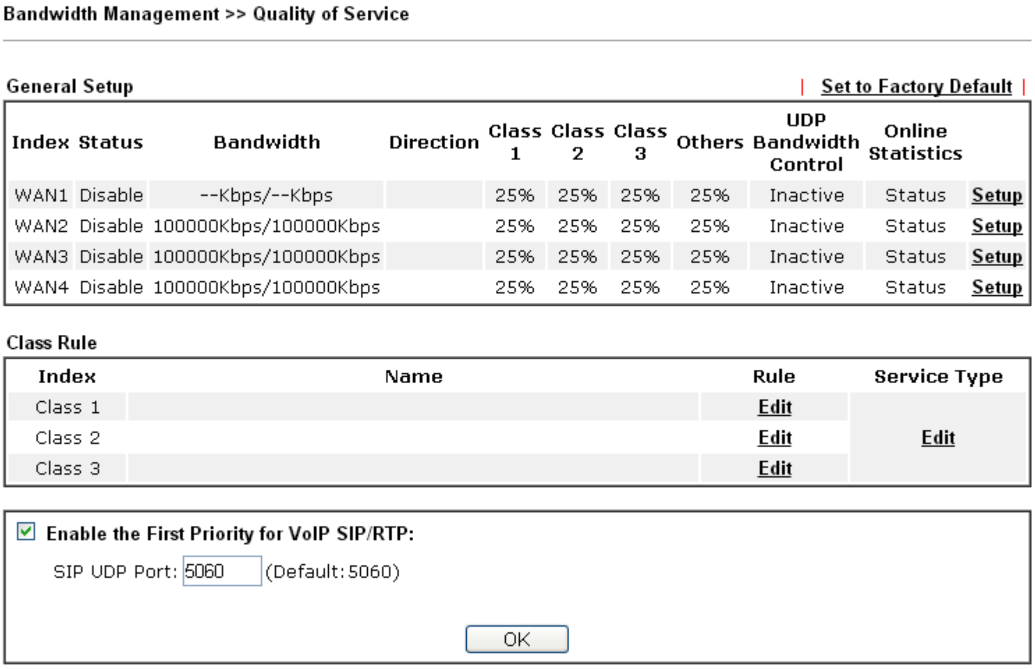
Item	Description
Enable the QoS Control	The factory default for this setting is checked. Please also define which traffic the QoS Control settings will apply to. **IN-** apply to incoming traffic only. **OUT-**apply to outgoing traffic only. **BOTH-** apply to both incoming and outgoing traffic. Check this box and click **OK**, then click **Setup** link again. You will see the **Online Statistics** link appearing on this page.
WAN Inbound Bandwidth	It allows you to set the connecting rate of data input for other WAN. For example, if your ADSL supports 1M of downstream and 256K upstream, please set 1000kbps for this box. The default value is 10000kbps.
WAN Outbound Bandwidth	It allows you to set the connecting rate of data output for other WAN. For example, if your ADSL supports 1M of downstream and 256K upstream, please set 256kbps for this box. The default value is 10000kbps.
Reserved Bandwidth Ratio	It is reserved for the group index in the form of ratio of **reserved bandwidth to upstream speed** and **reserved bandwidth to downstream speed**.
Enable UDP Bandwidth Control	Check this and set the limited bandwidth ratio on the right field. This is a protection of TCP application traffic since UDP application traffic such as streaming video will exhaust lots of bandwidth.
Outbound TCP ACK	The difference in bandwidth between download and upload

Prioritize	are great in ADSL2+ environment. For the download speed might be impacted by the uploading TCP ACK, you can check this box to push ACK of upload faster to speed the network traffic.
Limited_bandwidth Ratio	The ratio typed here is reserved for limited bandwidth of UDP application.

Info The rate of outbound/inbound must be smaller than the real bandwidth to ensure correct calculation of QoS. It is suggested to set the bandwidth value for inbound/outbound as 80% - 85% of physical network speed provided by ISP to maximize the QoS performance.

Edit the Class Rule for QoS

1. The first three (Class 1 to Class 3) class rules can be adjusted for your necessity. To add, edit or delete the class rule, please click the **Edit** link of that one.



Bandwidth Management >> Quality of Service

General Setup | Set to Factory Default |

Index	Status	Bandwidth	Direction	Class 1	Class 2	Class 3	Others	UDP Bandwidth Control	Online Statistics	
WAN1	Disable	--Kbps/--Kbps		25%	25%	25%	25%	Inactive	Status	Setup
WAN2	Disable	100000Kbps/100000Kbps		25%	25%	25%	25%	Inactive	Status	Setup
WAN3	Disable	100000Kbps/100000Kbps		25%	25%	25%	25%	Inactive	Status	Setup
WAN4	Disable	100000Kbps/100000Kbps		25%	25%	25%	25%	Inactive	Status	Setup

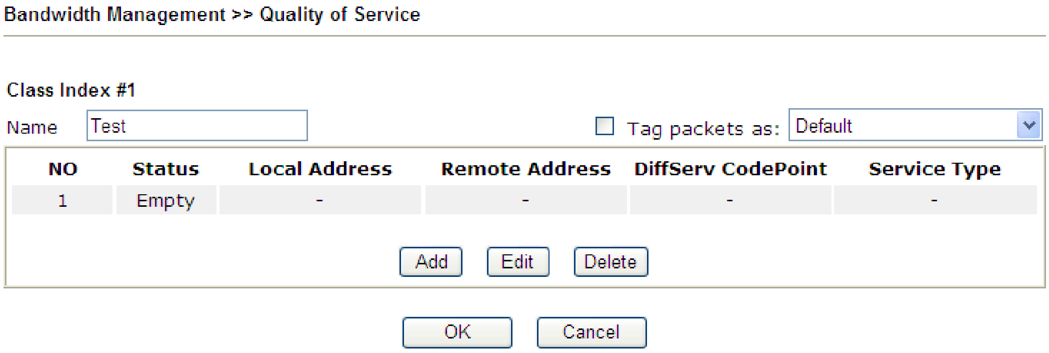
Class Rule

Index	Name	Rule	Service Type
Class 1		Edit	Edit
Class 2		Edit	
Class 3		Edit	

☑ Enable the First Priority for VoIP SIP/RTP:

SIP UDP Port: 5060 (Default:5060)

2. After you click the **Edit** link, you will see the following page. Now you can define the name for that Class. In this case, “Test” is used as the name of Class Index #1.



Bandwidth Management >> Quality of Service

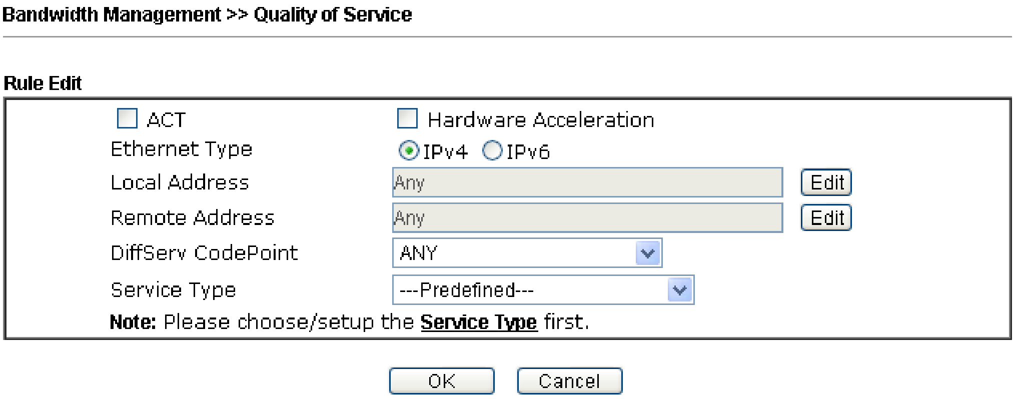
Class Index #1

Name: Test

□ Tag packets as: Default

NO	Status	Local Address	Remote Address	DiffServ CodePoint	Service Type
1	Empty	-	-	-	-

3. For adding a new rule, click **Add** to open the following page.



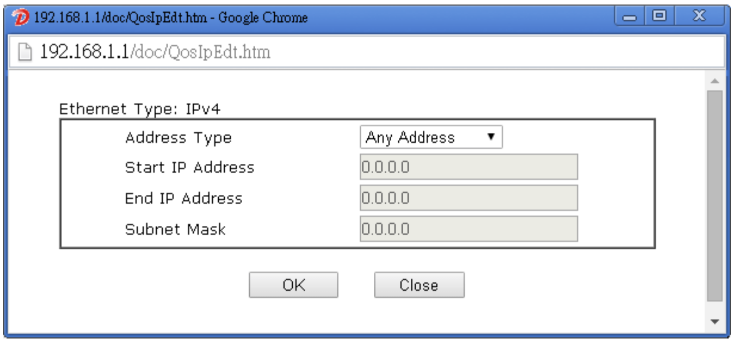
Bandwidth Management >> Quality of Service

Rule Edit

□ ACT	□ Hardware Acceleration
Ethernet Type	● IPv4 ○ IPv6
Local Address	Any [Edit]
Remote Address	Any [Edit]
DiffServ CodePoint	ANY
Service Type	---Predefined---

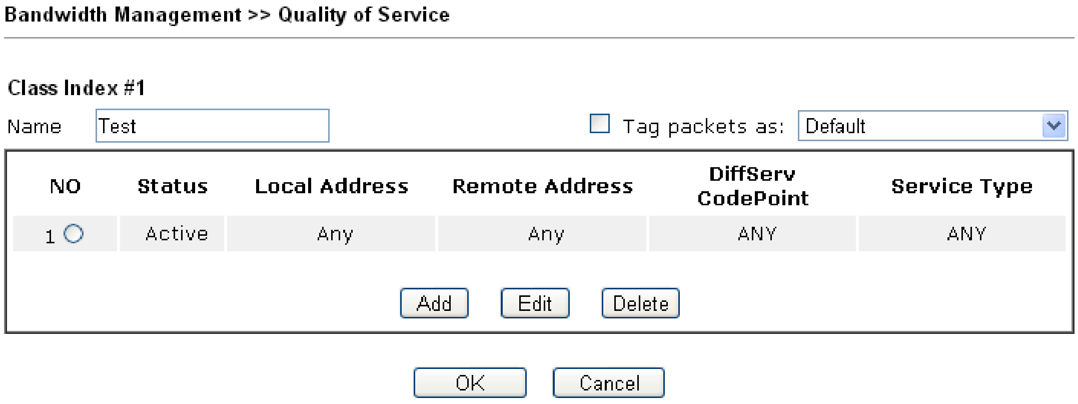
Note: Please choose/setup the **Service Type** first.

Available settings are explained as follows:

Item	Description
ACT	Check this box to invoke these settings.
Hardware Acceleration	Check this box to enable the hardware acceleration when such rule is applied.
Ethernet Type	Please specify which protocol (IPv4 or IPv6) will be used for this rule.
Local Address	Click the **Edit** button to set the local IP address (on LAN) for the rule.
Remote Address	Click the **Edit** button to set the remote IP address (on LAN/WAN) for the rule.  192.168.1.1/doc/QosIpEdt.htm - Google Chrome 192.168.1.1/doc/QosIpEdt.htm Ethernet Type: IPv4 Address Type: Any Address Start IP Address: 0.0.0.0 End IP Address: 0.0.0.0 Subnet Mask: 0.0.0.0 OK Close **Address Type -** Determine the address type for the source address. For **Single Address**, you have to fill in Start IP address. For **Range Address**, you have to fill in Start IP address and End IP address. For **Subnet Address**, you have to fill in Start IP address and Subnet Mask.
DiffServ CodePoint	All the packets of data will be divided with different levels and will be processed according to the level type by the system. Please assign one of the levels of the data for processing with QoS control.
Service Type	It determines the service type of the data for processing with QoS control. It can also be edited. You can choose the predefined service type from the Service Type drop down list. Those types are predefined in factory. Simply choose the one that you want for using by current QoS.

4. After finishing all the settings here, please click **OK** to save the configuration.

By the way, you can set up to 20 rules for one Class. If you want to edit an existed rule, please select the radio button of that one and click **Edit** to open the rule edit page for modification.



Bandwidth Management >> Quality of Service

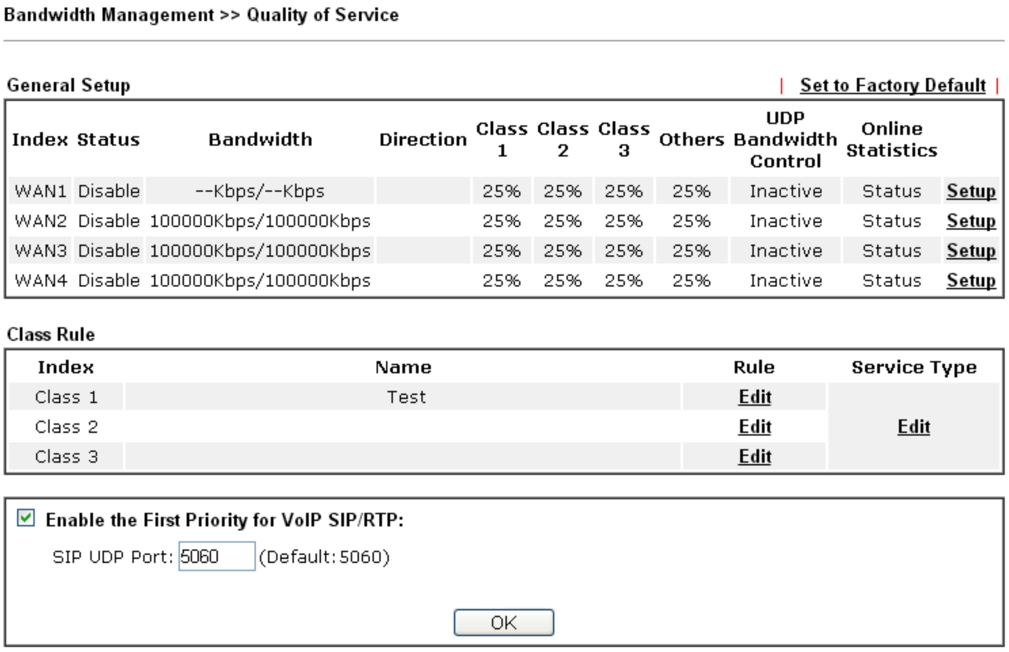
Class Index #1

Name: Test   □ Tag packets as: Default

NO	Status	Local Address	Remote Address	DiffServ CodePoint	Service Type
1 ○	Active	Any	Any	ANY	ANY

Edit the Service Type for Class Rule

1. To add a new service type, edit or delete an existed service type, please click the Edit link under Service Type field.



Bandwidth Management >> Quality of Service

General Setup | Set to Factory Default |

Index	Status	Bandwidth	Direction	Class 1	Class 2	Class 3	Others	UDP Bandwidth Control	Online Statistics	
WAN1	Disable	--Kbps/--Kbps		25%	25%	25%	25%	Inactive	Status	Setup
WAN2	Disable	100000Kbps/100000Kbps		25%	25%	25%	25%	Inactive	Status	Setup
WAN3	Disable	100000Kbps/100000Kbps		25%	25%	25%	25%	Inactive	Status	Setup
WAN4	Disable	100000Kbps/100000Kbps		25%	25%	25%	25%	Inactive	Status	Setup

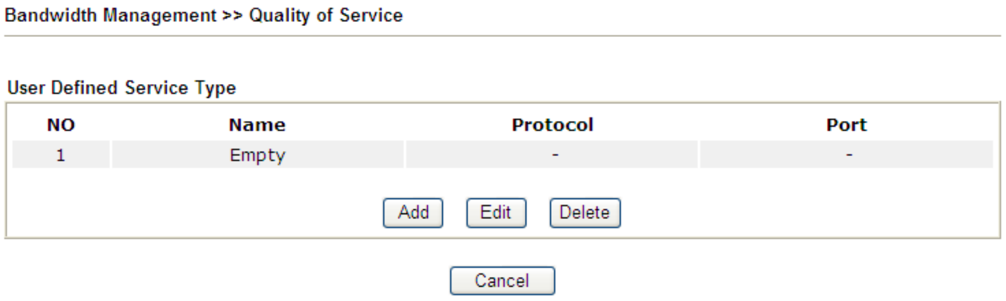
Class Rule

Index	Name	Rule	Service Type
Class 1	Test	Edit	Edit
Class 2		Edit	
Class 3		Edit	

☑ Enable the First Priority for VoIP SIP/RTP:

SIP UDP Port: 5060 (Default: 5060)

2. After you click the **Edit** link, you will see the following page.

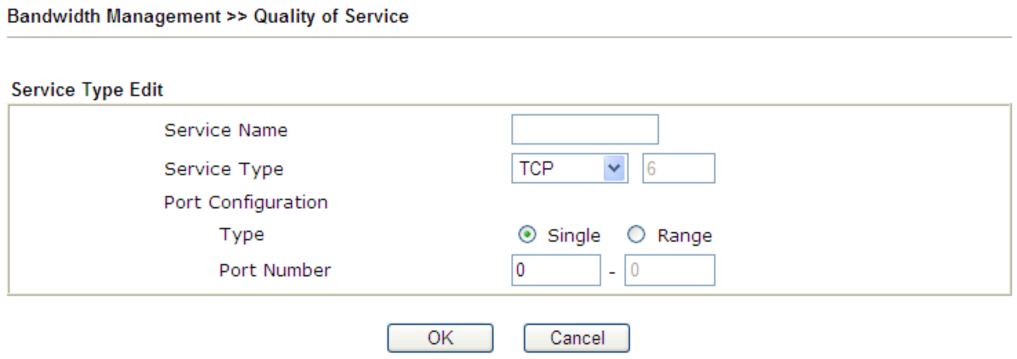


Bandwidth Management >> Quality of Service

User Defined Service Type

NO	Name	Protocol	Port
1	Empty	-	-

3. For adding a new service type, click **Add** to open the following page.



Bandwidth Management >> Quality of Service

Service Type Edit

Service Name	
Service Type	TCP ▾ 6
Port Configuration	
Type	● Single ○ Range
Port Number	0 - 0

OK Cancel

Available settings are explained as follows:

Item	Description
Service Name	Type in a new service for your request. The maximum length of the name you can set is 11 characters.
Service Type	Choose the type (TCP, UDP or TCP/UDP or other) for the new service.
Port Configuration	**Type** - Click **Single** or **Range** as the **Type**. If you select Range, you have to type in the starting port number and the end porting number on the boxes below. **Port Number** – Type in the starting port number and the end porting number here if you choose Range as the type.

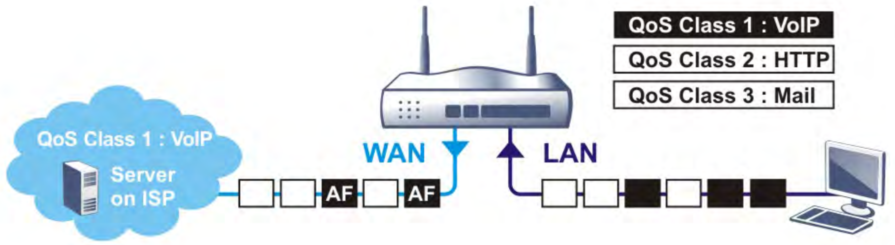
5. After finishing all the settings here, please click **OK** to save the configuration.

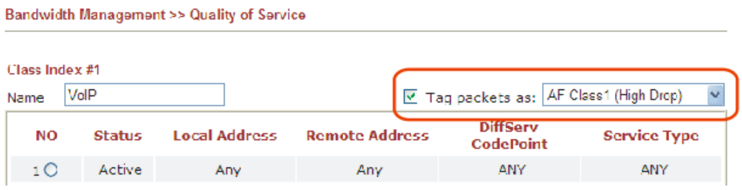
By the way, you can set up to 10 service types. If you want to edit/delete an existed service type, please select the radio button of that one and click **Edit/Edit** for modification.

Retag the Packets for Identification

Packets coming from LAN IP can be retagged through QoS setting. When the packets sent out through WAN interface, all of them will be tagged with certain header and that will be easily to be identified by server on ISP.

For example, in the following illustration, the VoIP packets in LAN go into Vigor router without any header. However, when they go forward to the Server on ISP through Vigor router, all of the packets are tagged with AF (configured in Bandwidth >>QoS>>Class) automatically.





Bandwidth Management >> Quality of Service

Class Index #1

Name VoIP ☑ Tag packets as: AF Class1 (High Drop) ▾

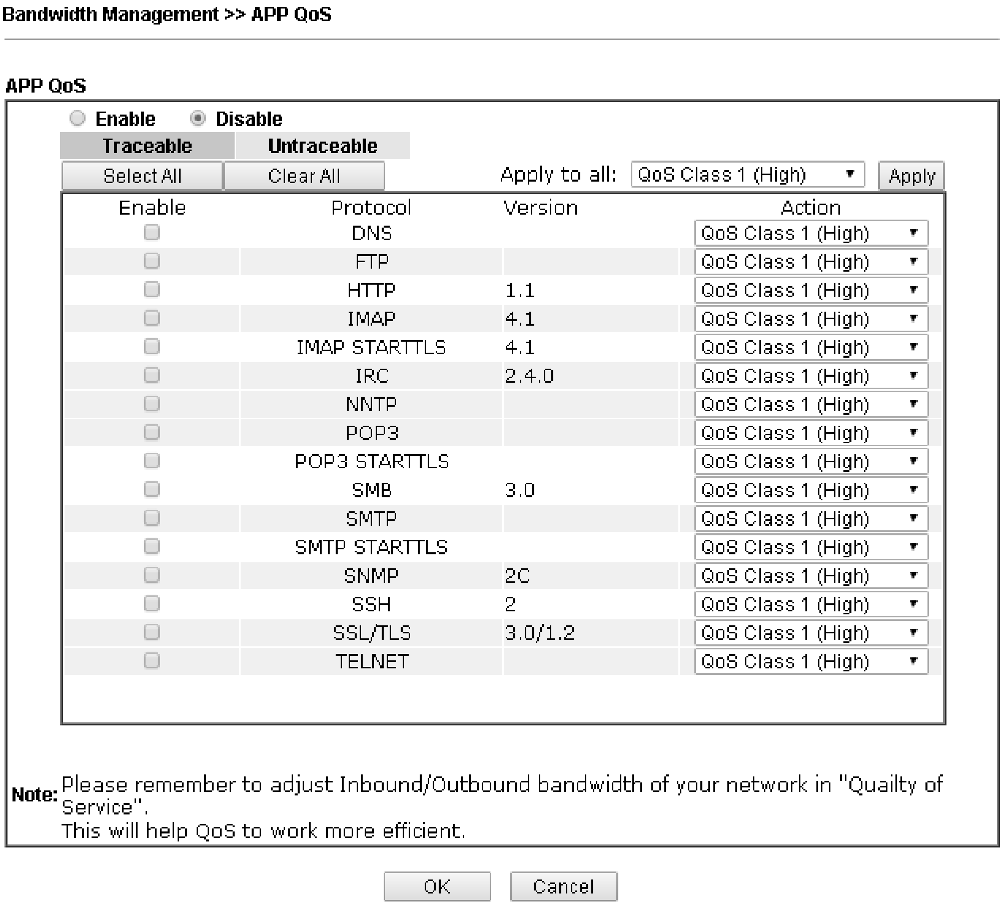
NO	Status	Local Address	Remote Address	DiffServ CodePoint	Service Type
1 ○	Active	Any	Any	ANY	ANY

VI-2-4 APP QoS

The QoS function is used to do bandwidth management for the services with certain IP or port number. However, there is no effect of bandwidth management on the service such as VNC or PPTV without fixed IP or port number.

APP QoS employs the function of APP Enforcement to detect the types of software in application layer. By combining the function of QoS (adjustment on Inbound/Outbond bandwidth and bandwidth ratio), Vigor router can perform the bandwidth management for the protocols, streaming, remote control, web HD and so on.

Click **Bandwidth Management>>APP QoS** to open the following page.



Bandwidth Management >> APP QoS

APP QoS

○ Enable ● Disable

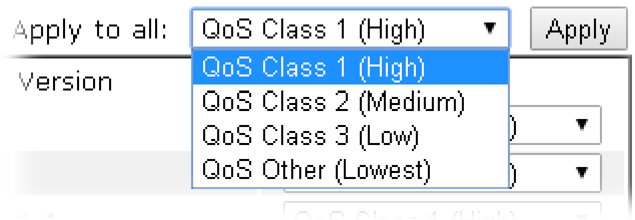
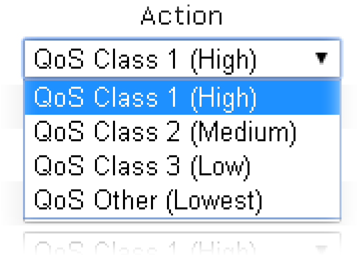
Apply to all: QoS Class 1 (High) Apply

Enable	Protocol	Version	Action
□	DNS		QoS Class 1 (High)
□	FTP		QoS Class 1 (High)
□	HTTP	1.1	QoS Class 1 (High)
□	IMAP	4.1	QoS Class 1 (High)
□	IMAP STARTTLS	4.1	QoS Class 1 (High)
□	IRC	2.4.0	QoS Class 1 (High)
□	NNTP		QoS Class 1 (High)
□	POP3		QoS Class 1 (High)
□	POP3 STARTTLS		QoS Class 1 (High)
□	SMB	3.0	QoS Class 1 (High)
□	SMTP		QoS Class 1 (High)
□	SMTP STARTTLS		QoS Class 1 (High)
□	SNMP	2C	QoS Class 1 (High)
□	SSH	2	QoS Class 1 (High)
□	SSL/TLS	3.0/1.2	QoS Class 1 (High)
□	TELNET		QoS Class 1 (High)

Note: Please remember to adjust Inbound/Outbound bandwidth of your network in "Quailty of Service".
This will help QoS to work more efficient.

Available settings are explained as follows:

Item	Description
Enable/Disable	Click **Enable** to activate APP QoS function. Click **Disable** to deactivate APP QoS function.
Traceable	The protocol listed below is traceable by Vigor router. Each tab offers different types of protocols to fit your request.
Untraceable	The protocol listed below is not easy to be traced by Vigor router. Each tab offers different types of protocols to fit your request.
Select All	Click it to select all of the protocols.
Clear All	Click it to de-select all of the protocols.

Apply to all	Choose one of the actions from the drop down list. It is prepared for applying to all protocols.  Apply to all: QoS Class 1 (High) Apply Version QoS Class 1 (High) QoS Class 2 (Medium) QoS Class 3 (Low) QoS Other (Lowest) **Apply** – Click it to make the selected action be applied all of the selected protocols immediately.
Action	There are many protocols which can be specified with different QoS Class.  Action QoS Class 1 (High) QoS Class 1 (High) QoS Class 2 (Medium) QoS Class 3 (Low) QoS Other (Lowest)

After finishing all the settings, please click **OK** to save the configuration.

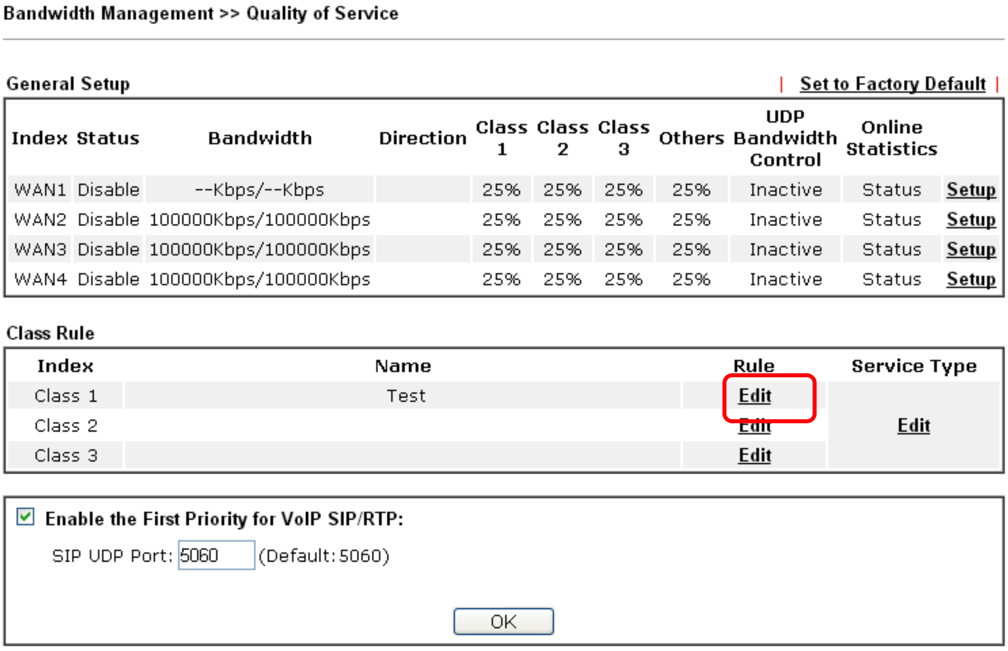
Application Notes

A-1 How to Optimize the Bandwidth through QoS Technology

Have you ever gotten any problems in uploading/downloading files (Voice, video or email/data only) with the narrow/districted bandwidth you may share from the common Internet connection line? The advanced bandwidth management technology-QoS (Quality of Service) helps you to well allocate the bandwidth upon your demand of Voice, Video, or Data transferring. Let's see how to get the optimum bandwidth per your request by using DrayTek Vigor router as below.

Scenario: The Internet connection you got from ISP line is 2MB/512Kb. There are VoIP telephony network, IPTV set top box and data server at your home. Assume you want to allocate 30% of the bandwidth you got to VoIP demand, 50% for IPTV, 15% for mail/data, 5% for others. Let's see how easily it is to do the setting as below:

1. Open **Bandwidth Management>> Quality of Service**.
2. You will get the following page. Click the **Edit** link for **Class 1**.



Bandwidth Management >> Quality of Service

General Setup | Set to Factory Default |

Index	Status	Bandwidth	Direction	Class 1	Class 2	Class 3	Others	UDP Bandwidth Control	Online Statistics	
WAN1	Disable	--Kbps/--Kbps		25%	25%	25%	25%	Inactive	Status	Setup
WAN2	Disable	100000Kbps/100000Kbps		25%	25%	25%	25%	Inactive	Status	Setup
WAN3	Disable	100000Kbps/100000Kbps		25%	25%	25%	25%	Inactive	Status	Setup
WAN4	Disable	100000Kbps/100000Kbps		25%	25%	25%	25%	Inactive	Status	Setup

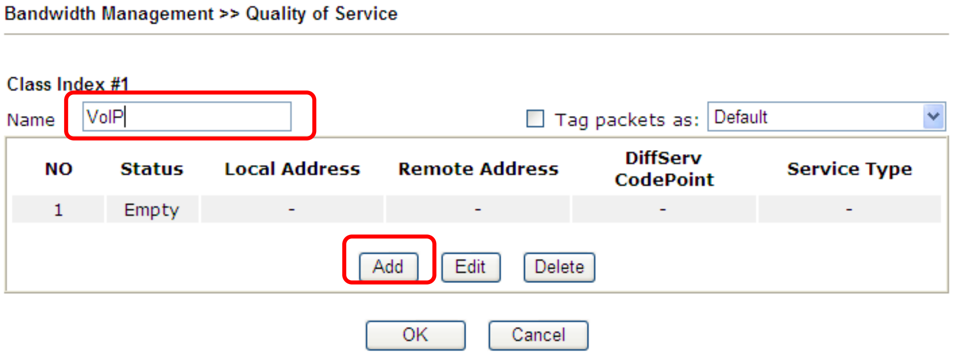
Class Rule

Index	Name	Rule	Service Type
Class 1	Test	Edit	Edit
Class 2		Edit	
Class 3		Edit	

☑ Enable the First Priority for VoIP SIP/RTP:

SIP UDP Port: 5060 (Default: 5060)

3. In the following page, type a name (e.g., VoIP) for such class and click **Add**.



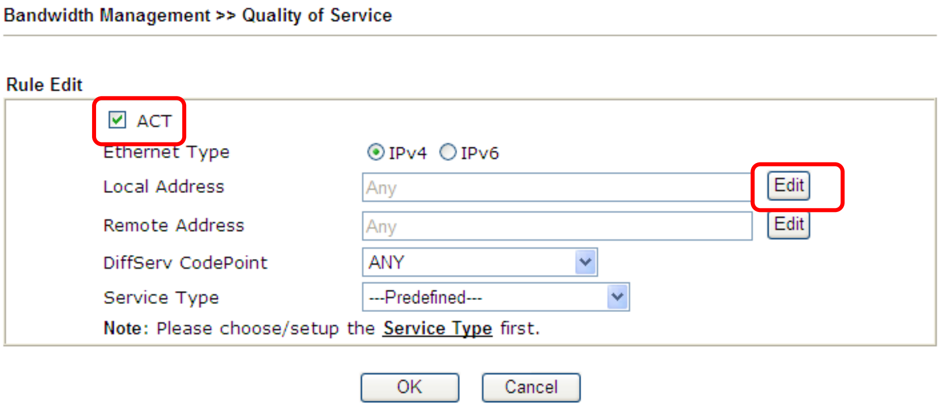
Bandwidth Management >> Quality of Service

Class Index #1

Name VoIP □ Tag packets as: Default

NO	Status	Local Address	Remote Address	DiffServ CodePoint	Service Type
1	Empty	-	-	-	-

4. Check the box of **ACT**. Click **Edit** to specify the local address.



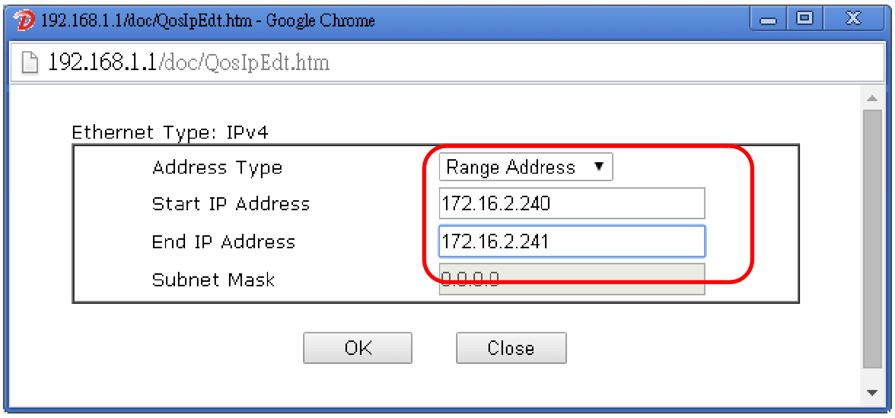
Bandwidth Management >> Quality of Service

Rule Edit

☑ ACT	
Ethernet Type	● IPv4 ○ IPv6
Local Address	Any [Edit]
Remote Address	Any [Edit]
DiffServ CodePoint	ANY
Service Type	---Predefined---

Note: Please choose/setup the Service Type first.

5. In the pop-up window, choose **Range Address** as the **Address Type** and type the start IP address and end IP address in relational fields. Click **OK** to save the settings and exit the window.



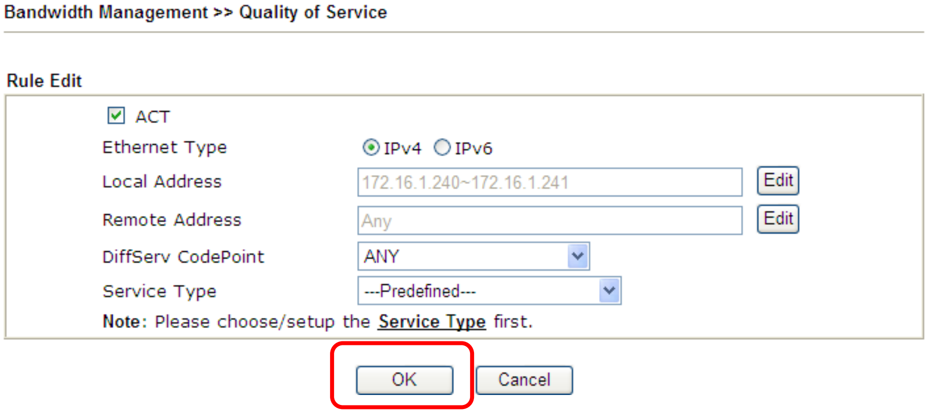
192.168.1.1/doc/QosIpEdt.htm - Google Chrome

192.168.1.1/doc/QosIpEdt.htm

Ethernet Type: IPv4

Address Type	Range Address
Start IP Address	172.16.2.240
End IP Address	172.16.2.241
Subnet Mask	0.0.0.0

6. Click **OK** again to save the settings.



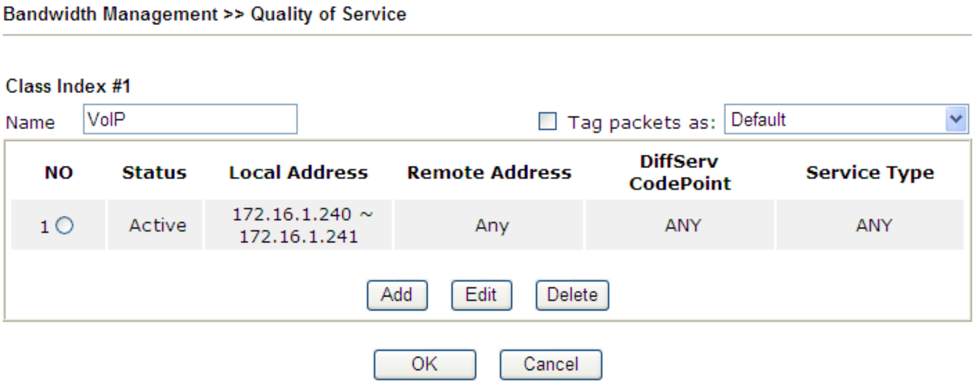
Bandwidth Management >> Quality of Service

Rule Edit

☑ ACT	
Ethernet Type	● IPv4 ○ IPv6
Local Address	172.16.1.240~172.16.1.241 [Edit]
Remote Address	Any [Edit]
DiffServ CodePoint	ANY
Service Type	---Predefined---

Note: Please choose/setup the Service Type first.

7. The class rule for VoIP has been set. Click **OK** to return to previous page.



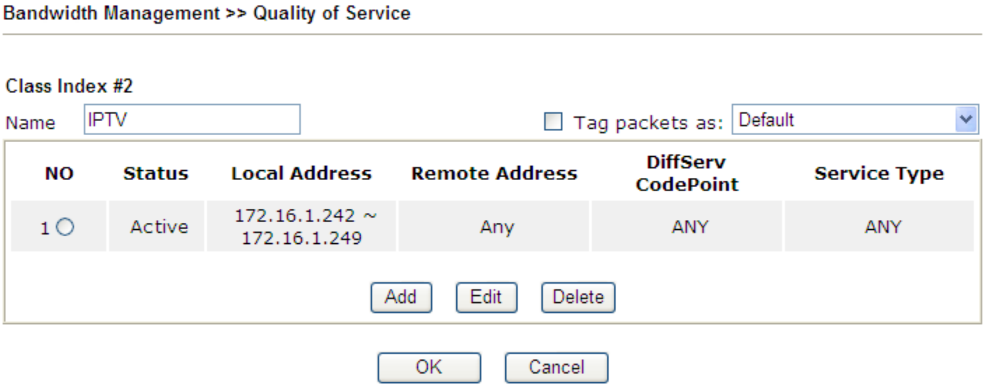
Bandwidth Management >> Quality of Service

Class Index #1

Name VoIP □ Tag packets as: Default

NO	Status	Local Address	Remote Address	DiffServ CodePoint	Service Type
1 ○	Active	172.16.1.240 ~ 172.16.1.241	Any	ANY	ANY

8. Do the same steps to add class rules for IPTV and Data/Email with IP addresses as shown below.



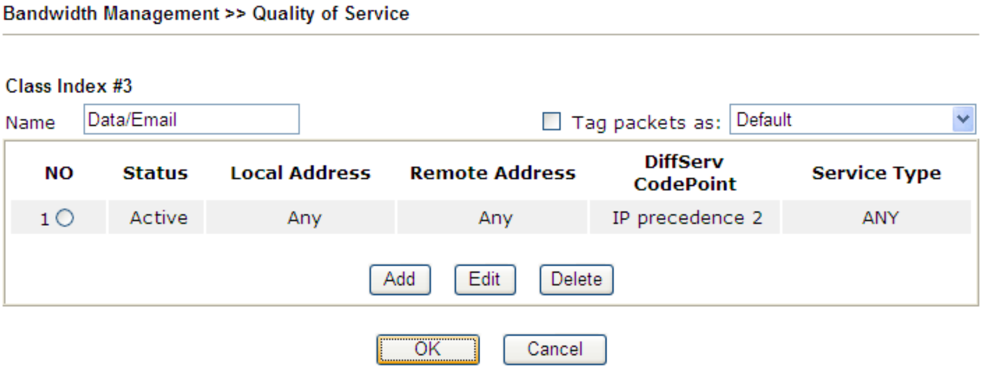
Bandwidth Management >> Quality of Service

Class Index #2

Name IPTV □ Tag packets as: Default

NO	Status	Local Address	Remote Address	DiffServ CodePoint	Service Type
1 ○	Active	172.16.1.242 ~ 172.16.1.249	Any	ANY	ANY

and



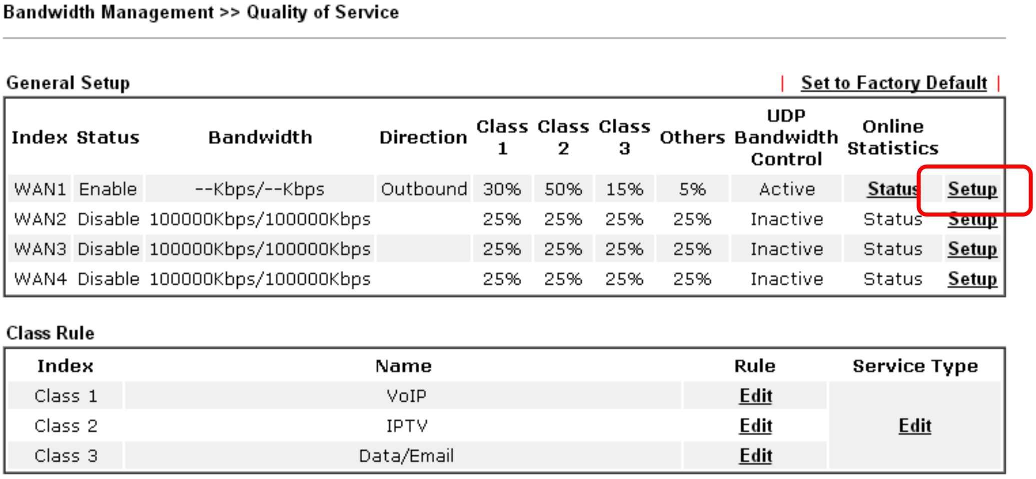
Bandwidth Management >> Quality of Service

Class Index #3

Name Data/Email □ Tag packets as: Default

NO	Status	Local Address	Remote Address	DiffServ CodePoint	Service Type
1 ○	Active	Any	Any	IP precedence 2	ANY

9. Assuming you get 2MB/512Kb Internet line. You can click the **Setup** link of WAN1 to set up the bandwidth for different groups among VoIP, IPTV and Data/Email.



Bandwidth Management >> Quality of Service

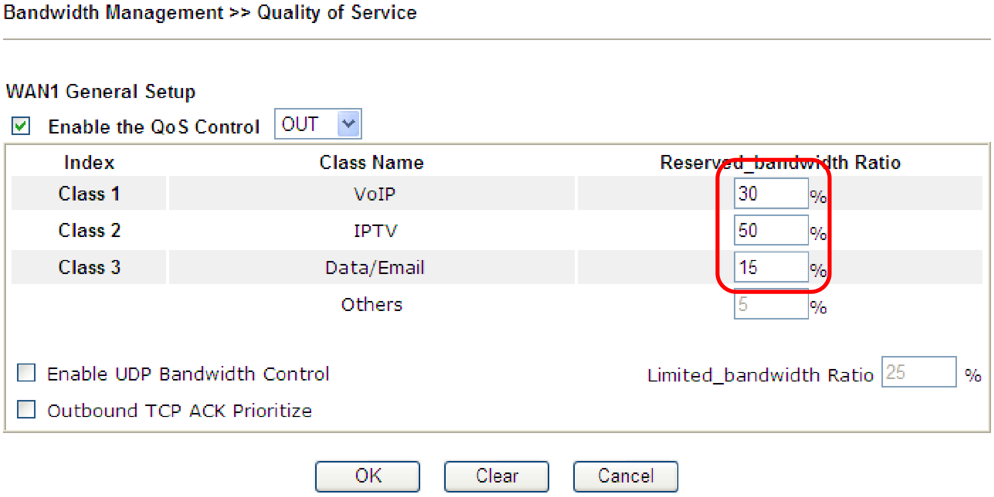
General Setup | Set to Factory Default |

Index	Status	Bandwidth	Direction	Class 1	Class 2	Class 3	Others	UDP Bandwidth Control	Online Statistics	
WAN1	Enable	--Kbps/--Kbps	Outbound	30%	50%	15%	5%	Active	Status	Setup
WAN2	Disable	100000Kbps/100000Kbps		25%	25%	25%	25%	Inactive	Status	Setup
WAN3	Disable	100000Kbps/100000Kbps		25%	25%	25%	25%	Inactive	Status	Setup
WAN4	Disable	100000Kbps/100000Kbps		25%	25%	25%	25%	Inactive	Status	Setup

Class Rule

Index	Name	Rule	Service Type
Class 1	VoIP	Edit	Edit
Class 2	IPTV	Edit	
Class 3	Data/Email	Edit	

10. In the Setup page, check the box of **Enable the QoS Control**. Type 30, 50 and 15 in the boxes for VoIP, IPTV and Data/Email respectively. Check the box of **Enable UDP Bandwidth Control**.



Bandwidth Management >> Quality of Service

WAN1 General Setup

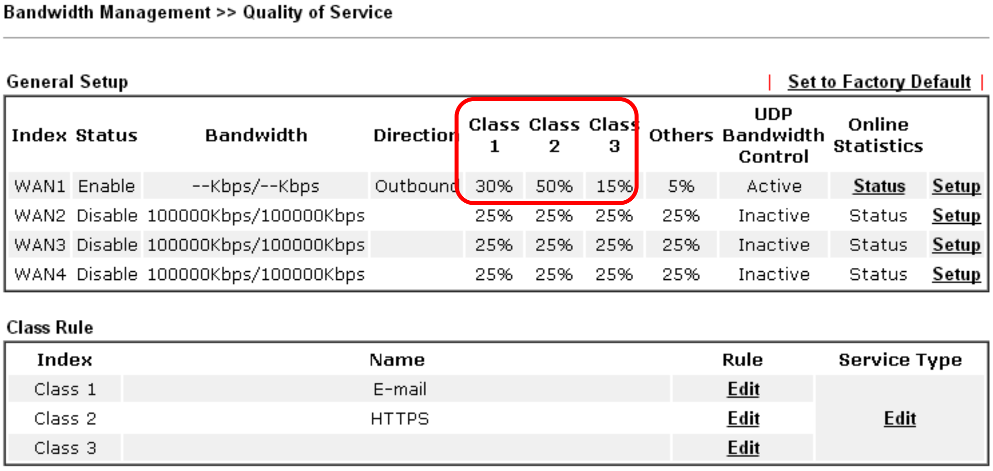
☑ Enable the QoS Control OUT

Index	Class Name	Reserved_bandwidth Ratio
Class 1	VoIP	30 %
Class 2	IPTV	50 %
Class 3	Data/Email	15 %
	Others	5 %

☐ Enable UDP Bandwidth Control Limited_bandwidth Ratio 25 %

☐ Outbound TCP ACK Prioritize

11. Click **OK** to save the settings. The class rules for WAN1 are defined as shown below.



Bandwidth Management >> Quality of Service

General Setup | Set to Factory Default |

Index	Status	Bandwidth	Direction	Class 1	Class 2	Class 3	Others	UDP Bandwidth Control	Online Statistics	
WAN1	Enable	--Kbps/--Kbps	Outbound	30%	50%	15%	5%	Active	Status	Setup
WAN2	Disable	100000Kbps/100000Kbps		25%	25%	25%	25%	Inactive	Status	Setup
WAN3	Disable	100000Kbps/100000Kbps		25%	25%	25%	25%	Inactive	Status	Setup
WAN4	Disable	100000Kbps/100000Kbps		25%	25%	25%	25%	Inactive	Status	Setup

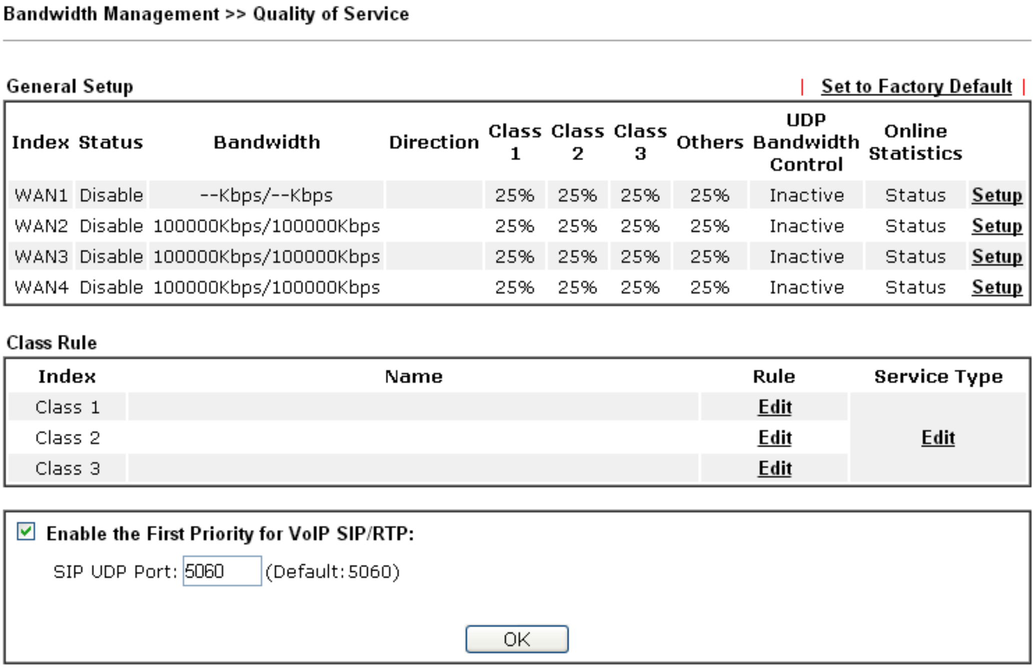
Class Rule

Index	Name	Rule	Service Type
Class 1	E-mail	Edit	Edit
Class 2	HTTPS	Edit	
Class 3		Edit	

A-2 QoS Setting Example

Assume a teleworker sometimes works at home and takes care of children. When working time, he would use Vigor router at home to connect to the server in the headquarter office downtown via either HTTPS or V PN to check email and access internal database. Meanwhile, children may chat on Skype in the restroom.

1. Go to **Bandwidth Management>>Quality of Service.**



Bandwidth Management >> Quality of Service

General Setup | Set to Factory Default |

Index	Status	Bandwidth	Direction	Class 1	Class 2	Class 3	Others	UDP Bandwidth Control	Online Statistics	
WAN1	Disable	--Kbps/--Kbps		25%	25%	25%	25%	Inactive	Status	Setup
WAN2	Disable	100000Kbps/100000Kbps		25%	25%	25%	25%	Inactive	Status	Setup
WAN3	Disable	100000Kbps/100000Kbps		25%	25%	25%	25%	Inactive	Status	Setup
WAN4	Disable	100000Kbps/100000Kbps		25%	25%	25%	25%	Inactive	Status	Setup

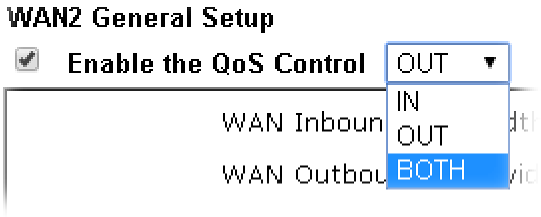
Class Rule

Index	Name	Rule	Service Type
Class 1		Edit	Edit
Class 2		Edit	
Class 3		Edit	

☑ Enable the First Priority for VoIP SIP/RTP:

SIP UDP Port: 5060 (Default: 5060)

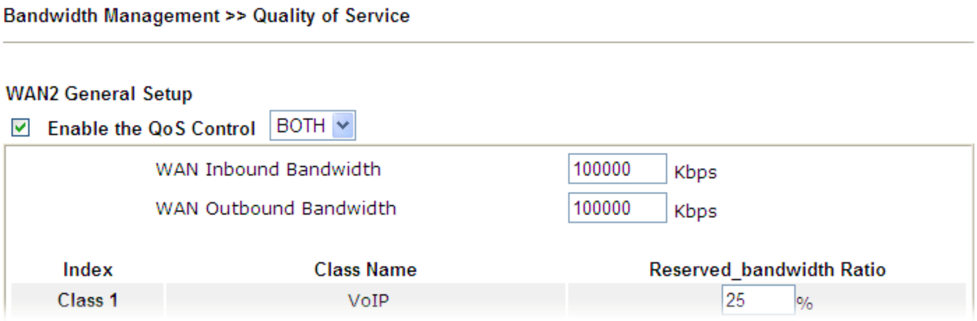
2. Click **Setup** link of WAN (2/3/4). Make sure the QoS Control on the left corner is checked. And select **BOTH** in **Direction**.



WAN2 General Setup

☑ Enable the QoS Control OUT

3. Set Inbound/Outbound bandwidth.



Bandwidth Management >> Quality of Service

WAN2 General Setup

☑ Enable the QoS Control BOTH

WAN Inbound Bandwidth 100000 Kbps

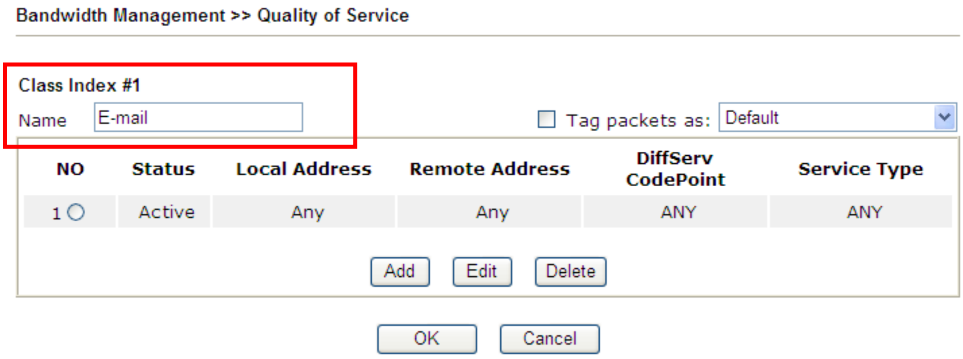
WAN Outbound Bandwidth 100000 Kbps

Index	Class Name	Reserved_bandwidth Ratio
Class 1	VoIP	25 %

Info

The rate of outbound/inbound must be smaller than the real bandwidth to ensure correct calculation of QoS. It is suggested to set the bandwidth value for inbound/outbound as 80% - 85% of physical network speed provided by ISP to maximize the QoS performance.

4. Return to previous page. Enter the Name of Index Class #1 by clicking **Edit** link. Type the name "**E-mail**" for Class 1. Click **OK** to save the settings.



Bandwidth Management >> Quality of Service

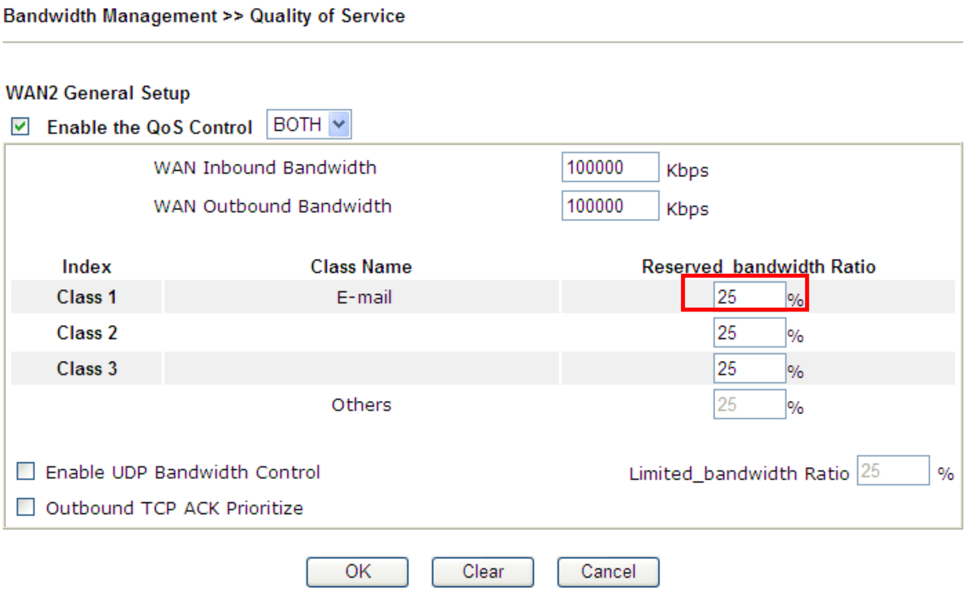
Class Index #1

Name: E-mail

□ Tag packets as: Default

NO	Status	Local Address	Remote Address	DiffServ CodePoint	Service Type
1 ○	Active	Any	Any	ANY	ANY

5. Click the **Setup** link for WAN2. The user can set reserved bandwidth (e.g., 25%) for **E-mail** using protocol POP3 and SMTP. Click **OK** to save the settings.



Bandwidth Management >> Quality of Service

WAN2 General Setup

☑ Enable the QoS Control: BOTH

WAN Inbound Bandwidth: 100000 Kbps

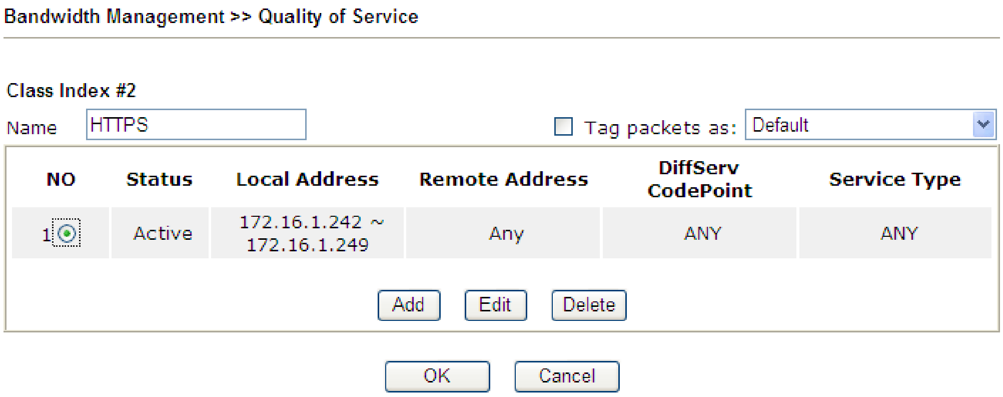
WAN Outbound Bandwidth: 100000 Kbps

Index	Class Name	Reserved_bandwidth Ratio
Class 1	E-mail	25 %
Class 2		25 %
Class 3		25 %
	Others	25 %

□ Enable UDP Bandwidth Control — Limited_bandwidth Ratio 25 %

□ Outbound TCP ACK Prioritize

6. Return to previous page. Enter the Name of Index Class #2 by clicking **Edit** link. In this index, the user will set reserved bandwidth for **HTTPS**. And click **OK**.



Bandwidth Management >> Quality of Service

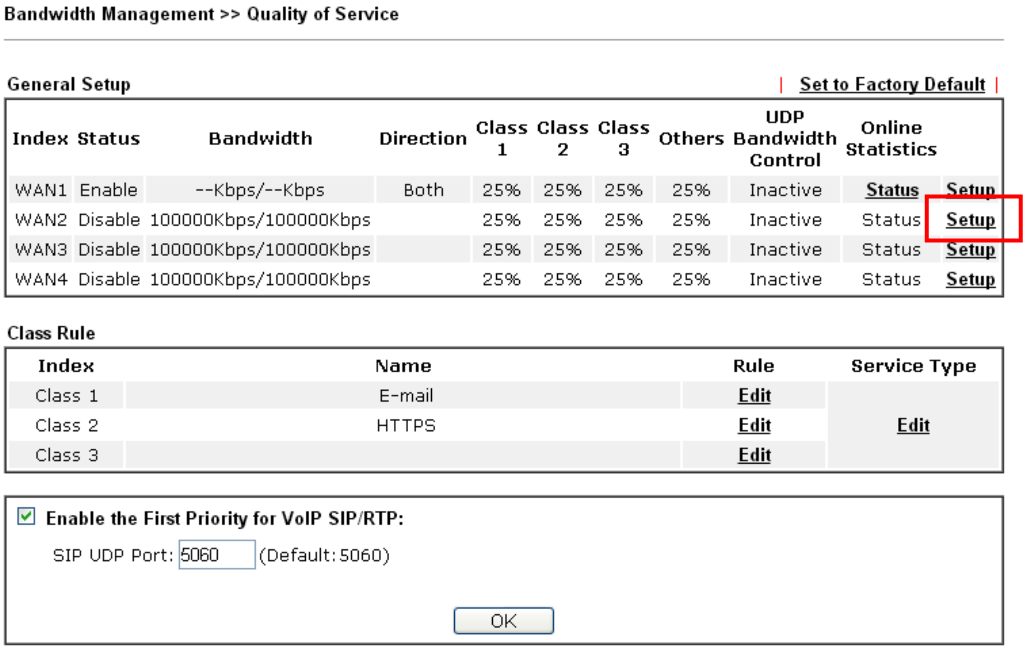
Class Index #2

Name: HTTPS

□ Tag packets as: Default

NO	Status	Local Address	Remote Address	DiffServ CodePoint	Service Type
1 ●	Active	172.16.1.242 ~ 172.16.1.249	Any	ANY	ANY

7. Click **Setup** link for WAN2.



Bandwidth Management >> Quality of Service

General Setup | Set to Factory Default |

Index	Status	Bandwidth	Direction	Class 1	Class 2	Class 3	Others	UDP Bandwidth Control	Online Statistics	
WAN1	Enable	--Kbps/--Kbps	Both	25%	25%	25%	25%	Inactive	Status	Setup
WAN2	Disable	100000Kbps/100000Kbps		25%	25%	25%	25%	Inactive	Status	Setup
WAN3	Disable	100000Kbps/100000Kbps		25%	25%	25%	25%	Inactive	Status	Setup
WAN4	Disable	100000Kbps/100000Kbps		25%	25%	25%	25%	Inactive	Status	Setup

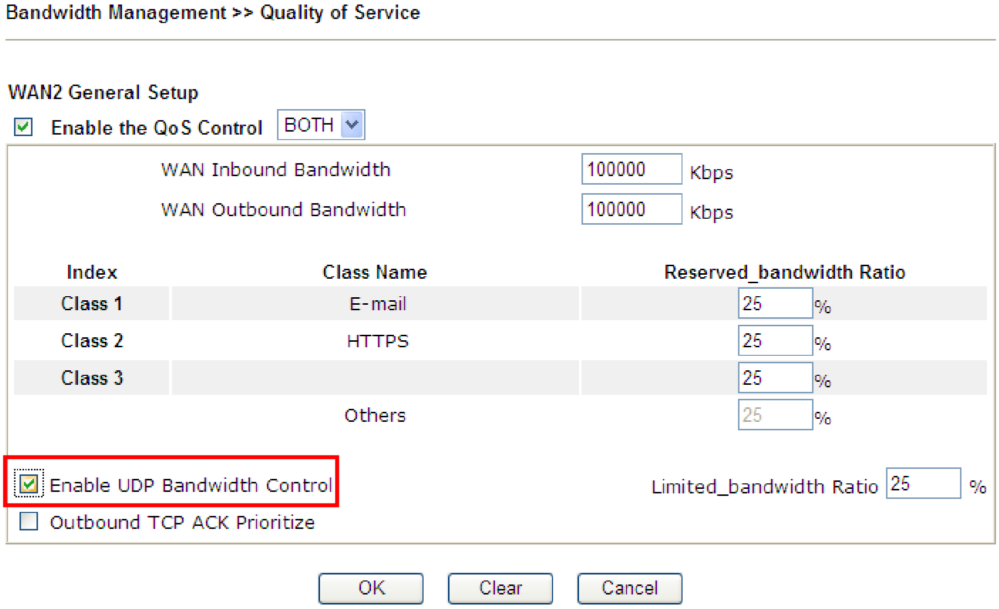
Class Rule

Index	Name	Rule	Service Type
Class 1	E-mail	Edit	Edit
Class 2	HTTPS	Edit	
Class 3		Edit	

☑ Enable the First Priority for VoIP SIP/RTP:

SIP UDP Port: 5060 (Default:5060)

8. Check **Enable UDP Bandwidth Control** on the bottom to prevent enormous UDP traffic influence other application. Click **OK**.



Bandwidth Management >> Quality of Service

WAN2 General Setup

☑ Enable the QoS Control BOTH

WAN Inbound Bandwidth 100000 Kbps

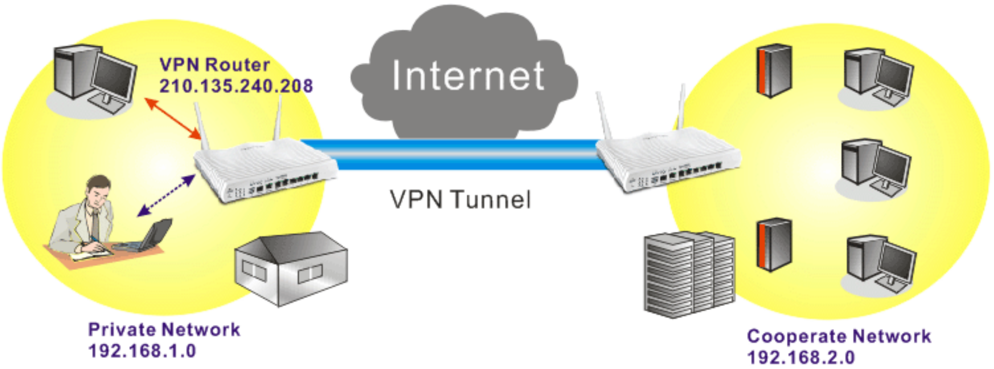
WAN Outbound Bandwidth 100000 Kbps

Index	Class Name	Reserved_bandwidth Ratio
Class 1	E-mail	25 %
Class 2	HTTPS	25 %
Class 3		25 %
	Others	25 %

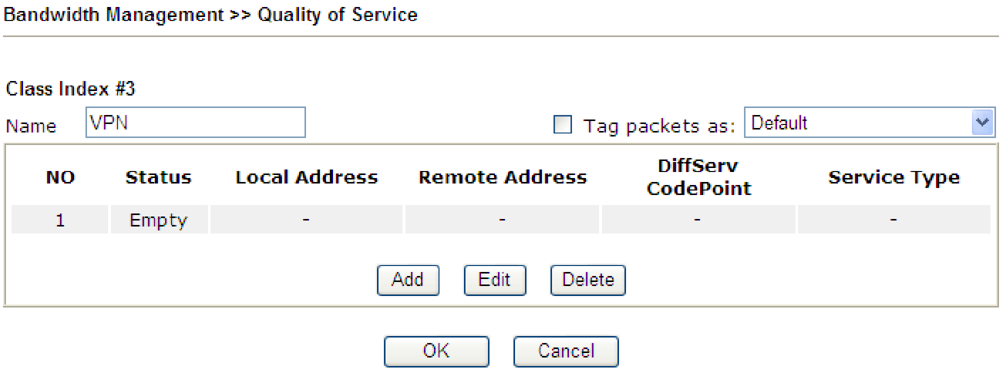
☑ Enable UDP Bandwidth Control Limited_bandwidth Ratio 25 %

□ Outbound TCP ACK Prioritize

9. If the worker has connected to the headquarter using host to host VPN tunnel. (Please refer to Chapter 3 VPN for detail instruction), he may set up an index for it. Enter the Class Name of Index 3. In this index, he will set reserved bandwidth for 1 VPN tunnel.



10. Click **Edit** for Class 3 to open a new window. In this index, the user will set reserved bandwidth for **VPN**.



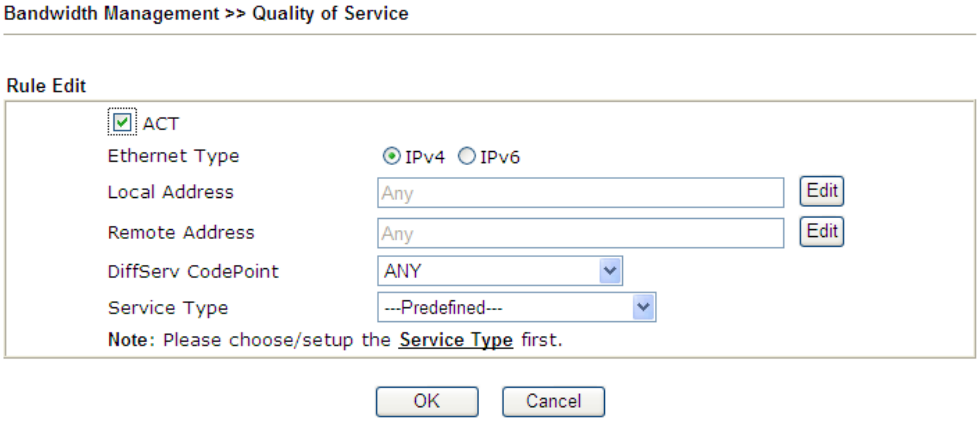
Bandwidth Management >> Quality of Service

Class Index #3

Name: VPN   □ Tag packets as: Default

NO	Status	Local Address	Remote Address	DiffServ CodePoint	Service Type
1	Empty	-	-	-	-

11. Click **Add** to open the following window. Check the **ACT** box, first.



Bandwidth Management >> Quality of Service

Rule Edit

☑ ACT

Ethernet Type: ● IPv4 ○ IPv6

Local Address: Any

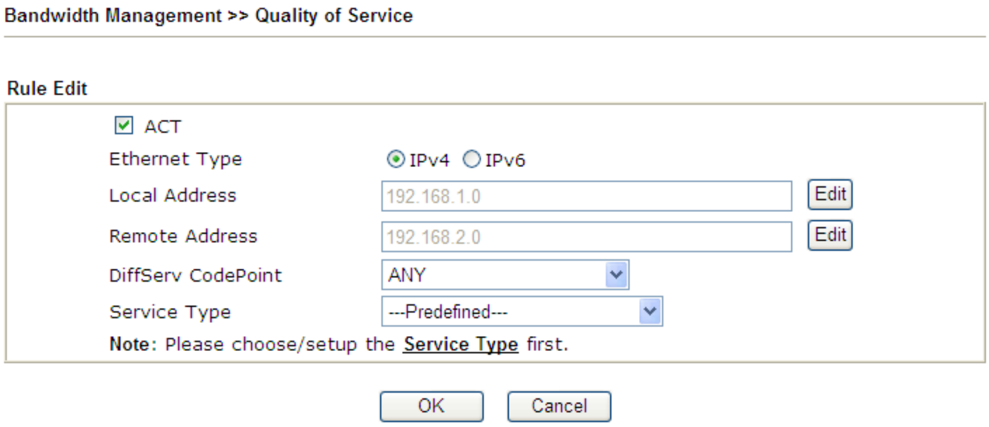
Remote Address: Any

DiffServ CodePoint: ANY

Service Type: ---Predefined---

Note: Please choose/setup the **Service Type** first.

12. Then click **Edit** of **Local Address** to set a worker's subnet address. Click **Edit** of **Remote Address** to set headquarter's IP address. Leave other fields and click **OK**.



Bandwidth Management >> Quality of Service

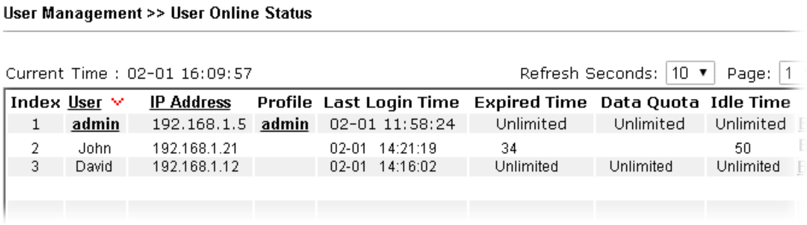
Rule Edit

☑ ACT	
Ethernet Type	● IPv4 ○ IPv6
Local Address	192.168.1.0 Edit
Remote Address	192.168.2.0 Edit
DiffServ CodePoint	ANY
Service Type	---Predefined---

Note: Please choose/setup the **Service Type** first.

VI-3 User Management

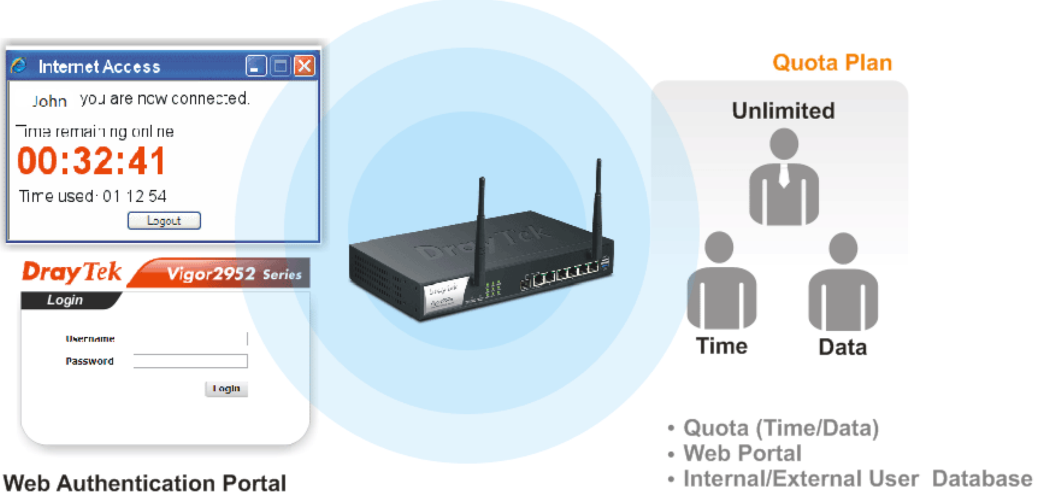
User Management is a security feature which disallows any IP traffic (except DHCP-related packets) from a particular host until that host has correctly supplied a valid username and password. Instead of managing with IP address/MAC address, User Management function manages hosts with user account. Network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



User Management >> User Online Status

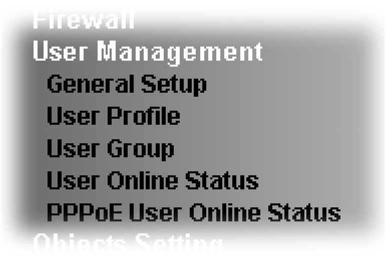
Current Time : 02-01 16:09:57 Refresh Seconds: 10 ▼ Page: 1

Index	User	IP Address	Profile	Last Login Time	Expired Time	Data Quota	Idle Time
1	admin	192.168.1.5	admin	02-01 11:58:24	Unlimited	Unlimited	Unlimited
2	John	192.168.1.21		02-01 14:21:19	34		50
3	David	192.168.1.12		02-01 14:16:02	Unlimited	Unlimited	Unlimited



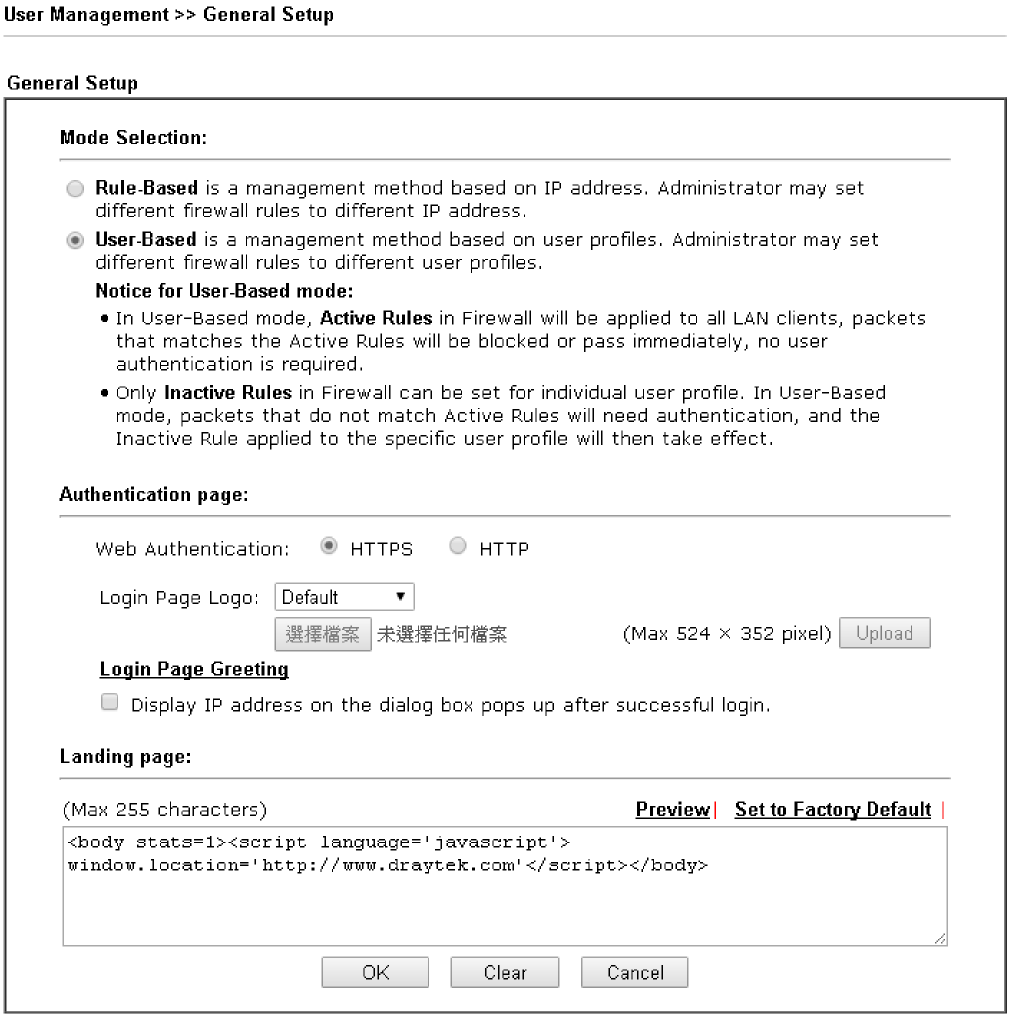
Info

Filter rules configured under Firewall usually are applied to the host (the one that the router installed) only. With user management, the rules can be applied to every user connected to the router with customized profiles.



VI-3-1 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.



User Management >> General Setup

General Setup

Mode Selection:

○ **Rule-Based** is a management method based on IP address. Administrator may set different firewall rules to different IP address.

● **User-Based** is a management method based on user profiles. Administrator may set different firewall rules to different user profiles.

Notice for User-Based mode:

- In User-Based mode, **Active Rules** in Firewall will be applied to all LAN clients, packets that matches the Active Rules will be blocked or pass immediately, no user authentication is required.
- Only **Inactive Rules** in Firewall can be set for individual user profile. In User-Based mode, packets that do not match Active Rules will need authentication, and the Inactive Rule applied to the specific user profile will then take effect.

Authentication page:

Web Authentication: ● HTTPS ○ HTTP

Login Page Logo: Default ▼

選擇檔案 未選擇任何檔案 (Max 524 × 352 pixel) Upload

Login Page Greeting

□ Display IP address on the dialog box pops up after successful login.

Landing page:

(Max 255 characters) **Preview** | **Set to Factory Default** |

```
<body stats=1><script language='javascript'>
window.location='http://www.draytek.com'</script></body>
```

OK Clear Cancel

Available settings are explained as follows:

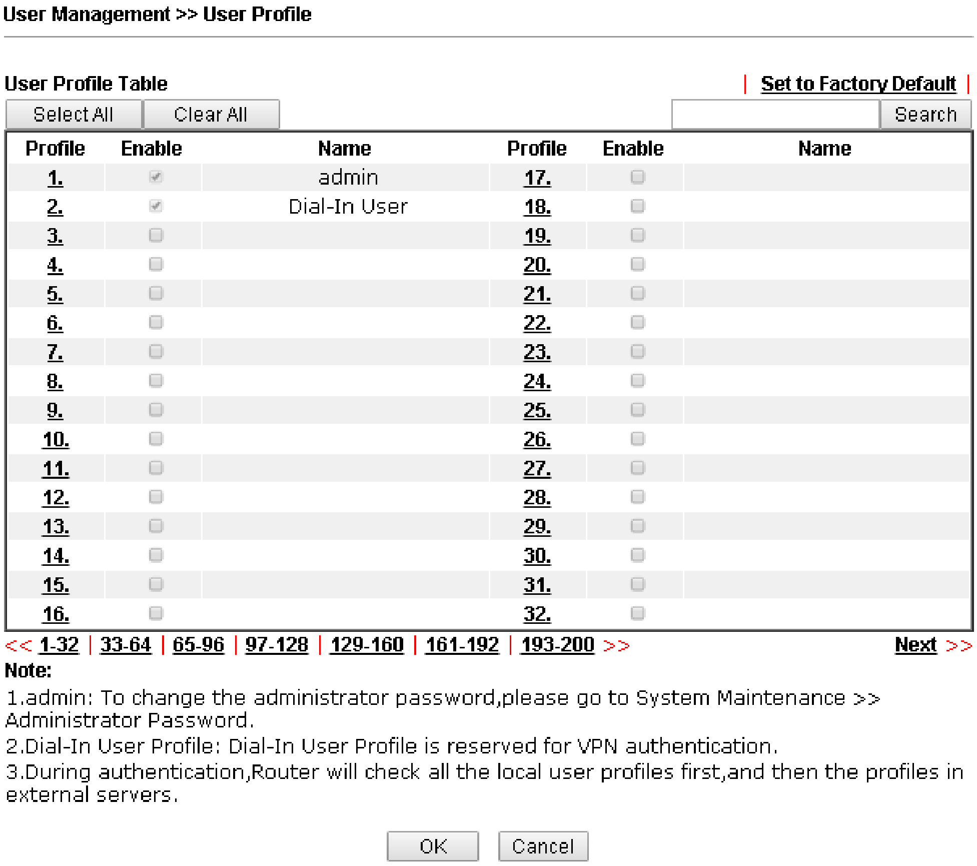
Item	Description
Mode	There are two modes offered here for you to choose. Each mode will bring different filtering effect to the users

	involved. **User-Based** - If you choose such mode, the router will apply the filter rules configured in **User Management>>User Profile** to the users. **Rule-Based** –If you choose such mode, the router will apply the filter rules configured in **Firewall>>General Setup** and **Filter Rule** to the users.
Authentication page	**Web Authentication** - Choose the protocol for web authentication. **Login Page Logo** – A logo which can be used as an identification of enterprise can be uploaded and displayed on the login page. You can use the default one, blank page or upload other image files (the size no mare than 524 × 352 pixel) to have an image of enterprise or have the effect of advertisement. **Login Page Greeting** - Such link allows you to access into the setting page for login greeting. For detailed information, refer to **System Maintenance>>Login Page Greeting**. **Display IP Address on tracking window** – Check the box to display the IP address of the client on the tracking window.
Landing Page	Type the information to be displayed on the first web page when the LAN user accessing into Internet via such router.

After finishing all the settings here, please click **OK** to save the configuration.

VI-3-2 User Profile

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



User Management >> User Profile

User Profile Table

| Set to Factory Default |

Select All | Clear All | Search

Profile	Enable	Name	Profile	Enable	Name
1.	☑	admin	17.	☐	
2.	☑	Dial-In User	18.	☐	
3.	☐		19.	☐	
4.	☐		20.	☐	
5.	☐		21.	☐	
6.	☐		22.	☐	
7.	☐		23.	☐	
8.	☐		24.	☐	
9.	☐		25.	☐	
10.	☐		26.	☐	
11.	☐		27.	☐	
12.	☐		28.	☐	
13.	☐		29.	☐	
14.	☐		30.	☐	
15.	☐		31.	☐	
16.	☐		32.	☐	

<< 1-32 | 33-64 | 65-96 | 97-128 | 129-160 | 161-192 | 193-200 >> Next >>

Note:

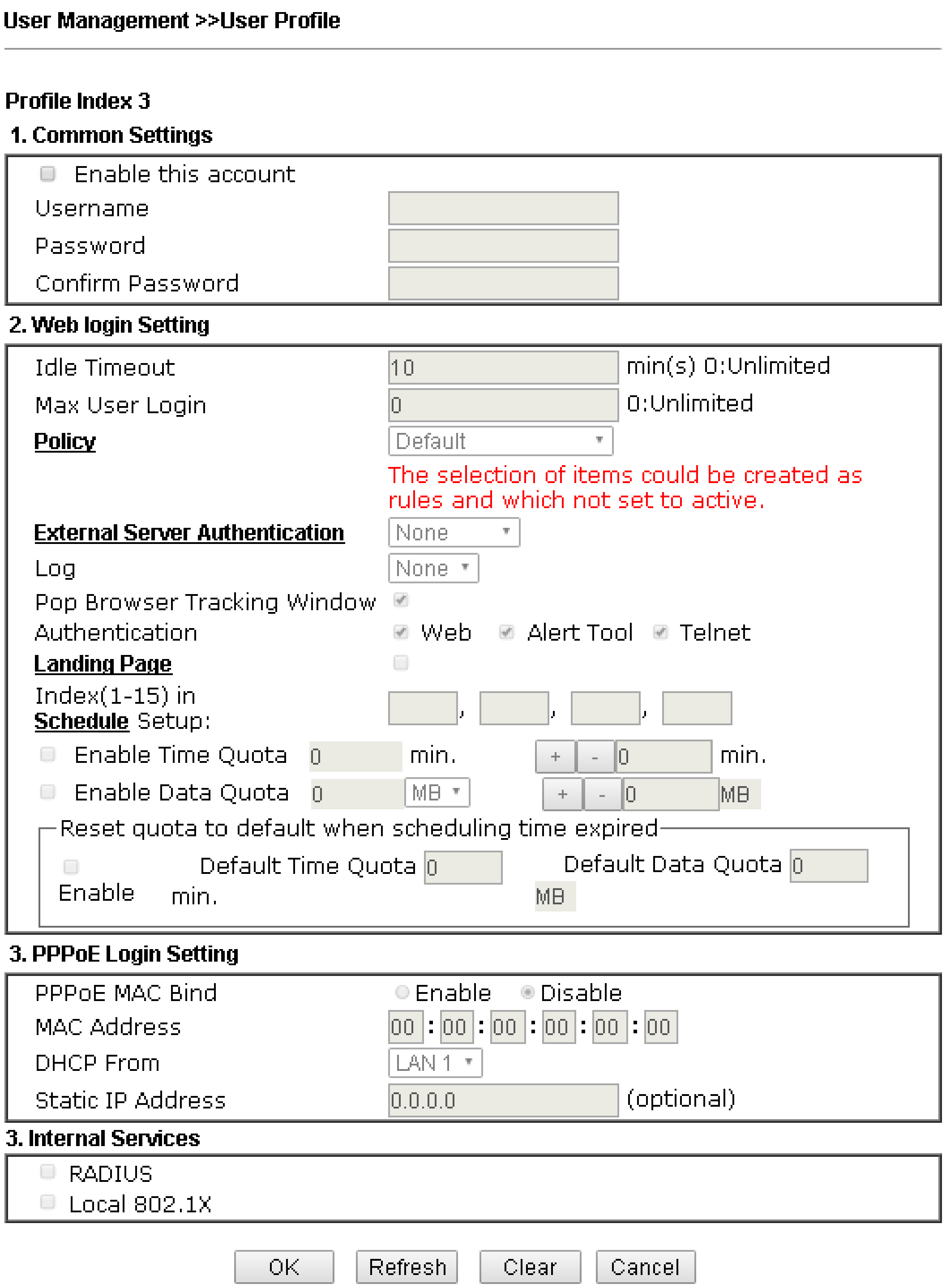
1.admin: To change the administrator password,please go to System Maintenance >> Administrator Password.

2.Dial-In User Profile: Dial-In User Profile is reserved for VPN authentication.

3.During authentication,Router will check all the local user profiles first,and then the profiles in external servers.

OK | Cancel

To set the user profile, please click any index number link to open the following page. Notice that profile 1 (**admin**) and profile 2 **(Dial-In User)** are factory default settings. Profile 2 is reserved for future use.



User Management >>User Profile

Profile Index 3

1. Common Settings

☐ Enable this account	
Username	
Password	
Confirm Password	

2. Web login Setting

Idle Timeout	10 min(s) 0:Unlimited
Max User Login	0 0:Unlimited
Policy	Default The selection of items could be created as rules and which not set to active.
External Server Authentication	None
Log	None
Pop Browser Tracking Window	☑
Authentication	☑ Web ☑ Alert Tool ☑ Telnet
Landing Page	☐
Index(1-15) in Schedule Setup:	, , ,
☐ Enable Time Quota 0 min.	+ - 0 min.
☐ Enable Data Quota 0 MB	+ - 0 MB

Reset quota to default when scheduling time expired

☐ Enable   Default Time Quota 0 min.   Default Data Quota 0 MB

3. PPPoE Login Setting

PPPoE MAC Bind	○ Enable ● Disable
MAC Address	00 : 00 : 00 : 00 : 00 : 00
DHCP From	LAN 1
Static IP Address	0.0.0.0 (optional)

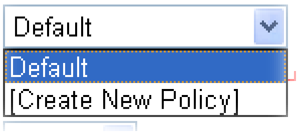
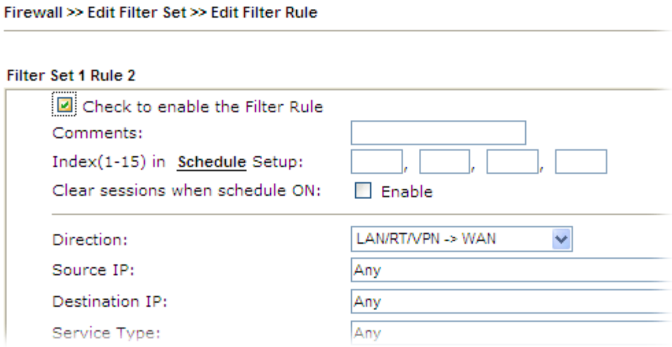
3. Internal Services

☐ RADIUS

☐ Local 802.1X

Available settings are explained as follows:

Item	Description
Common Settings	**Enable this account** - Check this box to enable such user profile. **Username** - Type a name for such user profile (e.g., *LAN_User_Group_1*, *WLAN_User_Group_A*, *WLAN_User_Group_B*, etc). When a user tries to access Internet through this router, an authentication step must be performed first. The user has to type the User Name 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. The maximum length of the name you can set is 24 characters. **Password** - Type a password for such profile (e.g., *lug123, wug123,wug456,* 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. The maximum length of the password you can set is 24 characters. **Confirm Password** - Type the password again for confirmation.
Web login Setting	**Idle Timeout** - If the user is idle over the limitation of the timer, the **network connection will be stopped for such user.** By default, the Idle Timeout is set to 10 minutes. **Max User Login** - Such profile can be used by many users. You can set the limitation for the number of users accessing Internet with the conditions of such profile. The default setting is 0 which means no limitation in the number of users. **Policy -** It is available only when **User-Based** mode selected in **User Management>>General Setup**.  ● **Default** – If you choose such item, the filter rules pre-configured in **Firewall** can be adopted for such user profile. ● **Create New Policy** – If you choose such item, the following page will be popped up for you to define another filter rule as a new policy.  Firewall >> Edit Filter Set >> Edit Filter Rule Filter Set 1 Rule 2 ☑ Check to enable the Filter Rule Comments: Index(1-15) in Schedule Setup: , , , Clear sessions when schedule ON: □ Enable Direction: LAN/RT/VPN -> WAN Source IP: Any Destination IP: Any Service Type: Any For the detailed configuration, simply refer to **Firewall>>Filter Rule**. The firewall filter rules that are not selected in **Firewall>>General>>Default rule** can be available for use in **User Management>>User Profile**. **External Service Authentication** - router will authenticate the dial-in user by itself or by external service such as LDAP server or Radius server or TACACS+ server. If LDAP, Radius or TACACS+ is selected here, it is not necessary to configure the password setting above.

Log - Time of login/log out, block/unblock for the user(s) can be sent to and displayed in Syslog. Please choose any one of the log items to take down relational records for the user(s).

Pop Browser Tracking Window - If such function is enabled, a pop up window will be displayed on the screen with time remaining for connection if Idle Timeout is set. However, the system will update the time periodically to keep the connection always on. Thus, Idle Timeout will not interrupt the network connection.

Authentication - Any user (from LAN side or WLAN side) tries to connect to Internet via Vigor router must be authenticated by the router first. There are three ways offered by the router for the user to choose for authentication.

- **Web** – If it is selected, the user can type the URL of the router from any browser. Then, a login window will be popped up and ask the user to type the user name and password for authentication. If succeed, a **Welcome Message** (configured in **User Management >> General Setup)** will be displayed. After authentication, the destination URL (if requested by the user) will be guided automatically by the router.
- **Alert Tool** – If it is selected, the user can open Alert Tool and type the user name and password for authentication. A window with remaining time of connection for such user will be displayed. Next, the user can access Internet through any browser on Windows. Note that Alert Tool can be downloaded from DrayTek web site.
- **Telnet** – If it is selected, the user can use Telnet command to perform the authentication job.

Landing Page - When a user tries to access into the web user interface of Vigor router series with the user name and password specified in this profile, he/she will be lead into the web page configured in Landing Page field in **User Management>>General Setup**.

Check this box to enable such function.

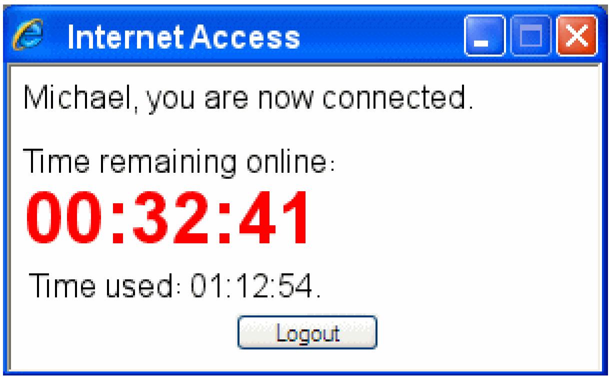
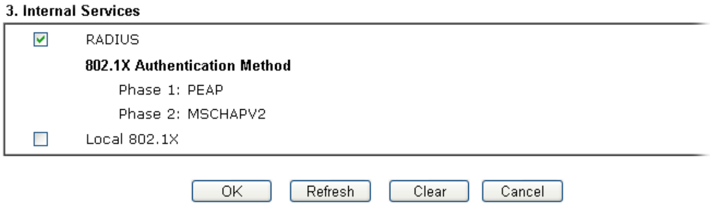
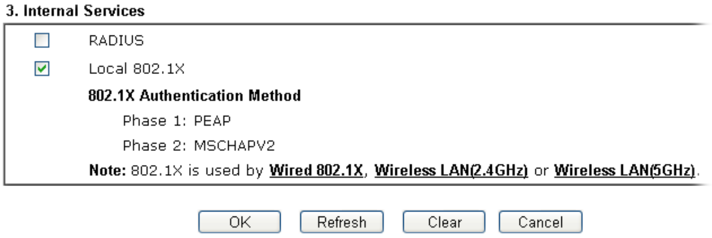
Index (1-15) in Schedule Setup - You can type in four sets of time schedule for your request. All the schedules can be set previously in **Application >> Schedule** web page and you can use the number that you have set in that web page.

Enable Time Quota - Time quota means the total connection time allowed by the router for the user with such profile. Check the box to enable the function of time quota. The first box displays the remaining time of the network connection. The second box allows to type the number of time (unit is minute) which is available for the user (using such profile) to access Internet.

+ – Click this box to set and increase the time quota for such profile.

- – Click this box to decrease the time quota for such profile.

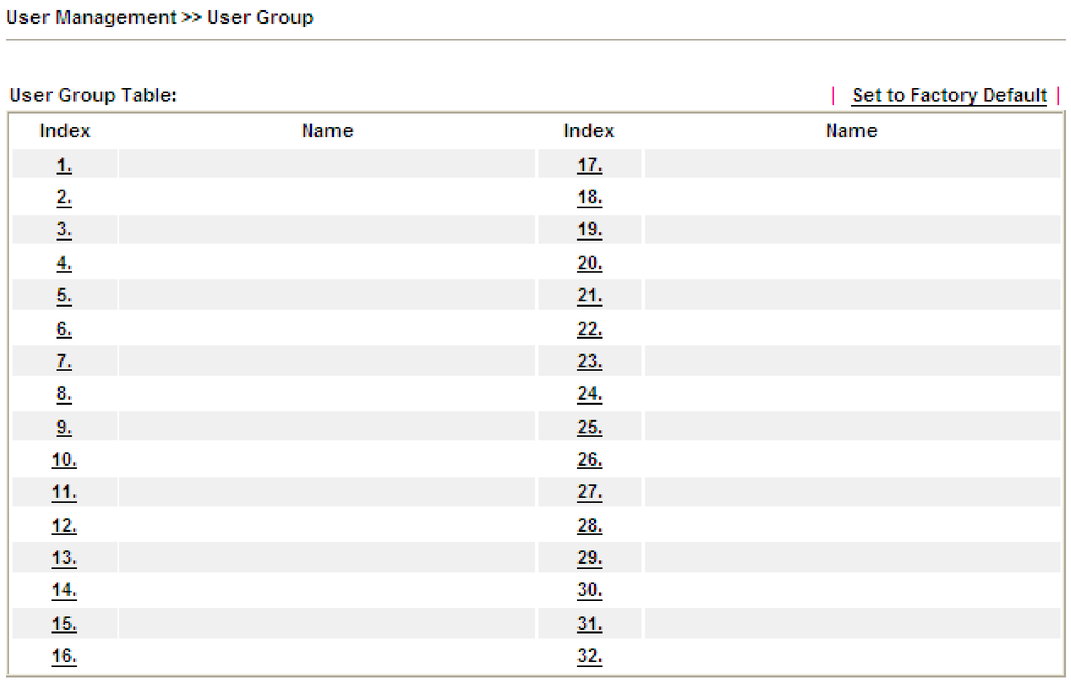
Note: A dialog will be popped up to notify how many time remained when a user accesses into Internet through Vigor router successfully.

	 Internet Access Michael, you are now connected. Time remaining online: 00:32:41 Time used: 01:12:54. When the time is up, all the connection jobs including network, IM, social media, facebook, and etc. will be terminated. **Enable Data Quota** - Data Quota means the total amount for data transmission allowed for the user. The unit is MB/GB. + – Click this box to set and increase the data quota for such profile. - – Click this box to decrease the data quota for such profile. **Reset quota to default when scheduling time expired -** Set default time quota and data quota for such profile. When the scheduling time is up, the router will use the default quota settings automatically. ● **Enable** – Check it to use the default setting for time quota and data quota. ● **Default Time Quota** – Type the value for the time manually. ● **Default Data Quota** – Type the value for the data manually.
RADIUS	Check the box to enable security authenticated via RADIUS server.  **3. Internal Services** ☑ RADIUS **802.1X Authentication Method** Phase 1: PEAP Phase 2: MSCHAPV2 □ Local 802.1X
Local 802.1X	Check the box to enable security authenticated via 802.1X server.  **3. Internal Services** □ RADIUS ☑ Local 802.1X **802.1X Authentication Method** Phase 1: PEAP Phase 2: MSCHAPV2 **Note:** 802.1X is used by Wired 802.1X, Wireless LAN(2.4GHz) or Wireless LAN(5GHz).

After finishing all the settings here, please click **OK** to save the configuration.

VI-3-3 User Group

This page allows you to bind several user profiles into one group. These groups will be used in **Firewall>>General Setup** as part of filter rules.

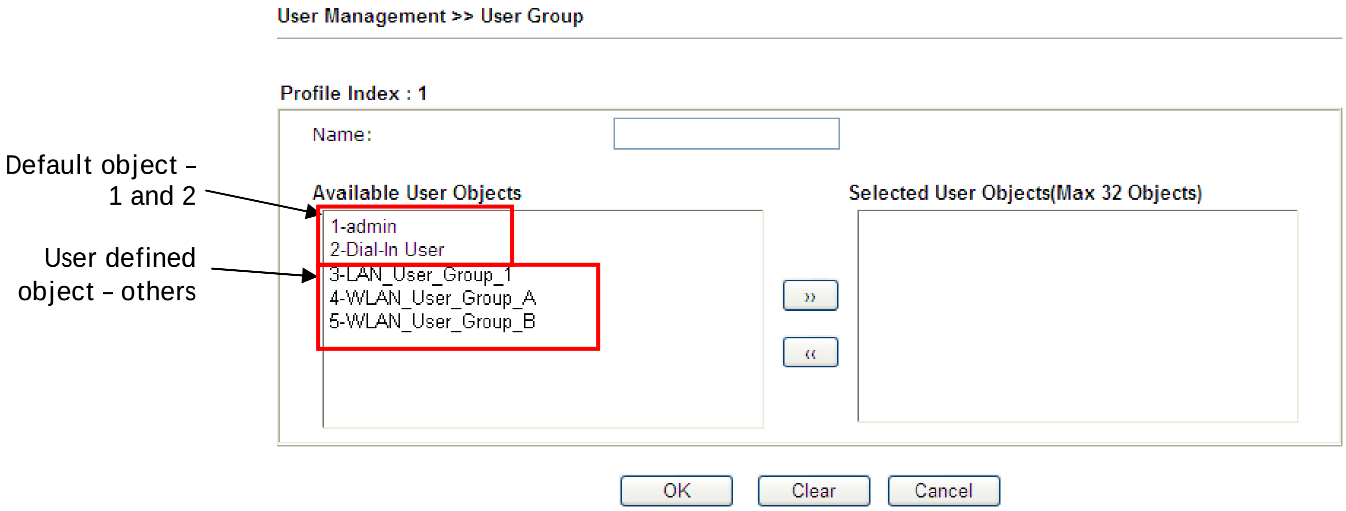


User Management >> User Group

User Group Table: | Set to Factory Default |

Index	Name	Index	Name
1.		17.	
2.		18.	
3.		19.	
4.		20.	
5.		21.	
6.		22.	
7.		23.	
8.		24.	
9.		25.	
10.		26.	
11.		27.	
12.		28.	
13.		29.	
14.		30.	
15.		31.	
16.		32.	

Please click any index number link to open the following page.



User Management >> User Group

Profile Index : 1

Name:

Available User Objects

1-admin
2-Dial-In User
3-LAN_User_Group_1
4-WLAN_User_Group_A
5-WLAN_User_Group_B

Selected User Objects(Max 32 Objects)

Available settings are explained as follows:

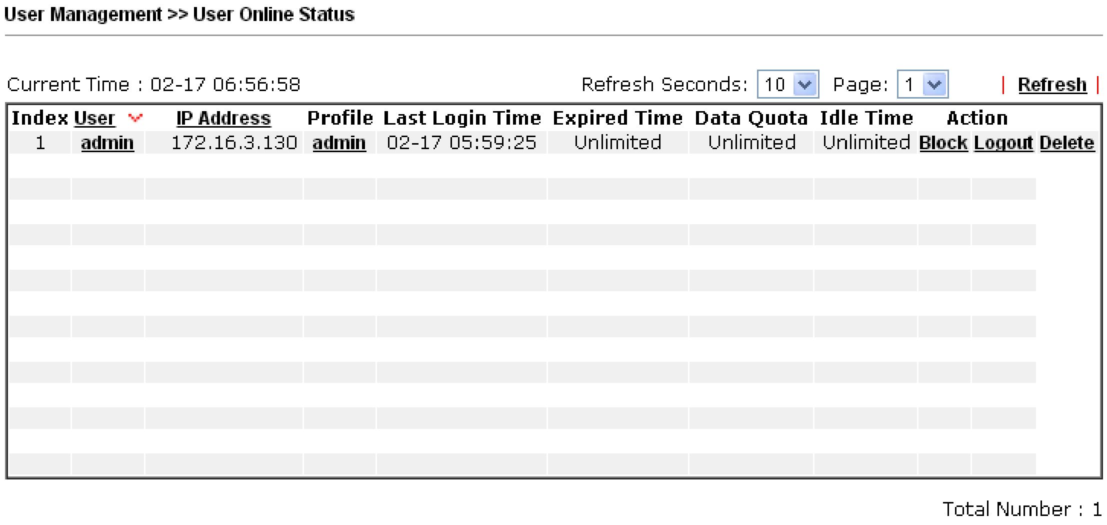
Item	Description
Name	Type a name for this user group.
Available User Objects	You can gather user profiles (objects) from **User Profile** page within one user group. All the available user objects that you have created will be shown in this box. Notice that user object, Admin and Dial-In User are factory settings. User defined profiles will be numbered with 3, 4, 5 and so on.

Selected Keyword Objects	Click » button to add the selected user objects in this box.

After finishing all the settings here, please click **OK** to save the configuration.

VI-3-4 User Online Status

User Online Status displays connection information (including user profile, IP address, authority, expired time, data quota, idle time, and so on) about the user accessing into web user interface of Vigor router.



User Management >> User Online Status

Current Time : 02-17 06:56:58

Refresh Seconds: 10 Page: 1 | Refresh |

Index	User	IP Address	Profile	Last Login Time	Expired Time	Data Quota	Idle Time	Action
1	admin	172.16.3.130	admin	02-17 05:59:25	Unlimited	Unlimited	Unlimited	Block Logout Delete

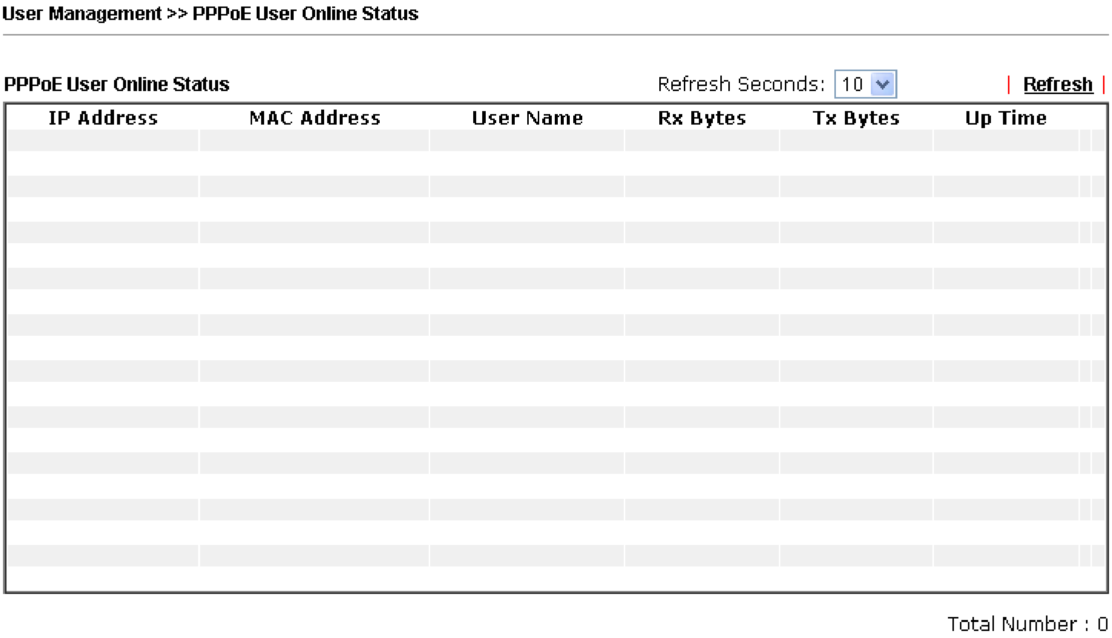
Total Number : 1

Available settings are explained as follows:

Item	Description
Refresh Seconds	Use the drop down list to choose the time interval of refreshing data flow that will be done by the system automatically.
Refresh	Click this link to refresh this page manually.
Index	Display the number of the data flow.
User	Display the users which connect to Vigor router currently. You can click the link under the username to open the user profile setting page for that user.
IP Address	Display the IP address of the device.
Profile	Display the authority of the account.
Last Login Time	Display the login time that such user connects to the router last time.
Expired Time	Display the expired time of the network connection for the user.
Data Quota	Display the quota for data transmission.
Idle Time	Display the idle timeout setting for such profile.
Action	**Block** - can avoid specified user accessing into Internet. **Unblock** – allow the user to access into Internet. **Logout** – the user will be logged out forcefully.

VI-3-5 PPPoE User Online Status

PPPoE User Online Status displays connection information (including IP address, MAC address,user name, transmitted bytes, received bytes, up time and so on) for the LAN client who accesses Internet via the built-in PPPoE server of Vigor router.



User Management >> PPPoE User Online Status

PPPoE User Online Status

Refresh Seconds: 10

| Refresh |

IP Address	MAC Address	User Name	Rx Bytes	Tx Bytes	Up Time

Total Number : 0

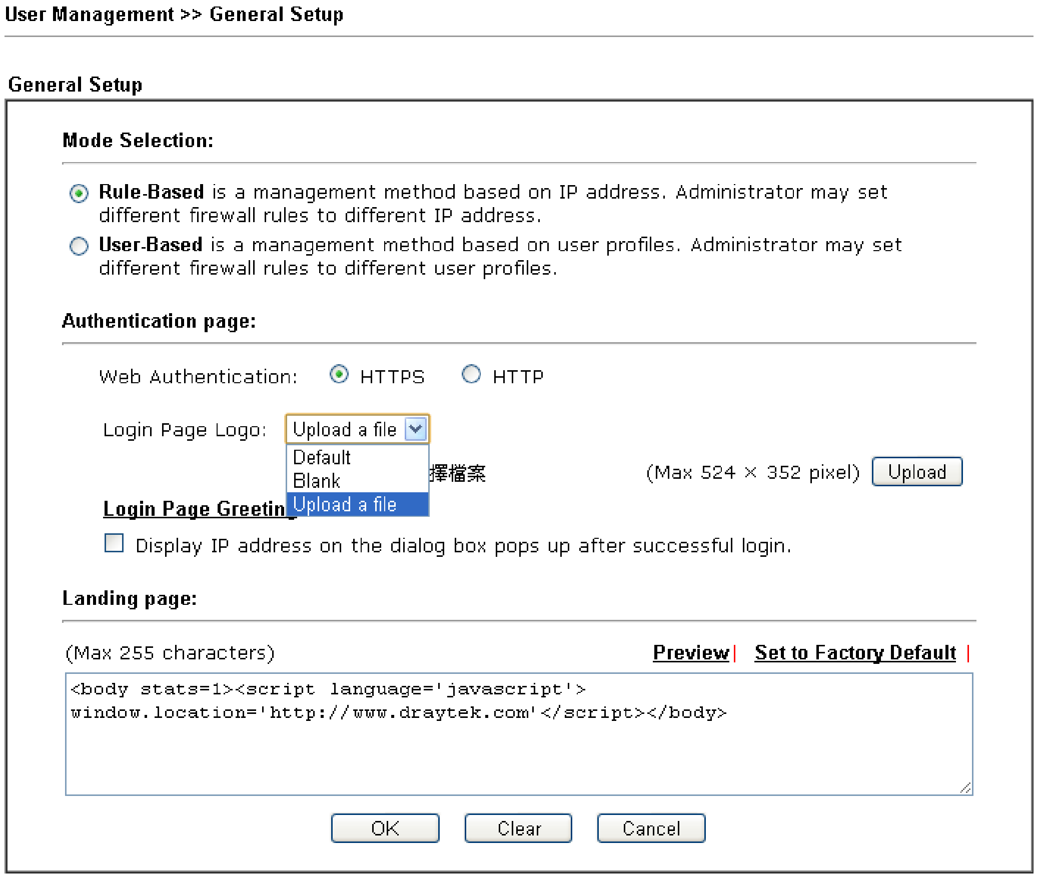
Available settings are explained as follows:

Item	Description
Refresh Seconds	Use the drop down list to choose the time interval of refreshing data flow that will be done by the system automatically.
Refresh	Click this link to refresh this page manually.
IP Address	Display the IP address of the client in LAN.
MAC Address	Display the MAC address of the client in LAN.
User Name	Display the name of user connecting to Vigor router currently. You can click the link under the username to open the user profile setting page for that user.
Rx Bytes	Displays the speed of octets received through such PPPoE user.
Tx Bytes	Displays the speed of octets transmitted through such PPPoE user.
Up Time	Display the connection time of such PPPoE user.

Application Notes

A-1 How to authenticate clients via User Management

Before using the function of User Management, please make sure **User-Based** has been selected as the **Mode** in the **User Management>>General Setup** page.



User Management >> General Setup

General Setup

Mode Selection:

● **Rule-Based** is a management method based on IP address. Administrator may set different firewall rules to different IP address.

○ **User-Based** is a management method based on user profiles. Administrator may set different firewall rules to different user profiles.

Authentication page:

Web Authentication: ● HTTPS ○ HTTP

Login Page Logo: Upload a file

Login Page Greetin

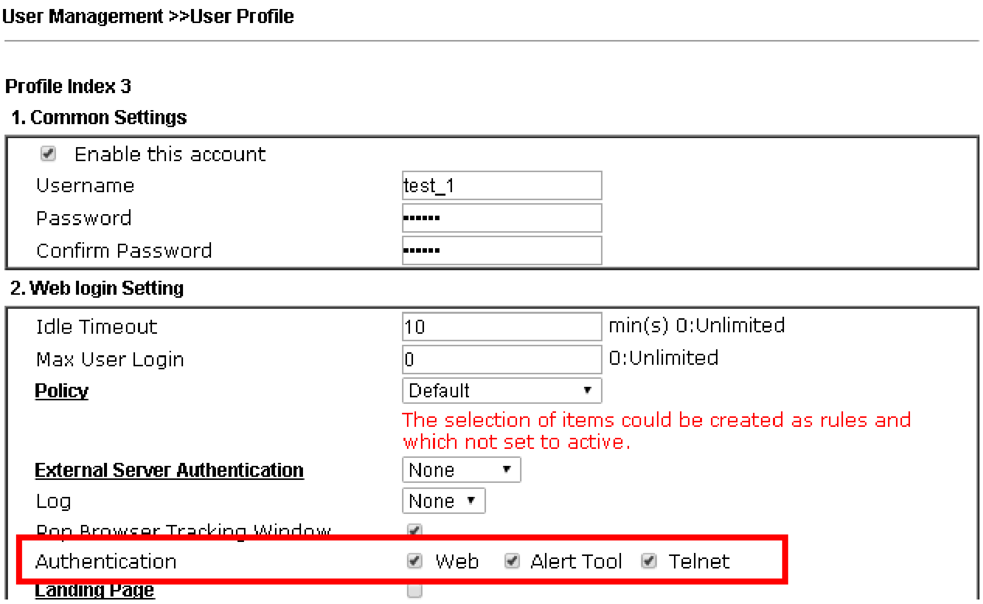
□ Display IP address on the dialog box pops up after successful login.

Landing page:

(Max 255 characters)

```
<body stats=1><script language='javascript'>
window.location='http://www.draytek.com'</script></body>
```

With **User Management** authentication function, before a valid username and password have been correctly supplied, a particular client will not be allowed to access Internet through the router. There are three ways for authentication: **Web**, **Telnet** and **Alert Tool**.



User Management >>User Profile

Profile Index 3

1. Common Settings

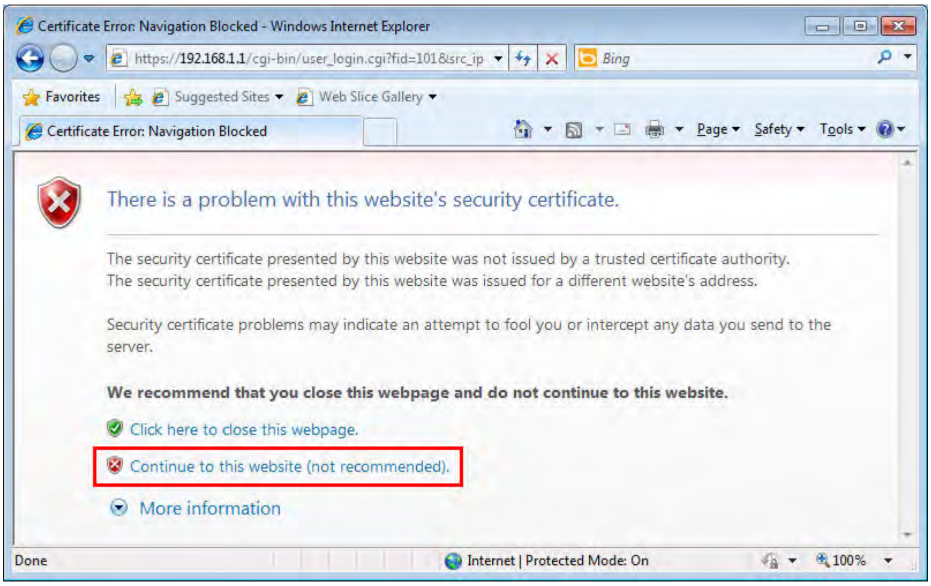
☑ Enable this account	
Username	test_1
Password	••••••
Confirm Password	••••••

2. Web login Setting

Idle Timeout	10 min(s) 0:Unlimited
Max User Login	0 0:Unlimited
Policy	Default ▾ The selection of items could be created as rules and which not set to active.
External Server Authentication	None ▾
Log	None ▾
Pop Browser Tracking Window	☑
Authentication	☑ Web ☑ Alert Tool ☑ Telnet
Landing Page	□

Authentication via Web

- If a LAN client who hasn't passed the authentication opens an external web site in his browser, he will be redirected to the router's Web authentication interface first. Then, the client is trying to access http://www.draytek.com and but brought to the Vigor router. Since this is an SSL connection, some web browsers will display warning messages.
  - With Microsoft Internet Explorer, you may get the following warning message. Please press **Continue to this website (not recommended)**.



Certificate Error: Navigation Blocked - Windows Internet Explorer
https://192.168.1.1/cgi-bin/user_login.cgi?fid=101&src_ip
Bing
Favorites
Suggested Sites
Web Slice Gallery
Certificate Error: Navigation Blocked
Page
Safety
Tools
Done
Internet | Protected Mode: On
100%

There is a problem with this website's security certificate.

The security certificate presented by this website was not issued by a trusted certificate authority.
The security certificate presented by this website was issued for a different website's address.

Security certificate problems may indicate an attempt to fool you or intercept any data you send to the server.

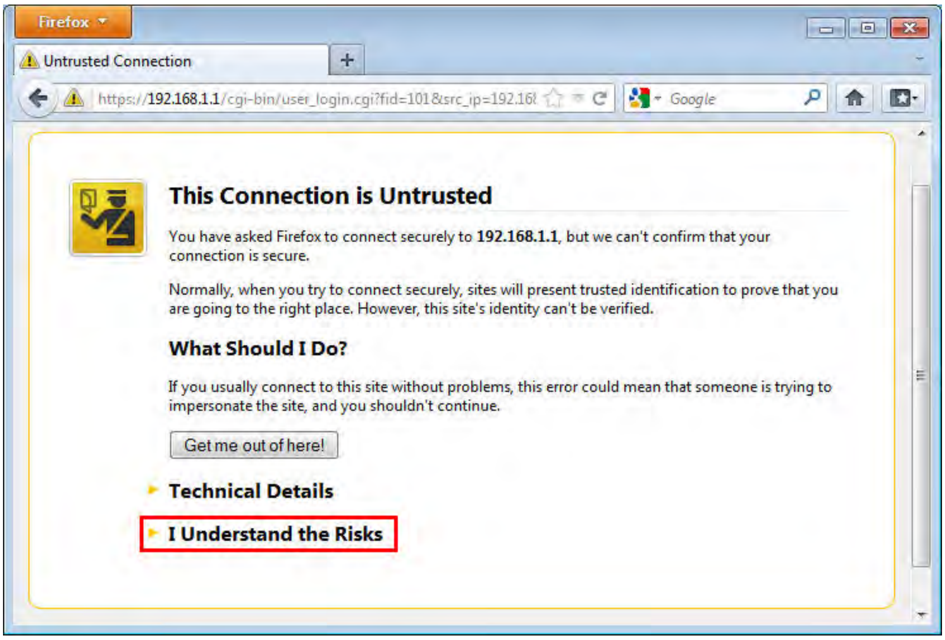
We recommend that you close this webpage and do not continue to this website.

Click here to close this webpage.

Continue to this website (not recommended).

More information

- With Mozilla Firefox, you may get the following warning message. Select **I Understand the Risks**.



Firefox
Untrusted Connection
https://192.168.1.1/cgi-bin/user_login.cgi?fid=101&src_ip=192.16
Google

This Connection is Untrusted

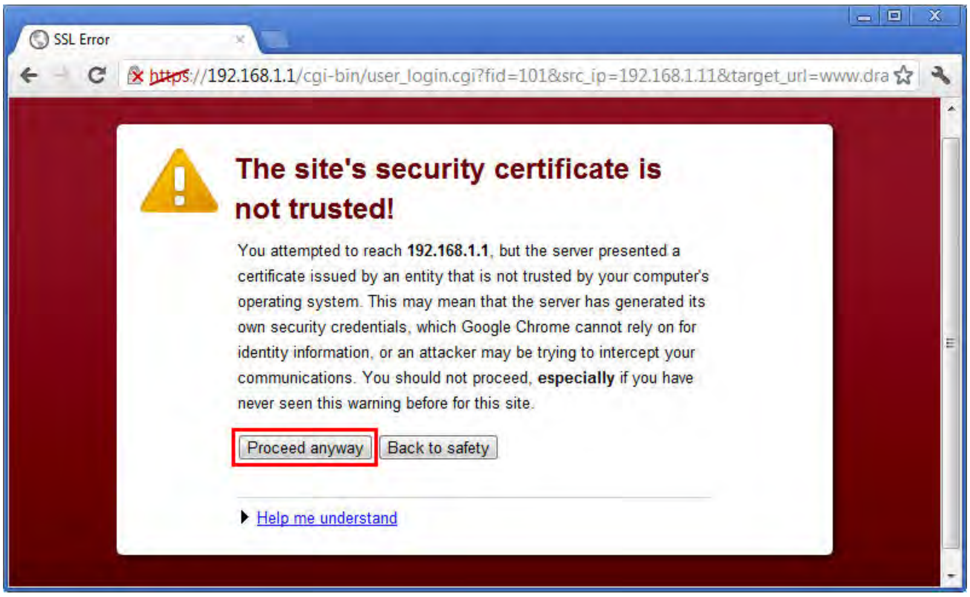
You have asked Firefox to connect securely to **192.168.1.1**, but we can't confirm that your connection is secure.

Normally, when you try to connect securely, sites will present trusted identification to prove that you are going to the right place. However, this site's identity can't be verified.

What Should I Do?

If you usually connect to this site without problems, this error could mean that someone is trying to impersonate the site, and you shouldn't continue.

- With Chrome browser, you may get the following warning. Click **Proceed anyway**.

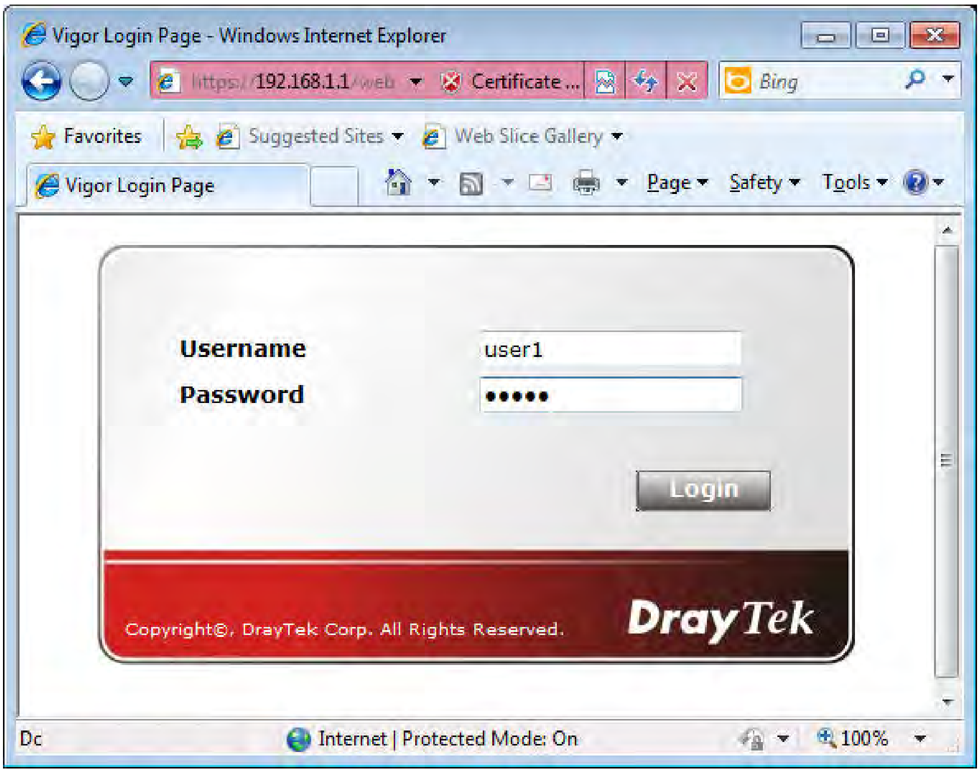


SSL Error
https://192.168.1.1/cgi-bin/user_login.cgi?fid=101&src_ip=192.168.1.11&target_url=www.dra

The site's security certificate is not trusted!

You attempted to reach **192.168.1.1**, but the server presented a certificate issued by an entity that is not trusted by your computer's operating system. This may mean that the server has generated its own security credentials, which Google Chrome cannot rely on for identity information, or an attacker may be trying to intercept your communications. You should not proceed, **especially** if you have never seen this warning before for this site.

After that, the web authentication window will appear. Input the user name and the password for your account (defined in **User Management**) and click **Login**.

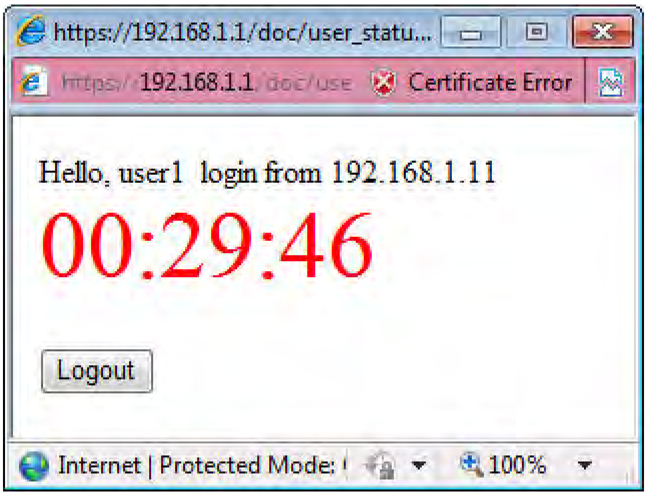


Username user1

Password •••••

Copyright©, DrayTek Corp. All Rights Reserved.

If the authentication is successful, the client will be redirected to the original web site that he tried to access. In this example, it is http://www.draytek.com . Furthermore, you will get a popped up window as the following. Then you can access the Internet.

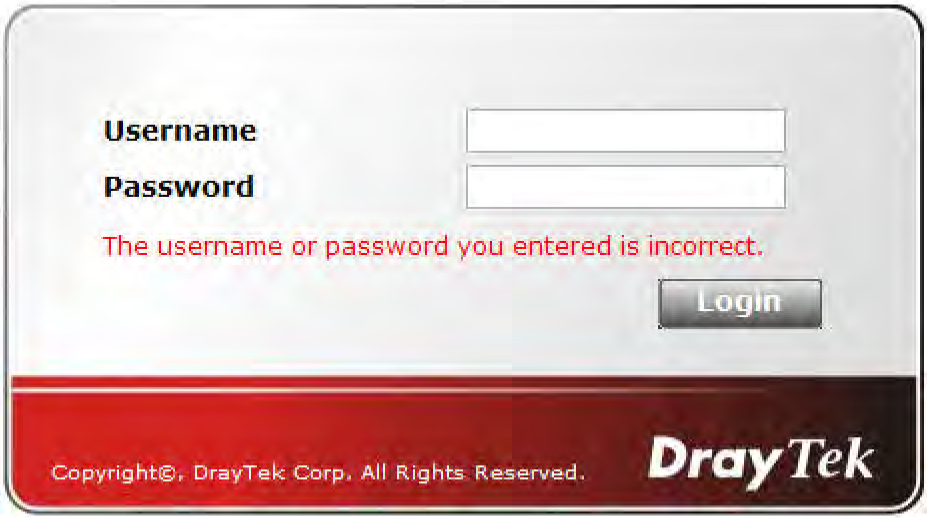

https://192.168.1.1/doc/user_statu...
https://192.168.1.1/doc/use
Certificate Error
Logout
Internet | Protected Mode:
100%

Hello, user1 login from 192.168.1.11

00:29:46

Note, if you block the web browser to pop up any window, you will not see such window.

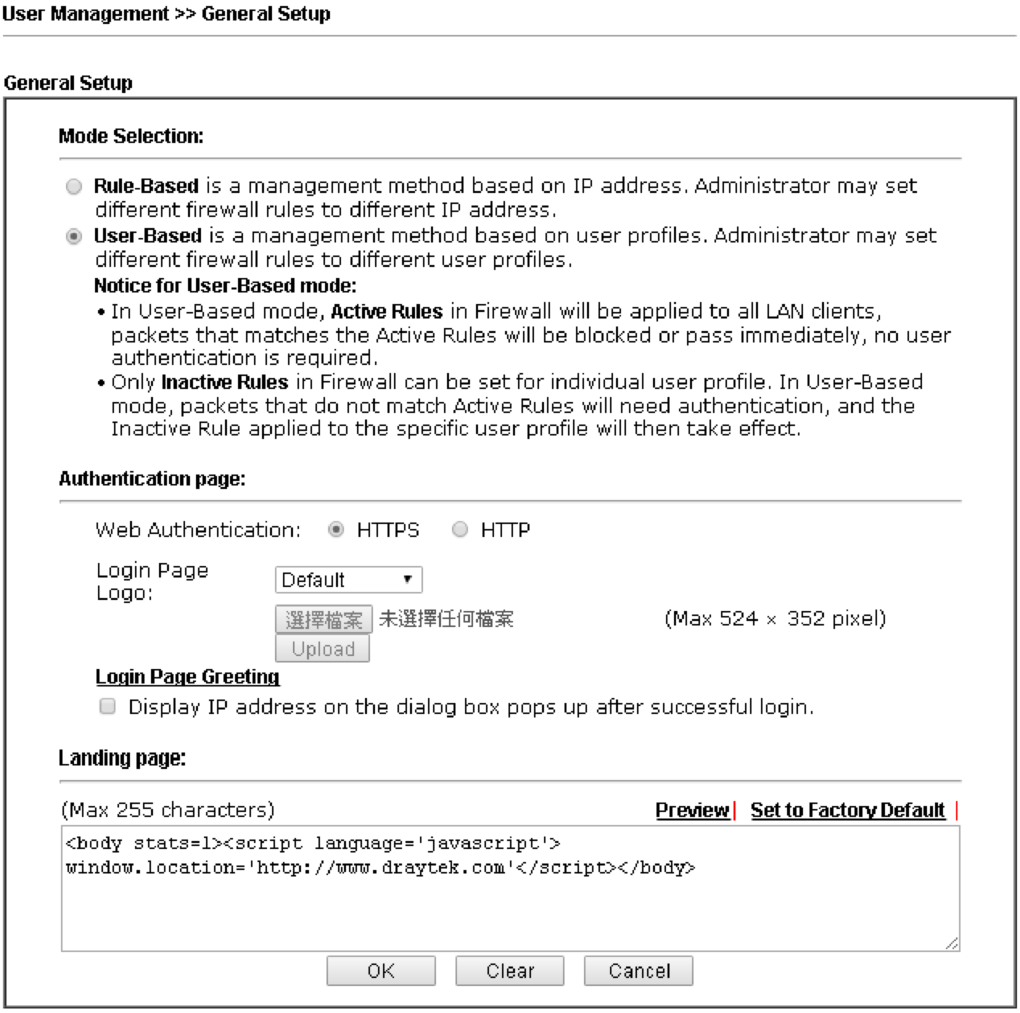
If the authentication is failed, you will get the error message, **The username or password you entered is incorrect**. Please login again.



The username or password you entered is incorrect.

- In above description, you access an external web site to trigger the authentication. You may also directly access the router's Web UI for authentication. Both HTTP and HTTPS are supported, for example http://192.168.1.1 or https://192.168.1.1 . Replace 192.168.1.1 with your router's real IP address, and add the port number if the default management port has been modified.

  If the authentication is successful, you will get the **Welcome Message** that is set in the **User Management >> General Setup** page.



User Management >> General Setup

General Setup

Mode Selection:

○ **Rule-Based** is a management method based on IP address. Administrator may set different firewall rules to different IP address.

● **User-Based** is a management method based on user profiles. Administrator may set different firewall rules to different user profiles.

Notice for User-Based mode:

• In User-Based mode, **Active Rules** in Firewall will be applied to all LAN clients, packets that matches the Active Rules will be blocked or pass immediately, no user authentication is required.

• Only **Inactive Rules** in Firewall can be set for individual user profile. In User-Based mode, packets that do not match Active Rules will need authentication, and the Inactive Rule applied to the specific user profile will then take effect.

Authentication page:

Web Authentication: ● HTTPS ○ HTTP

Login Page Logo: Default

(Max 524 × 352 pixel)

Login Page Greeting

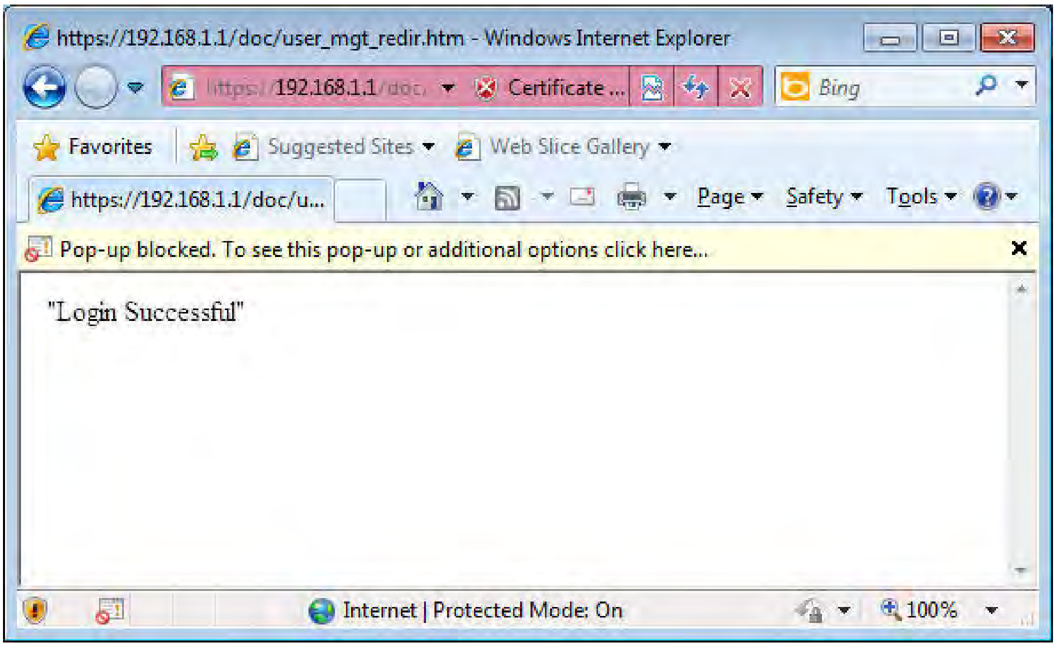
□ Display IP address on the dialog box pops up after successful login.

Landing page:

(Max 255 characters)

```
<body stats=1><script language='javascript'>
window.location='http://www.draytek.com'</script></body>
```

With the default setup **<body stats=1><script language='javascript'> window.location='http://www.draytek.com'</script></body>,** you will be redirected to http://www.draytek.com . You may change it if you want. For example, you will get the following welcome message if you enter **Login Successful** in the **Welcome Message** table.



https://192.168.1.1/doc/user_mgt_redir.htm - Windows Internet Explorer
https://192.168.1.1/doc/
Certificate ...
Bing
Favorites
Suggested Sites
Web Slice Gallery
https://192.168.1.1/doc/u...
Page
Safety
Tools
Pop-up blocked. To see this pop-up or additional options click here...
Internet | Protected Mode: On
100%

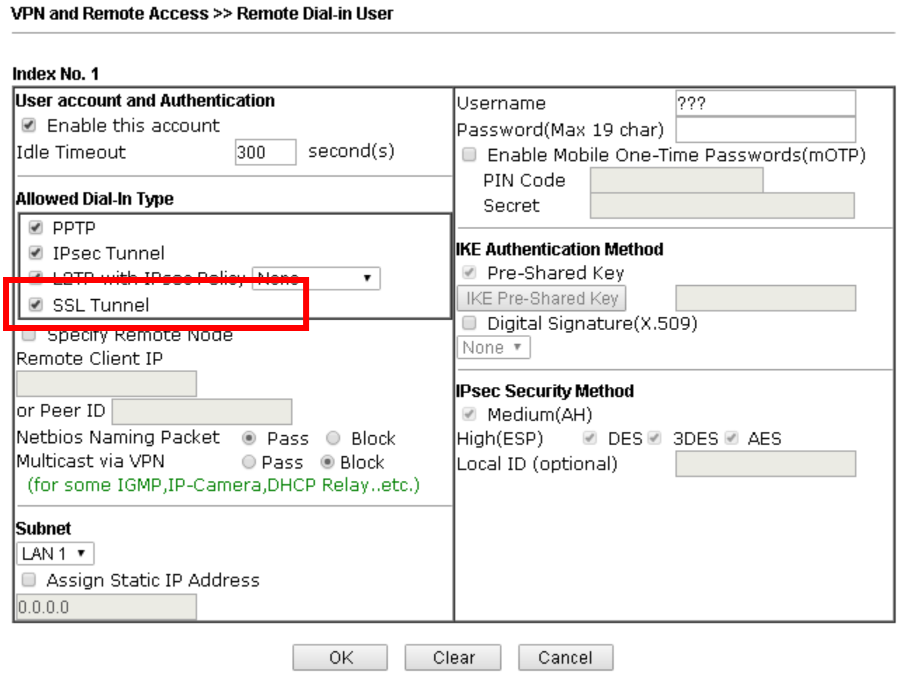
"Login Successful"

Also you will get a **Tracking Window** if you don't block the pop-up window.

- Don't setup a user profile in **User Management** and a VPN Remote Dial-in user profile with the same Username. Otherwise, you may get unexpected result. It is because the VPN Remote Dial-in User profiles can be extended to the User profiles in User Management for authentication.

  There are two different behaviors when a User Management account and a VPN profile share the same Username:

  - If **SSL Tunnel** or **SSL Web Proxy** is enabled in the VPN profile, the user profile in User Management will always be invalid for Web authentication. For example, if you create a user profile in User Management with **chaochen/test** as username/password, while a VPN Remote Dial-in user profile with the same username "chaochen" but a different password "1234", you will always get error message **The username or password you entered is incorrect** when you use **chaochen/test** via Web to do authentication.



VPN and Remote Access >> Remote Dial-in User

Index No. 1

User account and Authentication

☑ Enable this account

Idle Timeout 300 second(s)

Allowed Dial-In Type

☑ PPTP

☑ IPsec Tunnel

☑ L2TP with IPsec Policy None ▾

☑ SSL Tunnel

□ Specify Remote Node

Remote Client IP

or Peer ID

Netbios Naming Packet ● Pass ○ Block

Multicast via VPN ○ Pass ● Block

(for some IGMP,IP-Camera,DHCP Relay..etc.)

Subnet

LAN 1 ▾

□ Assign Static IP Address

0.0.0.0

Username ???

Password(Max 19 char)

□ Enable Mobile One-Time Passwords(mOTP)

PIN Code

Secret

IKE Authentication Method

☑ Pre-Shared Key

IKE Pre-Shared Key

□ Digital Signature(X.509)

None ▾

IPsec Security Method

☑ Medium(AH)

High(ESP) ☑ DES ☑ 3DES ☑ AES

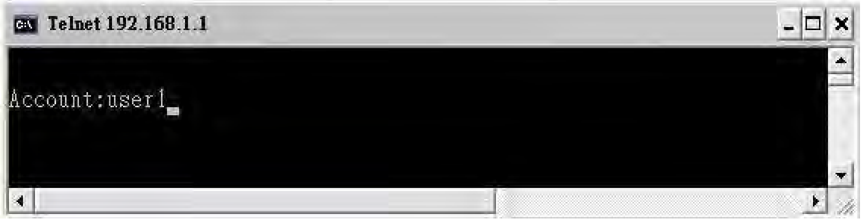
Local ID (optional)

- If **SSL Tunnel** or **SSL Web Proxy** is disabled in the VPN profile, a User Management account and a remote dial-in VPN profile can use the same Username, even with different passwords. However, we recommend you to use different usernames for different user profiles in User Management and VPN profiles.

Authentication via Telnet

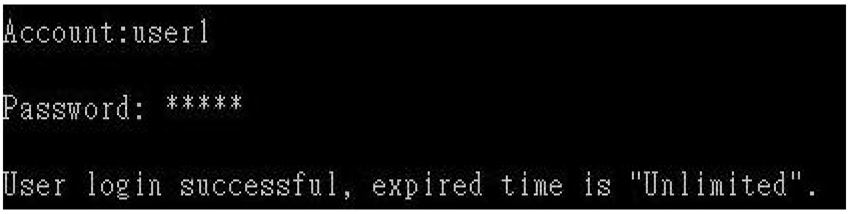
The LAN clients can also authenticate their accounts via telnet.

1. Telnet to the router's LAN IP address and input the account name for the authentication:



```
Account:user1_
```

2. Type the password for authentication and press **Enter**. The message **User login successful** will be displayed with the expired time (if configured).

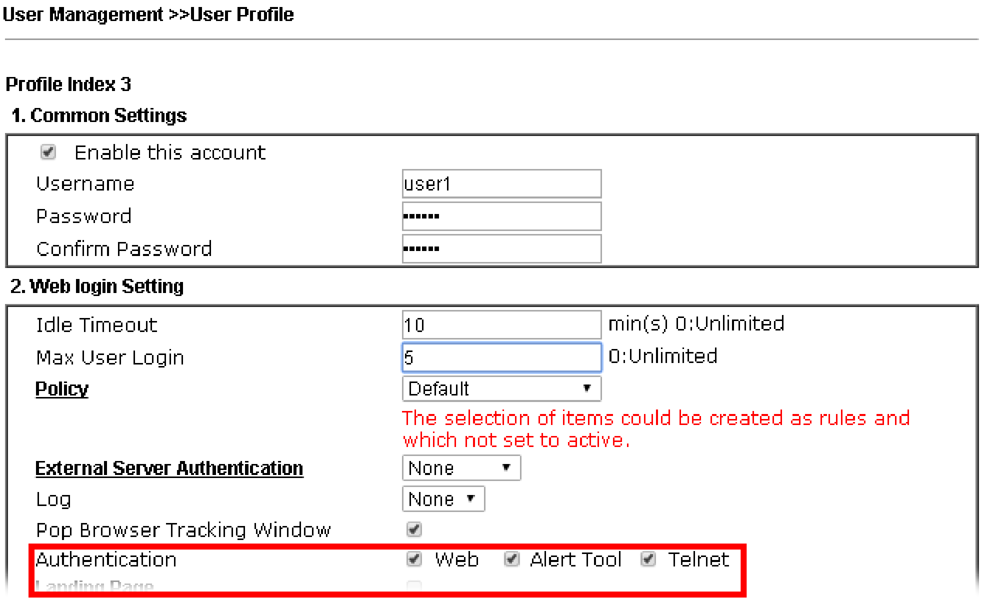


```
Account:user1

Password: *****

User login successful, expired time is "Unlimited".
```

Info

Here expired time is “Unlimited” means the Time Quota function is not enabled for this account. After login, this account will not be expired until it is logout.

3. In the Web interface of router, the configuration page of **Time Quota** is shown as below.



User Management >>User Profile

Profile Index 3

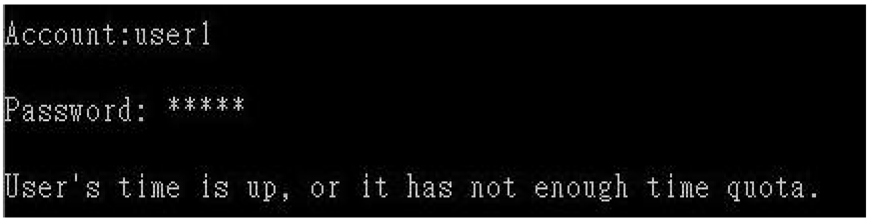
1. Common Settings

☑ Enable this account	
Username	user1
Password	••••••
Confirm Password	••••••

2. Web login Setting

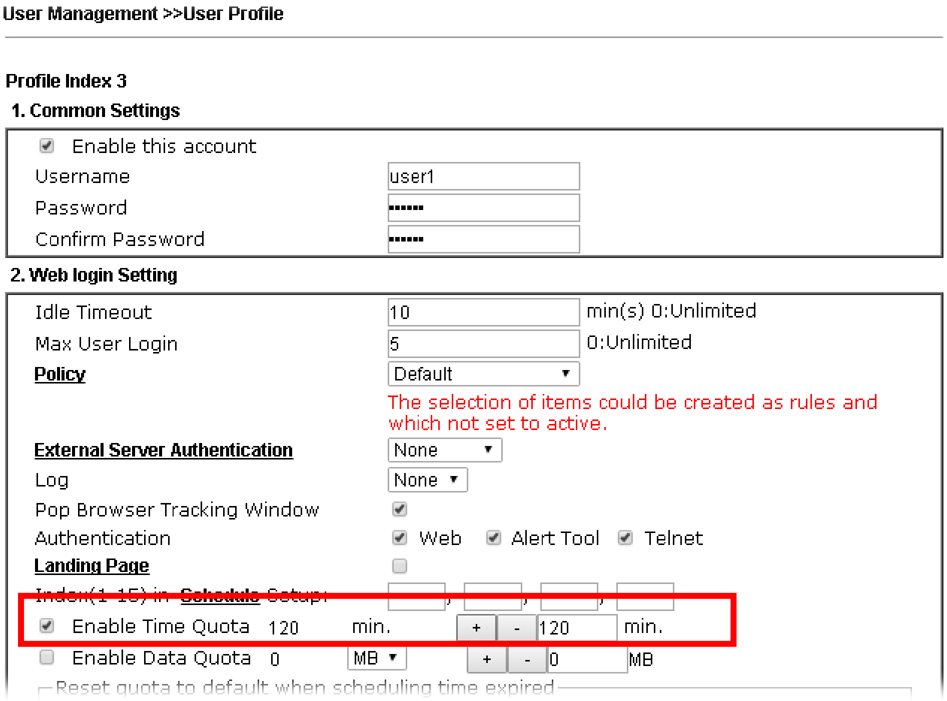
Idle Timeout	10 min(s) 0:Unlimited
Max User Login	5 0:Unlimited
Policy	Default ▾ The selection of items could be created as rules and which not set to active.
External Server Authentication	None ▾
Log	None ▾
Pop Browser Tracking Window	☑
Authentication	☑ Web ☑ Alert Tool ☑ Telnet
Landing Page	□

4. If the Time Quota is set with "0" minute, you will get the following message which means this account has no time quota.



```
Account:user1

Password: *****

User's time is up, or it has not enough time quota.
```

If the **Time Quota** is enabled and time is not 0 minute,



User Management >>User Profile

Profile Index 3

1. Common Settings

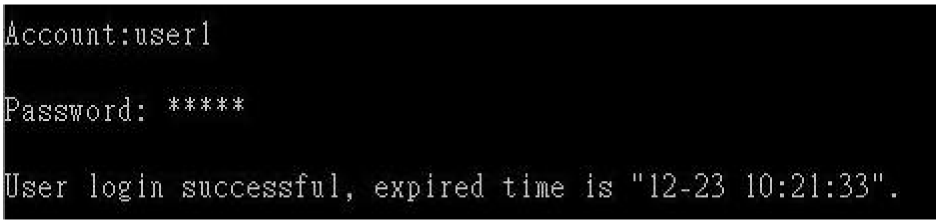
☑ Enable this account	
Username	user1
Password	••••••
Confirm Password	••••••

2. Web login Setting

Idle Timeout	10 min(s) 0:Unlimited
Max User Login	5 0:Unlimited
Policy	Default ▾ The selection of items could be created as rules and which not set to active.
External Server Authentication	None ▾
Log	None ▾
Pop Browser Tracking Window	☑
Authentication	☑ Web ☑ Alert Tool ☑ Telnet
Landing Page	□
Index(1-15) in **Schedule** Setup:	, , ,
☑ Enable Time Quota 120 min.	+ - 120 min.
□ Enable Data Quota 0 MB ▾	+ - 0 MB

Reset quota to default when scheduling time expired

You will get the following message. The expired time is shown after you login.



```
Account:user1

Password: *****

User login successful, expired time is "12-23 10:21:33".
```

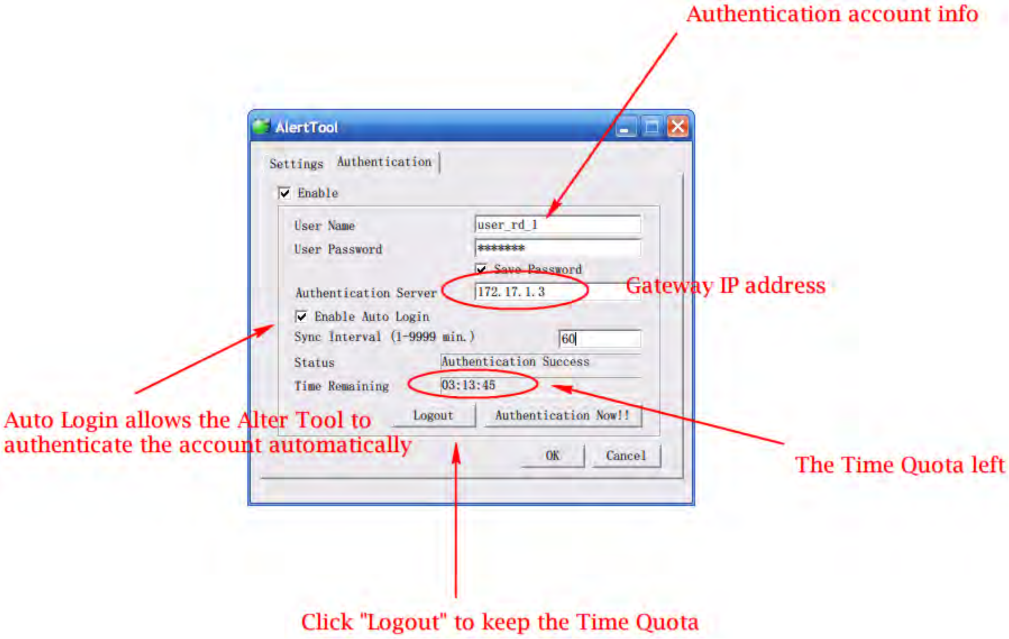
After you run out the available time, you can't use this account any more until the administrator manually adds additional time for you.

Authentication via VigorPro Alert Notice Tool

Authentication via Web or Telnet is convenient for users; however, it has some limitations. The most advantage with VigorPro Alert Notice Tool to operate the authentication is the ability to do **auto login**. If the timeout value set on the router for the user account has been reached, the router will stop the client computer from accessing the Internet until it does an authentication again. Authentication via VigorPro Alert Notice Tool allows user to setup the re-authentication interval so that the utility will send authentication requests periodically. This will keep the client hosts from having to manually authenticate again and again.

The configuration of the VigorPro Alert Notice Tool is as follows:

1. Click **Authenticate Now!!** to start the authentication immediately.



☑ Enable

User Name: user_rd_1

User Password: *******

☑ Save Password

Authentication Server: 172.17.1.3

☑ Enable Auto Login

Sync Interval (1-9999 min.): 60

Status: Authentication Success

Time Remaining: 03:13:45

Authentication account info

Gateway IP address

Auto Login allows the Alter Tool to authenticate the account automatically

The Time Quota left

Click "Logout" to keep the Time Quota

2. You may get the **VigorPro Alert Notice Tool** from the following link: http://www.draytek.com/user/SupportDLUtility.php

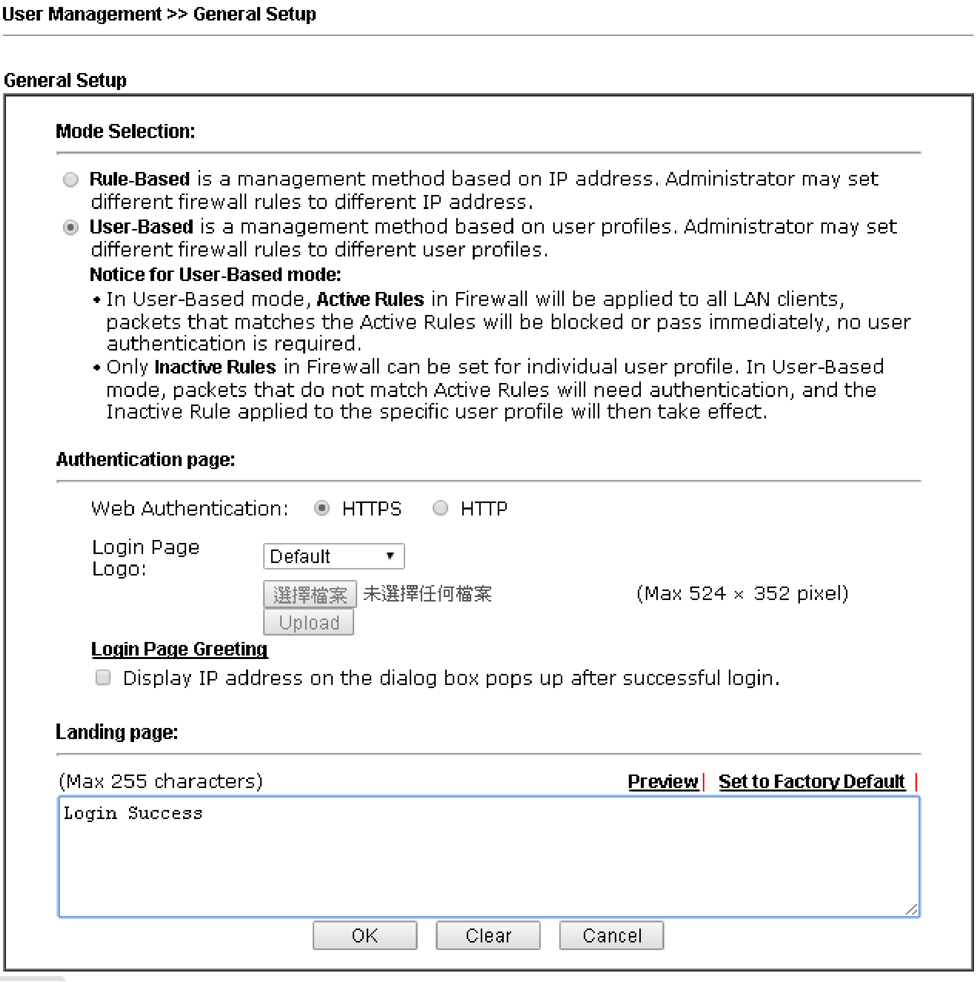
Info 1	Any modification to the Firewall policy will break down the connections of all current users. They all have to authenticate again for Internet access.
Info 2	The administrator may check the current users from **User Online Status** page.

A-2 How to use Landing Page Feature

Landing Page is a special feature configured under **User Management**. It can specify the message, content to be seen or specify which website to be accessed into when users try to access into the Internet by passing the authentication. Here, we take Vigor2952 Series router as an example.

Example 1：Users can see the message for landing page after logging into Internet successfully

1. Open the web user interface of Vigor2952.
2. Open **User Management -> General Setup** to get the following page. In the field of **Landing Page**, please type the words of “**x**”. Please note that the maximum number of characters to be typed here is 255.



User Management >> General Setup

General Setup

Mode Selection:

○ **Rule-Based** is a management method based on IP address. Administrator may set different firewall rules to different IP address.

● **User-Based** is a management method based on user profiles. Administrator may set different firewall rules to different user profiles.

Notice for User-Based mode:

- In User-Based mode, **Active Rules** in Firewall will be applied to all LAN clients, packets that matches the Active Rules will be blocked or pass immediately, no user authentication is required.
- Only **Inactive Rules** in Firewall can be set for individual user profile. In User-Based mode, packets that do not match Active Rules will need authentication, and the Inactive Rule applied to the specific user profile will then take effect.

Authentication page:

Web Authentication: ● HTTPS ○ HTTP

Login Page Logo: Default

選擇檔案 未選擇任何檔案 (Max 524 × 352 pixel)

Upload

Login Page Greeting

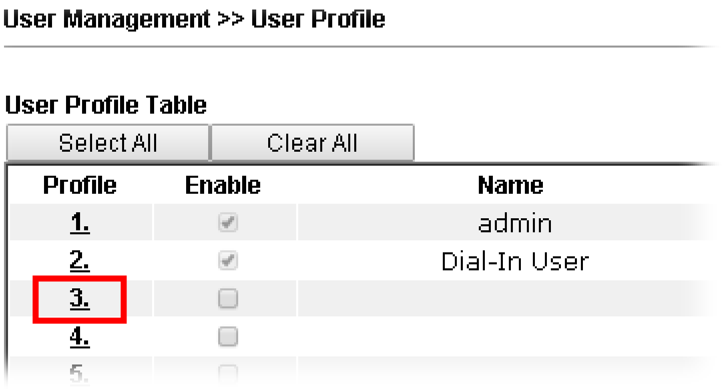
□ Display IP address on the dialog box pops up after successful login.

Landing page:

(Max 255 characters) Preview | Set to Factory Default |

```
Login Success
```

3. Now you can enable the **Landing Page** function. Open **User Management -> User Profile** and click one of the index number (e.g., index number 3) links.

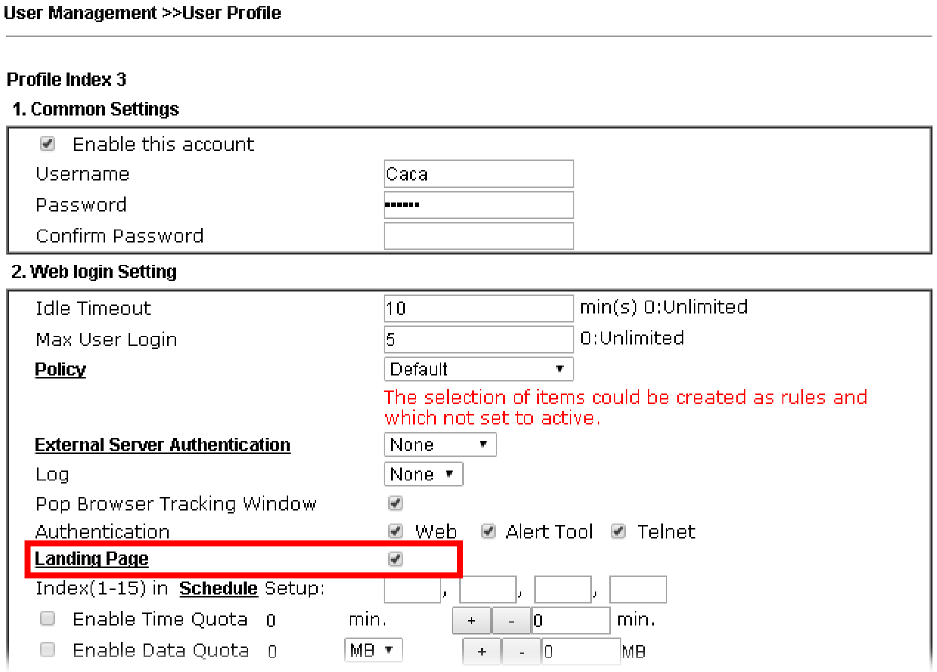


User Management >> User Profile

User Profile Table

Profile	Enable	Name
1.	☑	admin
2.	☑	Dial-In User
3.	□	
4.	□	
5.	□	

4. In the following page, check the box of **Landing page** and click **OK** to save the settings.



User Management >>User Profile

Profile Index 3

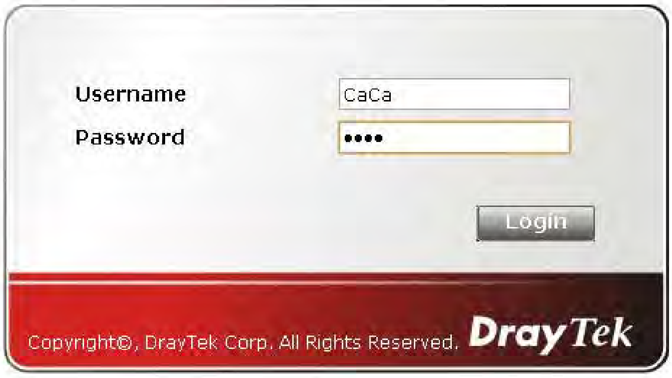
1. Common Settings

☑ Enable this account	
Username	Caca
Password	••••••
Confirm Password	

2. Web login Setting

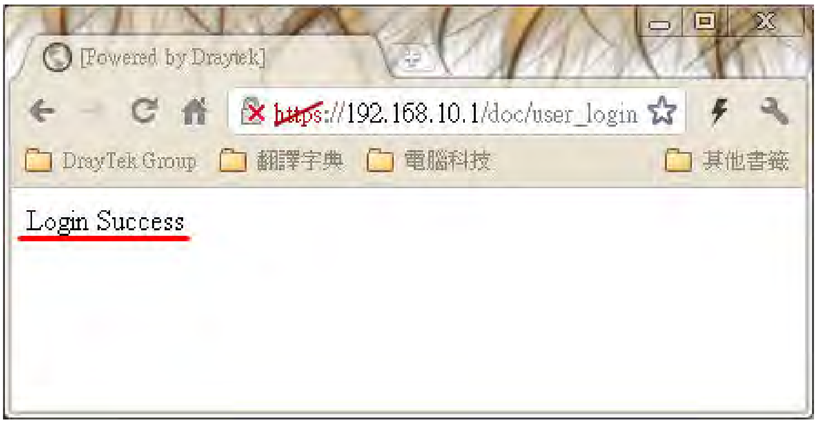
Idle Timeout	10 min(s) 0:Unlimited
Max User Login	5 0:Unlimited
Policy	Default The selection of items could be created as rules and which not set to active.
External Server Authentication	None
Log	None
Pop Browser Tracking Window	☑
Authentication	☑ Web ☑ Alert Tool ☑ Telnet
Landing Page	☑
Index(1-15) in Schedule Setup:	, , ,
□ Enable Time Quota 0 min.	+ - 0 min.
□ Enable Data Quota 0 MB	+ - 0 MB

5. Open any browser (e.g., FireFox, Internet Explorer). The logging page will appear and asks for username and password. Please type the correct username and password.



Username	CaCa
Password	••••

6. Click **Login**. If the logging is successful, you will see the message of Login Success from the browser you use.

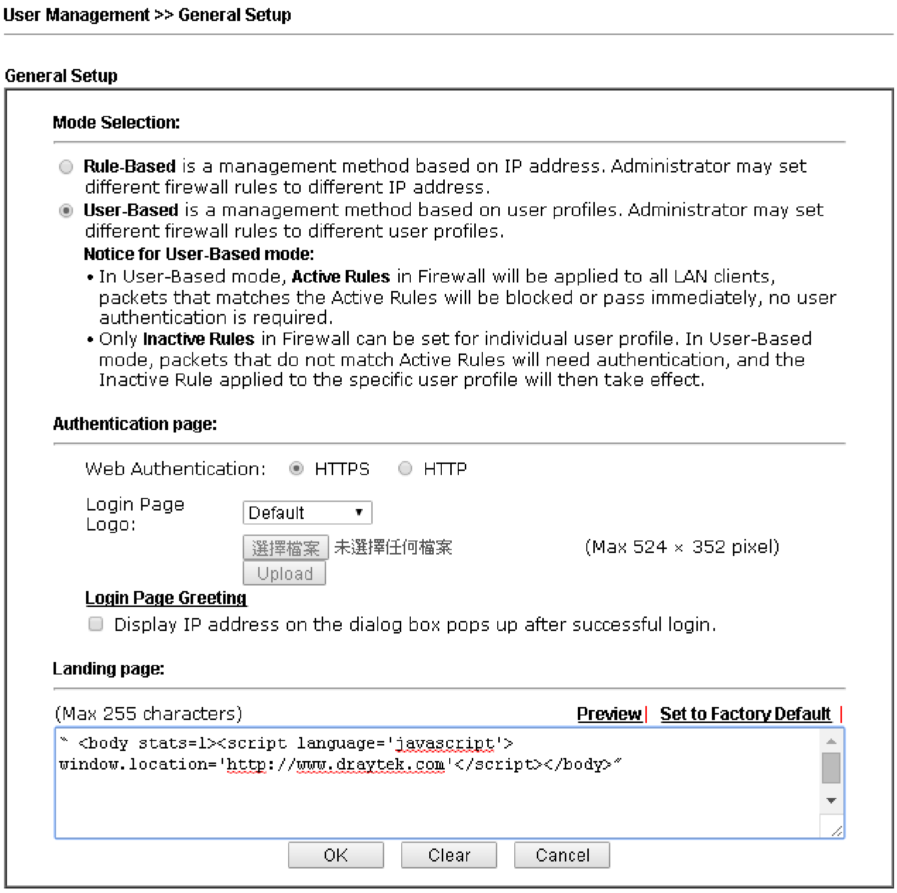


Login Success

Example 2：The system will connect to http://www.draytek.com automatically after logging into Internet successfully

1. In the field of **Landing Page**, please type the words as below:

   “<body stats=1><script language='javascript'> window.location='http://www.draytek.com'</script></body>”



User Management >> General Setup

General Setup

Mode Selection:

○ **Rule-Based** is a management method based on IP address. Administrator may set different firewall rules to different IP address.

● **User-Based** is a management method based on user profiles. Administrator may set different firewall rules to different user profiles.

Notice for User-Based mode:

- In User-Based mode, **Active Rules** in Firewall will be applied to all LAN clients, packets that matches the Active Rules will be blocked or pass immediately, no user authentication is required.
- Only **Inactive Rules** in Firewall can be set for individual user profile. In User-Based mode, packets that do not match Active Rules will need authentication, and the Inactive Rule applied to the specific user profile will then take effect.

Authentication page:

Web Authentication: ● HTTPS ○ HTTP

Login Page Logo: Default

選擇檔案 未選擇任何檔案 (Max 524 × 352 pixel)

Upload

Login Page Greeting

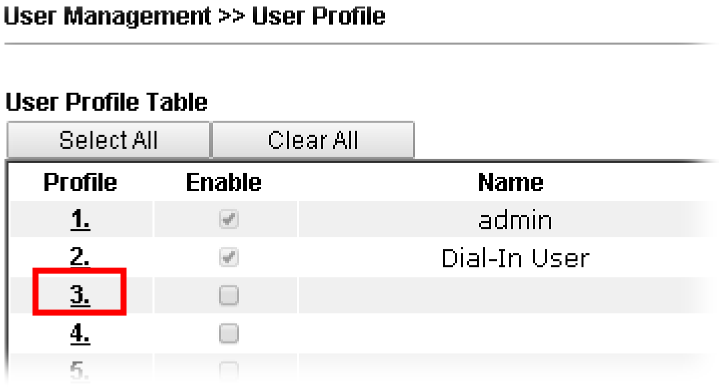
□ Display IP address on the dialog box pops up after successful login.

Landing page:

(Max 255 characters) Preview | Set to Factory Default |

```
“ <body stats=1><script language='javascript'>
window.location='http://www.draytek.com'</script></body>”
```

2. Next, enable the **Landing Page** function. Open **User Management -> User Profile** and click one of the index number (e.g., index number 3) links.

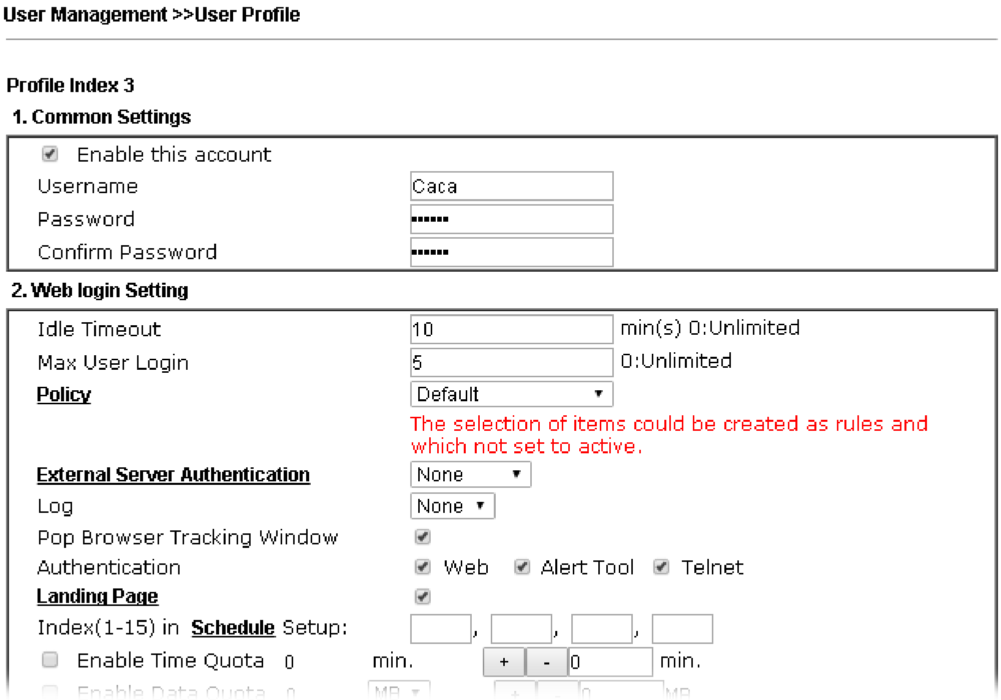


User Management >> User Profile

User Profile Table

Profile	Enable	Name
1.	☑	admin
2.	☑	Dial-In User
3.	□	
4.	□	
5.	□	

3. In the following page, check the box of **Landing page** and click **OK** to save the settings.



User Management >>User Profile

Profile Index 3

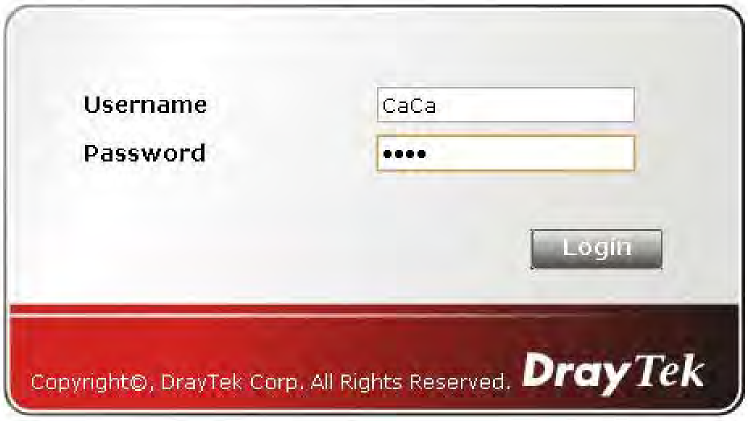
1. Common Settings

☑ Enable this account	
Username	Caca
Password	••••••
Confirm Password	••••••

2. Web login Setting

Idle Timeout	10 min(s) 0:Unlimited
Max User Login	5 0:Unlimited
Policy	Default The selection of items could be created as rules and which not set to active.
External Server Authentication	None
Log	None
Pop Browser Tracking Window	☑
Authentication	☑ Web ☑ Alert Tool ☑ Telnet
Landing Page	☑
Index(1-15) in Schedule Setup:	, , ,
□ Enable Time Quota 0	min. + - 0 min.
□ Enable Data Quota 0	MB + - 0 MB

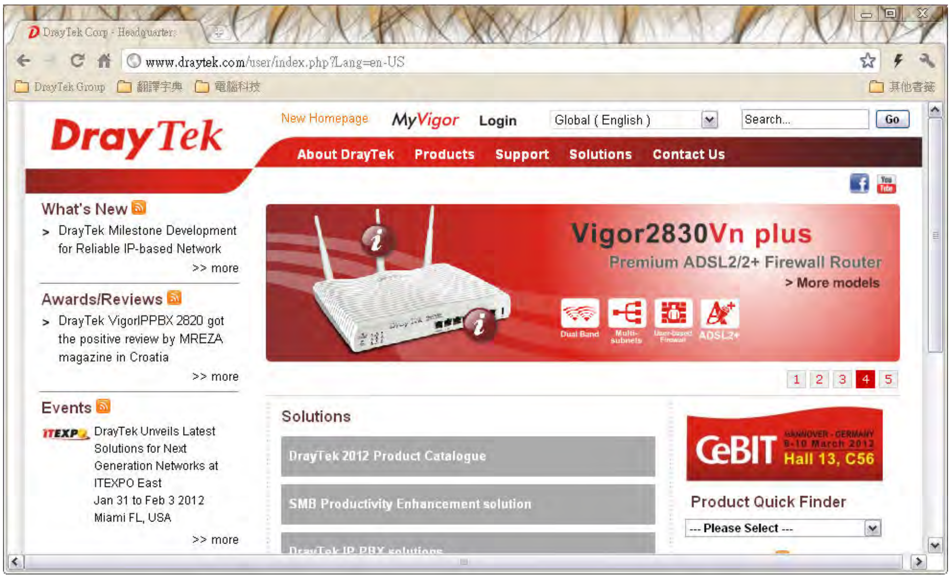
4. Open any browser (e.g., FireFox, Internet Explorer). The logging page will appear and asks for username and password. Please type the correct username and password.



Username CaCa

Password ••••

5. Click **Login**. If the logging is successful, you will be directed into the website of www.draytek.com.



What's New

> DrayTek Milestone Development for Reliable IP-based Network

>> more

Awards/Reviews

> DrayTek VigorIPPBX 2820 got the positive review by MREZA magazine in Croatia

>> more

Events

DrayTek Unveils Latest Solutions for Next Generation Networks at ITEXPO East
Jan 31 to Feb 3 2012
Miami FL, USA

>> more

Solutions

DrayTek 2012 Product Catalogue

SMB Productivity Enhancement solution

DrayTek IP PBX solutions

VI-4 Central AP Management (CAM)

Vigor2952 can manage the access points supporting AP management via Central AP Management.

AP Map

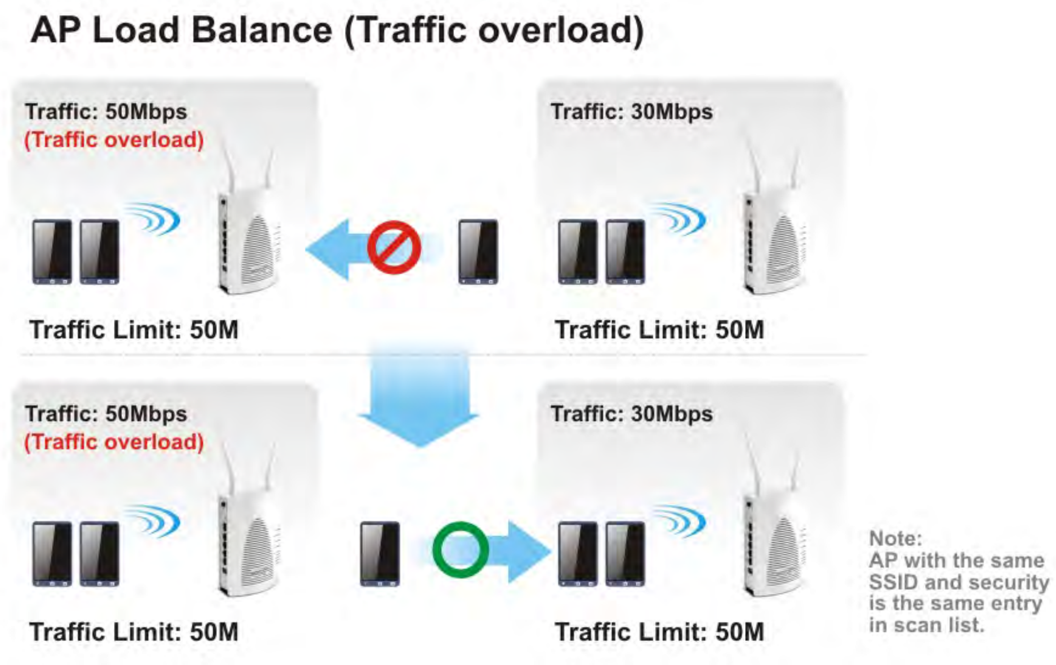
AP Map is helpful to determine the best location for VigorAP in a room. A floor plan of a room is required to be uploaded first. By dragging and dropping available VigorAP icon from the list to the floor plan, the placement with the best wireless coverage will be clearly indicated through simulated signal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

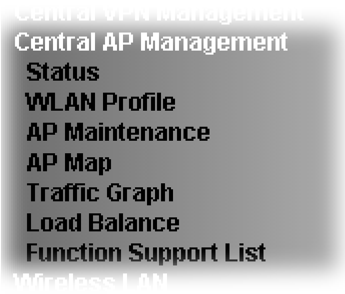
AP Maintenance

Vigor router can execute configuration backup, configuration restoration, firmware upgrade and remote reboot for the APs managed by the router. It is very convenient for the administrator to process maintenance without accessing into the web user interface of the access point.

Load Balance for AP

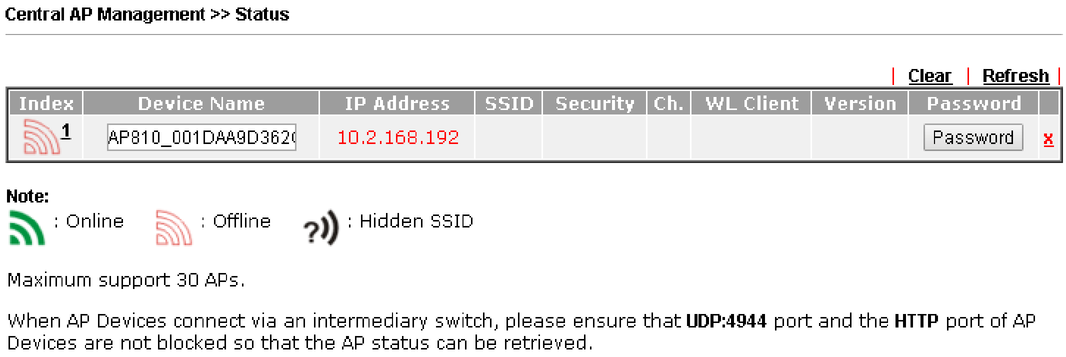
The parameters configured for Load Balance can help to distribute the traffic for all of the access points registered to Vigor router. Thus, the bandwidth will not be occupied by certain access points.





VI-4-1 Status

This page displays current status (online, offline or SSID hidden, IP address, encryption, channel, version, password and etc.) of the access points managed by Vigor router. Please open **Central AP Management>>Function Support List** to check what AP Models are supported.



Central AP Management >> Status

| Clear | Refresh |

Index	Device Name	IP Address	SSID	Security	Ch.	WL Client	Version	Password	
1	AP810_001DAA9D362(	10.2.168.192						Password	x

Note:
: Online : Offline : Hidden SSID

Maximum support 30 APs.

When AP Devices connect via an intermediary switch, please ensure that **UDP:4944** port and the **HTTP** port of AP Devices are not blocked so that the AP status can be retrieved.

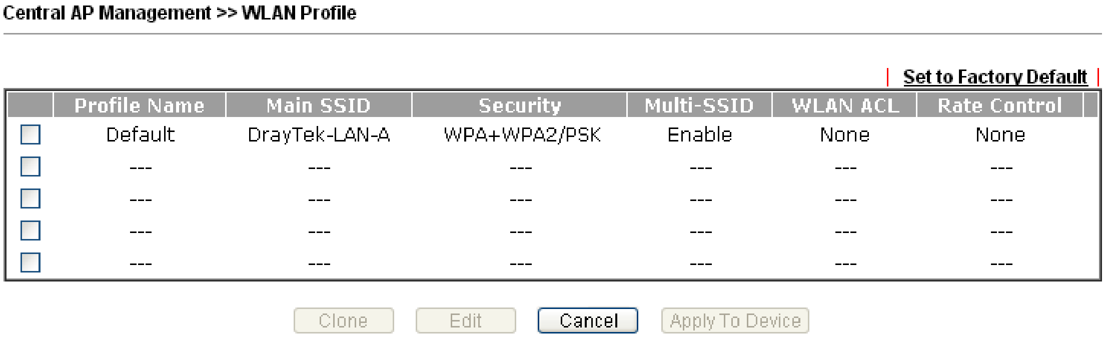
Available settings are explained as follows:

Item	Description
Index	Click the index number link for viewing the settings summary of the access point.
Device Name	The name of the AP managed by Vigor router will be displayed here.
IP Address	Display the true IP address of the access point.
SSID	Display the SSID configured for the access point(s) connected to Vigor2952.
Encryption	Display the encryption mode used by the access point.
Ch.	Display the channel used by the access point.
WL Client	Display the number of wireless clients (stations) connecting to the access point. In which, 0/64 means that up to 64 clients are allowed to connect to the access point. But, now no one connects to the access point. The number displayed on the left side means 2.4GHz; and the number displayed on the right side means 5GHz.

Version	Display the firmware version used by the access point.
Password	Vigor2952 can get related information of the access point by accessing into the web user interface of the access point. This button is used to modify the logging password of the connected access point.

VI-4-2 WLAN Profile

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

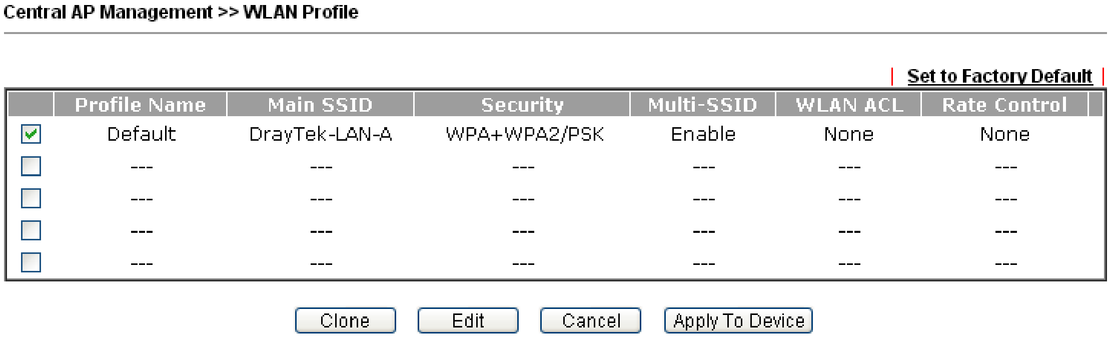


Central AP Management >> WLAN Profile

| Set to Factory Default |

	Profile Name	Main SSID	Security	Multi-SSID	WLAN ACL	Rate Control
□	Default	DrayTek-LAN-A	WPA+WPA2/PSK	Enable	None	None
□	---	---	---	---	---	---
□	---	---	---	---	---	---
□	---	---	---	---	---	---
□	---	---	---	---	---	---

Check the box on the left side of the selected profile to modify the content of the profile. The **Clone**, **Edit** and **Apply To Device** buttons will be available then.



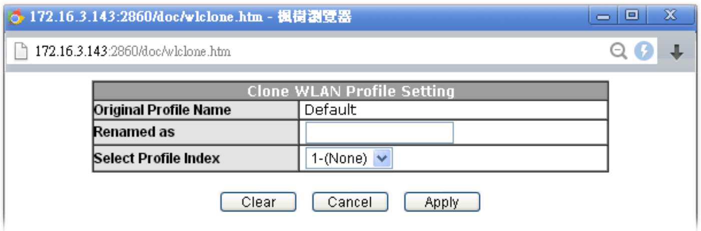
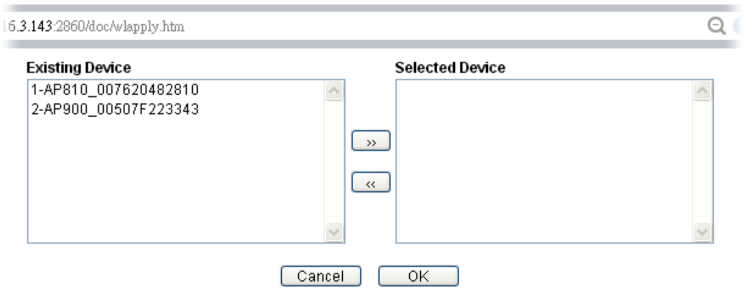
Central AP Management >> WLAN Profile

| Set to Factory Default |

	Profile Name	Main SSID	Security	Multi-SSID	WLAN ACL	Rate Control
☑	Default	DrayTek-LAN-A	WPA+WPA2/PSK	Enable	None	None
□	---	---	---	---	---	---
□	---	---	---	---	---	---
□	---	---	---	---	---	---
□	---	---	---	---	---	---

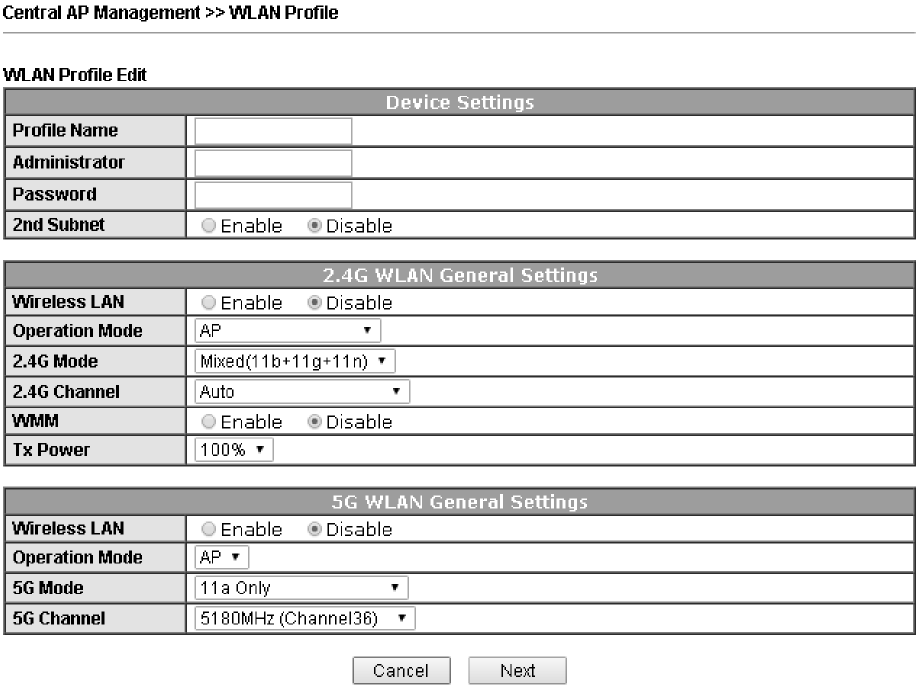
Available settings are explained as follows:

Item	Description
Profile	Display the name of the profile. The default profile cannot be renamed.
Main SSID	Display the SSID configured by such wireless profile.
Security	Display the security mode selected by such wireless profile.
Multi-SSID	Enable means multiple SSIDs (more than one) are active. Disable means only SSID1 is active.
WLAN ACL	Display the name of the access control list.
Rate Control	Display the upload and/or download transmission rate.
Clone	It can copy settings from an existing WLAN profile to another WLAN profile. First, you have to check the box of the existing profile as the original profile. Second, click **Clone**. The following dialog will appear.

	 172.16.3.143:2860/doc/wlclone.htm **Clone WLAN Profile Setting** Original Profile Name: Default Renamed as: Select Profile Index: 1-(None) Clear Cancel Apply Third, choose the profile index to accept the settings from the original profile. Forth, type a new name in the field of **Renamed as**. Last, click **Apply** to save the settings on this dialog. The new profile has been created with the settings coming from the original profile.
Edit	It allows you to modify an existing wireless profile or create a new wireless profile.
Apply to Device	Click it to apply the selected wireless profile to the specified Access Point.  6.3.143:2860/doc/wlapply.htm Existing Device: 1-AP810_007620482810, 2-AP900_00507F223343 Selected Device: >> << Cancel OK Simply choose the device you want from **Existing Device** field. Click **>>** to move the device to **Selected Device** field. Then, click **OK**. The selected WLAN profile will be applied to the selected access point immediately. Later the access point will reboot.

How to edit the wireless LAN profile?

1. Check the box on the left side of the selected profile.
2. Click the **Edit** button to display the following page.



Central AP Management >> WLAN Profile

WLAN Profile Edit

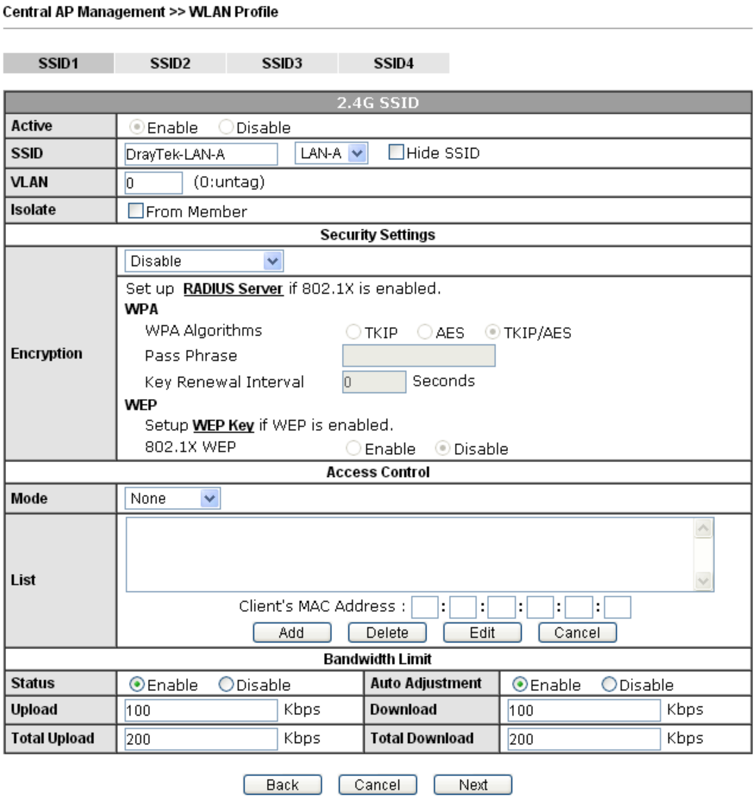
Device Settings	
Profile Name	
Administrator	
Password	
2nd Subnet	○ Enable ● Disable

2.4G WLAN General Settings	
Wireless LAN	○ Enable ● Disable
Operation Mode	AP
2.4G Mode	Mixed(11b+11g+11n)
2.4G Channel	Auto
WMM	○ Enable ● Disable
Tx Power	100%

5G WLAN General Settings	
Wireless LAN	○ Enable ● Disable
Operation Mode	AP
5G Mode	11a Only
5G Channel	5180MHz (Channel36)

Info The function of Auto Provision is available for the default WLAN profile.

3. After finished the general settings configuration, click **Next** to open the following page for 2.4G wireless security settings.



Central AP Management >> WLAN Profile

2.4G SSID	
Active	● Enable ○ Disable
SSID	DrayTek-LAN-A LAN-A □ Hide SSID
VLAN	0 (0:untag)
Isolate	□ From Member

Security Settings

Encryption	Disable Set up RADIUS Server if 802.1X is enabled. WPA WPA Algorithms ○ TKIP ○ AES ● TKIP/AES Pass Phrase Key Renewal Interval 0 Seconds WEP Setup WEP Key if WEP is enabled. 802.1X WEP ○ Enable ● Disable

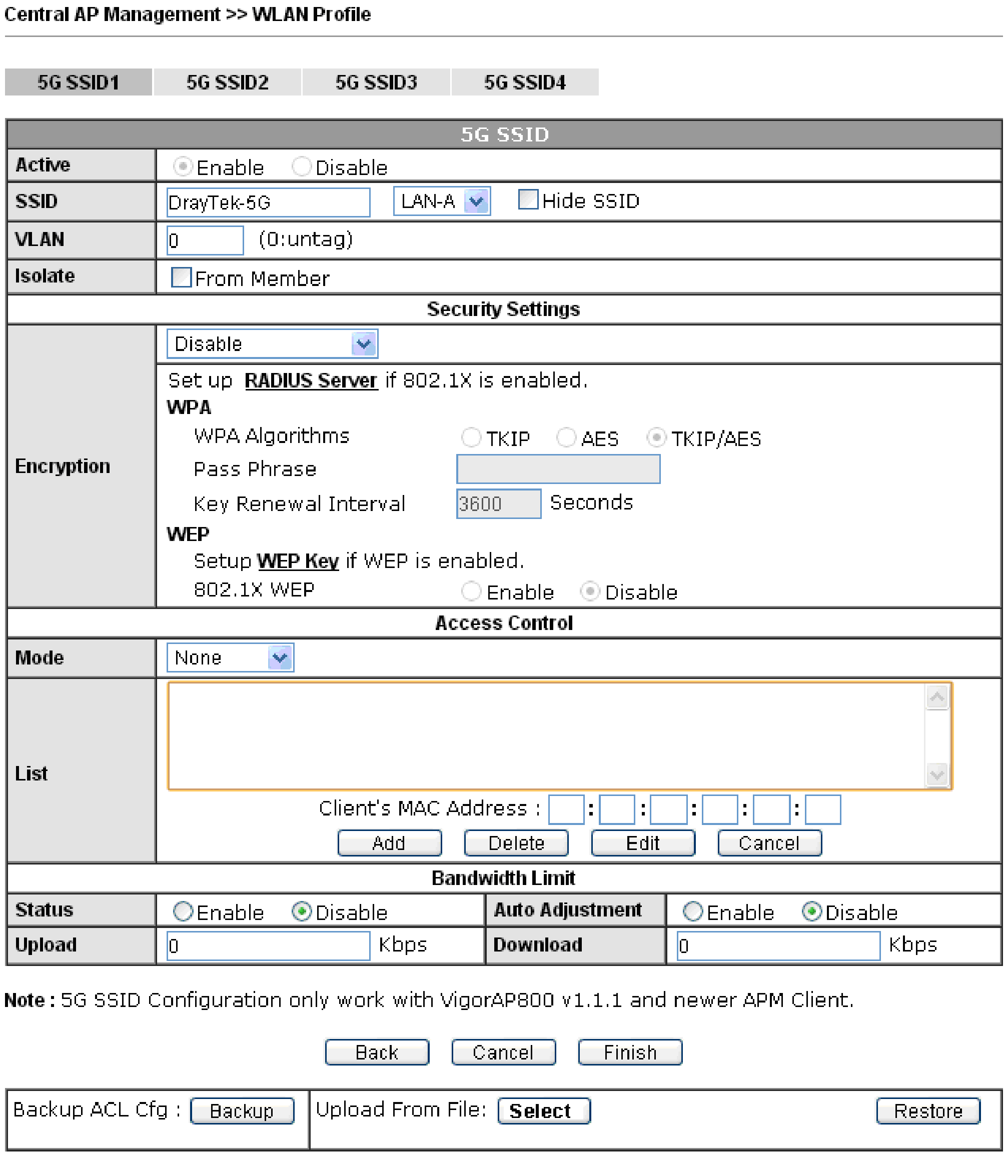
Access Control

Mode	None
List	Client's MAC Address : _ : _ : _ : _ : _ : _

Bandwidth Limit

Status	● Enable ○ Disable	Auto Adjustment	● Enable ○ Disable
Upload	100 Kbps	Download	100 Kbps
Total Upload	200 Kbps	Total Download	200 Kbps

4. After finished the above web page configuration, click **Next** to open the following page for 5G wireless security settings.



Central AP Management >> WLAN Profile

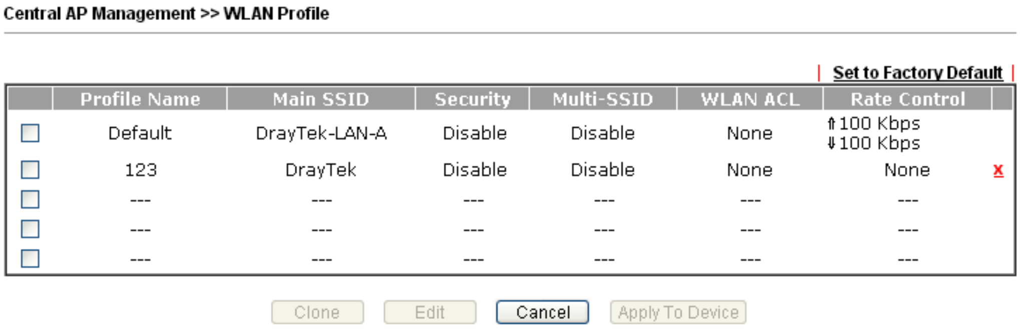
5G SSID1 | 5G SSID2 | 5G SSID3 | 5G SSID4

5G SSID			
Active	● Enable ○ Disable		
SSID	DrayTek-5G, LAN-A, □ Hide SSID		
VLAN	0 (0:untag)		
Isolate	□ From Member		
Security Settings			
Encryption	Disable Set up **RADIUS Server** if 802.1X is enabled. **WPA** WPA Algorithms ○ TKIP ○ AES ● TKIP/AES Pass Phrase Key Renewal Interval 3600 Seconds **WEP** Setup **WEP Key** if WEP is enabled. 802.1X WEP ○ Enable ● Disable		
Access Control			
Mode	None		
List	Client's MAC Address : _ : _ : _ : _ : _ : _ Add Delete Edit Cancel		
Bandwidth Limit			
Status	○ Enable ● Disable	Auto Adjustment	○ Enable ● Disable
Upload	0 Kbps	Download	0 Kbps

Note : 5G SSID Configuration only work with VigorAP800 v1.1.1 and newer APM Client.

Backup ACL Cfg : Backup | Upload From File: Select | Restore

5. When you finished the above web page configuration, click **Finish** to exit and return to the first page. The modified WLAN profile will be shown on the web page.



Central AP Management >> WLAN Profile

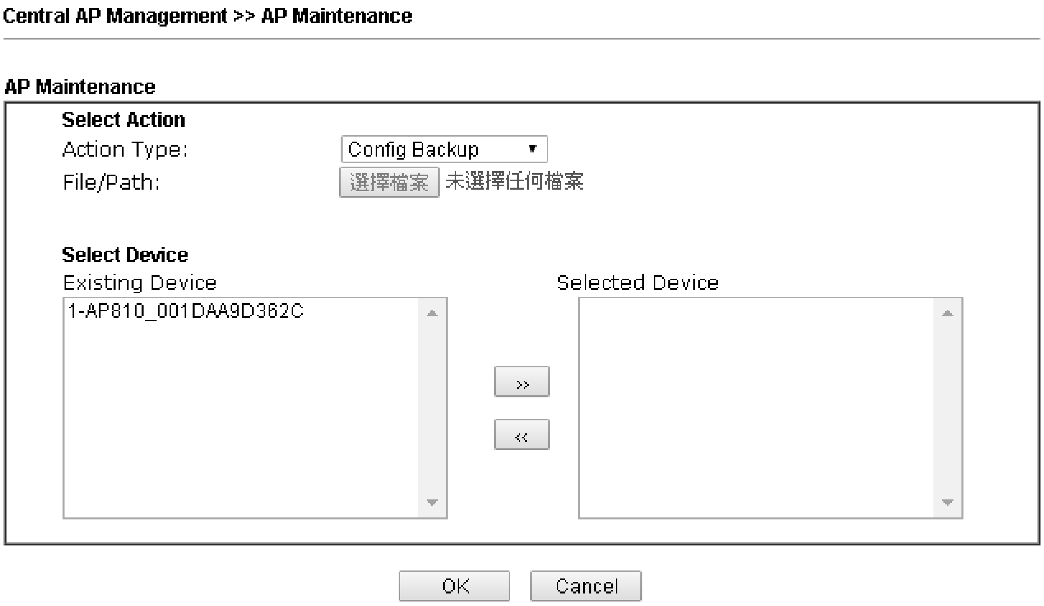
| Set to Factory Default |

	Profile Name	Main SSID	Security	Multi-SSID	WLAN ACL	Rate Control	
□	Default	DrayTek-LAN-A	Disable	Disable	None	⇑100 Kbps ⇓100 Kbps	
□	123	DrayTek	Disable	Disable	None	None	x
□	---	---	---	---	---	---	
□	---	---	---	---	---	---	
□	---	---	---	---	---	---	

VI-4-3 AP Maintenance

Vigor router can execute configuration backup, configuration restoration, firmware upgrade and remote reboot for the APs managed by the router. It is very convenient for the administrator to process maintenance without accessing into the web user interface of the access point.

Info	Config Backup can be performed to one AP at one time. Others functions (e.g., Config Restore, Firmware Upgrade, Remote Reboot can be performed to more than one AP at one time by using Vigor2952.



Central AP Management >> AP Maintenance

AP Maintenance

Select Action

Action Type: Config Backup

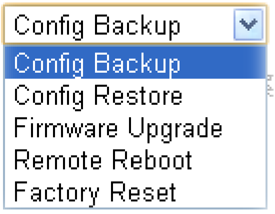
File/Path: 選擇檔案 未選擇任何檔案

Select Device

Existing Device: 1-AP810_001DAA9D362C

Selected Device

Available settings are explained as follows:

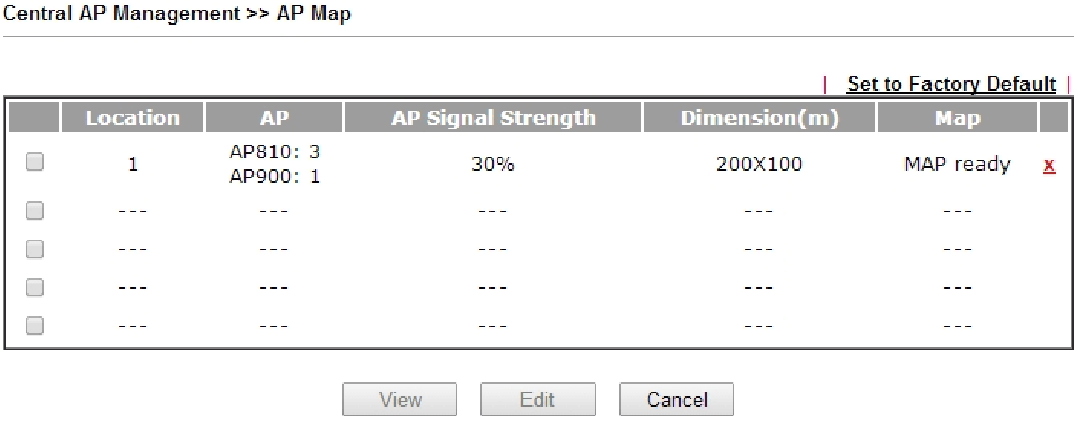
Item	Description
Action	There are four actions provided by Vigor router to manage the access points.  Config Backup Config Backup Config Restore Firmware Upgrade Remote Reboot Factory Reset Vigor router can **backup** the configuration of the selected AP, **restore** the configuration for the selected AP, perform the **firmware upgrade** of the selected AP, **reboot** the selected AP remotely and perform the **factory reset** for the selected AP.
File/Path	Specify the file and the path which will be used to perform **Config Restore** or **Firmware Upgrade**.
Select Device	Display all the available access points managed by Vigor router. Simply click << or >> to move the device(s) between **Select Device** and **Selected Device** areas.

Selected Device	Display the access points that will be applied by such function after clicking OK.

After finishing all the settings here, please click **OK** to perform the action.

VI-4-4 AP Map

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



Central AP Management >> AP Map

| Set to Factory Default |

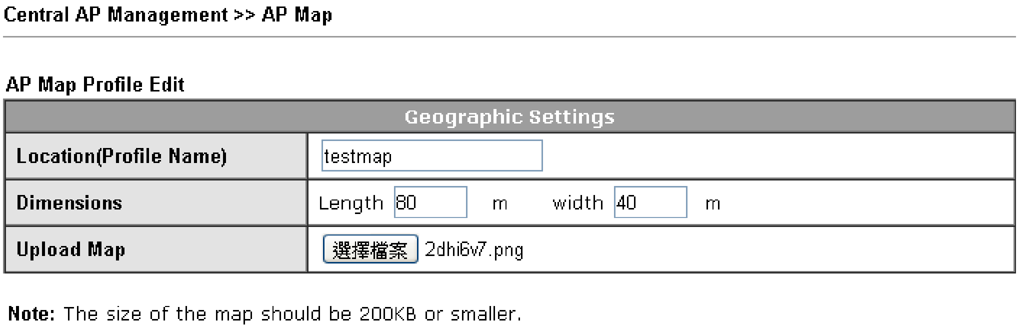
	Location	AP	AP Signal Strength	Dimension(m)	Map	
□	1	AP810: 3 AP900: 1	30%	200X100	MAP ready	x
□	---	---	---	---	---	
□	---	---	---	---	---	
□	---	---	---	---	---	
□	---	---	---	---	---	

Available settings are explained as follows:

Item	Description
Set to Factory Default	Click the link to clear current page configuration.
□	Check the box to view or edit the AP Map.
Location	Display a brief description (e.g., ground, roof) of the AP Map.
AP	Display the model name and number of VigorAP located on the AP map.
AP Signal Strength	Display the pre-defined signal strength of the AP map.
Dimension(m)	Display the width and length of the AP map.
Map	Display if the uploaded file for AP map is ready or not.
View	Click it to review the layout for the selected AP map.
Edit	Click it to modify the geographic settings for the selected AP Map profile.
Cancel	Click it to cancel the configuration in such page.

Editing the AP Map Profile

1. Select an index □ and click **Edit** to open the following web page.



Central AP Management >> AP Map

AP Map Profile Edit

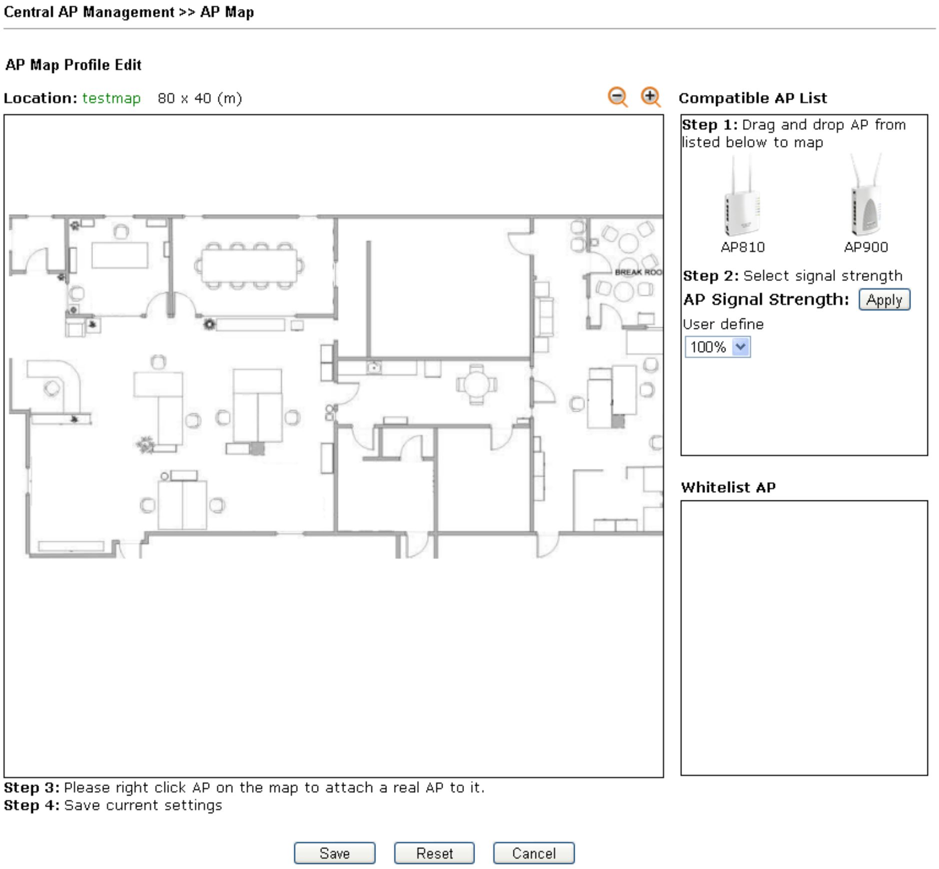
Geographic Settings	
Location(Profile Name)	testmap
Dimensions	Length 80 m width 40 m
Upload Map	選擇檔案 2dhi6v7.png

Note: The size of the map should be 200KB or smaller.

Available settings are explained as follows:

Item	Description
Location (Profile Name)	Type a name (e.g., groudfloor) for the AP map profile.
Dimensions	Type the real length and width of the uploaded map.
Upload Map	Click the **Select** button to choose an image file (only JPG and PNG are supported) for floor plan.
Cancel	Click it to cancel the configuration.
Next	Click it to go to the next configuration page.

2. Click **Next**. The configuration page with floor plan will be shown as follows.



Central AP Management >> AP Map

AP Map Profile Edit

Location: testmap 80 x 40 (m)

Compatible AP List

Step 1: Drag and drop AP from listed below to map

Step 2: Select signal strength

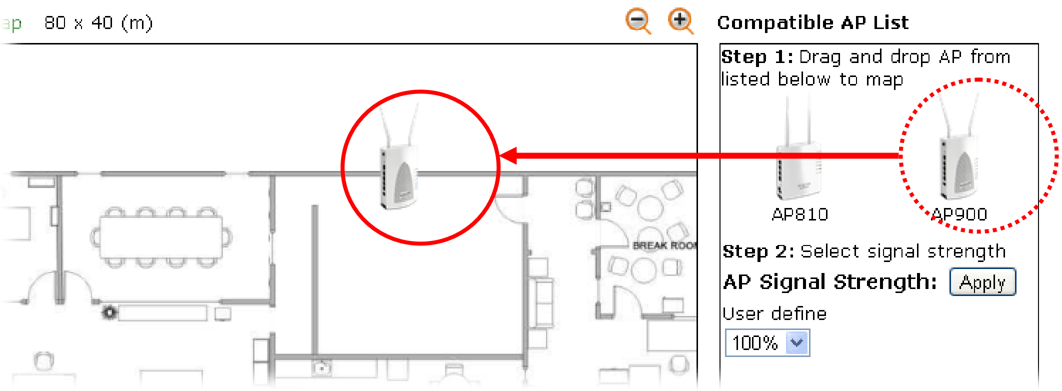
AP Signal Strength: Apply

User define 100%

Whitelist AP

Step 3: Please right click AP on the map to attach a real AP to it.
Step 4: Save current settings

3. Drag and drop an AP icon from **Compatible AP List** to the map on the left side.



ap 80 x 40 (m)

Compatible AP List

Step 1: Drag and drop AP from listed below to map

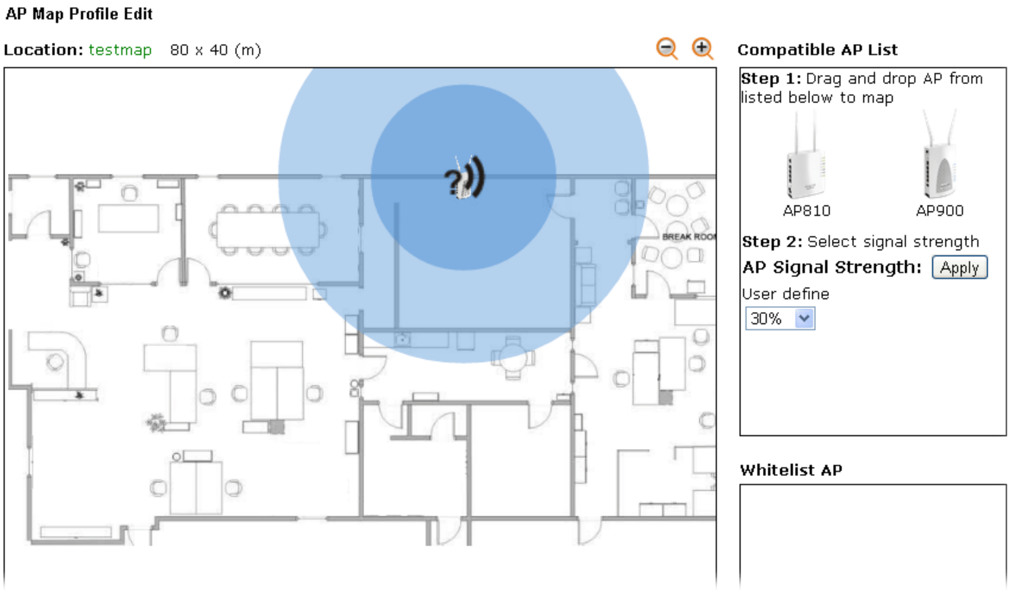
Step 2: Select signal strength

AP Signal Strength: Apply

User define

100%

4. Choose the signal strength (e.g., 30% in this case) from **User Define** drop down list. Click **Apply.**



AP Map Profile Edit

Location: testmap 80 x 40 (m)

Compatible AP List

Step 1: Drag and drop AP from listed below to map

Step 2: Select signal strength

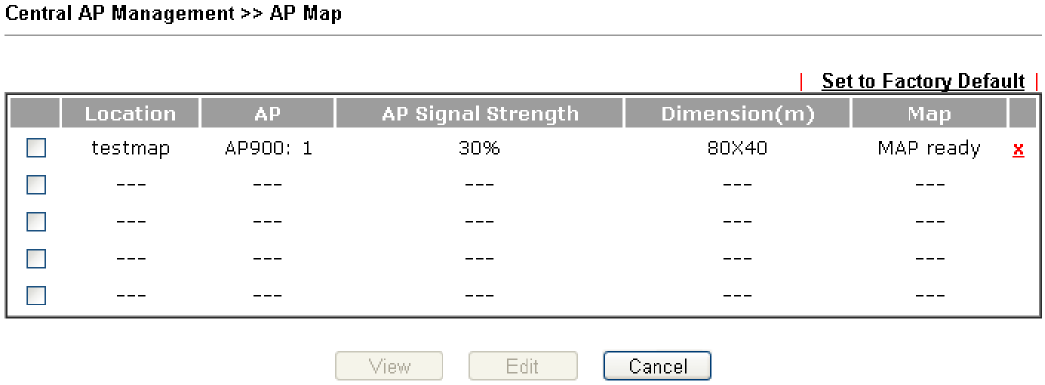
AP Signal Strength: Apply

User define

30%

Whitelist AP

5. Adjust the AP on the map to find out which place can have the best wireless coverage. At last, click **Save**.



Central AP Management >> AP Map

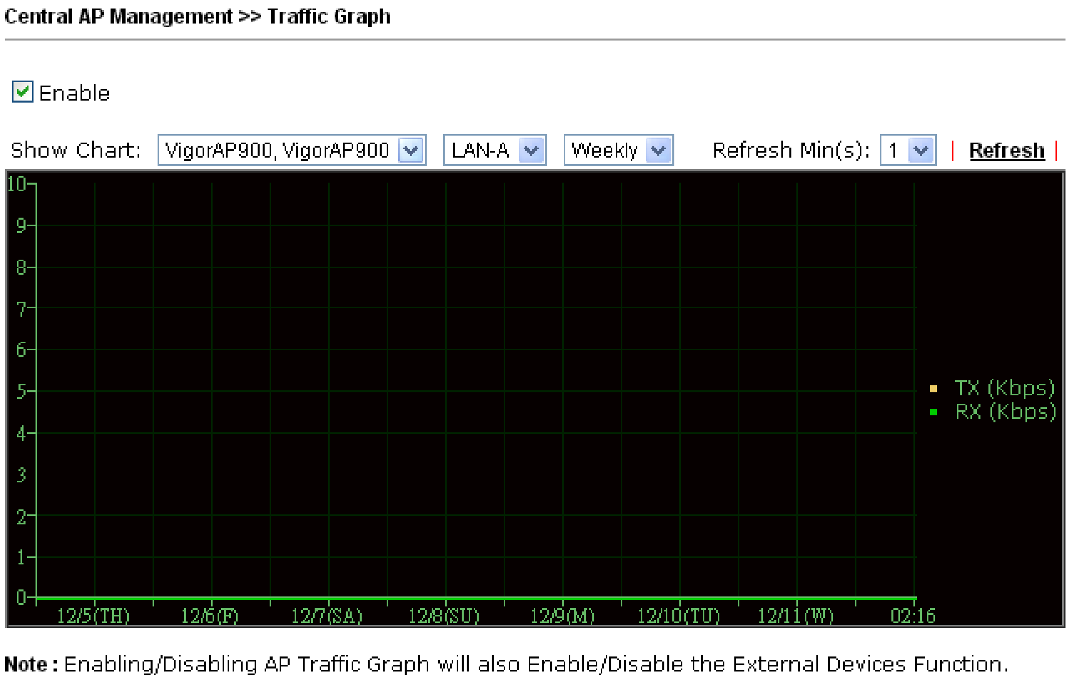
| Set to Factory Default |

	Location	AP	AP Signal Strength	Dimension(m)	Map	
□	testmap	AP900: 1	30%	80X40	MAP ready	x
□	---	---	---	---	---	
□	---	---	---	---	---	
□	---	---	---	---	---	
□	---	---	---	---	---	

View Edit Cancel

VI-4-5 Traffic Graph

Click **Traffic Graph** to open the web page. Choose one of the managed Access Points, LAN-A or LAN-B, daily or weekly for viewing data transmission chart. Click **Refresh** to renew the graph at any time.



Central AP Management >> Traffic Graph

☑ Enable

Show Chart: VigorAP900, VigorAP900 ▾ LAN-A ▾ Weekly ▾ Refresh Min(s): 1 ▾ | **Refresh** |

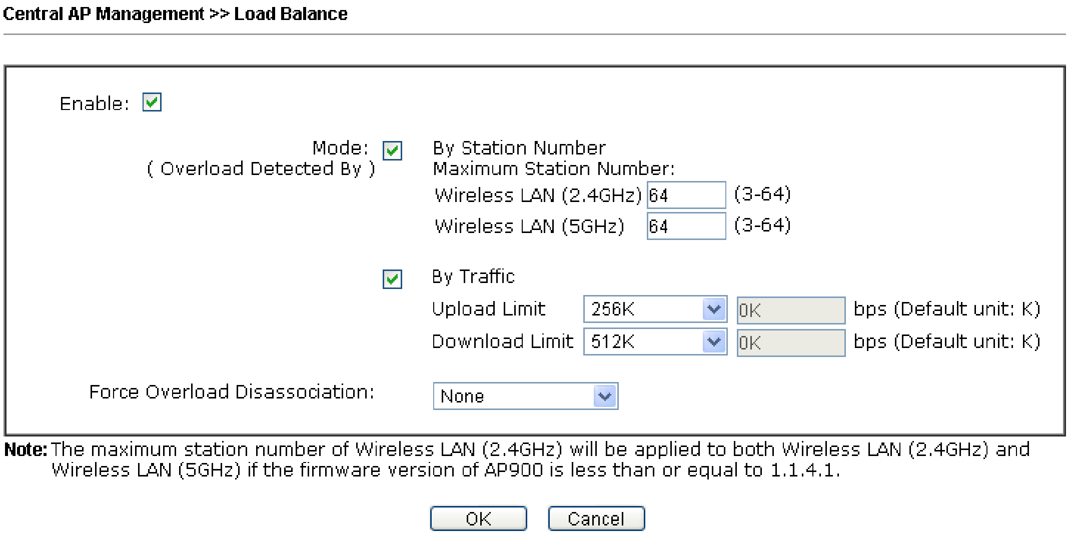
Note : Enabling/Disabling AP Traffic Graph will also Enable/Disable the External Devices Function.

The horizontal axis represents time; the vertical axis represents the transmission rate (in kbps).

Info	Enabling/Disabling such function will also enable/disable the External Devices function.

VI-4-6 Load Balance

The parameters configured for Load Balance can help to distribute the traffic for all of the access points registered to Vigor router. Thus, the bandwidth will not be occupied by certain access points.



Central AP Management >> Load Balance

Enable: ☑

Mode: (Overload Detected By) ☑ By Station Number

Maximum Station Number:

Wireless LAN (2.4GHz) 64 (3-64)

Wireless LAN (5GHz) 64 (3-64)

☑ By Traffic

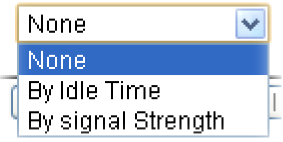
Upload Limit 256K 0K bps (Default unit: K)

Download Limit 512K 0K bps (Default unit: K)

Force Overload Disassociation: None

Note: The maximum station number of Wireless LAN (2.4GHz) will be applied to both Wireless LAN (2.4GHz) and Wireless LAN (5GHz) if the firmware version of AP900 is less than or equal to 1.1.4.1.

Available settings are explained as follows:

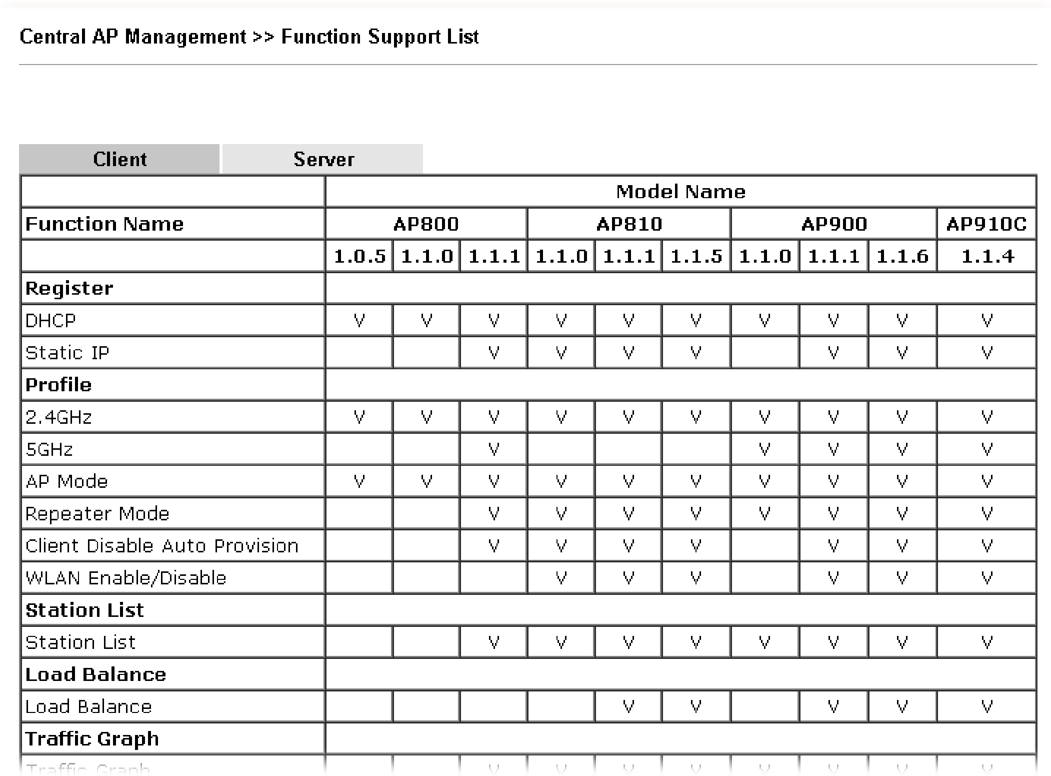
Item	Description
Enable	Check the box to enable such function.
Mode	It is used to determine the operation mode when the system detects overload between access points. **By Station Number** –The operation of load balance will be executed based on the station number configured in this page. It is used to limit the allowed number for the station connecting to the access point. The purpose is to prevent lots of stations connecting to access point at the same time and causing traffic unbalanced. Please define the required station number for WLAN (2.4GHz) and WLAN (5GHz) separately. **By Traffic** – The operation of load balance will executed according to the traffic configuration in this page. **Upload Limit** –Use the drop down list to specify the traffic limit for uploading. **Download Limit** – Use the drop down list to specify the traffic limit for downloading.
Force Overload Disassociation	**By Idle Time** - When the access point is overload (e.g., reaching the limit of station number or limit of network traffic), it will terminate the network connection of the client's station which is idle for a longest time. **By signal Strength** - When the access point is overload (e.g., reaching the limit of station number or limit of network traffic), it will terminate the network connection of the client's station with the weakest signal. 

After finishing all the settings here, please click **OK** to save the configuration.

VI-4-7 Function Support List

Click the **Client** tab to list the AP management functions that the Access Points support under different firmware versions.

Click the **Server** tab to list the AP management functions that Vigor router supports under different firmware versions.



Central AP Management >> Function Support List

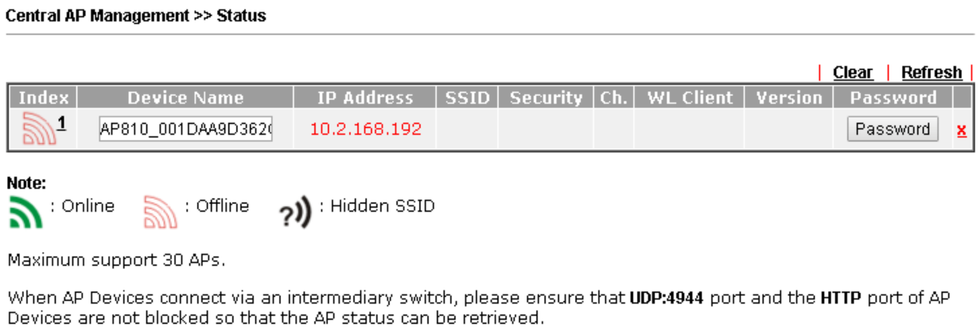
	Model Name									
Function Name	AP800			AP810			AP900			AP910C
	1.0.5	1.1.0	1.1.1	1.1.0	1.1.1	1.1.5	1.1.0	1.1.1	1.1.6	1.1.4
Register										
DHCP	V	V	V	V	V	V	V	V	V	V
Static IP			V	V	V	V		V	V	V
Profile										
2.4GHz	V	V	V	V	V	V	V	V	V	V
5GHz			V				V	V	V	V
AP Mode	V	V	V	V	V	V	V	V	V	V
Repeater Mode			V	V	V	V	V	V	V	V
Client Disable Auto Provision			V	V	V	V		V	V	V
WLAN Enable/Disable				V	V	V		V	V	V
Station List										
Station List			V	V	V	V	V	V	V	V
Load Balance										
Load Balance					V	V		V	V	V
Traffic Graph										
Traffic Graph			V	V	V	V	V	V	V	V

Application Notes

A-1 How to use AP Management function (in Vigor2952) to check AP status and deploy WLAN profile

The administrator can manage the access points linked to Vigor2952.

1. Open **Central AP Management>>Access Point Devices**. Vigor2952 will detect the AP connecting to the router automatically and display as below:



Central AP Management >> Status

| Clear | Refresh |

Index	Device Name	IP Address	SSID	Security	Ch.	WL Client	Version	Password	
1	AP810_001DAA9D362	10.2.168.192						Password	x

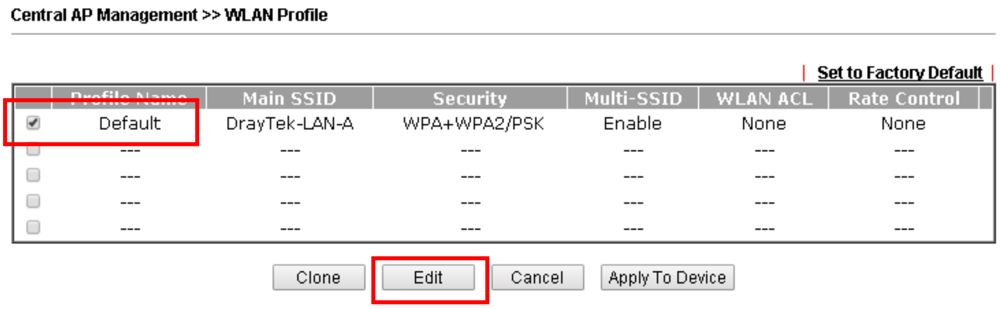
Note:
: Online : Offline : Hidden SSID

Maximum support 30 APs.

When AP Devices connect via an intermediary switch, please ensure that **UDP:4944** port and the **HTTP** port of AP Devices are not blocked so that the AP status can be retrieved.

In this case, a device named with *AP810_001DAA9D362C* has been detected by Vigor router.

2. Click the **Central AP Management>>WLAN Profile** tab to get the following page. Check the box of the default profile to make the **Edit** button be available. Then, click the **Edit** button.

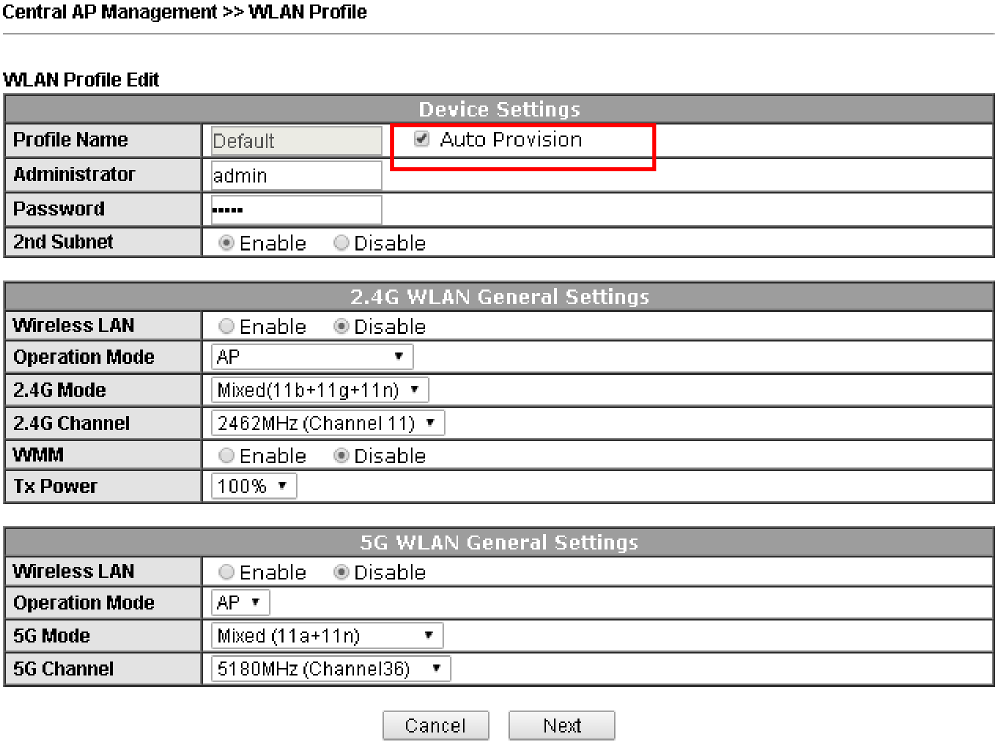


Central AP Management >> WLAN Profile

| Set to Factory Default |

	Profile Name	Main SSID	Security	Multi-SSID	WLAN ACL	Rate Control
☑	Default	DrayTek-LAN-A	WPA+WPA2/PSK	Enable	None	None
□	---	---	---	---	---	---
□	---	---	---	---	---	---
□	---	---	---	---	---	---
□	---	---	---	---	---	---

3. When the following configuration page appears, make the changes you want and check **Apply to All APs**. Then, click **Next** to access into the next page.



Central AP Management >> WLAN Profile

WLAN Profile Edit

Device Settings	
Profile Name	Default ☑ Auto Provision
Administrator	admin
Password	•••••
2nd Subnet	● Enable ○ Disable

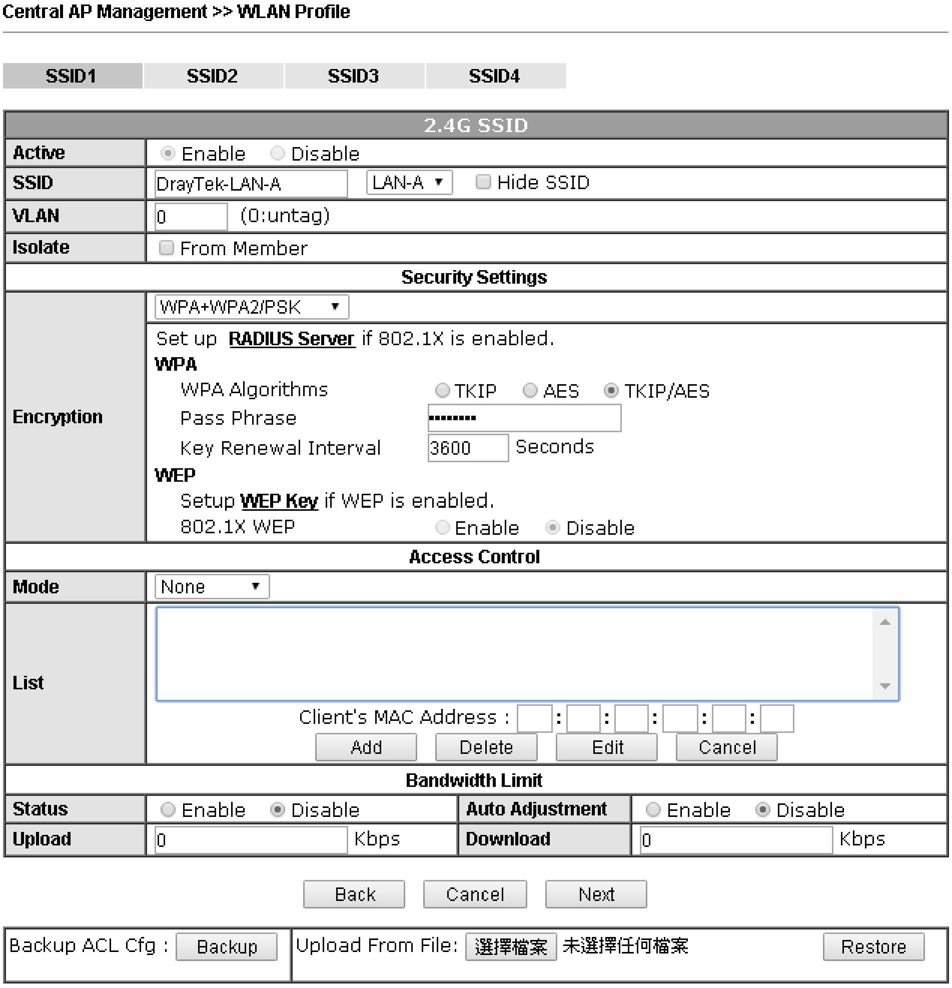
2.4G WLAN General Settings	
Wireless LAN	○ Enable ● Disable
Operation Mode	AP
2.4G Mode	Mixed(11b+11g+11n)
2.4G Channel	2462MHz (Channel 11)
WMM	○ Enable ● Disable
Tx Power	100%

5G WLAN General Settings	
Wireless LAN	○ Enable ● Disable
Operation Mode	AP
5G Mode	Mixed (11a+11n)
5G Channel	5180MHz (Channel36)

Info

Auto Provision can automatically apply the settings on **Default** profile to all of the access points registered to Vigor2952 later. Hence, it is not necessary for you to manually apply wireless profiles for APs respectively. Such feature will be convenient for people who want to *quickly deploy* multiple Vigor APs in a large exhibition to reach the goal of “plug and play” and “zero-configuration”.

4. The following page allows you to modify related settings for 2.4G SSID of managed AP. Make the changes you want for 2.4G SSID. Click **Next** for next page.



Central AP Management >> WLAN Profile

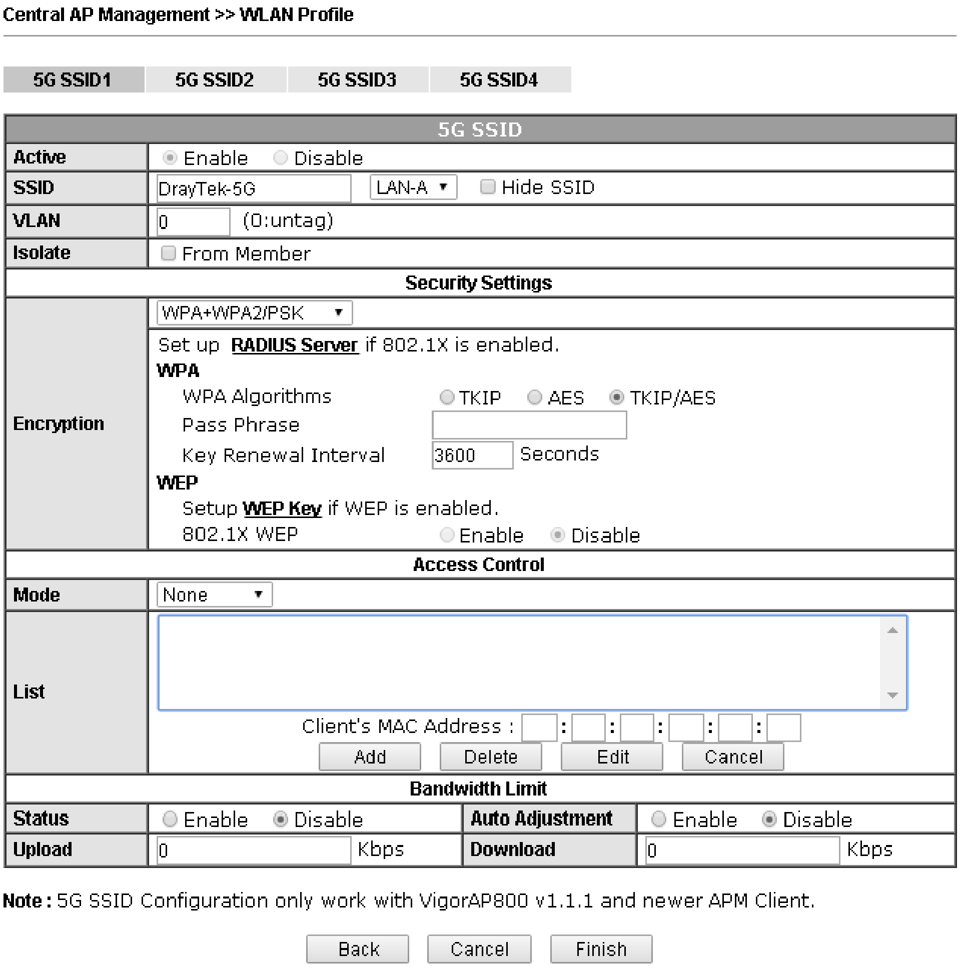
SSID1 | SSID2 | SSID3 | SSID4

2.4G SSID			
Active	● Enable ○ Disable		
SSID	DrayTek-LAN-A LAN-A ▾ □ Hide SSID		
VLAN	0 (0:untag)		
Isolate	□ From Member		
Security Settings			
Encryption	WPA+WPA2/PSK ▾ Set up RADIUS Server if 802.1X is enabled. WPA WPA Algorithms ○ TKIP ○ AES ● TKIP/AES Pass Phrase •••••••• Key Renewal Interval 3600 Seconds WEP Setup WEP Key if WEP is enabled. 802.1X WEP ○ Enable ● Disable		
Access Control			
Mode	None ▾		
List	Client's MAC Address : __ : __ : __ : __ : __ : __ Add Delete Edit Cancel		
Bandwidth Limit			
Status	○ Enable ● Disable	Auto Adjustment	○ Enable ● Disable
Upload	0 Kbps	Download	0 Kbps

Back Cancel Next

Backup ACL Cfg : Backup	Upload From File: 選擇檔案 未選擇任何檔案 Restore

5. The following page is offered for you to modify related settings for 5G SSID of managed AP. Continue to make any changes you want. After finished all of the changes, simply click **Finish**.



Central AP Management >> WLAN Profile

5G SSID1 | 5G SSID2 | 5G SSID3 | 5G SSID4

5G SSID	
Active	● Enable ○ Disable
SSID	DrayTek-5G LAN-A ▾ □ Hide SSID
VLAN	0 (0:untag)
Isolate	□ From Member
Security Settings	
Encryption	WPA+WPA2/PSK ▾
	Set up **RADIUS Server** if 802.1X is enabled. **WPA** WPA Algorithms ○ TKIP ○ AES ● TKIP/AES Pass Phrase Key Renewal Interval 3600 Seconds **WEP** Setup **WEP Key** if WEP is enabled. 802.1X WEP ○ Enable ● Disable
Access Control	
Mode	None ▾
List	Client's MAC Address : _ : _ : _ : _ : _ : _ Add Delete Edit Cancel

Bandwidth Limit			
Status	○ Enable ● Disable	Auto Adjustment	○ Enable ● Disable
Upload	0 Kbps	Download	0 Kbps

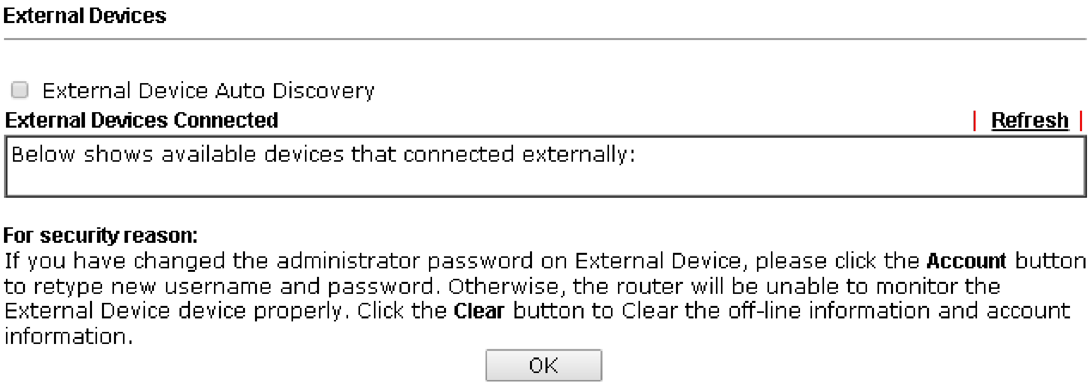
Note : 5G SSID Configuration only work with VigorAP800 v1.1.1 and newer APM Client.

Back Cancel Finish

Now, the AP (represented with *AP810_001DAA9D362C*) detected by Vigor router will be applied with the settings modified by Vigor router.

VI-5 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.



External Devices

□ External Device Auto Discovery

External Devices Connected | Refresh |

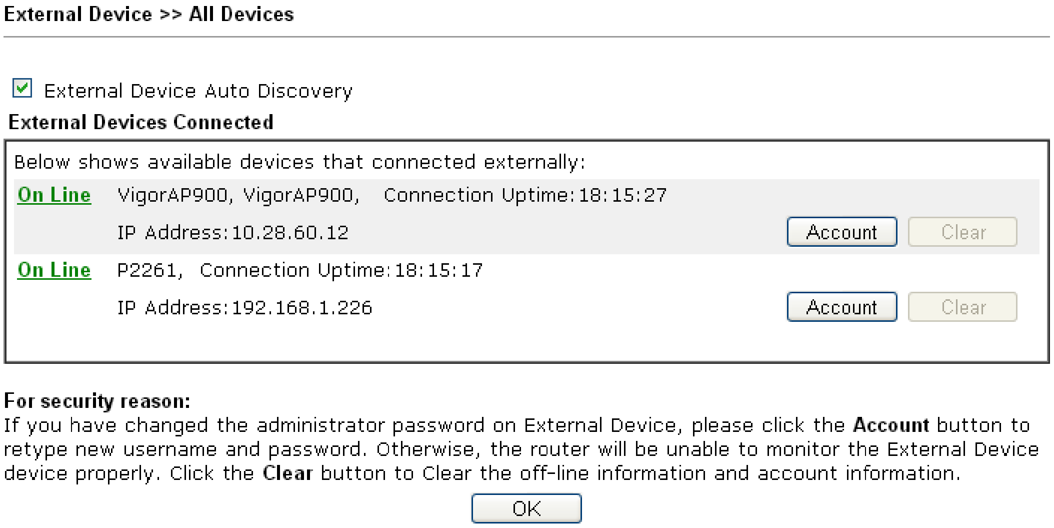
Below shows available devices that connected externally:

For security reason:
If you have changed the administrator password on External Device, please click the **Account** button to retype new username and password. Otherwise, the router will be unable to monitor the External Device device properly. Click the **Clear** button to Clear the off-line information and account information.

Available settings are explained as follows:

Item	Description
External Device Auto Discovery	Check this box to detect the external device automatically and display on this page.

From this web page, check the box of **External Device Auto Discovery**. Later, all the available devices will be displayed in this page with icons and corresponding information. You can change the device name if required or remove the information for off-line device whenever you want.



External Device >> All Devices

☑ External Device Auto Discovery

External Devices Connected

Below shows available devices that connected externally:

On Line VigorAP900, VigorAP900, Connection Uptime:18:15:27
IP Address:10.28.60.12

On Line P2261, Connection Uptime:18:15:17
IP Address:192.168.1.226

For security reason:
If you have changed the administrator password on External Device, please click the **Account** button to retype new username and password. Otherwise, the router will be unable to monitor the External Device device properly. Click the **Clear** button to Clear the off-line information and account information.

When you finished the configuration, click **OK** to save it.

Info Only DrayTek products can be detected by this function.

Part VII Others

Objects Settings

Define objects such as IP address, service type, keyword, file extension and others. These pre-defined objects can be applied in CSM.

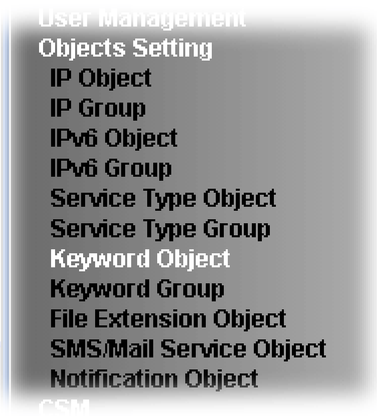
USB

USB device connected on Vigor router can be regarded as a server or WAN interface. By way of Vigor router, clients on LAN can access, write and read data stored in USB storage disk with different applications.

USB General Settings

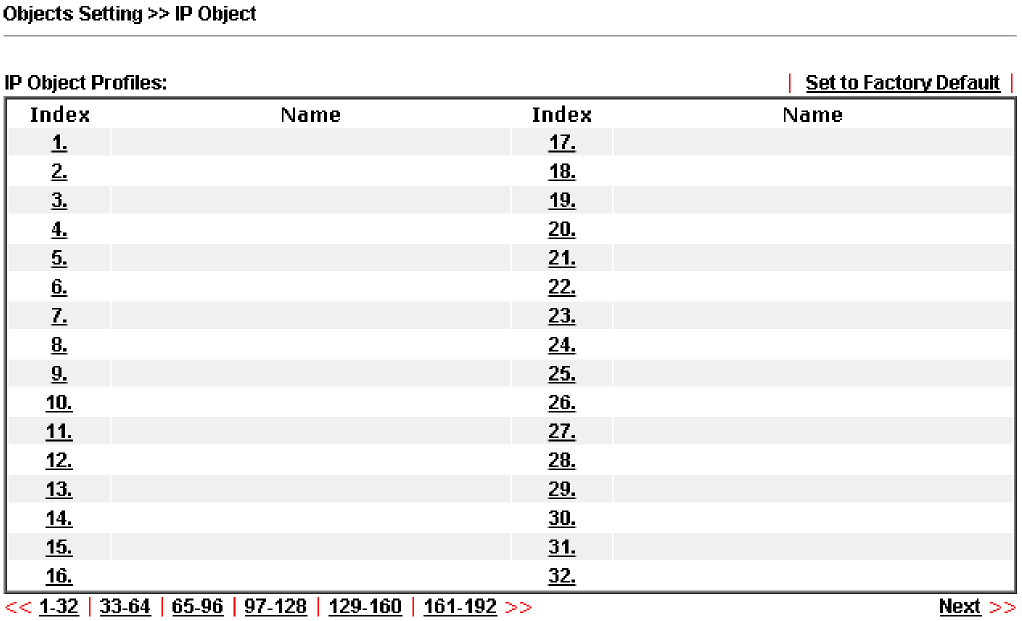
VII-1 Objects Settings

For IPs in a range and service ports in a limited range usually will be applied in configuring router's settings, therefore we can define them with *objects* and bind them with *groups* for using conveniently. Later, we can select that object/group 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).



VII-1-1 IP Object

You can set up to 192 sets of IP Objects with different conditions.



Objects Setting >> IP Object

IP Object Profiles: | Set to Factory Default |

Index	Name	Index	Name
1.		17.	
2.		18.	
3.		19.	
4.		20.	
5.		21.	
6.		22.	
7.		23.	
8.		24.	
9.		25.	
10.		26.	
11.		27.	
12.		28.	
13.		29.	
14.		30.	
15.		31.	
16.		32.	

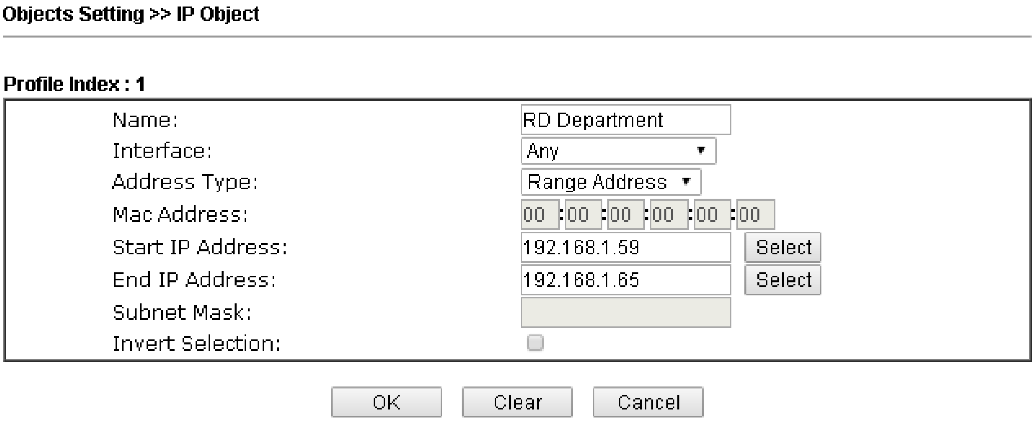
<< 1-32 | 33-64 | 65-96 | 97-128 | 129-160 | 161-192 >> Next >>

Available settings are explained as follows:

Item	Description
Set to Factory Default	Clear all profiles.
Index	Display the profile number that you can configure.
Name	Display the name of the object profile.

To set a new profile, please do the steps listed below:

1. Click the number (e.g., #1) under Index column for configuration in details.
2. The configuration page will be shown as follows:

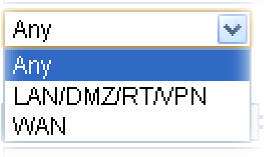
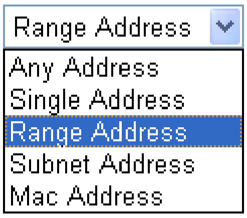


Objects Setting >> IP Object

Profile Index : 1

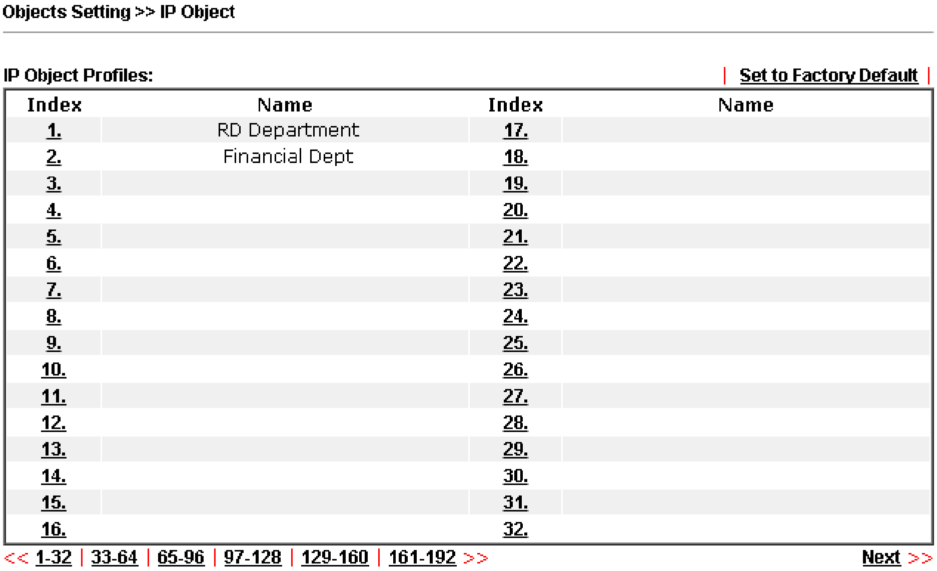
Name:	RD Department
Interface:	Any
Address Type:	Range Address
Mac Address:	00 : 00 : 00 : 00 : 00 : 00
Start IP Address:	192.168.1.59 Select
End IP Address:	192.168.1.65 Select
Subnet Mask:	
Invert Selection:	□

Available settings are explained as follows:

Item	Description
Name	Type a name for this profile. Maximum 15 characters are allowed.
Interface	Choose a proper interface.  For example, the **Direction** setting in **Edit Filter Rule** will ask you specify IP or IP range for WAN or LAN/DMZ/RT/VPN or any IP address. If you choose LAN/DMZ/RT/VPN as the **Interface** here, and choose LAN/DMZ/RT/VPN as the direction setting in **Edit Filter Rule**, then all the IP addresses specified with LAN/DMZ/RT/VPN interface will be opened for you to choose in **Edit Filter Rule** page.
Address Type	Determine the address type for the IP address. Select **Single Address** if this object contains one IP address only. Select **Range Address** if this object contains several IPs within a range. Select **Subnet Address** if this object contains one subnet for IP address. Select **Any Address** if this object contains any IP address. Select **Mac Address** if this object contains Mac address.  Range Address Any Address Single Address Range Address Subnet Address Mac Address
MAC Address	Type the MAC address of the network card which will be controlled.
Start IP Address	Type the start IP address for Single Address type.
End IP Address	Type the end IP address if the Range Address type is selected.

Subnet Mask	Type the subnet mask if the Subnet Address type is selected.
Invert Selection	If it is checked, all the IP addresses except the ones listed above will be applied later while it is chosen.

4. After finishing all the settings here, please click **OK** to save the configuration. Below is an example of IP objects settings.



Objects Setting >> IP Object

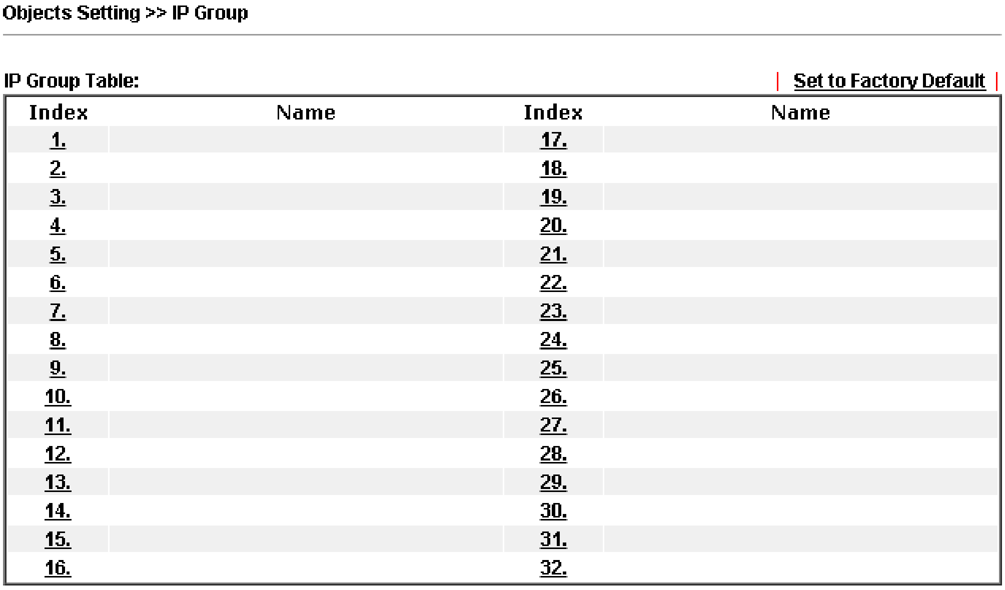
IP Object Profiles: | Set to Factory Default |

Index	Name	Index	Name
1.	RD Department	17.	
2.	Financial Dept	18.	
3.		19.	
4.		20.	
5.		21.	
6.		22.	
7.		23.	
8.		24.	
9.		25.	
10.		26.	
11.		27.	
12.		28.	
13.		29.	
14.		30.	
15.		31.	
16.		32.	

<< 1-32 | 33-64 | 65-96 | 97-128 | 129-160 | 161-192 >> Next >>

VII-1-2 IP Group

This page allows you to bind several IP objects into one IP group.



Objects Setting >> IP Group

IP Group Table: | Set to Factory Default |

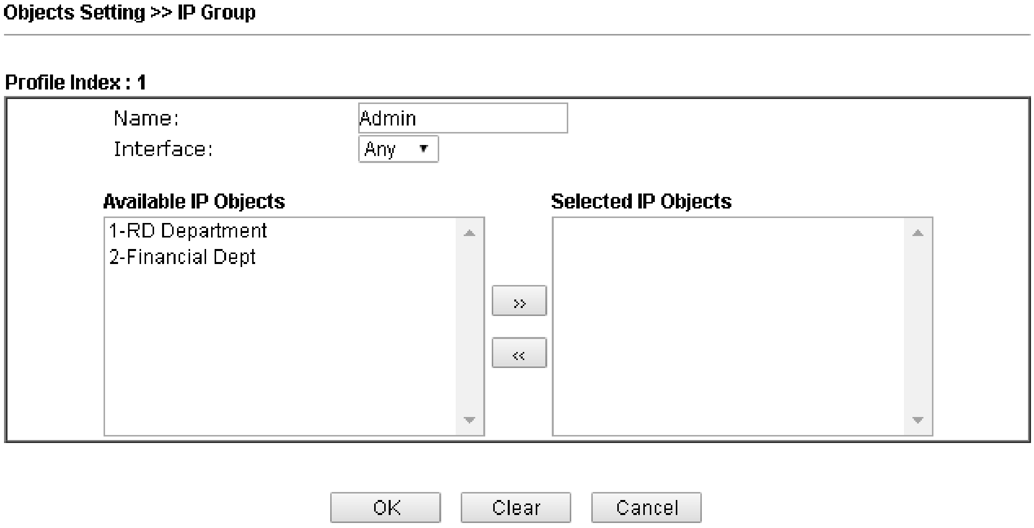
Index	Name	Index	Name
1.		17.	
2.		18.	
3.		19.	
4.		20.	
5.		21.	
6.		22.	
7.		23.	
8.		24.	
9.		25.	
10.		26.	
11.		27.	
12.		28.	
13.		29.	
14.		30.	
15.		31.	
16.		32.	

Available settings are explained as follows:

Item	**Description**
Set to Factory Default	Clear all profiles.
Index	Display the profile number that you can configure.
Name	Display the name of the group profile.

To set a new profile, please do the steps listed below:

1. Click the number (e.g., #1) under Index column for configuration in details.
2. The configuration page will be shown as follows:



Objects Setting >> IP Group

Profile Index : 1

Name: Admin

Interface: Any

Available IP Objects:
1-RD Department
2-Financial Dept

Selected IP Objects:

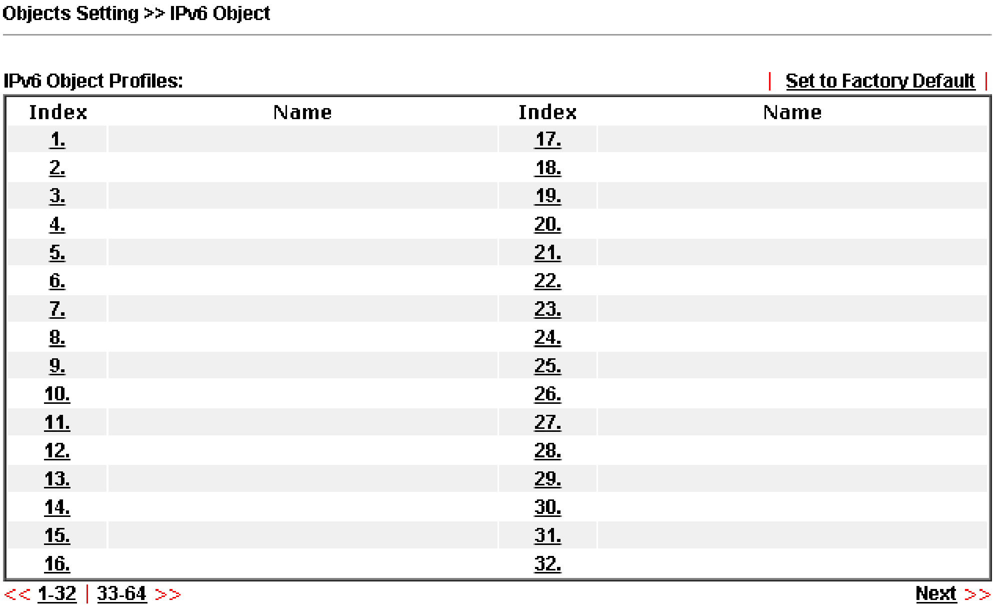
Available settings are explained as follows:

Item	Description
Name	Type a name for this profile. Maximum 15 characters are allowed.
Interface	Choose WAN, LAN or Any to display all the available IP objects with the specified interface.
Available IP Objects	All the available IP objects with the specified interface chosen above will be shown in this box.
Selected IP Objects	Click **>>** button to add the selected IP objects in this box.

3. After finishing all the settings here, please click **OK** to save the configuration.

VII-1-3 IPv6 Object

You can set up to 64 sets of IPv6 Objects with different conditions.



Objects Setting >> IPv6 Object

IPv6 Object Profiles: | Set to Factory Default |

Index	Name	Index	Name
1.		17.	
2.		18.	
3.		19.	
4.		20.	
5.		21.	
6.		22.	
7.		23.	
8.		24.	
9.		25.	
10.		26.	
11.		27.	
12.		28.	
13.		29.	
14.		30.	
15.		31.	
16.		32.	

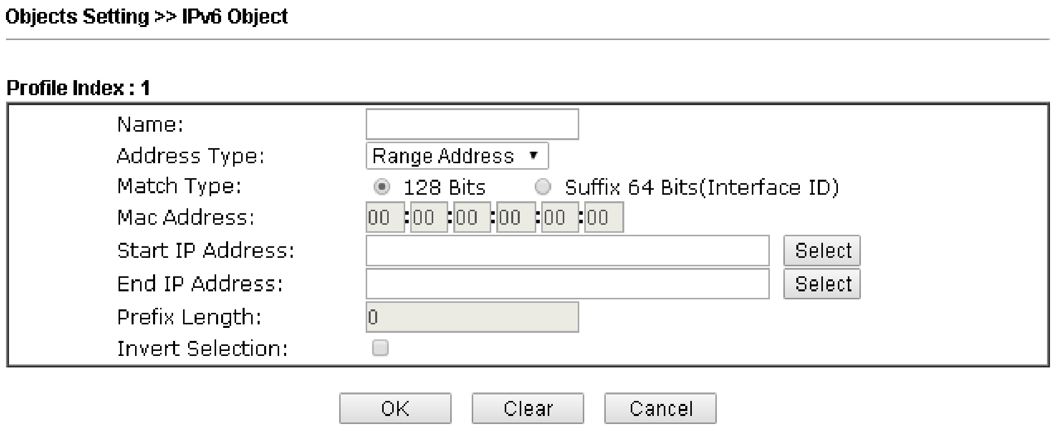
<< 1-32 | 33-64 >> Next >>

Available settings are explained as follows:

Item	Description
Set to Factory Default	Clear all profiles.
Index	Display the profile number that you can configure.
Name	Display the name of the object profile.

To set a new profile, please do the steps listed below:

1. Click the number (e.g., #1) under Index column for configuration in details.
2. The configuration page will be shown as follows:

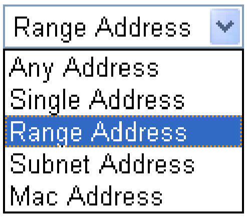


Objects Setting >> IPv6 Object

Profile Index : 1

Name:	
Address Type:	Range Address ▾
Match Type:	● 128 Bits ○ Suffix 64 Bits(Interface ID)
Mac Address:	00 : 00 : 00 : 00 : 00 : 00
Start IP Address:	Select
End IP Address:	Select
Prefix Length:	0
Invert Selection:	□

Available settings are explained as follows:

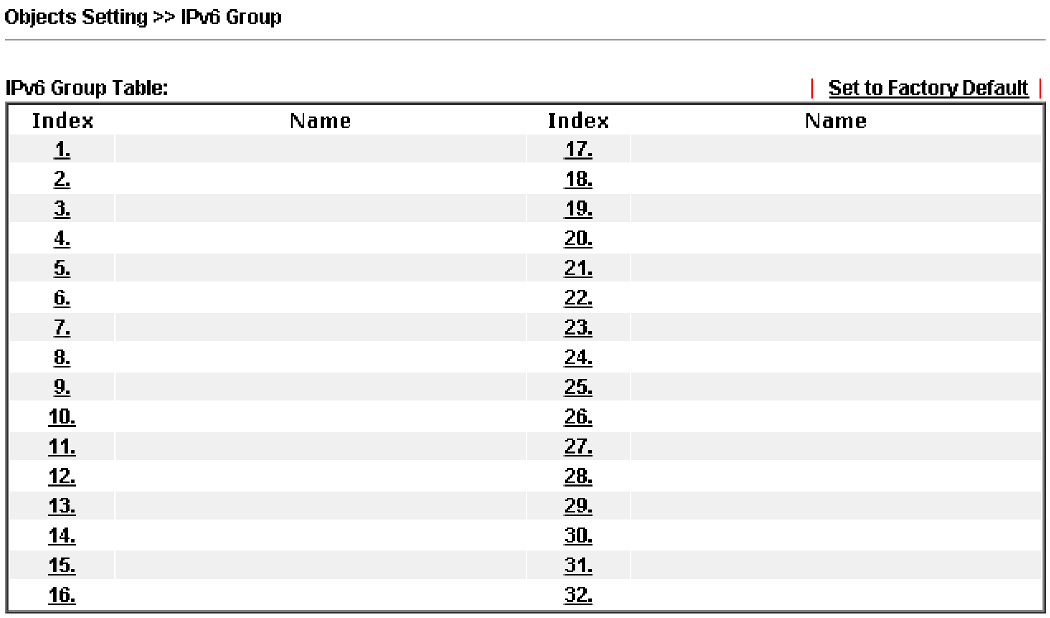
Item	Description
Name	Type a name for this profile. Maximum 15 characters are allowed.
Address Type	Determine the address type for the IPv6 address. Select **Single Address** if this object contains one IPv6 address only. Select **Range Address** if this object contains several IPv6s within a range. Select **Subnet Address** if this object contains one subnet for IPv6 address. Select **Any Address** if this object contains any IPv6 address. Select **Mac Address** if this object contains Mac address.  Range Address Any Address Single Address Range Address Subnet Address Mac Address
Match Type	It is available when Range Address is selected as Address Type. Specify which type (128 Bits or 64 Bits) of address fomat for IPv6 protocol will be used for comparison. The length of IPv6 address is composed by prefix and suffix (interface ID). **128 Bits** – When it is selected, Vigor router will make the completed comparison for IPv6 protocol based on prefix and suffix. **Suffix 64 Bits (Interface ID)** - When it is selected, Vigor router will make the simplified comparison for IPv6 protocol based on suffix only.
Mac Address	Type the MAC address of the network card which will be controlled.
Start IP Address	Type the start IP address for Single Address type.

End IP Address	Type the end IP address if the Range Address type is selected.
Prefix Length	Type the number (e.g., 64) for the prefix length of IPv6 address.
Invert Selection	If it is checked, all the IPv6 addresses except the ones listed above will be applied later while it is chosen.

3. After finishing all the settings, please click **OK** to save the configuration.

VII-1-4 IPv6 Group

This page allows you to bind several IPv6 objects into one IPv6 group.



Objects Setting >> IPv6 Group

IPv6 Group Table: | Set to Factory Default |

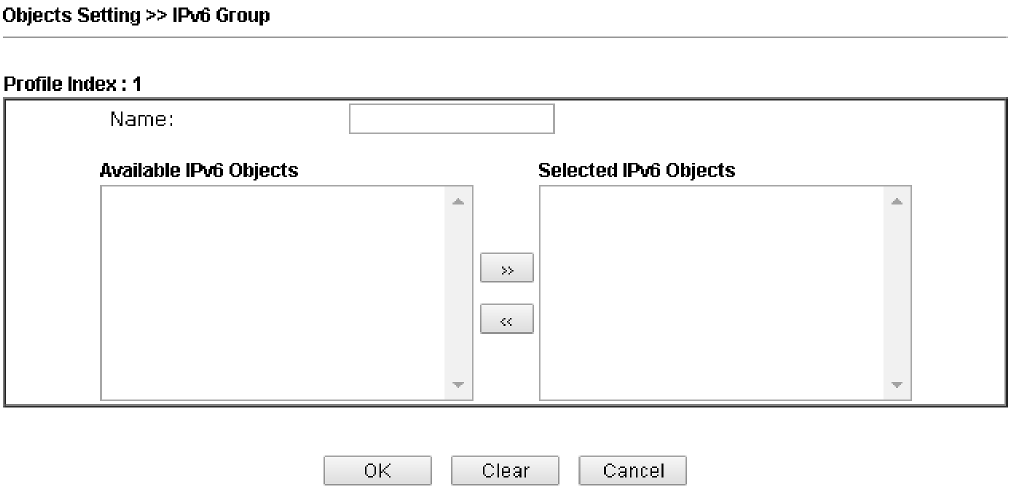
Index	Name	Index	Name
1.		17.	
2.		18.	
3.		19.	
4.		20.	
5.		21.	
6.		22.	
7.		23.	
8.		24.	
9.		25.	
10.		26.	
11.		27.	
12.		28.	
13.		29.	
14.		30.	
15.		31.	
16.		32.	

Available settings are explained as follows:

Item	Description
Set to Factory Default	Clear all profiles.
Index	Display the profile number that you can configure.
Name	Display the name of the group profile.

To set a new profile, please do the steps listed below:

1. Click the number (e.g., #1) under Index column for configuration in details.
2. The configuration page will be shown as follows:


Objects Setting >> IPv6 Group

Profile Index : 1

Name:

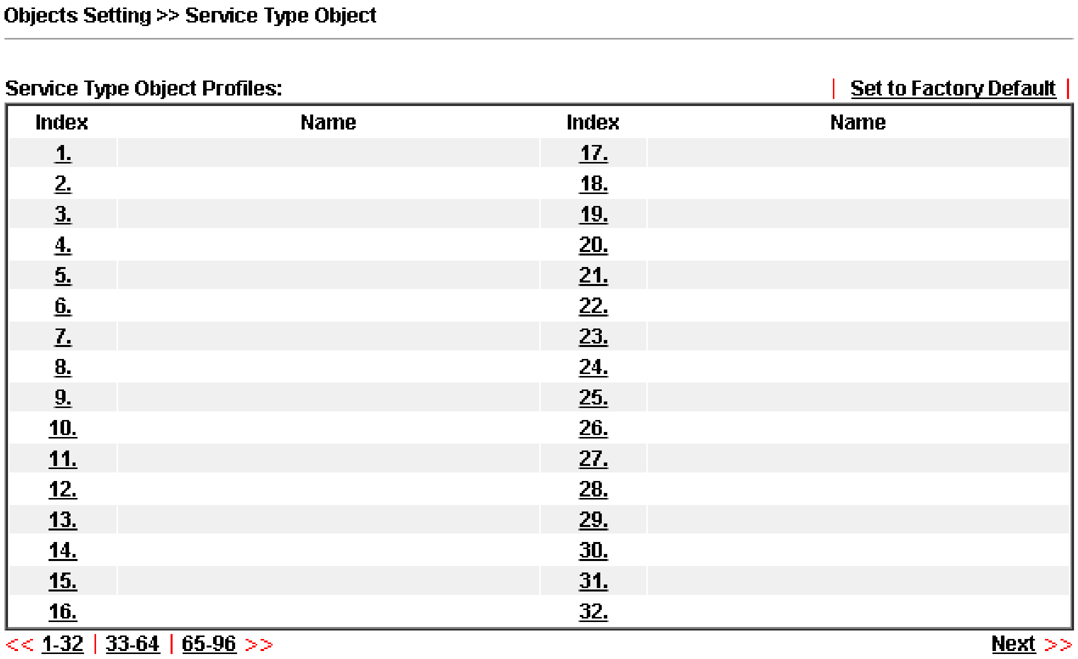
Available settings are explained as follows:

Item	Description
Name	Type a name for this profile. Maximum 15 characters are allowed.
Available IPv6 Objects	All the available IPv6 objects with the specified interface chosen above will be shown in this box.
Selected IPv6 Objects	Click **>>** button to add the selected IPv6 objects in this box.

3. After finishing all the settings, please click **OK** to save the configuration.

VII-1-5 Service Type Object

You can set up to 96 sets of Service Type Objects with different conditions.



Objects Setting >> Service Type Object

Service Type Object Profiles: | Set to Factory Default |

Index	Name	Index	Name
1.		17.	
2.		18.	
3.		19.	
4.		20.	
5.		21.	
6.		22.	
7.		23.	
8.		24.	
9.		25.	
10.		26.	
11.		27.	
12.		28.	
13.		29.	
14.		30.	
15.		31.	
16.		32.	

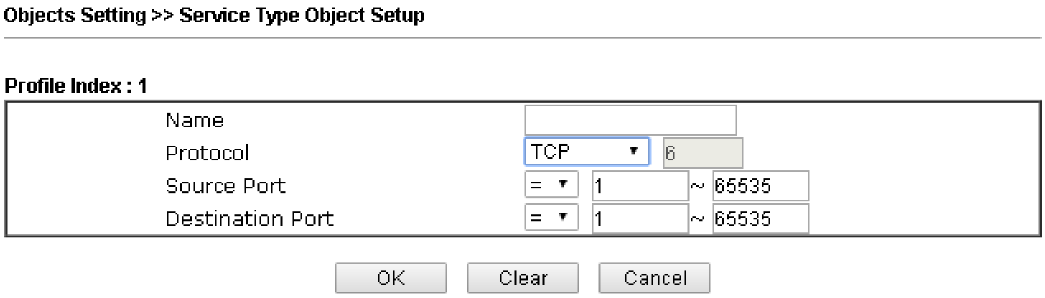
<< 1-32 | 33-64 | 65-96 >> Next >>

Available settings are explained as follows:

Item	Description
Set to Factory Default	Clear all profiles.
Index	Display the profile number that you can configure.
Name	Display the name of the object profile.

To set a new profile, please do the steps listed below:

1. Click the number (e.g., #1) under Index column for configuration in details.
2. The configuration page will be shown as follows:

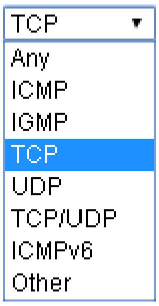


Objects Setting >> Service Type Object Setup

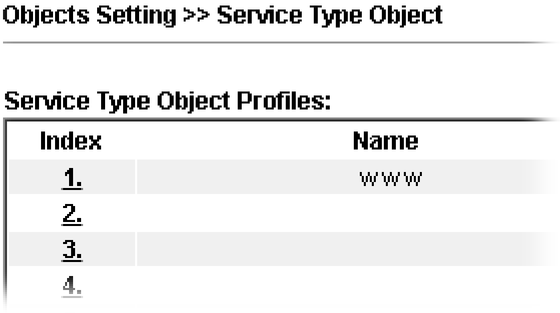
Profile Index : 1

Name	
Protocol	TCP 6
Source Port	= 1 ~ 65535
Destination Port	= 1 ~ 65535

Available settings are explained as follows:

Item	Description
Name	Type a name for this profile. Maximum 15 characters are allowed.
Protocol	Specify the protocol(s) which this profile will apply to.  TCP Any ICMP IGMP TCP UDP TCP/UDP ICMPv6 Other
Source/Destination Port	**Source Port** and the **Destination Port** columns are available for TCP/UDP protocol. It can be ignored for other protocols. The filter rule will filter out any port number. *(=)* – when the first and last value are the same, it indicates one port; when the first and last values are different, it indicates a range for the port and available for this profile. *(!=)* – when the first and last value are the same, it indicates all the ports except the port defined here; when the first and last values are different, it indicates that all the ports except the range defined here are available for this service type. *(>)* – the port number greater than this value is available. *(<)* – the port number less than this value is available for this profile.

3. After finishing all the settings, please click **OK** to save the configuration.

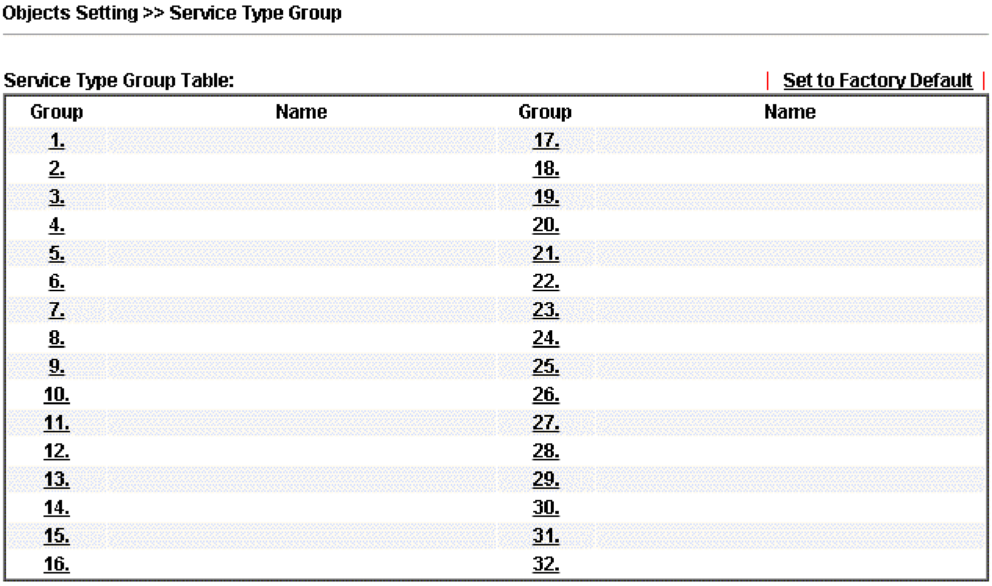

Objects Setting >> Service Type Object

Service Type Object Profiles:

Index	Name
1.	www
2.	
3.	
4.	

VII-1-6 Service Type Group

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


Objects Setting >> Service Type Group

Service Type Group Table:

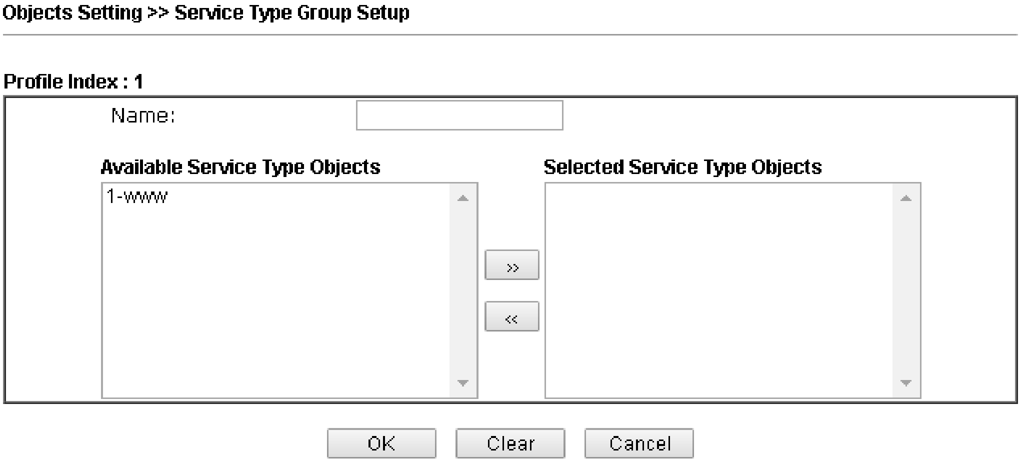
Group	Name	Group	Name
1.		17.	
2.		18.	
3.		19.	
4.		20.	
5.		21.	
6.		22.	
7.		23.	
8.		24.	
9.		25.	
10.		26.	
11.		27.	
12.		28.	
13.		29.	
14.		30.	
15.		31.	
16.		32.	

Available settings are explained as follows:

Item	Description
Set to Factory Default	Clear all profiles.
Index	Display the profile number that you can configure.
Name	Display the name of the group profile.

To set a new profile, please do the steps listed below:

1. Click the number (e.g., #1) under Group column for configuration in details.
2. The configuration page will be shown as follows:



Objects Setting >> Service Type Group Setup

Profile Index : 1

Name:

Available Service Type Objects

1-www

Selected Service Type Objects

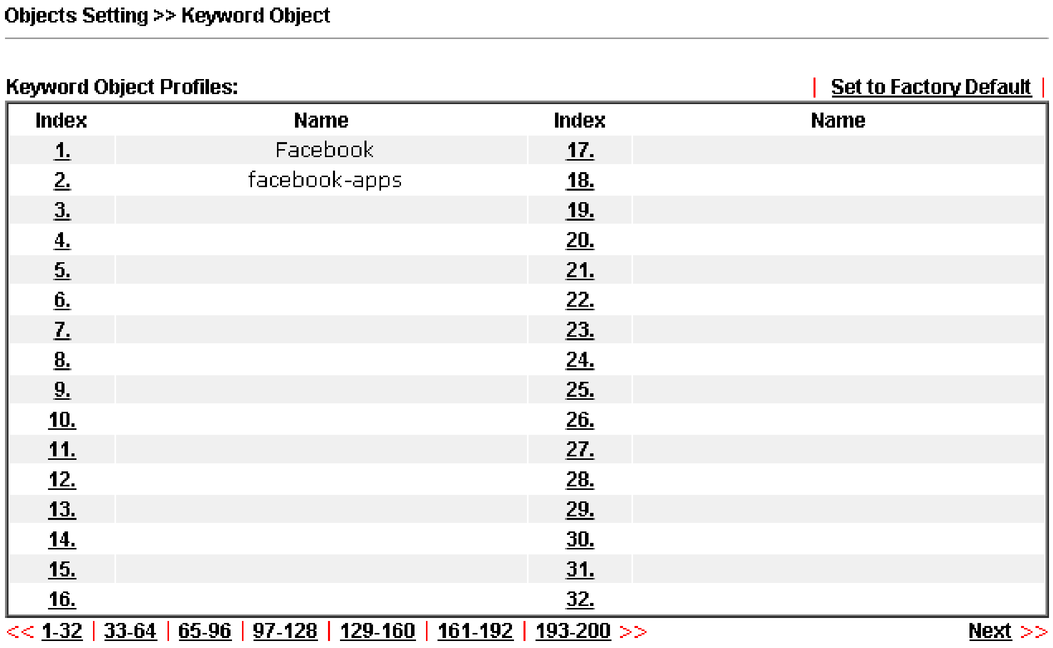
Available settings are explained as follows:

Item	Description
Name	Type a name for this profile. Maximum 15 characters are allowed.
Available Service Type Objects	All the available service objects that you have added on **Objects Setting>>Service Type Object** will be shown in this box.
Selected Service Type Objects	Click **>>** button to add the selected IP objects in this box.

3. After finishing all the settings, please click **OK** to save the configuration.

VII-1-7 Keyword Object

You can set 200 keyword object profiles for choosing as black /white list in **CSM >>URL Web Content Filter Profile.**



Objects Setting >> Keyword Object

Keyword Object Profiles: | Set to Factory Default |

Index	Name	Index	Name
1.	Facebook	17.	
2.	facebook-apps	18.	
3.		19.	
4.		20.	
5.		21.	
6.		22.	
7.		23.	
8.		24.	
9.		25.	
10.		26.	
11.		27.	
12.		28.	
13.		29.	
14.		30.	
15.		31.	
16.		32.	

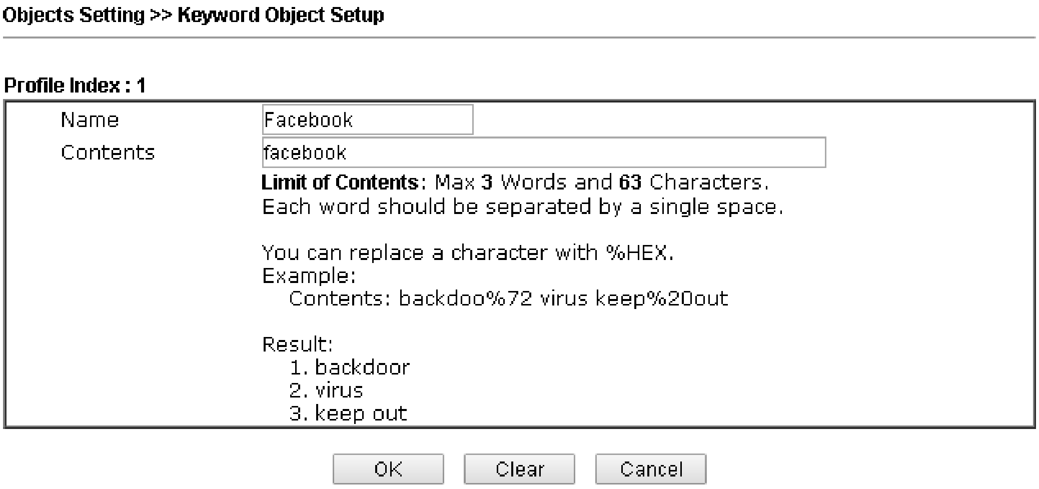
<< 1-32 | 33-64 | 65-96 | 97-128 | 129-160 | 161-192 | 193-200 >> Next >>

Available settings are explained as follows:

Item	Description
Set to Factory Default	Clear all profiles.
Index	Display the profile number that you can configure.
Name	Display the name of the object profile.

To set a new profile, please do the steps listed below:

1. Click the number (e.g., #1) under Index column for configuration in details.
2. The configuration page will be shown as follows:


Objects Setting >> Keyword Object Setup

Profile Index : 1

Name: Facebook

Contents: facebook

Limit of Contents: Max **3** Words and **63** Characters.
Each word should be separated by a single space.

You can replace a character with %HEX.
Example:
Contents: backdoo%72 virus keep%20out

Result:
1. backdoor
2. virus
3. keep out

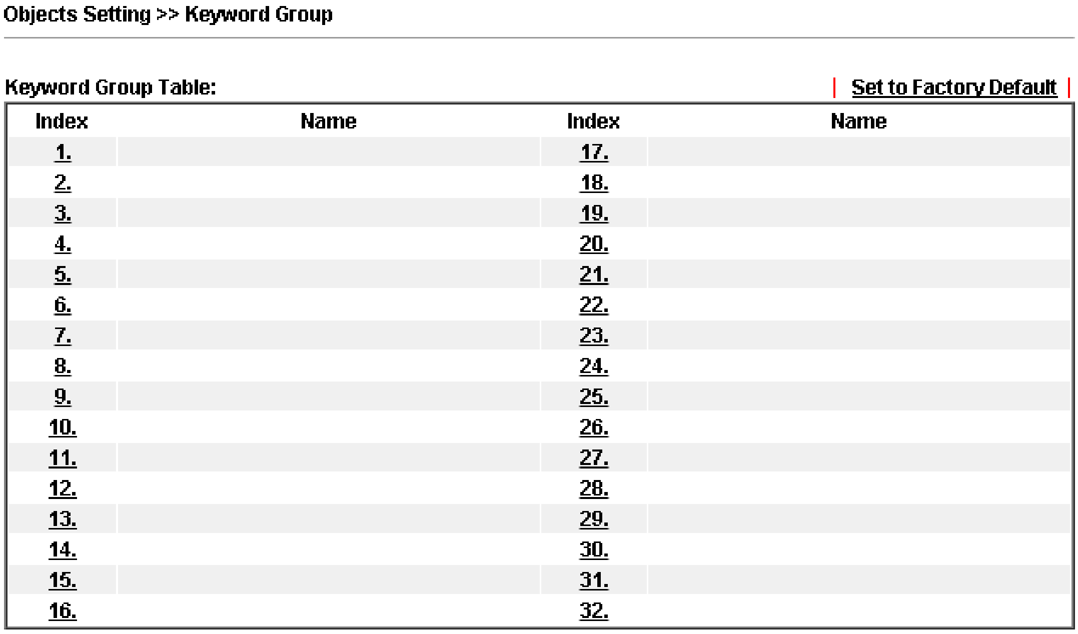
Available settings are explained as follows:

Item	Description
Name	Type a name for this profile, e.g., game. Maximum 15 characters are allowed.
Contents	Type the content for such profile. For example, type *gambling* 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.

3. After finishing all the settings, please click **OK** to save the configuration.

VII-1-8 Keyword Group

This page allows you to bind several keyword objects into one group. The keyword groups set here will be chosen as black /white list in **CSM >>URL /Web Content Filter Profile**.



Objects Setting >> Keyword Group

Keyword Group Table:

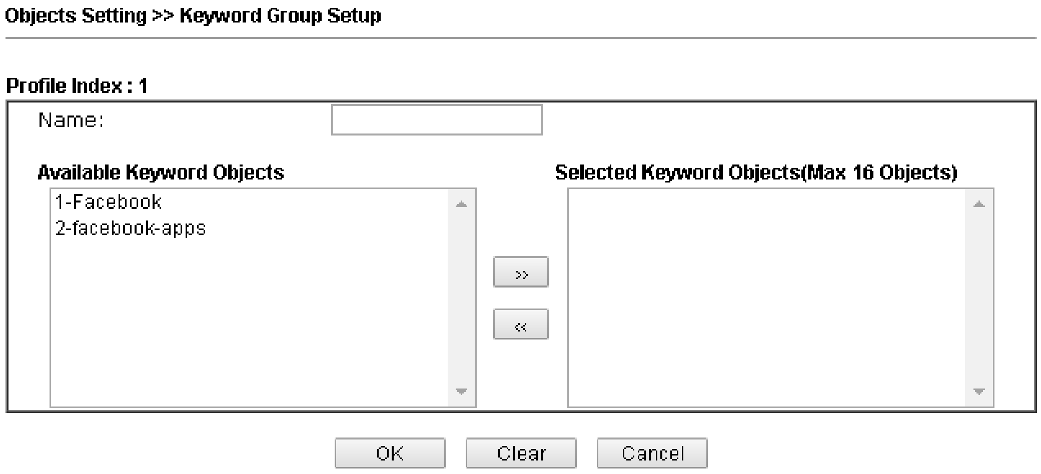
Index	Name	Index	Name
1.		17.	
2.		18.	
3.		19.	
4.		20.	
5.		21.	
6.		22.	
7.		23.	
8.		24.	
9.		25.	
10.		26.	
11.		27.	
12.		28.	
13.		29.	
14.		30.	
15.		31.	
16.		32.	

Available settings are explained as follows:

Item	Description
Set to Factory Default	Clear all profiles.
Index	Display the profile number that you can configure.
Name	Display the name of the group profile.

To set a new profile, please do the steps listed below:

1. Click the number (e.g., #1) under Index column for configuration in details.
2. The configuration page will be shown as follows:



Objects Setting >> Keyword Group Setup

Profile Index : 1

Name:

Available Keyword Objects

1-Facebook
2-facebook-apps

Selected Keyword Objects(Max 16 Objects)

Available settings are explained as follows:

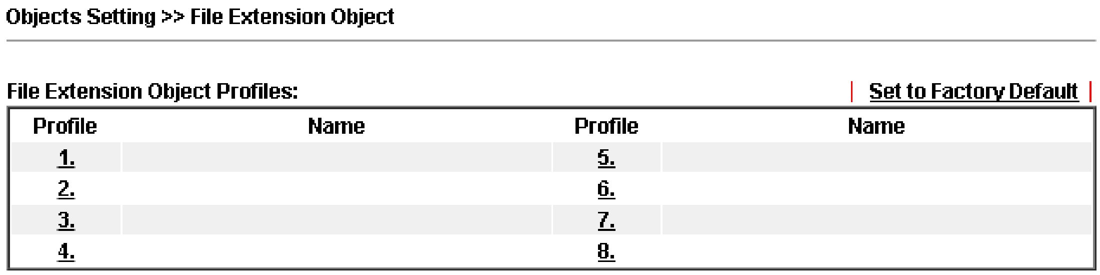
Item	Description

Name	Type a name for this group. Maximum 15 characters are allowed.
Available Keyword Objects	You can gather keyword objects from **Keyword Object** page within one keyword group. All the available Keyword objects that you have created will be shown in this box.
Selected Keyword Objects	Click >> button to add the selected Keyword objects in this box.

3. After finishing all the settings, please click **OK** to save the configuration.

VII-1-9 File Extension Object

This page allows you to set eight profiles which will be applied in **CSM>>URL Content Filter**. All the files with the extension names specified in these profiles will be processed according to the chosen action.



Objects Setting >> File Extension Object

File Extension Object Profiles: | Set to Factory Default |

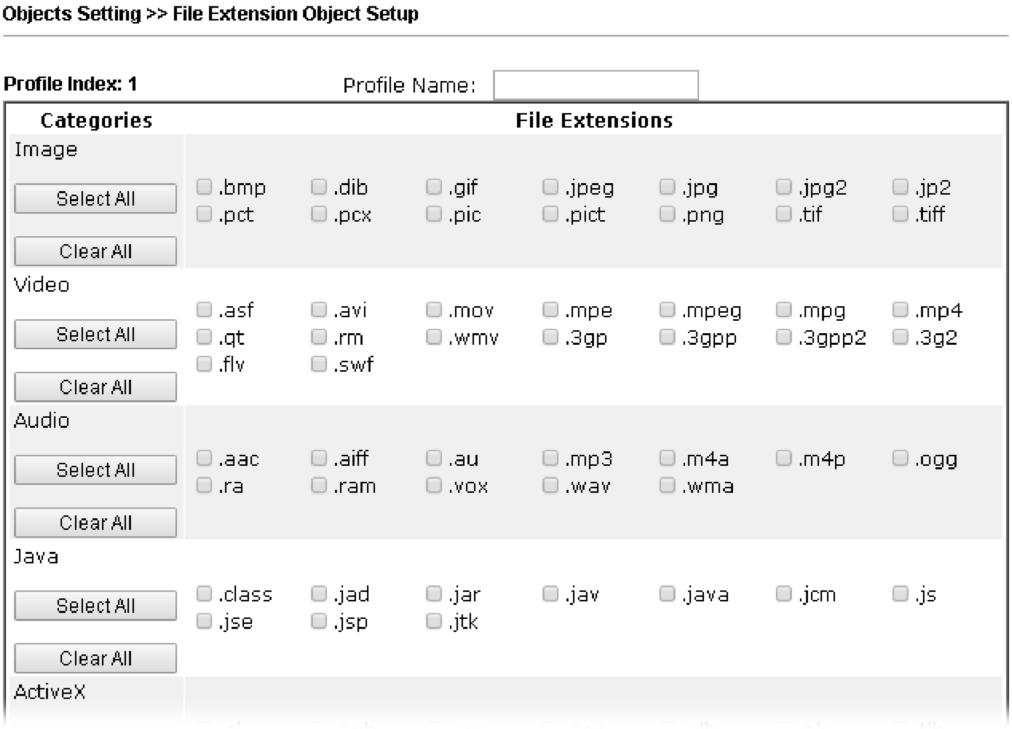
Profile	Name	Profile	Name
1.		5.	
2.		6.	
3.		7.	
4.		8.	

Available settings are explained as follows:

Item	Description
Set to Factory Default	Clear all profiles.
Index	Display the profile number that you can configure.
Name	Display the name of the object profile.

To set a new profile, please do the steps listed below:

1. Click the number (e.g., #1) under Profile column for configuration in details.
2. The configuration page will be shown as follows:



Objects Setting >> File Extension Object Setup

Profile Index: 1 Profile Name:

Categories	File Extensions						
Image Select All Clear All	□ .bmp □ .pct	□ .dib □ .pcx	□ .gif □ .pic	□ .jpeg □ .pict	□ .jpg □ .png	□ .jpg2 □ .tif	□ .jp2 □ .tiff
Video Select All Clear All	□ .asf □ .qt □ .flv	□ .avi □ .rm □ .swf	□ .mov □ .wmv	□ .mpe □ .3gp	□ .mpeg □ .3gpp	□ .mpg □ .3gpp2	□ .mp4 □ .3g2
Audio Select All Clear All	□ .aac □ .ra	□ .aiff □ .ram	□ .au □ .vox	□ .mp3 □ .wav	□ .m4a □ .wma	□ .m4p	□ .ogg
Java Select All Clear All	□ .class □ .jse	□ .jad □ .jsp	□ .jar □ .jtk	□ .jav	□ .java	□ .jcm	□ .js
ActiveX							

Available settings are explained as follows:

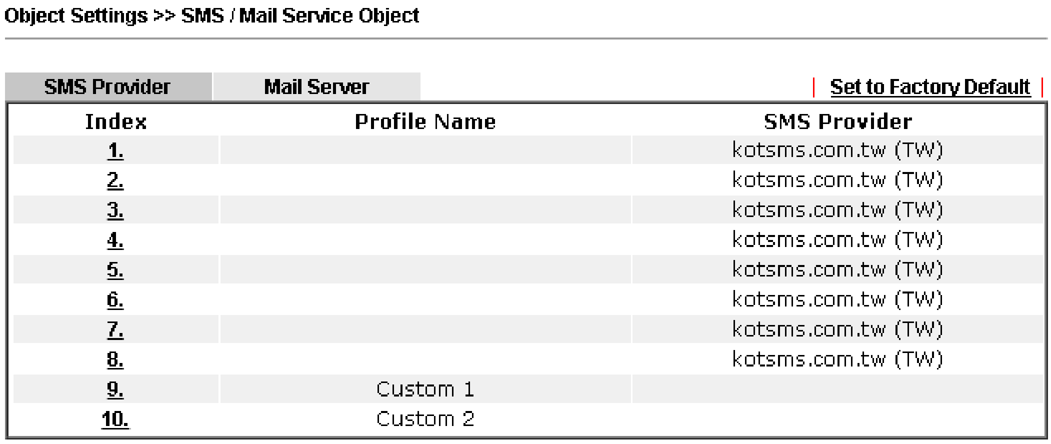
Item	Description
Profile Name	Type a name for this profile. The maximum length of the name you can set is 7 characters.

3. Type a name for such profile and check all the items of file extension that will be processed in the router. Finally, click **OK** to save this profile.

VII-1-10 SMS/Mail Service Object

SMS Service Object

This page allows you to set ten profiles which will be applied in **Application>>SMS/Mail Alert Service**.



Object Settings >> SMS / Mail Service Object

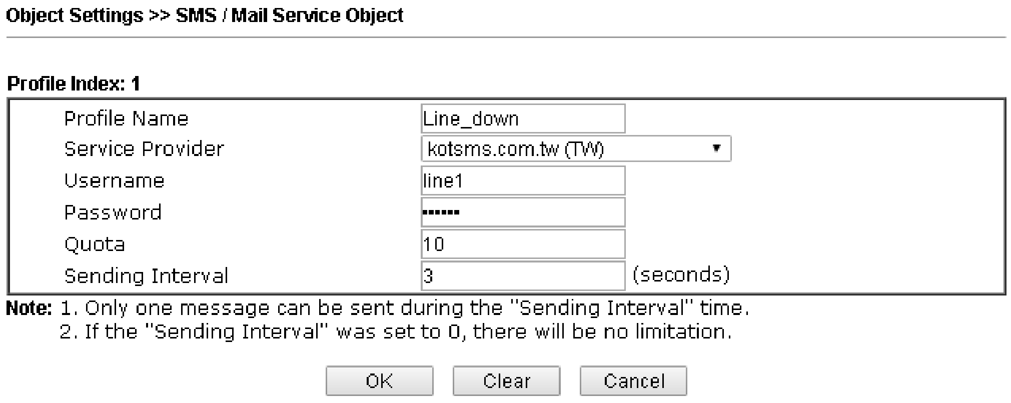
Index	Profile Name	SMS Provider
1.		kotsms.com.tw (TW)
2.		kotsms.com.tw (TW)
3.		kotsms.com.tw (TW)
4.		kotsms.com.tw (TW)
5.		kotsms.com.tw (TW)
6.		kotsms.com.tw (TW)
7.		kotsms.com.tw (TW)
8.		kotsms.com.tw (TW)
9.	Custom 1	
10.	Custom 2	

Each item is explained as follows:

Item	Description
Set to Factory Default	Clear all of the settings and return to factory default settings.
Index	Display the profile number that you can configure.
Profile	Display the name for such SMS profile.
SMS Provider	Display the service provider which offers SMS service.

To set a new profile, please do the steps listed below:

1. Click the **SMS Provider** tab, and click the number (e.g., #1) under Index column for configuration in details.
2. The configuration page will be shown as follows:



Object Settings >> SMS / Mail Service Object

Profile Index: 1

Profile Name	Line_down
Service Provider	kotsms.com.tw (TW) ▾
Username	line1
Password	••••••
Quota	10
Sending Interval	3 (seconds)

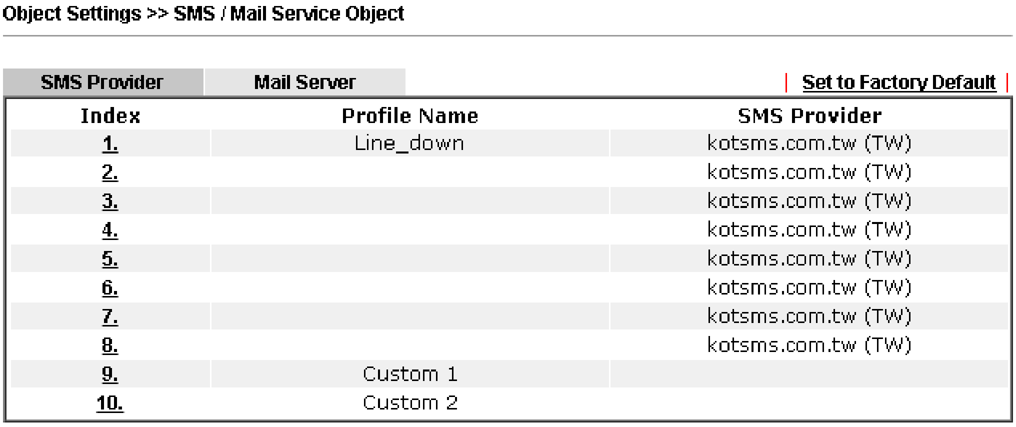
Note: 1. Only one message can be sent during the "Sending Interval" time.
2. If the "Sending Interval" was set to 0, there will be no limitation.

Available settings are explained as follows:

Item	Description

Profile Name	Type a name for such SMS profile. The maximum length of the name you can set is 31 characters.
Service Provider	Use the drop down list to specify the service provider which offers SMS service.
Username	Type a user name that the sender can use to register to selected SMS provider. The maximum length of the name you can set is 31 characters.
Password	Type a password that the sender can use to register to selected SMS provider. The maximum length of the password you can set is 31 characters.
Quota	Type the number of the credit that you purchase from the service provider chosen above. Note that one credit equals to one SMS text message on the standard route.
Sending Interval	To avoid quota being exhausted soon, type time interval for sending the SMS.

3. After finishing all the settings here, please click **OK** to save the configuration.

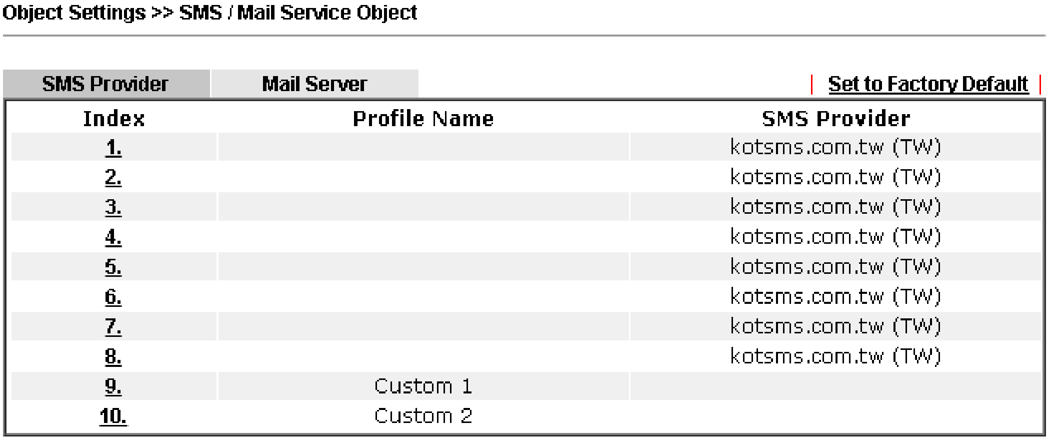


Object Settings >> SMS / Mail Service Object

Index	Profile Name	SMS Provider
1.	Line_down	kotsms.com.tw (TW)
2.		kotsms.com.tw (TW)
3.		kotsms.com.tw (TW)
4.		kotsms.com.tw (TW)
5.		kotsms.com.tw (TW)
6.		kotsms.com.tw (TW)
7.		kotsms.com.tw (TW)
8.		kotsms.com.tw (TW)
9.	Custom 1	
10.	Custom 2	

Customized SMS Service

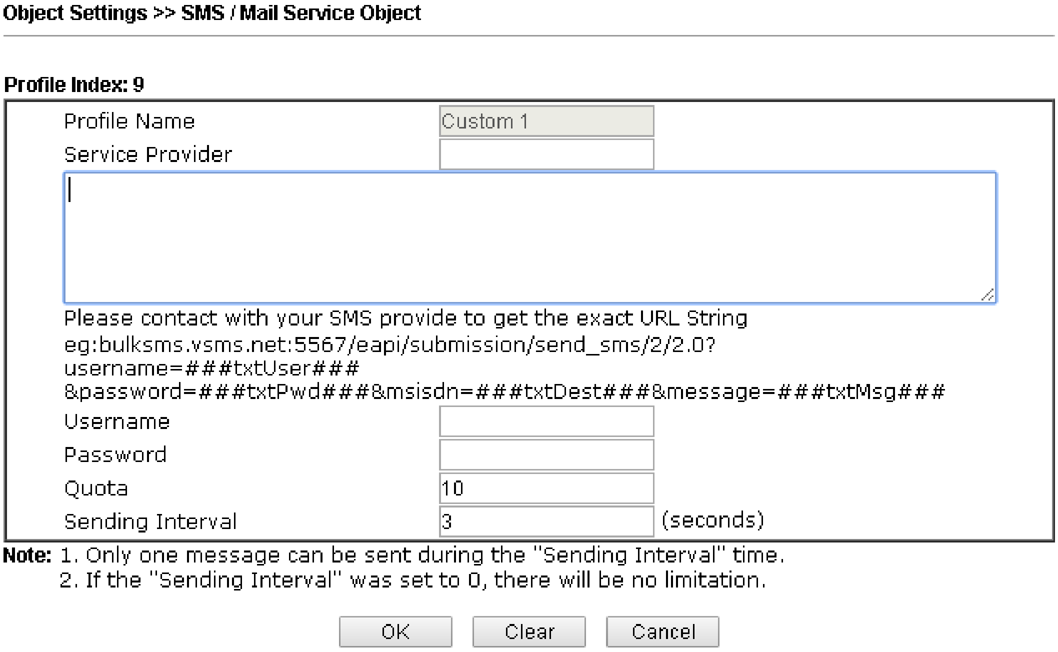
Vigor router offers several SMS service provider to offer the SMS service. However, if your service provider cannot be found from the service provider list, simply use Index 9 and Index 10 to make customized SMS service. The profile name for Index 9 and Index 10 are fixed.



Object Settings >> SMS / Mail Service Object

Index	Profile Name	SMS Provider
1.		kotsms.com.tw (TW)
2.		kotsms.com.tw (TW)
3.		kotsms.com.tw (TW)
4.		kotsms.com.tw (TW)
5.		kotsms.com.tw (TW)
6.		kotsms.com.tw (TW)
7.		kotsms.com.tw (TW)
8.		kotsms.com.tw (TW)
9.	Custom 1	
10.	Custom 2	

You can click the number (e.g., #9) under Index column for configuration in details.



Object Settings >> SMS / Mail Service Object

Profile Index: 9

Profile Name	Custom 1
Service Provider	

Please contact with your SMS provide to get the exact URL String
eg:bulksms.vsms.net:5567/eapi/submission/send_sms/2/2.0?username=###txtUser###&password=###txtPwd###&msisdn=###txtDest###&message=###txtMsg###

Username	
Password	
Quota	10
Sending Interval	3 (seconds)

Note: 1. Only one message can be sent during the "Sending Interval" time.
2. If the "Sending Interval" was set to 0, there will be no limitation.

Available settings are explained as follows:

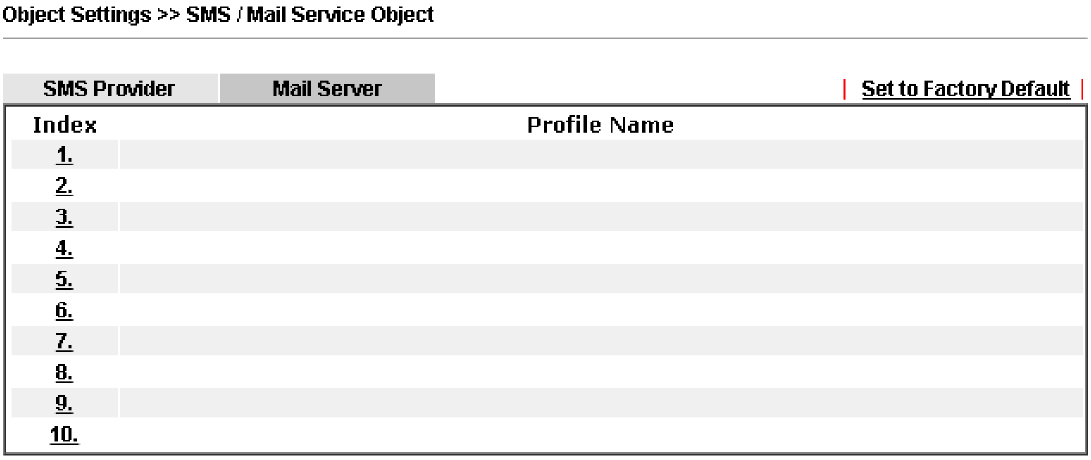
Item	Description
Profile Name	Display the name of this profile. It cannot be modified.
Service Provider	Type the website of the service provider. Type the URL string in the box under the filed of Service Provider. You have to contact your SMS provider to obtain the exact URL string.
Username	Type a user name that the sender can use to register to selected SMS provider. The maximum length of the name you can set is 31 characters.

Password	Type a password that the sender can use to register to selected SMS provider. The maximum length of the password you can set is 31 characters.
Quota	Type the total number of the messages that the router will send out.
Sending Interval	Type the shortest time interval for the system to send SMS.

After finishing all the settings here, please click **OK** to save the configuration.

Mail Service Object

This page allows you to set ten profiles which will be applied in **Application>>SMS/Mail Alert Service**.



Object Settings >> SMS / Mail Service Object

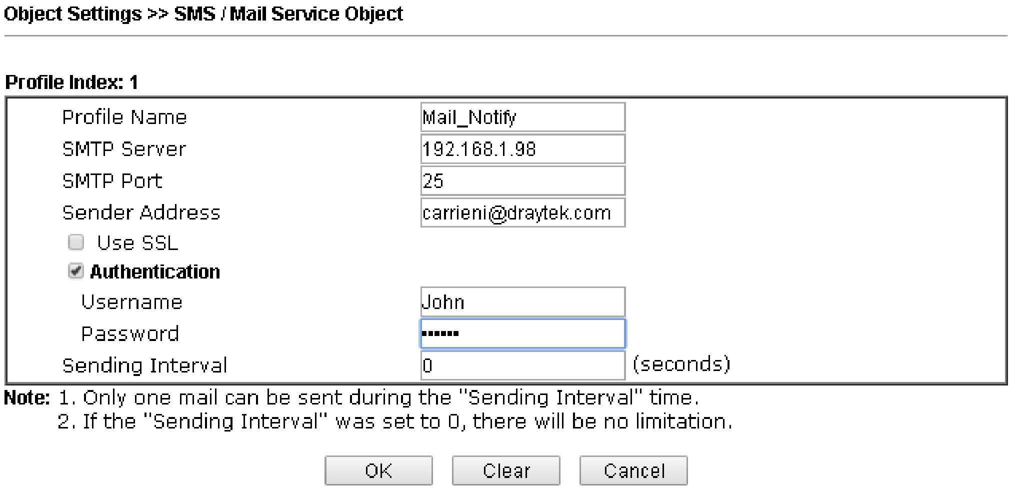
Index	Profile Name
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	

Each item is explained as follows:

Item	Description
Set to Factory Default	Clear all of the settings and return to factory default settings.
Index	Display the profile number that you can configure.
Profile	Display the name for such mail server profile.

To set a new profile, please do the steps listed below:

1. Click the **Mail Server** tab, and click the number (e.g., #1) under Index column for configuration in details.
2. The configuration page will be shown as follows:



Object Settings >> SMS / Mail Service Object

Profile Index: 1

Profile Name	Mail_Notify
SMTP Server	192.168.1.98
SMTP Port	25
Sender Address	carrieni@draytek.com
□ Use SSL	
☑ Authentication	
Username	John
Password	••••••
Sending Interval	0 (seconds)

Note: 1. Only one mail can be sent during the "Sending Interval" time.
2. If the "Sending Interval" was set to 0, there will be no limitation.

Available settings are explained as follows:

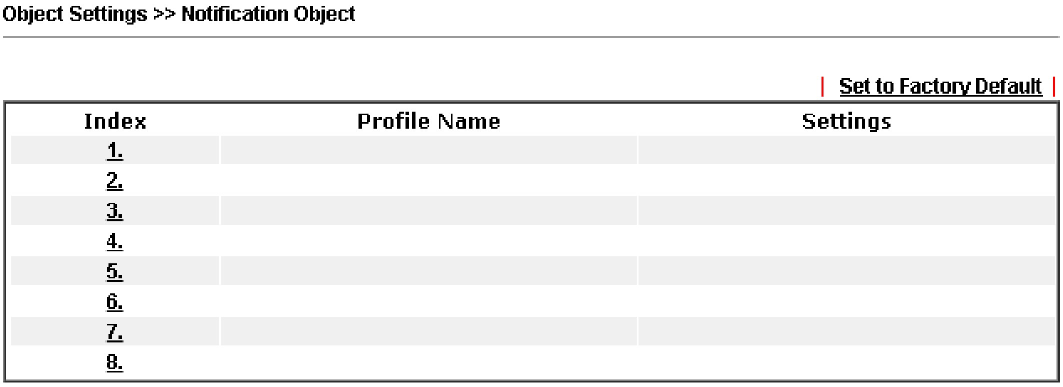
Item	Description
Profile Name	Type a name for such mail service profile. The maximum length of the name you can set is 31 characters.
SMTP Server	Type the IP address of the mail server.
SMTP Port	Type the port number for SMTP server.
Sender Address	Type the e-mail address of the sender.
Use SSL	Check this box to use port 465 for SMTP server for some e-mail server uses https as the transmission method.
Authentication	The mail server must be authenticated with the correct username and password to have the right of sending message out. Check the box to enable the function. **Username** – Type a name for authentication. The maximum length of the name you can set is 31 characters. **Password** – Type a password for authentication. The maximum length of the password you can set is 31 characters.
Sending Interval	Define the interval for the system to send the SMS out.

3. After finishing all the settings here, please click **OK** to save the configuration.

VII-1-11 Notification Object

This page allows you to set ten profiles which will be applied in **Application>>SMS/Mail Alert Service**.

You can set an object with different monitoring situation.



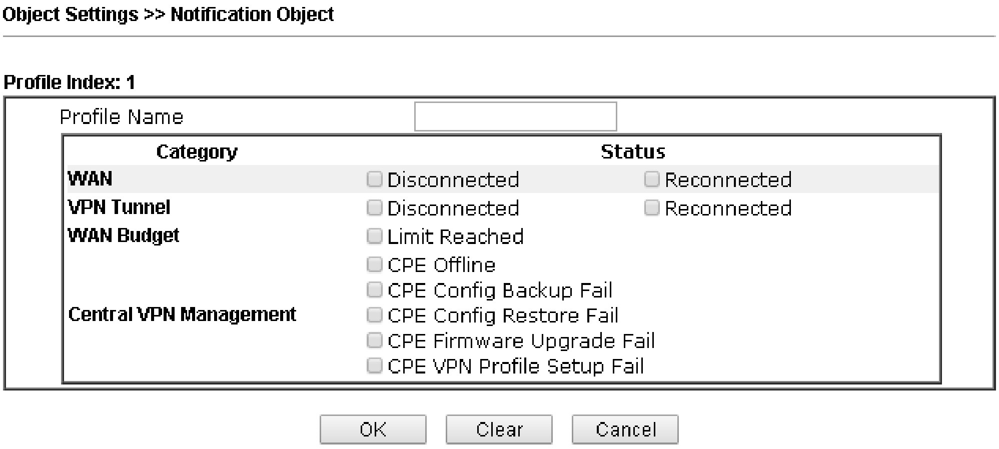
Object Settings >> Notification Object

| Set to Factory Default |

Index	Profile Name	Settings
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

To set a new profile, please do the steps listed below:

1. Open **Object Setting>>Notification Object**, and click the number (e.g., #1) under Index column for configuration in details.
2. The configuration page will be shown as follows:



Object Settings >> Notification Object

Profile Index: 1

Profile Name

Category	Status	
WAN	□ Disconnected	□ Reconnected
VPN Tunnel	□ Disconnected	□ Reconnected
WAN Budget	□ Limit Reached	
Central VPN Management	□ CPE Offline □ CPE Config Backup Fail □ CPE Config Restore Fail □ CPE Firmware Upgrade Fail □ CPE VPN Profile Setup Fail	

Available settings are explained as follows:

Item	Description
Profile Name	Type a name for such notification profile. The maximum length of the name you can set is 15 characters.
Category	Display the types that will be monitored.
Status	Display the status for the category. You can check the box you want to be monitored.

3. After finishing all the settings here, please click **OK** to save the configuration.

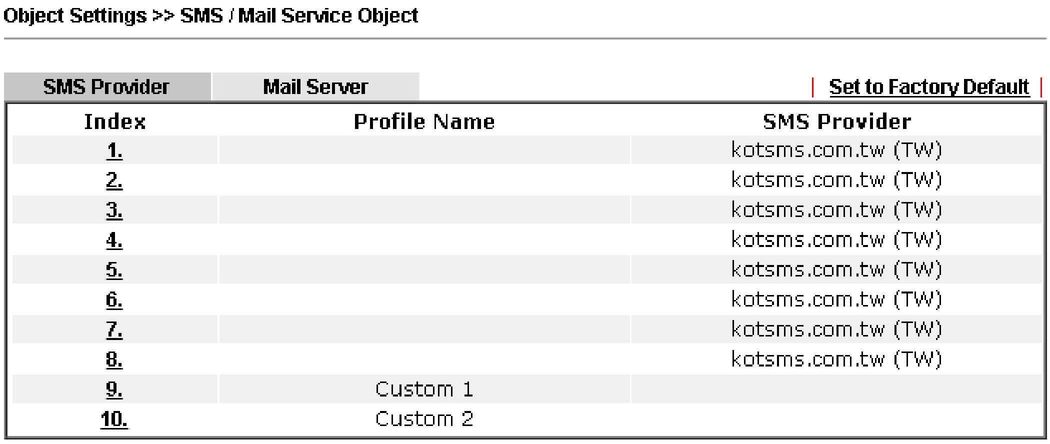
Application Notes

A-1 How to Send a Notification to Specified Phone Number via SMS Service in WAN Disconnection

Follow the steps listed below:

1. Log into the web user interface of Vigor router.

2. Configure relational objects first. Open **Object Settings>>SMS/Mail Server Object** to get the following page.

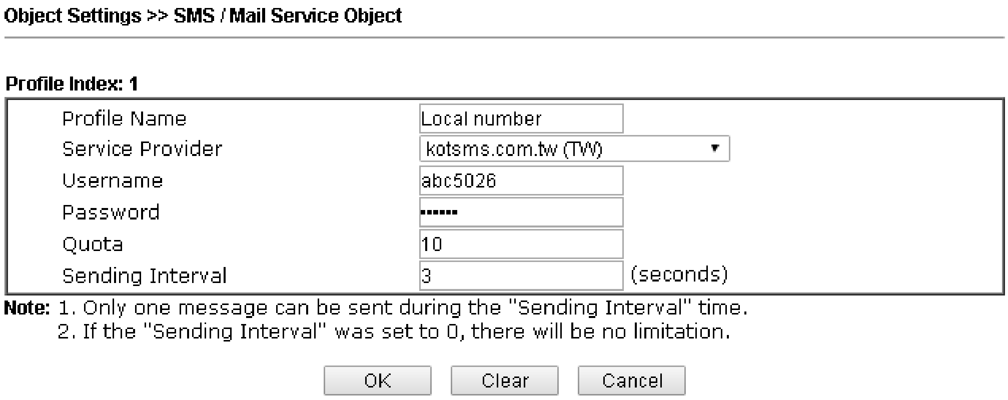


Object Settings >> SMS / Mail Service Object

Index	Profile Name	SMS Provider
1.		kotsms.com.tw (TW)
2.		kotsms.com.tw (TW)
3.		kotsms.com.tw (TW)
4.		kotsms.com.tw (TW)
5.		kotsms.com.tw (TW)
6.		kotsms.com.tw (TW)
7.		kotsms.com.tw (TW)
8.		kotsms.com.tw (TW)
9.	Custom 1	
10.	Custom 2	

Index 1 to Index 8 allows you to choose the built-in SMS service provider. If the SMS service provider is not on the list, you can configure Index 9 and Index 10 to add the new service provider to Vigor router.

3. Choose any index number (e.g., Index 1 in this case) to configure the SMS Provider setting. In the following page, type the username and password and set the quota that the router can send the message out.



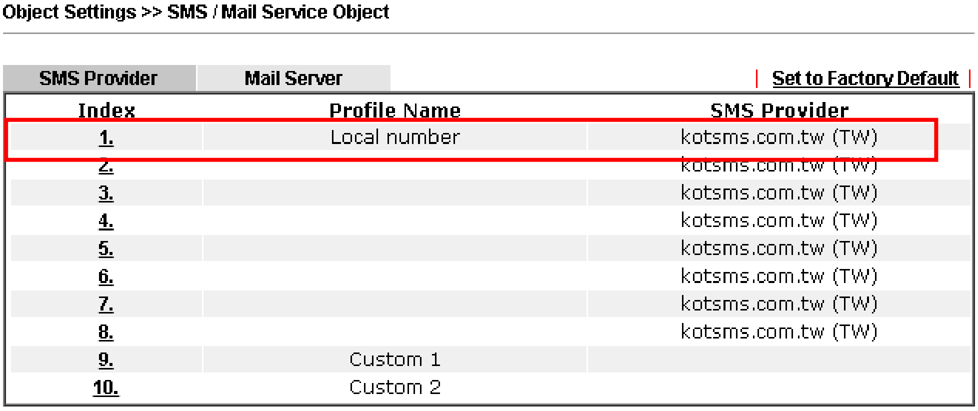
Object Settings >> SMS / Mail Service Object

Profile Index: 1

Profile Name	Local number
Service Provider	kotsms.com.tw (TW)
Username	abc5026
Password	••••••
Quota	10
Sending Interval	3 (seconds)

Note: 1. Only one message can be sent during the "Sending Interval" time.
2. If the "Sending Interval" was set to 0, there will be no limitation.

4. After finished the settings, click **OK** to return to previous page. Now you have finished the configuration of the SMS Provider profile setting.

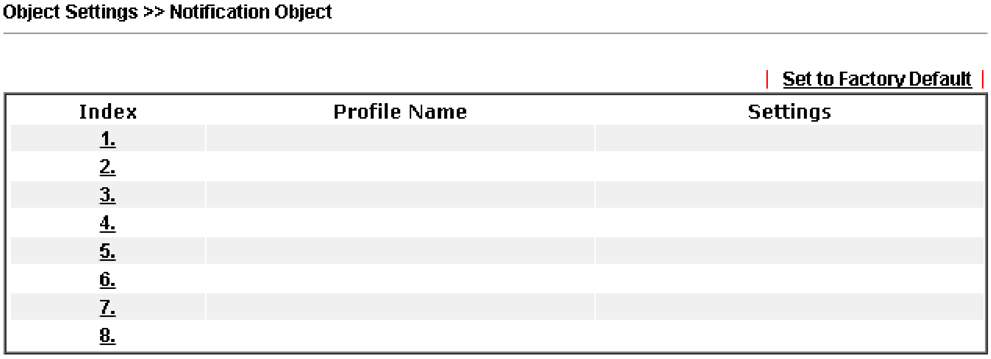


Object Settings >> SMS / Mail Service Object

SMS Provider | Mail Server | Set to Factory Default |

Index	Profile Name	SMS Provider
1.	Local number	kotsms.com.tw (TW)
2.		kotsms.com.tw (TW)
3.		kotsms.com.tw (TW)
4.		kotsms.com.tw (TW)
5.		kotsms.com.tw (TW)
6.		kotsms.com.tw (TW)
7.		kotsms.com.tw (TW)
8.		kotsms.com.tw (TW)
9.	Custom 1	
10.	Custom 2	

5. Open **Object Settings>>Notification Object** to configure the event conditions of the notification.

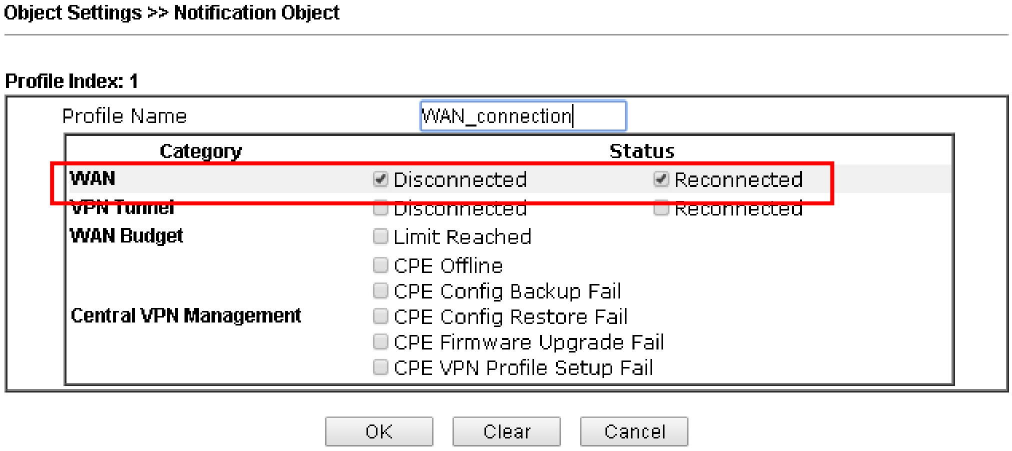


Object Settings >> Notification Object

| Set to Factory Default |

Index	Profile Name	Settings
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

6. Choose any index number (e.g., Index 1 in this case) to configure conditions for sending the SMS. In the following page, type the name of the profile and check the Disconnected and Reconnected boxes for WAN to work in concert with the topic of this paper.



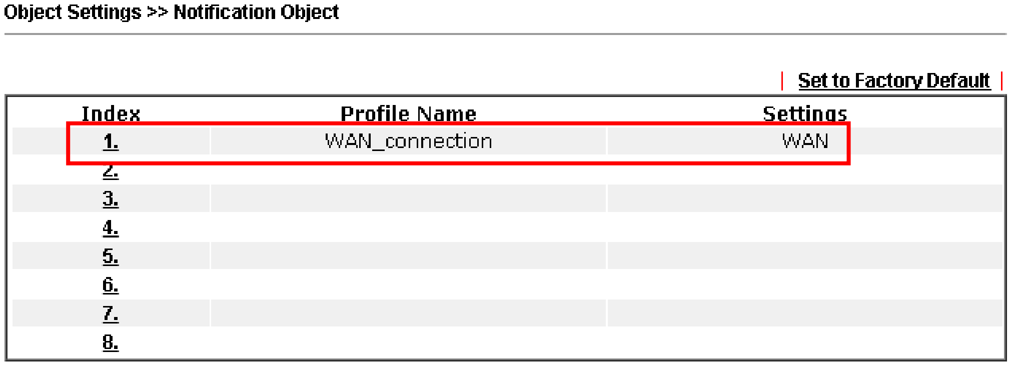
Object Settings >> Notification Object

Profile Index: 1

Profile Name: WAN_connection

Category	Status	
WAN	☑ Disconnected	☑ Reconnected
VPN Tunnel	□ Disconnected	□ Reconnected
WAN Budget	□ Limit Reached	
Central VPN Management	□ CPE Offline □ CPE Config Backup Fail □ CPE Config Restore Fail □ CPE Firmware Upgrade Fail □ CPE VPN Profile Setup Fail	

7. After finished the settings, click **OK** to return to previous page. You have finished the configuration of the notification object profile setting.

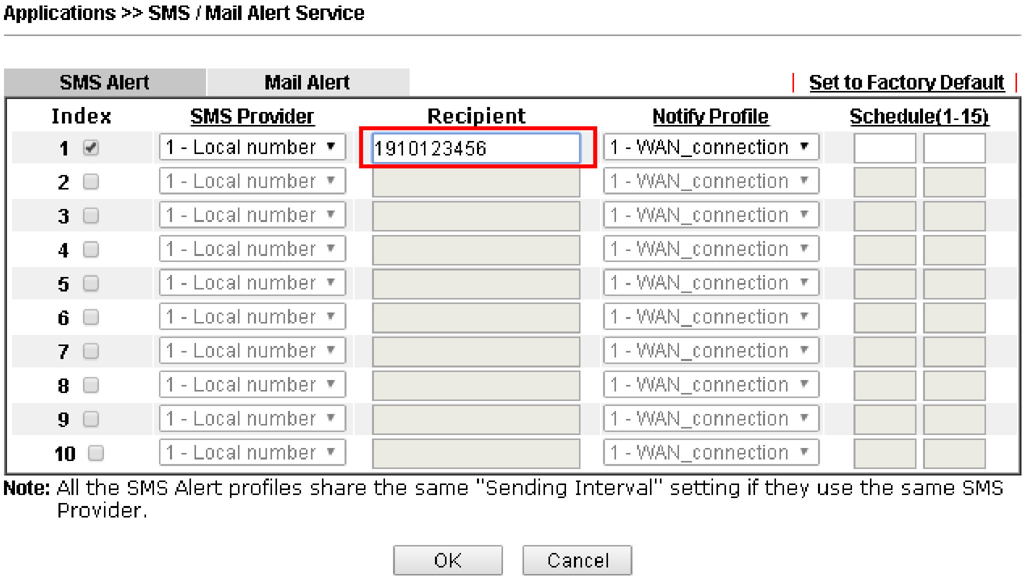


Object Settings >> Notification Object

| Set to Factory Default |

Index	Profile Name	Settings
1.	WAN_connection	WAN
2.		
3.		
4.		
5.		
6.		
7.		
8.		

8. Now, open **Application >> SMS / Mail Alert Service**. Use the drop down list to choose SMS Provider and the Notify Profile (specify the time of sending SMS). Then, type the phone number in the field of Recipient (the one who will receive the SMS).



Applications >> SMS / Mail Alert Service

SMS Alert | Mail Alert

| Set to Factory Default |

Index		SMS Provider	Recipient	Notify Profile	Schedule(1-15)	
1	☑	1 - Local number ▾	1910123456	1 - WAN_connection ▾		
2	□	1 - Local number ▾		1 - WAN_connection ▾		
3	□	1 - Local number ▾		1 - WAN_connection ▾		
4	□	1 - Local number ▾		1 - WAN_connection ▾		
5	□	1 - Local number ▾		1 - WAN_connection ▾		
6	□	1 - Local number ▾		1 - WAN_connection ▾		
7	□	1 - Local number ▾		1 - WAN_connection ▾		
8	□	1 - Local number ▾		1 - WAN_connection ▾		
9	□	1 - Local number ▾		1 - WAN_connection ▾		
10	□	1 - Local number ▾		1 - WAN_connection ▾		

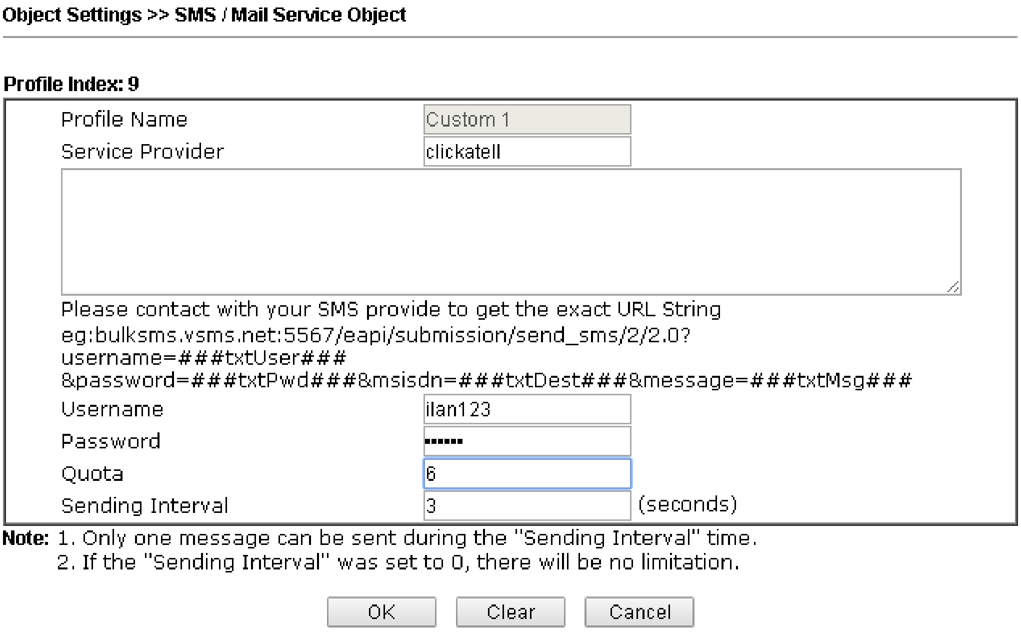
Note: All the SMS Alert profiles share the same "Sending Interval" setting if they use the same SMS Provider.

OK | Cancel

9. Click **OK** to save the settings. Later, if one of the WAN connections fails in your router, the system will send out SMS to the phone number specified. If the router has only one WAN interface, the system will send out SMS to the phone number while reconnecting the WAN interface successfully.

Remark: How the customize the SMS Provider

Choose one of the Index numbers (9 or 10) allowing you to customize the SMS Provider. In the web page, type the URL string of the SMS provider and type the username and password. After clicking OK, the new added SMS provider will be added and will be available for you to specify for sending SMS out.



Object Settings >> SMS / Mail Service Object

Profile Index: 9

Profile Name	Custom 1
Service Provider	clickatell

Please contact with your SMS provide to get the exact URL String
eg:bulksms.vsms.net:5567/eapi/submission/send_sms/2/2.0?
username=###txtUser###
&password=###txtPwd###&msisdn=###txtDest###&message=###txtMsg###

Username	ilan123
Password	••••••
Quota	6
Sending Interval	3 (seconds)

Note: 1. Only one message can be sent during the "Sending Interval" time.
2. If the "Sending Interval" was set to 0, there will be no limitation.

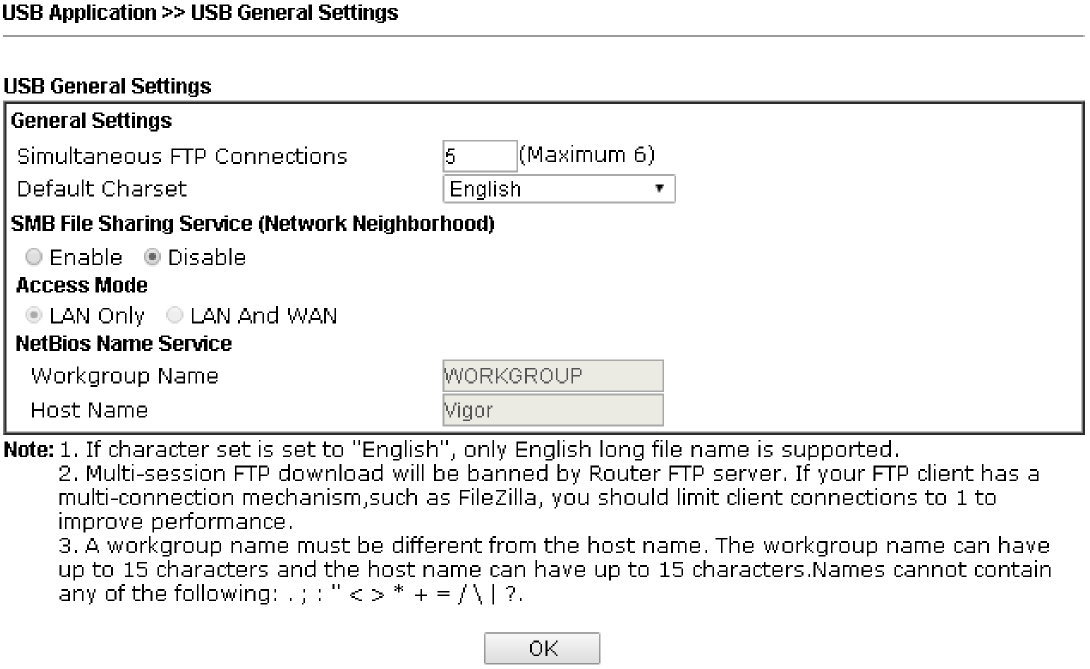
VII-2 USB Application

USB device connected on Vigor router can be regarded as a server or WAN interface. By way of Vigor router, clients on LAN can access, write and read data stored in USB storage disk with different applications. After setting the configuration in **USB Application**, you can type the IP address of the Vigor router and username/password created in **USB Application>>USB User Management** on the client software. Then, the client can use the FTP site (USB storage disk) or share the SMB service through Vigor router.

Info	USB ports on Vigor router are allowed to connect to USB modem. Models of the modems supported by Vigor router can be seen from **USB Application>>Modem Support List**. For network connection via USB modem, refer to **WAN>>Internet Access** and **WAN>>General Setup** for detailed information.

VII-2-1 USB General Settings

This page will determine the number of concurrent FTP connection, default charset for FTP server and enable SMB service. At present, the Vigor router can support USB storage disk with formats of FAT16 and FAT32 only. Therefore, before connecting the USB storage disk into the Vigor router, please make sure the memory format for the USB storage disk is FAT16 or FAT32. It is recommended for you to use FAT32 for viewing the filename completely (FAT16 cannot support long filename).



USB Application >> USB General Settings

USB General Settings

General Settings

Simultaneous FTP Connections	5 (Maximum 6)
Default Charset	English ▼

SMB File Sharing Service (Network Neighborhood)

○ Enable ● Disable

Access Mode

● LAN Only ○ LAN And WAN

NetBios Name Service

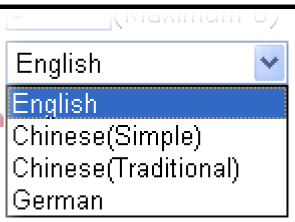
Workgroup Name	WORKGROUP
Host Name	Vigor

Note: 1. If character set is set to "English", only English long file name is supported.
2. Multi-session FTP download will be banned by Router FTP server. If your FTP client has a multi-connection mechanism,such as FileZilla, you should limit client connections to 1 to improve performance.
3. A workgroup name must be different from the host name. The workgroup name can have up to 15 characters and the host name can have up to 15 characters.Names cannot contain any of the following: . ; : " < > * + = / \ | ?.

OK

Available settings are explained as follows:

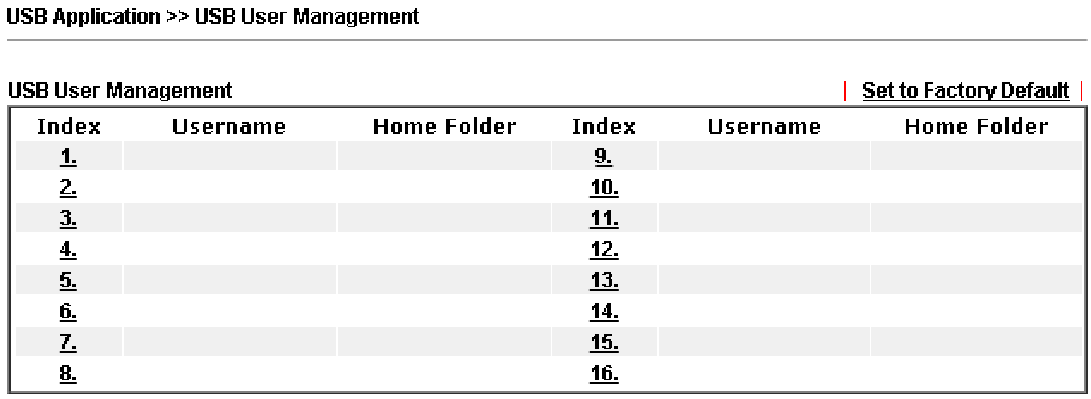
Item	Description
General Settings	**Simultaneous FTP Connections -** This field is used to specify the quantity of the FTP sessions. The router allows up to 6 FTP sessions connecting to USB storage disk at one time. **Default Charset -** At present, Vigor router supports four types of character sets. Default Charset is for English based file name.

	 English English Chinese(Simple) Chinese(Traditional) German
SMB File Sharing Service	Click **Enable** to invoke SMB file sharing service via the router.
Access Mode	**LAN Only** – Users coming from internet cannot connect to the SMB server of the router. **LAN And WAN** - Both LAN and WAN users can access SMB server of the router.
NetBios Name Service	For the NetBios service of USB storage disk, you have to specify a workgroup name and a host name. A workgroup name must not be the same as the host name. The workgroup name can have as many as 15 characters and the host name can have as many as 23 characters. Both them cannot contain any of the following--- ; : " < > * + = \ | ?. **Workgroup Name -** Type a name for the workgroup. **Host Name -** Type the host name for the router.

After finishing all the settings here, please click **OK** to save the configuration.

VII-2-2 USB User Management

This page allows you to set profiles for FTP/SMB users. Any user who wants to access into the USB storage disk must type the same username and password configured in this page. Before adding or modifying settings in this page, please insert a USB storage disk first. Otherwise, an error message will appear to warn you.

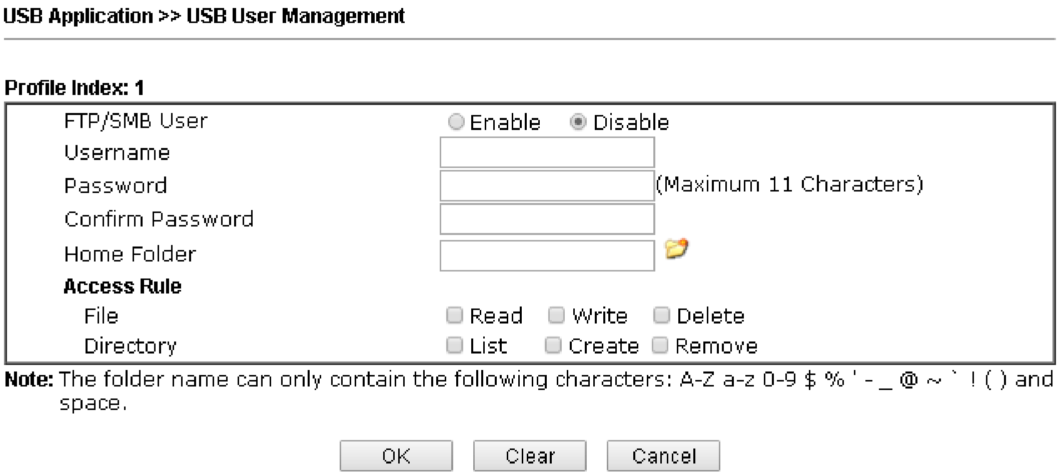


USB Application >> USB User Management

USB User Management | Set to Factory Default |

Index	Username	Home Folder	Index	Username	Home Folder
1.			9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Click index number to access into configuration page.



USB Application >> USB User Management

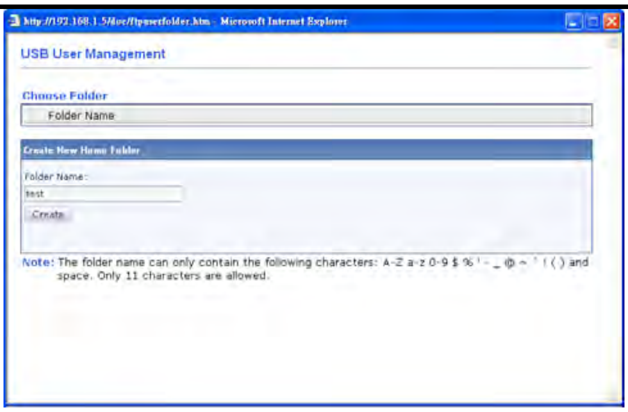
Profile Index: 1

FTP/SMB User	○ Enable ● Disable
Username	
Password	(Maximum 11 Characters)
Confirm Password	
Home Folder	📂
Access Rule	
File	□ Read □ Write □ Delete
Directory	□ List □ Create □ Remove

Note: The folder name can only contain the following characters: A-Z a-z 0-9 $ % ' - _ @ ~ ` ! ( ) and space.

Available settings are explained as follows:

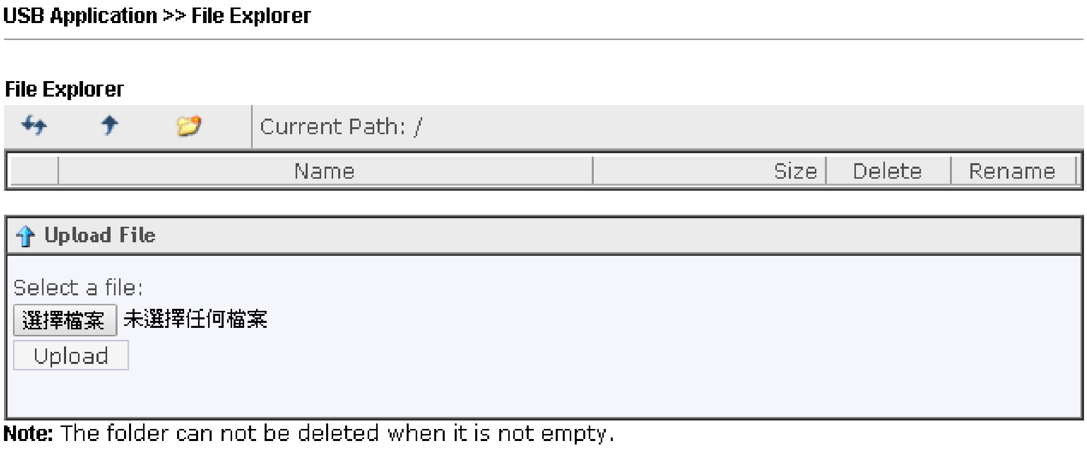
Item	Description
FTP/SMB User	**Enable** – Click this button to activate this profile (account) for FTP service or SMB file sharing service. Later, the user can use the username specified in this page to login into FTP server. **Disable** – Click this button to disable such profile.
Username	Type the username for FTP/SMB users for accessing into FTP server (USB storage disk). Be aware that users cannot access into USB storage disk in anonymity. Later, you can open FTP client software and type the username specified here for accessing into USB storage disk. The length of the name is limited to 11 characters. **Note:** "Admin" could not be typed here as username, for the word is specified for accessing into web pages of Vigor router only. Also, it is reserved for FTP firmware upgrade usage. **Note:** FTP Passive mode is not supported by Vigor Router. Please disable the mode on the FTP client.
Password	Type the password for FTP/SMB users for accessing FTP server. Later, you can open FTP client software and type the password specified here for accessing into USB storage disk. The length of the password is limited to 11 characters.
Confirm Password	Type the password again to make confirmation.
Home Folder	It determines the folder for the client to access into. The user can enter a directory name in this field. Then, after clicking **OK**, the router will create the specific/new folder in the USB storage disk. In addition, if the user types "/" here, he/she can access into all of the disk folders and files in USB storage disk. **Note:** When write protect status for the USB storage disk is **ON**, you cannot type any new folder name in this field. Only "/" can be used in such case. You can click 📂 to open the following dialog to add any new folder which can be specified as the Home Folder.

	 http://192.168.1.5/doc/ftpuserfolder.htm - Microsoft Internet Explorer USB User Management Choose Folder Folder Name Create New Home Folder Folder Name: test Create Note: The folder name can only contain the following characters: A-Z a-z 0-9 $ % ' - _ @ ~ ` ! ( ) and space. Only 11 characters are allowed.
Access Rule	It determines the authority for such profile. Any user, who uses such profile for accessing into USB storage disk, must follow the rule specified here. **File** – Check the items (Read, Write and Delete) for such profile. **Directory** –Check the items (List, Create and Remove) for such profile.

Before you click **OK**, you have to insert a USB storage disk into the USB interface of the Vigor router. Otherwise, you cannot save the configuration.

VII-2-3 File Explorer

File Explorer offers an easy way for users to view and manage the content of USB storage disk connected on Vigor router.



USB Application >> File Explorer

File Explorer

Current Path: /

	Name	Size	Delete	Rename

Upload File

Select a file:

選擇檔案 未選擇任何檔案

Upload

Note: The folder can not be deleted when it is not empty.

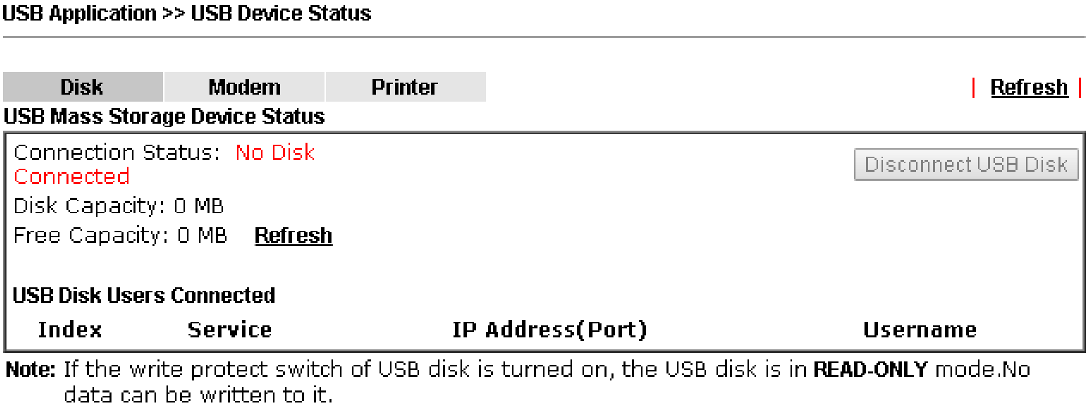
Available settings are explained as follows:

Item	Description
Refresh	Click this icon to refresh files list.
Back	Click this icon to return to the upper directory.
Create	Click this icon to add a new folder.
Current Path	Display current folder.
Upload	Click this button to upload the selected file to the USB

	storage disk. The uploaded file in the USB diskette can be shared for other user through FTP.

VII-2-4 USB Device Status

This page is to monitor the status for USB device connecting to Vigor router. In addition, the status of the USB modem or USB printer or USB sensor connecting to Vigor router can be checked from such page. If you want to remove the storage disk from USB port in router, please click **Disconnect USB Disk** first. And then, remove the USB device later.



USB Mass Storage Device Status

Connection Status: No Disk Connected
Disk Capacity: 0 MB
Free Capacity: 0 MB Refresh

USB Disk Users Connected

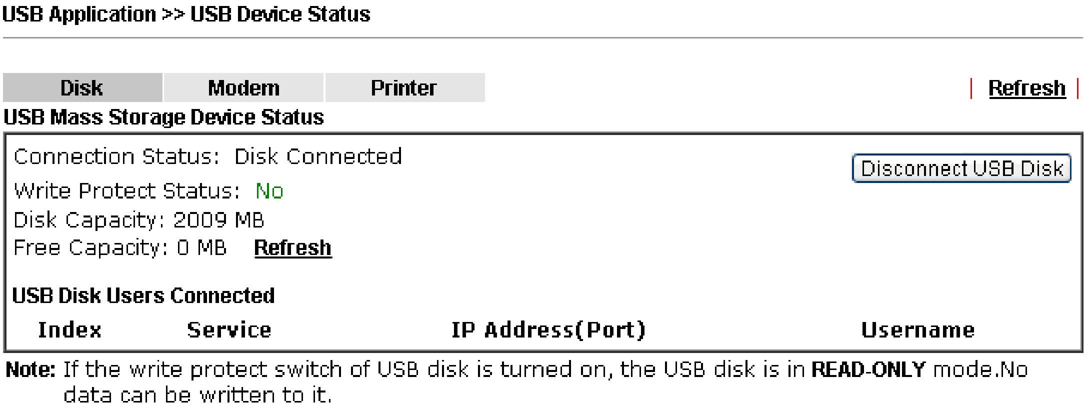
Index	Service	IP Address(Port)	Username

Note: If the write protect switch of USB disk is turned on, the USB disk is in **READ-ONLY** mode.No data can be written to it.

Available settings are explained as follows:

Item	Description
Connection Status	If there is no USB device connected to Vigor router, "**No Disk Connected**" will be shown here.
Disk Capacity	It displays the total capacity of the USB storage disk.
Free Capacity	It displays the free space of the USB storage disk. Click **Refresh** at any time to get new status for free capacity.
Index	It displays the number of the client which connects to FTP server.
IP Address	It displays the IP address of the user's host which connects to the FTP server.
Username	It displays the username that user uses to login to the FTP server.

When you insert USB device into the Vigor router, the system will start to find out such device within several seconds.



USB Mass Storage Device Status

Connection Status: Disk Connected
Write Protect Status: No
Disk Capacity: 2009 MB
Free Capacity: 0 MB Refresh

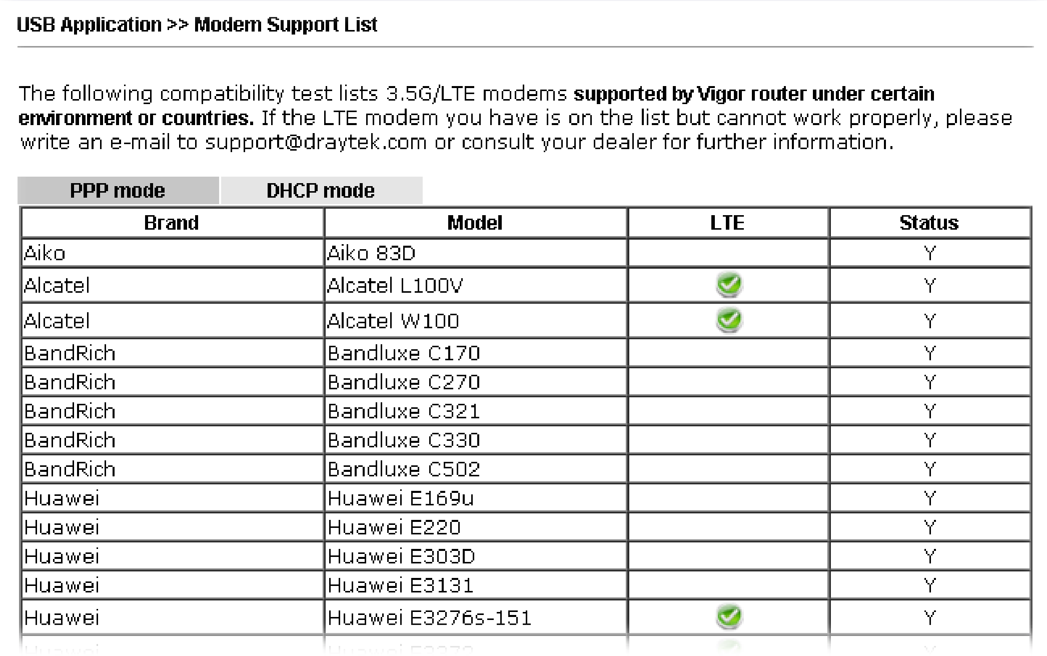
USB Disk Users Connected

Index	Service	IP Address(Port)	Username

Note: If the write protect switch of USB disk is turned on, the USB disk is in **READ-ONLY** mode.No data can be written to it.

VII-2-5 Modem Support List

Such page provides the information about the brand name and model name of the USB modems which are supported by Vigor router.



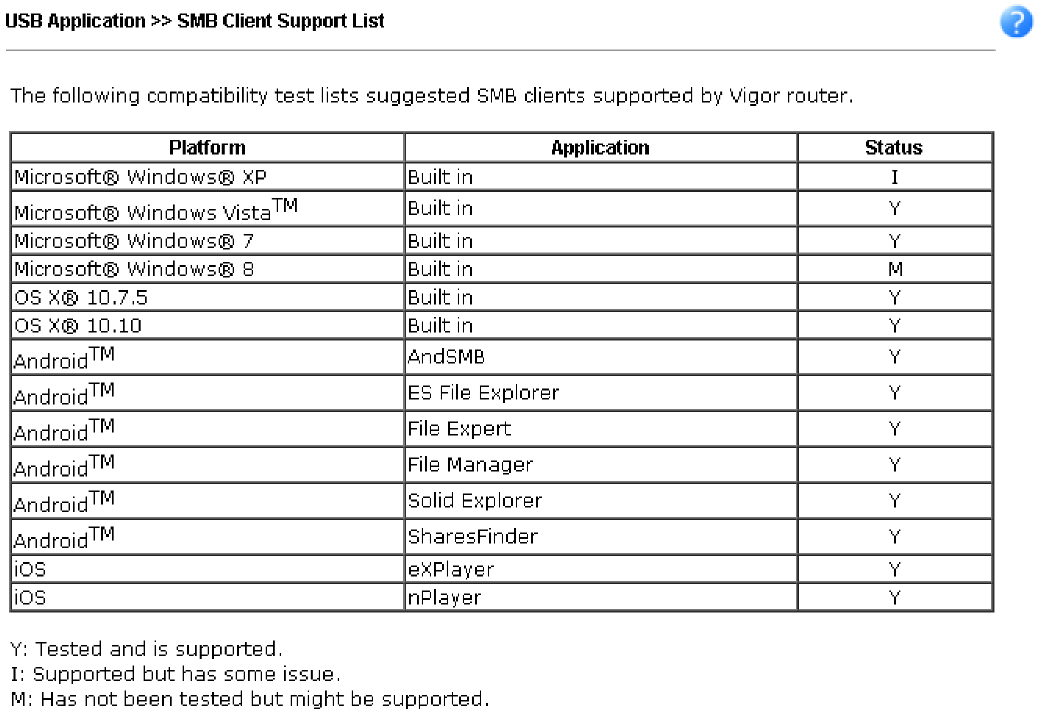
USB Application >> Modem Support List

The following compatibility test lists 3.5G/LTE modems **supported by Vigor router under certain environment or countries.** If the LTE modem you have is on the list but cannot work properly, please write an e-mail to support@draytek.com or consult your dealer for further information.

Brand	Model	LTE	Status
Aiko	Aiko 83D		Y
Alcatel	Alcatel L100V	✓	Y
Alcatel	Alcatel W100	✓	Y
BandRich	Bandluxe C170		Y
BandRich	Bandluxe C270		Y
BandRich	Bandluxe C321		Y
BandRich	Bandluxe C330		Y
BandRich	Bandluxe C502		Y
Huawei	Huawei E169u		Y
Huawei	Huawei E220		Y
Huawei	Huawei E303D		Y
Huawei	Huawei E3131		Y
Huawei	Huawei E3276s-151	✓	Y
Huawei	Huawei E3372	✓	Y

VII-2-6 SMB Client Support List

SMB Client Support List provides the test status information for applications with file sharing operated under different platforms.



USB Application >> SMB Client Support List

The following compatibility test lists suggested SMB clients supported by Vigor router.

Platform	Application	Status
Microsoft® Windows® XP	Built in	I
Microsoft® Windows Vista^{TM}	Built in	Y
Microsoft® Windows® 7	Built in	Y
Microsoft® Windows® 8	Built in	M
OS X® 10.7.5	Built in	Y
OS X® 10.10	Built in	Y
Android^{TM}	AndSMB	Y
Android^{TM}	ES File Explorer	Y
Android^{TM}	File Expert	Y
Android^{TM}	File Manager	Y
Android^{TM}	Solid Explorer	Y
Android^{TM}	SharesFinder	Y
iOS	eXPlayer	Y
iOS	nPlayer	Y

Y: Tested and is supported.
I: Supported but has some issue.
M: Has not been tested but might be supported.

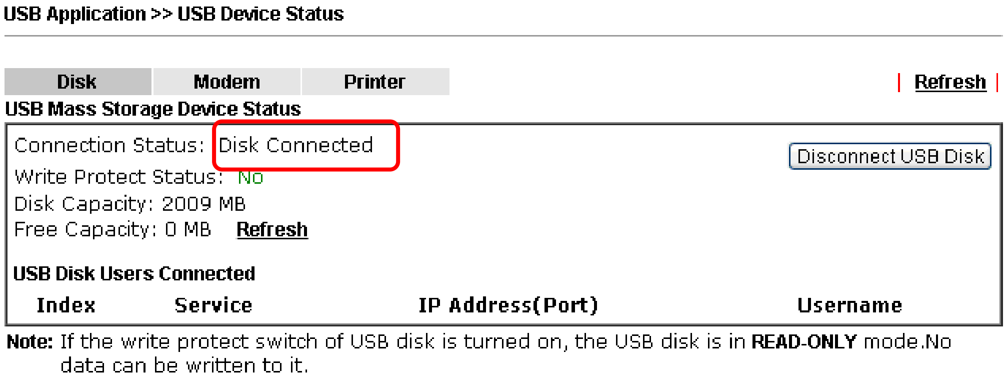
Application Notes

A-1 How can I get the files from USB storage device connecting to Vigor router?

Files on USB storage device can be reviewed by opening **USB Applicaiton>>File Explorer.** If it is necessary for you to delete, copy files on the device or write, paste files to the devcie, it must be done through SMB server or FTP server.

SMB service is based on the original USB FTP service. You will need to setup USB FTP first. We would like to give brief instructions on USB FTP setup here.

1. Plug the USB device to the USB port on the router. Open **USB Application>>USB Device Status**. Make sure **Disk Connected** appears on the **Connection Status** as the figure shown below:



USB Application >> USB Device Status

USB Mass Storage Device Status

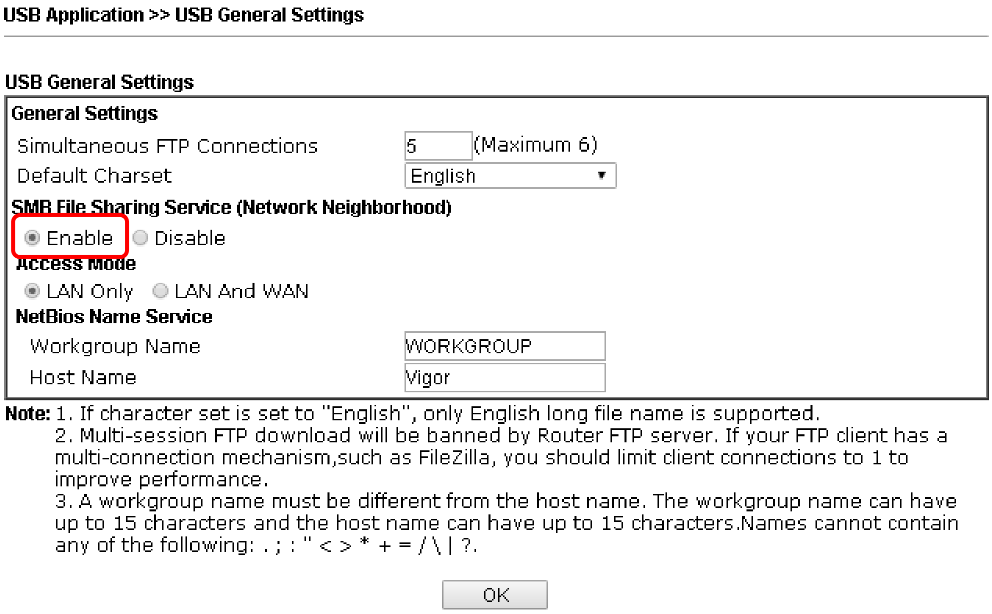
Connection Status: Disk Connected
Write Protect Status: No
Disk Capacity: 2009 MB
Free Capacity: 0 MB Refresh

USB Disk Users Connected

Index	Service	IP Address(Port)	Username

Note: If the write protect switch of USB disk is turned on, the USB disk is in READ-ONLY mode.No data can be written to it.

2. Then, please open **USB Application >> USB General Settings** to enable SMB service.



USB Application >> USB General Settings

USB General Settings

General Settings

Simultaneous FTP Connections 5 (Maximum 6)
Default Charset English

SMB File Sharing Service (Network Neighborhood)

● Enable ○ Disable

Access Mode

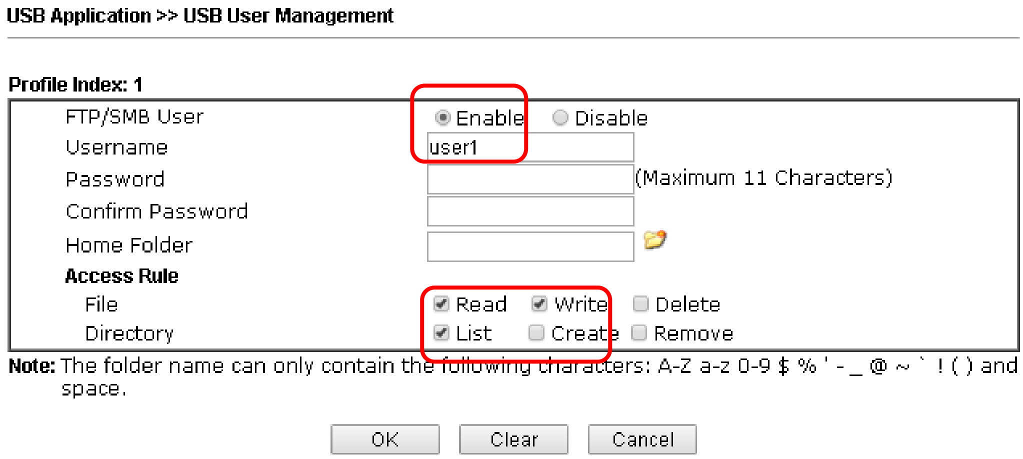
● LAN Only ○ LAN And WAN

NetBios Name Service

Workgroup Name WORKGROUP
Host Name Vigor

Note: 1. If character set is set to "English", only English long file name is supported.
2. Multi-session FTP download will be banned by Router FTP server. If your FTP client has a multi-connection mechanism,such as FileZilla, you should limit client connections to 1 to improve performance.
3. A workgroup name must be different from the host name. The workgroup name can have up to 15 characters and the host name can have up to 15 characters.Names cannot contain any of the following: . ; : " < > * + = / \ | ?.

3. Setup a user account for the FTP service by using **USB Application >>USB User Management.** Click index #1 link, and click **Enable** to enable FTP/SMB User account. Here we add a new account "user1" and assign authorities "Read", "Write" and "List" to it.



USB Application >> USB User Management

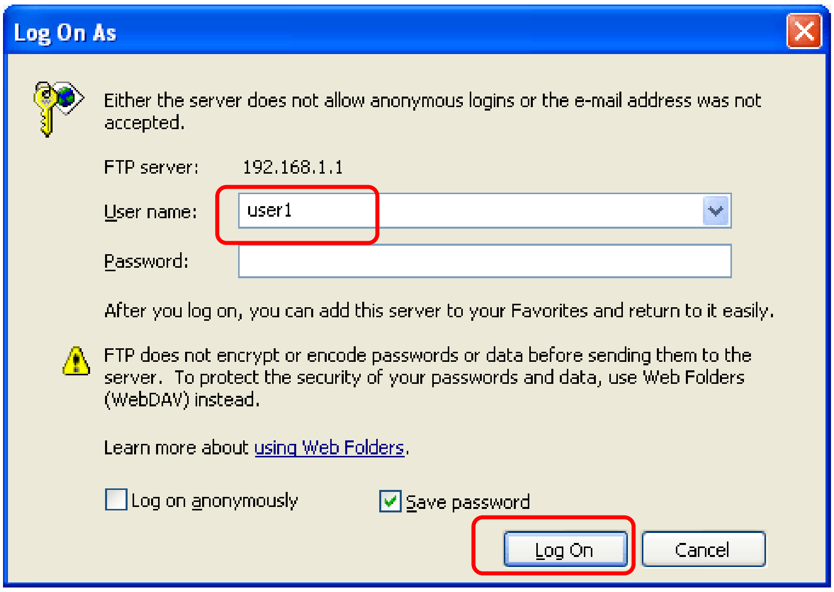
Profile Index: 1

FTP/SMB User	● Enable ○ Disable
Username	user1
Password	(Maximum 11 Characters)
Confirm Password	
Home Folder	
Access Rule	
File	☑ Read ☑ Write □ Delete
Directory	☑ List □ Create □ Remove

Note: The folder name can only contain the following characters: A-Z a-z 0-9 $ % ' - _ @ ~ ` ! ( ) and space.

4. Click **OK** to save the configuration.

5. Make sure the FTP service is running properly. Please open a browser and type *ftp://192.168.1.1.* Use the account "**user1**" to login.



Log On As

Either the server does not allow anonymous logins or the e-mail address was not accepted.

FTP server: 192.168.1.1

User name: user1

Password:

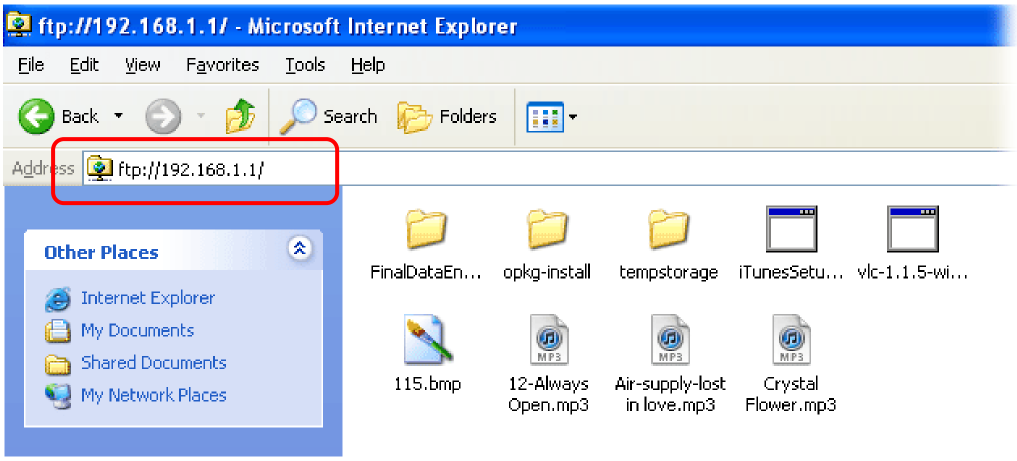
After you log on, you can add this server to your Favorites and return to it easily.

FTP does not encrypt or encode passwords or data before sending them to the server. To protect the security of your passwords and data, use Web Folders (WebDAV) instead.

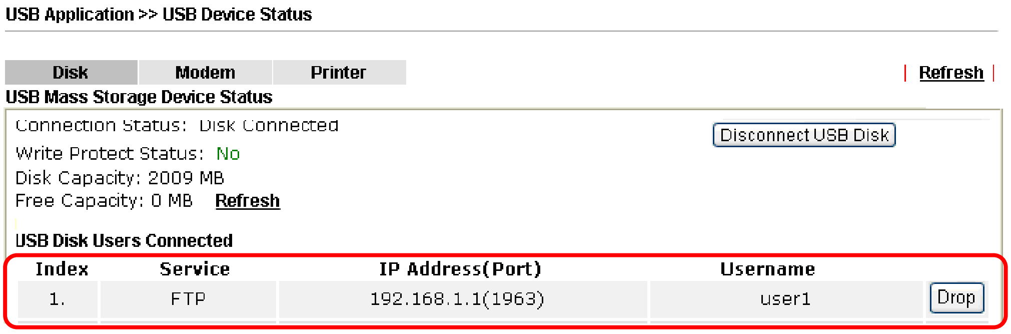
Learn more about using Web Folders.

□ Log on anonymously ☑ Save password

6. When the following screen appears, it means the FTP service is running properly.



7. Return to **USB Application >> USB Disk Status**. The information for FTP server will be shown as below.



USB Mass Storage Device Status

Connection Status: Disk Connected
Write Protect Status: No
Disk Capacity: 2009 MB
Free Capacity: 0 MB Refresh

USB Disk Users Connected

Index	Service	IP Address(Port)	Username	
1.	FTP	192.168.1.1(1963)	user1	Drop

Now, users in LAN of Vigor2952 can access into the USB storage device by typing ftp://192.168.1.1 on any browser. They can add or remove files / directories, depending on the Access Rule for FTP account settings in **USB Application >>USB User Management.**

Part VIII Troubleshooting

Troubleshooting

This part will guide you to solve abnormal situations if you cannot access into the Internet after installing the router and finishing the web configuration

VIII-1Diagnostics

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.

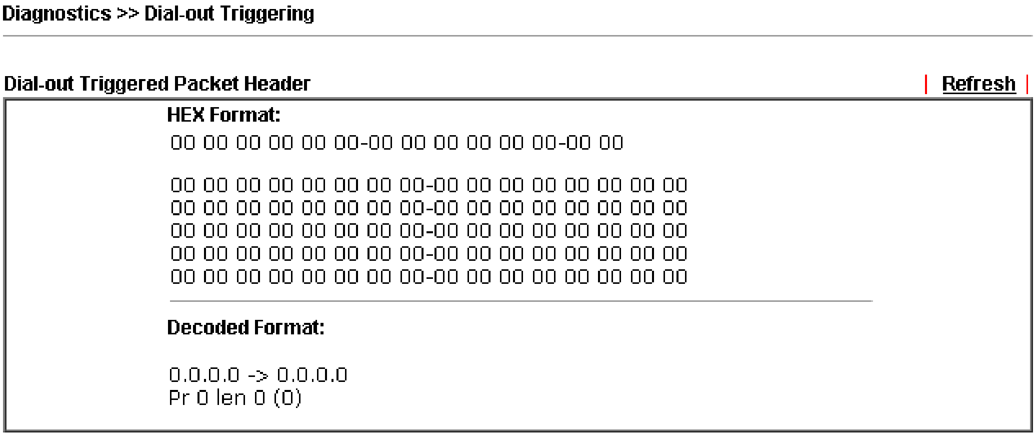
- Checking if the hardware status is OK or not.
- Checking if the network connection settings on your computer are OK or not.
- Pinging the router from your computer.
- Checking if the ISP settings are OK or not.
- Backing to factory default setting if necessary.

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

Fisrt, take a look at the menu items under Diagnostics. Diagnostic Tools provide a useful way to **view** or **diagnose** the status of your Vigor router.

VIII-1-1 Dial-out Triggering

Click **Diagnostics** and click **Dial-out Triggering** to open the web page. The internet connection (e.g., PPPoE) is triggered by a package sending from the source IP address.



Diagnostics >> Dial-out Triggering

Dial-out Triggered Packet Header

HEX Format:

```
00 00 00 00 00 00-00 00 00 00 00 00-00 00

00 00 00 00 00 00 00 00-00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00-00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00-00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00-00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00-00 00 00 00 00 00 00 00
```

Decoded Format:

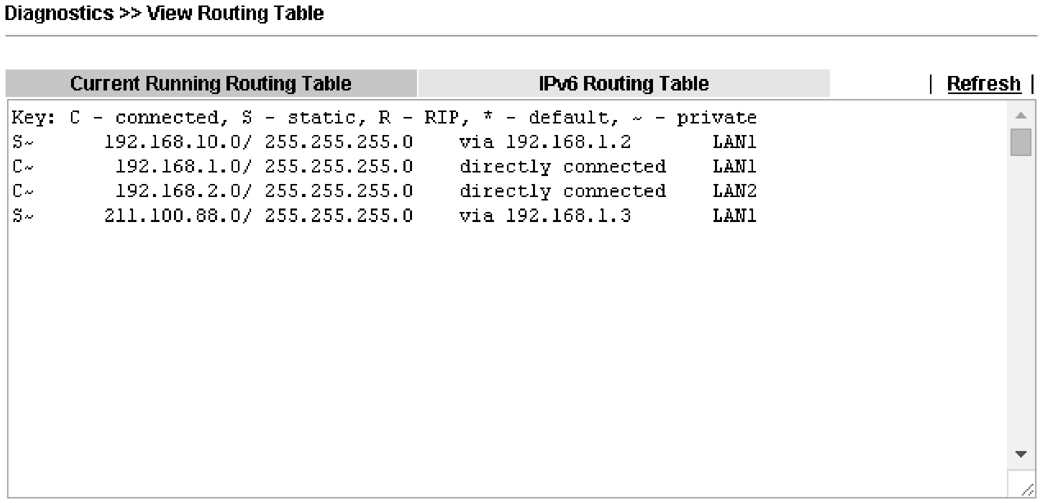
```
0.0.0.0 -> 0.0.0.0
Pr 0 len 0 (0)
```

Available settings are explained as follows:

Item	Description
Decoded Format	It shows the source IP address (local), destination IP (remote) address, the protocol and length of the package.
Refresh	Click it to reload the page.

VIII-1-2 Routing Table

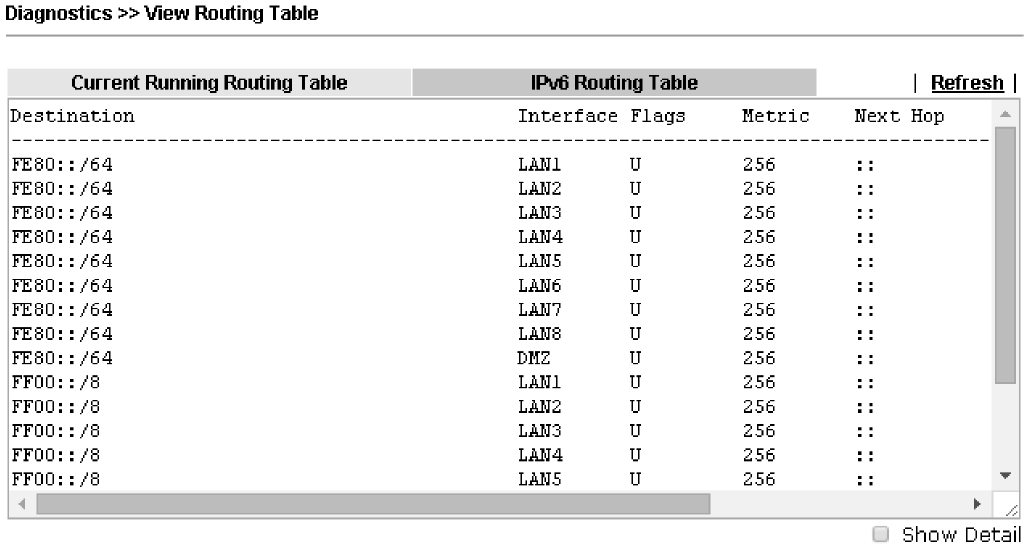
Click **Diagnostics** and click **Routing Table** to open the web page.



Diagnostics >> View Routing Table

```
Key: C - connected, S - static, R - RIP, * - default, ~ - private
S~      192.168.10.0/ 255.255.255.0    via 192.168.1.2       LAN1
C~       192.168.1.0/ 255.255.255.0    directly connected    LAN1
C~       192.168.2.0/ 255.255.255.0    directly connected    LAN2
S~      211.100.88.0/ 255.255.255.0    via 192.168.1.3       LAN1
```

and



Diagnostics >> View Routing Table

```
Destination                                 Interface Flags     Metric    Next Hop
-----------------------------------------------------------------------------------
FE80::/64                                   LAN1      U         256       ::
FE80::/64                                   LAN2      U         256       ::
FE80::/64                                   LAN3      U         256       ::
FE80::/64                                   LAN4      U         256       ::
FE80::/64                                   LAN5      U         256       ::
FE80::/64                                   LAN6      U         256       ::
FE80::/64                                   LAN7      U         256       ::
FE80::/64                                   LAN8      U         256       ::
FE80::/64                                   DMZ       U         256       ::
FF00::/8                                    LAN1      U         256       ::
FF00::/8                                    LAN2      U         256       ::
FF00::/8                                    LAN3      U         256       ::
FF00::/8                                    LAN4      U         256       ::
FF00::/8                                    LAN5      U         256       ::
```

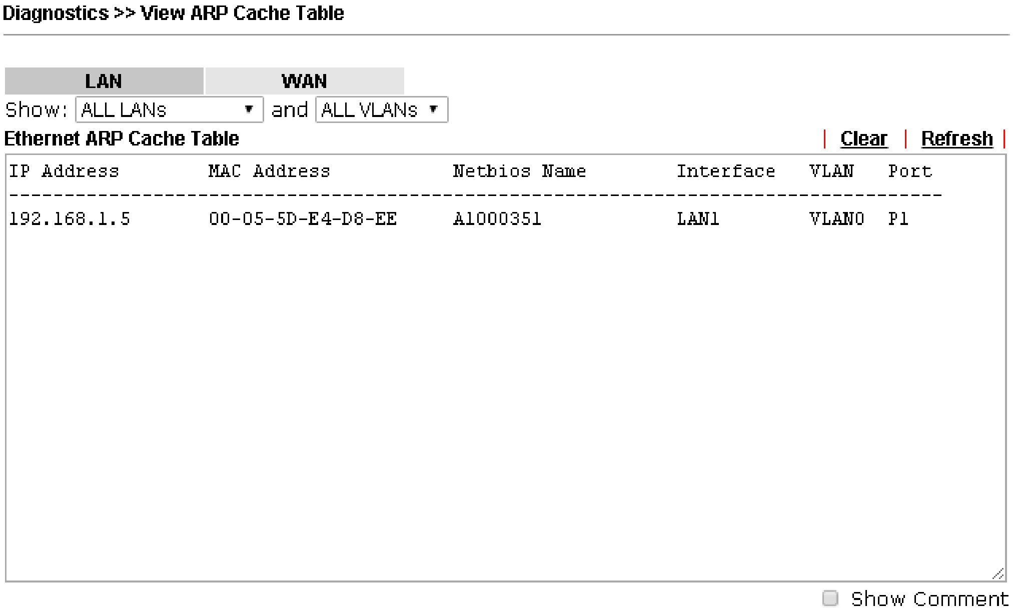
□ Show Detail

Available settings are explained as follows:

Item	Description
Refresh	Click it to reload the page.

VIII-1-3 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.



Diagnostics >> View ARP Cache Table

```
IP Address        MAC Address          Netbios Name         Interface    VLAN    Port
-------------------------------------------------------------------------------------
192.168.1.5       00-05-5D-E4-D8-EE    A1000351             LAN1         VLAN0   P1
```

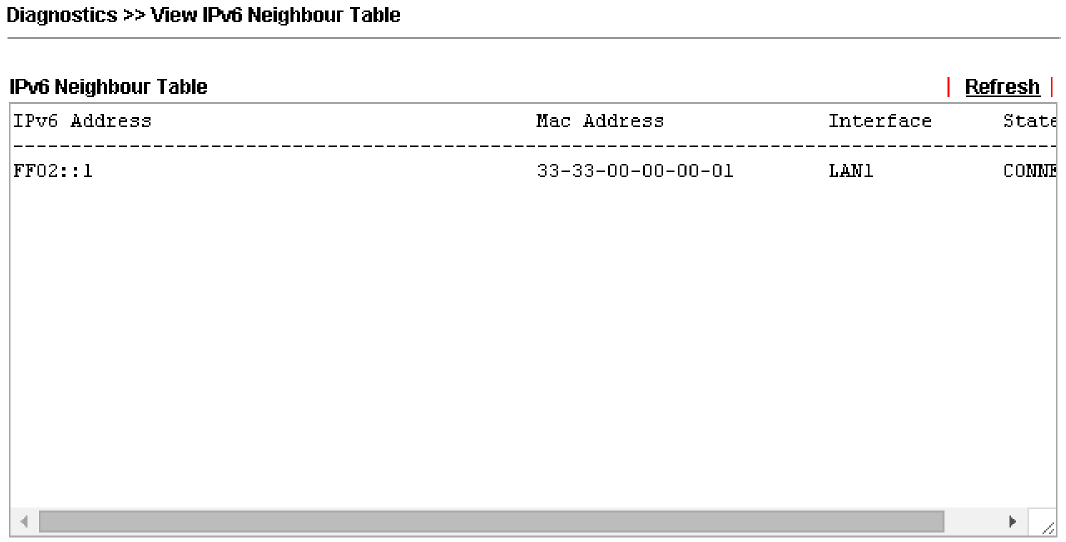
Available settings are explained as follows:

Item	Description
Refresh	Click it to reload the page.

VIII-1-4 IPv6 Neighbour Table

The table shows a mapping between an Ethernet hardware address (MAC Address) and an IPv6 address. This information is helpful in diagnosing network problems, such as IP address conflicts, etc.

Click **Diagnostics** and click **IPv6 Neighbour Table** to open the web page.



```
IPv6 Address                                      Mac Address          Interface        State
------------------------------------------------------------------------------------------------
FF02::1                                           33-33-00-00-00-01    LAN1             CONNE
```

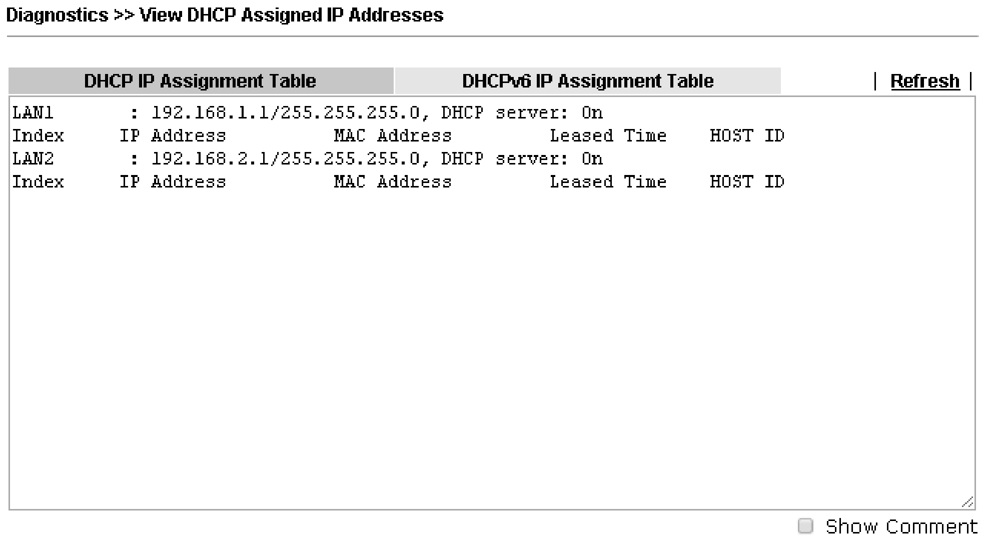
Available settings are explained as follows:

Item	Description
Refresh	Click it to reload the page.

VIII-1-5 DHCP Table

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

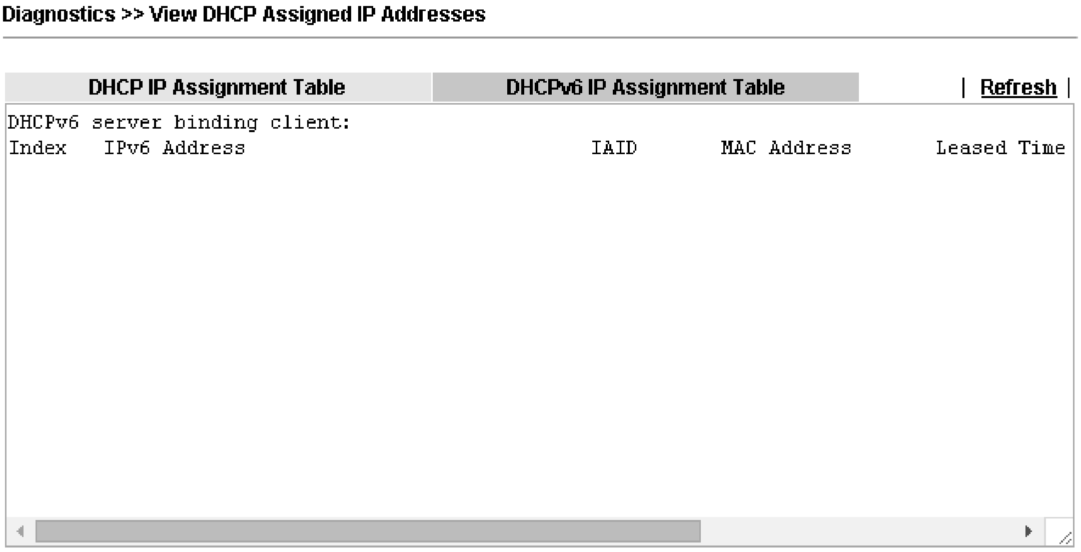
Click **Diagnostics** and click **DHCP Table** to open the web page.



Diagnostics >> View DHCP Assigned IP Addresses
DHCP IP Assignment Table
DHCPv6 IP Assignment Table
| Refresh |
Show Comment

```
LAN1       : 192.168.1.1/255.255.255.0, DHCP server: On
Index     IP Address           MAC Address          Leased Time    HOST ID
LAN2       : 192.168.2.1/255.255.255.0, DHCP server: On
Index     IP Address           MAC Address          Leased Time    HOST ID
```

and



Diagnostics >> View DHCP Assigned IP Addresses

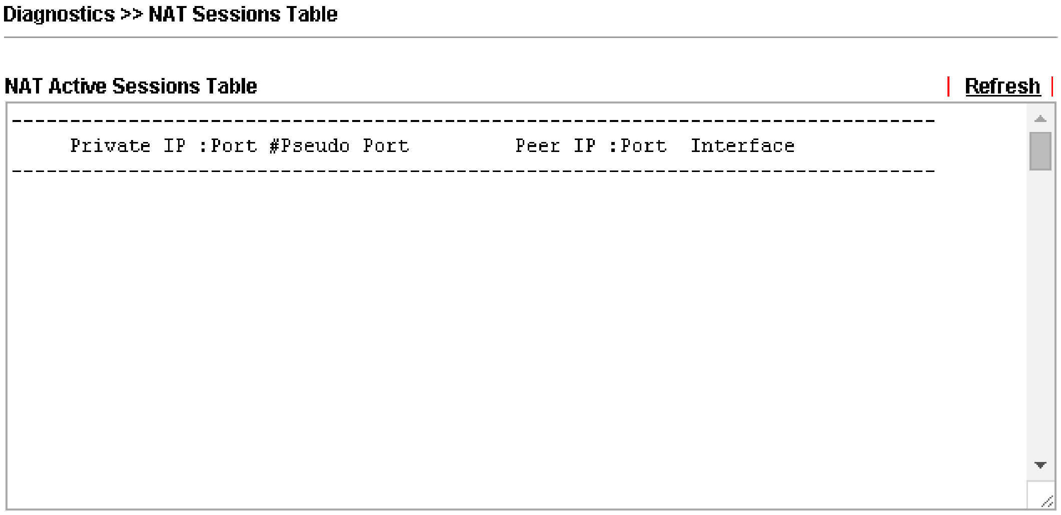
```
DHCPv6 server binding client:
Index   IPv6 Address                                  IAID       MAC Address       Leased Time
```

Available settings are explained as follows:

Item	Description
Index	It displays the connection item number.
IP Address	It displays the IP address assigned by this router for specified PC.
MAC Address	It displays the MAC address for the specified PC that DHCP assigned IP address for it.
Leased Time	It displays the leased time of the specified PC.
HOST ID	It displays the host ID name of the specified PC.
Refresh	Click it to reload the page.

VIII-1-6 NAT Sessions Table

Click **Diagnostics** and click **NAT Sessions Table** to open the list page.



Diagnostics >> NAT Sessions Table

NAT Active Sessions Table | Refresh |

```
-------------------------------------------------------------------------------
     Private IP :Port #Pseudo Port         Peer IP :Port  Interface
-------------------------------------------------------------------------------
```

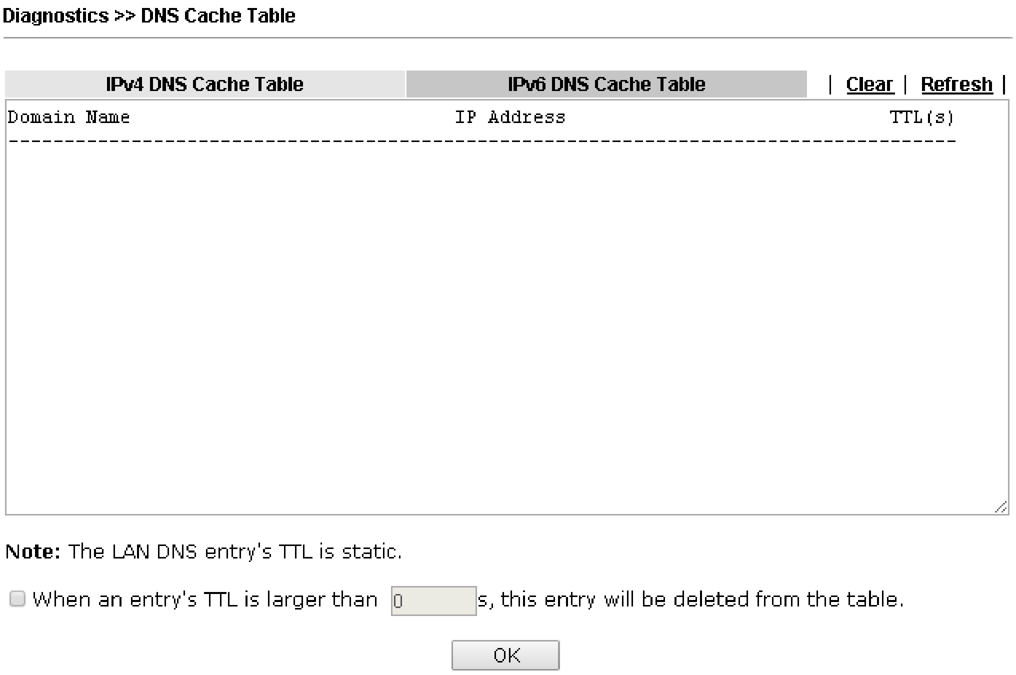
Available settings are explained as follows:

Item	Description
Private IP:Port	It indicates the source IP address and port of local PC.
#Pseudo Port	It indicates the temporary port of the router used for NAT.
Peer IP:Port	It indicates the destination IP address and port of remote host.
Interface	It displays the representing number for different interface.
Refresh	Click it to reload the page.

VIII-1-7 DNS Cache Table

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

The record of domain Name and the mapping IP address for answering the DNS query from LAN will be stored on Vigor router's Cache temporarily and displayed on **Diagnostics >> DNS Cache Table**.



Diagnostics >> DNS Cache Table

```
Domain Name                                IP Address                                TTL(s)
-----------------------------------------------------------------------------------------
```

Note: The LAN DNS entry's TTL is static.

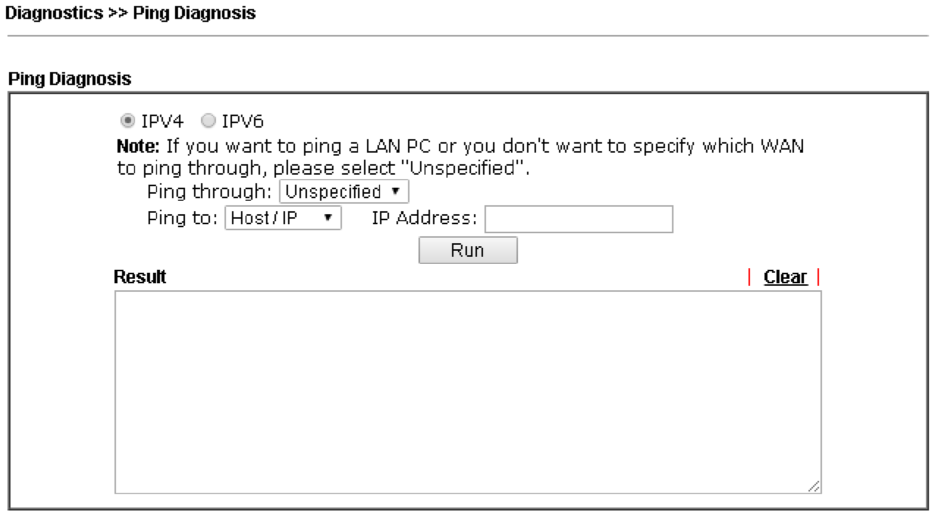
□ When an entry's TTL is larger than 0 s, this entry will be deleted from the table.

Available settings are explained as follows:

Item	Description
Clear	Click this link to remove the result on the window.
Refresh	Click it to reload the page.
When an entry's TTL is larger than....	Check the box the type the value of TTL (time to live) for each entry. Click **OK** to enable such function. It means when the TTL value of each DNS query reaches the threshold of the value specified here, the corresponding record will be deleted from router's Cache automatically.

VIII-1-8 Ping Diagnosis

Click **Diagnostics** and click **Ping Diagnosis** to open the web page.



Diagnostics >> Ping Diagnosis

Ping Diagnosis

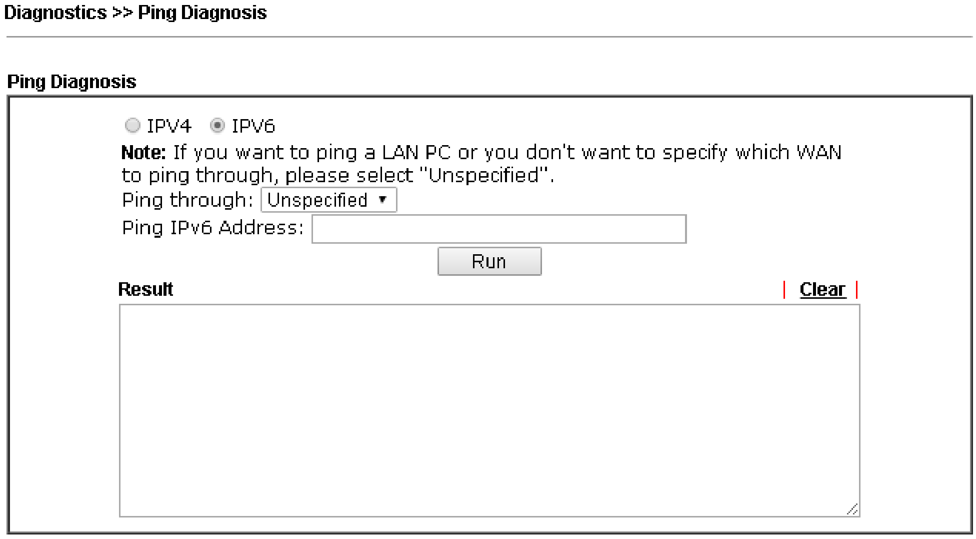
● IPV4 ○ IPV6

Note: If you want to ping a LAN PC or you don't want to specify which WAN to ping through, please select "Unspecified".

Ping through: Unspecified

Ping to: Host/IP IP Address:

or



Diagnostics >> Ping Diagnosis

Ping Diagnosis

○ IPV4 ● IPV6

Note: If you want to ping a LAN PC or you don't want to specify which WAN to ping through, please select "Unspecified".

Ping through: Unspecified

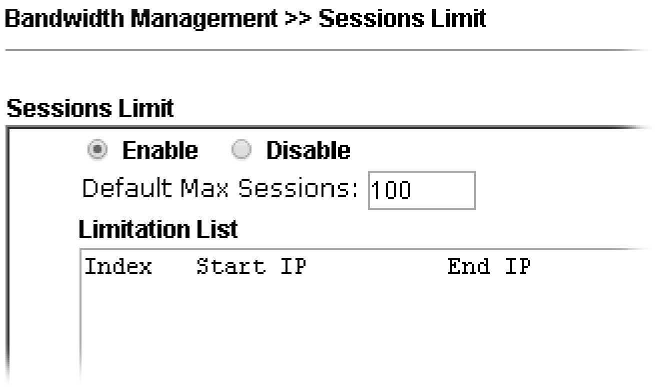
Ping IPv6 Address:

Available settings are explained as follows:

Item	Description
IPV4 /IPV6	Choose the interface for such function.
Ping through	Use the drop down list to choose the WAN interface that you want to ping through or choose **Unspecified** to be determined by the router automatically.
Ping to	Use the drop down list to choose the destination that you want to ping.
IP Address	Type the IP address of the Host/IP that you want to ping.
Ping IPv6 Address	Type the IPv6 address that you want to ping.
Run	Click this button to start the ping work. The result will be displayed on the screen.
Clear	Click this link to remove the result on the window.

VIII-1-9 Data Flow Monitor

This page displays the running procedure for the IP address monitored and refreshes the data in an interval of several seconds. The IP address listed here is configured in Bandwidth Management. You have to enable IP bandwidth limit and IP session limit before invoking Data Flow Monitor. If not, a notification dialog box will appear to remind you enabling it.



Bandwidth Management >> Sessions Limit

Sessions Limit

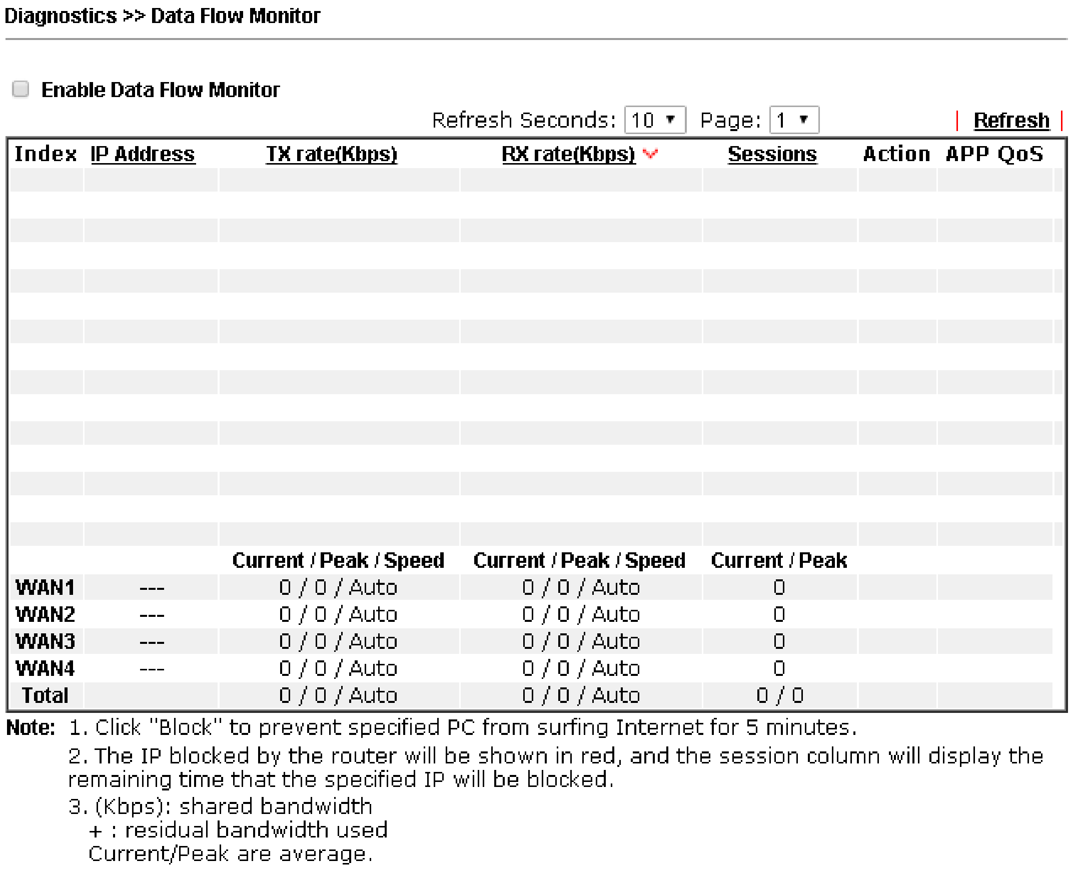
● Enable ○ Disable

Default Max Sessions: 100

Limitation List

Index Start IP End IP

Click **Diagnostics** and click **Data Flow Monitor** to open the web page. You can click **IP Address**, **TX rate**, **RX rate** or **Session** link for arranging the data display.



Diagnostics >> Data Flow Monitor

□ Enable Data Flow Monitor

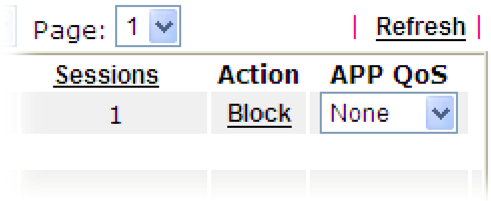
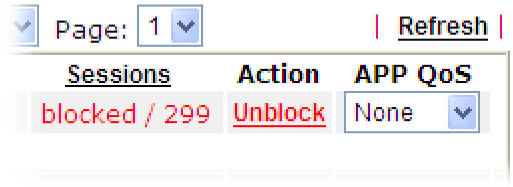
Refresh Seconds: 10 Page: 1 | Refresh |

Index	IP Address	TX rate(Kbps)	RX rate(Kbps)	Sessions	Action	APP QoS
		Current / Peak / Speed	Current / Peak / Speed	Current / Peak		
WAN1	---	0 / 0 / Auto	0 / 0 / Auto	0		
WAN2	---	0 / 0 / Auto	0 / 0 / Auto	0		
WAN3	---	0 / 0 / Auto	0 / 0 / Auto	0		
WAN4	---	0 / 0 / Auto	0 / 0 / Auto	0		
Total		0 / 0 / Auto	0 / 0 / Auto	0 / 0		

Note: 1. Click "Block" to prevent specified PC from surfing Internet for 5 minutes.
2. The IP blocked by the router will be shown in red, and the session column will display the remaining time that the specified IP will be blocked.
3. (Kbps): shared bandwidth
+ : residual bandwidth used
Current/Peak are average.

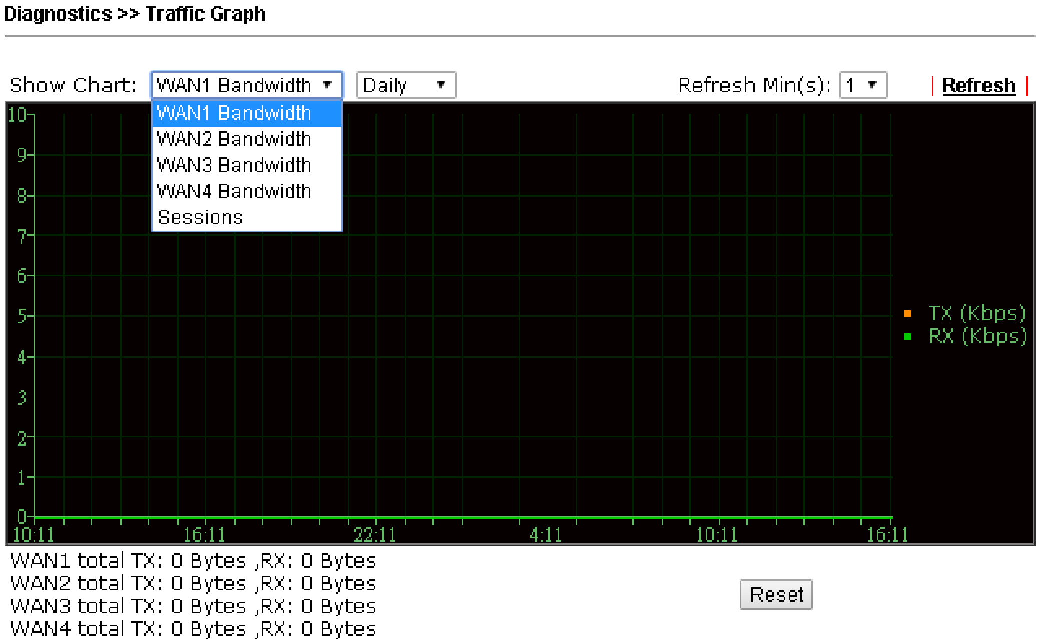
Available settings are explained as follows:

Item	Description
Enable Data Flow Monitor	Check this box to enable this function.
Refresh Seconds	Use the drop down list to choose the time interval of

	refreshing data flow that will be done by the system automatically.
Refresh	Click this link to refresh this page manually.
Index	Display the number of the data flow.
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.
Action	**Block** - can prevent specified PC accessing into Internet within 5 minutes.  Page: 1 | Refresh | Sessions Action APP QoS 1 Block None **Unblock** –The device with the IP address will be blocked for five minutes. The remaining time will be shown on the session column. Click it to cancel the IP address blocking.  Page: 1 | Refresh | Sessions Action APP QoS blocked / 299 Unblock None
Current /Peak/Speed	**Current** means current transmission rate and receiving rate for WAN interface. **Peak** means the highest peak value detected by the router in data transmission. **Speed** means line speed specified in **WAN>>General Setup**. If you do not specify any rate at that page, here will display **Auto** for instead.

VIII-1-10 Traffic Graph

Click **Diagnostics** and click **Traffic Graph** to open the web page. Choose WAN1/WAN2/WAN3/WAN4 Bandwidth, Sessions, daily or weekly for viewing different traffic graph. Click **Reset** to zero the accumulated RX/TX (received and transmitted) data of WAN. Click **Refresh** to renew the graph at any time.


Diagnostics >> Traffic Graph

Show Chart: WAN1 Bandwidth ▾ Daily ▾ Refresh Min(s): 1 ▾ | Refresh |

WAN1 total TX: 0 Bytes ,RX: 0 Bytes
WAN2 total TX: 0 Bytes ,RX: 0 Bytes
WAN3 total TX: 0 Bytes ,RX: 0 Bytes
WAN4 total TX: 0 Bytes ,RX: 0 Bytes

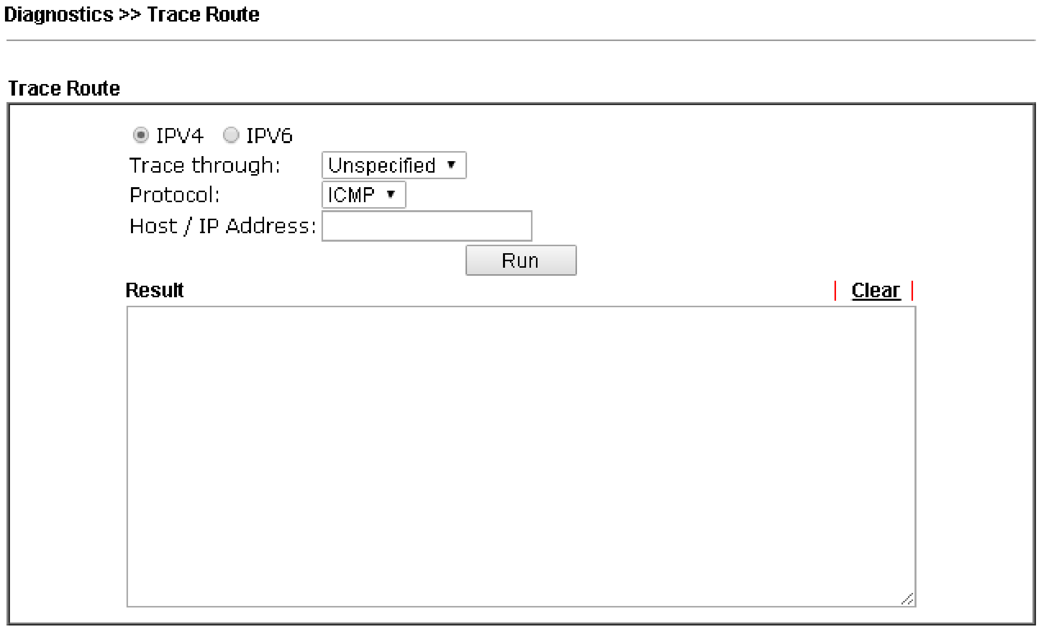
Reset

The horizontal axis represents time. Yet the vertical axis has different meanings. For WAN1/WAN2/WAN3/WAN4 Bandwidth chart, the numbers displayed on vertical axis represent the numbers of the transmitted and received packets in the past.

For Sessions chart, the numbers displayed on vertical axis represent the numbers of the NAT sessions during the past.

VIII-1-11 Trace Route

Click **Diagnostics** and click **Trace Route** to open the web page. 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.



Diagnostics >> Trace Route

Trace Route

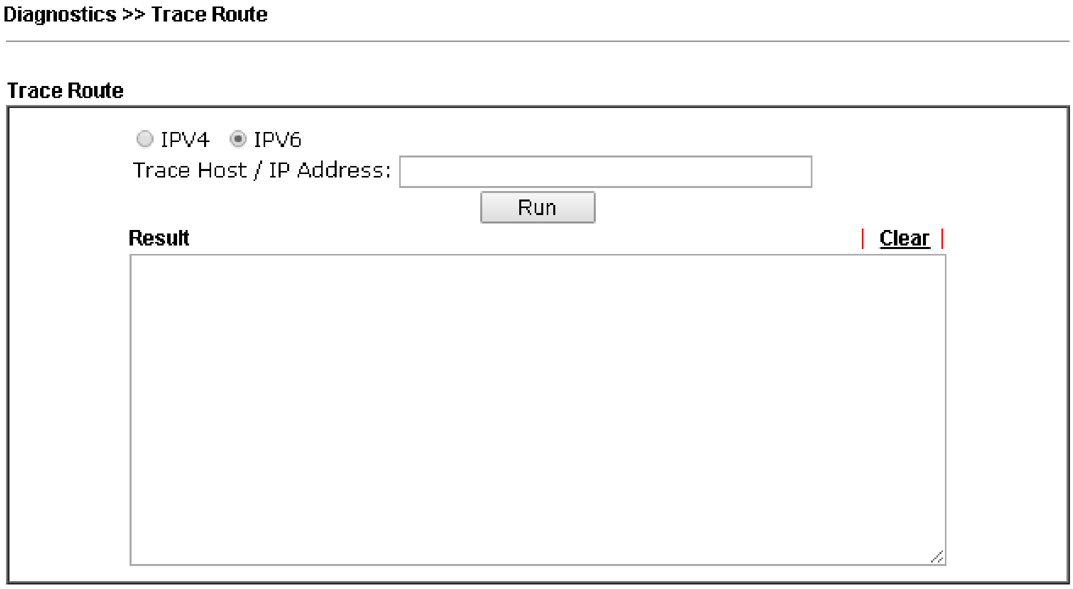
● IPV4 ○ IPV6

Trace through: Unspecified

Protocol: ICMP

Host / IP Address:

or



Diagnostics >> Trace Route

Trace Route

○ IPV4 ● IPV6

Trace Host / IP Address:

Available settings are explained as follows:

Item	Description
IPv4 / IPv6	Click one of them to display corresponding information for it.
Trace through	Use the drop down list to choose the interface that you want to ping through.

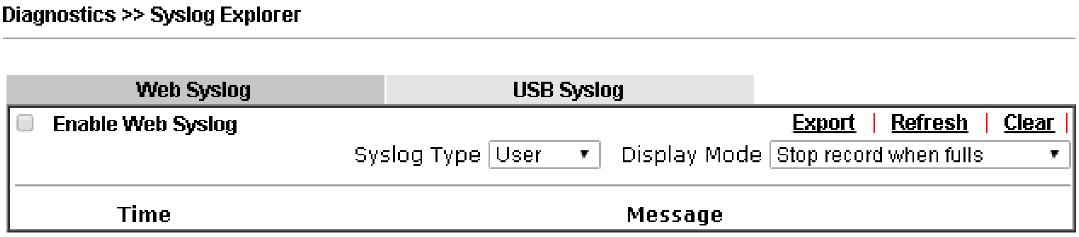
Protocol	Use the drop down list to choose the protocol that you want to ping through.
Host/IP Address	It indicates the IP address of the host.
Trace Host/IP Address	It indicates the IPv6 address of the host.
Run	Click this button to start route tracing work.
Clear	Click this link to remove the result on the window.

VIII-1-12 Syslog Explorer

Such page provides real-time syslog and displays the information on the screen.

For Web Syslog

This page displays the time and message for User/Firewall/call/WAN/VPN settings. You can check **Enable Web Syslog,** specify the type of Syslog and choose the display mode you want. Later, the event of Syslog with specified type will be shown for your reference.



Diagnostics >> Syslog Explorer

Web Syslog | USB Syslog

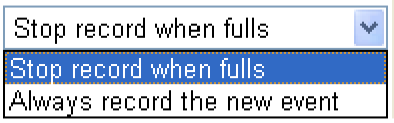
□ Enable Web Syslog

Export | Refresh | Clear |

Syslog Type: User ▾ Display Mode: Stop record when fulls ▾

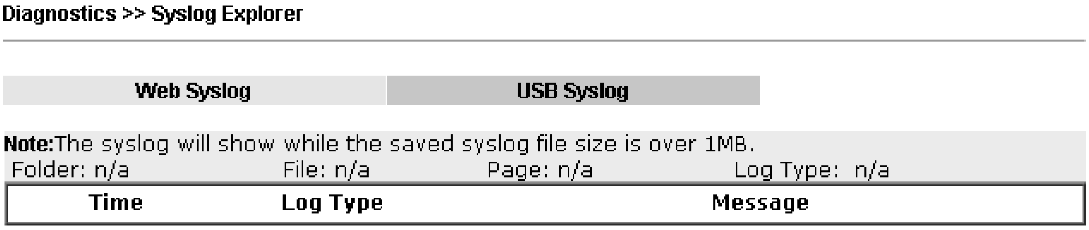
Time | Message

Available settings are explained as follows:

Item	Description
Enable Web Syslog	Check this box to enable the function of Web Syslog.
Syslog Type	Use the drop down list to specify a type of Syslog to be displayed.
Export	Click this link to save the data as a file.
Refresh	Click this link to refresh this page manually.
Clear	Click this link to clear information on this page.
Display Mode	There are two modes for you to choose.  Stop record when fulls Stop record when fulls Always record the new event **Stop record when fulls -** when the capacity of syslog is full, the system will stop recording. **Always record the new event -** only the newest events will be recorded by the system.
Time	Display the time of the event occurred.
Message	Display the information for each event.

For USB Syslog

This page displays the syslog recorded on the USB storage disk.



Diagnostics >> Syslog Explorer

Note: The syslog will show while the saved syslog file size is over 1MB.

Folder: n/a File: n/a Page: n/a Log Type: n/a

Time	Log Type	Message

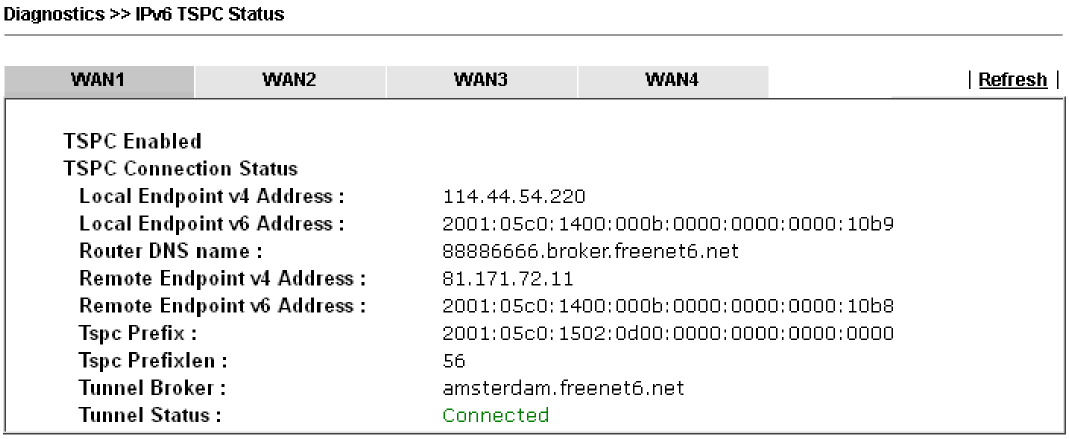
Available settings are explained as follows:

Item	Description
Time	Display the time of the event occurred.
Log Type	Display the type of the record.
Message	Display the information for each event.

VIII-1-13 TSPC Status

IPv6 TSPC status web page could help you to diagnose the connection status of TSPC.

If TSPC has configured properly, the router will display the following page when the user connects to tunnel broker successfully.



Diagnostics >> IPv6 TSPC Status

TSPC Enabled

TSPC Connection Status

Local Endpoint v4 Address :	114.44.54.220
Local Endpoint v6 Address :	2001:05c0:1400:000b:0000:0000:0000:10b9
Router DNS name :	88886666.broker.freenet6.net
Remote Endpoint v4 Address :	81.171.72.11
Remote Endpoint v6 Address :	2001:05c0:1400:000b:0000:0000:0000:10b8
Tspc Prefix :	2001:05c0:1502:0d00:0000:0000:0000:0000
Tspc Prefixlen :	56
Tunnel Broker :	amsterdam.freenet6.net
Tunnel Status :	Connected

Available settings are explained as follows:

Item	Description
Refresh	Click this link to refresh this page manually.

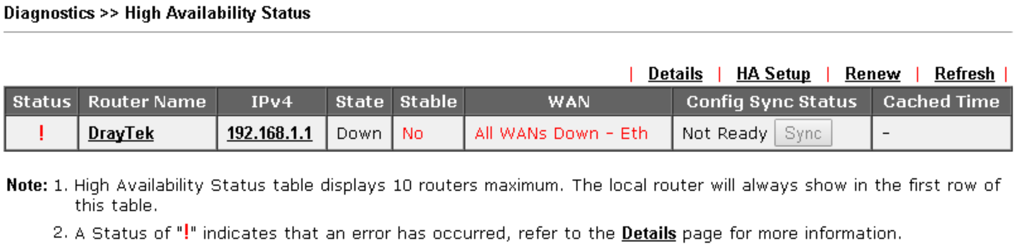
VIII-1-14 High Availability Status

All of the routers under the same DARP (DrayTek Address resolution Protocol) group can be viewed in such page. However, only partial information of the router status will be displayed.

Vigor routers with the following condtions will be treated as the same DARP group:

- HA enabled
- the same Redundancy method
- the same Group ID
- the same Authentication Key
- the same Management Interface

Open **Diagnostics>>High Availablity Status**.



Diagnostics >> High Availability Status

| Details | HA Setup | Renew | Refresh |

Status	Router Name	IPv4	State	Stable	WAN	Config Sync Status	Cached Time
!	DrayTek	192.168.1.1	Down	No	All WANs Down - Eth	Not Ready Sync	-

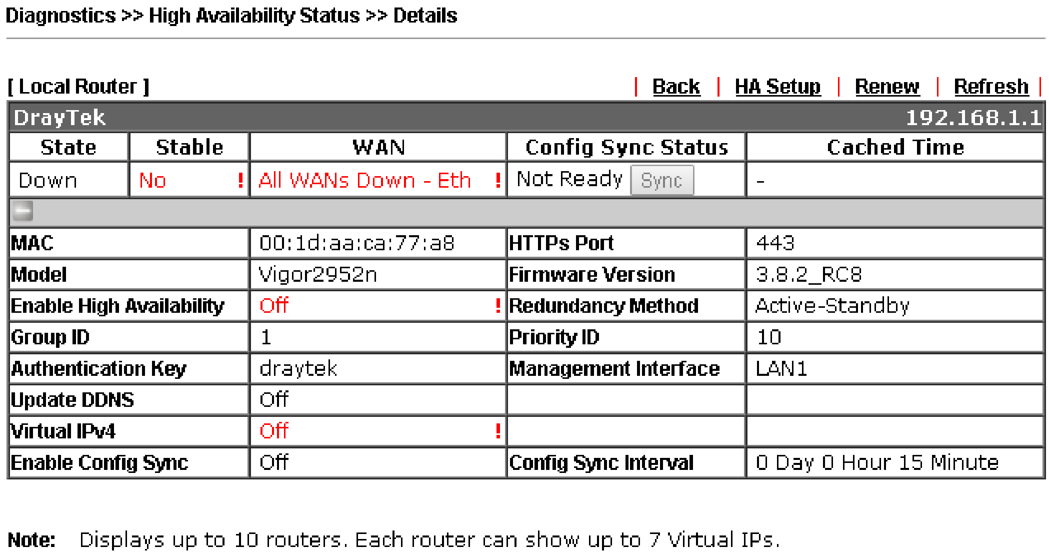
Note: 1. High Availability Status table displays 10 routers maximum. The local router will always show in the first row of this table.
2. A Status of "!" indicates that an error has occurred, refer to the **Details** page for more information.

Available settings are explained as follows:

Item	Description
Details/Back	**Details -** Click it to display detailed status about HA configuration for the selected router. **Back** – Return to previous page.
HA Setup	Click it to open **Applications>>High Availability** for modifying the configuration.
Renew	Click it to get the newest status of other router (except the primary router).
Refresh	Click it to get the newest status of the primary router.
Status	**"!"** means an error has occurred. Refer to **Detailed** information and modify HA settings if required.
Router Name	Display the name of the device.
IPv4	Display the IPv4 address of such router.
State	"Down" means the function of HA is disabled. "Primary" means such router stands for the primary router in HA. "Secondary" means such router stands for the secondary router in HA.
Stable	"No" means the primary router has not been determined yet. DARP is negotiating. "YES" means the primary router is determined.
WAN	"At Least One UP" means that at least one WAN interface connects to Internet. "All WANs Down" means that no WAN interface connects to

	Internet.
Config Sync Status	"Not Ready" means configuration synchronization is unable to execute, or configuration synchronization is disabled, or synchronization initialization executes but fails. "Ready" means configuration synchronization is ready to execute. "Progressing" means configuration synchronization is operating. "Fail" means configuration synchronization executed and failed; or wrong model name. "Equal" means the corresponding settings are equal to the primary router.
Cached Time	Display the time period since the last time to get the newest status of other router (except the primary router).

Cick the link of **Status**, **Router Name**, **IPv4** or **Details**, the following page will be displayed on the screen.



Diagnostics >> High Availability Status >> Details

[Local Router] | Back | HA Setup | Renew | Refresh |

DrayTek 192.168.1.1

State	Stable	WAN	Config Sync Status	Cached Time
Down	No !	All WANs Down - Eth !	Not Ready Sync	-

MAC	00:1d:aa:ca:77:a8	HTTPs Port	443
Model	Vigor2952n	Firmware Version	3.8.2_RC8
Enable High Availability	Off !	Redundancy Method	Active-Standby
Group ID	1	Priority ID	10
Authentication Key	draytek	Management Interface	LAN1
Update DDNS	Off		
Virtual IPv4	Off !		
Enable Config Sync	Off	Config Sync Interval	0 Day 0 Hour 15 Minute

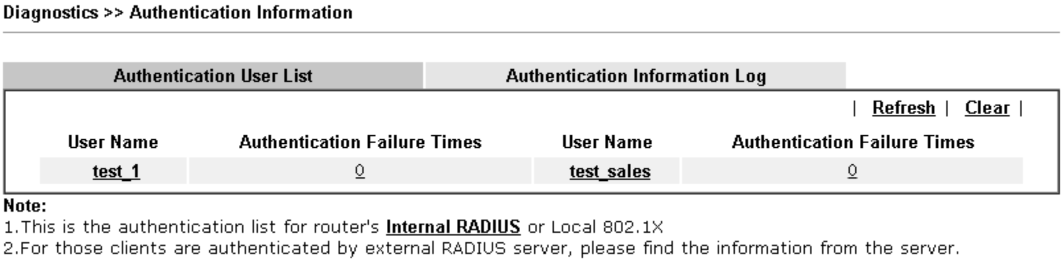
Note: Displays up to 10 routers. Each router can show up to 7 Virtual IPs.

VIII-1-15 Authentication Information

Authentication User List

Such page displays authentication jobs made by Internal RADIUS or Local 802.1X.

When the mouse cursor moves to the name link under User Name, the connection message (including authentication failed information) about internal RADIUS or local 802.1X service will be shown by a popped up dialog box.



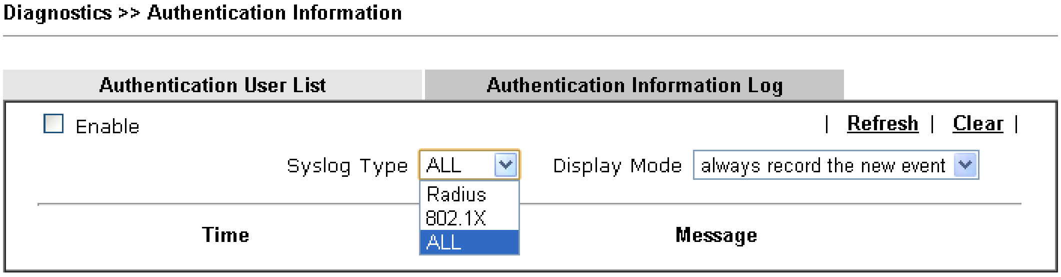
Diagnostics >> Authentication Information

User Name	Authentication Failure Times	User Name	Authentication Failure Times
test_1	0	test_sales	0

Note:
1.This is the authentication list for router's Internal RADIUS or Local 802.1X
2.For those clients are authenticated by external RADIUS server, please find the information from the server.

Authentication Information Log

This page will display the complete authentication log information.



Diagnostics >> Authentication Information

□ Enable

Syslog Type ALL

Display Mode always record the new event

Available settings are explained as follows:

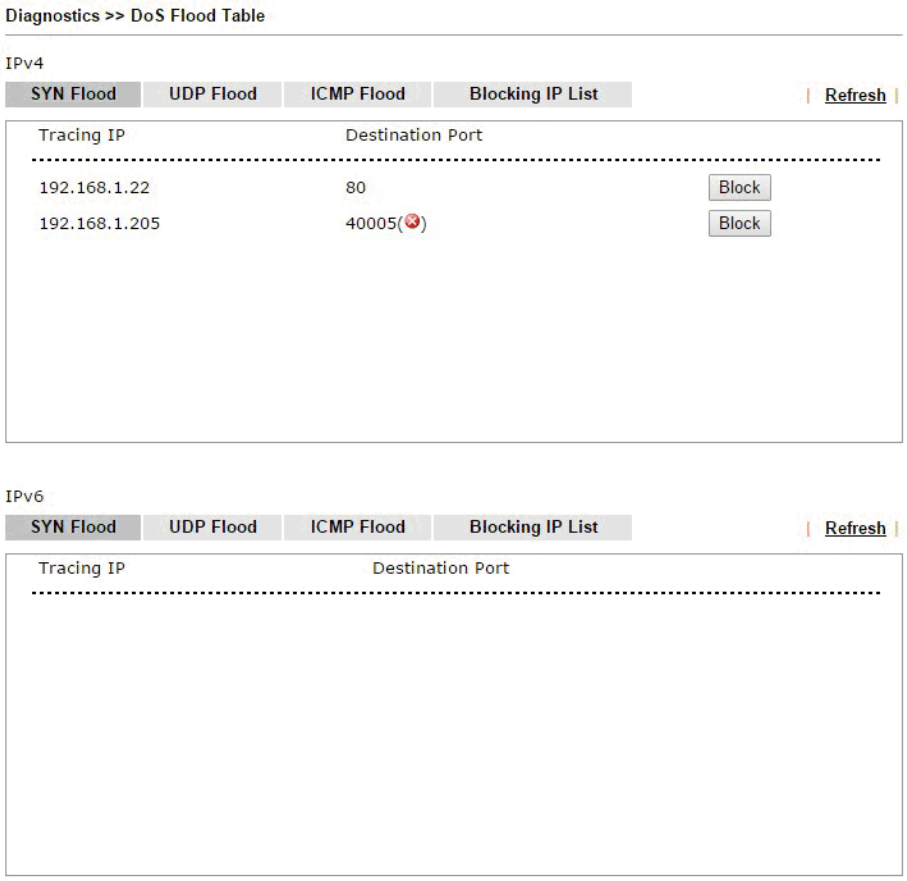
Item	Description
Enable	Check the box to enable such function.
Refresh	Click it to update current page.
Clear	Click it to remove all of the records.
Syslog Type	Specify RADIUS, 802.1X or All to display related authentication information log.
Display Mode	Choose the mode you want to display the related information on the following table. ● **Stop record when fulls -** when the capacity of CVM log is full, the system will stop recording. ● **Always record the new event -** only the newest events will be recorded by the system.
Time	Display the time the user authenticated by Vigor2952 series.
Message	Display authentication information done by Vigor2952 series.

VIII-1-16 DoS Flood Table

This page can display content of IP connection detected by DoS Flooding Defense mechanism. It is useful and convenient for network engineers (e.g., MIS engineer) to inspect the network environment to find out if there is any abnormal connection.

Information of IP traced and destination port used for SYN Flood, UDP Flood and ICMP Flood attacks will be detected and shown respectively on different pages.

Moreover, IP address detected and suspected to attack the network system can be blocked shortly by clicking the **Block** button shown on pages of SYN Flood, UDP Flood and ICMP Flood.



Diagnostics >> DoS Flood Table

IPv4

Tracing IP	Destination Port	
192.168.1.22	80	Block
192.168.1.205	40005(⊗)	Block

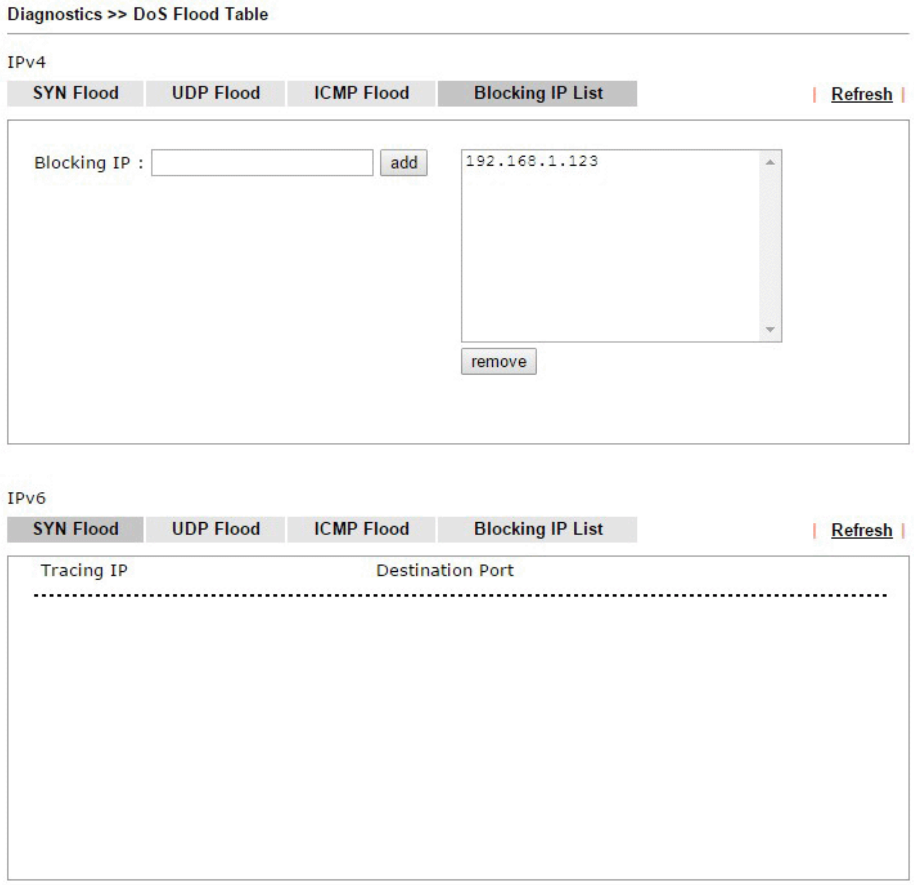
IPv6

Tracing IP	Destination Port

Info

The icon - (⊗) - means there is something wrong (e.g., attacking the system) with that IP address.

However, if an IP address is comfirmed to be blocked due to its abnormal behavior, click the **Blocking IP List** tab to block it forever. For example, IP address "192.168.1.123" (displayed on the following web page) will be blocked forever.



Diagnostics >> DoS Flood Table

IPv4

Blocking IP :

192.168.1.123

IPv6

Tracing IP   Destination Port

Available settings are explained as follows:

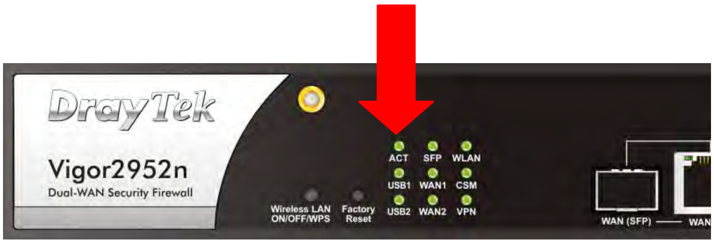
Item	Description
Blocking IP	Type the IP address in this field and click **add**. It will be added to the IP List and appear in the right frame. IP list in the right frame will be blocked by Vigor system permanatly. **Remove** – It is used to remove selected IP address from the Blocking IP List.
Refresh	Click this link to refresh current page.

VIII-2 Checking If the Hardware Status Is OK or Not

Follow the steps below to verify the hardware status.

1. Check the power line and WLAN/LAN cable connections.
   Refer to "**I-2 Hardware Installation"** for details.

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 **"I-2 Hardware Installation"** to execute the hardware installation again. And then, try again.

VIII-3 Checking If the Network Connection Settings on Your Computer Is OK or Not

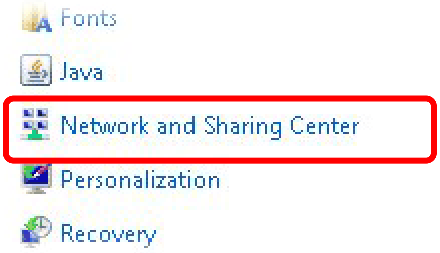
Sometimes the link failure occurs due to the wrong network connection settings. After trying the above section, if the link is stilled failed, please do the steps listed below to make sure the network connection settings is OK.

For Windows

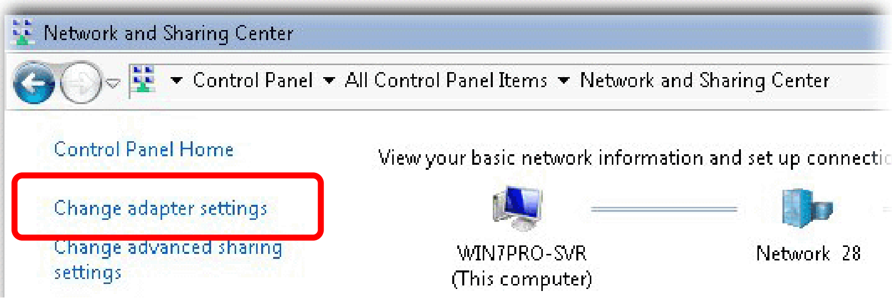
Info

The example is based on Windows 7. As to the examples for other operation systems, please refer to the similar steps or find support notes in www.DrayTek.com.

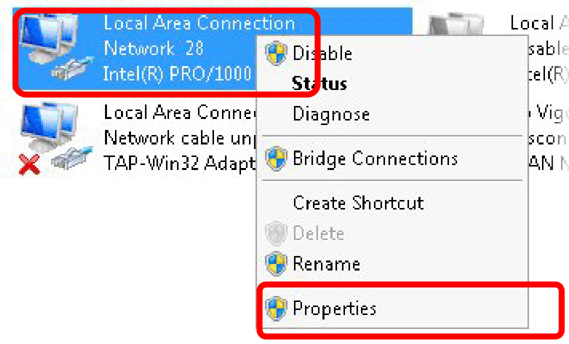
1. Open **All Programs>>Getting Started>>Control Panel.** Click **Network and Sharing Center.**



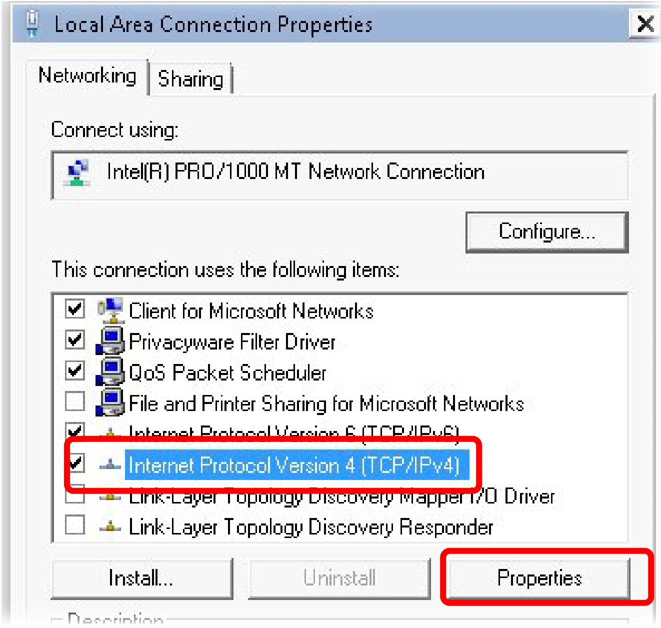
2. In the following window, click **Change adapter settings**.


Network and Sharing Center
Control Panel ▸ All Control Panel Items ▸ Network and Sharing Center
Control Panel Home
Change adapter settings
Change advanced sharing settings
View your basic network information and set up connectio
WIN7PRO-SVR
(This computer)
Network 28

3. Icons of network connection will be shown on the window. Right-click on **Local Area Connection** and click on **Properties**.



4. Select **Internet Protocol Version 4 (TCP/IP)** and then click **Properties**.



Local Area Connection Properties

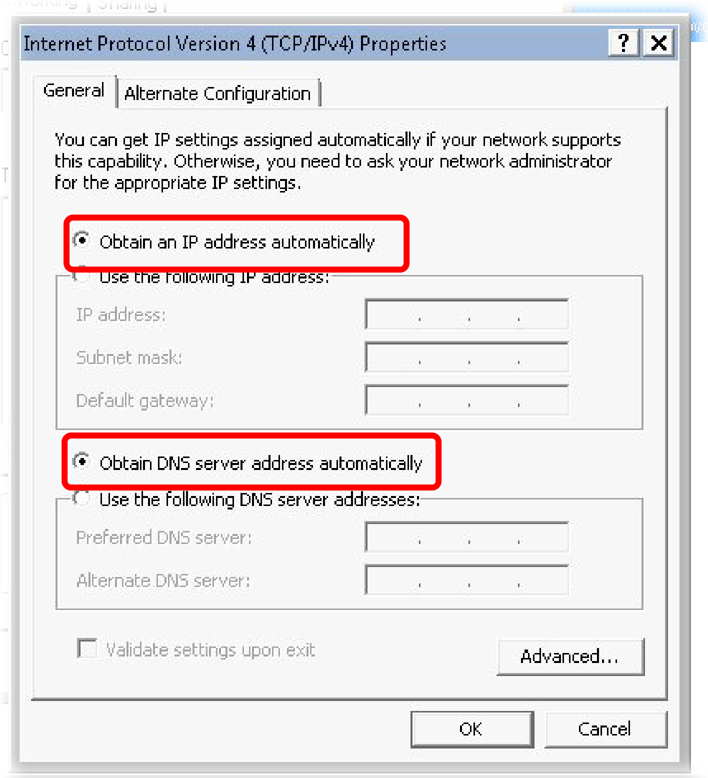
Connect using:

Intel(R) PRO/1000 MT Network Connection

This connection uses the following items:

☑ Client for Microsoft Networks
☑ Privacyware Filter Driver
☑ QoS Packet Scheduler
□ File and Printer Sharing for Microsoft Networks
☑ Internet Protocol Version 6 (TCP/IPv6)
☑ Internet Protocol Version 4 (TCP/IPv4)
□ Link-Layer Topology Discovery Mapper I/O Driver
□ Link-Layer Topology Discovery Responder

5. Select **Obtain an IP address automatically** and **Obtain DNS server address automatically**. Finally, click **OK**.



Internet Protocol Version 4 (TCP/IPv4) Properties

You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

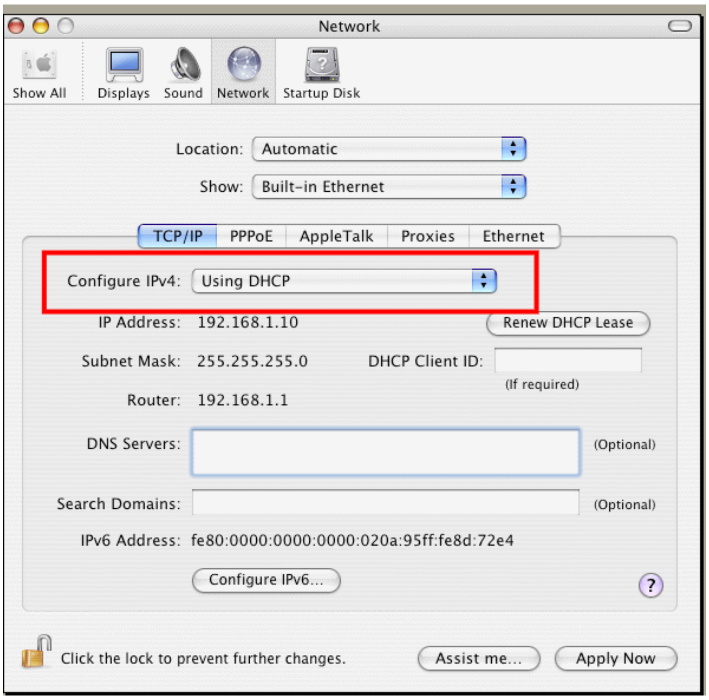
● Obtain an IP address automatically
○ Use the following IP address:
IP address: . . .
Subnet mask: . . .
Default gateway: . . .

● Obtain DNS server address automatically
○ Use the following DNS server addresses:
Preferred DNS server: . . .
Alternate DNS server: . . .

□ Validate settings upon exit

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.



Location: Automatic

Show: Built-in Ethernet

Configure IPv4: Using DHCP

IP Address: 192.168.1.10

Subnet Mask: 255.255.255.0

DHCP Client ID: (If required)

Router: 192.168.1.1

DNS Servers: (Optional)

Search Domains: (Optional)

IPv6 Address: fe80:0000:0000:0000:020a:95ff:fe8d:72e4

Click the lock to prevent further changes.

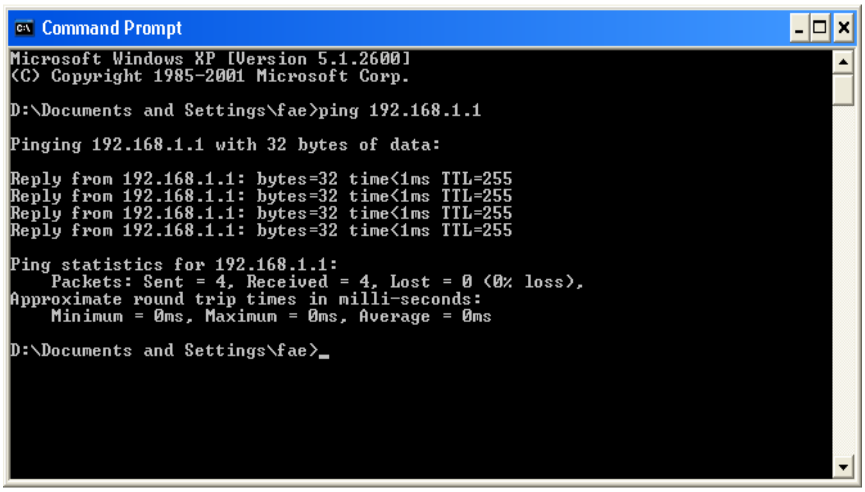
VIII-4 Pinging the Router from Your Computer

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 VIII-3).

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/7/8). The DOS command dialog will appear.

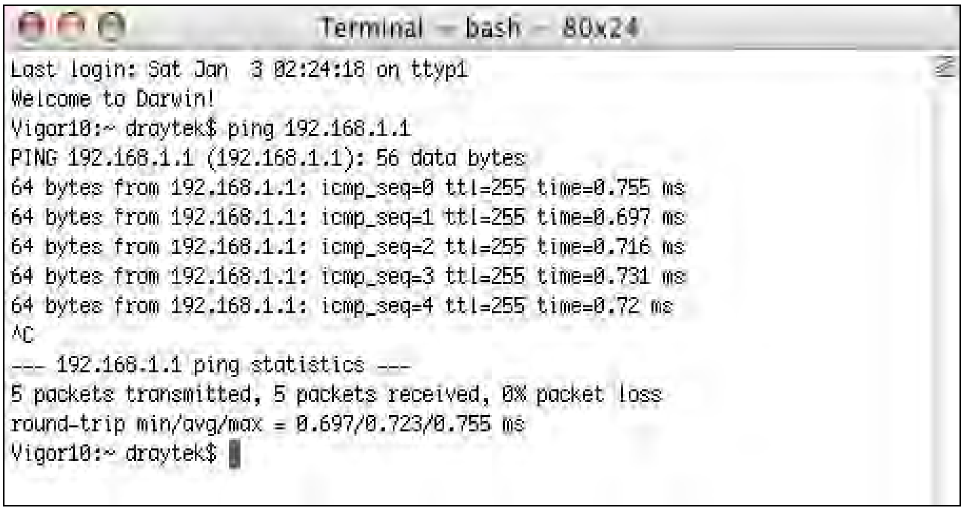


```
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

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 MacOs 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.



```
Last login: Sat Jan  3 02:24:18 on ttyp1
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$
```

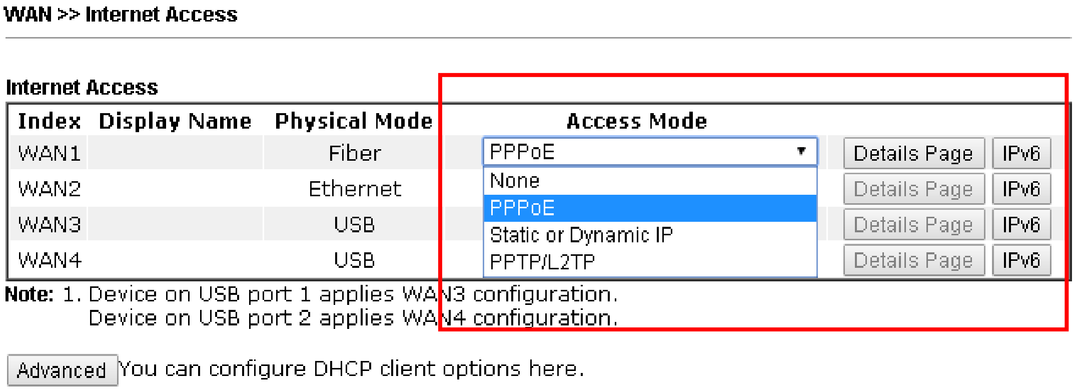
VIII-5 Checking If the ISP Settings are OK or Not

If WAN connection cannot be up, check if the LEDs (according to the LED explanations listed on section I-1) are correct or not. If the LEDs are off, please:

- Change the **Physical Type** from **Auto negotiation** to other values (e.g., 100M full duplex).
- Next, change the physical type of modem (e.g., DSL/FTTX(GPON)/Cable modem) offered by ISP with the same value configured in Vigor router. Check if the LEDs on Vigor router are on or not.
- If not, please install an additional switch for connecting both Vigor router and the modem offered by ISP. Then, check if the LEDs on Vigor router are on or not.
- If the problem of LEDs cannot be solved by the above measures, please contact with the nearest reseller, or send an e-mail to DrayTek FAE for technical support.
- Check if the settings offered by ISP are configured well or not.

When the LEDs are on and correct, yet the WAN connection still cannot be up, please:

- Open **WAN >> Internet Access** page and then check whether the ISP settings are set correctly. Click **Details Page** of WAN1~WAN4 to review the settings that you configured previously.



WAN >> Internet Access

Internet Access

Index	Display Name	Physical Mode	Access Mode		
WAN1		Fiber	PPPoE ▾	Details Page	IPv6
WAN2		Ethernet		Details Page	IPv6
WAN3		USB		Details Page	IPv6
WAN4		USB		Details Page	IPv6

Note: 1. Device on USB port 1 applies WAN3 configuration.
Device on USB port 2 applies WAN4 configuration.

Advanced You can configure DHCP client options here.

VIII-6 Problems for 3G/4G Network Connection

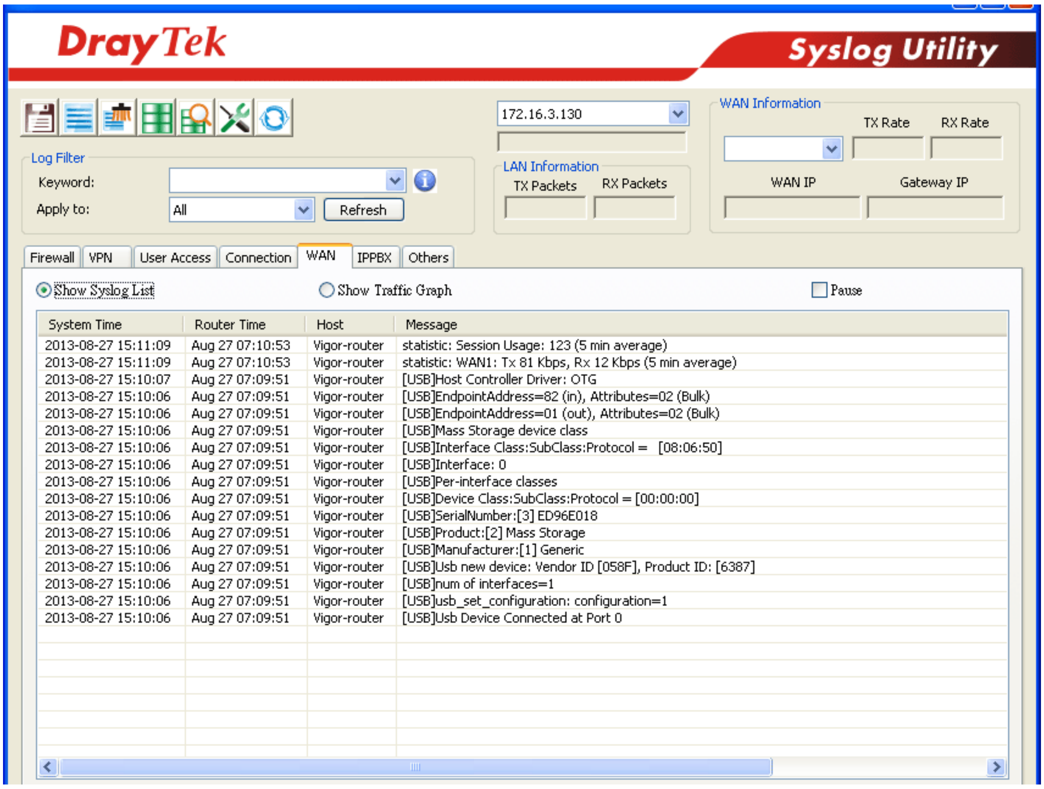
When you have trouble in using 3G/4G network transmission, please check the following:

Check if USB LED lights on or off

You have to wait about 15 seconds after inserting 3G/4G USB Modem into your Vigor2952. Later, the USB LED will light on which means the installation of USB Modem is successful. If the USB LED does not light on, please remove and reinsert the modem again. If it still fails, restart Vigor2952.

USB LED lights on but the network connection does not work

Check the PIN Code of SIM card is disabled or not. Please use the utility of 3G/4G USB Modem to disable PIN code and try again. If it still fails, it might be the compliance problem of system. Please open DrayTek Syslog Tool to capture the connection information (WAN Log) and send the page (similar to the following graphic) to the service center of DrayTek.



172.16.3.130

Apply to: All

● Show Syslog List ○ Show Traffic Graph □ Pause

System Time	Router Time	Host	Message
2013-08-27 15:11:09	Aug 27 07:10:53	Vigor-router	statistic: Session Usage: 123 (5 min average)
2013-08-27 15:11:09	Aug 27 07:10:53	Vigor-router	statistic: WAN1: Tx 81 Kbps, Rx 12 Kbps (5 min average)
2013-08-27 15:10:07	Aug 27 07:09:51	Vigor-router	[USB]Host Controller Driver: OTG
2013-08-27 15:10:06	Aug 27 07:09:51	Vigor-router	[USB]EndpointAddress=82 (in), Attributes=02 (Bulk)
2013-08-27 15:10:06	Aug 27 07:09:51	Vigor-router	[USB]EndpointAddress=01 (out), Attributes=02 (Bulk)
2013-08-27 15:10:06	Aug 27 07:09:51	Vigor-router	[USB]Mass Storage device class
2013-08-27 15:10:06	Aug 27 07:09:51	Vigor-router	[USB]Interface Class:SubClass:Protocol = [08:06:50]
2013-08-27 15:10:06	Aug 27 07:09:51	Vigor-router	[USB]Interface: 0
2013-08-27 15:10:06	Aug 27 07:09:51	Vigor-router	[USB]Per-interface classes
2013-08-27 15:10:06	Aug 27 07:09:51	Vigor-router	[USB]Device Class:SubClass:Protocol = [00:00:00]
2013-08-27 15:10:06	Aug 27 07:09:51	Vigor-router	[USB]SerialNumber:[3] ED96E018
2013-08-27 15:10:06	Aug 27 07:09:51	Vigor-router	[USB]Product:[2] Mass Storage
2013-08-27 15:10:06	Aug 27 07:09:51	Vigor-router	[USB]Manufacturer:[1] Generic
2013-08-27 15:10:06	Aug 27 07:09:51	Vigor-router	[USB]Usb new device: Vendor ID [058F], Product ID: [6387]
2013-08-27 15:10:06	Aug 27 07:09:51	Vigor-router	[USB]num of interfaces=1
2013-08-27 15:10:06	Aug 27 07:09:51	Vigor-router	[USB]usb_set_configuration: configuration=1
2013-08-27 15:10:06	Aug 27 07:09:51	Vigor-router	[USB]Usb Device Connected at Port 0

Transmission Rate is not fast enough

Please connect your Notebook with 3G/4G USB Modem to test the connection speed to verify if the problem is caused by Vigor2952. In addition, please refer to the manual of 3G/4G USB Modem for LED Status to make sure if the modem connects to Internet via HSDPA mode. If you want to use the modem indoors, please put it on the place near the window to obtain better signal receiving.

VIII-7 Backing to Factory Default Setting If Necessary

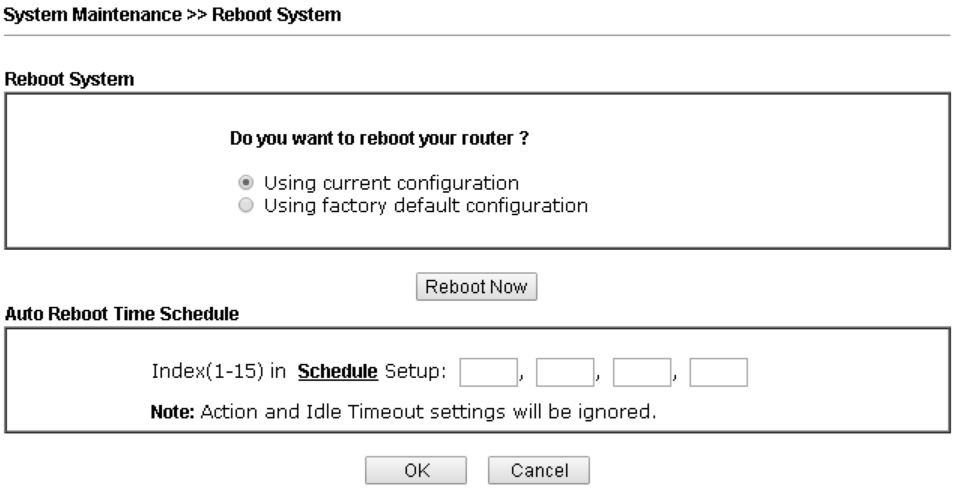
Sometimes, a wrong connection can be improved by returning to the default settings. Try to reset the router by software or hardware. Such function is available in **Admin Mode** only.

Info After pressing factory default setting, you will loose all settings you did before. Make sure you have recorded all useful settings before you pressing. The password of factory default is null.

Software Reset

You can reset the router to factory default via Web page. Such function is available in **Admin Mode** only.

Go to **System Maintenance** and choose **Reboot System** on the web page. The following screen will appear. Choose **Using factory default configuration** and click **Reboot Now**. After few seconds, the router will return all the settings to the factory settings.



System Maintenance >> Reboot System

Reboot System

Do you want to reboot your router ?

● Using current configuration
○ Using factory default configuration

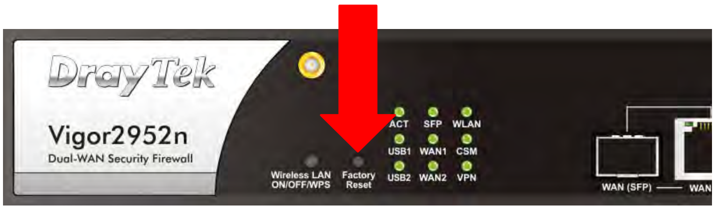
Auto Reboot Time Schedule

Index(1-15) in Schedule Setup: ____, ____, ____, ____

Note: Action and Idle Timeout settings will be ignored.

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.

VIII-8 Contacting DrayTek

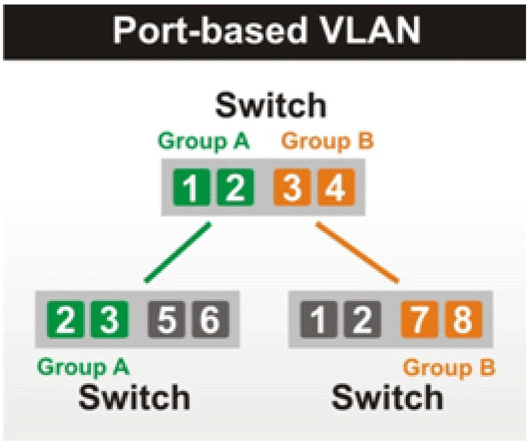
If the router still cannot work correctly after trying many efforts, please contact your dealer for further help right away. For any questions, please feel free to send e-mail to support@DrayTek.com.

Appendix I: VLAN Applications on Vigor Router

Virtual Local Area Network is so-called VLAN. It offers the logical grouping technique to separate the physical ports of Ethernet switches, thus we can manage our local network easier, more flexible and secure. For instance, you're a networking administrator in your company and you're planning to isolate the visitors' traffics from your private network for security considerations because you cannot ensure that visitors' computer is clean. Or you want to separate your private network into several parts by divisions because there are too many computers in the same network segment and it results in the local traffics heavily. VLAN helps you to solve these situations, and DrayTek's products support bellow two popular types:

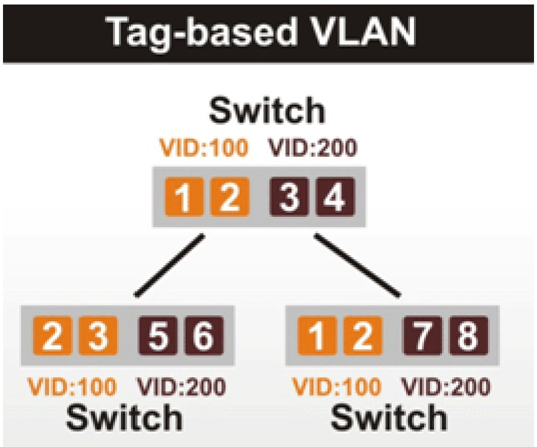
Port-based

It uses a matrix table of the physical ports to define the traffics how to exchange between each port, and the traffics will be isolated from the ports are not being ticked in the same line. It is the easiest way to setup an isolate network, but not a flexible way to maintain a growing network. Because the idea of port-based VLAN is grouping by physical ports, but the difficulty is how to handle the traffics between two or more Ethernet switches. Thus, VLAN is suitable for some circumstances, for example, the rental apartment, SOHO office…and so on. These clients may need two or three isolated networks only and setup a network in a simple way.



Tag-based

The idea of tag-based VLAN is to identify a virtual LAN with a specific ID, therefore, **VLAN ID** introduced by tag-based VLAN. Through VLAN ID, ports with different **VID (VLAN ID) will be** identified as in different LANs, so the traffics also will be isolated from each of VLANs. Many administrators who manage an enterprise network or even the internet service providers (ISP) adopt Tag-based VLAN popularly because it is convenient to maintain and manage a distributed network. Setting a large-scale network is easy by giving each of them with different VID and isolating the traffics at the same time. Besides the VLAN ID, there is another feature, **Trunk**, introduced. While the role of a port on an Ethernet switch is setup as a Trunk port, it means the VLAN ID will be kept while forwarding the packets between switches. By this feature, VLANs are able to distribute over two or more Ethernet switches easily, moreover design a large and secured network is possible through Trunk port. When VLAN is being enabled on Vigor routers, the LAN ports are being turned into Trunk mode automatically. Therefore, a VLAN supported switch, like VigorSwitch G2260/P2261, or VigorSwitch G1240, is needed.



Vigor routers [Note] support Tag-based feature both on LAN and WAN interfaces. The next we'll demonstrate our web design and how to configure the settings by introducing the functionalities of Vigor router.

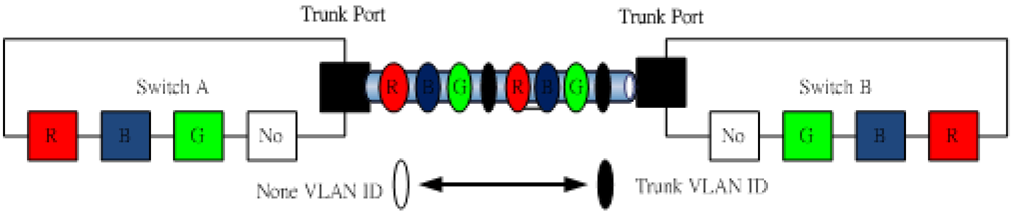
[Note]

Broadband router: Vigor2920/Vigor3200/Vigor2925/Vigo2960/Vigor3900

Modem router: Vigor2850/Vigor2952

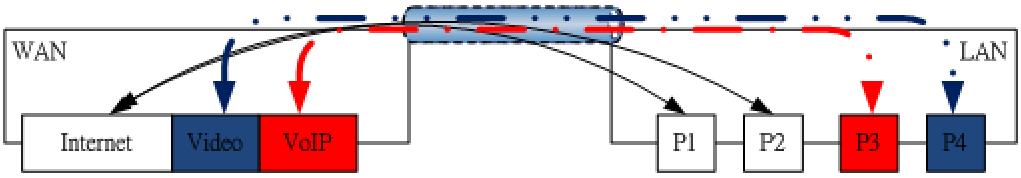
VLAN Packets on Vigor routers

Trunk mode of LAN



Trunk Port can carry the packets with VID but replace the Non-VID packet as the VID of Trunk port while forwarding the packets to another switch.

Bridge mode of WAN

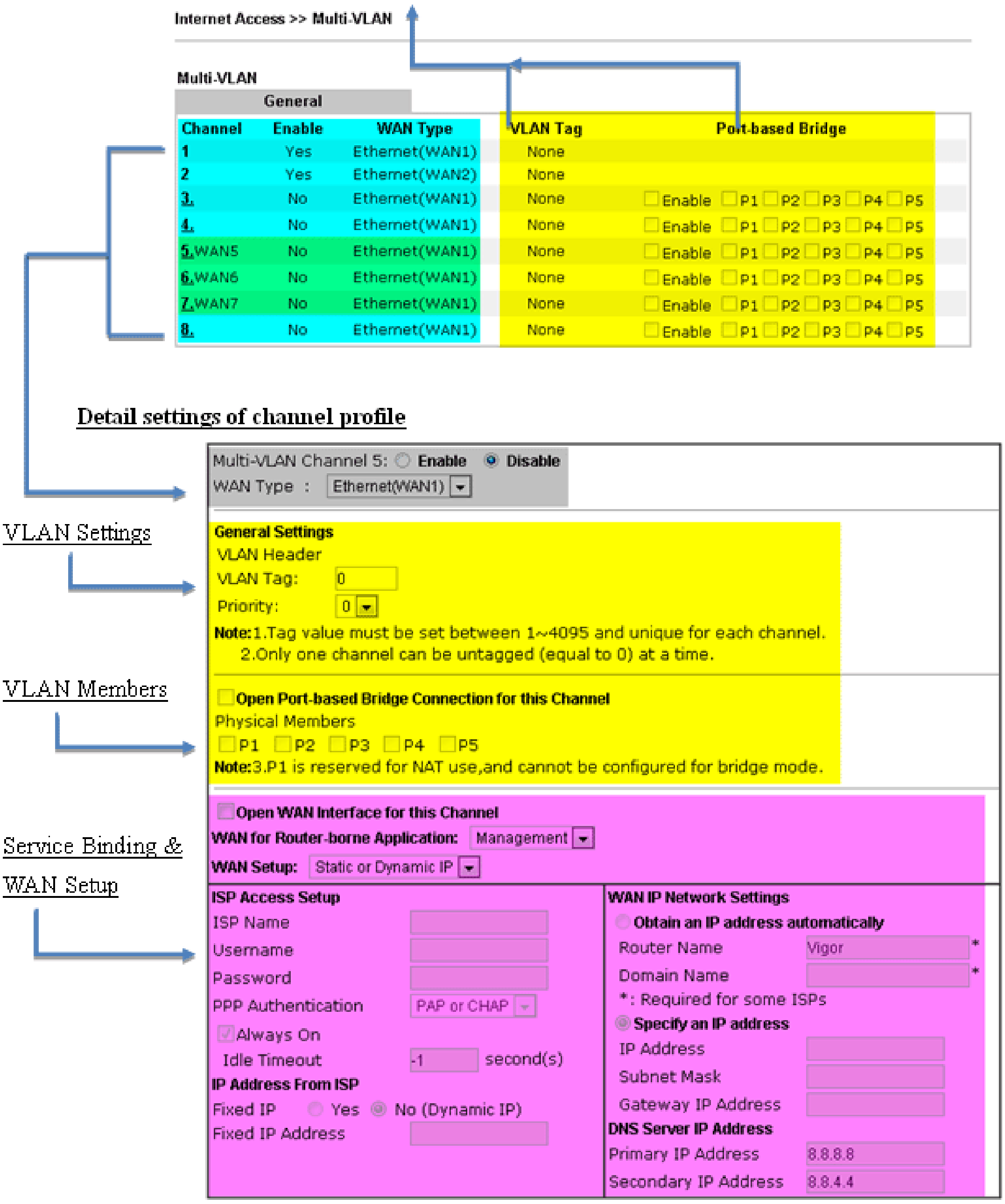


P1 and P2 are doing NAT flow to access to the internet, but P3 and P4 will forward the packets between WAN and LAN ports directly.

Web User Interface

So far, there are two kinds of open system on Vigor router. One is DrayOS, which is DrayTek owned, and another is Linux-like which customized by DrayTek from OpenWRT. Here DrayOS system is going to be introduced to you because it is the most stable and superfast booting system in DrayTek products. If the UI style of yours is different from the following. It may not DrayOS system with new web style or maybe the Linux-like model.

WAN



Internet Access >> Multi-VLAN

Multi-VLAN

General				
Channel	Enable	WAN Type	VLAN Tag	Port-based Bridge
1	Yes	Ethernet(WAN1)	None	
2	Yes	Ethernet(WAN2)	None	
3.	No	Ethernet(WAN1)	None	□ Enable □ P1 □ P2 □ P3 □ P4 □ P5
4.	No	Ethernet(WAN1)	None	□ Enable □ P1 □ P2 □ P3 □ P4 □ P5
5.WAN5	No	Ethernet(WAN1)	None	□ Enable □ P1 □ P2 □ P3 □ P4 □ P5
6.WAN6	No	Ethernet(WAN1)	None	□ Enable □ P1 □ P2 □ P3 □ P4 □ P5
7.WAN7	No	Ethernet(WAN1)	None	□ Enable □ P1 □ P2 □ P3 □ P4 □ P5
8.	No	Ethernet(WAN1)	None	□ Enable □ P1 □ P2 □ P3 □ P4 □ P5

Detail settings of channel profile

VLAN Settings

VLAN Members

Service Binding & WAN Setup

Multi-VLAN Channel 5: ○ Enable ● Disable

WAN Type : Ethernet(WAN1)

General Settings

VLAN Header

VLAN Tag: 0

Priority: 0

Note:1.Tag value must be set between 1~4095 and unique for each channel.
2.Only one channel can be untagged (equal to 0) at a time.

□ **Open Port-based Bridge Connection for this Channel**

Physical Members

□ P1 □ P2 □ P3 □ P4 □ P5

Note:3.P1 is reserved for NAT use,and cannot be configured for bridge mode.

□ **Open WAN Interface for this Channel**

WAN for Router-borne Application: Management

WAN Setup: Static or Dynamic IP

ISP Access Setup

ISP Name

Username

Password

PPP Authentication: PAP or CHAP

☑ Always On

Idle Timeout -1 second(s)

IP Address From ISP

Fixed IP ○ Yes ● No (Dynamic IP)

Fixed IP Address

WAN IP Network Settings

○ **Obtain an IP address automatically**

Router Name: Vigor *

Domain Name *

*: Required for some ISPs

● **Specify an IP address**

IP Address

Subnet Mask

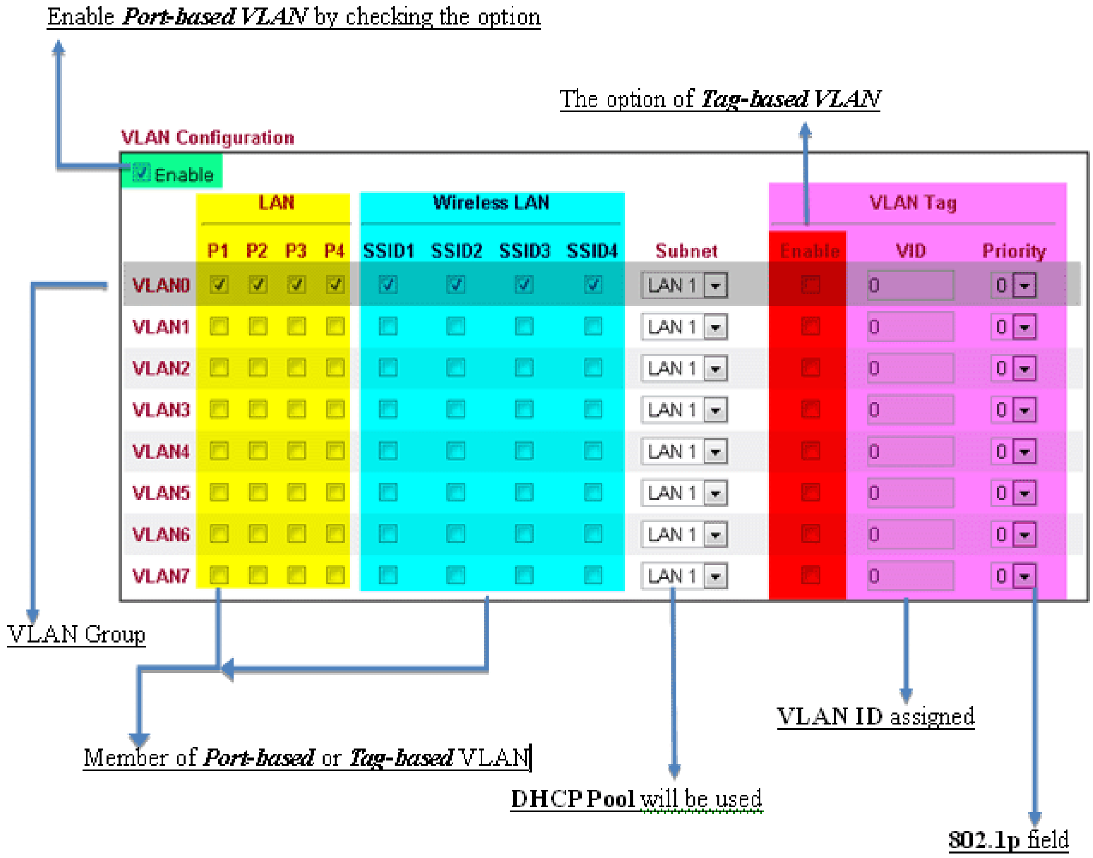
Gateway IP Address

DNS Server IP Address

Primary IP Address: 8.8.8.8

Secondary IP Address: 8.8.4.4

LAN



Enable *Port-based VLAN* by checking the option

The option of *Tag-based VLAN*

VLAN Configuration

☑ Enable

	LAN				Wireless LAN					VLAN Tag		
	P1	P2	P3	P4	SSID1	SSID2	SSID3	SSID4	Subnet	Enable	VID	Priority
VLAN0	☑	☑	☑	☑	☑	☑	☑	☑	LAN 1	☐	0	0
VLAN1	☐	☐	☐	☐	☐	☐	☐	☐	LAN 1	☐	0	0
VLAN2	☐	☐	☐	☐	☐	☐	☐	☐	LAN 1	☐	0	0
VLAN3	☐	☐	☐	☐	☐	☐	☐	☐	LAN 1	☐	0	0
VLAN4	☐	☐	☐	☐	☐	☐	☐	☐	LAN 1	☐	0	0
VLAN5	☐	☐	☐	☐	☐	☐	☐	☐	LAN 1	☐	0	0
VLAN6	☐	☐	☐	☐	☐	☐	☐	☐	LAN 1	☐	0	0
VLAN7	☐	☐	☐	☐	☐	☐	☐	☐	LAN 1	☐	0	0

VLAN Group

Member of *Port-based* or *Tag-based* VLAN

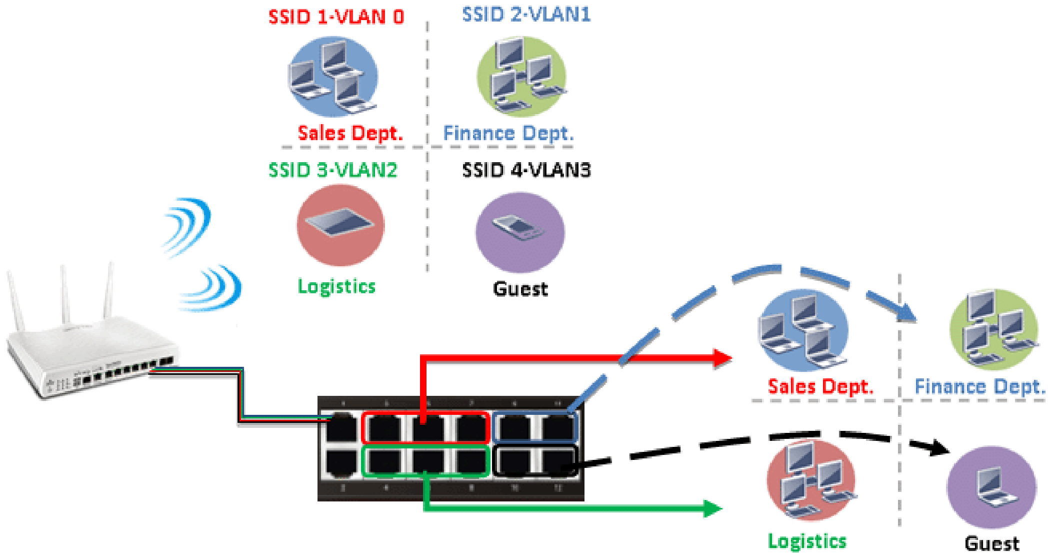
DHCP Pool will be used

VLAN ID assigned

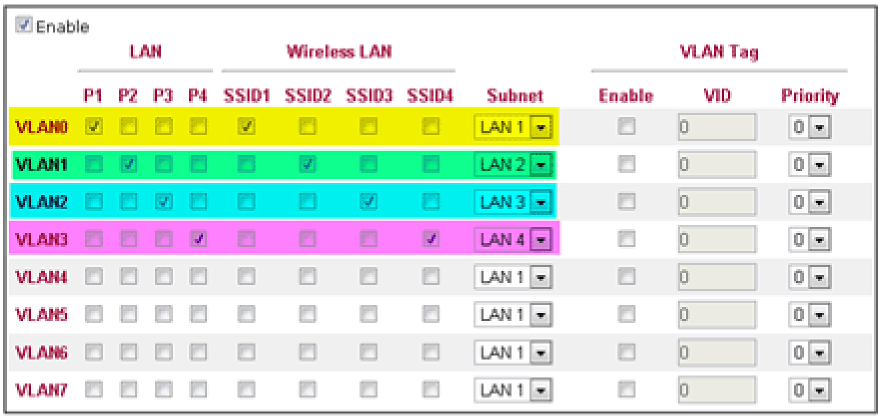
802.1p field

VLAN applications on Vigor router

- **Multi Subnet (VLAN of LAN)**



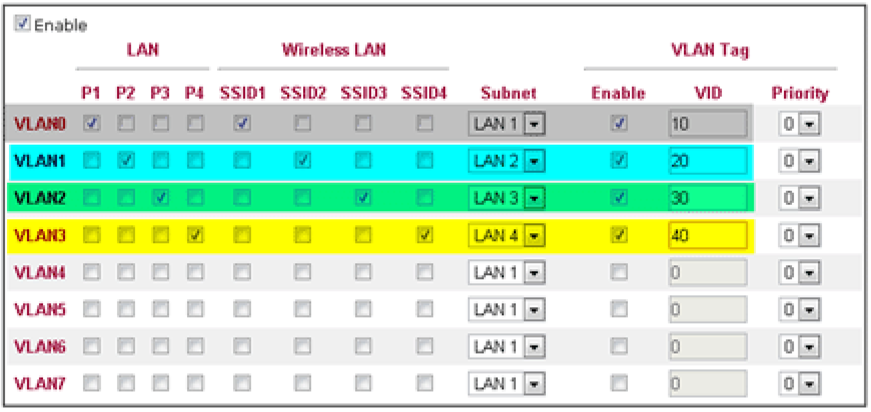
Port-based mode



☑ Enable

	LAN				Wireless LAN					VLAN Tag		
	P1	P2	P3	P4	SSID1	SSID2	SSID3	SSID4	Subnet	Enable	VID	Priority
VLAN0	☑	□	□	□	☑	□	□	□	LAN 1	□	0	0
VLAN1	□	☑	□	□	□	☑	□	□	LAN 2	□	0	0
VLAN2	□	□	☑	□	□	□	☑	□	LAN 3	□	0	0
VLAN3	□	□	□	☑	□	□	□	☑	LAN 4	□	0	0
VLAN4	□	□	□	□	□	□	□	□	LAN 1	□	0	0
VLAN5	□	□	□	□	□	□	□	□	LAN 1	□	0	0
VLAN6	□	□	□	□	□	□	□	□	LAN 1	□	0	0
VLAN7	□	□	□	□	□	□	□	□	LAN 1	□	0	0

Tag-based mode

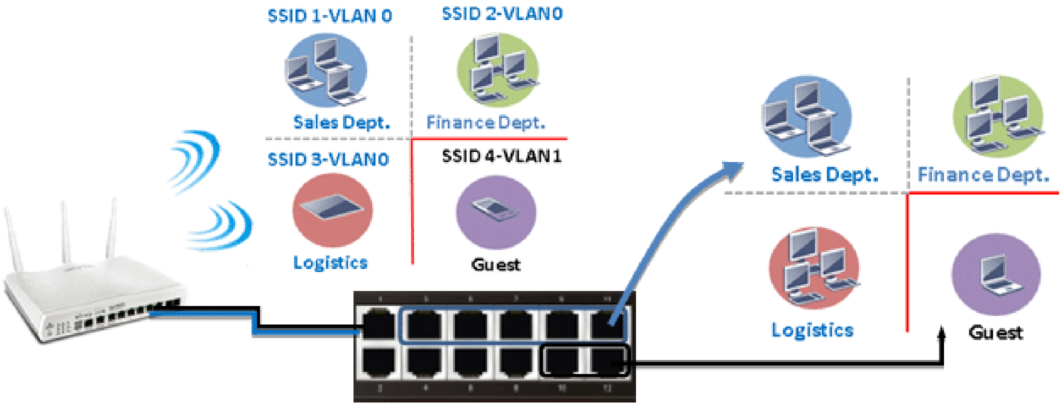


☑ Enable

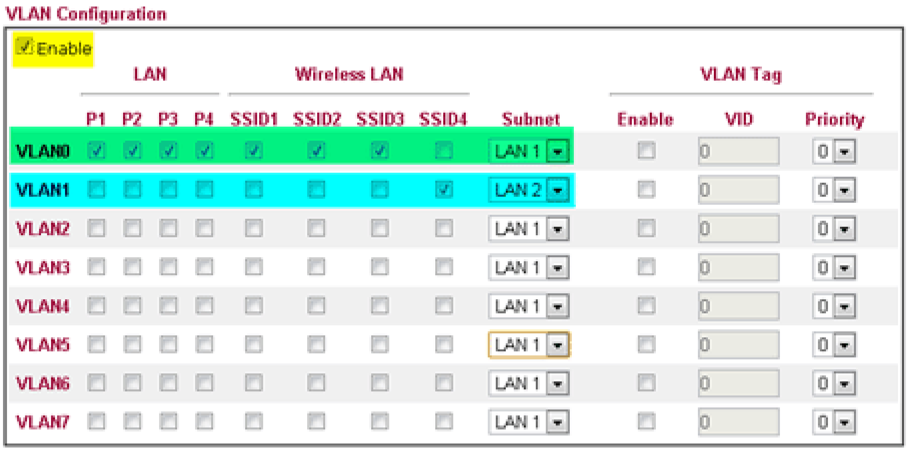
	LAN				Wireless LAN					VLAN Tag		
	P1	P2	P3	P4	SSID1	SSID2	SSID3	SSID4	Subnet	Enable	VID	Priority
VLAN0	☑	□	□	□	☑	□	□	□	LAN 1	☑	10	0
VLAN1	□	☑	□	□	□	☑	□	□	LAN 2	☑	20	0
VLAN2	□	□	☑	□	□	□	☑	□	LAN 3	☑	30	0
VLAN3	□	□	□	☑	□	□	□	☑	LAN 4	☑	40	0
VLAN4	□	□	□	□	□	□	□	□	LAN 1	□	0	0
VLAN5	□	□	□	□	□	□	□	□	LAN 1	□	0	0
VLAN6	□	□	□	□	□	□	□	□	LAN 1	□	0	0
VLAN7	□	□	□	□	□	□	□	□	LAN 1	□	0	0

By above settings, there are four private networks will be created and computers attached with each of LAN ports or SSIDs which are able to obtain a private IP address from each DHCP server (LAN1/LAN2/LAN3/LAN4). However, the traffics of the LAN port or SSID that are NOT being grouped in the same VLAN are unable to forward to each other. The benefit of Port-based is able to extend the wired ports by installing a cheaper dumb switch as many as you need, but Tag-based offers you a flexible and well-managed network. The networks are isolated, secured and reduce the broadcasting storm effectively in each of networks with VLAN.

- **Guest Network**



Port-based mode

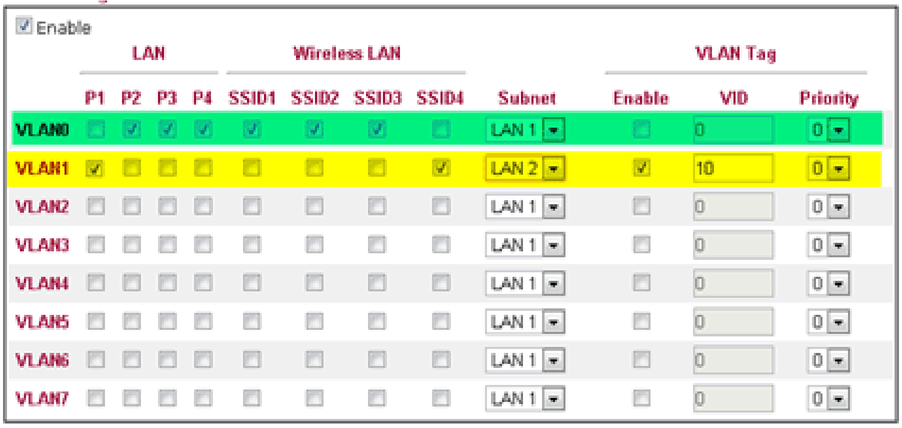


VLAN Configuration

☑ Enable

	LAN				Wireless LAN					VLAN Tag		
	P1	P2	P3	P4	SSID1	SSID2	SSID3	SSID4	Subnet	Enable	VID	Priority
VLAN0	☑	☑	☑	☑	☑	☑	☑	□	LAN 1	□	0	0
VLAN1	□	□	□	□	□	□	□	☑	LAN 2	□	0	0
VLAN2	□	□	□	□	□	□	□	□	LAN 1	□	0	0
VLAN3	□	□	□	□	□	□	□	□	LAN 1	□	0	0
VLAN4	□	□	□	□	□	□	□	□	LAN 1	□	0	0
VLAN5	□	□	□	□	□	□	□	□	LAN 1	□	0	0
VLAN6	□	□	□	□	□	□	□	□	LAN 1	□	0	0
VLAN7	□	□	□	□	□	□	□	□	LAN 1	□	0	0

Tag-based mode



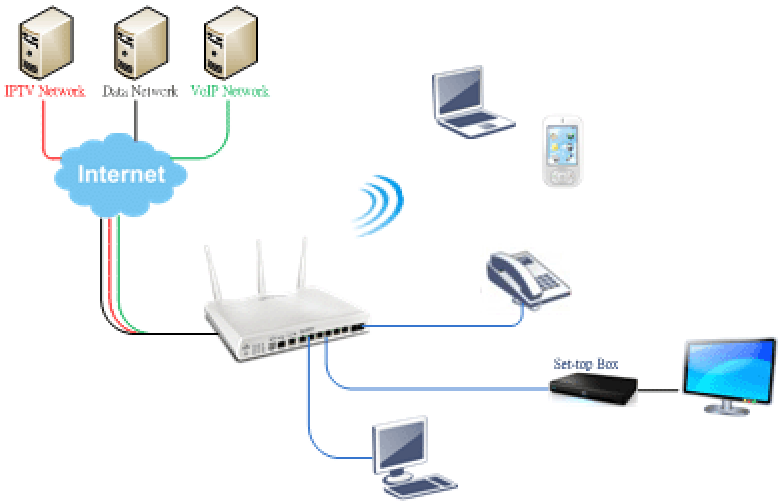
☑ Enable

	LAN				Wireless LAN					VLAN Tag		
	P1	P2	P3	P4	SSID1	SSID2	SSID3	SSID4	Subnet	Enable	VID	Priority
VLAN0	□	☑	☑	☑	☑	☑	☑	□	LAN 1	□	0	0
VLAN1	☑	□	□	□	□	□	□	☑	LAN 2	☑	10	0
VLAN2	□	□	□	□	□	□	□	□	LAN 1	□	0	0
VLAN3	□	□	□	□	□	□	□	□	LAN 1	□	0	0
VLAN4	□	□	□	□	□	□	□	□	LAN 1	□	0	0
VLAN5	□	□	□	□	□	□	□	□	LAN 1	□	0	0
VLAN6	□	□	□	□	□	□	□	□	LAN 1	□	0	0
VLAN7	□	□	□	□	□	□	□	□	LAN 1	□	0	0

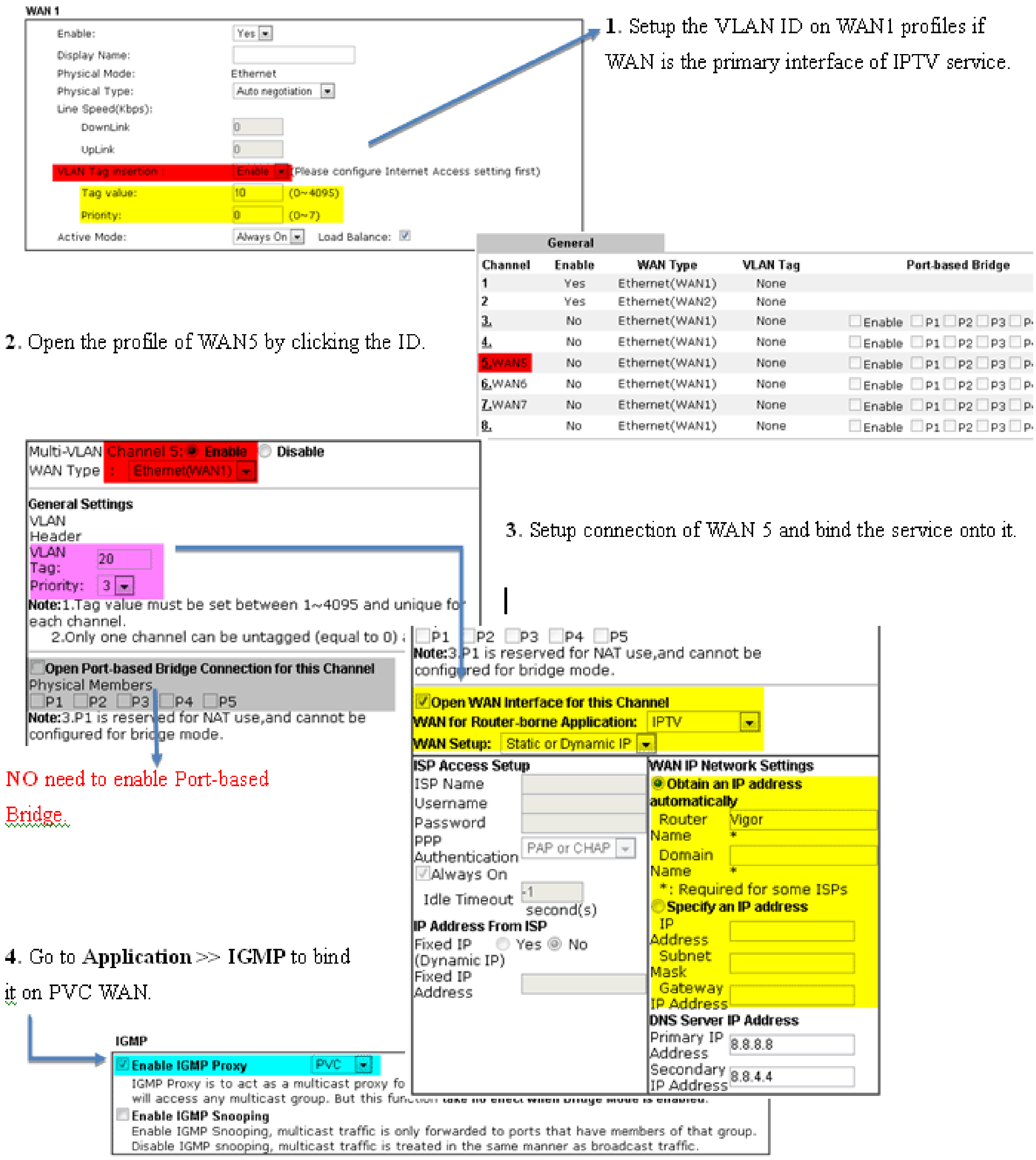
To deploy a guest network, which serves your guests the internet accessibility, but the traffics have to be isolated from your private network due to the security considerations, it can be done by above settings. However, a switch support VLAN function is need if VLAN Tag enabled.

- **Triple Play (Multi-WAN)**

NAT mode with VLAN



Following settings, the set-top box (STB) is able to attach with any LAN port. Video streaming which your ISP provided will be played on your monitor.



1. Setup the VLAN ID on WAN1 profiles if WAN is the primary interface of IPTV service.

WAN 1

Enable:	Yes ▾
Display Name:	
Physical Mode:	Ethernet
Physical Type:	Auto negotiation ▾
Line Speed(Kbps):	
DownLink	0
UpLink	0
VLAN Tag insertion :	Enable ▾ (Please configure Internet Access setting first)
Tag value:	10 (0~4095)
Priority:	0 (0~7)
Active Mode:	Always On ▾ Load Balance: ☑

2. Open the profile of WAN5 by clicking the ID.

General

Channel	Enable	WAN Type	VLAN Tag	Port-based Bridge
1	Yes	Ethernet(WAN1)	None	
2	Yes	Ethernet(WAN2)	None	
3.	No	Ethernet(WAN1)	None	□ Enable □ P1 □ P2 □ P3 □ P
4.	No	Ethernet(WAN1)	None	□ Enable □ P1 □ P2 □ P3 □ P
5.WAN5	No	Ethernet(WAN1)	None	□ Enable □ P1 □ P2 □ P3 □ P
6.WAN6	No	Ethernet(WAN1)	None	□ Enable □ P1 □ P2 □ P3 □ P
7.WAN7	No	Ethernet(WAN1)	None	□ Enable □ P1 □ P2 □ P3 □ P
8.	No	Ethernet(WAN1)	None	□ Enable □ P1 □ P2 □ P3 □ P

Multi-VLAN Channel 5: ● Enable ○ Disable

WAN Type : Ethernet(WAN1) ▾

General Settings

VLAN Header

VLAN Tag: 20

Priority: 3 ▾

Note:1.Tag value must be set between 1~4095 and unique for each channel.

2.Only one channel can be untagged (equal to 0) a

□ **Open Port-based Bridge Connection for this Channel**

Physical Members

□ P1 □ P2 □ P3 □ P4 □ P5

Note:3.P1 is reserved for NAT use,and cannot be configured for bridge mode.

NO need to enable Port-based Bridge.

3. Setup connection of WAN 5 and bind the service onto it.

□ P1 □ P2 □ P3 □ P4 □ P5

Note:3.P1 is reserved for NAT use,and cannot be configured for bridge mode.

☑ **Open WAN Interface for this Channel**

WAN for Router-borne Application: IPTV ▾

WAN Setup: Static or Dynamic IP ▾

ISP Access Setup

ISP Name	
Username	
Password	
PPP Authentication	PAP or CHAP ▾
☑ Always On	
Idle Timeout	-1 second(s)

IP Address From ISP

Fixed IP (Dynamic IP)	○ Yes ● No
Fixed IP Address	

WAN IP Network Settings

● **Obtain an IP address automatically**

Router Name *	Vigor
Domain Name *	

*: Required for some ISPs

○ **Specify an IP address**

IP Address	
Subnet Mask	
Gateway IP Address	

DNS Server IP Address

Primary IP Address	8.8.8.8
Secondary IP Address	8.8.4.4

4. Go to **Application** >> **IGMP** to bind it on PVC WAN.

IGMP

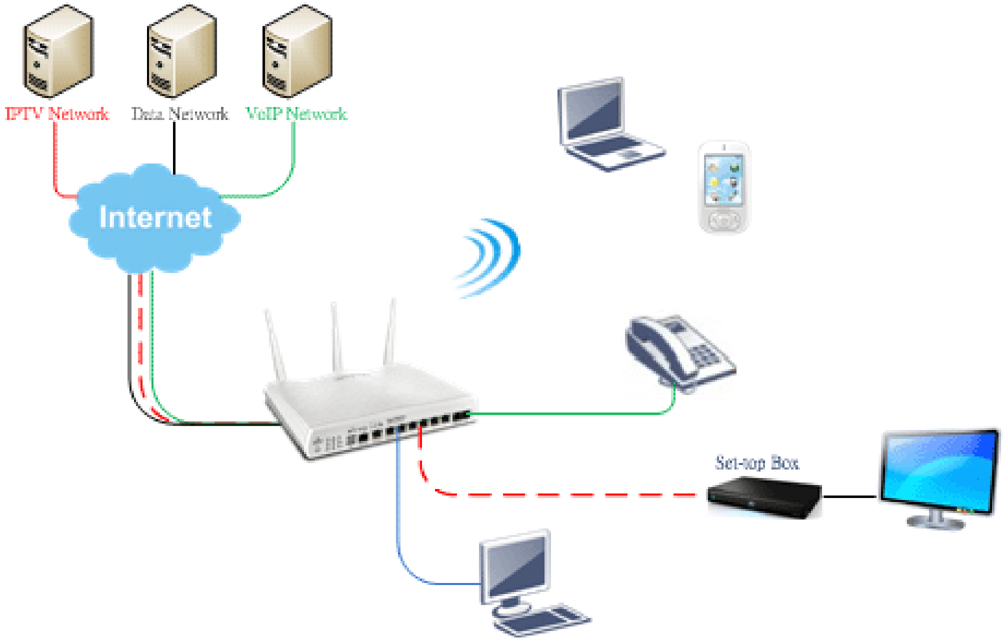
☑ **Enable IGMP Proxy** PVC ▾

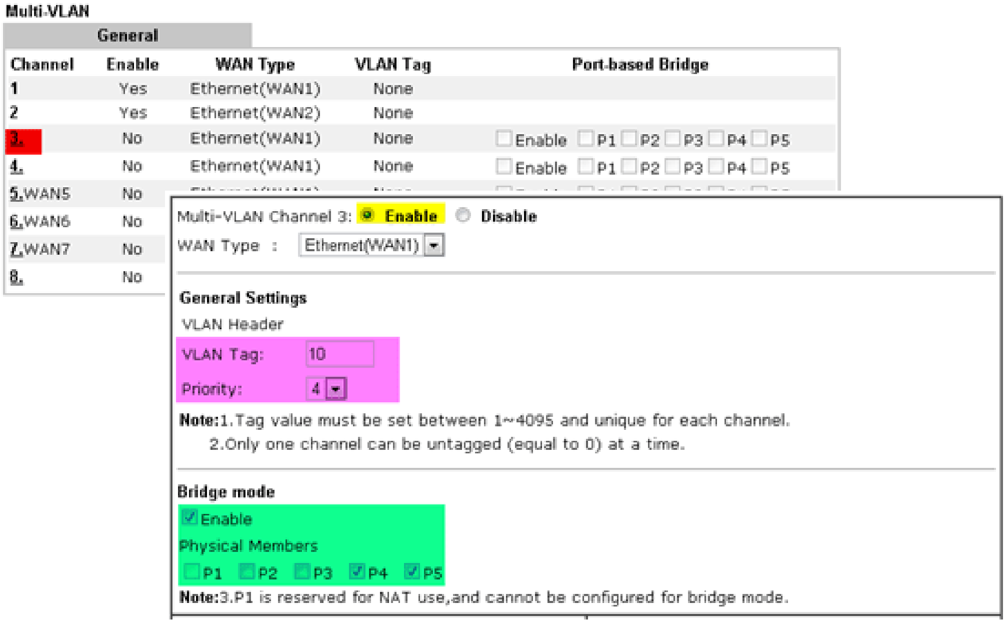
IGMP Proxy is to act as a multicast proxy fo
will access any multicast group. But this function take no effect when bridge mode is enabled.

□ **Enable IGMP Snooping**

Enable IGMP Snooping, multicast traffic is only forwarded to ports that have members of that group.
Disable IGMP snooping, multicast traffic is treated in the same manner as broadcast traffic.

Bridge mode with VLAN





Multi-VLAN

General

Channel	Enable	WAN Type	VLAN Tag	Port-based Bridge
1	Yes	Ethernet(WAN1)	None	
2	Yes	Ethernet(WAN2)	None	
3.	No	Ethernet(WAN1)	None	□Enable □P1 □P2 □P3 □P4 □P5
4.	No	Ethernet(WAN1)	None	□Enable □P1 □P2 □P3 □P4 □P5
5.WAN5	No			
6.WAN6	No			
7.WAN7	No			
8.	No			

Multi-VLAN Channel 3: ● Enable ○ Disable

WAN Type : Ethernet(WAN1)

General Settings

VLAN Header

VLAN Tag: 10

Priority: 4

Note:1.Tag value must be set between 1~4095 and unique for each channel.
2.Only one channel can be untagged (equal to 0) at a time.

Bridge mode

☑Enable

Physical Members

□P1 □P2 □P3 ☑P4 ☑P5

Note:3.P1 is reserved for NAT use,and cannot be configured for bridge mode.

Set-top box (STB) or the other kinds of media devices are able to attach with Port4 or Port5 of LAN. Those devices that attached with Port4 or Port5 are able to access the services network directly which your ISP provided.

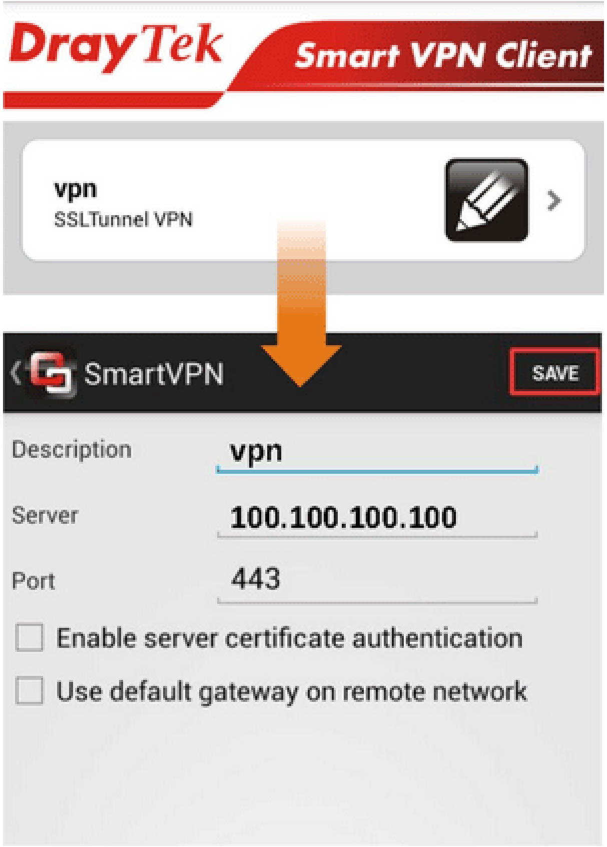
This page is left blank.

Part IX DrayTek Tools

IX-1 SmartVPN Client

IX-1-1 DrayTek Android-based SmartVPN APP for the establishment of SSL VPN connection

DrayTek has been the world-leading company to integrate VPN with Vigor SOHO routers to serve professionals and business customers with secure data transactions over Internet. The facilities of VPN let businesses are able to receive and send data over Internet with secure tunnels. We provide multiple protocol VPN connections such as IPSec/PPTP/L2TP protocols for secure data exchange and communication. With SSL VPN embedded on Vigor routers, teleworkers can have convenient and simple access to central site VPN. The teleworkers do not need to install any VPN software manually. From regular web browser, you can establish VPN connection back to your main office even in a guest network or web cafe.



Description vpn

Server 100.100.100.100

Port 443

□ Enable server certificate authentication

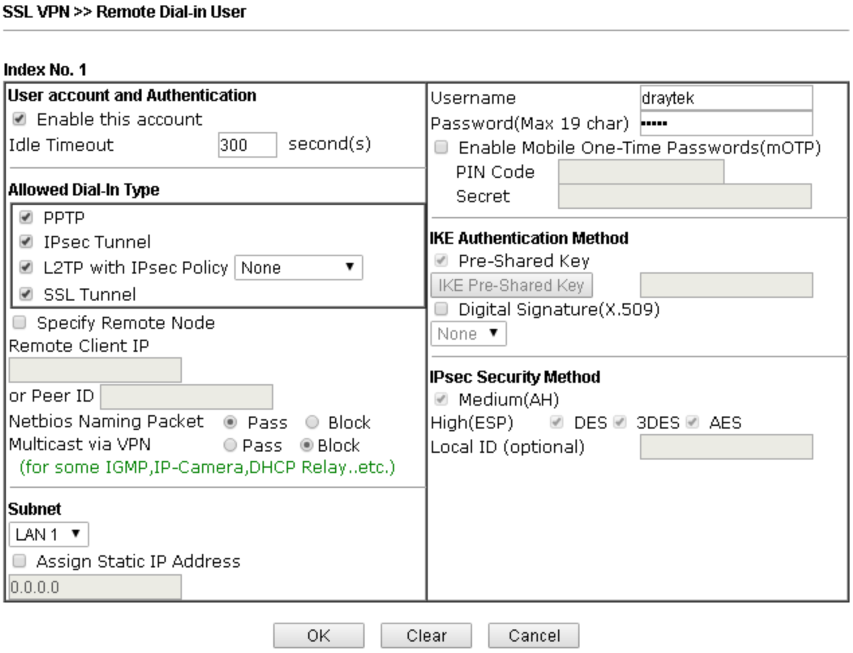
□ Use default gateway on remote network

DrayTek provided free SmartVPN for Windows-based users to easily establish VPN tunnels. There were million downloads. Now, DrayTek released Android-based SmartVPN app for those who would like to set up SSL VPN connection with the VPN server working at the main office. The SmartVPN app is available for your free download! Then, you can use the SmartVPN App on smartphone/tablet PC to establish SSL VPN tunnels with your main office.

IX-1-2 How to Use SmartVPN Android APP to Establish SSL VPN Tunnel?

SmartVPN APP for Android is now available on Google play. This document demonstrates how to use the APP to establish a SSL VPN tunnel.

1. On VPN server, create a SSL user account. Please refer to "How to Set up SSL VPN" on www.draytek.com for detailed instructions.



SSL VPN >> Remote Dial-in User

Index No. 1

User account and Authentication

☑ Enable this account

Idle Timeout 300 second(s)

Allowed Dial-In Type

☑ PPTP

☑ IPsec Tunnel

☑ L2TP with IPsec Policy None

☑ SSL Tunnel

□ Specify Remote Node

Remote Client IP

or Peer ID

Netbios Naming Packet ● Pass ○ Block

Multicast via VPN ○ Pass ● Block

(for some IGMP,IP-Camera,DHCP Relay..etc.)

Subnet

LAN 1

□ Assign Static IP Address

0.0.0.0

Username draytek

Password(Max 19 char) •••••

□ Enable Mobile One-Time Passwords(mOTP)

PIN Code

Secret

IKE Authentication Method

☑ Pre-Shared Key

IKE Pre-Shared Key

□ Digital Signature(X.509)

None

IPsec Security Method

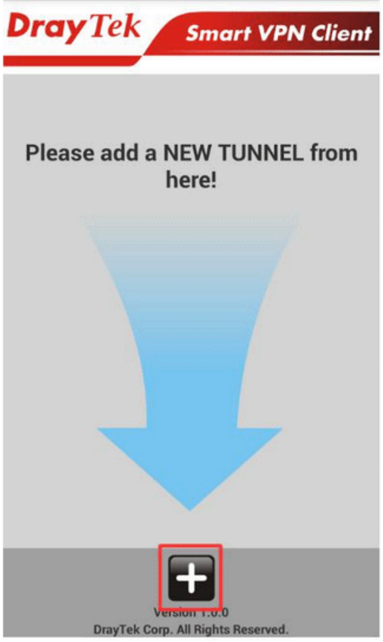
☑ Medium(AH)

High(ESP) ☑ DES ☑ 3DES ☑ AES

Local ID (optional)

2. Download the APP from Google play, and run the APP.

3. Click "+" to add a new profile.



Please add a NEW TUNNEL from here!

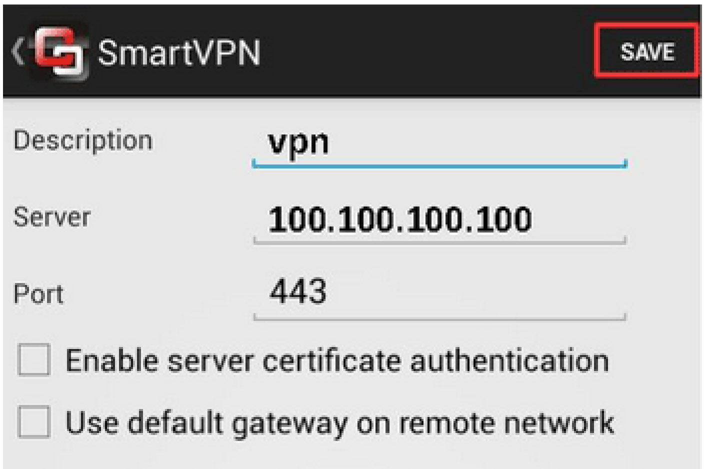
4. Edit the profile.

   a. Enter description of this profile.

   b. Enter VPN Server's IP in Server.

   c. Enter Port as the port which VPN server uses for SSL VPN; for Vigor Routers, it is 443 by default.

   d. Tap SAVE to save the profile or “<” to cancel.



Description vpn

Server 100.100.100.100

Port 443

□ Enable server certificate authentication

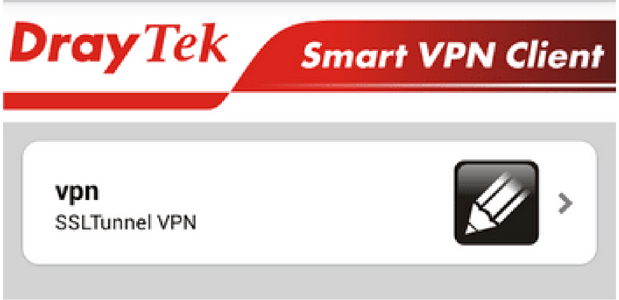
□ Use default gateway on remote network

Info

Installation of relevant Root CA is required to enable server certificate authentication.

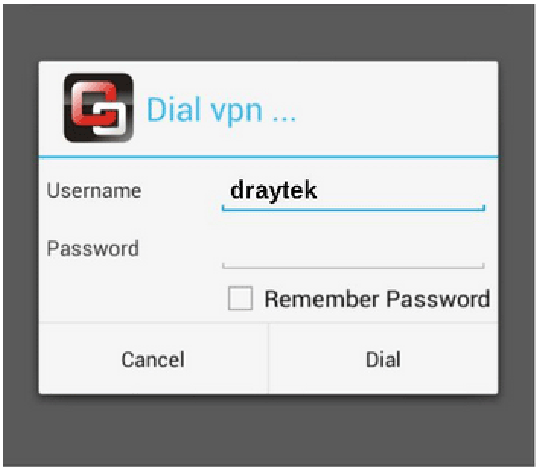
If you check “Use default gateway on remote network”, all the traffic of this smart device will be forwarded to the remote gateway.

5. Tap the profile bar to establish SSL VPN tunnel.



vpn
SSLTunnel VPN

6. Enter Username and Password, then tap Dial.

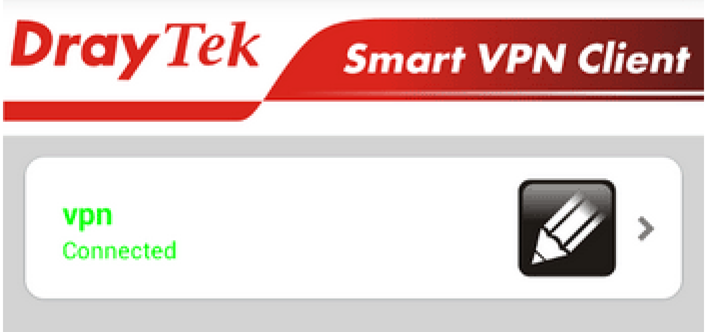


Username draytek

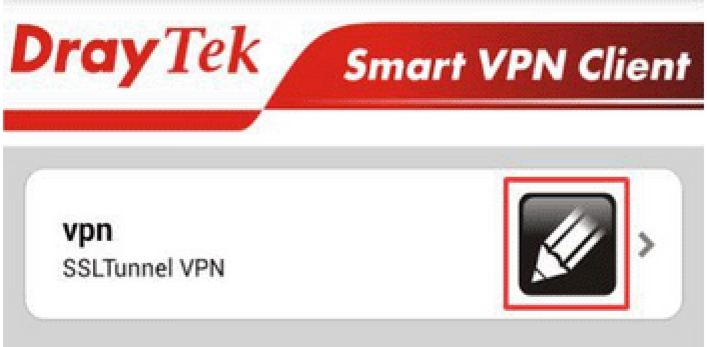
Password

□ Remember Password

7. When the tunnel is up, the profile will turn green. Tap the bar again will disconnect the tunnel.



8. Tap the pencil icon to edit or remove the profile.



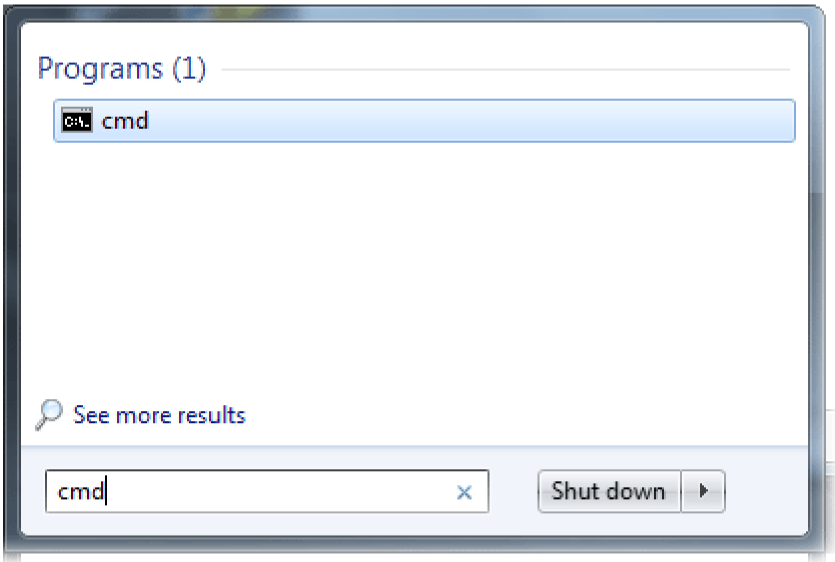
Part X Telnet Commands

Accessing Telnet of Vigor2952

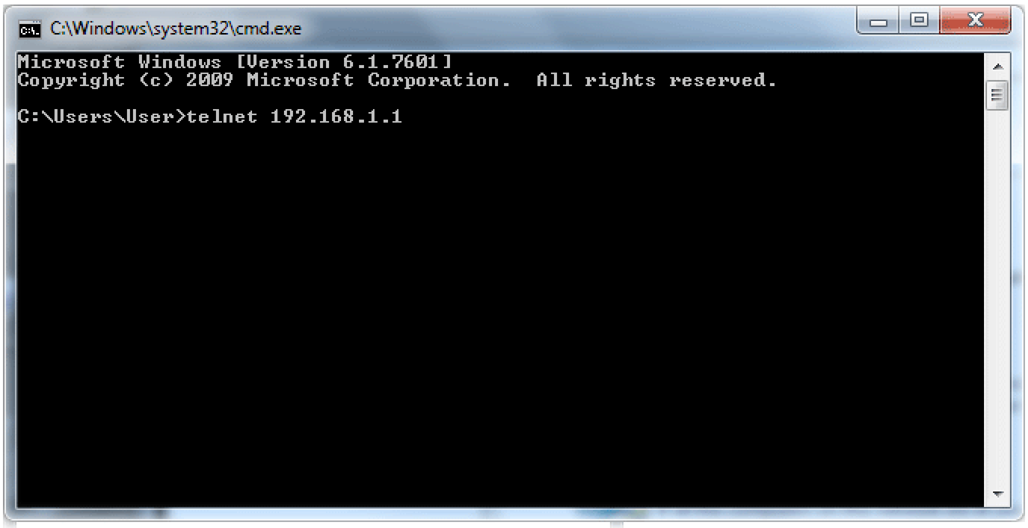
This chapter also gives you a general description for accessing telnet and describes the firmware versions for the routers explained in this manual.

Info	For Windows 7 user, please make sure the Windows Features of Telnet Client has been turned on under Control Panel>>Programs.

Type **cmd** and press Enter. The Telnet terminal will be open later.

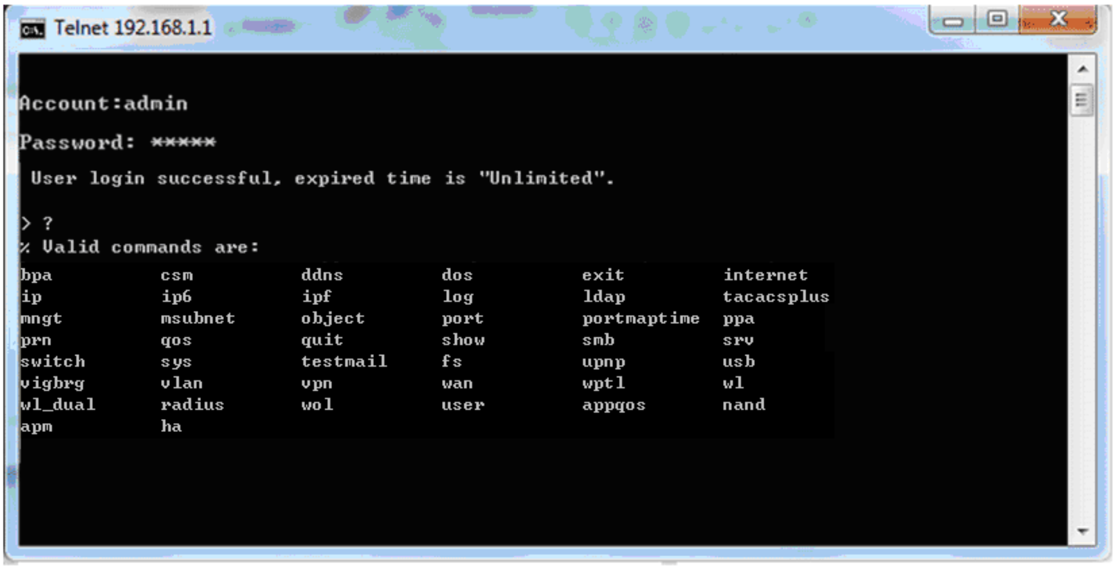


In the following window, type **Telnet 192.168.1.1** as below and press Enter. Note that the IP address in the example is the default address of the router. If you have changed the default, enter the current IP address of the router.



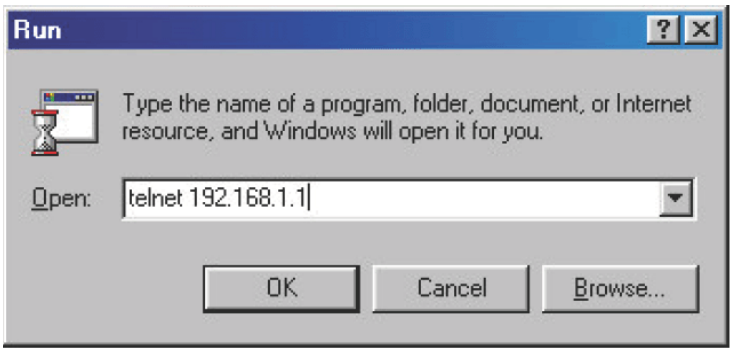
```
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation.  All rights reserved.

C:\Users\User>telnet 192.168.1.1
```

Next, type admin/admin for Account/Password. Then, type **?**. You will see a list of valid/common commands depending on the router that your use.



```
Account:admin
Password: *****
 User login successful, expired time is "Unlimited".

> ?
% Valid commands are:
bpa          csm          ddns         dos          exit         internet
ip           ip6          ipf          log          ldap         tacacsplus
mngt         msubnet      object       port         portmaptime  ppa
prn          qos          quit         show         smb          srv
switch       sys          testmail     fs           upnp         usb
vigbrg       vlan         vpn          wan          wptl         wl
wl_dual      radius       wol          user         appqos       nand
apm          ha
```

For users using previous Windows system (e.g., 2000/XP), simply click **Start >> Run** and type **Telnet 192.168.1.1** in the Open box as below. Next, type admin/admin for Account/Password. And, type **?** to get a list of valid/common commands.



Run
Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.
Open:
OK
Cancel
Browse...

Open: telnet 192.168.1.1

Telnet Command: bpa

This command allows to configure a network setting specified for Australia's ISP.

Syntax

bpa m *[-<command> <parameter> | ...]*

Syntax Description

Parameter	Description
m	Available settings are 1 and 2.
-a <enable>	1/0 to enable/disable this entry
-n <UserName>	contact UserName(max. 24 characters)
-p <PassWord>	contact PassWord (max. 24 characters)
-s <select>	It means to specify an IP address for Server. 0 : no selection. 1 : NSW(61.9.192.13) 2 : QLD(61.9.208.13), 3 : VIC(61.9.128.13) 4 : SA(61.9.224.13), 5 : WA(61.9.240.13)
-l <List>	List all settings configured.

Example

```
> bpa 1 -a 1 -n testUser -p testPassword -s 4
> bpa -l
-------index: 1 active------
UserName[1]: testUser
PassWord[1]: testPassword
ServerIP[1]:4

-------index: 2 inactive------
UserName[2]:
PassWord[2]:
ServerIP[2]:0

>
```

Telnet Command: csm appe prof

Commands under CSM allow you to set CSM profile to define policy profiles for different policy of IM (Instant Messenger)/P2P (Peer to Peer) application.

"csm appe prof " is used to configure the APP Enforcement Profile name. Such profile will be applied in **Default Rule** of **Firewall>>General Setup** for filtering.

Syntax

csm appe prof -i *INDEX [-v | -n NAME|setdefault]*

Syntax Description

Parameter	Description

INDEX	Specify the index number of CSM profile, from 1 to 32.
- v	View the configuration of the CSM profile.
- n	Set a name for the CSM profile.
NAME	Specify a name for the CSM profile, less then 15 characters.
setdefault	Reset to default settings.

Example

```
> csm appe prof -i 1 -n games
The name of APPE Profile 1 was setted.
```

Telnet Command: csm appe set

It is used to configure group settings for IM/P2P/Protocol and Others in APP Enforcement Profile.

Syntax

csm appe set *-i INDEX [-v GROUP*| *-e AP_IDX* | *-d AP_IDX*| *-a AP_IDX [ACTION]]*

Syntax Description

Parameter	Description
INDEX	Specify the index number of CSM profile, from 1 to 32.
- v	View the IM/P2P/Protocol and Others configuration of the CSM profile.
-e	Enable to block specific application.
-d	Disable to block specific application.
-a	Set the action of specific application
GROUP	Specify the category of the application. Available options are: IM, P2P, Protocol and Others.
AP_IDX	Each application has independent index number for identification in CLI command. Specify the index number of the application here. If you have no idea of the inex number, do the following (Take IM as an example): Type "csm appe set –I 1 –v IM", the system will list all of the index numbers of the applications categorized under IM.
ACTION	Specify the action of the application, 0 or 1. 0: Block. All of the applications meet the CSM rule will be blocked. 1: Pass. All of the applications meet the CSM rule will be passed.

Example

```
>csm appe set -i 1 -a 1 1

Profile 1 - : <NULL> action set to Pass.

>
```

Telnet Command: csm appe show

It is used to display group (IM/P2P/Protocol and Others) information APP Enforcement Profile.

Syntax

csm appe show *[-a|-i|-p|-t|-m]*

Syntax Description

Parameter	Description
-a	View the configuration status for All groups.
-i	View the configuration status of IM group.
-p	View the configuration status of P2P group.
-t	View the configuration status of protocol group.
-m	View the configuration status of Others group.

Example

```
>csm appe show -t

         Type     Index                 Name       Version   Advance
 Advanced Option: (M)essage, (F)ile Transfer, (G)ame, (C)onference, and (O)ther
Activities
--------------------------------------------------------------
      PROTOCOL      52                   DB2
      PROTOCOL      53                   DNS
      PROTOCOL      54                   FTP
      PROTOCOL      55                  HTTP           1.1
      PROTOCOL      56                  IMAP           4.1
      PROTOCOL      57          IMAP STARTTLS            4.1
      PROTOCOL      58                   IRC         2.4.0            …………
```

Telnet Command: csm appe config

It is used to display the configuration status (enabled or disabled) for IM/P2P/Protocol/Other applications.

Syntax

csm appe config -v *INDEX [-i|-p|-t|-m]*

Syntax Description

Parameter	Description
INDEX	Specify the index number of CSM profile, from 1 to 32.
-i	View the configuration status of IM group.
-p	View the configuration status of P2P group.
-t	View the configuration status of protocol group.
-m	View the configuration status of Others group.

Example

```
> csm appe config -v 1 -m

    Group         Type     Index               Name        Enable     A
vance Enable
 Advance abbreviation: Message, File Transfer, Game, Conference, and Other
 Advance abbreviation: : M, F, G, C, and O
--------------------------------------------------------------------
   OTHERS       TUNNEL      75           DNSCrypt          Disable
   OTHERS       TUNNEL      76           DynaPass          Disable
   OTHERS       TUNNEL      77              FreeU         Disable
   OTHERS       TUNNEL      78         HTTP Proxy          Disable
```

```
    OTHERS        TUNNEL        79          HTTP Tunnel           Disable
    OTHERS        TUNNEL        80             Hamachi           Disable
    OTHERS        TUNNEL        81       Hotspot Shield           Disable
    OTHERS        TUNNEL        82           MS Teredo           Disable
    OTHERS        TUNNEL        83              PGPNet           Disable
    OTHERS        TUNNEL        84          Ping Tunnel           Disable
.
.
.
---------------------------------------------------------------
Total 66 APPs
>
```

Telnet Command: csm appe interface

It is used to configure APPE signature download interface.

Syntax

csm appe interface *[AUTO/WAN#]*

Syntax Description

Parameter	Description
AUTO	Vigor router specifies WAN interface automatically.
WAN	Specify the WAN interface for signature downloading.

Example

```
> csm appe interface wan1
Download interface is set as "WAN1" now.
> csm appe interface auto
Download interface is set as "auto-selected" now.
```

Telnet Command: csm appe email

It is used to set notification e-mail for APPE signature based on the settings configured in **System Maintenance>>SysLog/Mail Alert Setup (**in which, the box of **APPE Signature** is checkd under **Enable E-Mail Alert**).

Syntax

csm appe email *[-e|-d|-s]*

Syntax Description

Parameter	Description
-e	Enable notification e-mail mechanism.
-d	Disable notification e-mail mechanism.
-s	Send an example e-mail.

Example

```
> csm appe email -e
Enable APPE email.
```

Telnet Command: csm ucf

It is used to configure settings for URL control filter profile.

Syntax

csm ucf show

csm ucf setdefault

csm ucf msg *MSG*

csm ucf obj *INDEX [-n PROFILE_NAME* | *-l [P|B|A|N]* | *uac* | *wf]*

csm ucf obj *INDEX -n PROFILE_NAME*

csm ucf obj *INDEX -p VALUE*

csm ucf obj *INDEX -l P|B|A|N*

csm ucf obj *INDEX uac*

csm ucf obj *INDEX wf*

Syntax Description

Parameter	Description
show	Display all of the profiles.
setdefault	Return to default settings for all of the profile.
msg MSG	Set the administration message. MSG means the content (less than 255 characters) of the message itself.
obj	Specify the object for the profile.
INDEX	Specify the index number of CSM profile, from 1 to 8.
-n	Set the profile name.
PROFILE_NAME	Specify the name of the profile (less than 16 characters)
-p	Set the priority (defined by the number specified in VALUE) for the profile.
VALUE	Number 0 to 3 represent different conditions. 0: It means Bundle: Pass. 1: It means Bundle: Block. 2: It means Either: URL Access Control First. 3: It means Either: Web Feature First.
-l	It means the log type of the profile. They are: P: Pass, B: Block, A: All, N: None
MSG	Specify the Administration Message, less then 255 characters
uac	Set URL Access Control part.
wf	Set Web Feature part.

Example

```
> csm ucf obj 1 -n game -l B
Profile Index: 1
Profile Name:[game]
```

```
Log:[none]
Priority Select : [Bundle : Pass]

[ ]Enable URL Access Control
 Action:[pass]
[ ]Prevent web access from IP address.
  No  Obj NO.   Object Name
 --- -------- --------------------------------

  No  Grp NO.   Group Name
 --- -------- --------------------------------
```

Telnet Command: csm ucf obj INDEX uac

It means to configure the settings regarding to URL Access Control (uac).

Syntax

csm ucf obj *INDEX uac -v*

csm ucf obj *INDEX uac -e*

csm ucf obj *INDEX uac -d*

csm ucf obj *INDEX uac -a P|B*

csm ucf obj *INDEX uac -i E|D*

csm ucf obj *INDEX uac -o KEY_WORD_Object_Index*

csm ucf obj *INDEX uac -g KEY_WORD_Group_Index*

Syntax Description

Parameter	Description
INDEX	Specify the index number of CSM profile, from 1 to 8.
- v	View the protocol configuration of the CSM profile.
-e	Enable the function of URL Access Control.
-d	Disable the function of URL Access Control.
-a	Set the action of specific application, P or B. B: Block. The web access meets the URL Access Control will be blocked. P: Pass. The web access meets the URL Access Control will be passed.
-i	Prevent the web access from any IP address. E: Enable the function. The Internet access from any IP address will be blocked. D: Disable the function.
-o	Set the keyword object.
KEY_WORD_Object_Index	Specify the index number of the object profile.
-g	Set the keyword group.
KEY_WORD_Group_Index	Specify the index number of the group profile.

Example

```
> csm ucf obj 1 uac -i E
```

```
Profile Index: 1
Profile Name:[game]
Log:[none]
Priority Select : [Bundle : Pass]

[ ]Enable URL Access Control
 Action:[pass]
 [v]Prevent web access from IP address.
  No  Obj NO.   Object Name
 --- -------- --------------------------------

  No  Grp NO.   Group Name
 --- -------- --------------------------------

> csm ucf obj 1 uac -a B
Profile Index: 1
Profile Name:[game]
Log:[none]
Priority Select : [Bundle : Pass]

[ ]Enable URL Access Control
 Action:[block]
 [v]Prevent web access from IP address.
  No  Obj NO.   Object Name
 --- -------- --------------------------------

  No  Grp NO.   Group Name
 --- -------- --------------------------------
```

Telnet Command: csm ucf obj INDEX wf

It means to configure the settings regarding to Web Feature (wf).

Syntax

csm ucf obj *INDEX wf -v*

csm ucf obj *INDEX wf -e*

csm ucf obj *INDEX wf -d*

csm ucf obj *INDEX wf -a P|B*

csm ucf obj *INDEX wf -s WEB_FEATURE*

csm ucf obj *INDEX wf -u WEB_FEATURE*

csm ucf obj *INDEX wf -f File_Extension_Object_index*

Syntax Description

Parameter	Description
INDEX	Specify the index number of CSM profile, from 1 to 8.
- v	View the protocol configuration of the CSM profile.
-e	Enable the restriction of web feature.
-d	Disable the restriction of web feature.
-a	Set the action of web feature, P or B. B: Block. The web access meets the web feature will be blocked. P: Pass. The web access meets the web feature will be passed.
-s	Enable the the Web Feature configuration. Features available for configuration are: c: Cookie p: Proxy u: Upload
-u	Cancel the web feature configuration.
-f	Set the file extension object index number.
File_Extension_Object_index	Type the index number (1 to 8) for the file extension object.

Example

```
> csm ucf obj 1 wf -s c
Profile Index: 1
Profile Name:[game]
Log:[none]
Priority Select : [Bundle : Pass]

[ ]Enable URL Access Control
 Action:[block]
 [v] Prevent web access from IP address.
  No  Obj NO.    Object Name
 --- -------- --------------------------------

  No  Grp NO.    Group Name
 --- -------- --------------------------------
```

```
[ ]Enable Restrict Web Feature
 Action:[pass]
 File Extension Object Index : [0]       Profile Name : []
 [V] Cookie [ ] Proxy [ ] Upload
```

Telnet Command: csm wcf

It means to configure the settings regarding to web control filter (wcf).

Syntax

csm wcf show

csm wcf look

csm wcf cache

csm wcf server WCF_SERVER

csm wcf msg MSG

csm wcf setdefault

csm wcf obj *INDEX -v*

csm wcf obj *INDEX -a P|B*

csm wcf obj *INDEX -n PROFILE_NAME*

csm wcf obj *INDEX -l N|P|B|A*

csm wcf obj *INDEX -o KEY_WORD Object Index*

csm wcf obj *INDEX -g KEY_WORD Group Index*

csm wcf obj *INDEX -w E|D|P|B*

csm wcf obj *INDEX -s CATEGORY|WEB_GROUP*

csm wcf obj *INDEX -u CATEGORY|WEB_GROUP*

Syntax Description

Parameter	Description
show	Display the web content filter profiles.
Look	Display the license information of WCF.
Cache	Set the cache level for the profile.
Server WCF_SERVER	Set web content filter server.
Msg MSG	Set the administration message. MSG means the content (less than 255 characters) of the message itself.
setdefault	Return to default settings for all of the profile.
obj	Specify the object profile.
INDEX	Specify the index number of web content filter profile, from 1 to 8.
- v	View the web content filter profile.
-a	Set the action of web content filter profile, P or B. B: Block. The web access meets the web feature will be blocked. P: Pass. The web access meets the web feature will be passed.
-n	Set the profile name.
PROFILE_NAME	Specify the name of the profile (less than 16 characters)
-l	It means the log type of the profile. They are: P: Pass,

	B: Block, A: All, N: None
-o	Set the keyword object.
KEY_WORD_Object_Index	Specify the index number of the object profile.
-g	Set the keyword group.
KEY_WORD_Group_Index	Specify the index number of the group profile.
-w	Set the action for the black and white list. E:Enable, D:Disable, P:Pass, B:Block
-s	It means to choose the items under CATEGORY or WEB_GROUP.
-u	It means to discard items under CATEGORY or WEB_GROUP.
WEB_GROUP	Child_Protection, Leisure, Business, Chating, Computer Internet, Other
CATEGORY	Includes: Alcohol & Tobacco, Criminal Activity, Gambling, Hate & Intoleranc, Illegal Drug, Nudity, Pornography/Sexually Explicit, Weapons, Violence, School Cheating,Sex Education, Tasteless, Child Abuse Imges, Entertainment, Games, Sports, Travel, Leisure & Recreation, Fashin & Beauty, Business, Job Search, Web-based Emai, Chat, Instant Messaging, Anonymizers, Forums & Newsgroups, Computers & Technology, Download Sites, Streaming Media & Downloads, Phishing & Fraud, Search Engines & Portals, Social Networking, Spam Sites,Malware, Botnets, Hacking, Illegal Software, Information Security,Peer-to-eer, Advertisements & Pop-Ups, Arts, Transportation, Compromised, Dating & Personals, , Education, Finance, Government,Health & Medcine, News, Non-profits & NGOs, Personal Sites,Politics, Real Estate, Rligion, Restaurants & Dining,Shopping, Translators, General, Cults,Greetig cards, Image Sharing, Network Errors, Parked Domains, Private IP Addresses)

Example

```
> csm wcf obj 1 -n test_wcf
Profile Index: 1
Profile Name:[test_wcf]
[]White/Black list
Action:[block]
  No  Obj NO.   Object Name
 --- -------- --------------------------------
  No  Grp NO.   Group Name
 --- -------- --------------------------------
Action:[block]
Log:[block]
------------------------------------------------------------------
-------------
child Protection Group:
  [v]Alcohol & Tobacco    [v]Criminal & Activity   [v]Gambling
  [v]Hate & Intolerance   [v]Illegal Drug        [v]Nudity
  [v]Pornography & Sexually explicit  [v]Violence
[v]Weapons


  [v]School Cheating      [v]Sex Education       [v]Tasteless
  [v]Child Abuse Images
------------------------------------------------------------------
-------------
leisure Group:
  [ ]Entertainment       [ ]Games              [ ]Sports
  [ ]Travel             [ ]Leisure & Recreation  [ ]Fashion & Beauty
.
.
>
```

Telnet Command: csm dnsf

It means to configure the settings regarding to DNS filter.

Syntax

csm dnsf enable *ON|OFF*

csm dnsf syslog *N|P|B|A*

csm dnsf wcf [IDNEX]

csm dnsf ucf [IDNEX]

csm dnsf cachetime [CACHE_TIME]

csm dnsf blockpage *show/on/off*

csm dnsf profile_show

csm dnsf profile_edit *INDEX*

csm dnsf profile_edit *INDEX -n PROFILE_NAME*

csm dnsf profile_edit *INDEX -l N|P|B|A*

csm dnsf profile_edit *INDEX -w WCF_PROFILE*

csm dnsf profile_edit *INDEX -u UCF_PROFILE*

csm dnsf profile_edit *INDEX -c CACHE_TIME*

Syntax Description

Parameter	Description
Enable ON|OFF	Enable or disable DNS Filter. ON: enable. OFF: disable.
syslog N|P|B|A	Determine the content of records transmitting to Syslog. P: Pass. Records for the packets passing through DNS filter will be sent to Syslog. B: Block. Records for the packets blocked by DNS filter will be sent to Syslog. A: All. Records for the packets passing through or blocked by DNS filter will be sent to Syslog. N: None. No record will be sent to Syslog.
wcf [INDEX]	INDEX: Specify a WCF profile as the base of DNS filtering. Type a number to indicate the index number of WCF profile. Available index number settings are 1 to 8.
ucf [INDEX]	INDEX: Specify a UCF profile as the base of DNS filtering. Type a number to indicate the index number of WCF profile. Available index number settings are 1 to 8.
Cachetime [CACHE_TIME]	CACHE_TIME: It means to set the time for cache to live (available values are 1 to 24; 1 is one hour, 2 is two hours, and so on ...) for DNS filter.
blockpage	DNS sends block page for redirect port. When a web page is blocked by DNS filter, the router system will send a message page to describe that the page is not allowed to be visisted. ON: Enable the function of displaying message page. OFF: Disable the function of displaying message page. SHOW: Display the function of displaying message page is ON or OFF.
profile_show	Display the table of the DNS filter profile.
profile_edit	Modify the content of the DNS filter profile.
-n PROFILE_NAME	PROFILE_NAME: Type the name of the DNS filter profile that you want to modify.
-l N|P|B|A	Specify the log type of the profile. P: Pass. B: Block. A: All. N: None.
-w WCF_PROFILE	WCF_PROFILE: Type the index number of the WCF profile.
-u UCF_PROFILE	UCF_PROFILE: Type the index number of the UCF profile.
-c CACHE_TIME	-c means to set the cache time for DNS filter. CACHE_TIME: It means to set the time for cache to live (available values are 1 to 24; 1 is one hour, 2 is two hours, and so on ...) for DNS filter.

Example

```
> csm dnsf service 2
dns service set up!!!
```

```
>csm dnsf service 3
wcf profile 3 is empty.....
>csm dnsf cachetime 1
dns cache time set up!!!
```

Telnet Command: ddns log

Displays the DDNS log.

Example

```
>ddns log
>
```

Telnet Command: ddns time

Sets and displays the DDNS time.

Syntax

ddns time <*update in minutes*>

Syntax Description

Parameter	Description
Update in minutes	Type the value as DDNS time. The range is from 1 to 14400.

Example

```
> ddns time
ddns time <update in minutes>
Valid: 1 ~ 14400
%Now: 14400
> ddns time 1000
ddns time <update in minutes>
Valid: 1 ~ 14400
%Now: 1000
```

Telnet Command: dos

This command allows users to configure the settings for DoS defense system.

Syntax

dos *[-V* | *D* | *A]*

dos *[-s ATTACK_F [THRESHOLD][TIMEOUT]]*

dos *[-a* | *e [ATTACK_F][ATTACK_0]* | *d [ATTACK_F][ATTACK_0]]*

Syntax Description

Parameter	Description
-V	View the configuration of DoS defense system.
-D	Deactivate the DoS defense system.
-A	Activate the DoS defense system.

-s	Enable the defense function for a specific attack and set its parameter(s).
ATTACK_F	Specify the name of flooding attack(s) or portscan, e.g., synflood, udpflood, icmpflood, or postscan.
THRESHOLD	It means the packet rate (packet/second) that a flooding attack will be detected. Set a value larger than 20.
TIMEOUT	It means the time (seconds) that a flooding attack will be blocked. Set a value larger than 5.
-a	Enable the defense function for all attacks listed in ATTACK_0.
-e	Enable defense function for a specific attack(s).
ATTACK_0	Specify a name of the following attacks: ip_option, tcp_flag, land, teardrop, smurf, pingofdeath, traceroute, icmp_frag, syn_frag, unknow_proto, fraggle.
-d	Disable the defense function for a specific attack(s).

Example

```
>dos –A
The Dos Defense system is Activated
>dos –s synflood 50 10
Synflood is enabled! Threshold=50 <pke/sec> timeout=10 <pke/sec>
```

Telnet Command: exit

Type this command will leave telnet window.

Telnet Command: Internet

This command allows you to configure detailed settings for WAN connection.

Syntax

internet *-W n -M n [-<command> <parameter> | …]*

Syntax Description

Parameter	Description
-W n	W means to set WAN interface. 1=WAN1, 2=WAN2,…. Default is WAN1.

-M n	M means to set Internet Access Mode (Mandatory) and n means different modes (represented by 0 – 3)
	n=0: Offline
	n=1: PPPoE
	n=2: Dynamic IP
	n=3: Static IP
	n=4: PPTP with Dynamic IP,
	n=5: PPTP with Static IP,
	n=6: L2TP with Dynamic IP
	n=7: L2TP with Static IP
	n=A: 3G/4G USB Modem(PPP mode),
	n=B: 3G/4G USB Modem(DHCP mode)

<command><parameter>|…]	The available commands with parameters are listed below. *[…]* means that you can type in several commands in one line.
-S <isp name>	Set ISP Name (max. 23 characters).

-P <on/off>	Enable PPPoE Service.
-u <username>	Set username (max. 49 characters) for Internet accessing.
-p <password>	Set password (max. 49 characters) for Internet accessing.
-a n	It means to set PPP Authentication Type and n means different types (represented by 0-1). n=0: PAP/CHAP (this is default setting) n=1: PAP Only
-t n	Set connection duration and n means different conditions. n=-1: Always-on n=1 ~ 999: Idle time for offline (default 180 seconds)
-i <ip address>	It means that *PPPoE server* will assign an IP address specified here for CPE (PPPoE client). If you type 0.0.0.0 as the <ip address>, ISP will assign suitable IP address for you. However, if you type an IP address here, the router will use that one as a fixed IP.
-w <ip address>	It means to assign WAN IP address for such connection. Please type an IP address here for WAN port.
-n <netmask>	It means to assign netmask for WAN connection. You have to type 255.255.255.xxx (x is changeable) as the netmask for WAN port.
-g <gateway>	Assign gateway IP for such WAN connection.
-s <server ip>	Set PPTP/L2TP Server IP. <server ip>= ppp.qqq.rrr.sss: PPTP/L2TP server IP
-A <idx>	Set to Always On mode, and <idx> as backup WAN#.
-B <mode>	Set to Backup mode; <mode> 0: When any WAN disconnect; 1: When all WAN disconnect.
-V	View Internet Access profile.
-C <sim pin code>	Set (PPP mode) SIM PIN code (max. 15 characters).
-O <init string>	Set (PPP mode) Modem Initial String (max. 47 characters).
-T <init string2>	Set (PPP mode) Modem Initial String2 (max. 47 characters)
-D <dial string>	Set (PPP mode) Modem Dial String (max. 31 characters).
-v <service name>	Set (PPP mode) Service Name (max. 23 characters).
-m <ppp username>	Set (PPP mode) PPP Username (max. 63 characters).
-o <ppp password>	Set (PPP mode) PPP Password (max. 62 characters).
-e n	Set (PPP mode) PPP Authentication Type. n= 0: PAP/CHAP (default), 1: PAP Only
-q n	(PPP mode) Index(1-15) in Schedule Setup-One
-x n	(PPP mode) Index(1-15) in Schedule Setup-Two
-y n	(PPP mode) Index(1-15) in Schedule Setup-Three
-z n	(PPP mode) Index(1-15) in Schedule Setup-Four
-Q <mode>	Set (PPP mode or DHCP mode) WAN Connection Detection Mode. <mode> 0: ARP Detect; 1: Ping Detect
-I <ping ip>	Set (PPP mode or DHCP mode) WAN Connection Detection Ping IP. <ping ip>= ppp.qqq.rrr.sss: WAN Connection Detection Ping IP

-L n	Set (PPP mode) WAN Connection Detection TTL (1-255) value.
-E <sim pin code>	Set (DHCP mode) SIM PIN code (max. 19 characters).

-G <mode>	Set (DHCP mode) Network Mode.
	<mode>
	0: 4G/3G/2G;
	1: 4G Only;
	2: 3G Only;
	3: 2G Only

-N <apn name>	Set (DHCP mode) APN Name (max. 47 characters)
-U n	(DHCP mode) MTU(1000-1440)

Example

```
>internet -M 1 -S tcom -u username -p password -a 0 -t -1  -i 0.0.0.0
 WAN1 Internet Mode set to PPPoE/PPPoA
 WAN1 ISP Name set to tcom
 WAN1 Username set to username
 WAN1 Password set successful
 WAN1 PPP Authentication Type set to PAP/CHAP
 WAN1 Idle timeout set to always-on
 WAN1 Gateway IP set to 0.0.0.0
> internet -V
WAN1 Internet Mode:PPPoE
ISP Name: tcom
Username: username
Authentication: PAP/CHAP
Idle Timeout: -1
WAN IP: Dynamic IP
> internet -W 1 -M 1 -u link1 -p link1 -a 0
 You are going to watching and setting in WAN 1
 WAN1 Internet Mode set to PPPoE/PPPoA
 WAN1 Username set to link1
 WAN1 Password set successful
 WAN1 PPP Authentication Type set to PAP/CHAP
>
```

Telnet Command: ip pubsubnet

This command allows users to enable or disable the IP routing subnet for your router.

Syntax

ip pubsubnet *<Enable/Disable>*

Syntax Description

Parameter	Description
Enable	Enable the function.
Disable	Disable the function.

Example

```
> ip 2ndsubnet enable
```

```
public subnet enabled!
```

Telnet Command: ip pubaddr

This command allows to set the **IP routed subnet** for the router.

Syntax

ip pubaddr *?*

ip pubaddr *<public subnet IP address>*

Syntax Description

Parameter	Description
?	Display an IP address which allows users set as the public subnet IP address.
public subnet IP address	Specify an IP address. The system will set the one that you specified as the public subnet IP address.

Example

```
> ip pubaddr ?
% ip addr <public subnet IP address>
% Now: 192.168.0.1

> ip pubaddr 192.168.2.5
% Set public subnet IP address done !!!
```

Telnet Command: ip pubmask

This command allows users to set the mask for IP routed subnet of your router.

Syntax

ip pubmask *?*

ip pubmask *<public subnet mask>*

Syntax Description

Parameter	Description
?	Display an IP address which allows users set as the public subnet mask.
public subnet IP address	Specify a subnet mask. The system will set the one that you specified as the public subnet mask.

Example

```
> ip pubmask ?
% ip pubmask <public subnet mask>
% Now: 255.255.255.0

> ip pubmask 255.255.0.0
% Set public subnet mask done !!!
```

Telnet Command: ip aux

This command is used for configuring WAN IP Alias.

Syntax

ip aux add *[IP] [Join to NAT Pool][wanX]*

ip aux remove *[index]*

Syntax Description

Parameter	Description
add	Create a new WAN IP address.
remove	Delete an existed WAN IP address.
IP	It means the auxiliary WAN IP address.
Join to NAT Pool	0 (disable) or 1 (enable).
wanX	Add or remove an address for WAN interface.
index	Type the index number of the table displayed on your screen.

Example

```
> ip aux add 192.168.1.65 1
% 192.168.1.65 has added in index 3.
```

When you type *ip aux?*, the current auxiliary WAN IP Address table will be shown as the following:

```
Index no.   Status  IP address      IP pool
----------------------------------------------
    1       Enable  172.16.3.229    Yes
    2       Enable  172.16.3.56     No
    3       Enable  172.16.3.113    No
```

Telnet Command: ip addr

This command allows users to set/add a specified LAN IP your router.

Syntax

ip addr *[IP address]*

Syntax Description

Parameter	Description
IP address	The LAN IP address.

Example

```
>ip addr 192.168.50.1
% Set IP address OK !!!
```

Info

When the LAN IP address is changed, the start IP address of DHCP server are still the same. To make the IP assignment of the DHCP server being consistent with this new IP address (they should be in the same network

	segment), the IP address of the PC must be fixed with the same LAN IP address (network segment) set by this command for accessing into the web user interface of the router. Later, modify the start addresses for the DHCP server.

Telnet Command: ip nmask

This command allows users to set/add a specified netmask for your router.

Syntax

ip nmask *[IP netmask]*

Syntax Description

Parameter	Description
IP netmask	The netmask of LAN IP.

Example

```
> ip nmask 255.255.0.0
% Set IP netmask OK !!!
```

Telnet Command: ip arp

ARP displays the matching condition for IP and MAC address.

Syntax

ip arp add *[IP address] [MAC address] [LAN or WAN]*

ip arp del *[IP address] [LAN or WAN]*

ip arp flush

ip arp status

ip arp accept *[0/1/2/3/4/5status]*

ip arp setCacheLife *[time]*

In which, **arp add** allows users to add a new IP address into the ARP table; **arp del** allows users to remove an IP address; **arp flush** allows users to clear arp cache; **arp status** allows users to review current status for the arp table; **arp accept** allows to accept or reject the source /destination MAC address; arp **setCacheLife** allows users to configure the duration in which ARP caches can be stored on the system. If **ip arp setCacheLife** is set with "60", it means you have an ARP cache at 0 second. Sixty seconds later without any ARP messages received, the system will think such ARP cache is expired. The system will issue a few ARP request to see if this cache is still valid.

Syntax Description

Parameter	Description
IP address	It means the LAN IP address.
MAC address	It means the MAC address of your router.
LAN or WAN	It indicates the direction for the arp function.
0/1/2/3/4/5	0: disable to accept illegal source mac address 1: enable to accept illegal source mac address 2: disable to accept illegal dest mac address 3: enable to accept illegal dest mac address 4: Decline VRRP mac into arp table

	5: Accept VRRP mac into arp table status: display the setting status.
Time	Available settings will be 10, 20, 30,….2550 seconds.

Example

```
> ip arp status
[ARP Table]
 Index IP Address    MAC Address       Netbios Name    Interface  VLAN
Port
   1   192.168.1.5    00-05-5D-E4-D8-EE                 LAN1
VLAN0   P1

>
```

Telnet Command: ip dhcpc

This command is available for WAN DHCP.

Syntax

ip dhcpc *option*

ip dhcpc *option -h|l*

ip dhcpc *option -d [idx]*

ip dhcpc *option -e [1 or 0] -w [wan unmber] -c [option number] -v [option value]*

ip dhcpc *option -e [1 or 0] -w [wan unmber] -c [option number] -x "[option value]"*

ip dhcpc *option -e [1 or 0] -w [wan unmber] -c [option number] -a [option value]*

ip dhcpc *option -u [idx unmber]*

ip dhcpc *release [wan number]*

ip dhcpc *renew [wan number]*

ip dhcpc *status*

Syntax Description

Parameter	Description
option	It is an optional setting for DHCP server. -h: display usage -l: list all custom set DHCP options -d: delete custom dhcp client option by index number -e: enable/disable option feature, 1:enable, 0:disable -w: set WAN number (e.g., 1=WAN1) -c: set option number: 0~255 -v: set option value by string -x: set option value by raw byte (hex) -u: update by index number
release	It means to release current WAN IP address.
renew	It means to renew the WAN IP address and obtain another new one.
status	It displays current status of DHCP client.

Example

```
>ip dhcpc status
I/F#3 DHCP Client Status:

DHCP Server IP      : 172.16.3.7
WAN Ipm             : 172.16.3.40
WAN Netmask         : 255.255.255.0
WAN Gateway         : 172.16.3.1
Primary DNS         : 168.95.192.1
Secondary DNS       : 0.0.0.0
Leased Time         : 259200
Leased Time T1      : 129600
Leased Time T2      : 226800
Leased Elapsed      : 259194
Leased Elapsed T1   : 129594
Leased Elapsed T2   : 226794
```

Telnet Command: ip ping

This command allows users to ping IP address of WAN1/WAN2 for verifying if the WAN connection is OK or not.

Syntax

ip ping *[IP address] [WAN1/WAN2]*

Syntax Description

Parameter	Description
IP address	It means the WAN IP address.
WAN1/WAN2	It means the WAN interface that the above IP address passes through.

Example

```
>ip ping 172.16.3.229 WAN1
Pinging 172.16.3.229 with 64 bytes of Data:
Receive reply from 172.16.3.229, time=0ms
Receive reply from 172.16.3.229, time=0ms
Receive reply from 172.16.3.229, time=0ms
Packets: Sent = 5, Received = 5, Lost = 0 <0% loss>
```

Telnet Command: ip tracert

This command allows users to trace the routes from the router to the host.

ip tracert *[Host/IP address] [WAN1/WAN2/WAN3/WAN4/WAN5] [Udp/Icmp]*

Syntax Description

Parameter	Description
IP address	The target IP address.
WAN1/WAN2	It means the WAN port that the above IP address passes through.
Udp/Icmp	The UDP or ICMP.

Example

```
>ip tracert 22.128.2.62 WAN1
Traceroute to 22.128.2.62, 30 hops max
1   172.16.3.7  10ms
2   172.16.1.2  10ms
3   Request Time out.
4   168.95.90.66    50ms
5   211.22.38.134   50ms
6   220.128.2.62    50ms
Trace complete
```

Telnet Command: ip telnet

This command allows users to access specified device by telnet.

Syntax

ip telnet *[IP address][Port]*

Syntax Description

Parameter	Description
IP address	Type the WAN or LAN IP address of the remote device.
Port	Type a port number (e.g., 23). Available settings: 0 ~65535.

Example

```
> ip telnet 172.17.3.252 23
>
```

Telnet Command: ip rip

This command allows users to set the RIP (routing information protocol) of IP.

Syntax

ip rip *[0/1/2]*

Syntax Description

Parameter	Description
0/1/2	0 means disable; 1 means LAN1 and 2 means IP Routed.

Example

```
> ip rip 1
%% Set RIP LAN1.
```

Telnet Command: ip wanrip

This command allows users to set the RIP (routing information protocol) of WAN IP.

Syntax

ip wanrip *[ifno] -e [0/1]*

Syntax Description

Parameter	Description
ifno	It means the connection interface. 1: WAN1,2: WAN2, 3: PVC3,4: PVC4,5: PVC5 **Note**: PVC3 ~PVC5 are virtual WANs.
-e	It means to disable or enable RIP setting for specified WAN interface. 1: Enable the function of setting RIP of WAN IP. 0: Disable the function.

Example

```
> ip wanrip ?
 Valid ex:ip wanrip <ifno> -e <0/1>
 <ifno> 1: WAN1,2: WAN2
       3: PVC3,4: PVC4,5: PVC5
 -e <0/1>  0: disable, 1: enable
 Now status:
 WAN[1] Rip Protocol disable
 WAN[2] Rip Protocol disable
 WAN[3] Rip Protocol disable
 WAN[4] Rip Protocol disable
 WAN[5] Rip Protocol disable
> ip wanrip 5 -e 1
> ip wanrip ?
 Valid ex:ip wanrip <ifno> -e <0/1>
 <ifno> 1: WAN1,2: WAN2
       3: PVC3,4: PVC4,5: PVC5
 -e <0/1>  0: disable, 1: enable
 Now status:
 WAN[1] Rip Protocol disable
 WAN[2] Rip Protocol disable
 WAN[3] Rip Protocol disable
 WAN[4] Rip Protocol disable
 WAN[5] Rip Protocol enable
>
```

Telnet Command: ip route

This command allows users to set static route.

Syntax

ip route *add [dst] [netmask][gateway][ifno][rtype]*

ip route *del [dst] [netmask][rtype]*

ip route *status*

ip route *cnc*

ip route *default [wan1/wan2/off/?]*

ip route *clean [1/0]*

Syntax Description

Parameter	Description
add	It means to add an IP address as static route.
del	It means to delete specified IP address.
status	It means current status of static route.
dst	It means the IP address of the destination.
netmask	It means the netmask of the specified IP address.
gateway	It means the gateway of the connected router.
ifno	It means the connection interface. 3=WAN1, 4=WAN2, 5=WAN3, 6=WAN4
rtype	It means the type of the route. default : default route; static: static route.
cnc	It means current IP range for CNC Network.
default	Set WAN1/WAN2/off as current default route.
clean	Clean all of the route settings. 1: Enable the function. 0: Disable the function.

Example

```
> ip route add 172.16.2.0 255.255.255.0 172.16.2.4 3 static
> ip route status

Codes: C - connected, S - static, R - RIP, * - default, ~ - private
C~       192.168.9.0/   255.255.255.0 is directly connected, DMZ
C~       192.168.1.0/   255.255.255.0 is directly connected, LAN1
S         172.16.2.0/   255.255.255.0 via 172.16.2.4, WAN1
```

Telnet Command: ip igmp_proxy

This command allows users to enable/disable igmp proxy server.

Syntax

ip igmp_proxy *set*

ip igmp_proxy *reset*

ip igmp_proxy *wan*

ip igmp_proxy *query*

ip igmp_proxy *ppp [0/1]*

ip igmp_proxy *status*

Syntax Description

Parameter	Description
set	It means to enable proxy server.
reset	It means to disable proxy server.

wan	It means to specify WAN interface for IGMP service.
query	It means to set IGMP general query interval. The default value is 125000 ms.
ppp	0 – No need to set IGMP with PPP header. 1 – Set IGMP with PPP header.
status	It means to display current status for proxy server.

Example

```
This command is for setting IGMP General Query Interval
 The default value is 125000 ms
 Current Setting is:130000 ms
> ip igmp_proxy set
% ip igmp_proxy [set|reset|wan|status], IGMP Proxy is ON
> ip igmp_proxy status
%% ip igmp_proxy [set|reset|wan|status], IGMP Proxy is ON
%%% igmp_proxy WAN:
   239.255.255.250    state=1
   239.255.255.250    timer=0
```

Telnet Command: ip igmp_snoop

This command is used to enable/disable igmp snoop server.

Syntax

ip igmp_snoop *enable*

ip igmp_snoop *disable*

ip igmp_snoop *status*

ip igmp_snoop *txquery [on|off] [v2|v3]*

ip igmp_snoop *chkleave [on|off]*

ip igmp_snoop *separate [on|off]*

Syntax Description

Parameter	**Description**
enable	It means to enable proxy server.
disable	It means to disable proxy server.
status	It means to display current status for proxy server.
table	Display the whole table of IGMP Snoop configuration.
txquery [on|off] [v2|v3]	IGMP query will be sent out to LAN periodically.
mode [hw/sw]	Make IGMP snooping work on software or hardware.
chkleave [on|off]	Off – Vigor router will drop LEAVE if clients still on the same group.
separate [on|off]	On – IGMP packets will be separated by NAT/Bridge mode.

Example

```
> ip igmp_snoop enable

% ip igmp snooping [enable|disable|status], IGMP Snooping is Enabled.
```

```
>
```

Telnet Command: ip dmz

Specify MAC address of certain device as the DMZ host.

Syntax

ip dmz *[mac]*

Syntax Description

Parameter	Description
mac	It means the MAC address of the device that you want to specify.

Example

```
>ip dmz ?
% ip dmz <mac>,  now : 00-00-00-00-00-00
> ip dmz 11-22-33-44-55-66
> ip dmz ?
% ip dmz <mac>,  now : 11-22-33-44-55-66
>
```

Telnet Command: ip dmzswitch

This command is to enable /disable private IP DMZ or Active True IP DMZ for DMZ host.

Syntax

ip dmzswitch *off*

ip dmzswitch *private*

ip dmaswitch *active_trueip*

Syntax Description

Parameter	Description
off	Disable the function of DMZ host.
private	Enable private IP address of the DMZ host.
Active_trueip	Enable active true IP address of the DMZ host.

Example

```
> ip dmzswitch ?
%% ip dmzswitch [off|private|active_trueip], DMZ is OFF
> ip dmzswitch private
%% ip dmzswitch [off|private|trueip|active_trueip], PRIVATE IP DMZ is
ON
> ip dmzswitch trueip
> ip dmzswitch active_trueip
%% ip dmzswitch [off|private|trueip|active_trueip], ACTIVE TRUE IP DMZ
is ON
```

Telnet Command: ip session

This command allows users to set maximum session limit number for the specified IP; set message for exceeding session limit and set how many seconds the IP session block works.

Syntax

ip session *on*

ip session *off*

ip session *default [num]*

ip session *defaultp2p [num]*

ip session *status*

ip session *show*

ip session *timer [num]*

ip session *[block/unblock][IP]*

ip session *[add/del][IP1-IP2][num][p2pnum]*

Syntax Description

Parameter	Description
on	Turn on session limit for each IP.
off	Turn off session limit for each IP.
default [num]	Set the default number of session num limit.
Defautlp2p [num]	Set the default number of session num limit for p2p.
status	Display the current settings.
show	Display all session limit settings in the IP range.
timer [num]	Set when the IP session block works. The unit is second.
[block/unblock][IP]	Block/unblock the specified IP address. Block: The IP cannot access Internet through the router. Unblock: The specified IP can access Internet through the router.
add	Add the session limits in an IP range.
del	Delete the session limits in an IP range.
IP1-IP2	It means the range of IP address specified for this command.
num	It means the number of the session limits, e.g., 100.
p2pnum	It means the number of the session limits, e.g., 50 for P2P.

Example

```
>ip session default 100
> ip session add 192.168.1.5-192.168.1.100 100 50
> ip session on
> ip session status

  IP range:
    192.168.1.5 - 192.168.1.100 : 100

  Current ip session limit is turn on

  Current default session number is 100
```

Telnet Command: ip bandwidth

This command allows users to set maximum bandwidth limit number for the specified IP.

Syntax

ip bandwidth *on*

ip bandwidth *off*

ip bandwidth *default [tx_rate][rx_rate]*

ip bandwidth *status*

ip bandwidth *show*

ip bandwidth *[add/del] [IP1-IP2][tx][rx][shared]*

Syntax Description

Parameter	Description
on	Turn on the IP bandwidth limit.
off	Turn off the IP bandwidth limit.
default [tx_rate][rx_rate]	Set default tx and rx rate of bandwidth limit. The range is from 0 – 65535 Kpbs.
status	Display the current settings.
show	Display all the bandwidth limits settings within the IP range.
add	Add the bandwidth within the IP range.
del	Delete the bandwidth within the IP range.
IP1-IP2	It means the range of IP address specified for this command.
tx	Set transmission rate for bandwidth limit.
rx	Set receiving rate for bandwidth limit.
shared	It means that the bandwidth will be shared for the IP range.

Example

```
> ip bandwidth default 200 800
> ip bandwidth add 192.168.1.50-192.168.1.100 10 60
> ip bandwidth status

  IP range:
    192.168.1.50 - 192.168.1.100 : Tx:10K Rx:60K

  Current ip Bandwidth limit is turn off


  Auto adjustment is off
```

Telnet Command: ip bindmac

This command allows users to set IP-MAC binding for LAN host.

Syntax

ip bindmac *on*

ip bindmac *off*

ip bindmac *strict_on*

ip bindmac *show*

ip bindmac *add [IP][MAC][Comment]*

ip bindmac *del [IP]/all*

Syntax Description

Parameter	Description
on	Turn on IP bandmac policy. Even the IP is not in the policy table, it can still access into network.
off	Turn off all the bindmac policy.
strict_on	It means that only those IP address in IP bindmac policy table can access into network.
show	Display the IP address and MAC address of the pair of binded one.
add	Add one IP bindmac.
del	Delete one IP bindmac.
IP	Type the IP address for binding with specified MAC address.
MAC	Type the MAC address for binding with the IP address specified.
Comment	Type words as a brief description.
All	Delete all the IP bindmac settings.

Example

```
> ip bindmac add 192.168.1.46 00:50:7f:22:33:55 just for test
> ip bindmac show
ip bind mac function is turned ON
IP : 192.168.1.46 bind MAC : 00-50-7f-22-33-55 Comment : just
```

Telnet Command: ip maxnatuser

This command is used to set the maximum number of NAT users.

Syntax

ip maxnatuser *user no*

Syntax Description

Parameter	Description
User no	A number specified here means the total NAT users that Vigor router supports. 0 – It means no limitation.

Example

```
> ip maxnatuser 100
% Max NAT user = 100
```

Telnet Command: ip policy_rt

This command is used to set the IP policy route profile.

Syntax

ip policy_rt *[-<command> <parameter>* **|** *…]*

Syntax Description

Parameter	Description
<command><parameter>|…]	The available commands with parameters are listed below. *[…]* means that you can type in several commands in one line.
General Setup for Policy Route	
-i [value]	Specify an index number for setting policy route profile. Value: 1 to 60. "-1" means to get a free policy index automatically.
-e [0/1]	0: Disable the selected policy route profile. 1: Enable the selected policy route profile.
-o [value]	Determine the operation of the policy route. Value: add – Create a new policy rotue profile. del – Remove an existed policy route profile. edit – Modify an existed policy route profile. flush – Reset policy route to default setting.
-1 [any/range]	Specify the source IP mode. Range: Indicate a range of IP addresses. Any: It means any IP address will be treated as source IP address.
-2 [any/ip_range/ip_subnet/domain]	Specify the destination IP mode. Any: No need to specify an IP address for any IP address will be treated as destination IP address. ip_range: Indicates a range of IP addresses. ip_subnet: Indicates the IP subnet. domain: Indicates the domain name.
-3 [any/range]	Specify the destination port mode. Range: Indicate a range of port number.

	Any: It means any port number can be used as destination port.
-G [default/specific]	Specify the gateway mode.
-L [default/specific]	Specify the failover gateway mode.
-s [value]	Indicate the source IP start. Value: The type format shall be "xxx.xxx.xxx.xxx". (e.g, 192.168.1.0)
-S [value]	Indicate the source IP end. Value: The type format shall be "xxx.xxx.xxx.xxx". (e.g, 192.168.1.100)
-d [value]	Indicate the destination IP start. Value: The type format shall be "xxx.xxx.xxx.xxx". (e.g, 192.168.2.0)
-D [value]	Indicate the destination IP end. Value: The type format shall be "xxx.xxx.xxx.xxx". (e.g, 192.168.2.100)
-p [value]	Indicate the destination port start. Value: Type a number (1 ~ 65535) as the port start (e.g., 1000).
-P [value]	Indicate the destination port end. Value: Type a number (1 ~ 65535) as the port end (e.g., 2000).
-y [value]	Indicate the priority of the policy route profile. Value: Type a number (0 ~ 250). The default value is "150".
-I [value]	Indicate the interface specified for the policy route profile. Value: Available interfaces include, LAN1 ~ LAN8, IP_Routed_Subnet, DMZ_Subnet, WAN1 ~ WAN5, VPN_PROFILE_1 ~ VPN_PROFILE_100, WAN_1_IP_ALIAS_1 ~ WAN_4_IP_ALIAS_8
-g [value]	Indicate the gateway IP address. Value: The type format shall be "xxx.xxx.xxx.xxx". (e.g, 192.168.3.1)
-l [value]	Indicate the failover IP address. Value: The type format shall be "xxx.xxx.xxx.xxx". (e.g, 192.168.4.1)
-t [value]	It means "protocol". Value: Available settings include "TCP", "UDP", "TCP/UDP", "ICMP" and "Any".
-n [0/1]	Indicates the function of "Force NAT". 0: Disable the function. 1: Enable the function.
-a [0/1]	Indicates to enable the function of failover. 0: Disable the function. 1: Enable the function.
-f [value]	It means to specify the interface for failover. Value: Avaialbe interfaces include, NO_FAILOVER, Default_WAN, Policy1 ~ Policy60 LAN1 ~ LAN8 IP_Routed_Subnet, DMZ_Subnet, WAN1 ~ WAN5, VPN_PROFILE_1 ~ VPN_PROFILE_100, WAN_1_IP_ALIAS_1 ~ WAN_4_IP_ALIAS_8
-b [value]	It means "failback".

	Value: Available settings include, 0: Disable the function of "failback". 1: Enable the function of "failback". -v: View current failback setting.
Diagnose for Policy Route	
-s [value]	It means "source IP". Value: Available settings include: Any: It indicates any IP address can be used as source IP address. "xxx.xxx.xxx.xxx": The type format (e.g, 192.168.1.0).
-d [value]	It means "destination IP". Value : Available settings include: Any: It indicates any IP address can be used as destination IP address. "xxx.xxx.xxx.xxx": Specify an IP address.
-p [value]	It means "destination port". Value: Specify a number or type Any (indicating any number).
-t [value]	It means "protocol". Value: Available settings include "ICMP", "TCP", "UDP" and "Any".

Example

```
> ip policy_rt diagnose -s 192.168.1.100 -d any -p any -t ICMP

   ---------------------------------------------------
      Matched Route  (Priority)
   ---------------------------------------------------
   * No_Match

   ---------------------------------------------------
      Matched Policy (Priority)
   ---------------------------------------------------
   * Policy_1 (200)

   * Conclusion:The packet was dropped because the send-to interface
of the mat
ched policy "policy 1" was inactive and there was no failover setting
> ip policy_rt -i -1 -o add -1 range -s 192.168.1.10 -S 192.168.1.20 -2
ip_range –d 202.211.100.10 -D 202.211.100.20 -g 202.211.100.1 -I WAN2
```

Telnet Command: ip lanDNSRes

This command is used to set LAN DNS profile.

Syntax

ip lanDNSRes *[-<command> <parameter> | …]*

Syntax Description

Parameter	Description
[<command> <parameter>|...]	The available commands with parameters are listed below. *[...]* means that you can type in several commands in one line.
-a <IP Address>	Set IP Address that domain name mapped.
-c <CNAME>	Set CNAME value.
-d <address mapping index number>	Delete the selected LAN DNS profile.

-e <0/1>	0: disable the selected LAN DNS profile. 1: enable the selected LAN DNS profile.
-i <profile setting index number>	Type the index number of the profile.
-l	List the content of LAN DNS profile (including domain name, IP address and message).
-n <domain name>	Set domain name.
-p <profile name>	Set profile name for LAN DNS.
-r	Reset the settings for selected profile.
-s <0/1>	0:reply all 1:reply only same subnet packet
-z	update LAN DNS config to DNS Cache

Example

```
>
ip lanDNSRes -i 1 -p test
% Configure Set1's Profile:test
> ip lanDNSRes -i 1 -l
% Idx: 1
% State: Disable
% Profile: test
% Domain Name:
% -------- Address Mapping Table --------
% Not Set Address Mapping.
>
```

Telnet Command: ip dnsforward

This command is used to set LAN DNS profile for conditional DNS forwarding.

Syntax

ip dnsforward *[-<command> <parameter>* | *…]*

Syntax Description

Parameter	Description
[<command> <parameter>|…]	The available commands with parameters are listed below. *[…]* means that you can type in several commands in one line.
-a <IP Address>	Set forwarded DNS server IP Address.
-d <DNS server mapping index number>	Delete the selected LAN DNS profile.
-e <0/1>	0: disable such function. 1: enable such function.
-i <profile setting index number>	Type the index number of the profile.
-l	List the content of LAN DNS profile (including domain name, IP address and message).
-n <domain name>	Set domain name.
-p <profile name>	Set profile name for LAN DNS.
-r	Reset the settings for selected profile.

Example

```
> ip dnsforward -i 1 -n ftp.drayTek.com
% Configure Set1's DomainName:ftp.drayTek.com
> ip dnsforward -i 1 -a 172.16.1.1
% Configure Set1's IP:172.16.1.1
> ip dnsforward -i 1 -l
% Idx: 1
% State: Disable
% Profile: test
% Domain Name: ftp.drayTek.com
% DNS Server IP: 172.16.1.1
>
```

Telnet Command: ip6 addr

This command allows users to set the IPv6 address for your router.

Syntax

ip6 addr -s *[prefix] [prefix-length] [LAN|WAN1|WAN2|iface#]*

ip6 addr -d *[prefix] [prefix-length] [LAN|WAN1|WAN2|iface#]*

ip6 addr -a *[LAN|WAN1|WAN2|iface#]*

Syntax Description

Parameter	Description
-s	It means to add a static ipv6 address.
-d	It means to delete an ipv6 address.
-a	It means to show current address(es) status.
-u	It means to show only unicast addresses.
prefix	It means to type the prefix number of IPv6 address.
prefix-length	It means to type a fixed value as the length of the prefix.
LAN|WAN1|WAN2|iface#	It means to specify LAN or WAN interface for such address.

Example

```
> ip6 addr -a
LAN
Unicast Address:
 FE80::250:7FFF:FE00:0/64 (Link)
Multicast Address:
 FF02::2
 FF02::1:FF00:0
 FF02::1
```

Telnet Command: ip6 dhcp req_opt

This command is used to configure option-request settings for DHCPv6 client.

Syntax

ip6 dhcp *req_opt* [*LAN|WAN1|WAN2|iface#] [-<command> <parameter>|* …]

Syntax Description

Parameter	Description
req_opt	It means option-request.
LAN|WAN1|WAN2|iface#	It means to specify LAN or WAN interface for such address.
[<command> <parameter>|…]	The available commands with parameters are listed below. *[…]* means that you can type in several commands in one line.
-a	It means to show current DHCPv6 status.
-s	It means to ask the SIP.
-S	It means to ask the SIP name.
-d	It means to ask the DNS setting.
-D	It means to ask the DNS name.
-n	It means to ask NTP.
-i	It means to ask NIS.
-I	It means to ask NIS name.
-p	It means to ask NISP.
-P	It means to ask NISP name.
-b	It means to ask BCMCS.
-B	It means to ask BCMCS name.
-r	It means to ask refresh time.
Parameter	1: the parameter related to the request will be displayed. 0: the parameter related to the request will not be displayed.

Example

```
> ip6 dhcp req_opt WAN2 -S 1
> ip6 dhcp req_opt WAN2 -r 1
> ip6 dhcp req_opt WAN2 -a
% Interface WAN2 is set to request following DHCPv6 options:
%    sip name
>
```

Telnet Command: ip6 dhcp client

This command allows you to use DHCPv6 protocol to obtain IPv6 address from server.

Syntax

ip6 dhcp *client [WAN1|WAN2|iface#] [-<command> <parameter>| …]*

Syntax Description

Parameter	Description
client	It means the dhcp client settings.
[<command> <parameter>|…]	The available commands with parameters are listed below. *[…]* means that you can type in several commands in one line.
-a	It means to show current DHCPv6 status.
-p [IAID]	It means to request identity association ID for Prefix Delegation.
-n [IAID]	It means to request identity association ID for Non-temporary

	Address.
-c [parameter]	It means to send rapid commit to server.
-i [parameter]	It means to send information request to server.
-e[parameter]	It means to enable or disable the DHCPv6 client. 1: Enable 0: Disable

Example

```
> ip6 dhcp client WAN2 –p 2008::1
> ip6 dhcp client WAN2 –a
  Interface WAN2 has following DHCPv6 client settings:
      DHCPv6 client enabled
      request IA_PD whose IAID equals to 2008
> ip6 dhcp client WAN2 –n 1023456
> ip6 dhcp client WAN2 –a
  Interface WAN2 has following DHCPv6 client settings:
      DHCPv6 client enabled
      request IA_NA whose IAID equals to 2008
> system reboot
```

Telnet Command: ip6 dhcp server

This command allows you to configure DHCPv6 server.

Syntax

ip6 dhcp *server [-<command> <parameter>| …]*

Syntax Description

Parameter	**Description**
server	It means the dhcp server settings.
[<command> <parameter>|...]	The available commands with parameters are listed below. *[...]* means that you can type in several commands in one line.
-a	It means to show current DHCPv6 status.
-i<pool_min_addr>	It means to set the start IPv6 address of the address pool.
-x<pool_max_addr>	It means to set the end IPv6 address of the address pool.
-d<addr>	It means to set the first DNS IPv6 address.
-D<addr>	It means to set the second DNS IPv6 address.
-c<parameter>	It means to send rapid commit to server. 1: Enable 0: Disable
-e<parameter>	It means to enable or disable the DHCPv6 server. 1: Enable 0: Disable

Example

```
> ip6 dhcp server -d FF02::1
> ip6 dhcp server -i ff02::1
> ip6 dhcp server -x ff02::3
> ip6 dhcp server -a
% Interface LAN has following DHCPv6 server settings:
%    DHCPv6 server disabled
%    maximum address of the pool: FF02::3
%    minimum address of the pool: FF02::1
%   1st DNS IPv6 Addr: FF02::1
```

Telnet Command: ip6 internet

This command allows you to configure settings for accessing Internet.

Syntax

ip6 internet *-W n -M n [-<command> <parameter> | ...]*

Syntax Description

Parameter	Description

-W n	**W** means to set WAN interface and **n** means different selections. Default is WAN1.
	n=1: WAN1
	n=2: WAN2
	n=3: WAN3
	.
	.
	n=X: WANx

-M n	M means to set Internet Access Mode (Mandatory) and n means different modes (represented by 0 – 5)
	n= 0: Offline,
	n=1: PPP,
	n=2: TSPC,
	n=3: AICCU,
	n=4: DHCPv6,
	n=5: Static
	n=6: 6in4-Static
	n=7: 6rd

[<command> <parameter>|...]	The available commands with parameters are listed below. *[...]* means that you can type in several commands in one line.
For 6rd	

-C n	Set 6rd Connection Mode.
	n = 0: Auto
	n = 1: Static.

-s [server]	Set 6rd IPv4 Border Relay.
-m n	Set 6rd IPv4 address mask length.
-p [prefix]	Set 6rd IPv6 prefix.
-l n	Set 6rd IPv6 prefix length.
For 6in4	
-s [server]	Set 6in4 Remote Endpoint IPv4 Address.
-I [IPv6 Addr]	Set 6in4 IPv6 Address. IPv6 Addr= IPv6 address.
-P n	Set 6in4 IPv6 WAN prefix length.
-p [prefix]	Set 6in4 LAN Routed Prefix.
-l n	Set 6in4 LAN Routed Prefix length.
-T n	Set 6in4 Tunnel TTL.
For TSPC/AICCU	
-u [username]	Set Username (max. 63 characters).
-P [password]	Set Password (max. 63 characters).
-s [server]	Set Tunnel Server IP. server= IPv4 Address or URL (max. 63 characters).
For AICCU	

-p [prefix]	Set Subnet Prefix (AICCU).
-l n	Subnet Prefix length (AICCU).
-o [0/1]	Set AICCU always on. On = 1, Off = 0.
-f	Set AICCU tunnel ID.
For Static	
-w [addr]	Set Default Gateway. Addr= IPv6 address.
For others	
-d <server>	Set 1st DNS Server IP server= IPv6 Address.
-D <server>	Set 2nd DNS Server IP. server= IPv6 Address.
-t <dhcp/ra/none>	Set ipv6 PPP WAN test mode for DHCP or RA.
-V	View IPv6 Internet Access Profile.
-k	Dial the Tunnel on the WAN.
-j	Drop the Tunnel on the WAN.
-r n	Set Prefix State Machine RA timeout.
-c n	Set Prefix State Machine DHCPv6 Client timeout.
-q [value]	Set WAN detection mode. 0: NS Detect. 1: Ping Detect. 2: Always On.
-z [value]	Set Ping Detect TTL. value= 0 ~ 255.
-x [hostname/IPv6 address]	Set Ping Detect Host (hostname or IPv6 address).
-I [interval]	Set ipv6 connection interval. Interval = 1500-60000 (unit:10ms).
-b [0/1]	Enable DNSv6 based on DHCPv6. 0= off 1= on

Example

```
> ip6 internet -W 1 -M 2 -u userid -p passwd -s broker.freenet6.net
 This setting will take effect after rebooting.
 Please use "sys reboot" command to reboot the router.
>
```

Telnet Command: ip6 neigh

This command allows you to display IPv6 neighbour table.

Syntax

ip6 neigh *–s [inet6_addr] [eth_addr] [LAN1|LAN2|…|LAN4|WAN1|WAN2|USB1|USB2]*

ip6 neigh *-d [inet6_addr] [LAN1|LAN2|…|LAN4|WAN1|WAN2|USB1|USB2]*

ip6 neigh *-a [inet6_addr] [-N LAN1|LAN2|…|LAN4|WAN1|WAN2|USB1|USB2]*

Syntax Description

Parameter	Description
-s	It means to add a neighbour.
-d	It means to delete a neighbour.
-a	It means to show neighbour status.
inet6_addr	Type an IPv6 address
eth_addr	Type submask address.
LAN|WAN1|WAN2	Specify an interface for the neighbor.

Example

```
> ip6 neigh -s 2001:2222:3333::1111 00:50:7F:11:ac:22:WAN2
        Neighbour 2001:2222:3333::1111 successfully added!
> ip6 neigh -a

I/F  ADDR                                    MAC                  STATE
-------------------------------------------------------------------------
LAN FF02::1                                33-33-00-00-00-01    CONNECTED
WAN2 2001:5C0:1400:B::10B8                 00-00-00-00-00-00    CONNECTED
WAN2 2001:2222:3333::1111                  00-00-00-00-00-00    CONNECTED
WAN2 2001:2222:6666::1111                  00-00-00-00-00-00    CONNECTED
WAN2 ::                                    00-00-00-00-00-00    CONNECTED
LAN  ::                                                         NONE
>
```

Telnet Command: ip6 pneigh

This command allows you to add a proxy neighbour.

Syntax

ip6 pneigh *-s inet6_addr [LAN1|LAN2|... |LAN4|WAN1|WAN2|USB1|USB2]*

ip6 pneigh *-d inet6_addr [LAN1|LAN2|... |LAN4|WAN1|WAN2|USB1|USB2]*

ip6 pneigh *-a [inet6_addr] [-N LAN1|LAN2|... |LAN4|WAN1|WAN2|USB1|USB2]*

Syntax Description

Parameter	Description
-s	It means to add a proxy neighbour.
-d	It means to delete a proxy neighbour.
-a	It means to show proxy neighbour status.
inet6_addr	Type an IPv6 address
LAN1|LAN2|... |LAN4|WAN1|WAN2|USB1|USB2	Specify an interface for the proxy neighbor.

Example

```
> ip6 neigh -s FE80::250:7FFF:FE12:300 LAN
%     Neighbour FE80::250:7FFF:FE12:300 successfully added!
```

Telnet Command: ip6 route

This command allows you to

Syntax

ip6 route *-s [prefix] [prefix-length] [gateway] [LAN|WAN1|WAN2|iface#> [-D]*

ip6 route *-s [prefix] [prefix-length] [gateway] [LAN1|LAN2|... |LAN4|WAN1|WAN2|USB1|USB2|VPN1|... |VPN32] [-D]*

ip6 route -*d [prefix] [prefix-length]*

ip6 route -*a LAN1|LAN2|... |LAN4|WAN1|WAN2|USB1|USB2|VPN1|... |VPN32]*

Syntax Description

Parameter	Description
-s	It means to add a route.
-*d*	It means to delete a route.
-*a*	It means to show the route status.
-D	It means that such route will be treated as the default route.
prefix	It means to type the prefix number of IPv6 address.
prefix-length	It means to type a fixed value as the length of the prefix.
gateway	It means the gateway of the router.
LAN1|LAN2|... |LAN4|WAN1|WAN2|USB1|USB2|VPN1|... |VPN32]	It means to specify LAN or WAN interface for such address.

Example

```
> ip6 route -s FE80::250:7FFF:FE12:500 16 FE80::250:7FFF:FE12:100 LAN
%      Route FE80::250:7FFF:FE12:500/16 successfully added!
> ip6 route -a LAN

 PREFIX/PREFIX-LEN  _EXPIRES_  _NEXT-HOP_   I/F  METRIC    STATE    FLAGS
--------------------------------------------------------------------------
------
 FE80::/128                                  LAN     0   UNICAST    U
                        0   ::
 FE80::250:7FFF:FE00:0/128                   LAN     0   UNICAST    U
                        0   ::
 FE80::/64                                   LAN   256   UNICAST    U
                        0
 FE80::/16                                   LAN  1024   UNICAST    UGA
                        0   FE80::250:7FFF:FE12:100
 FF02::1/128                                 LAN     0   UNICAST    UC
                        0   FF02::1
 FF00::/8                                    LAN   256   UNICAST    U
                        0
 ::/0                                        LAN    -1   UNREACHABLE !
                        0
```

Telnet Command: ip6 ping

This command allows you to pin an IPv6 address or a host.

Syntax

ip6 ping *[IPV6 address/Host] [LAN1|LAN2|...|LAN4|WAN1|WAN2|USB1|USB2][send* count*] [data_size(1~1452)]*

Syntax Description

Parameter	Description
IPV6 address/Host	It means to specify the IPv6 address or host for ping.
LAN1|LAN2|...|LAN4|WAN1 |WAN2|USB1|USB2	It means to specify LAN or WAN interface for such address.

Example

```
> ip6 ping 2001:4860:4860::8888 WAN2

Pinging 2001:4860:4860::8888 with 64 bytes of Data:

Receive reply from 2001:4860:4860::8888, time=330ms
Receive reply from 2001:4860:4860::8888, time=330ms
Receive reply from 2001:4860:4860::8888, time=330ms
Receive reply from 2001:4860:4860::8888, time=330ms
Receive reply from 2001:4860:4860::8888, time=330ms

Packets: Sent = 5, Received = 5, Lost = 0 <% loss>
>
```

Telnet Command: ip6 tracert

This command allows you to trace the routes from the router to the host.

Syntax

ip6 tracert *[IPV6 address/Host] [LAN1|LAN2|…|LAN4|WAN1|WAN2|USB1|USB2]*

Syntax Description

Parameter	Description
IPV6 address/Host	It means to specify the IPv6 address or host for ping.
LAN1|LAN2|…|LAN4|WAN1 |WAN2|USB1|USB2	It means to specify LAN or WAN interface for such address.

Example

```
> ip6 tracert 2001:4860:4860::8888
traceroute to 2001:4860:4860::8888, 30 hops max through protocol ICMP
  1 2001:5C0:1400:B::10B8    340 ms
  2 2001:4DE0:1000:A22::1    330 ms
  3 2001:4DE0:A::1           330 ms
  4 2001:4DE0:1000:34::1     340 ms
  5 2001:7F8:1: :A501:5169:1 330 ms
  6 2001:4860::1:0:4B3       350 ms
  7 2001:4860::8:0:2DAF      330 ms
  8 2001:4860::2:0:66E       340 ms
  9 Request timed out.          *
 10 2001:4860:4860::8888     350 ms
Trace complete.
>
```

Telnet Command: ip6 tspc

This command allows you to display TSPC status.

Syntax

ip6 tspc *[ifno]*

Syntax Description

Parameter	Description

ifno	It means the connection interface.
	Ifno=1 (means WAN1)
	Info=2 (means WAN2) … etc.

Example

```
> ip6 tspc 2
Local Endpoint v4 Address : 111.243.177.223
Local Endpoint v6 Address : 2001:05c0:1400:000b:0000:0000:0000:10b9
Router DNS name : 8886666.broker.freenet6.net
Remote Endpoint v4 Address :81.171.72.11
Remote Endpoint v6 Address : 2001:05c0:1400:000b:0000:0000:0000:10b8
Tspc Prefixlen : 56
```

```
Tunnel Broker: Amsterdam.freenet.net

Status: Connected

>
```

Telnet Command: ip6 radvd

This command allows you to enable or disable RADVD server.

Syntax

Ip6 radvd *[LAN1|LAN2|...|LAN4] [-<command> <parameter>| ...]*

ip6 radvd *[R|u]*

Syntax Description

Parameter	Description
LAN1|LAN2|...|LAN4	It means to specify LAN interface for such address.
<command> <parameter>	
-s	It means to enable or disable the default lifetime of the RADVD server. 1: Enable the RADVD server. 0: Disable the RADVD server.
-D <1/0>	Enable/Disable the RDNSS.
-d <lifetime>	Set the default lifetime for RADVD server.
-i <lifetime>	Set the mininum interval time(sec) for RADVD server.
-I <lifetime>	Set the maximum interval time(sec) for RADVD server.
Lifetime	It means to set the lifetime. The lifetime associated with the default router in units of seconds. It's used to control the lifetime of the prefix. The maximum value corresponds to 18.2 hours. A lifetime of 0 indicates that the router is not a default router and should not appear on the default router list. Type the number (unit: second) you want.
-h <hoplimit>	Set hop limit for RADVD server.
-m <mtu/auto>	Set MTU value for RADVD server. Range: 1280-1500. auto - auto select MTU from WAN.
-e <time>	Set reachable time.
-a <time/infinity>	Set retransmit timer /infinity.
-p <0/1/2>	Set default preference Low/Medium/High for RADVD server.
-v	View the RADVD server configuration.
-V	It means to show the RADVD configuration.
-L <time/infinity>:	Set prefix valid lifetime.
-P <time/infinity>	Set prefix preferred lifetime.
-r [num]	Make RADVD test for item [num]. num - 0-default, 121:logo 121, 124:logo 124.
-R	Reload Config and send RA for subnets.
-u	View MTU on all interfaces.

Example

```
> ip6 radvd LAN1 -v
% [LAN1] setting !
%   Status         : Enable
%   RDNSS          : Enable
%   Default Lifetime : 1800 seconds
%   min interval time: 200 seconds
%   MAX interval time: 600 seconds
%   Hop limit       : 64
%   MTU            : auto
%   Reachable time  : 0
%   Retransmit time : 0
%   Preference      : Medium
%   Prefix valid lifetime    : 2592000
%   Prefix preferred lifetime : 604800
```

Telnet Command: ip6 mngt

This command allows you to manage the settings for access list.

Syntax

ip6 mngt list

ip6 mngt list *[add<index> <prefix> <prefix-length>|remove <index>|flush]*

ip6 mngt status

ip6 mngt *[http|telnet|ping|https|ssh] [on|off]*

Syntax Description

Parameter	Description
list	It means to show the setting information of the access list.
status	It means to show the status of IPv6 management.
add	It means to add an IPv6 address which can be used to execute management through Internet.
index	It means the number (1, 2 and 3) allowed to be configured for IPv6 management.
prefix	It means to type the IPv6 address which will be used for accessing Internet.
prefix-length	It means to type a fixed value as the length of the prefix.
remove	It means to remove (delete) the specified index number with IPv6 settings.
flush	It means to clear the IPv6 access table.
http|telnet|ping|https|ssh	These protocols are used for accessing Internet.
on|off	It means to enable (on) or disable (off) the Internet accessing through http/telnet/ping.

Example

```
> ip6 mngt list add 1 FE80::250:7FFF:FE12:1010 128
> ip6 mngt list add 2 FE80::250:7FFF:FE12:1020 128
> ip6 mngt list add 3 FE80::250:7FFF:FE12:2080 128
> ip6 mngt list
% IPv6 Access List :
Index   IPv6 Prefix    Prefix Length
========================================
1      FE80::250:7FFF:FE12:1010      128
2      FE80::250:7FFF:FE12:1020      128
3      FE80::250:7FFF:FE12:2080      128

> ip6 mngt status
% IPv6 Remote Management :
telnet : off,   http : off,    ping : off
```

Telnet Command: ip6 online

This command allows you to check the online status of IPv6 LAN /WAN.

Syntax

ip6 *online [WAN1|WAN2|USB1|USB2]*

Syntax Description

Parameter	Description
WAN1|WAN2|USB1|USB2	It means the connection interface.

Example

```
> ip6 online WAN1
 % WAN1 online status :
 % IPv6 WAN1 Disabled
 % Default Gateway : ::
 % Interface : DOWN
 % UpTime : 0:00:00
 % IPv6 DNS Server: :: Static
 % IPv6 DNS Server: :: Static
 % IPv6 DNS Server: :: Static
 % Tx packets = 0, Tx bytes = 0, Rx packets = 0, Rx bytes = 0
 % MTU Onlink: 1280 , Config MTU : 0
```

Telnet Command: ip6 aiccu

This command allows you to view IPv6 settings for WAN interface with connection type of AICCU.

Syntax

ip6 aiccu -i <*ifno*> **-r**

ip6 aiccu -i <*ifno*> **-s**

Syntax Description

Parameter	Description
-r	Reset the AICCU retry account for the specified interace.

ifno	ifno=1, WAN1
	ifno=2, WAN2

	ifno=x, WANx
-s	Show the interface status.

Example

```
> ip6 aiccu -i 1 -r
reset AICCU Retry Account OK!

>
```

Telnet Command: ip6 ntp

This command allows you to set IPv6 settings for NTP (Network Time Protocols) server.

Syntax

ip6 ntp –h

ip6 ntp –v

ip6 ntp –p [0/1]

Syntax Description

Parameter	Description
–h	It is used to display the usage of such command.
-v	It is used to show the NTP state.
-p <0/1>	It is used to specify NTP server for IPv6. 0 – Auto 1 – First Query IPv6 NTP Server.

Example

```
> ip6 ntp -p 1
% Set NTP Priority: IPv6 First
```

Telnet Command: ip6 lan

Syntax

ip6 lan -I n *[-<l:w:d:D:m:o:s> <parameter> | ...]*

Syntax Description

Parameter	Description
–h	It is used to display the usage of such command.
<l:w:d:D:m:o:s><parameter>	The following lists all of the available commands with parameters.

-l n	Select LAN interface to be set.
	n = 1: LAN1. Default is LAN1.
	n = 2: LAN2
	n = x: LANx

-w n	Select WAN interface to be primary.
	n = 0: None
	n = 1: WAN1
	n = 2: WAN2
	n = x: WANx.

-d <server>	Set the first DNS Server IP. <server>= IPv6 Addrress.

-D <server	Set secondd DNS Server IP. <server>= IPv6 Addrress.

-m n	Set IPv6 LAN management. Default is SLAAC.
	n = 0: OFF
	n = 1: SLAAC
	n = 2: DHCPv6.

-o n	Enable Other option(O-bit) flag. (O-bit is redundant when management is DHCPv6)
	n= 0: Disable
	n= 1: Enable.

-e n:	Add an extension WAN.
	n = 1: WAN1
	n = 2: WAN2
	n = x: WANx.

-E n	Delete an extension WAN.
	n = 1: WAN1
	n = 2: WAN2
	n = x: WANx.

-b map	Set bit map(decimal) for extension WANs.
	map = bit 0: WAN1
	map = bit 1: WAN2
	map = bit n: WAN(n+1)

-f n	Disable IPv6.
	n = 1: Disable IPv6
	n = 0: Enable IPv6.

-s n	Show IPv6 LAN setting. n = 0: show all. n = 1: LAN1, 2: LAN2, ... x: LANx, 5: DMZ. Default is show all

Example

```
> ip6 lan -l 2 -w 1 -d 2001:4860:4860::8888 -o 1 -f 0 -s 2
%   Set LAN2!

%   Set primary WAN1!
```

Telnet Command: ipf view

IPF users to view the version of the IP filter, to view/set the log flag, to view the running IP filter rules.

Syntax

ipf view *[-VcdhrtzZ]*

Syntax Description

Parameter	Description
-V	It means to show the version of this IP filter.
-c	It means to show the running call filter rules.
-d	It means to show the running data filter rules.
-h	It means to show the hit-number of the filter rules.
-r	It means to show the running call and data filter rules.
-t	It means to display all the information at one time.
-z	It means to clear a filter rule's statistics.
-Z	It means to clear IP filter's gross statistics.

Example

```
> ipf view -V -c -d
ipf: IP Filter: v3.3.1 (1824)
Kernel: IP Filter: v3.3.1
Running: yes
Log Flags: 0x80947278 = nonip
Default: pass all, Logging: available
```

Telnet Command: ipf set

This command is used to set general rule for firewall.

Syntax

ipf set *[Options]*

ipf set *[SET_NO] rule [RULE_NO] [Options]*

Syntax Description

Parameter	Description
Options	There are several options provided here, such as *-v*, *-c [SET_NO], -d [SET_NO],… and etc.*
SET_NO	It means to specify the index number (from 1 to 12) of filter set.
RULE_NO	It means to specify the index number (from 1 to 7) of filter rule set.
-v	Type "-v" to view the configuration of general set.
-c [SET_NO]	It means to setup Call Filter, e.g., **-c 2**. The range for the index number you can type is "0" to "12" (0 means "disable).
-d [SET_NO]	It means to setup Data Filter, e.g., *-d 3*. The range for the index number you can type is "0" to "12" (0 means "disable).
-l [VALUE]	It means to setup Log Flag, e.g., *-l 2* Type "0" to disable the log flag. Type "1" to display the log of passed packet. Type "2" to display the log of blocked packet. Type "3" to display the log of non-matching packet.
- p [VALUE]	It means to setup actions for packet not matching any rule, e.g., *-p 1* Type "0" to let all the packets pass; Type "1" to block all the packets.
-R [v4/v6] [Enable/Disable]	Accept routing packet from WAN., e.g., *-R v4 0* : Set Accept routing packet from WAN by IPv4 is enable *-R v4 1* : Set Accept routing packet from WAN by IPv6 is disable *-R v6 0* : Set Accept routing packet from WAN by IPv4 is enable *-R v6 1* : Set Accept routing packet from WAN by IPv6 is disable
-L [VALUE]	Enable/Disable Strict Security Firewall, e.g., *-L 1*. 0:Disable, 1:Enable
-C [VALUE]	Setup the code page, e.g., *-C 12*. Type 1 ~ 12 as the code page number. If "0" is set, the code page setting is disabled.
-M [APPE_NO]	It means to configure APPE for the packets not matching with any rule, e.g., *-M 1* Type "0" to let all the packets pass; Type "1" to block all the packets.
-U [URL_NO]	It means to configure URL content filter for the packets not

	matching with any rule, e.g., *-U 1* Type “0” to let all the packets pass; Type “1” to block all the packets.
-W [WEB_NO]	Setup WEB Content Filter for packet not matching any rule.
-D[DNS_NO]	Setup DNS Filter for packet not matching any rule.
-g [VALUE]	Setup DNS Filter syslog. Type “0” to disable the function. Type “1” to enable the function.
-a [AD_SET]	It means to configure the advanced settings.
-f [VALUE]	It means to accept large incoming fragmented UDP or ICMP packets.
-E [VALUE]	It means to set the maximum count (0 ~ 60000) for session limitation.
-F [VALUE]	It means to configure the load-balance policy.
-Q [VALUE]	It means to set the QoS class.

Example

```
> ipf set -c 1  #set call filter start from set 1
Setting saved.

> ipf set -d 2  #set data filter start from set 2
Setting saved.
> ipf set -v

Call Filter: Enable (Start Filter Set = 1)
Data Filter: Enable (Start Filter Set = 2)
Log Flag   : None

Actions for packet not matching any rule:
  Pass or Block    : Pass
  CodePage        : ANSI(1252)-Latin I
  Max Sessions Limit: 60000
  Current Sessions  : 0
  Mac Bind IP      : Non-Strict
  QOS Class       : None
  APP Enforcement  : None
  URL Content Filter: None
  Load-Balance policy : Auto-select
  --------------------------------------------------------------
  CodePage               : ANSI(1252)-Latin I
  Window size             : 65535
  Session timeout          : 1440
  DrayTek Banner           : Enable
  ---------------------------------------------------------------
  Apply IP filter to VPN incoming packets           : Enable
  Accept large incoming fragmented UDP or ICMP packets: Enable
  ----------------------------------------------------------------
  Strict Security Checking
    [ ]APP Enforcement
>
```

Telnet Command: ipf rule

This command is used to set filter rule for firewall.

Syntax

ipf rule *s r [-<command> <parameter> | ...*

ipf rule s r -v

Syntax Description

Parameter	Description
s	Such word means Filter Set, range form 1~12.
r	Such word means Filter Rule, range from 1~7.
<Command><parameter>	The following lists all of the available commands with parameters.
-e	It means to enable or disable the rule setting. 0- disable 1- enable
-s o:g <obj>	It means to specify source IP object and IP group. o - indicates "object". g - indicates "group". obj - indicates index number of object or index number of group. Available settings range from 1-192. For example, "-s g 3" means the third source IP group profile.
–s u <Address Type> <Start IP Address> <End IP Address> | <Address Mask>	It means to configure **source** IP address including address type, start IP address, end IP address and address mask. u – It means "user defined". *Address Type* - Type the number (representing different address type). 0 - Subnet Address 1 - Single Address 2 - Any Address 3 - Range Address Example: Set Subnet Address => -s u 0 192.168.1.10 255.255.255.0 Set Single Address => -s u 1 192.168.1.10 Set Any Address => -s u 2 Set Range Address => -s u 3 192.168.1.10 192.168.1.15
–d u <Address Type> <Start IP Address> <End IP Address> | <Address Mask>	It means to configure **destination** IP address including address type, start IP address, end IP address and address mask. u – It means "user defined". *Address Type* - Type the number (representing different address type). 0 - Subnet Address 1 - Single Address 2 - Any Address 3 - Range Address Example: Set Subnet Address => -d u 0 192.168.1.10 255.255.255.0 Set Single Address => -d u 1 192.168.1.10 Set Any Address => -d u 2 Set Range Address => -d u 3 192.168.1.10 192.168.1.15
-d o:g <obj>	It means to specify destination IP object and IP group.

	o – indicates "object". g – indicates "group" <obj>– indicates index number of object or index number of group. Available settings range from 1-192. For example, "-d g 1" means the first destination IP group profile.
-S o:g <obj>	It means to specify Service Type object and IP group. o – indicates "object". g – indicates "group" <obj> – indicates index number of object or index number of group. Available settings range from 1-96. For example, "-S 0 1" means the first service type object profile.
-S u <protocol> <source_port__value> <destination_port_vale>	It means to configure advanced settings for Service Type, such as protocol and port range. u – it means "user defined". <protocol> – It means TCP(6),UDP(17), TCP/UDP(255). <source_port__value> – 1 – Port OP, range is 0-3. 0:= =, 1:!=, 2:>, 3:< 3 – Port range of the Start Port Number, range is 1-65535. 5 – Port range of the End Port Number, range is 1-65535. <destination_port_value>: 2 – Port OP, range is 0-3, 0:==, 1:!=, 2:>, 3:< 4 – Port range of the Start Port Number, range is 1-65535. 6 – Port range of the End Port Number, range is 1-65535.
-F <index> <log flag>	It means the Filter action you can specify. index – Available settings contain: 0 –Pass Immediately, 1 – Block Immediately, 2 – Pass if no further match, 3 – Block if no further match. log flag - 0 means disable to save and display in Syslog; 1 means enable to save and display in Syslog.
-q <index> <log flag>	It means the classification for QoS. index – Available settings contain: 1– Class 1, 2 – Class 2, 3 – Class 3, 4 – Other log flag - 0 means disable to save and display in Syslog; 1 means enable to save and display in Syslog.
-l <wan> <log flag>	It means to set load balance policy. wan – Available settings contain 0 (means auto-select), 1 (means WAN1), 2 (means WAN2) and 3 (means WAN3). log flag – 0 means disable to save and display in Syslog; 1 means enable to save and display in Syslog.
-E<index>	It means to enable APP Enforcement for Strict Security Checking. <index> – Available settings for APP Enforcement are: 0 – disable APP Enforcement. 1- enable APP Enforcement.
-a <index> <Log Flag>	It means to specify which APP Enforcement profile will be applied. <index> – Available settings range for APP Enforcement is 0 ~ 32. "0" means no profile will be applied.

	log flag - 0 means disable to save and display in Syslog; 1 means enable to save and display in Syslog.
-u <index> <Log Flag>	It means to specify which URL Content Filter profile will be applied. <index> – Available settings range from 0 ~ 8. “0” means no profile will be applied. log flag- 0 means disable to save and display in Syslog; 1 means enable to save and display in Syslog.
-w <index> <Log Flag>	It means to specify which Web Content Filter profile will be applied. <index> – Available settings range from 0 ~ 8. “0” means no profile will be applied. log flag- 0 means disable to save and display in Syslog; 1 means enable to save and display in Syslog.
-n <index> <Log Flag>	It means to specify which DNS Filter profile will be applied. <index> – Available settings range from 0 ~ 8. “0” means no profile will be applied. log flag- 0 means disable to save and display in Syslog; 1 means enable to save and display in Syslog.
-c <0-20>	It means to set code page. Different number represents different code page. 0. None 1. ANSI(1250)-Central Europe 2. ANSI(1251)-Cyrillic 3. ANSI(1252)-Latin I 4. ANSI(1253)-Greek 5. ANSI(1254)-Turkish 6. ANSI(1255)-Hebrew 7. ANSI(1256)-Arabic 8. ANSI(1257)-Baltic 9. ANSI(1258)-Viet Nam 10. OEM(437)-United States 11. OEM(850)-Multilingual Latin I 12. OEM(860)-Portuguese 13. OEM(861)-Icelandic 14. OEM(863)-Canadian French 15. OEM(865)-Nordic 16. ANSI/OEM(874)-Thai 17. ANSI/OEM(932)-Japanese Shift-JIS 18. ANSI/OEM(936)-Simplified Chinese GBK 19. ANSI/OEM(949)-Korean 20. ANSI/OEM(950)-Traditional Chinese Big5
-C <Windows Size> <Session_Timeout>	It means to set Window size and Session timeout (Minute). <Windows Size> - Available settings range from 1 ~ 65535. <Session_Timeout> - Make the best utilization of network resources.
-M <Your Comments>	Set the content of the comments for a rule.
-v	It is used to show current filter/rule settings.

Example

```
>  ipf rule 2 1 -e 1 -M "Your Comments" -s "o 1" -d "o 2" -S "o 1" -F "1 1"

Setting saved.
> ipf rule 2 1 -v
```

```
Filter Set 2 Rule 1:

Status  : Enable
Comments: Your
Index(1-15) in Schedule Setup: <null>, <null>, <null>, <null>

Direction    : LAN -> WAN
Source IP    : Object1,
Destination IP: Object2,
Service Type  : TCP/UDPObject1,
Fragments    : Don't Care

Pass or Block           : Block Immediately
Branch to Other Filter Set: None
Max Sessions Limit       : 60000
Current Sessions         : 0
Mac Bind IP             : Non-Strict
Qos Class               : None
APP Enforcement          : None
URL Content Filter       : None
WEB Content Filter       : None
DNS Filter              : None
Load-Balance policy      : Auto-select
Log                    : Enable
----------------------------------------------------------------------
CodePage                : ANSI(1252)-Latin I
Window size              : 65535
Session timeout          : 1440
DrayTek Banner           : Enable
  ---------------------------------------------------------------------
  Strict Security Checking
    [ ]APP Enforcement
>
```

Telnet Command: ipf flowtrack

This command is used to set and view flowtrack sessions.

Syntax

ipf flowtrack set *[-re]*

ipf flowtrack view *[-fb]*

ipf flowtrack *[-i][-p][-t]*

Syntax Description

Parameter	Description
-r	It means to refresh the flowtrack.
-e	It means to enable or disable the flowtrack. 0: Disable 1: Enable
-f	It means to show the sessions state of flowtrack. If you do not

	specify any IP address, then all the session state of flowtrack will be displayed.
-b	It means to show all of IP sessions state.
- i [IP address]	It means to specify IP address (e.g,, -i 192.168.2.55).
-p[value]	It means to type a port number (e.g., -p 1024). Available settings are 0 ~ 65535.
-t [value]	It means to specify a protocol (e.g., -t tcp). Available settings include: *tcp* *udp* *icmp*

Example

```
>ipf flowtrack set -r
Refresh the flowstate ok
> ipf flowtrack view -f
Start to show the flowtrack sessions state:

ORIGIN>>  192.168.1.11:59939 ->       8.8.8.8:   53 ,ifno=0
REPLY >>      8.8.8.8:   53 ->   192.168.1.11:59939 ,ifno=3
      proto=17, age=93023180(3920), flag=203
ORIGIN>>  192.168.1.11:15073 ->       8.8.8.8:   53 ,ifno=0
REPLY >>      8.8.8.8:   53 ->   192.168.1.11:15073 ,ifno=3
      proto=17, age=93025100(2000), flag=203
ORIGIN>>  192.168.1.11: 7247 ->       8.8.8.8:   53 ,ifno=0
REPLY >>      8.8.8.8:   53 ->   192.168.1.11: 7247 ,ifno=3
      proto=17, age=93020100(7000), flag=203
End to show the flowtrack sessions state
```

Telnet Command: Log

This command allows users to view log for WAN interface such as call log, IP filter log, flush log buffer, etc.

Syntax

log *[-cfhiptwx?] [-F a| c | f | w]*

Syntax Description

Parameter	Description
-c	It means to show the latest call log.
-f	It means to show the IP filter log.
-F	It means to show the flush log buffer. a: flush all logs c: flush the call log f: flush the IP filter log w: flush the WAN log
-h	It means to show this usage help.
-p	It means to show PPP/MP log.

-t	It means to show all logs saved in the log buffer.
-w	It means to show WAN log.
-x	It means to show packet body hex dump.

Example

```
> log -w
25:36:25.580 ---->DHCP (WAN-5) Len = 548XID = 0x7880fdd4
       Client IP     = 0.0.0.0
       Your IP       = 0.0.0.0
       Next server IP = 0.0.0.0
       Relay agent IP = 0.0.0.0
25:36:33.580 ---->DHCP (WAN-5) Len = 548XID = 0x7880fdd4
       Client IP     = 0.0.0.0
       Your IP       = 0.0.0.0
       Next server IP = 0.0.0.0
       Relay agent IP = 0.0.0.0
25:36:41.580 ---->DHCP (WAN-5) Len = 548XID = 0x7880fdd4
       Client IP     = 0.0.0.0
       Your IP       = 0.0.0.0
       Next server IP = 0.0.0.0
       Relay agent IP = 0.0.0.0
25:36:49.580 ---->DHCP (WAN-5) Len = 548XID = 0x7880fdd4
       Client IP     = 0.0.0.0
       Your IP       = 0.0.0.0
       Next server IP = 0.0.0.0
       Relay agent IP = 0.0.0.0
25:36:57.580 ---->DHCP (WAN-5) Len = 548XID = 0x7880fdd4
       Client IP     = 0.0.0.0
       Your IP       = 0.0.0.0
--- MORE ---   ['q': Quit, 'Enter': New Lines, 'Space Bar': Next Page]
---
```

Telnet Command: ldap user

This command is used to configure the LDAP profile.

Syntax

ldap user *[INDEX][OPTION]*

Syntax Description

Parameter	Description
INDEX	Specify the index number (1 to 8) of the LDAP profile.
OPTION	
-n VALUE	Setup Profile Name.
-b VALUE	Setup Base Distinguished Name.
-a VALUE	Setup Additional Filter.
-g VALUE	Setup Group Distinguished Name.
-c VALUE	Setup Common Name Identifier.
-v	View detail information of the LDAP profile.

Example

```
>ldap user 1 -n LD_user_test1
Profile Name has been updated!
> ldap user 1 -v
Profile Index:1
Profile Name:LD_user_test1
Common Name Identifier:
Base Distinguished Name:
Additional Filter:
Group distinguished Name:
```

Telnet Command: ldap view

This command is used to check current status of LDAP settings configuration.

Syntax

ldap view

Example

```
> ldap view ?
LDAP Enable:Disabled.
LDAP Bind Type:Simple
LDAP with SSL:Disabled
LDAP Regular DN:
LDAP Regular Password:
LDAP Server IP:
LDAP Server Port:389
```

Telnet Command: tacacsplus set

This command allows users to configure general settings for TACACS+ server

Syntax

tacacspluse set *[Options][Value]*

Syntax Description

Parameter	Description
enable [0-1]	Disable (0)/enable(1) the TACACS+ server.
IP <VALUE>	Set the IP address of TACACS+ server.
port <VALUE>	Set the port number of TACACS+ server.
shared_secret <VALUE>	Set the Shared Secret value of TACACS+ Server.

Example

```
> tacacsplus set enable 1
TACACS+ enabled!
 This setting will take effect after rebooting.
 Please use "sys reboot" command to reboot the router.

> tacacsplus set IP 192.168.1.59
TACACS+ Server IP has been setting.
 This setting will take effect after rebooting.
 Please use "sys reboot" command to reboot the router.
> tacacsplus view
TACACS+ Enable:Enable.
TACACS+ Server IP:192.168.1.59
TACACS+ Server Port:49
TACACS+ Type:ASCII
TACACS+ Shared Secret:
```

Telnet Command: tacacsplus view

This command allows users to check the general settings for TACACS+ server

Syntax

tacacspluse view

Example

```
> tacacsplus view
TACACS+ Enable:Enable.
TACACS+ Server IP:192.168.1.59
TACACS+ Server Port:49
TACACS+ Type:ASCII
TACACS+ Shared Secret:
```

Telnet Command: mngt ftpport

This command allows users to set FTP port for management.

Syntax

mngt ftpport *[FTP port]*

Syntax Description

Parameter	Description
FTP port	It means to type the number for FTP port. The default setting is 21.

Example

```
> mngt ftpport 21
% Set FTP server port to 21 done.
```

Telnet Command: mngt httpport

This command allows users to set HTTP port for management.

Syntax

mngt httpport *[Http port]*

Syntax Description

Parameter	Description
Http port	It means to enter the number for HTTP port. The default setting is 80.

Example

```
> mngt httpport 80
% Set web server port to 80 done.
```

Telnet Command: mngt httpsport

This command allows users to set HTTPS port for management.

Syntax

mngt httpsport *[Https port]*

Syntax Description

Parameter	Description
Https port	It means to type the number for HTTPS port. The default setting is 443.

Example

```
> mngt httpsport 443
% Set web server port to 443 done.
```

Telnet Command: mngt telnetport

This command allows users to set telnet port for management.

Syntax

mngt telnetport *[Telnet port]*

Syntax Description

Parameter	Description
Telnet port	It means to type the number for telnet port. The default setting is 23.

Example

```
> mngt telnetport 23
% Set Telnet server port to 23 done.
```

Telnet Command: mngt sshport

This command allows users to set SSH port for management.

Syntax

mngt sshport *[ssh port]*

Syntax Description

Parameter	Description
ssh port	It means to type the number for SSH port. The default setting is 22.

Example

```
> mngt sshport 23
```

```
% Set ssh port to 23 done.
```

Telnet Command: mngt noping

This command is used to pass or block Ping from LAN PC to the internet.

Syntax

mngt noping *[on]*

mngt noping *[off]*

mngt noping *[viewlog]*

mngt noping *[clearlog]*

Syntax Description

Parameter	Description
on	All PING packets will be forwarded from LAN PC to Internet.
off	All PING packets will be blocked from LAN PC to Internet.
viewlog	It means to display a log of ping action, including source MAC and source IP.
clearlog	It means to clear the log of ping action.

Example

```
> mngt noping off
No Ping Packet Out is OFF!!
```

Telnet Command: mngt defenseworm

This command can block specified port for passing through the router.

Syntax

mngt defenseworm *[on]*

mngt defenseworm *[off]*

mngt defenseworm *[add port]*

mngt defenseworm *[del port]*

mngt defenseworm *[viewlog]*

mngt defenseworm *[clearlog]*

Syntax Description

Parameter	Description
on	It means to activate the function of defense worm packet out.
off	It means to inactivate the function of defense worm packet out.
add port	It means to add a new TCP port for block.
del port	It means to delete a TCP port for block.
viewlog	It means to display a log of defense worm packet, including source MAC and source IP.
clearlog	It means to remove the log of defense worm packet.

Example

```
> mngt defenseworm add 21
Add TCP port 21
Block TCP port list: 135, 137, 138, 139, 445, 21
> mngt defenseworm del 21
Delete TCP port 21
Block TCP port list: 135, 137, 138, 139, 445
```

Telnet Command: mngt rmtcfg

This command can allow the system administrators to login from the Internet. By default, it is not allowed.

Syntax

mngt rmtcfg *[status]*

mngt rmtcfg *[enable]*

mngt rmtcfg *[disable]*

mngt rmtcfg *[http/https/ftp/telnet/ssh/tr069] [on/off]*

Syntax Description

Parameter	Description
status	It means to display current setting for your reference.
enable	It means to allow the system administrators to login from the Internet.
disable	It means to deny the system administrators to login from the

	Internet.
http/https/ftp/telnet/ssh/tr069	It means to specify one of the servers/protocols for enabling or disabling.
on/off	on – enable the function. off – disable the function.

Example

```
> mngt rmtcfg ftp on
Enable server fail
Remote configure function has been disabled
please enable by enter mngt rmtcfg enable

> mngt rmtcfg enable
%% Remote configure function has been enabled.
> mngt rmtcfg ftp on
%% FTP server has been enabled.
```

Telnet Command: mngt lanaccess

This command allows users to manage accessing into Vigor router through LAN port.

Syntax

mngt lanaccess *-e [0/1] –s [value] –i [value]*

mngt lanaccess *–f*

mngt lanaccess *–d*

mngt lanaccess *–v*

mngt lanaccess *–h*

Syntax Description

Parameter	Description
-e[0/1]	It means to enable/disable the function. 0-disable the function. 1-enable the function.
-s[value]	It means to specify service offered. Available values include: FTP, HTTP, HTTPS, TELNET, SSH, None, All
-i[value]	It means the interface which is allowed to access. Available values include: LAN2~LAN6, DMZ, IP Routed Subnet, None, All **Note**: LAN1 is always allowed for accessing into the router.
-f	It means to flush all of the settings.
-d	It means to restore the factory default settings.
-v	It means to view current settings.
-h	It means to get the usage of such command.

Example

```
> mngt lanaccess -e 1
> mngt lanaccess -s FTP,TELNET
> mngt lanaccess -i LAN3
>> mngt lanaccess -v
Current LAN Access Control Setting:
* Enable:Yes
* Service:
   - FTP:Yes
   - HTTP:No
   - HTTPS:No
   - TELNET:Yes
   - SSH:No
* Subnet:
   - LAN 2: disabled
   - LAN 3: enabled
   - LAN 4: disabled
   - LAN 5: disabled
   - LAN 6: disabled
   - DMZ: disabled
   - IP Routed Subnet: disabled

Note: the settings do NOT apply to LAN1, LAN1 is always allowed to access
the router
```

Telnet Command: mngt echoicmp

This command allows users to reject or accept PING packets from the Internet.

Syntax

mngt echoicmp *[enable]*

mngt echoicmp *[disable]*

Syntax Description

Parameter	Description
enable	It means to accept the echo ICMP packet.
disable	It means to drop the echo ICMP packet.

Example

```
> mngt echoicmp enable
%% Echo ICMP packet enabled.
```

Telnet Command: mngt accesslist

This command allows you to specify that the system administrator can login from a specific host or network. A maximum of three IPs/subnet masks is allowed.

Syntax

mngt accesslist *list*

mngt accesslist *add [index][ip addr][mask]*

mngt accesslist *remove [index]*

mngt accesslist *flush*

Syntax Description

Parameter	Description
list	It can display current setting for your reference.
add	It means adding a new entry.
index	It means to specify the number of the entry.
ip addr	It means to specify an IP address.
mask	It means to specify the subnet mask for the IP address.
remove	It means to delete the selected item.
flush	It means to remove all the settings in the access list.

Example

```
> mngt accesslist add 1 192.168.1.89 255.255.255.0
%% Set OK.
> mngt accesslist list
%% Access list :
  Index IP address     Subnet mask
==========================================
  1    192.168.1.89   255.255.255.0
```

Telnet Command: mngt snmp

This command allows you to configure SNMP for management.

Syntax

mngt snmp *[-<command> <parameter> | …]*

Syntax Description

Parameter	Description
[<command> <parameter>|…]	The available commands with parameters are listed below. *[…]* means that you can type in several commands in one line.
-e <1/2>	1: Enable the SNMP function. 2: Disable the SNMP function.
-g<Community name>	It means to set the name for getting community by typing a proper character. (max. 23 characters)
-s <Community name>	It means to set community by typing a proper name. (max. 23 characters)
-m <IP address>	It means to set one host as the manager to execute SNMP function. Please type in IPv4 address to specify certain host.
-t <Community name>	It means to set trap community by typing a proper name. (max. 23 characters)
-n <IP address>	It means to set the IPv4 address of the host that will receive the trap community.
-T <seconds>	It means to set the trap timeout <0~999>.
-V	It means to list SNMP setting.

Example

```
> mngt snmp -e 1 -g draytek -s DK -m 192.168.1.1 -t trapcom -n 10.20.3.40
```

```
-T 88
 SNMP Agent Turn on!!!
 Get Community set to draytek
 Set Community set to DK
 Manager Host IP set to 192.168.1.1
 Trap Community set to trapcom
 Notification Host IP set to 10.20.3.40
 Trap Timeout set to 88 seconds
```

Telnet Command: msubnet switch

This command is used to configure multi-subnet.

Syntax

msubnet switch *[2/3/4/5/6/7/8][On/Off]*

Syntax Description

Parameter	Description
2/3/4/5/6/7/8	It means LAN interface. 2=LAN2, 3=LAN3, 4=LAN4, 5=LAN5, 6=LAN6, 7=LAN7, 8=LAN8
On/Off	On means turning on the subnet for the specified LAN interface. Off means turning off the subnet.

Example

```
> msubnet switch 2 On
% LAN2      Subnet On!

 This setting will take effect after rebooting.
 Please use "sys reboot" command to reboot the router.
```

Telnet Command: msubnet addr

This command is used to configure IP address for the specified LAN interface.

Syntax

msubnet addr *[2/3/4/5/6/7/8][IP address]*

Syntax Description

Parameter	Description
2/3/4/5/6/7/8	It means LAN interface. 2=LAN2, 3=LAN3, 4=LAN4, 5=LAN5, 6=LAN6, 7=LAN7, 8=LAN8
IP address	Type the private IP address for the specified LAN interface.

Example

```
>msubnet addr 2 192.168.5.1
% Set LAN2 subnet IP address done !!!

 This setting will take effect after rebooting.
 Please use "sys reboot" command to reboot the router.
```

Telnet Command: msubnet nmask

This command is used to configure net mask address for the specified LAN interface.

Syntax

msubnet nmask *[2/3/4/5/6/7/8][IP address]*

Syntax Description

Parameter	Description
2/3/4/5/6/7/8	It means LAN interface. 2=LAN2, 3=LAN3, 4=LAN4, 5=LAN5, 6=LAN6, 7=LAN7, 8=LAN8
IP address	Type the subnet mask address for the specified LAN interface.

Example

```
> msubnet nmask 2 255.255.0.0
% Set LAN2 subnet mask done !!!

 This setting will take effect after rebooting.
 Please use "sys reboot" command to reboot the router.
```

Telnet Command: msubnet status

This command is used to display current status of subnet.

Syntax

msubnet status *[2/3/4/5/6/7/8]*

Syntax Description

Parameter	Description
2/3/4/5/6/7/8	It means LAN interface. 2=LAN2, 3=LAN3, 4=LAN4, 5=LAN5, 6=LAN6, 7=LAN7, 8=LAN8

Example

```
> msubnet status 2
% LAN2      Off: 0.0.0.0/0.0.0.0, PPP Start IP: 0.0.0.60
% DHCP server: Off
% Dhcp Gateway: 0.0.0.0, Start IP: 0.0.0.10, Pool Count: 50
```

Telnet Command: msubnet dhcps

This command allows you to enable or disable DHCP server for the subnet.

Syntax

msubnet dhcps *[2/3/4/5/6/7/8][On/Off]*

Syntax Description

Parameter	Description
2/3/4/5/6/7/8	It means LAN interface. 2=LAN2, 3=LAN3, 4=LAN4, 5=LAN5, 6=LAN6, 7=LAN7, 8=LAN8

On/Off	On means enabling the DHCP server for the specified LAN interface. Off means disabling the DHCP server.

Example

```
>msubnet dhcps 3 off
% LAN3      Subnet DHCP Server disabled!

 This setting will take effect after rebooting.
 Please use "sys reboot" command to reboot the router.
```

Telnet Command: msubnet nat

This command is used to configure the subnet for NAT or Routing usage.

Syntax

msubnet nat *[2/3/4/5/6/7/8] [On/Off]*

Syntax Description

Parameter	Description
2/3/4/5/6/7/8	It means LAN interface. 2=LAN2, 3=LAN3, 4=LAN4, 5=LAN5, 6=LAN6, 7=LAN7, 8=LAN8
On/Off	On – It means the subnet will be configured for NAT usage. Off **-** It means the subnet will be configured for Routing usage.

Example

```
>> msubnet nat 2 off
% LAN2 Subnet is for Routing usage!
%Note: If you have multiple WAN connections, please be reminded to setup
a Load-Balance policy so that packets from this subnet will be forwarded
to the right WAN interface!

 This setting will take effect after rebooting.
 Please use "sys reboot" command to reboot the router.
```

Telnet Command: msubnet gateway

This command is used to configure an IP address as the gateway used for subnet.

Syntax

msubnet gateway *[2/3/4/5/6/7/8] [Gateway IP]*

Syntax Description

Parameter	Description
2/3/4/5/6/7/8	It means LAN interface. 2=LAN2, 3=LAN3, 4=LAN4, 5=LAN5, 6=LAN6, 7=LAN7, 8=LAN8
Gateway IP	Specify an IP address as the gateway IP.

Example

```
>msubnet gateway 2 192.168.1.13
```

```
% Set LAN2 Dhcp Gateway IP done !!!

 This setting will take effect after rebooting.
 Please use "sys reboot" command to reboot the router.
```

Telnet Command: msubnet ipcnt

This command is used to defined the total number allowed for each LAN interface.

Syntax

msubnet ipcnt *[2/3/4/5/6/7/8] [IP counts]*

Syntax Description

Parameter	Description
2/3/4/5/6/7/8	It means LAN interface. 2=LAN2, 3=LAN3, 4=LAN4, 5=LAN5, 6=LAN6, 7=LAN7, 8=LAN8
IP counts	Specify a total number of IP address allowed for each LAN interface. The available range is from 0 to 220.

Example

```
> msubnet ipcnt 2 15
 This setting will take effect after rebooting.
 Please use "sys reboot" command to reboot the router.
```

Telnet Command: msubnet talk

This command is used to establish a route between two LAN interfaces.

Syntax

msubnet talk *[1/2/3/4/5/6/7/8] [1/2/3/4/5/6/7/8] [On/Off]*

Syntax Description

Parameter	Description
1/2/3/4/5/6/7/8	It means LAN interface. 1=LAN1, 2=LAN2, 3=LAN3, 4=LAN4, 5=LAN5, 6=LAN6, 7=LAN7, 8=LAN8
On/Off	On – It means to establish a link for the selected LAN with others. Off **-** It means to terminate the link.

Example

```
>  msubnet talk 1 2 on
% Enable routing between LAN1 and LAN2!

 This setting will take effect after rebooting.
 Please use "sys reboot" command to reboot the router.

> msubnet talk
% msubnet talk <1/2/3/4/5/6/7/8> <1/2/3/4/5/6/7/8> <On/Off>
% where 1:LAN1, 2:LAN2, 3:LAN3, 4:LAN4, 5:LAN5, 6:LAN6, 7:LAN7, 8:LAN8
% Now:
```

```
%            LAN1   LAN2   LAN3   LAN4   LAN5   LAN6   LAN7   LAN8
% LAN1         V
% LAN2               V
% LAN3                     V
% LAN4                           V
% LAN5                                 V
% LAN6                                       V
% LAN7                                             V
% LAN8                                                  V
```

Telnet Command: msubnet startip

This command is used to configure a starting IP address for DCHP.

Syntax

msubnet startip *[2/3/4/5/6/7/8] [Gateway IP]*

Syntax Description

Parameter	Description
2/3/4/5/6/7/8	It means LAN interface. 2=LAN2, 3=LAN3, 4=LAN4, 5=LAN5, 6=LAN6, 7=LAN7, 8=LAN8
Gateway IP	Type an IP address as the starting IP address for a subnet.

Example

```
> msubnet startip 2 192.168.2.90
%Set LAN2 Dhcp Start IP done !!!

 This setting will take effect after rebooting.
 Please use "sys reboot" command to reboot the router.
> msubnet startip ?
% msubnet startip <2/3/4> <Gateway IP>
% Now: LAN2 192.168.2.90; LAN3 192.168.3.10; LAN4 192.168.4.10;
```

Telnet Command: msubnet pppip

This command is used to configure a starting IP address for PPP connection.

Syntax

msubnet pppip *[2/3/4/5/6/7/8] [Start IP]*

Syntax Description

Parameter	Description
2/3/4/5/6/7/8	It means LAN interface. 2=LAN2, 3=LAN3, 4=LAN4, 5=LAN5, 6=LAN6, 7=LAN7, 8=LAN8
Start IP	Type an IP address as the starting IP address for PPP connection.

Example

```
> msubnet pppip 2 192.168.2.250
% Set LAN2 PPP(IPCP) Start IP done !!!
```

```
 This setting will take effect after rebooting.
 Please use "sys reboot" command to reboot the router.

> msubnet pppip ?
% msubnet pppip <2/3/4> <Start IP>
% Now: LAN2 192.168.2.250; LAN3 192.168.3.200; LAN4 192.168.4.200
```

Telnet Command: msubnet nodetype

This command is used to specify the type for node which is required by DHCP option.

Syntax

msubnet nodetype *[2/3/4/5/6/7/8][count]*

Syntax Description

Parameter	Description
2/3/4/5/6/7/8	It means LAN interface. 2=LAN2, 3=LAN3, 4=LAN4, 5=LAN5, 6=LAN6, 7=LAN7, 8=LAN8
count	Choose the following number for specifying different node type. 1= B-node 2= P-node 4= M-node 8= H-node 0= Not specify any type for node.

Example

```
> msubnet nodetype ?
% msubnet nodetype <2/3/4> <count>
% Now: LAN2 0; LAN3 0; LAN4 0

% count: 1. B-node 2. P-node 4. M-node 8. H-node

>  msubnet nodetype 2 1
% Set LAN2 Dhcp Node Type done !!!

> msubnet nodetype ?
% msubnet nodetype <2/3/4> <count>
% Now: LAN2 1; LAN3 0; LAN4 0


% count: 1. B-node 2. P-node 4. M-node 8. H-node
```

Telnet Command: msubnet primWINS

This command is used to configure primary WINS server.

Syntax

msubnet primWINS *[2/3/4/5/6/7/8] [WINS IP]*

Syntax Description

Parameter	Description

2/3/4/5/6/7/8	It means LAN interface. 2=LAN2, 3=LAN3, 4=LAN4, 5=LAN5, 6=LAN6, 7=LAN7, 8=LAN8
WINS IP	Type the IP address as the WINS IP.

Example

```
>> msubnet primWINS ?
% msubnet primWINS <2/3/4> <WINS IP>
% Now: LAN2 0.0.0.0; LAN3 0.0.0.0; LAN4 0.0.0.0
> msubnet primWINS 2 192.168.3.5
% Set LAN2 Dhcp Primary WINS IP done !!!

> msubnet primWINS ?
% msubnet primWINS <2/3/4> <WINS IP>
% Now: LAN2 192.168.3.5; LAN3 0.0.0.0; LAN4 0.0.0.0
```

Telnet Command: msubnet secWINS

This command is used to configure secondary WINS server.

Syntax

msubnet secWINS *[2/3/4/5/6/7/8] [WINS IP]*

Syntax Description

Parameter	Description
2/3/4/5/6/7/8	It means LAN interface. 2=LAN2, 3=LAN3, 4=LAN4, 5=LAN5, 6=LAN6, 7=LAN7, 8=LAN8
WINS IP	Type the IP address as the WINS IP.

Example

```
>> msubnet secWINS 2 192.168.3.89
% Set LAN2 Dhcp Secondary WINS IP done !!!

> msubnet secWINS ?
% msubnet secWINS <2/3/4> <WINS IP>
% Now: LAN2 192.168.3.89; LAN3 0.0.0.0; LAN4 0.0.0.0
```

Telnet Command: msubnet tftp

This command is used to set TFTP server for multi-subnet.

Syntax

msubnet tftp *[2/3/4/5/6/7/8] [TFTP server name]*

Syntax Description

Parameter	Description
2/3/4/5/6/7/8	It means LAN interface. 2=LAN2, 3=LAN3, 4=LAN4, 5=LAN5, 6=LAN6, 7=LAN7, 8=LAN8
TFTP server name	Type a name to indicate the TFTP server.

Example

```
> msubnet tftp ?
% msubnet tftp <2/3/4/5/6/7/8> <TFTP server name>
% Now: LAN2
      LAN3
      LAN4
      LAN5
      LAN6
      LAN7
      LAN8
> msubnet tftp 2 publish
% Set LAN2 TFTP Server Name done !!!

> msubnet tftp ?
% msubnet tftp <2/3/4/5/6/7/8> <TFTP server name>
% Now: LAN2 publish
      LAN3
      LAN4
      LAN5
      LAN6
      LAN7
      LAN8
```

Telnet Command: msubnet mtu

This command allows you to configure MTU value for LAN/IP Routed Subnet.

Syntax

msubnet mtu *[interface][value]*

Syntax Description

Parameter	Description
interface	Available settings include LAN1~LAN4, IP_Routed_Subnet.
value	1000 ~ 1508 (Bytes), default: 1500 (Bytes)

Example

```
> msubnet mtu LAN1 1492%
 Set LAN1 subnet mtu as 1492
> msubnet mtu ?
Usage:

  >msubnet mtu <interface> <value>

  <interface>: LAN1~LAN4,IP_Routed_Subnet,  <value>:    1000 ~ 1496
(Bytes), de
fault: 1500 (Bytes)

  e.x: >msubnet mtu LAN1 1492

Current Settings:

   LAN1 MTU:           1492 (Bytes)
   LAN2 MTU:           1500 (Bytes)
   LAN3 MTU:           1500 (Bytes)
   LAN4 MTU:           1500 (Bytes)
   IP Routed Subnet MTU: 1500 (Bytes)
```

Telnet Command: object ip obj

This command is used to create an IP object profile.

Syntax

object ip obj setdefault

object ip obj *INDEX -v*

object ip obj *INDEX -n NAME*

object ip obj *INDEX -i INTERFACE*

object ip obj *INDEX -s INVERT*

object ip obj I*NDEX -a TYPE [START_IP] [END/MASK_IP]*

Syntax Description

Parameter	Description
setdefault	It means to return to default settings for all profiles.
INDEX	It means the index number of the specified object profile.
-v	It means to view the information of the specified object profile. Example: *object ip obj 1 -v*
-n NAME	It means to define a name for the IP object. NAME: Type a name with less than 15 characters. Example: *object ip obj 9 -n bruce*

-i INTERFACE	It means to define an interface for the IP object.
	INTERFACE=0, means any
	INTERFACE=1, means LAN
	INTERFACE=3, means WAN
	Example: *object ip obj 8 -i 0*

-s INVERT	It means to set invert seletion for the object profile. INVERT=0, means disableing the function. INVERT=1, means enabling the function. Example: *`object ip obj 3 -s 1`*

-a TYPE	It means to set the address type and IP for the IP object profile.
	TYPE=0, means Mask
	TYPE=1, means Single
	TYPE=2, means Any
	TYPE=3, means Rang
	Example: *`object ip obj 3 -a 2`*

[START_IP]	When the TYPE is set with 2, you have to type an IP address as a starting point and another IP address as end point. Type an IP address.
[END/MASK_IP]	Type an IP address (different with START_IP) as the end IP address.

Example

```
> object ip obj 1 -n marketing
> object ip obj 1 -a 1 192.168.1.45
> object ip obj 1 -v
 IP Object Profile 1
 Name   :[marketing]
 Interface:[Any]
 Address type:[single]
 Start ip address:[192.168.1.45]
 End/Mask ip address:[0.0.0.0]
 Invert Selection:[0]
```

Telnet Command: object ip grp

This command is used to integrate several IP objects under an IP group profile.

Syntax

object ip grp setdefault

object ip grp *INDEX -v*

object ip grp *INDEX -n NAME*

object ip grp *INDEX -i INTERFACE*

object ip grp *INDEX -a IP_OBJ_INDEX*

Syntax Description

Parameter	Description
setdefault	It means to return to default settings for all profiles.
INDEX	It means the index number of the specified group profile.
-v	It means to view the information of the specified group profile. Example: *`object ip grp 1 -v`*
-n NAME	It means to define a name for the IP group. NAME: Type a name with less than 15 characters. Example: *`object ip grp 8 -n bruce`*
-i INTERFACE	It means to define an interface for the IP group.

	INTERFACE=0, means any
	INTERFACE=1, means LAN
	INTERFACE=2, means WAN
	Example: *`object ip grp 3 -i 0`*

-a IP_OBJ_INDEX	It means to specify IP object profiles for the group profile. Example: *`:object ip grp 3 -a 1 2 3 4 5`* The IP object profiles with index number 1,2,3,4 and 5 will be group under such profile.

Example

```
> object ip grp 2 -n First
 IP Group Profile 2
 Name   :[First]
 Interface:[Any]
 Included ip object index:
 [0:][0]
 [1:][0]
 [2:][0]
 [3:][0]
 [4:][0]
 [5:][0]
 [6:][0]
 [7:][0]

> object ip grp 2 -i 1
> object ip grp 2 -a 1 2
 IP Group Profile 2
 Name   :[First]
 Interface:[Lan]
 Included ip object index:
 [0:][1]
 [1:][2]
 [2:][0]
 [3:][0]
 [4:][0]
 [5:][0]
 [6:][0]
 [7:][0]
```

Telnet Command: object ipv6 obj

This comman is used to create an IP object profile.

Syntax

object ip obj setdefault

object ip obj *INDEX -v*

object ip obj *INDEX -n NAME*

object ip obj *INDEX -i INTERFACE*

object ip obj *INDEX -s INVERT*

object ip obj I*NDEX -a TYPE [START_IP] [END/MASK_IP]*

Syntax Description

Parameter	Description
setdefault	It means to return to default settings for all profiles.
INDEX	It means the index number of the specified object profile.
-v	It means to view the information of the specified object profile. Example: *object ip obj 1 -v*
-n NAME	It means to define a name for the IP object. NAME: Type a name with less than 15 characters. Example: *object ip obj 9 -n bruce*

-i INTERFACE	It means to define an interface for the IP object.
	INTERFACE=0, means any
	INTERFACE=1, means LAN
	INTERFACE=3, means WAN
	Example: *object ip obj 8 -i 0*

-s INVERT	It means to set invert seletion for the object profile. INVERT=0, means disableing the function. INVERT=1, means enabling the function. Example: *object ip obj 3 -s 1*

-a TYPE	It means to set the address type and IP for the IP object profile.
	TYPE=0, means Mask
	TYPE=1, means Single
	TYPE=2, means Any
	TYPE=3, means Rang
	Example: *object ip obj 3 -a 2*

[START_IP]	When the TYPE is set with 2, you have to type an IP address as a starting point and another IP address as end point. Type an IP address.
[END/MASK_IP]	Type an IP address (different with START_IP) as the end IP address.

Example

```
> object ip obj 1 -n marketing
> object ip obj 1 -a 1 192.168.1.45
> object ip obj 1 -v
 IP Object Profile 1
 Name   :[marketing]
 Interface:[Any]
 Address type:[single]
 Start ip address:[192.168.1.45]
 End/Mask ip address:[0.0.0.0]
 Invert Selection:[0]
```

Telnet Command: object ipv6 grp

This command is used to integrate several IP objects under an IP group profile.

Syntax

object ip grp setdefault

object ip grp *INDEX -v*

object ip grp *INDEX -n NAME*

object ip grp *INDEX -i INTERFACE*

object ip grp *INDEX -a IP_OBJ_INDEX*

Syntax Description

Parameter	Description
setdefault	It means to return to default settings for all profiles.
INDEX	It means the index number of the specified group profile.
-v	It means to view the information of the specified group profile. Example: *`object ip grp 1 -v`*
-n NAME	It means to define a name for the IP group. NAME: Type a name with less than 15 characters. Example: *`object ip grp 8 -n bruce`*

-i INTERFACE	It means to define an interface for the IP group.
	INTERFACE=0, means any
	INTERFACE=1, means LAN
	INTERFACE=2, means WAN
	Example: *`object ip grp 3 -i 0`*

-a IP_OBJ_INDEX	It means to specify IP object profiles for the group profile. Example: *`:object ip grp 3 -a 1 2 3 4 5`* The IP object profiles with index number 1,2,3,4 and 5 will be group under such profile.

Example

```
> object ip grp 2 -n First
 IP Group Profile 2
 Name   :[First]
 Interface:[Any]
 Included ip object index:
 [0:][0]
 [1:][0]
 [2:][0]
 [3:][0]
 [4:][0]
 [5:][0]
 [6:][0]
 [7:][0]

> object ip grp 2 -i 1
> object ip grp 2 -a 1 2
 IP Group Profile 2
 Name   :[First]
 Interface:[Lan]
 Included ip object index:
 [0:][1]
 [1:][2]
 [2:][0]
 [3:][0]
 [4:][0]
 [5:][0]
 [6:][0]
 [7:][0]
```

Telnet Command: object service obj

This command is used to create service object profile.

Syntax

object service obj setdefault

object service obj *INDEX -v*

object service obj *INDEX -n NAME*

object service obj *INDEX -p PROTOCOL*

object service obj *INDEX -s CHK [START_P] [END_P]*

object service obj *INDEX -d CHK [START_P] [END_P]*

Syntax Description

Parameter	Description
setdefault	It means to return to default settings for all profiles.
INDEX	It means the index number of the specified service object profile.
-v	It means to view the information of the specified service object profile. Example: *object service obj 1 -v*
-n NAME	It means to define a name for the IP object. NAME: Type a name with less than 15 characters. Example: *object service obj 9 -n bruce*

-i PROTOCOL	It means to define a PROTOCOL for the service object profile.
	PROTOCOL =0, means any
	PROTOCOL =1, means ICMP
	PROTOCOL =2, means IGMP
	PROTOCOL =6, means TCP
	PROTOCOL =17, means UDP
	PROTOCOL =255, means TCP/UDP
	Other values mean other protocols.
	Example: *object service obj 8 -i 0*

CHK	It means the check action for the port setting. 0=equal**(=)**, when the starting port and ending port values are the

	same, it indicates one port; when the starting port and ending port values are different, it indicates a range for the port and available for this service type. 1=not equal**(!=)**, when the starting port and ending port values are the same, it indicates all the ports except the port defined here; when the starting port and ending port values are different, it indicates that all the ports except the range defined here are available for this service type. 2=larger**(>)**, the port number greater than this value is available.. 3=less**(<)**, the port number less than this value is available for this profile.
-s CHK [START_P] [END_P]	It means to set souce port check and configure port range (1~65565) for TCP/UDP. END_P, type a port number to indicate source port. Example: *`object service obj 3 -s 0 100 200`*
-d CHK [START_P] [END_P]	It means to set destination port check and configure port range (1~65565) for TCP/UDP. END_P, type a port number to indicate destination port. Example: *`object service obj 3 -d 1 100 200`*

Example

```
> object service obj 1 -n limit
> object service obj 1 -p 255
> object service obj 1 -s 1 120 240
> object service obj 1 -d 1 200 220
> object service obj 1 -v
 Service Object Profile 1
 Name   :[limit]
 Protocol:[255]
 Source port check action:[!=]
 Source port range:[120~240]
 Destination port check action:[!=]
 Destination port range:[200~220]
```

Telnet Command: object service grp

This command is used to integrate several service objects under a service group profile.

Syntax

object service grp setdefault

object service grp *INDEX -v*

object service grp *INDEX -n NAME*

object service grp *INDEX -a SER_OBJ_INDEX*

Syntax Description

Parameter	Description
setdefault	It means to return to default settings for all profiles.
INDEX	It means the index number of the specified group profile.
-v	It means to view the information of the specified group profile. Example: *`object service grp 1 -v`*
-n NAME	It means to define a name for the service group.

	NAME: Type a name with less than 15 characters. Example: *object service grp 8 -n bruce*
-a SER_OBJ_INDEX	It means to specify service object profiles for the group profile. Example: *:object service grp 3 -a 1 2 3 4 5* The service object profiles with index number 1,2,3,4 and 5 will be group under such profile.

Example

```
>object service grp 1 -n Grope_1
 Service Group Profile 1
 Name   :[Grope_1]
 Included service object index:
 [0:][0]
 [1:][0]
 [2:][0]
 [3:][0]
 [4:][0]
 [5:][0]
 [6:][0]
 [7:][0]

> object service grp 1 -a 1 2
 Service Group Profile 1
 Name   :[Grope_1]
 Included service object index:
 [0:][1]
 [1:][2]
 [2:][0]
 [3:][0]
 [4:][0]
 [5:][0]
 [6:][0]
 [7:][0]
```

Telnet Command: object kw

This command is used to create keyword profile.

Syntax

object kw obj setdefault

object kw obj show PAGE

object kw obj *INDEX -v*

object kw obj *INDEX -n NAME*

object kw obj *INDEX -a CONTENTS*

Syntax Description

Parameter	Description
setdefault	It means to return to default settings for all profiles.
show PAGE	It means to show the contents of the specified profile.

	PAGE: type the page number.
show	It means to show the contents for all of the profiles.
INDEX	It means the index number of the specified keyword profile.
-v	It means to view the information of the specified keyword profile.
-n NAME	It means to define a name for the keyword profile. NAME: Type a name with less than 15 characters.
-a CONTENTS	It means to set the contents for the keyword profile. Example: *object kw obj 40 -a test*

Example

```
> object kw obj 1 -n children
 Profile 1
 Name   :[children]
 Content:[]
> object kw obj 1 -a gambling
 Profile 1
 Name   :[children]
 Content:[gambling]

> object kw obj 1 -v
 Profile 1
 Name   :[children]
 Content:[gambling]
```

Telnet Command: object fe

This command is used to create File Extension Object profile.

Syntax

object fe show

object fe setdefault

object fe obj *INDEX -v*

object fe obj *INDEX -n NAME*

object fe obj *INDEX -e CATEGORY|FILE_EXTENSION*

object fe obj *INDEX -d CATEGORY|FILE_EXTENSION*

Syntax Description

Parameter	Description
show	It means to show the contents for all of the profiles.
setdefault	It means to return to default settings for all profiles.
INDEX	It means the index number (from 1 to 8) of the specified file extension object profile.
-v	It means to view the information of the specified file extension object profile.
-n NAME	It means to define a name for the file extension object profile. NAME: Type a name with less than 15 characters.
-e	It means to enable the specific CATEGORY or FILE_EXTENSION.

-d	It means to disable the specific CATEGORY or FILE_EXTENSION
CATEGORY|FILE_EXTENSION	CATEGORY: Image, Video, Audio, Java, ActiveX, Compression, Executation Example: *`object fe obj 1 -e Image`* FILE_EXTENSION: ".bmp", ".dib", ".gif", ".jpeg", ".jpg", ".jpg2", ".jp2", ".pct", ".pcx", ".pic", ".pict", ".png", ".tif", ".tiff", ".asf", ".avi", ".mov", ".mpe", ".mpeg", ".mpg", ".mp4", ".qt", ".rm", ".wmv", ".3gp", ".3gpp", ".3gpp2", ".3g2", ".aac", ".aiff", ".au", ".mp3", ".m4a", ".m4p", ".ogg", ".ra", ".ram", ".vox", ".wav", ".wma", ".class", ".jad", ".jar", ".jav", ".java", ".jcm", ".js", ".jse", ".jsp", ".jtk", ".alx", ".apb", ".axs", ".ocx", ".olb", ".ole", ".tlb", ".viv", ".vrm", ".ace", ".arj", ".bzip2", ".bz2", ".cab", ".gz", ".gzip", ".rar", ".sit", ".zip", ".bas", ".bat", ".com", ".exe", ".inf", ".pif", ".reg", ".scr" Example: *`object fe obj 1 -e .bmp`*

Example

```
> object fe obj 1 -n music
> object fe obj 1 -e Audio
> object fe obj 1 -v
Profile Index: 1
Profile Name:[music]

-----------------------------------------------------------------------------
------
Image category:
 [ ].bmp   [ ].dib   [ ].gif   [ ].jpeg  [ ].jpg   [ ].jpg2  [ ].jp2   [ ].pct
 [ ].pcx   [ ].pic   [ ].pict  [ ].png   [ ].tif   [ ].tiff
-----------------------------------------------------------------------------
------
Video category:
 [ ].asf   [ ].avi   [ ].mov   [ ].mpe   [ ].mpeg  [ ].mpg   [v].mp4   [ ].qt
 [ ].rm    [v].wmv   [ ].3gp   [ ].3gpp  [ ].3gpp2 [ ].3g2
-----------------------------------------------------------------------------
------
Audio category:
 [v].aac   [v].aiff  [v].au    [v].mp3   [v].m4a   [v].m4p   [v].ogg   [v].ra
 [v].ram   [v].vox   [v].wav   [v].wma
-----------------------------------------------------------------------------
------
Java category:
 [ ].class [ ].jad   [ ].jar   [ ].jav   [ ].java  [ ].jcm   [ ].js    [ ].jse
 [ ].jsp   [ ].jtk
-----------------------------------------------------------------------------
------
ActiveX category:
 [ ].alx   [ ].apb   [ ].axs   [ ].ocx   [ ].olb   [ ].ole   [ ].tlb   [ ].viv
 [ ].vrm
-----------------------------------------------------------------------------
------
Compression category:
 [ ].ace   [ ].arj   [ ].bzip2 [ ].bz2   [ ].cab   [ ].gz    [ ].gzip  [ ].rar
 [ ].sit   [ ].zip
```

```
-------------------------------------------------------------------------
------
Executation category:
 [ ].bas  [ ].bat  [ ].com  [ ].exe  [ ].inf  [ ].pif  [ ].reg  [ ].scr
```

Telnet Command: port

This command allows users to set the speed for specific port of the router.

Syntax

port *[1, 2, 3, 4, wan2, all] [AN, 1000F, 100F, 100H, 10F, 10H, status]*

port wan1 fiber *[AUTO, 1000M, 100M, status]*

port wan1 ethernet *[AN, 1000F, 100F, 100H, 10F, 10H, status]*

port status

port sniff *[on,off,port,txrx,restart,status]*

port 802.1x*[enable,disable,status,addport,delport]*

port jumbo

port wanfc

Syntax Description

Parameter	Description
1, 2, 3, 4, wan2, all	It means the number of LAN port and WAN port.
AUTO, 1000M, 100M	It means the physical type for the fiber connection.
AN... 10H	It means the physical type for the Ethernet connection. AN: auto-negotiate. 100F: 100M Full Duplex. 100H: 100M Half Duplex. 10F: 10M Full Duplex. 10H: 10M Half Duplex.
status	It means to view the Ethernet port status.
wanfc	It means to set WAN flow control.

Example

```
> port 1 100F
%Set Port 1 Force speed 100 Full duplex OK !!!
```

Telnet Command: portmaptime

This command allows you to set a time of keeping the session connection for specified protocol.

Syntax

portmaptime *[-<command> <parameter> | …]*

Syntax Description

Parameter	Description
[<command> <parameter>|...]	The available commands with parameters are listed below. *[...]* means that you can type in several commands in one line.
-t <sec>	It means “TCP” protocol. <sec>: Type a number to set the TCP session timeout.
-u <sec>	It means “UDP” protocol.

	<sec>: Type a number to set the UDP session timeout.
-i <sec>	It means "IGMP" protocol. <sec>: Type a number to set the IGMP session timeout.
-w <sec>	It means "TCP WWW" protocol. <sec>: Type a number to set the TCP WWW session timeout.
-s <sec>	It means "TCP SYN" protocol. <sec>: Type a number to set the TCP SYN session timeout.
-f	It means to flush all portmaps (useful for diagnostics).
-l <List>	List all settings.

Example

```
> portmaptime -t 86400 -u 300  -i 10
> portmaptime -l
------ Current setting ------
TCP Timeout   : 86400 sec.
UDP Timeout   : 300 sec.
IGMP Timeout  : 10 sec.
TCP WWW Timeout: 60 sec.
TCP SYN Timeout: 60 sec.
```

Telnet Command: ppa

Syntax

ppa *[-<command> <parameter> | …]*

ppa n *[-<command> <parameter> | …]*

Syntax Description

Parameter	**Description**
[<command> <parameter>|…]	The available commands with parameters are listed below. *[…]* means that you can type in several commands in one line.
-m <mode>	Specify a mode. 1=auto 2=manual(traffic) 3=manual(qos) 4=manual(specific hosts) 0=disable
-p <proto>	Specify a protocol. proto - 1-TCP; 2-UDP; and 3-Both.
-b 1/0	Enable/disable TWO-way hardware acceleration.
-M enable/disable	Enable/disable the multicast hardware acceleration.
-v	Show PPA_WAN_Table and PPA_LAN_Table for reference.
-c	Clean all settings.
ppa n - used in QoS or specific host	
-l <rule>	Specify an index number of rule profile for QoS mode.
-h <host>	Type an IP address for Specific Host mode.
-s <start port>	Specify a starting port number for Specific Host mode.

-e <end port>	Specify an ending port number for Specific Host mode

Example

```
> ppa -m 1 -p 1 -b 0
 Set ok! The PPA mode is Auto

% You need to set the Manual mode first !

%TWO way accleration is disable

> ppa -v
% PPA mode is Auto
%PPA Protocol TCP 1, UDP 0
%PPA two way disable
%PPA time  is 10
%PPA range is 192
%PPA LAN entries 0
%PPA WAN entries 0
```

Telnet Command: prn

This command allows you to view current status (interface and driver) of USB printer.

Syntax

prn status

prn pppoe_stat qos

Example

```
> prn status
Interface: USB bus 2.0
Printer: NotReady

>
```

Telnet Command: qos setup

This command allows user to set general settings for QoS.

Syntax

qos setup *[-<command> <parameter> | ...]*

Syntax Description

Parameter	Description
[<command> <parameter>|...]	The available commands with parameters are listed below. *[...]* means that you can type in several commands in one line.
-h	Type it to display the usage of this command.
-m <mode>	It means to define which traffic the QoS control settings will apply to and eable QoS control. 0: disable. 1: in, apply to incoming traffic only. 2: out, apply to outgoing traffic only. 3: both, apply to both incoming and outgoing traffic. Default is enable (for outgoing traffic).
-i <bandwidth>	It means to set inbound bandwidth in kbps (Ethernet WAN only) The available setting is from 1 to 100000.
-o <bandwidth>	It means to set outbound bandwidth in kbps (Ethernet WAN only). The available setting is from 1 to 100000.
-r <index:ratio>	It means to set ratio for class index, in %.
-u <mode>	It means to enable bandwidth control for UDP. 0: disable 1: enable Default is disable.
-p <ratio>	It means to enable bandwidth limit ratio for UDP.
-t <mode>	It means to enable/disable Outbound TCP ACK Prioritize. 0: disable 1: enable
-V	Show all the settings.
-D	Set all to factory default (for all WANs).
[...]	It means that you can type in several commands in one line.

Example

```
> qos setup -W 2 -m 3 -i 9500 -o 8500 -r 3:20 -u 1 -p 50 -t 1

 Setup WAN2 !!!!
 WAN2 QOS mode is both
 inbound bandwidth set to 9500
 outbound bandwidth set to 8500
 WAN2 class 3 ratio set to 20
 WAN2 udp bandwidth control set to enable
 WAN2 udp bandwidth limit ratio set to 50
 WAN2 Outbound TCP ACK Prioritizel set to enable
QoS WAN2 set complete; restart QoS
>
```

Telnet Command: qos class

This command allows user to set QoS class.

Syntax

qos class -c *[no] –[a|e|d] [no][-<command> <parameter> | …]*

Syntax Description

Parameter	Description
[<command> <parameter>|…]	The available commands with parameters are listed below. *[…]* means that you can type in several commands in one line.
-h	Type it to display the usage of this command.
-c <no>	Specify the inde number for the class. Available value for <no> contains 1, 2 and 3. The default setting is class 1.
-n <name>	It means to type a name for the class.
-a	It means to add rule for specified class.
-e <no>	It means to edit specified rule. <no>: type the index number for the rule.
-d <no>	It means to delete specified rule. <no>: type the index number for the rule.
-m <mode>	It means to enable or disable the specified rule. 0: disable, 1: enable
-l <addr>	Set the local address. *Addr1* – It means Single address. Please specify the IP address directly, for example, "*-l 172.16.3.9*". *addr1:addr2* – It means Range address. Please specify the IP addresses, for example, "*-l 172.16.3.9: 172.16.3.50*." *addr1:subnet* – It means the subnet address with start IP address. Please type the subnet and the IP address, for example, "*-l 172.16.3.9:255.255.0.0".0* *any* – It means Any address. Simple type "*-l*" to specify any address for this command.
-r <addr>	Set the remote address. *addr1* – It means Single address. Please specify the IP address directly, for example, "*-l 172.16.3.9*". *addr1:addr2* – It means Range address. Please specify the IP addresses, for example, "*-l 172.16.3.9: 172.16.3.50*." *addr1:subnet* – It means the subnet address with start IP address. Please type the subnet and the IP address, for example, "*-l 172.16.3.9:255.255.0.0".0* *any* – It means Any address. Simple type "*-l*" to specify any address for this command.
-p <DSCP id>	Specify the ID.
-s <Service type>	Specify the service type by typing the number. The available types are listed as below: 1:ANY 2:DNS 3:FTP 4:GRE 5:H.323 6:HTTP 7:HTTPS 8:IKE 9:IPSEC-AH 10:IPSEC-ESP 11:IRC 12:L2TP 13:NEWS 14:NFS 15:NNTP 16:PING 17:POP3 18:PPTP 19:REAL-AUDIO 20:RTSP 21:SFTP 22:SIP 23:SMTP 24:SNMP 25:SNMP-TRAPS 26:SQL-NET 27:SSH 28:SYSLOG 29:TELNET 30:TFTP

-u <Service type>	Set a number to make user defined service type. Available number is: 1 ~ 40.
-S <d/s>	Show the content for specified DSCP ID/Service type.
-V <1/2/3>	Show the rule in the specified class.
[…]	It means that you can type in several commands in one line.

Example

```
> qos class -c 2 -n draytek -a -m 1 -l 192.168.1.50:192.168.1.80

 Following setting will set in the class2
 class 2 name set to draytek
 Add a rule in class2
 Class2 the 1 rule enabled
 Set local address type to Range, 192.168.1.50:192.168.1.80
```

Telnet Command: qos type

This command allows user to configure protocol type and port number for QoS.

Syntax

qos type *[-a <service name>* **|** *-e <no>* **|** *-d <no>]***…**

Syntax Description

Parameter	**Description**
-a <name>	It means to add rule.
-e <no>	It means to edit user defined service type. “no” means the index number. Available numbers are 1~40.
-d <no>	It means to delete user defined service type. “no” means the index number. Available numbers are 1~40.
-n <name>	It means the name of the service.
-t <type>	It means protocol type. 6: tcp(default) 17: udp 0: tcp/udp <1~254>: other
-p <port>	It means service port. The typing format must be [start:end] (ex., 510:330).
-l	List user defined types. “no” means the index number. Available numbers are 1~40.

Example

```
> qos type -a draytek -t 6 -p 510:1330

 service name set to draytek
 service type set to 6:TCP
 Port type set to Range
 Service Port set to 510 ~ 1330
>
```

Telnet Command: qos voip

This command allows user to enable or disable the QoS for VoIP and RTP.

Syntax

qos voip *[on/off]*

Syntax Description

Parameter	Description
on/off	On – Enable the QoS for VoIP. Off – Disable th QoS for VoIP.

Example

```
> qos voip off
QoS for VoIP: Disable; SIP Port: 5060
```

Telnet Command: quit

This command can exit the telnet command screen.

Telnet Command: show lan

This command displays current status of LAN IP address settings.

Example

```
> show lan
The LAN settings:
Status   IP             Mask           DHCP Start IP       Pool Gateway
-------- -------------- -------------- ---- -------------- ---- ------------
--
[V]LAN1  192.168.1.1    255.255.255.0   V   192.168.1.10   200  192.168.1.1

[V]LAN2  192.168.2.1    255.255.255.0   V   192.168.2.10   100  192.168.2.1

[X]LAN3  192.168.3.1    255.255.255.0   V   192.168.3.10   100  192.168.3.1

[X]LAN4  192.168.4.1    255.255.255.0   V   192.168.4.10   100  192.168.4.1

[X]LAN5  192.168.5.1    255.255.255.0   V   192.168.5.10   100  192.168.5.1

[X]LAN6  192.168.6.1    255.255.255.0   V   192.168.6.10   100  192.168.6.1

[X]LAN7  192.168.7.1    255.255.255.0   V   192.168.7.10   100  192.168.7.1

[X]LAN8  192.168.8.1    255.255.255.0   V   192.168.8.10   100  192.168.8.1
```

```
[X]Route 192.168.0.1    255.255.255.0   V   0.0.0.0       0   192.168.0.1
```

Telnet Command: show dmz

This command displays current status of DMZ host.

Example

```
> show dmz
%     WAN1 DMZ mapping status:
 Index  Status  WAN1 aux IP    Private IP
----------------------------------------------------
   1   Disable 0.0.0.0
   2   Disable 202.211.100.11

%     WAN2 DMZ mapping status:
 Index  Status  WAN2 aux IP    Private IP
----------------------------------------------------
   1   Disable 0.0.0.0
   2   Disable 202.211.100.11

%     WAN3 DMZ mapping status:
 Index  Status  WAN3 aux IP    Private IP
----------------------------------------------------
   1   Disable 0.0.0.0

%     WAN4 DMZ mapping status:
 Index  Status  WAN4 aux IP    Private IP
----------------------------------------------------
   1   Disable 0.0.0.0
```

Telnet Command: show dns

This command displays current status of DNS setting.

Example

```
> show dns
%%     Domain name server settings:
%  LAN1  Primary DNS: [Not set]
%  LAN1  Secondary DNS: [Not set]

%  LAN2  Primary DNS: [Not set]
%  LAN2  Secondary DNS: [Not set]

%  LAN3  Primary DNS: [Not set]
%  LAN3  Secondary DNS: [Not set]

%  LAN4  Primary DNS: [Not set]
%  LAN4  Secondary DNS: [Not set]

%  LAN5  Primary DNS: [Not set]
%  LAN5  Secondary DNS: [Not set]

%  LAN6  Primary DNS: [Not set]
%  LAN6  Secondary DNS: [Not set]

%  LAN7  Primary DNS: [Not set]
%  LAN7  Secondary DNS: [Not set]

%  LAN8  Primary DNS: [Not set]
%  LAN8  Secondary DNS: [Not set]
```

Telnet Command: show openport

This command displays current status of open port setting.

Example

```
> show openport
%%     Openport settings:
Index   Status  Comment        Local IP Address
***************************************************************
  1.    Enable  OP_1          192.168.1.5
Total 1 items listed.
```

Telnet Command: show nat

This command displays current status of NAT.

Example

```
> show nat
 Port Redirection Running Table:

Index  Protocol  Public Port   Private IP       Private Port
 1          0          0   0.0.0.0                  0
 2          0          0   0.0.0.0                  0
 3          0          0   0.0.0.0                  0
 4          0          0   0.0.0.0                  0
 5          0          0   0.0.0.0                  0
 6          0          0   0.0.0.0                  0
 7          0          0   0.0.0.0                  0
 8          0          0   0.0.0.0                  0
 9          0          0   0.0.0.0                  0
10          0          0   0.0.0.0                  0
11          0          0   0.0.0.0                  0
12          0          0   0.0.0.0                  0
13          0          0   0.0.0.0                  0
14          0          0   0.0.0.0                  0
15          0          0   0.0.0.0                  0
16          0          0   0.0.0.0                  0
17          0          0   0.0.0.0                  0
18          0          0   0.0.0.0                  0
19          0          0   0.0.0.0                  0
20          0          0   0.0.0.0                  0
--- MORE ---   ['q': Quit, 'Enter': New Lines, 'Space Bar': Next Page]
```

Telnet Command: show portmap

This command displays the table of NAT Active Sessions.

Example

```
> show portmap
-------------------------------------------------------------------------
-
  Private_IP:Port Pseudo_IP:Port Peer_IP:Port [Timeout/Protocol/Flag]
-------------------------------------------------------------------------
-
```

Telnet Command: show pmtime

This command displays the reuse time of NAT session.

Level0: It is the default setting.

Level1: It will be applied when the NAT sessions are smaller than 25% of the default setting.

Level2: It will be applied when the NAT sessions are smaller than the eighth of the default setting.

Example

```
> show pmtime
  Level0 TCP=86400001 UDP=300001 ICMP=10001
  Level1 TCP=600000 UDP=90000 ICMP=7000
  Level2 TCP=60000 UDP=30000 ICMP=5000
```

Telnet Command: show session

This command displays current status of current session.

Example

```
> show session
% Maximum Session Number: 50000
% Maximum Session Usage: 0
% Current Session Usage: 0
% Current Session Used(include waiting for free): 0
% WAN1 Current Session Usage: 0
% WAN2 Current Session Usage: 0
% WAN3 Current Session Usage: 0
% WAN4 Current Session Usage: 0
>
```

Telnet Command: show status

This command displays current status of LAN and WAN connections.

Example

```
> show status
System Uptime:1:4:49
LAN Status
Primary DNS:8.8.8.8         Secondary DNS:8.8.4.4
IP Address:192.168.1.1       Tx Rate:3266    Rx Rate:2245
```

```
WAN 1 Status: Disconnected
Enable:Yes      Line:xDSL       Name:
Mode:PPPoE      Up Time:0:00:00    IP:---          GW IP:---
TX Packets:0        TX Rate:0   RX Packets:0        RX Rate:0



WAN 2 Status: Disconnected
Enable:Yes      Line:Ethernet    Name:
Mode:---       Up Time:0:00:00    IP:---          GW IP:---
TX Packets:0        TX Rate:0   RX Packets:0        RX Rate:0

WAN 3 Status: Disconnected
Enable:Yes      Line:USB        Name:
Mode:---       Up Time:0:00:00    IP:---          GW IP:---
TX Packets:0        TX Rate:0   RX Packets:0        RX Rate:0

WAN 4 Status: Disconnected

Enable:Yes      Line:USB        Name:

--- MORE ---   ['q': Quit, 'Enter': New Lines, 'Space Bar': Next Page] ---
```

Telnet Command: show statistic

This command displays statistics for WAN interface.

Syntax

show statistic

show statistic reset *[interface]*

Syntax Description

Parameter	Description
reset	It means to reset the transmitted/received bytes to Zero.
interface	It means to specify WAN1 ~WAN5 interface for displaying related statistics.

Example

```
> show statistic
 WAN1 total TX: 0 Bytes ,RX: 0 Bytes
 WAN2 total TX: 0 Bytes ,RX: 0 Bytes
 WAN3 total TX: 0 Bytes ,RX: 0 Bytes
 WAN4 total TX: 0 Bytes ,RX: 0 Bytes
 WAN5 total TX: 0 Bytes ,RX: 0 Bytes
 WAN6 total TX: 0 Bytes ,RX: 0 Bytes
 WAN7 total TX: 0 Bytes ,RX: 0 Bytes
> show statistic reset wan1
 Reset WAN1 tx/rx Bytes to zero
>
```

Telnet Command: smb setting

This command is used to configure file sharing settings for SMB server.

Syntax

smb setting *[enable/disable]*

smb setting *show status*

smb setting *set workgroup [Workgroup name]*

smb setting *set host [host name]*

smb setting *set access [LAN or LANWAN]*

Syntax Description

Parameter	Description
enable/disable	Enable or disable the SMB service.
show status	Display current status of SMB service.
Set workgroup [Workgroup name]	Set a name of workgroup for SMB service.
set host [host name]	Set a name of the host for SMB service.
set access [LAN or LANWAN]	Allow to access into SMB server by LAN or borth LAN and WAN.

Example

```
> smb setting enable
SMB service is enabled.

> smb setting set access LAN
Allow SMB access from LAN only.
>
```

Telnet Command: srv dhcp dhcp2

This command is enable or disable the port setting for the second DHCP server.

Syntax

srv dhcp dhcp2 *[-<command> <parameter> | ...]*

Syntax Description

Parameter	Description
-l <enable>	Enable LAN PORT to Public DHCP. 0:Disable; 1:Enable
-m <enable>	Enable MAC ADDR to Public DHCP. 0:Disable; 1:Enable
-e <id>	Turn ON the flag of LAN port [1,2,3,4].
-d <id>	Turn OFF the flag of LAN port [1,2,3,4].
-v	View current status.

Example

```
> srv dhcp dhcp2 -e 3
> srv dhcp dhcp2 -v
 2nd DHCP server flag status --
   Server works on specified MAC address: ON
   Server works on specified LAN port: OFF
   Port 1 flag: ON
   Port 2 flag: ON
   Port 3 flag: ON
   Port 4 flag: OFF
```

Telnet Command: srv dhcp public

This command allows users to configure DHCP server for second subnet.

Syntax

srv dhcp public *start [IP address]*

srv dhcp public *cnt [IP counts]*

srv dhcp public *status*

srv dhcp public *add [MAC Addr XX-XX-XX-XX-XX-XX]*

srv dhcp public *del [MAC Addr XX-XX-XX-XX-XX-XX/all/ALL]*

Syntax Description

Parameter	Description
start	It means the starting point of the IP address pool for the DHCP server.
IP address	It means to specify an IP address as the starting point in the IP address pool.
cnt	It means the IP count number.
IP counts	It means to specify the number of IP addresses in the pool. The maximum is 10.
status	It means the execution result of this command.
add	It means creating a list of hosts to be assigned.
del	It means removing the selected MAC address.
MAC Addr	It means to specify MAC Address of the host.
all/ALL	It means all of the MAC addresses.

Example

```
Vigor> ip route add 192.168.1.56 255.255.255.0 192.168.1.12 3 default
Vigor> srv dhcp public status
Index   MAC Address
```

Telnet Command: srv dhcp dns1

This command allows users to set Primary IP Address for DNS Server in LAN.

Syntax

srv dhcp dns1 [lan1/lan2/lan3/lan4/lan5/lan6/lan7/lan8]*[DNS IP address]*

Syntax Description

Parameter	Description
lan1/lan2/lan3/lan4/lan5/lan6/lan7/lan8	It means the LAN port number.
DNS IP address	It means the IP address that you want to use as DNS1. **Note:** The IP Routed Subnet DNS must be the same as NAT Subnet DNS).

Example

```
> srv dhcp dns1 168.95.1.1
% srv dhcp dns1 <DNS IP address>
% Now: 168.95.1.1
(IP Routed Subnet dns same as NAT Subnet dns)
```

Telnet Command: srv dhcp dns2

This command allows users to set Secondary IP Address for DNS Server in LAN.

Syntax

srv dhcp dns2 [lan1/lan2/lan3/lan4/lan5/lan6/lan7/lan8]*[DNS IP address]*

Syntax Description

Parameter	Description
lan1/lan2/lan3/lan4/lan5/lan6/lan7/lan8	It means the LAN port number.
DNS IP address	It means the IP address that you want to use as DNS2. **Note:** The IP Routed Subnet DNS must be the same as NAT Subnet DNS).

Example

```
> srv dhcp dns2 10.1.1.1
% srv dhcp dns2 <DNS IP address>
% Now: 10.1.1.1
(IP Routed Subnet dns same as NAT Subnet dns)
```

Telnet Command: srv dhcp frcdnsmanl

This command can force the router to invoke DNS Server IP address.

Syntax

srv dhcp frcdnsmanl *[on]*

srv dhcp frcdnsmanl *[off]*

Syntax Description

Parameter	Description
?	It means to display the current status.
on	It means to use manual setting for DNS setting.
Off	It means to use auto settings acquired from ISP.

Example

```
> srv dhcp frcdnsmanl on
% Domain name server now is using manual settings!
> srv dhcp frcdnsmanl off
% Domain name server now is using auto settings!
```

Telnet Command: srv dhcp gateway

This command allows users to specify gateway address for DHCP server.

Syntax

srv dhcp gateway *[Gateway IP]*

Syntax Description

Parameter	Description
Gateway IP	It means to specify a gateway address used for DHCP server.

Example

```
> srv dhcp gateway 192.168.2.1
 This setting will take effect after rebooting.
 Please use "sys reboot" command to reboot the router.
```

Telnet Command: srv dhcp ipcnt

This command allows users to specify IP counts for DHCP server.

Syntax

srv dhcp ipcnt *[IP counts]*

Syntax Description

Parameter	Description
IP counts	It means the number that you have to specify for the DHCP server.

Example

```
> srv dhcp ipcnt ?
% srv dhcp ipcnt <IP counts>
% Now: 150
```

Telnet Command: srv dhcp off

This function allows users to turn off DHCP server. It needs rebooting router, please type "sys reboot" command to reboot router.

Telnet Command: srv dhcp on

This function allows users to turn on DHCP server. It needs rebooting router, please type "sys reboot" command to reboot router.

Telnet Command: srv dhcp relay

This command allows users to set DHCP relay setting.

Syntax

srv dhcp relay servip *[server ip]*

srv dhcp relay subnet *[index]*

Syntax Description

Parameter	Description
server ip	It means the IP address that you want to used as DHCP server.
Index	It means subnet 1 or 2. Please type 1 or 2. The router will invoke this function according to the subnet 1 or 2 specified here.

Example

```
> srv dhcp relay servip 192.168.1.46
> srv dhcp relay subnet 2
>srv dhcp relay servip ?
% srv dhcp relay servip <server ip>
% Now: 192.168.1.46
```

Telnet Command: srv dhcp startip

Syntax

srv dhcp startip *[IP address]*

Syntax Description

Parameter	Description
IP address	It means the IP address that you can specify for the DHCP server as the starting point.

Example

```
> srv dhcp startip 192.168.1.53
 This setting will take effect after rebooting.
 Please use "sys reboot" command to reboot the router.
```

Telnet Command: srv dhcp status

This command can display general information for the DHCP server, such as IP address, MAC address, leased time, host ID and so on.

Example

```
> srv dhcp status
LAN1      : 192.168.1.1/255.255.255.0, DHCP server: On
Default gateway: 192.168.1.1
Index   IP Address     MAC Address           Leased Time    HOST ID
1      192.168.1.255   00-00-00-00-00-00      BAD IP
2      192.168.1.0    00-00-00-00-00-00      BAD IP
3      192.168.1.1    00-00-00-00-00-00      BAD IP

LAN2      : 192.168.2.1/255.255.255.0, DHCP server: On
Default gateway: 192.168.2.1
Index   IP Address     MAC Address           Leased Time    HOST ID
1      192.168.2.10   00-1D-AA-9D-36-2C      0:19:19
2      192.168.2.255   00-00-00-00-00-00      BAD IP
3      192.168.2.0    00-00-00-00-00-00      BAD IP
4      192.168.2.1    00-00-00-00-00-00      BAD IP
```

Telnet Command: srv dhcp leasetime

This command can set the lease time for the DHCP server.

Syntax

srv dhcp leasetime *[Lease Time (sec)]*

Syntax Description

Parameter	Description
Lease Time (sec)	It means the lease time that DHCP server can use. The unit is second.

Example

```
> srv dhcp leasetime ?
% srv dhcp leasetime <Lease Time (sec.)>
% Now: 86400
>
```

Telnet Command: srv dhcp nodetype

This command can set the node type for the DHCP server.

Syntax

srv dhcp nodetype *<count>*

Syntax Description

Parameter	Description
count	It means to specify a type for node. 1. B-node 2. P-node 4. M-node 8. H-node

Example

```
> srv dhcp nodetype 1
> srv dhcp nodetype ?
%% srv dhcp nodetype <count>
%% 1. B-node 2. P-node 4. M-node 8. H-node
% Now: 1
```

Telnet Command: srv dhcp primWINS

This command can set the primary IP address for the DHCP server.

Syntax

srv dhcp primWINS *[WINS IP address]*

srv dhcp primWINS clear

Syntax Description

Parameter	Description
WINS IP address	It means the IP address of primary WINS server.
clear	It means to remove the IP address settings of primary WINS server.

Example

```
> srv dhcp primWINS 192.168.1.88
> srv dhcp primWINS ?
%% srv dhcp primWINS <WINS IP address>
%% srv dhcp primWINS clear
% Now: 192.168.1.88
```

Telnet Command: srv dhcp secWINS

This command can set the secondary IP address for the DHCP server.

Syntax

srv dhcp secWINS *[WINS IP address]*

srv dhcp secWINS clear

Syntax Description

Parameter	Description
WINS IP address	It means the IP address of secondary WINS server.
clear	It means to remove the IP address settings of second WINS server.

Example

```
> srv dhcp secWINS 192.168.1.180
> srv dhcp secWINS ?
%% srv dhcp secWINS <WINS IP address>
%% srv dhcp secWINS clear
% Now: 192.168.1.180
```

Telnet Command: srv dhcp expRecycleIP

This command can set the time to check if the IP address can be assigned again by DHCP server or not.

Syntax

srv dhcp expRecycleIP *<sec time>*

Syntax Description

Parameter	Description
sec time	It means to set the time (5~300 seconds) for checking if the IP can be assigned again or not.

Example

```
Vigor> srv dhcp expRecycleIP 250
% DHCP expired_RecycleIP = 250
```

Telnet Command: srv dhcp tftp

This command can set the TFTP server as the DHCP server.

Syntax

srv dhcp tftp *<TFTP server name>*

Syntax Description

Parameter	Description
TFTP server name	It means to type the name of TFTP server.

Example

```
> srv dhcp tftp TF123
> srv dhcp tftp ?
%% srv dhcp tftp <TFTP server name>
% Now: TF123
```

Telnet Command: srv dhcp option

This command can set the custom option for the DHCP server.

Syntax

srv dhcp option *-h*

srv dhcp option *-l*

srv dhcp option *-d [idx]*

srv dhcp option *-e [1 or 0] -i [lan number] -s [Next Server IP Address]*

srv dhcp option *-e [1 or 0] -i [lan number] -c [option number] -v [option value]*

srv dhcp option *-e [1 or 0] -i [lan number] -c [option number] -x [option value]*

srv dhcp option *-e [1 or 0] -i [lan number] -c [option number] -a [option value]*

srv dhcp option *-u [idx unmber]*

Syntax Description

Parameter	Description
-h	It means to display usage of this command.
-l	It means to display all the user defined DHCP options.
-d[idx]	It means to delete the option number by specifying its index number.
-e [1 or 0]	It means to enable/disable custom option feature. 1:enable 0:disable
-i [lan number]	It means to set LAN number. 1=LAN1, a=all LAN, r=routed subnet, d=dmz
-s [Next Server IP Address]	It means to specify the IP address for next server.
-c [option number]	It means to set option number. Available number ranges from 0 to 255.
-v [option value]	It means to set option number by typing string.
-x [option value]	It means to set option number with the format of Hexadecimal characters.
-a [option value]	It means to set the option value by specifying the IP address.
-u	It means to update the option value of the sepecified index.
idx number	It means the index number of the option value.

Example

```
>srv dhcp option -e 1 -i 2/r -c 44 -a 192.168.1.10,192.168.1.20
```

Telnet Command: srv nat dmz

This command allows users to set DMZ host. Before using this command, please set WAN IP Alias first.

Syntax

srv nat dmz n m *[-<command> <parameter> | …]*

Syntax Description

Parameter	Description
n	It means to map selected WAN IP to certain host. 1: wan1 2: wan2
m	It means the index number of the DMZ host. Default setting is "1" (WAN 1). It is only available for Static IP mode. If you use other mode, you can set 1 ~ 8 in this field. If WAN IP alias has been configured, then the number of DMZ host can be added more.
[<command> <parameter>|…]	The available commands with parameters are listed below. *[…]* means that you can type in several commands in one line.
-e	It means to enable/disable such feature. 1:enable 0:disable
-i	It means to specify the private IP address of the DMZ host.
-r	It means to remove DMZ host setting.
-v	It means to display current status.

Example

```
> srv nat dmz 1 1 -i 192.168.1.96
> srv nat dmz -v
%     WAN1 DMZ mapping status:
 Index  Status  WAN1 aux IP    Private IP
---------------------------------------------------
   1   Disable 0.0.0.0 192.168.1.96
```

Telnet Command: srv nat ipsecpass

This command allows users to enable or disable IPSec ESP tunnel passthrough and IKE source port (500) preservation.

Syntax

srv nat ipsecpass *[options]*

Syntax Description

Parameter	Description
[options]	The available commands with parameters are listed below.
on	It means to enable IPSec ESP tunnel passthrough and IKE source port (500) preservation.
off	It means to disable IPSec ESP tunnel passthrough and IKE source port (500) preservation.

status	It means to display current status for checking.

Example

```
> srv nat ipsecpass status
%% Status: IPsec ESP pass-thru and IKE src_port:500 preservation is
OFF.
```

Telnet Command: srv nat openport

This command allows users to set open port settings for NAT server.

Syntax

srv nat openport n m *[-<command> <parameter> | …]*

Syntax Description

Parameter	**Description**
n	It means the index number for the profiles. The range is from 1 to 20.
m	It means to specify the sub-item number for this profile. The range is from 1 to 10.
[<command> <parameter>|…]	The available commands with parameters are listed below. *[…]* means that you can type in several commands in one line.
-a <enable>	It means to enable or disable the open port rule profile. 0: disable 1:enable
-c <comment>	It means to type the description (less than 23 characters) for the defined network service.
-i <local ip>	It means to set the IP address for local computer. Local ip: Type an IP address in this field.
-w <idx>	It means to specify the public IP. 1: WAN1 Default, 2: WAN1 Alias 1, …and so on.
-p <protocol>	Specify the transport layer protocol. Available values are TCP, UDP and ALL.
-s<start port>	It means to specify the starting port number of the service offered by the local host. The range is from 0 to 65535.
-e<end port>	It means to specify the ending port number of the service offered by the local host. The range is from 0 to 65535.
-v	It means to display current settings.
-r <remove>	It means to delete the specified open port setting. remove: Type the index number of the profile.
-f <flush>	It means to return to factory settings for all the open ports profiles.

Example

```
> srv nat openport 1 1 -a 1 -c games -i 192.168.1.100 -w 1 -p TCP -s
23 -e 83
> srv nat openport -v
```

```
%% Status: Enable
%% Comment: games
%% Private IP address: 192.168.1.100
Index  Protocal       Start Port     End Port
*****************************************************************
  1.    TCP           23            83

%% Status: Disable
%% Comment:
%% Private IP address: 0.0.0.0
Index  Protocal       Start Port     End Port
*****************************************************************

%% Status: Disable
%% Comment:
%% Private IP address: 0.0.0.0
Index  Protocal       Start Port     End Port
*****************************************************************
>
```

Telnet Command: srv nat portmap

This command allows users to set port redirection table for NAT server.

Syntax

srv nat portmap *add [idx][serv name][proto][pub port][pri ip][pri port][wan1/wan2]*

srv nat portmap *del [idx]*

srv nat portmap *disable [idx]*

srv nat portmap *enable [idx] [proto]*

srv nat portmap *flush*

srv nat portmap *table*

Syntax Description

Parameter	Description
Add[idx]	It means to add a new port redirection table with an index number. Available index number is from 1 to 10.
serv name	It means to type one name as service name.
proto	It means to specify TCP or UDP as the protocol.
pub port	It means to specify which port can be redirected to the specified Private IP and Port of the internal host.
pri ip	It means to specify the private IP address of the internal host providing the service.
pri port	It means to specify the private port number of the service offered by the internal host.
wan1/wan2	It means to specify WAN interface for the port redirection.
del [idx]	It means to remove the selected port redirection setting.
disable [idx]	It means to inactivate the selected port redirection setting.
enable [idx]	It means to activate the selected port redirection setting.
flush	It means to clear all the port mapping settings.

table	It means to display Port Redirection Configuration Table.

Example

```
> srv nat portmap add 1 game tcp 80 192.168.1.11 100 wan1
> srv nat portmap table

NAT Port Redirection Configuration Table:

Index  Service Name   Protocol  Public Port  Private IP     Private
Port ifno
 1    game             6         80   192.168.1.11       100
-1
 2                    0          0                    0     -2
 3                    0          0                    0     -2
 4                    0          0                    0     -2
 5                    0          0                    0     -2
 6                    0          0                    0     -2
 7                    0          0                    0     -2
 8                    0          0                    0     -2
 9                    0          0                    0     -2
10                    0          0                    0     -2
11                    0          0                    0     -2
12                    0          0                    0     -2
13                    0          0                    0     -2
14                    0          0                    0     -2
15                    0          0                    0     -2
16                    0          0                    0     -2
17                    0          0                    0     -2
18                    0          0                    0     -2

19                    0          0                    0     -2

20                    0          0                    0     -2


Protocol: 0 = Disable, 6 = TCP, 17 = UDP
```

Telnet Command: srv nat trigger

This command allows users to configure port triggering settings for NAT.

Syntax

srv nat trigger setdefault

srv nat trigger view

srv nat trigger *n [-<command> <parameter>* | *…]*

Syntax Description

Parameter	Description
setdefault	Set to factory default settings.
view	Dispaly all of the port triggering settings.

n *<command><parameter>|…]*	"n" means the rule number. The available commands with parameters are listed below. *[…]* means that you can type in several commands in one line.
-c[XXX]	Type a comment for such rule if required.
-e [0/1]	Enable (1) or disable (0) a rule (specified with rule number).
-p [1/2/3]	Specify the protocol for such trigger rule. 1 – TCP 2 – UDP 3 - All
-t	Specify the port number (0~65535) for trigger.
-P	Specify the incoming protocol for such trigger rule.
-i	Specify the port number (0~65535) for incoming protocol.
-d	Delete the selected trigger rule.
-v	Display the port trigger settings for specified rule.

Example

```
> srv nat trigger 1 -c after_dinner
> srv nat trigger 1 -e 1
> srv nat trigger 1 -p 1
> srv nat trigger 1 -t 2000
> srv nat trigger 1 -P 2
> srv nat trigger 1 -i 3000
> srv nat trigger 1 -v

Port Trigger Rule Index:1

Status:Enable
Comment:after_dinner2000
Triggering Protocol:TCP
Triggering Port:2000
Incoming Protocol:UDP
Incoming Port:3000
```

Telnet Command: srv nat status

This command allows users to view NAT Port Redirection Running Table.

Example

```
> srv nat status
NAT Port Redirection Running Table:

Index  Protocol  Public Port   Private IP       Private Port
 1          6         80   192.168.1.11            100
 2          0          0   0.0.0.0                  0
 3          0          0   0.0.0.0                  0
 4          0          0   0.0.0.0                  0
 5          0          0   0.0.0.0                  0
 6          0          0   0.0.0.0                  0
 7         0         0  0.0.0.0              0
 8         0         0  0.0.0.0              0
 9         0         0  0.0.0.0              0
10         0         0  0.0.0.0              0
11         0         0  0.0.0.0              0
12         0         0  0.0.0.0              0
13         0         0  0.0.0.0              0
14         0         0  0.0.0.0              0
15         0         0  0.0.0.0              0
16         0         0  0.0.0.0              0
17         0         0  0.0.0.0              0
18         0         0  0.0.0.0              0
19         0         0  0.0.0.0              0

20         0         0  0.0.0.0              0

--- MORE ---   ['q': Quit, 'Enter': New Lines, 'Space Bar': Next Page]
---
```

Telnet Command: srv nat showall

This command allows users to view a summary of NAT port redirection setting, open port and DMZ settings.

Example

```
>  srv nat showall ?
Index   Proto   WAN IP:Port              Private IP:Port          Act
*************************************************************************
****
R01    TCP    0.0.0.0:80              192.168.1.11:100          Y

O01    TCP    0.0.0.0:23~83            192.168.1.100:23~83       Y

D01    All    0.0.0.0                 192.168.1.96             Y

R:Port Redirection, O:Open Ports, D:DMZ
```

Telnet Command: srv nat closeffp

Syntax

srv nat closeffp *n [-<command> <parameter> | …]*

Syntax Description

Parameter	Description
n *<command><parameter>|…]*	"n" means the rule number (1~10). The available commands with parameters are listed below. *[…]* means that you can type in several commands in one line.
-e [0/1]	Enable (1) or disable (0) a rule (specified with rule number).
-p [TCP/UDP/ALL]	Specify the protocol for such trigger rule.
-n [port number]	Specify the port number (0~65535) for trigger.
-r [range]	Specify the range for port number.
-v	Display current settings.

-d [delete]	Delete the selected trigger rule.
-f [flush]	Set all of the rules back to factory default settings.

Example

```
> srv nat closeffp 1 -e 1 -p UDP -n 6500
> srv nat closeffp -v
% Status: Enable
% Protocal: udp

% Index: 1
% Port Number: 6500
% Range: 0
> srv nat closeffp 1 -d
```

Telnet Command: switch -i

This command is used to obtain the TX (transmitted) or RX (received) data for each connected switch.

Syntax

switch -i *[switch idx_no] [option]*

Syntax Description

Parameter	Description
switch idx_no	It means the index number of the switch profile.
option	The available commands with parameters are listed below. *cmd* *acc* *traffic [on/off/status/tx/rx]*
cmd	It means to send command to the client.
acc	It means to set the client authentication account and password.
traffic [on/off/status/tx/rx]	It means to turn on/off or display the data transmission from the client.

Example

```
>  switch -i 1 traffic on
External Device NO. 1 traffic statistic function is enable
```

Telnet Command: switch status

This command is used to check the status for the auto discovery of external devices.

Example

```
> switch status
External Device auto discovery status : Disable

No Respond to External Device : Enable
```

Telnet Command: switch not_respond

Syntax

switch not_respond 0

switch not_respond 1

Syntax Description

Parameter	Description
0	Disable the option of "No Respond to External Device packets".
1	Enable the option of "No Respond to External Device packets".

Example

```
> switch not_respond 1
slave not respond!
>
```

Telnet Command: switch on

This command is used to turn on the auto discovery for external devices.

Example

```
>  switch on
Enable Extrnal Device auto discovery!
```

Telnet Command: switch off

This command is used to turn off the auto discovery for external devices.

Example

```
>  switch off
Disable External Device auto discovery!
```

Telnet Command: switch list

This command is used to display the connection status of the switch.

Example

```
> switch list?
No.      Mac             IP         status   Dur Time   Model_Name
------------------------------------------------------------------
---------
[1]  00-50-7f-cd-07-48  192.168.1.3    On-Line   00:01:01
Vigor2920 Series
```

Telnet Command: switch clear

This command is used to reset the switch table and reboot the router.

Syntax

switch clear *[idx]*

Syntax Description

Parameter	Description
idx	It means the index number of each item shown on the table. The range is from 1 to 8.
-f	It means to clear all of the data.

Example

```
> switch clear 1
Switch Data clear successful

> switch clear -f
Switch Data clear successful
```

Telnet Command: switch query

This command is used to enable or disable the switch query.

Example

```
> switch query on
Extern Device status query is Enable
> switch query off
Extern Device status query is Disable
```

Telnet Command: sys admin

This command is used for RD engineer to access into test mode of Vigor router.

Telnet Command: sys adminuser

This command is used to create user account and specify LDAP server. The server will authenticate the local user who wants to access into the web user interface of Vigor router.

Syntax

sys adminuser *[option]*

sys adminuser edit *[index] username password*

Syntax Description

Parameter	Description
option	Available options includes: Local [0-1] LDAP [0-1] edit [INDEX] delete [INDEX] view [INDEX]
Local [0-1]	0 – Disable the local user. 1 – Enable the local user.
LDAP [0-1]	0 – Disable the LDAP. 1 – Enable the LDAP.
edit [INDEX] username password	Edit an existed user account or create a new local user account. [INDEX] – 1 ~8. There are eight profiles to be added / edited. Username – Type a new name for local user. Password – Type a password for local user.

delete [INDEX]	Delete a local user account.
view [INDEX]	Show the user account/password detail information.

Example

```
> > sys adminuser Local 1
Local User has enabled!
> sys adminuser LDAP 1
LDAP has enabled!
>> sys adminuser edit 1 carrie test123
Updated!
>> sys adminuser view 1

Index:1
User Name:carrie
User Password:test123
```

Telnet Command: sys bonjour

This command is used to disable/enable and configure the Bonjour service.

Syntax

sys bonjour *[-<command> <parameter>* | *...]*

Syntax Description

Parameter	Description
-e <enable>	It is used to disable/enable bonjour service (0: disable, 1: enable).
-h <enable>	It is used to disable/enable http (web) service (0: disable, 1: enable).
-t <enable>	It is used to disable/enable telnet service (0: disable, 1: enable).
-f <enable>	It is used to disable/enable FTP service (0: disable, 1: enable).
-s <enable>	It is used to disable/enable SSH service (0: disable, 1: enable).
-p <enable>	It is used to disable/enable printer service (0: disable, 1: enable).
-6 <enable>	It is used to disable/enable IPv6 (0: disable, 1: enable).

Example

```
> sys bonjour -s 1
>
```

Telnet Command: sys cfg

This command reset the router with factory default settings. When a user types this command, all the configuration will be reset to default setting.

Syntax

sys cfg default

sys cfg status

Syntax Description

Parameter	Description
default	It means to reset current settings with default values.
status	It means to display current profile version and status.

Example

```
> sys cfg status
Profile version: 3.0.0   Status: 1 (0x491e5e6c)
> sys cfg default
>
```

Telnet Command: sys cmdlog

This command displays the history of the commands that you have typed.

Example

```
> sys cmdlog
% Commands Log: (The lowest index is the newest !!!)
   [1] sys cmdlog
   [2] sys cmdlog ?
   [3] sys ?
   [4] sys cfg status
   [5] sys cfg ?
```

Telnet Command: sys ftpd

This command displays current status of FTP server.

Syntax

sys ftpd *on*

sys ftpd *off*

Syntax Description

Parameter	Description
on	It means to turn on the FTP server of the system.
off	It means to turn off the FTP server of the system.

Example

```
> sys ftpd on
% sys ftpd turn on !!!
```

Telnet Command: sys domainname

This command can set and remove the domain name of the system when DHCP mode is selected for WAN.

Syntax

sys domainname *[wan1/wan2] [Domain Name Suffix]*

sys domainname *[wan1/wan2] clear*

Syntax Description

Parameter	Description
wan1/wan2	It means to specify WAN interface for assigning a name for it.
Domain Name Suffix	It means the name for the domain of the system. The maximum number of characters that you can set is 40.
clear	It means to remove the domain name of the system.

Example

```
> sys domainname wan1 clever
> sys domainname wan2 intellegent
> sys domainname ?
% sys domainname <wan1/wan2> <Domain Name Suffix (max. 40 characters)>
% sys domainname <wan1/wan2> clear
% Now: wan1 == clever, wan2 ==intelligent
>
```

Telnet Command: sys iface

This command displays the current interface connection status (UP or Down) with IP address, MAC address and Netmask for the router.

Example

```
> sys iface
Interface 0 Ethernet:
Status: UP
IP Address: 192.168.1.1      Netmask: 0xFFFFFF00 (Private)
IP Address: 0.0.0.0         Netmask: 0xFFFFFFFF
MAC: 00-50-7F-00-00-00
Interface 4 Ethernet:
Status: DOWN
IP Address: 0.0.0.0         Netmask: 0x00000000
MAC: 00-50-7F-00-00-02
Interface 5 Ethernet:
Status: DOWN
IP Address: 0.0.0.0         Netmask: 0x00000000
MAC: 00-50-7F-00-00-03
Interface 6 Ethernet:
Status: DOWN
IP Address: 0.0.0.0         Netmask: 0x00000000
MAC: 00-50-7F-00-00-04
```

```
Interface 7 Ethernet:
Status: DOWN
IP Address: 0.0.0.0         Netmask: 0x00000000
MAC: 00-50-7F-00-00-05
Interface 8 Ethernet:
Status: DOWN
IP Address: 0.0.0.0         Netmask: 0x00000000
MAC: 00-50-7F-00-00-06

Interface 9 Ethernet:
Status: DOWN
IP Address: 0.0.0.0         Netmask: 0x00000000
MAC: 00-50-7F-00-00-07
--- MORE ---   ['q': Quit, 'Enter': New Lines, 'Space Bar': Next Page]
---
>
```

Telnet Command: sys name

This command can set and remove the name for the router when DHCP mode is selected for WAN.

Syntax

sys name *[wan1/wan2] [ASCII string]*

sys name *[wan1/wan2]* **clear**

Syntax Description

Parameter	Description
wan1/wan2	It means to specify WAN interface for assigning a name for it.
ASCII string	It means the name for router. The maximum character that you can set is 20.

Example

```
> sys name wan1 drayrouter
> sys name ?
% sys name <wan1/wan2> <ASCII string (max. 20 characters)>
% sys name <wan1/wan2> clear
% Now: wan1 == drayrouter, wan2 ==
```

Note: Such name can be used to recognize router's identification in SysLog dialog.

Telnet Command: sys passwd

This command allows users to set password for the administrator.

Syntax

sys passwd *[ASCII string]*

Syntax Description

Parameter	Description
ASCII string	It means the password for administrator. The maximum character that you can set is 23.

Example

```
> sys passwd admin123
>
```

Telnet Command: sys reboot

This command allows users to restart the router immediately.

Example

```
> sys reboot
>
```

Telnet Command: sys autoreboot

This command allows users to restart the router automatically within a certain time.

Syntax

sys autoreboot *[on/off/hour(s)]*

Syntax Description

Parameter	Description
on/off	On – It means to enable the function of auto-reboot. Off – It means to disable the function of auto-reboot.
hours	It means to set the time schedule for router reboot. For example, if you type "2" in this field, the router will reboot with an **interval** of two hours.

Example

```
> sys autoreboot on
 autoreboot is ON
> sys autoreboot 2
 autoreboot is ON
 autoreboot time is 2 hour(s)
```

Telnet Command: sys commit

This command allows users to save current settings to FLASH. Usually, current settings will be saved in SRAM. Yet, this command will save the file to FLASH.

Example

```
> sys commit
>
```

Telnet Command: sys tftpd

This command can turn on TFTP server for upgrading the firmware.

Example

```
> sys tftpd
% TFTP server enabled !!!
```

Telnet Command: sys cc

This command can display current country code and wireless region of this device.

Example

```
> sys cc
Country Code       : 0x 0 [International]
Wireless Region Code: 0x30
>
```

Telnet Command: sys version

This command can display current version for the system.

Example

```
> sys version
Router Model: Vigor2952n   Version: 3.8.2_RC8 English
Profile version: 3.0.0   Status: 1 (0x39a1563a)
Router IP: 192.168.1.1   Netmask: 255.255.255.0
Firmware Build Date/Time: Jan  5 2016 14:15:52
Router Name: DrayTek
Revision: 53829 V381_3220_3821
```

Telnet Command: sys qrybuf

This command can display the system memory status and leakage list.

Example

```
> sys qrybuf
System Memory Status and Leakage List

Buf sk_buff  ( 200B), used#: 1647, cached#:   30
Buf KMC4088  (4088B), used#:    0, cached#:    8
Buf KMC2552  (2552B), used#: 1641, cached#:   42
Buf KMC1016  (1016B), used#:    7, cached#:    1
Buf KMC504   ( 504B), used#:    8, cached#:    8
Buf KMC248   ( 248B), used#:   26, cached#:   22
Buf KMC120   ( 120B), used#:   67, cached#:   61
Buf KMC56    (  56B), used#:   20, cached#:   44
Buf KMC24    (  24B), used#:   58, cached#:   70
Dynamic memory: 13107200B; 4573168B used; 190480B/0B in level 1/2
cache.

FLOWTRACK Memory Status
# of free = 12000
# of maximum = 0
# of flowstate = 12000
# of lost by siganture = 0
# of lost by list = 0
```

Telnet Command: sys pollbuf

This command can turn on or turn off polling buffer for the router.

Syntax

sys pollbuf *[on]*

sys pollbuf *[off]*

Syntax Description

Parameter	Description
on	It means to turn on pulling buffer.
off	It means to turn off pulling buffer.

Example

```
> sys pollbuf on
% Buffer polling is on!

> sys pollbuf off
% Buffer polling is off!
```

Telnet Command: sys tr069

This command can set CPE settings for applying in VigorACS.

Syntax

sys tr069 get *[parm] [option]*

sys tr069 set *[parm] [value]*

sys tr069 getnoti *[parm]*

sys tr069 setnoti *[parm] [value]*

sys tr069 log

sys tr069 debug *[on/off]*

sys tr069 save

sys tr069 inform *[event code]*

sys tr069 port *[port num]*

sys tr069 cert_auth *[on/off]*

Syntax Description

Parameter	Description
get [parm] [option]	It means to get parameters for tr-069. option=<nextlevel>: only gets nextlevel for GetParameterNames.
set [parm] [value]	It means to set parameters for tr-069.
getnoti [parm]	It means to get parameter notification value.
setnoti [parm] [value]	It means to set parameter notification value.
log	It means to display the TR-069 log.
debug [on/off]	on: turn on the function of sending debug message to syslog. off: turn off the function of sending debug message to syslog.

save	It means to save the parameters to the flash memory of the router.
Inform [event code]	It means to inform parameters for tr069 with different event codes. [event code] includes: 0-"0 BOOTSTRAP", 1-"1 BOOT", 2-"2 PERIODIC", 3-"3 SCHEDULED", 4-"4 VALUE CHANGE", 5-"5 KICKED", 6-"6 CONNECTION REQUEST", 7-"7 TRANSFER COMPLETE", 8-"8 DIAGNOSTICS COMPLETE", 9-"M Reboot"
port [port num]	It means to change tr069 listen port number.
cert_auth [on/off]	on: turn on certificate-based authentication. off: turn off certificate-based authentication.

Example

```
> sys tr069 get Int. nextlevel
Total number of parameter is 24
Total content length of parameter is 915
InternetGatewayDevice.LANDeviceNumberOfEntries
InternetGatewayDevice.WANDeviceNumberOfEntries
InternetGatewayDevice.DeviceInfo.
InternetGatewayDevice.ManagementServer.
InternetGatewayDevice.Time.
InternetGatewayDevice.Layer3Forwarding.
InternetGatewayDevice.LANDevice.
InternetGatewayDevice.WANDevice.
InternetGatewayDevice.Services.
InternetGatewayDevice.X_00507F_InternetAcc.
InternetGatewayDevice.X_00507F_LAN.
InternetGatewayDevice.X_00507F_NAT.
InternetGatewayDevice.X_00507F_Firewall.
InternetGatewayDevice.X_00507F_Bandwidth.
InternetGatewayDevice.X_00507F_Applications.
InternetGatewayDevice.X_00507F_VPN.
InternetGatewayDevice.X_00507F_VoIP.
InternetGatewayDevice.X_00507F_WirelessLAN.
InternetGatewayDevice.X_00507F_System.
InternetGatewayDevice.X_00507F_Status.

InternetGatewayDevice.X_00507F_Diagnostics.
--- MORE ---   ['q': Quit, 'Enter': New Lines, 'Space Bar': Next Page]
---
```

Telnet Command: sys sip_alg

This command can turn on/off SIP ALG (Application Layer Gateway) for traversal.

Syntax

sys sip_alg *[1]*

sys sip_alg *[0]*

Syntax Description

Parameter	Description
1	It means to turn on SIP ALG.
0	It means to turn off SIP ALG.

Example

```
> sys sip_alg ?
usage: sys sip_alg [value]
 0 - disable SIP ALG
 1 - enable SIP ALG
 current SIP ALG is disabled
```

Telnet Command: sys license

This command can process the system license.

Syntax

sys license *licmsg*

sys license *licauth*

sys license *regser*

sys license *licera*

sys license *licifno*

sys license *lic_wiz [set/reg/qry]*

sys license *dev_chg*

sys license *dev_key*

Syntax Description

Parameter	Description
licmsg	It means to display license message.
licauth	It means the license authentication time setting.
regser	It means the license register server setting.
licera	It means to erase license setting.
licifno	It means license and signature download interface setting.
lic_wiz [set/reg/qry]	It means the license wizard setting. qry: query service support status set [idx] [trial] [service type] [sp_id] [start_date] [License Key] reg: register service in portal
dev_chg	It means to change the device key.
dev_key	It means to show device key.

Example

```
> sys license licifno

License and Signature download interface setting:
licifno [AUTO/WAN#]

Ex: licifno wan1

Download interface is "auto-selected" now.
```

Telnet Command: sys daylightsave

This command is used to configure daylight save setting.

Syntax

sys daylightsave *[-<command> <parameter> | …]*

Syntax Description

Parameter	Description
[<command><parameter>|…]	The available commands with parameters are listed below. *[…]* means that you can type in several commands in one line.
-v	Display the daylight saving settings.
-r	Set to factory default setting.
-e [1/0]	Enable (1) / disable (0) daylight saving.
-t [0/1/2]	Specify the saving type for daylight setting. 0 – Default 1 – Time range 2 - Yearly
-s <year> <month> <day> <hour>	Set the detailed settings of the starting day for time range type. year – must be the year after 2013. month - 1 ~ 12 day – 1 ~ 31 hour – 0 ~ 23 e.g., sys daylightsave -s 2014 3 10 12
-d <year> <month> <day> <hour>	Set the detailed settings of the ending day for time range type. year – After 2013. month - 1 ~ 12 day – 1 ~ 31 hour – 0 ~ 23 e.g., sys daylightsave -d 2014 9 10 12
-y <month> <th weekday> <day in week> <hour>	Set the detailed settings of the starting day for yearly type. month - 1 ~ 12 th weekday – 1 ~ 5, 9: last week day in week - 0:Sun, 1:Mon, 2:Tue, 3:Wed, 4:Thu, 5: Fri, 6:Sat hour – 0 ~ 23 e.g, sys daylightsave -y 9 1 0 14
-z <month> <th weekday> <day in week> <hour>	Set the detailed settings of the ending day for yearly type. month - 1 ~ 12 th weekday – 1 ~ 5, 9: last week day in week - 0:Sun, 1:Mon, 2:Tue, 3:Wed, 4:Thu, 5: Fri, 6:Sat hour – 0 ~ 23

	e.g, sys daylightsave -z 3 1 6 14

Example

```
> sys daylightsave -y 9 1 0 14

% Start: Yearly on Sep 1th Sun 14:00
```

Telnet Command: sys dnsCacheTbl

This command is used to configure TTL settings which will be displayed in DNS Cache table.

Syntax

sys dnsCacheTbl *[<command><parameter>|...]*

Syntax Description

Parameter	**Description**
[<command><parameter>|...]	The available commands with parameters are listed below. *[...]* means that you can type in several commands in one line.
-l	Display DNS IPv4 entry in the DNS cache table.
-s	Display DNS IPv6 entry in the DNS cache table.
-v	Display the TTL limit value in the DNS cache table.
-t < 0/n >	Set the TTL limit value in the DNS cache table. 0- No limit N – Greater than or equal to 5.
-c	Clear the DNS cache table.

Example

```
> sys dnsCacheTbl -l
%DNS Cache Table List
> sys dnsCacheTbl -t 65
% Set TTL limit: 65 seconds.
% When TTL larger than 65s , delete the DNS entry in the router's DNS cache
tabl
e.
>
```

Telnet Command: sys syslog

This command is used to configure

Syntax

sys syslog *-a <enable> [-<command> <parameter> | …]*

Syntax Description

Parameter	**Description**
[<command><parameter>|...]	The available commands with parameters are listed below. *[...]* means that you can type in several commands in one line.
-a <1/0>	Enable (1) or disable (0) Syslog Access Setup.
-s <1/0>	Enable (1) or disable (0) Syslog Save to Syslog Server.
-i <IP address>	Define the IP address of the Syslog server.

-d <port number>	Define the port number (1 ~ 65535) as the destination port.
-u <1/0>	Enable (1) or disable (0) Syslog Save to USB Disk.
-m <1/0>	Enable (1) or disable (0) Mail Syslog.
-f <1/0>	Enable (1) or disable (0) Filewall Log.
-v <1/0>	Enable (1) or disable (0) VPN Log.
-e <1/0>	Enable (1) or disable (0) User Access Log.
-c <1/0>	Enable (1) or disable (0) Call Log.
-w <1/0>	Enable (1) or disable (0) WAN Log.
-r <1/0>	Enable (1) or disable (0) Router/DSL Information.
-t <1/0>	Enable (1) or disable (0) AlertLog Setup.
-o <port number>	Define the port number (1 ~ 65535) for AlertLog.

Example

```
> sys syslog -a 1 -s 1 -i 192.168.1.25 -d 514
>
```

Telnet Command: sys time

This command is used to configure system time and date.

Syntax

sys time server *[domain]*

sys time inquire

sys time show

sys time zone *[index]*

Syntax Description

Parameter	**Description**
domain	Type the domain name of the time server.
index	Different number means different time zone. 1 - GMT-12:00 Eniwetok, Kwajalein 2 - GMT-11:00 Midway Island, Samoa 3 - GMT-10:00 Hawaii 4 - GMT-09:00 Alaska 5 - GMT-08:00 Pacific Time (US & Canada) 6 - GMT-08:00 Tijuana 7 - GMT-07:00 Mountain Time (US & Canada) 8 - GMT-07:00 Arizona 9 - GMT-06:00 Central Time (US & Canada) 10 - GMT-06:00 Saskatchewan 11 - GMT-06:00 Mexico City, Tegucigalpa 12 - GMT-05:00 Eastern Time (US & Canada) 13 - GMT-05:00 Indiana (East) 14 - GMT-05:00 Bogota, Lima, Quito 15 - GMT-04:00 Atlantic Time (Canada) 16 - GMT-04:00 Caracas, La Paz 17 - GMT-04:00 Santiago 18 - GMT-03:30 Newfoundland 19 - GMT-03:00 Brasilia 20 - GMT-03:00 Buenos Aires, Georgetown 21 - GMT-02:00 Mid-Atlantic 22 - GMT-01:00 Azores, Cape Verde Is. 23 - GMT Greenwich Mean Time : Dublin

	24 - GMT Edinburgh, Lisbon, London 25 - GMT Casablanca, Monrovia 26 - GMT+01:00 Belgrade, Bratislava 27 - GMT+01:00 Budapest, Ljubljana, Prague 28 - GMT+01:00 Sarajevo, Skopje, Sofija 29 - GMT+01:00 Warsaw, Zagreb 30 - GMT+01:00 Brussels, Copenhagen 31 - GMT+01:00 Madrid, Paris, Vilnius 32 - GMT+01:00 Amsterdam, Berlin, Bern 33 - GMT+01:00 Rome, Stockholm, Vienna 34 - GMT+02:00 Bucharest 35 - GMT+02:00 Cairo 36 - GMT+02:00 Helsinki, Riga, Tallinn 37 - GMT+02:00 Athens, Istanbul, Minsk 38 - GMT+02:00 Jerusalem 39 - GMT+02:00 Harare, Pretoria 40 - GMT+03:00 Volgograd 41 - GMT+03:00 Baghdad, Kuwait, Riyadh 42 - GMT+03:00 Nairobi 43 - GMT+03:00 Moscow, St. Petersburg 44 - GMT+03:30 Tehran 45 - GMT+04:00 Abu Dhabi, Muscat 46 - GMT+04:00 Baku, Tbilisi 47 - GMT+04:30 Kabul 48 - GMT+05:00 Ekaterinburg 49 - GMT+05:00 Islamabad, Karachi, Tashkent 50 - GMT+05:30 Bombay, Calcutta 51 - GMT+05:30 Madras, New Delhi 52 - GMT+06:00 Astana, Almaty, Dhaka 53 - GMT+06:00 Colombo 54 - GMT+07:00 Bangkok, Hanoi, Jakarta 55 - GMT+08:00 Beijing, Chongqing 56 - GMT+08:00 Hong Kong, Urumqi 57 - GMT+08:00 Singapore 58 - GMT+08:00 Taipei 59 - GMT+08:00 Perth 60 - GMT+09:00 Seoul 61 - GMT+09:00 Osaka, Sapporo, Tokyo 62 - GMT+09:00 Yakutsk 63 - GMT+09:30 Darwin 64 - GMT+09:30 Adelaide 65 - GMT+10:00 Canberra, Melbourne, Sydney 66 - GMT+10:00 Brisbane 67 - GMT+10:00 Hobart 68 - GMT+10:00 Vladivostok 69 - GMT+10:00 Guam, Port Moresby 70 - GMT+11:00 Magadan, Solomon Is. 71 - GMT+11:00 New Caledonia 72 - GMT+12:00 Fiji, Kamchatka, Marshall Is. 73 - GMT+12:00 Auckland, Wellington

Example

```
> sys time zone 8
  Set Time Zone OK

> sys time show
  ***************  System Time  ***************
  Current System Time: [2000 Jan 01 Sat 02:09:29]
  Time Server: [pool.ntp.org]
  Time Zone Index: [8]. GMT-07:00
  *********************************************
```

Telnet Command: sys eap_tls

This command is used to disable or enable EAP-TLS.

You might have to enable EAP-TLS compatibility to avoid compatibility issues with some operating systems. But, please note that enabling EAP-TLS compatibility will lower down the connection security level.

Syntax

sys eap_tls set *[0/1]*

Syntax Description

Parameter	Description
0	Disable EAP-TLS compatibility!
1	Enable EAP-TLS compatibility!

Example

```
> sys eap_tls set 1
Enable EAP_TLS compatibility!
```

Telnet Command: testmail

This command is used to display current settings for sending test mail.

Example

```
> testmail
Send out test mail
 Mail Alert:[Disable]
 SMTP_Server:[0.0.0.0]
 Mail to:[]
 Return-Path:[]
```

Telnet Command: upnp off

This command can close UPnP function.

Example

```
>upnp off
UPNP say bye-bye
```

Telnet Command: upnp on

This command can enable UPnP function.

Example

```
>upnp on
UPNP start.
```

Telnet Command: upnp nat

This command can display IGD NAT status.

Example

```
> upnp nat ?
******************  IGD NAT Status  ****************

((0))
InternalClient >>192.168.1.10<<, RemoteHost >>0.0.0.0<<
InternalPort >>21<<, ExternalPort >>21<<
PortMapProtocol >>TCP<<
The tmpvirtual server index >>0<<
PortMapLeaseDuration >>0<<, PortMapEnabled >>0<<
Ftp Example [MICROSOFT]
((1))
InternalClient >>0.0.0.0<<, RemoteHost >>0.0.0.0<<
InternalPort >>0<<, ExternalPort >>0<<
PortMapProtocol >><NULL><<
The tmpvirtual server index >>0<<
PortMapLeaseDuration >>0<<, PortMapEnabled >>0<<
PortMapProtocol >><NULL><<
The tmpvirtual server index >>0<<
PortMapLeaseDuration >>0<<, PortMapEnabled >>0<<
0<<

--- MORE ---   ['q': Quit, 'Enter': New Lines, 'Space Bar': Next Page] ---
```

Telnet Command: upnp service

This command can display the information of the UPnP service. UPnP service must be enabled first.

Example

```
> upnp on
UPNP start.

> upnp service
>>>>> SERVICE TABLE1 <<<<<
  serviceType urn:schemas-microsoft-com:service:OSInfo:1
  serviceId   urn:microsoft-com:serviceId:OSInfo1
  SCPDURL    /upnp/OSInfo.xml
  controlURL  /OSInfo1
  eventURL   /OSInfoEvent1
  UDN       uuid:774e9bbe-7386-4128-b627-001daa843464

>>>>> SERVICE TABLE2 <<<<<
  serviceType
urn:schemas-upnp-org:service:WANCommonInterfaceConfig:1
  serviceId   urn:upnp-org:serviceId:WANCommonIFC1
  SCPDURL    /upnp/WComIFCX.xml
  controlURL  /upnp?control=WANCommonIFC1
  eventURL   /upnp?event=WANCommonIFC1
  UDN       uuid:2608d902-03e2-46a5-9968-4a54ca499148
```

```
.
.
.
```

Telnet Command: upnp subscribe

This command can show all UPnP services subscribed.

Example

```
> upnp on
UPNP start.
> upnp subscribe
Vigor> upnp subscribe
>>>> (1) serviceType urn:schemas-microsoft-com:service:OSInfo:1

  ----- Subscribtion1 -------

   sid = 7a2bbdd0-0047-4fc8-b870-4597b34da7fb

   eventKey =1, ToSendEventKey = 1

   expireTime =6926

   active =1

   DeliveryURLs
=<http://192.168.1.113:2869/upnp/eventing/twtnpnsiun>

>>>> (2) serviceType
urn:schemas-upnp-org:service:WANCommonInterfaceConfig:1

  ----- Subscribtion1 -------

   sid = d9cd47a5-d9c9-4d3d-8043-d03a82f27983

   eventKey =1, ToSendEventKey = 1
.
.
.
```

Telnet Command: upnp tmpvs

This command can display current status of temp Virtual Server of your router.

Example

```
Vigor> upnp tmpvs
******************  Temp virtual server status  ****************

((0))
real_addr  >>192.168.1.10<<, pseudo_addr >>172.16.3.229<<
real_port >>0<<, pseudo_port >>0<<
hit_portmap_index >>0<<
The protocol >>TCP<<
```

```
time >>0<<

((1))
real_addr  >>0.0.0.0<<, pseudo_addr >>0.0.0.0<<
real_port >>0<<, pseudo_port >>0<<
hit_portmap_index >>0<<
The protocol >>0<<
time >>0<<
--- MORE ---   ['q': Quit, 'Enter': New Lines, 'Space Bar': Next Page]
---
```

Telnet Command: upnp wan

This command is used to specify WAN interface to apply UPnP.

Syntax

upnp wan *[n]*

Syntax Description

Parameter	Description

n	It means to specify WAN interface to apply UPnP.
	n=0, it means to auto-select WAN interface.
	n=1, WAN1
	n=2, WAN2 ……….

Example

```
> upnp wan 1
use wan1 now.
```

Telnet Command: usb list

This command is use to display the information about the brand name and model name of the USB modems which are supported by Vigor router.

Example

```
> usb list ?
Brand      Module             Standard
-----------------------        --------
Aiko       Aiko 83D             3.5G              Y
BandRich    Bandluxe C170         3.5G              Y
BandRich    Bandluxe C270         3.5G              Y
BandRich    Bandluxe C321         3.5G              Y
BandRich    Bandluxe C330         3.5G              Y
BandRich    Bandluxe C331         3.5G              Y
BandRich    Bandluxe C502         3.5G              Y
Huawei     Huawei E169u         3.5G              Y
Huawei     Huawei E220          3.5G              Y
Huawei     Huawei E303D         3.5G              Y
Huawei     Huawei E392          3.5G              Y
Huawei     Huawei E398          3.5G              Y
Sony Erics  Sony Ericsson MD30     3.5G               Y
```

```
TP-LINK     TP-LINK MA180         3.5G               Y
TP-LINK     TP-LINK MA260         3.5G               Y
Vodafone    Vodafone K3765-Z       3.5G               Y
Vodafone    Vodafone K4605        3.5G               Y
ZTE        ZTE MF626            3.5G               Y
ZTE        ZTE MF627 plus        3.5G               Y
ZTE        ZTE MF633            3.5G               Y
ZTE        ZTE MF636            3.5G               Y

SpinCom     SpinCom GPRS Modem     3.5G               Y
- MORE - ['q': Quit, 'Enter': New Lines, 'Space Bar': Next Page] -
```

Telnet Command: usb user

This command is used to set profiles for FTP/SMB users.

Syntax

usb user add *[Index] [Username] [Password] [Permission] [Home path]*

usb user rm *[Index]*

usb user enable *[Index]*

usb user disable *[Index]*

usb user list

Syntax Description

Parameter	Description
add	Add a new user profile.
Rm	Delete an existed user profile.
enable	Enable a user profile.
disable	Disable a user profile.
list	Display all of the user profile.
index	It means the index number of the user profile. There are 16 profiles allowed to be configured. So the range of such option is 1 ~ 16.
Username	Type a text (maximum 11 characters) as the username for the user profile.
Password	Type a text (maximum 11 characters) as the password for the user profile.
Permission	Specify the action (RWDLCR) permitted. If one of the actions is not allowed, simple type "-" instead. R – Read File. W – Write File. D – Delete File. L – List directory. C – Create directory. R – Remove selected directory.
Home path	Set the path (maximum 159 characters) for the USB user profile.

Example

```
> usb user add 1 root 1234 R-DLCR /usr
```

Telnet Command: vigbrg set

Syntax

vigbrg set *-v [IP version] -w [WAN_idx] -l [LAN_idx] -e [0/1] -f [0/1]*

Syntax Description

Parameter	Description
-v [IP version]	Indicate the IP version for the IP address. 4 – IPv4. 6 – IPv6.
-w [WAN_idx]	WAN_idx – Indicate the WAN interface. 1 – WAN1 2 – WAN2 3 – WAN3 4 – WAN4
-l [LAN_idx]	LAN_idx – Indicate the LAN interface. 1 – LAN1 2 – LAN2 3 – LAN3 4 – LAN4
e [0/1]	Enable (1) or disable (0) the Vigor Bridge for WAN or/and LAN.
f [0/1]	Enable (1) or disable (0) the firewall functions.

Example

```
> vigbrg set -v 4 -w 1 -l 1 -e 1
[WAN1] IPv4 bridge is enable. Set subnet[LAN1]
```

Telnet Command: vigbrg status

This command can show whether the Vigor Bridge Function is enabled or disabled.

Example

```
> vigbrg status
%Vigor Bridge Function is enable!

%Wan1 management is disable!
```

Telnet Command: vigbrg cfgip

This command allows users to transfer a bridge modem into ADSL router by accessing into and adjusting specified IP address. Users can access into Web UI of the router to manage the router through the IP address configured here.

Syntax

vigbrg cfgip *[IP Address]*

Syntax Description

Parameter	Description
IP Address	It means to type an IP address for users to manage the router.

Example

```
> vigbrg cfgip 192.168.1.15
> vigbrg cfgip ?
% Vigor Bridge Config IP,
% Now: 192.168.1.15
```

Telnet Command: vigbrg wanstatus

This command can display the existed WAN connection status for the modem (change from ADSL router into bridge modem), including index number, MAC address, Stamp Time, PVC, VLAN port for Vigor Bridge Function..

Example

```
> vigbrg wanstatus
Vigor Bridge: Running
WAN mac table:
Index  MAC Address          Stamp Time      PVC          VLan
    Port
```

Telnet Command: vigbrg wlanstatus

This command can display the existed WLAN connection status for the modem (change from router into bridge modem), including index number, MAC address, Stamp Time, PVC, VLAN port for Vigor Bridge Function.

Example

```
> vigbrg wlanstatus
Vigor Bridge: Running
WAN mac table:
Index  MAC Address          Stamp Time      PVC      VLan    Port
```

Telnet Command: vlan group

This command allows you to set VLAN group. You can set four VLAN groups. Please run *`vlan restart`* command after you change any settings.

Syntax

vlan group *id [set/set_ex] [p1/p2/p3/p4/s1/s2/s3/s4]*

Syntax Description

Parameter	Description
id	It means the group 0 to 7 for VLAN.
set	It indicates each port can join more than one VLAN group.
set_ex	It indicates each port can join one VLAN group at one time.
p1/p2/p3/p4	It indicates LAN port 1 to LAN port 4. To group LAN1, LAN2, LAN3 and/or LAN4 under one VLAN group, please type the port number(s) you want.
s1/s2/s3/s4	It is only available for WALN models.

Example

```
> vlan group 3 set p1 s3 s4
 VLAN  p1   p2  p3   p4  s1   s2  s3   s4
 -----------------------------------------------
  3    V                        V   V
>
```

Telnet Command: vlan off

This command allows you to disable VLAN function.

Syntax

vlan off

Example

```
> vlan off
 VLAN is Disable!
 Force subnet LAN2/3/4 to be disabled!!
```

Telnet Command: vlan on

This command allows you to enable VLAN function.

Syntax

vlan on

Example

```
> vlan on
 VLAN is Enable!
```

Telnet Command: vlan pri

This command is used to define the priority for each VLAN profile setting.

Syntax

vlan pri *n pri_no*

Syntax Description

Parameter	Description
n	It means VLAN ID number.

	n=VLAN ID number (from 0 to 7).
pri_no	It means the priority of VLAN profile. pri_no=0 ~7 (from none to highest priority).

Example

```
> vlan pri 1 2
 VLAN1: Priority=2
```

Telnet Command: vlan restart

This command can make VLAN settings restarted with newest configuration.

Syntax

vlan restart

Example

```
> vlan restart ?
 VLAN restarts!!!
```

Telnet Command: vlan status

This command display current status for VLAN.

Syntax

vlan status

Example

```
> vlan status
VLAN  is Enable :
------------------------------------------------------
VLAN Enable VID  Pri   p1 p2 p3 p4 s1 s2 s3 s4  subnet
------------------------------------------------------
 0    OFF    0   0                        1:LAN1
 1    OFF    0   2                        1:LAN1
 2    OFF    0   0                        1:LAN1
 3    OFF    0   0   V              V  V   1:LAN1
 4    OFF    0   0                        1:LAN1
 5    OFF    0   0                        1:LAN1
 6    OFF    0   0                        1:LAN1
 7    OFF    0   0                        1:LAN1
------------------------------------------------------
 Note: they are only untag for s1/s2/s3/s4, but they can join tag vlan
with lan
ports.
 Permit untagged device in P1 to access router: ON.
```

Telnet Command: vlan subnet

This command is used to configure the LAN interface used by the VLAN group.

Syntax

vlan subnet group_id *[1/2/3/4/5/6/7/8]*

Syntax Description

Parameter	Description
[1/2/3/4/5/6/7/8]	It means interfaces, LAN1 ~ LAN8.

Example

```
> vlan subnet group_id 2
% Vlan Group-0 using LAN2      !


 This setting will take effect after rebooting.
 Please use "sys reboot" command to reboot the router.
```

Telnet Command: vlan submode

This command changes the VLAN encapsulation mechanisms in the LAN driver.

Syntax

vlan submode *[on|off|status]*

Syntax Description

Parameter	Description
on	It means to enable the promiscuous mode.
off	It means to enable the normal mode.
status	It means to display if submode is normal mode or promiscuous mode.

Example

```
> vlan submode status
% vlan subnet mode : normal mode
> vlan submode on
% vlan subnet mode modified to promiscuous mode.
> vlan submode status
% vlan subnet mode : promiscuous mode
```

Telnet Command: vlan tagged

This command is used to enable or disable the incoming of untagged packets.

Syntax

vlan tagged *[n] [on/off]*

vlan tagged *[unlimited] [on/off]*

vlan tagged *[p1_untag] [on/off]*

Syntax Description

Parameter	Description
n	It means VLAN channel. The ranage is from 0 to 7.
on/off	It means to enable/disable the tagged VLAN.

[unlimited] [on/off]	unlimited on: It allows the incoming of untagged packets even all VLAN are tagged. unlimited off: It does not allows the incoming of untagged packets.
[p1_untag] [on/off]	P1_untag on: It allows the incoming of untagged packets form LAN port 1. P1_untag off: It does not allow the incoming of untagged packets from LAN port 1.

Example

```
> vlan tagged unlimited on
 unlimited mode is ON
```

Telnet Command: vlan vid

This command is used to configure VID number for each VLAN channel.

Syntax

vlan vid *n vid_no*

Syntax Description

Parameter	Description
n	It means VLAN channel. The ranage is from 0 to 7.
vid_no	It means the value of VLAN ID. Type the value as the VLAN ID number. The range is form 0 to 4095.

Example

```
> vlan vid 1 4095
 VLAN1, vid=4095
```

Telnet Command: vlan sysvid

This command is used to modify and show the scope (reserved 78) of the VLAN IDs used internally by the system.

Syntax

vlan sysvid *[show* | *n]*

Syntax Description

Parameter	Description
show	It means to show the scope of VLAN ID used internally.
n	It means the value to be set as VLAN ID. The range is from 0 to 4018.

Example

```
> vlan sysvid 100
 You have set system VLAN ID to range: 100 ~ 177,
 We recommend that you reboot the system now.

> vlan sysvid 200
```

```
 You have set system VLAN ID to range: 200 ~ 263,
 We recommend that you reboot the system now.
> vlan sysvid show
 The system VLAN ID is in range: 200 ~ 263
```

Telnet Command: vpn l2lset

This command allows users to set advanced parameters for LAN to LAN function.

Syntax

vpn l2lset *[list index]* **peerid** *[peerid]*

vpn l2lset *[list index]* **localid** *[localid]*

vpn l2lset *[list index]***main** *[auto/proposal index]*

vpn l2lset *[list index]* **aggressive** *[g1/g2]*

vpn l2lset *[list index]***pfs** *[on/off]*

vpn l2lset *[list index]* **phase***1[lifetime]*

vpn l2lset *[list index]* **phase2***[lifetime]*

Syntax Description

Parameter	Description
list index	It means the index number of L2L (LAN to LAN) profile.
peerid	It means the peer identity for aggressive mode.
localid	It means the local identity for aggressive mode.
main	It means to choose proposal for main mode.
auto index	It means to choose default proposals.
proposal index	It means to choose specified proposal.
aggressive	It means the chosen DH group for aggressive mode
pfs	It means “perfect forward secrete”.
on/off	It means to turn on or off the PFS function.
phase1	It means phase 1 of IKE.
lifetime	It means the lifetime value (in second) for phase 1 and phase 2.
phase2	It means phase 2 of IKE.

Example

```
> VPN l2lset 1 peerid 10226
```

Telnet Command: vpn dinset

This command allows users to configure setting for remote dial-in VPN profile.

Syntax

vpn dinset <*list index*>

vpn dinset <*list index*> <*on/off*>

vpn dinset <*list index*> **motp** <*on/off*>

vpn dinset <*list index*> **pin_secret** <*pin*> <*secret*>

Syntax Description

Parameter	Description
<list index>	It means the index number of the profile.
<on/off>	It means to enable or disable the profile. on – Enable. off – Disable.
motp <on/off>	It means to enable or disable the authentication with mOTP function. on – Enable. off – Disable.
pin_secret<pin> <secret>	It means to set PIN code with secret. *<pin>* **-** Type the code for authentication (e.g, 1234). *<secret>* - Use the 32 digit-secret number generated by mOTP in the mobile phone (e.g., e759bb6f0e94c7ab4fe6)

Example

```
> vpn dinset 1

Dial-in profile index 1

Profile Name: ???
Status: Deactive

Mobile OTP: Disabled

Password:

Idle Timeout: 300 sec

> vpn dinset 1 on
% set profile active

> vpn dinset 1 motp on
% Enable Mobile OTP mode!>
> vpn dinset 1 pin_secret 1234 e759bb6f0e94c7ab4fe6
> vpn dinset 1

Dial-in profile index 1

Profile Name: ???
Status: Active

Mobile OTP: Enabled

PIN: 1234

Secret: e759bb6f0e94c7ab4fe6

Idle Timeout: 300 sec
```

Telnet Command: vpn subnet

This command allows users to specify a subnet selection for the specified remote dial-in VPN profile.

Syntax

vpn subnet *[index] [1/2/3/4/5/6]*

Syntax Description

Parameter	Description
<index>	It means the index number of the VPN profile.
<1/2/3/4/5/6>	1 – it means LAN1 2 – it means LAN2. 3 – it means LAN3 4 – it means LAN4. 5 – it means LAN51 6 – it means LAN6.

Example

```
> vpn subnet 1 2
>
```

Telnet Command: vpn setup

This command allows users to setup VPN for different types.

Syntax

Command of PPTP Dial-Out

vpn setup *<index> <name>* **pptp_out** *<ip> <usr> <pwd> <nip> <nmask>*

Command of IPSec Dial-Out

vpn setup *<index> <name>* **ipsec_out** *<ip> <key> <nip> <nmask>*

Command of L2Tp Dial-Out

vpn setup *<index> <name>* **l2tp_out** *<ip> <usr> <pwd> <nip> <nmask>*

Command of Dial-In

vpn setup *<index> <name>* **dialin** *<ip> <usr> <pwd> <key> <nip> <nmask>*

Syntax Description

Parameter	Description
For PPTP Dial-Out	
<index>	It means the index number of the profile.
<name>	It means the name of the profile.
<ip>	It means the IP address to dial to.
<usr> <pwd>	It means the user and the password required for the PPTP connection.
<nip> <nmask>	It means the remote network IP and the mask. e.g., vpn setup 1 name1 pptp_out 1.2.3.4 vigor 1234 192.168.1.0 255.255.255.0

For IPsec Dial-Out	
<index>	It means the index number of the profile.
<name>	It means the name of the profile.
<ip>	It means the IP address to dial to.
<key>	It means the value of IPsec Pre-Shared Key.
<nip> <nmask>	It means the remote network IP and the mask. e.g., vpn setup 1 name1 ipsec_out 1.2.3.4 1234 192.168.1.0 255.255.255.0
For L2TP Dial-Out	
<index>	It means the index number of the profile.
<name>	It means the name of the profile.
<ip>	It means the IP address to dial to.
<usr> <pwd>	It means the user and the password required for the L2TP connection.
<nip> <nmask>	It means the remote network IP and the mask. e.g.,, vpn setup 1 name1 l2tp_out 1.2.3.4 vigor 1234 192.168.1.0 255.255.255.0
For Dial-In	
<index>	It means the index number of the profile.
<name>	It means the name of the profile.
<ip>	It means the IP address allowed to dial in.
<usr> <pwd>	It means the user and the password required for the PPTP/L2TP connection.
<key>	It means the value of IPsec Pre-Shared Key.
<nip> <nmask>	It means the remote network IP and the mask. e.g., vpn setup 1 name1 dialin 1.2.3.4 vigor 1234 abc 192.168.1.0 255.255.255.0

Example

```
> vpn setup 1 name1 dialin 1.2.3.4 vigor 1234 abc 192.168.1.0
255.255.255.0
% Profile Change Log ...

% Profile Index : 1
% Profile Name : name1
% Username : vigor
% Password : 1234
% Pre-share Key : abc
% Call Direction : Dial-In
% Type of Server :  ISDN PPTP IPSec L2TP
% Dial from : 1.2.3.4
% Remote NEtwork IP : 192.168.1.0
% Remote NEtwork Mask : 255.255.255.0
>
```

Telnet Command: vpn option

This command allows users to configure settings for LAN to LAN profile.

Syntax

vpn option *<index> <cmd1>=<param1> [<cmd2>=<para2> | …]*

Syntax Description

Parameter	Description
<index>	It means the index number of the profile. Available index numbers: 1 ~ 32
For Common Settings	
<index>	It means the index number of the profile.
pname	It means the name of the profile.
ena	It means to enable or disable the profile. on – Enable off - Disable
thr	It means the way that VPN connection passes through. Available settings are wlf, wlo, w2f, and w2o. w1f – WAN1 First. w1o – WAN1 Only. w2f – WAN2 First. w2o – WAN2 Only.
nnpkt	It means the NetBios Naming Packet. on – Enable the function to pass the packet. off – Disable the function to block the packet.
dir	It means the call direction. Available settings are b, o and i. b – Both o – Dial-Out i – Dial-In.
idle=[value]	It means Always on and Idle Time out. Available values include: -1 – it means always on for dial-out. 0 – it means always on for dial-in. Other numbers (e.g., idle=200, idle=300, idle=500) mean the router will be idle after the interval (seconds) configured here.
palive	It means to enable PING to keep alive. -1 – disable the function. 1,2,3,4 – Enable the function and PING IP 1.2.3.4 to keep alive.
For Dial-Out Settings	
ctype	It means "Type of Server I am calling". "ctype=t" means PPTP. "ctype=s" means IPSec. "ctype= l" means L2TP(IPSec Policy None). "ctype= l1" means L2TP(IPSec Policy Nice to Have). "ctype= l2" means L2TP(IPSec Policy Must).
dialto	It means Server IP/Host Name for VPN. (such as draytek.com or 123.45.67.89).

ltype	It means Link Type. "ltype=0" means "Disable". "ltype=1" means "64kbps". "ltype=2" means "128kbps". "ltype=3" means "BOD".
oname	It means Dial-Out Username. "oname=admin" means to set Username = admin.
opwd	It means Dial-Out Password "opwd=1234" means to set Password = 1234.
pauth	It means PPP Authentication. "pauth=pc" means to set PPP Authentication = PAP&CHAP. "pauth=p" means to set PPP Authentication = PAP Only
ovj	It means VJ Compression. "ovj=on/off" means to enable/disable VJ Compression.
okey	It means IKE Pre-Shared Key. "okey=abcd" means to set IKE Pre-Shared Key = abcd.
ometh	It means IPSec Security Method. "ometh=ah/" means AH. "ometh=espd/espda/" means ESP DES without/with Authentication. "ometh=esp3/esp3a/" means ESP 3DES without/with Authentication. "ometh=espa/espaa" means ESP AES without/with Authentication.
sch	It means Index(1-15) in Schedule Setup. sch=1,3,5,7 Set schedule 1->3->5->7
rcallb	It means Require Remote to Callback. "rcallb=on/off" means to enable/disable Set Require Remote to Callback.
ikeid	It means IKE Local ID. "ikeid=vigor" means Set Local ID = vigor.
For Dial-In Settings	
itype	It means Allowed Dial-In Type. Available settings include: "itype=t" means PPTP. "itype=s" means IPSec. "itype=L1"means L2TP (None). "itype=L1" means L2TP(Nice to Have). "itype=l2" means L2TP(Must).
peer	It means specify Peer VPN Server IP for Remote VPN Gateway. Type "203.12.23.48" means to allow VPN dial-in with IP address of 203.12.23.48. Type "off" means any remote IP is allowed to dial in.
peerid	It means the peer ID for Remote VPN Gateway. Type "draytek" means the word is used as local ID.
iname	It means Dial-in Username. "iname=admin" means to set username as "admin".
ipwd	It means Dial-in Password. "ipwd=1234" means to set password as "1234".
ivj	It means VJ Compression. "ivj=on/off" means to enable /disable VJ Compression.

ikey	It means IKE Pre-Shared Key. “ikey=abcd” means to set IKE Pre-Shared Key = abcd.
imeth	It means IPSec Security Method “imeth=h” means “Allow AH”. “imeth=d” means “Allow DES”. “imeth=3” means “Allow 3DES”. “imeth=a” means “Allow AES.
For TCP/IP Settings	
mywip	It means My WAN IP. “mywip=1.2.3.4” means to set My WAN IP as “1.2.3.4”.
rgip	It means Remote Gateway IP. “rgip=1.2.3.4” means to set Remote Gateway IP as “1.2.3.4”.
rnip	It means Remote Network IP. “rnip=1.2.3.0” means to set Remote Network IP as “1.2.3.0”.
rnmask	It means Remote Network Mask. “rnmask=255.255.255.0” means to set Remote Network Mask as “255.255.255.0”.
rip	It means RIP Direction. “rip=d” means to set RIP Direction as “Disable”. “rip=t” means to set RIP Direction as “TX”. “rip=r” means to set RIP Direction as “RX”. “rip=b” means to set RIP Direction as “Both”.
mode	It means the option of “From first subnet to remote network, you have to do”. “mode=r” means to set Route mode. “mode=n” means to set NAT mode.
droute	It means to Change default route to this VPN tunnel (Only single WAN supports this). droute=on/off means to enable/disable the function.

Example

```
> vpn option 1 idle=250
% Change Log..

% Idle Timeout = 250
```

Telnet Command: vpn mroute

This command allows users to list, add or delete static routes for a certain LAN to LAN VPN profile.

Syntax

vpn mroute <*index*> **list**

vpn mroute <*index*> **add** <*network ip*>/<*mask*>

vpn mroute <*index*> **del** <*network ip*>/<*mask*>

Syntax Description

Parameter	**Description**

list	It means to display all of the route settings.
add	It means to add a new route.
del	It means to delete specified route.
<index>	It means the index number of the profile. Available index numbers: 1 ~ 32
<network ip>/<mask>	Type the IP address with the network mask address.

Example

```
> vpn mroute 1 add 192.168.5.0/24
% 192.168.5.0/24
% Add new route 192.168.5.0/24 to profile 1
```

Telnet Command: vpn list

This command allows users to view LAN to LAN VPN profiles.

Syntax

vpn list *<index>* **all**

vpn list *<index>***com**

vpn list*<index>***out**

vpn list *<index>* **in**

vpn list*<index>***net**

Syntax Description

Parameter	Description
all	It means to list configuration of the specified profile.
com	It means to list common settings of the specified profile.
out	It means to list dial-out settings of the specified profile.
in	It means to list dial-in settings of the specified profile.
net	It means to list Network Settings of the specified profile.
<index>	It means the index number of the profile. Available index numbers: 1 ~ 32

Example

```
> vpn list 32 all
% Common Settings

% Profile Name            : ???
% Profile Status          : Disable
% Netbios Naming Packet   : Pass
% Call Direction          : Both
% Idle Timeout            : 300
% PING to keep alive      : off

% Dial-out Settings

% Type of Server           : PPTP
% Link Type:               : 64k bps
% Username                 : ???
% Password                 :
% PPP Authentication       : PAP/CHAP
% VJ Compression           : on
% Pre-Shared Key           :
% IPSec Security Method    : AH
% Schedule                 : 0,0,0,0
% Remote Callback          : off
% Provide ISDN Number      : off
% IKE phase 1 mode         : Main mode
% IKE Local ID             :


% Dial-In Settings

--- MORE ---   ['q': Quit, 'Enter': New Lines, 'Space Bar': Next Page] ---
> vpn list 1 com
% Common Settings

% Profile Name           : ???
% Profile Status        : Disable
% Netbios Naming Packet : Pass
% Call Direction        : Both
% Idle Timeout          : 300
% PING to keep alive    : off
>
```

Telnet Command: vpn remote

This command allows users to enable or disable *PPTP/IPSec/L2TP* VPN service.

Syntax

vpn remote *[PPTP/IPSec/L2TP] [on/off]*

Syntax Description

Parameter	Description
PPTP/IPSec/L2TP	There are four types to be selected.
on/off	on – enable VPN remote setting. off – disable VPN remote setting.

Example

```
> vpn remote PPTP on
Set PPTP VPN Service : On

Please restart the router!!
```

Telnet Command: vpn 2ndsubnet

This command allows users to enable second subnet IP as VPN server IP.

Syntax

vpn 2ndsubnet *on*

vpn 2ndsubnet *off*

Syntax Description

Parameter	Description
on/off	It means to enable or disable second subnet.

Example

```
> vpn 2ndsubnet on
%Enable second subnet IP as VPN server IP!
```

Telnet Command: vpn trunk

This command allows users to configure VPN Backup, VPN load balance, GRE over IPsec, and Binding tunnel policy.

Syntax

vpn trunk show_usable

vpn trunk backup *<add/del> <name> <Member#1> <Member#2>*

vpn trunk backup more_syslog *<ON/OFF>*

vpn trunk backup ERD *<name> <Normal/Recover/Resume><second>*

vpn trunk lb *<add/del> <name> <Member#1> <Member#2>*

vpn trunk lb more_syslog *<ON/OFF>*

vpn trunk lb algorithm *<name> <RR>*

vpn trunk lb algorithm *<name><W-RR><Auto> <AccordingRatio> <Member1:Member2>*

vpn trunk lb algorithm *<name><Fastest>*

vpn trunk bind usage *<BindIndex>*

vpn trunk bind show *<LoadBalanceName>*

vpn trunk bind reset_default

vpn trunk bind more_syslog *<ON/OFF>*

vpn trunk bind set *<BindIndex> <ACT> <TrunkName> <Member> <SrcIp:A~B> <DstI p:A~B> <DstPort:A~B> <Proto> <Frag>*

vpn trunk bind insert *<After_BindIndex> <ACT> <TrunkName> <Member> <SrcIp:A~B> <DstIp:A~B> <DstPort:A~B> <Proto> <Frag>*

vpn trunk SetGre show *<Dialout_Index>*

vpn trunk SetGre *<Active/In-active><Dialout_Index><GRE_MyIP><GRE_PeerIP><Logical_Traffic>*

vpn trunk An_Gre GreIPsecAnalyze *<ON/OFF>*

Syntax Description

Parameter	Description
show_usable	Display a list of LAN to LAN dial out profiles.
backup <add/del> <name>	Set multiple VPN tunnels (LAN to LAN profiles) as backup tunnel.

<Member#1> <Member#2>	add/del - Add or delete a profile for used in VPN Trunk. name – Specify the name of the VPN trunk. Member#1 – Inidcate the first LAN to LAN profile. Member#2 – Indicate the second LAN to LAN proifle.
backup ERD <name> <Normal/Recover/Resume>< second>	ERD means Environment Recovers Detection. name – Specify the name of the VPN trunk. Normal – Indicate the Normal mode. All dial-out VPN TRUNK backup profiles will be activated alternatively. Recover – Indicate the duration of VPN backup operation. Resume – When VPN connection breaks down or disconnects, Member 1 will be the top priority for the system to do VPN connection. Second – “0” means to dial each six seconds automatically. “60 ~ 2147483647” means to early handle for less than 30 seconds within designated time.
lb <add/del> <name> <Member#1> <Member#2>	It means to create VPN trunk with load balance. add/del - Add or delete a profile for used in VPN Trunk. name – Specify the name of the VPN trunk. Member#1 – Inidcate the first LAN to LAN profile. Member#2 – Indicate the second LAN to LAN proifle.
lb algorithm <name> <RR/W-RR/Fastest>	Set multiple VPN tunnels for using as traffic load balance tunnel. Such command is to configure the algorithm (with round robin mode) of Load Balance. name – Specify the name of the VPN trunk. RR – It menas round robin mode. All of the dial-out profiles will be taken truns equally.
lb algorithm <name><W-RR><Auto> <AccordingRatio> <Member1:Member2>	Such command is to configure the algorithm (with round robin mode) of Load Balance. name – Specify the name of the VPN trunk. W-RR – It means weighted round robin mod based on speed ratio. ● *Auto - the speed must be based on Lay2.* ● *AccordingRatio – the speed must be based on given ratio.* Member#1 – Inidcate the first LAN to LAN profile. Member#2 – Indicate the second LAN to LAN proifle.
lb algorithm <name><Fastest>	Such command is to configure the algorithm (with fastest mode) of Load Balance. Most of traffics will be led to the channel with the fastest connection. name – Specify the name of the VPN trunk.
bind usage <BindIndex>	Display detailed information for VPN Load Balance Tunnel Bind. BindIndex – Indicate the index number of the tunnle bind.
bind show <LoadBalanceName>	Display the bind information for VPN Load Balance profile. LoadBalanceName – type the name of VPN Load Balance profile
bind reset_default	Reset the bind tunnel for VPN load balance to factory reset settings.
bind set <BindIndex> <ACT> <TrunkName> <Member> <SrcIp:A~B> <DstI p:A~B> <DstPort:A~B> <Proto> <Frag>	Set the binding tunnel policy. BindIndex – Indicate the index number (1 ~ 64) for the tunnel to be bound. ACT – Specify the action. “y” means active; “n” means inactive or delete. TrunkName - Specify the name of the VPN trunk. Member – Specify the index number of the LAN to LAN (dial-out) profile to be bound. SrcIp:A~B – Specify the source IP range (e.g., 192.168.10.0~192.168.10.255.

	DstI p:A~B - Specify the destination IP range (e.g., 192.168.1.0~192.168.1.255. DstPort:A~B – Specify the destination port range (1~65535). Proto – Specify the protocol. 0 – any 1 – ICMP 2 – IGMP 6 – TCP 17 – UDP 255 – TCP/UDP Frag – "ON" means to bind the fragmented packet; "OFF" means not to care. It is the default setting.
bind insert <After_BindIndex> <ACT> <TrunkName> <Member> <SrcIp:A~B> <DstIp:A~B> <DstPort:A~B> <Proto> <Frag>	It is used to insert additional load balance policy into an existing policy. After_BindIndex – Specify an index number that new additional policy should be inserted before. See the following example: *vpn trunk bind insert 1 y vpnlb 2 192.168.10.3~192.168.10.200 192.168.99.200~192.168.99.200 80~80 TCP OFF* ACT – Specify the action. "y" means active; "n" means inactive or delete. TrunkName - Specify the name of the VPN trunk. Member – Specify the index number of the LAN to LAN (dial-out) profile to be bound. SrcIp:A~B – Specify the source IP range (e.g., 192.168.10.0~192.168.10.255. DstI p:A~B - Specify the destination IP range (e.g., 192.168.1.0~192.168.1.255. DstPort:A~B – Specify the destination port range (1~65535). Proto – Specify the protocol. 0 – any 1 – ICMP 2 – IGMP 6 – TCP 17 – UDP 255 – TCP/UDP Frag – "ON" means to bind the fragmented packet; "OFF" means not to care. It is the default setting.
SetGre show <Dialout_Index>	Display the GRE over IPSec settings in specifed LAN to LAN profile. Dialout_Index – Index number of the LAN to LAN (dial-out) profile.
SetGre <Active/In-active><Dialout_Index><GRE_MyIP><GRE_PeerIP><Logical_Traffic>	Active/In-active - Specify the action. "y" means active; "n" means inactive. Dialout_Index – Index number of the LAN to LAN (dial-out) profile. GRE_MyIP –Type the virtual IP for router itself for verified by peer.

	GRE_PeerIP –Type the virtual IP of peer host for verified by router. Logical_Traffic - Specify the action for RFC2890. “y” means active; “n” means inactive.
An_Gre GreIPsecAnalyze *<ON/OFF>*	These commands are used for RD debug.

Telnet Command: vpn NetBios

This command allows users to enable or disable NetBios for Remote Access User Accounts or LAN-to-LAN Profile.

Syntax

vpn NetBios set *<H2l/L2l> <index> <Block/Pass>*

Syntax Description

Parameter	Description
<H2l/L2l>	H2l means Remote Access User Accounts. L2l means LAN-to-LAN Profile. Specify which one will be applied by NetBios.
<index>	The index number of the profile.
<Block/Pass>	**Pass** – Have an inquiry for data transmission between the hosts located on both sides of VPN Tunnel while connecting. **Block** – When there is conflict occurred between the hosts on both sides of VPN Tunnel in connecting, set it block data transmission of Netbios Naming Packet inside the tunnel.

Example

```
> vpn NetBios set H2l 1 Pass
% Remote Dial In Profile Index [1] :
% NetBios Block/Pass: [PASS]
```

Telnet Command: vpn mss

This command allows users to configure the maximum segment size (MSS) for different TCP types.

Syntax

vpn mss show

vpn mss default

vpn mss set *<connection type> <TCP maximum segment size range>*

Syntax Description

Parameter	Description
show	It means to display current setting status.
default	TCP maximum segment size for all the VPN connection will be set as 1360 bytes.
set	Use it to specify the connection type and value of MSS.
<connection type>	1~4 represent various type.

	1 – PPTP 2 – L2TP 3 – IPSec 4 – L2TP over IPSec
<TCP maximum segment size range>	Each type has different segment size range. PPTP – 1 ~ 1412 L2TP – 1 ~ 1408 IPSec – 1 ~ 1381 L2TP over IPSec – 1 ~ 1361

Example

```
>vpn mss set 1 1400
% VPN TCP maximum segment size (MSS) :
  PPTP  = 1400
  L2TP  = 1360
  IPSec = 1360
  L2TP over IPSec  = 1360
>vpn mss show
 VPN TCP maximum segment size (MSS) :
 PPTP  = 1400
 L2TP  = 1360
 IPSec = 1360
 L2TP over IPSec  = 1360
```

Telnet Command: vpn ike

This command is used to display IKE memory status and leakage list.

Syntax

vpn ike -q

Example

```
> vpn ike -q
IKE Memory Status and Leakage List

# of free L-Buffer=95, minimum=94, leak=1
# of free M-Buffer=529, minimum=529 leak=3
# of free S-Buffer=1199, minimum=1198, leak=1
# of free Msgid-Buffer=1024, minimum=1024
```

Telnet Command: vpn Multicast

This command allows users to pass or block the multi-cast packet via VPN**.**

Syntax

vpn Multicast set *<H2l/L2l> <index> <Block/Pass>*

Syntax Description

Parameter	**Description**

<H2l/L2l>	H2l means Host to LAN (Remote Access User Accounts). L2l means LAN-to-LAN Profile.
<index>	The index number of the profile.
<Block/Pass>	Set Block/Pass the Multicast Packets. The default is Block.

Example

```
> vpn Multicast set L2l 1 Pass
% Lan to Lan Profile Index [1] :
% Status Block/Pass: [PASS]
```

Telnet Command: vpn pass2nd

This command allows users to determine if the packets coming from the second subnet passing through current used VPN tunnel.

Syntax

vpn pass2nd*[on]*

vpn pass2nd *[off]*

Syntax Description

Parameter	Description
on/off	on – the packets can pass through NAT. off – the packets cannot pass through NAT.

Example

```
> vpn pass2nd on
% 2nd subnet is allowed to pass VPN tunnel!
```

Telnet Command: vpn pass2nat

This command allows users to determine if the packets passing through by NAT or not when the VPN tunnel disconnects.

Syntax

vpn pass2nat *[on]*

vpn pass2nat *[off]*

Syntax Description

Parameter	Description
on/off	on – the packets can pass through NAT. off – the packets cannot pass through NAT.

Example

```
> vpn pass2nat on
% Packets would go through by NAT when VPN disconnect!!
```

Telnet Command: wan ppp_mru

This command allows users to adjust the size of PPP LCP MRU. It is used for specific network.

Syntax

wan ppp_mru *<WAN interface number> <MRU size >*

Syntax Description

Parameter	Description
<WAN interface number>	Type a number to represent the physical interface. For Vigor130, the number is 1 (which means WAN1).
<MRU size >	It means the number of PPP LCP MRU. The available range is from 1400 to 1600.

Example

```
>wan ppp_mru 1 ?
% Now: 1492

> wan ppp_mru 1 1490
>
> wan ppp_mru 1 ?
% Now: 1490

> wan ppp_mru 1 1492
> wan ppp_mru 1 ?
% Now: 1492
```

Telnet Command: wan mtu/wan mtu2

This command allows users to adjust the size of MTU/MTU2 for WAN.

Syntax

wan mtu *[value]*

wan mtu2 *[value]*

Syntax Description

Parameter	Description
value	It means the number of MTU for PPP. The available range is from 1000 to 1500. For Static IP/DHCP, the maximum number will be 1500. For PPPoE, the maximum number will be 1492. For PPTP/L2TP, the maximum number will be 1460.

Example

```
> wan mtu 1100
> wan mtu ?
Static IP/DHCP (Max MSS: 1500)
PPPoE(Max MSS: 1492)
PPTP/L2TP(Max MSS: 1460)
% wan ppp_mss <MSS size: 1000 ~ 1500>
% Now: 1100
```

Telnet Command: wan DF_check

This command allows you to enable or disable the function of DF (Don't fragment)

Syntax

wan DF_check *[on]*

wan DF_check *[off]*

Syntax Description

Parameter	Description
on/off	It means to enable or disable DF.

Example

```
> wan DF_check on
%DF bit check enable!
```

Telnet Command: wan disable

This command allows you to disable WAN connection.

Example

```
> wan disable WAN
%WAN disabled.
```

Telnet Command: wan enable

This command allows you to disable wan connection.

Example

```
> wan enable WAN
%WAN1 enabled.
```

Telnet Command: wan forward

This command allows you to enable or disable the function of WAN forwarding. The packets are allowed to be transmitted between different WANs.

Syntax

wan forward *[on]*

wan forward *[off]*

Syntax Description

Parameter	Description
on/off	It means to enable or disable WAN forward.

Example

```
> wan forward ?
%WAN forwarding is Disable!
```

```
> wan forward on
%WAN forwarding is enable!
```

Telnet Command: wan status

This command allows you to display the status of WAN connection, including connection mode, TX/RX packets, DNS settings and IP address.

Example

```
> wan status
WAN1: Offline, stall=N
 Mode: ---, Up Time=00:00:00
 IP=---, GW IP=---
 TX Packets=0, TX Rate(Bps)=0, RX Packets=0, RX Rate(Bps)=0
 Primary DNS=0.0.0.0, Secondary DNS=0.0.0.0

PVC_WAN3: Offline, stall=N
 Mode: ---, Up Time=00:00:00
 IP=---, GW IP=---
 TX Packets=0, TX Rate(Bps)=0, RX Packets=0, RX Rate(Bps)=0

PVC_WAN4: Offline, stall=N
 Mode: ---, Up Time=00:00:00
 IP=---, GW IP=---
 TX Packets=0, TX Rate(Bps)=0, RX Packets=0, RX Rate(Bps)=0

PVC_WAN5: Offline, stall=N
 Mode: ---, Up Time=00:00:00
 IP=---, GW IP=---
 TX Packets=0, TX Rate(Bps)=0, RX Packets=0, RX Rate(Bps)=0
```

Telnet Command: wan detect

This command allows you to Ping a specified IP to detect the WAN connection (static IP or PPPoE mode).

Syntax

wan detect *[wan1][on/off/always_on]*

wan detect *[wan1]***target** *[ip addr]*

wan detect *[wan1]***ttl** *[1-255]*

wan detect status

Syntax Description

Parameter	**Description**
on	It means to enable ping detection. The IP address of the target shall be set.
off	It means to enable ARP detection (default).
always_on	disable link detect, always connected(only support static IP)
target	It means to set the ping target.
ip addr	It means the IP address used for detection. Type an IP address in this field.

ttl	It means to set the ping TTL value (work as trace route) If you do not set any value for ttl here or just type 0 here, the system will use default setting (255) as the ttl value.
status	It means to show the current status.

Example

```
> wan detect status
 WAN1: always on
 WAN2: off
 WAN3: off
 WAN4: off
 WAN5: off
> wan detect wan1 target 192.168.1.78
 Set OK

> wan detect wan1 on
 Set OK

> wan detect status
 WAN1: on, Target=192.168.1.78, TTL=255
 WAN2: off
 WAN3: off
 WAN4: off
 WAN5: off
>
```

Telnet Command: wan lb

This command allows you to Enable/Disable for each WAN to join auto load balance member.

Syntax

wan lb *[wan1/wan2/...] on*

wan lb *[wan1/wan2/...] off*

Syntax Description

Parameter	Description
wan1/wan2	It means to specify which WAN will be applied with load balance.
on	It means to make WAN interface as the member of load balance.
off	It means to cancel WAN interface as the member of load balance.

Example

```
> wan lb status
 WAN1: on
 WAN2: on
 WAN3: on
 WAN4: on
 WAN5: on
 WAN6: on
 WAN7: on
```

Telnet Command: wan mvlan

This command allows you to configure multi-VLAN for WAN and LAN. It supports pure bridge mode (modem mode) between Ethernet WAN and LAN port 2~4.

Syntax

wan mvlan *[pvc_no/status/save/enable/disable] [on/off/clear/tag tag_no] [service type/vlan priority] [px ...][Keep Tag]*

Syntax Description

Parameter	Description
pvc_no	It means index number of PVC. There are 10 PVC, 0(Channel-1) to 9(Channel-9) allowed to be configured. However, only 2 to 9 are available for configuration.
status	It means to display the whole Bridge status.
save	It means to save the configuration into flash of Vigor router.
enable/disable	It means to enable/disable the Multi-VLAN function.
on/off	It means to turn on/off bridge mode for the specific channel.
clear	It means to turn off/clear the port.
tag tag_no	It means to tag a number for the VLAN. -1: No need to add tag number. 1-4095: Available setting numbers used as tagged number.
service type	It means to specify the service type for VLAN. 0: Normal. 1: IGMP.
vlan priority	It means to specify the priority for the VALN setting. Range is from 0 to 7.
px	It means LAN port. Available setting number is from 2 to 4. Port number 1 is locked for NAT usage.
Keep Tag	It means Multi-VLAN packets will keep their VLAN headers to LAN.

Example

PVC 7 will map to LAN port 2/3/4 in bridge mode; service type is Normal. No tag added.

```
> wan mvlan 7 on p2 p3 p4
PVC  Bridge  p1 p2 p3 p4 p5 p6   Service Type   Tag    Priority   Keep Tag
 -------------------------------------------------------------------
   7  ON      0  0  1  1  0  0     Normal      0(OFF)     0       OFF
>
```

Telnet Command: wan multifno

This command allows you to specify a channel (in Multi-PVC/VLAN) to make bridge connection to a specified WAN interface.

Syntax

wan multifno *[channel #] [WAN interface #]*

wan multifno *status*

Syntax Description

Parameter	Description
channel #	There are 4 (?) channels including VLAN and PVC. Available settings are: 1=Channel 1 3=Channel 3 4=Channel 4 5=Channel 5
WAN interface #	Type a number to indicate the WAN interface. *1=WAN1*
status	It means to display current bridge status.

Example

```
> wan multifno 5 1
% Configured channel 5 uplink to WAN1
> wan multifno status
% Channel 3 uplink ifno: 3
% Channel 4 uplink ifno: 3
% Channel 5 uplink ifno: 3
% Channel 6 uplink ifno: 3
% Channel 7 uplink ifno: 3
>
```

Telnet Command: wan vlan

This command allows you to tag packets on WAN VLAN with specified number.

Syntax

wan vlan wan *[#]* **adsl tag** *[value]*

wan vlan wan *[#]* **adsl** *[enable|disable]*

wan vlan wan *[#]* **adsl** *pri[value]*

wan vlan wan *[#]* **vdsl tag** *[value]*

wan vlan wan *[#]* **vdsl** *[enable|disable]*

wan vlan wan *[#]* **vdsl** *pri[value]*

wan vlan stat

Syntax Description

Parameter	Description
#	It means the number of WAN interface. 1: means WAN1 2: means WAN2.
value	It means the number to be tagged on packets. The range of the value is between 32 ~ 4095.
enable|disable	It means to enable or disable the WAN interface for VLAN.
stat	It means to display the table of WAN VLAN status.

Example

```
> wan vlan stat
%Interface    Pri     Tag    Enabled
%=====================================
% WAN1 (ADSL)   0      0
% WAN1 (VDSL)   0      0
%WAN2         0      0
```

Telnet Command: wan budget

This command allows you determine the data *traffic volume* for each WAN interface respectively to prevent from overcharges for data transmission by the ISP.

Syntax

wan budget wan *[#] rdate [day] [hour]*

wan budget wan *[#] [enable|disable]*

wan budget wan *[#]* **thres** *[budget limit (MB)]*

wan budget wan *[#]* **gthres** *[budget limit (GB)]*

wan budget wan *[#]* **mode** *[monthly|periodic|none]*

wan budget wan *[#]* **psday** *[th day in periodic]*

wan budget wan *[#]* **action** *[action bitmap]*

wan budget status

Syntax Description

Parameter	Description
wan[#]	Specify the WAN interface.
rdate	Specify the WAN budget refresh time. day – Available settings are from 1 to 30. hour – Available settings are from 1 to 23. E.g., `wan budget wan 1 rdate 5 10` If monthy mode is selected: WAN budget will be refreshed on 5th day at 10:00 in each month If periodic mode is selected: WAN budget will be refreshed every 5 days and 10 hours
enable/disable	enable - Enable the function of wan budget. disable - Disable the function of wan budget.
thres [budget limit (MB)]	Specify the maximum value for WAN budget limit. (Unit: MB) budget limit – Type a number.
gthres [budget limit (GB)]	Specify the maximum value of wan budget limit. (Unit: GB) budget limit – Type a number.
mode [monthly|periodic|none]	Specify the calculation mode (monthly, periodically, or none) for WAN budget.
psday [th day in periodic]	It is used only when mode is set with "periodic". Specify the order of "today" in the cycle. E.g., `wan budget wan 5 psday` → It means "today" is the 5th day in the billing cycle.
action [action bitmap]	Determine the action to be performed when it reaches the WAN budget limit. *action bitmap* – Type a total number of actions to be executed. Different numbers represent different actions. 1: shotdown wan 2: send mail alert 4: send sms alert For example, if you type "5" (5=1+4), the system will send SMS alert when WAN shotdown is detected.

status	Display current configuration status of WAN budget.

Example

```
> wan budget wan 1 action 5
% WAN 1 budget action set to 5
> wan budget wan 1 gthres 10
% WAN 1 budget limit set to 10 GB
```

Telnet Command: wan detect_mtu

This command allows you to run a WAN MTU Discovery. The user can specify an IPv4 target to ping and find the suitable MTU size of the WAN interface.

Syntax

wan detect_mtu -w *[number]* **-i** *[Host/IP address]* **-s** *[base_size]* **-d** *[decrease_size] (-c [count])*

Syntax Description

Parameter	Description
-w [number]	Specify the WAN interface. Value: Type the number of WAN interface. 1: WAN1; 2:WAN2….and etc.
-I [Host/IP address]	Specify the IPv4 target to detect. If can be an IPv4 address or domain name. Host/IP address: Type the IP address/domain name of the target.
-s [base_size]	Set the MTU size base for Discovery. base_size: Available setting is 1000 ~ 1500.
-d [decrease size]	Set the MTU size to decrease between detections. decrease size: Available setting is 1 ~ 100.
-c [count]	Set the maximum times of ping failure during a Discovery. count: Available settings are 1 ~ 10. Default value is 3.

Example

```
> wan detect_mtu -w 2 -i 8.8.8.8 -s 1500 -d 30 -c 10
 detecting  mtu size:1500!!!

 mtu size:1470!!!
```

Telnet Command: wan detect_mtu6

This command allows you to run a WAN MTU Discovery. The user can specify an IPv6 target to ping and find the suitable MTU size of the WAN interface.

Syntax

wan detect_mtu6 -w *[number]* **-i** *[IPv6 address]* **-s** *[base_size]*

Syntax Description

Parameter	Description
-w [number]	Specify the WAN interface number: Type the number of WAN interface. 1: WAN1; 2:WAN2….and etc.
-I [IPv6 address]	Specify the IPv6 target to detect. It must be an IPv6 IP address. IPv6 address: Type the IPv6 address of the target.
-s [base_size]	Specify the size of MTU. base_size: Available setting is 1000 ~ 1500.

Example

```
> wan detect_mtu6 -w 1 -i 2404:6800:4008:c06::5e -s 1500
>
```

Telnet Command: wptl

This command is used to specify an URL for accessing into or display a message when a wireless user connects to Internet through this router.

Syntax

wptl -p *<profile> [-l <lan>] [-s <ssid>] [-m <message>* | *-u <url>* | *-f <url>] [-e* | *-d]*

Syntax Description

Parameter	Description
profile	It means to specify one of the SSID profiles for configuration. The range is from 1 to 4.
-l <lan>	It means to specify the LAN interface for applying the function. lan1 and lan2: -l 1,2
-s <ssid>	It means to specify the WLAN interface (SSID1 ~ SSID4) for applying the function.
-m <message>	Redirect to message.
-u <url>	Redirect to url.
-f <url>	Redirect to url and force the user to click on the button to proceed.
-e	Enable the profile.
-d	Disable the profile.
-i	Display the content of the profile.
-c	Reset all of the settings.
-x <0/1/2>	Change the priority of the profile. 0:none 1:wptl 2:usermgt
-h<0/1>	Disable(0)/enable(1) redirection of HTTPS.

Example

```
>  wptl -e -p 1 -l 1,2 -s 1 -u http://www.draytek.com
Profile 1 enable ... [OK]
Applied LAN interfaces ... [OK]
Applied WLAN interfaces ... [OK]
Redirect to URL mode ... [OK]
>
```

Telnet Command: wl acl

This command allows the user to configure wireless access control settings.

Syntax

wl acl enable *[ssid1 ssid2 ssid3 ssid4]*

wl acl disable *[ssid1 ssid2 ssid3 ssid4]*

wl acl add *[MAC] [ssid1 ssid2 ssid3 ssid4] [isolate]*

wl acl del *[MAC]*

wl acl mode *[ssid1 ssid2 ssid3 ssid4] [white/black]*

wl acl show

wl acl showmode

wl acl clean

Syntax Description

Parameter	Description
enable [ssid1 ssid2 ssid3 ssid4]	It means to enable the settings for SSID1, SSID2, SSID3 and SSID4.
disable [ssid1 ssid2 ssid3 ssid4]	It means to disable the settings for SSID1, SSID2, SSID3 and SSID4.
add [MAC] [ssid1 ssid2 ssid3 ssid4] [isolate]	It means to associate a MAC address to certain SSID interfaces' access control settings. The isolate setting will limit the wireless client's network capabilities to accessing the wireless LAN only. [MAC] format: xx-xx-xx-xx-xx-xx or xx:xx:xx:xx:xx:xx or xx.xx.xx.xx.xx.xx
del [MAC]	It means to delete a MAC address entry defined in the access control list.
mode [ssid1 ssid2 ssid3 ssid4] [white/black]	It means to set white/black list for each SSID.
wl acl show	It means to show access control status.
wl acl showmode	It means to show the mode for each SSID.
wl acl clean	It means to clean all access control setting.

Example

```
> wl acl showmode
 ssid1: none
 ssid2: none
 ssid3: none
 ssid4: none
> wl acl add 00-50-70-ff-12-70
 Set Done !!
> wl acl add 00-50-70-ff-12-70 ssid1 ssid2 isolate
 Set Done !!
> wl acl show
 ----------Enable Mac Address Filter---------
 ssid1: dis   ssid2: dis   ssid3: dis   ssid4: dis
 ----------MAC Address Filter----------
 Index   Attribute      MAC Address       Associated SSIDs
   0                  00:50:70:ff:12:70   ssid1 ssid2 ssid3 ssid4
   1       s          00:50:70:ff:12:70   ssid1 ssid2

 s: Isolate the station from LAN
>
```

Telnet Command: wl config

This command allows users to configure general settings and security settings for wireless connection.

Syntax

wl config mode *[value]*

wl config mode show

wl config channel *[number]*

wl config preamble *[enable]*

wl config txburst *[enable]*

wl config ssid *[ssid_num enable ssid_name [hidden_ssid]]*

wl config security *[SSID_NUMBER] [mode]*

wl config ratectl *[ssid_num enable upload download]*

wl config isolate *[ssid_num lan member]*

Syntax Description

Parameter	Description
mode[value]	It means to select connection mode for wireless connection. Available settings are: "11bgn", "11gn", "11n", "11bg", "11g", or "11b".
mode show	It means to display what the current wireless mode is.

channel [number]	It means the channel of frequency of the wireless LAN.
	The available settings are 0,1,2,3,4,5,6,7,8,9,10,11,12 and 13.
	number=0, means Auto
	number=1, means Channel 1
	….
	number=13, means Channel 13.

preamble [enable]	It means to define the length of the sync field in an 802.11 packet. Most modern wireless network uses short preamble with 56 bit sync field instead of long preamble with 128 bit sync field. However, some original 11b wireless network devices only support long preamble. 0: disable to use long preamble. 1: enable to use long preamble.
txburst [enable]	It means to enhance the performance in data transmission about 40%* more (by enabling **Tx Burst**). It is active only when both sides of Access Point and Station (in wireless client) invoke this function at the same time. 0: disable the function. 1: enable the funciton.
ssid[ssid_num enable ssid_name [hidden_ssid]]	It means to set the name of the SSID, hide the SSID if required. *ssid_num:* Type 1, 2, 3 or 4 to specify SSID1, SSID2, SSID3 or SSID4. *ssid_name*: Give a name for the specified SSID. *hidden_ssid*: Type 0 to hide the SSID or 1 to display the SSID
Security [SSID_NUMBER] [mode][key][index]	It means to configure security settings for the wirelesss connection. *SSID_NUMBER*: Type 1, 2, 3 or 4 to specify SSID1, SSID2, SSID3 or SSID4. *mode*: Available settings are: disable: No security. wpa1x: WPA/802.1x Only wpa21x: WPA2/802.1x Only

	wpamix1x: Mixed (WPA+WPA2/802.1x only) wep1x: WEP/802.1x Only wpapsk: WPA/PSK wpa2psk: WPA2/PSK wpamixpsk: Mixed (WPA+WPA2)/PSK wep: WEP *key, index*: Moreover, you have to add keys for *wpapsk, wpa2psk, wpamixpsk* and *wep*, and specify index number of schedule profiles to be followed by the wireless connection. WEP keys must be in 5/13 ASCII text string or 10/26 Hexadecimal digit format; WPA keys must be in 8~63 ASCII text string or 64 Hexadecimal digit format.
ratectl [ssid_num enable upload download]	It means to set the rate control for the specified SSID. *ssid_num:* Choose 1, 2, 3 or 4 to specify SSID1, SSID2, SSID3 or SSID4. *enable*: It means to enable the function of the rate control for the specified SSID. 0: disable and 1:enable. *upload*: It means to configure the rate control for data upload. The unit is kbps. *download*: It means to configure the rate control for data download. The unit is kbps.
isolate [ssid_num lan member]	It means to isolate the wireless connection for LAN and/or Member. *lan* – It can make the wireless clients (stations) with remote-dial and LAN to LAN users not accessing for each other. *member* – It can make the wireless clients (stations) with the same SSID not accessing for each other.

Example

```
> wl config mode 11bgn
 Current mode is 11bgn
% <Note> Please restart wireless after you set the channel
> wl config channel 13
 Current channel is 13
% <Note> Please restart wireless after you set the channel.
> wl config preamble 1
 Long preamble is enabled
% <Note> Please restart wireless after you set the parameters.
> wl config ssid 1 enable dray
 SSID  Enable  Hide_SSID  Name
 1     1       0          dray
% <Note> Please restart wireless after you set the parameters.
> wl config security 1 wpa1x
%% Configured Wlan Security Setting:
% SSID1
%%  Mode: wpa1x
%% Wireless card must be reset for configurations to take effect
%% (Telnet Command: wl restart)
```

Telnet Command: wl set

This command allows users to configure basic wireless settings.

Syntax

wl set *[SSID] [CHAN[En]]*

wl set txburst *[enable]*

Syntax Description

Parameter	Description
SSID	It means to type the SSID for the router. The maximum character that you can use is 32.
CHAN[En]	It means to specify required channel for the router. *CHAN:* The range for the number is between 1 ~ 13. *En*: type *on* to enable the function; type *off* to disable the function.
txburst [enable]	It means to enhance the performance in data transmission about 40%* more (by enabling **Tx Burst**). It is active only when both sides of Access Point and Station (in wireless client) invoke this function at the same time. 0: disable the function. 1: enable the function.

Example

```
> wl set MKT 2 on
% New Wlan Setting is:
% SSID=MKT
% Chan=2
% Wl is Enable
```

Telnet Command: wl act

This command allows users to activate wireless settings.

Syntax

wl act *[En]*

Syntax Description

Parameter	Description
En	It means to enable or disable the function of VPN isolation. 0: diable 1: enable

Example

```
> wl act on
% Set Wlan to Enable.
```

Telnet Command: wl iso_vpn

This command allows users to activate the function of VPN isolation.

Syntax

wl iso_vpn *[ssid] [En]*

Syntax Description

Parameter	Description
ssid	It means the number of SSID.

	1: SSID1 2: SSID2 3: SSID3 4: SSID4
En	It means to enable or disable the function of VPN isolation. 0: disable 1: enable

Example

```
> wl iso_vpn 1 on
% ssid: 1 isolate vpn on :1
```

Telnet Command: wl wpa

This command allows you to configure WPA wireless settings.

Syntax

wl wpa *1/2/3*

Syntax Description

Parameter	Description
wl wpa	Type 1/2/3 to represent different WPA modes. 1 – means WPA+WPA2 2 – means WPA2 Only 3 – means WPA Only

Example

```
> wl wpa 1
>
```

Telnet Command: wl wmm

This command allows users to set WMM for wireless connection. It defines the priority levels for four access categories derived from 802.1d (prioritization tabs).

Syntax

wl wmm ap *QueIdx Aifsn Cwmin Cwmax Txop ACM*

wl wmm bss *QueIdx Aifsn Cwmin Cwmax Txop ACM*

wl wmm ack *Que0_Ack Que1_Ack Que2_Ack Que3_Ack*

wl wmm enable *SSID0 SSID1 SSID2 SSID3*

wl wmm apsd *value*

wl wmm show

Syntax Description

Parameter	Description
ap	It means to set WMM for access point.
bss	It means to set WMM for wireless clients.
ack	It means to map to the Ack policy settings of AP WMM.

enable	It means to enable the WMM for each SSID. 0: disable 1: enable
Apsd [value]	It means to enable / disable the ASPD(automatic power-save delivery) function. 0: disable 1: enable
show	It displays current status of WMM.
QueIdx	It means the number of the queue which the WMM settings will be applied to. There are four queues, best effort, background, voice, and video.
Aifsn	It controls how long the client waits for each data transmission.
Cwmin/ Cwmax	**CWMin** means contention Window-Min and **CWMax** means contention Window-Max. Specify the value ranging from 1 to 15.
Txop	It means transmission opportunity. Specify the value ranging from 0 to 65535.
ACM	It can restrict stations from using specific category class if it is enabled. 0: disable 1: enable

Example

```
> wl wmm ap 0 3 4 6 0 0
 QueIdx=0: APAifsn=3,APCwmin=4,APCwmax=6, APTxop=0,APACM=0
> wl wmm enable 1 0 1 0
 WMM_SSID0 =1, WMM_SSID1 =0,WMM_SSID2 =1,WMM_SSID3 =0
> wl wmm show
 Enable WMM: SSID0 =1, SSID1 =0,SSID2 =1,SSID3 =0
 APSD=0
 QueIdx=0: APAifsn=3,APCwmin=4,APCwmax=6, APTxop=0,APACM=0
 QueIdx=1: APAifsn=7,APCwmin=4,APCwmax=10, APTxop=0,APACM=0
 QueIdx=2: APAifsn=1,APCwmin=3,APCwmax=4, APTxop=94,APACM=0
 QueIdx=3: APAifsn=1,APCwmin=2,APCwmax=3, APTxop=47,APACM=0
 QueIdx=0: BSSAifsn=3,BSSCwmin=4,BSSCwmax=10, BSSTxop=0,BSSACM=0
 QueIdx=1: BSSAifsn=7,BSSCwmin=4,BSSCwmax=10, BSSTxop=0,BSSACM=0
 QueIdx=2: BSSAifsn=2,BSSCwmin=3,BSSCwmax=4, BSSTxop=94,BSSACM=0
 QueIdx=3: BSSAifsn=2,BSSCwmin=2,BSSCwmax=3, BSSTxop=47,BSSACM=0
 AckPolicy[0]=0: AckPolicy[1]=0,AckPolicy[2]=0,AckPolicy[3]=0
```

Telnet Command: wl ht

This command allows you to configure wireless settings.

Syntax

wl ht bw *value*

wl ht gi *value*

wl ht badecline *value*

wl ht autoba *value*

wl ht rdg *value*

wl ht msdu *value*

wl ht txpower *value*

wl ht antenna *value*

wl ht greenfield *value*

Syntax Description

Parameter	Description
wl ht bw value	The value you can type is 0 (for BW_20) and 1 (for BW_40).
wl ht gi value	The value you can type is 0 (for GI_800) and 1 (for GI_4001)
wl ht badecline value	The value you can type is 0 (for disabling) and 1 (for enabling).
wl ht autoba value	The value you can type is 0 (for disabling) and 1 (for enabling).
wl ht rdg value	The value you can type is 0 (for disabling) and 1 (for enabling).
wl ht msdu value	The value you can type is 0 (for disabling) and 1 (for enabling).
wl ht txpower value	The value you can type ranges from 1 – 6 (level).
wl ht antenna value	The value you can type ranges from 0-3. 0: 2T3R 1: 2T2R 2: 1T2R 3: 1T1R
wl ht greenfield value	The value you can type is 0 (for mixed mode) and 1 (for green field).

Example

```
> wl ht bw value 1
 BW=0
 <Note> Please restart wireless after you set new parameters.
> wl restart
 Wireless restart................
```

Telnet Command: wl restart

This command allows you to restart wireless setting.

Example

```
> wl restart
 Wireless restart................
```

Telnet Command: wl wds

This command allows you to configure WDS settings.

Syntax

wl wds mode *[value]*

wl wds security *[value]*

wl wds ap *[value]*

wl wds hello *[value]*

wl wds status

wl wds show

wl wds mac *[value]*

wl wds flush

Syntax Description

Parameter	Description
mode [value]	It means to specify connection mode for WDS. [value]: Available settings are : d: Disable b: Bridge r: Repeapter
security [value]	It means to configure security mode with encrypted keys for WDS. *mode*: Available settings are: disable: No security. wep: WEP wpapsk [key]: WPA/PSK wpa2psk [key]: WPA2/PSK *key*: Moreover, you have to add keys for *wpapsk, wpa2psk,* and *wep*, and specify index number of schedule profiles to be followed by the wireless connection. WEP keys must be in 5/13 ASCII text string or 10/26 Hexadecimal digit format; WPA keys must be in 8~63 ASCII text string or 64 Hexadecimal digit format. e.g., *wl dual wds security disable* *wl dual wds security wep 12345* *wl dual wds security wpa2psk 12345678*
ap [value]	It means to enable or disable the AP function. Value: 1 – enable the function. 0 – disable the function.
hello [value]	It means to send hello message to remote end (peer). Value: 1 – enable the function. 0 – disable the function.
status	It means to display WDS link status for 2.4GHz connection.
show	It means to display current WDS settings.
mac add [index addr]	add *[index addr] – A*dd the peer MAC entry in Repeater/Bridge WDS MAC table.
mac clear/disable/enable [index/all]	clear/disable/enable *[index/all]*- Clear, disable, enable the specifed or all MAC entries in Repeater/Bridge WDS MAC table. e.g, *wl dual wds mac enable 1*
flush	It means to reset all WDS setting.

Example

```
> wl wds status
Please enable WDS hello function first.

> wl wds hello 1
% <Note> Please restart router after you set the parameters.

> wl wds status
```

Telnet Command: wl btnctl

This command allows you to enable or disable wireless button control.

Syntax

wl btnctl *[value]*

Syntax Description

Parameter	Description
value	0: disable 1: enable

Example

```
> wl btnctl 1
Enable wireless botton control
Current wireless botton control is on
>
```

Telnet Command: wl iwpriv

This command is reserved for RD debug. Do not use them.

Telnet Command: wl set8021x

This command allows you to configure the external or internal server used by Vigor router for wireless authentication.

Syntax

wl set8021x -t *[0/1]*

wl set8021x -v

Syntax Description

Parameter	Description
-t	Specify the type (external or internal) of wireless authentication server. 0 – Indicate the external RADIUS server. 1- Indicate the local 802.1x server.
-v	View the settings of 802.1x.

Example

```
> wl set8021x -t 1
% <Note> Please restart wireless after you set the parameters.
> wl set8021x -v
 802.1X type is : Local 802.1X
>
```

Telnet Command: radius

This command allows you to configure detailed settings for RADIUS server

Syntax

radius enable *[0/1]*

radius authport *[port_number]*

radius set_auth_method *[method idx]*

radius client *[add] [idx] -i [address] -m [mask] -p [prefix] -l [length] -s [secret]*

radius client *[del] [idx]*

radius show

radius auth *[0/1]*

radius enable_dot1x *[0/1]*

radius set_dot1x_phase1 *-e [method_idx]*

radius set_dot1x_phase1 *-d [method_idx]*

radius set_dot1x_phase2 *-e [method_idx]*

radius set_dot1x_phase2 *-d [method_idx]*

Syntax Description

Parameter	Description
eable[0/1]	Enable (1) or disable (0) the RADIUS server settings.
Authport [port number]	Configure the port number for authentication. Port number: Available range is from 0 to 65535.
set_auth_method[method idx]	Specify which method will be used for authentication. Method idx: "0" is "Only PAP"; "1" is "PAP/CHAP/MS-CHAP/MS-CHAPv2".
client add	Speicfy a client to be authenticated by RADIUS server by typing required information as follows: -i [address]: client IPv4 address(domain) -m [mask]: client IPv4 mask -p [prefix]: client IPv6 prefix -l [length]: client IPv6 prefix length -s [secret]: client secret ex: radius client add 1 -i 192.168.1.1 -m 255.255.255.0 -s 123
client del	Delete related settings for selected client.
idx	Specify the index number of client profiles.
show	Display the status of RADIUS server.
auth [0/1]	This command is used for RD debug only.
-e	Set method for dot1x_phase1 or dot1x_phase2.
-d	Delete method for dot1x_phase1 or dot1x_phase2.
[method_idx]	Specify which method will be used 0: Only PAP 1: PAP/CHAP/MS-CHAP/MS-CHAPv2 At present, dot1x_phase1 can only support PEAP now. So only "1" can be used for it. And, dot1x_phase2 can only support MS-CHAPv2 now. So only "1" can be used for it.

Telnet Command: wol

This command allows you to set the white list of WAN IP addresses/Subnets, that the magic packet from these IP addresses/Subnets will be eligible to pass through NAT and wake up the LAN client. You also need to set NAT rule for LAN client.

Syntax

wol up *[MAC Address]/[IP Address]*

wol fromWan *[on/off/any]*

wol fromWan_Setting *[idx][ip address][mask]*

Syntax Description

Parameter	Description
MAC Address	It means the MAC address of the host.
IP address	It means the LAN IP address of the host. If you want to wake up LAN host by using IP address, be sure that that IP address has been bound with the MAC address (IP BindMAC).
on/off/any	It means to enable or disable the function of WOL from WAN. on: enable off: disable any: It means any source IP address can pass through NAT and wake up the LAN client. This command will allow the user to choose whether WoL packets can be passed from the Internet to the LAN network from a specific WAN interface.
[idx][ip address] [mask]	It means the index number (from 1 to 4). These commands will allow the user to configure the LAN clients that the user may wake up from the Internet through the use of the WoL packet. *ip address* - It means the WAN IP address. *mask* - It means the mask of the IP address.

Example

```
> wol fromWan on
> wol fromWan_Setting 1 192.168.1.45 255.255.255.0
>
```

Telnet Command: user

The command is used to create new user account profiles.

Syntax

User set *[-a|-b|-c|-d|-e|-l|-o|-q|-r|-s|-u]*

user edit *[PROFILE_IDX] [-a|-d|-e|-f|-i|-m|-n|-p|-q|-r|-s|-t|-u|-v|-w|-x|-A|-H|-T|-P|-l]*

user account *[USER_NAME] [-d|-q|-r|-t|-w]*

user setdefault

Syntax Description

Parameter	Description
set	It means to configure general setup for the user management.
edit	It means to modify the selected user profile.

account	It means to set user account.
User Set	
-a[Profile idx][User name][IP_Address]	It means to pass an IP Address. *Profile idx*- type the index number of the selected profile. *User name*- type the user name that you want it to pass. *IP_Address*- type the IP address that you want it to pass.
-c[user name] *-c all*	Clear the user record. *user name* – type the user name that you want to get clear corresponding record. *all* – all of the records will be removed.
-d	Disable User management function.
-e	Enable User management function.
-l all *-l userl* *-l ip*	Show online user. *all* – all of the users will be displayed on the screen. *user name* – type the user name that you want to view on the screen. *ip* – type the IP address that you want to view on the screen.
-o	It means to show user account information. e.g.,*-o*
-q	It means to trigger the alert tool to do authentication.
-r [user name | all]	Remove the user record. *user name* – type the name of the user profile. *all* – all of the user profile settings will be removed.
-s	It means to set login service. 0:HTTPS 1:HTTP e.g.,*-s 1*
-buser [user name] *-b ip [ip address]*	Block specifies user or IP address. *user name* – type the user name that you want to block. *ip address* — type the IP address that you want to block.
-u user [user name] *-u ip [ip address]*	Unblock specifies user or IP address. *user name* – type the user name that you want to unblock. *ip address* — type the IP address that you want to unblock.
User edit	
PROFILE_IDX	Type the index number of the profile that you want to edit.
-a [Param]	Enable/Disable Internal RADIUS server. 0:Disable 1:Enable
-d	Disable User profile function.
-e	Enable User profile function.
-f [Param]	Enable/Disable Local 802.1X user. 0:Disable 1:Enable
-I [Param]	Set the idle time. 0:Unlimited, MAX:255. e.g., *-i 60*
-m [Param]	Set the maximum login user number. 0:Unlimited, MAX:2000.
-n [Param]	It means to set a user name for a profile.

	e.g.,*-n fortest*
-p [Param]	It means to configure user password. e.g., *-p 60fortest*
-q [Param]	It means to set time quota (1 ~ 65535) of the user profile. e.g., *-q 200*
-r [Param]	It means to set data quota (1 ~ 65535) of the user profile. e.g., *-r 1000*
-s [Param]	It means to set schedule index . "sch_idex" could be 1 to 15.
-t [Param]	It means to enable /disable time quota limitation for user profile. 0:Disable 1:Enable
-u [Param]	It means to enable /disable data quota limitation for user profile. 0:Disable 1:Enable
-v	It means to view user profile(s).
-w [Param]	It means to specify the data quota unit (MB/GB). e.g., -w MB
-x [Param]	It means to set external server authentication 0: None 1: LDAP 2: Radius 3: TACACS+ e.g., *-x 2*
-l [Param]	It means to set log type. 0: None 1: Login 2: Event 3: All
-P [Param]	It means to set pop browser tracking window. 0:Disable 1:Enable
-T [Param]	It means to set Authentication by Telnet. 0:Disable 1:Enable
-H [Param]	It means to set Authentication by web page. 0:Disable 1:Enable
-A [Param]	It means to set Authentication by Alert Tool. 0:Disable 1:Enable
User account	
USER_NAME	It means to type a name of the user account.
-d [Param]	It means to enable /disable data quota limitation for user account. 0:Disable 1:Enable
-q [Param]	It means to set account time quota.

	e.g., *-q 200*
-r [Param]	It means to set account data quota. e.g., *-r 1000*
-t [Param]	It means to enable /disable time quota limitation for user account. 0:Disable 1:Enable
-w [Param]	It means to set data quota unit (MB/GB).
setdefault	Setup all of the user profiles to factory default configuration.

Example

```
>user account admin -d 0 -q 200 -r 1000 -t 1 -w MB
 Disable the [admin] data quota limited
```

Telnet Command: appqos

The command is used to configure QoS for APP.

Syntax

appqos view

appqos enable*[0/1]*

appqos traceable *[-v* | *-e AP_INDEX CLASS* | *-d AP_INDEX]*

appqos untraceable

Syntax Description

Parameter	**Description**
view	It means to display current status of APP QoS.
enable[0/1]	It means to enable or disable the function of APP QoS.
traceable/ untraceable	The APPs are divided into traceable and untraceable based on their properties.
-v	It means to view the content of all traceable APs. Use "appqos traceable –v" to display all of the traceable APS with speficed index number. Use "appqos untraceable –v" to display all of the untraceable APS with speficed index number.
-e	It menas to enable QoS for application(s) and assign QoS class.
AP_INDEX	Each index number represents one application. Index number: 50, 51, 52, 53, 54, 58, 60, 62, 63, 64, 65, 66, 68 are used for 13 traceabel APPs. Index number: 0~49, 55~59, 61, 67, 69, and 70~123 are used for 125 untraceable AP.
CLASS	Specifies the QoS class of the application, from 1 to 4 1:Class 1, 2:Class 2, 3:Class 3, 4:Other Class
-d	It means to disable QoS for application(s).

Example

```
> appqos enable 1
```

```
APP QoS set to Enable.
> appqos traceable -e 68 2

TELNET: ENABLED, QoS Class 2.
```

Telnet Command: nand bad /nand usage

“NAND usage” is used to display NAND Flash usage; “nand bad” is used to display NAND Flash bad blocks.

Syntax

nand bad

nand usage

Example

```
>nand usage
Show NAND Flash Usage:
Partition   Total         Used          Available      Use%
cfg         4194304       7920          4186384          0%
bin_web     33554432      11869493      21684939        35%
cfg-bak     4194304       7920          4186384          0%
bin_web-bak 33554432      11869493      21684939        35%
> nand bad
Show NAND Flash Bad Blocks:
Block   Address       Partition
1020    0x07f80000     unused
1021    0x07fa0000     unused
1022    0x07fc0000     unused
1023    0x07fe0000     unused
```

Telnet Command: apm show/clear/discover/query

The apm command(s) is use to display, remove, discover or query the information of VigorAP registered to Vigor2952.

Syntax

apm show

apm clear

apm discover

apm query

Syntax Description

Parameter	Description
show	It displays current information of APM profile.
clear	It is used to remove all of the APM profile.
discover	It is used to search VigorAP on LAN.
query	It is used to query any VigorAP which has been registered to APM (Central AP Management) in Vigor3220. Information related to the registered AP will be send back to Vigor3220 for updating the web page of Central AP Management.

Example

```
> apm clear ?
Clear all clients ... done
```

Telnet Command: apm profile

This command allows to configure wireless profiles to be used in Central AP Management.

Syntax

apm profile clone *[from index][to index][[new name]*

apm profile del *[index]*

apm profile reset

apm profile summary

apm profile *[show [profile index]]*

apm profile apply *[profile index] [client index1 [index2 .. index5]]*

Syntax Description

Parameter	Description
clone	It is used to copy the same parameters settings from one profile to another APM profile.
del	It is used to delete a specified APM profile. The default (index #1) should not be deleted.
reset	It is used to reset to factory settings for WLAN profile.
summary	It is used to list all of the APM profiles with required information.
show	It is used to display specified APM profile.
apply	It is used to apply the selected APM profile onto specified VigorAP.
from index	Type an index number in this field. It is the original APM profile to be cloned to other APM profile.
to index	Type an index number in this file. It is the target profile which will clone the parameters settings from an existed APM profile.
new name	Type a name for a new APM profile.
profile index	Type the index number of existed profile.
client index1/2/3/4/5	It is useful for applying the selected APM profile to the specified VigorAP.

Example

```
> apm profile clone 1 2 forcarrie
(Done)

> apm profile summary
# Name           SSID           Security    ACL    RateCtrl(U/D)
- ---------------- --------------- ----------- ------- ------
0 Default       DrayTek-LAN-A   WPA+WPA2/PSK x         - /    -
                DrayTek-LAN-B   WPA+WPA2/PSK x         - /    -

1 -              -              -          -               -
2 forcarrie       DrayTek        Disable     x         - /    -
```

```
3 -              -             -          -                -
4 -              -             -          -                -
```

Telnet Command: apm cache

This command is used to display or remove the information of registered VigorAP, including MAC address, name, and authentication. Up to 30 entries of registered information can be stored and displayed.

Syntax

apm cache *[show]*

apm cache clear

Syntax Description

Parameter	Description
show	It means to display the information related to VigorAP registered Vigor3220.
clear	It means to remove the information related to VigorAP registered Vigor3220.

Example

```
> apm cache show
MAC        Name              Auth
------------ ------------------- -------------------

>
```

Telnet Command: apm lbcfg

This command allows to set parameters related to AP management control.

Syntax

apm lbcfg *[set] [value]*

apm lbcfg*[show]*

Syntax Description

Parameter	Description
set	It means to set the load balance configuration file for APM.
Show	It shows the configuration value.
[value]	You need to type 10 numbers in this field. Each number represents different setting value. [1] – The first number means the load balance function. Type 1 – enable load balance, 0 – disable load balance. [2] – The second number means the station limit function. Type 1 –enable station limit, 0 – disable station limit. [3] – The third number means the traffic limit function. Type 1 – enable traffic limit, 0 – disable traffic limit.

	[4] – The forth number means the limit num of station. Available range is 3~64. [5] – The fifth number means the upload limit function. Type 1 – enable upload limit, 0 – disable upload limit. [6] – The sixth number means the download limit function. Type 1 – enable download limit, 0 – disable download limit. [7] – The seventh number means disassociation by idle time. Type 1 – enable disassociation, 0 – disable disassociation. [8] – The eighth number means to enable or disable disassociation by signal strength. Type 1 – enable disassociation, 0 – disable disassociation. [9] – The ninth number means to determine the unit of traffic limit (for upload) 1 – Mbps 0 – kbps [10] – The tenth number means to determine the unit of traffic limit (for download) 1 – Mbps 0 – kbps

Example

```
> apm lbcfg show
apm LoadBalance Config :
1. Enable LoadBalance : 0
2. Enable station limit : 0
3. Enable traffic limit : 0
4. limit Number : 64
5. Upload limit : 0
6. Download limit : 0
7. Enable disassociation by idle time : 0
8. Enable disassociation by Signal strength : 0
9. Traffic limit unit (upload)   : 0
10.Traffic limit unit (download) : 0
flag : 0
> apm lbcfg set 1 1 0 15 0 0 0 0 1 1
> apm lbcfg show
apm LoadBalance Config :
1. Enable LoadBalance : 1
2. Enable station limit : 1
3. Enable traffic limit : 0
4. limit Number : 15
5. Upload limit : 0
6. Download limit : 0
7. Enable disassociation by idle time : 0
8. Enable disassociation by Signal strength : 0
9. Traffic limit unit (upload)   : 1
```

```
10.Traffic limit unit (download) : 1
flag : 49
```

Telnet Command: ha set

This command can be used to configure HA settings for Vigor routers.

Syntax

ha set *[-<command> <parameter>| …]*

Syntax Description

Parameter	**Description**
[<command> <parameter>|…]	The available commands with parameters are listed below. *[…]* means that you can type in several parameters in one line.
-e <1/0>	1: Enable the function of High Availability (HA). 0: Disable the function of High Availability (HA).
-l <1/0>	1: Enable the function of recording the operation record of HA in Syslog. 0: Disable the function of recording the operation record of HA in Syslog.
-M <1/0>	Specify the Redundancy Method for HA. 1: Active-Standby 0: Hot-Standby
-v <1-255>	Specify the group ID (VHID) 1- 255: Setting range.
-R	Set HA settings to Factory Default.
-p <1-30>	Specify the Priority ID. 1-30: Setting range.
-k <key>	Specify the Authentication Key. Key: Max. 31 Characters.
-u <1/0>	Enable or disable the function of Update DDNS. 1: Enable. When a router changes HA status to primary, it will update DDNS automatically. 0: Disable.
-m <interface>	Specify the management interface. Interface: LAN1 ~ LAN8, DMZ.
-s	It means to get the newest status of other router (except the local router).
-y	It means sync local config to other router. Primary can executes this command. Secondary can not execute this commad.
-c <1/0>	Enable or disable the function of Config Sync. 1: Enable. 0: Disable.
-I -[M|H|D] <interval>	Set the Config Sync Interval for HA. Minimum interval is 15 minutes. -M: Minute. Setting range is 0/15/30/45. (e.g., ha set -I -M 30) -H: Hour. Setting range is from 0 to 23. (e.g., ha set -I -H 12) -D: Day. Setting range is from 0 to 30. (e.g., ha set -I -D 15)
-h <Subnet> [<Virtual IP>]	Enable and set virtual IP to the subnet. Subnet: LAN1 to LAN8, DMZ. Virtual IP*:* The type format shall be “xxx.xxx.xxx.xxx”. (e.g, 192.168.1.0) For example, to enable a virtual IP to the sunet, simply type: ha set –h LAN1 192.168.1.5
-d <Subnet>	Disable a virtual IP to the subnet. Subnet: LAN1 to LAN8, DMZ*.* For example, to disable a virtual IP to the subnet, just type: ha set –h LAN1

Example

```
> ha set -h LAN1 192.168.1.5
% Enable Virtual IP on LAN1

% Set Virtual IP 192.168.1.5 OK!!

>
```

Telnet Command: ha show

This command can be used to show the *settings information* about config sync and general setup.

Syntax

ha show -c

ha show -g

Syntax Description

Parameter	Description
-c	Show the settings of config sync.
-g	Show the settings of general setup.

Example

```
> ha show -g
%   High Availability   : Disable
%   Redundancy Method   : Active-Standby
%   Group ID           : 1
%   Priority ID         : 10
%   Preempt Mode        : Enable
%   Update DDNS         : Disable
%   Management Interface : LAN1
%   Authentication Key   : draytek
%   Syslog             : OFF
%
%   [ Index | Enable | Virtual IP ]
%     LAN1    -       0.0.0.0
%     LAN2    -       0.0.0.0
%     LAN3    -       0.0.0.0
%     LAN4    -       0.0.0.0
%     LAN5    -       0.0.0.0
%     LAN6    -       0.0.0.0
%     LAN7    -       0.0.0.0
%     LAN8    -       0.0.0.0
%     DMZ     -       0.0.0.0

>
```

Telnet Command: ha status

This command is used to display *HA status information*.

Syntax

ha status -a *[Detail Level]*

ha status -m *[Detail Level]*

Syntax Description

Parameter	Description
-a	Show the status for all of the routers in HA group.
-m	Show the status of local router only.
Detail Level	0: Basic information. 1: Basic information with more data (e.g., firmware version, model, HTTPs port. MAC address and etc). 2: Basic information with some HA settings.

Example

```
> ha status -m 2
%   [Local Router] DrayTek
%   IPv4                  : 192.168.1.1
%   Status                : !
%   High Availability     : ! Disable
%   Redundancy Method     : Active-Standby
%   Group ID              : 1
%   Priority ID           : 10
%   Preempt Mode          : Enable
%   Update DDNS           : Disable
%   Management Interface  : LAN1
%   Authentication Key    : draytek
%   Virtual IP: (Max. 7 Virtual IPs)
%     ! OFF
%   Config Sync           : Disable
%   Config Sync Interval  : 0 Day 0 Hour 15 Minute
%   Cached Time           : 0 (s)
> ha status -m 0
%   [Local Router] DrayTek
%   IPv4                : 192.168.1.1
%   Status              : !
%   State               : Down
%   Stable              : ! No
%   WAN                 : ! All WANs Down - Eth
%   Config Sync Status  : Not Ready
%   Cached Time         : 0 (s)
%
>
```