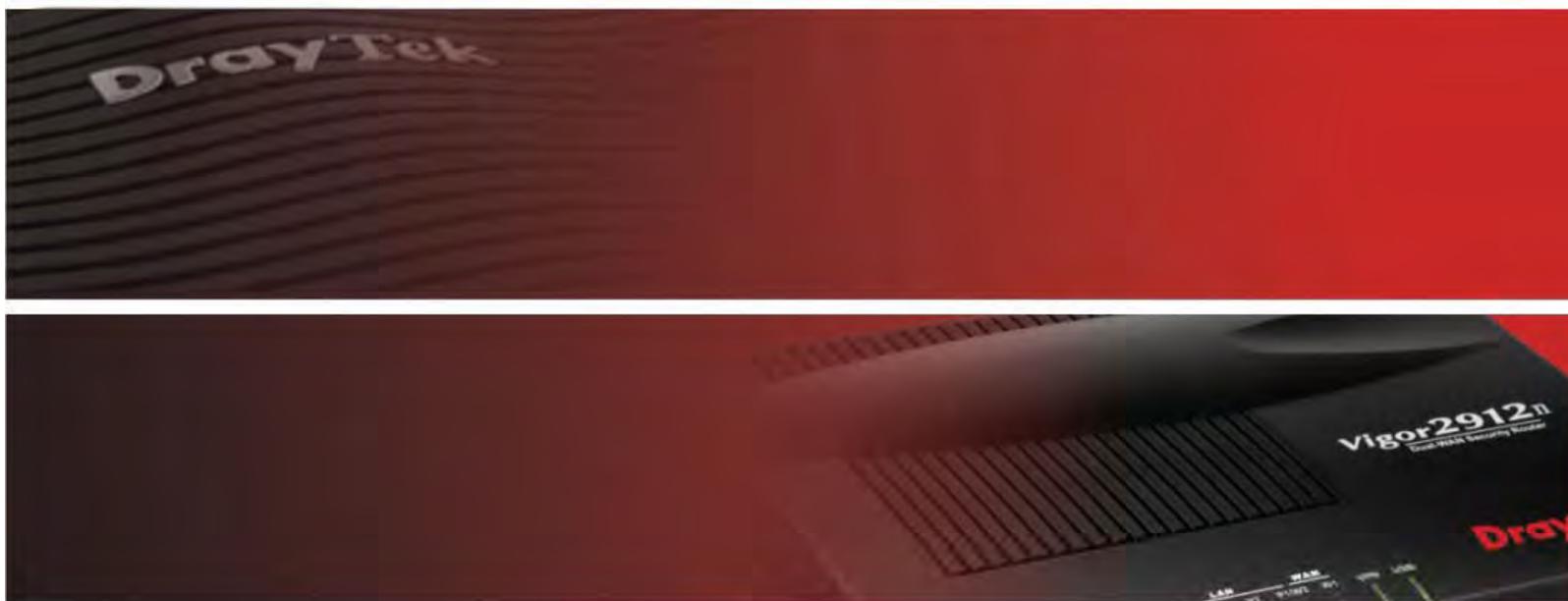


DrayTek

Vigor2912 Series

Dual-WAN Security Router



Your reliable networking solutions partner

User's Guide

V1.7

Vigor2912 Series Dual-WAN Security Router User's Guide

Version: 1.7

Firmware Version: V3.8.1.3

(For future update, please visit DrayTek web site)

Date: September 20, 2016

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Safety Instructions and Approval

Safety Instructions

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

Warranty

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

Be a Registered Owner

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

Firmware & Tools Updates

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

<http://www.DrayTek.com>

European Community Declarations

Manufacturer: DrayTek Corp.
Address: No. 26, Fu Shing Road, Hukou Township, Hsinchu Industrial Park, Hsinchu County, Taiwan 303
Product: Vigor2912 Series Router

DrayTek Corp. declares that Vigor2912 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 B and EN55024/Class B.

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 B 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.

This equipment complies with RFCC radiation exposure limits set forth for an uncontrolled environment.

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

Please visit <http://www.draytek.com> for more detailed information.



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Appendix I: VLAN Applications on Vigor Router405

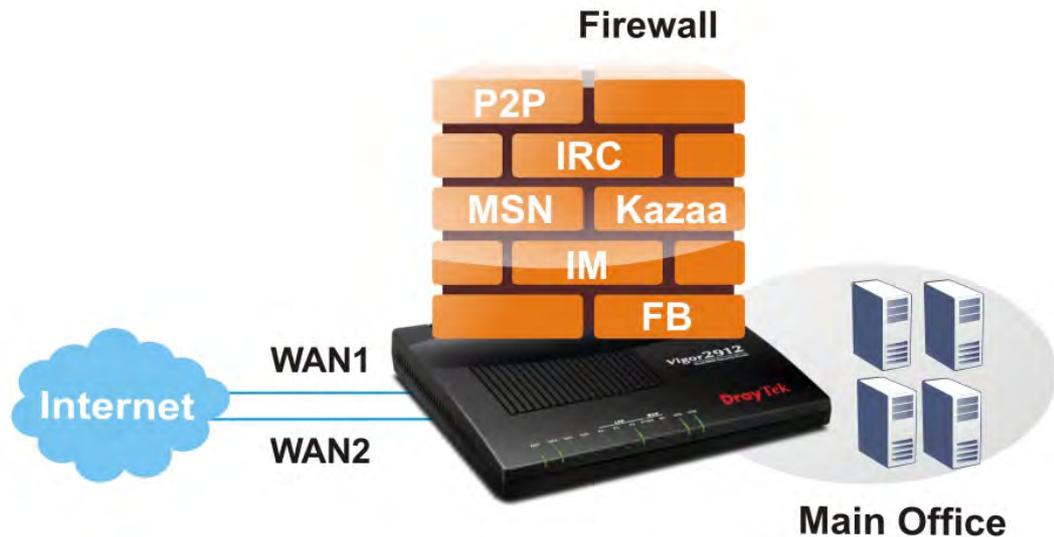
1

Introduction

Vigor2912 series is a broadband router which 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 16 VPN tunnels.

The object-based design used in SPI (Stateful Packet Inspection) firewall allows users to set firewall policy with ease. 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. Object-based firewall is flexible and allows your network be safe.

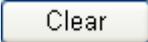
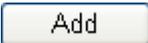


In addition, Vigor2912 series supports USB interface for connecting USB printer to share printing function or 3G USB modem for network connection.

Vigor2912 series provides two-level management to simplify the configuration of network connection. The user mode allows user accessing into WEB interface via simple configuration. However, if users want to have advanced configurations, they can access into WEB interface through admin mode.

1.1 Web Configuration Buttons Explanation

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

	Save and apply current settings.
	Cancel current settings and recover to the previous saved settings.
	Clear all the selections and parameters settings, including selection from drop-down list. All the values must be reset with factory default settings.
	Add new settings for specified item.
	Edit the settings for the selected item.
	Delete the selected item with the corresponding settings.

Note: For the other buttons shown on the web pages, please refer to Chapter 3, 4 for detailed explanation.

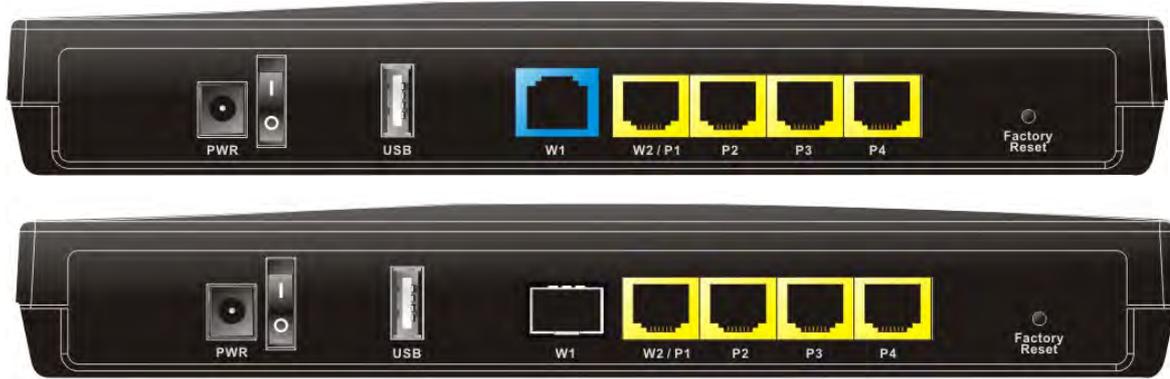
1.2 LED Indicators and Connectors

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

1.2.1 Vigor2912/Vigor2912F

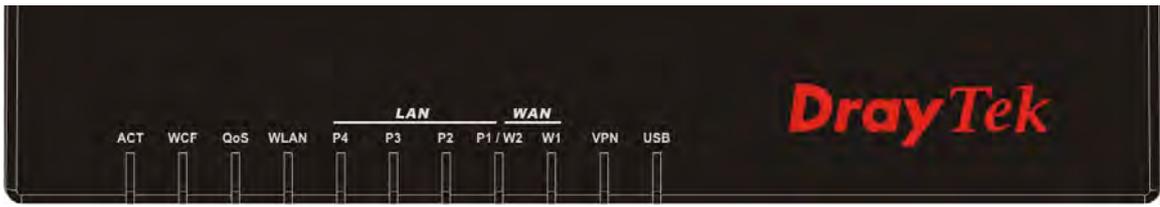


LED	Status	Explanation
ACT (Activity)	Blinking	The router is powered on and running normally.
	Off	The router is powered off.
WCF	On	The Web Content Filter is active. (It is enabled from Firewall >> General Setup).
	Off	The Web Content Filter is inactive.
QoS	On	The QoS function is active.
DoS	On	The DoS/DDoS function is active.
	Blinking	It will blink while detecting an attack.
LAN (P4~P1)	On	The port is connected.
	Off	The port is disconnected.
	Blinking	The data is transmitting.
WAN(W2~W1)	On	Internet connection is ready.
	Off	Internet connection is not ready.
	Blinking	The data is transmitting.
VPN	On	The VPN tunnel is active.
USB	On	USB device is connected and ready for use.
	Blinking	The data is transmitting.



Interface	Description
PWR	Connector for a power adapter.
ON/OFF	Power Switch.
USB	Connector for a USB device (for 3G/4G USB Modem or printer).
W1 (Vigor2912)	Connector an ADSL or cable modem for accessing Internet (WAN).
W1 (Vigor2912F)	Fiber connection (100Mbps) for accessing the Internet.
	
W2/P1	Connector an ADSL or cable modem for accessing Internet (WAN); or connector for local network devices (LAN). This connector is switchable for LAN and WAN connection.
P2~P4	Connectors for local network devices (LAN).
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.

1.2.2 Vigor2912n/Vigor2912Fn



LED	Status	Explanation
ACT (Activity)	Blinking	The router is powered on and running normally.
	Off	The router is powered off.
WCF	On	The Web Content Filter is active. (It is enabled from Firewall >> General Setup).
	Off	The Web Content Filter is inactive.
QoS	On	The QoS function is active.
WLAN	On	Wireless access point is ready.
	Blinking	It will blink slowly while wireless traffic goes through. ACT and WLAN LEDs blink quickly and simultaneously when WPS is working, and will return to normal condition after two minutes. (You need to setup WPS within 2 minutes.)
LAN (P4~P1)	On	The port is connected.
	Off	The port is disconnected.
	Blinking	The data is transmitting.
WAN(W2~W1)	On	Internet connection is ready.
	Off	Internet connection is not ready.
	Blinking	The data is transmitting.
VPN	On	The VPN tunnel is active.
USB	On	USB device is connected and ready for use.
	Blinking	The data is transmitting.



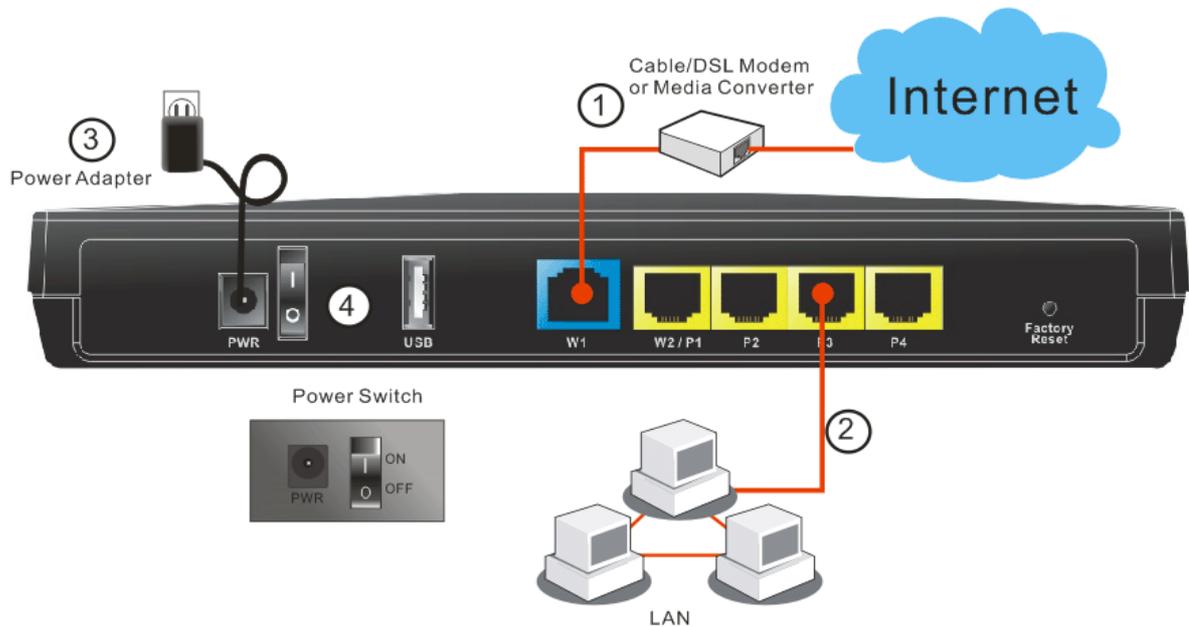
Interface	Description
PWR	Connector for a power adapter.
ON/OFF	Power Switch.
USB	Connector for a USB device (for 3G/4G USB Modem or printer).
W1 (Vigor2912n)	Connector an ADSL or cable modem for accessing Internet (WAN).
W1 (Vigor2912Fn)	Fiber connection (100Mbps) for accessing the Internet.
W2/P1	Connector an ADSL or cable modem for accessing Internet (WAN); or connector for local network devices (LAN). This connector is switchable for LAN and WAN connection.
P2~P4	Connectors for local network devices (LAN).
Wireless LAN ON/OFF/WPS	Press "Wireless LAN ON/OFF/WPS" button once to wait for client device making network connection through WPS. Press "Wireless LAN ON/OFF/WPS" button twice to enable (WLAN LED on) or disable (WLAN LED off) wireless connection.
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.

1.3 Hardware Installation

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

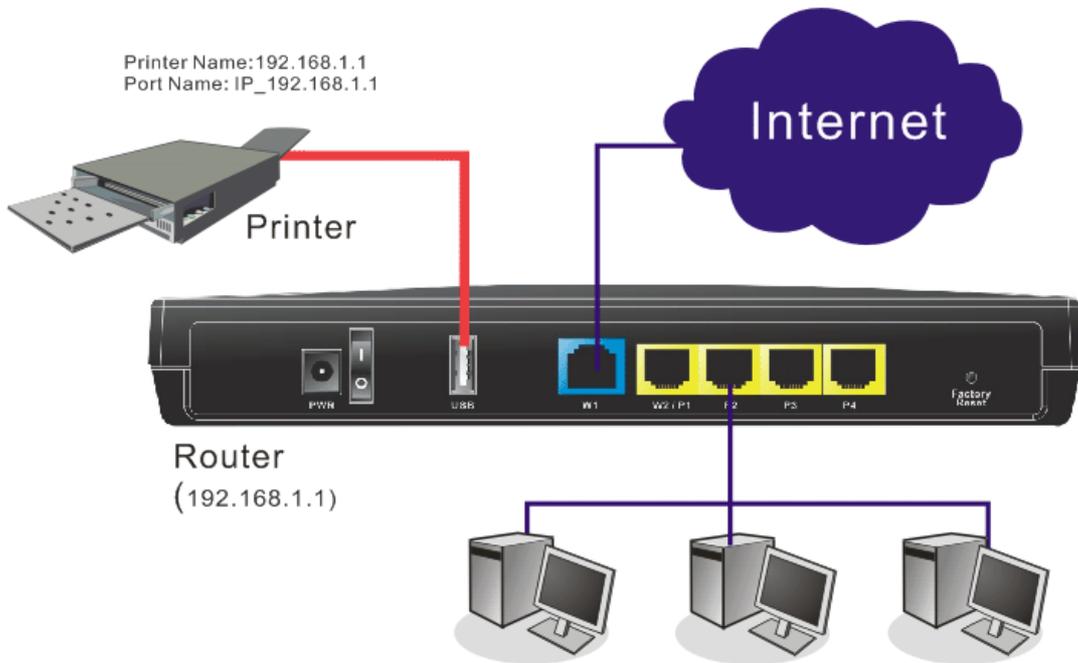
1. Connect the cable Modem/DSL Modem/Media Converter to any WAN port of router with Ethernet cable (RJ-45).
2. Connect one end of an Ethernet cable (RJ-45) to one of the LAN ports of the router and the other end of the cable (RJ-45) into the Ethernet port on your computer.
3. Connect one end of the power adapter 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.

(For the hardware connection, we take "n" model as an example.)



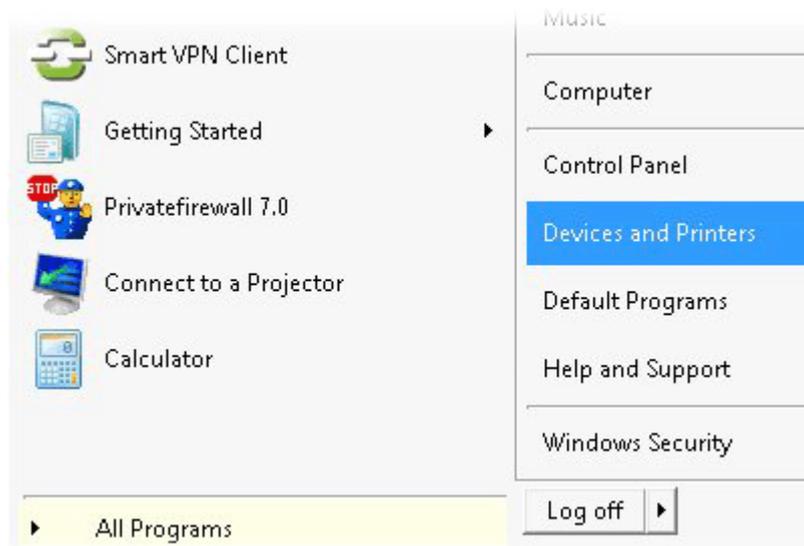
1.4 Printer Installation

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 XP/2000. For Windows 98/SE/Vista, please visit www.DrayTek.com.

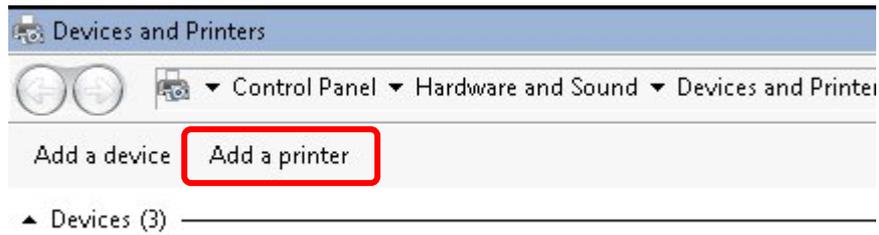


Before using it, please follow the steps below to configure settings for connected computers (or wireless clients).

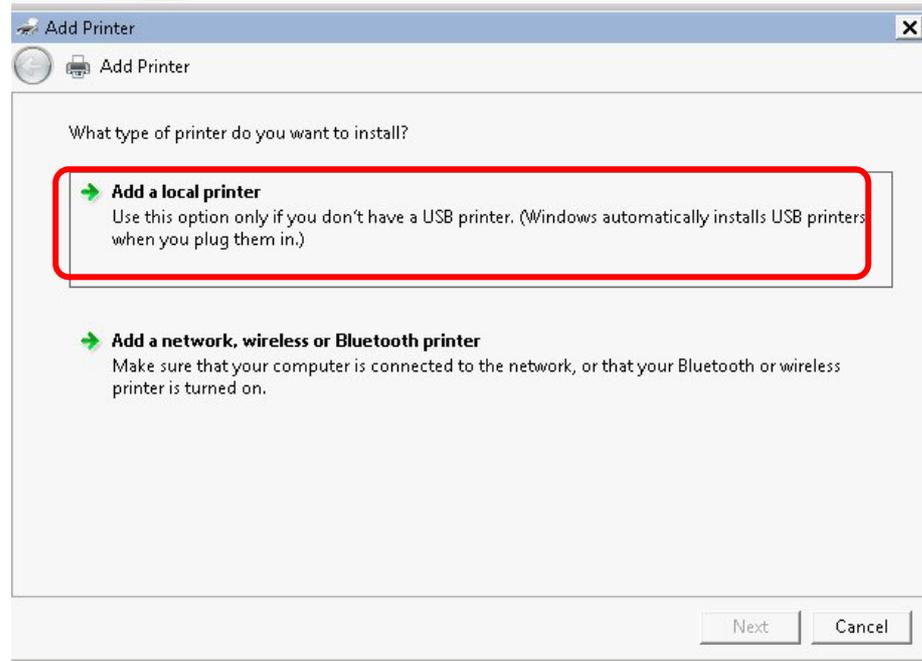
1. Connect the printer with the router through USB/parallel port.
2. Open **All Programs>>Getting Started>>Devices and Printers**.



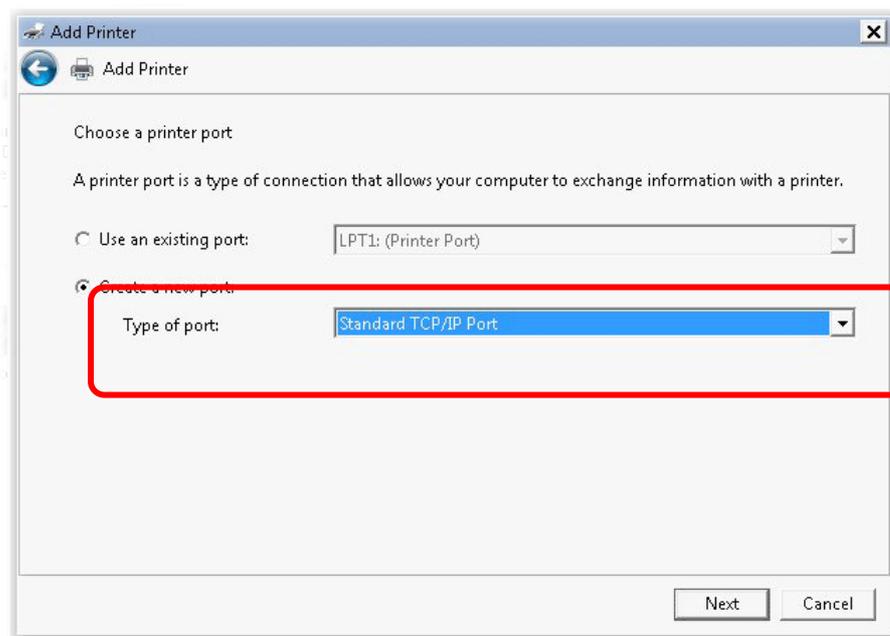
3. Click **Add a printer**.



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



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**.



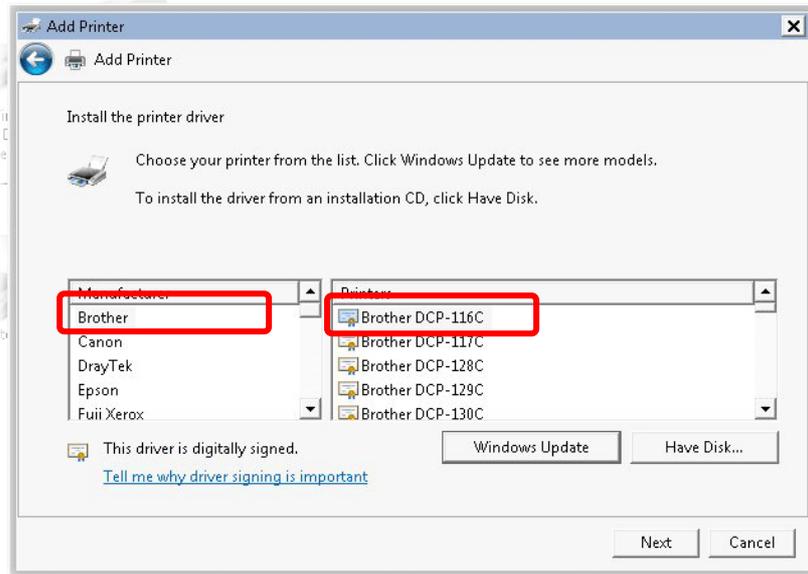
6. In the following dialog, type **192.168.1.1** (router's LAN IP) in the field of **Hostname or IP Address** and type **192.168.1.1** as the **Port name**. Then, click **Next**.

The screenshot shows the 'Add Printer' dialog box. The title bar says 'Add Printer'. Below the title bar, there is a back arrow icon and a printer icon with the text 'Add Printer'. The main area contains the text 'Type a printer hostname or IP address'. Below this, there is a 'Device type:' label and a dropdown menu showing 'TCP/IP Device'. Below that, there are two text input fields: 'Hostname or IP address:' and 'Port name:'. Both fields contain the text '192.168.1.1'. A red rectangular box highlights these two input fields. Below the input fields, there is an unchecked checkbox with the text 'Query the printer and automatically select the driver to use'. At the bottom right of the dialog, there are two buttons: 'Next' and 'Cancel'.

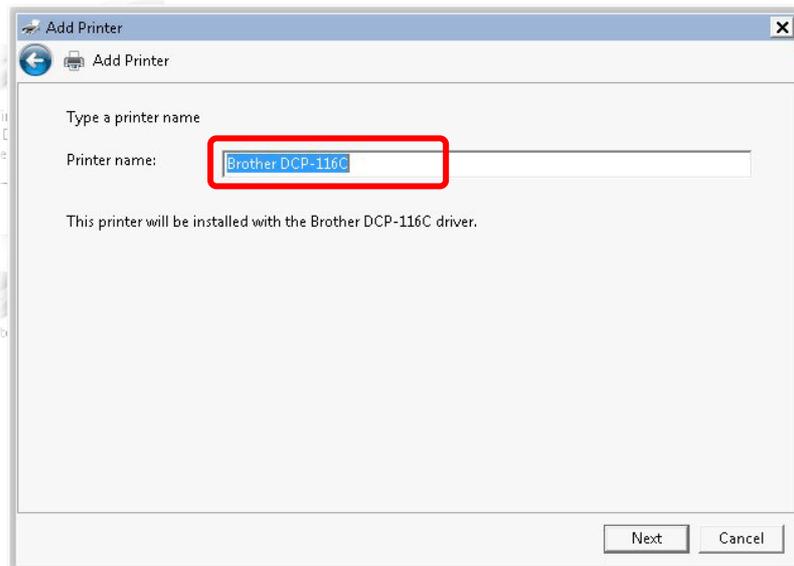
7. Click **Standard** and choose **Generic Network Card**.

The screenshot shows the 'Add Printer' dialog box. The title bar says 'Add Printer'. Below the title bar, there is a back arrow icon and a printer icon with the text 'Add Printer'. The main area contains the text 'Additional port information required'. Below this, there is the text 'The device is not found on the network. Be sure that:' followed by a numbered list: 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. Below the list, there is the text '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.' Below this text, there is a 'Device Type' section. It contains two radio buttons: 'Standard' (which is selected) and 'Custom'. Next to the 'Custom' radio button is a 'Settings...' button. A dropdown menu is open next to the 'Standard' radio button, showing the text 'Generic Network Card'. A red rectangular box highlights the 'Standard' radio button and the dropdown menu. At the bottom right of the dialog, there are two buttons: 'Next' and 'Cancel'.

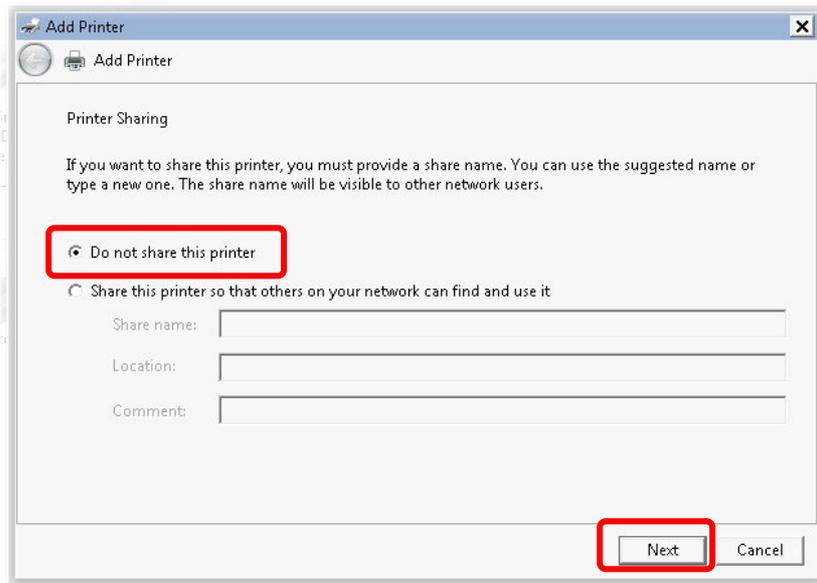
8. Now, your system will ask you to choose right name of the printer that you installed onto the router. Such step can make correct driver loaded onto your PC. When you finish the selection, click **Next**.



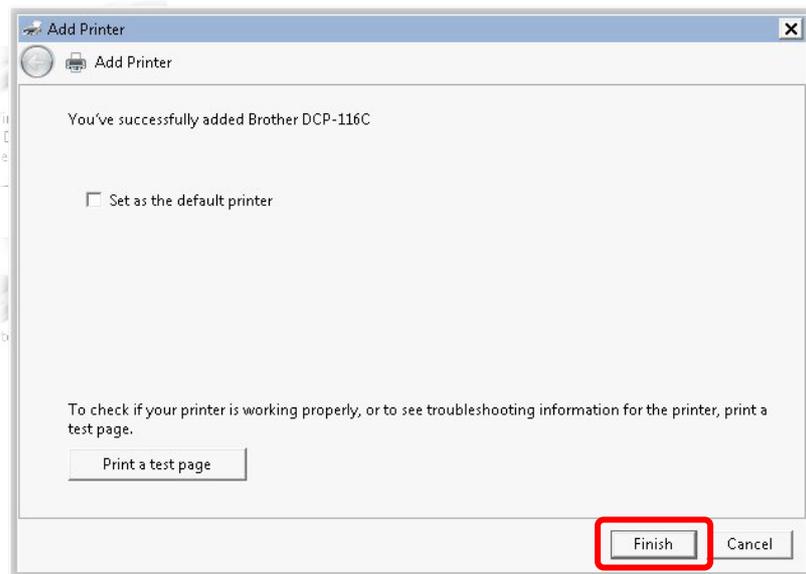
9. Type a name for the chosen printer. Click **Next**.



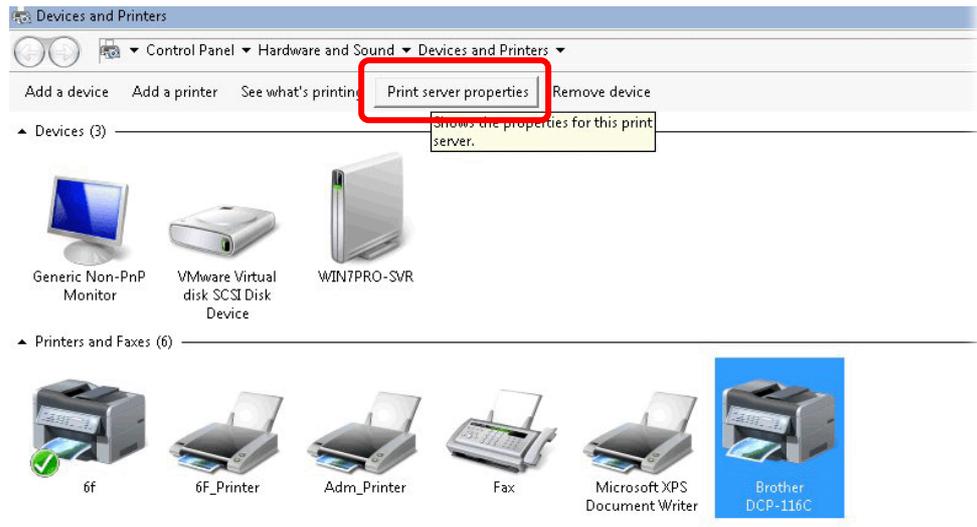
10. Choose **Do not share this printer** and click **Next**.



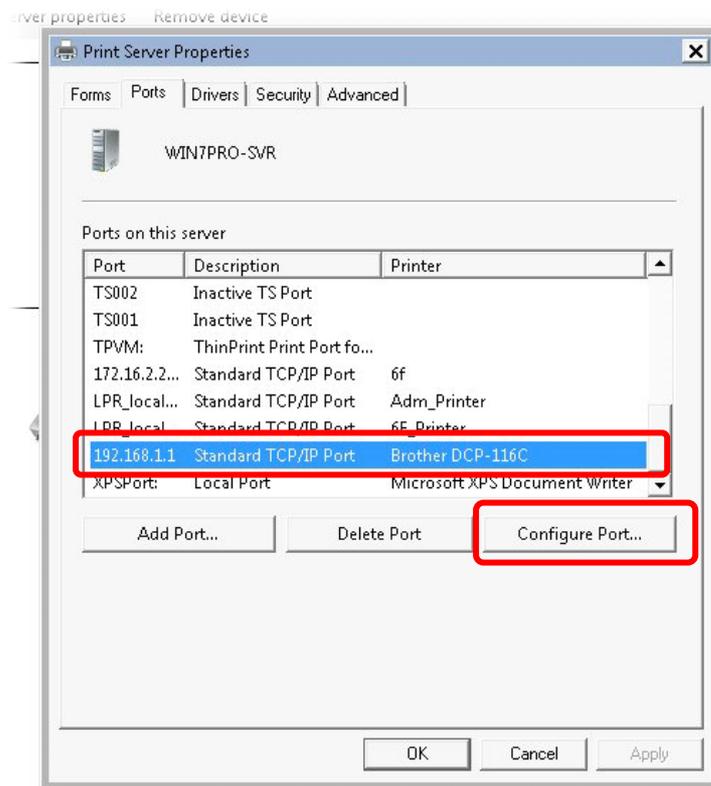
11. Then, in the following dialog, click **Finish**.



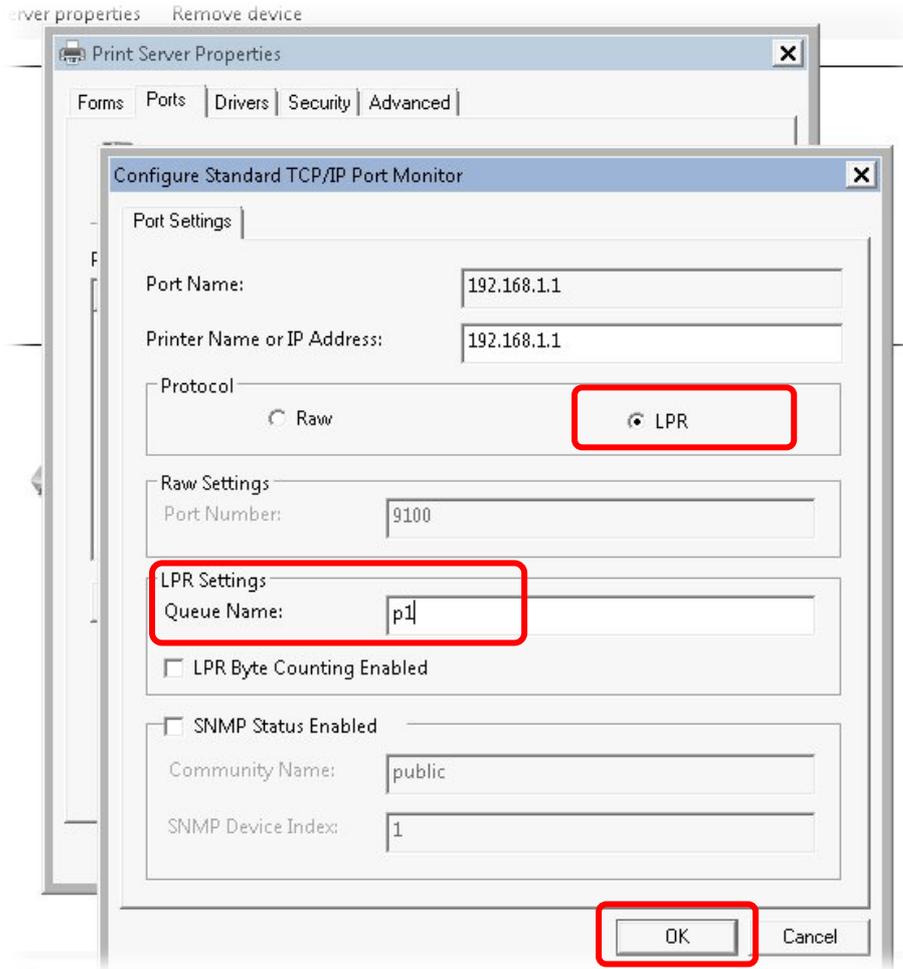
12. The new printer has been added and displayed under **Printers and Faxes**. Click the new printer icon and click **Printer server properties**.



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



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.

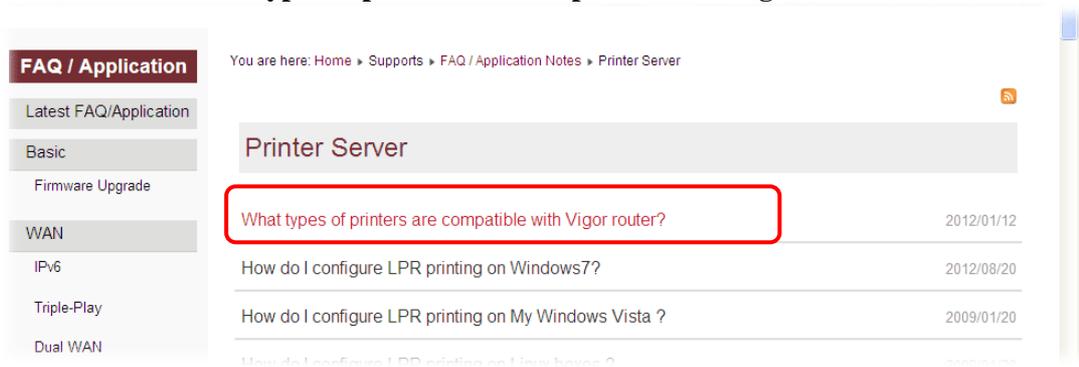


The printer can be used for printing now. Most of the printers with different manufacturers are compatible with vigor router.

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 **Printer Server** and click it; then click the **What types of printers are compatible with Vigor router?** link.



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



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

1.5 Accessing Web User Interface

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.



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

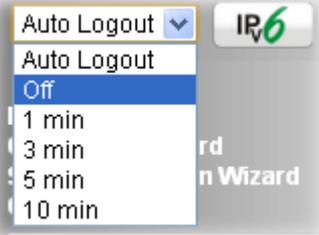
Notice: If you fail to access to the web configuration, please go to “Trouble Shooting” for detecting and solving your problem.

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



Note: 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.



1.6 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	<input type="text"/>
New Password	<input type="text"/>
Confirm Password	<input type="text"/>

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

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

Note: 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.

Note: Even the password has been changed, the Username for logging to the web user interface is still “admin”.

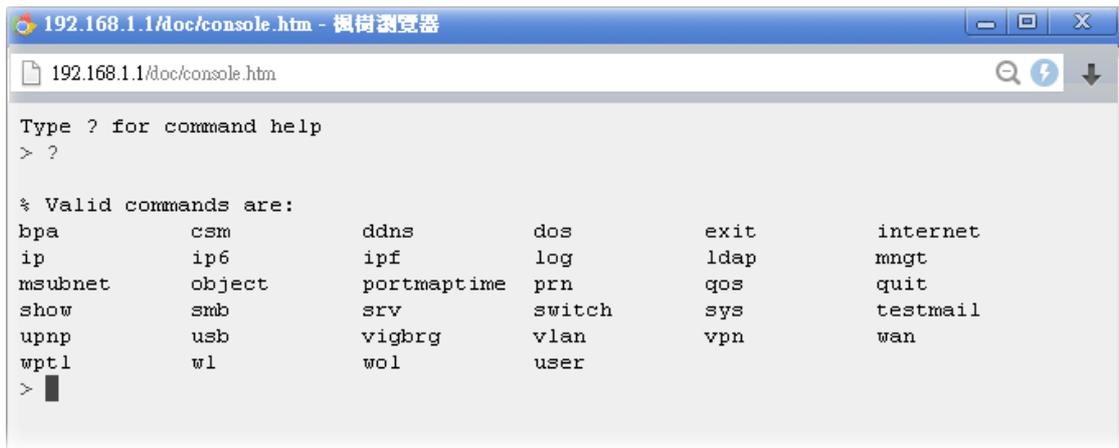
1.7 Web Console, Config Backup & Exit

1.7.1 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.

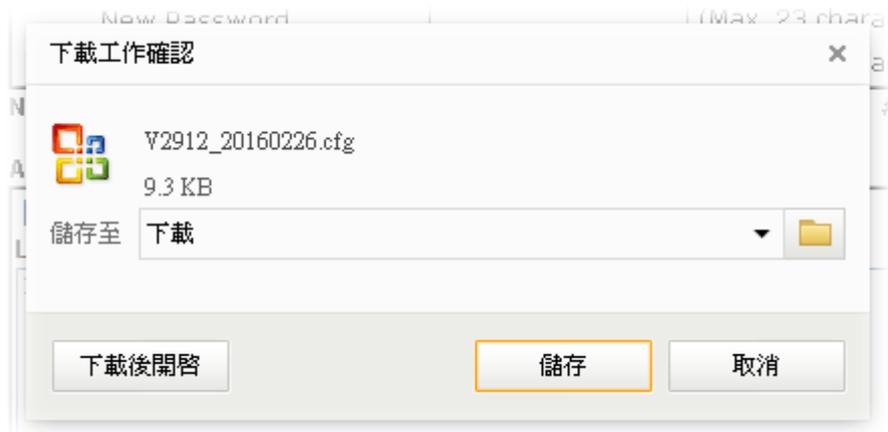


1.7.2 Config Backup



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.



Click **OK/Save** to store the setting.

1.7.3 Logout



Click the **Logout** icon to exit the web user interface.

1.8 Online Status

Online Status
Physical Connection
Virtual WAN

1.8.1 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 0:29:52
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	10806	7522				
WAN 1 Status						
Enable	Line	Name	Mode	Up Time		
Yes	Ethernet		---	00:00:00		
IP	GW IP	TX Bytes	TX Rate(Bps)	RX Bytes	RX Rate(Bps)	
---	---	0 (B)	0	0 (B)	0	
WAN 2 Status						
Enable	Line	Name	Mode	Up Time		
Yes	Ethernet		---	00:00:00		
IP	GW IP	TX Bytes	TX Rate(Bps)	RX Bytes	RX Rate(Bps)	
---	---	0 (B)	0	0 (B)	0	
WAN 3 Status						
Enable	Line	Name	Mode	Up Time	Signal	
Yes	USB		---	00:00:00	-	
IP	GW IP	TX Bytes	TX Rate(Bps)	RX Bytes	RX Rate(Bps)	
---	---	0 (B)	0	0 (B)	0	

Physical Connection for IPv6 Protocol

Online Status

Physical Connection				System Uptime: 0:1:18
IPv4		IPv6		
LAN Status				
IP Address				
2001:4DD0:FF00:83E4:21D:AFF:FEA6:2568/64 (Global)				
FE80::21D:AFF: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	

Detailed explanation (for IPv4) is shown below:

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

Detailed explanation (for IPv6) is shown below:

Item	Description
LAN Status	<p>IP Address- Displays the IPv6 address of the LAN interface..</p> <p>TX Packets-Displays the total transmitted packets at the LAN interface.</p> <p>RX Packets-Displays the total received packets at the LAN interface.</p> <p>TX Bytes - Displays the speed of transmitted octets at the LAN interface.</p> <p>RX Bytes - Displays the speed of received octets at the LAN interface.</p>
WAN IPv6 Status	<p>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.</p>

Item	Description
	<p>Mode - Displays the type of WAN connection (e.g., TSPC).</p> <p>Up Time - Displays the total uptime of the interface.</p> <p>IP - Displays the IP address of the WAN interface.</p> <p>Gateway IP - Displays the IP address of the default gateway.</p>

Note: 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.

1.8.2 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: 3:15:25
WAN 5 Status						
Enable	Line	Name	Mode	Up Time	Application	
Yes	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	
Yes	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	
Yes	Ethernet		---	00:00:00	Management	
IP	GW IP	TX Packets	TX Rate(Bps)	RX Packets	RX Rate(Bps)	
---	---	0	0	0	0	

1.9 Saving Configuration

Each time you click **OK** on the web page for saving the configuration, you can find messages showing the system interaction with you.



Ready indicates the system is ready for you to input settings.

Settings Saved means your settings are saved once you click **Finish** or **OK** button.

2

Quick Setup

There are several setup wizards offered for you to configure the router simply and quickly.



- **Quick Start Wizard** – used for building network connection, Internet access.
- **Service Activation Wizard** – used for activating the web content filter service.
- **VPN Client Wizard** – used for establishing VPN tunnel; the router is treated as a VPN client.
- **VPN Server Wizard** – used for establishing VPN tunnel; the router is treated as a VPN server.
- **Wireless Wizard** – used for building wireless LAN connection.

2.1 Quick Start Wizard

Open **Wizards>>Quick Start Wizard**. The first screen 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	<input type="password"/>
New Password	<input type="password"/>
Confirm Password	<input type="password"/>

On the next page as shown below, please select the WAN interface that you use. If Ethernet interface is used, please choose WAN1/WAN2; if 3G USB modem is used, please choose WAN3. Then click **Next** for next step.

Quick Start Wizard

WAN Interface

WAN Interface:	WAN1 ▾
Display Name:	<input type="text"/>
Physical Mode:	Ethernet
Physical Type:	Auto negotiation ▾

WAN1, WAN2 and WAN3 will bring up different configuration page. Refer to the following for detailed information.

2.1.1 For WAN1 (Ethernet/Fiber) and WAN2 (Ethernet)

WAN1 is dedicated to physical mode in Ethernet (Vigor2912/Vigor2912n) or Fiber (Vigor2912F/Vigor2912Fn). WAN2 is dedicated to physical mode in Ethernet. If you choose WAN1/WAN2 based on Ethernet, please specify physical type. Then, click **Next**.

Quick Start Wizard

WAN Interface

WAN Interface:	<input type="text" value="WAN2"/>
Display Name:	<input type="text"/>
Physical Mode:	Ethernet
Physical Type:	<input type="text" value="Auto negotiation"/>

On the next page as shown below, 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. Then click **Next** for next step.

PPPoE

1. Choose **WAN1/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)

Username

Password

Confirm Password

Available settings are explained as follows:

Item	Description
Service Name (Optional)	Type the description of the specific network service.
User Name	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
Physical Type:	Auto negotiation
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.

PPTP/L2TP

1. Choose **WAN1/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

< Back Next > Finish Cancel

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

Quick Start Wizard

PPTP Client Mode

WAN 2
Enter the user name, password, WAN IP configuration and PPTP server IP provided by your ISP.

User Name

Password

Confirm Password

WAN IP Configuration

Obtain an IP address automatically
 Specify an IP address

IP Address

Subnet Mask

Gateway

Primary DNS

Second DNS

PPTP Server

< Back Next > Finish Cancel

Available settings are explained as follows:

Item	Description
User Name	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.
WAN IP Configuration	<p>Obtain an IP address automatically – the router will get an IP address automatically from DHCP server.</p> <p>Specify an IP address – you have to type relational settings manually.</p> <p>IP Address - Type the IP address.</p> <p>Subnet Mask –Type the subnet mask.</p> <p>Gateway – Type the IP address of the gateway.</p> <p>Primary DNS –Type in the primary IP address for the router.</p> <p>Second DNS –Type in secondary IP address for necessity in the future.</p>
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.

- 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:	WAN1
Physical Mode:	Ethernet
Internet Access:	PPTP
<p>Click Back to modify changes if necessary. Otherwise, click Finish to save the current settings and restart the Vigor router.</p>	

- 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!

- Now, you can enjoy surfing on the Internet.

Static IP

1. Choose **WAN1/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

< Back Next > Finish Cancel

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

Quick Start Wizard

Static IP Client Mode

WAN 1
Enter the Static IP configuration provided by your ISP.

WAN IP 192.168.3.100
Subnet Mask 255.255.255.0
Gateway 192.168.3.1
Primary DNS 8.8.8.8
Secondary DNS 8.8.4.4 (optional)

< Back Next > Finish Cancel

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:	WAN1
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.

DHCP

1. Choose **WAN1/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

< Back Next > Finish Cancel

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 -84 -8F -36 (optional)

< Back Next > Finish Cancel

Available settings are explained as follows:

Item	Description
Host Name	Type the name of the host. Note: 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
Physical Type:	Auto negotiation
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.

2.1.2 For WAN3 (USB)

WAN3 is dedicated to physical mode in USB. If WAN3 is selected, it is not necessary for you to type any information for such connection.

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

Quick Start Wizard

WAN Interface

WAN Interface:

Display Name:

Physical Mode: USB

Physical Type:

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)
 4G USB Modem(DHCP mode)

3G/4G USB Modem(PPP mode)

SIM PIN code:

Modem Initial String:
(Default: AT&FE0V1X1&D2&C1S0=0)

APN Name:

Available settings are explained as follows:

Item	Description
Internet Access	Choose a protocol for accessing the Internet.
3G/4G USB Modem (PPP mode)	<p>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.</p> <p>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.</p> <p>APN Name – APN means Access Point Name which is</p>

	provided and required by some ISPs. Type the name and click Apply .
4G USB Modem (DHCP mode)	<p>SIM Pin code –Type PIN code of the SIM card that will be used to access Internet.</p> <p>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.</p> <p>APN Name – APN means Access Point Name which is provided and required by some ISPs.</p>

- 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.

- 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!

- Now, you can enjoy surfing on the Internet.

2.2 Service Activation Wizard

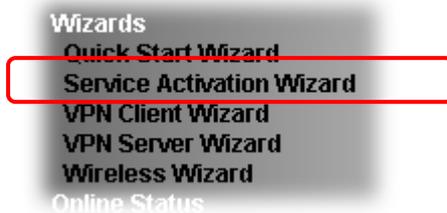
Service Activation Wizard can guide you to activate WCF service (Web Content Filter) with a quick and easy way. **For the Service Activation Wizard is only available for admin operation, therefore, please type “admin/admin” on Username/Password while Logging into the web user interface.**

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.

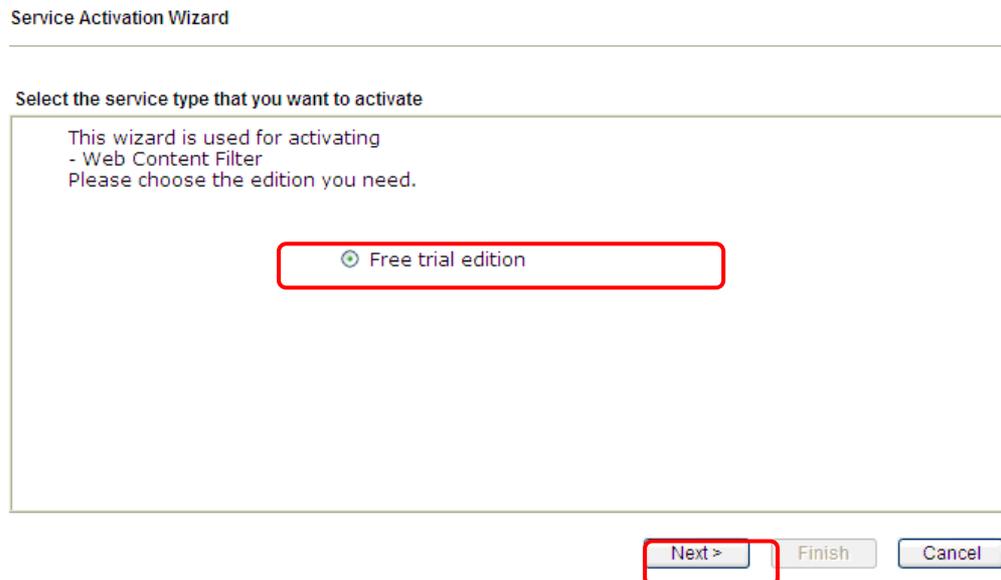
Now, follow the steps listed below to activate WCF feature for your router.

Note: 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. Choose the one you need and click **Next**. In this case, we choose to activate free trail 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.

< Back **Next >** Finish Cancel

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.

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>

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

Service Type : Trial version
Service Activated : Web Content Filter (Commtouch)

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

< Back **Next >** Finish Cancel

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

Next >

Finish

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

Note: 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.

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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/>

Next >

Finish

Cancel

2.3 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 **VPN and Remote Access>>VPN Client Wizard**. The following page will appear.

VPN and Remote Access >> 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: For a typical LAN-to-LAN tunnel, please select Route Mode.
 If the remote network is expecting only a single client or ip and is not configured to route the subnet and then select NAT mode.
 If in doubt then 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 this mode, otherwise please choose Route Mode. <div style="border: 1px solid #ccc; padding: 2px; width: fit-content;"> Route Mode ▾ Route Mode NAT Mode </div>
Please choose a LAN-to-LAN Profile	There are 32 VPN profiles for users to set.

[Index]	[Status]	[Name]
1	x	???
2	x	???
3	x	???
4	x	???
5	x	???
6	x	???
7	x	???
8	x	???
9	x	???
10	x	???
11	x	???
12	x	???
13	x	???
14	x	???
15	x	???
16	x	???
17	x	???
18	x	???
19	x	???
20	x	???
21	x	???
22	x	???
23	x	???
24	x	???
25	x	???
26	x	???
27	x	???
28	x	???
29	x	???

2. When you finish the mode and profile selection, please click **Next** to open the following page.

VPN and Remote Access >> VPN Client Wizard

VPN Connection Setting

Security ranking (1 is the highest; 5 is the lowest)	Throughput ranking (1 is the highest; 5 is the lowest)
1. L2TP over IPsec	1. PPTP (None Encryption)
2. IPsec	2. L2TP
3. PPTP (Encryption)	3. IPsec
4. L2TP	4. L2TP over IPsec
5. PPTP (None Encryption)	5. PPTP (Encryption)

Select VPN Type:

- PPTP (None Encryption)
- PPTP (Encryption)
- IPsec
- L2TP
- L2TP over IPsec (Nice to Have)
- L2TP over IPsec (Must)

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.

Note: 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
<input type="checkbox"/> 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

< Back Next > Finish Cancel

- 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
<input type="checkbox"/> Always on	
Server IP/Host Name for VPN (e.g. draytek.com or 123.45.67.89)	
IKE Authentication Method	
<input checked="" type="radio"/> Pre-Shared Key	
Confirm Pre-Shared Key	
<input type="radio"/> Digital Signature (X.509)	
Peer ID	None
Local ID	
<input checked="" type="radio"/> Alternative Subject Name First	
<input type="radio"/> Subject Name First	
Local Certificate	None
IPsec Security Method	
<input checked="" type="radio"/> Medium (AH)	
<input type="radio"/> High (ESP)	DES without Authentication
Remote Network IP	0.0.0.0
Remote Network Mask	255.255.255.0

< Back Next > Finish Cancel

- When you choose **L2TP**, you will see the following graphic:

VPN Client L2TP Settings

Profile Name	???
VPN Dial-Out Through	WAN1 First
<input type="checkbox"/> 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

< Back Next > Finish Cancel

- When you choose **L2TP over IPsec (Nice to Have)** or **L2TP over IPsec (Must)**, you will see the following graphic:

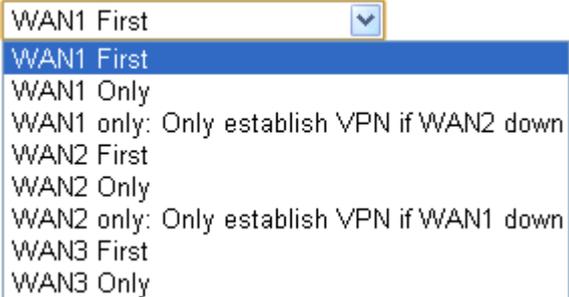
VPN Client L2TP over IPsec (Nice to Have) Settings

Profile Name	VPN-2
VPN Dial-Out Through	WAN1 First
<input type="checkbox"/> Always on	
Server IP/Host Name for VPN (e.g. draytek.com or 123.45.67.89)	
IKE Authentication Method	
<input checked="" type="radio"/> Pre-Shared Key
Confirm Pre-Shared Key
<input type="radio"/> Digital Signature (X.509)	
Peer ID	None
Local ID	
<input checked="" type="radio"/> Alternative Subject Name First	
<input type="radio"/> Subject Name First	
Local Certificate	None
IPsec Security Method	
<input checked="" type="radio"/> Medium (AH)	
<input type="radio"/> High (ESP)	DES without Authentication
Username	???
Password	
Remote Network IP	0.0.0.0
Remote Network Mask	255.255.255.0

< Back Next > Finish Cancel

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	<p>Use the drop down menu to choose a proper WAN interface for this profile. This setting is useful for dial-out only.</p>  <p>WAN1 First/ WAN2 First/ WAN3 First - While connecting, the router will use WAN1/WAN2/WAN3 as the first channel for VPN connection. If WAN1/WAN2/WAN3 fails, the router will use another WAN interface instead.</p> <p>WAN1 Only /WAN2 Only/WAN 3 Only- While connecting, the router will use WAN1/WAN2/WAN3 as the only channel for VPN connection.</p> <p>WAN1 Only: Only establish VPN if WAN2 down - If WAN2 failed, the router will use WAN1 for VPN connection.</p> <p>WAN2 Only: Only establish VPN if WAN1 down - If WAN1 failed, the router will use WAN2 for VPN connection.</p>
Always On	<p>Check to enable router always keep VPN connection.</p>
Server IP/Host Name for VPN	<p>Type the IP address of the server or type the host name for such VPN profile.</p>
IKE Authentication Method	<p>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.</p> <p>Pre-Shared Key - Specify a key for IKE authentication.</p> <p>Confirm Pre-Shared Key -Confirm the pre-shared key.</p>
Digital Signature (X.509)	<p>Click Digital Signature to invoke this function.</p> <p>Peer ID – Choose the peer ID selection from the drop down list.</p> <p>Local ID – Choose Alternative Subject Name First or Subject Name First.</p> <p>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.</p>
IPsec Security Method	<p>Medium - Authentication Header (AH) means data will be authenticated, but not be encrypted. By default, this option is active.</p> <p>High - Encapsulating Security Payload (ESP) means payload (data) will be encrypted and authenticated. You</p>

	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 use 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 and Remote Access >> VPN Client Wizard

Please confirm your settings

LAN-to-LAN Index:	20
Profile Name:	VPN-2
VPN Connection Type:	L2TP over IPsec (Nice to Have)
VPN Dial-Out Through:	WAN1 First
Always on:	No
Server IP/Host Name:	172.16.3.8
IKE Authentication Method:	Pre-Shared Key
IPsec Security Method:	AH-SHA1
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.

2.4 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 **VPN and Remote Access>>VPN Server Wizard**. The following page will appear.

VPN and Remote Access >> VPN Server Wizard

Choose VPN Establishment Environment

VPN Server Mode Selection: Remote Dial-in User (Teleworker) ▼

Please choose a LAN-to-LAN Profile: 2 x ??? ▼

Please choose a Dial-in User Accounts: 2 x ??? ▼

Allowed Dial-in Type:

PPTP

IPsec

L2TP with IPsec Policy None ▼

< Back Next > Finish Cancel

Available settings are explained as follows:

Item	Description
VPN Server Mode Selection	<p>Choose the direction for the VPN server.</p> <p>Site to Site VPN – To set a LAN-to-LAN profile automatically, please choose Site to Site VPN.</p> <p>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.</p> 
Please choose a LAN-to-LAN Profile	<p>This item is available when you choose Site to Site VPN (LAN-to-LAN) as VPN server mode. There are 32 VPN profiles for users to set.</p>

[Index]	[Status]	[Name]
1	x	???
2	x	???
3	x	???
4	x	???
5	x	???
6	x	???
7	x	???
8	x	???
9	x	???
10	x	???
11	x	???
12	x	???
13	x	???
14	x	???
15	x	???
16	x	???
17	x	???
18	x	???
19	x	???
20	x	???
21	x	???
22	x	???
23	x	???
24	x	???
25	x	???
26	x	???
27	x	???
28	x	???
29	x	???

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
 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.

- 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

< Back Next > Finish Cancel

- 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	
<input checked="" type="checkbox"/> Pre-Shared Key	
Confirm Pre-Shared Key	
<input type="checkbox"/> Digital Signature (X.509)	
Peer ID	None
Local ID	
<input type="radio"/> Alternative Subject Name First	
<input type="radio"/> 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

< Back Next > Finish Cancel

- When you check **IPsec**, you will see the following graphic:

VPN and Remote Access >> VPN Server Wizard

VPN Authentication Setting

Profile Name	???
IPsec / L2TP over IPsec Authentication	
<input checked="" type="checkbox"/> Pre-Shared Key	
Confirm Pre-Shared Key	
<input type="checkbox"/> Digital Signature (X.509)	
Peer ID	None
Local ID	
<input type="radio"/> Alternative Subject Name First	
<input type="radio"/> 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 and Remote Access >> VPN Server Wizard

Please Confirm Your Settings

VPN Environment:	Remote Access VPN (Host-to-LAN)
Index:	2
Username:	???
Authentication Type:	Local User Database
Allowed Service:	IPsec
Peer IP/VPN Client IP:	192.168.1.100
Peer ID:	David

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.

< Back Next > Finish Cancel

Available settings are explained as follows:

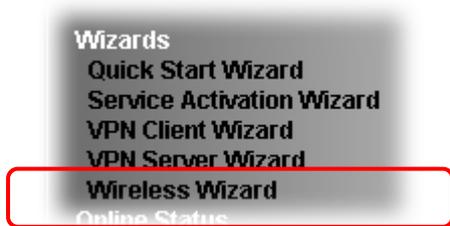
Item	Description
Go to the VPN Connection Management	Click this radio button to access VPN and Remote Access>>Connection Management for viewing VPN Connection status.
Do another VPN Server Wizard Setup	Click this radio button to set another profile of VPN Server through VPN Server Wizard.
View more detailed configuration	Click this radio button to access VPN and Remote Access>>LAN to LAN for viewing detailed configuration.

2.5 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 **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:

Mode:

Channel:

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, 11g Only, 11n Only (2.4GHz), 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.

- 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:

Security Key:

Rate Control: Enable Upload kbps Download 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...").
Rate Control	It controls the data transmission rate through wireless connection. Upload – Check Enable and type the transmitting rate for data upload. Default value is 30,000 kbps. 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.

- After typing the required information, click **Next**.
- The following page will display the configuration summary for wireless setting.

Wireless Wizard

Configuration Summary

<p>Wireless 2.4GHz Settings</p> <hr/> <p>Mode: Mixed(11b+11g+11n) Channel: Channel 6, 2437MHz</p> <p>Host AP SSID Name: DrayTek Security Key: *****</p> <p>Guest AP Status: Disabled SSID Name: DrayTek_Guest Security Key: ***** Rate Control: Disabled</p>
--

- Click **Finish** to complete the wireless settings configuration.

2.6 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.

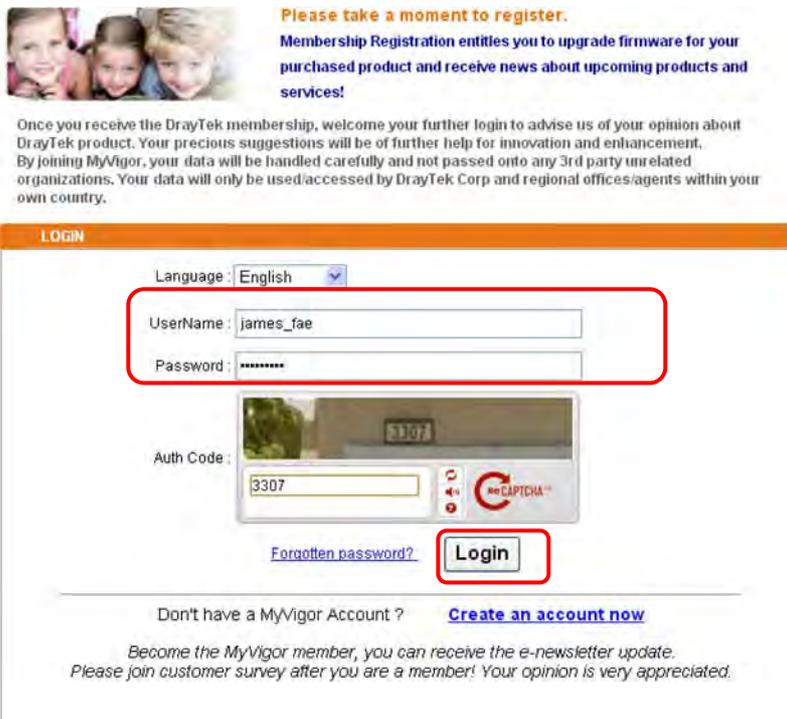


- 2 Click **Support Area>>Production Registration** from the home page.



Support Area
Product Registration

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

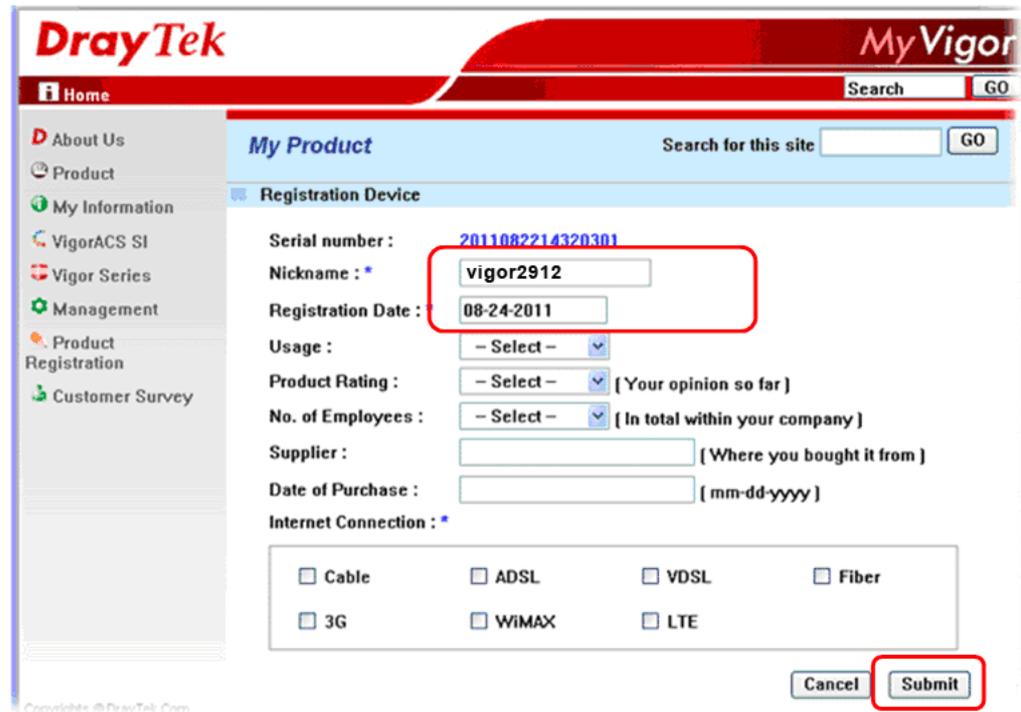


Notice: If you haven't an accessing account, please refer to section 3.7 Creating an Account for MyVigor on User's Guide to create your own one. Please **read the articles on the Agreement regarding user rights** carefully while creating a user account.

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



- 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**.



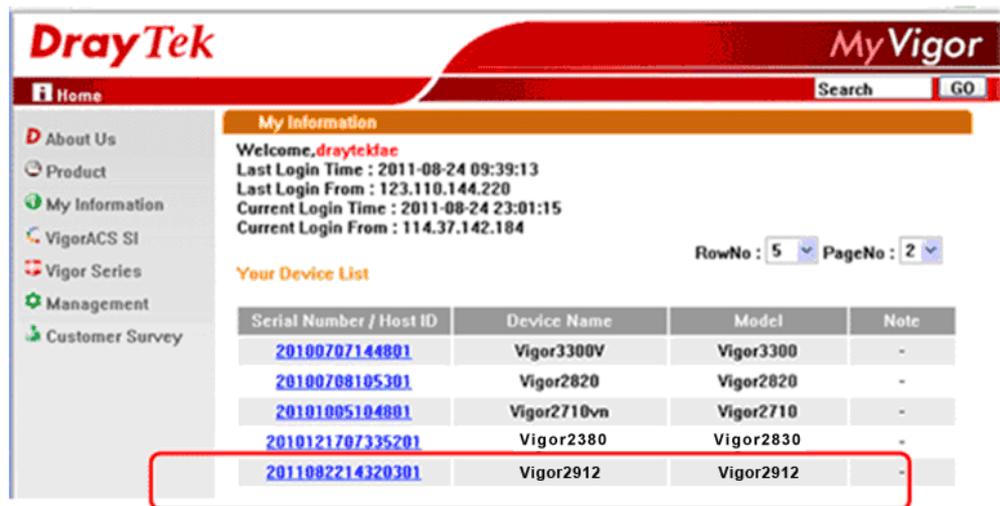
- 6 When the following page appears, your router information has been added to the database.

Your device has been successfully added to the database.

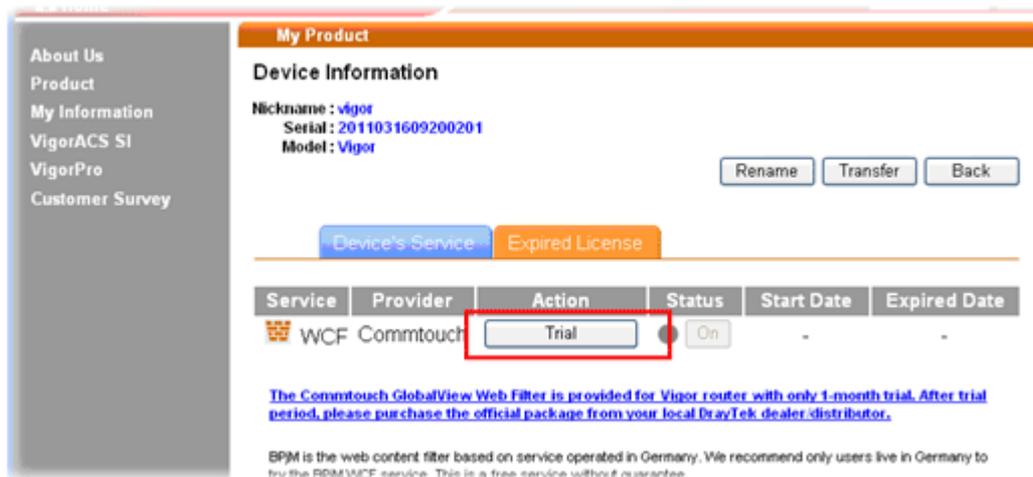


- 7 Now, you have finished the product registration.
- 8 After clicking **OK**, you will see the following page. Your router has been registered to *myvigor* website successfully.

If you have not activated web content filter service by using **Service Activation Wizard**, you can activate the service from this step. Please click the serial number link.



- 9 From the **Device's Service** section, click the **Trial**.



- 10 In the following page, check the box of “**I have read and accept the above Agreement**”. The system will find out the date for you to activate this version of service. Then, click **Next**.

- 11 When this page appears, click **Register**.

- 12 Wait for a moment until the following page appears.

DrayTek Service Activation

Service Name	Start Date	Expire Date	Status
Web Content filter	2011-03-28	2011-04-27	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.

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Close

- 13 Click **Close**.

3

Tutorials and Applications

3.1 How to configure settings for IPv6 Service in Vigor2912

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 Vigor2912, you need to know which connection type that your IPv6 service used.

Note: 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 Vigor2912, there are five connection types to be chosen: PPP, TSPC, AICCU, DHCPv6 Client and Static IPv6.

1. Access into the web user interface of Vigor2912. 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		Ethernet	None	Details Page	IPv6
WAN2		Ethernet	PPPoE	Details Page	IPv6
WAN3		USB	None	Details Page	IPv6

Note : Only one WAN can support IPv6.

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

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

WAN >> Internet Access

WAN 2

PPPoE	Static or Dynamic IP	PPTP/L2TP	IPv6
Internet Access Mode			
Connection Type		Offline Offline PPP TSPC AICCU DHCPv6 Client Static IPv6	
OK			

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 2

PPPoE	Static or Dynamic IP	PPTP/L2TP	IPv6
<input checked="" type="radio"/> Enable <input type="radio"/> Disable	PPP/MP Setup PPP Authentication: PAP or CHAP Idle Timeout: -1 second(s) IP Address Assignment Method (IPCP) <input type="button" value="WAN IP Alias"/> Fixed IP: <input type="radio"/> Yes <input checked="" type="radio"/> No (Dynamic IP) Fixed IP Address: <input type="text"/>		
ISP Access Setup Username: 73768635@hinet.net Password: <input type="password"/>		<input checked="" type="radio"/> Default MAC Address <input type="radio"/> Specify a MAC Address MAC Address: 00 .1D .AA .A8 .B7 .6A	
WAN Connection Detection Mode: ARP Detect Ping IP: <input type="text"/> TTL: <input type="text"/> MTU: 1442 (Max:1492)			
OK Cancel			

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

WAN >> Internet Access

WAN 2

PPPoE	Static or Dynamic IP	PPTP/L2TP	IPv6
Internet Access Mode			
Connection Type		PPP	
Note: IPv4 WAN setting should be PPPoE client.			
OK Cancel			

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	
ADSL Information (ADSL Firmware Version: 05-04-04-04-00-01)						
ATM Statistics	TX Cells	RX Cells	TX CRC errs	RX CRC errs		
	0	0	0	0		
ADSL Status	Mode	State	Up Speed	Down Speed	SNR Margin	Loop Att.
		READY	0	0	0	0

Online Status

Physical Connection						System Uptime: 0:2:32
IPv4			IPv6			
LAN Status						
IP Address						
2001:B010:7300:201:21D:AFF:FEA6:2568/64 (Global)						
FE80::21D:AFF: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	Gateway IP					
2001:B010:7300:201:21D:AFF:FEA6:256A/128 (Global)	FE80::90:1A00:242:AD52					
FE80::1D:AFF:FEA6:256A/128 (Link)						
DNS IP						
2001:8000:168::1						
2001:8000:168::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.

Note: 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 2

PPPoE	Static or Dynamic IP	PPTP/L2TP	IPv6
Internet Access Mode			
Connection Type		TSPC	
TSPC Configuration			
Username		cacahsu	
Password		••••••	
Confirm Password		••••••	
Tunnel Broker		broker.freenet6.net	

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: 0:23

IPv4		IPv6	
LAN Status			
IP Address			
2001:5C0:1502:D00:21D:AFF:FEA6:2568/64 (Global)			
FE80::21D:AFF: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.

Note: 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 2

PPPoE	Static or Dynamic IP	PPTP/L2TP	IPv6
Internet Access Mode			
Connection Type		AICCU	
AICCU Configuration			
<input type="checkbox"/> Always On			
Username		JCR3-SIXXS	
Password		•••••	
Confirm Password		•••••	
Tunnel Broker		tic.sixxs.net	
Subnet Prefix		2001:4DD0:FF00:8805::2 / 64	

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

IPv4		IPv6	
LAN Status			
IP Address			
2001:4DD0:FF00:83E4:21D:AFF:FEA6:2568/64 (Global)			
FE80::21D:AFF: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 2

PPPoE	Static or Dynamic IP	PPTP/L2TP	IPv6
Internet Access Mode			
Connection Type		DHCPv6 Client	
DHCPv6 Client Configuration			
Identity Association		<input type="radio"/> Prefix Delegation <input checked="" type="radio"/> Non-temporary Address	
IAID (Identity Association ID)		972573680	
OK		Cancel	

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: 0:0:50

IPv4		IPv6	
LAN Status			
IP Address			
FE80::21D:AFF: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		
2001:8010:7300:201:21D:AFF:FEA6:256A/64 (Global)	---		
2001:1111:2222:5555:21D:AFF:FEA6:256A/64 (Global)			
2001:1111:2222:3333::1111/128 (Global)			
FE80::21D:AFF: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 2

Static or Dynamic IP

Internet Access Mode

Connection Type: Static IPv6

Static IPv6 Address configuration

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

Current IPv6 Address Table

Index	IPv6 Address/Prefix Length	Scope
1	2001:B010:7300:201:21D::AAFF:FEA6:256A/64	Global
2	2001:1111:2222:5555:21D::AAFF:FEA6:256A/64	Global
3	FE80::21D::AAFF:FEA6:256A/64	Link

Static IPv6 Gateway configuration

IPv6 Gateway Address: ::

OK Cancel

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: 0:4:2

IPv4		IPv6	
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)			---
2001:1111:2222:5555:21D::AAFF:FEA6:256A/64 (Global)			
FE80::21D::AAFF:FEA6:256A/64 (Link)			
TX Packets	RX Packets	TX Bytes	RX Bytes
8	2	608	364

II. Configuring the LAN Settings

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

1. Access into the web user interface of Viogr2925. Open **LAN>> General Setup**. Click the **IPv6** button.

Note: Only the subnet of **LAN1** supports IPv6 feature.

LAN >> General Setup

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

RADVD Configuration

Enable Disable

Advertisement Lifetime Seconds (Range : 600 - 9000)

DHCPv6 Server Configuration

Enable Server Disable Server

Start IPv6 Address

End IPv6 Address

DNS Server IPv6 Address

Primary DNS Server

Secondary DNS Server

Static IPv6 Address configuration

IPv6 Address / Prefix Length

Current IPv6 Address Table

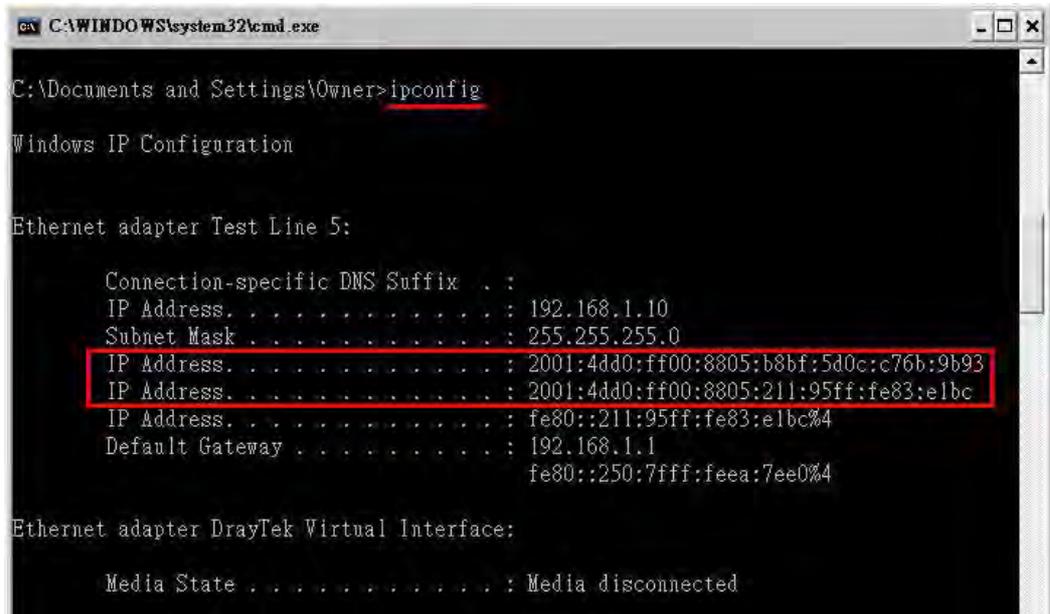
Index	IPv6 Address/Prefix Length	Scope
1	FE80::21D:AAFF:FEA6:2568/64	Link

2. In the field of **RADVD Configuration**, the default setting is **Enable**. The client's PC will ask RADVD service for the Prefix of IPv6 address automatically, and generate an Interface ID by itself to compose a full and unique IPv6 address.
3. In the field of **HCPv6 Server Configuration**, when DHCPv6 service is enabled, you can assign available IPv6 address for the client manually.

Note: 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 get the correct IPv6 IP address. Get into MS-DOS interface and type the command of “ipconfig”. Refer to the following figure.



```
C:\WINDOWS\system32\cmd.exe
C:\Documents and Settings\Owner>ipconfig

Windows IP Configuration

Ethernet adapter Test Line 5:

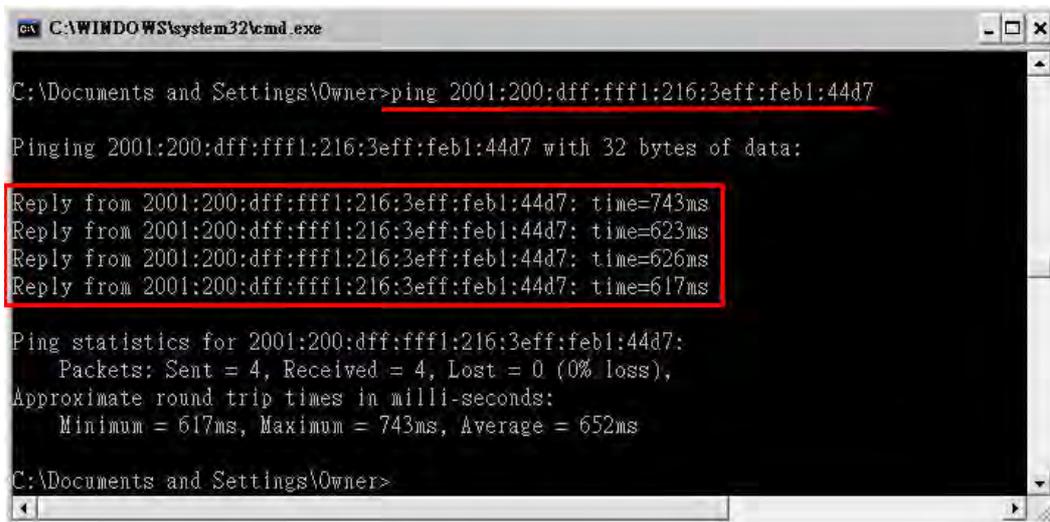
    Connection-specific DNS Suffix  . : 
    IP Address. . . . .               : 192.168.1.10
    Subnet Mask . . . . .             : 255.255.255.0
    IP Address. . . . .               : 2001:4dd0:ff00:8805:b8bf:5d0c:c76b:9b93
    IP Address. . . . .               : 2001:4dd0:ff00:8805:211:95ff:fe83:e1bc
    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:\WINDOWS\system32\cmd.exe
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.



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

3.2 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 Application>>File Explorer**. If it is necessary for you to delete, copy files on the device or write, paste files to the device, 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. Make sure **Disk Connected** appears on the **Connection Status** as the figure shown below:

USB Application >> USB Disk Status

USB Mass Storage Device Status

Connection Status	Disk Connected	Disconnect USB Disk	
Write Protect Status:	No		
Disk Capacity:	2009 MB		
USB Disk Users Connected		Refresh	
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
Samba Service Settings(Network Neighborhood)	
<input checked="" type="radio"/> Enable	<input type="radio"/> Disable
Access Mode	
<input type="radio"/> LAN Only	<input type="radio"/> LAN And WAN
NetBios Name Service	
Workgroup Name	
Host Name	Vigor2860

Note: 1. If Charset 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 have multi-connection mechanism, such as FileZilla, you may limit client connections setting to 1 to get better performance.
3. A workgroup name must not be the same as the host name. The workgroup name and the host name can have as many as 15 characters and a host name can have as many as 23 characters, but both cannot contain any of the following: . ; : " < > * + = / \ | ?.

OK

3. Setup a user account for the FTP service by using **USB Application >>USB User Management**. 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/Samba User	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Username	<input type="text" value="user1"/>
Password	<input type="password"/> (Maximum 11 Characters)
Confirm Password	<input type="password"/>
Home Folder	<input type="text"/>
Access Rule	
File	<input checked="" type="checkbox"/> Read <input checked="" type="checkbox"/> Write <input type="checkbox"/> Delete
Directory	<input checked="" type="checkbox"/> List <input type="checkbox"/> Create <input type="checkbox"/> Remove

Note: The folder name can only contain the following characters: A-Z a-z 0-9 \$ % ' - _ @ ~ ` ! () / and space.

OK Clear Cancel

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:

Password:

After you log on, you can add this server to your Favorites and return to it easily.

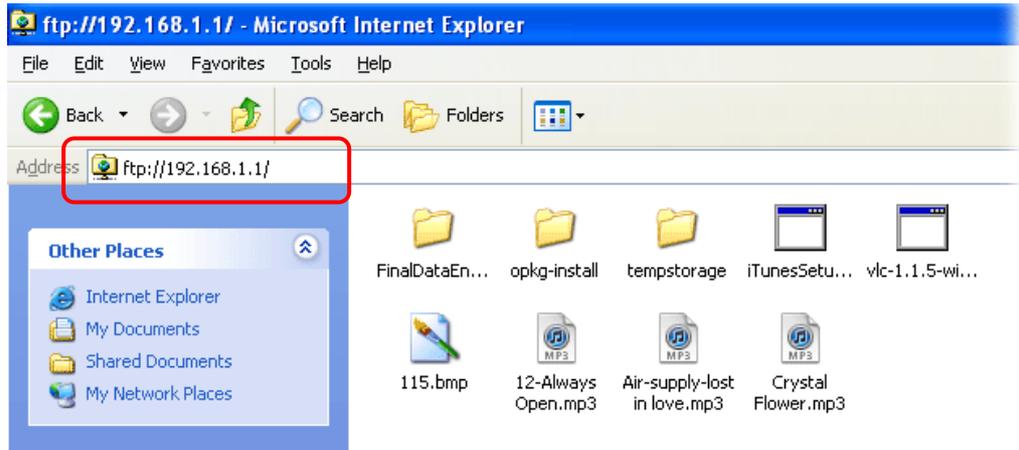
FTP does not encrypt or encode passwords or data before sending them to the server. To protect the security of your passwords and data, use Web Folders (WebDAV) instead.

Learn more about [using Web Folders](#).

Log on anonymously Save password

Log On Cancel

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 Application >> USB Disk Status

USB Mass Storage Device Status

Connection Status: Disk Connected Disconnect USB Disk

Write Protect Status: No

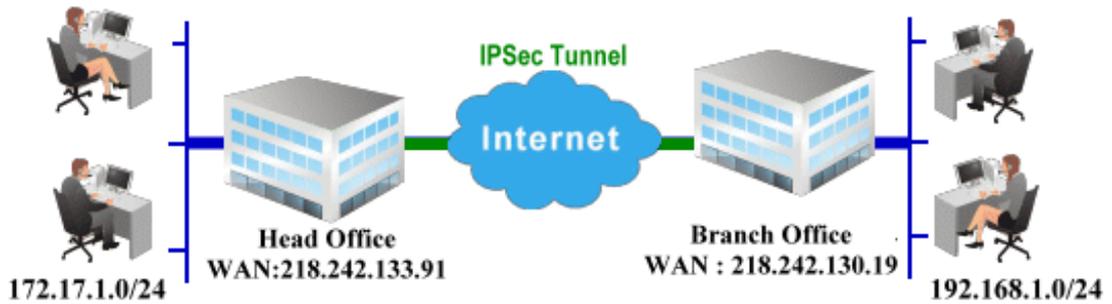
Disk Capacity: 2009 MB

USB Disk Users Connected | Refresh |

Index	Service	IP Address(Port)	Username
1.	FTP	192.168.1.10(1963)	user1 Drop

Now, users in LAN of Vigor2912 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**.

3.3 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.

VPN and Remote Access >> LAN to LAN i

LAN-to-LAN Profiles:

[Set to Factory Default](#)

View: All Trunk

Index	Name	Active	Status	Index	Name	Active	Status
1.	???	<input type="checkbox"/>	---	17.	???	<input type="checkbox"/>	---
2.	???	<input type="checkbox"/>	---	18.	???	<input type="checkbox"/>	---
3.	???	<input type="checkbox"/>	---	19.	???	<input type="checkbox"/>	---
4.	???	<input type="checkbox"/>	---	20.	???	<input type="checkbox"/>	---
5.	???	<input type="checkbox"/>	---	21.	???	<input type="checkbox"/>	---

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 <input type="text" value="VPN Server"/> <input checked="" type="checkbox"/> Enable this profile	Call Direction <input type="radio"/> Both <input type="radio"/> Dial-Out <input checked="" type="radio"/> Dial-in <input type="checkbox"/> Always on Idle Timeout <input type="text" value="0"/> second(s) <input type="checkbox"/> Enable PING to keep alive PING to the IP <input type="text"/>
VPN Dial-Out Through <input type="text" value="WAN1 First"/>	
Netbios Naming Packet <input checked="" type="radio"/> Pass <input type="radio"/> Block Multicast via VPN <input checked="" type="radio"/> Pass <input type="radio"/> Block (for some IGMP, IP-Camera, DHCP Relay..etc.)	

2. Dial-Out Settings

- 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

<p>Allowed Dial-In Type</p> <input checked="" type="checkbox"/> PPTP <input checked="" type="checkbox"/> IPsec Tunnel <input checked="" type="checkbox"/> L2TP with IPsec Policy None	<p>Username <input data-bbox="1161 389 1385 421" type="text" value="???"/></p> <p>Password <input data-bbox="1161 434 1385 465" type="password"/></p> <p>VJ Compression <input type="radio"/> On <input checked="" type="radio"/> Off</p>
<p><input checked="" type="checkbox"/> Specify Remote VPN Gateway</p> <p>Peer VPN Server IP <input data-bbox="405 622 628 654" type="text" value="218.242.130.19"/></p> <p>or Peer ID <input data-bbox="507 667 730 698" type="text"/></p>	<p>IKE Authentication Method</p> <input checked="" type="checkbox"/> Pre-Shared Key <input data-bbox="948 600 1155 631" type="button" value="IKE Pre-Shared Key"/> <input data-bbox="1171 600 1378 631" type="text"/> <input checked="" type="checkbox"/> Digital Signature(X.509) None
	<p>Local ID</p> <input checked="" type="radio"/> Alternative Subject Name First <input type="radio"/> Subject Name First
	<p>IPsec Security Method</p> <input checked="" type="checkbox"/> Medium(AH) High(ESP) <input checked="" type="checkbox"/> DES <input checked="" type="checkbox"/> 3DES <input checked="" type="checkbox"/> AES

4. Gre over IPsec Settings

- 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 <input data-bbox="660 1258 874 1290" type="text" value="0.0.0.0"/>	RIP Direction Disable
Remote Gateway IP <input data-bbox="660 1303 874 1335" type="text" value="0.0.0.0"/>	From first subnet to remote network, you have to do
Remote Network IP <input data-bbox="660 1348 874 1379" type="text" value="192.168.1.0"/>	<input data-bbox="1155 1348 1235 1379" type="button" value="Route"/>
Remote Network Mask <input data-bbox="660 1393 874 1424" type="text" value="255.255.255.0"/>	<input type="checkbox"/> Change default route to this VPN tunnel (Only single WAN supports this)
Local Network IP <input data-bbox="660 1438 874 1469" type="text" value="192.168.1.9"/>	
Local Network Mask <input data-bbox="660 1482 874 1514" type="text" value="255.255.255.0"/>	
<input data-bbox="660 1505 730 1536" type="button" value="More"/>	

- Click **OK** to save the settings.

- 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

(V2920) 172.16.2.145

VPN Connection Status
Current Page: 1 Page No.

VPN	Type	Remote IP	Virtual Network	Tx Pkts	Tx Rate (Bps)	Rx Pkts	Rx Rate (Bps)	UpTime
1 (VPN Server)	IPSec Tunnel DES-SHA1 Auth	218.242.130.19	192.168.1.0/24	353	3	291	3	0:13:58 <input type="button" value="Drop"/>

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

Configuration on Vigor Router for Branch Office

- Log into the web user interface of Vigor router.
- 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 Trunk

Index	Name	Active	Status	Index	Name	Active	Status
<u>1.</u>	???	<input type="checkbox"/>	---	<u>17.</u>	???	<input type="checkbox"/>	---
<u>2.</u>	???	<input type="checkbox"/>	---	<u>18.</u>	???	<input type="checkbox"/>	---
<u>3.</u>	???	<input type="checkbox"/>	---	<u>19.</u>	???	<input type="checkbox"/>	---
<u>4.</u>	???	<input type="checkbox"/>	---	<u>20.</u>	???	<input type="checkbox"/>	---
<u>5.</u>	???	<input type="checkbox"/>	---	<u>21.</u>	???	<input type="checkbox"/>	---

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

2. Dial-Out Settings

- 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

<p>Type of Server I am calling</p> <p><input type="radio"/> PPTP</p> <p><input checked="" type="radio"/> IPsec Tunnel</p> <p><input type="radio"/> L2TP with IPsec Policy None</p>	<p>Username <input data-bbox="1161 376 1378 407" type="text" value="???"/></p> <p>Password <input data-bbox="1161 421 1366 452" type="password"/></p> <p>PPP Authentication PAP/CHAP</p> <p>VJ Compression <input type="radio"/> On <input checked="" type="radio"/> Off</p>
<p>Server IP/Host Name for VPN. (such as draytek.com or 123.45.67.89)</p> <p><input data-bbox="402 600 705 631" type="text" value="218.242.133.91"/></p>	<p>IKE Authentication Method</p> <p><input checked="" type="radio"/> Pre-Shared Key</p> <p><input data-bbox="906 622 1145 654" type="button" value="IKE Pre-Shared Key"/> <input data-bbox="1161 622 1366 654" type="password" value="....."/></p> <p><input type="radio"/> Digital Signature(X.509)</p> <p>Peer ID None</p> <p>Local ID</p> <p><input checked="" type="radio"/> Alternative Subject Name First</p> <p><input type="radio"/> Subject Name First</p>
	<p>IPsec Security Method</p> <p><input type="radio"/> Medium(AH)</p> <p><input checked="" type="radio"/> High(ESP) 3DES with Authentication</p> <p><input data-bbox="906 945 1008 976" type="button" value="Advanced"/></p>
<p>Index(1-15) in <u>Schedule</u> Setup:</p> <p><input type="text"/> , <input type="text"/> , <input type="text"/> , <input type="text"/></p>	

- 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

<p>My WAN IP <input data-bbox="657 1339 874 1370" type="text" value="0.0.0.0"/></p> <p>Remote Gateway IP <input data-bbox="657 1384 874 1415" type="text" value="0.0.0.0"/></p> <p>Remote Network IP <input data-bbox="657 1429 874 1460" type="text" value="172.17.1.0"/></p> <p>Remote Network Mask <input data-bbox="657 1473 874 1505" type="text" value="255.255.255.0"/></p> <p>Local Network IP <input data-bbox="657 1518 874 1550" type="text" value="192.168.1.9"/></p> <p>Local Network Mask <input data-bbox="657 1563 874 1594" type="text" value="255.255.255.0"/></p> <p><input data-bbox="657 1608 730 1639" type="button" value="More"/></p>	<p>RIP Direction Disable</p> <p>From first subnet to remote network, you have to do</p> <p><input data-bbox="1161 1429 1248 1460" type="button" value="Route"/></p> <p><input type="checkbox"/> Change default route to this VPN tunnel (Only single WAN supports this)</p>
---	--

- Click **OK** to save the settings.

- 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

(V2920) 172.16.2.145

VPN Connection Status

Current Page: 1 Page No.

VPN	Type	Remote IP	Virtual Network	Tx Pkts	Tx Rate (Bps)	Rx Pkts	Rx Rate (Bps)	UpTime
1 (VPN Client)	IPSec Tunnel DES-SHA1 Auth	218.242.133.91	172.17.1.0/24	8	3	132	36	0:6:41 <input type="button" value="Drop"/>

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

3.4 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:

- Open **Bandwidth Management>> Quality of Service**.

CSM

Bandwidth Management

Sessions Limit

Bandwidth Limit

Quality of Service

Applications

- 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	101060.00Kbps/98180.00Kbps		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

Class Rule

Index	Name	Rule	Service Type
Class 1		Edit	
Class 2		Edit	Edit
Class 3		Edit	

- In the following page, type a name (e.g., VoIP) for such class and click **Add**.

Class Index #1
 Name Tag packets as:

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.

Rule Edit

ACT

Ethernet Type IPv4 IPv6

Local Address

Remote Address

DiffServ CodePoint

Service Type

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.

Ethernet Type: IPv4

Address Type

Start IP Address

End IP Address

Subnet Mask

6. Click **OK** again to save the settings.

Rule Edit

ACT

Ethernet Type IPv4 IPv6

Local Address

Remote Address

DiffServ CodePoint

Service Type

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 Tag packets as:

NO	Status	Local Address	Remote Address	DiffServ CodePoint	Service Type
1 <input type="radio"/>	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 Tag packets as:

NO	Status	Local Address	Remote Address	DiffServ CodePoint	Service Type
1 <input type="radio"/>	Active	172.16.1.242 ~ 172.16.1.249	Any	ANY	ANY

and

Bandwidth Management >> Quality of Service

Class Index #3
 Name Tag packets as:

NO	Status	Local Address	Remote Address	DiffServ CodePoint	Service Type
1 <input type="radio"/>	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	Disable	101060.00Kbps/98180.00Kbps		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

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 %

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	101060.00Kbps/98180.00Kbps	Outbound	30%	50%	15%	5%	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

Class Rule

Index	Name	Rule	Service Type
Class 1	VoIP	Edit	Edit
Class 2	IPTV	Edit	
Class 3	Data/Email	Edit	

3.5 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	101060.00Kbps/98180.00Kbps		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

Class Rule

Index	Name	Rule	Service Type
Class 1		Edit	
Class 2		Edit	Edit
Class 3		Edit	

2. Click **Setup** link of WAN(1/2/3). Make sure the QoS Control on the left corner is checked. And select **BOTH** in **Direction**.

Bandwidth Management >> Quality of Service

WAN2 General Setup

Enable the QoS Control BOTH ▾

WAN Inbound Bandwidth IN

WAN Outbound Bandwidth OUT

BOTH

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 %

Note: 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.

- 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 Tag packets as:

NO	Status	Local Address	Remote Address	DiffServ CodePoint	Service Type
1	Active	Any	Any	ANY	ANY

- 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

WAN Inbound Bandwidth Kbps

WAN Outbound Bandwidth Kbps

Index	Class Name	Reserved bandwidth Ratio
Class 1	E-mail	<input type="text" value="25"/> %
Class 2		<input type="text" value="25"/> %
Class 3		<input type="text" value="25"/> %
	Others	<input type="text" value="25"/> %

Enable UDP Bandwidth Control Limited_bandwidth Ratio %

Outbound TCP ACK Prioritize

- 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 Tag packets as:

NO	Status	Local Address	Remote Address	DiffServ CodePoint	Service Type
1	Active	172.16.1.242 ~ 172.16.1.249	Any	ANY	ANY

- 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	101060.00Kbps/98180.00Kbps	Outbound	30%	50%	15%	5%	Inactive	Status Setup
WAN2	Enable	100000Kbps/100000Kbps	Both	25%	25%	25%	25%	Inactive	Status Setup
WAN3	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	

- Check **Enable UDP Bandwidth Control** on the bottom to prevent enormous UDP traffic influent other application. Click **OK**.

Bandwidth Management >> Quality of Service

WAN2 General Setup

Enable the QoS Control BOTH ▾

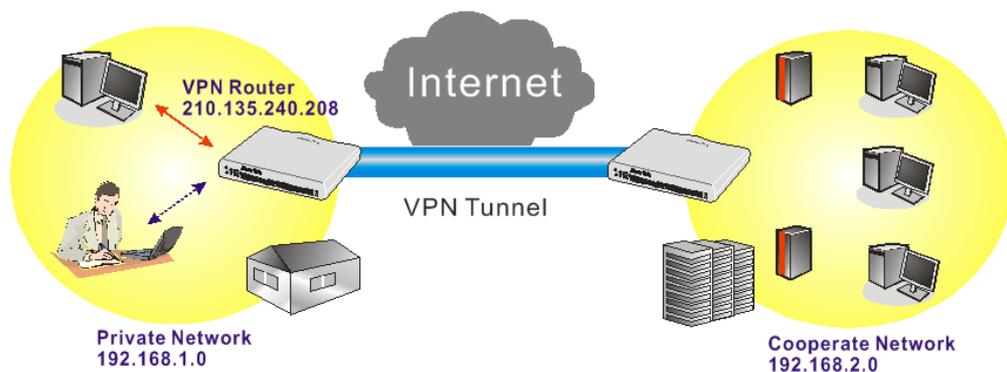
WAN Inbound Bandwidth	<input type="text" value="100000"/> Kbps
WAN Outbound Bandwidth	<input type="text" value="100000"/> Kbps

Index	Class Name	Reserved Bandwidth Ratio
Class 1	E-mail	<input type="text" value="25"/> %
Class 2	HTTPS	<input type="text" value="25"/> %
Class 3		<input type="text" value="25"/> %
	Others	<input type="text" value="25"/> %

Enable UDP Bandwidth Control Limited_bandwidth Ratio %

Outbound TCP ACK Prioritize

- 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.



- 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 Tag packets as: ▾

NO	Status	Local Address	Remote Address	DiffServ CodePoint	Service Type
1	Empty	-	-	-	-

- 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

Remote Address

DiffServ CodePoint ▾

Service Type ▾

Note: Please choose/setup the Service Type first.

- 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**.

3.6 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 Vigor2912 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 Vigor2912.
2. Open **User Management -> General Setup** to get the following page. In the field of **Landing Page**, please type the words of “**Login Success**”. Please note that the maximum number of characters to be typed here is 255.

User Management >> General Setup

General Setup

Mode:

Notice :

1. User Management will refer to active rules in Data Filter as whitelists and blacklists in user-based firewall mode.
2. Users match the above lists will not be required for authentication. The firewall rules policy will still valid.
3. Otherwise, authentication required for users not matched the above lists. The firewall rules designated in the user profile's policy will still valid.

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	Name
1.	admin
2.	Dial-In User
3.	
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

<input checked="" type="checkbox"/>	Enable this account	
User Name		Caca
Password		••••
Confirm Password		
Idle Timeout		10 min(s) 0:Unlimited
Max User Login		0 0:Unlimited
<u>External Server Authentication</u>		None
Log		None
Pop Browser Tracking Window		<input checked="" type="checkbox"/>
Authentication		<input checked="" type="checkbox"/> Web <input checked="" type="checkbox"/> Alert Tool <input checked="" type="checkbox"/> Telnet
Landing Page		<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	Enable Time Quota	0 min(s) Refresh Add more 0 min(s)
Index(1-15) in <u>Schedule</u> Setup:		

- 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: ••••
Login

Copyright©, DrayTek Corp. All Rights Reserved. **DrayTek**

- Click **Login**. If the logging is successful, you will see the message of Login Success from the browser you use.



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:

Notice :

1. User Management will refer to active rules in Data Filter as whitelists and blacklists in user-based firewall mode.
2. Users match the above lists will not be required for authentication. The firewall rules policy will still valid.
3. Otherwise, authentication required for users not matched the above lists. The firewall rules designated in the user profile's policy will still valid.

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	Name
<u>1.</u>	admin
<u>2.</u>	Dial-In User
<u>3.</u>	
<u>4.</u>	

3. In the following page, check the box of **Landing page** and click **OK** to save the settings.

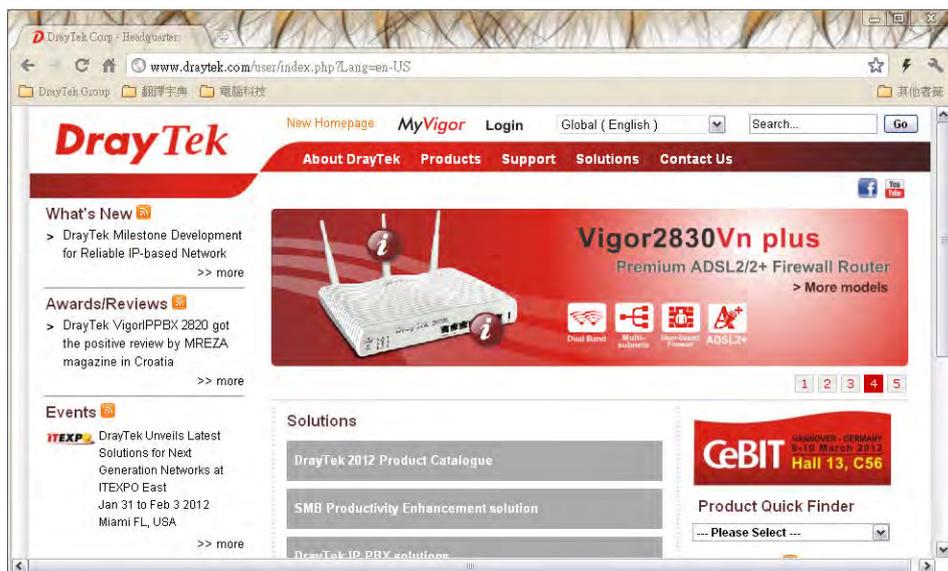
Profile Index 3

<input checked="" type="checkbox"/> Enable this account	
User Name	<input type="text" value="Caca"/>
Password	<input type="password" value="...."/>
Confirm Password	<input type="password"/>
Idle Timeout	<input type="text" value="10"/> min(s) 0:Unlimited
Max User Login	<input type="text" value="0"/> 0:Unlimited
<u>External Server Authentication</u>	<input type="text" value="None"/>
Log	<input type="text" value="None"/>
Pop Browser Tracking Window	<input checked="" type="checkbox"/>
Authentication	<input checked="" type="checkbox"/> Web <input checked="" type="checkbox"/> Alert Tool <input checked="" type="checkbox"/> Telnet
<u>Landing Page</u>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Enable Time Quota	<input type="text" value="0"/> min(s) <input type="button" value="Refresh"/> <input type="button" value="Add"/> more <input type="text" value="0"/> min(s)
Index(1-15) in <u>Schedule</u> Setup:	<input type="text"/> , <input type="text"/> , <input type="text"/> , <input type="text"/>

- 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.



- Click **Login**. If the logging is successful, you will be directed into the website of www.draytek.com.



3.7 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.

3.7.1 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.	

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>
```

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

```
Activation authenticate fail, contact with support@draytek.com, 2012-10-30 16:17:01
```

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 : **t x x h d d**

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

[Forgotten password?](#)

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

If you are having difficulty logging in, contact our customer service.
Customer Service : (888) 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.

- 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 modifications 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:*
(3 - 20 characters)

Password:*
(4 - 20 characters : Do not set the same as the username.)

Confirm Password:*

Personal Information

First Name:*

Last Name:*

Company Name:

Email Address:*
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: -

Country:*

Career:*

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?

What kind of anti-virus do you use?

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.

7. Now you have created an account successfully. Click **START**.

Register
Create an account - Please enter personal profile.

1 Agreement
2 Personal Information
3 Preferences
4 Completion

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

START

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

Search for this site GO

Register Confirm

Thank for your register in VigorPro Web Site
The Register process is completed

Close Login

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 :

Password :

Auth Code : **T4he1C**

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

[Forgotten password?](#)

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.

3.7.2 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.

DrayTek MyVigor Customer Survey

Home Search GO

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.

Please use IE 5.0 or above (resolution 1024 * 768) for best display. © DrayTek Corp.

Login

UserName

Password

AuthCode **QbkqVd**

If you can't read the AuthCode, [click here](#)

[Forget password?](#)

Not registered yet ? [Click here!](#)

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 your account.

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.



6. Check to see the confirmation *email* with the title of **New Account Confirmation Letter from myvigor.draytek.com**.

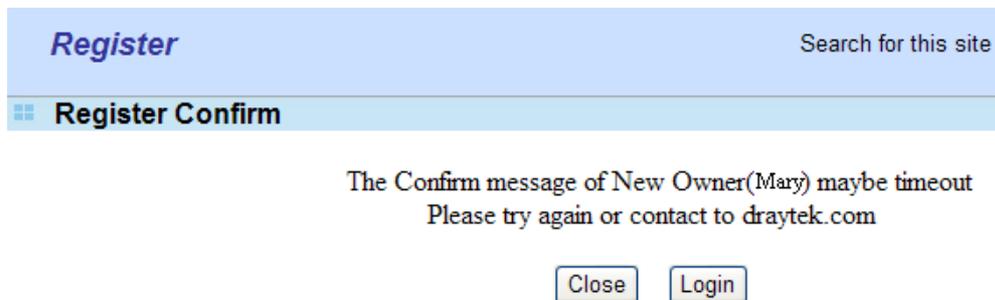
***** This is an automated message from myvigor.draytek.com.*****

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**.



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 :

Password :

Auth Code : **T4he1C**

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

[Forgotten password?](#)

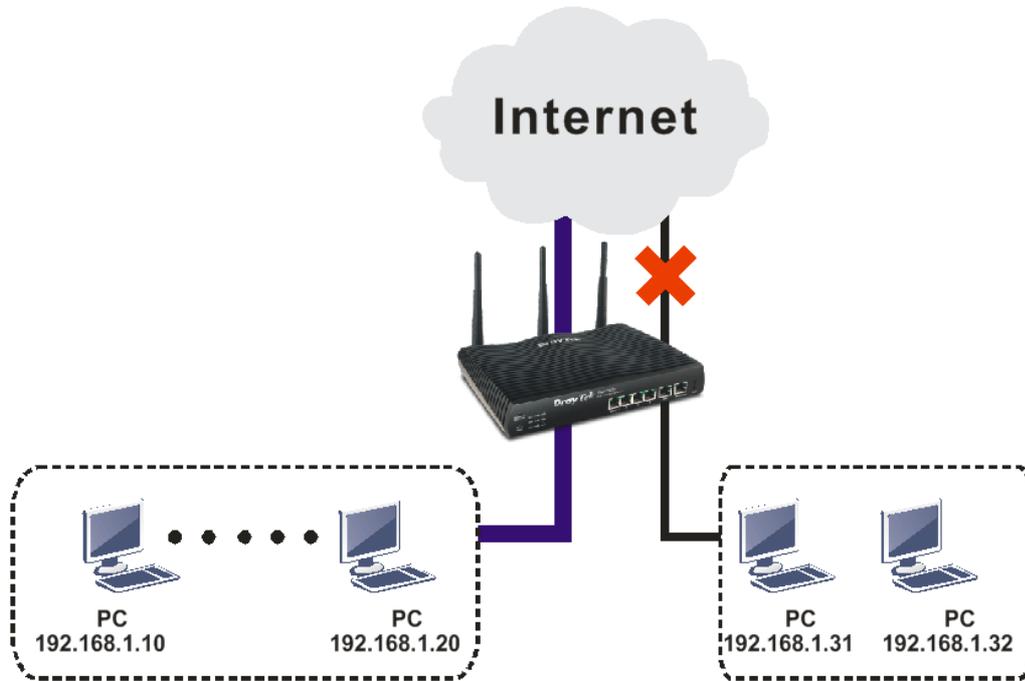
Don't have a MyVigor Account ? [Create an account now](#)

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.

3.8 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 has 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
2	<input checked="" type="checkbox"/>	xNetBios -> DNS		Down
3	<input type="checkbox"/>		UP	Down
4	<input type="checkbox"/>		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:

Index(1-15) in **Schedule** Setup: , , ,

Clear sessions when schedule ON: Enable

Direction:

Source IP:

Destination IP:

Service Type:

Fragments:

Application

Filter:

Branch to Other Filter Set:

Sessions Control:

Syslog:

Note: 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:

Index(1-15) in **Schedule** Setup: , , ,

Clear sessions when schedule ON: Enable

Direction:

Source IP:

Destination IP:

Service Type:

Fragments:

Application

Filter:

Branch to Other Filter Set:

Syslog:

- 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	<input type="checkbox"/>
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

OK Close

- 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

<input checked="" type="checkbox"/> Check to enable the Filter Rule		
Comments:	open_ip	
Index(1-15) in Schedule Setup:	, , ,	
Clear sessions when schedule ON:	<input type="checkbox"/> Enable	
Direction:	LAN/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	<input type="checkbox"/>
Branch to Other Filter Set:	None	

8. Both filter rules have been created. Click **OK**.

Firewall >> Filter Setup >> Edit Filter Set

Filter Set 2

Comments :

Filter Rule	Active	Comments	Move Up	Move Down
<input type="text" value="1"/>	<input checked="" type="checkbox"/>	xNetBios -> DNS		<u>Down</u>
<input type="text" value="2"/>	<input checked="" type="checkbox"/>	block_all	<u>UP</u>	<u>Down</u>
<input type="text" value="3"/>	<input checked="" type="checkbox"/>	open_ip	<u>UP</u>	<u>Down</u>
<input type="text" value="4"/>	<input type="checkbox"/>		<u>UP</u>	<u>Down</u>
<input type="text" value="5"/>	<input type="checkbox"/>		<u>UP</u>	<u>Down</u>
<input type="text" value="6"/>	<input type="checkbox"/>		<u>UP</u>	<u>Down</u>
<input type="text" value="7"/>	<input type="checkbox"/>		<u>UP</u>	

Next Filter Set 

9. 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.

3.9 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 [Activate](#)
[Status: **Commtouch**] [Start Date: 2012-12-31 Expire Date: 2013-01-08]

Setup Query Server	<input type="text" value="auto-selected"/>	Find more
Setup Test Server	<input type="text" value="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 :

```
<body><center><br><br><br><p>The requested Web page <br> from %SIP% <br>to %URL%  
<br>that is categorized with %CLI% <br>has been blocked by %RNAME% Web Content  
Filter.<p>Please contact your system administrator for further  
information.</center></body>
```

How to register/activate Web Content Filter (WCF) license? Please visit for getting more information:

***How to Register AI/AV/AS/WCF Service (Service Activation Wizard)**
(<http://www.draytek.com/user/SupportFAQDetail.php?ID=1955>)

***How to Activate Anti-Virus/Anti-Intrusion/Anti-Spam Service**
(<http://www.draytek.com/user/SupportFAQDetail.php?ID=286>)

How to use the Web Content Filter (WCF)
(<http://www.draytek.com/user/SupportFAQDetail.php?ID=1953>)

*** What the Web Content Filter (WCF) license benefits are,**
(<http://www.draytek.com/user/PdInfoDetail.php?Id=110>)

- Open CSM >> **Web Content Filter Profile** to create a WCF profile. Check **Social Networking** with Action, **Block**.

Vigor 2925 Series

Child Abuse Images

Leisure

Select All
Clear All

Entertainment Games Sports
 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 Forums & Newsgroups Computers
 Download Sites Streaming, Downloads Phishing & Fraud
 Search Engine, Portals **Social Networking** Spam Sites
 Malware Botnets Hacking
 Illegal Software Information Security Peer-to-Peer

Other

Select All

Adv & Pop-Ups Arts Transportation
 Compromised Dating & Personals Education

- Enable this profile in **Firewall>>General Setup>>Default Rule**.

Firewall >> General Setup

General Setup

General Setup **Default Rule**

Actions for default rule:

Application	Action/Profile	Syslog
Filter	Pass	<input type="checkbox"/>
Sessions Control	65 / 60000	<input type="checkbox"/>
Quality of Service	None	<input type="checkbox"/>
Load-Balance policy	Auto-Select	<input type="checkbox"/>
User Management	None	<input type="checkbox"/>
APP Enforcement	None	<input type="checkbox"/>
URL Content Filter	None	<input type="checkbox"/>
Web Content Filter	1-Default	<input type="checkbox"/>
Advance Setting	None [Create New] 1-Default	

- 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”

- Open **Object Settings>>Keyword Object**. Click an index number to open the setting page.
- In the field of **Contents**, please type *facebook*. Configure the settings as the following figure.

Objects Setting >> Keyword Object Setup

Profile Index : 1

Name	<input type="text" value="Facebook"/>
Contents	<input type="text" value="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

- Open **CSM>>URL Content Filter Profile**. Click an index number to open the setting page.
- Configure the settings as the following figure.

Profile Index: 1

Profile Name:

Priority: Log:

1.URL Access Control

Enable URL Access Control Prevent web access from IP address

Action: Group/Object Selections:

2.Web Feature

Enable Restrict Web Feature

Action: Cookie Proxy Upload File Extension Profile:

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.

General Setup

Actions for default rule:	Action/Profile	Syslog
Application	<input type="text" value="Pass"/>	<input type="checkbox"/>
Filter	<input type="text" value="Pass"/>	<input type="checkbox"/>
Sessions Control	<input type="text" value="0 / 60000"/>	<input type="checkbox"/>
<u>Quality of Service</u>	<input type="text" value="None"/>	<input type="checkbox"/>
Load-Balance policy	<input type="text" value="Auto-Select"/>	<input type="checkbox"/>
<u>User Management</u>	<input type="text" value="None"/>	<input type="checkbox"/>
APP Enforcement	<input type="text" value="None"/>	<input type="checkbox"/>
URL Content Filter	<input type="text" value="1-Facebook"/>	<input type="checkbox"/>
<u>Web Content Filter</u>	<input type="text" value="None"/>	<input type="checkbox"/>

Advance Setting

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

OK Clear Cancel

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			
<input checked="" type="checkbox"/> Enable URL Access Control	<input type="checkbox"/> Prevent web access from IP address		
Action:	Group/Object Selections		
Block	facebook..	Edit	
2.Web Feature			
<input type="checkbox"/> Enable Restrict Web Feature			
Action:	<input type="checkbox"/> Cookie	<input type="checkbox"/> Proxy	<input type="checkbox"/> Upload
Pass	File Extension Profile:		None

OK Clear Cancel

5. When you finished the above steps, please open **Firewall>>General Setup**.

- 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

The screenshot shows the 'General Setup' page for a firewall, specifically the 'Default Rule' tab. The page is divided into two sections: 'General Setup' and 'Default Rule'. The 'Default Rule' section contains a table of configuration options for the default rule. The 'URL Content Filter' option is highlighted with a red box and is set to '2-face.apps'. Other options include 'Filter' (Pass), 'Sessions Control' (0 / 60000), 'Quality of Service' (None), 'Load-Balance policy' (Auto-Select), 'User Management' (None), 'APP Enforcement' (None), and 'Web Content Filter' (None). There is also an 'Advance Setting' button with an 'Edit' option.

Actions for default rule:	Action/Profile	Syslog
Application		
Filter	Pass	<input type="checkbox"/>
Sessions Control	0 / 60000	<input type="checkbox"/>
Quality of Service	None	<input type="checkbox"/>
Load-Balance policy	Auto-Select	<input type="checkbox"/>
User Management	None	<input type="checkbox"/>
APP Enforcement	None	<input type="checkbox"/>
URL Content Filter	2-face.apps	<input type="checkbox"/>
Web Content Filter	None	<input type="checkbox"/>

Advance Setting

This page is left blank.

4

Advanced Configuration

This chapter will guide users to execute advanced (full) configuration through admin mode operation.

1. Open a web browser on your PC and type **http://192.168.1.1**. The window will ask for typing username and password.
2. Please type “admin/admin” on Username/Password for administration operation.

Now, the **Main Screen** will appear. Note that “Admin mode” will be displayed on the bottom left side.

The screenshot displays the DrayTek Vigor2912 Series web interface. The top navigation bar includes the DrayTek logo, the series name 'Vigor2912 Series', and navigation icons. A sidebar on the left contains a menu with options like 'Wizards', 'WAN', 'LAN', 'Firewall', and 'Support Area'. The main content area is titled 'System Status' and contains several tables:

- System Status:** Model Name: Vigor2912n, Firmware Version: 3.8.1.3, Build Date/Time: Aug 30 2016 16:48:57.
- LAN Table:**

	MAC Address	IP Address	Subnet Mask	DHCP Server	DNS
LAN1	00-1D-AA-84-8F-34	192.168.1.1	255.255.255.0	ON	8.8.8.8
LAN2	00-1D-AA-84-8F-34	192.168.2.1	255.255.255.0	ON	8.8.8.8
IP Routed Subnet	00-1D-AA-84-8F-34	192.168.0.1	255.255.255.0	ON	8.8.8.8
- Wireless LAN Table:**

MAC Address	Frequency Domain	Firmware Version	SSID
00-1D-AA-84-8F-34	Europe	2.7.1.5	DrayTek
- WAN Table:**

Link Status	MAC Address	Connection	IP Address	Default Gateway
WAN1 Disconnected	00-1D-AA-84-8F-35	PPPoE	---	---
WAN2 Disconnected	00-1D-AA-84-8F-36	---	---	---
WAN3 Disconnected	00-1D-AA-84-8F-37	---	---	---
- IPv6 Table:**

Address	Scope	Internet Access Mode
LAN FE80::21D:A AFF:FE84:8F34/64	Link	---

At the bottom, it states 'User Mode is OFF now.'

4.1 WAN

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

4.1.1 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.

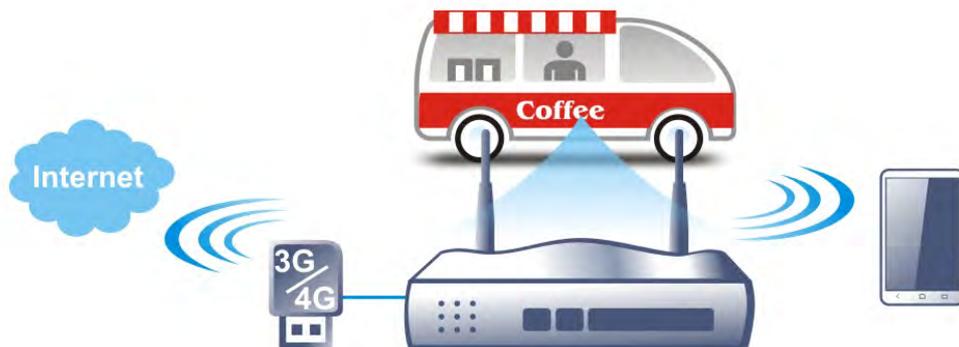
Get Your Public IP Address from ISP

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, Vigor2912 adds the function of 3G/4G network connection for such purpose. By connecting 3G/4G USB Modem to the USB port of Vigor2912, it can support HSDPA/UMTS/EDGE/GPRS/GSM and the future 3G/4G standard (HSUPA, etc). Vigor2912n 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 four LAN ports on the router to access Internet. Also, they can access Internet via 802.11n wireless function of Vigor2912n, and enjoy the powerful firewall, bandwidth management, VPN features of Vigor2912n series.



After connecting into the router, 3G/4G USB Modem will be regarded as the third WAN 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 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.

Below shows the menu items for **WAN**.

4.1.2 General Setup

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

This webpage allows you to set general setup for WAN1, WAN2 and WAN3 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**.

For Vigor2912/Vigor2912n:

WAN >> General Setup

Load Balance Mode:

Setup				
Index	Enable	Physical Mode/Type	Line Speed(Kbps) DownLink/UpLink	Active Mode
WAN1	<input checked="" type="checkbox"/>	Ethernet/Auto negotiation	0 / 0	Always On
WAN2	<input type="checkbox"/>	Ethernet/Auto negotiation	0 / 0	Always On
WAN3	<input checked="" type="checkbox"/>	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.

For Vigor2912F/Vigor2912Fn:

WAN >> General Setup

Load Balance Mode:

Setup				
Index	Enable	Physical Mode/Type	Line Speed(Kbps) DownLink/UpLink	Active Mode
WAN1	<input checked="" type="checkbox"/>	Fiber/100M FULL	0 / 0	Always On
WAN2	<input type="checkbox"/>	Ethernet/Auto negotiation	0 / 0	Always On
WAN3	<input checked="" type="checkbox"/>	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

	<p>practical bandwidth for your WAN interface, please choose the setting of According to Line Speed. Otherwise, please choose Auto Weigh to let the router reach the best load balance.</p> <p>IP Based - The same source / destination IP pair will select the same WAN interface as policy. It is the default setting.</p> <p>Session 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.</p> <p>If you have no strong demand about speed test result, keep default settings as IP based.</p>
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	Display the downstream and upstream rate of such WAN interface.
Active Mode	Display whether such WAN interface is Active device or backup device.

Note: In default, each WAN port is enabled.

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

WAN1/WAN2 with Ethernet and Fiber WAN

WAN1 is dedicated to physical mode in Ethernet (Vigor2912/Vigor2912n) or Fiber (Vigor2912F/Vigor2912Fn). WAN2 is dedicated to physical mode in Ethernet.

WAN >> General Setup

WAN 1

Enable:	<input type="button" value="Yes"/>
Display Name:	<input type="text"/>
Physical Mode:	Ethernet
Physical Type:	<input type="button" value="Auto negotiation"/>
Line Speed(Kbps):	
DownLink	<input type="text"/>
UpLink	<input type="text"/>
VLAN Tag insertion :	<input type="button" value="Disable"/> (Please configure Internet Access setting first)
Tag value:	<input type="text"/> (0~4095)
Priority:	<input type="text"/> (0~7)
Active Mode:	<input type="button" value="Failover"/> Load Balance: <input checked="" type="checkbox"/>
Active When:	<input checked="" type="radio"/> Any of the selected WAN disconnect <input type="radio"/> All of the selected WAN disconnect <input type="checkbox"/> WAN 1 <input type="checkbox"/> WAN 2 <input type="checkbox"/> WAN 3

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	You can change the physical type for WAN or choose Auto negotiation for determined by the system.
Line Speed	If you 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	<p>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.</p> <p>Disable – Disable the function of VLAN with tag.</p> <p>Tag value – Type the value as the VLAN ID number. The range is form 0 to 4095.</p> <p>Priority – Type the packet priority number for such VLAN. The range is from 0 to 7.</p>
Active Mode	<p>Choose Always On to make the WAN1 connection being activated always.</p> <p>Load Balance: Check this box to enable auto load balance function for such WAN interface.</p>

	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	<p>If you choose Failover as the Active Mode, the option of Active When will appear.</p> <ul style="list-style-type: none"> ● 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 WAN3 – Specify the WAN interface by checking the WAN box.

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

WAN3 with USB

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

WAN >> General Setup

WAN 3

Enable:	Yes <input type="button" value="v"/>
Display Name:	<input type="text"/>
Physical Mode:	USB
Line Speed(Kbps):	
DownLink	<input type="text" value="0"/>
UpLink	<input type="text" value="0"/>
Active Mode:	Failover <input type="button" value="v"/> Load Balance: <input checked="" type="checkbox"/>
Active When:	<input checked="" type="radio"/> Any of the selected WAN disconnect <input type="radio"/> All of the selected WAN disconnect <input type="checkbox"/> WAN 1 <input type="checkbox"/> WAN 2 <input type="checkbox"/> WAN 3

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 you 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	<p>Choose Always On to make such WAN connection being activated always.</p> <p>Load Balance: Check this box to enable auto load balance function for such WAN interface.</p> <p>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.</p>
Active When	<p>If you choose Failover as the Active Mode, the option of Active When will appear.</p> <ul style="list-style-type: none"> ● 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 WAN3 – Specify the WAN interface by checking the WAN box.

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

4.1.3 Internet Access

For the router supports multi-WAN function, the users can set different WAN settings (for WAN1/WAN2/WAN3) 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		Ethernet	Static or Dynamic IP	Details Page	IPv6
WAN2		Ethernet	None	Details Page	IPv6
WAN3		USB	Static or Dynamic IP	Details Page	IPv6

Advanced You can configure DHCP client options here.

WAN >> Internet Access

Internet Access

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

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 that entered in general setup.
Physical Mode	It shows the physical connection for WAN1 (Ethernet/Fiber), WAN2 (Ethernet), and WAN3 (USB) according to the real network connection.
Access Mode	Use the drop down list to choose a proper access mode. Then, click Details Page for accessing the settings 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 ADSL/VDSL physical mode specified on WAN>>General Setup .

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.

4.1.3.1 Details Page for PPPoE in WAN1/WAN2

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

WAN >> Internet Access

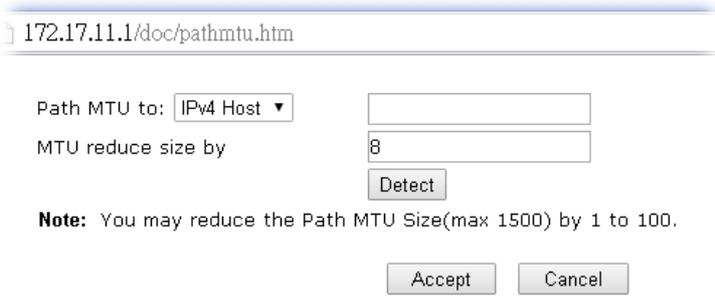
WAN 1

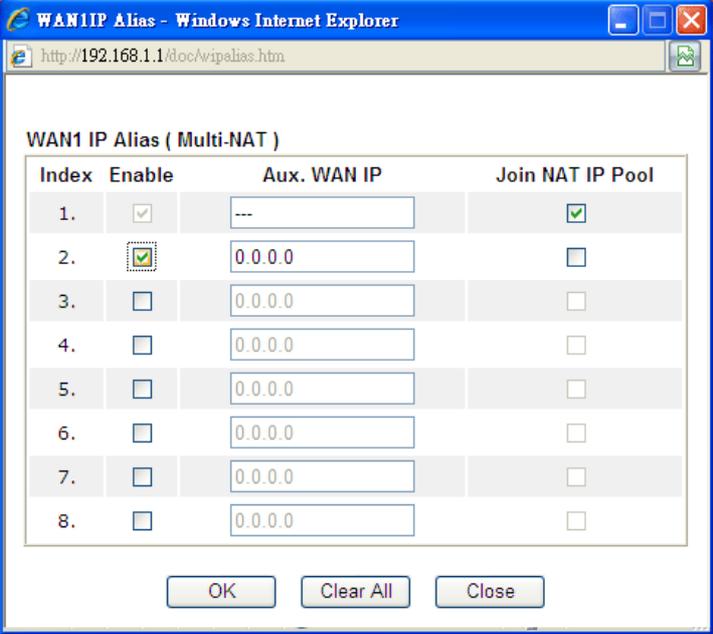
PPPoE	Static or Dynamic IP	PPTP/L2TP	IPv6
<input type="radio"/> Enable <input checked="" type="radio"/> Disable			
ISP Access Setup Service Name (Optional) <input type="text"/> Username <input type="text"/> Password <input type="text"/> Index(1-15) in Schedule Setup: => <input type="text"/> , <input type="text"/> , <input type="text"/> , <input type="text"/>		PPP/MP Setup PPP Authentication <input type="text" value="PAP or CHAP"/> Idle Timeout <input type="text" value="-1"/> second(s)	
WAN Connection Detection Mode <input type="text" value="ARP Detect"/>		IP Address Assignment Method (IPCP) <input type="text" value="WAN IP Alias"/> Fixed IP: <input type="radio"/> Yes <input checked="" type="radio"/> No (Dynamic IP) Fixed IP Address <input type="text"/>	
MTU <input type="text" value="1492"/> (Max:1492) Path MTU Discovery <input type="text" value="Detect"/>		<input checked="" type="radio"/> Default MAC Address <input type="radio"/> Specify a MAC Address MAC Address: <input type="text" value="00"/> <input type="text" value="1D"/> <input type="text" value="AA"/> <input type="text" value="84"/> <input type="text" value="8F"/> <input type="text" value="35"/>	

Note: (Optional) Required for some ISPs. Leave blank if in doubt because the connection request might be denied if "Service Name" is incorrect.

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	<p>Enter your allocated username, password and authentication parameters according to the information provided by your ISP.</p> <p>Service Name (Optional) - Enter the description of the specific network service.</p> <p>Username – Type in the username provided by ISP in this field. The maximum length of the user name you can set is 63 characters.</p> <p>Password – Type in the password provided by ISP in this field. The maximum length of the password you can set is 62</p>

	<p>characters.</p> <p>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.</p>
<p>WAN Connection Detection</p>	<p>Such function allows you to verify whether network connection is alive or not through ARP Detect or Ping Detect.</p> <p>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.</p> <ul style="list-style-type: none"> ● 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.
<p>MTU</p>	<p>It means Max Transmit Unit for packet.</p> <p>Path MTU Discovery – It is used to detect the maximum MTU size of a packet not to be segmented in specific transmit path.</p> <p>Click Detect to open the following dialog.</p>  <ul style="list-style-type: none"> ● 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

	<ul style="list-style-type: none"> ● Accept – After clicking it, the detected value will be displayed in the field of MTU.
<p>PPP/MP Setup</p>	<p>PPP Authentication – Select PAP only or PAP or CHAP for PPP.</p> <p>Idle Timeout – Set the timeout for breaking down the Internet after passing through the time without any action.</p>
<p>IP Address Assignment Method (IPCP)</p>	<p>Usually ISP dynamically assigns IP address to you each time you connect to it and request. In some case, your ISP provides service to always assign you the same IP address whenever you request. In this case, you can fill in this IP address in the Fixed IP field. Please contact your ISP before you want to use this function.</p> <p>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 8 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.</p>  <p>Fixed IP – Click Yes to use this function and type in a fixed IP address in the box of Fixed IP Address.</p> <p>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.</p> <p>Specify a MAC Address – Type the MAC address for the router manually.</p>

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

4.1.3.2 Details Page for Static or Dynamic IP in WAN1/WAN2

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

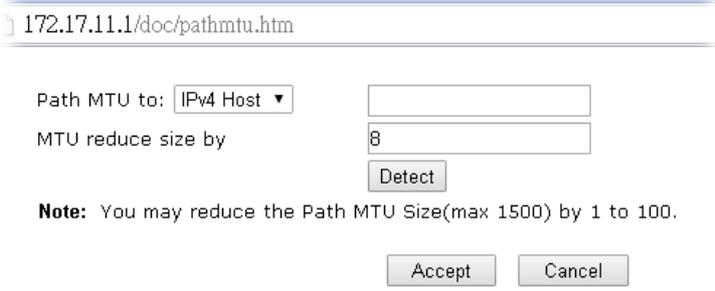
PPPoE	Static or Dynamic IP	PPTP/L2TP	IPv6
<input type="radio"/> Enable <input checked="" type="radio"/> Disable	WAN IP Network Settings WAN IP Alias		
Keep WAN Connection <input type="checkbox"/> Enable PING to keep alive PING to the IP <input type="text"/> PING Interval <input type="text"/> minute(s)	<input type="radio"/> Obtain an IP address automatically Router Name <input type="text" value="Vigor"/> * Domain Name <input type="text"/> *		
WAN Connection Detection Mode <input type="text" value="ARP Detect"/>	<input checked="" type="radio"/> Specify an IP address IP Address <input type="text"/> Subnet Mask <input type="text"/> Gateway IP Address <input type="text"/>		
MTU <input type="text" value="1500"/> (Max:1500) Path MTU Discovery <input type="text" value="Detect"/>	<input checked="" type="radio"/> Default MAC Address <input type="radio"/> Specify a MAC Address MAC Address: <input type="text" value="00"/> <input type="text" value="1D"/> <input type="text" value="AA"/> <input type="text" value="84"/> <input type="text" value="8F"/> <input type="text" value="35"/>		
RIP Protocol <input type="checkbox"/> Enable RIP	DNS Server IP Address Primary IP Address <input type="text" value="8.8.8.8"/> Secondary IP Address <input type="text" value="8.8.4.4"/>		
Bridge Mode <input type="checkbox"/> Enable Bridge Mode Bridge Subnet <input type="text" value="LAN 1"/>			

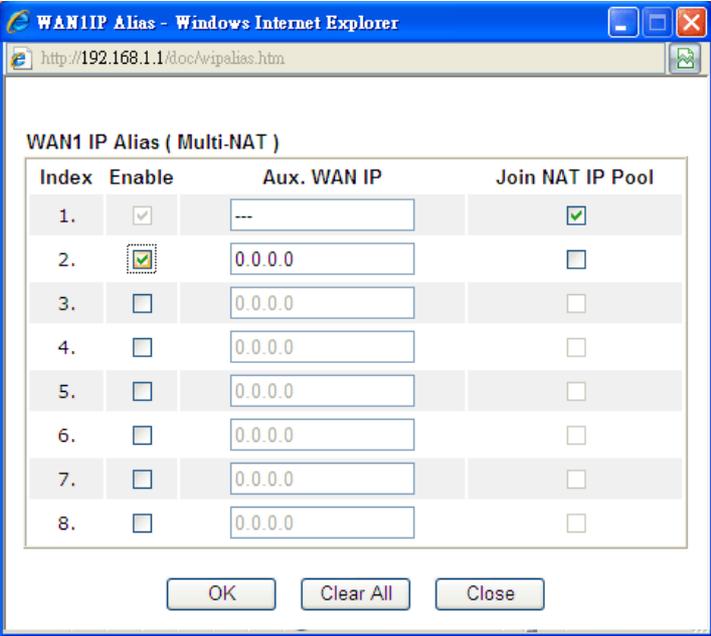
*: Required for some ISPs

- 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 ignored.

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

	<p>Detect.</p> <p>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.</p> <ul style="list-style-type: none"> ● 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.
<p>MTU</p>	<p>It means Max Transmit Unit for packet.</p> <p>Path MTU Discovery – It is used to detect the maximum MTU size of a packet not to be segmented in specific transmit path.</p> <p>Click Detect to open the following dialog.</p>  <ul style="list-style-type: none"> ● 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.
<p>RIP Protocol</p>	<p>Routing Information Protocol is abbreviated as RIP (RFC1058) specifying how routers exchange routing tables information. Click Enable RIP for activating this function.</p>

<p>Bridge Mode</p>	<p>Enable Bridge Mode - If the function is enabled, the router will work as a bridge modem.</p> <p>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.</p> <p>Bridge Subnet – Make a bridge between the selected LAN subnet and such WAN interface.</p>
<p>WAN IP Network Settings</p>	<p>This group allows you to obtain an IP address automatically and allows you type in IP address manually.</p> <p>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 8 public IP addresses other than the current one you are using.</p>  <p>Obtain an IP address automatically – Click this button to obtain the IP address automatically if you want to use Dynamic IP mode.</p> <ul style="list-style-type: none"> ● Router Name: Type in the router name provided by ISP. ● Domain Name: Type in the domain name that you have assigned. <p>DHCP Client Identifier for some ISP</p> <ul style="list-style-type: none"> ● 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.

	<p>Specify an IP address – Click this radio button to specify some data if you want to use Static IP mode.</p> <ul style="list-style-type: none"> ● IP Address: Type the IP address. ● Subnet Mask: Type the subnet mask. ● Gateway IP Address: Type the gateway IP address. <p>Default MAC Address: Click this radio button to use default MAC address for the router.</p> <p>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.</p>
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.

4.1.3.3 Details Page for PPTP/L2TP in WAN1/WAN2

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

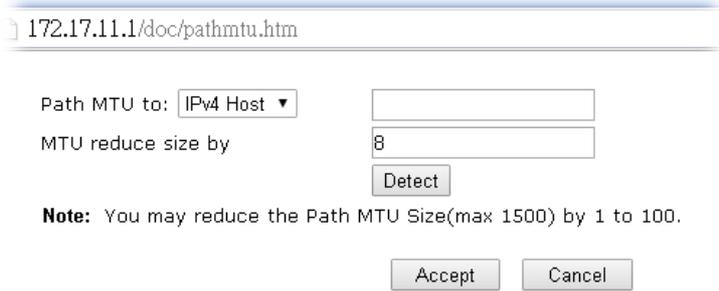
WAN >> Internet Access

WAN 1

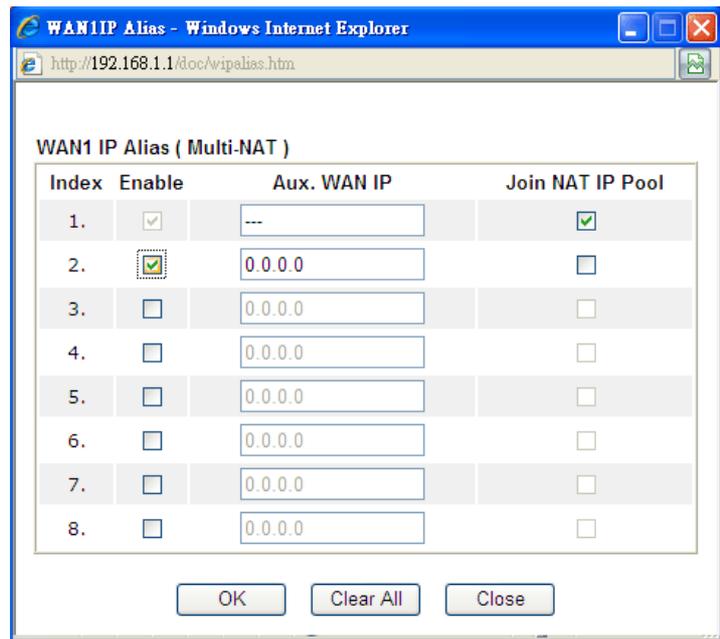
PPPoE	Static or Dynamic IP	PPTP/L2TP	IPv6
<input type="radio"/> Enable PPTP <input type="radio"/> Enable L2TP <input checked="" type="radio"/> Disable Server Address <input type="text"/> Specify Gateway IP Address <input type="text"/>		PPP Setup PPP Authentication <input type="text" value="PAP or CHAP"/> Idle Timeout <input type="text" value="-1"/> second(s)	
ISP Access Setup Username <input type="text"/> Password <input type="text"/> Index(1-15) in Schedule Setup: => <input type="text"/> , <input type="text"/> , <input type="text"/> , <input type="text"/>		IP Address Assignment Method (IPCP) <input type="text" value="WAN IP Alias"/> Fixed IP: <input type="radio"/> Yes <input checked="" type="radio"/> No (Dynamic IP) Fixed IP Address <input type="text"/>	
MTU <input type="text" value="1460"/> (Max:1460) Path MTU Discovery <input type="text" value="Detect"/>		WAN IP Network Settings <input type="radio"/> Obtain an IP address automatically <input checked="" type="radio"/> Specify an IP address IP Address <input type="text"/> Subnet Mask <input type="text"/>	

Available settings are explained as follows:

Item	Description
PPTP/L2TP	<p>Enable PPTP- Click this radio button to enable a PPTP client to establish a tunnel to a DSL modem on the WAN interface.</p> <p>Enable L2TP - Click this radio button to enable a L2TP client to establish a tunnel to a DSL modem on the WAN interface.</p>

	<p>Disable – Click this radio button to close the connection through PPTP or L2TP.</p> <p>Server Address - Specify the IP address of the PPTP/L2TP server if you enable PPTP/L2TP client mode.</p> <p>Specify Gateway IP Address – Specify the gateway IP address for DHCP server.</p>
ISP Access Setup	<p>Username -Type in the username provided by ISP in this field. The maximum length of the user name you can set is 63 characters.</p> <p>Password -Type in the password provided by ISP in this field. The maximum length of the password you can set is 62 characters.</p> <p>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.</p>
MTU	<p>It means Max Transmit Unit for packet.</p> <p>Path MTU Discovery – It is used to detect the maximum MTU size of a packet not to be segmented in specific transmit path.</p> <p>Click Detect to open the following dialog.</p>  <p>Note: You may reduce the Path MTU Size(max 1500) by 1 to 100.</p> <ul style="list-style-type: none"> ● 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	<p>PPP Authentication - Select PAP only or PAP or CHAP for PPP.</p> <p>Idle Timeout - Set the timeout for breaking down the Internet after passing through the time without any action.</p>
IP Address Assignment Method(IPCP)	<p>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 8 public IP addresses</p>

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.

4.1.3.4 Details Page for 3G/4G USB Modem (PPP mode) in WAN3

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 WAN3. The following web page will be shown.

WAN >> Internet Access

WAN 3

3G/4G USB Modem(PPP mode)
3G/4G USB Modem(DHCP mode)
IPv6

[Modem Support List](#)

3G/4G USB Modem(PPP mode) Enable Disable

SIM PIN code

Modem Initial String
(Default:AT&FE0V1X1&D2&C1S0=0)

APN Name

Modem Initial String2

Modem Dial String
(Default:ATDT*99#, CDMA:ATDT#777, TD-SCDMA:ATDT*98*1#)

Service Name (Optional)

PPP Username (Optional)

PPP Password (Optional)

PPP Authentication ▼

Index(1-15) in [Schedule](#) Setup:
 => , , ,

WAN Connection Detection

Mode ▼

Available settings are explained as follows:

Item	Description
Modem Support List	It lists all of the modems supported by such router.
3G /4G USB Modem (PPP mode)	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.
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 . The maximum length of the name you can set is 43 characters.

Modem Initial String2	<p>The initial string 1 is shared with APN.</p> <p>In some cases, user may need another initial AT command to restrict 3G band or do any special settings.</p> <p>The maximum length of the string you can set is 47 characters.</p>
Modem Dial String	<p>Such value is used to dial through USB mode. Please use the default value. If you have any question, please contact to your ISP.</p> <p>The maximum length of the string you can set is 31 characters.</p>
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	<p>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</p>
WAN Connection Detection	<p>Such function allows you to verify whether network connection is alive or not through ARP Detect or Ping Detect.</p> <p>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.</p> <ul style="list-style-type: none"> ● 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.

4.1.3.5 Details Page for 3G/4G USB Modem (DHCP mode) in WAN3

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. The following web page will be shown.

WAN >> Internet Access

WAN 3

3G/4G USB Modem(PPP mode) **3G/4G USB Modem(DHCP mode)** IPv6

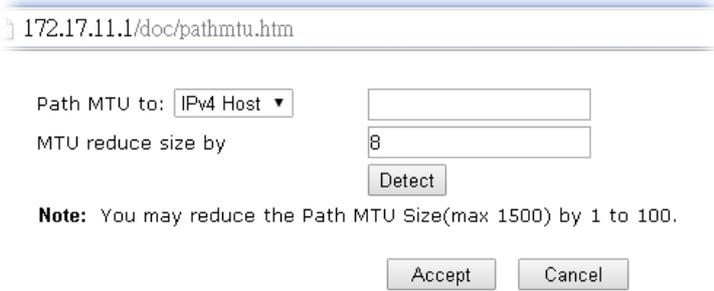
[Modem Support List](#)

3G/4G USB Modem(DHCP mode)	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
SIM PIN code	<input type="text"/>
Network Mode	4G/3G/2G (Default: 4G/3G/2G)
APN Name	<input type="text"/>
MTU	1380 (Default: 1380)
Path MTU Discovery	<input type="button" value="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:

Item	Description
Modem Support List	It lists all of the modems supported by such router.
4G USB Modem (DHCP mode)	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.
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 19 characters.
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. Type the name and click Apply . The maximum length of the name you can set is 47 characters.

<p>MTU</p>	<p>It means Max Transmit Unit for packet.</p> <p>Path MTU Discovery – It is used to detect the maximum MTU size of a packet not to be segmented in specific transmit path.</p> <p>Click Choose IP to open the following dialog.</p>  <p>Note: You may reduce the Path MTU Size(max 1500) by 1 to 100.</p> <ul style="list-style-type: none"> ● 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.
<p>WAN Connection Detection</p>	<p>Such function allows you to verify whether network connection is alive or not through ARP Detect or Ping Detect.</p> <p>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.</p> <ul style="list-style-type: none"> ● 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 the configuration.

4.1.3.6 Details Page for IPv6 – Offline in WAN1/WAN2/WAN3

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

WAN >> Internet Access ?

WAN 1

PPPoE	Static or Dynamic IP	PPTP/L2TP	IPv6
Internet Access Mode			
Connection Type		Offline ▼	

4.1.3.7 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

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 ▼	

Available settings are explained as follows:

Item	Description
WAN Connection Detection	<p>Such function allows you to verify whether network connection is alive or not through Ping Detect.</p> <p>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.</p> <ul style="list-style-type: none"> ● 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	
IPv4	IPv6		
LAN Status			
IP Address			
2001:B010:7300:201:21D:AFF:FEA6:2568/64 (Global)			
FE80::21D:AFF: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		Gateway IP	
2001:B010:7300:201:21D:AFF:FEA6:256A/128 (Global)		FE80::90:1A00:242:AD52	
FE80::1D:AFF:FEA6:256A/128 (Link)			
DNS IP			
2001:8000:168::1			
2001:8000:168::2			
TX Packets	RX Packets	TX Bytes	RX Bytes
7	9	544	1126

Note: 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.

4.1.3.8 Details Page for IPv6 – TSPC in WAN1/WAN2/WAN3

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

PPPoE	Static or Dynamic IP	PPTP/L2TP	IPv6
Internet Access Mode			
Connection Type		TSPC	
TSPC Configuration			
Username		<input type="text"/>	
Password		<input type="text"/>	
Tunnel Broker		<input type="text"/>	
WAN Connection Detection			
Mode		Ping Detect	
Ping IP/Hostname		<input type="text"/>	
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	<p>Such function allows you to verify whether network connection is alive or not through Ping Detect.</p> <p>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.</p> <ul style="list-style-type: none"> ● 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.

4.1.3.9 Details Page for IPv6 – AICCU in WAN1/WAN2/WAN3

WAN >> Internet Access



WAN 1

PPPoE	Static or Dynamic IP	PPTP/L2TP	IPv6
Internet Access Mode			
Connection Type		AICCU	
AICCU Configuration			
<input type="checkbox"/> Always On			
Username		<input type="text"/>	
Password		<input type="text"/>	
Tunnel Broker		tic.sixxs.net	
Tunnel ID		<input type="text"/>	
Subnet Prefix		<input type="text"/> / <input type="text"/>	
WAN Connection Detection			
Mode		Ping Detect	
Ping IP/Hostname		<input type="text"/>	
TTL(1-255,0:Auto)		0	

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

OK Cancel

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	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. <ul style="list-style-type: none"> ● 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.

4.1.3.10 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

PPPoE / PPPoA	MPoA / Static or Dynamic IP	IPv6
<p>Internet Access Mode</p> <p>Connection Type: <input type="text" value="DHCPv6 Client"/></p>		
<p>DHCPv6 Client Configuration</p> <p>IAID (Identity Association ID): <input type="text" value="707148341"/></p>		
<p>WAN Connection Detection</p> <p>Mode: <input type="text" value="Ping Detect"/></p> <p>Ping IP/Hostname: <input type="text"/></p> <p>TTL(1-255,0: Auto): <input type="text" value="0"/></p>		
<p>Bridge Mode</p> <p><input type="checkbox"/> Enable Bridge Mode</p> <p>Bridge Subnet: <input type="text" value="LAN 1"/></p>		

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	<p>Such function allows you to verify whether network connection is alive or not through NS Detect or Ping Detect.</p> <p>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.</p> <ul style="list-style-type: none"> ● 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	<p>Enable Bridge Mode - If the function is enabled, the router will work as a bridge modem.</p> <p>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</p>

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.

4.1.3.11 Details Page for IPv6 – Static IPv6 in WAN1/WAN2

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

WAN >> Internet Access



WAN 1

PPPoE / PPPoA MPoA / Static or Dynamic IP IPv6

Internet Access Mode
 Connection Type: Static IPv6

Static IPv6 Address Configuration
 IPv6 Address: _____ / Prefix Length: _____
 Add Delete

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
 Enable Firewall
 Bridge Subnet: LAN 1

OK Cancel

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	Display current interface IPv6 address.

Table	
Static IPv6 Gateway Configuration	IPv6 Gateway Address - Type your IPv6 gateway address here.
WAN Connection Detection	<p>Such function allows you to verify whether network connection is alive or not through Ping Detect.</p> <p>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.</p> <ul style="list-style-type: none"> ● 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	<p>Enable Bridge Mode - If the function is enabled, the router will work as a bridge modem.</p> <p>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.</p> <p>Bridge Subnet – Make a bridge between the selected LAN subnet and such WAN interface.</p>

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

4.1.3.12 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 any cast endpoint. The mode has more reliability.

WAN >> Internet Access



WAN 1

PPPoE	Static or Dynamic IP	PPTP/L2TP	IPv6
Internet Access Mode			
Connection Type		6in4 Static Tunnel	
6in4 Static Tunnel			
Remote Endpoint IPv4 Address		<input type="text"/>	
6in4 IPv6 Address		<input type="text"/>	/ 64 (default:64)
LAN Routed Prefix		<input type="text"/>	/ 64 (default:64)
Tunnel TTL		<input type="text" value="255"/>	(default:255)
WAN Connection Detection			
Mode		Ping Detect	
Ping IP/Hostname		<input type="text"/>	
TTL(1-255,0:Auto)		<input type="text" value="0"/>	

Available 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	<p>Such function allows you to verify whether network connection is alive or not through Ping Detect.</p> <p>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.</p> <ul style="list-style-type: none"> ● Ping IP/Hostname – If you choose Ping Detect as detection mode, you have to type IP address in this field for ping. ● 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	
IPv4	IPv6		
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

4.1.3.13 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		<input type="radio"/> Auto 6rd <input checked="" type="radio"/> Static 6rd	
Static 6rd Settings			
IPv4 Border Relay:		<input type="text"/>	
IPv4 Mask Length:		<input type="text" value="0"/>	
6rd Prefix:		<input type="text"/>	
6rd Prefix Length:		<input type="text" value="0"/>	
WAN Connection Detection			
Mode		Ping Detect	
Ping IP/Hostname		<input type="text"/>	
TTL(1-255,0:Auto)		<input type="text" value="0"/>	

Available settings are explained as follows:

Item	Description
6rd Mode	<p>Auto 6rd – Retrieve 6rd prefix automatically from 6rd service provider. The IPv4 WAN must be set as "DHCP".</p> <p>Static 6rd - Set 6rd options manually.</p>
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	<p>Such function allows you to verify whether network connection is alive or not through Ping Detect.</p> <p>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.</p> <ul style="list-style-type: none"> ● 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	
IPv4	IPv6		
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

4.1.3.14 Advanced for DHCP

This page allows you to configure DHCP client option. DHCP packets can be processed by adding option number and data information when such function is enabled.

WAN >> Internet Access

Internet Access

Index	Display Name	Physical Mode	Access Mode		
WAN1		Ethernet	Static or Dynamic IP	Details Page	IPv6
WAN2		Ethernet	None	Details Page	IPv6
WAN3		USB	None	Details Page	IPv6

Note: Only one WAN can support IPv6.

[Advanced](#) You can configure DHCP client options here.

Click **Advanced** to open the following page.

WAN >> Internet Access

DHCP Client Options Status

Options List				
Enable	Interface	Option	Type	Data

Enable:

Interface: All WAN1 WAN2 WAN3 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:

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".

Available settings are explained as follows:

Item	Description
Options List	Display related information of the DHCP client option.
Enable	<p>Check the box to enable the function of DHCP Option. Each DHCP option is composed by an option number with data. For example,</p> <p style="padding-left: 40px;">Option number: 100 Data: abcd</p> <p>When such function is enabled, the specified values for DHCP option will be seen in DHCP reply packets.</p>

Interface	Specify the WAN interface(s) which will apply the DHCP option setting. WAN5 ~ WAN7 can be located under WAN>>Multi-VLAN .
Option Number	Type a number for such option. Note: If you choose to configure option 61 here, the detailed settings in WAN>>Interface Access will be overwritten.
Data Type	Choose the type (ASCII, Hex., or IP address) for the data to be stored.
Data	Type the real content of the data to be processed by the function of DHCP option.
Add	Create a new entry and display on the Option List table.
Update	Edit the existing entry.
Delete	Remove the existing entry.

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

4.1.4 Multi-VLAN

Multi-VLAN allows users to create profiles for specific WAN interface and bridge connections for user applications that require very high network throughput. Simply go to WAN and select **Multi-VLAN**.

General

This page shows the basic configurations used by every channel.

WAN >> Multi-VLAN

Multi-VLAN

Multi-VLAN												
General												
Channel	Enable	WAN Type	VLAN Tag	Port-based Bridge								
1	Yes	Ethernet(WAN1)	None									
2	No	Ethernet(WAN2)	None									
5.	WAN5 No	Ethernet(WAN1)	None	<input type="checkbox"/> Enable	<input type="checkbox"/> P1	<input type="checkbox"/> P2	<input type="checkbox"/> P3	<input type="checkbox"/> P4	<input type="checkbox"/> SSID1	<input type="checkbox"/> SSID2	<input type="checkbox"/> SSID3	<input type="checkbox"/> SSID4
6.	WAN6 No	Ethernet(WAN1)	None	<input type="checkbox"/> Enable	<input type="checkbox"/> P1	<input type="checkbox"/> P2	<input type="checkbox"/> P3	<input type="checkbox"/> P4	<input type="checkbox"/> SSID1	<input type="checkbox"/> SSID2	<input type="checkbox"/> SSID3	<input type="checkbox"/> SSID4
7.	WAN7 No	Ethernet(WAN1)	None	<input type="checkbox"/> Enable	<input type="checkbox"/> P1	<input type="checkbox"/> P2	<input type="checkbox"/> P3	<input type="checkbox"/> P4	<input type="checkbox"/> SSID1	<input type="checkbox"/> SSID2	<input type="checkbox"/> SSID3	<input type="checkbox"/> SSID4
8.	No	Ethernet(WAN1)	None	<input type="checkbox"/> Enable	<input type="checkbox"/> P1	<input type="checkbox"/> P2	<input type="checkbox"/> P3	<input type="checkbox"/> P4	<input type="checkbox"/> SSID1	<input type="checkbox"/> SSID2	<input type="checkbox"/> SSID3	<input type="checkbox"/> SSID4

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. SSID 1 ~ SSID 4 – Check the box(es) to build bridge connection on wireless LAN.

Click any 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:
 Priority: 0 ▾

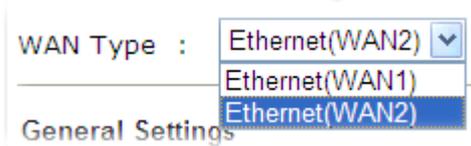
Note: Tag value must be set between 1~4095 and unique for each channel.
 Only one channel can be untagged (equal to 0) at a time.

Bridge mode
 Enable
 Physical Members
 P1 P2 P3 P4

Note: P4 is reserved for NAT use, and cannot be configured for bridge mode.

OK Cancel

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.

Moreover, WAN link 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.

Multi-VLAN Channel 5: Enable Disable

WAN Type :

General Settings

VLAN Header

VLAN Tag:

Priority:

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.

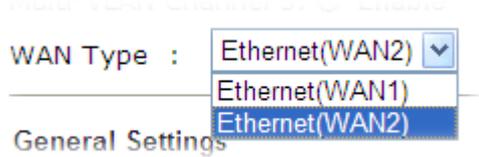
Open WAN Interface for this Channel

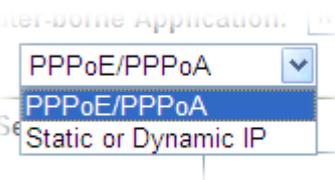
WAN Application:

WAN Setup:

<p>ISP Access Setup</p> <p>ISP Name: <input type="text"/></p> <p>Username: <input type="text"/></p> <p>Password: <input type="text"/></p> <p>PPP Authentication: <input type="text" value="PAP or CHAP"/></p> <p><input checked="" type="checkbox"/> Always On</p> <p>Idle Timeout: <input type="text" value="-1"/> second(s)</p> <p>IP Address From ISP</p> <p>Fixed IP: <input type="radio"/> Yes <input checked="" type="radio"/> No (Dynamic IP)</p> <p>Fixed IP Address: <input type="text"/></p>	<p>WAN IP Network Settings</p> <p><input type="radio"/> Obtain an IP address automatically</p> <p>Router Name: <input type="text" value="Vigor"/>*</p> <p>Domain Name: <input type="text"/>*</p> <p>*: Required for some ISPs</p> <p><input checked="" type="radio"/> Specify an IP address</p> <p>IP Address: <input type="text"/></p> <p>Subnet Mask: <input type="text"/></p> <p>Gateway IP Address: <input type="text"/></p> <p>DNS Server IP Address</p> <p>Primary IP Address: <input type="text" value="8.8.8.8"/></p> <p>Secondary IP Address: <input type="text" value="8.8.4.4"/></p>
--	---

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-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. 

<p>General Settings</p>	<p>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.</p> <p>Priority – Choose the number to determine the packet priority for such VLAN. The range is from 0 to 7.</p>
<p>Open Port-based Bridge Connection for this Channel</p>	<p>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.</p> <p>Physical Members – Group the physical ports by checking the corresponding check box(es) for applying the port-based bridge connection.</p>
<p>Open WAN Interface for this Channel</p>	<p>Check the box to enable relating function.</p> <p>WAN Application - Management can be specified for general management (Web configuration/telnet/TR069). If you choose Management, the configuration for this VLAN will be effective for Web configuration/telnet/TR069.</p> <p>IPTV - The IPTV configuration will allow the WAN interface to send IGMP packets to IPTV servers.</p> <p>WAN Setup – Choose PPPoE/PPPoA or Static or Dynamic IP to determine what WAN settings must be configured.</p> 
<p>ISP Access Setup, IP Address From ISP, WAN IP Network Settings, DNS Server IP Address</p>	<p>For other settings, refer to Details Page for PPPoE in WAN1.</p>

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

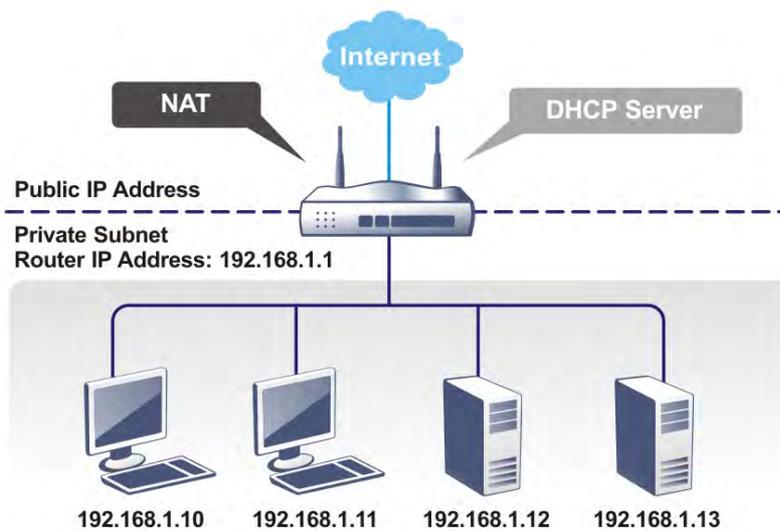
4.2 LAN

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

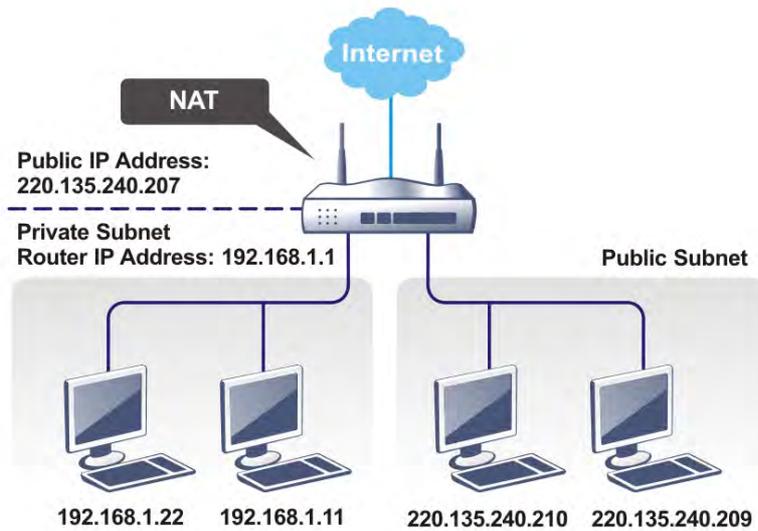


4.2.1 Basics of LAN

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)

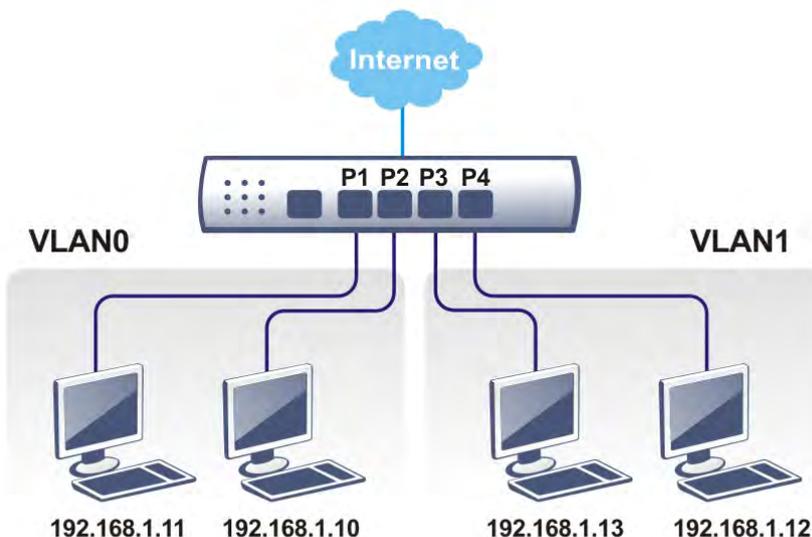
Vigor router will exchange routing information with neighboring routers using the RIP to accomplish IP routing. This allows users to change the information of the router such as IP address and the routers will automatically inform for each other.

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 4 virtual LANs. To manage the communication between different groups, please set up rules in Virtual LAN (VLAN) function and the rate of each.



4.2.2 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 six subnets provided by the router which allow users to divide groups into different subnets (LAN1 – LAN2). 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 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	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	192.168.1.1	Details Page	IPv6
LAN 2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	192.168.2.1	Details Page	IPv6
IP Routed Subnet	<input type="checkbox"/>	<input checked="" type="checkbox"/>	192.168.0.1	Details Page	

[Advanced](#) You can configure DHCP options here.

Inter-LAN Routing

Subnet	LAN 1	LAN 2
LAN 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LAN 2	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Note: LAN 2 is available when VLAN is enabled.

[OK](#)

Available settings are explained as follows:

Item	Description
General Setup	<p>Allow to configure settings for each subnet respectively.</p> <p>Index - Display all of the LAN items.</p> <p>Status- Basically, LAN1 status is enabled in default. LAN2 and IP Routed Subnet can be observed by checking the box of Status.</p> <p>DHCP- LAN1 is configured with DHCP in default. If required, please check the DHCP box for each LAN.</p> <p>IP Address - Display the IP address for each LAN item. Such information is set in default and you can not modify it.</p> <p>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.</p> <p>IPv6 – Click it to access into the settings page of IPv6.</p>
Advanced	DHCP packets can be processed by adding option number and data information when such function is enabled.

DHCP Server Customized Status

Customized List				
Enable	Interface	Option	Type	Data

Enable:

Interface: All LAN1 LAN2 IP Routed Subnet

Next Server IP Address/SIAddr:

Option Number:

Data Type: 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:

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.

Enable – Check it to enable 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/LAN interface(s) that will be overwritten by such function.

Next Server IP Address/SIAddr – Type the IP address of PXE server which is helpful for downloading boot loader via network.

Option Number – Type a number for such function.

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

Data Type – 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.

Inter-LAN Routing

Check the box to link two different subnets (LAN1 and LAN2).

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

4.2.2.1 Details Page for LAN1/LAN2 – 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 <input type="text" value="192.168.1.1"/> Subnet Mask <input type="text" value="255.255.255.0"/> RIP Protocol Control <input type="button" value="Disable"/>	DHCP Server Configuration <input checked="" type="radio"/> Enable Server <input type="radio"/> Disable Server <input type="checkbox"/> Enable Relay Agent Start IP Address <input type="text" value="192.168.1.10"/> IP Pool Counts <input type="text" value="200"/> Gateway IP Address <input type="text" value="192.168.1.1"/> Lease Time <input type="text" value="86400"/> (s) <input type="checkbox"/> Retrieve IPs from inactive clients periodically DNS Server IP Address Primary IP Address <input type="text"/> Secondary IP Address <input type="text"/>

Available settings are explained as follows:

Item	Description
Network Configuration	<p>For NAT Usage,</p> <p>IP Address - Type in private IP address for connecting to a local private network (Default: 192.168.1.1).</p> <p>Subnet Mask - Type in an address code that determines the size of the network. (Default: 255.255.255.0/ 24)</p> <p>RIP Protocol Control,</p> <p>Disable - deactivate the RIP protocol. It will lead to a stoppage of the exchange of routing information between routers. (Default)</p> <p>Enable – activate the RIP protocol.</p>
DHCP Server Configuration	<p>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.</p> <p>Enable Server - Let the router assign IP address to every host in the LAN.</p> <p>Disable Server – Let you manually assign IP address to every host in the LAN.</p> <p>Enable Relay Agent – Specify which subnet that DHCP server is located the relay agent should redirect the DHCP request to.</p> <p>DHCP Server IP Address – It is available when Enable</p>

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.

4.2.2.2 Details Page for IP Routed Subnet

LAN >> General Setup

TCP/IP and DHCP Setup for IP Routed Subnet

<p>Network Configuration</p> <p><input type="radio"/> Enable <input checked="" type="radio"/> Disable</p> <p>For Routing Usage</p> <p>IP Address <input type="text" value="192.168.0.1"/></p> <p>Subnet Mask <input type="text" value="255.255.255.0"/></p> <hr/> <p>RIP Protocol Control <input type="text" value="Disable"/></p> <p>Note: Disable LAN & Enable LAN shouldn't be in the same subnet.</p>	<p>DHCP Server Configuration</p> <p>Start IP Address <input type="text"/></p> <p>IP Pool Counts <input type="text" value="0"/> (max. 32)</p> <p>Lease Time <input type="text" value="259200"/> (s)</p> <p><input type="checkbox"/> Use LAN Port <input checked="" type="checkbox"/> P3 <input checked="" type="checkbox"/> P4</p> <p><input checked="" type="checkbox"/> Use MAC Address</p> <table border="1"> <thead> <tr> <th>Index</th> <th>Matched MAC Address</th> <th>given IP Address</th> </tr> </thead> <tbody> <tr> <td colspan="3" style="height: 100px;"></td> </tr> </tbody> </table> <p>MAC Address : <input type="text"/> : <input type="text"/></p> <p><input type="button" value="Add"/> <input type="button" value="Delete"/> <input type="button" value="Edit"/> <input type="button" value="Cancel"/></p>	Index	Matched MAC Address	given IP Address			
Index	Matched MAC Address	given IP Address					

Available settings are explained as follows:

Item	Description
Network Configuration	<p>Enable/Disable - Click Enable to enable such configuration; click Disable to disable such configuration.</p> <p>For Routing Usage,</p> <p>IP Address - Type in private IP address for connecting to a local private network (Default: 192.168.1.1).</p> <p>Subnet Mask - Type in an address code that determines the size of the network. (Default: 255.255.255.0/ 24)</p> <p>RIP Protocol Control,</p> <p>Disable - deactivate the RIP protocol. It will lead to a stoppage of the exchange of routing information between routers. (Default)</p> <p>Enable – activate the RIP protocol.</p>
DHCP Server Configuration	<p>DHCP stands for Dynamic Host Configuration Protocol. The router by factory default acts a DHCP server for your</p>

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 and/or P2. Please check the box of P1 and P2.

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 to 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.

4.2.2.3 Details Page for LAN1 – IPv6 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. 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	
<input style="width: 90%;" type="text"/>	<input style="width: 10%;" type="text"/>	<input type="button" value="Add"/> <input type="button" value="Delete"/>

Unique Local Address(ULA) configuration

Off
 / 64

Current IPv6 Address Table

Index	IPv6 Address/Prefix Length	Scope
1	FE80::21D:A AFF:FE84:8F34/64	Link

DNS Server IPv6 Address

Primary DNS Server	<input style="width: 60%;" type="text" value="2001:4860:4860::8888"/>
Secondary DNS Server	<input style="width: 60%;" type="text" value="2001:4860:4860::8844"/>

Management

SLAAC(stateless)
 Other Option(O-bit)

DHCPv6 Server

Enable Server
 Disable Server

Auto IPv6 range

Start IPv6 Address	<input style="width: 60%;" type="text" value="::"/>
End IPv6 Address	<input style="width: 60%;" type="text" value="::"/>

Advance setting

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

Available settings are explained as follows:

Item	Description
Enable	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.

	<p>Add – Click it to add a new entry.</p> <p>Delete – Click it to remove an existed entry.</p>
Unique Local Address (ULA) configuration	<p>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.</p>  <p>Auto ULA Prefix – The system will generate the required IPv6 address.</p> <p>Manually ULA Prefix – A user can type the ULA IPv6 address manually.</p>
Current IPv6 Address Table	Display current used IPv6 addresses.
DNS Server IPv6 Address	<p>Primary DNS Server – Type the IPv6 address for Primary DNS server.</p> <p>Secondary DNS Server –Type another IPv6 address for DNS server if required.</p>
Management	<p>Host under LAN can be assigned IP address from Vigor router via the following method.</p>  <ul style="list-style-type: none"> ● 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. <p>Other Option (O-bit) – Check this box to enable the O-bit for obtaining additional information (e.g., DNS) from DHCPv6.</p>
DHCPv6 Server Configuration	<p>Enable Server –Click it to enable DHCPv6 server. DHCPv6 Server could assign IPv6 address to PC according to the Start/End IPv6 address configuration.</p> <p>Disable Server –Click it to disable DHCPv6 server.</p> <p>Auto IPv6 Range – The default settings are enabled. If it is disabled, you need to type start and end IPv6 addresses separately.</p> <p>Start IPv6 Address / End IPv6 Address –Type the start and end address for IPv6 server.</p>

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: 0 Auto

Extension WAN

Available WAN: WAN2, WAN3, WAN4

Selected WAN

OK Close

Router Advertisement Server – 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 Limit – 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.

4.2.3 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.

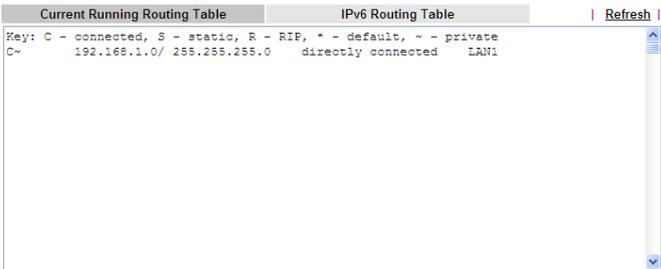
Static Route for IPv4

LAN >> Static Route Setup

IPv4			IPv6			Set to Factory Default	View Routing Table
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
Set to Factory Default	Clear all of the settings and return to factory default settings.
Viewing Routing Table	<p>Displays the routing table for your reference.</p> <p>Diagnostics >> View Routing Table</p> 
Index	The number (1 to 10) 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.

Click any underline of index number to get the following page.

LAN >> Static Route Setup

Index No. 5

<input type="checkbox"/> Enable	
Destination IP Address	???
Subnet Mask	
Gateway IP Address	
Network Interface	LAN1

OK Cancel delete

- LAN1
- LAN2
- WAN1
- WAN2
- WAN3

Available settings are explained as follows:

Item	Description
Enable	Check 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.
Network Interface	Use the drop down list to specify an interface for such static route.

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

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

IPv4			IPv6			Set to Factory Default	View IPv6 Routing Table
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		

<< [1 - 20](#) | [21 - 40](#) >> [Next](#) >>

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

Each item is explained as follows:

Item	Description
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.
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.

Click any underline of index number to get the following page.

LAN >> Static Route Setup

Index No. 1

<input checked="" type="checkbox"/> Enable
Destination IPv6 Address / Prefix Len <input type="text" value="::"/> / <input type="text" value="0"/>
Gateway IPv6 Address <input type="text"/>
Network Interface <input type="text" value="LAN"/>

Available settings are explained as follows:

Item	Description
Enable	Check 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.

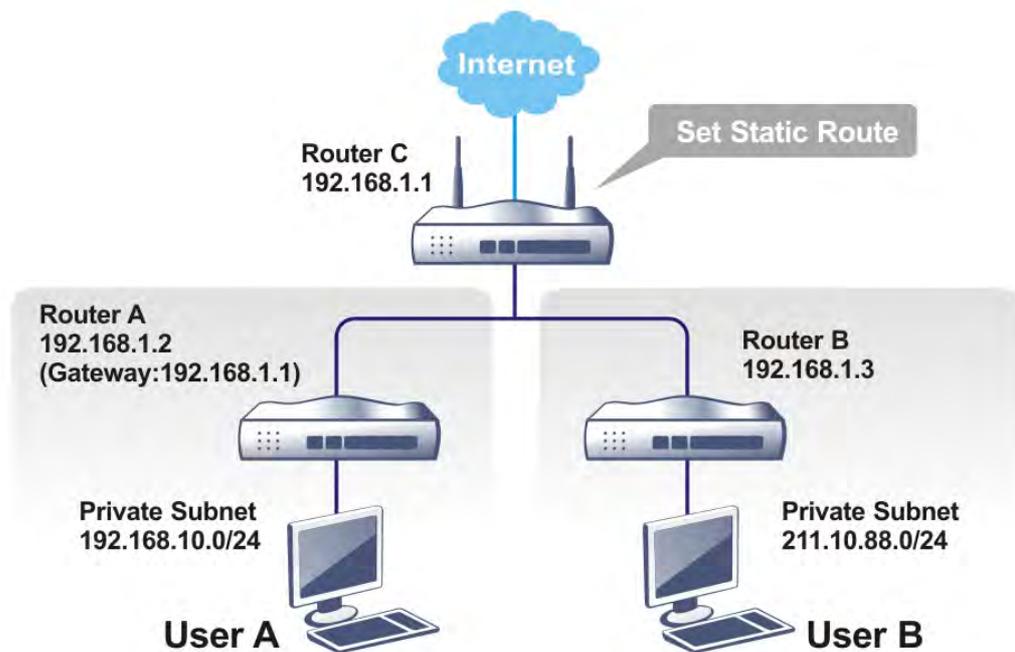
After finishing all the settings here, please click **OK** to save the configuration.

Add Static Routes to Private and Public Networks (based on IPv4)

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.

Note: 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.

- 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

<input checked="" type="checkbox"/> Enable	
Destination IP Address	192.168.1.10
Subnet Mask	255.255.255.0
Gateway IP Address	192.168.1.2
Network Interface	LAN1

OK Cancel Delete

- 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

<input checked="" type="checkbox"/> Enable	
Destination IP Address	211.100.88.0
Subnet Mask	255.255.255.0
Gateway IP Address	192.168.1.3
Network Interface	LAN1

OK Cancel Delete

- Go to **Diagnostics** and choose **Routing Table** to verify current routing table.

Diagnostics >> View Routing Table

Current Running Routing Table	IPv6 Routing Table	Refresh
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
S~ 211.100.88.0/ 255.255.255.0	via 192.168.1.3	LAN1

4.2.4 VLAN

Virtual LAN function provides you a very convenient way to manage hosts by grouping them based on the physical port. You can also manage the in/out rate of each port.

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.

Open **LAN>>VLAN**. The following page will appear. Click **Enable** to invoke VLAN function.

LAN >> VLAN Configuration

VLAN Configuration

<input checked="" type="checkbox"/> Enable												
	LAN				Wireless LAN				VLAN Tag			
	P1	P2	P3	P4	SSID1	SSID2	SSID3	SSID4	Subnet	Enable	VID	Priority
VLAN0	<input type="checkbox"/>	LAN 1	<input type="checkbox"/>	0	0							
VLAN1	<input type="checkbox"/>	LAN 1	<input type="checkbox"/>	0	0							
VLAN2	<input type="checkbox"/>	LAN 1	<input type="checkbox"/>	0	0							
VLAN3	<input type="checkbox"/>	LAN 1	<input type="checkbox"/>	0	0							
VLAN4	<input type="checkbox"/>	LAN 1	<input type="checkbox"/>	0	0							
VLAN5	<input type="checkbox"/>	LAN 1	<input type="checkbox"/>	0	0							
VLAN6	<input type="checkbox"/>	LAN 1	<input type="checkbox"/>	0	0							
VLAN7	<input type="checkbox"/>	LAN 1	<input type="checkbox"/>	0	0							

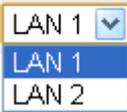
1. For each VLAN row, if enable is checked for the VLAN Tag then the corresponding VID will be applied to wired LAN traffic.
2. Wireless LAN traffic is always untagged, but will still be a member of the VLAN group selected.
3. Each VID must be unique.

OK Clear Cancel

Note: 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 be grouped under the selected VLAN.
Wireless LAN	SSID1 – SSID4 – Check the SSID boxes to group them

	under the selected VLAN.
Subnet	<p>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.</p> <p>Subnet</p> 
VLAN Tag	<p>Enable – Check the box to enable the function of VLAN with tag.</p> <p>The router will add specific VLAN number to all packets on the LAN while sending them out.</p> <p>Please type the tag value and specify the priority for the packets sending by LAN.</p> <p>VID – Type the value as the VLAN ID number. The range is form 0 to 4095.</p> <p>Priority – Type the packet priority number for such VLAN. The range is from 0 to 7.</p>

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

To add or remove a VLAN, please refer to the following example.

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

<input checked="" type="checkbox"/> Enable												
LAN				Wireless LAN				VLAN Tag				
P1	P2	P3	P4	SSID1	SSID2	SSID3	SSID4	Subnet	Enable	VID	Priority	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAN 1	<input type="checkbox"/>	0	0	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	LAN 2	<input type="checkbox"/>	0	0	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAN 1	<input type="checkbox"/>	0	0	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAN 1	<input type="checkbox"/>	0	0	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAN 1	<input type="checkbox"/>	0	0	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAN 1	<input type="checkbox"/>	0	0	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAN 1	<input type="checkbox"/>	0	0	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAN 1	<input type="checkbox"/>	0	0	

1. For each VLAN row, if enable is checked for the VLAN Tag then the corresponding VID will be applied to wired LAN traffic.
2. Wireless LAN traffic is always untagged, but will still be a member of the VLAN group selected.
3. Each VID must be unique.

OK Clear Cancel

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**.

LAN >> General Setup

General Setup

Index	Status	DHCP	IP Address		
LAN 1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	192.168.1.1	Details Page	IPv6
LAN 2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	192.168.2.1	Details Page	IPv6
IP Routed Subnet	<input type="checkbox"/>	<input checked="" type="checkbox"/>	192.168.0.1	Details Page	

[Advanced](#) You can configure DHCP options here.

Inter-LAN Routing

Subnet	LAN 1	LAN 2
LAN 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LAN 2	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Note: LAN 2 is available when VLAN is enabled.

OK

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.

Note: As for the VLAN applications, refer to “Appendix I: VLAN Application on Vigor Router” for more detailed information.

Add or Update	<p>IP Address – Type the IP address that will be used for the specified MAC address.</p> <p>Mac Address – Type the MAC address that is used to bind with the assigned IP address.</p> <p>Comment – Type a brief description for the entry.</p> <p>Show Comment – Check this box to display the comment on IP Bind List box.</p>
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.

Note: 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.

4.2.6 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 connect to the mirroring port. Last, it is more convenient and easy to configure in user's interface.

LAN >> LAN Port Mirror

LAN Port Mirror

Port Mirror:
 Enable Disable

Mirror port:
 P1 P2 P3 P4

Mirrored port:
 P1 P2 P3 P4

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 port	Select which ports are necessary to be mirrored.

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

4.2.7 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	
<input type="checkbox"/>	<u>1.</u>	URL Redirect	None	Preview
<input type="checkbox"/>	<u>2.</u>	URL Redirect	None	Preview
<input type="checkbox"/>	<u>3.</u>	URL Redirect	None	Preview
<input type="checkbox"/>	<u>4.</u>	URL Redirect	None	Preview

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

OK

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 interfaces of the profile.
Preview	Open a preview window according to the configured settings.

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 ▼

Notice

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

(Max 511 characters) [Default Message](#)

Position on screen Top Bottom

Button (Max 39 characters)

User must click button to proceed

Priority Override user management Prefer user management

Applied Interfaces

Subnet LAN1 LAN2

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.

Available settings are explained as follows:

Item	Description
Enable	Check the box to enable this function.
Body	<p>Two types can be specified for web portal setup.</p> <p>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.</p> <p>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.</p> <ul style="list-style-type: none"> ● Default Message – Click it to restore the default content.
Notice	<p>Content given in this field will be displayed on the screen when a web page is redirected by web portal mechanism.</p> <p>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.</p> <ul style="list-style-type: none"> ● 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	<p>If 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.</p> <p>Override user management – Web portal profile will be used to filter users first.</p> <p>Prefer user management – User Management profile will be used to filter users first.</p>
Applied Interfaces	<p>Check the box(es) representing different interfaces to be applied by such profile.</p> <p>The advantage is that each SSID (1/2/3/4) for wireless network can be applied with different web portal separately.</p>

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

4.3 Load-Balance /Route Policy

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 polices 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.

Note: For more detailed information about using policy route, refer to Support >>FAQ/Application Notes on www.draytek.com.

4.3.1 General Setup

Load-Balance/Route Policy



Load-Balance/Route Policy											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	<input type="checkbox"/>	Any	WAN1	200	Any	Any	Any	Any	Any	Any		Down
2	<input type="checkbox"/>	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
3	<input type="checkbox"/>	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
4	<input type="checkbox"/>	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
5	<input type="checkbox"/>	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
6	<input type="checkbox"/>	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
7	<input type="checkbox"/>	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
8	<input type="checkbox"/>	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
9	<input type="checkbox"/>	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
10	<input type="checkbox"/>	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	

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 load-balance policy configuration web page.
Enable	Check this box to enable this policy.
Protocol	Use the drop-down menu to change the protocol for the WAN interface.
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 any **Index** number link (e.g., 1 in this case). 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 Dest IP End
 ~

Available settings are explained as follows:

Item	Description
Source IP	<p>Any – Any IP can be treated as the source IP.</p> <p>Src IP Start - Type the source IP start for the specified WAN interface.</p> <p>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.</p>
Destination IP	<p>Any – Any IP can be treated as the destination IP.</p> <p>Dest IP Start- Type the destination IP start for the specified WAN interface.</p> <p>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.</p>

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

Available settings are explained as follows:

Item	Description
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.

- 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.

- 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 ~ 192.168.1.66

Interface

WAN1

More options

Force NAT

- If there is no error, click **Finish** to complete wizard setting.

Load-Balance/Route Policy

Load-Balance/Route Policy [Set to Factory](#)

Index	Enable	Protocol	Interface	Interface Address	Src IP Start	Src IP End	Dest IP Start	Dest IP End	Dest Port Start	Dest Port End	Mov Up
1	<input type="checkbox"/>	Any	WAN1	172.16.3.130	Any	Any	192.168.1.6	192.168.1.66	Any	Any	
2	<input type="checkbox"/>	Any	WAN1	172.16.3.130							UP

To use Advance Mode, do the following steps:

1. Click the **Advance Mode** radio button.
2. Click **Index 1** to access into the following page.

Load-Balance/Route Policy

Index: 1

Enable

Criteria

Protocol: Any

Source IP: Any
 Src IP Range
 Start: End:

Src IP Subnet

Destination IP: Any
 Dest IP Range
 Start: End:

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:

Low 250 150 0 High

Default Route Routes in Routing Table

More Options

Packet Forwarding to WAN via Force NAT
 Force Routing

Failover to WAN/LAN Default WAN
 VPN VPN 1.???
 Route Policy Index 1

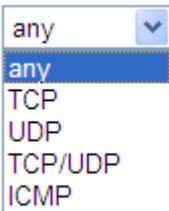
Gateway: Default Gateway
 Specific Gateway

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.

Available settings are explained as follows:

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

Enable	Check this box to enable this policy.
Protocol	Use the drop-down menu to choose a proper protocol for the WAN interface. 
Source IP	<p>Any – Any IP can be treated as the source IP.</p> <p>Src IP Range – Define a range of IP address as source IP addresses.</p> <ul style="list-style-type: none"> ● Start - Type an address as the starting IP for such profile. ● End - Type an address as the ending IP for such profile. <p>Src IP Subnet – Define a subnet containing IP address and mask address.</p> <ul style="list-style-type: none"> ● Network – Type an IP address here. ● Mask – Use the drop down list to choose a suitable mask for the network.
Destination IP	<p>Any – Any IP can be treated as the destination IP.</p> <p>Dest IP Range – Define a range of IP address as destination IP addresses.</p> <ul style="list-style-type: none"> ● Start - Type an address as the starting IP for such profile. ● End - Type an address as the ending IP for such profile. <p>Dest IP Subnet – Define a subnet containing IP address and mask address.</p> <ul style="list-style-type: none"> ● Network – Type an IP address here. ● Mask – Use the drop down list to choose a suitable mask for the network.
Destination Port	<p>Any – Any port number can be treated as the destination port.</p> <p>Dest Port Start - Type the destination port start for the destination IP.</p> <p>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.</p>
Send to if criteria matched	<p>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.</p> <p>Gateway IP – Specific gateway is used only when you want to forward the packets to the desired gateway. Usually, Default Gateway is selected in default.</p>
Priority	Packets will be transmitted based on all routes or Route Policy. Vigor router will determine which rule will be

	<p>adopted for transmitting the packet according to the priority of Static Route and Route Policy.</p> <p>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.</p>
More options	<p>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.</p> <p>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.</p> <ul style="list-style-type: none"> ● 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. <p>Gateway IP – Specific gateway is used only when you want to forward the packets to the desired gateway. Usually, Default Gateway is selected in default.</p>

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

Load-Balance/Route Policy

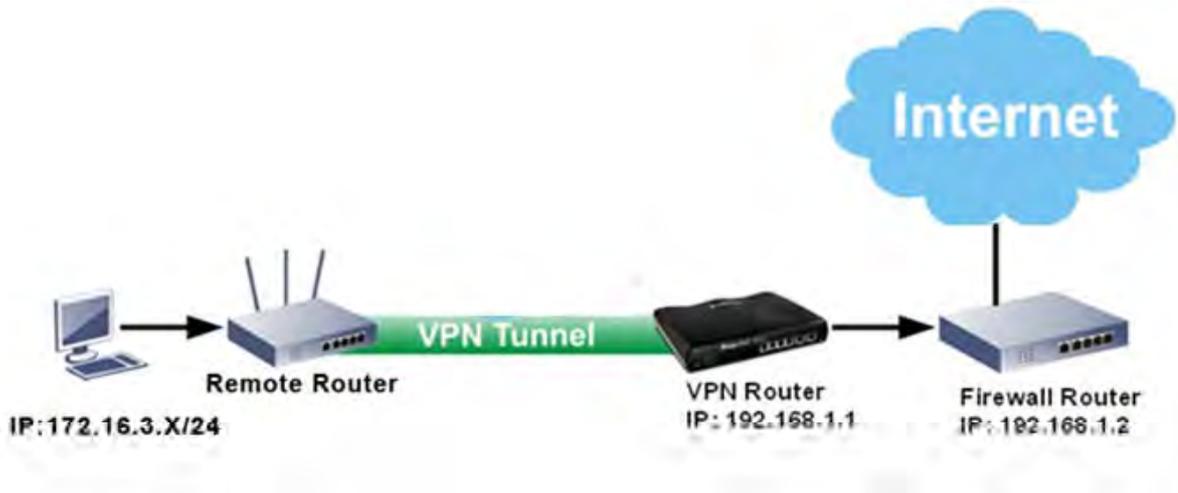
Load-Balance/Route Policy											Set to Factory
Index	Enable	Protocol	Interface	Interface Address	Src IP Start	Src IP End	Dest IP Start	Dest IP End	Dest Port Start	Dest Port End	Mov Up
1	<input type="checkbox"/>	Any	WAN1	172.16.3.130	Any	Any	192.168.1.6	192.168.1.66	Any	Any	
2	<input type="checkbox"/>	Any	WAN1	172.16.3.130							

How to Customize a Secure Route between VPN Router and Remote Router by Using Route Policy

Note: 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., Vigor2925 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**>>**General Setup** 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	<input type="checkbox"/>	Any	WAN1	200	Any	Any	Any	Any	Any	Any		Down
2	<input type="checkbox"/>	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
3	<input type="checkbox"/>	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
4	<input type="checkbox"/>	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
5	<input type="checkbox"/>	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
6	<input type="checkbox"/>	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
7	<input type="checkbox"/>	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
8	<input type="checkbox"/>	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
9	<input type="checkbox"/>	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
10	<input type="checkbox"/>	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down

<< 1-10 | 11-20 | 21-30 | 31-40 | 41-50 >>

[Next >>](#)

- Wizard Mode: most frequently used settings in three pages
- Advance Mode: all settings in one page

OK

- 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: 255.255.255.0 / 24

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: 100

Low (250) ———— 150 ———— High (0)
 Default Route Routes in Routing Table

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.

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

Load-Balance/Route Policy



Load-Balance/Route Policy

10 rules per page

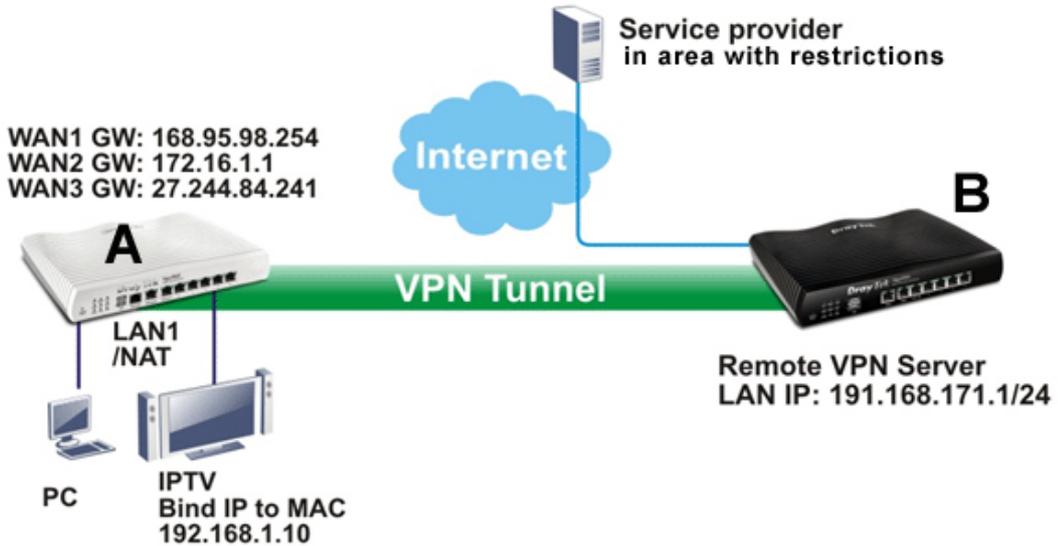
[Set to Factory Default](#)

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	<input checked="" type="checkbox"/>	Any	LAN1	100	172.16.3.2	172.16.3.25	Any	Any	Any	Any		Down
2	<input type="checkbox"/>	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
3	<input type="checkbox"/>	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
4	<input type="checkbox"/>	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down
5	<input type="checkbox"/>	Any	WAN1	200	Any	Any	Any	Any	Any	Any	UP	Down

- 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>>General Setup**.
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

Destination IP: Any
 Dest IP Range
Start: 213.57.89.100 End: 213.57.89.100

Destination Port: Any
 Dest Port Start ~ Dest Port End

Send via if Criteria Matched

Interface: WAN/LAN (WAN1)
 VPN (VPN 1.For Branch)

Gateway: Default Gateway
 Specific Gateway

More Options ▼

Priority: 200

Low (250) ----- High (0)

Default Route | Routes in Routing Table

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

4.3.2 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

Dst IP

Dst Port

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

([download](#) an example input file)

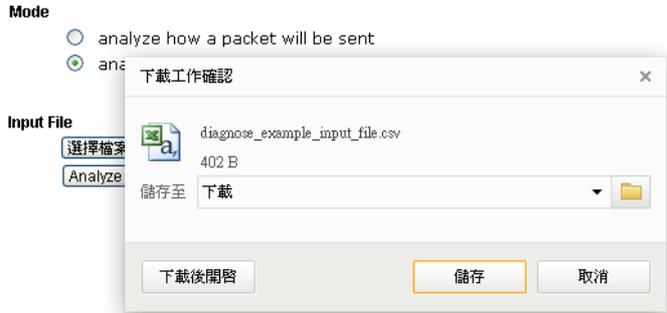
Available settings are explained as follows:

Item	Description
Mode	<p>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.</p> <p>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.</p>
Packet Information	<p>Specify the nature of the packets to be analyzed by Vigor router.</p> <p>ICMP/UDP/TCP/ANY- Specify a protocol for diagnosis.</p> <p>Src IP – Type an IP address as the source IP.</p> <p>Dst IP – Type an IP address as the destination IP.</p> <p>Dst Port – Use the drop down list to specify the destination port.</p>

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.



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.



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.

4.4 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.

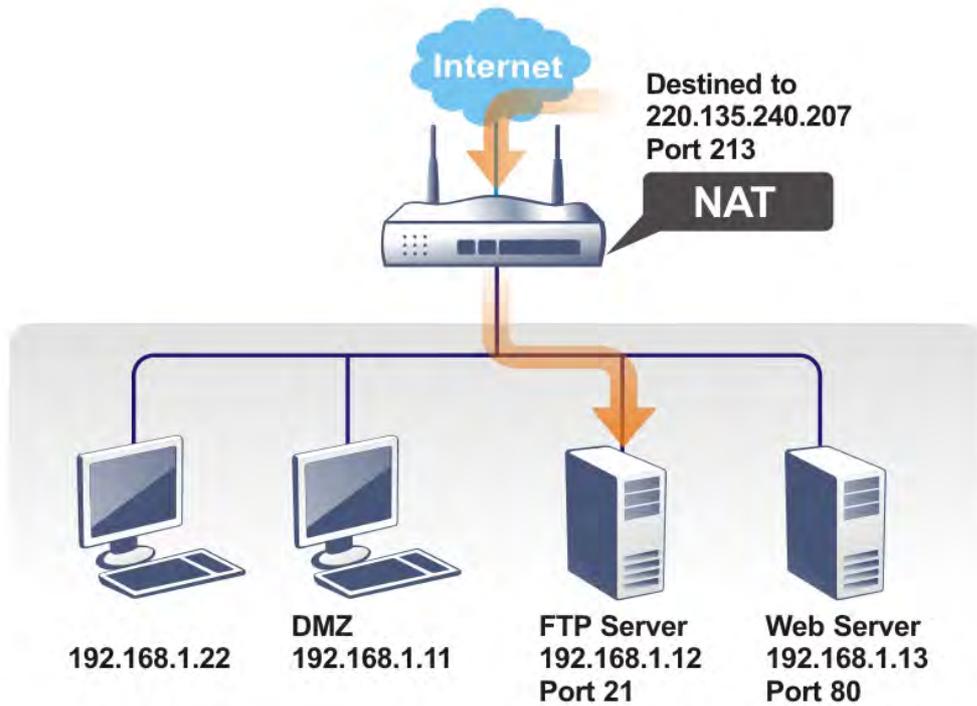
Note: On NAT page, you will see the private IP address defined in RFC-1918. Usually we use the 192.168.1.0/24 subnet for the router. As stated before, the NAT facility can map one or more IP addresses and/or service ports into different specified services. In other words, the NAT function can be achieved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

Below shows the menu items for NAT.



4.4.1 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 20 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](#) >>

[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](#).

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 Range ▾

Service Name Single

Protocol Range

WAN IP --- ▾

Public Port 1.All ▾

Private IP 0 -

Private Port -

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 IP	Select the WAN IP used for port redirection. There are eight WAN IP alias that can be selected and used for port redirection. The default setting is All which means all the incoming data from any port will be redirected to specified

	range of IP address and port.
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. Simply type the required number on the first box. The second one will be assigned automatically later.
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) and the fourth digits in the second box (as the end point).
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.

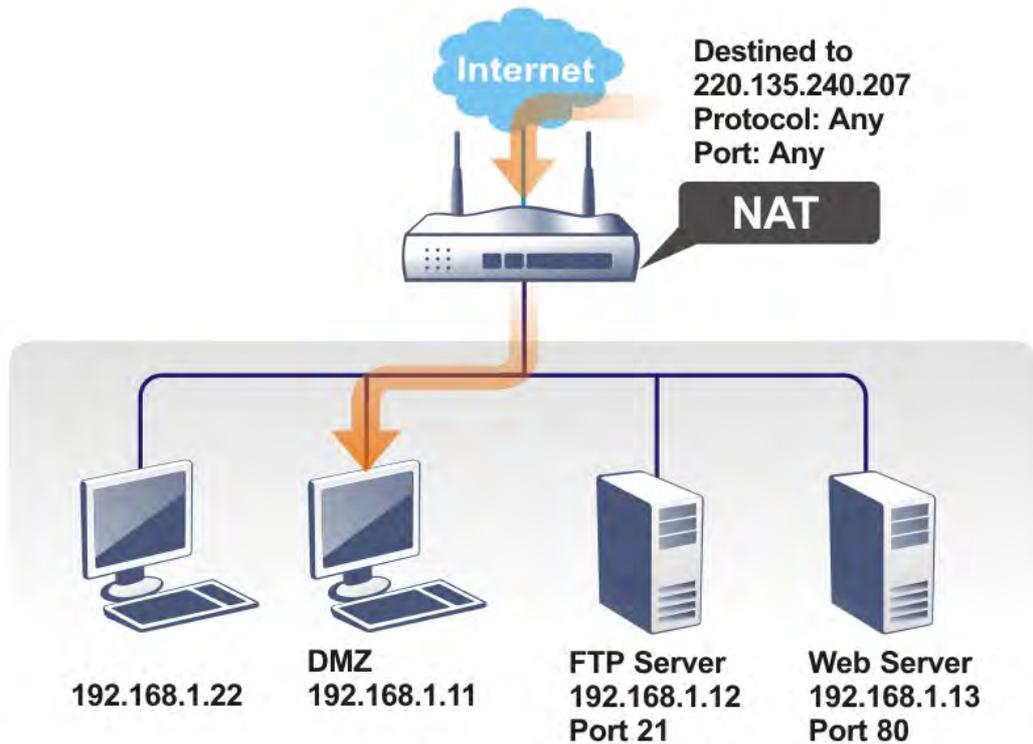
System Maintenance >> Management

IPv4 Management Setup	IPv6 Management Setup
Router Name <input type="text"/>	
<input type="checkbox"/> Default:Disable Auto-Logout	
Internet Access Control	
<input type="checkbox"/> Allow management from the Internet	
<input type="checkbox"/> FTP Server <input checked="" type="checkbox"/> HTTP Server <input checked="" type="checkbox"/> HTTPS Server <input checked="" type="checkbox"/> Telnet Server <input checked="" type="checkbox"/> TR069 Server <input type="checkbox"/> SSH Server	
<input checked="" type="checkbox"/> Disable PING from the Internet	
Access List from the Internet	
List	IP Subnet Mask
1	<input type="text"/> <input type="text"/>
2	<input type="text"/> <input type="text"/>
3	<input type="text"/> <input type="text"/>
Management Port Setup	
<input checked="" type="radio"/> User Define Ports	
<input type="radio"/> Default Ports	
Telnet Port	<input type="text" value="23"/> (Default: 23)
HTTP Port	<input type="text" value="80"/> (Default: 80)
HTTPS Port	<input type="text" value="443"/> (Default: 443)
FTP Port	<input type="text" value="21"/> (Default: 21)
TR069 Port	<input type="text" value="8069"/> (Default: 8069)
SSH Port	<input type="text" value="22"/> (Default: 22)
External Device Control	
<input checked="" type="checkbox"/> No respond to External Device	

OK

4.4.2 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.

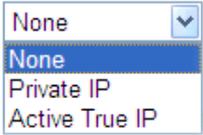
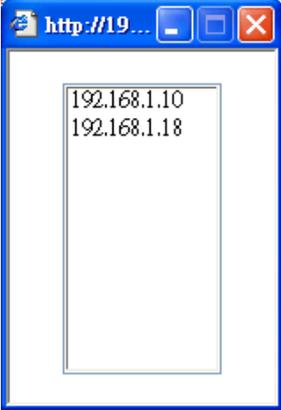
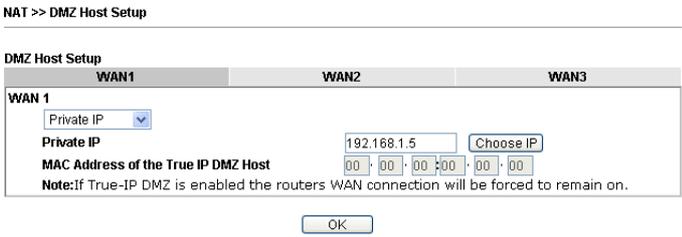
NAT >> DMZ Host Setup

DMZ Host Setup

WAN1	WAN2	WAN3
<p>WAN 1</p> <p>None <input type="button" value="v"/></p> <p>Private IP <input type="text" value=""/> <input type="button" value="Choose IP"/></p> <p>MAC Address of the True IP DMZ Host <input type="text" value="00.00.00.00.00.00"/></p> <p>Note:If True-IP DMZ is enabled the routers WAN connection will be forced to remain on.</p> <p style="text-align: center;"><input type="button" value="OK"/></p>		

Available settings are explained as follows:

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

<p>WAN 1</p> 	<p>Choose Private IP or Active True IP first. Active True IP selection is available for WAN1 only.</p>
<p>Private IP</p>	<p>Enter the private IP address of the DMZ host, or click Choose PC to select one.</p>
<p>Choose IP</p>	<p>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.</p>  <p>When you have selected one private IP from the above dialog, the IP address will be shown on the following screen. Click OK to save the setting.</p> 

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

See the following figure.



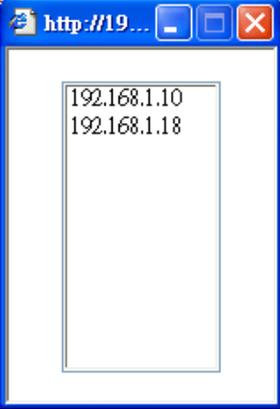
If you previously have set up **WAN Alias** for **PPPoE** or **Static or Dynamic IP** mode in WAN2 interface, you will find them in **Aux. WAN IP** for your selection.

NAT >> DMZ Host Setup

DMZ Host Setup

WAN1		WAN2		WAN3	
WAN 1					
Index	Enable	Aux. WAN IP	Private IP		
1.	<input type="checkbox"/>	---	0.0.0.0	Choose IP	
2.	<input type="checkbox"/>	192.168.1.54	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	<p>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.</p>  <p>When you have selected one private IP from the above dialog, the IP address will be shown on the following screen. Click OK to save the setting.</p>

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

4.4.3 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	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](#) >>

[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](#).

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.
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.

Index No. 1

Enable Open Ports

Comment

WAN Interface

Private IP

	Protocol	Start Port	End Port		Protocol	Start Port	End Port
1.	----	<input type="text" value="0"/>	<input type="text" value="0"/>	2.	----	<input type="text" value="0"/>	<input type="text" value="0"/>
3.	TCP	<input type="text" value="0"/>	<input type="text" value="0"/>	4.	----	<input type="text" value="0"/>	<input type="text" value="0"/>
5.	UDP	<input type="text" value="0"/>	<input type="text" value="0"/>	6.	----	<input type="text" value="0"/>	<input type="text" value="0"/>
7.	TCP/UDP	<input type="text" value="0"/>	<input type="text" value="0"/>	8.	----	<input type="text" value="0"/>	<input type="text" value="0"/>
9.	----	<input type="text" value="0"/>	<input type="text" value="0"/>	10.	----	<input type="text" value="0"/>	<input type="text" value="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.
Private IP	Enter the private IP address of the local host or click Choose IP 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	Local IP Address	Status
1.	P2261	WAN1	192.168.1.49	v
2.				x
3.				x
4.				x
5.				x
6.				x
7.				x

4.4.4 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

Incoming Protocol UDP ▾

Incoming Port

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. <div style="border: 1px solid black; padding: 2px; margin-top: 5px;"> User Defined ▾ User Defined Real Player QuickTime WMP IRC AIM Talk ICQ PaITalk BitTorrent </div>

Comment	Type the text to memorize the application of this rule.
Triggering Protocol	<p>Select the protocol (TCP, UDP or TCP/UDP) for such triggering profile.</p> 
Triggering Port	Type the port or port range for such triggering profile.
Incoming Protocol	<p>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.</p> 
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.

4.5 Firewall

4.5.1 Basics for 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:

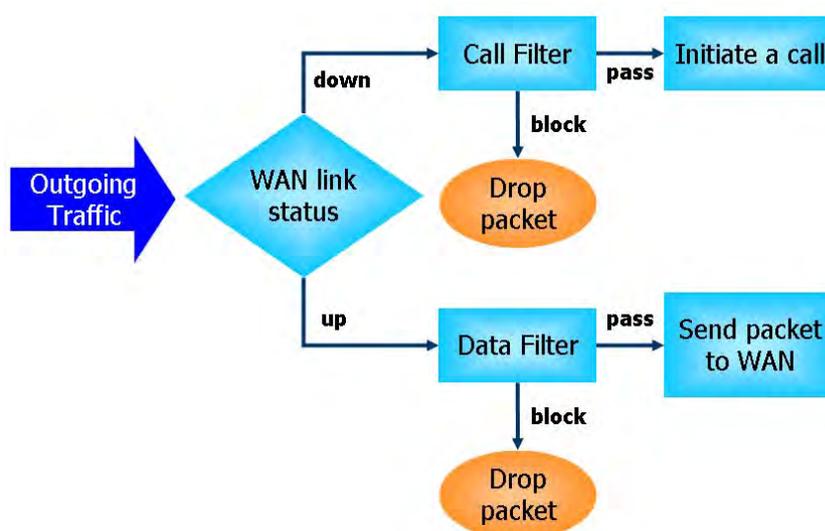
- User-configurable IP filter (Call Filter/ Data Filter).
- Stateful Packet Inspection (SPI): tracks packets and denies unsolicited incoming data
- Selectable Denial of Service (DoS) /Distributed DoS (DDoS) attacks protection

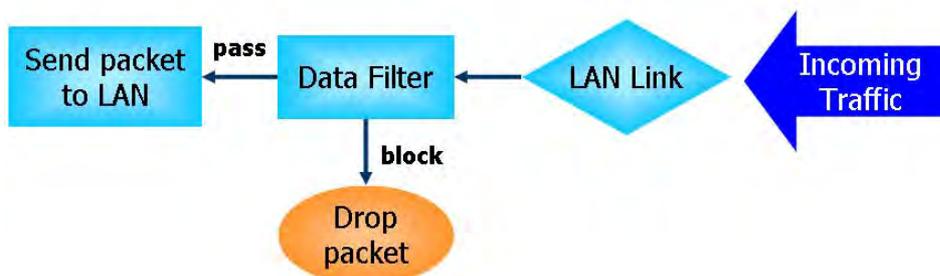
IP Filters

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 just examine the header information also monitor 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.

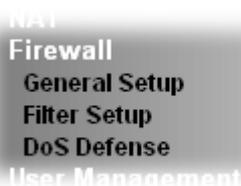
The **DoS Defense** function enables the Vigor router to inspect every incoming packet based on the attack signature database. Any malicious packet that might duplicate itself to paralyze the host in the secure LAN will be strictly blocked and a Syslog message will be sent as warning, if you set up Syslog 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 | 9. SYN fragment |
| 2. UDP flood attack | 10. Fraggle attack |
| 3. ICMP flood attack | 11. TCP flag scan |
| 4. Port Scan attack | 12. Tear drop attack |
| 5. IP options | 13. Ping of Death attack |
| 6. Land attack | 14. ICMP fragment |
| 7. Smurf attack | 15. Unassigned Numbers |
| 8. Trace route | |

Below shows the menu items for Firewall.



4.5.2 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.

4.5.2.1 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

General Setup **Default Rule**

Call Filter Enable Start Filter Set:

Disable

Data Filter Enable Start Filter Set:

Disable

Accept large incoming fragmented UDP or ICMP packets (for some games, ex. CS)

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	<p>For the sake of security, the router will execute strict security checking for data transmission.</p> <p>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.</p>
Block routing packet from WAN	<p>Usually, IPv6 network sessions/traffic from WAN to LAN will be accepted by IPv6 firewall in default.</p> <p>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.</p> <p>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.</p>

4.5.2.2 Default Rule Page

Such page allows you to choose filtering profiles including QoS, Policy Route, WCF, APP Enforcement, URL Content 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 <input type="button" value="v"/>	<input type="checkbox"/>
Sessions Control	0 / 32000 <input type="text"/>	<input type="checkbox"/>
Quality of Service	None <input type="button" value="v"/>	<input type="checkbox"/>
User Management	None <input type="button" value="v"/>	<input type="checkbox"/>
APP Enforcement	None <input type="button" value="v"/>	<input type="checkbox"/>
URL Content Filter	None <input type="button" value="v"/>	<input type="checkbox"/>
Web Content Filter	None <input type="button" value="v"/>	<input type="checkbox"/>
DNS Filter	None <input type="button" value="v"/>	<input type="checkbox"/>

Advance Setting

Available settings are explained as follows:

Item	Description
Filter	<p>Select Pass or Block for the packets that do not match with the filter rules.</p> <p>Filter <input type="button" value="Pass"/> <input type="button" value="v"/> <div style="border: 1px solid black; padding: 2px; display: inline-block;"> Pass Block </div> </p>
Sessions Control	<p>The number typed here is the total sessions of the packets that do not match the filter rule configured in this page.</p>
Quality of Service	<p>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.</p> <p><input type="button" value="None"/> <input type="button" value="v"/> <div style="border: 1px solid black; padding: 2px; display: inline-block;"> None Class 1 Class 2 Class 3 Other </div> </p>
User Management	<p>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</p>

	<p>here.</p>  <p>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.</p>
APP Enforcement	<p>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.</p>
URL Content Filter	<p>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.</p>
Web Content Filter	<p>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.</p>
DNS Filter	<p>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.</p>
Advance Setting	<p>Click Edit to open the following window. However, it is strongly recommended to use the default settings here.</p>

Firewall >> General Setup

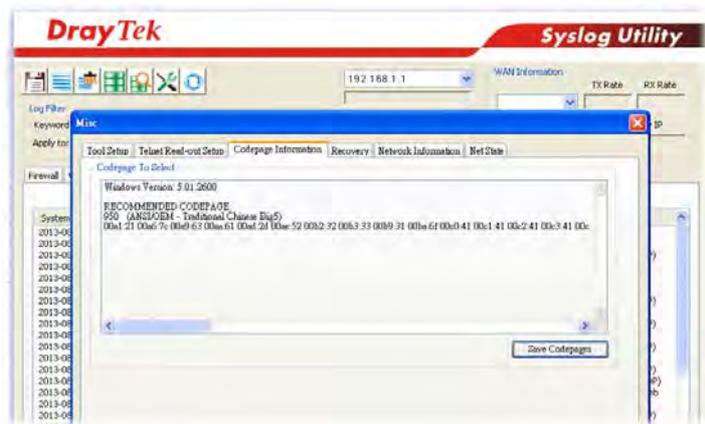
Advance Setting

Codepage	ANSI(1252)-Latin I	
Window size:	65535	
Session timeout:	1440	Minute

OK Close

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.



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.

4.5.3 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 rule.

Firewall >> Filter Setup >> Edit Filter Set

Filter Set 1

Comments :

Filter Rule	Active	Comments	Move Up	Move Down
<input type="button" value="1"/>	<input checked="" type="checkbox"/>	Block NetBios		Down
<input type="button" value="2"/>	<input type="checkbox"/>		UP	Down
<input type="button" value="3"/>	<input type="checkbox"/>		UP	Down
<input type="button" value="4"/>	<input type="checkbox"/>		UP	Down
<input type="button" value="5"/>	<input type="checkbox"/>		UP	Down
<input type="button" value="6"/>	<input type="checkbox"/>		UP	Down
<input type="button" value="7"/>	<input type="checkbox"/>		UP	

Next Filter Set

Available settings are explained as follows:

Item	Description
Filter 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.

Filter Set 1 Rule 1

Check to enable the Filter Rule

Comments:

Index(1-15) in **Schedule** Setup: , , ,

Clear sessions when schedule ON: Enable

Direction:

Source IP:

Destination IP:

Service Type:

Fragments:

Application	Action/Profile	Syslog
Filter:	<input type="text" value="Block Immediately"/> <input type="button" value="Edit"/>	<input type="checkbox"/>
Branch to Other Filter Set:	<input type="text" value="None"/> <input type="button" value="Edit"/>	
Sessions Control	0 / <input type="text" value="60000"/>	<input type="checkbox"/>
MAC Bind IP	<input type="text" value="Non-Strict"/> <input type="button" value="Edit"/>	<input type="checkbox"/>
Quality of Service	<input type="text" value="None"/> <input type="button" value="Edit"/>	<input type="checkbox"/>
User Management	<input type="text" value="None"/> <input type="button" value="Edit"/>	<input type="checkbox"/>
APP Enforcement:	<input type="text" value="None"/> <input type="button" value="Edit"/>	<input type="checkbox"/>
URL Content Filter:	<input type="text" value="None"/> <input type="button" value="Edit"/>	<input type="checkbox"/>
Web Content Filter:	<input type="text" value="None"/> <input type="button" value="Edit"/>	<input type="checkbox"/>
DNS Filter	<input type="text" value="None"/> <input type="button" value="Edit"/>	<input type="checkbox"/>

Advance Setting

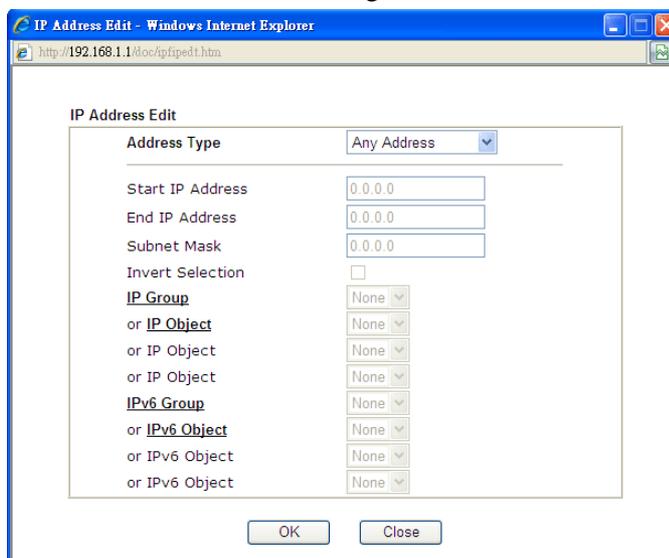
Available settings are explained as follows:

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. <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <input type="text" value="LAN/RT/VPN -> WAN"/> <input type="button" value="Edit"/> LAN/RT/VPN -> WAN WAN -> LAN/RT/VPN LAN/RT/VPN -> LAN/RT/VPN </div> Note: RT means routing domain for 2nd subnet or other

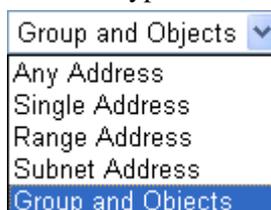
LAN.

Source/Destination IP

Click **Edit** to access into the following dialog to choose the source/destination IP or IP ranges.



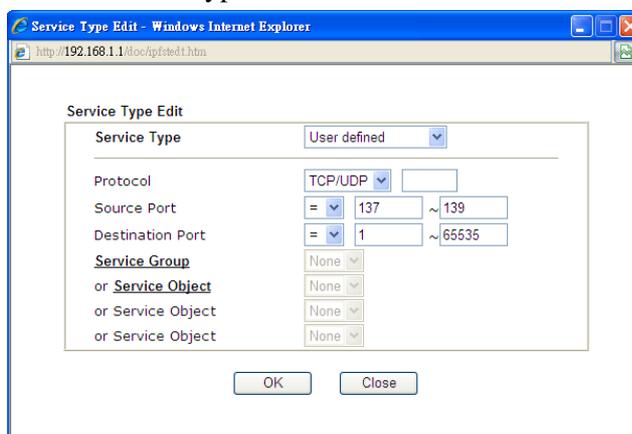
To set the IP address manually, please choose **Any Address/Single Address/Range Address/Subnet Address** as the Address Type and type them in this dialog. In addition, if you want to use the IP range from defined groups or objects, please choose **Group and Objects** as the Address Type.



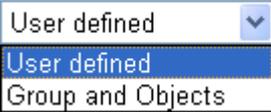
From the **IP Group** drop down list, choose the one that you want to apply. Or use the **IP Object** drop down list to choose the object that you want.

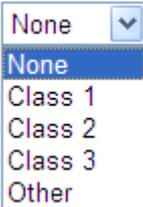
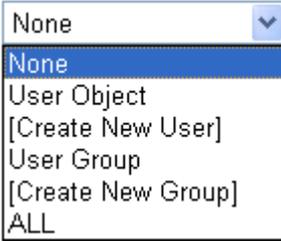
Service Type

Click **Edit** to access into the following dialog to choose a suitable service type.



To set the service type manually, please choose **User defined** as the Service Type and type them in this dialog. In

	<p>addition, if you want to use the service type from defined groups or objects, please choose Group and Objects as the Service Type.</p>  <p>Protocol - Specify the protocol(s) which this filter rule will apply to.</p> <p>Source/Destination Port –</p> <p>(=) – 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.</p> <p>(!=) – 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.</p> <p>(>) – the port number greater than this value is available.</p> <p>(<) – the port number less than this value is available for this profile.</p> <p>Service Group/Object - Use the drop down list to choose the one that you want.</p>
Fragments	<p>Specify the action for fragmented packets. And it is used for Data Filter only.</p> <p>Don't care -No action will be taken towards fragmented packets.</p> <p>Unfragmented -Apply the rule to unfragmented packets.</p> <p>Fragmented - Apply the rule to fragmented packets.</p> <p>Too Short - Apply the rule only to packets that are too short to contain a complete header.</p>
Filter	<p>Specifies the action to be taken when packets match the rule.</p> <p>Block Immediately - Packets matching the rule will be dropped immediately.</p> <p>Pass Immediately - Packets matching the rule will be passed immediately.</p> <p>Block If No Further Match - A packet matching the rule, and that does not match further rules, will be dropped.</p> <p>Pass If No Further Match - A packet matching the rule, and that does not match further rules, will be passed through.</p>
Branch to other Filter Set	<p>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.</p>
Sessions Control	<p>The number typed here is the total sessions of the packets that do not match the filter rule configured in this page. The</p>

	default setting is 60000.
MAC Bind IP	<p>Strict – Make the MAC address and IP address settings configured in IP Object for Source IP and Destination IP be bound for applying such filter rule.</p> <p>No-Strict - no limitation.</p>
Quality of Service	<p>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.</p> 
User Management	<p>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.</p>  <p>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.</p>
APP Enforcement	<p>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.</p>
URL Content Filter	<p>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.</p>
Web Content Filter	<p>Select one of the Web Content Filter profile settings (created in CSM>> Web Content Filter) for applying with</p>

	<p>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.</p>
<p>DNS Filter</p>	<p>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.</p>
<p>Advance Setting</p>	<p>Click Edit to open the following window. However, it is strongly recommended to use the default settings here.</p> <p>Firewall >> Edit Filter Set >> Edit Filter Rule</p> <div data-bbox="715 772 1369 1108" data-label="Form"> <p>Filter Set 1 Rule 1</p> <p>Advance Setting</p> <p>Codepage: ANSI(1252)-Latin I</p> <p>Window size: 65535</p> <p>Session timeout: 1440 Minute</p> <p>DrayTek Banner: <input checked="" type="checkbox"/></p> <p>Strict Security Checking</p> <p><input type="checkbox"/> APP Enforcement</p> <p>OK Close</p> </div> <p>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.</p> <p>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.</p> <div data-bbox="702 1556 1404 1971" data-label="Image"> </div> <p>Window size – It determines the size of TCP protocol</p>

(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.



Strict Security Checking - For the sake of security, you might want the router executing strict security checking for data transmission. The router performance will be affected if you invoke strict security checking.

APP Enforcement – Check this box to execute the critical checking for all the files transferred via IM/P2P.

Example

As stated before, all the traffic will be separated and arbitrated using one 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.

The image shows a sequence of four screenshots from the DrayTek Firewall configuration interface, connected by red arrows indicating the workflow:

- General Setup:** Shows the 'General Setup' tab with 'Call Filter' and 'Data Filter' both set to 'Enable'. The 'Start Filter Set' dropdowns are set to 'Set#1' and 'Set#2' respectively.
- Filter Setup:** A table listing 12 filter sets. The first two are highlighted with red boxes:

Set	Comments	Set	Comments
1.	Default Call Filter	7.	
2.	Default Data Filter	8.	
3.		9.	
4.		10.	
5.		11.	
6.		12.	
- Edit Filter Set:** Shows 'Filter Set 1' with 7 rules. Rule 1 is highlighted with a red box and has the comment 'Block NetBios'.
- Edit Filter Rule:** Shows 'Filter Set 1 Rule 1' configuration. The 'Service Type' is set to 'TCP/UDP, Port. from 137-139 to any'.

4.5.4 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

<input checked="" type="checkbox"/> Enable SYN flood defense	Threshold	<input type="text" value="2000"/>	packets / sec
	Timeout	<input type="text" value="10"/>	sec
<input checked="" type="checkbox"/> Enable UDP flood defense	Threshold	<input type="text" value="2000"/>	packets / sec
	Timeout	<input type="text" value="10"/>	sec
<input checked="" type="checkbox"/> Enable ICMP flood defense	Threshold	<input type="text" value="250"/>	packets / sec
	Timeout	<input type="text" value="10"/>	sec
<input checked="" type="checkbox"/> Enable Port Scan detection	Threshold	<input type="text" value="2000"/>	packets / sec
<input checked="" type="checkbox"/> Block IP options	<input checked="" type="checkbox"/> Block TCP flag scan		
<input checked="" type="checkbox"/> Block Land	<input checked="" type="checkbox"/> Block Tear Drop		
<input checked="" type="checkbox"/> Block Smurf	<input checked="" type="checkbox"/> Block Ping of Death		
<input checked="" type="checkbox"/> Block trace route	<input checked="" type="checkbox"/> Block ICMP fragment		
<input checked="" type="checkbox"/> Block SYN fragment	<input checked="" type="checkbox"/> Block Unassigned Numbers		
<input checked="" type="checkbox"/> Block Fraggle Attack			

Enable DoS defense function to prevent the attacks from hacker or crackers.

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	<p>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.</p> <p>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.</p>
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.

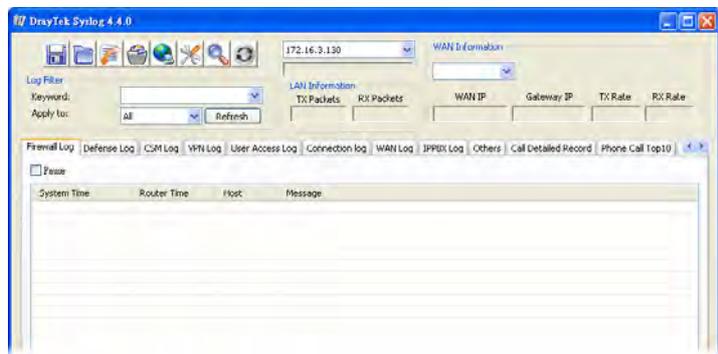
	<p>The default setting for threshold and timeout are 2000 packets per second and 10 seconds, respectively. That means, when 2000 packets per second received, they will be regarded as “attack event” and the session will be paused for 10 seconds.</p>
Enable ICMP flood defense	<p>Check the box to activate 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.</p> <p>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.</p>
Enable Port Scan detection	<p>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.</p> <p>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”.</p>
Block IP options	<p>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.</p>
Block Land	<p>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.</p>
Block Smurf	<p>Check the box to activate the Block Smurf function. The Vigor router will ignore any broadcasting ICMP echo request.</p>
Block trace router	<p>Check the box to enforce the Vigor router not to forward any trace route packets.</p>
Block SYN fragment	<p>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.</p>
Block Fraggle Attack	<p>Check the box to activate the Block fraggle Attack function. Any broadcast UDP packets received from the Internet is blocked.</p>

	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 <i>no flag scan</i> , <i>FIN without ACK scan</i> , <i>SYN FINscan</i> , <i>Xmas scan</i> and <i>full Xmas scan</i> .
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 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	<p>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.</p> <p>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.</p>

SysLog / Mail Alert Setup

SysLog Access Setup <input checked="" type="checkbox"/> Enable Syslog Save to: <input checked="" type="checkbox"/> Syslog Server <input type="checkbox"/> USB Disk Router Name <input type="text"/> Server IP Address <input type="text"/> Destination Port <input type="text" value="514"/> Mail Syslog <input type="checkbox"/> Enable Enable syslog message: <input checked="" type="checkbox"/> Firewall Log <input checked="" type="checkbox"/> User Access Log <input checked="" type="checkbox"/> WAN Log <input checked="" type="checkbox"/> Router/DSL information AlertLog Setup <input type="checkbox"/> Enable AlertLog Port <input type="text" value="514"/>	Mail Alert Setup <input checked="" type="checkbox"/> Enable <input type="button" value="Send a test e-mail"/> SMTP Server <input type="text"/> SMTP Port <input type="text" value="25"/> Mail To <input type="text"/> Return-Path <input type="text"/> <input type="checkbox"/> Authentication User Name <input type="text"/> Password <input type="text"/> Enable E-Mail Alert: <input checked="" type="checkbox"/> DoS Attack <input checked="" type="checkbox"/> IM-P2P <input checked="" type="checkbox"/> VPN LOG
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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.



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

4.6 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.



Note: 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.

Firewall
User Management
General Setup
User Profile
User Group
User Online Status
Objects Setting

4.6.1 General Setup

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

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

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>
```

Available settings are explained as follows:

Item	Description
Mode	<p>There are two modes offered here for you to choose. Each mode will bring different filtering effect to the users involved.</p> <p>User-Based - If you choose such mode, the router will apply the filter rules configured in User Management>>User Profile to the users.</p> <p>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.</p>
Authentication page	<p>Web Authentication - Choose the protocol for web authentication.</p> <p>Display IP Address on the dialog box pops up after successful login – Check the box to display the IP address of the client on the pop up window after the user accesses into Vigor router successfully..</p>
Display IP Address on tracking window	<p>On – The IP address of the user accessing into Vigor router/Internet will be displayed on the tracking window.</p>
Landing Page	<p>Type the information to be displayed on the first web page when the LAN user accessing into Internet via such router.</p>

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

4.6.2 User Profile

This page allows you to set customized profiles (up to 100) 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

Profile	Enable	Name	Profile	Enable	Name
1.	<input checked="" type="checkbox"/>	admin	17.	<input type="checkbox"/>	
2.	<input checked="" type="checkbox"/>	System Reservation	18.	<input type="checkbox"/>	
3.	<input type="checkbox"/>		19.	<input type="checkbox"/>	
4.	<input type="checkbox"/>		20.	<input type="checkbox"/>	
5.	<input type="checkbox"/>		21.	<input type="checkbox"/>	
6.	<input type="checkbox"/>		22.	<input type="checkbox"/>	
7.	<input type="checkbox"/>		23.	<input type="checkbox"/>	
8.	<input type="checkbox"/>		24.	<input type="checkbox"/>	
9.	<input type="checkbox"/>		25.	<input type="checkbox"/>	
10.	<input type="checkbox"/>		26.	<input type="checkbox"/>	
11.	<input type="checkbox"/>		27.	<input type="checkbox"/>	
12.	<input type="checkbox"/>		28.	<input type="checkbox"/>	
13.	<input type="checkbox"/>		29.	<input type="checkbox"/>	
14.	<input type="checkbox"/>		30.	<input type="checkbox"/>	
15.	<input type="checkbox"/>		31.	<input type="checkbox"/>	
16.	<input type="checkbox"/>		32.	<input type="checkbox"/>	

<< [1-32](#) | [33-64](#) | [65-96](#) | [97-100](#) >> [Next](#) >>

To set the user profile, please click any index number link to open the following page. Notice that profile 1 (**admin**) and profile 2 (**System Reservation**) 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 min(s) 0:Unlimited

Max User Login 0:Unlimited

External Server Authentication

Log

Pop Browser Tracking Window

Authentication Web Alert Tool Telnet

Landing Page

Index(1-15) in **Schedule** Setup: , , ,

Enable Time Quota min. min.

Enable Data Quota MB

Reset quota to default when scheduling time expired

Enable Default Time Quota min. Default Data Quota MB

Available settings are explained as follows:

Item	Description
Enable this account	Check this box to enable such user profile.
User Name	Type a name for such user profile (e.g., <i>LAN_User_Group_1</i> , <i>WLAN_User_Group_A</i> , <i>WLAN_User_Group_B</i> , etc). When a user tries to access Internet through this router, an authentication step must be performed first. The user has to type the 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., <i>lug123</i> , <i>wug123</i> , <i>wug456</i> , etc). When a user tries to access Internet through this router, an authentication step must be performed first. The user has to type the password specified here to pass the authentication. When the user passes the authentication, he/she can access Internet via this router with the limitation configured in this user profile. The maximum length of the password you can set is 24 characters.
Confirm Password	Type the password again for confirmation.
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.
External Service Authentication	<p>The router will authenticate the dial-in user by itself or by external service such as LDAP server or Radius server. If LDAP or Radius is selected here, it is not necessary to configure the password setting above.</p> 
Log	<p>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).</p> 
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	<p>Any user (from LAN 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.</p> <p>Web – If it is selected, the use 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.</p> <p>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.</p> <p>Telnet – If it is selected, the user can use Telnet command to perform the authentication job.</p>
Landing Page	<p>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.</p>
Index (1-15) in Schedule Setup	<p>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.</p>
Enable Time Quota	<p>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.</p> <p><input type="checkbox"/> + – Click this box to set and increase the time quota for such profile.</p> <p><input type="checkbox"/> - – Click this box to decrease the time quota for such profile.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>Note: A dialog will be popped up to notify how many time remained when a user accesses into Internet through Vigor router successfully.</p> </div>

	 <p>When the time is up, all the connection jobs including network, IM, social media, facebook, and etc. will be terminated.</p>
<p>Enable Data Quota</p>	<p>Data Quota means the total amount for data transmission allowed for the user. The unit is MB.</p> <p><input type="button" value="+"/> – Click this box to set and increase the data quota for such profile.</p> <p><input type="button" value="-"/> – Click this box to decrease the data quota for such profile.</p>
<p>Reset quota to default when scheduling time expired</p>	<p>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.</p> <p>Enable – Check it to use the default setting for time quota and data quota.</p> <p>Default Time Quota – Type the value for the time manually.</p> <p>Default Data Quota – Type the value for the data manually.</p>

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

4.6.3 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

Group Index : 1

Name:

<p>Available User Objects</p> <div style="border: 1px solid gray; padding: 2px;"> 1-admin 2-System Reservation 3-LAN_User_Group_1 4-WLAN_User_Group_A 5-WLAN_User_Group_B </div>	<input type="button" value=">>"/> <input type="button" value="<<"/>	<p>Selected User Objects(Max 32 Objects)</p> <div style="border: 1px solid gray; height: 100px;"></div>
---	--	--

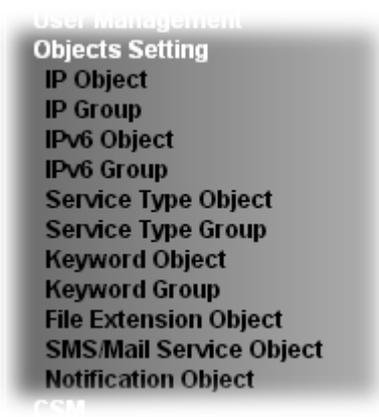
Available settings are explained as follows:

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.

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 prevent specified user accessing into Internet. Unblock – the user will be blocked. Logout – the user will be logged out forcefully.

4.7 Objects Settings

Define objects such as IP address, service type, keyword, file extension and others. These pre-defined objects can be applied in CSM.



4.7.1 IP Object

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).

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.

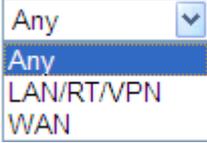
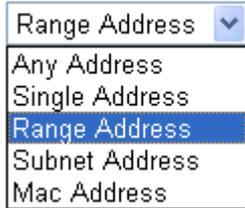
To set a new profile, please do the steps listed below:

1. Click the number (e.g., #1) under Index column for configuration in details.
2. The configuration page will be shown as follows:

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
End IP Address:	192.168.1.65
Subnet Mask:	0.0.0.0
Invert Selection:	<input type="checkbox"/>

Available settings are explained as follows:

Item	Description
Name	Type a name for this profile. Maximum 15 characters are allowed.
Interface	<p>Choose a proper interface.</p>  <p>For example, the Direction setting in Edit Filter Rule will ask you specify IP or IP range for WAN or LAN/RT/VPN or any IP address. If you choose LAN/RT/VPN as the Interface here, and choose LAN/RT/VPN as the direction setting in Edit Filter Rule, then all the IP addresses specified with LAN/RT/VPN interface will be opened for you to choose in Edit Filter Rule page.</p>
Address Type	<p>Determine the address type for the IP address.</p> <p>Select Single Address if this object contains one IP address only.</p> <p>Select Range Address if this object contains several IPs within a range.</p> <p>Select Subnet Address if this object contains one subnet for IP address.</p> <p>Select Any Address if this object contains any IP address.</p> <p>Select Mac Address if this object contains Mac address.</p> 
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.

- 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:

Index	Name	Index
<u>1.</u>	RD Department	<u>17.</u>
<u>2.</u>	Financial Dept	<u>18.</u>
<u>3.</u>	HR Department	<u>19.</u>
<u>4.</u>		<u>20.</u>
<u>5.</u>		<u>21.</u>
6.		22.

4.7.2 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:

Interface:

Available IP Objects

1-RD Department
 2-Financial Dept
 3-HR Department

Selected IP Objects

(Empty)

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.

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

4.7.3 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:

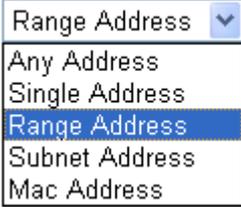
1. Click the number (e.g., #1) under Index column for configuration in details.
2. The configuration page will be shown as follows:

Objects Setting >> IPv6 Object

Profile Index : 1

Name:	<input type="text"/>
Address Type:	Subnet Address <input type="button" value="v"/>
Mac Address:	<input type="text" value="00"/> : <input type="text" value="00"/>
Start IP Address:	<input type="text"/>
End IP Address:	<input type="text"/>
Prefix Len:	<input type="text"/>
Invert Selection:	<input type="checkbox"/>

Available settings are explained as follows:

Item	Description
Name	Type a name for this profile. Maximum 15 characters are allowed.
Address Type	<p>Determine the address type for the IPv6 address.</p> <p>Select Single Address if this object contains one IPv6 address only.</p> <p>Select Range Address if this object contains several IPv6s within a range.</p> <p>Select Subnet Address if this object contains one subnet for IPv6 address.</p> <p>Select Any Address if this object contains any IPv6 address.</p> <p>Select Mac Address if this object contains Mac address.</p> 
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 Len	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.

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

4.7.4 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:

- Click the number (e.g., #1) under Index column for configuration in details.
- The configuration page will be shown as follows:

Objects Setting >> IPv6 Group

Profile Index : 1

Name:

Available IPv6 Objects

>>

<<

Selected IPv6 Objects

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.

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

4.7.5 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.	

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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:

- Click the number (e.g., #1) under Index column for configuration in details.

- The configuration page will be shown as follows:

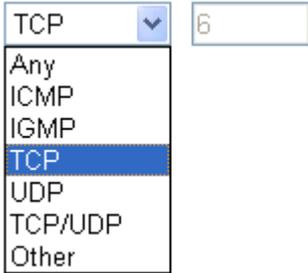
Objects Setting >> Service Type Object Setup

Profile Index : 1

Name	<input type="text" value="www"/>
Protocol	TCP <input type="text" value="6"/>
Source Port	= <input type="text" value="1"/> ~ <input type="text" value="65535"/>
Destination Port	= <input type="text" value="1"/> ~ <input type="text" value="65535"/>

OK Clear Cancel

Available settings are explained as follows:

Item	Description
Name	Type a name for this profile.
Protocol	Specify the protocol(s) which this profile will apply to. 
Source/Destination Port	Source Port and the Destination Port column 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.

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

Objects Setting >> Service Type Object

Service Type Object Profiles:

Index	Name	Index
<u>1.</u>	www	<u>17.</u>
<u>2.</u>	SIP	<u>18.</u>
<u>3.</u>		<u>19.</u>
<u>4.</u>		<u>20.</u>

4.7.6 Service Type Group

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

Objects Setting >> Service Type Group

Service Type Group Table: | [Set to Factory Default](#) |

Group	Name	Group	Name
<u>1.</u>		<u>17.</u>	
<u>2.</u>		<u>18.</u>	
<u>3.</u>		<u>19.</u>	
<u>4.</u>		<u>20.</u>	
<u>5.</u>		<u>21.</u>	
<u>6.</u>		<u>22.</u>	
<u>7.</u>		<u>23.</u>	
<u>8.</u>		<u>24.</u>	
<u>9.</u>		<u>25.</u>	
<u>10.</u>		<u>26.</u>	
<u>11.</u>		<u>27.</u>	
<u>12.</u>		<u>28.</u>	
<u>13.</u>		<u>29.</u>	
<u>14.</u>		<u>30.</u>	
<u>15.</u>		<u>31.</u>	
<u>16.</u>		<u>32.</u>	

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

2-SIP

>>

<<

Selected Service Type Objects

Available settings are explained as follows:

Item	Description
Name	Type a name for this profile.
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.

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

4.7.7 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
<u>1.</u>		<u>17.</u>	
<u>2.</u>		<u>18.</u>	
<u>3.</u>		<u>19.</u>	
<u>4.</u>		<u>20.</u>	
<u>5.</u>		<u>21.</u>	
<u>6.</u>		<u>22.</u>	
<u>7.</u>		<u>23.</u>	
<u>8.</u>		<u>24.</u>	
<u>9.</u>		<u>25.</u>	
<u>10.</u>		<u>26.</u>	
<u>11.</u>		<u>27.</u>	
<u>12.</u>		<u>28.</u>	
<u>13.</u>		<u>29.</u>	
<u>14.</u>		<u>30.</u>	
<u>15.</u>		<u>31.</u>	
<u>16.</u>		<u>32.</u>	

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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	<input type="text"/>
Contents	<input type="text"/>

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. Type a name for this profile, e.g., game.
Contents	Type the content for such profile. For example, type <i>gambling</i> as Contents. When you browse the webpage, the page with gambling information will be watched out and be passed/blocked based on the configuration on Firewall settings.

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

4.7.8 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: | [Set to Factory Default](#) |

Index	Name	Index	Name
<u>1.</u>		<u>17.</u>	
<u>2.</u>		<u>18.</u>	
<u>3.</u>		<u>19.</u>	
<u>4.</u>		<u>20.</u>	
<u>5.</u>		<u>21.</u>	
<u>6.</u>		<u>22.</u>	
<u>7.</u>		<u>23.</u>	
<u>8.</u>		<u>24.</u>	
<u>9.</u>		<u>25.</u>	
<u>10.</u>		<u>26.</u>	
<u>11.</u>		<u>27.</u>	
<u>12.</u>		<u>28.</u>	
<u>13.</u>		<u>29.</u>	
<u>14.</u>		<u>30.</u>	
<u>15.</u>		<u>31.</u>	
<u>16.</u>		<u>32.</u>	

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-Key-1
2-Key-2

Selected Keyword Objects(Max 16 Objects)

(Empty)

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 <input type="button" value=">>"/> button to add the selected Keyword objects in this box.

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

4.7.9 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
<u>1.</u>		<u>5.</u>	
<u>2.</u>		<u>6.</u>	
<u>3.</u>		<u>7.</u>	
<u>4.</u>		<u>8.</u>	

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 <input type="button" value="Select All"/> <input type="button" value="Clear All"/>	<input type="checkbox"/> .bmp <input type="checkbox"/> .dib <input type="checkbox"/> .gif <input type="checkbox"/> .jpeg <input type="checkbox"/> .jpg <input type="checkbox"/> .jpg2 <input type="checkbox"/> .jp2 <input type="checkbox"/> .pct <input type="checkbox"/> .pcx <input type="checkbox"/> .pic <input type="checkbox"/> .pict <input type="checkbox"/> .png <input type="checkbox"/> .tif <input type="checkbox"/> .tiff
Video <input type="button" value="Select All"/> <input type="button" value="Clear All"/>	<input type="checkbox"/> .asf <input type="checkbox"/> .avi <input type="checkbox"/> .mov <input type="checkbox"/> .mpe <input type="checkbox"/> .mpeg <input type="checkbox"/> .mpg <input type="checkbox"/> .mp4 <input type="checkbox"/> .qt <input type="checkbox"/> .rm <input type="checkbox"/> .wmv <input type="checkbox"/> .3gp <input type="checkbox"/> .3gpp <input type="checkbox"/> .3gpp2 <input type="checkbox"/> .3g2
Audio <input type="button" value="Select All"/> <input type="button" value="Clear All"/>	<input type="checkbox"/> .aac <input type="checkbox"/> .aiff <input type="checkbox"/> .au <input type="checkbox"/> .mp3 <input type="checkbox"/> .m4a <input type="checkbox"/> .m4p <input type="checkbox"/> .ogg <input type="checkbox"/> .ra <input type="checkbox"/> .ram <input type="checkbox"/> .vox <input type="checkbox"/> .wav <input type="checkbox"/> .wma
Java <input type="button" value="Select All"/> <input type="button" value="Clear All"/>	<input type="checkbox"/> .class <input type="checkbox"/> .jad <input type="checkbox"/> .jar <input type="checkbox"/> .jav <input type="checkbox"/> .java <input type="checkbox"/> .jcm <input type="checkbox"/> .js <input type="checkbox"/> .jse <input type="checkbox"/> .jsp <input type="checkbox"/> .jtk
ActiveX <input type="button" value="Select All"/> <input type="button" value="Clear All"/>	<input type="checkbox"/> .alx <input type="checkbox"/> .apb <input type="checkbox"/> .axs <input type="checkbox"/> .ocx <input type="checkbox"/> .olb <input type="checkbox"/> .ole <input type="checkbox"/> .tlb <input type="checkbox"/> .viv <input type="checkbox"/> .vrm
Compression <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	

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.

4.7.10 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

SMS Provider		Mail Server	Set to Factory Default
Index	Profile Name	SMS Provider	
<u>1.</u>		kotsms.com.tw (TW)	
<u>2.</u>		kotsms.com.tw (TW)	
<u>3.</u>		kotsms.com.tw (TW)	
<u>4.</u>		kotsms.com.tw (TW)	
<u>5.</u>		kotsms.com.tw (TW)	
<u>6.</u>		kotsms.com.tw (TW)	
<u>7.</u>		kotsms.com.tw (TW)	
<u>8.</u>		kotsms.com.tw (TW)	
<u>9.</u>	Custom 1		
<u>10.</u>	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.

Object Settings >> SMS / Mail Service Object

SMS Provider		Mail Server
Index	Profile Name	
<u>1.</u>		
<u>2.</u>		
<u>3.</u>		
<u>4.</u>		

- The configuration page will be shown as follows:

Objects Setting >> SMS / Mail Service Object

Profile Index: 1

Profile Name	<input type="text" value="Line_down"/>
Service Provider	<input type="text" value="kotsms.com.tw (TW)"/>
Username	<input type="text" value="line1"/>
Password	<input type="password" value="*****"/>
Quota	<input type="text" value="10"/>
Sending Interval	<input type="text" value="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.

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

Object Settings >> SMS / Mail Service Object

SMS Provider		Mail Server	Set to Factory Default
Index	Profile Name	SMS Provider	
<u>1.</u>	Line_down	kotsms.com.tw (TW)	
<u>2.</u>		kotsms.com.tw (TW)	
<u>3.</u>		kotsms.com.tw (TW)	
<u>4.</u>		kotsms.com.tw (TW)	

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

SMS Provider	Mail Server	Set to Factory Default
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	<input type="text" value="Custom 1"/>
Service Provider	<input type="text"/>
	<div style="border: 1px solid gray; height: 40px; width: 100%;"></div>
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	<input type="text"/>
Password	<input type="text"/>
Quota	<input type="text" value="10"/>
Sending Interval	<input type="text" value="3"/> (seconds)

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

SMS Provider	Mail Server	Set to Factory Default
Index	Profile Name	
<u>1.</u>		
<u>2.</u>		
<u>3.</u>		
<u>4.</u>		
<u>5.</u>		
<u>6.</u>		
<u>7.</u>		
<u>8.</u>		
<u>9.</u>		
<u>10.</u>		

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.

Object Settings >> SMS / Mail Service Object

SMS Provider	Mail Server
Index	
<u>1.</u>	
<u>2.</u>	
<u>3.</u>	
<u>4.</u>	

2. The configuration page will be shown as follows:

Objects Setting >> SMS / Mail Service Object

Profile Index: 1

Profile Name	<input type="text" value="Mail_Notify"/>
SMTP Server	<input type="text" value="192.168.1.98"/>
SMTP Port	<input type="text" value="465"/>
Sender Address	<input type="text" value="carrieni@draytek.com"/>
<input checked="" type="checkbox"/> Use SSL	
<input checked="" type="checkbox"/> Authentication	
Username	<input type="text" value="john"/>
Password	<input type="password" value="*****"/>
Sending Interval	<input type="text" value="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. The maximum length of the name you can set is 63 characters.
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 enable such function.
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.
-------------------------	---

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

Object Settings >> SMS / Mail Service Object

SMS Provider		Mail Server	Set to Factory Default
Index	Profile Name		
<u>1.</u>	Mail_Notify		
<u>2.</u>			
<u>3.</u>			

4.7.11 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	
<u>1.</u>			
<u>2.</u>			
<u>3.</u>			
<u>4.</u>			
<u>5.</u>			
<u>6.</u>			
<u>7.</u>			
<u>8.</u>			

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.
Settings	Display the category selected for such profile.

To set a new profile, please do the steps listed below:

- Open **Object Setting>>Notification Object**, and click the number (e.g., #1) under Index column for configuration in details.

Object Settings >> Notification Object

Index	Profile Name
1.	
2.	
3.	
4.	

2. The configuration page will be shown as follows:

Object Settings >> Notification Object

Profile Index: 4

Profile Name	Notify_attack	
Category	Status	
WAN	<input type="checkbox"/> Disconnected	<input type="checkbox"/> Reconnected
VPN Tunnel	<input type="checkbox"/> Disconnected	<input type="checkbox"/> Reconnected

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.

Object Settings >> Notification Object

[Set to Factory Default](#)

Index	Profile Name	Settings
1.	Notify_attack	WAN VPN
2.		
3.		

4.8 CSM Profile

Content Security Management (CSM)

CSM is an abbreviation of **Content 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 reserve attitude in order to reduce employee misuse 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.

Note: The priority of URL Content Filter is higher than Web Content Filter.
--

Objects Setting
CSM
APP Enforcement Profile
 URL Content Filter Profile
 Web Content Filter Profile
 DNS Filter Profile
 Bandwidth Management

4.8.1 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 that you can choose to disallow people using.

Below shows the items which are categorized under **Protocol**.

CSM >> APP Enforcement Profile

Profile Index : 1 Profile Name:

IM	P2P	Protocol	OTHERS
<input type="button" value="Select All"/>	<input type="button" value="Clear All"/>		
Protocol			
Enable	APP Name	Version	Note
<input type="checkbox"/>	DB2		DB2 is a relational database management system (RDBMS) offered by IBM.
<input type="checkbox"/>	DNS		Domain Name System (DNS) protocol is used to translate easily memorized domain names to numerical IP addresses needed for the purpose of locating computer services and devices worldwide.
<input type="checkbox"/>	FTP		File Transfer Protocol (FTP) is used to transfer files from one host to another host over networks.
<input type="checkbox"/>	HTTP	1.1	Hypertext Transfer Protocol (HTTP) is the data communication protocol for the World Wide Web.
<input type="checkbox"/>	IMAP	4.1	Internet message access protocol (IMAP) is a protocol for e-mail retrieval.
<input type="checkbox"/>	IRC	2.4.0	Internet Relay Chat (IRC) is a protocol for live interactive Internet text messaging (chat), synchronous conferencing and file sharing.
<input type="checkbox"/>	Informix		Informix is a relational database management system (RDBMS) offered by IBM.
<input type="checkbox"/>	MSSQL		Microsoft SQL Server is a relational database management system.
<input type="checkbox"/>	MySQL		MySQL is an open source relational database management system.
<input type="checkbox"/>	NNTP		The Network News Transfer Protocol (NNTP) is a protocol used for transporting Usenet news articles between news servers and for reading and posting articles by end user client applications.

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.
Support List	Display the all the information (name, version and note) about IM, P2P, Protocol and others applications that Vigor router supports for APPE function.
Action	Block – Block all the packets passing with the settings configured in this page. Pass – Pass all the packets with the settings configured in this page.

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.

The items categorized under **P2P** -----

CSM >> APP Enforcement Profile

Profile Index: 1 Profile Name:

IM	P2P	Protocol	OTHERS
<input type="button" value="Select All"/>	<input type="button" value="Clear All"/>		
BitTorrent			
Enable	APP Name	Version	Note
<input type="checkbox"/>	BitTorrent		The encrypted connection can not be 100% blocked. To block BitComet (1.30), BitSpirit (3.2.1), BitTorrent (4.4.1) and UltraTorrent (2.0).
FastTrack			
Enable	APP Name	Version	Note
<input type="checkbox"/>	FASTTRACK		To block BareShare (6.2.0.45), iMesh (9.1), KazaA (1.0.0.3) and Shareaza (4.1.0).
Gnutella			
Enable	APP Name	Version	Note
<input type="checkbox"/>	GNUTELLA		To block BareShare (5.1.0.26), Foxy (1.9.9), LimeWireWin (4.18.3) and Shareaza (2.3.0.0).
OpenFT			
Enable	APP Name	Version	Note
<input type="checkbox"/>	OpenFT		When blocking the connection, it will show "Connected" at first while the connection is not established successfully. After few seconds it will change back to "Connecting" status. KCeasy (0.19) also supports Ares

Below shows the items which are categorized under **IM**.

CSM >> APP Enforcement Profile

Profile Index : 1 Profile Name:

IM		P2P	Protocol	OTHERS
<input type="button" value="Select All"/>		<input type="button" value="Clear All"/>		
IM				
Enable	APP Name	Version	Note	
<input type="checkbox"/>	AIM	5.9		
<input type="checkbox"/>	AIM	8	Only block Login. If users have already logged in, AIM services can not be blocked.	
<input type="checkbox"/>	AliWW	2008		
<input type="checkbox"/>	Ares	2.0.9		
<input type="checkbox"/>	BaiduHi	37378		
<input type="checkbox"/>	Fetion	2010		
<input type="checkbox"/>	GaduGadu Protocol			
<input type="checkbox"/>	Google Chat			
<input type="checkbox"/>	ICQ	7	In ICQ6, if Videos are blocked, Voices will be blocked at the same time. In ICQ5 or former versions, Videos and	

The items categorized under **OTHERS**-----

CSM >> APP Enforcement Profile

Profile Index : 1 Profile Name:

IM		P2P	Protocol	OTHERS
<input type="button" value="Select All"/>		<input type="button" value="Clear All"/>		
TUNNEL				
Enable	APP Name	Version	Note	
<input type="checkbox"/>	DNSEncrypt	0.0.6	Only blocks DNSEncrypt login.	
<input type="checkbox"/>	DynaPass	1.5		
<input type="checkbox"/>	FreeU	10		
<input type="checkbox"/>	HTTP Proxy			
<input type="checkbox"/>	HTTP Tunnel	4.4.4000		
<input type="checkbox"/>	Hamachi	1.0.2.5		
<input type="checkbox"/>	Hotspot Shield	4.15.3	Block Hotspot Shield from establishing VPN connections. Please note that the APP Enforcement needs to be enabled prior than the VPN connections, or the blocking may not be successful.	
<input type="checkbox"/>	MS Teredo			
<input type="checkbox"/>	P2PNet	7.0.3		

4.8.2 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>
```

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.

Profile Index: 1

Profile Name:

Priority: Log:

1.URL Access Control

Enable URL Access Control Prevent web access from IP address

Action: Group/Object Selections:

Exception List

2.Web Feature

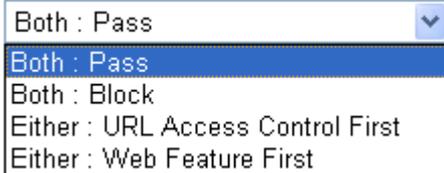
Enable Restrict Web Feature

Action: Cookie Proxy Upload

File Extension Profile:

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	<p>It determines the action that this router will apply.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p>

	
Log	<p>None – There is no log file will be recorded for this profile.</p> <p>Pass – Only the log about Pass will be recorded in Syslog.</p> <p>Block – Only the log about Block will be recorded in Syslog.</p> <p>All – All the actions (Pass and Block) will be recorded in Syslog.</p> 
URL Access Control	<p>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.</p> <p>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.</p> <p>Action – This setting is available only when Either : URL Access Control First or Either : Web Feature First is selected.</p> <ul style="list-style-type: none"> ● 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. <p>Action:</p>  <p>Exception List – Specify the object profile(s) as the exception list which will be processed in an opposite manner to the action selected above.</p> <p>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</p>

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

<u>Keyword Object</u>	None
or Keyword Object	None
or <u>Keyword Group</u>	None
or Keyword Group	None

OK Close

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** allows accessing into the corresponding webpage with the keywords listed on the box below.

- **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.

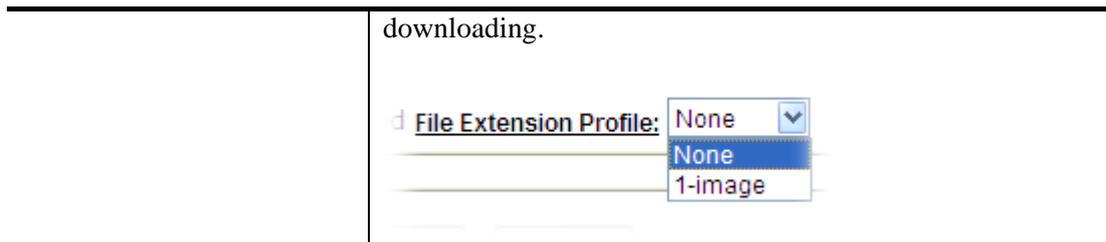
If the web pages do not match with the specified feature set here, it will be processed with reverse action.

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



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

4.8.3 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.

Note 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.

Note 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>

Web-Filter License [Activate](#)
 [Status:Not Activated]

Setup Query Server	<input type="text" value="auto-selected"/>	Find more
Setup Test Server	<input type="text" value="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 :

```
<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

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.
Test a site to verify whether it is categorized	Click this link to do the verification.
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	<p>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.</p> <p>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.</p> <p>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.</p> <p>L1+L2 Cache – the router will check the URL with fast processing rate combining the feature of L1 and L2.</p>
--------------	---

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: Log:

Black/White List

Enable

Action: Group/Object Selections

Action:

Groups	Categories		
Child Protection <input type="button" value="Select All"/> <input type="button" value="Clear All"/>	<input checked="" type="checkbox"/> Alcohol & Tobacco	<input checked="" type="checkbox"/> Criminal Activity	<input checked="" type="checkbox"/> Gambling
	<input checked="" type="checkbox"/> Hate & Intolerance	<input checked="" type="checkbox"/> Illegal Drug	<input checked="" type="checkbox"/> Nudity
	<input checked="" type="checkbox"/> Porn & Sexually	<input checked="" type="checkbox"/> Violence	<input checked="" type="checkbox"/> Weapons
	<input checked="" type="checkbox"/> School Cheating	<input checked="" type="checkbox"/> Sex Education	<input checked="" type="checkbox"/> Tasteless

<input type="checkbox"/> News	<input type="checkbox"/> Non-profits & NGOs	<input type="checkbox"/> Personal Sites
<input type="checkbox"/> Politics	<input type="checkbox"/> Real Estate	<input type="checkbox"/> Religion
<input type="checkbox"/> Restaurants & Dining	<input type="checkbox"/> Shopping	<input type="checkbox"/> Translators
<input type="checkbox"/> General	<input type="checkbox"/> Cults	<input type="checkbox"/> Greeting cards
<input type="checkbox"/> Image Sharing	<input type="checkbox"/> Network Errors	<input type="checkbox"/> Parked Domains
<input type="checkbox"/> Private IP Addresses	<input type="checkbox"/> Uncategorized Sites	

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.
Black/White List	<p>Enable – Activate white/black list function for such profile.</p> <p>Group/Object Selections – Click Edit to choose the group or object profile as the content of white/black list.</p> <p>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.</p> <p>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.</p>
Action	<p>Pass - allow accessing into the corresponding webpage with the categories listed on the box below.</p> <p>Block - restrict accessing into the corresponding webpage with the categories listed on the box below.</p> <p>If the web pages do not match with the specified feature set here, it will be processed with reverse action.</p>
Log	<p>None – There is no log file will be recorded for this profile.</p> <p>Pass – Only the log about Pass will be recorded in Syslog.</p> <p>Block – Only the log about Block will be recorded in Syslog.</p> <p>All – All the actions (Pass and Block) will be recorded in Syslog.</p> 

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

4.8.4 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.

Note: 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	<input type="checkbox"/> Enable
Syslog	None <input type="button" value="v"/>
WCF	None <input type="button" value="v"/>
UCF	None <input type="button" value="v"/>
Enable Block Page	<input checked="" type="checkbox"/> 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:

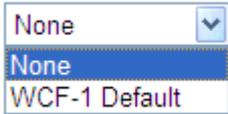
%SIP% - Source IP , %URL% - URL
%CL% - Category , %RNAME% - Router Name

OK

Cancel

Available settings are explained as follows:

Item	Description
DNS Filter	Check Enable to enable such feature.
Syslog	<p>The filtering result can be recorded according to the setting selected for Syslog.</p> <p>None – There is no log file will be recorded for this profile.</p> <p>Pass – Only the log about Pass will be recorded in Syslog.</p> <p>Block – Only the log about Block will be recorded in Syslog.</p> <p>All – All the actions (Pass and Block) will be recorded in Syslog.</p> <p><input type="button" value="v"/> Block <input type="button" value="v"/></p> <p>None</p> <p>Pass</p> <p>Block</p> <p>All</p>

Service	<p>Set the filtering conditions. Specify one of the WCF profiles as Service.</p>  <p>Choose the WCF profiles to apply DNS filter.</p>
Cache Time (hour)	Set the time for DNS query.
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.

4.9 Bandwidth Management

Below shows the menu items for Bandwidth Management.



4.9.1 Sessions Limit

A PC with private IP address can access to the Internet via NAT router. The router will generate the records of NAT sessions for such connection. The P2P (Peer to Peer) applications (e.g., BitTorrent) always need many sessions for procession and also they will occupy over resources which might result in important accesses impacted. To solve the problem, you can use limit session to limit the session procession for specified Hosts.

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

Bandwidth Management >> Sessions Limit

Sessions Limit

Enable
 Disable

Default Max Sessions:

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	<p>Enable - Click this button to activate the function of limit session.</p> <p>Disable - Click this button to close the function of limit</p>

	<p>session.</p> <p>Default Max Sessions - Defines the default session number used for each computer in LAN.</p>
Limitation List	<p>Displays a list of specific limitations that you set on this web page.</p>
Specific Limitation	<p>Start IP- Defines the start IP address for limit session.</p> <p>End IP - Defines the end IP address for limit session.</p> <p>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.</p> <p>Add - Adds the specific session limitation onto the list above.</p> <p>Edit - Allows you to edit the settings for the selected limitation.</p> <p>Delete - Remove the selected settings existing on the limitation list.</p>
Administration Message	<p>Type the words which will be displayed when reaches the maximum number of Internet sessions permitted.</p> <p>Default Message - Click this button to apply the default message offered by the router.</p>
Time Schedule	<p>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.</p>

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

4.9.2 Bandwidth Limit

The downstream or upstream from FTP, HTTP or some P2P applications will occupy large of bandwidth and affect the applications for other programs. Please use Limit Bandwidth to make the bandwidth usage more efficient.

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

Bandwidth Management >> Bandwidth Limit

Bandwidth Limit

Enable
 IP Routed Subnet
 Disable

Default TX Limit: Kbps
 Default RX Limit: 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

Smart Bandwidth Limit
 For any LAN IP Not in Limitation List, when session number exceeds

TX Limit : Kbps
 RX Limit : 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.

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	<p>Enable - Click this button to activate the function of limit bandwidth.</p> <p>Apply to 2nd Subnet - Check this box to apply the bandwidth limit to the second subnet specified in LAN>>General Setup.</p> <p>Disable - Click this button to close the function of limit bandwidth.</p> <p>Default TX limit - Define the default speed of the upstream for each computer in LAN.</p> <p>Default RX limit - Define the default speed of the</p>

	<p>downstream for each computer in LAN.</p> <p>Allow auto adjustment... - Check this box to make the best utilization of available bandwidth.</p>
Limitation List	<p>Display a list of specific limitations that you set on this web page.</p>
Specific Limitation	<p>Start IP - Define the start IP address for limit bandwidth.</p> <p>End IP - Define the end IP address for limit bandwidth.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>Add - Add the specific speed limitation onto the list above.</p> <p>Edit - Allow you to edit the settings for the selected limitation.</p> <p>Delete - Remove the selected settings existing on the limitation list.</p>
Smart Bandwidth Limit	<p>Check this box to have the bandwidth limit determined by the system automatically.</p> <p>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.</p> <p>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.</p>
Time Schedule	<p>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.</p>

4.9.3 Quality of Service

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, thus 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.

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	Outbound	25%	25%	25%	25%	Inactive	Status Setup
WAN2	Disable	100000Kbps/100000Kbps	Outbound	25%	25%	25%	25%	Inactive	Status Setup
WAN3	Disable	100000Kbps/100000Kbps		25%	25%	25%	25%	Inactive	Status Setup

Class Rule

Index	Name	Rule	Service Type
Class 1		Edit	
Class 2		Edit	Edit
Class 3		Edit	

Enable the First Priority for VoIP SIP/RTSP:
 SIP UDP Port: (Default: 5060)

Available settings are explained as follows:

Item	Description
General Setup	<p>Index - Display the WAN interface number that you can edit.</p> <p>Status - Display if the WAN interface is available for such function or not.</p> <p>Bandwidth - Display the inbound and outbound bandwidth setting for the WAN interface.</p> <p>Direction - Display which direction that such function will influence.</p> <p>Class 1/Class2/Class 3/Others - Display the bandwidth percentage for each class.</p> <p>UDP Bandwidth Control - Display the UDP bandwidth control is enabled or not.</p> <p>Online Statistics - Display an online statistics for quality of</p>

Item	Description
	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.

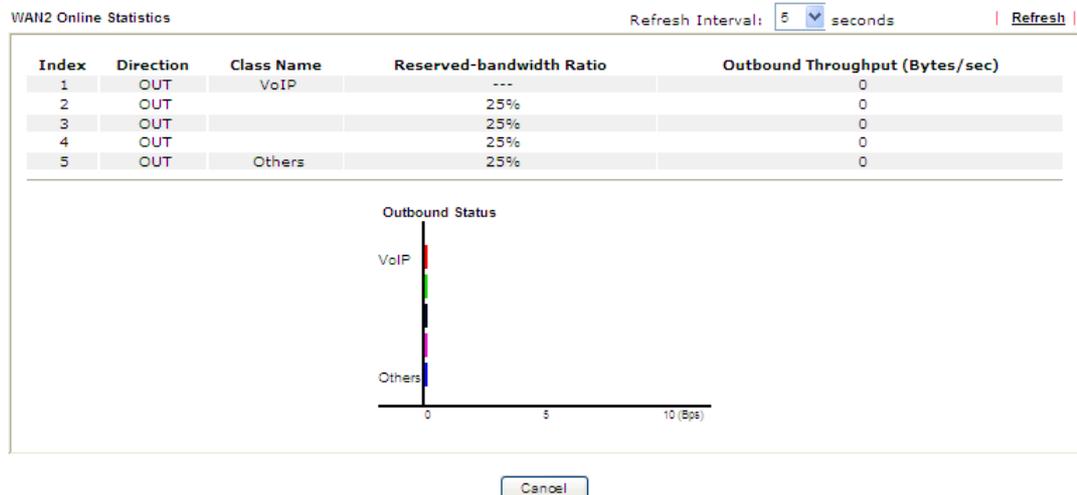
This page displays the QoS settings result of the WAN interface. Click the **Setup** link to access into next page for the general setup of WAN interface. As to class rule, simply click the **Edit** link to access into next for configuration.

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



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.

WAN1 General Setup

Enable the QoS Control OUT

WAN Inbound Bandwidth	<input type="text" value="100"/>	<input type="radio"/> Kbps	<input checked="" type="radio"/> Mbps	
WAN Outbound Bandwidth	<input type="text" value="100"/>	<input type="radio"/> Kbps	<input checked="" type="radio"/> Mbps	

Index	Class Name	Reserved_bandwidth Ratio
Class 1		<input type="text" value="25"/> %
Class 2		<input type="text" value="25"/> %
Class 3		<input type="text" value="25"/> %
	Others	<input type="text" value="25"/> %

Enable UDP Bandwidth Control Limited_bandwidth Ratio %

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 WAN interface. 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 WAN interface. 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 Prioritize	The difference in bandwidth between download and upload 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.

Note: 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

- 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	100000Kbps/100000Kbps	Outbound	25%	25%	25%	25%	Inactive	Status Setup
WAN2	Disable	100000Kbps/100000Kbps	Outbound	25%	25%	25%	25%	Inactive	Status Setup
WAN3	Disable	100000Kbps/100000Kbps		25%	25%	25%	25%	Inactive	Status Setup

Class Rule

Index	Name	Rule	Service Type
Class 1		Edit	
Class 2		Edit	Edit
Class 3		Edit	

Enable the First Priority for VoIP SIP/RTP:
 SIP UDP Port: (Default: 5060)

- 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 Tag packets as:

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

Ethernet Type IPv4 IPv6

Local Address

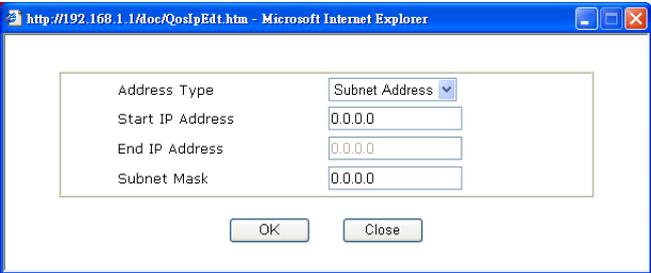
Remote Address

DiffServ CodePoint

Service Type

Note: Please choose/setup the **Service Type** first.

Available settings are explained as follows:

Item	Description
ACT	Check this box to invoke these settings.
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. 
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 Tag packets as: ▼

NO	Status	Local Address	Remote Address	DiffServ CodePoint	Service Type
1 <input type="radio"/>	Active	Any	Any	ANY	ANY
2 <input type="radio"/>	Active	192.168.1.12	192.168.1.56	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

| [Set to Factory Default](#) |

Index	Status	Bandwidth	Direction	Class 1	Class 2	Class 3	Others	UDP Bandwidth Control	Online Statistics
WAN1	Disable	100000Kbps/100000Kbps	Outbound	25%	25%	25%	25%	Inactive	Status Setup
WAN2	Disable	100000Kbps/100000Kbps	Outbound	25%	25%	25%	25%	Inactive	Status Setup
WAN3	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: (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	-	-

- For adding a new service type, click **Add** to open the following page.

Bandwidth Management >> Quality of Service

Service Type Edit

Service Name	<input type="text"/>
Service Type	TCP <input type="button" value="v"/> <input type="text" value="6"/>
Port Configuration	
Type	<input checked="" type="radio"/> Single <input type="radio"/> Range
Port Number	<input type="text" value="0"/> - <input type="text" value="0"/>

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	<p>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.</p> <p>Port Number – Type in the starting port number and the end porting number here if you choose Range as the type.</p>

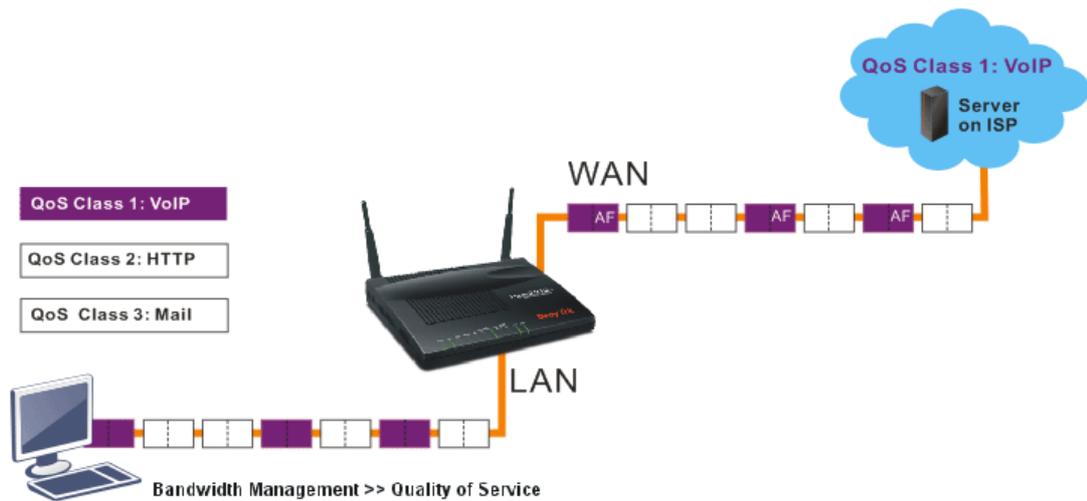
- After finishing all the settings here, please click **OK** to save the configuration.

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/Delete** 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.



Class Index #1
 Name Tag packets as:

NO	Status	Local Address	Remote Address	DiffServ CodePoint	Service Type
1	Active	Any	Any	ANY	ANY

4.10 Applications

Below shows the menu items for Applications.



4.10.1 Dynamic DNS

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

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

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. In the DDNS setup menu, check **Enable Dynamic DNS Setup**.

Applications >> Dynamic DNS Setup

Dynamic DNS Setup | [Set to Factory Default](#) |

Enable Dynamic DNS Setup [View Log](#) [Force Update](#)

Auto-Update interval 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

[OK](#) [Clear All](#)

Available settings are explained as follows:

Item	Description
Set to Factory Default	Clear all profiles and recover to factory settings.
Enable Dynamic DNS Setup	Check this box to enable DDNS function.
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.

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

Index : 1

Enable Dynamic DNS Account

WAN Interface: WAN1 First

Service Provider: dyndns.org (www.dyndns.org)

Service Type: Dynamic

Domain Name: chronic6653 . dyndns.org dyndns.org

Login Name: chronic6653 (max. 64 characters)

Password: ●●●●●●●● (max. 23 characters)

Wildcards

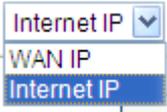
Backup MX

Mail Extender:

Determine Real WAN IP: Internet 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	<p>WAN1/WAN2/WAN3 First - While connecting, the router will use WAN1/WAN2/WAN3 as the first channel for such account. If WAN1/WAN2/WAN3 fails, the router will use another WAN interface instead.</p> <p>WAN1/WAN2/WAN3 Only - While connecting, the router will use WAN1/WAN2/WAN3 as the only channel for such account.</p> <div style="border: 1px solid gray; padding: 5px; width: fit-content;"> <p>WAN1 First</p> <p style="background-color: #e0e0e0;">WAN1 First</p> <p>WAN1 Only</p> <p>WAN2 First</p> <p>WAN2 Only</p> <p>WAN3 First</p> <p>WAN3 Only</p> </div>
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	<p>If a Vigor router is installed behind any NAT router, you can enable such function to locate the real WAN IP.</p> <p>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.</p> <p>There are two methods offered for you to choose:</p>  <p>WAN IP - If it is selected and the WAN IP of Vigor router is private, DDNS update will take place right away.</p> <p>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.</p>

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

Disable the Function and Clear all Dynamic DNS Accounts

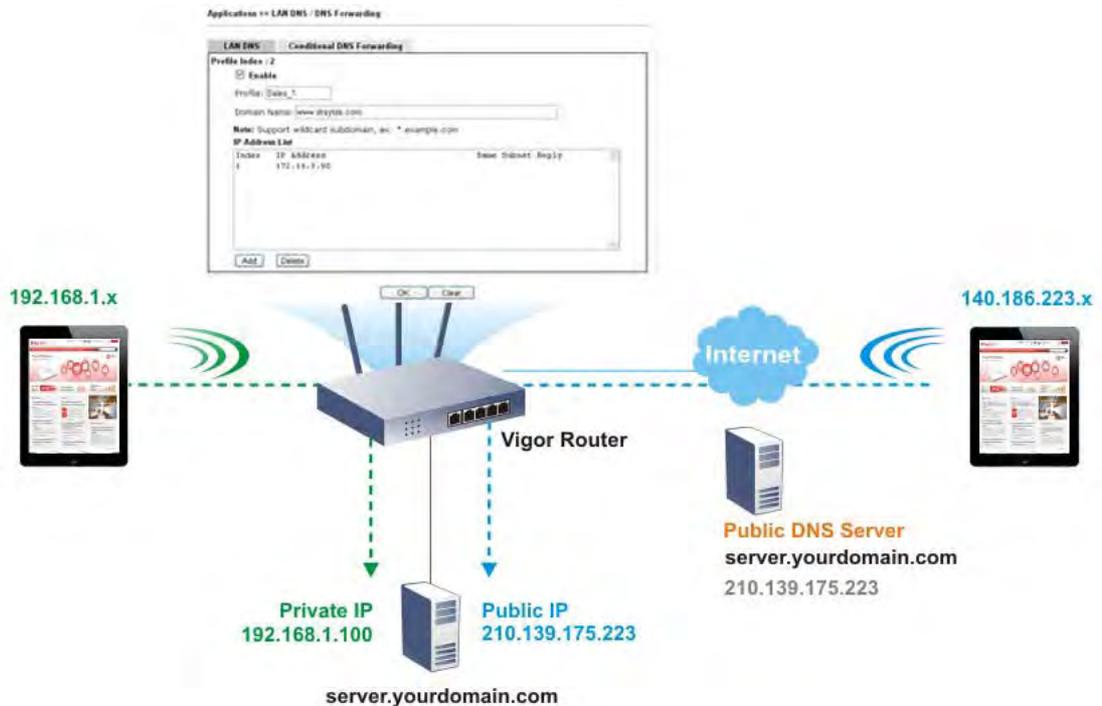
In the DDNS setup menu, uncheck **Enable Dynamic DNS Setup**, and push **Clear All** button to disable the function and clear all accounts from the router.

Delete a Dynamic DNS Account

In the DDNS setup menu, click the **Index** number you want to delete and then push **Clear All** button to delete the account.

4.10.2 LAN DNS

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 Vigor2912 series will respond the specified private IP address.



Open **Applications**>>**LAN DNS** to get the following page:

Applications >> **LAN DNS**

LAN DNS Resolution				Set to Factory Default
Enable	Index	Profile	Domain Name	
<input type="checkbox"/>	1.			
<input type="checkbox"/>	2.			
<input type="checkbox"/>	3.			
<input type="checkbox"/>	4.			
<input type="checkbox"/>	5.			
<input type="checkbox"/>	6.			
<input type="checkbox"/>	7.			
<input type="checkbox"/>	8.			
<input type="checkbox"/>	9.			
<input type="checkbox"/>	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.

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

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):

IP Address List

Index	IP Address	Same Subnet Rep

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.



- **Only use this record....** – 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.

Applications >> LAN DNS

LAN DNS Resolution | [Set to Factory Default](#) |

Enable	Index	Profile	Domain Name
<input checked="" type="checkbox"/>	1.	sales_1	www.draytek.com
<input type="checkbox"/>	2.		
<input type="checkbox"/>	3.		
<input type="checkbox"/>	4.		
<input type="checkbox"/>	5.		
<input type="checkbox"/>	6.		
<input type="checkbox"/>	7.		
<input type="checkbox"/>	8.		
<input type="checkbox"/>	9.		
<input type="checkbox"/>	10.		

<< 1-10 | 11-20 >>

OK

4.10.3 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

Each item is 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.

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

OK Clear Cancel

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.

- 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).



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.

4.10.4 RADIUS

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

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

Applications >> RADIUS

RADIUS Setup

<input checked="" type="checkbox"/> Enable	
Server IP Address	<input type="text"/>
Destination Port	<input type="text" value="1812"/>
Shared Secret	<input type="text"/>
Confirm Shared Secret	<input type="text"/>

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'.

OK Clear Cancel

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.

4.10.5 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 create several profiles, enable the function and specify general settings for LDAP server.

Applications >> Active Directory /LDAP

Active Directory /LDAP
| [Set to Factory Default](#) |

General Setup

Active Directory / LDAP Profiles

Enable

Bind Type Simple Mode ▾

Server Address

Destination Port

Use SSL

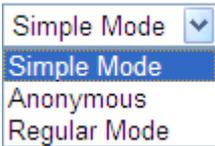
Regular DN

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	<p>There are three types of bind type supported.</p>  <p>Simple Mode – Just simply do the bind authentication without any search action.</p> <p>Anonymous – Perform a search action first with Anonymous account then do the bind authentication.</p> <p>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.</p> <p>For the regular mode, you'll need to type in the Regular DN and Regular Password.</p>
Server IP 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

| [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	<input type="text" value="RD1"/>	
Common Name Identifier	<input type="text" value="UID"/>	
Base Distinguished Name	<input type="text"/>	
Additional Filter	<input type="text"/>	
<p>Note: Please type in your additional filter for BaseDN search request. For example, 1) For OpenLDAP: (gidNumber=500) 2) For AD: (msNPAllowDialin=TRUE)</p>		
Group Distinguished Name	<input type="text"/>	
<input type="button" value="OK"/> <input type="button" value="Cancel"/>		

Available settings are explained as follows:

Item	Description
Name	Type a name for such profile.
Common Name Identifier	Type or edit the common name identifier for the LDAP server. The common name identifier for most LDAP server is "cn".
Base Distinguished Name / Group Distinguished Name	Type or edit the distinguished name used to look up entries on the LDAP server. 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.

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

4.10.6 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.

Note: 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 Default WAN ▾
 Enable Connection control Service
 Enable Connection Status Service

Note: If you intend running UPnP service inside your LAN, you should check the appropriate service above to allow control, as well as the appropriate UPnP settings.

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.

4.10.7 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

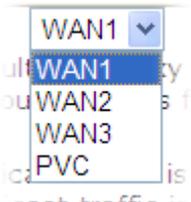
Enable IGMP Proxy WAN1 ▾
 IGMP Proxy is to act as a multicast proxy for hosts on the LAN side. Enable IGMP Proxy, if you will access any multicast group. But this function **take no effect when Bridge Mode is enabled**.

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.

| [Refresh](#) |

Working Multicast Groups					
Index	Group ID	P1	P2	P3	P4

Available settings are explained as follows:

Item	Description
Enable IGMP Proxy	Check this box to enable this function. The application of multicast will be executed through WAN port. In addition, such function is available in NAT mode. 
Enable 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 to P4	It indicates the LAN port used for the multicast group.

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

4.10.8 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.

Application >> 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:

IP Address:

MAC Address:

Result

Available settings are explained as follows:

Item	Description
Wake by	<p>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.</p> <p>Wake by: <input type="text" value="MAC Address"/></p>
IP Address	<p>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.</p>
MAC Address	<p>Type any one of the MAC address of the bound PCs.</p>
Wake Up	<p>Click this button to wake up the selected IP. See the following figure. The result will be shown on the box.</p>

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

4.10.9 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 Provider

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

SMS Alert		Mail Alert		Set to Factory Default	
Index	SMS Provider	Recipient	Notify Profile	Schedule(1-15)	
1 <input checked="" type="checkbox"/>	9 - Custom 1 <input type="button" value="v"/>	<input type="text"/>	1 - ??? <input type="button" value="v"/>	<input type="text"/>	<input type="text"/>
2 <input type="checkbox"/>	1 - ??? <input type="button" value="v"/>	<input type="text"/>	1 - ??? <input type="button" value="v"/>	<input type="text"/>	<input type="text"/>
3 <input type="checkbox"/>	1 - ??? <input type="button" value="v"/>	<input type="text"/>	1 - ??? <input type="button" value="v"/>	<input type="text"/>	<input type="text"/>
4 <input type="checkbox"/>	1 - ??? <input type="button" value="v"/>	<input type="text"/>	1 - ??? <input type="button" value="v"/>	<input type="text"/>	<input type="text"/>
5 <input type="checkbox"/>	1 - ??? <input type="button" value="v"/>	<input type="text"/>	1 - ??? <input type="button" value="v"/>	<input type="text"/>	<input type="text"/>
6 <input type="checkbox"/>	1 - ??? <input type="button" value="v"/>	<input type="text"/>	1 - ??? <input type="button" value="v"/>	<input type="text"/>	<input type="text"/>
7 <input type="checkbox"/>	1 - ??? <input type="button" value="v"/>	<input type="text"/>	1 - ??? <input type="button" value="v"/>	<input type="text"/>	<input type="text"/>
8 <input type="checkbox"/>	1 - ??? <input type="button" value="v"/>	<input type="text"/>	1 - ??? <input type="button" value="v"/>	<input type="text"/>	<input type="text"/>
9 <input type="checkbox"/>	1 - ??? <input type="button" value="v"/>	<input type="text"/>	1 - ??? <input type="button" value="v"/>	<input type="text"/>	<input type="text"/>
10 <input type="checkbox"/>	1 - ??? <input type="button" value="v"/>	<input type="text"/>	1 - ??? <input type="button" value="v"/>	<input type="text"/>	<input type="text"/>

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	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	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 Server

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 <input checked="" type="checkbox"/>	1 - Mail_Notify		1 - ???			
2 <input type="checkbox"/>	1 - Mail_Notify		1 - ???			
3 <input type="checkbox"/>	1 - Mail_Notify		1 - ???			
4 <input type="checkbox"/>	1 - Mail_Notify		1 - ???			
5 <input type="checkbox"/>	1 - Mail_Notify		1 - ???			
6 <input type="checkbox"/>	1 - Mail_Notify		1 - ???			
7 <input type="checkbox"/>	1 - Mail_Notify		1 - ???			
8 <input type="checkbox"/>	1 - Mail_Notify		1 - ???			
9 <input type="checkbox"/>	1 - Mail_Notify		1 - ???			
10 <input type="checkbox"/>	1 - Mail_Notify		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 provider. You can click Mail Service link to define the mail server.
Recipient	Type the e-mail address of the one who will receive the notification message.
Notify	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	Type the schedule number that the notification will be sent out.

	You can click the Schedule(1-15) link to define the schedule.
--	--

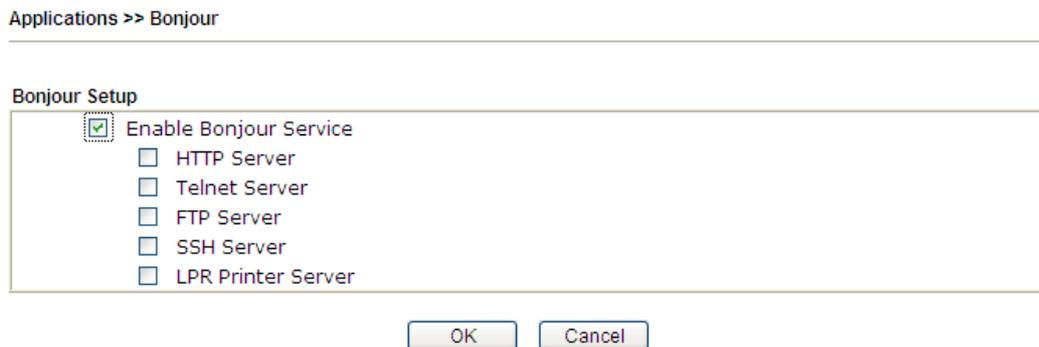
After finishing all the settings here, please click **OK** to save the configuration.

4.10.10 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.

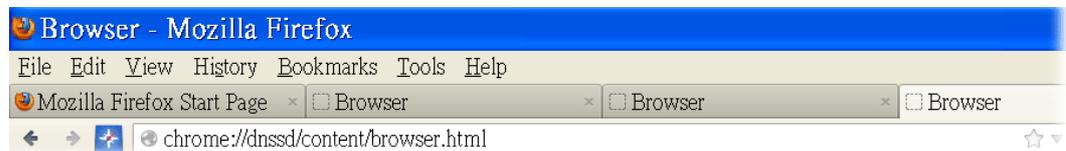
Usually, users have to configure the router or personal computers to use above services. Sometimes, the configuration (e.g., IP settings, port number) is complicated and not easy to complete. The purpose of Bonjour is to decrease the settings configuration (e.g., IP setting). If the host and user's computer 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.



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.



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

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.

- Open **System Maintenance >> Management**. Type a name (e.g., Vigor Router) as the Router Name and click **OK**.

System Maintenance >> Management

IPv4 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	<input type="text"/>	<input type="text"/>
2	<input type="text"/>	<input type="text"/>
3	<input type="text"/>	<input type="text"/>

IPv6 Management Setup

Management Port Setup

User Define Ports Default Ports

Telnet Port: (Default: 23)

HTTP Port: (Default: 80)

HTTPS Port: (Default: 443)

FTP Port: (Default: 21)

SSH Port: (Default: 22)

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

Applications >> Bonjour

Bonjour Setup

Enable Bonjour Service

HTTP Server

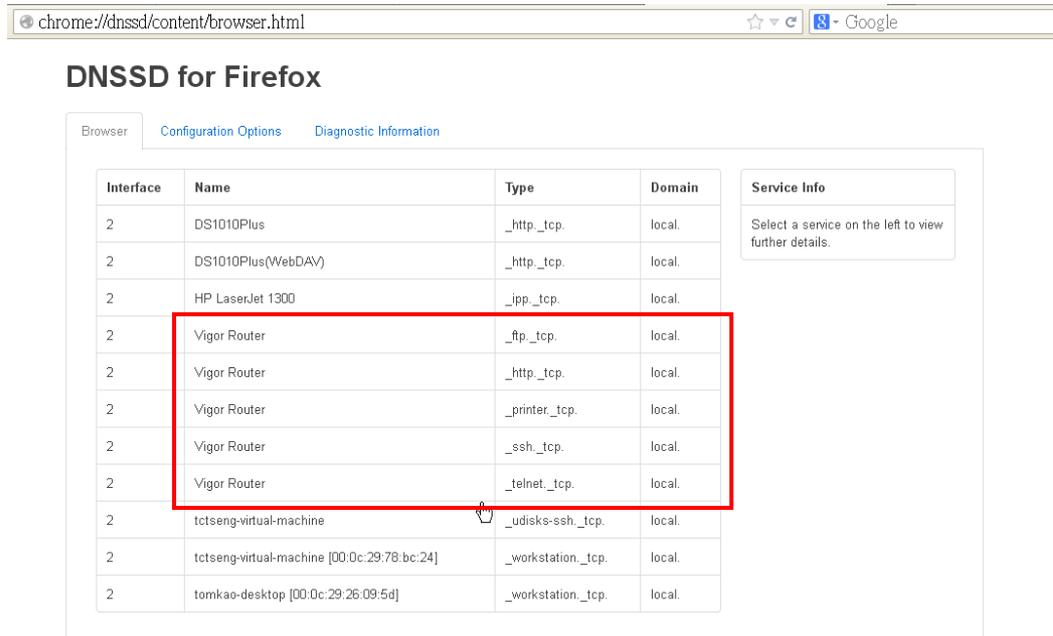
Telnet Server

FTP Server

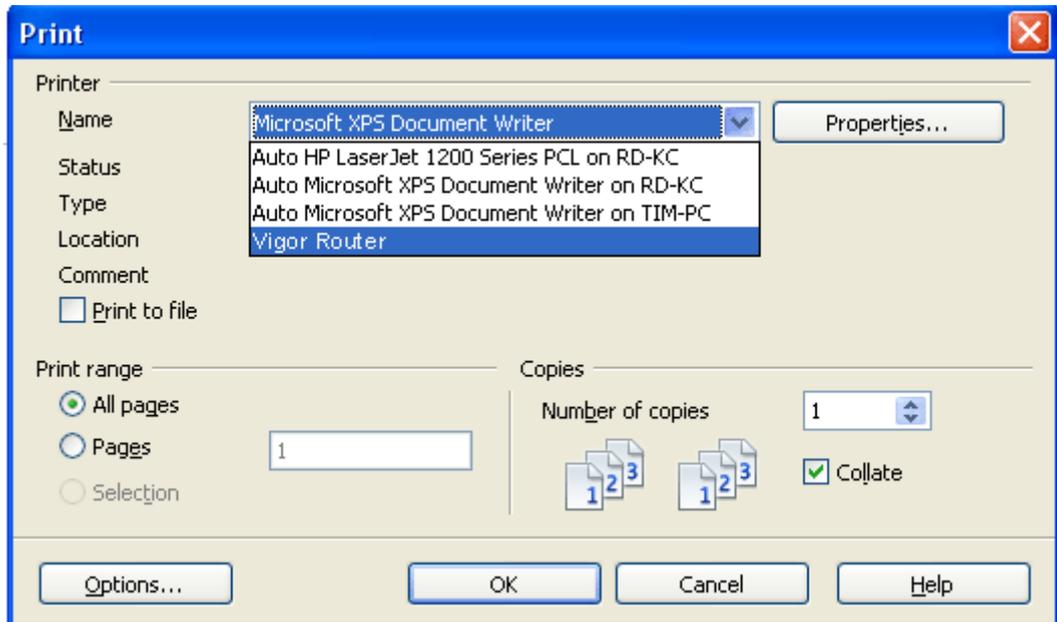
SSH Server

LPR Printer Server

- 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.

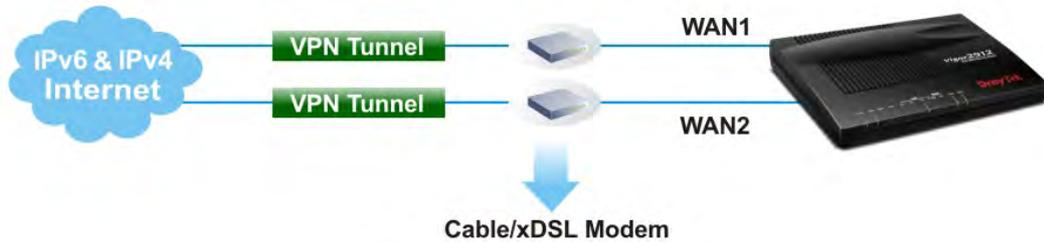


- Now, any page or document can be printed out through Vigor router (installed with a printer).



4.11 VPN and Remote Access

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



Below shows the menu items for VPN and Remote Access.



4.11.1 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

<input checked="" type="checkbox"/>	Enable PPTP VPN Service
<input checked="" type="checkbox"/>	Enable IPsec VPN Service
<input checked="" type="checkbox"/>	Enable L2TP 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.

OK Clear Cancel

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

4.11.2 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	
<p>PPP/MP Protocol</p> <p>Dial-In PPP Authentication: PAP/CHAP/MS-CHAP/MS-CHAPv2</p> <p>Dial-In PPP Encryption(MPPE): Optional MPPE</p> <p>Mutual Authentication (PAP): <input type="radio"/> Yes <input checked="" type="radio"/> No</p> <p>Username: <input type="text"/></p> <p>Password: <input type="text"/></p> <p>IP Address Assignment for Dial-In Users (When DHCP Disable set)</p> <p>Assigned IP start LAN 1: 192.168.1.200</p> <p>LAN 2: 192.168.2.200</p>	<p>PPP Authentication Methods</p> <p><input checked="" type="checkbox"/> Remote Dial-in User</p> <p><input checked="" type="checkbox"/> RADIUS</p> <p><input checked="" type="checkbox"/> AD/LDAP</p> <p>PPTP LDAP Profile</p> <p>Note: Please select 'PAP Only' Dial-In PPP Authentication, if you want to use AD/LDAP for PPP Authentication.</p> <p>Note: Default priority is Remote Dial-in User -> RADIUS -> AD/LDAP.</p> <p>While using Radius or LDAP Authentication:</p> <p>Assign IP from subnet: LAN1</p>

OK

Available settings are explained as follows:

Item	Description
Dial-In PPP Authentication	<p>PAP Only - elect this option to force the router to authenticate dial-in users with the PAP protocol.</p> <p>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.</p>
Dial-In PPP Encryption (MPPE)	<p>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.</p> <p>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.</p> <p>Maximum MPPE - This option indicates that the router will use the MPPE encryption scheme with maximum bits (128-bit) to encrypt the data.</p>
Mutual Authentication (PAP)	<p>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</p>

	<p>authentication. You should further specify the Username and Password of the mutual authentication peer.</p> <p>The length of the name/password is limited to 23/19 characters.</p>
Assigned IP Start	<p>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.</p>
PPP Authentication Methods	<p>Select the method(s) to be used for authentication in PPP connection.</p> <p>PPP Authentication Methods</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Remote Dial-in User <input checked="" type="checkbox"/> RADIUS <input checked="" type="checkbox"/> AD/LDAP
PPTP LDAP Profile	<p>Configured LDAP profiles will be listed under such item. Simply check the one you want to enable the PPP authentication by LDAP server profiles.</p> <p>However, if there is no profile listed, simply click the link of PPTP LDAP Profile to create/add some new LDAP profiles you want.</p>
While using Radius or LDAP Authentication	<p>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.</p>

4.11.3 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

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. Pre-Shared Key - Specify a key for IKE authentication.

	<p>Confirm Pre-Shared Key- Retype the characters to confirm the pre-shared key.</p> <p>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.</p>
<p>IPsec Security Method</p>	<p>Medium - Authentication Header (AH) means data will be authenticated, but not be encrypted. By default, this option is active.</p> <p>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.</p>

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

4.11.4 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 32 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.

Profile Index : 4

Profile Name

Enable this account

Accept Any Peer ID

Accept Subject Alternative Name

Type

Domain Name

Accept Subject Name

Country (C)

State (ST)

Location (L)

Organization (O)

Organization 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.

4.11.5 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 **32** 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](#) |

Index	User	Active	Status	Index	User	Active	Status
1.	???	<input type="checkbox"/>	---	17.	???	<input type="checkbox"/>	---
2.	???	<input type="checkbox"/>	---	18.	???	<input type="checkbox"/>	---
3.	???	<input type="checkbox"/>	---	19.	???	<input type="checkbox"/>	---
4.	???	<input type="checkbox"/>	---	20.	???	<input type="checkbox"/>	---
5.	???	<input type="checkbox"/>	---	21.	???	<input type="checkbox"/>	---
6.	???	<input type="checkbox"/>	---	22.	???	<input type="checkbox"/>	---
7.	???	<input type="checkbox"/>	---	23.	???	<input type="checkbox"/>	---
8.	???	<input type="checkbox"/>	---	24.	???	<input type="checkbox"/>	---
9.	???	<input type="checkbox"/>	---	25.	???	<input type="checkbox"/>	---
10.	???	<input type="checkbox"/>	---	26.	???	<input type="checkbox"/>	---
11.	???	<input type="checkbox"/>	---	27.	???	<input type="checkbox"/>	---
12.	???	<input type="checkbox"/>	---	28.	???	<input type="checkbox"/>	---
13.	???	<input type="checkbox"/>	---	29.	???	<input type="checkbox"/>	---
14.	???	<input type="checkbox"/>	---	30.	???	<input type="checkbox"/>	---
15.	???	<input type="checkbox"/>	---	31.	???	<input type="checkbox"/>	---
16.	???	<input type="checkbox"/>	---	32.	???	<input type="checkbox"/>	---

Available settings are explained as follows:

Item	Description
Set to Factory Default	Click to clear all indexes.
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 enable the selected 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.

Index No. 3

User account and Authentication <input type="checkbox"/> Enable this account Idle Timeout <input type="text" value="300"/> second(s)		Username <input type="text" value="???"/> Password(Max 19 char) <input type="text"/> <input type="checkbox"/> Enable Mobile One-Time Passwords(mOTP) PIN Code <input type="text"/> Secret <input type="text"/>
Allowed Dial-In Type <input checked="" type="checkbox"/> PPTP <input checked="" type="checkbox"/> IPsec Tunnel <input checked="" type="checkbox"/> L2TP with IPsec Policy <input type="text" value="None"/>		IKE Authentication Method <input checked="" type="checkbox"/> Pre-Shared Key IKE Pre-Shared Key <input type="text"/> <input type="checkbox"/> Digital Signature(X.509) <input type="text" value="None"/>
<input type="checkbox"/> Specify Remote Node Remote Client IP <input type="text"/> or Peer ID <input type="text"/> Netbios Naming Packet <input checked="" type="radio"/> Pass <input type="radio"/> Block Multicast via VPN <input type="radio"/> Pass <input checked="" type="radio"/> Block (for some IGMP,IP-Camera,DHCP Relay,.etc.)		IPsec Security Method <input checked="" type="checkbox"/> Medium(AH) High(ESP) <input checked="" type="checkbox"/> DES <input checked="" type="checkbox"/> 3DES <input checked="" type="checkbox"/> AES Local ID (optional) <input type="text"/>
Subnet <input type="text" value="LAN 1"/> <input type="checkbox"/> Assign Static IP Address <input type="text" value="0.0.0.0"/>		

OK Clear Cancel

Available settings are explained as follows:

Item	Description
User account and Authentication	<p>Enable this account - Check the box to enable this function.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>Enable Mobile One-Time Passwords (mOTP) - Check this box to make the authentication with mOTP function.</p> <p>PIN Code – Type the code for authentication (e.g, 1234).</p> <p>Secret – Use the 32 digit-secret number generated by mOTP in the mobile phone (e.g., e759bb6f0e94c7ab4fe6).</p>
Allowed Dial-In Type	<p>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.</p> <p>IPsec Tunnel - Allow the remote dial-in user to make an IPsec VPN connection through Internet.</p> <p>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</p>

	<p>below:</p> <ul style="list-style-type: none"> ● 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. <p>Specify Remote Node -You can specify the IP address of the remote dial-in user, or peer ID (used in IKE aggressive mode).</p> <p>Uncheck the checkbox means the connection type you select above will apply the authentication methods and security methods in the general settings.</p> <p>Netbios Naming Packet -</p> <ul style="list-style-type: none"> ● 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. <p>Multicast via VPN - Some programs might send multicast packets via VPN connection.</p> <ul style="list-style-type: none"> ● 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.
<p>Subnet</p>	<p>Chose one of the subnet selections for such VPN profile.</p> <p>Subnet</p>  <p>Assign Static IP Address – Please type a static IP address for the subnet you specified.</p>
<p>IKE Authentication Method</p>	<p>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.</p> <p>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.</p> <p>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</p>

	Identity.
IPsec Security Method	<p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p>

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

4.11.6 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 router supports up to 32 VPN tunnels simultaneously. The following figure shows the summary table.

The following figure shows the summary table according to the item (All/Trunk) selected for View.

VPN and Remote Access >> LAN to LAN ?

LAN to LAN Profiles: | [Set to Factory Default](#) |

View: All Trunk

Index	Name	Active	Status	Index	Name	Active	Status
1.	???	<input type="checkbox"/>	---	17.	???	<input type="checkbox"/>	---
2.	???	<input type="checkbox"/>	---	18.	???	<input type="checkbox"/>	---
3.	???	<input type="checkbox"/>	---	19.	???	<input type="checkbox"/>	---
4.	???	<input type="checkbox"/>	---	20.	???	<input type="checkbox"/>	---
5.	???	<input type="checkbox"/>	---	21.	???	<input type="checkbox"/>	---
6.	???	<input type="checkbox"/>	---	22.	???	<input type="checkbox"/>	---
7.	???	<input type="checkbox"/>	---	23.	???	<input type="checkbox"/>	---
8.	???	<input type="checkbox"/>	---	24.	???	<input type="checkbox"/>	---
9.	???	<input type="checkbox"/>	---	25.	???	<input type="checkbox"/>	---
10.	???	<input type="checkbox"/>	---	26.	???	<input type="checkbox"/>	---
11.	???	<input type="checkbox"/>	---	27.	???	<input type="checkbox"/>	---
12.	???	<input type="checkbox"/>	---	28.	???	<input type="checkbox"/>	---
13.	???	<input type="checkbox"/>	---	29.	???	<input type="checkbox"/>	---
14.	???	<input type="checkbox"/>	---	30.	???	<input type="checkbox"/>	---
15.	???	<input type="checkbox"/>	---	31.	???	<input type="checkbox"/>	---
16.	???	<input type="checkbox"/>	---	32.	???	<input type="checkbox"/>	---

[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 Backup mechanism.

VPN and Remote Access >> LAN to LAN

LAN-to-LAN Profiles:

View: All **Trunk**

Name	Activate	Members	Status
<u>test</u>	<input checked="" type="checkbox"/>	<u>Cathy</u> <u>Jacky</u>	Offline Offline

OK Cancel

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 – mans the profile has not been enabled.
Status	Online – means such LAN to LAN profile is in use. Offline – means such LAN to LAN profile isn't in use even if the profile has been enabled.

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 4 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.

For the web page is too long, we divide the page into several sections for explanation.

Profile Index : 10

1. Common Settings

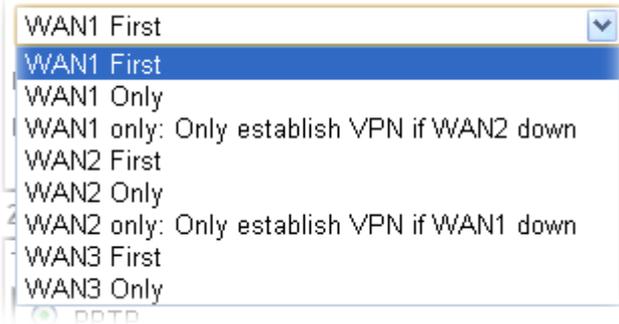
Profile Name <input type="text" value="???"/> <input type="checkbox"/> Enable this profile <hr/> VPN Dial-Out Through <input type="text" value="WAN1 First"/>	Call Direction <input checked="" type="radio"/> Both <input type="radio"/> Dial-Out <input type="radio"/> Dial-in <input type="checkbox"/> Always on Idle Timeout <input type="text" value="300"/> second(s) <input type="checkbox"/> Enable PING to keep alive PING to the IP <input type="text"/>
Netbios Naming Packet <input checked="" type="radio"/> Pass <input type="radio"/> Block Multicast via VPN <input type="radio"/> Pass <input checked="" type="radio"/> Block (for some IGMP,IP-Camera,DHCP Relay..etc.)	

2. Dial-Out Settings

Type of Server I am calling <input checked="" type="radio"/> PPTP <input type="radio"/> IPsec Tunnel <input type="radio"/> L2TP with IPsec Policy <input type="text" value="None"/>	Username <input type="text" value="???"/> Password(Max 15 char) <input type="text"/> PPP Authentication <input type="text" value="PAP/CHAP/MS-CHAP/MS-CHAPv2"/> VJ Compression <input checked="" type="radio"/> On <input type="radio"/> Off
Server IP/Host Name for VPN. (such as draytek.com or 123.45.67.89) <input type="text"/>	IKE Authentication Method <input checked="" type="radio"/> Pre-Shared Key <input type="text" value="IKE Pre-Shared Key"/> <input type="radio"/> Digital Signature(X.509) Peer ID <input type="text" value="None"/> Local ID <input checked="" type="radio"/> Alternative Subject Name First <input type="radio"/> Subject Name First
	IPsec Security Method <input checked="" type="radio"/> Medium(AH) <input type="radio"/> High(ESP) <input type="text" value="DES without Authentication"/> <input type="button" value="Advanced"/>
	Index(1-15) in Schedule Setup: <input type="text"/> , <input type="text"/> , <input type="text"/> , <input type="text"/>

Available settings are explained as follows:

Item	Description
Common Settings	<p>Profile Name – Specify a name for the profile of the LAN-to-LAN connection.</p> <p>Enable this profile - Check here to activate this profile.</p> <p>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.</p>



- **WAN1 First/ WAN2 First/ WAN3 First** - While connecting, the router will use WAN1/WAN2/WAN3 as the first channel for VPN connection. If WAN1/WAN2/WAN3 fails, the router will use another WAN interface instead.
- **WAN1 Only /WAN2 Only/WAN 3 Only**- While connecting, the router will use WAN1/WAN2/WAN3 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.

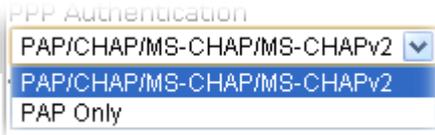
Call Direction - Specify the allowed call direction of this LAN-to-LAN profile.

- **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 alive - This function is to help the router to determine the status of IPsec VPN connection,

	<p>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.</p> <p>Enable PING to keep 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 disconnect 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).</p> <p>PING to the IP - Enter the IP address of the remote host that located at the other-end of the VPN tunnel.</p>
<p>Dial-Out Settings</p>	<p>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.</p> <p>IPsec Tunnel - Build an IPsec VPN connection to the server through Internet.</p> <p>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:</p> <ul style="list-style-type: none"> ● 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. <p>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.</p> <p>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.</p> <p>PPP Authentication - This field is applicable when you select, PPTP or L2TP with or without IPsec policy above. PAP/CHAP/MS-CHAP/MS-CHAP2 is the most common selection due to wild compatibility.</p>  <p>VJ compression - This field is applicable when you select</p>

PPTP or L2TP with or without IPsec policy above. VJ Compression is used for TCP/IP protocol header compression. Normally set to **Yes** 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.

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 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

<p>Allowed Dial-In Type</p> <p><input checked="" type="checkbox"/> PPTP</p> <p><input checked="" type="checkbox"/> IPsec Tunnel</p> <p><input checked="" type="checkbox"/> L2TP with IPsec Policy None</p> <p><input type="checkbox"/> Specify Remote VPN Gateway</p> <p>Peer VPN Server IP <input type="text"/></p> <p>or Peer ID <input type="text"/></p>	<p>Username <input data-bbox="1166 226 1374 255" style="width: 100px;" type="text" value="???"/></p> <p>Password <input data-bbox="1166 271 1362 300" style="width: 100px;" type="password"/></p> <p>VJ Compression <input checked="" type="radio"/> On <input type="radio"/> Off</p> <hr/> <p>IKE Authentication Method</p> <p><input checked="" type="checkbox"/> Pre-Shared Key</p> <p style="margin-left: 20px;">IKE Pre-Shared Key <input data-bbox="1166 427 1362 456" style="width: 100px;" type="text"/></p> <p><input type="checkbox"/> Digital Signature(X.509)</p> <p style="margin-left: 20px;">None</p> <p>Local ID</p> <p><input checked="" type="radio"/> Alternative Subject Name First</p> <p><input type="radio"/> Subject Name First</p> <hr/> <p>IPsec Security Method</p> <p><input checked="" type="checkbox"/> Medium(AH)</p> <p>High(ESP) <input checked="" type="checkbox"/> DES <input checked="" type="checkbox"/> 3DES <input checked="" type="checkbox"/> AES</p>
--	--

4. Gre over IPsec Settings

<input type="checkbox"/> Enable IPsec Dial-Out function GRE over IPsec		
<input type="checkbox"/> Logical Traffic	My GRE IP <input style="width: 100px;" type="text"/>	Peer GRE IP <input style="width: 100px;" type="text"/>

5. TCP/IP Network Settings

<p>My WAN IP <input style="width: 100px;" type="text" value="0.0.0.0"/></p> <p>Remote Gateway IP <input style="width: 100px;" type="text" value="0.0.0.0"/></p> <p>Remote Network IP <input style="width: 100px;" type="text" value="0.0.0.0"/></p> <p>Remote Network Mask <input style="width: 100px;" type="text" value="255.255.255.0"/></p> <p>Local Network IP <input style="width: 100px;" type="text" value="192.168.1.1"/></p> <p>Local Network Mask <input style="width: 100px;" type="text" value="255.255.255.0"/></p> <p style="text-align: center;"><input type="button" value="More"/></p>	<p>RIP Direction Disable</p> <p>From first subnet to remote network, you have to do</p> <p style="text-align: center;">Route</p> <hr/> <p><input type="checkbox"/> Change default route to this VPN tunnel (Only single WAN supports this)</p>
--	--

Available settings are explained as follows:

Item	Description
Dial-In Settings	<p>Allowed Dial-In Type - Determine the dial-in connection with different types.</p> <ul style="list-style-type: none"> ● 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: <ul style="list-style-type: none"> ■ 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.

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 named 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.

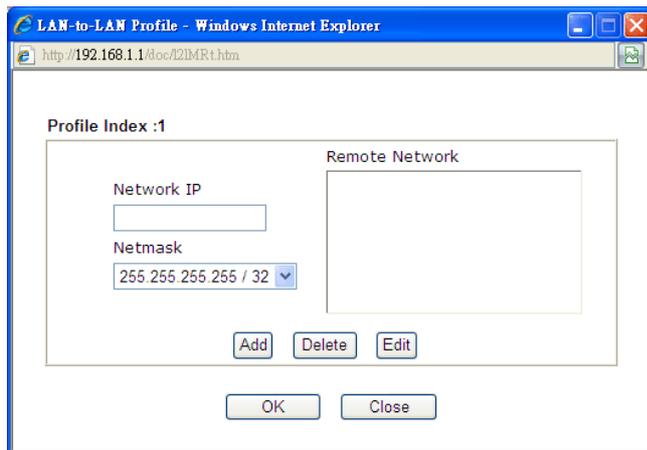
IKE Authentication Method - This group of fields is applicable for IPsec Tunnels and L2TP with IPsec Policy when you specify the IP address of the remote node. The only exception is Digital Signature (X.509) can be set when you select IPsec tunnel either with or without specify the IP address of the 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.
-

	<ul style="list-style-type: none"> ● 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	<p>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.</p> <p>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.</p> <p>My GRE IP: Type the virtual IP for router itself for verified by peer.</p> <p>Peer GRE IP: Type the virtual IP of peer host for verified by router.</p>
TCP/IP Network Settings	<p>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.</p> <p>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.</p> <p>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.</p> <p>Local Network IP / Local Network Mask - Display the local network IP and mask for TCP / IP configuration. You can modify the settings if required.</p> <p>More - 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.</p>



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.

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

4.11.7 VPN TRUNK Management

VPN trunk includes four features - VPN Backup, 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 Sit 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.

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.

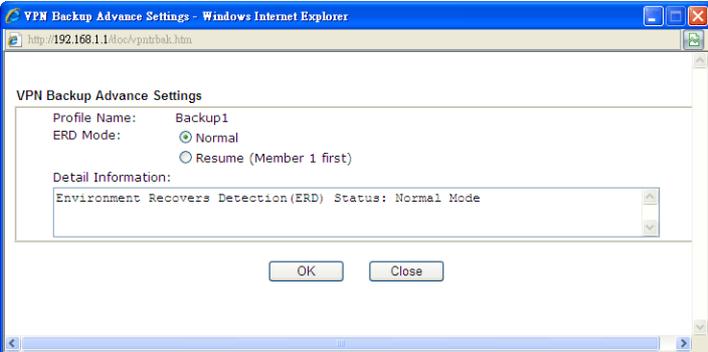
No.	Status	Name	Member1 (Active)Type	Member2 (Active)Type

Advanced

General Setup

Status	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Profile Name	<input type="text"/>
Member1	Please select a LAN-to-LAN Dial-Out profile. <input type="button" value="v"/>
Member2	Please select a LAN-to-LAN Dial-Out profile. <input type="button" value="v"/>
Active Mode	<input checked="" type="radio"/> Backup

Available settings are explained as follows:

Item	Description
<p>Backup Profile List</p>	<p>Set to Factory Default - Click to clear all VPN TRUNK-VPN Backup mechanism profile.</p> <p>No – The order of VPN TRUNK-VPN Backup mechanism profile.</p> <p>Status - “v” means such profile is enabled; “x” means such profile is disabled.</p> <p>Name - Display the name of VPN TRUNK-VPN Backup mechanism profile.</p> <p>Member1 - Display the dial-out profile selected from the Member1 drop down list below.</p> <p>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.</p> <p>Type - Display the connection type for that profile, such as IPsec, PPTP, L2TP, L2TP over IPsec (NICE), L2TP over IPsec(MUST) and so on.</p> <p>Member2 - Display the dial-out profile selected from the Member2 drop down list below.</p> <p>Advanced – This button is available only when LAN to LAN profile (or more) is created.</p>  <p>Detailed information for this dialog, see later section - Advanced Backup.</p>
<p>General Setup</p>	<p>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 mechanism profile will not have any effect for VPN tunnel.</p> <p>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.</p> <p>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 mechanism profile.</p> <ul style="list-style-type: none"> ● 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** 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.

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.

How can you set a VPN TRUNK-VPN Backup 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 mechanism profile management well.
2. Access into **VPN and Remote Access>>VPN TRUNK Management**.
3. Set one group of VPN TRUNK – VPN Backup 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)

Add Edit Delete

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 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)

More

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)

More

Advanced Backup

After setting profiles for backup, you can choose any one of them and click Advance for more detailed configuration. Refer to the following explanation:

VPN Backup Advance Settings

Profile Name: test1
 ERD Mode: Normal
 Resume (Member 1 first)

Detail Information:
 Environment Recovers Detection(ERD) Status: Normal Mode

OK Close

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.

4.11.8 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

General Mode:
 Backup Mode:

VPN Connection Status
 Current Page: 1 Page No.

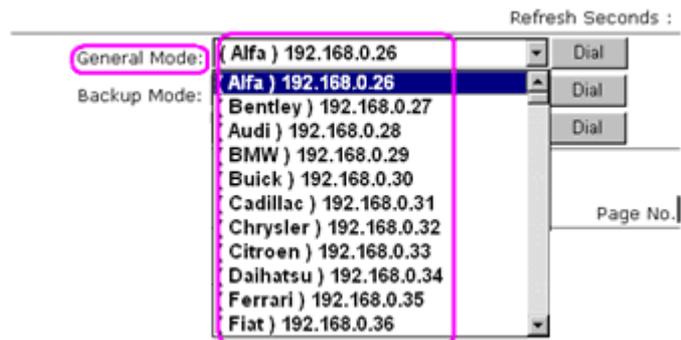
VPN	Type	Remote IP	Virtual Network	Tx Pkts	Tx Rate(Bps)	Rx Pkts	Rx Rate(Bps)	UpTime

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

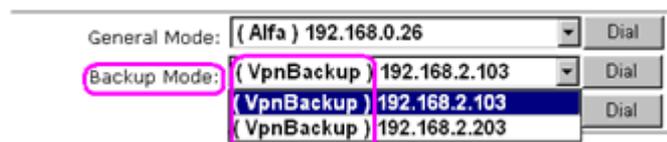
Available settings are explained as follows:

Item	Description
Dial-out Tool	General Mode - This field 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.



Backup Mode - This field 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.



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.

4.12 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.



4.12.1 Local Certificate

Certificate Management >> Local Certificate

X509 Local Certificate Configuration

Name	Subject	Status	Modify
Local	---	---	<input type="button" value="View"/> <input type="button" value="Delete"/>

X509 Local Certificate

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 certificate 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

Subject Alternative Name	
Type	IP Address <input type="button" value="v"/>
IP	<input type="text"/>
Subject Name	
Country (C)	<input type="text"/>
State (ST)	<input type="text"/>
Location (L)	<input type="text"/>
Organization (O)	<input type="text"/>
Organization Unit (OU)	<input type="text"/>
Common Name (CN)	<input type="text"/>
Email (E)	<input type="text"/>
Key Type	RSA <input type="button" value="v"/>
Key Size	1024 Bit <input type="button" value="v"/>

Note: Please be noted that “Common Name” must be configured with router’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
Local	/C=TW/ST=HS/L=Houko/O=DT/OU=...	Requesting	<input type="button" value="View"/> <input type="button" value="Delete"/>

X509 Local Certificate Request

```

-----BEGIN CERTIFICATE REQUEST-----
MIIBoTCCAQoCAQAyYELMAkGA1UEBhMCVFcxZzAJBgNVBAGTAkhTMQ4wDAYDVQQH
EwVlbnN3VrbyzELMAkGA1UEChMCRFQxZjAMBgNVBAcTBURUIENPMRgwFgYDVQQDEw93
d3csZHJheXRlay5jb20wgZ8wDQYJKoZIhvcNAQEBBQADgY0AMIGJAoGBAMibnBZ
uuY+2Jt+CFrtJNr+7ybM1ZbDNQoeDmXnvT/rOgF+ekwg3hkLquUdbfjVlwxnUaYZ
TFUXHWFOOQP+2oJad4p7kBJ/UyUciDihBuG1zHRajgmS2lgrpmlAQnI1O3OEmXH
lnSBWDOJ4TyPM8PvEBMRuOlbD/kEeFfnX8nnAgMBAAGgADANBgkqhkiG9w0BAQUF
AAOBgQBeki6YPAOudq2QOgb2dXqKR9r9Yc88LAiaGisc6/Y9Wz1tCKVDPzgg+7vy
yWtiB4BYIKnLHM6hpccDbHvqnK/smbIqhh3Ue0Uv0Pqya35sIbMFc0uoLK/UmZk4
0qGNcFIqk7KEUyH57Y0hpY016P1fvzn1CgdWX1siSMnpI5vyTA==
-----END CERTIFICATE REQUEST-----
    
```

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 open the following page.

Certificate Management >> Local Certificate

Import X509 Local Certificate

Select a local certificate file.

No file chosen

Click [Import](#) to upload the local certificate.

In the above page, click **Choose File** to select a certificate. Next click **Import**.

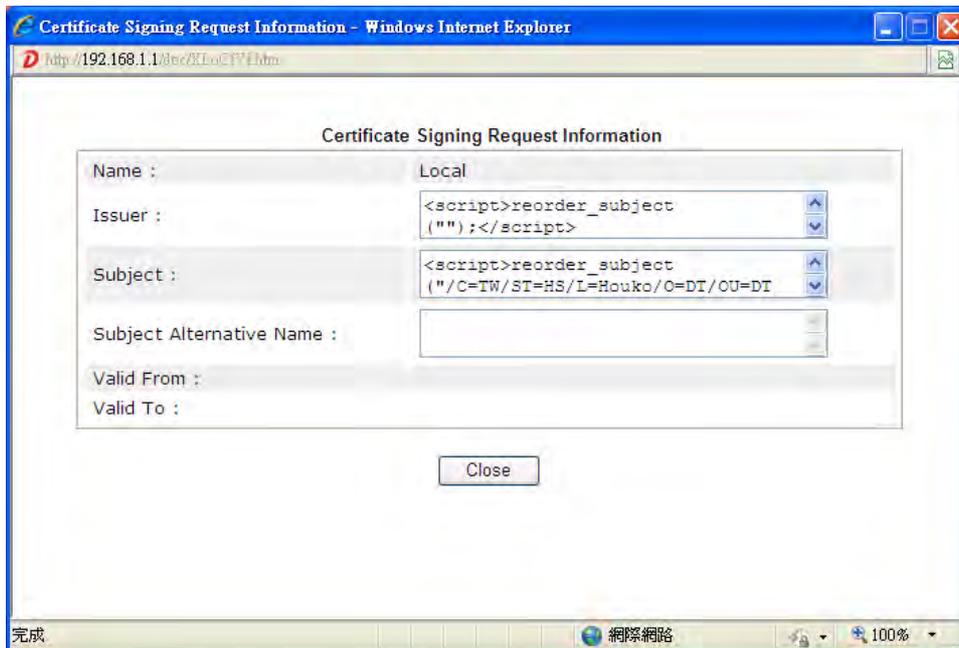
If you have done well in certificate generation, the Status of the certificate will be shown as “OK”.

REFRESH

Click this button to refresh the information listed below.

View

Click this button to view the detailed settings for certificate request.



Note: 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.

4.12.2 Trusted CA Certificate

Trusted CA certificate lists three sets of trusted CA certificate.

Certificate Management >> Trusted CA Certificate

X509 Trusted CA Certificate Configuration

Name	Subject	Status	Modify	
Trusted CA-1	---	---	<input type="button" value="View"/>	<input type="button" value="Delete"/>
Trusted CA-2	---	---	<input type="button" value="View"/>	<input type="button" value="Delete"/>
Trusted CA-3	---	---	<input type="button" value="View"/>	<input type="button" value="Delete"/>

To import a pre-saved trusted CA certificate, please click **IMPORT** to open the following window. Use **Choose File** 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

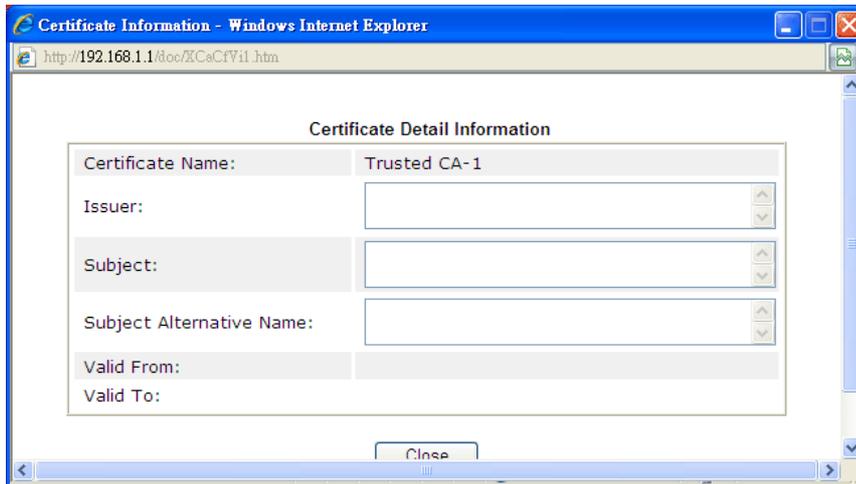
Import X509 Trusted CA Certificate

Select a trusted CA certificate file.

No file chosen

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.



4.12.3 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

<p>Backup</p> <p>Encrypt password: <input type="text"/></p> <p>Confirm password: <input type="text"/></p> <p>Click <input type="button" value="Backup"/> to download certificates to your local PC as a file.</p>
<p>Restoration</p> <p>Select a backup file to restore.</p> <p><input type="text"/> <input type="button" value="Browse.."/></p> <p>Decrypt password: <input type="text"/></p> <p>Click <input type="button" value="Restore"/> to upload the file.</p>

4.13 Wireless LAN

This function is used for “n” models only.

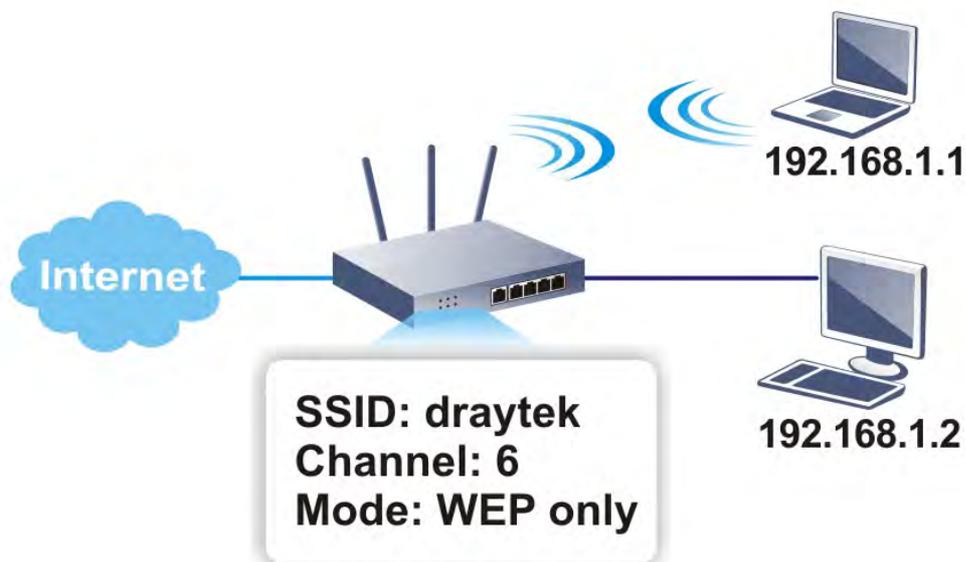
4.13.1 Basic Concepts

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 Vigor “n” model, a.k.a. Vigor wireless router, 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.

The Vigor wireless routers are equipped with a wireless LAN interface compliant with the standard IEEE 802.11n draft 2 protocol. To boost its performance further, the Vigor Router is also loaded with advanced wireless technology to lift up data rate up to 300 Mbps*. Hence, you can finally smoothly enjoy stream music and video.

Note: * 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.

Security Overview

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.

Separate the Wireless and the Wired LAN- WLAN Isolation 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 will display all the station in your wireless network and the status of their connection.

Below shows the menu items for Wireless LAN.



4.13.2 General Setup

By clicking the **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.

General Setting (IEEE 802.11)

Enable Wireless LAN

Mode :

Channel:

	Enable	Hide SSID	SSID	Isolate Member	Isolate VPN
1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="DrayTek"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="DrayTek_Guest"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>

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.

Rate Control

	Enable	Upload	Download
SSID 1	<input type="checkbox"/>	<input type="text" value="30000"/> kbps	<input type="text" value="30000"/> kbps
SSID 2	<input type="checkbox"/>	<input type="text" value="30000"/> kbps	<input type="text" value="30000"/> kbps
SSID 3	<input type="checkbox"/>	<input type="text" value="30000"/> kbps	<input type="text" value="30000"/> kbps
SSID 4	<input type="checkbox"/>	<input type="text" value="30000"/> kbps	<input type="text" value="30000"/> kbps

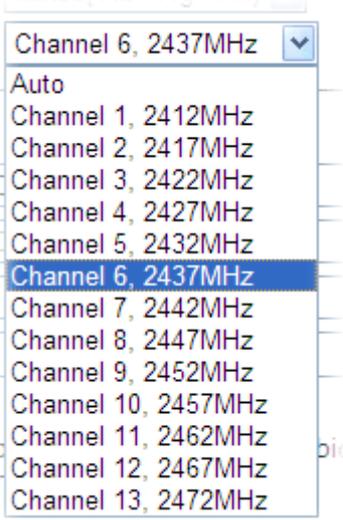
Note:
Configurable upload and download rates are from 100 to 50,000(kbps).

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(2.4 GHz), 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

	<p>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.</p> 
Hide SSID	<p>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.</p>
SSID	<p>Means the identification of the wireless LAN. SSID can be any text numbers or various special characters.</p>
Isolate	<p>Member – Check this box to make the wireless clients (stations) with the same SSID not accessing for each other. VPN – Check this box to restrict the wireless clients (stations) to access VPN network.</p>
Rate Control	<p>It controls the data transmission rate through wireless connection.</p> <p>Upload – Check Enable and type the transmitting rate for data upload. Default value is 30,000 kbps. Download – Type the transmitting rate for data download. Default value is 30,000 kbps.</p>
Schedule	<p>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.</p>

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

4.13.3 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.

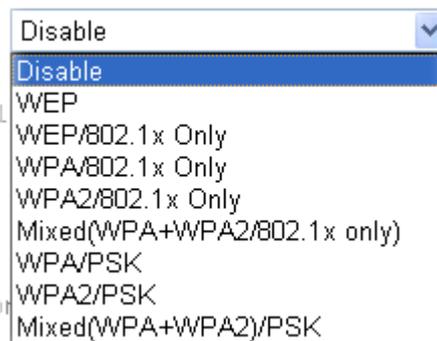


By clicking the **Security Settings**, a new web page will appear so that you could configure the settings of WPA and WEP.

SSID 1	SSID 2	SSID 3	SSID 4
<p>Mode: WEP/802.1x Only ▼</p> <p><u>WPA</u></p> <p>Encryption Mode: TKIP for WPA/AES for WPA2</p> <p>Pre-Shared Key(PSK): *****</p> <p>Type 8~63 ASCII character or 64 Hexadecimal digits leading by "0x", for example "dfgs01a2..." or "0x655abcd....".</p> <p><u>WEP</u></p> <p>Encryption Mode: 64-Bit ▼</p> <p><input checked="" type="radio"/> Key 1 : *****</p> <p><input type="radio"/> Key 2 : *****</p> <p><input type="radio"/> Key 3 : *****</p> <p><input type="radio"/> Key 4 : *****</p> <p>Note: Please configure the <u>RADIUS Server</u> if 802.1x is used. 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".</p> <p style="text-align: center;"> <input type="button" value="OK"/> <input type="button" value="Cancel"/> </p>			

Available settings are explained as follows:

Item	Description
Mode	There are several modes provided for you to choose.



Note: 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...").

Type - Select from Mixed (WPA+WPA2) or WPA2 only.

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 ▼
64-Bit
128-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.

4.13.4 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.

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

Index	Attribute	MAC Address	Apply SSID
<div style="border: 1px solid gray; width: 100%; height: 100%;"></div>			

Client's MAC Address : : : : : :

Apply SSID : SSID 1 SSID 2 SSID 3 SSID 4

Attribute : s: Isolate the station from LAN

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.

4.13.5 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.

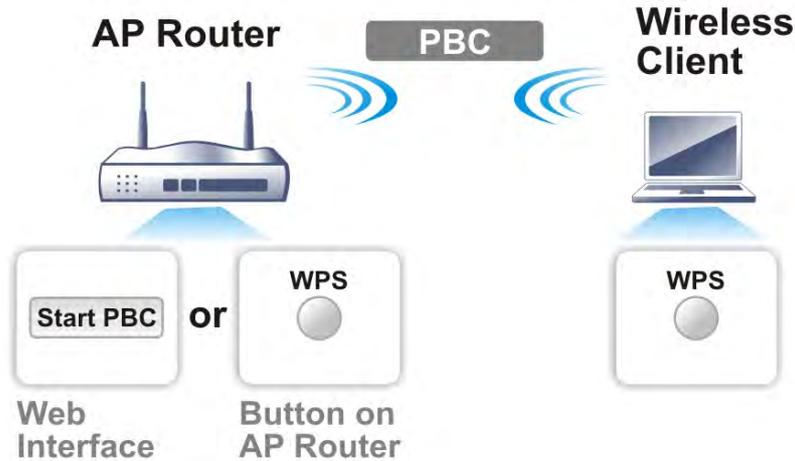


Note: Such function is available for the wireless station with WPS supported.

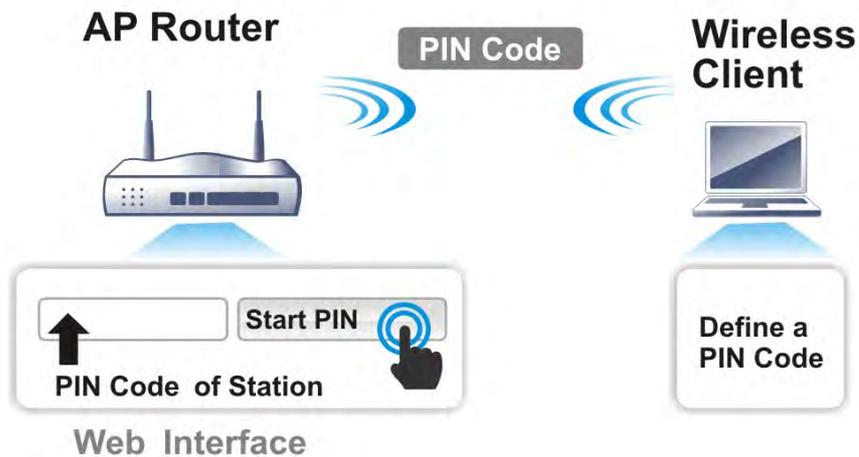
It is the simplest way to build connection between wireless network clients and vigor router. Users do not need to select any encryption mode and type any long encryption passphrase to setup a wireless client every time. He/she only needs to press a button on wireless client, and WPS will connect for 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**.

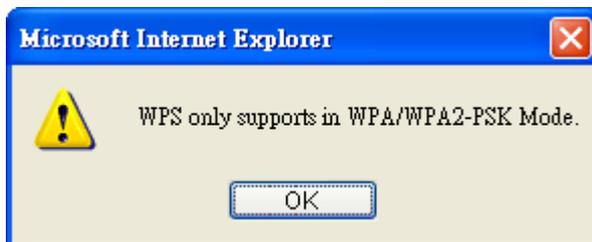
- On the side of Vigor 2912 series which served as an AP, press **WPS** button once on the front panel of the router or click **Start PBC** on web configuration interface. On the side of a station with network card installed, press **Start PBC** button of network card.



- 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.



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	<input type="button" value="Start PBC"/>
Configure via Client PinCode	<input type="text"/> <input type="button" value="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)

4.13.6 WDS

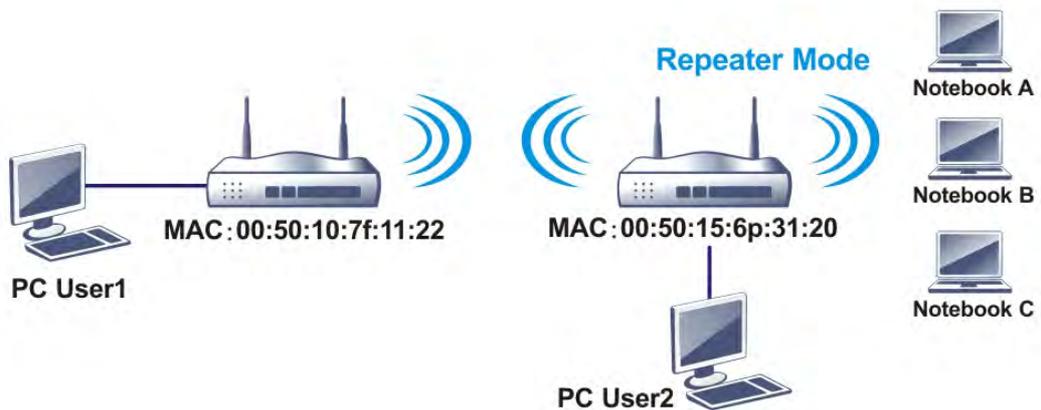
WDS means Wireless Distribution System. It is a protocol for connecting two access points (AP) wirelessly. Usually, it can be used for the following application:

- 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:

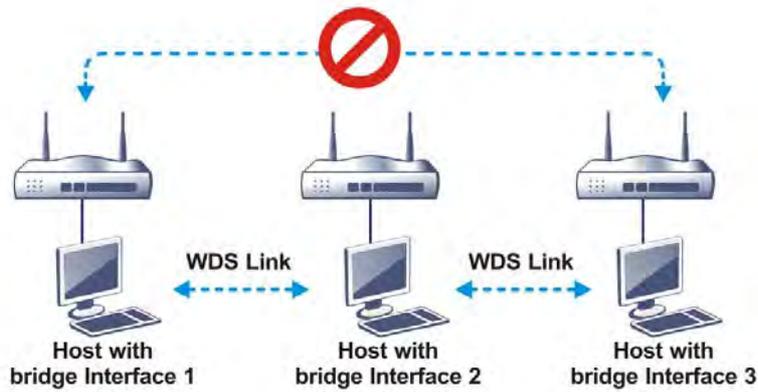


The application for the WDS-Repeater mode is depicted as below:



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.



Click **WDS** from **Wireless LAN** menu. The following page will be shown.

WDS Settings | [Set to Factory Default](#) |

Mode: Bridge	Bridge Enable <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Security: <input checked="" type="radio"/> Disable <input type="radio"/> WEP <input type="radio"/> Pre-shared Key	Peer MAC Address <input type="text"/> : <input type="text"/>
WEP: Use the same WEP key set in Security Settings .	<input type="checkbox"/>
Pre-shared Key: Type: <input type="radio"/> WPA <input checked="" type="radio"/> WPA2 Key : <input type="text"/>	Repeater Enable <input type="checkbox"/> <input type="checkbox"/>
Note: WPA and WPA2 are not compatible with DrayTek WPA. Type 8~63 ASCII characters or 64 hexadecimal digits leading by "0x", for example "cfigs01a2..." or "0x655abcd....".	Note: Disable unused links to get better performance.
	Access Point Function: <input checked="" type="radio"/> Enable <input type="radio"/> Disable
	Status: <input type="checkbox"/> Send "Hello" message to peers. <input type="button" value="Link Status"/>
	Note: The status is valid only when the peer also supports this function.

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.

	<div style="border: 1px solid black; padding: 2px;"> Disable ▾ Disable Bridge Repeater </div>
Security	There are three types for security, Disable , WEP 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.
WEP	Check this box to use the same key set in Security Settings page. If you did not set any key in Security Settings page, this check box will be dimmed.
Pre-shared Key	<p>Type – There are some types for you to choose. WPA and WPA2 are used for WDS devices (e.g.2912n wireless router, you can set the encryption mode as WPA or WPA2 to establish your WDS system between AP and the router.</p> <p>Key - Type 8 ~ 63 ASCII characters or 64 hexadecimal digits leading by “0x”.</p>
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 serving 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.

4.13.7 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

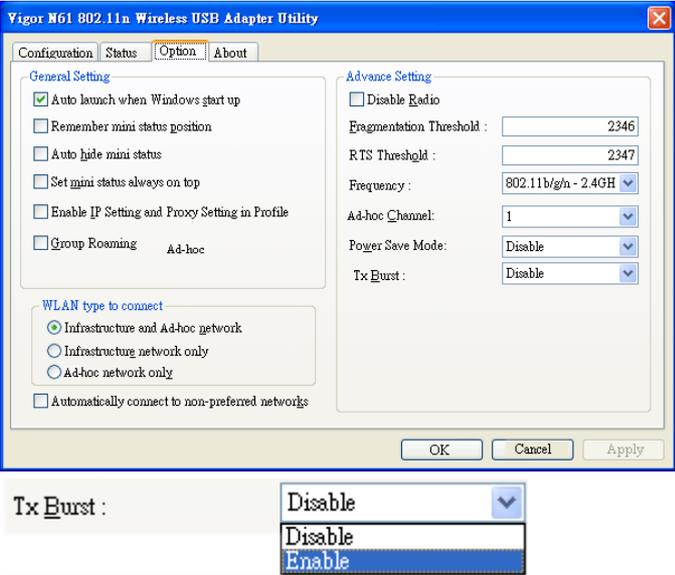
HT Physical Mode

Operation Mode	<input checked="" type="radio"/> Mixed Mode <input type="radio"/> Green Field
Channel Bandwidth	<input type="radio"/> 20 <input checked="" type="radio"/> 20/40 <input type="radio"/> 40
Guard Interval	<input type="radio"/> long <input checked="" type="radio"/> auto
Aggregation MSDU(A-MSDU)	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Long Preamble	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
Packet-OVERDRIVE™ TX Burst	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
Antenna	<input checked="" type="radio"/> 2T2R <input type="radio"/> 1T1R
Tx Power	<input checked="" type="radio"/> 100% <input type="radio"/> 80% <input type="radio"/> 60% <input type="radio"/> 30% <input type="radio"/> 20% <input type="radio"/> 10%
WMM Capable	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
APSD Capable	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
Rate Adaptation Algorithm	<input checked="" type="radio"/> New <input type="radio"/> Old
Fragment Length (256 - 2346)	<input type="text" value="2346"/> bytes
RTS Threshold (1 - 2347)	<input type="text" value="2347"/> bytes

OK

Available settings are explained as follows:

Item	Description
Operation Mode	<p>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.</p> <p>Green Field – to get the highest throughput, please choose such mode. Such mode can make the data transmission happening between 11n systems only. In addition, it does not have protection mechanism to avoid the conflict with neighboring devices of 802.11a/b/g.</p>
Channel Bandwidth	<p>20- the router will use 20MHz for data transmission and receiving between the AP and the stations.</p> <p>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 transmission.</p> <p>40- the router will use 40MHz for data transmission and receiving between the AP and the stations.</p>
Guard Interval	<p>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.</p>
Aggregation MSDU	<p>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.</p>

<p>Long Preamble</p>	<p>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.</p>
<p>Packet-OVERDRIVE</p>	<p>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.</p> <p>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).</p>  <p>Note: * means the real transmission rate depends on the environment of the network.</p>
<p>Antenna</p>	<p>Vigor router can be attached with two antennas to have good data transmission via wireless connection. However, if you have only one antenna attached, please choose 1T1R.</p>
<p>Tx Power</p>	<p>Set the power percentage for transmission signal of access point. The greater the value is, the higher intensity of the signal will be.</p>
<p>WMM Capable</p>	<p>WMM is an abbreviation of Wi-Fi Multimedia. It defines the priority levels for four access categories derived from 802.1d (prioritization tabs). The categories are designed with specific types of traffic, voice, video, best effort and low priority data. There are four accessing categories - AC_BE , AC_BK, AC_VI and AC_VO for WMM.</p> <p>To apply WMM parameters for wireless data transmission, please click the Enable radio button.</p>

APSD Capable	APSD (automatic power-save delivery) is an enhancement over the power-save mechanisms supported by Wi-Fi networks. It allows devices to take more time in sleeping state and consume less power to improve the performance by minimizing transmission latency. 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.

4.13.8 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.

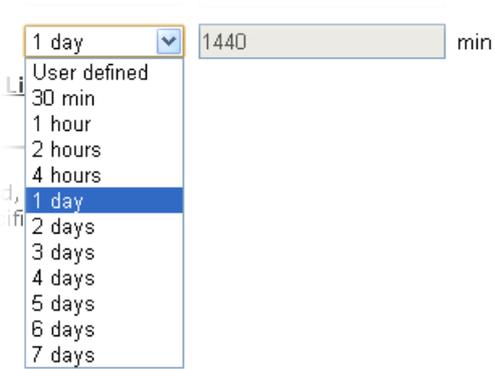
Note: Up to 300 Wireless Station records are supported by Vigor router.

Wireless LAN >> Station Control

SSID 1	SSID 2	SSID 3	SSID 4
SSID		DrayTek	
Enable		<input type="checkbox"/>	
Connection Time		1 hour	
Reconnection Time		2 hours	
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.

4.13.9 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 APs in the neighborhood.

Wireless LAN >> Access Point Discovery

Access Point List

Index	BSSID	Channel	RSSI	SSID	Authentication

See [Statistics](#).

Add to WDS Settings :

AP's MAC address : : : : :

 Bridge Repeater

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 AP(s) in the neighborhood. The results will be shown on the box above this button.																													
Statistics	It displays the statistics for the channels used by APs. <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> <p style="font-size: small;">Wireless LAN >> Site Survey Statistics</p> <hr/> <p style="font-size: x-small;">Recommended channels for usage: 1 2 3 4 5 6 7 8 9 10 11 12 13</p> <div style="border: 1px solid black; padding: 5px; margin: 5px auto; width: 80%;"> <p style="font-size: x-small; text-align: center;">AP number v.s. Channel</p> <table style="width: 100%; text-align: center; border-collapse: collapse;"> <tr> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> </tr> <tr> <td style="font-size: x-small;">1</td> <td style="font-size: x-small;">2</td> <td style="font-size: x-small;">3</td> <td style="font-size: x-small;">4</td> <td style="font-size: x-small;">5</td> <td style="font-size: x-small;">6</td> <td style="font-size: x-small;">7</td> <td style="font-size: x-small;">8</td> <td style="font-size: x-small;">9</td> <td style="font-size: x-small;">10</td> <td style="font-size: x-small;">11</td> <td style="font-size: x-small;">12</td> <td style="font-size: x-small;">13</td> <td style="font-size: x-small;">14</td> </tr> </table> <p style="font-size: x-small; text-align: center;">Channel</p> <p style="text-align: right; margin-top: 5px;"><input type="button" value="Cancel"/></p> </div> </div>																1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	2	3	4	5	6	7	8	9	10	11	12	13	14																	
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.																													

4.13.10 Airtime Fairness

Airtime fairness is essential in wireless networks that must support critical enterprise applications.

Most of the applications are either symmetric or require more downlink than uplink capacity; telephony and email send the same amount of data in each direction, while video streaming and web surfing involve more traffic sent from access points to clients than the other way around. This is essential for ensuring predictable performance and quality-of-service, as well as allowing 802.11n and legacy clients to coexist on the same network. Without airtime fairness, offices using mixed mode networks risk having legacy clients slow down the entire network or letting the fastest client(s) crowd out other users.

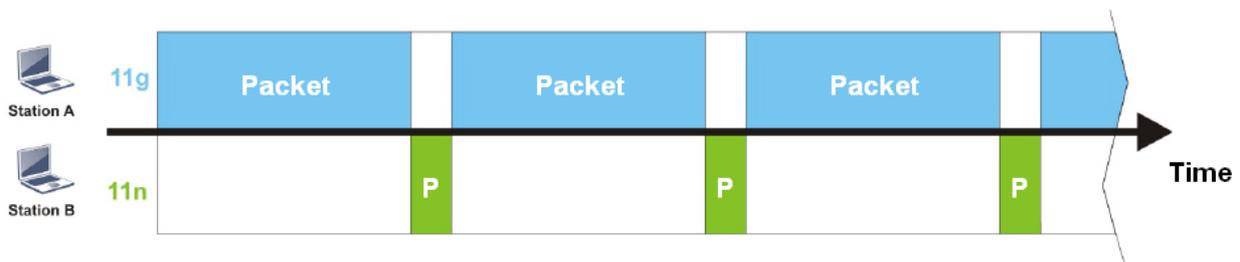
With airtime fairness, every client at a given quality-of-service level has equal access to the network's airtime.

The wireless channel can be accessed by only one wireless station at the same time.

The principle behind the IEEE802.11 channel access mechanisms is that each station has **equal probability** to access the channel. When wireless stations have similar data rate, this principle leads to a fair result. In this case, stations get similar channel access time which is called airtime.

However, when stations have various data rate (e.g., 11g, 11n), the result is not fair. The slow stations (11g) work in their slow data rate and occupy too much airtime, whereas the fast stations (11n) become much slower.

Take the following figure as an example, both Station A(11g) and Station B(11n) transmit data packets through Vigor router. Although they have equal probability to access the wireless channel, Station B(11n) gets only a little airtime and waits too much because Station A(11g) spends longer time to send one packet. In other words, Station B(fast rate) is obstructed by Station A(slow rate).



To improve this problem, Airtime Fairness is added for Vigor router. Airtime Fairness function tries to assign *similar airtime* to each station (A/B) by controlling TX traffic. In the following figure, Station B(11n) has higher probability to send data packets than Station A(11g). By this way, Station B(fast rate) gets fair airtime and its speed is not limited by Station A(slow rate).



It is similar to automatic Bandwidth Limit. The dynamic bandwidth limit of each station depends on instant active station number and airtime assignment. Please note that Airtime Fairness of 2.4GHz and 5GHz are independent. But stations of different SSIDs function together, because they all use the same wireless channel. IN SPECIFIC ENVIRONMENTS, this function can reduce the bad influence of slow wireless devices and improve the overall wireless performance.

Suitable environment:

- (1) Many wireless stations.
- (2) All stations mainly use download traffic.
- (3) The performance bottleneck is wireless connection.

Wireless LAN >> Airtime Fairness

Enable **Airtime Fairness**
 Triggering Client Number (2 ~ 64) (Default: 2)

Available settings are explained as follows:

Available settings are explained as follows:

Item	Description
Enable Airtime Fairness	<p>Try to assign similar airtime to each wireless station by controlling TX traffic.</p> <p>Airtime Fairness – Click the link to display the following screen of airtime fairness note.</p> <div style="border: 1px solid gray; padding: 5px; margin: 5px 0;"> <p>Airtime Fairness Note:</p> <ul style="list-style-type: none"> * Airtime is the time where a wireless station occupies the wireless channel. Airtime Fairness function tries to assign similar airtime to each station by controlling TX traffic. IN SPECIFIC ENVIRONMENTS, this function can reduce the bad influence of slow wireless devices and improve the overall wireless performance. * Suitable environment : (1) Many wireless stations. (2) All stations mainly use download traffic. (3) The performance bottleneck is wireless connection. * Triggering Client Number: Airtime Fairness function is applied only when active station number achieves this number. </div> <p>Triggering Client Number –Airtime Fairness function is applied only when active station number achieves this number.</p>

After finishing this web page configuration, please click **OK** to save the settings.

Note: Airtime Fairness function and Bandwidth Limit function should be mutually exclusive. So their webs have extra actions to ensure these two functions are not enabled simultaneously.

4.13.11 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

General Advanced

Index	Status	IP Address	MAC Address	Associated with
<div style="text-align: right; margin-bottom: 5px;"><input type="button" value="Refresh"/></div>				

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 .

4.14 USB Application

USB storage disk 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.

Note: 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.



4.14.1 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

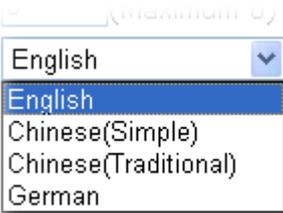
USB General Settings

General Settings	
Simultaneous FTP Connections	<input type="text" value="5"/> (Maximum 6)
Default Charset	<input type="text" value="English"/> <input type="button" value="v"/>
SMB File Sharing Service (Network Neighborhood)	
<input type="radio"/> Enable <input checked="" type="radio"/> Disable	
Access Mode	
<input checked="" type="radio"/> LAN Only <input type="radio"/> LAN And WAN	
NetBios Name Service	
Workgroup Name	<input type="text" value="WORKGROUP"/>
Host Name	<input type="text" value="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: . ; : " < > * + = / \ | ?.

Available settings are explained as follows:

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

<p>General Settings</p>	<p>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.</p> <p>Default Charset - At present, Vigor router supports four types of character sets. Default Charset is for English based file name.</p> 
<p>SMB File Sharing Service</p>	<p>Click Enable to invoke SMB file sharing service via the router.</p>
<p>Access Mode</p>	<p>LAN Only – Users coming from internet cannot connect to the SMB server of the router.</p> <p>LAN And WAN - Both LAN and WAN users can access SMB server of the router.</p>
<p>NetBios Name Service</p>	<p>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--- ; : " < > * + = \ ?.</p> <p>Workgroup Name – Type a name for the workgroup.</p> <p>Host Name – Type the host name for the router.</p>

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

4.14.2 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

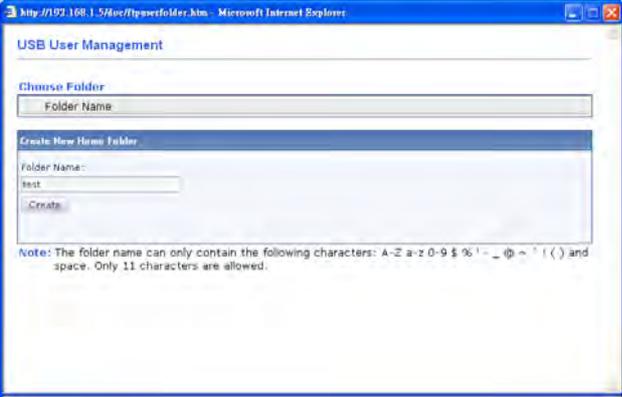
Profile Index: 1

FTP/Samba User	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
Username	<input type="text"/>
Password	<input type="text"/> (Maximum 11 Characters)
Confirm Password	<input type="text"/>
Home Folder	<input type="text"/> 
Access Rule	
File	<input type="checkbox"/> Read <input type="checkbox"/> Write <input type="checkbox"/> Delete
Directory	<input type="checkbox"/> List <input type="checkbox"/> Create <input type="checkbox"/> 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	<p>Enable – Click this button to activate this profile (account) for FTP service or SMB User service. Later, the user can use the username specified in this page to login into FTP server.</p> <p>Disable – Click this button to disable such profile.</p>
Username	<p>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.</p> <p>Note: “Admin” could not be typed here as username, for</p>

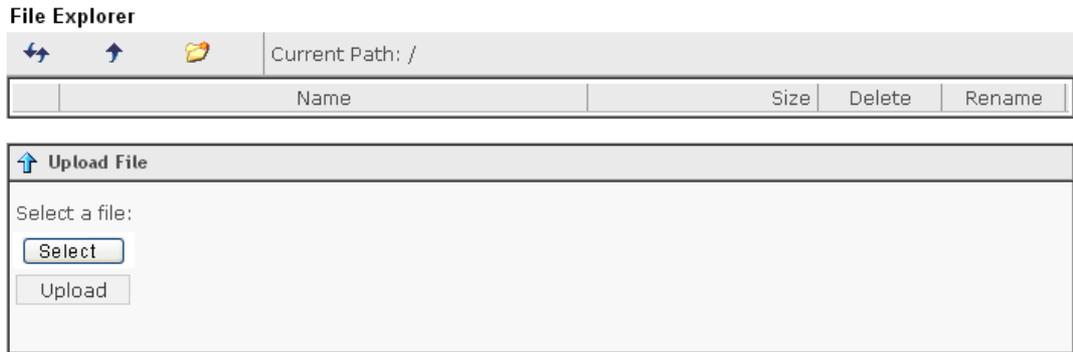
	<p>the word is specified for accessing into web pages of Vigor router only. Also, it is reserved for FTP firmware upgrade usage.</p> <p>Note: FTP Passive mode is not supported by Vigor Router. Please disable the mode on the FTP client.</p>
Password	Type the password for FTP/SMB users for accessing FTP 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	<p>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.</p> <p>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.</p> <p>You can click  to open the following dialog to add any new folder which can be specified as the Home Folder.</p> 
Access Rule	<p>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.</p> <p>File – Check the items (Read, Write and Delete) for such profile.</p> <p>Directory –Check the items (List, Create and Remove) for such profile.</p>

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.

4.14.3 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



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.

4.14.4 USB Device Status

This page is to monitor the status for the users who accessing into FTP or SMB server (USB storage disk) via the Vigor router. In addition, the status of the USB modem or USB printer 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 storage disk later.

USB Application >> USB Device Status

Disk
Modem
Printer

| [Refresh](#) |

USB Mass Storage Device Status

Connection Status: No Disk Connected Disconnect USB Disk

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 storage disk 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 connecting to FTP server.
IP Address	It displays the IP address of the user’s host which connecting to the FTP server.
Username	It displays the username that user uses to login to the FTP server.

When you insert USB storage disk into the Vigor router, the system will start to find out such device within several seconds.

4.14.5 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.

PPP mode	DHCP mode		
Brand	Model	LTE	Status
Aiko	Aiko 83D		Y
Alcatel	Alcatel L100V	✔	Y
Alcatel	Alcatel W100	✔	Y
BandRich	Bandlux C170		Y
BandRich	Bandlux C270		Y
BandRich	Bandlux C321		Y
BandRich	Bandlux C330		Y
BandRich	Bandlux C502		Y
D-Link	D_LINK DWM221 B1	✔	Y
D-Link	D_LINK DWM222 A1	✔	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
Huawei	Huawei E392	✔	Y

4.14.6 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™	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™	AndSMB	Y
Android™	ES File Explorer	Y
Android™	File Expert	Y
Android™	File Manager	Y
Android™	Solid Explorer	Y
Android™	SharesFinder	Y
iOS	eXPlayer	Y
iOS	nPlayer	Y

Y: Tested and is supported.

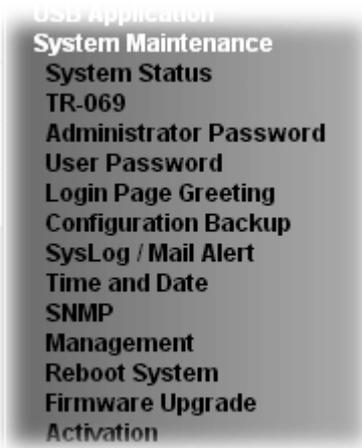
I: Supported but has some issue.

M: Has not been tested but might be supported.

4.15 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 Customization, Configuration Backup, Syslog /Mail Alert, Time and Date, Management, Reboot System, Firmware Upgrade and Activation.

Below shows the menu items for System Maintenance.



4.15.1 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 : Vigor2912n
Firmware Version : 3.8.1.3
Build Date/Time : Aug 30 2016 16:48:57

LAN					
	MAC Address	IP Address	Subnet Mask	DHCP Server	DNS
LAN1	00-1D-AA-84-8F-34	192.168.1.1	255.255.255.0	ON	8.8.8.8
LAN2	00-1D-AA-84-8F-34	192.168.2.1	255.255.255.0	ON	8.8.8.8
IP Routed Subnet	00-1D-AA-84-8F-34	192.168.0.1	255.255.255.0	ON	8.8.8.8

Wireless LAN			
MAC Address	Frequency Domain	Firmware Version	SSID
00-1D-AA-84-8F-34	Europe	2.7.1.5	DrayTek

WAN					
	Link Status	MAC Address	Connection	IP Address	Default Gateway
WAN1	Disconnected	00-1D-AA-84-8F-35	PPPoE	---	---
WAN2	Disconnected	00-1D-AA-84-8F-36	---	---	---
WAN3	Disconnected	00-1D-AA-84-8F-37	---	---	---

IPv6			
	Address	Scope	Internet Access Mode
LAN	FE80::21D:AFF:FE84:8F34/64	Link	---

User Mode is OFF now.

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	<p>MAC Address - Display the MAC address of the LAN Interface.</p> <p>IP Address - Display the IP address of the LAN interface.</p> <p>Subnet Mask - Display the subnet mask address of the LAN interface.</p> <p>DHCP Server - Display the current status of DHCP server of the LAN interface</p> <p>DNS - Display the assigned IP address of the primary DNS.</p>
WAN	<p>Link Status - Display current connection status.</p> <p>MAC Address - Display the MAC address of the WAN Interface.</p> <p>Connection - Display the connection type.</p> <p>IP Address - Display the IP address of the WAN interface.</p> <p>Default Gateway - Display the assigned IP address of the default gateway.</p>
IPv6	<p>Address - Display the IPv6 address for LAN.</p> <p>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.</p> <p>Internet Access Mode – Display the connection mode chosen for accessing into Internet.</p>

4.15.2 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	<input type="text"/> <input type="button" value="Wizard"/>
Username	<input type="text"/>
Password	<input type="text"/>
	<input type="button" value="Test With Inform"/> Event Code
	PERIODIC
Last Inform Response Time :(NA)	●
CPE Client	
<input checked="" type="radio"/> Disable	
<input type="radio"/> Enable	
<input checked="" type="radio"/> Http <input type="radio"/> Https	
URL	<input type="text"/>
Port	8069
Username	vigor
Password	*****
Periodic Inform Settings	
<input checked="" type="radio"/> Disable	
<input type="radio"/> Enable	
Interval Time	900 second(s)
STUN Settings	
<input checked="" type="radio"/> Disable	
<input type="radio"/> Enable	
Server Address	<input type="text"/>
Server Port	3478
Minimum Keep Alive Period	60 second(s)
Maximum Keep Alive Period	-1 second(s)
Apply Settings to APs	
<input checked="" type="radio"/> Disable	
<input type="radio"/> Enable	
AP Password	<input type="text"/>
<input type="button" value="OK"/>	

Available settings are explained as follows:

Item	Description
ACS Server On	Choose the interface for the router connecting to ACS server.
ACS Server	<p>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.</p> <p>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.</p>

	<p>Event Code – Use the drop down menu to specify an event to perform the test.</p> <p>Last Inform Response Time – Display the time that VigorACS server made a response while receiving Inform message from CPE last time.</p>
CPE Client	<p>Such information is useful for Auto Configuration Server.</p> <p>Enable/Disable – Allow/Deny the CPE Client to connect with Auto Configuration Server.</p> <p>Port – Sometimes, port conflict might be occurred. To solve such problem, you might change port number for CPE.</p> <p>Username and Password – Type the username and password that VigorACS can use to access into such CPE.</p>
Periodic Inform Settings	<p>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.</p>
STUN Settings	<p>The default is Disable. If you click Enable, please type the relational settings listed below:</p> <p>Server IP – Type the IP address of the STUN server.</p> <p>Server Port – Type the port number of the STUN server.</p> <p>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”.</p> <p>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.</p>
Apply Settings to APs	<p>This feature is able to apply TR-069 settings (including STUN and ACS server settings) to all of APs managed by Vigor2912 at the same time.</p> <p>Disable – Related settings will not be applied to VigorAP.</p> <p>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.</p> <ul style="list-style-type: none"> ● AP Password – Type the password of the VigorAP that you want to apply Vigor2912’s TR-069 settings.

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

4.15.3 Administrator Password

This page allows you to set new password.

System Maintenance >> Administrator Password Setup

Administrator Password

Old Password	<input type="text"/>	
New Password	<input type="text"/>	(Max. 23 characters allowed)
Confirm Password	<input type="text"/>	(Max. 23 characters allowed)

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

Administrator Local User

<input type="checkbox"/> Local User				
Local User List				
<table border="1"> <thead> <tr> <th>Index</th> <th>User Name</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> </tbody> </table>	Index	User Name		
Index	User Name			
Specific User				
User Name: <input type="text"/>				
Password: <input type="text"/> Confirm Password: <input type="text"/>				
<input type="button" value="Add"/> <input type="button" value="Edit"/> <input type="button" value="Delete"/>				
<input checked="" type="checkbox"/> Enable 'Admin' Login From Wan				

Administrator LDAP Setting

<input type="checkbox"/> Enable LDAP/AD login for Admin users
<input checked="" type="checkbox"/> Enable 'Admin' Login From Wan
LDAP Server Profiles
LDAP Profile Setup

Note: Please select 'Admin' from group select box on login UI.

Available settings are explained as follows:

Item	Description
Administrator Password	<p>Old Password - Type in the old password. The factory default setting for password is “admin”.</p> <p>New Password -Type in new password in this field. The length of the password is limited to 23 characters.</p> <p>Confirm Password -Type in the new password again.</p>
Administrator Local User	<p>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.</p> <p>Local User – Check the box to enable the local user configuration.</p> <p>Local User List – It displays the username of the local user.</p>

	<p>User Name – Give a user name for the local user.</p> <p>Password – Type the password for the local user.</p> <p>Confirm Password – Type the password again for confirmation.</p> <p>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.</p> <p>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.</p> <p>Delete – If the local user listed on the box above is not satisfied, simply click the username and click Delete to remove it.</p> <p>Enable Admin Login From Wan – The default setting is enabled. It can ensure any user accessing into web user interface of Vigor router through Internet by username/password of “admin/admin”.</p>
<p>Administrator LDAP Setting</p>	<p>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.</p> <p>Enable Admin Login From Wan – The default setting is enabled. It can ensure any user accessing into web user interface of Vigor router through Internet by username/password of “admin/admin”.</p> <p>LDAP Server Profiles – Available profiles will be displayed here under the link of LDAP Profile Setup.</p> <p>LDAP Profile Setup – It allows you to create a new LDAP profile.</p>

When you click **OK**, the login window will appear. Please use the new password to access into the web user interface again.

4.15.4 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	<input type="text"/>	(Max. 23 characters allowed)
Confirm Password	<input type="text"/>	(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.

OK

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 use 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.

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	<input type="password"/>
Confirm Password	<input type="password"/>

Note: 1.Password can contain only a-z A-Z 0-9 , ; : . " < > * + = \ | ? @ # ^ ! ()
 2.Password can't be only *.Example:'*' or '***' or '****' is illegal, but '123*' or '*45' is OK.

OK

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 field of **Password** and click **Login**.

A screenshot of the DrayTek Vigor2912 Series Login window. The window has a red header with "DrayTek" in white and "Vigor2912 Series" in white. Below the header is a black bar with "Login" in white. The main area is white and contains two input fields: "Username" and "Password". The "Password" field contains six black dots. Below the fields is a grey button with "Login" in white. At the bottom of the window, there is a small copyright notice: "Copyright © 2013 DrayTek Corp. All Rights Reserved."

6. The main screen with User Mode will be shown as follows.

The screenshot displays the DrayTek Vigor2912 Series User Mode main screen. The interface includes a navigation menu on the left and a main content area with several sections:

- System Status:**
 - Model Name : Vigor2912n
 - Firmware Version : 3.8.1.3
 - Build Date/Time : Aug 30 2016 16:48:57
- LAN:**

	MAC Address	IP Address	Subnet Mask	DHCP Server	DNS
LAN1	00-1D-AA-84-8F-34	192.168.1.1	255.255.255.0	ON	8.8.8.8
LAN2	00-1D-AA-84-8F-34	192.168.2.1	255.255.255.0	ON	8.8.8.8
IP Routed Subnet	00-1D-AA-84-8F-34	192.168.0.1	255.255.255.0	ON	8.8.8.8
- Wireless LAN:**

MAC Address	Frequency Domain	Firmware Version	SSID
00-1D-AA-84-8F-34	Europe	2.7.1.5	DrayTek
- WAN:**

Link Status	MAC Address	Connection	IP Address	Default Gateway
WAN1 Disconnected	00-1D-AA-84-8F-35	PPPoE	---	---
WAN2 Disconnected	00-1D-AA-84-8F-36	---	---	---
WAN3 Disconnected	00-1D-AA-84-8F-37	---	---	---
- IPv6:**

Address	Scope	Internet Access Mode
LAN FE80::21D:A AFF:FE84:8F34/64	Link	---

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.

Note: Setting in User Mode can be configured as same as in Admin Mode.

4.15.5 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 (31 char max.)

Welcome Message and Bulletin (Max 511 characters) [Preview](#) | [Set to Factory Default](#) |

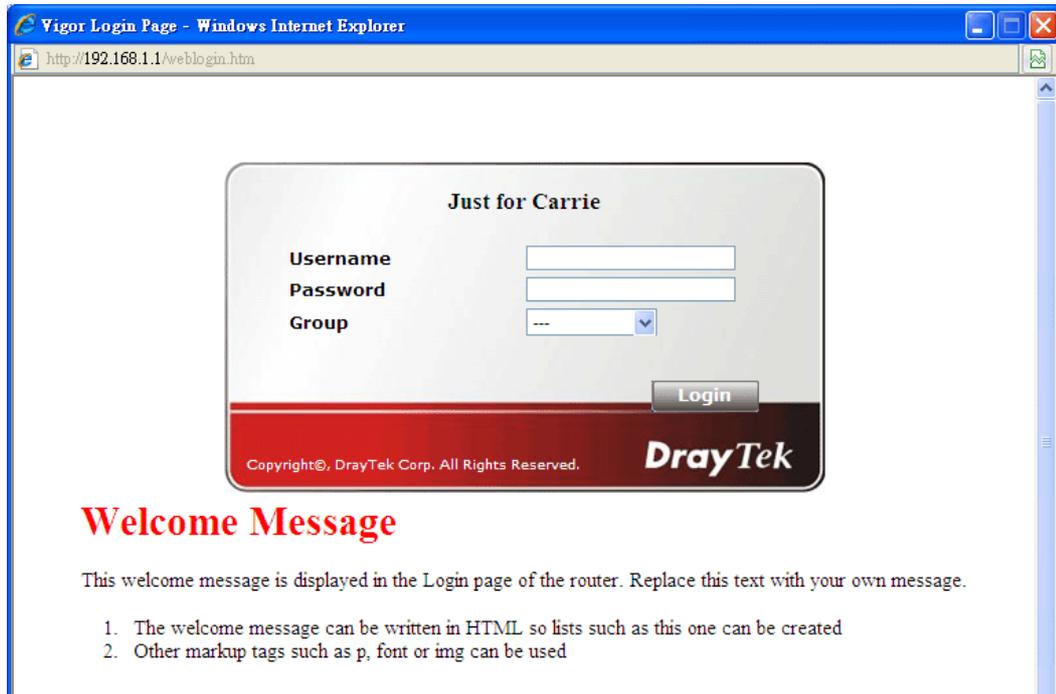
```
<h1><b><font color=red>Welcome Message</font></b></h1><p>This welcome message is displayed in the Login page of the router. Replace this text with your own message. </p><ol><li>The welcome message can be written in HTML so lists such as this one can be created </li><li>Other markup tags such as p, font or img can be used</li></ol>
```

Examples of Welcome Message and Bulletin:
 <h1>Welcome Message</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.



4.15.6 Configuration Backup

Such function can be used to apply the router settings configured by Vigor2910 to Vigor2912.

Backup the Configuration

Follow the steps below to backup your 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

<p>Restore</p> <p>Restore settings from a configuration file.</p> <p><input type="button" value="選擇檔案"/> 未選擇檔案</p> <p>Click Restore to upload the file.</p> <p><input type="button" value="Restore"/></p>
<p>Backup</p> <p>Back up the current settings into a configuration file.</p> <p><input type="button" value="Backup"/></p>

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.

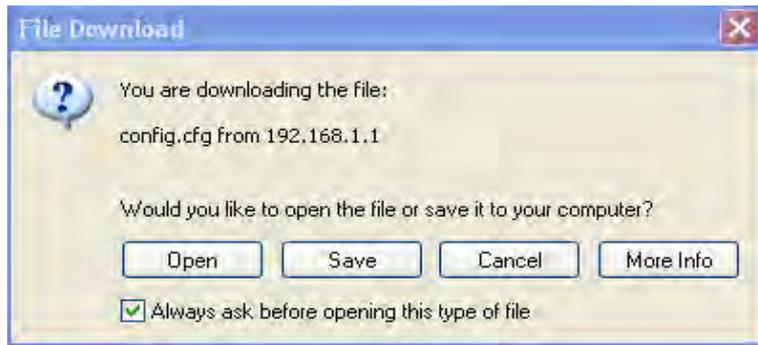
Supported Model List

Model	Firmware Version	Note
Vigor2910	3.2.5.3, or later	Due to design differences on Firewall and CSM between Vigor2910 and Vigor2912, related settings for CSM and IM/P2P of Vigor2910 will not be converted and applied to Vigor2912. The configuration of WAN2 in Vigor2910 will not be converted and applied to WAN2 in Vigor2912 if the physical mode in Vigor2910 is not Ethernet.

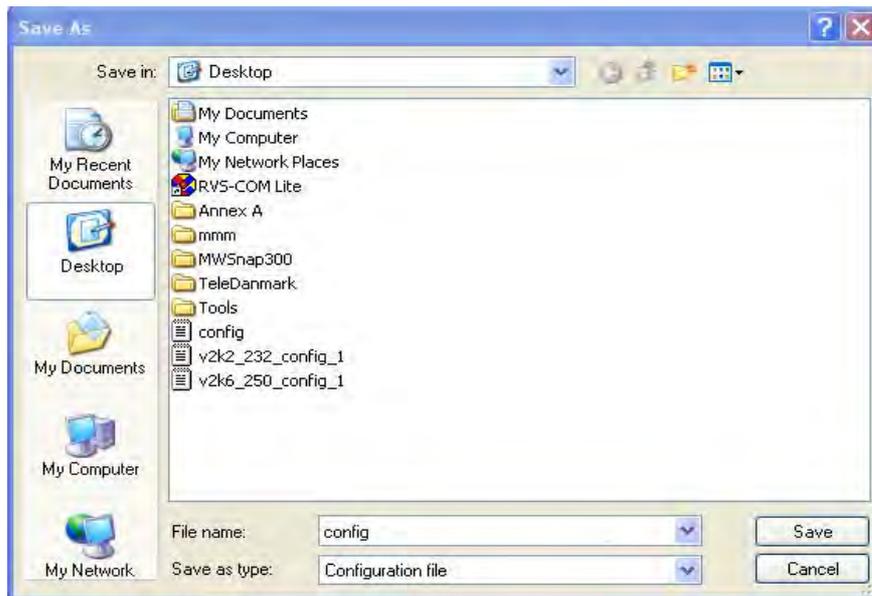
Available settings are explained as follows:

Item	Description
Restore	Choose File – Click it to specify a file to be restored. Click Restore to restore the configuration. If the file is encrypted, the system will ask you to type the password to decrypt the configuration file.
Backup	Click it to perform the configuration backup of this router.
Support Model List	Web configuration file from <i>other</i> Vigor router can be applied to Vigor2912 series. At present, the configuration file of Vigor2910 is accepted for Vigor 2912. This field displays model name(s) and firmware which web configuration file saved can be used by such router.

2. Click **Backup** button to get into the following dialog. Click **Save** button to open another dialog for saving configuration as a file.



3. In **Save As** dialog, the default filename is **config.cfg**. You could give it another name by yourself.



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.

Note: 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.

Configuration Backup / Restoration

<p>Restore</p> <p>Restore settings from a configuration file.</p> <p><input type="button" value="選擇檔案"/> 未選擇檔案</p> <p>Click Restore to upload the file.</p> <p><input type="button" value="Restore"/></p>
<p>Backup</p> <p>Back up the current settings into a configuration file.</p> <p><input type="button" value="Backup"/></p>

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	Note
Vigor2910	3.2.5.3, or later	Due to design differences on Firewall and CSM between Vigor2910 and Vigor2912, related settings for CSM and IM/P2P of Vigor2910 will not be converted and applied to Vigor2912. The configuration of WAN2 in Vigor2910 will not be converted and applied to WAN2 in Vigor2912 if the physical mode in Vigor2910 is not Ethernet.

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.

4.15.7 Syslog/Mail Alert

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

System Maintenance >> SysLog / Mail Alert Setup

SysLog / Mail Alert Setup	
<p>SysLog Access Setup</p> <p><input type="checkbox"/> Enable</p> <p>Syslog Save to:</p> <p><input checked="" type="checkbox"/> Syslog Server</p> <p><input type="checkbox"/> USB Disk</p> <p>Router Name <input type="text" value="DrayTek"/></p> <p>Server IP Address <input type="text"/></p> <p>Destination Port <input type="text" value="514"/></p> <p>Mail Syslog <input type="checkbox"/> Enable</p> <p>Enable syslog message:</p> <p><input checked="" type="checkbox"/> Firewall Log</p> <p><input checked="" type="checkbox"/> VPN Log</p> <p><input checked="" type="checkbox"/> User Access Log</p> <p><input checked="" type="checkbox"/> WAN Log</p> <p><input checked="" type="checkbox"/> Router/DSL information</p> <p>AlertLog Setup</p> <p><input type="checkbox"/> Enable</p> <p>AlertLog Port <input type="text" value="514"/></p>	<p>Mail Alert Setup</p> <p><input type="checkbox"/> Enable <input type="button" value="Send a test e-mail"/></p> <p>SMTP Server <input type="text"/></p> <p>SMTP Port <input type="text" value="25"/></p> <p>Mail To <input type="text"/></p> <p>Return-Path <input type="text"/></p> <p><input type="checkbox"/> Use SSL</p> <p><input type="checkbox"/> Authentication</p> <p>Username <input type="text"/></p> <p>Password <input type="text"/></p> <p>Enable E-Mail Alert:</p> <p><input checked="" type="checkbox"/> DoS Attack</p> <p><input checked="" type="checkbox"/> APPE</p> <p><input checked="" type="checkbox"/> VPN LOG</p>

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.

Available settings are explained as follows:

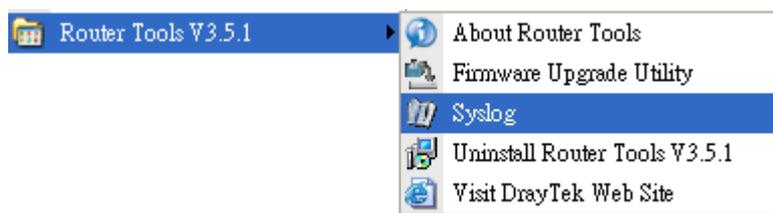
Item	Description
SysLog Access Setup	<p>Enable - Check Enable to activate function of syslog.</p> <p>Syslog Save to – Check Syslog Server to save the log to Syslog server.</p> <p>USB Disk - Check USB Disk to save the log to the attached USB storage disk.</p> <p>Router Name - Display the name for such router configured in System Maintenance>>Management.</p> <p>If there is no name here, simply lick the link to access into System Maintenance>>Management to set the router name.</p> <p>Server IP Address -The IP address of the Syslog server.</p> <p>Destination Port - Assign a port for the Syslog protocol.</p> <p>Mail Syslog – Check the box to recode the mail event on Syslog.</p> <p>Enable syslog message - Check the box listed on this web page to send the corresponding message of firewall, VPN, User Access, Call, WAN, Router/DSL information to Syslog.</p>
AlertLog Setup	Check Enable to activate function of alert log.

	<p>AlertLog Port - Type the port number for alert log. The default setting is 514.</p>
Mail Alert Setup	<p>Check Enable to activate function of mail alert.</p> <p>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.</p> <p>SMTP Server/SMTP Port - The IP address/Port number of the SMTP server.</p> <p>Mail To - Assign a mail address for sending mails out.</p> <p>Return-Path - Assign a path for receiving the mail from outside.</p> <p>Use SSL - Check this box to use port 465 for SMTP server for some e-mail server uses https as the transmission method.</p> <p>Authentication - Check this box to activate this function while using e-mail application.</p> <ul style="list-style-type: none"> ● User Name - Type the user name for authentication. ● Password - Type the password for authentication. <p>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.</p>

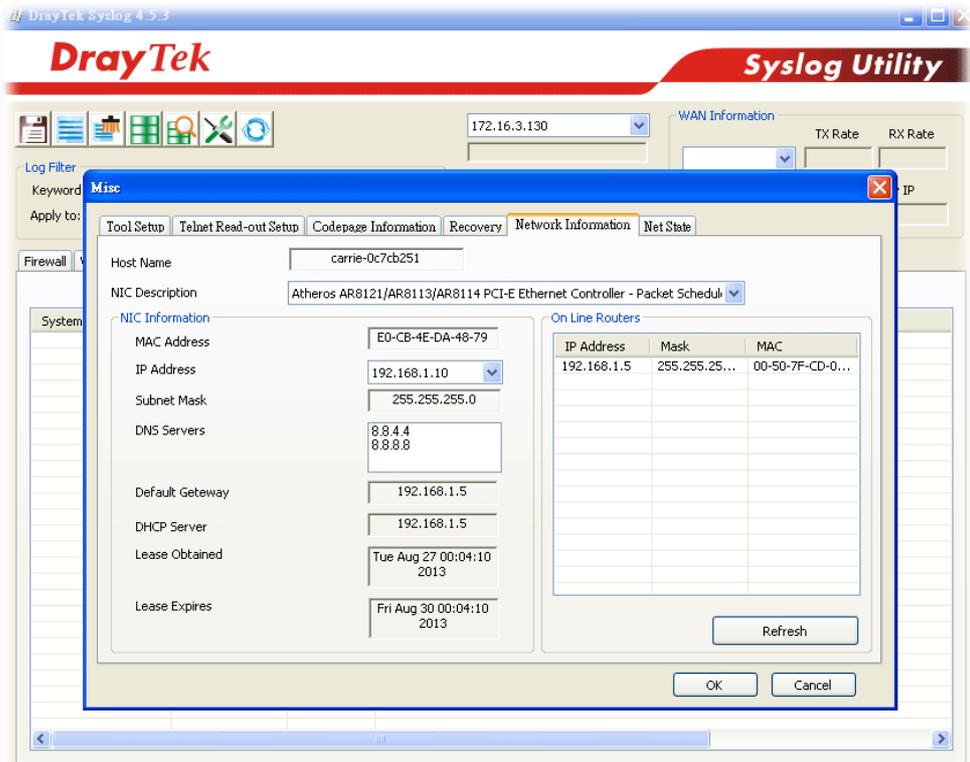
Click **OK** to save these settings.

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.



Custom Time: Time has from the computer which runs this custom application.

Default Time: Time has from router.

4.15.8 Time and Date

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

System Maintenance >> Time and Date

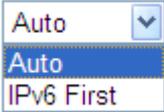
Time Information

Current System Time	2000 Jan 1 Sat 3 : 47 : 32	<input type="button" value="Inquire Time"/>
---------------------	----------------------------	---

Time Setup

<input type="radio"/>	Use Browser Time	
<input checked="" type="radio"/>	Use Internet Time	
	Time Server	<input type="text" value="pool.ntp.org"/>
	Priority	<input type="button" value="Auto"/>
	Time Zone	<input type="button" value="(GMT) Greenwich Mean Time : Dublin"/>
	Enable Daylight Saving	<input type="checkbox"/> <input type="button" value="Advanced"/>
	Automatically Update Interval	<input type="button" value="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 IP address or domain name of the time server.
Priority	<p>IPv6 First – If the time server configured with a domain name that supports IPv6; such option will be the first choice.</p> <p>Auto – It is the default setting. If you have no idea whether the time server supports IPv6 or IPv4, simply choose Auto as the priority.</p> 
Time Zone	Select the time zone where the router is located.
Enable Daylight Saving	<p>Check the box to enable the daylight saving. Such feature is available for certain area.</p> <p>Advanced – Click it to open a pop up dialog.</p>

	<p>Daylight Saving Advanced</p> <div style="border: 1px solid black; padding: 5px;"> <p><input checked="" type="radio"/> Default Start: Yearly on March last Sun End: Yearly on October last Sun</p> <p><input type="radio"/> Date Range Start: Year ▾ Month ▾ Day ▾ 00:00 ▾ End: Year ▾ Month ▾ Day ▾ 00:00 ▾</p> <p><input type="radio"/> Yearly Start: Yearly On January ▾ First ▾ Sunday ▾ 00:00 ▾ End: Yearly On January ▾ First ▾ Sunday ▾ 00:00 ▾</p> </div> <p style="text-align: center;"> <input type="button" value="OK"/> <input type="button" value="Close"/> </p> <p>Use the default time setting or set user defined time for your requirement.</p>
<p>Automatically Update Interval</p>	<p>Select a time interval for updating from the NTP server.</p>

Click **OK** to save these settings.

4.15.9 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

Set Community

Manager Host IP(IPv4)

Index	IP	Subnet Mask
1	<input type="text"/>	<input type="text"/>
2	<input type="text"/>	<input type="text"/>
3	<input type="text"/>	<input type="text"/>

Manager Host IP(IPv6)

Index	IPv6 Address	Prefix Length
1	<input type="text"/>	<input type="text" value="/0"/>
2	<input type="text"/>	<input type="text" value="/0"/>
3	<input type="text"/>	<input type="text" value="/0"/>

Trap Community

Notification Host IP(IPv4)

Index	IP
1	<input type="text"/>
2	<input type="text"/>

Notification Host IP(IPv6)

Index	IPv6 Address
1	<input type="text"/>
2	<input type="text"/>

Trap Timeout

Enable SNMPV3 Agent

USM User

Auth Algorithm

Auth Password

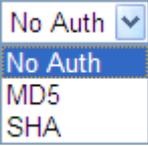
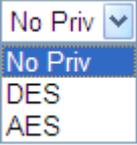
Privacy Algorithm

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.

4.15.10 Management

This page allows you to manage the settings for Internet Access Control, Access List from the Internet, Management Port Setup, and External Device Control.

The management pages for IPv4 and IPv6 protocols are different.

For IPv4

System Maintenance >> Management



IPv4 Management Setup	IPv6 Management Setup												
Router Name <input type="text" value="DrayTek"/>													
<input type="checkbox"/> Default:Disable Auto-Logout	Management Port Setup <input checked="" type="radio"/> User Define Ports <input type="radio"/> Default Ports												
Internet Access Control <input type="checkbox"/> Allow management from the Internet Domain name allowed <input type="text"/>	Telnet Port <input type="text" value="23"/> (Default: 23) HTTP Port <input type="text" value="80"/> (Default: 80) HTTPS Port <input type="text" value="443"/> (Default: 443) FTP Port <input type="text" value="21"/> (Default: 21) TR069 Port <input type="text" value="8069"/> (Default: 8069) SSH Port <input type="text" value="22"/> (Default: 22)												
<input type="checkbox"/> FTP Server <input checked="" type="checkbox"/> HTTP Server <input checked="" type="checkbox"/> HTTPS Server <input checked="" type="checkbox"/> Telnet Server <input checked="" type="checkbox"/> TR069 Server <input type="checkbox"/> SSH Server <input checked="" type="checkbox"/> Disable PING from the Internet	TLS/SSL Encryption Setup <input type="checkbox"/> Enable SSL 3.0												
Access List from the Internet <table border="1"> <thead> <tr> <th>List</th> <th>IP</th> <th>Subnet Mask</th> </tr> </thead> <tbody> <tr> <td>1</td> <td><input type="text"/></td> <td><input type="text"/></td> </tr> <tr> <td>2</td> <td><input type="text"/></td> <td><input type="text"/></td> </tr> <tr> <td>3</td> <td><input type="text"/></td> <td><input type="text"/></td> </tr> </tbody> </table>	List	IP	Subnet Mask	1	<input type="text"/>	<input type="text"/>	2	<input type="text"/>	<input type="text"/>	3	<input type="text"/>	<input type="text"/>	Device Management <input type="checkbox"/> Respond to external device
List	IP	Subnet Mask											
1	<input type="text"/>	<input type="text"/>											
2	<input type="text"/>	<input type="text"/>											
3	<input type="text"/>	<input type="text"/>											

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.

Internet Access Control	<p>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.</p> <p>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.</p>
Access List from the Internet	<p>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.</p> <p>List IP - Indicate an IP address allowed to login to the router.</p> <p>Subnet Mask - Represent a subnet mask allowed to login to the router.</p>
Management Port Setup	<p>User Define Ports - Check to specify user-defined port numbers for the Telnet, HTTP and FTP servers.</p> <p>Default Ports - Check to use standard port numbers for the Telnet and HTTP servers.</p>
TLS/SSL Encryption Setup	<p>Enable SSL 3.0 – Check the box to enable the function of SSL 3.0 if required.</p> <p>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.</p>
Device Management	<p>Check the box to enable the device management function for Vigor2912.</p> <p>Respond to external device – If it is enabled, Vigor2912 will be regarded as slave device. When the external device (master device) sends request packet to Vigor2912, Vigor2912 would send back information to respond the request coming from the external device which is able to manage Vigor2912.</p>

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

For IPv6

System Maintenance >> Management

IPv4 Management Setup	IPv6 Management Setup
Management Access Control Allow management from the Internet <input type="checkbox"/> Telnet Server (Port : 23) <input type="checkbox"/> HTTP Server (Port : 80) <input type="checkbox"/> HTTPS Server (Port : 443) <input type="checkbox"/> SSH Server (Port : 22) <input type="checkbox"/> Enable PING from the Internet	
Access List List IPv6 Address / Prefix Length 1. <input type="text"/> / <input type="text"/> 2. <input type="text"/> / <input type="text"/> 3. <input type="text"/> / <input type="text"/> Note : Telnet / Http server port is the same as IPv4.	
<input type="button" value="OK"/>	

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. IPv6 Address /Prefix Length - Indicate the IP address(es) allowed to login to the router.

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

4.15.11 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

Reboot Now

Auto Reboot Time Schedule

Index(1-15) in Schedule Setup: , , ,

Note: Action and Idle Timeout settings will be ignored.

OK

Cancel

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.

Note: 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.

4.15.12 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



Firmware Version Status

Current Firmware Version: 3.8.1.3

Web Firmware Upgrade

Select a firmware file.

未選擇檔案

Click Upgrade to upload the file.

TFTP Firmware Upgrade from LAN

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 complete, the TFTP server will automatically stop running.

Do you want to upgrade firmware ?

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 **Choose File**. Then, click **Upgrade**. The system will upgrade the firmware of the router automatically.

Or, click **OK**. The following screen will appear. Then, execute the firmware upgrade utility.

System Maintenance >> Firmware Upgrade

 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.

4.15.13 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 [Activate](#)
 [Status:Not Activated]

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. <div style="text-align: center; margin-top: 10px;"> Activate via interface : auto-selected ▼ auto-selected WAN 1 WAN 2 WAN 3 </div>
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:

Web-Filter License Activate
[Status: **Commtouch**] [Start Date: **2011-03-28** Expire Date: **2011-04-27**]

Authentication Message

```
WebFilter, Activation authenticate fail, contact with support@draytek.com, 2011-03-28 01:00:24
```

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.

4.16 Diagnostics

Diagnostic Tools provide a useful way to **view** or **diagnose** the status of your Vigor router. Below shows the menu items for Diagnostics.



4.16.1 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

| [Refresh](#) |

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
```

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.

4.16.2 Routing Table

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

Diagnostics >> View Routing Table

Current Running Routing Table	IPv6 Routing Table	Refresh
Key: C - connected, S - static, R - RIP, * - default, ~ - private		
C~	192.168.1.0/ 255.255.255.0	directly connected LAN1

And,

Diagnostics >> View Routing Table

Current Running Routing Table	IPv6 Routing Table	Refresh		
Destination	Interface	Flags	Metric	Next Hop
FE80::/64	LAN	U	256	
FF00::/8	LAN	U	256	

Available settings are explained as follows:

Item	Description
Refresh	Click it to reload the page.

4.16.3 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

LAN
WAN

Show: ALL LANs and ALL VLANs

[Clear](#) | [Refresh](#)

IP Address	MAC Address	Netbios Name	Interface	VLAN	Port
192.168.1.5	00-05-5D-E4-D8-EE	A1000351	LAN1	VLAN0	P2

Show Comment

Available settings are explained as follows:

Item	Description
Refresh	Click it to reload the page.

4.16.4 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.

Diagnostics >> View IPv6 Neighbour Table

IPv6 Neighbour Table [Refresh](#)

IPv6 Address	Mac Address	Interface
FF02::2	33-33-00-00-00-02	LAN
FF02::1:3	33-33-00-01-00-03	LAN
FE80::3D5E:E74:8751:A44B	e8-9d-87-87-69-2f	LAN
FF02::1:FF51:A44B	33-33-ff-51-a4-4b	LAN
FE80::250:7FFF:FEC9:1E79	00-50-7f-c9-1e-79	LAN
FE80::250:7FFF:FEC8:4305	00-50-7f-c8-43-05	LAN
FF02::1	33-33-00-00-00-01	LAN
FF02::1	00-00-00-00-00-00	USB2
FF02::1:2	00-00-00-00-00-00	USB2
FE80::9D5C:CA86:5428:3CA7	00-26-2d-fe-63-4f	LAN
FF02::1:FF0A:673C	33-33-ff-0a-67-3c	LAN

Available settings are explained as follows:

Item	Description
Refresh	Click it to reload the page.

4.16.5 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
LAN1 : 192.168.1.1/255.255.255.0, DHCP server: On					
Index	IP Address	MAC Address	Leased Time	HOST ID	
1	192.168.1.10	E0-CB-4E-DA-48-79	70:23:20	carrie-0c7cb251	
2	192.168.1.1	00-1D-AA-A8-B7-D8			

And,

Diagnostics >> View DHCP Assigned IP Addresses

DHCP IP Assignment Table		DHCPv6 IP Assignment Table		Refresh
DHCPv6 server binding client:				
Index	IPv6 Address	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.

4.16.6 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
192.168.1.11 2491	52078	24.9.93.189 443	WAN1
192.168.1.11 2493	52080	207.46.25.2 80	WAN1
192.168.1.10 3079	52665	207.46.5.10 80	WAN1

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.

4.16.7 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

IPv4 DNS Cache Table	IPv6 DNS Cache Table		Clear Refresh
Domain Name	IP Address	TTL (s)	

Note: The LAN DNS entry's TTL is static.

When an entry's TTL is larger than s, this entry will be deleted from the table.

OK

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.

4.16.8 Ping Diagnosis

Click **Diagnostics** and click **Ping Diagnosis** to pen 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 "Auto".

Ping through:

Ping to: IP Address:

Result | [Clear](#) |

And,

Diagnostics >> Ping Diagnosis

Ping Diagnosis

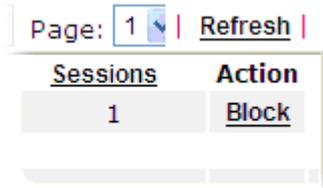
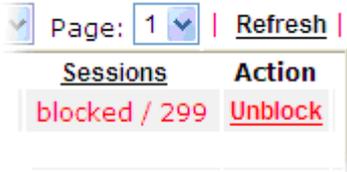
IPV4 IPV6

Ping IPv6 Address:

Result | [Clear](#) |

Available settings are explained as follows:

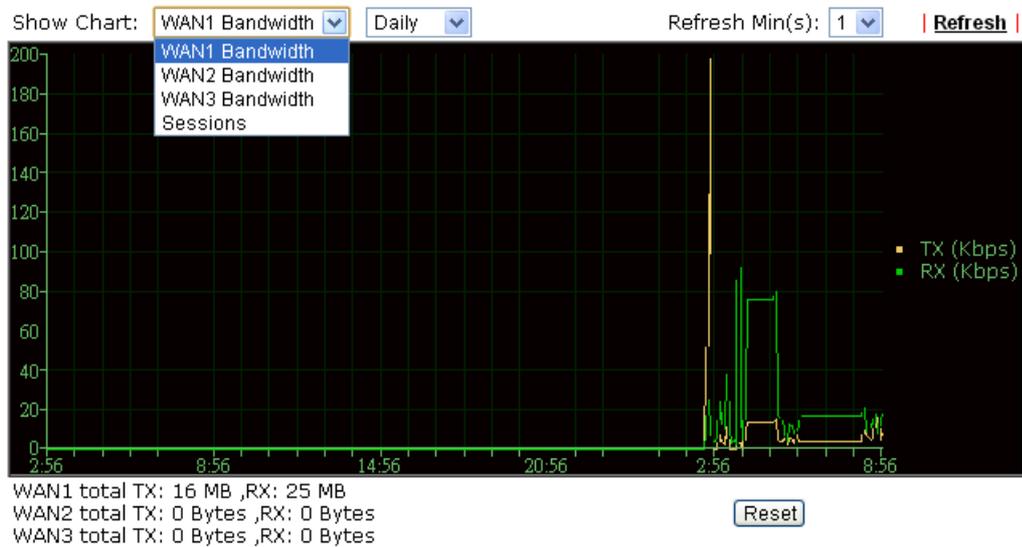
Item	Description
IPV4 /IPV6	Choose the interface for such function.
Ping through	Use the drop down list to choose the WAN interface that you want to ping through or choose Unspecified to be determined by the router automatically.
Ping to	Use the drop down list to choose the destination that you want 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.

Monitor	
Refresh Seconds	<p>Use the drop down list to choose the time interval of refreshing data flow that will be done by the system automatically.</p> <p>Refresh Seconds: </p>
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	<p>Block - can prevent specified PC accessing into Internet within 5 minutes.</p>  <p>Unblock – the device with the IP address will be blocked in five minutes. The remaining time will be shown on the session column.</p> 
Current /Peak/Speed	<p>Current means current transmission rate and receiving rate for WAN interface.</p> <p>Peak means the highest peak value detected by the router in data transmission.</p> <p>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.</p>

4.16.10 Traffic Graph

Click **Diagnostics** and click **Traffic Graph** to pen the web page. Choose WAN1/WAN2/WAN3 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



The horizontal axis represents time. Yet the vertical axis has different meanings. For WAN1/WAN2/WAN3 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.

4.16.11 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:
 Protocol:
 Host / IP Address:

Result | [Clear](#) |

or

Diagnostics >> Trace Route

Trace Route

IPV4 IPV6
 Trace Host / IP Address:

Result | [Clear](#) |

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.

4.16.12 Syslog Explorer

Such page provides real-time syslog and displays the information on the screen.

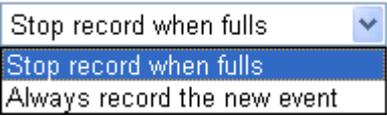
Web Syslog

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



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 – 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.

USB Syslog

This page displays the syslog recorded on the USB storage disk.

USB Application >> Syslog Explorer

Web Syslog	USB Syslog
------------	------------

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.

4.16.13 IPv6 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

WAN1	WAN2	WAN3	Refresh
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.

4.16.14 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

SYN Flood	UDP Flood	ICMP Flood	Blocking IP List	Refresh
Tracing IP		Destination Port		

192.168.1.22	80	Block		
192.168.1.205	40005(⊗)	Block		

IPv6

SYN Flood	UDP Flood	ICMP Flood	Blocking IP List	Refresh
Tracing IP		Destination Port		

Note: The icon - (⊗) - means there is something wrong (e.g., attacking the system) with that IP address.

However, if an IP address is confirmed 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

[SYN Flood](#)
[UDP Flood](#)
[ICMP Flood](#)
[Blocking IP List](#)
[Refresh](#)

Blocking IP :

192.168.1.123

IPv6

[SYN Flood](#)
[UDP Flood](#)
[ICMP Flood](#)
[Blocking IP List](#)
[Refresh](#)

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 permanently. Remove – It is used to remove selected IP address from the Blocking IP List.
Refresh	Click this link to refresh current page.

4.17 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

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 properly. Click the **Clear** button to Clear the off-line information and account information.

OK

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 Auto Discovery

External Devices Connected

Below shows available devices that connected externally:

On Line	Vigor3900, Connection Uptime:00:00:16 IP Address:172.17.5.140	Account	Clear
On Line	Vigor2960, Connection Uptime:00:00:16 IP Address:172.17.5.184	Account	Clear
On Line	VigorIPPBX 3510, Connection Uptime:00:00:16 IP Address:172.17.3.1	Account	Clear
On Line	Vigor2820 Series, Connection Uptime:00:00:16 IP Address:172.17.3.193	Account	Clear
On Line	VigorIPPBX 3510, Connection Uptime:00:00:16 IP Address:172.17.3.160	Account	Clear
On Line	Vigor2850 Series, Connection Uptime:00:00:16		

When you finished the configuration, click **OK** to save it.

Note: Only DrayTek products can be detected by this function.

5

Trouble Shooting

This section will guide you to solve abnormal situations if you cannot access into the Internet after installing the router and finishing the web configuration. Please follow sections below to check your basic installation status stage by stage.

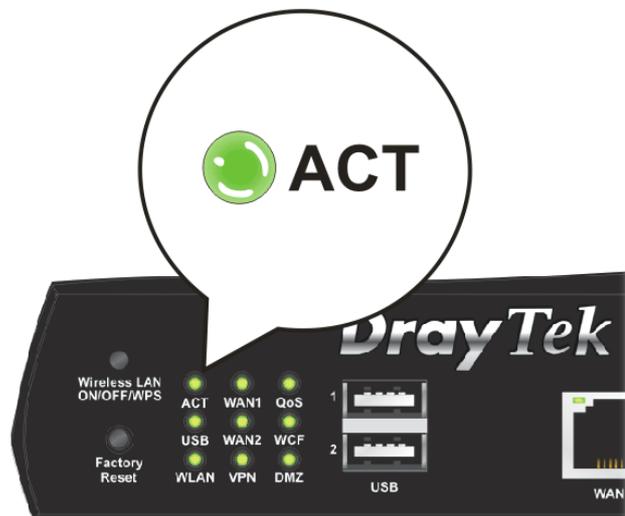
- Checking if the hardware status is OK or not.
- Checking if the network connection settings on your computer are OK or not.
- Pinging the router from your computer.
- Checking if the ISP settings are OK or not.
- Backing to factory default setting if necessary.

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

5.1 Checking If the Hardware Status Is OK or Not

Follow the steps below to verify the hardware status.

1. Check the power line and WLAN/LAN cable connections. Refer to “**1.3 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 “**1.3 Hardware Installation**” to execute the hardware installation again. And then, try again.

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

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

For Windows

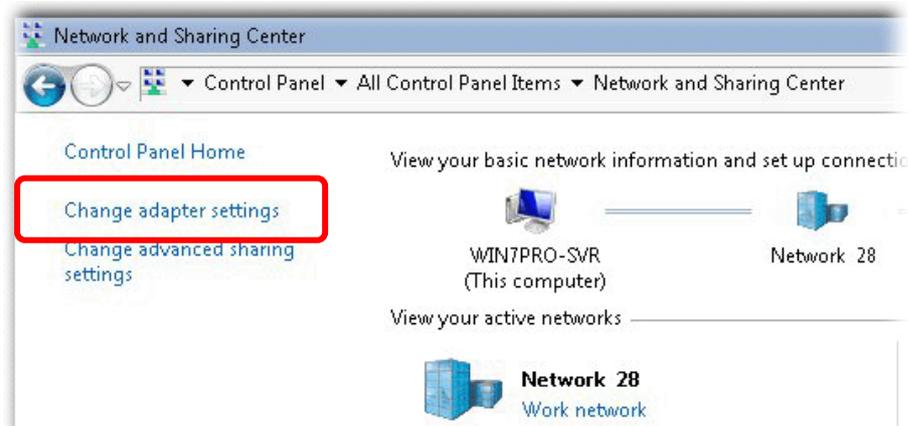


The example is based on Windows 7 (Professional Edition). As to the examples for other operation systems, please refer to the similar steps or find support notes in www.DrayTek.com.

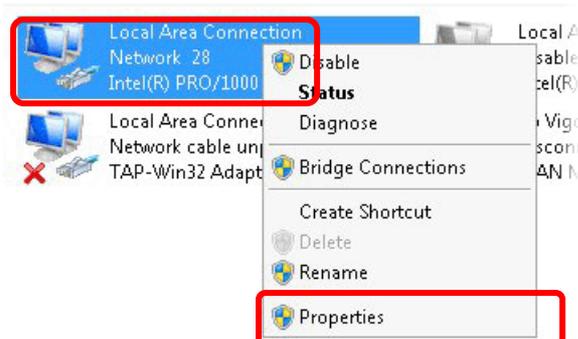
1. Open **All Programs>>Getting Started>>Control Panel**. Click **Network and Sharing Center**.



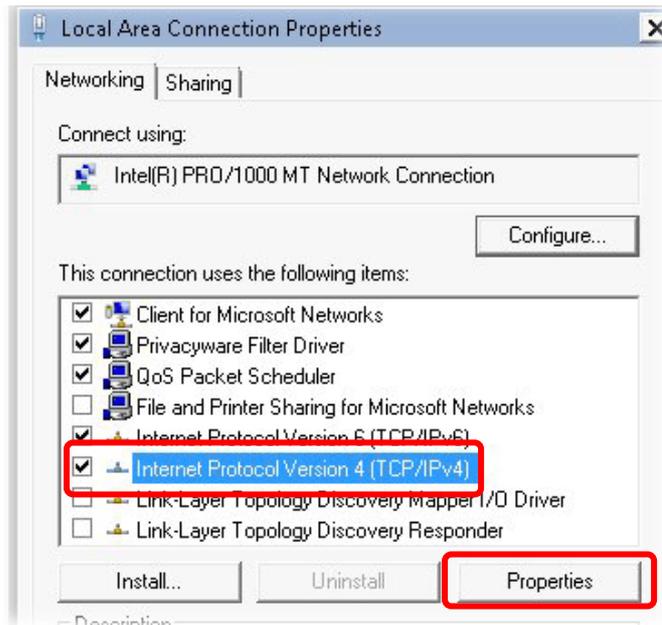
2. In the following window, click **Change adapter settings**.



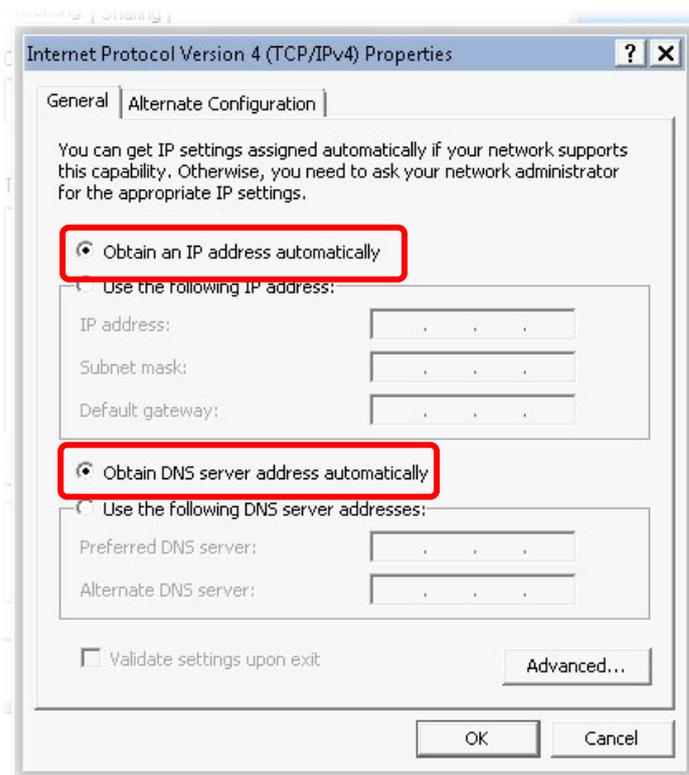
3. Icons of network connection will be shown on the window. Right-click on **Local Area Connection** and click on **Properties**.



4. Select **Internet Protocol Version 4 (TCP/IP)** and then click **Properties**.

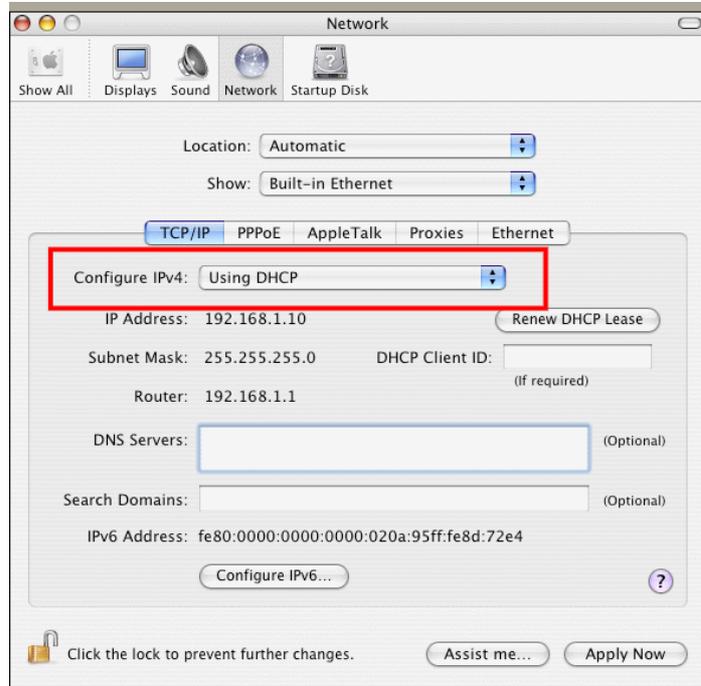


5. Select **Obtain an IP address automatically** and **Obtain DNS server address automatically**. Finally, click **OK**.



For Mac OS

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



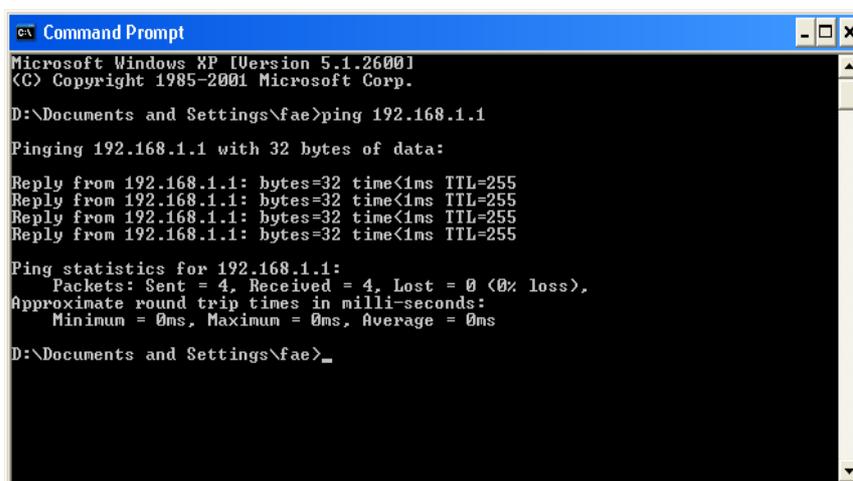
5.3 Pinging the Router from Your Computer

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

Please follow the steps below to ping the router correctly.

For Windows

1. Open the **Command Prompt** window (from **Start menu**> **Run**).
2. Type **command** (for Windows 95/98/ME) or **cmd** (for Windows NT/ 2000/XP/Vista/7). 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

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.

```

Terminal - bash - 80x24
Last login: Sat Jan  3 02:24:18 on ttys1
Welcome to Darwin!
Vigor10:~ draytek$ ping 192.168.1.1
PING 192.168.1.1 (192.168.1.1): 56 data bytes
64 bytes from 192.168.1.1: icmp_seq=0 ttl=255 time=0.755 ms
64 bytes from 192.168.1.1: icmp_seq=1 ttl=255 time=0.697 ms
64 bytes from 192.168.1.1: icmp_seq=2 ttl=255 time=0.716 ms
64 bytes from 192.168.1.1: icmp_seq=3 ttl=255 time=0.731 ms
64 bytes from 192.168.1.1: icmp_seq=4 ttl=255 time=0.72 ms
^C
--- 192.168.1.1 ping statistics ---
5 packets transmitted, 5 packets received, 0% packet loss
round-trip min/avg/max = 0.697/0.723/0.755 ms
Vigor10:~ draytek$

```

5.4 Checking If the ISP Settings are OK or Not

Open **WAN >> Internet Access** page and then check whether the ISP settings are set correctly. Click **Details Page** of WAN1-WAN3 to review the settings that you configured previously.

WAN >> Internet Access

Internet Access			Access Mode
Index	Display Name	Physical Mode	
WAN1		Fiber	<div style="border: 1px solid red; padding: 2px;"> None <input type="button" value="Details Page"/> <input type="button" value="IPv6"/> </div>
WAN2		Ethernet	<div style="border: 1px solid red; padding: 2px;"> None <input type="button" value="Details Page"/> <input type="button" value="IPv6"/> </div>
WAN3		USB	<div style="border: 1px solid red; padding: 2px;"> PPPoE <input type="button" value="Details Page"/> <input type="button" value="IPv6"/> Static or Dynamic IP PPTP/L2TP </div>

Note: Only one WAN can support IPv6.

You can configure DHCP client options here.

5.5 Problems for 3G Network Connection

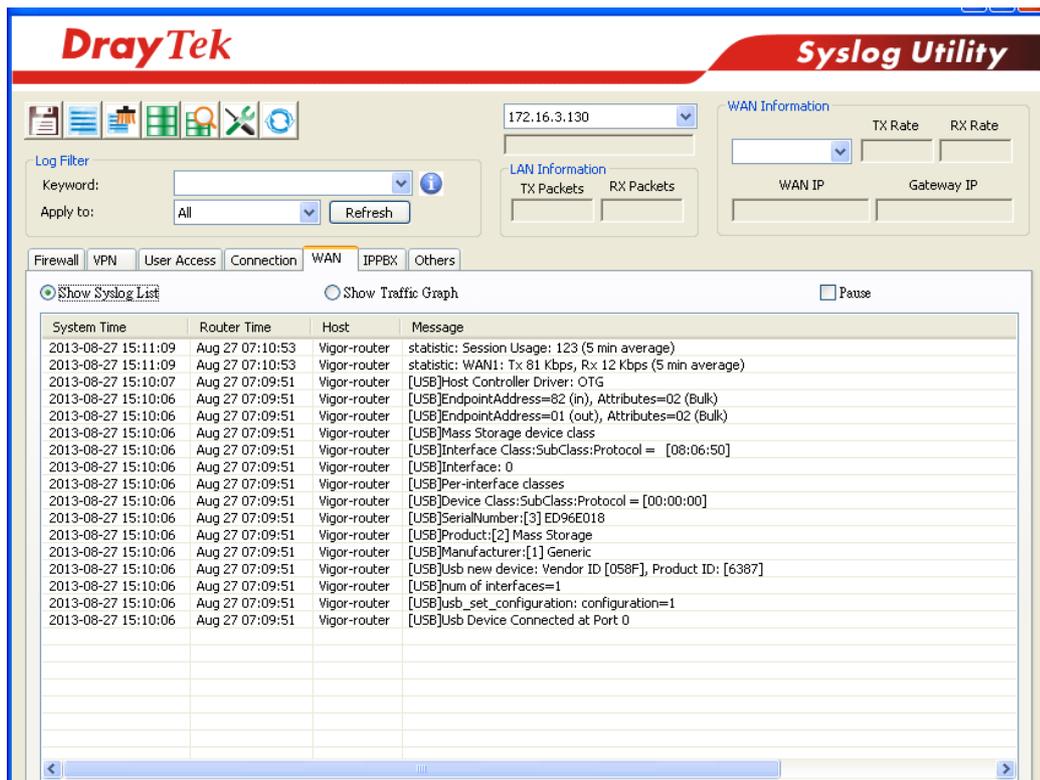
When you have trouble in using 3G network transmission, please check the following:

Check if USB LED lights on or off

You have to wait about 15 seconds after inserting 3G USB Modem into your Vigor2912. 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 Vigor2912.

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 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.



Transmission Rate is not fast enough

Please connect your Notebook with 3G USB Modem to test the connection speed to verify if the problem is caused by Vigor2912. In addition, please refer to the manual of 3G 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.

5.6 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.



Warning: After pressing **factory default setting**, you will lose all settings you did before. Make sure you have recorded all useful settings before you pressing.

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.

Reboot System

Do you want to reboot your router ?

- Using current configuration
- Using factory default configuration

Reboot Now

Auto Reboot Time Schedule

Index(1-15) in Schedule Setup: , , ,

Note: Action and Idle Timeout settings will be ignored.

OK

Cancel

Hardware Reset

While the router is running (ACT LED blinking), press the **Factory Reset** button and hold for more than 5 seconds. When you see the ACT LED blinks rapidly, please release the button. Then, the router will restart with the default configuration.



After restore the factory default setting, you can configure the settings for the router again to fit your personal request.

5.7 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.

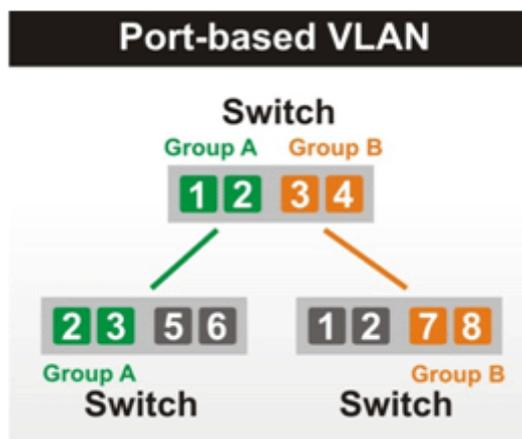
This page is left blank.

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 management 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

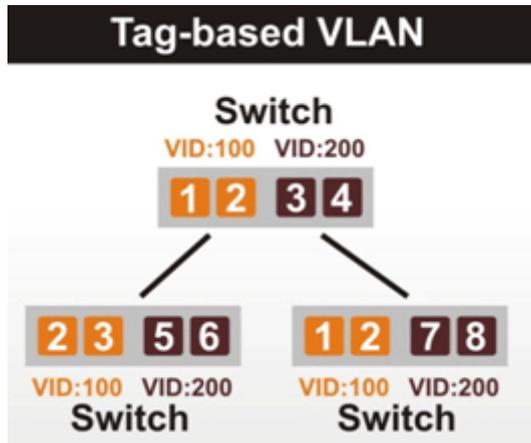
It uses a matrix table of the physical ports to define the traffics how to exchange between each port, and the traffics will be isolated from the ports are not being ticked in the same line. It is the easiest way to setup an isolate network, but not a flexible way to maintain a growing network. Because 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 maintenance and management 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.

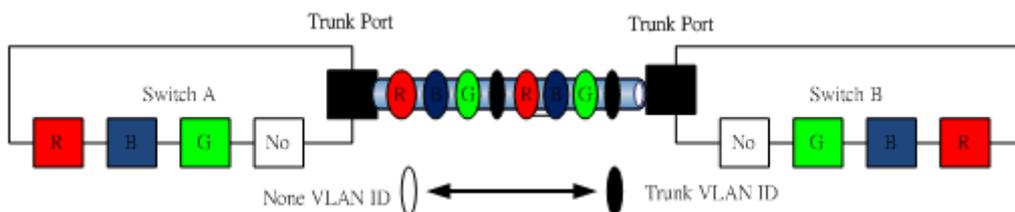
[Note]

Broadband router: Vigor2920/Vigor3200/Vigor2925/Vigo2960/Vigor3900

Modem router: Vigor2850/Vigor2860

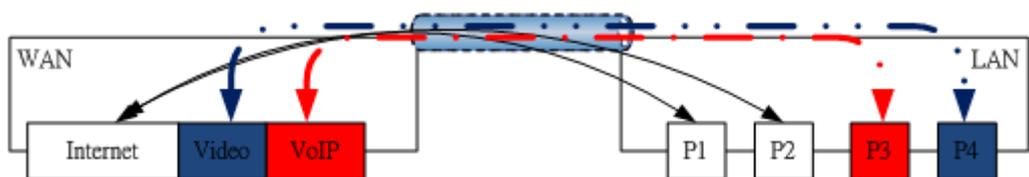
VLAN Packets on Vigor routers

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

Channel	Enable	WAN Type	VLAN Tag	Port-based Bridge
1	Yes	Ethernet(WAN1)	None	
2	Yes	Ethernet(WAN2)	None	
3	No	Ethernet(WAN1)	None	<input type="checkbox"/> Enable <input type="checkbox"/> P1 <input type="checkbox"/> P2 <input type="checkbox"/> P3 <input type="checkbox"/> P4 <input type="checkbox"/> P5
4	No	Ethernet(WAN1)	None	<input type="checkbox"/> Enable <input type="checkbox"/> P1 <input type="checkbox"/> P2 <input type="checkbox"/> P3 <input type="checkbox"/> P4 <input type="checkbox"/> P5
5_WAN5	No	Ethernet(WAN1)	None	<input type="checkbox"/> Enable <input type="checkbox"/> P1 <input type="checkbox"/> P2 <input type="checkbox"/> P3 <input type="checkbox"/> P4 <input type="checkbox"/> P5
6_WAN6	No	Ethernet(WAN1)	None	<input type="checkbox"/> Enable <input type="checkbox"/> P1 <input type="checkbox"/> P2 <input type="checkbox"/> P3 <input type="checkbox"/> P4 <input type="checkbox"/> P5
7_WAN7	No	Ethernet(WAN1)	None	<input type="checkbox"/> Enable <input type="checkbox"/> P1 <input type="checkbox"/> P2 <input type="checkbox"/> P3 <input type="checkbox"/> P4 <input type="checkbox"/> P5
8	No	Ethernet(WAN1)	None	<input type="checkbox"/> Enable <input type="checkbox"/> P1 <input type="checkbox"/> P2 <input type="checkbox"/> P3 <input type="checkbox"/> P4 <input type="checkbox"/> P5

Detail settings of channel profile

Multi-VLAN Channel 5: Enable Disable
 WAN Type : Ethernet(WAN1)

General Settings

VLAN Header
 VLAN Tag:
 Priority:

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: *
 Domain Name: *
 *: Required for some ISPs

Specify an IP address

IP Address:
 Subnet Mask:
 Gateway IP Address:

DNS Server IP Address

Primary IP Address:
 Secondary IP Address:

Annotations:

- Internet Access >> Multi-VLAN (points to the table)
- Multi-VLAN (points to the table)
- Detail settings of channel profile (points to the detailed settings form)
- VLAN Settings (points to the General Settings section)
- VLAN Members (points to the Physical Members section)
- Service Binding & WAN Setup (points to the WAN Setup and ISP Access Setup sections)

LAN

Enable *Port-based VLAN* by checking the option

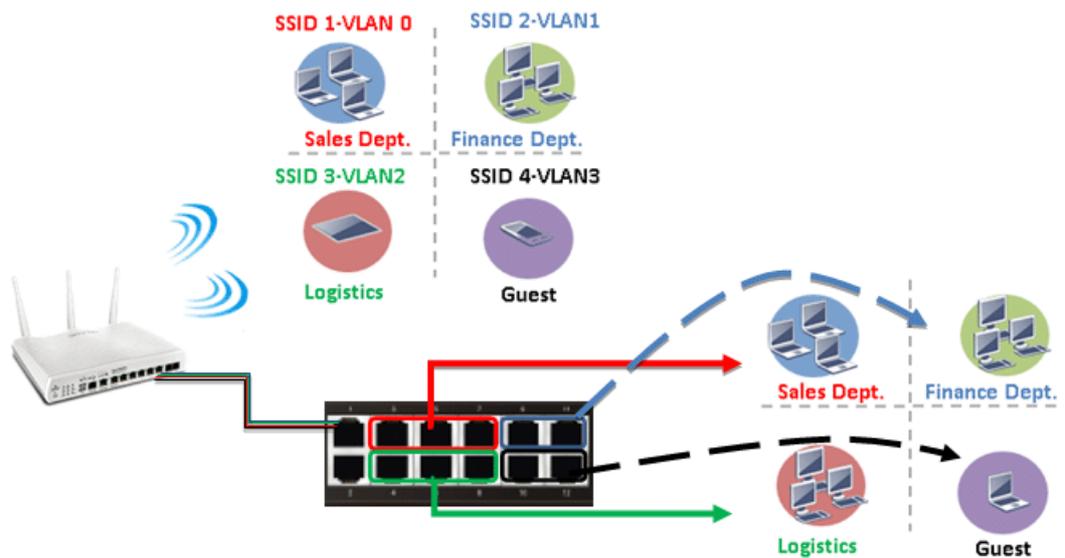
The option of *Tag-based VLAN*

VLAN Configuration												
VLAN	LAN				Wireless LAN				Subnet	VLAN Tag		
	P1	P2	P3	P4	SSID1	SSID2	SSID3	SSID4		Enable	VID	Priority
VLAN0	<input checked="" type="checkbox"/>	LAN 1	<input checked="" type="checkbox"/>	0	0							
VLAN1	<input type="checkbox"/>	LAN 1	<input type="checkbox"/>	0	0							
VLAN2	<input type="checkbox"/>	LAN 1	<input type="checkbox"/>	0	0							
VLAN3	<input type="checkbox"/>	LAN 1	<input type="checkbox"/>	0	0							
VLAN4	<input type="checkbox"/>	LAN 1	<input type="checkbox"/>	0	0							
VLAN5	<input type="checkbox"/>	LAN 1	<input type="checkbox"/>	0	0							
VLAN6	<input type="checkbox"/>	LAN 1	<input type="checkbox"/>	0	0							
VLAN7	<input type="checkbox"/>	LAN 1	<input type="checkbox"/>	0	0							

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

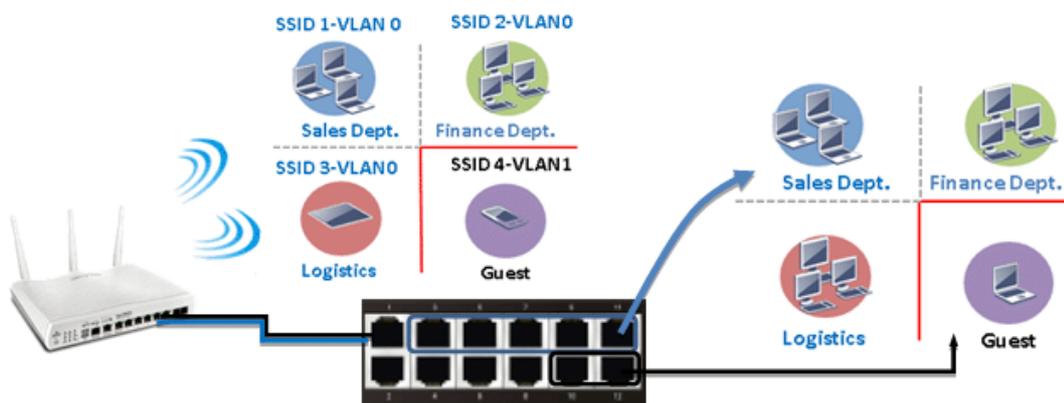
<input checked="" type="checkbox"/> Enable												
VLAN	LAN				Wireless LAN				Subnet	VLAN Tag		
	P1	P2	P3	P4	SSID1	SSID2	SSID3	SSID4		Enable	VID	Priority
VLAN0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAN 1	<input type="checkbox"/>	0	0
VLAN1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAN 2	<input type="checkbox"/>	0	0
VLAN2	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	LAN 3	<input type="checkbox"/>	0	0
VLAN3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	LAN 4	<input type="checkbox"/>	0	0
VLAN4	<input type="checkbox"/>	LAN 1	<input type="checkbox"/>	0	0							
VLAN5	<input type="checkbox"/>	LAN 1	<input type="checkbox"/>	0	0							
VLAN6	<input type="checkbox"/>	LAN 1	<input type="checkbox"/>	0	0							
VLAN7	<input type="checkbox"/>	LAN 1	<input type="checkbox"/>	0	0							

Tag-based mode

<input checked="" type="checkbox"/> Enable												
VLAN	LAN				Wireless LAN				Subnet	VLAN Tag		
	P1	P2	P3	P4	SSID1	SSID2	SSID3	SSID4		Enable	VID	Priority
VLAN0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAN 1	<input checked="" type="checkbox"/>	10	0
VLAN1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAN 2	<input checked="" type="checkbox"/>	20	0
VLAN2	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	LAN 3	<input checked="" type="checkbox"/>	30	0
VLAN3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	LAN 4	<input checked="" type="checkbox"/>	40	0
VLAN4	<input type="checkbox"/>	LAN 1	<input type="checkbox"/>	0	0							
VLAN5	<input type="checkbox"/>	LAN 1	<input type="checkbox"/>	0	0							
VLAN6	<input type="checkbox"/>	LAN 1	<input type="checkbox"/>	0	0							
VLAN7	<input type="checkbox"/>	LAN 1	<input type="checkbox"/>	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 servers (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

	LAN				Wireless LAN				VLAN Tag			
	P1	P2	P3	P4	SSID1	SSID2	SSID3	SSID4	Subnet	Enable	VID	Priority
VLAN0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	LAN 1	<input type="checkbox"/>	0	0						
VLAN1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	LAN 2	<input type="checkbox"/>	0	0						
VLAN2	<input type="checkbox"/>	LAN 1	<input type="checkbox"/>	0	0							
VLAN3	<input type="checkbox"/>	LAN 1	<input type="checkbox"/>	0	0							
VLAN4	<input type="checkbox"/>	LAN 1	<input type="checkbox"/>	0	0							
VLAN5	<input type="checkbox"/>	LAN 1	<input type="checkbox"/>	0	0							
VLAN6	<input type="checkbox"/>	LAN 1	<input type="checkbox"/>	0	0							
VLAN7	<input type="checkbox"/>	LAN 1	<input type="checkbox"/>	0	0							

Tag-based mode

	LAN				Wireless LAN				VLAN Tag			
	P1	P2	P3	P4	SSID1	SSID2	SSID3	SSID4	Subnet	Enable	VID	Priority
VLAN0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	LAN 1	<input type="checkbox"/>	0	0
VLAN1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	LAN 2	<input checked="" type="checkbox"/>	10	0
VLAN2	<input type="checkbox"/>	LAN 1	<input type="checkbox"/>	0	0							
VLAN3	<input type="checkbox"/>	LAN 1	<input type="checkbox"/>	0	0							
VLAN4	<input type="checkbox"/>	LAN 1	<input type="checkbox"/>	0	0							
VLAN5	<input type="checkbox"/>	LAN 1	<input type="checkbox"/>	0	0							
VLAN6	<input type="checkbox"/>	LAN 1	<input type="checkbox"/>	0	0							
VLAN7	<input type="checkbox"/>	LAN 1	<input type="checkbox"/>	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.

WAN 1

Enable: Yes No

Display Name:

Physical Mode: Ethernet

Physical Type: Auto negotiation

Line Speed(Kbps):

DownLink:

UpLink:

VLAN Tag insertion: Enable (Please configure Internet Access setting first)

Tag value: (0~4095)

Priority: (0~7)

Active Mode: Always On Load Balance:

1. Setup the VLAN ID on WAN1 profiles if WAN is the primary interface of IPTV service.

2. Open the profile of WAN5 by clicking the ID.

Channel	Enable	WAN Type	VLAN Tag	Port-based Bridge
1	Yes	Ethernet(WAN1)	None	
2	Yes	Ethernet(WAN2)	None	
3	No	Ethernet(WAN1)	None	<input type="checkbox"/> Enable <input type="checkbox"/> P1 <input type="checkbox"/> P2 <input type="checkbox"/> P3 <input type="checkbox"/> P4
4	No	Ethernet(WAN1)	None	<input type="checkbox"/> Enable <input type="checkbox"/> P1 <input type="checkbox"/> P2 <input type="checkbox"/> P3 <input type="checkbox"/> P4
5, WAN5	No	Ethernet(WAN1)	None	<input type="checkbox"/> Enable <input type="checkbox"/> P1 <input type="checkbox"/> P2 <input type="checkbox"/> P3 <input type="checkbox"/> P4
6, WAN6	No	Ethernet(WAN1)	None	<input type="checkbox"/> Enable <input type="checkbox"/> P1 <input type="checkbox"/> P2 <input type="checkbox"/> P3 <input type="checkbox"/> P4
7, WAN7	No	Ethernet(WAN1)	None	<input type="checkbox"/> Enable <input type="checkbox"/> P1 <input type="checkbox"/> P2 <input type="checkbox"/> P3 <input type="checkbox"/> P4
8	No	Ethernet(WAN1)	None	<input type="checkbox"/> Enable <input type="checkbox"/> P1 <input type="checkbox"/> P2 <input type="checkbox"/> P3 <input type="checkbox"/> P4

Multi-VLAN Channel 5: Enable Disable

WAN Type: Ethernet(WAN1)

General Settings

VLAN Header

VLAN:

Tag:

Priority:

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):

P1 P2 P3 P4 P5

Note: 3. P1 is reserved for NAT use, and cannot be configured for bridge mode.

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.

3. Setup connection of WAN 5 and bind the service onto it.

NO need to enable Port-based Bridge.

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: 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: Vigor

Name: *

Domain Name: *

*: Required for some ISPs

Specify an IP address

IP Address:

Subnet:

Mask:

Gateway:

IP Address:

DNS Server IP Address

Primary IP Address:

Secondary IP Address:

4. Go to Application >> IGMP to bind it on PVC WAN.

IGMP

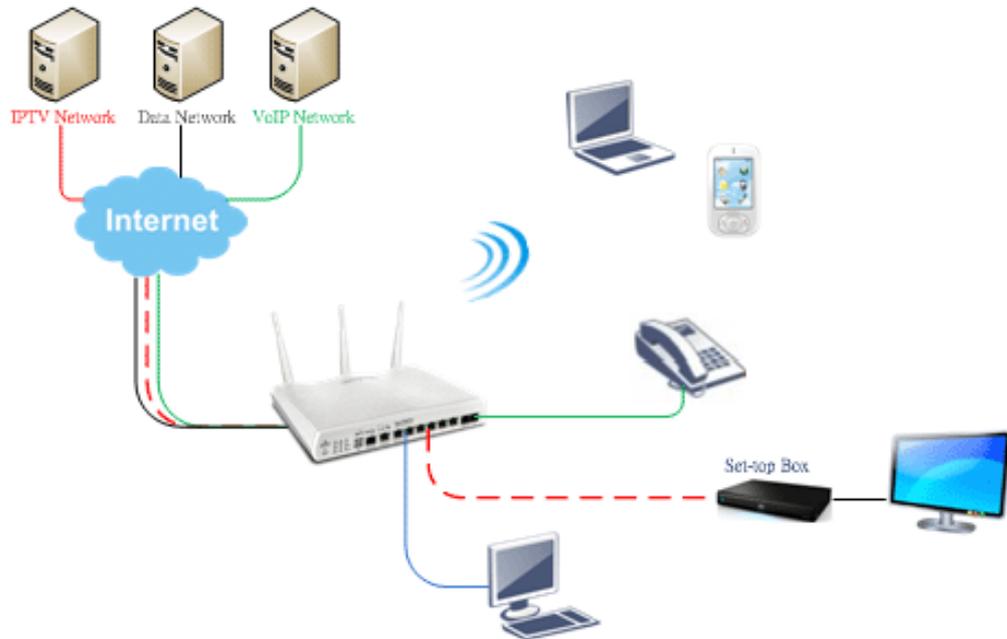
Enable IGMP Proxy

IGMP Proxy is to act as a multicast proxy for will access any multicast group. But this function take no effect when bridge mode is enable.

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	<input type="checkbox"/> Enable <input type="checkbox"/> P1 <input type="checkbox"/> P2 <input type="checkbox"/> P3 <input type="checkbox"/> P4 <input type="checkbox"/> P5
4	No	Ethernet(WAN1)	None	<input type="checkbox"/> Enable <input type="checkbox"/> P1 <input type="checkbox"/> P2 <input type="checkbox"/> P3 <input type="checkbox"/> P4 <input type="checkbox"/> P5
5	No			
6	No			
7	No			
8	No			

Multi-VLAN Channel 3: Enable Disable

WAN Type :

General Settings

VLAN Header

VLAN Tag:

Priority:

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.